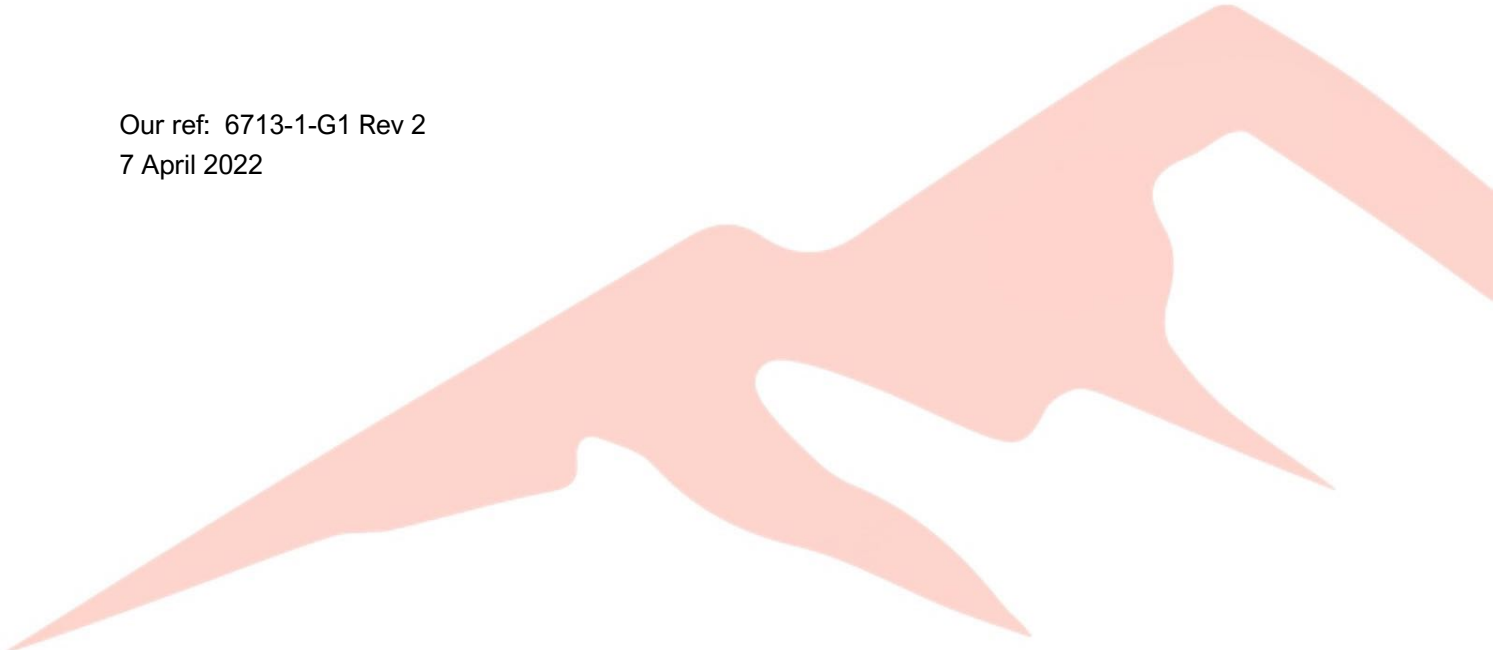
assetgeoenviro

EVT / Kosciuszko Thredbo Pty Ltd

Merritts Mountain House Restaurant – Sewer and Water Services Thredbo NSW

Geotechnical Assessment

Our ref: 6713-1-G1 Rev 2
7 April 2022



Your trusted engineering professionals

Form 4 – Minimal Impact Certification

DA Number: _____

This form may be used where minor construction works which present minimal or no geotechnical impact on the site or related land are proposed to be erected within the "G" line area of the geotechnical maps.

A geotechnical engineer or engineering geologist must inspect the site and/or review the proposed development documentation to determine if the proposed development requires a geotechnical report to be prepared to accompany the development application. Where the geotechnical engineer determines that such a report is not required then they must complete this form and attach design recommendations where required. A copy of Form 4 with design recommendation, if required, must be submitted with the development application.

Please contact the Alpine Resorts Team in Jindabyne for further information - phone 02 6456 1733.

To complete this form, please place a cross in the appropriate boxes ☐ and complete all sections.

1. Declaration made by geotechnical engineer or engineering geologist in relation to a nil or minimal geotechnical impact assessment and site classification

I,

Mr [x] Ms [ ] Mrs [ ] Dr [ ] Other [ ]

First Name	Family Name
Mark	Bartel

OF

Company/organisation

Asset Geotechnical Engineering Pty Ltd (trading as AssetGeoEnviro)

certify that I am a geotechnical engineer /engineering geologist as defined by the "Policy" and I have inspected the site and reviewed the proposed development known as

Merritt's Mountain House Restaurant – Sewer and Water Services, Thredbo NSW

As a result of my site inspection and review of the following documentation

(List of documentation reviewed)

Services Upgrade Plans by EPES Consulting Engineers & Triaxial Consulting as attached to Report 2713-1-G1 Rev 2 dated 7 April 2022

I have determined that;

- ☒ the current load-bearing capacity of the existing building will not be exceeded or adversely impacted by the proposed development, and
- ☒ the proposed works are of such a minor nature that the requirement for geotechnical advice in the form of a geotechnical report, prepared in accordance with the "Policy", is considered unnecessary for the adequate and safe design of the structural elements to be incorporated into the new works, and
- ☒ in accordance with AS 2870.1 Residential Slabs and Footings, the site is to be classified as a type

(insert classification type)

Class P

- ☒ I have attached design recommendations to be incorporated in the structural design in accordance with this site classification.

I am aware that this declaration shall be used by the Department as an essential component in granting development consent for a structure to be erected within the "G" line area (as identified on the geotechnical maps) of Kosciuszko Alpine Resorts without requiring the submission of a geotechnical report in support of the development application.

2. Signatures

Signature

Mark Bartel

Chartered professional status

CPEng 35641 NER (Civil)

Name

Mark Bartel

Date

7 April 2022

3. Contact details

Alpine Resorts Team
Shop 5A, 19 Snowy River Avenue
P O Box 36, JINDABYNE NSW 2627
Telephone: 02 6456 1733
Facsimile: 02 6456 1736
Email: alpineresorts@planning.nsw.gov.au

Document Authorization

Prepared for EVT / Kosciuszko Thredbo Pty Ltd

Our ref: 6713-1-G1 Rev 2
7 April 2022

For and on behalf of
AssetGeoEnviro

Mark Bartel
BE, MEngSc, GMQ, CPEng, RPEQ/NER(Civil), DEP/PRE (NSW)
Managing Director | Senior Principal Geotechnical Engineer

Document Control

Distribution Register

Copy	Media	Recipient	Location
1	Secure PDF	Ben Devaney	Event Hospitality & Entertainment
2	Secure PDF	Jamie Laurendent	Event Hospitality & Entertainment
3	Secure PDF	Mark Bartel	AssetGeoEnviro

Document Status

Rev	Revision Details	Author	Reviewer		Approved for Issue		
			Name	Initials	Name	Initials	Date
0	Initial issue	M. Bartel			M. Bartel	*MAB*	9 March 2022
1	Minor revisions	M. Bartel			M. Bartel	*MAB*	24 March 2022
2	Plans updated	M. Bartel			M. Bartel		7 April 2022

Suite 2.06 / 56 Delhi Road
North Ryde NSW 2113
02 9878 6005
assetgeoenviro.com.au

ISO 9001:2015
ISO 14001:2015
ISO 45001:2018 AS/NZS 4801:2001

Contents

1. Introduction

1.1 General

This report presents the results of a geotechnical assessment for proposed water and sewer service upgrade for the Merritts Mountain House Restaurant at Thredbo, NSW (Merritts). The assessment was commissioned in an email on 21 January 2022 by Ben Devaney of Event Hospitality & Entertainment (EVT) as an extension to a Consultancy Agreement dated 28 October 2021. The work was carried out in accordance with the email proposal by AssetGeoEnviro (Asset) dated 19 January 2022, reference 6713-1-P1.

Documents supplied to us for this assessment comprised:

- Services Upgrade Plans (prepared by: EPES Consulting Engineers and Triaxial Consulting; Project №: TX16479.00; Drawings: as attached).

We understand that the project involves upgrading services to the redevelopment of the Merritts Mountain House Restaurant, comprising:

- New sewer line to replace existing.
- New water supply pipe.
- Extension of 150mm diameter ring main.
- Power upgrade to UV treatment building.
- Extend existing UV water treatment building for new pump station and upgrade power supply.

The route alignment and key notes are provided on the supplied plans. The new sewer and water supply pipe will mostly be located within the existing vehicle track except for a small section near Merritts that will be through an existing partly disturbed corridor, and a section coming off the existing UV treatment building where the new water supply and water ring main extension will follow an existing path. The power upgrade will follow the existing power conduit.

The work is to be conducted under a Development Application (DA), which will require geotechnical considerations for trenching for the various services.

1.2 Scope of Work

The main objectives of the investigation were to assess the surface and subsurface conditions and to provide comments and recommendations relating to:

- Landslide risk assessment as per AGS 2007[1].
- Geotechnical constraints.

The following scope of work was carried out to achieve the project objectives:

- A review of existing regional maps and reports relevant to the site held within our files.
- Visual observations of surface features.
- Engineering assessment and reporting.

[1] Landslide Risk Management, Australian Geomechanics, Vol 42, No. 1, March 2007.

This report must be read in conjunction with the attached "Important Information about your Geotechnical Report" and "Important Information about your Landslide Risk Assessment" in Appendix A. Attention is drawn to the limitations inherent in site investigations and the importance of verifying the subsurface conditions inferred herein. Landslide risk considerations presented in this report must be read in conjunction with the attached GeoGuides for Slope Management and Maintenance.

2. Regional Topography

The regional topography comprises moderately to steeply sloping terrain flanking the north-easterly flowing Thredbo River, with ground slopes over the land flanking the river generally ranging from 10º to 30º and some locally steeper sections, and more gentle slopes over the river shoulders. Numerous drainage depressions and watercourses flow towards the river, with some of the persistent watercourses to the north of the river carved several metres into the underlying granite bedrock. Side slopes to creeks and watercourses are typically steeper at 20 to 35º, and typically include numerous granite boulders and cobbles.

The site lies within an area designated as "G" as defined in the maps accompanying DIPNR's "Geotechnical Policy – Kosciuszko Alpine Resorts", November 2003, and therefore a geotechnical report is required to accompany the development application as per the requirements of the Geotechnical Policy.

3. Site Observations

The site is located within Thredbo, north of the Alpine Way and north of the Thredbo River. The works is located within a corridor running uphill from the Woodridge Apartments to the existing UV treatment building, then joining an existing vehicle track up to and past mid station for the Gondola, continuing uphill to Merritts.

The new services are to be laid within disturbed ground comprising mostly the vehicle track up to Merritts but also some pedestrian pathways and some existing services corridors. The trenching is understood to generally be relatively shallow (less than about 1m depth below ground level). The trenching for the vehicle track is proposed to be laid in the middle of the formation width.

Photographs of selected sections of the route are included in Appendix B.

There was no obvious evidence of existing or potential landslides affecting the pipe alignment except for some road shoulder support works on the eastern (downhill) side of the vehicle track up to Merritts. It is noted that the potential failure mechanism for the track is assessed to be a shallow slump extending to just outside edge of the vehicle traffic path which is well away from the centre of the track where the services are to be located. After remedial works, the landslide risk is assessed to be **Low** with respect to property and **Acceptable** with respect to life.

4. Discussions & Recommendations

The proposed works will have 'minimal or no geotechnical impact' on the site, based on the relatively shallow depths of excavation required, the lack of obvious signs of landslide observed or expected, and previous observations by the undersigned in the area. We therefore consider that a geotechnical report prepared in accordance with the Geotechnical Policy for Kosciuszko Alpine Resorts (2003) is not required. A completed Form 4 – Minimal Impact Certification is provided on the second page of this report.

The following recommendations are provided for the development:

- Based on our site observations and previous test over the mountain side, we expect that due to previous site disturbance and observed slopes, the site is Class 'P', in accordance with AS2870-2011 'Residential slabs and footings'.
- Excavation is anticipated to be predominantly within soils of variable nature including completely weathered granite and cobbles and boulders. Excavation could be achieved by suitably sized excavator.
- Excavation sides may be cut vertically for the trenches up to maximum 1m depth. Excavation for the UV building extension may also be cut vertically up to maximum 1.5m depth (due to the limited lateral extent and gentle slopes in the area).
- Footings for the UV building should be formed on completely weathered or better granite, or dense or very dense sands, or very stiff or hard clays, and may be designed for a maximum allowable bearing pressure of 150 kPa. Further geotechnical advice should be sought if poorer foundation soils are exposed at footing excavation level.
- Filling may comprise the excavated soils provided they are not wet and do not contain too much organic matters that prevents achieving reasonable compaction levels. The fill should be placed in layers not more than 0.2m loose thickness and compacted using wheel roller on an excavator or other suitable compaction equipment (e.g., whacker-packer). Compaction should continue until no further subsidence or compression of the compacted surface is observed.
- Erosion protection measures must be maintained to prevent concentrated flows. For the access track, this has been achieved with regularly spaced berms to direct flows across the track and downslope of the road embankment via corrugated open channel. Consideration could be given to use of polymer binders to reduce erosion. Sections of pipeline through disturbed terrain should be vegetated over after construction to aid with erosion control.

5. Limitations

In addition to the limitations inherent in site investigations (refer to the attached Information Sheets), it must be pointed out that the recommendations in this report are based on assessed subsurface conditions from limited investigations.

It is recommended that a qualified and experienced Geotechnical Engineer be engaged to provide further input and review during the design development; including site visits during construction (either in-person or by remote with assistance of suitably experienced site personnel) to verify the site conditions and provide advice where conditions vary from those assumed in this report.

This report may have included geotechnical recommendations for design and construction of temporary works (e.g., temporary batter slopes or temporary shoring of excavations). Such temporary works are expected to perform adequately for a relatively short period only, which could range from a few days (for temporary batter slopes) up to six months (for temporary shoring). This period depends on a range of factors including but not limited to: site geology; groundwater conditions; weather conditions; design criteria; and level of care taken during construction. If there are factors which prevent temporary works from being completed and/or which require temporary works to function for periods longer than originally designed, further advice must be sought from the Geotechnical Engineer.

This report and details for the proposed development should be submitted to relevant regulatory authorities that have an interest in the property (e.g., Department of Planning) or are responsible for services that may be within or adjacent to the site for their review.

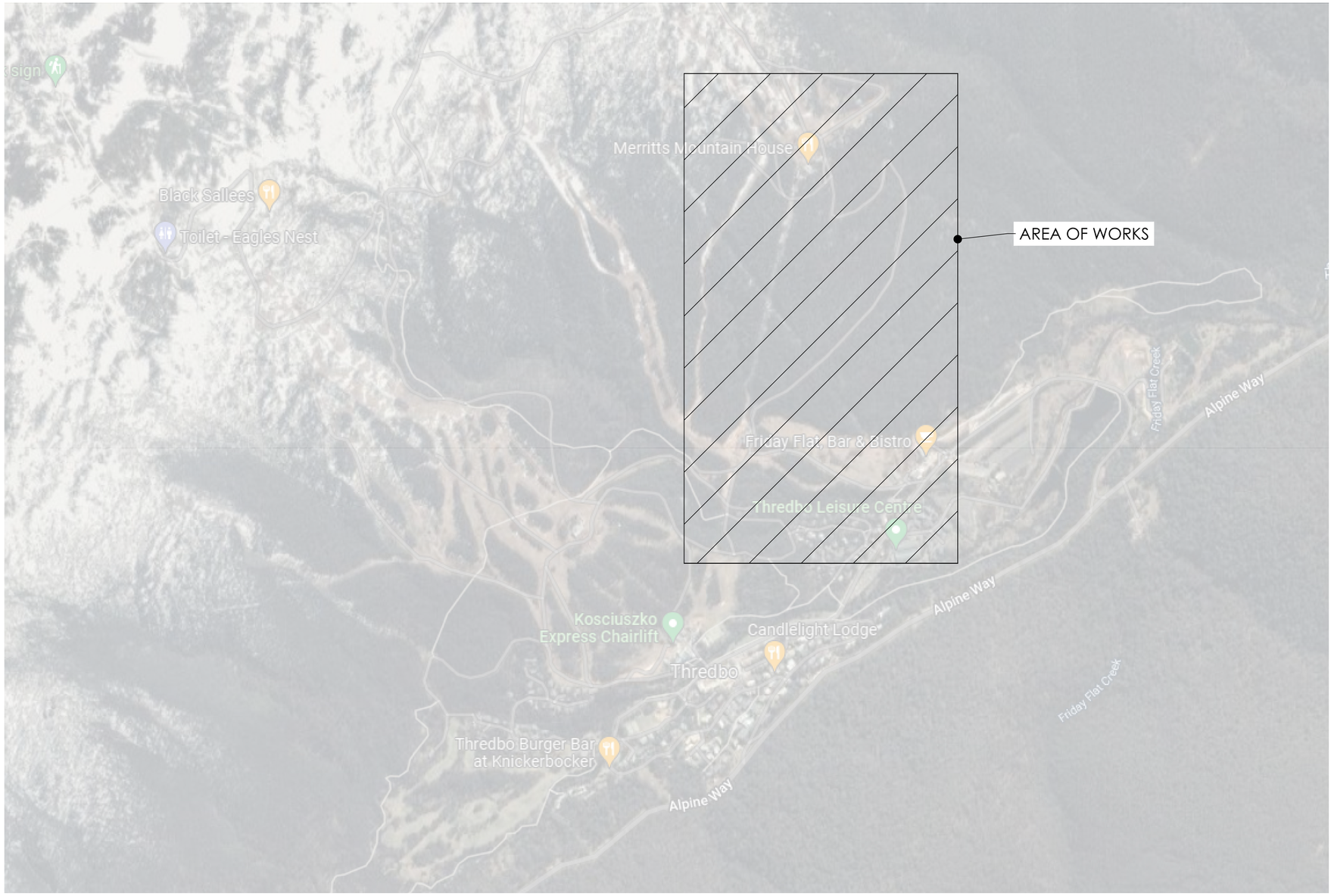
Asset accepts no liability where our recommendations are not followed or are only partially followed. The document “Important Information about your Geotechnical Report” in Appendix A provides additional information about the uses and limitations of this report.

Services Upgrade Plans

Source: EPES Consulting Engineers / Triaxial Consulting

C1.00 Rev B: Cover Sheet
C2.00 Rev B: Key Plan
C3.00 Rev D: Rising Main Plan Sheet 1 of 5
C3.01 Rev D: Rising Main Plan Sheet 2 of 5
C3.02 Rev D: Rising Main Plan Sheet 3 of 5
C3.03 Rev D: Rising Main Plan Sheet 4 of 5
C3.04 Rev D: Rising Main Plan Sheet 5 of 5
C4.00 Rev B: Merritts Mountain House Site Plan, Access Track, Typical Section
C5.00 Rev B: Sewer and Water Long Section Sheet 1 of 5
C5.01 Rev C: Sewer and Water Long Section Sheet 2 of 5
C5.02 Rev C: Sewer and Water Long Section Sheet 3 of 5
C5.03 Rev B: Sewer and Water Long Section Sheet 4 of 5
C5.04 Rev B: Sewer and Water Long Section Sheet 5 of 5
C5.05 Rev D: Power Conduit Long Section, Trench Details & Water Supply Details

MERRITS MOUNTAIN HOUSE
TOP OF MERRITS GONDOLA,
THREDBO NSW 2625
PROPOSED SEWER PRESSURE MAIN AND WATER SUPPLY



LOCATION PLAN
SCALE NTS

DRAWINGS LIST

EXISTING SURFACE:
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

SERVICES NOTE:
1. EXISTING SERVICES SHOWN ARE BASED ON SURVEY DATA RECEIVED BY THIS OFFICE.
2. ALL EXISTING SERVICES ARE SHOWN DIAGRAMMATIC ONLY. ALL SERVICES ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.

ISSUED FOR DA	18.03.22	B	N.K
ISSUED FOR DA	16.03.22	A	N.K
AMENDMENTS	DATE	ISSUE	BY

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT
HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
B.R	N.K	MAR 22	A1	TX16479.00 - C01

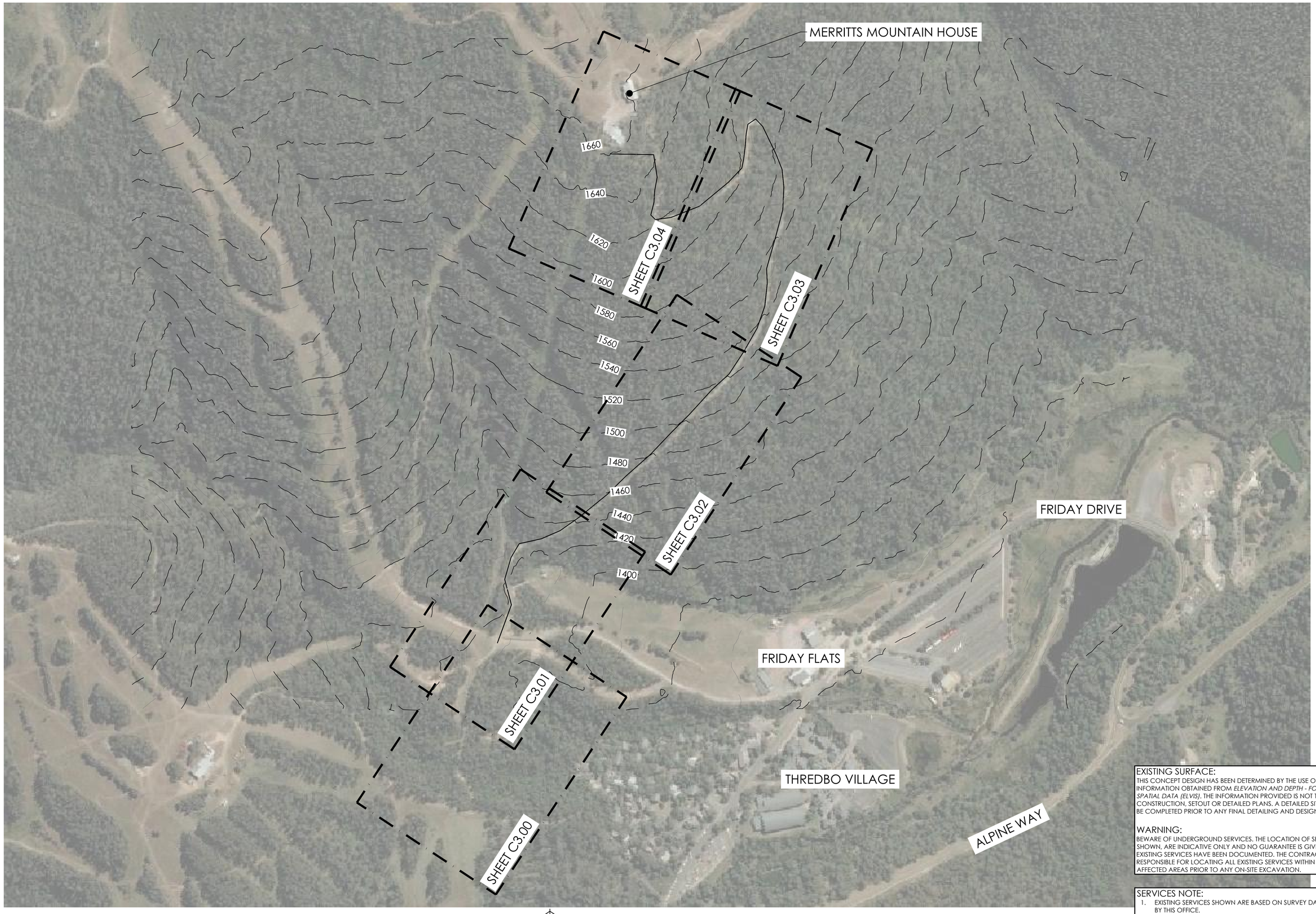
EPES Consulting Engineers
OFFICE | 1/6 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY
1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

DRAWING TITLE
COVER SHEET

PROJECT No. TX16479.00 - DRAWING No. C1.00 ISSUE B



KEY PLAN
N.T.S.

EXISTING SURFACE:
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

SERVICES NOTE:
1. EXISTING SERVICES SHOWN ARE BASED ON SURVEY DATA RECEIVED BY THIS OFFICE.
2. ALL EXISTING SERVICES ARE SHOWN DIAGRAMMATIC ONLY. ALL SERVICES ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	18.03.22	B	N.K
ISSUED FOR DA	16.03.22	A	N.K

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT

HOSPITALITY
AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
B.R	N.K	MAR 22	A1	TX16479.00 - C01

EPES Consulting Engineers
OFFICE | 1/6 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY
1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

DRAWING TITLE
KEY PLAN

PROJECT No. TX16479.00 - | DRAWING No. C2.00 | ISSUE B

MERRITTS WATER MAIN CAP LOCATION

WATER - DN100 DICL PN35

SEWER - DN75 PE100 SDR11

CH270.876

CH250.000

CH221.044

CH200.000
CH199.554

CH169.164

CH150.000

CH100.000

CH62.701

CH50.000

CH0.000

000 0HO

ROUTE OF NEW PIPEWORK TO FOLLOW EXISTING PATH

APPROXIMATE 3500 EXTENSION TO EXISTING UV TREATMENT BUILDING TO HOUSE NEW PUMP EQUIPMENT

INSTALL NEW WATER SUPPLY PUMP, REFER TO DETAIL ON SHEET C5.05.

LOCATE AND CONNECT TO EXISTING SEWER JUNCTION

ROUTE OF UPGRADED HYDRAULIC SERVICES PROPOSED SEWAGE PRESSURE MAIN

RETAIN EXISTING SEWER DOWNSTREAM OF CONNECTION POINT

APPROXIMATE LOCATION OF EXISTING SEWER MAIN

CH35.556

CH50.000

CH69.476

EXISTING BRIDGE CROSSING CREEK IN THIS LOCATION (APPROX.) SUPPORT NEW CONDUIT FROM BRIDGE STRUCTURE

CH92.767

CH100.000

RETAIN EXISTING ELEVATED SEWER ACROSS CREEK

CH127.618

CH139.079

CH155.028

CH150.000

CONNECT TO EXISTING PILLAR (TO BE UPGRADED)

ADJOINS SHEET C3.01

EXISTING SURFACE:

THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:

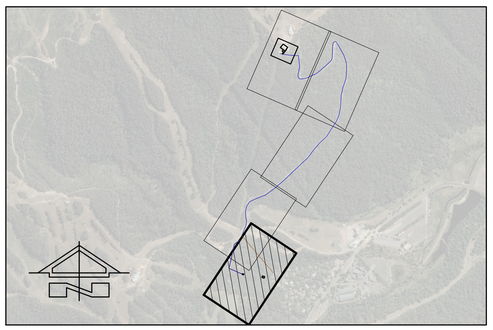
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

LEGEND

SYMBOL	DESCRIPTION
	CONTOUR MAJOR (5m)
	CONTOUR MINOR (1m)
E	PROPOSED ELECTRICAL CONDUIT 150mm NOM
S	EXISTING SEWER (APPROX. LOCATION)
RM	SEWER PRESSURE - DN75 PE100 SDR11
	WATER SUPPLY - DN100 DICL PN35
	WATER LINE - RING MAIN

NOTE:

SUBJECT TO CONFIRMATION OF DETAILED HYDRAULIC ANALYSIS THE DN100 DICL PN35 WATER SUPPLY PIPELINE MAY TRANSITION TO HDPE TOWARDS THE UPPER ELEVATION OF THE PIPELINE



KEY PLAN

RISING MAIN PLAN 1 OF 5

SCALE 1:500 AT A1

0 12.5 25 37.5 50m

SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	05.04.22	D	B.R
ISSUED FOR DA	23.03.22	C	N.K
ISSUED FOR DA	18.03.22	B	N.K
ISSUED FOR DA	16.02.22	A	N.K

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT
HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

EPES Consulting Engineers
OFFICE | 1/6 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY
1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

DRAWING TITLE
RISING MAIN PLAN SHEET 1 OF 5

PROJECT No.	DRAWING No.	ISSUE
TX16479.00 -	C3.00	D

EXISTING SURFACE:
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

KEY PLAN

LEGEND

SYMBOL	DESCRIPTION
— —	CONTOUR MAJOR (5m)
— —	CONTOUR MINOR (1m)
— E —	PROPOSED ELECTRICAL CONDUIT 150mm NOM
— S —	EXISTING SEWER (APPROX. LOCATION)
— RM —	SEWER PRESSURE - DN75 PE100 SDR11
——	WATER SUPPLY - DN100 DICL PN35
——	WATER LINE - RING MAIN

NOTE:
SUBJECT TO CONFIRMATION OF DETAILED HYDRAULIC ANALYSIS THE DN100 DICL PN35 WATER SUPPLY PIPELINE MAY TRANSITION TO HDPE TOWARDS THE UPPER ELEVATION OF THE PIPELINE

RISING MAIN PLAN 2 OF 5

SCALE 1:500 AT A1

0 12.5 25 37.5 50m
SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	05.04.22	D	B.R
ISSUED FOR DA	23.03.22	C	N.K
ISSUED FOR DA	18.03.22	B	N.K
ISSUED FOR DA	16.02.22	A	N.K

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT
HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

EPES Consulting Engineers
OFFICE | 1/6 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY
1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

DRAWING TITLE
RISING MAIN PLAN SHEET 2 OF 5

PROJECT No. TX16479.00 - DRAWING No. C3.01 ISSUE D

ADJOINS SHEET C3.01

ADJOINS SHEET C3.03

EXISTING SURFACE:
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

1500 1495 1490 1485 1480 1475 1470 1465 1460 1455 1450 1445

WATER - DN100 DICL PN35

SEWER - DN75 PE100 SDR11

RM

CH550.000 CH557.804 CH600.000 CH627.754 CH650.000 CH697.512 CH700.000 CH740.845 CH750.000 CH778.490 CH800.000 CH819.826 CH850.000

KEY PLAN

LEGEND

SYMBOL	DESCRIPTION
	CONTOUR MAJOR (5m)
	CONTOUR MINOR (1m)
E	PROPOSED ELECTRICAL CONDUIT 150mm NOM
S	EXISTING SEWER (APPROX. LOCATION)
RM	SEWER PRESSURE - DN75 PE100 SDR11
	WATER SUPPLY - DN100 DICL PN35
	WATER LINE - RING MAIN

NOTE:
SUBJECT TO CONFIRMATION OF DETAILED HYDRAULIC ANALYSIS THE DN100 DICL PN35 WATER SUPPLY PIPELINE MAY TRANSITION TO HDPE TOWARDS THE UPPER ELEVATION OF THE PIPELINE

RISING MAIN PLAN 3 OF 5

SCALE 1:500 AT A1

0 12.5 25 37.5 50m

SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	05.04.22	D	B.R
ISSUED FOR DA	23.03.22	C	N.K
ISSUED FOR DA	18.03.22	B	N.K
ISSUED FOR DA	16.02.22	A	N.K

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT

HOSPITALITY
AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

EPES Consulting Engineers
OFFICE | 1/6 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY

1300 874 294 | TRIAXIAL.COM.AU

SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

DRAWING TITLE
RISING MAIN PLAN SHEET 3 OF 5

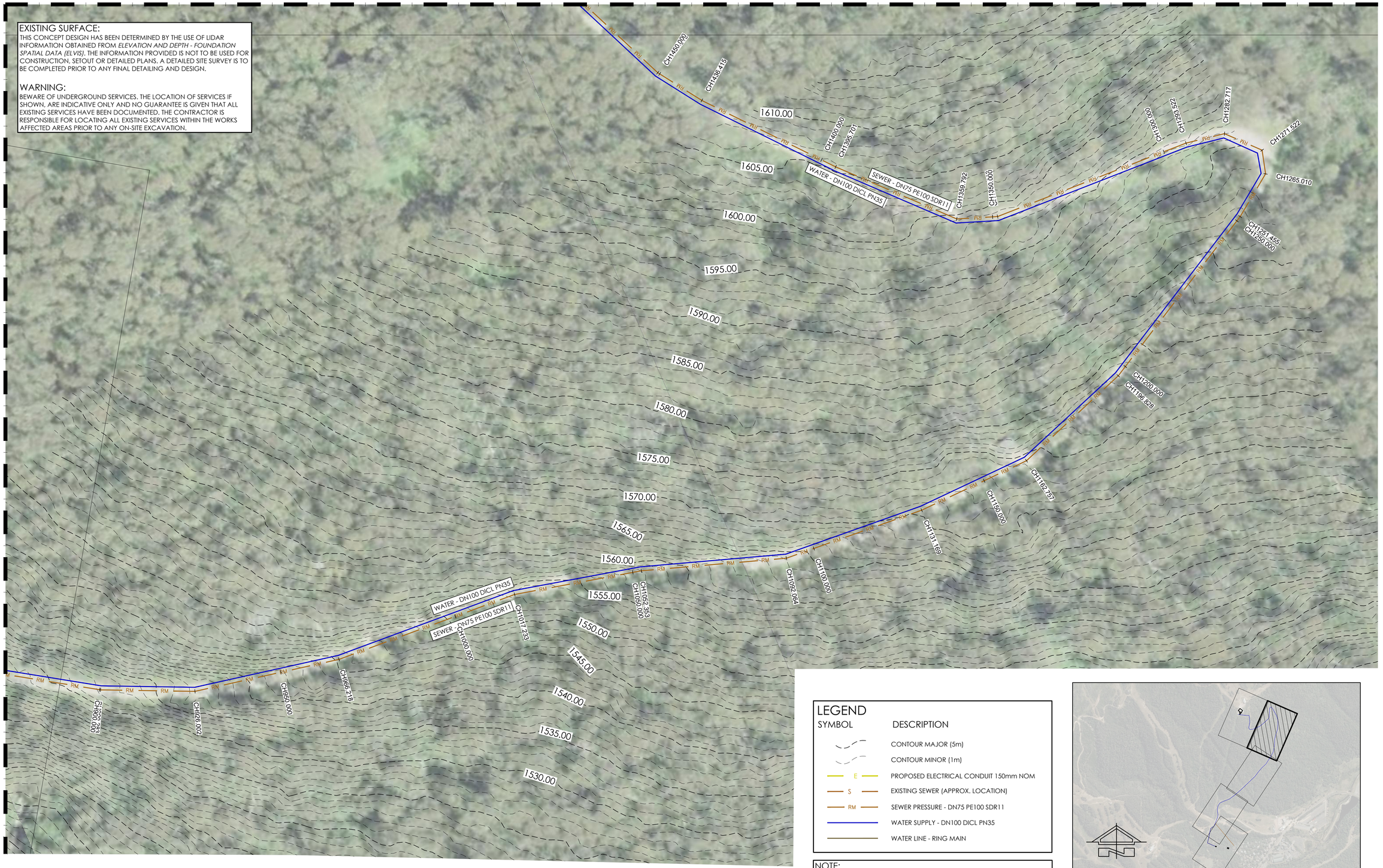
PROJECT No. TX16479.00 - DRAWING No. C3.02 ISSUE D

ADJOINS SHEET C3.04

ADJOINS SHEET C3.02

EXISTING SURFACE:
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.



RISING MAIN PLAN 4 OF 5
SCALE 1:500 AT A1

LEGEND

SYMBOL	DESCRIPTION
	CONTOUR MAJOR (5m)
	CONTOUR MINOR (1m)
E	PROPOSED ELECTRICAL CONDUIT 150mm NOM
S	EXISTING SEWER (APPROX. LOCATION)
RM	SEWER PRESSURE - DN75 PE100 SDR11
	WATER SUPPLY - DN100 DICL PN35
	WATER LINE - RING MAIN

NOTE:
SUBJECT TO CONFIRMATION OF DETAILED HYDRAULIC ANALYSIS THE DN100 DICL PN35 WATER SUPPLY PIPELINE MAY TRANSITION TO HDPE TOWARDS THE UPPER ELEVATION OF THE PIPELINE

KEY PLAN

0 12.5 25 37.5 50m
SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	05.04.22	D	B.R
ISSUED FOR DA	23.03.22	C	N.K
ISSUED FOR DA	18.03.22	B	N.K
ISSUED FOR DA	16.02.22	A	N.K

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT
HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

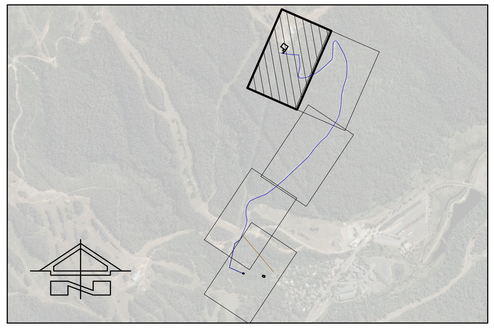
EPES Consulting Engineers
OFFICE | 1/6 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY
1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

DRAWING TITLE
RISING MAIN PLAN SHEET 4 OF 5

PROJECT No. TX16479.00 - DRAWING No. C3.03 ISSUE D



KEY PLAN

LEGEND

SYMBOL	DESCRIPTION
	CONTOUR MAJOR (5m)
	CONTOUR MINOR (1m)
E	PROPOSED ELECTRICAL CONDUIT 150mm NOM
S	EXISTING SEWER (APPROX. LOCATION)
RM	SEWER PRESSURE - DN75 PE100 SDR11
	WATER SUPPLY - DN100 DICL PN35
	WATER LINE - RING MAIN

NOTE:
SUBJECT TO CONFIRMATION OF DETAILED HYDRAULIC ANALYSIS THE DN100 DICL PN35 WATER SUPPLY PIPELINE MAY TRANSITION TO HDPE TOWARDS THE UPPER ELEVATION OF THE PIPELINE

EXISTING SURFACE:
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

ADJOINS SHEET C3.03

RISING MAIN PLAN 5 OF 5
SCALE 1:500 AT A1

0 12.5 25 37.5 50m
SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	05.04.22	D	B.R
ISSUED FOR DA	23.03.22	C	N.K
ISSUED FOR DA	18.03.22	B	N.K
ISSUED FOR DA	16.02.22	A	N.K

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT

HOSPITALITY
AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

EPES Consulting Engineers
OFFICE | 116 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY

1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

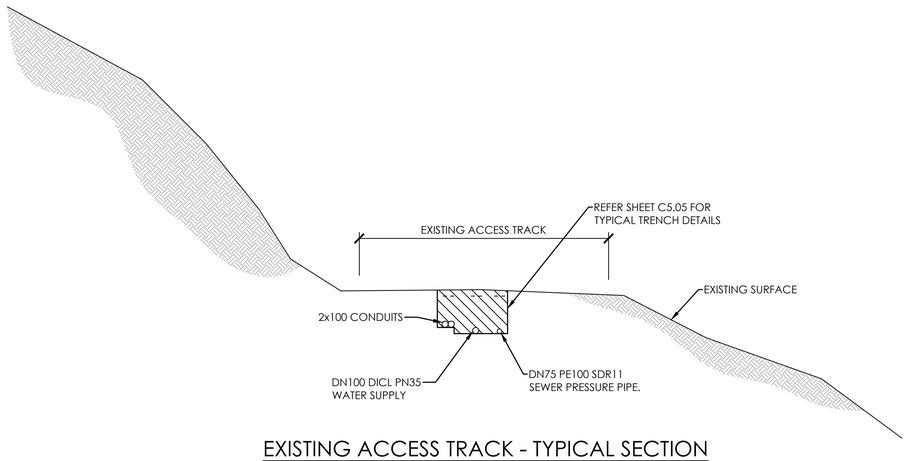
DRAWING TITLE
RISING MAIN PLAN SHEET 5 OF 5

PROJECT No. TX16479.00 - DRAWING No. C3.04 ISSUE D

EXISTING SURFACE:
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

MERRITTS MOUNTAIN HOUSE SITE PLAN
SCALE 1:200 AT A1



EXISTING ACCESS TRACK - TYPICAL SECTION
SCALE 1:50

ISSUED FOR DA	18.03.22	B	N.K
ISSUED FOR DA	16.02.22	A	N.K
AMENDMENTS	DATE	ISSUE	BY

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT

HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

EPES Consulting Engineers
OFFICE | 1/6 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY
1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

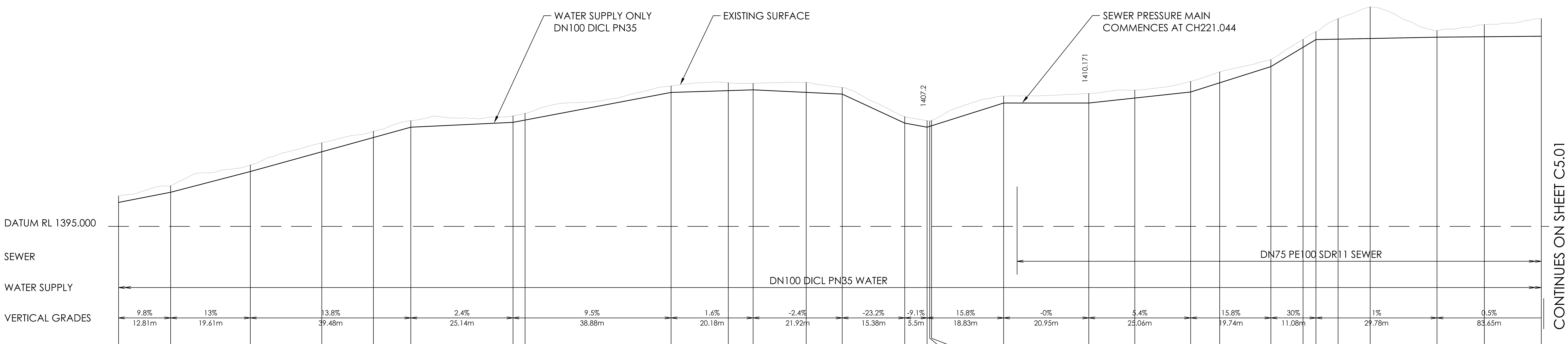
DRAWING TITLE
MERRITTS MOUNTAIN HOUSE SITE PLAN, ACCESS TRACK TYPICAL SECTION

PROJECT No.	DRAWING No.	ISSUE
TX16479.00 -	C4.00	B

EXISTING SURFACE:
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

SERVICES NOTE:
1. EXISTING SERVICES SHOWN ARE BASED ON SURVEY DATA RECEIVED BY THIS OFFICE.
2. ALL EXISTING SERVICES ARE SHOWN DIAGRAMMATIC ONLY. ALL SERVICES ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.



CONTINUES ON SHEET C5.01

CHAINAGE	DESIGN	EXISTING SURFACE
0	1397.948	1398.748
12.815	1399.200	1400.000
32.424	1401.749	1402.549
50	1404.176	1405.280
62.701	1405.930	1406.707
71.901	1407.200	1408.000
97.037	1407.798	1408.598
100	1408.078	1408.906
135.922	1411.477	1412.277
150	1411.696	1412.667
156.103	1411.791	1412.591
169.164	1411.480	1412.720
178.023	1411.269	1412.074
193.402	1407.700	1408.500
198.9	1407.200	1408.000
199.554	1407.303	1407.953
200	1407.374	1408.034
217.728	1410.175	1411.025
238.677	1410.171	1411.347
250	1410.785	1411.759
263.737	1411.530	1412.837
270.876	1412.659	1413.999
283.473	1414.650	1415.500
291.389	1417.022	1417.996
294.554	1417.971	1418.953
300	1418.025	1420.540
307.9	1418.104	1421.997
324.334	1418.268	1419.068
335.986	1418.322	1419.807
350	1418.386	1420.540

WATER SUPPLY & SEWER PRESSURE MAIN - LONGITUDINAL SECTION

A1 HORZ SCALE 1:500
A1 VERT SCALE 1:250

0 6.25 12.5 18.75 25m
SCALE 1:250 AT A1 SHEET | 1:500 AT A3 SHEET

0 12.5 25 37.5 50m
SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	18.03.22	B	B.R
ISSUED FOR DA	16.03.22	A	B.R

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT
HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

EPES Consulting Engineers
OFFICE | 1/6 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY
1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

DRAWING TITLE
SEWER AND WATER LONG SECTION SHEET 1 OF 5

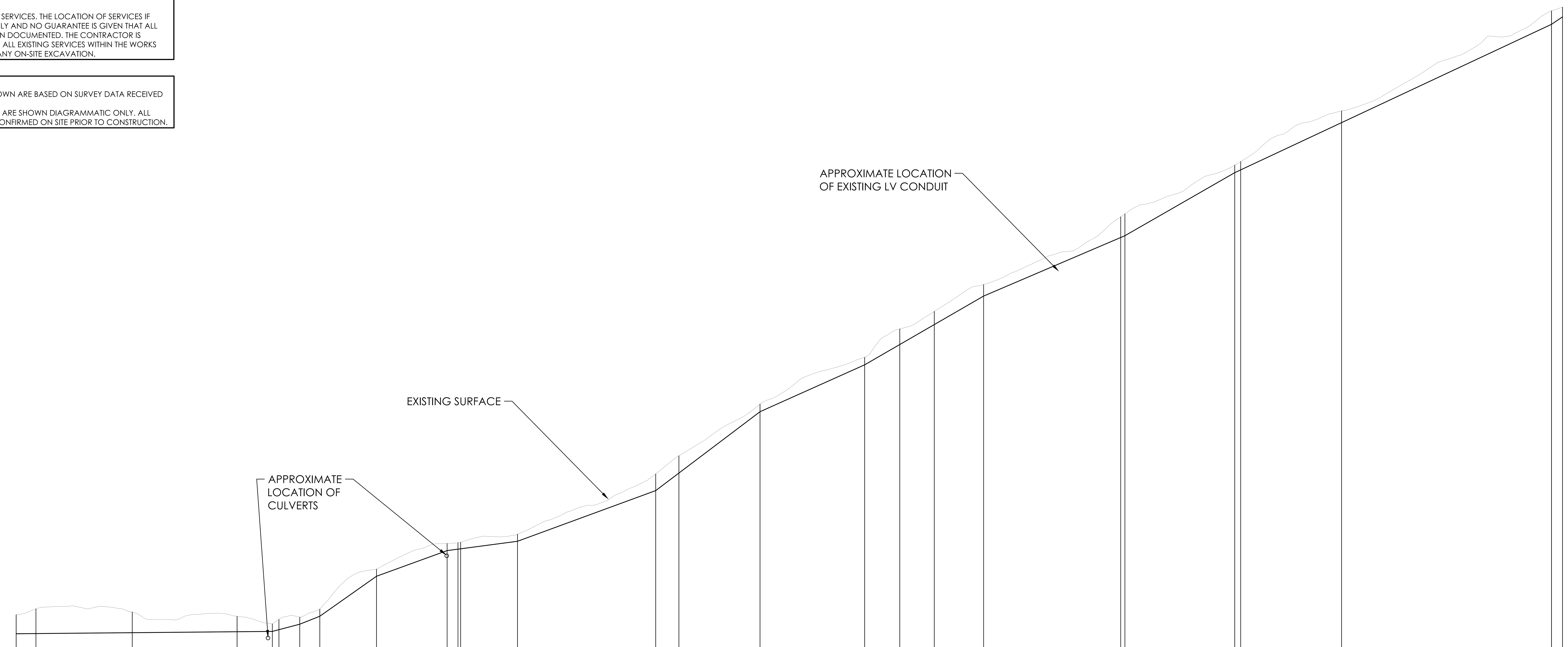
PROJECT No.	DRAWING No.	ISSUE
TX16479.00 -	C5.00	B

EXISTING SURFACE:
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

SERVICES NOTE:
1. EXISTING SERVICES SHOWN ARE BASED ON SURVEY DATA RECEIVED BY THIS OFFICE.
2. ALL EXISTING SERVICES ARE SHOWN DIAGRAMMATIC ONLY. ALL SERVICES ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.

CONTINUES ON SHEET C5.00



DATUM RL 1415.000

SEWER: DN75 PE100 SDR11 SEWER

WATER SUPPLY: DN100 DICL PN35 WATER

VERTICAL GRADES: 0.5% 83.65m | 13.2% 6.21m | 19.9% 4.54m | 35.2% 12.84m | 18.2% 15.98m | 6.6% 15.93m | 18.3% 31.29m | 37.8% 23.61m | 22.4% 23.69m | 28.9% 26.92m | 21.3% 31.98m | 28.7% 24.86m | 23.4% 71.69m | 33.7% 41.58m

CHAINAGE	DESIGN	EXISTING SURFACE
350	1418.386	1420.540
354.473	1418.406	1421.201
376.274	1418.506	1420.844
400	1418.615	1420.352
407.98	1418.651	1419.501
409.477	1418.848	1420.010
414.185	1419.468	1420.268
418.725	1420.369	1421.169
431.561	1424.889	1425.689
447.543	1427.792	1428.592
450	1427.954	1428.687
450.598	1427.994	1428.730
463.469	1428.845	1429.645
494.755	1434.575	1436.453
500	1436.557	1438.514
518.367	1443.499	1444.349
542.053	1448.798	1449.648
550	1451.093	1452.856
557.804	1453.347	1454.834
568.973	1456.574	1457.871
600	1463.195	1465.529
600.95	1463.398	1465.861
625.809	1470.527	1471.377
627.154	1470.841	1471.783
650	1476.187	1477.514
697.499	1487.301	1488.819
697.512	1487.305	1488.822
700	1488.143	1489.250

CONTINUES ON SHEET C5.02

WATER SUPPLY & SEWER PRESSURE MAIN - LONGITUDINAL SECTION

A1 HORZ SCALE 1:500
A1 VERT SCALE 1:250

0 6.25 12.5 18.75 25m
SCALE 1:250 AT A1 SHEET | 1:500 AT A3 SHEET

0 12.5 25 37.5 50m
SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	05.04.22	C	B.R
ISSUED FOR DA	18.03.22	B	B.R
ISSUED FOR DA	16.03.22	A	B.R

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT
HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

EPES Consulting Engineers
OFFICE | 1/6 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY
1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

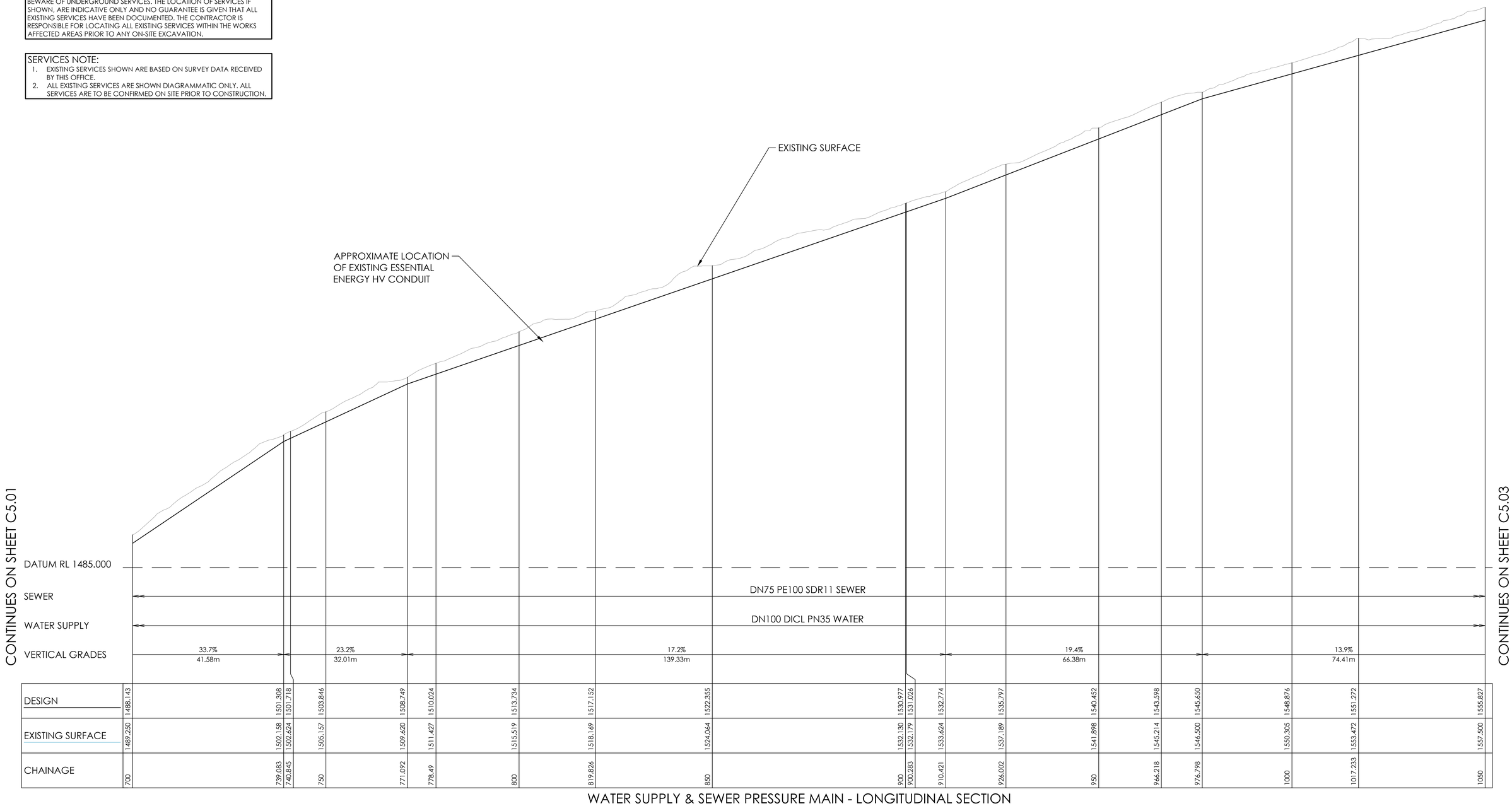
DRAWING TITLE
SEWER AND WATER LONG SECTION SHEET 2 OF 5

PROJECT No.	DRAWING No.	ISSUE
TX16479.00 -	C5.01	C

EXISTING SURFACE:
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

SERVICES NOTE:
1. EXISTING SERVICES SHOWN ARE BASED ON SURVEY DATA RECEIVED BY THIS OFFICE.
2. ALL EXISTING SERVICES ARE SHOWN DIAGRAMMATIC ONLY. ALL SERVICES ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.



DESIGN	1488.143		1501.308	1501.718	1503.846		1508.749	1510.024		1513.734		1517.152		1522.355		1530.977	1531.026	1532.774	1535.797		1540.452	1543.598	1545.650		1548.876	1551.272		1555.827
EXISTING SURFACE	1489.250		1502.158	1502.624	1505.157		1509.620	1511.427		1515.519		1518.169		1524.064		1532.130	1532.179	1533.624	1537.189		1541.898	1545.214	1546.500		1550.305	1553.472		1557.500
CHAINAGE	700		739.083	740.845	750		771.092	778.49		800		819.826		850		900	900.283	910.421	926.002		950	966.218	976.798		1000	1017.233		1050

WATER SUPPLY & SEWER PRESSURE MAIN - LONGITUDINAL SECTION

A1 HORZ SCALE 1:500
A1 VERT SCALE 1:250

0 6.25 12.5 18.75 25m
SCALE 1:250 AT A1 SHEET | 1:500 AT A3 SHEET

0 12.5 25 37.5 50m
SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	05.04.22	C	B.R
ISSUED FOR DA	18.03.22	B	B.R
ISSUED FOR DA	16.03.22	A	B.R

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT
HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

EPES Consulting Engineers
OFFICE | 1/6 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY

1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

DRAWING TITLE
SEWER AND WATER LONG SECTION SHEET 3 OF 5

PROJECT No. TX16479.00 - DRAWING No. C5.02 ISSUE C

EXISTING SURFACE:

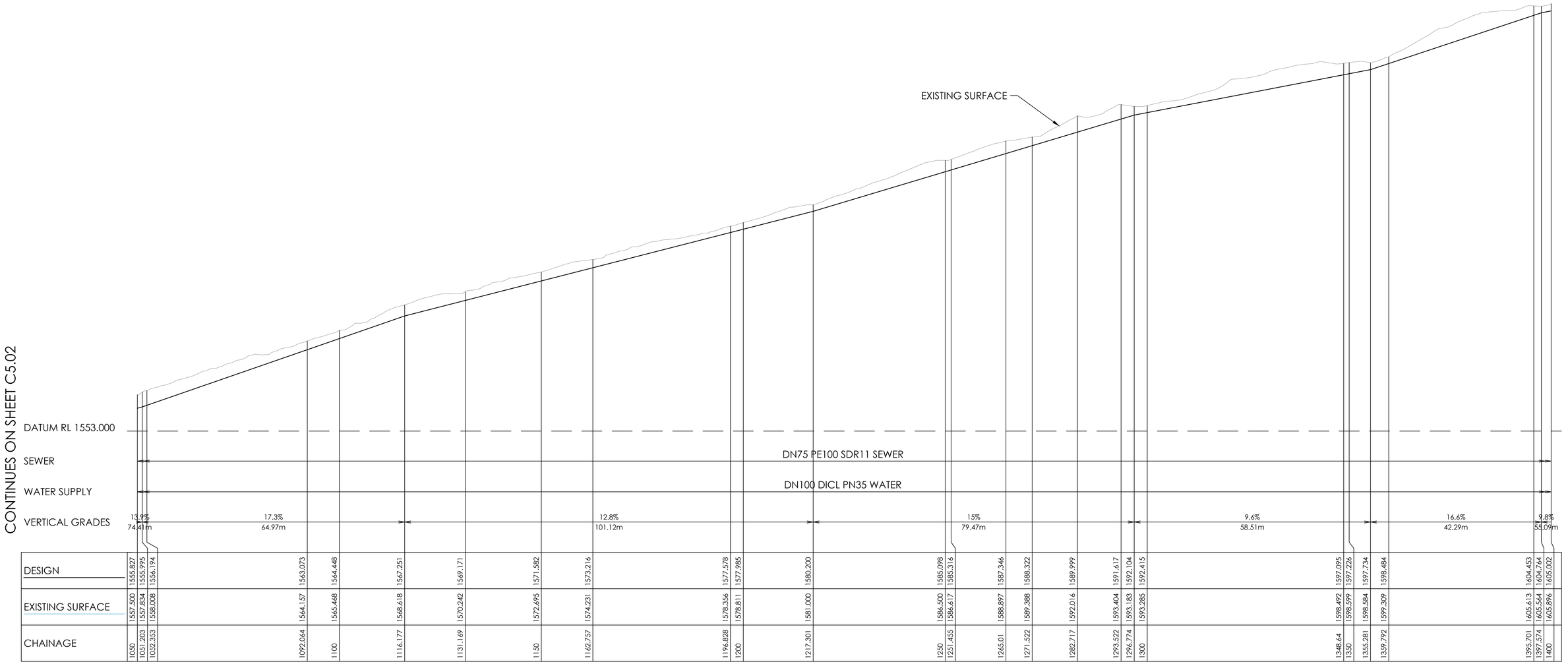
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:

BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

SERVICES NOTE:

1. EXISTING SERVICES SHOWN ARE BASED ON SURVEY DATA RECEIVED BY THIS OFFICE.
2. ALL EXISTING SERVICES ARE SHOWN DIAGRAMMATIC ONLY. ALL SERVICES ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.



WATER SUPPLY & SEWER PRESSURE MAIN - LONGITUDINAL SECTION

A1 HORZ SCALE 1:500
A1 VERT SCALE 1:250

0 6.25 12.5 18.75 25m
SCALE 1:250 AT A1 SHEET | 1:500 AT A3 SHEET

0 12.5 25 37.5 50m
SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	18.03.22	B	B.R
ISSUED FOR DA	16.03.22	A	B.R

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT
HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

EPES Consulting Engineers
OFFICE | 1/8 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY

1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

DRAWING TITLE
SEWER AND WATER LONG SECTION SHEET 4 OF 5

PROJECT No.	DRAWING No.	ISSUE
TX16479.00 -	C5.03	B

EXISTING SURFACE:

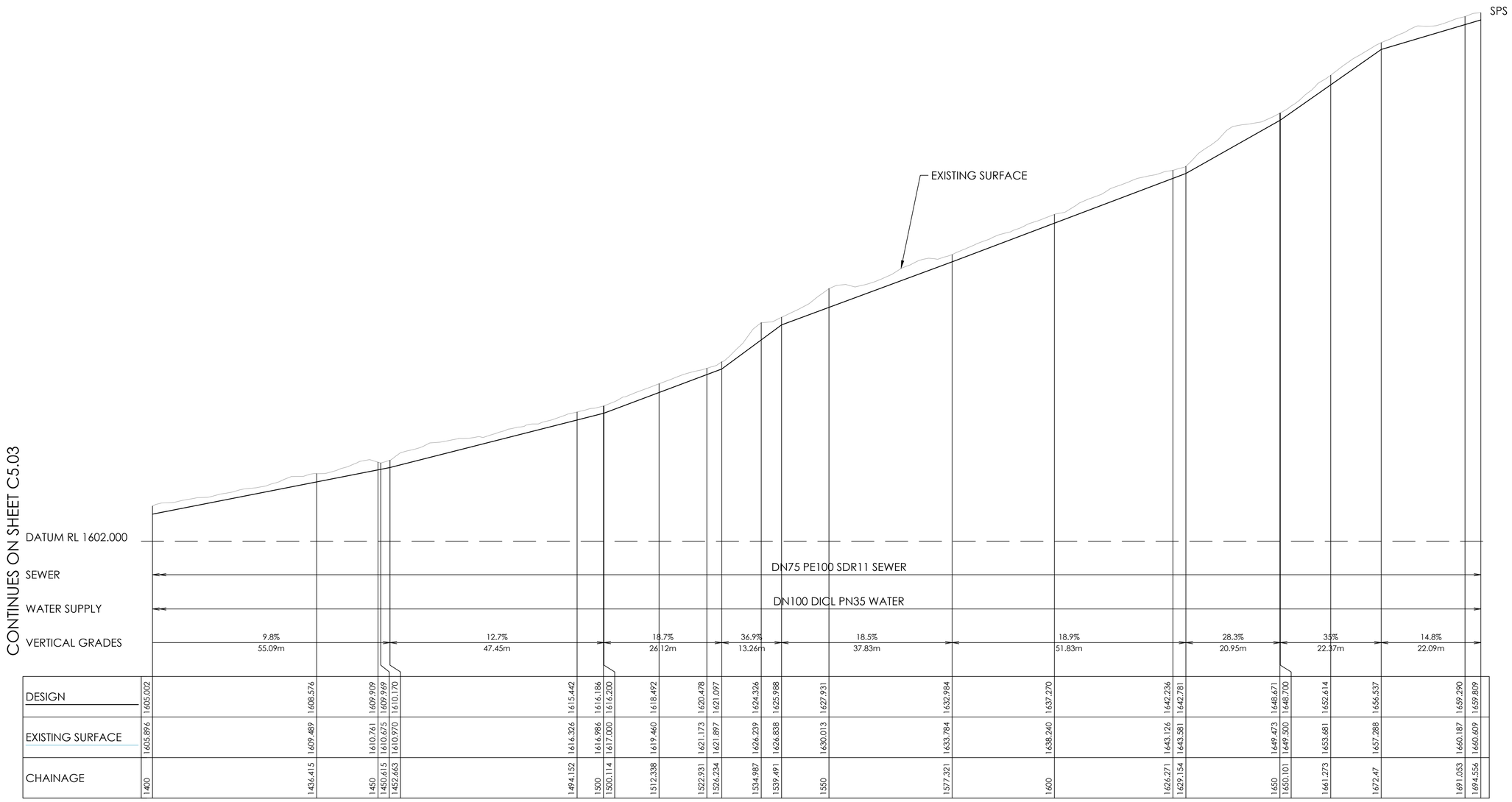
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

WARNING:

BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

SERVICES NOTE:

1. EXISTING SERVICES SHOWN ARE BASED ON SURVEY DATA RECEIVED BY THIS OFFICE.
2. ALL EXISTING SERVICES ARE SHOWN DIAGRAMMATIC ONLY. ALL SERVICES ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.



WATER SUPPLY & SEWER PRESSURE MAIN - LONGITUDINAL SECTION

A1 HORZ SCALE 1:500
A1 VERT SCALE 1:250

0 6.25 12.5 18.75 25m
SCALE 1:250 AT A1 SHEET | 1:500 AT A3 SHEET

0 12.5 25 37.5 50m
SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

ISSUED FOR DA	18.03.22	B	B.R
ISSUED FOR DA	16.03.22	A	B.R
AMENDMENTS	DATE	ISSUE	BY

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT

HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

EPES Consulting Engineers
OFFICE | 1/6 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

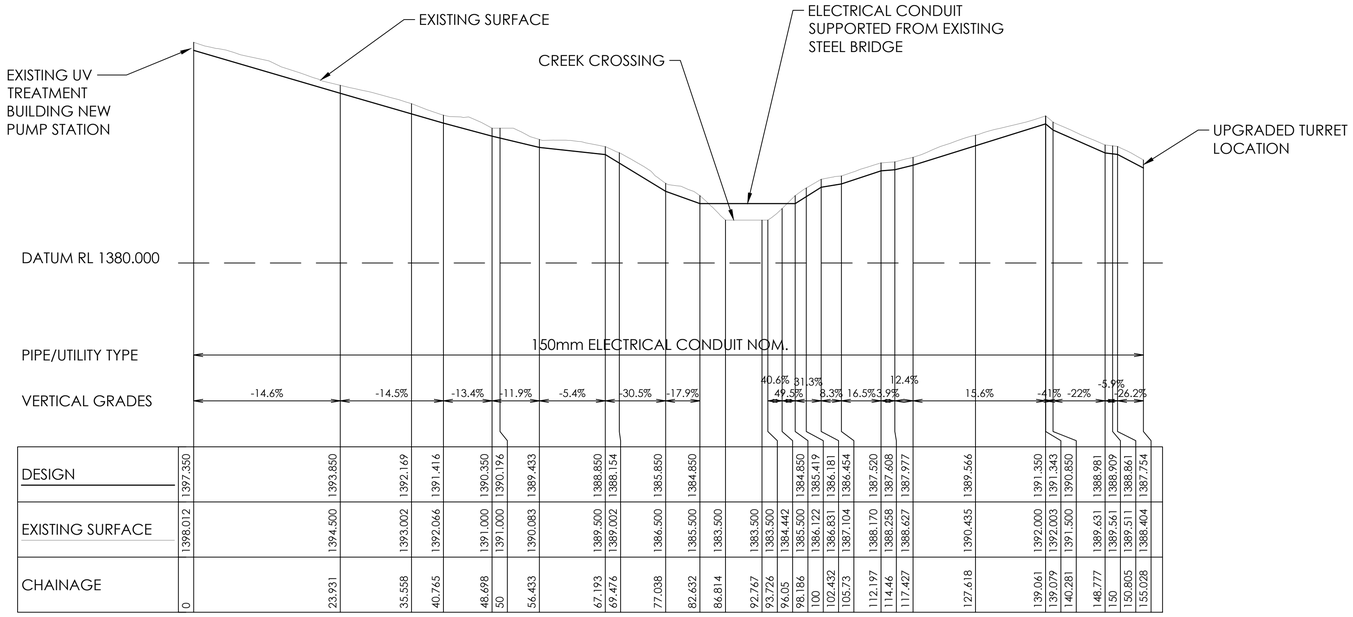
TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY

1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

DRAWING TITLE
SEWER AND WATER LONG SECTION SHEET 5 OF 5

PROJECT No. TX16479.00 - DRAWING No. C5.04 ISSUE B



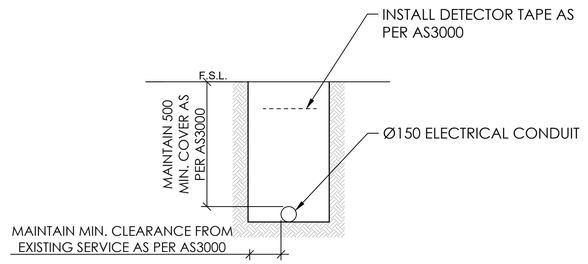
POWER CONDUIT - LONGITUDINAL SECTION

A1 HORZ SCALE 1:500
A1 VERT SCALE 1:250

EXISTING SURFACE:
THIS CONCEPT DESIGN HAS BEEN DETERMINED BY THE USE OF LIDAR INFORMATION OBTAINED FROM *ELEVATION AND DEPTH - FOUNDATION SPATIAL DATA (ELVIS)*. THE INFORMATION PROVIDED IS NOT TO BE USED FOR CONSTRUCTION, SETOUT OR DETAILED PLANS. A DETAILED SITE SURVEY IS TO BE COMPLETED PRIOR TO ANY FINAL DETAILING AND DESIGN.

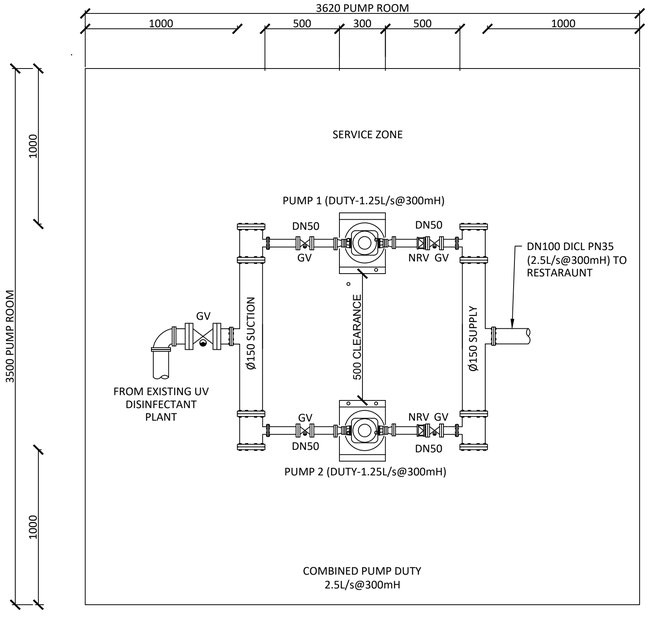
WARNING:
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF SERVICES IF SHOWN, ARE INDICATIVE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES HAVE BEEN DOCUMENTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES WITHIN THE WORKS AFFECTED AREAS PRIOR TO ANY ON-SITE EXCAVATION.

SERVICES NOTE:
1. EXISTING SERVICES SHOWN ARE BASED ON SURVEY DATA RECEIVED BY THIS OFFICE.
2. ALL EXISTING SERVICES ARE SHOWN DIAGRAMMATIC ONLY. ALL SERVICES ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.



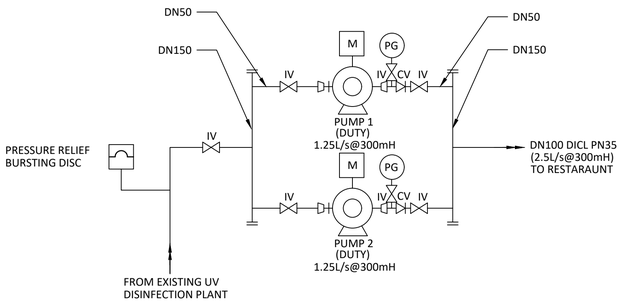
NEW POWER SUPPLY TO PUMP HOUSE TYPICAL CROSS SECTION

N.T.S.



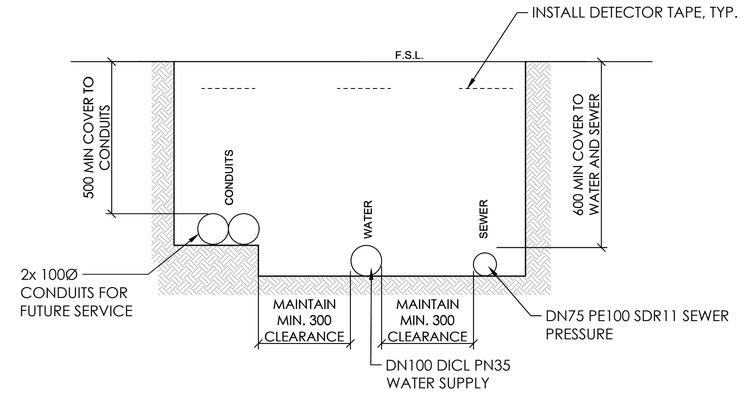
INDICATIVE WATER PUMP STATION LAYOUT

N.T.S.



TYPICAL WATER PUMP SCHEMATIC DETAIL

N.T.S.



NEW WATER SUPPLY & SEWAGE PRESSURE MAIN TRENCH TYPICAL CROSS SECTION

N.T.S.

0 6.25 12.5 18.75 25m
SCALE 1:250 AT A1 SHEET | 1:500 AT A3 SHEET

0 12.5 25 37.5 50m
SCALE 1:500 AT A1 SHEET | 1:1000 AT A3 SHEET

AMENDMENTS	DATE	ISSUE	BY
ISSUED FOR DA	05.04.22	D	B.R
ISSUED FOR DA	23.03.22	C	B.R
ISSUED FOR DA	18.03.22	B	B.R
ISSUED FOR DA	16.03.22	A	B.R

NOT FOR CONSTRUCTION

NORTH POINT U.N.O.

CLIENT
EVENT
HOSPITALITY AND ENTERTAINMENT

PROJECT
MERRITTS MOUNTAIN HOUSE
TOP OF MERRITTS GONDOLA
THREDBO

DESIGNED	DRAWN	DATE	SIZE	CAD REF
C.W	N.K	MAR 22	A1	TX16479.00 - C01

EPES Consulting Engineers
OFFICE | 116 DONNISON ST WEST, WEST GOSFORD NSW 2250
POSTAL | PO BOX 106, AVOCA BEACH, NSW 2251 AUSTRALIA
WWW.EPES.COM.AU | INFO@EPES.COM.AU

TRIAXIAL CONSULTING
COMPLEX PROBLEMS RESOLVED SIMPLY
1300 874 294 | TRIAXIAL.COM.AU
SUITE 12, LEVEL 14, 327 PITT STREET, SYDNEY NSW 2000
PO BOX A203, SYDNEY SOUTH NSW 1235

TO BE PRINTED IN COLOUR

DRAWING TITLE
POWER CONDUIT LONG SECTION, TRENCH DETAILS & WATER SUPPLY PUMP DETAILS

PROJECT NO.	DRAWING NO.	ISSUE
TX16479.00 -	C5.05	D

Appendix A

Important Information about your Geotechnical Report
Soil & Rock Explanation Sheets

Important Information about your Geotechnical Report

Scope of Services

The geotechnical report ("the report") has been prepared in accordance with the scope of services as set out in the contract, or as otherwise agreed, between the Client and Asset Geotechnical Engineering Pty Ltd ("Asset"), for the specific site investigated. The scope of work may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

The report should not be used if there have been changes to the project, without first consulting with Asset to assess if the report's recommendations are still valid. Asset does not accept responsibility for problems that occur due to project changes if they are not consulted.

Reliance on Data

Asset has relied on data provided by the Client and other individuals and organizations, to prepare the report. Such data may include surveys, analyses, designs, maps and plans. Asset has not verified the accuracy or completeness of the data except as stated in the report. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations ("conclusions") are based in whole or part on the data, Asset will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to Asset.

Geotechnical Engineering

Geotechnical engineering is based extensively on judgment and opinion. It is far less exact than other engineering disciplines. Geotechnical engineering reports are prepared for a specific client, for a specific project and to meet specific needs, and may not be adequate for other clients or other purposes (e.g. a report prepared for a consulting civil engineer may not be adequate for a construction contractor). The report should not be used for other than its intended purpose without seeking additional geotechnical advice. Also, unless further geotechnical advice is obtained, the report cannot be used where the nature and/or details of the proposed development are changed.

Limitations of Site Investigation

The investigation program undertaken is a professional estimate of the scope of investigation required to provide a general profile of subsurface conditions. The data derived from the site investigation program and subsequent laboratory testing are extrapolated across the site to form an inferred geological model, and an engineering opinion is rendered about overall subsurface conditions and their likely behavior with regard to the proposed development. Despite investigation, the actual conditions at the site might differ from those inferred to exist, since no subsurface exploration program, no matter how comprehensive, can reveal all subsurface details and anomalies.

The engineering logs are the subjective interpretation of subsurface conditions at a particular location and time, made by trained personnel. The actual interface between materials may be more gradual or abrupt than a report indicates.

Therefore, the recommendations in the report can only be regarded as preliminary. Asset should be retained during the project implementation to assess if the report's recommendations are valid and whether or not changes should be considered as the project proceeds.

Subsurface Conditions are Time Dependent

Subsurface conditions can be modified by changing natural forces or man-made influences. The report is based on conditions that existed at the time of subsurface exploration. Construction operations adjacent to the site, and natural events such as floods, or ground water fluctuations, may also affect subsurface conditions, and thus the continuing adequacy of a geotechnical report. Asset should be kept appraised of any such events, and should be consulted to determine if any additional tests are necessary.

Verification of Site Conditions

Where ground conditions encountered at the site differ significantly from those anticipated in the report, either due to natural variability of subsurface conditions or construction activities, it is a condition of the report that Asset be notified of any variations and be provided with an opportunity to review the recommendations of this report. Recognition of change of soil and rock conditions requires experience and it is recommended that a suitably experienced geotechnical engineer be engaged to visit the site with sufficient frequency to detect if conditions have changed significantly.

Reproduction of Reports

This report is the subject of copyright and shall not be reproduced either totally or in part without the express permission of this Company. Where information from the accompanying report is to be included in contract documents or engineering specification for the project, the entire report should be included in order to minimize the likelihood of misinterpretation from logs.

Report for Benefit of Client

The report has been prepared for the benefit of the Client and no other party. Asset assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of Asset or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own inquiries and obtain independent advice in relation to such matters.

Data Must Not Be Separated from The Report

The report as a whole presents the site assessment, and must not be copied in part or altered in any way.

Logs, figures, drawings, test results etc. included in our reports are developed by professionals based on their interpretation of field logs (assembled by field personnel) and laboratory evaluation of field samples. These data should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

Partial Use of Report

Where the recommendations of the report are only partially followed, there may be significant implications for the project and could lead to problems. Consult Asset if you are not intending to follow all of the report recommendations, to assess what the implications could be. Asset does not accept responsibility for problems that develop where the report recommendations have only been partially followed if they have not been consulted.

Other Limitations

Asset will not be liable to update or revise the report to take into account any events or emergent circumstances or fact occurring or becoming apparent after the date of the report.

Soil and Rock Explanation Sheets (1 of 2)

Log Abbreviations & Notes

METHOD

borehole logs

AS	auger screw *
AD	auger drill *
RR	roller / tricone
W	washbore
CT	cable tool
HA	hand auger
D	diatube
B	blade / blank bit
V	V-bit
T	TC-bit

* bit shown by suffix e.g. ADV

excavation logs

NE	natural excavation
HE	hand excavation
BH	backhoe bucket
EX	excavator bucket
DZ	dozer blade
R	ripper tooth

coring

NMLC, NQ, PQ, HQ

SUPPORT

borehole logs	
N	nil
M	mud
C	casing
NQ	NQ rods

excavation logs	
N	nil
S	shoring
B	benched

CORE—LIFT

‖	casing installed
⊢	barrel withdrawn

NOTES, SAMPLES, TESTS

D	disturbed
B	bulk disturbed
U50	thin-walled sample, 50mm diameter
HP	hand penetrometer (kPa)
SV	shear vane test (kPa)
DCP	dynamic cone penetrometer (blows per 100mm penetration)
SPT	standard penetration test
N*	SPT value (blows per 300mm) * denotes sample taken
Nc	SPT with solid cone
R	refusal of DCP or SPT

USCS SYMBOLS

GW	Gravel and gravel-sand mixtures, little or no fines.
GP	Gravel and gravel-sand mixtures, little or no fines, uniform gravels
GM	Gravel-silt mixtures and gravel-sand-silt mixtures.
GC	Gravel-clay mixtures and gravel-sand-clay mixtures.
SW	Sand and gravel-sand mixtures, little or no fines.
SP	Sand and gravel sand mixtures, little or no fines.
SM	Sand-silt mixtures.
SC	Sand-clay mixtures.
ML	Inorganic silt and very fine sand, rock flour, silty or clayey fine sand or silt with low plasticity.
CL, CI	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays.
OL	Organic silts
MH	Inorganic silts
CH	Inorganic clays of high plasticity.
OH	Organic clays of medium to high plasticity, organic silt
PT	Peat, highly organic soils.

MOISTURE CONDITION

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

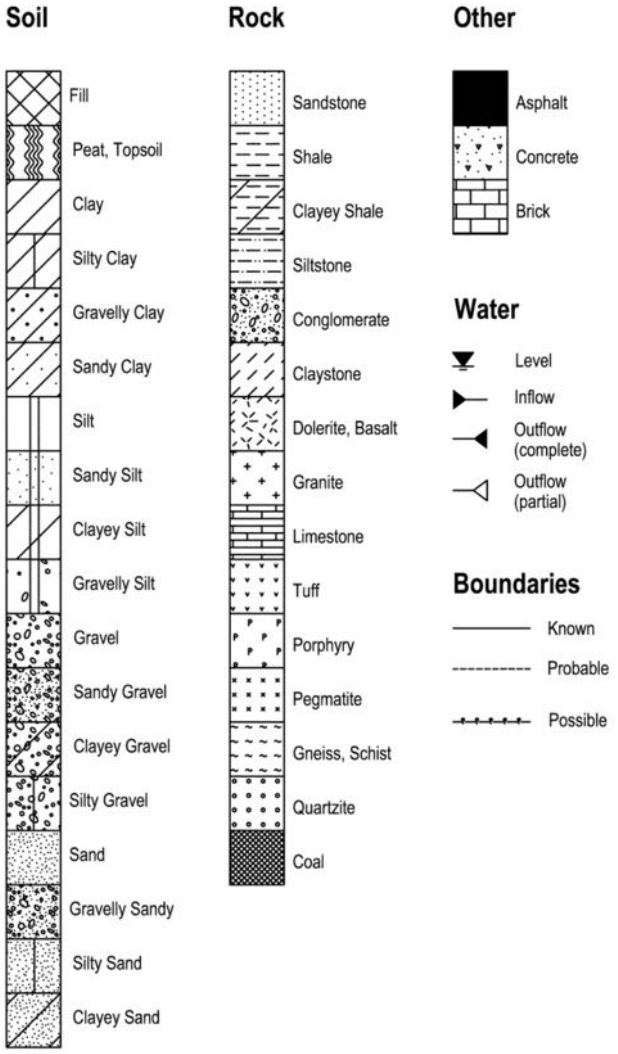
CONSISTENCY

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

DENSITY INDEX

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

Graphic Log



WEATHERING

XW	extremely weathered
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

STRENGTH

VL	very low
L	low
M	medium
H	high
VH	very high
EH	extremely high

RQD (%)

= sum of intact core pieces > 2 x diameter x 100
total length of core run drilled

DEFECTS:

type	
JT	joint
PT	parting
SZ	shear zone
SM	seam

coating	
cl	clean
st	stained
ve	veneer
co	coating

shape	
pl	planar
cu	curved
un	undulating
st	stepped
ir	irregular

roughness	
po	polished
sl	slickensided
sm	smooth
ro	rough
vr	very rough

inclination

measured above axis and perpendicular to core

Soil and Rock Explanation Sheets (2 of 2)

AS1726-2017

Soils and rock are described in the following terms, which are broadly in accordance with AS1726-2017.

Soil

MOISTURE CONDITION

Term	Description
Dry	Looks and feels dry. Fine grained and cemented soils are hard, friable or powdery. Uncemented coarse grained soils run freely through hand.
Moist	Soil feels cool and darkened in colour. Fine grained soils can be moulded. Coarse soils tend to cohere.
Wet	As for moist, but with free water forming on hand.

Moisture content of cohesive soils may also be described in relation to plastic limit (W_P) or liquid limit (W_L) [>> much greater than, > greater than, < less than, << much less than].

CONSISTENCY OF FINE-GRAINED SOILS

Term	Su (kPa)	Term	Su (kPa)
Very soft	< 12	Very Stiff	>100 – ≤200
Soft	>12 – ≤25	Hard	> 200
Firm	>25 – ≤50	Friable	–
Stiff	>50 – ≤100		

RELATIVE DENSITY OF COARSE-GRAINED SOILS

Term	Density Index (%)	Term	Density Index (%)
Very Loose	< 15	Dense	65 – 85
Loose	15 – 35	Very Dense	>85
Medium Dense	35 – 65		

PARTICLE SIZE

Name	Subdivision	Size (mm)
Boulders		> 200
Cobbles		63 – 200
Gravel	coarse	19 – 63
	medium	6.7 – 19
	fine	2.36 – 6.7
Sand	coarse	0.6 – 2.36
	medium	0.21 – 0.6
	fine	0.075 – 0.21
Silt & Clay		< 0.075

MINOR COMPONENTS

Term	Proportion by Mass:	
	coarse grained	*fine grained*
Trace	≤ 15%	≤ 5%
With	>15% – ≤30%	>5% – ≤12%

SOIL ZONING

Layers	Continuous across exposures or sample.
Lenses	Discontinuous, lenticular shaped zones.
Pockets	Irregular shape zones of different material.

SOIL CEMENTING

Weakly	Easily broken up by hand pressure in water or air.
Moderately	Effort is required to break up by hand in water or in air.

USCS SYMBOLS

Symbol	Description
GW	Gravel and gravel-sand mixtures, little or no fines.
GP	Gravel and gravel-sand mixtures, little or no fines, uniform gravels.
GM	Gravel-silt mixtures and gravel-sand-silt mixtures.
GC	Gravel-clay mixtures and gravel-sand-clay mixtures.
SW	Sand and gravel-sand mixtures, little or no fines.
SP	Sand and gravel sand mixtures, little or no fines.
SM	Sand-silt mixtures.
SC	Sand-clay mixtures.
ML	Inorganic silt and very fine sand, rock flour, silty or clayey fine sand or silt with low plasticity.
CL, CI	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays.
OL	Organic silts
MH	Inorganic silts
CH	Inorganic clays of high plasticity.
OH	Organic clays of medium to high plasticity, organic silt
PT	Peat, highly organic soils.

Rock

SEDIMENTARY ROCK TYPE DEFINITIONS

Rock Type	Definition (more than 50% of rock consists of …..)
Conglomerate	... gravel sized (>2mm) fragments.
Sandstone	... sand sized (0.06 to 2mm) grains.
Siltstone	... silt sized (<0.06mm) particles, rock is not laminated.
Claystone	... clay, rock is not laminated.
Shale	... silt or clay sized particles, rock is laminated.

LAYERING

Term	Description
Massive	No layering apparent.
Poorly Developed	Layering just visible. Little effect on properties.
Well Developed	Layering distinct. Rock breaks more easily parallel to layering.

STRUCTURE

Term	Spacing (mm)	Term	Spacing
Thinly laminated	<6	Medium bedded	200 – 600
Laminated	6 – 20	Thickly bedded	600 – 2,000
Very thinly bedded	20 – 60	Very thickly bedded	> 2,000
Thinly bedded	60 – 200		

STRENGTH (NOTE: Is50 = Point Load Strength Index)

Term	Is50 (MPa)	Term	Is50 (MPa)
Extremely Low	<0.03	High	1.0 – 3.0
Very low	0.03 – 0.1	Very High	3.0 – 10.0
Low	0.1 – 0.3	Extremely High	>10.0
Medium	0.3 – 1.0		

WEATHERING

Term	Description
Residual Soil	Material is weathered to an extent that it has soil properties. Rock structures are no longer visible, but the soil has not been significantly transported.
Extremely …..	Material is weathered to the extent that it has soil properties. Mass structures, material texture & fabric of original rock is still visible.
Highly …..	Rock strength is significantly changed by weathering; rock is discolored, usually by iron staining or bleaching. Some primary minerals have weathered to clay minerals.
Moderately …..	Rock strength shows little or no change of strength from fresh rock; rock may be discolored.
Slightly …..	Rock is partially discolored but shows little or no change of strength from fresh rock.
Fresh	Rock shows no signs of decomposition or staining.

DEFECT DESCRIPTION

Type	
Joint	A surface or crack across which the rock has little or no tensile strength. May be open or closed.
Parting	A surface or crack across which the rock has little or no tensile strength. Parallel or sub-parallel to layering/bedding. May be open or closed.
Sheared Zone	Zone of rock substance with roughly parallel, near planar, curved or undulating boundaries cut by closely spaced joints, sheared surfaces or other defects.
Seam	Seam with deposited soil (infill), extremely weathered insitu rock (XW), or disoriented usually angular fragments of the host rock (crushed).
Shape	
Planar	Consistent orientation.
Curved	Gradual change in orientation.
Undulating	Wavy surface.
Stepped	One or more well defined steps.
Irregular	Many sharp changes in orientation.
Roughness	
Polished	Shiny smooth surface.
Slickensided	Grooved or striated surface, usually polished.
Smooth	Smooth to touch. Few or no surface irregularities.
Rough	Many small surface irregularities (amplitude generally <1mm). Feels like fine to coarse sandpaper.
Very Rough	Many large surface irregularities, amplitude generally >1mm. Feels like very coarse sandpaper.
Coating	
Clean	No visible coating or discolouring.
Stained	No visible coating but surfaces are discolored.
Veneer	A visible coating of soil or mineral, too thin to measure; may be patchy
Coating	Visible coating =1mm thick. Thicker soil material described as seam.

Appendix B

Site Photos

Photo 1

View of track down from Merritts Mountain House Restaurant past storage tanks

Photo 2

View of track adjacent to storage tanks (reverse view of Photo 1)

Photo 3

Typical view of track erosion south of Merritts Mountain House Restaurant

Photo 4

View of track near Mid Chair Lift

Photo 5

View of earthworks for nearby Sundowner Snowmaking Upgrade

Photo 6

View of track heading towards UV Treatment building

Photo 7

View of UV Treatment building, showing location of new pump extension

Photo 8

View of elevated sewer across creek