

Greenbox Architecture
Lane Cove West Data Centre
SSDA Site Infrastructure Statement

Issue 3 | 26 August 2019

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 259234

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Document verification

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Revision	Date	Filename	LCWDC - SSDA Infrastructure Statement.docx		
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			Prepared by	Checked by	Approved by
		Name			
		Signature			
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			Prepared by	Checked by	Approved by
		Name	KB	SS	SS
		Signature			
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		Description			
			Prepared by	Checked by	Approved by
		Name			
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			Prepared by	Checked by	Approved by
		Name			
		Signature			
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Contents

	Page
1 Introduction	1
2 Site Utility Infrastructure Details	1
2.1 Power	1
2.2 Water	2
2.3 Sewer	2
2.4 Communications	2
2.5 Gas	2
3 Electrical Substation Details	2
4 DBYD Site Assessment	3

1 Introduction

The purpose of this report is to summarise the infrastructure requirements of the proposed data centre development.

2 Site Utility Infrastructure Details

2.1 Power

The project team has been in discussions with Ausgrid about the project and possible electrical supply options. Ausgrid have confirmed that the requested capacity and arrangement is available from a nearby 132kV Sub-Transmission Switching Station (STSS) at Lane Cove.

It is envisaged that 2 new 132kV radial feeders will be constructed from the Ausgrid Lane Cove STSS, connecting to a new private 132kV substation on the proposed site. The two new feeders will provide for N+1 security of electrical supply.

Options have been provided by Ausgrid as to possible overhead and underground 132kV cable reticulation routes from the STSS to the site 132kV substation. The final reticulation routes, including whether diverse cable routes are required for the feeders are still under investigation. New Ausgrid easements will be required along the routes in accordance with Ausgrid standard NS143.



Figure 1: Overview of Lane Cove STSS and proposed AirTrunk site

2.2 Water

An existing DIA150 Sydney Water main is present along the southern boundary of the site at the entrances on both Sirius Road and Apollo Place. Connections at one or both of these locations should be possible.

Our initial assessment is that the existing DIA150 main will be sufficient for the project, and this has been confirmed by a flow and pressure enquiry. It may be necessary to bring a second diverse supply to the site depending on the final design.

2.3 Sewer

An existing DIA225 sewer line runs along the southern border of the site. It is envisaged that a connection will be made along this line, and will involve pumping as the site is lower than this existing line and other nearby infrastructure.

It is not envisaged that an upgrade to this line will be required. The possible requirement to upgrade the water supply is driven by the need for make up water to cooling towers – the majority of this water will be consumed on site (evaporated), not put to drain.

2.4 Communications

Both Optus and NBN have infrastructure in the vicinity of the site on Sirius Road and Apollo place which are may be appropriate for construction and site operations.

Numerous high capacity communications connections to the site will be needed to support the proposed data centre operations. The end user of the facility is already in discussions with several network providers to make these connections available.

2.5 Gas

The site does not require a gas supply.

3 Electrical Substation Details

A new 132kV privately owned substation will be procured to serve this site only.

The substation will be fed by 2No. new 132kV Ausgrid feeders from the Lane Cove STSS. The exact ownership demarcation line between the end user and Ausgrid is to be agreed but is anticipated to be at the location where the incoming 132kV Ausgrid feeders terminate into the client owned 132kV switchgear in the new substation. The substation itself will be owned by the end user and further MV and LV distribution on the site will be a private network.

The infrastructure in the substation will include:

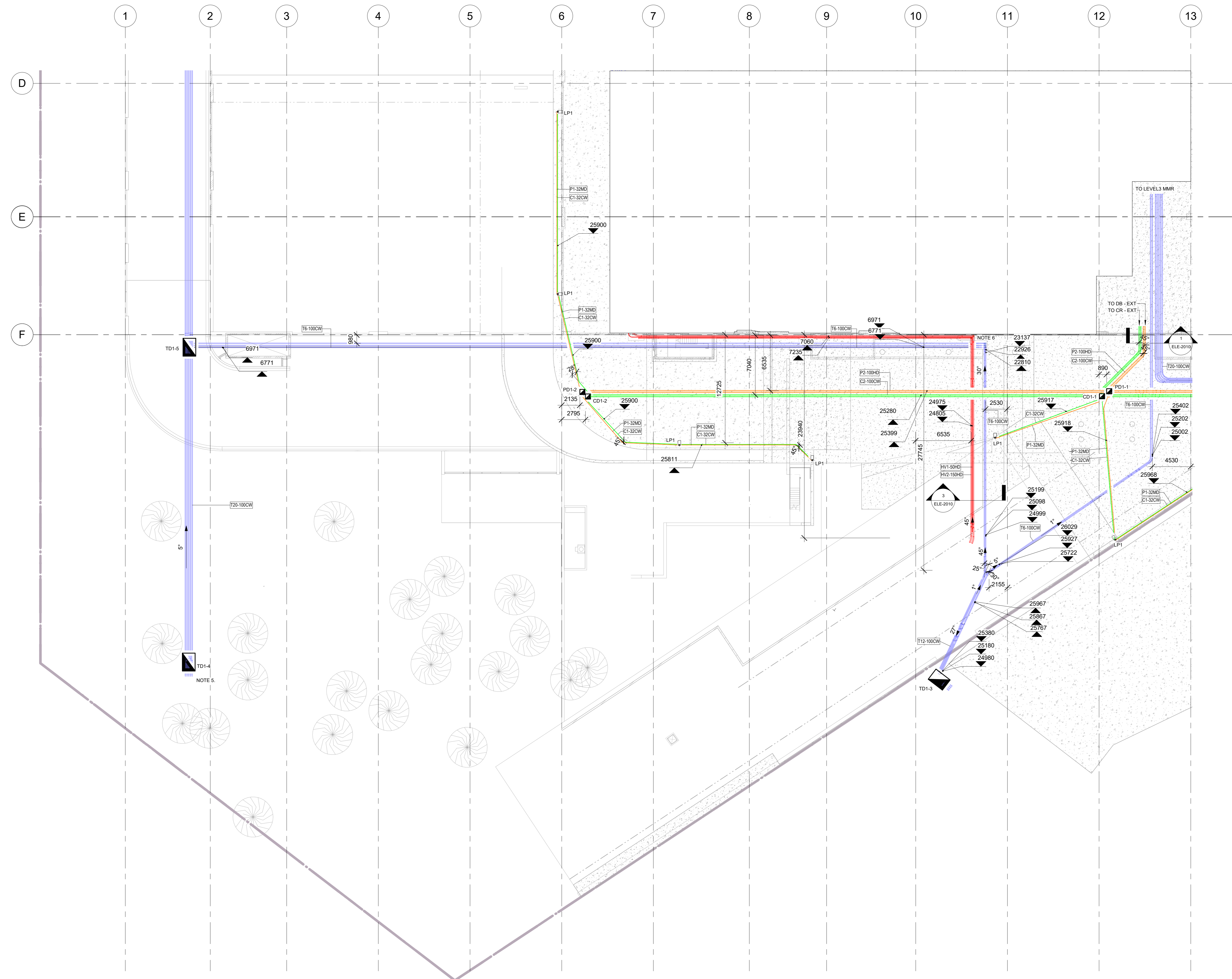
- 3No. 45MVA 132/11kV transformers. It is envisaged that 2No. transformers will be installed initially, with the 3rd installed at a later date as the site electrical load increases.
- A 132kV Gas Insulated Switchgear (GIS) unit to allow for control of the incoming 132kV feeders, and protection and distribution to the 45MVA transformers.
- 3No. 11kV switchgear units to allow for protection, control, and distribution of power around the site via an 11kV private network.
- 3No. Neutral Earthing Resistors to allow for reduction of the substation fault current to an acceptable level.
- 2No. 11/0.4kV Station services transformer to supply the electrical demands of the substation.
- Additional miscellaneous equipment relating to SCADA, protection, control, and operation of the substation.

4 DBYD Site Assessment

We have undertaken a DBYD assessment of the site. The following drawings showing various services in the vicinity of the proposed site are attached for reference:

- ELE-1033.06 In Ground Services Layout RL20.2-26 Zone 3
- ELE-1043.06 In Ground Services Layout RL26+ Zone 3
- ELE-1044.06 In Ground Services Layout RL26+ Zone 4
- ELE-2010.04 Roadway Section Views
- HYD-002.01 Hydraulic Site Plan

- DRAWING NOTES:**
- CONDUITS FOR SUPPLIES TO SMALL POWER AND COMMS TO BE CONFIRMED AND COORDINATED ONCE MORE INFORMATION IS RECEIVED.
 - TELCO PITS HAVE BEEN OMITTED BASED ON THE ASSUMPTION THAT THERE WILL BE A DEDICATED PATH OF ACCESS INTO THE VOID BELOW THE SUSPENDED ROAD WAY.
 - HV CONDUITS FOR 132kV SUPPLY SHALL BE DETAILED ONCE THE UNDERBORE DETAILS AND L3 DESIGN ARE RECEIVED.
 - HV CONDUITS FOR TEMP 11kV SUPPLY HAVE BEEN SHOWN INDICATIVELY AND SHALL BE REVISED ONCE THE L3 DESIGN IS RECEIVED.
 - TELCO PIT TO BE RELOCATED PENDING FINAL UNDERBORE DETAILS.
 - TEMPORARY HV AND TELCO CONDUITS TO RUN VERTICALLY DOWN THE CONCRETE FACADE IN THE VOID BETWEEN THE CIVIL CUT.



ARCHITECT:
GREENBOX

Consultant:
ARUP

BUILDER:
A W EDWARDS

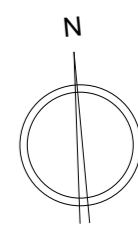
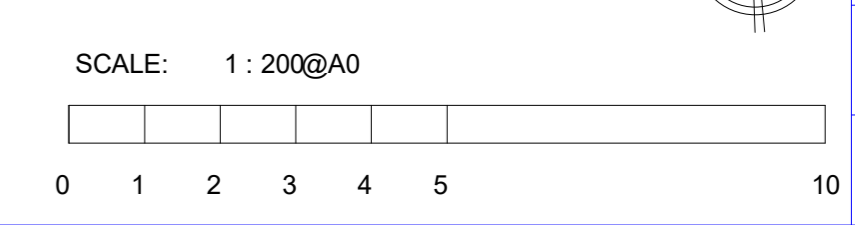
ELECTRICAL CONTRACTOR:
Barnwell Cambridge Pty Ltd
Electrical Contractors and Engineers
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P.O. Box 105, Rockdale N.S.W. 2216
Telephone: 02 9556 1666 Facsimile: 02 9556 1566
ABN 90 002 462 957

CLIENT APPROVAL:
NAME:
SIGN:
TITLE:
DATE:

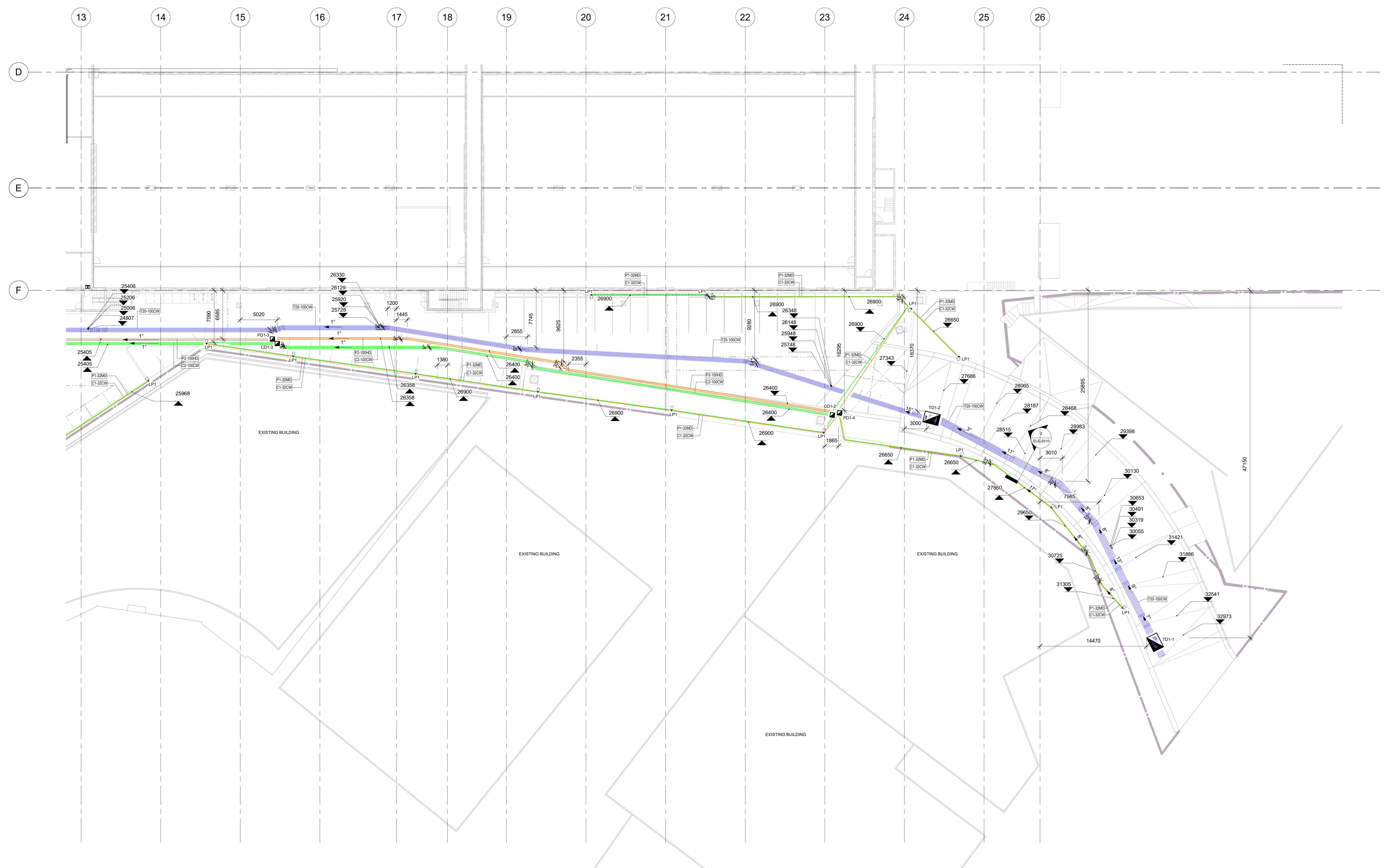
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5	CHANGES FOR APPROVAL	14.08.2019
4	80% DESIGN SUBMISSION	31.07.2019
3	FOR APPROVAL	26.07.2019
2	FOR APPROVAL	19.07.2019
1	FOR APPROVAL	10.07.2019

DESIGN: A.KEIVANI 23.08.2019
DRAWN: S.WU 23.08.2019
DRAWING CHECK: S.WOODCOCK 23.08.2019
DESIGN CHECK: J.TRIGGS 23.08.2019
APPROVED: J.TRIGGS 23.08.2019
PROJECT: **ATSYD2-LANE COVE**

TITLE: **In Ground Services Layout
RL=20.2-26 Zone 3**
Project Identifier:
ATSYD2-A-SHD-BCE
Drawing Number & Revision:
ELE-1033.06



DRAWING NOTES:
1. CONDUITS FOR SUPPLIES TO SMALL POWER AND COMMS TO BE CONFIRMED AND COORDINATED ONCE MORE INFORMATION IS RECEIVED.
2. TELCO PITS HAVE BEEN OMITTED BASED ON THE ASSUMPTION THAT THERE WILL BE A DEDICATED PATH OF ACCESS INTO THE VOID BELOW THE SUSPENDED ROAD WAY.



CLIENT:
AIRTRUNK

ARCHITECT:
GREENBOX

Consultant:
ARUP

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ABN 98 062 462 957

CLIENT APPROVAL:
NAME:
SIGN:
TITLE:
DATE:

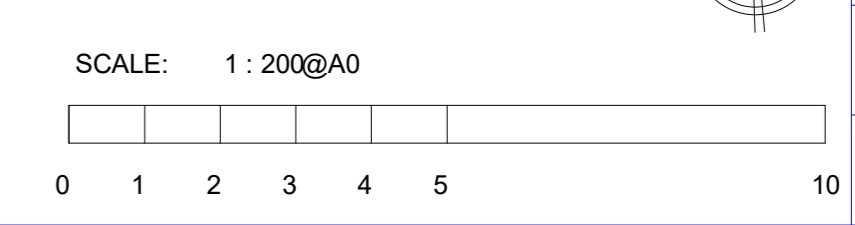
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DESIGN CHECK: J.TRIGGS 23.08.2019
APPROVED: J.TRIGGS 23.08.2019

PROJECT: **ATSYD2-LANE COVE**

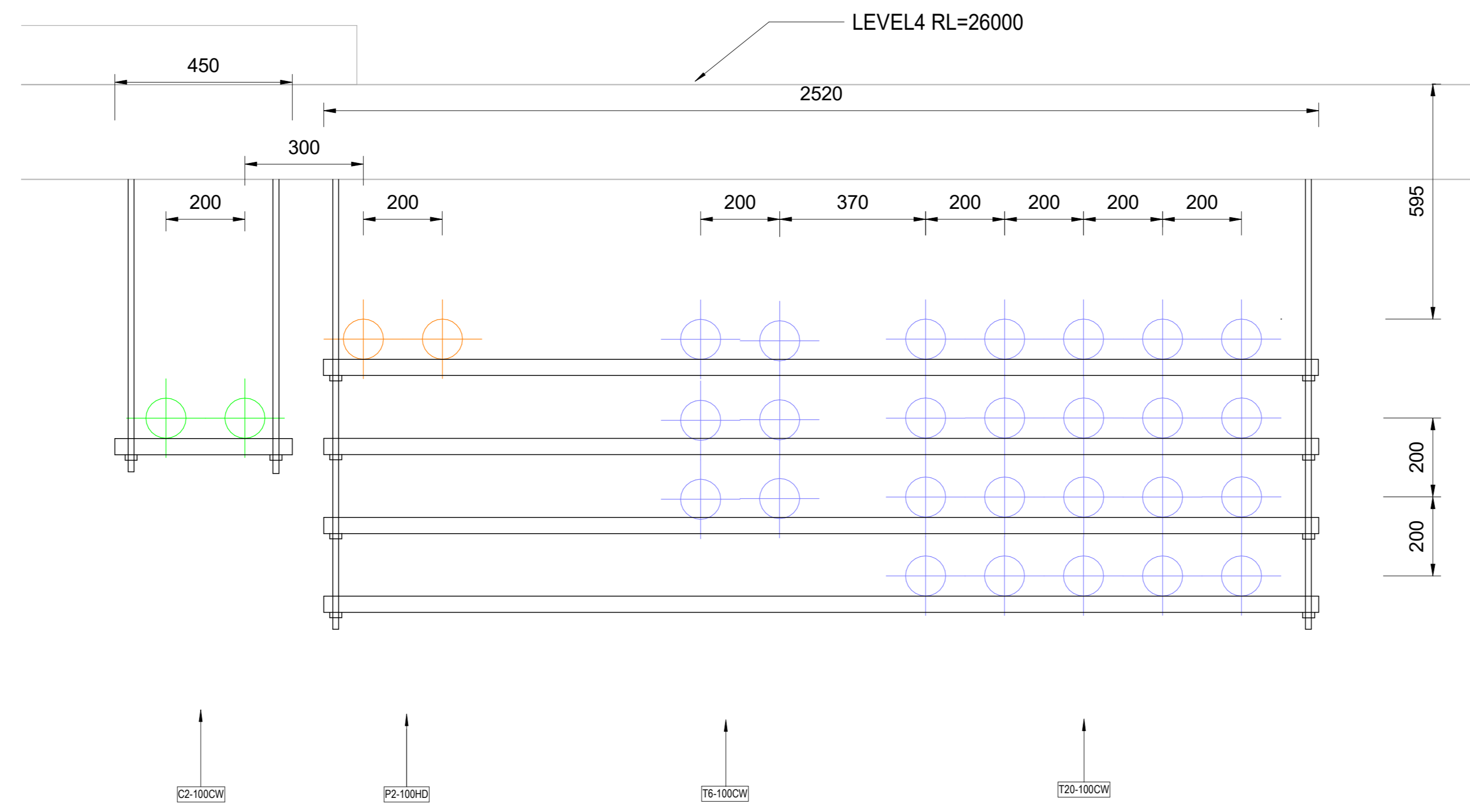
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Project Identifier:
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Drawing Number & Revision:
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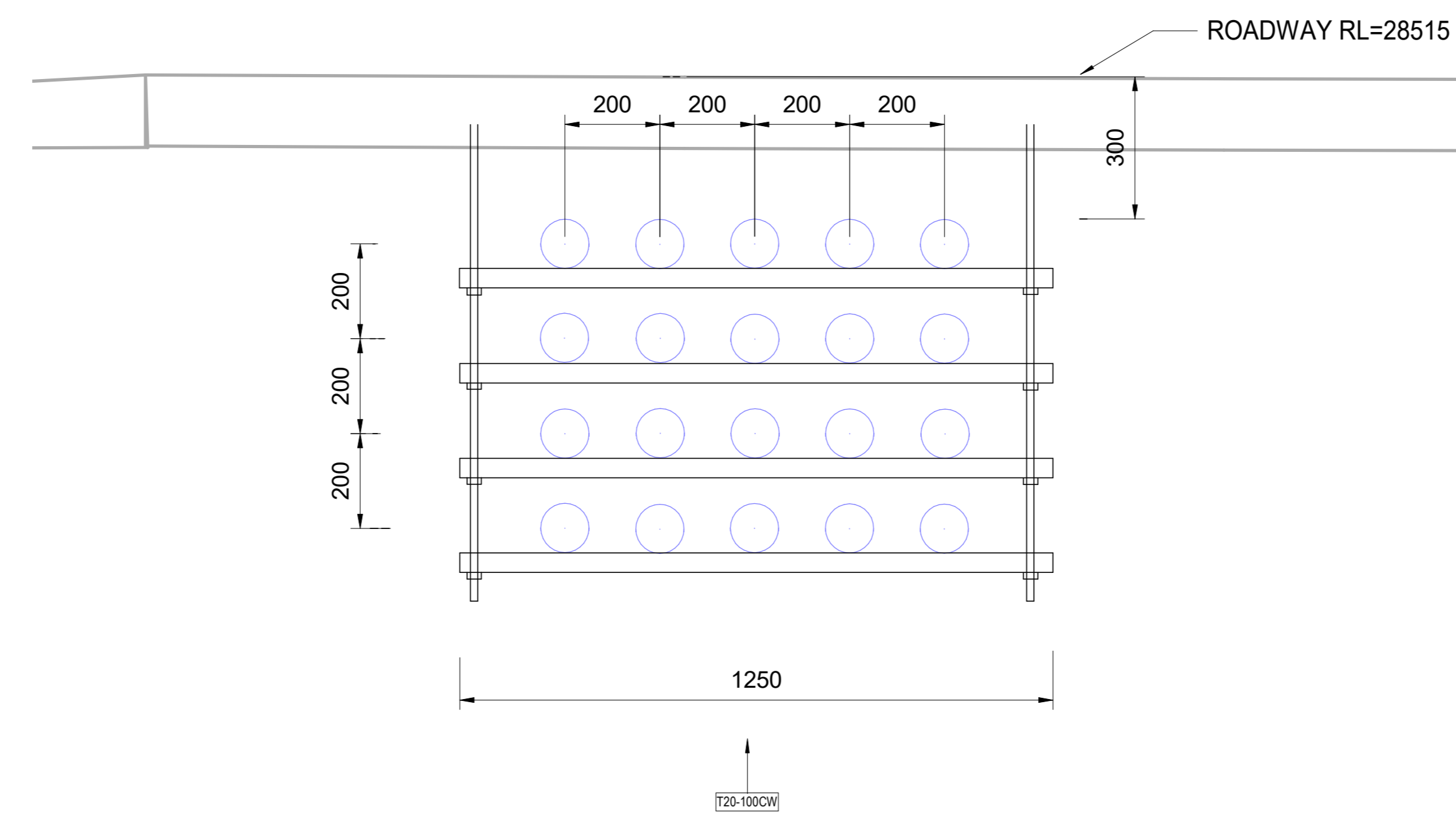


DRAWING NOTES:
1. TOPOGRAPHY NOT SHOWN FOR CLARITY

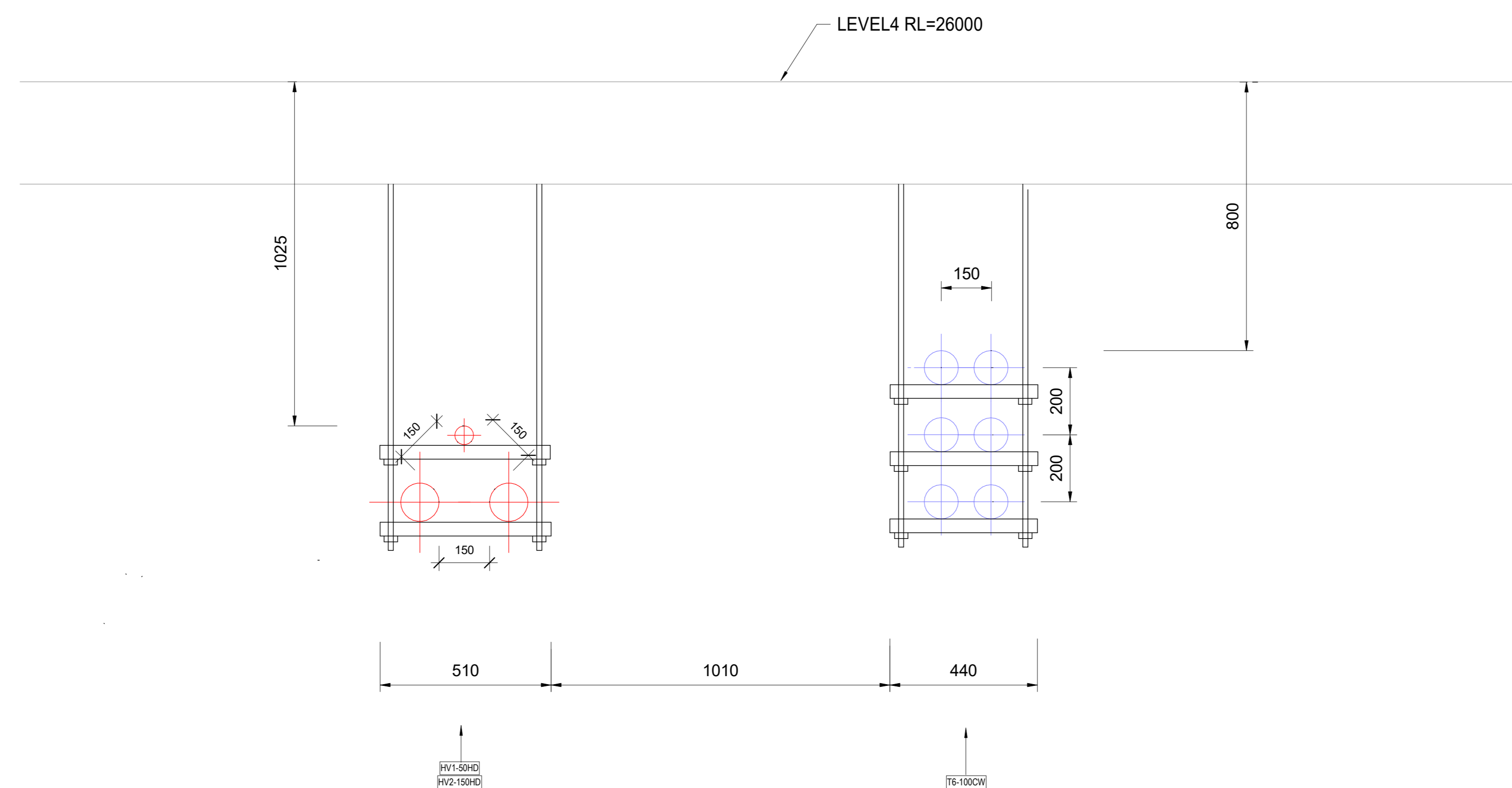
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1 SECTION 1 / ELE-1033
1 : 10



2 SECTION 2 / ELE-1044
1 : 10



3 SECTION 3 / ELE-1033
1 : 10

CLIENT:



ARCHITECT:



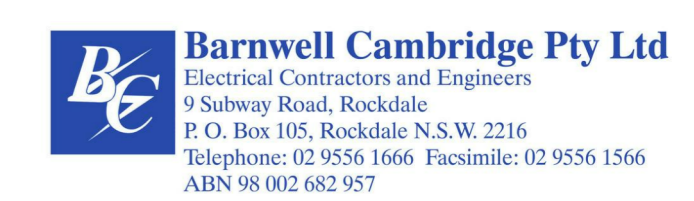
Consultant:



BUILDER:



ELECTRICAL CONTRACTOR:



CLIENT APPROVAL:

NAME:

SIGN:

TITLE:

DATE:

REV.	AMENDMENT	DATE
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3	CHANGES FOR APPROVAL	14.08.2019
2	60% DESIGN SUBMISSION	31.07.2019
1	FOR APPROVAL	26.07.2019

NAME	DATE
DESIGN: A.KEIVANI	23.08.2019
DRAWN: S.WU	23.08.2019
DRAWING CHECK: S.WOODCOCK	23.08.2019
DESIGN CHECK: J.TRIGGS	23.08.2019
APPROVED: J.TRIGGS	23.08.2019

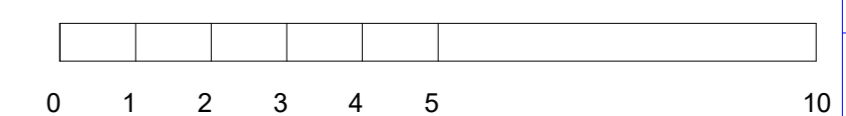
PROJECT: ATSYD2-LANE COVE

TITLE: Roadway Section Views

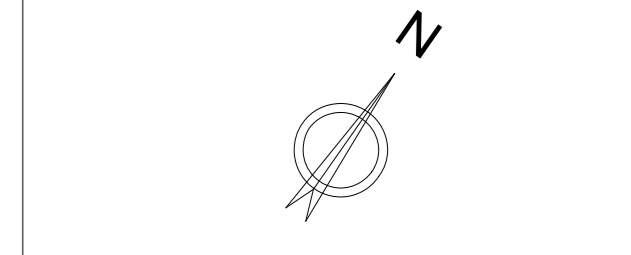
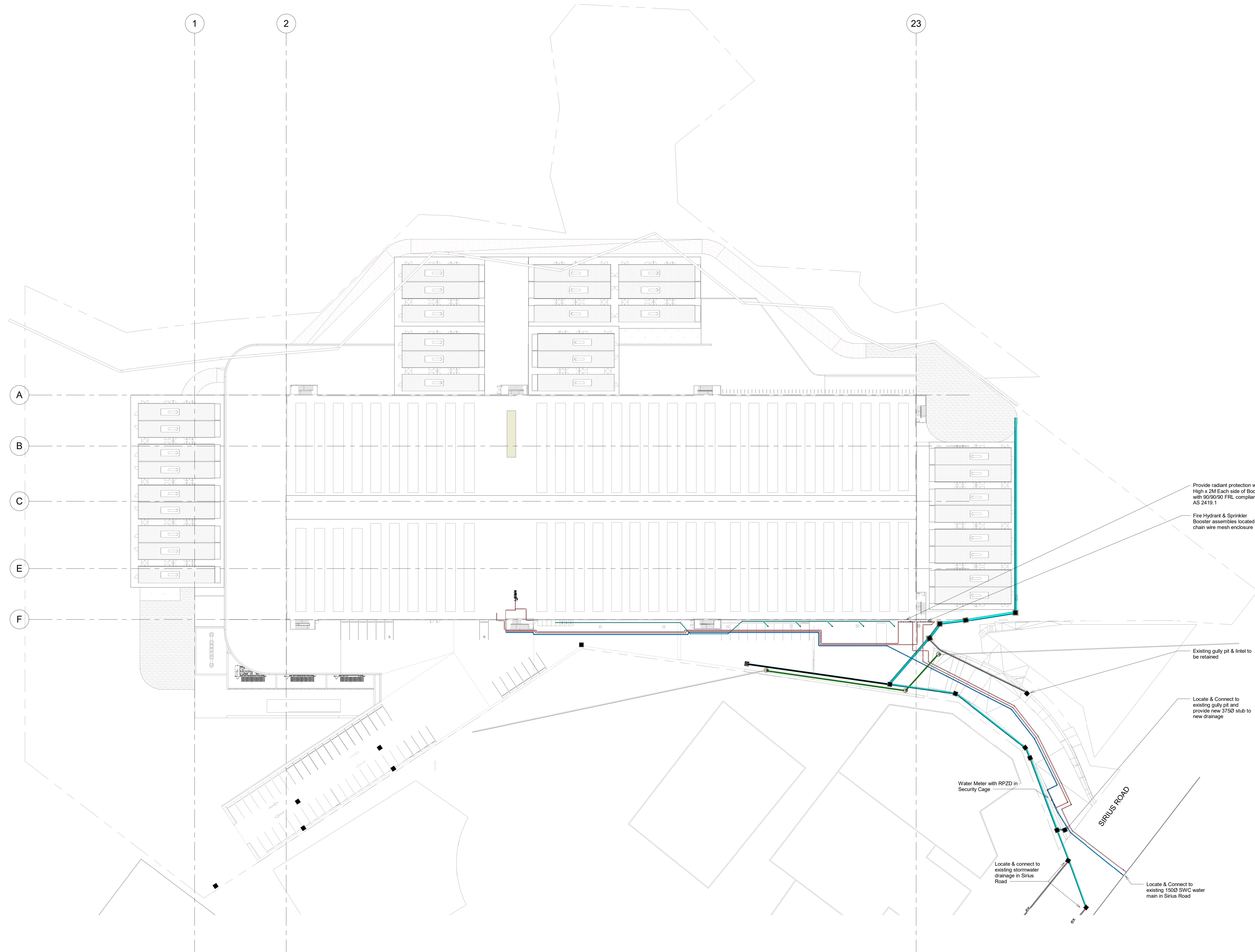
Project Identifier:
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Drawing Number & Revision:
ELE-2010.04

SCALE: 1 : 10 @A0



HYDRAULIC SERVICES WORKSHOP DRAWING



Issue	Date	Description
01	21/08/18	PRELIMINARY

**DRAWING IS
COLOUR CODED-
PRINT ALL COPIES
IN COLOUR**



Construction Manager



Design & Construction Hydraulic Contractor
JONES & JONES
 MASTER PLUMBERS PTY LTD

Hydraulic & Fire Engineers
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 p: +61 2 8905 5357
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Client
AIRTRUNK



Architect
GREENBOX

- Use written dimensions only
 - Do not scale from drawing
 - Confirm all existing services, dimensions on-site prior to commencing any work
 - All materials to be used in accordance with the manufacturer's specifications and instructions and shall comply with the relevant Australian Standards

Project
ATSYD2
 1 Sirius Road Lane Cove NSW

Drawn By
 RM
 Scale
 1:400 @ AD
 Checked By
 RM
 Approved By
 RM

Date
 21/08/18
 Job Number
 5893

Project Status
PRELIMINARY

Drawing Title
Site Plan

Project Identifier
 ATSYD2-SITE-SHO-JAJ

Client Reference
 ATSYD2-01

21/08/2018 8:45:34 PM

