Our Ref 02507-L005

Contact Gary Chan

23 August 2021

Principal Certifying Authority
c/- Parkview Constructions Pty. Limited
Level 7, 60 Union Street
Pyrmont NSW 2009

Attention: Linda Yeh

C & M CONSULTING ENGINEERS

C & M Consulting Engineers Pty Ltd
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BUILDING A1, MIDTOWN MACPARK IVANHOE ESTATE, MACQURIE PARK
(RYDE CITY COUNCIL – DA NO. SSD8903)

DESIGN CERTIFICATE – HYDRAULIC SERVICES

We confirm that the design of the Hydraulic Services for the subject development was carried out by this firm and is presented on our Drawings listed below.

Hydraulic Services

DRAWING NUMBER	DRAWING NAME	REVISION
02507-A1-HY-001	NOTES & LEGEND	01
02507-A1-HY-201	BASEMENT 3	01
02507-A1-HY-500	GENEREAL DETAILS 1	01

We certify that the design has been carried out in accordance with:

- Ryde City Council's Development Consent Conditions;
- NCC – National Construction Code – 2019 Amdt 1 – Volume 1, Building Code of Australia
- NCC – National Construction Code – 2019 Amdt 1 – Volume 3, Plumbing Code of Australia
- AS3500 – 2018 – Plumbing and Drainage Code;
- AS5601 – 2013 – Gas Installations;
- BASIX Certificate No. 893728M_02;
- The current standards of good industry practice.

This certificate shall not be construed as relieving any other party of their legal responsibilities or contractual obligations.

Yours faithfully

Gary Chan
DipEng(Hydraulic), DipEng(Civil), C14 Reg. No. BDC04511, Member of HCAA and QBCC,
Design Practitioner Reg. No. DEP0000137, Principal Design Practitioner Reg. No. PDP0000052
Hydraulic Engineer - Director
C & M Consulting Engineers Pty Ltd

Date: 20th July 2021

Attention: Ben Myles

Company: ADW Johnson Pty Limited
5 Pioneer Avenue,
Tuggerah NSW 2259

Re: Stormwater Quality – MUSIC Modelling

Dear Ben,

As per your request, I confirm that the stormwater treatment system detailed in MUSIC Model 'Ivanhoe Estate - A1 - For OP (OP EDIT)' satisfies the stormwater quality objectives referenced in the ADW Johnson report *Stage 1 of Ivanhoe Estate - A State Significant Development* (5th Oct - Revision G).

MUSIC Inputs for the Building A1 treatment system include a StormFilter chamber area with 3m^2 footprint area with 2 x 690Psorb StormFilter cartridges.

OceanGuard pit inserts with 200um bags are included in grated surface inlet pits collecting ground areas upstream and downstream of the StormFilter system.

In my opinion this updated MUSIC model, based on the original provided by ADW Johnson, demonstrates compliance with the relevant DCP requirements also referenced in the report.

I trust this satisfies your requirements. Should you have any further queries please do not hesitate in contacting me.

OP Ref: 13150

Yours faithfully,



Harout Tcherkezian
Ocean Protect

Mob: 0419 102 700
Email: harout@oceanprotect.com.au

Ref: BMY/LF 300001(A1)

23rd August 2021

Parkview
Level 7, 60 Union Street
PYRMONT NSW 2011

Attention: Linda Yeh

Dear Linda,

MIDTOWN MAC PARK – BUILDING A1 STORMWATER CERTIFICATION

We hereby certify that the Onsite Stormwater Detention (OSD) tank depicted on the drawings prepared by ADW Johnson reference 300001(A1)-ENG-001-462 revision 1, complies with all conditions of consent of SSD 8903.

The design is generally in accordance with Council's DCP 2014 Part 8.2 Stormwater Management, Australian Rainfall and Runoff, NSW Floodplain Management Manual and the relevant Australian Standards.

This certification does not cover any structural elements associated with the tank and is for the spatial design and discharge control of the tank only.

Should you have any queries, please do not hesitate to contact the undersigned.

Yours faithfully,



Nathan Delaney
Senior Civil Engineer
MIEAust CPENG NER
ADW Johnson Pty Ltd
Central Coast

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30 July 2021

Architecture
Interior Design
Urban Design
Strategy

Design Compliance Declaration
Supplementary Information
Other Regulated Designs

BATESSMART™

Project: S12067.A
Building A1, Midtown MacPark, Ivanhoe Estate, Macquarie Park
Description: CC2 Basement Structure
Building element: Structure

This document is provided as supplementary information to a design compliance declaration, providing details about the **other regulated designs** that have been integrated into this regulated design in order to achieve compliance with the BCA.

Drawing No.	Drawing Title	Variation No
A1-ST-000-00	Cover Sheet	01
A1-ST-000-01	Drawing List	01
A1-ST-001-01	General Notes	01
A1-ST-003-00	Foundation General Arrangement	01
A1-ST-003-31	Foundation Sections And Details Sheet 1	01
A1-ST-003-32	Foundation Sections And Details Sheet 2	01
A1-ST-003-33	Foundation Sections And Details Sheet 3	01
A1-ST-005-01	Column Schedule Sheet 1	01
A1-ST-005-02	Column Schedule Sheet 2	01
A1-ST-005-03	Column Schedule Sheet 3	01
A1-ST-005-04	Column Schedule Sheet 4	01
A1-ST-005-05	Column Schedule Sheet 5	01
A1-ST-005-31	Column Details Sheet 1	01
A1-ST-005-41	Column Transition Details	01
A1-ST-005-51	Typical R.C. Wall Details Sheet 1	01
A1-ST-005-52	Typical R.C. Wall Details Sheet 2	01
A1-ST-005-53	Typical R.C. Wall Details - Pentrations	01
A1-ST-005-54	Typical R.C. Wall Link Beam Details	01
A1-ST-005-61	Core Wall Elevations Sheet 1	01
A1-ST-005-62	Core Wall Elevations Sheet 2	01
A1-ST-005-63	Core Wall Elevations Sheet 3	01
A1-ST-005-64	Core Wall Elevations Sheet 4	01
A1-ST-005-65	Core Wall Elevations Sheet 5	01
A1-ST-005-66	Core Wall Elevations Sheet 6	01
A1-ST-005-67	Core Wall Elevations Sheet 7	01
A1-ST-005-68	Core Wall Elevations Sheet 8	01
A1-ST-005-69	Core Wall Elevations Sheet 9	01
A1-ST-005-70	Core Wall Elevations Sheet 10	01
A1-ST-005-71	Core Wall Elevations Sheet 11	01
A1-ST-005-72	Core Wall Elevations Sheet 12	01
A1-ST-005-73	Core Wall Elevations Sheet 13	01
A1-ST-005-74	Core Wall Elevations Sheet 14	01
A1-ST-005-75	Core Wall Elevations Sheet 15	01
A1-ST-005-76	Core Wall Elevations Sheet 16	01
A1-ST-005-77	Core Wall Elevations Sheet 17	01
A1-ST-005-78	Core Wall Elevations Sheet 18	01
A1-ST-006-00	Core Structure Isometric Views	01

A1-ST-008-01	Carpark Ramp Sections And Details	01
A1-ST-009-21	Stair Elevations Sheet 1	01
A1-ST-009-22	Stair Elevations Sheet 2	01
A1-ST-009-31	Typical Stair Details	01
A1-ST-011-31	Typical Slab Details Sheet 1	01
A1-ST-096-00	Basement 03 General Arrangement	01
A1-ST-096-31	Typical Slab On Grade Details	01
A1-ST-097-00	Basement 02 General Arrangement	01
A1-ST-098-00	Basement 01 General Arrangement	01
A1-ST-296-00	Basement 03 Loading Diagram	01
A1-ST-297-00	Basement 02 Loading Diagram	01
A1-ST-298-00	Basement 01 Loading Diagram	01
A1-ME-3-000-01	Ventilation Schematic	01
A1-ME-4-B01-03	Basement 03	01
A1-ME-4-B01-02	Basement 02	01
A1-ME-4-B01-01	Basement 01	01
A1-ME-4-BLG-01	Lower Ground	01
A1-ME-4-L00-01	Ground Floor	01
A1-HY-001	Hydraulic Services - Legend note notes	01
A1-HY-100	Hydraulic Services - Site Plan	01
A1-HY-201	Hydraulic Services - Basement 3	01
A1-HY-202	Hydraulic Services - Basement 2	01
A1-HY-203	Hydraulic Services - Basement 1	01
A1-HY-500	Hydraulic Services - General Details	01
IFS-F-W-001	Schematic (Wet)	01
IFS-F-W-101	Basement 03 Wet Fire Layout	01
IFS-F-W-102	Basement 02 Wet Fire Layout	01
IFS-F-W-103	Basement 01 Wet Fire Layout	01
IFS-F-W-104	Lower Ground Wet Fire Layout	01
IFS-F-W-105	Ground Floor Wet Fire Layout	01
IFS-F-D-002	Schematic (Dry)	01
IFS-F-D-201	Basement 03 Dry Fire Layout	01
IFS-F-D-202	Basement 02 Dry Fire Layout	01
IFS-F-D-203	Basement 01 Dry Fire Layout	01
IFS-F-D-204	Lower Ground Dry Fire Layout	01
IFS-F-D-205	Ground Floor Dry Fire Layout	01
E000	Electrical Services Legend & Drawing Schedule	01
E100	Basement 03 - Lighting, Power & Security Layout	01
E101	Basement 02 - Lighting, Power & Security Layout	01
E102	Basement 01 - Lighting, Power & Security Layout	01

Attachments
Nil

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30 July 2021

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Urban Design
Strategy

Design Compliance Declaration
Supplementary Information
Specialist Advice

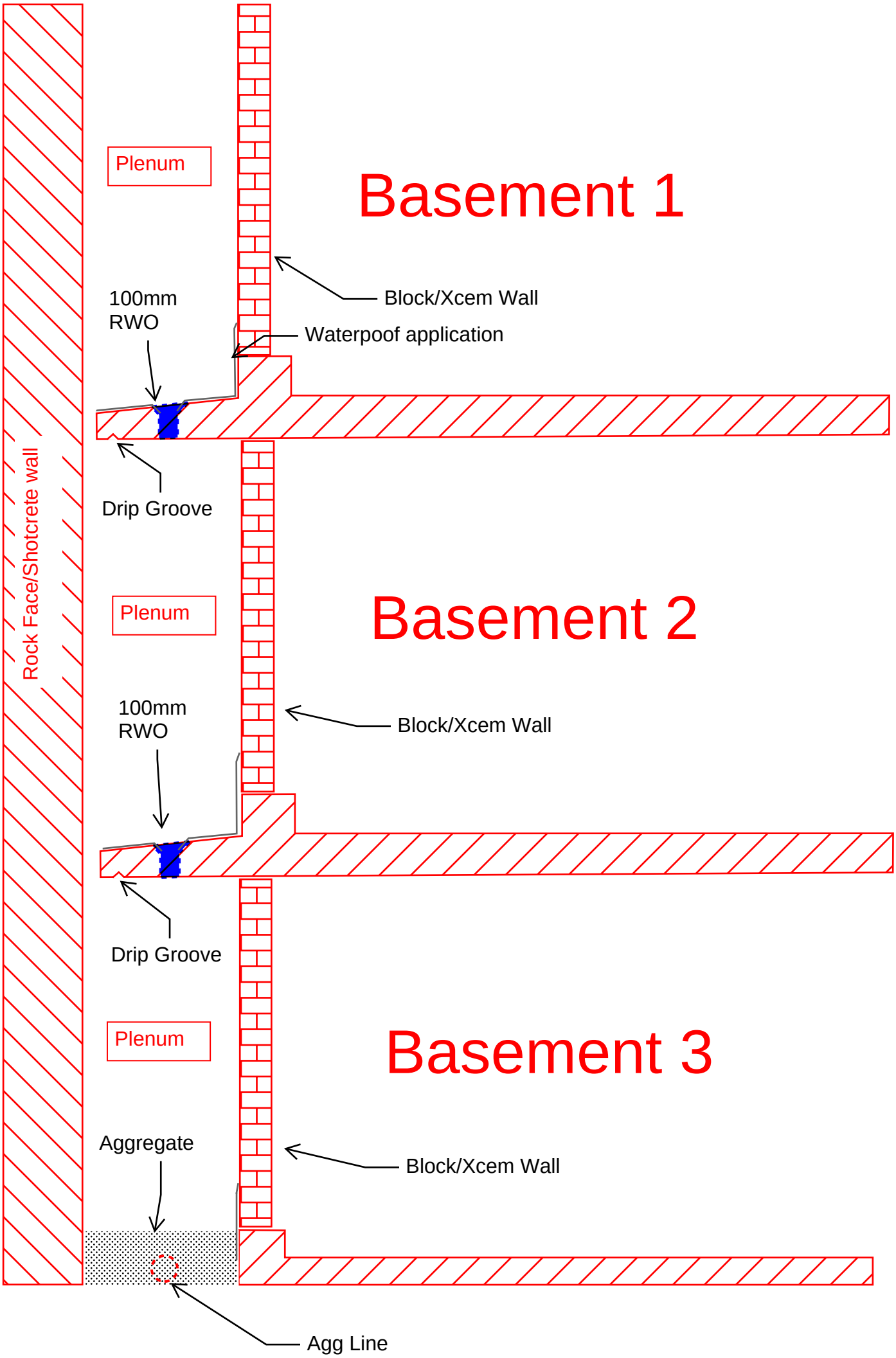
BATESSMART™

Project: S12067.A
Building A1, Midtown MacPark, Ivanhoe Estate, Macquarie Park
Description: CC2 Basement Structure
Building element: Structure

This document is provided as supplementary information to a design compliance declaration, providing details of **specialist advice considered** in preparing the regulated design, including name and contact details of the specialist.

Document title, number and revision	Date	Author	Contact email
Lift shaft sizes	28.07.2021	Kris Gailloux	kristofer.gailloux@otis.com
Access consultant review	23.04.2020	Morris Goding	Anthony@mgac.com.au
MGAC-GCOR-000034 (access)	23.01.2020	Anthony Leuzzi	Anthony@mgac.com.au
Access Design Cert amended	30.04.2020	Anthony Leuzzi	Anthony Leuzzi
Egress distance review – Fire	25.02.2020	Thomas O'Dwyer	todwyer@affinity-eng.com
Traffic review	28.07.2021	Hayden Dimitrovski	hayden.dimitrovski@traffix.com.au
Sketch of basement perimeter	14.07.2021	Mohamed Yaccoub	mohamed.yaccoub@parkview.com.au
Wind Engineer advice	02.07.2021	Windtech	reception@windtechglobal.com
Fire rating review	12.07.2021	Charles Boyce	CBoyce@bcalogic.com.au

Attachments
Parkview sketch of basement perimeter


Plenum
Basement 1
100mm
RWO
Block/Xcem Wall
Waterpoof application
Drip Groove
Rock Face/Shotcrete wall
Plenum
Basement 2
100mm
RWO
Block/Xcem Wall
Drip Groove
Plenum
Basement 3
Aggregate
Block/Xcem Wall
Agg Line

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30 July 2021

Architecture
Interior Design
Urban Design
Strategy

Design Compliance Declaration
Supplementary Information
Standards or codes

BATESSMART™

Project: S12067.A
Building A1, Midtown MacPark, Ivanhoe Estate, Macquarie Park
Description: CC2 Basement Structure
Building element: Structure

This document is provided as supplementary information to a design compliance declaration, providing details about the **standards, codes or requirements** not referenced in the BCA, that have been applied in preparing the regulated design/s.

Standard/Code No.	**Title**
AS/NZS 2890.1 - 2004	Parking Facilities – Part 1 Off-street car parking
AS4299-1995	Adaptable Housing

Attachments
Nil

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Engineering

Working Beyond Expectations

Stormwater and Drainage Assessment

To accompany a Development Application for Stage 1 of Ivanhoe Estate - A State Significant Development

Property:
The land currently comprising Ivanhoe Estate, Herring Road, Macquarie Park as well as a portion of Shrimptons Creek and part of Lot 1 in DP 859537

Applicant:
Aspire Consortium on behalf of NSW Land and Housing Corporation

Date:
5th October 2018

adw johnson

Document Control Sheet

Issue No.	Amendment	Date	Prepared By	Checked By
A	DRAFT	23rd January 2018	BMY	IB
B	Modelling Updated	7th March 2018	BMY	IB
C	Appendix C added	16th March 2018	BMY	IB
D	Minor Wording	26th March 2018	BMY	IB
E	Minor Amendments	10th April 2018	BMY	IB
F	Amendments to C1	4th October 2018	BMY	IB
G	Image amended	5th October 2018	BMY	IB

Limitations Statement

This report has been prepared in accordance with and for the purposes outlined in the scope of services agreed between ADW Johnson Pty Ltd and the Client. It has been prepared based on the information supplied by the Client, as well as investigation undertaken by ADW Johnson and the sub-consultants engaged by the Client for the project.

Unless otherwise specified in this report, information and advice received from external parties during the course of this project was not independently verified. However, any such information was, in our opinion, deemed to be current and relevant prior to its use. Whilst all reasonable skill, diligence and care have been taken to provide accurate information and appropriate recommendations, it is not warranted or guaranteed and no responsibility or liability for any information, opinion or commentary contained herein or for any consequences of its use will be accepted by ADW Johnson or by any person involved in the preparation of this assessment and report.

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The Client should be aware that this report does not guarantee the approval of any application by any Council, Government agency or any other regulatory authority.

Executive Summary

This report supports a Development Application for Stage 1 of the Ivanhoe Estate redevelopment, a State Significant Development (SSD) submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). It has been prepared for Aspire Consortium on behalf of NSW Land and Housing Corporation.

As a part of the Stage 1 development application, a Stormwater and Drainage Assessment of the proposed development is required. This report has undertaken an assessment of the proposed development to determine compliance with the requirements set out in both the Secretary's Environmental Assessment Requirements (SEAR's) and Ryde Council's DCP 2014 in regards to stormwater drainage.

The Stage 1 development application includes lots A1 and C1, along with the public road network for the entire development.

Ryde Council's DCP 2014 requires the development to comply with requirements for onsite detention, water sensitive urban design and flooding. This report considers both the onsite detention and water quality aspects with the flooding impact assessment been done by a third party.

As detailed in the previous submission for the Ivanhoe Estate Masterplan, onsite detention (OSD) and water sensitive urban design (WSUD) requirements only need to apply to areas within the site that are to remain in private ownership. As such, all OSD and WSUD control measures were provided on lot prior to flows entering the public drainage system. A concept drainage plan was developed on this basis and consisted of an on lot private system and a public drainage system located within the proposed public road reserves.

Using the XP-RAFTS software, an onsite detention model was created, using a combination of rainwater tanks and designated detention tanks to attenuate peak flows to meet Council's requirements. It was found that a total of 155m^3 of dedicated detention storage was required, along with 50m^3 of storage within the rainwater tanks to meet the requirements set out by Ryde Council.

A water quality model was created in the MUSIC software to determine the required water quality treatment measures to meet Council's water quality targets. A treatment train of rainwater tanks, gross pollutant traps and media filtration devices was proposed for the development. An analysis of the MUSIC model indicated that the proposed treatment train not only met but exceeded the targets set by Council.

A water balance model was developed to determine the reduction in potable water for each building within Stage 1 of the development. This development proposes to reuse captured stormwater for irrigation and car washing purposes.

Erosion and sedimentation control plans were developed for the likely construction staging, to ensure that during construction, runoff generated on the site was adequately treated prior to it entering the downstream receiving waters. Required temporary stormwater works are also detailed on the erosion and sedimentation control plans. The erosion and sediment control plans will need to be regularly updated to adjust to changes in the proposed development over the life of the project.

The adjoining development to the northwest of the subject site currently drains, under easement, through the site to the existing drainage system within Ivanhoe Place. It was found that the proposed development would impact on this connection, however through the design of building A1, it is shown that a new connection can be provided.

This report shows that from a stormwater management perspective, the proposed development can adequately meet the requirements set out by both Ryde City Council and the SEAR's and as such, should be approved.

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1.0 Introduction

This report supports a Development Application for Stage 1 of the Ivanhoe Estate redevelopment, a State Significant Development (SSD) submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). It has been prepared for Aspire Consortium on behalf of NSW Land and Housing Corporation.

1.1 BACKGROUND

In September 2015 the Ivanhoe Estate was rezoned by DPE as part of the Macquarie University Station (Herring Road) Priority Precinct, to transform the area into a vibrant centre that benefits from the available transport infrastructure and the precinct's proximity to jobs, retail and education opportunities within the Macquarie Park corridor.

The Ivanhoe Estate is currently owned by NSW Land and Housing Corporation and comprises 259 social housing dwellings. The redevelopment of the Ivanhoe Estate is part of the NSW Government Communities Plus program, which seeks to deliver new communities where social housing blends with private and affordable housing, with good access to transport, employment, improved community facilities and open space.

The Communities Plus program seeks to leverage the expertise and capacity of the private and non-government sectors. As part of this program, Aspire Consortium, comprising Frasers Property Australia and Mission Australia Housing, were selected as the successful proponent to develop the site in July 2017.

In September 2017, DPE issued the Secretary's Environmental Assessment Requirements for a comprehensive Masterplan application that will establish the framework for the staged redevelopment of the site. This Development Application for Stage 1 of the Ivanhoe Estate redevelopment represents the first stage of detailed works pursuant to the Ivanhoe Estate Masterplan.

1.2 SITE DESCRIPTION

The Ivanhoe Estate site is located in Macquarie Park near the corner of Epping Road and Herring Road within the Ryde Local Government Area (LGA). The site is approximately 8.2 hectares and currently accommodates 259 social housing dwellings, comprising a mix of townhouse and four storey apartment buildings set around a cul-de-sac street layout. An aerial photo of the site is provided at **Figure 1** below.

Immediately to the north of the site are a series of four storey residential apartment buildings. On the north-western boundary, the site fronts Herring Road and a lot that is currently occupied by four former student accommodation buildings and is likely to be subject to redevelopment. Epping Road runs along the south-western boundary of the site and Shrimptons Creek, an area of public open space, runs along the south-eastern boundary. Vehicle access to the site is via Herring Road.

Ivanhoe Estate comprised of 17 individual lots owned and managed by the NSW Land and Housing Corporation. The Masterplan site also incorporates adjoining land, being a portion of Shrimptons Creek and part of the commercial site at 2-4 Lyonpark Road. This land is included to facilitate a bridge crossing and road connection to Lyonpark Road.



Figure 1: Ivanhoe Estate Site

1.2.1 Site Topography

The site generally falls from the north western corner, at the intersection of Epping and Herring Roads towards Shrimpton's Creek in the south eastern corner. As indicated in **Figure 2** overleaf, there is approximately 30m of fall across the site at an average grade of 7.5%.

The topography of 2-4 Lyonpark Road is very gentle with the site generally falling towards Shrimpton's Creek at an average slope of 1-2%. This is also indicated in **Figure 2** overleaf.

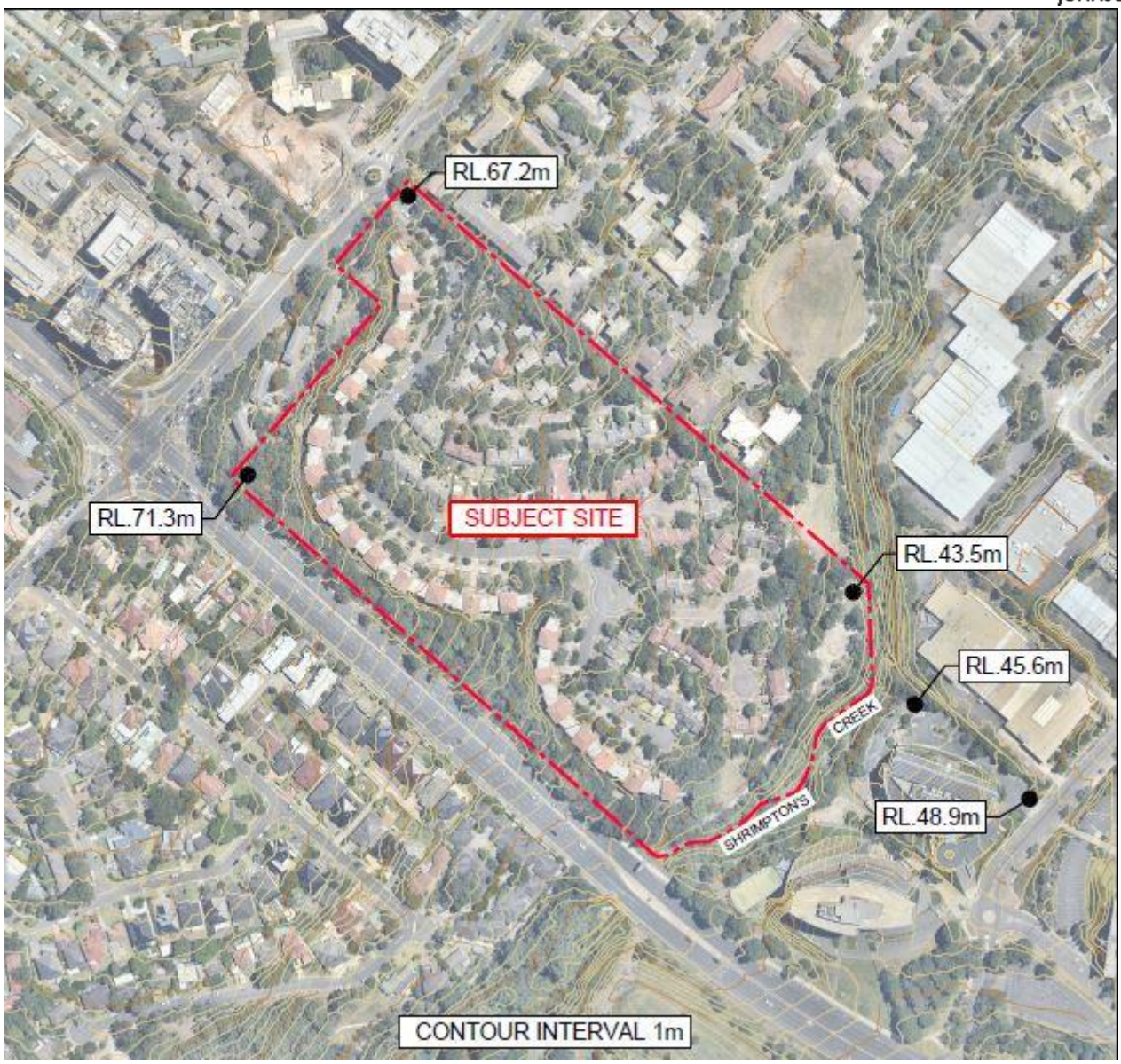


Figure 2: Existing Topography

1.2.2 Existing Stormwater Infrastructure

As mentioned in Section 1.2, the site currently consists of a mix of residential townhouses and apartment buildings set around a cul-de-sac street layout. Street drainage and interallotment drainage infrastructure currently drains runoff generated by the existing development south towards Shrimpton's Creek. There are currently three (3) outlet locations discharging into Shrimpton's Creek.

Prior to construction of the new development, all existing buildings, roads and associated infrastructure are to be demolished. As a part of this, the existing stormwater infrastructure is to be removed, with a new stormwater system to be constructed to cater for the new development.

It is noted that stormwater generated by the existing residential development to the North West of the subject site (Lot 1 D.P 609711) currently drains under easement through the site to the existing drainage system in Ivanhoe Place. Whilst the proposed development will impact on this connection, the design of building A1 has ensured that a connection will remain. This is discussed further in Section 6 of this report.

1.3 PROPOSED DEVELOPMENT

The proposed Stage 1 Development Application seeks consent for the first stage of detailed works within the Ivanhoe Estate, pursuant to the Ivanhoe Estate Masterplan under Section 4.22 of the EP&A Act. The Masterplan establishes the planning and development framework against which this Stage 1 Development Application will be assessed.

The Stage 1 Development Application seeks approval for:

- site preparation works, including tree removal, demolition of roads, services, and earthworks across the Ivanhoe Estate;
- the provision and augmentation of utilities and services infrastructure across the Ivanhoe Estate;
- the construction of all internal roads including public domain within the road reserves, and the bridge crossing and road connection to Lyonpark Road;
- the consolidation of existing lots and subdivision of the Ivanhoe Estate to reflect the revised road layout, open space, and provide superblocks corresponding to the Masterplan;
- the construction and use of Buildings A1 and C1 comprising residential uses (including social housing), a childcare centre, and retail / community spaces.

Despite the stage 1 development application seeking approval for works over the entire estate, it is proposed to deliver the works in accordance with the staging plan identified within the masterplan development application.

An image of the Masterplan, identifying Buildings A1 and C1 and illustrating the road network, is provided at **Figure 3** below.

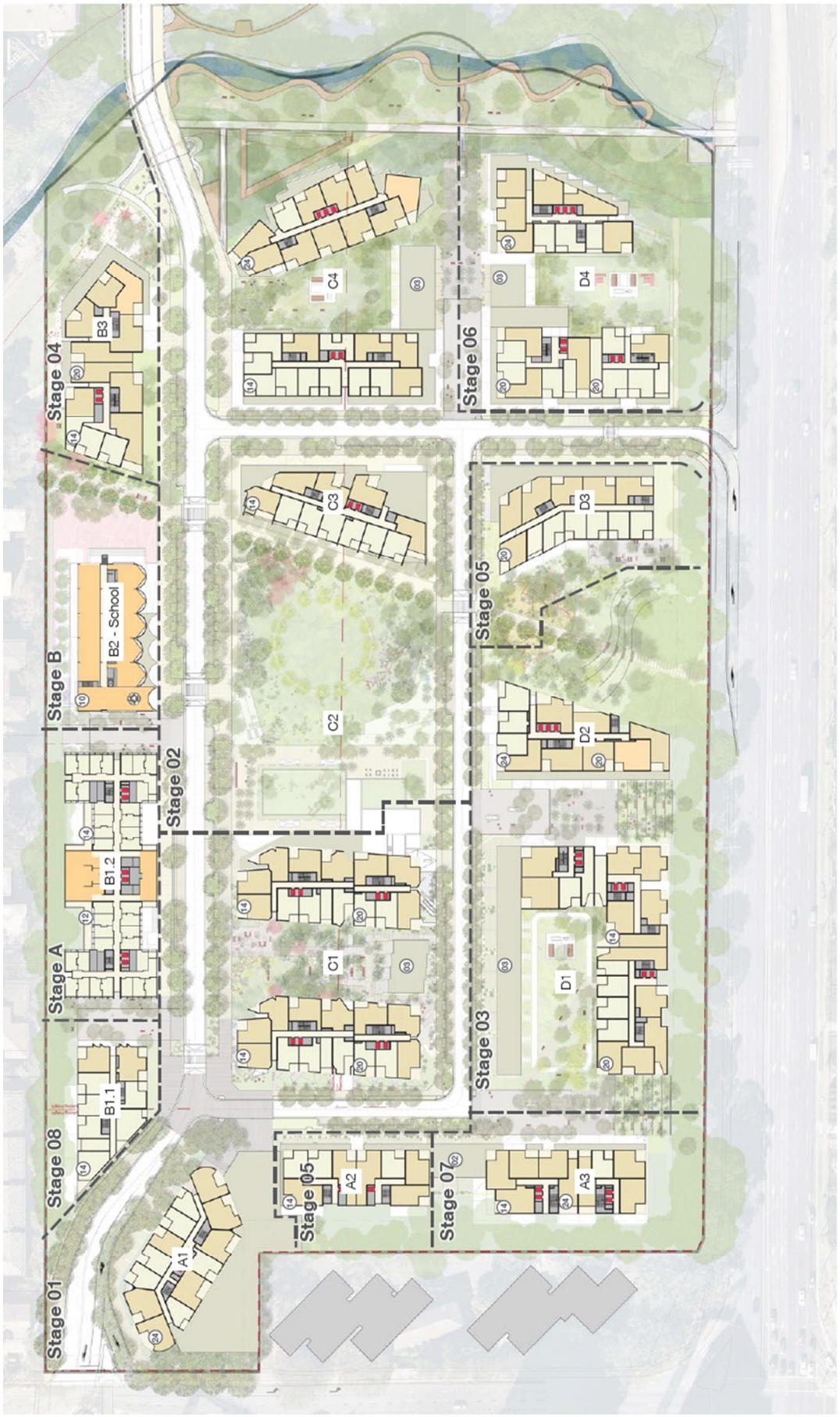


Figure 3: Ivanhoe Estate Masterplan (Stage 1)

2.0 Authority Requirements

The proposed development is within the Ryde Council LGA and is therefore subject to the requirements of Ryde Council's Development Control Plan (DCP) 2014. Part 8.2 of Council's DCP contains specific information relating to the management of stormwater and contains the following documents:

- Stormwater Management Technical Manual;
- Water Sensitive Urban Design Guideline.

The proposed development is to satisfy the requirements of these documents and the broader Ryde Council DCP.

The development must also comply with the Secretary's Environmental Assessment Requirements (SEARs) provided by the NSW Department of Planning. A summary of the key SEARs requirements relating to this report can be seen below:

- *Prepare a Stormwater, Groundwater and Drainage Assessment;*
- *Detail Erosion, sediment and stormwater management controls during construction;*
- *Identify appropriate water quality management measures;*
- *Identify any water licensing requirements or other approvals;*
- *Prepare and integrated water management plan/drainage concept.*

The development is aiming to achieve a six (6) star Green Star communities rating and as such, is required to meet a number of stormwater objectives that are separate to the requirements of the SEAR's and Ryde Council's DCP 2014. As the Green Star communities rating is applied to the overall development, the requirements do not need to be considered in detail on a stage by stage basis. Details of the proposed measures to achieve the Green Star rating can be found in the Masterplan stormwater report.

2.1 STORMWATER QUANTITY

Ryde Council adopts a major/minor stormwater drainage philosophy for stormwater management throughout the LGA.

The minor drainage system is required to cater for runoff generated from all storm events up to and including the minor storm event without any surcharging within the system and minimising flow widths and ponding within the road carriageway. In accordance with the stormwater technical manual, the minor storm event for an urban residential development is the 20 year ARI storm event.

The road network and dedicated overland flow paths are to be provided to safely convey flows which exceed the capacity of the minor storm event up to and including the 100 year ARI storm event.

2.1.1 Onsite Detention (OSD)

Onsite detention systems are designed to minimise the effect of increased runoff from developments by attenuating peak stormwater flows leaving the site.

In accordance with Ryde Council's Stormwater Technical Manual, OSD systems are to be designed to ensure that the peak discharge in the **post developed 100 year ARI** storm event does not exceed the peak discharge in the **post developed 5 year ARI** storm event.

As outlined in the Stormwater and Drainage Assessment for the Ivanhoe Estate Masterplan development application submission, a meeting was held with Council to discuss the OSD requirements for the proposed development. Council advised that the detention requirements outlined within Ryde Council's Stormwater Technical Manual are only required to apply to the areas within the development that are to remain in private ownership.

Whilst the Stage 1 development application is for approval of the entire road network and lots A1 and C1 all OSD controls are to be applied to and contained within lots A1 and C1.

2.1.2 Shrimpton's Creek

As detailed in the Ivanhoe Estate Masterplan submission, Shrimpton's Creek is a second order watercourse which flows from west to east along the southern boundary of the proposed development site.

Shrimpton's Creek and its catchment has been analysed in the "Macquarie Park Floodplain Risk Management Study and Plan". This flood study, completed in 2011 considers the entire Shrimpton's Creek catchment on a regional scale and provides indicative flood extents within the Creek.

A further Study was undertaken as a part of the Ivanhoe Estate masterplan submission, detailing the impacts of the proposed development on Shrimpton's Creek and the surrounding areas. A copy of this report can be seen in **Appendix A.**

2.2 WATER SENSITIVE URBAN DESIGN

Through the management of potable water, wastewater and stormwater, water sensitive urban design (WSUD) aims to manage the effects of urban development on the water cycle. Ryde Council's "Water Sensitive Urban Design Guidelines" outline the requirements for WSUD within the Ryde LGA. This development aims to not only comply with the requirements set out by Council but exceed them.

2.2.1 Stormwater Quality

In order to comply with the WSUD requirements, the stormwater drainage system must effectively remove nutrients and gross pollutants from the site prior to runoff entering the downstream drainage infrastructure. The stormwater treatment objectives have been taken from the Ryde Council "Water Sensitive Urban Design Guidelines" document and can be seen below in **Table 1**.

Table 1 – Stormwater Treatment Objectives

Pollutant	Treatment Objective
Gross Pollutants	**90%** retention of the average annual load for particles and suspended solids
Suspended Solids	**85%** retention of the average annual load for particles and suspended solids
Total Phosphorus	**65%** retention of average annual pollutant load
Total Nitrogen	**45%** retention of average annual pollutant load

As outlined in the Stormwater and Drainage Assessment for the Ivanhoe Estate Masterplan development application submission, a meeting was held with Council to discuss the WSUD requirements for the proposed development. Council advised that the WSUD requirements outlined within Ryde Council's Stormwater Technical Manual are only required to apply to the areas within the development that are to remain in private ownership.

As with the OSD requirements, whilst the Stage 1 development application is for approval of the entire road network and lots A1 and C1 all WSUD controls are to be applied to and contained within lots A1 and C1.

2.2.2 Potable Water Conservation

The reduction of potable water usage can be achieved for a development through a number of methods, including the reuse of captured stormwater. This report details the requirements for stormwater reuse only, however it is noted that other methods may be used within the development.

Ryde Council requires that a water balance model be prepared to demonstrate how stormwater runoff from the site is reused. It should be noted that for a high-density development, as is proposed, it is extremely difficult to capture enough water to effectively reduce the extremely high potable water demand for internal uses. It has been decided at this stage for captured stormwater to be used for irrigation and car washing purposes only. It should be noted that other methods may be used within the development and these will be explored on a stage by stage basis as required.

This report will provide a water balance model to indicate how the captured stormwater is reused within the development.

3.0 Stormwater Quantity

As discussed in Section 2.0, this report will provide a drainage concept plan for Stage 1 of the Ivanhoe Estate project.

A concept stormwater drainage plan has been prepared to demonstrate how the stormwater runoff generated by the proposed development is captured and safely conveyed to Shrimpton's Creek.

As discussed in the Masterplan report, in order to achieve a six (6) star green star communities rating for the development, it is proposed to provide an end of line rain garden to cater for runoff generated by the public road reserves. It is noted that the Stage 1 development application includes the entire public road network, however as the Green Star requirements only need to be met for the entire development, the rain gardens will not be required in Stage 1. Despite this, in order to allow for the future rain gardens, the appropriate drainage pipework will be included within the Stage 1 development application.

As the Stage 1 development application is for the entire road network, along with lots A1 and C1, the concept stormwater plan has been developed for both the road network and the lots. It is noted however, that as Council do not require the roads to be detained or treated the public road network will not be included in the OSD or WSUD calculations found in this report.

The on lot drainage system has been designed to capture runoff from the lots and private access roads within the site, whilst the public drainage system has been designed to capture runoff generated by the public road network. The public drainage system will convey flows generated by both the lots and the road network to the receiving waters in Shrimpton's Creek.

The private system within the lots will capture and attenuate the flows generated within these lots before discharging to the public system. The private system consists of the following elements:

- Rainwater Tanks – Rainwater tanks will be used to capture and store runoff from roof areas for external reuse within the lots;
- OSD Tanks – OSD tanks will be used to attenuate peak flows before discharging into the public drainage system;
- Surface Drainage – Surface drainage pits will be provided to capture and convey runoff from both hardstand and pervious areas to the OSD tanks.

A plan showing the concept stormwater drainage system for the public road network can be seen in **Exhibit 1,** whilst a concept drainage plan for lots A1 and C1 can be seen in **Exhibit 2**.

3.1 ONSITE DETENTION

In accordance with Ryde Council's Stormwater Technical Manual, OSD systems are to be designed to ensure that the peak discharge in the **post developed 100 year ARI** storm event does not exceed the peak discharge in the **post developed 5 year ARI** storm event.

In accordance with the masterplan submission, it is proposed to use a series of rainwater tanks and dedicated OSD tanks located within the lots and under private roads to adequately attenuate the peak discharges generated by each lot. Runoff generated from the site is conveyed to the proposed tanks via the following systems:

- Roof Areas – Runoff generated from the building roofs is directed via the building hydraulics to rainwater tanks located within the basement of each building. Overflow from these rainwater tanks is then directed to an OSD tank.

  The most efficient rainwater tank sizes for each lot was provided by the building hydraulics engineer. A water balance model was performed on the rainwater tanks to determine the average volume available within the tanks at any given time. The average volume available within the tanks was adopted as available storage in the detention modelling. The water balance model is discussed further in Section 4.2.

- Remaining Lot Areas – Runoff generated from the remaining lot areas is captured in a series of surface drainage pits and conveyed to the detention tanks.

An XP-RAFTS model was created using the parameters outlined in the following sections in order to accurately model the proposed system.

3.1.1 Catchment Parameters

To ensure the runoff generated by each lot is accurately calculated the lots were split into subcatchments to reflect the conveyance systems discussed in Section 3.1 above.

The subcatchments areas were measured directly from the latest design plans for both A1 and C1 and can be seen in **Exhibit 2** and **Table 2** below**.**

Table 2. Catchment Areas

CATCHMENT AREA (ha)			
Catchment	**Roof**	**Remaining Lot (Captured)**	**Remaining Lot (Not Captured)**
A1	0.127	0.141	0.043
C1	0.298	0.224	0.113

In order to produce runoff hydrographs for each catchment, a number of hydrological parameters are required to be input into the XP-RAFTS model. These parameters include:

- Percentage of Impervious Area;
- Manning's 'n' – the Manning's 'n' coefficient is a measure of the surface roughness of a catchment;
- Average Catchment Slope.

The percentage of impervious area, Manning's 'n' and average catchment slopes were all estimated based upon the latest design plans for A1 and C1 respectively.

A summary of the parameters for lots A1 and C1 can be seen below in **Table 3.**

Table 3. Hydrological Parameters

Hydrological Parameter			
Catchment	**Impervious %**	**Manning's 'n'***	**Slope (%)**
A1 – Lot Captured	25%	0.035/0.015	1%
A1 – Lot not Captured	80%	0.035/0.015	10%
A1 – Roof	60%	0.05/0.01	1%
C1 – Lot Captured	40%	0.04/0.015	1%
C1 – Lot not Captured	60%	0.04/0.015	3%
C1 – Roof	60%	0.05/0.01	1%

* Manning's 'n' values are for Pervious/Impervious

3.1.2 Detention Modelling

Detention modelling was undertaken using an XP-RAFTS model in order to determine the size of the proposed detention tanks within lots A1 and C1 to achieve the requirements set out by Council.

Rainwater tanks were used in the model to supplement the storage volume provided by the proposed detention tanks. The rainwater tanks have been modelled to have an orifice 300mm from the top of the tank and as such, only provide a small amount of detention storage. The storage below the orifice does however, buffer the peak discharge generated by the roof catchments to assist in reducing the overall lot peak discharge.

Ryde Council's Stormwater Management Technical Manual indicates that XP-RAFTS models are suitable for use in sizing detention structures, however it is required that the flow rates calculated are checked against another method. In accordance with this, a DRAINS model was set up to provide a check of XP-RAFTS flow rates. A comparison of 5 year and 100 year post developed flows for the A1 and C1 catchments can be seen in **Table 4** below.

Table 4. DRAINS vs RAFTS

	RAFTS (5 Yr ARI) (m^3/s)	DRAINS (5 Yr ARI) (m^3/s)	Difference (%)	RAFTS (100 Yr ARI) (m^3/s)	DRAINS (100 Yr ARI) (m^3/s)	Difference (%)
A1 Roof	0.038	0.039	3%	0.067	0.068	2%
A1 Lot	0.032	0.036	11%	0.06	0.067	11%
C1 Roof	0.086	0.093	7%	0.148	0.159	7%
C1 lot	0.056	0.062	10%	0.1	0.112	11%
Combined	0.21	0.226	7%	0.37	0.4	8%

It can be seen from **Table 4** above that the flows calculated by DRAINS compare well with those calculated by the RAFTS model. The RAFTS model was generally found to produce slightly lower flows than the DRAINS model.

Based on this comparison, it was concluded that the RAFTS model was suitable to use for the detention modelling. The results of the detention modelling can be seen below in **Table 5.**

Table 5. RAFTS Results

Catchment	5 Year ARI Flow (m3/s)	100 Year ARI Flow - Without Detention (m3/s)	100 Year ARI Flow - With Detention (m3/s)	Rain Water Tank Size (kL)#	Detention Tank Size (m^3)
A1	0.087	0.154	0.087	20	55
C1	0.182	0.313	0.180	30	100
Total	0.269	0.467	0.267	50	155

 # Only a percentage of the actual tank volume was used in the modelling

It can be seen from **Table 5** above that, through the use of rainwater tanks and dedicated detention tanks, the post developed 1 in 100 year ARI peak discharges can be adequately attenuated back to the post developed 1 in 5 year ARI peak discharges.

Indicative rainwater and detention tanks for each lot can be seen in **Exhibit 2.** A screenshot of the XP RAFTS model can be seen in **Appendix B**.

3.1.3 Detention Tank Parameters

To ensure the 1 in 100 year ARI peak discharge is attenuated back to the 1 in 5 year ARI peak discharge, discharge control structures have been designed for each tank. Each tank has been designed with a low flow outlet and a high flow weir.

The high flow weir has been designed to cater for the 1 in 100 year ARI peak discharge, however it is an emergency overflow weir only and as such, has been placed above the 1 in 100 year level in the detention tank.

The tank configuration and outlet controls for each tank are summarised below in **Table 6.**

Table 6. Detention Tank Parameters

Detention Tank	Volume (m^3)	Tank Depth (Excluding Emergency Weir*) (m)	Low Flow Orifice (mm)	Weir Length x Height (m)
A1	55	1.5	170	1m x 0.2m
C1	100	1.5	225	2m x 0.2m

** Tank volume is based on a depth of 1.5m. Emergency weir to be placed above this level.*

It should be noted that as the detention tanks are to be incorporated into the basements of the proposed buildings, the final configuration of the tanks will be subject to confirmation by the building hydraulics engineers.

The configuration of the rainwater tanks is discussed in section 4.1.4. An indicative sketch showing two potential tank configurations can be seen in **Appendix C.** It should be noted that these are indicative only and are subject to final design by the building hydraulics engineers.

4.0 Water Sensitive Urban Design

Through the management of potable water, wastewater and stormwater, water sensitive urban design (WSUD) aims to manage the effects of urban development on the water cycle. Ryde Council's "Water Sensitive Urban Design Guidelines" outline the requirements for WSUD within the LGA.

4.1 STORMWATER QUALITY

The proposed stormwater drainage system, as discussed in Section 3 above, will incorporate a number of water quality treatment devices to effectively treat runoff generated by Stage 1 of the development prior to it being discharged to the receiving waters in Shrimpton's Creek.

As discussed in Section 2.2.1, water quality devices are only required to treat runoff generated by the proposed lots. As such, all water quality devices will be provided within the lots to treat runoff prior to it discharging to the public drainage network.

It is noted that an end of line rain garden will be provided at a future stage in order to meet the requirements of the Green Star communities' guidelines.

4.1.1 Treatment Devices

It is proposed to use a combination of at source and conveyance controls to treat the runoff prior to it entering the public drainage system. The proposed treatment train has been modelled in the water quality software "Model for Urban Stormwater Improvement Conceptualisation" (MUSIC) to demonstrate compliance with Council's treatment targets.

The following devices are proposed within the development to achieve the required targets:

Rainwater Tanks

Rainwater tanks are proposed within each building to capture and store runoff generated from the roof area for reuse. Each rainwater tank will be fitted with a first flush system to provide pretreatment prior to runoff entering the tanks.

Gross Pollutant Traps

It is proposed to provide Stormwater 360 "Enviropods" or Council approved equivalent litter traps in all grated surface inlet pits within the private stormwater system to capture gross pollutants and coarse sediments. Further details of the Stormwater 360 "Enviropod" can be seen in **Appendix D.**

Media Filtration

It is proposed to provide Stormwater 360 'Stormfilter" or council approved equivalent system. The "Stormfilter" is a proprietary media filtration device consisting of multiple cartridges that will be housed within the proposed OSD tanks. Further details of the "Stormfilter" cartridges can be seen in **Appendix D.**

As all of the proposed treatment devices are to be provided within the private lots, maintenance of all devices will be the lot owners and as such no maintenance burden is placed on council. Details of the required maintenance of the system will be provided at the CC stage of the development.

A graphical representation of the treatment train can be seen in **Figure 4** below.

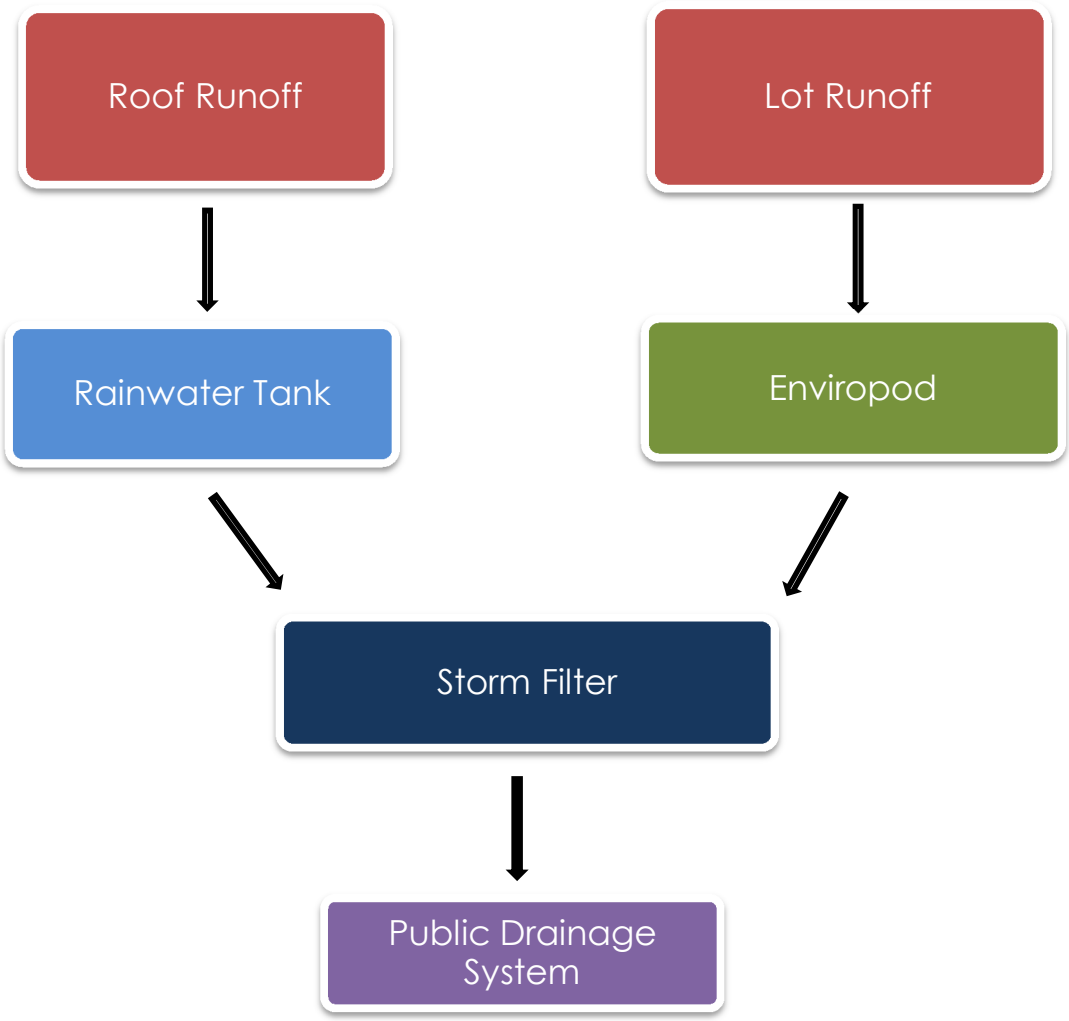


Figure 4: Proposed Treatment Train

4.1.2 MUSIC Parameters

The MUSIC model was set up in accordance with the "Using MUSIC in Sydney's Drinking Water Catchment" guidelines and Ryde Council's "Water Sensitive Urban Design Guidelines".

Catchment areas for the MUSIC modelling were adopted to correspond with those used within the detention model. Similar to the detention model, the overall catchments were broken down into smaller subcatchments in order to accurately determine the pollutant loads.

A summary of the catchment areas and parameters can be seen in Tables 2 and 3 in Section 3.1.1 above.

4.1.3 Water Quality Modelling

The MUSIC model was created using the parameters outlined above to determine compliance with council's water quality targets. The results of the water quality modelling can be seen in **Table 7** below.

Table 7. MUSIC Modelling Results

	Pollutant Load Reduction			
Catchment	**Gross Pollutants**	**Total Suspended Solids**	**Total Phosphorus**	**Total Nitrogen**
A1	100.0%	86.8%	67.1%	59.6%
C1	100.0%	86.5%	65.2%	56.7%

From **Table 7** above, it can be seen that the proposed treatment train of rainwater tanks, gross pollutant traps and media filtration devices not only meets, but exceeds the targets set by Council.

A screenshot of the MUSIC model can be seen in **Appendix E** whilst further details of the proposed treatment devices can be seen in section 4.1.4 below.

4.1.4 Treatment Device Parameters

The A1 and C1 catchments, as described in Section 3.1.1 above, have different characteristics and as such, require different configurations of the proposed treatment devices.

The treatment devices modelled for each catchment were chosen to achieve the required targets whilst also providing the most efficient solution for each catchment. The treatment device parameters for the rain water tanks and stormfilters can be seen below in **Tables 8 & 9,** whilst each catchment is to have Enviropods in all surface drainage pits.

Table 8. Rain water Tank Parameters

	Tank Parameter			
Catchment	**Volume (kL)**	**Surface Area (m^2)**	**Depth Above Overflow (m)**	**Overflow Pipe Diameter (mm)***
A1	20	13	0.3	270
C1	30	20	0.3	400

***** *Overflow pipe diameter is an equivalent diameter.*

Table 9. Stormfilter Parameters

	Tank Parameter				
Catchment	**Chamber Surface Area (m^2)**	**Extended Detention Depth (m)**	**Overflow Weir Width (m)**	**Overflow Pipe Diameter (mm)***	**Number of Cartridges**
A1	8.6	0.77	2	49	2
C1	8.6	0.77	2	49	5

***** *Overflow pipe diameter is an equivalent diameter.*

A sketch showing two potential tank configurations can be seen in **Appendix C.**

4.2 POTABLE WATER CONSERVATION

The reduction of potable water usage can be achieved for a development through a number of methods, including the reuse of captured stormwater. This report considers stormwater reuse only, however it is noted that other methods may be used throughout the development.

A water balance model was prepared for Stage 1 to determine the reduction in potable water consumption achieved through the reuse of stormwater captured within the rainwater tanks for irrigation purposes. Whilst the development will ultimately use captured stormwater for both irrigation and car washing purposes, the water balance model will only consider irrigation as the demand for car washing is unknown at this stage.

4.2.1 Water Balance Model Parameters

To accurately determine the potable water reduction for the development, a daily water balance model was set up for each individual building. In order to create the water balance model, the following parameters were required for each building:

- Catchment Area – As with the detention and water quality models, it was assumed that 50% of the roof catchment is a rooftop garden. Due to the expected low runoff from the rooftop garden (in the order of 4-5 l/s in the 1 year ARI event), it has been assumed for the water balance model that only 50% of the roof catchment reaches the tank.

- Water Demand – To determine the amount of water used each day within the lots a water demand is required. An irrigation rate for each catchment was provided by the landscape architects. A demand of **10,200 l/day** was adopted for catchment A1, whilst a demand of **15,400 l/day** was adopted for catchment C1.

- Daily Rainfall – To ensure consistency between models, the same rainfall data adopted within the MUSIC model was adopted for the water balance model.

The most efficient rainwater tank size for each lot was provided by the building hydraulics engineers and combined with the above parameters were used to perform a water balance model. The results of the water balance model can be seen in **Table 10** below.

Table 10. Water Balance Model Results

Block	Tank Size (kL)	Reduction in Potable Water *	Average Volume Available in tank (kL)#
A1	20	16.6%	17.2
C1	30	21.6%	24.0

***** *Reduction in potable water used for irrigation purposes only.*
#The average volume available in the tank was adopted in the OSD modelling as available storage.

It should be noted that reduction in potable water demand in **Table 10** above is for irrigation purposes only and does not consider car washing or internal building uses.

Table 10 also indicates that the average volume (empty space) available within the tanks. These volumes have been adopted within the OSD model as described in Section 3.1.2

5.0 Erosion and Sedimentation Control

Erosion and sedimentation control are an important part of any development to ensure downstream receiving waters are not adversely affected during construction.

The Stage 1 development application is for the entire public road network, along with lots A1 and C1, however it is likely that construction of the road network will be split into multiple stages.

As such, to ensure that there are no impacts to the downstream receiving waters at any stage during construction, detailed erosion and sediment control plans have been prepared for the likely construction staging of the development.

As the likely construction staging starts at the upstream end of the sites catchment, temporary stormwater works will be required to convey flows to the receiving waters in Shrimpton's Creek.

The likely construction staging can be seen in **Exhibit 3**, whilst the erosion and sediment control plans and required temporary works can be seen in **Exhibits 4-6**.

It should be noted that the erosion and sediment control plans contained within this report are provided as an indicative plan only and all erosion and sediment controls should be constantly updated during construction to ensure adequate protection is provided at all times.

6.0 Adjoining Development Drainage

As mentioned in Section 1.2.2, the existing development to the northwest of the site (Lot 1 D.P 609711) currently drains under easement through the proposed development site to the existing drainage system in Ivanhoe Place. The location of the existing stormwater line can be seen in **Figure 7** below.

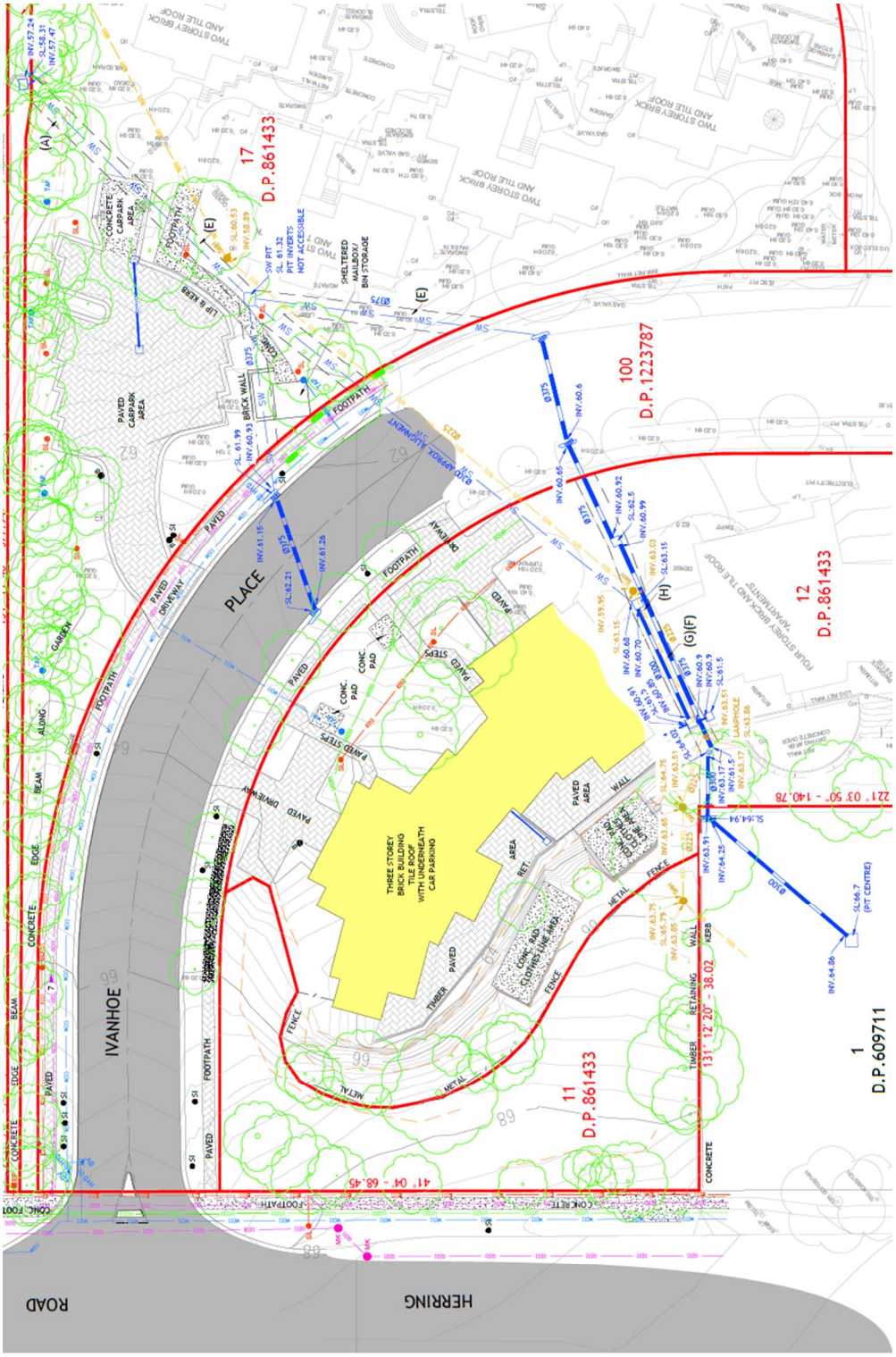


Figure 7: Adjoining Development Drainage

It can be seen from **Figure 7** that the adjoining site is currently drained via a 375mm dia stormwater pipe under the existing buildings and into the drainage system within the existing Ivanhoe Place. It is noted that Ivanhoe Place was never dedicated as public road and therefore the easement benefitting lot 1 DP 609711 does not extend to an existing public drainage system.

Based upon the proposed location and levels of building A1, it was found that the existing drainage infrastructure will need to be removed as a part of the proposed development.

In order to allow Lot 1 D.P. 609711 to continue to drain through Ivanhoe Estate, it is proposed to provide a piped stormwater system through the basement of building A1. This pipe system will drain through the basement of A1 and connect into the public drainage network located within the proposed road reserve.

This pipe system will be designed to cater for the 1 in 100 year ARI storm event, with an overland flow path to be provided on the podium level of building A1 to cater for emergency overland flows.

The final configuration of the proposed piped connection and overland flow path is subject to negotiation with the adjoining landowner and as such final details of the proposed system will be provided at the CC stage of the development.

Whilst final details are unavailable at this time, it is noted that a connection **will** be provided and as such, this issue will not pose a constraint to the development.

7.0 Groundwater Assessment

A groundwater assessment of the subject site has been undertaken by Douglas Partners and is detailed within their report.

8.0 Water Licensing Requirements and Other Approvals

Potable water for use within the site will be provided via the Sydney Water Corporation's existing carrier water mains, with this being supplemented by captured stormwater for reuse within buildings. No other permanent water sources are proposed to be utilised by the development and accordingly an ongoing water license for the site is not required.

Based upon the results of the geotechnical testing, it is likely that groundwater will be encountered in basement excavations and therefore dewatering will be required. The appropriate dewatering licenses will be obtained prior to construction commencing.

9.0 Conclusion

This report supports a Development Application for Stage 1 of the Ivanhoe Estate redevelopment, a State Significant Development (SSD) submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). It has been prepared for Aspire Consortium on behalf of NSW Land and Housing Corporation.

This report considered the stormwater drainage aspects of the proposed development, with specific focus on onsite detention and Water Sensitive Urban Design. Flood modelling within the adjacent Shrimpton's Creek was considered in a separate report.

In accordance with the Stormwater and Drainage Assessment for the Ivanhoe Estate Masterplan, OSD and WSUD requirements outlined within Ryde Council's Stormwater Technical Manual would only apply to the areas within the development that are to remain in private ownership. A concept drainage plan was developed on this basis and consisted of an on lot private system and a public drainage system located within the proposed public road reserves.

Through the use of rainwater tanks and dedicated detention tanks, it was shown that the private stormwater system could adequately attenuate peak flows generated by the proposed development and comply with the OSD requirements set out by Ryde Council. Similarly, through the use of rainwater tanks, gross pollutant traps and filtration devices, it was shown that the proposed development complies with the WSUD requirements set by Council.

In accordance with Council's requirements, a water balance model was developed to demonstrate how captured stormwater was reused within the site to reduce the demand on potable water. Whilst the development proposes to reuse captured stormwater for both irrigation and car washing purposes, only irrigation has been considered in the water balance model due to the car washing demand being unknown at this stage.

An erosion and sedimentation control plan was developed for the likely construction staging to ensure that during construction runoff generated on the site was adequately treated prior to it entering the downstream receiving waters. This plan will be regularly updated to adjust to changes in the proposed development over the life of the project.

The adjoining development to the northwest of the subject site currently drains, under easement, through the site to the existing drainage system in Ivanhoe Place. It was found that based upon the proposed location and level of building A1 that this connection would need to be removed. A new piped connection is to be provided through the basement of building A1 with an emergency overland flow path being provided on the podium level.

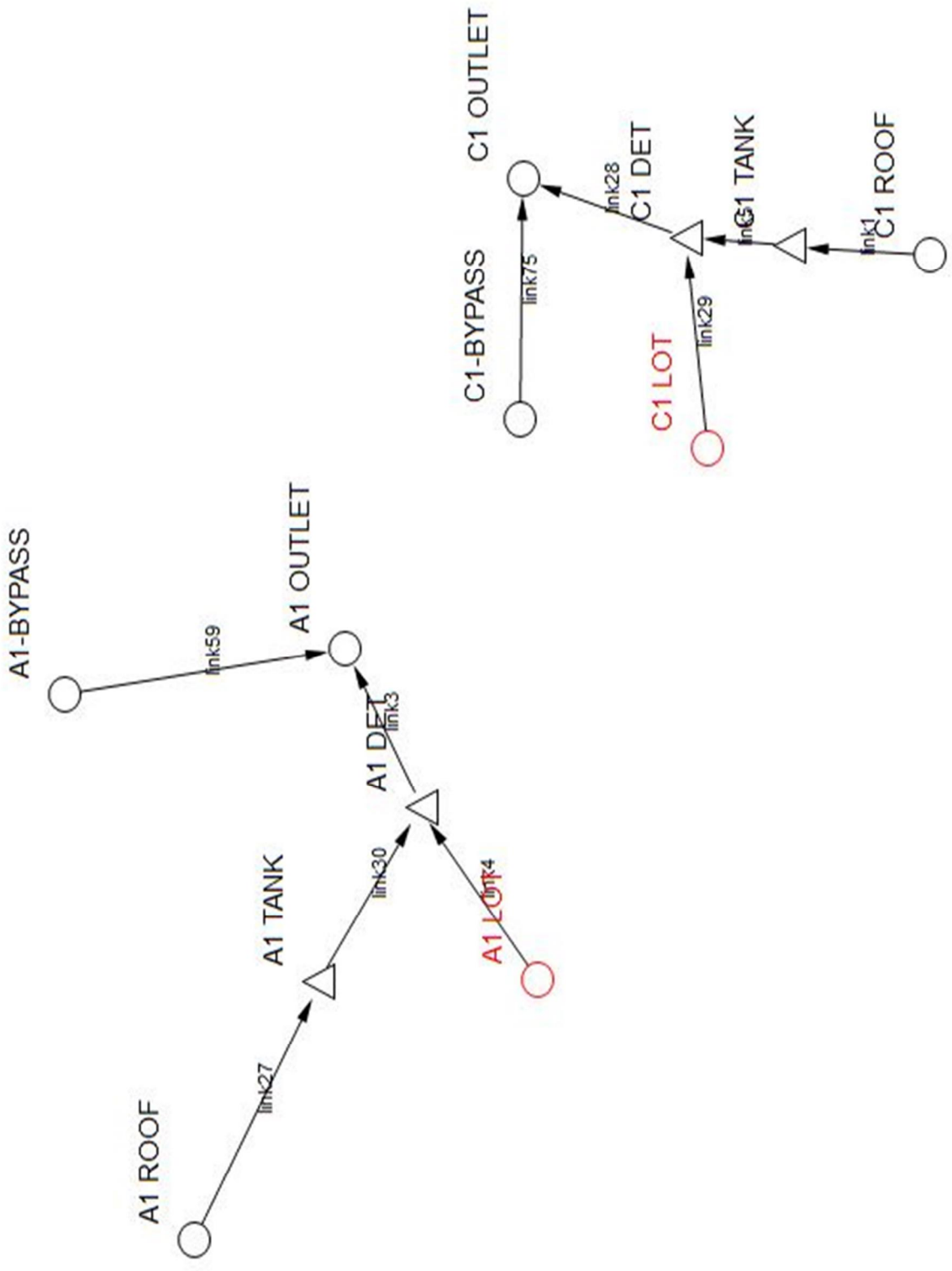
This report shows that from a stormwater management perspective, the proposed development can adequately meet the requirements set out by both Ryde City Council and the SEAR's and as such should be approved.

Appendix A

BMT WBM FLOODING REPORT

Appendix B

XP-RAFTS MODEL

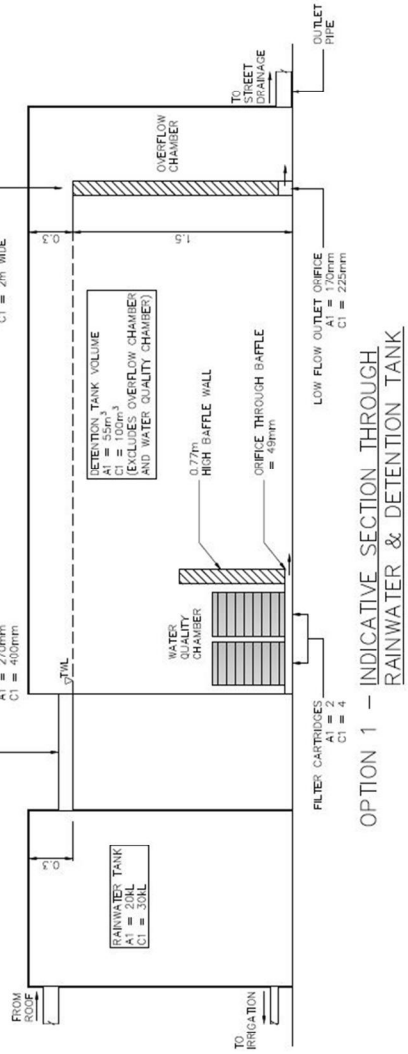


Appendix C

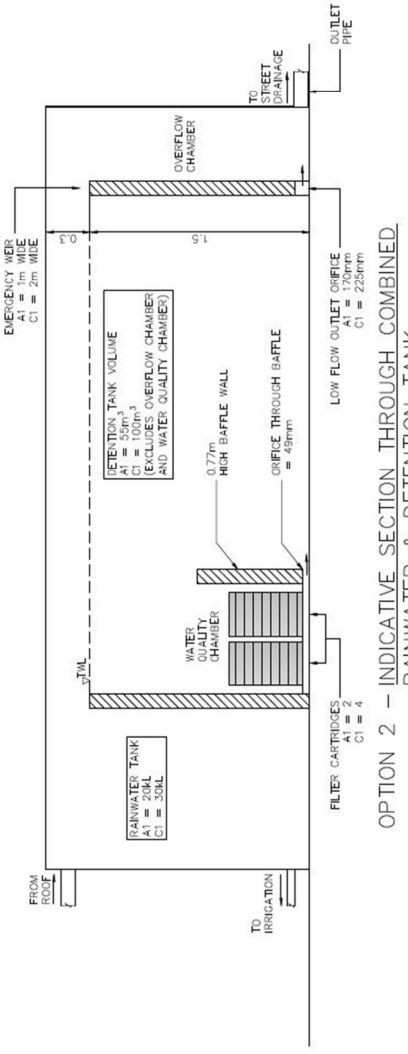
TANK DETAILS

NOTES:-

1. TANK DESIGNS ARE INDICATIVE ONLY AND ARE SUBJECT TO DETAILED DESIGN.
2. FINAL TANK CONFIGURATION SUBJECT TO BUILDING HYDRAULICS AND ARCHITECTURAL DESIGN.
3. OUTLET TO STREET DRAINAGE MAY BE PUMPED OR DRAINED VIA GRAVITY.
4. REFER TO STORMWATER 360 BROCHURE FOR STORMFILTER DETAILS



OPTION 1 – INDICATIVE SECTION THROUGH RAINWATER & DETENTION TANK



OPTION 2 – INDICATIVE SECTION THROUGH COMBINED RAINWATER & DETENTION TANK

Appendix D

STORMWATER 360 INFORMATION

EnviroPod®



Cost-effective, easily maintained gullypit insert

The EnviroPod is a proven gullypit insert that's been designed for easy retrofitting into new and existing stormwater gullypits, requiring no construction or land take. It removes a significant portion of sediment, litter, debris and other pollutants from water entering the stormwater system, and can be installed in either kerb inlet, standard pre-cast gullypits or manhole gullypits. Using low-cost passive screening and optional oil-adsorbent media, the EnviroPod can be customised to meet site-specific requirements with interchangeable polyester mesh screens ranging from 200 to 1600 micron pore size. Unless specified otherwise, 1600 micron filter mesh screening bags are supplied as standard.

> "Designed for easy fit into new or existing gully pits, the EviroPod® is a simple and effective solution for preventing gross pollutants from entering the stormwater system.

The EnviroPod is also effective as a pre-treatment device for use in a treatment train with hydrodynamic separators, filtration devices, ponds and wetlands. In many cases, it is often the most practical solution for retrofits.

Independently trialled and tested by city councils throughout Australia and New Zealand, and with installation of over 15,000 units including North America, the EnviroPod filter is the premier gully pit insert.

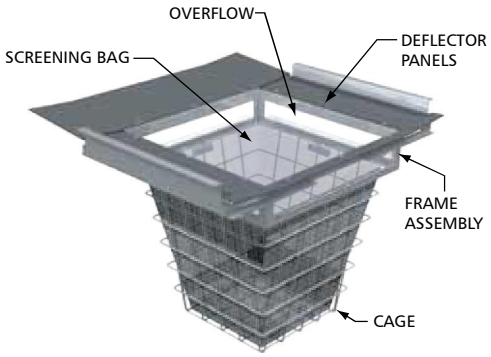
How does it work?

As stormwater enters a storm grate or gullypit, it passes over the oil adsorbent pillows (optional) and into the screening bag. Litter, debris, and other pollutants larger than the screening bag aperture are captured and retained, while the oil adsorbent pillows reduce oil and grease. If the screening bag is full, or during high flows, overflow is released through the overflow apertures in the frame assembly.



Design and operation

The EnviroPod consists of a screening bag supported by a filter box and structural cage. Modular plastic deflector panels attach to the filter box and guide the flow of water to the screening bag. The screening bag captures pollutants and allows the water to pass through to the outlet pipe. Optional absorbent material inside the screening bag captures oil and grease. Openings in the filter box allow water to bypass the screening bag during high flow conditions to prevent surface flooding.



Capabilities

- Captures sediment, litter, debris and other pollutants before they enter the drainage system
- Fits a range of gullypit sizes – ideal for retrofits
- Easy access – maintenance friendly design, generally no confined space entry required
- Bypasses high flows with no moveable parts
- Adjustable panels allow fine-tuning during installation for a perfect fit

Configurations

The kerb entry EnviroPod is inserted through the pit access cover and is supported by aluminium arms fixed to the kerb channel/pit wall.

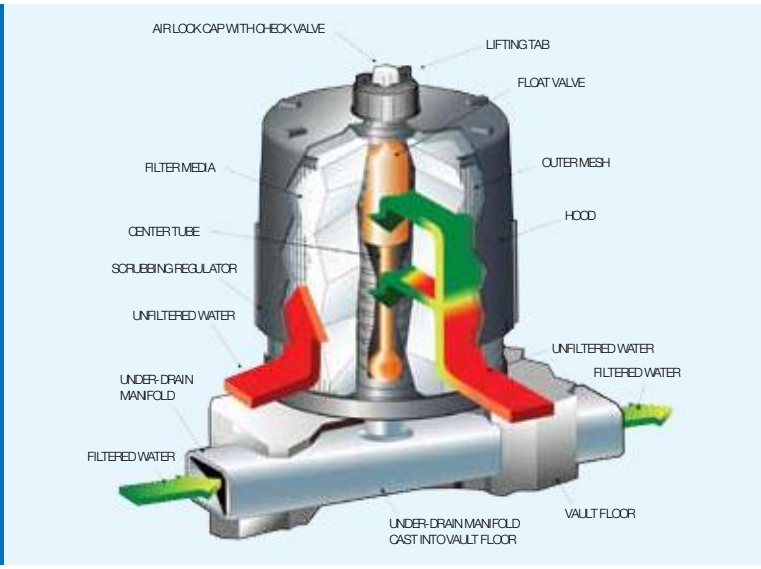
The Drop-In EnviroPod is designed to simply insert into the gullypit below the grate, again supported by aluminium arms fixed to the kerb channel/wall pit. Plastic deflector panels seal against the pit walls and direct flow into the filter box and through the mesh screens. There are two standard sizes to fit most pre-cast regular and kerb entry gullypits. Custom designs can be fabricated for non-standard pits.

Installation, inspection and maintenance

Traffic control must be well planned when installing, inspecting or maintaining EnviroPod Filters. All standard rules and regulations governing traffic control and safety while working on the road must be rigidly followed at all times. All potential hazards must be identified and control methods put in place prior to installing, inspecting or maintaining filters.



The Stormwater Management StormFilter



Removing the most challenging target pollutants

The Stormwater Management StormFilter is a best management practice (BMP) designed to meet stringent regulatory requirements. It removes the most challenging target pollutants – including fine solids, soluble heavy metals, oil, and total nutrients (inc. soluble) – using a variety of media. For more than two decades, StormFilter has helped clients meet their regulatory needs and through product enhancements the design continues to be refined for ease of use.

Why StormFilter is the best filter available

Superior hydraulics

- External bypass – protects treatment chamber from high flows and ensures captured pollutants are not lost during low frequency, high intensity storm events
- Multiple cartridge heights – minimises head loss to fit within the hydraulic grade line and shrink system size, reducing installation costs
- Multiple StormFilter configurations in use across the country

Reliable longevity

- One-of-a-kind self-cleaning hood – prevents surface blinding, ensures use of all media, and prolongs cartridge life
- Customised maintenance cycles – fewer maintenance events compared to similar products, which reduces costs over the lifetime of the system
- 12 years of maintenance experience – predictable long-term performance comes standard

Proven performance

- Only filter on the Australian market tested within Australia achieving best practice guidelines, for TSS, TP and TN
- Qualifies for a minimum 2 EMI 5 Green star credits
- Achieve water quality goals with confidence – easy approval speeds development assessment process
- 8th generation product – design refined and perfected over two decades of research and experience

Maximising your land use and development profitability

StormFilter systems are utilised in below ground systems. The advantages this offers over above ground systems includes:

- Land space saving that enable an increase in development density and reduce sprawl
- The potential to add car parking, increase building size, and develop out parcels

In addition, StormFilter's compact design reduces construction and installation costs by limiting excavation.

Media options

Our filtration products can be customised using different filter media to target site-specific pollutants. A combination of media is often recommended to maximise pollutant removal effectiveness.



PhosphoSorb™ is a lightweight media built from a Perlite-base that removes total phosphorus (TP) by adsorbing dissolved-P and filtering particulate-P simultaneously.



Perlite is naturally occurring puffed volcanic ash. Effective for removing TSS, oil and grease.



Zeolite is a naturally occurring mineral used to remove soluble metals, ammonium and some organics.



GAC (Granular Activated Carbon) has a micro-porous structure with an extensive surface area to provide high levels of adsorption. It is primarily used to remove oil and grease and organics such as PAHs and phthalates.

	PhosphoSorb	Perlite	ZPG	Zeolite	GAC
Sediments	•	•	•		
Oil and Grease	•	•	•		
Soluble Metals	•		•	•	
Organics			•	•	•
Nutrients	•	•	•	•	•
Total Phosphorus	•		•		

Note: Indicated media are most effective for associated pollutant type. Other media may treat pollutants, but to a lesser degree.

ZPG™ media, a proprietary blend of zeolite, perlite, and GAC.

Cartridge options

With multiple cartridge heights available, you now have a choice when fitting a StormFilter system onto your site.

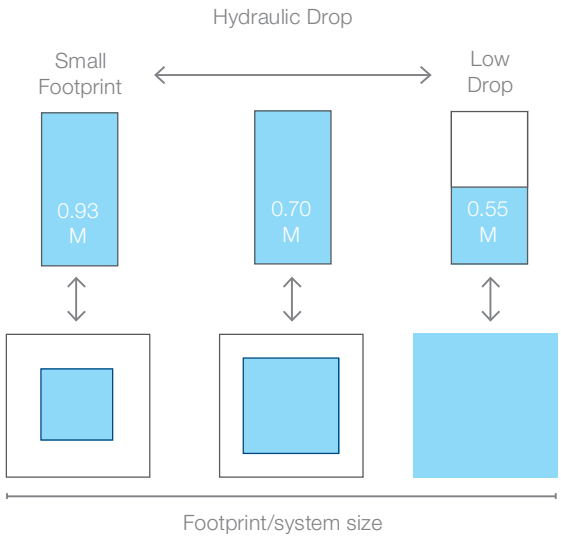
The 69cm cartridge provides 50% more treatment than the previously standard 46cm cartridge, which enables you to meet the same treatment standards with fewer cartridges, and via a smaller system.

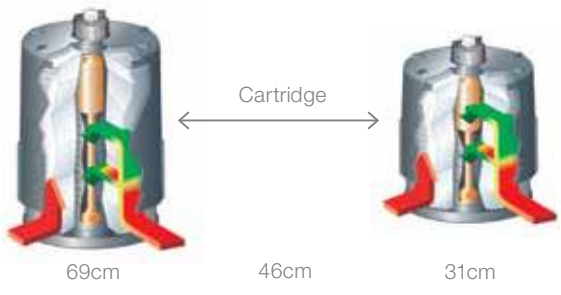
If you are limited by hydraulic constraints, the low drop cartridge provides filtration treatment with only 0.55m of headloss.

Cartridge flow rates

Cartridge Type	Hydraulic Drop	Treatment Capacity (l/sec)	
		0.7 l/s/m²	1.4 l/s/m²
StormFilter 69cm	0.93 m	0.71	1.42
StormFilter 46cm	0.70 m	0.47	0.95
StormFilter Low Drop	0.55 m	0.32	0.63

Selecting cartridge height





Configurations and applications

The StormFilter technology can be configured to meet your unique site requirements. Here are a few of the most common configurations, however many other configurations are available. A Stormwater360 engineer can assist you evaluate the best options for your site or you can find out more by downloading the StormFilter Configuration Guide from www.stormwater360.com.au

Upstream treatment configurations

The following suite of StormFilter configurations are easily incorporated on sites where WSUD is recommended. These low-cost, low-drop, point-of-entry systems also work well when you have a compact drainage area.

GullyPit StormFilter

Combines a gullypit, a high flow bypass device, and a StormFilter cartridge in one shallow structure.

- Treats sheet flow
- Uses drop from the inlet grate to the conveyance pipe to drive the passive filtration cartridge
- No confined space required for maintenance



Gully inlet

- Accommodates kerb inlet openings from 900 to 3000mm long
- Uses drop from the kerb inlet to the conveyance pipe to drive the passive filtration cartridges



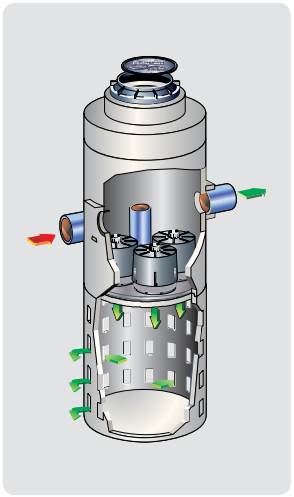
Linear grate

- Can be designed to meet volume based sizing requirements
- Can be installed in place of and similar to a typical gullypit
- No confined space entry required for maintenance
- Accommodates up to 29 StormFilter cartridges



Infiltration/retrofit configuration infiltration

- Provides treatment and infiltration in one structure
- Available for new construction and retrofit applications
- Easy to install
- Re-charge groundwater and reduces run-off



Roof runoff treatment configuration

Down pipe

- Easily integrated into existing gutter systems to treat pollution from rooftop runoff
- Fits most downpipe configurations and sizes; single or dual-cartridge models available
- Treats up to 1300m^2 of rooftop area per dual-cartridge system

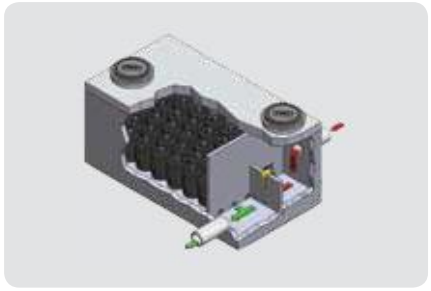


Downstream treatment configurations

Conventional stormwater treatment involves collecting, conveying and treating stormwater runoff with an end-of-pipe treatment system before discharging off-site. StormFilter configurations suitable for these applications are listed below and can be engineered to treat a wide range of flows.

Peak diversion

- Provides off-line bypass and treatment in one structure
- Eliminates material and installation cost of additional structures to bypass peak flows
- Reduces the overall footprint of the treatment system, avoiding utility and right-of-way conflicts
- Internal weir allows high peak flows with low hydraulic head losses
- Accommodates large inlet and outlet pipes (up to 900mm) for high flow applications



Vault / manhole

- Treats small to medium sized sites
- Simple installation – arrives on-site fully assembled
- May require off-line bypass structure



High flow

- Treats flows from large sites
- Consists of large, precast components designed for easy assembly on-site
- Configurations available, include, Panel Vault and Cast-In-Place



Volume

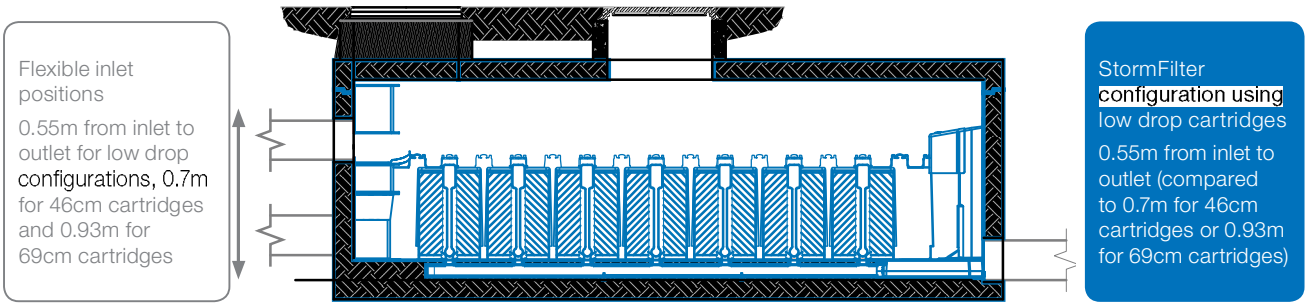
- Meets volume-based stormwater treatment regulations
- Captures and treats specific water quality volume (WQv)
- Provides treatment and controls the discharge rate
- Can be designed to capture all, or a portion, of the WQv



Filtration for low drop sites

Designing for limited drop

In some cases, site constraints limit the hydraulic drop that is available to drive the passive filtration cartridges. Following are a variety of solutions to either create the required drop or work around the limited drop without impacting the performance of the system.



Solutions for Low Drop Sites

Site modfications

Reduce pipe slope

Use an alternate pipe material with a lower Manning's n value for a portion of the site and reduce the pipe slope.

Reduce pipe cover

Use controlled density fill (CDF) at the front-end of the conveyance system to minimise pipe cover and raise the conveyance system. CDF, a method of pouring concrete with fine aggregate (sand vs. gravel) around pipe, allows the use of most pipe materials with limited cover.

Drain inlet treatment

Substitute several shallow inlet configurations for the single end-of-pipe system. Shallow options include the Catchpit/Gullypit StormFilter, CurbInlet StormFilter, Manhole StormFilter and the Linear StormFilter. These systems still require the normal drop (0.7m for 46cm cartridges) but utilise the drop into the conveyance system to drive the cartridges.

Provide pumping system

Stormwater360 offers the Integrated Pumping System (IPS), which can be designed in tandem with filtration system sizing.

Treatment system modfications

Use low drop cartridges

The StormFilter can be configured with low drop cartridges that activate at 31cm, reducing the overall head loss to only 0.55m, compared to 0.7m for the 46cm cartridge or 0.93m for the 69cm cartridge.

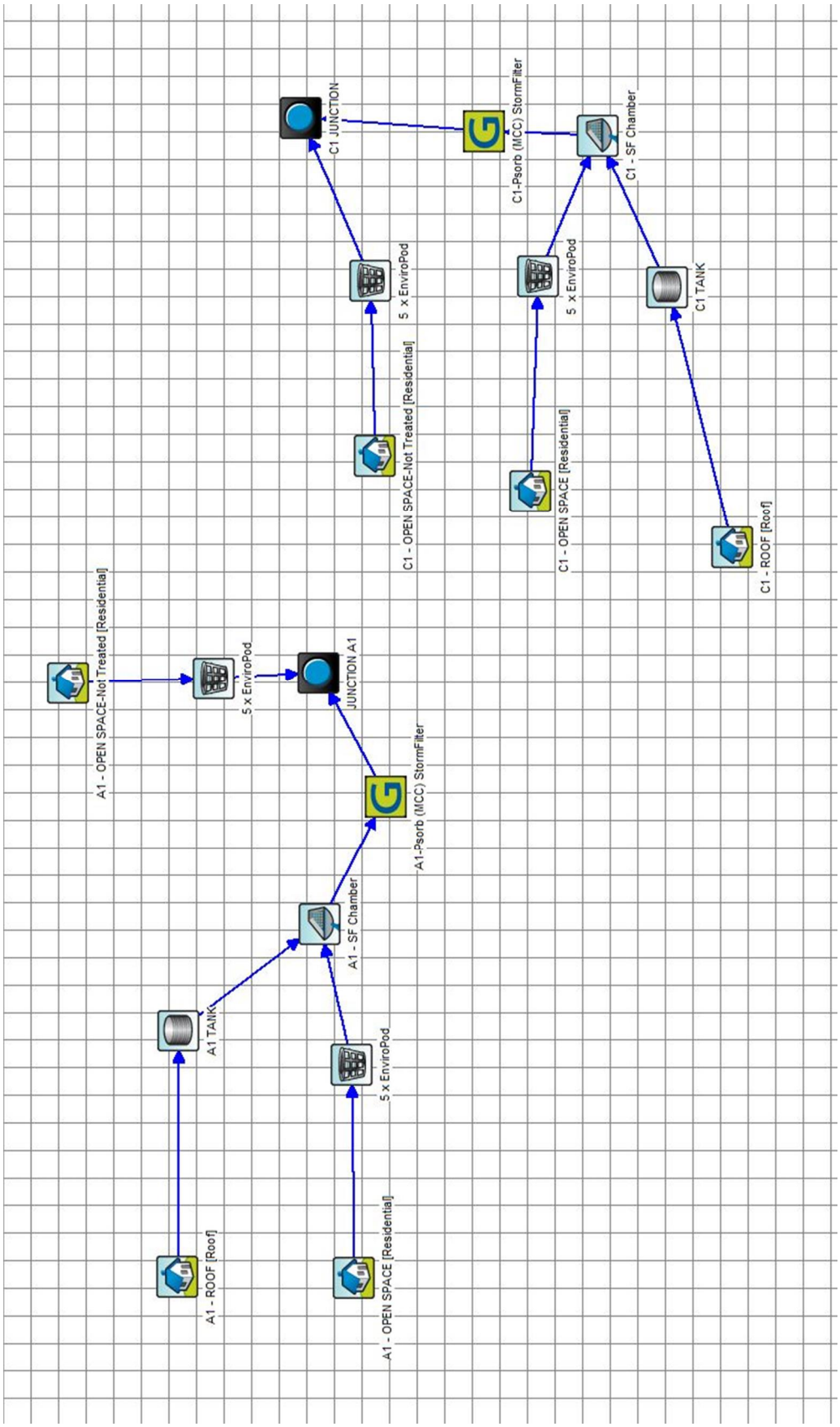
Surcharge the inlet pipe

Backing-up water into the conveyance system can create the necessary drop to drive the StormFilter cartridges. This will affect the HGL and increase the volume of water required to activate the cartridges, which could have a detrimental effect on system longevity. The following design modifications mitigate these risks:

- Confer with a Stormwater360 design engineer before surcharging the inlet pipe
- Verify this is an acceptable practice in your local jurisdiction
- Modify the overall system design to accommodate the increased HGL
- Calculate the additional treatment volume and consider using more cartridges

Appendix E

MUSIC MODEL



Exhibits

NOTE:
1. OUTLETS TO SHRIMPTONS CREEK SUBJECT TO DETAILED DESIGN

LEGEND

- SITE BOUNDARY
- STAGE 1 DA BOUNDARY
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- MAJOR CONTOURS
- MINOR CONTOURS
- PROPOSED KERB
- PROPOSED STORMWATER
- FUTURE STORMWATER
- PROPOSED STORMWATER OUTLET
- PROPOSED LINTEL
- PROPOSED GSIP
- INDICATIVE FUTURE RAIN GARDEN

HERRING ROAD
EPPING ROAD
LYON PARK RO
CREEK
SHRIMPTONS
ROAD No.1
ROAD No.2
ROAD No.3
LOT A1
LOT A2
LOT A3
LOT C1
FUTURE LOT B1.1
FUTURE LOT B1.2
FUTURE LOT B2
FUTURE LOT B3
FUTURE LOT C2
FUTURE LOT C3
FUTURE LOT C4
FUTURE LOT D1
FUTURE LOT D2
FUTURE LOT D3
FUTURE LOT D4
FUTURE DRIVEWAY No.1
FUTURE DRIVEWAY No.2
FUTURE DRIVEWAY No.3
FUTURE DRIVEWAY No.4
FUTURE LOW FLOW BYPASS TO RAIN GARDEN
INDICATIVE FUTURE RAIN GARDEN LOCATION. TO BE CONFIRMED BY LANDSCAPE ARCHITECT

CONCEPT STORMWATER PLAN

SCALE 1:1500

ver.	date	comment	drawn	pm	level information	scale (A3 original size)	notes
C	04.10.18	ISSUED FOR APPROVAL	KT	BM	DATUM: N/A CONTOUR INTERVAL: 1.0m	0 30 60 75m SCALE: 1:1500 (FULL)	

drawing title:

STAGE 1 - CONCEPT STORMWATER PLAN

location: HERRING RD & EPPING RD, MACQUARIE PARK

council: RYDE CITY COUNCIL

dwg ref: 300001(1)-EX-001

client: ASPIRE

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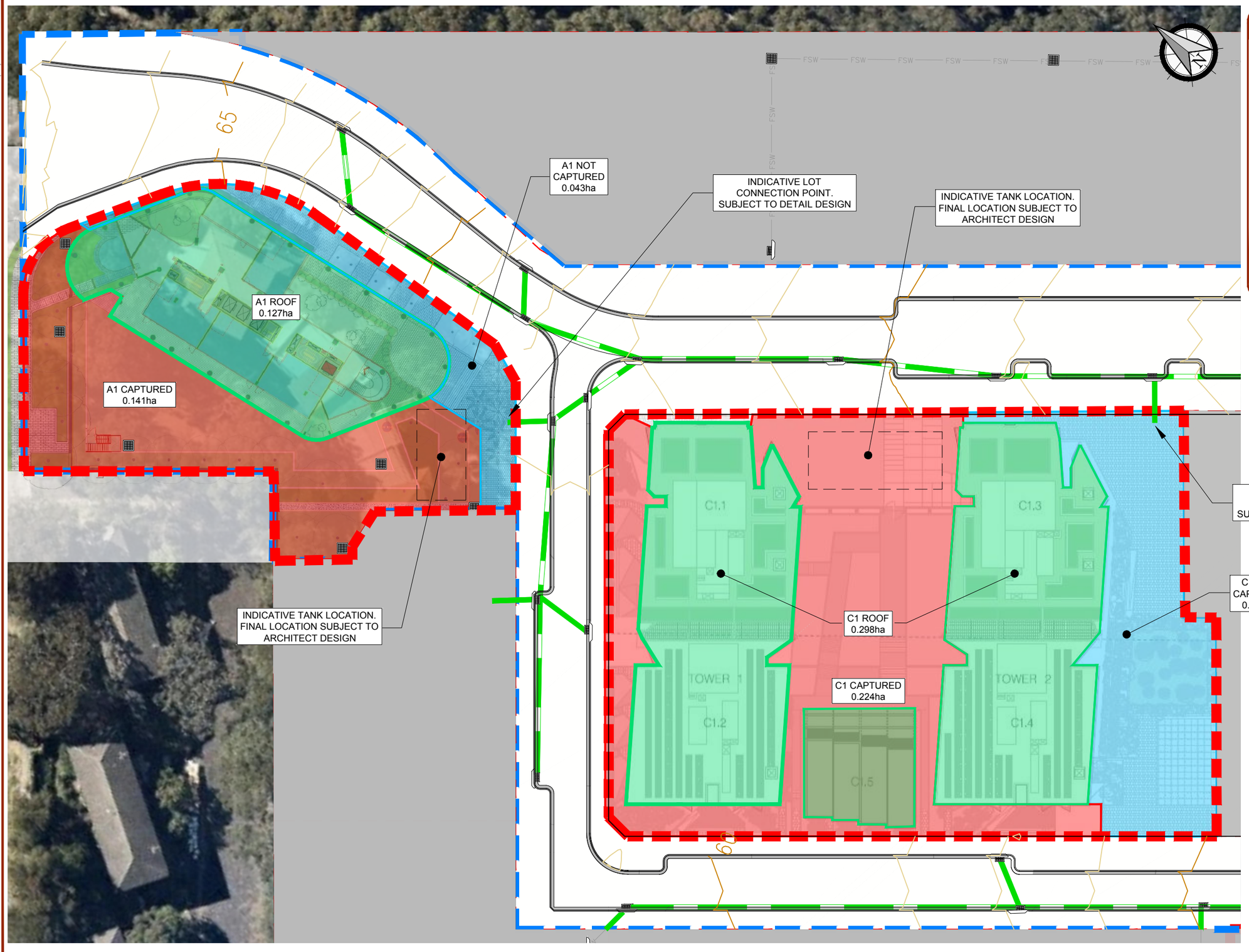
• project management • civil engineering • infrastructure • superintendency • economic analysis • social impact • town planning • surveying • development feasibility • visualisation • urban design

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LEGEND

- OVERALL CATCHMENT AREA
- ROOF CATCHMENT AREA
- LOT AREA NOT CAPTURED
- LOT AREA CAPTURED
- INDICATIVE TANK LOCATION
- PROPOSED KERB
- PROPOSED STORMWATER
- PROPOSED LINTEL
- PROPOSED GSIP

NOTE:
1. STORMWATER PITS WITHIN LOTS SHOWN INDICATIVELY ONLY. FINAL LOCATION SUBJECT TO ARCHITECT DESIGN.

ver.	date	comment	drawn	pm	level information	scale (A3 original size)	notes
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drawing title:

STAGE 1 - CATCHMENT PLAN

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dwg ref: 300001(1)-EX-002

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STAGING SUMMARY

- STAGE 1A
- STAGE 1B
- STAGE 1C
- STAGE 1 BUILDING WORKS

*image source: Nearmap (20/11/2017)

STAGING PLAN

SCALE 1:1500

ver.	date	comment	drawn	pm	level information	scale (A3 original size)	notes
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CONSTRUCTION STAGING

location: HERRING RD & EPPING RD, MACQUARIE PARK

council: RYDE CITY COUNCIL

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NOTE:
1. DETAILED EROSION AND SEDIMENT CONTROLS PLANS TO BE PROVIDED STAGE BY STAGE.
2. EROSION AND SEDIMENT CONTROLS TO SUIT THE SITE AT TIME OF CONSTRUCTION
3. FURTHER DETAILS AROUND TEMPORARY WORKS TO BE PROVIDED AT CC STAGE.

LEGEND

- SITE BOUNDARY
- STAGE BOUNDARY
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED KERB
- PROPOSED STORMWATER
- PROPOSED STORMWATER OUTLET
- SEDIMENT/SILT FENCING
- NO-GO FENCING
- DIVERSION DRAIN
- TEMPORARY SWALE
- STRAWBALES
- GRAVEL/SAND BAGS
- SITE ACCESS/SHAKER RAMP
- TEMPORARY SEDIMENT BASIN

HERRING ROAD
LYON PARK ROAD
EPPING ROAD
SHRIMPTONS
CREEK
LOT A1
LOT C1
ROAD No.1
ROAD No.2
ROAD No.3
TIE INTO SALES SUITE LEVELS
TEMPORARY TURNING HEAD
TEMPORARY BASIN
TEMPORARY BASIN
FUTURE RAIN GARDEN TO BE USED AS TEMPORARY SEDIMENT BASIN
FSW
65
50

STAGE 1A - EROSION AND SEDIMENT CONTROL/TEMPORARY WORKS PLAN

SCALE 1:1500

ver.	date	comment	drawn	pm	level information	scale (A3 original size)	notes
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drawing title:
STAGE 1A - EROSION & SEDIMENT CONTROL/TEMPORARY WORKS PLAN

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council: RYDE CITY COUNCIL
dwg ref: 300001(1)-EX-004
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2. EROSION AND SEDIMENT CONTROLS TO SUIT THE SITE AT TIME OF CONSTRUCTION
3. FURTHER DETAILS AROUND TEMPORARY WORKS TO BE PROVIDED AT CC STAGE.

LEGEND

- SITE BOUNDARY
- STAGE BOUNDARY
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED KERB
- PROPOSED STORMWATER
- PROPOSED STORMWATER OUTLET
- SEDIMENT/SILT FENCING
- NO-GO FENCING
- DIVERSION DRAIN
- TEMPORARY SWALE
- STRAWBALES
- GRAVEL/SAND BAGS
- SITE ACCESS/SHAKER RAMP
- TEMPORARY SEDIMENT BASIN

HERRING ROAD

LYON PARK ROA

EPPING ROAD

ROAD No.1

ROAD No.2

ROAD No.3

TEMPORARY BASIN

TEMPORARY BASIN

TEMPORARY BASIN

FUTURE RAIN GARDEN TO BE USED AS TEMPORARY SEDIMENT BASIN

CREEK

SHRIMPTONS

FSW

65

60

STAGE 1B - EROSION AND SEDIMENT CONTROL/TEMPORARY WORKS PLAN

SCALE 1:1500

ver.	date	comment	drawn	pm	level information	scale (A3 original size)	notes
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drawing title:

STAGE 1B - EROSION & SEDIMENT CONTROL/TEMPORARY WORKS PLAN

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council: RYDE CITY COUNCIL

dwg ref: 300001(1)-EX-005

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2. EROSION AND SEDIMENT CONTROLS TO SUIT THE SITE AT TIME OF CONSTRUCTION
3. FURTHER DETAILS AROUND TEMPORARY WORKS TO BE PROVIDED AT CC STAGE.

LEGEND

- SITE BOUNDARY
- STAGE BOUNDARY
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED KERB
- PROPOSED STORMWATER
- PROPOSED STORMWATER OUTLET
- SEDIMENT/SILT FENCING
- NO-GO FENCING
- DIVERSION DRAIN
- TEMPORARY SWALE
- STRAWBALES
- GRAVEL/SAND BAGS
- SITE ACCESS/SHAKER RAMP
- TEMPORARY SEDIMENT BASIN

HERRING ROAD

LYON PARK ROAD

EPPING ROAD

ROAD No.1

ROAD No.2

ROAD No.2

ROAD No.3

CREEK

SHRIMPTONS

TEMPORARY BASIN

TEMPORARY BASIN

TEMPORARY BASIN

TEMPORARY BASIN

FUTURE RAIN GARDEN TO BE USED AS TEMPORARY SEDIMENT BASIN

FSW

65

60

STAGE 1C - EROSION AND SEDIMENT CONTROL/TEMPORARY WORKS PLAN

SCALE 1:1500

ver.	date	comment	drawn	pm	level information	scale (A3 original size)	notes
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drawing title:
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council: RYDE CITY COUNCIL

dwg ref: 300001(1)-EX-006

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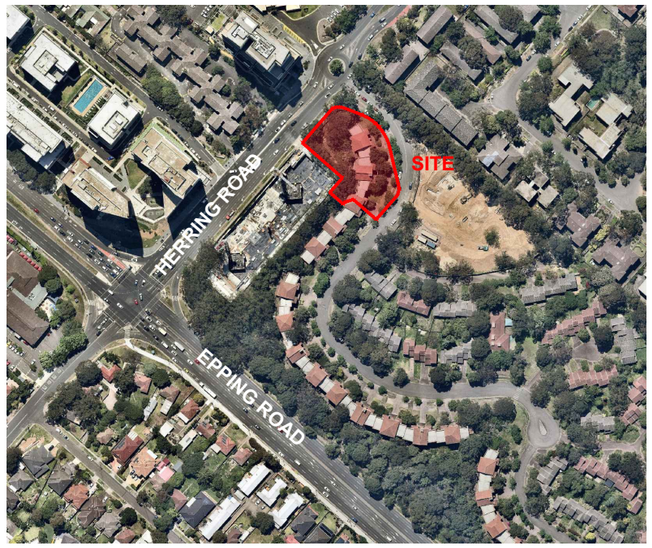
• project management • civil engineering • infrastructure • superintendency • economic analysis • social impact • town planning • surveying • development feasibility • visualisation • urban design

Plotted By: Ben Myles Plot Date: 04/10/18 9:39:49 AM Cad File: S:\300001\DRAWINGS\REPORT DRAWINGS\STAGE 1 STORMWATER\300001(1)-EX-006-C.DWG
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300001(A1)-ENG-001

ENGINEERING PLANS OF
' PROPOSED OSD TANK '
BUILDING A1 MIDTOWN, IVANHOE ESTATE
MACQUARIE PARK, 2322



LOCALITY SKETCH
NOT TO SCALE

M.G.A.

INDEX OF DRAWINGS

DRAWING No.	NAME
300001(A1)-ENG-001	COVER SHEET, INDEX OF DRAWINGS & LOCALITY SKETCH
300001(A1)-ENG-003	OVERALL SITE PLAN
300001(A1)-ENG-461	OSD TANK DETAILS - SHEET 1
300001(A1)-ENG-462	OSD TANK DETAILS - SHEET 2

DIAL1100
BEFORE YOU DIG

ISSUED FOR CONSTRUCTION

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	30.07.21	ISSUED FOR COORDINATION	B.M.	D.P.T.	B.M.	B.M.
B	05.08.21	AMENDED TANK LAYOUT	B.M.	P.B.	B.M.	B.M.
1	23.08.21	FOR CONSTRUCTION	B.M.	J.J.	B.M.	B.M.

SCALES

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ABN 62 129 445 398

CLIENT
PARKVIEW

PROPERTY DESCRIPTION
BUILDING A1 MIDTOWN,
IVANHOE ESTATE
MACQUARIE PARK, 2322

SURVEYED | DATUM

PROJECT
PROPOSED OSD TANK

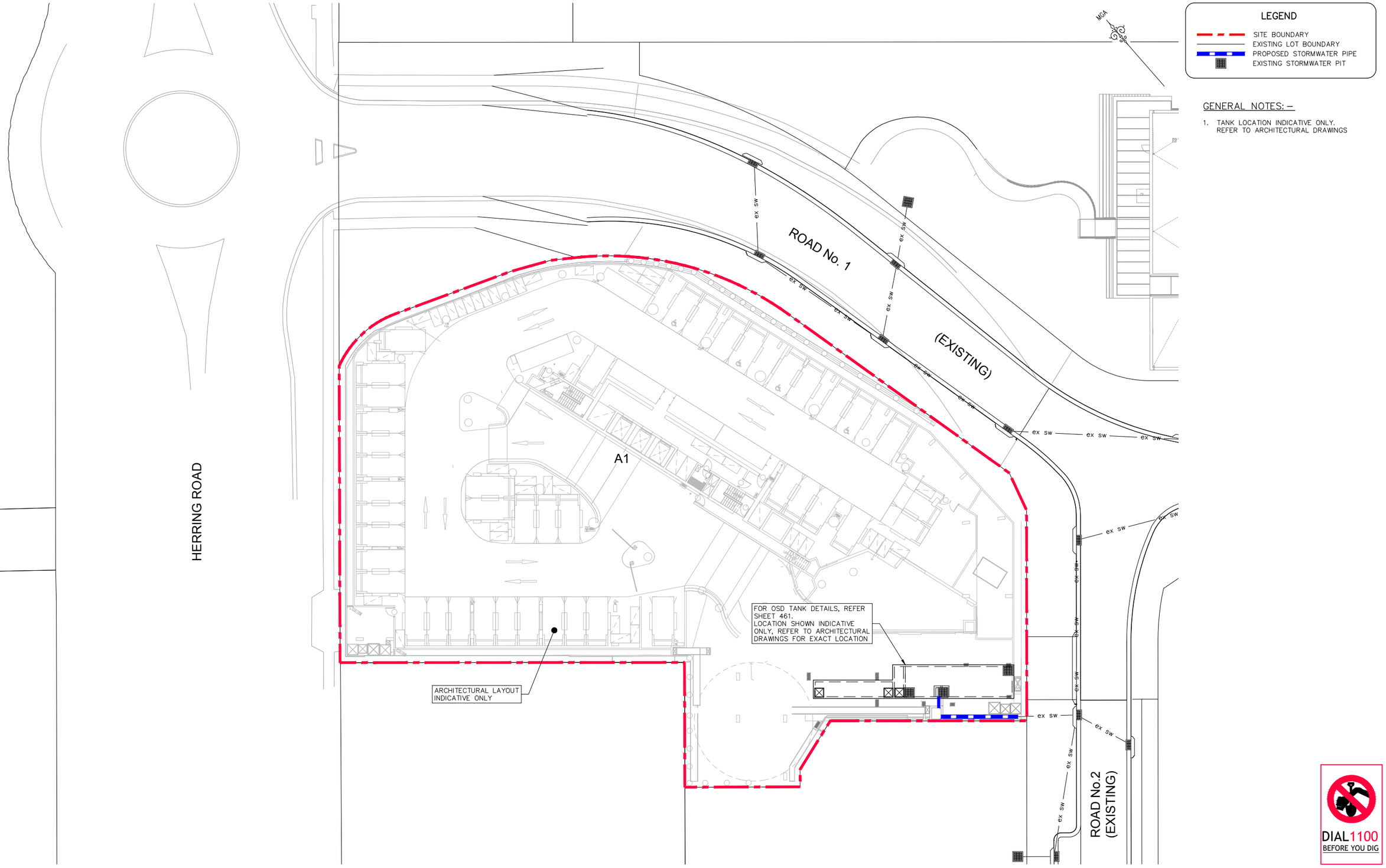
PLAN TITLE
COVER SHEET, INDEX OF DRAWINGS
& LOCALITY SKETCH

PROJECT No.	DISCIPLINE	NUMBER	REV.
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300001(A1)-ENG-003



OVERALL SITE PLAN

SCALE 1:200

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1	23.08.21	FOR CONSTRUCTION	B.M.	J.J.	B.M.	B.M.

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CLIENT: PARKVIEW

PROPERTY DESCRIPTION: BUILDING A1 MIDTOWN, IVANHOE ESTATE MACQUARIE PARK, 2322

SURVEYED: ADWJ

DATUM: AHD GDA 94

PROJECT: PROPOSED OSD TANK

PLAN TITLE: OVERALL SITE PLAN

PROJECT No. 300001(A1) – DISCIPLINE CV – NUMBER 003 REV. 1

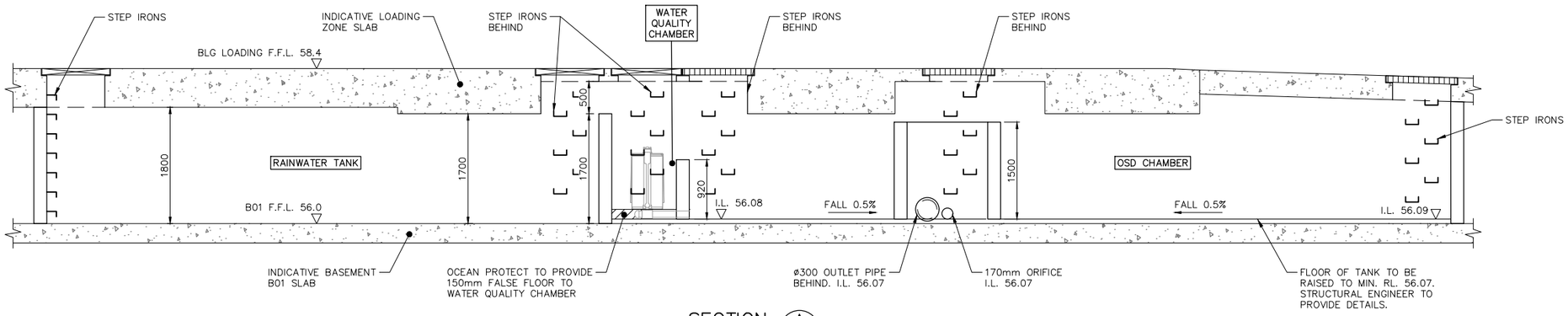
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300001(A1)-ENG-461

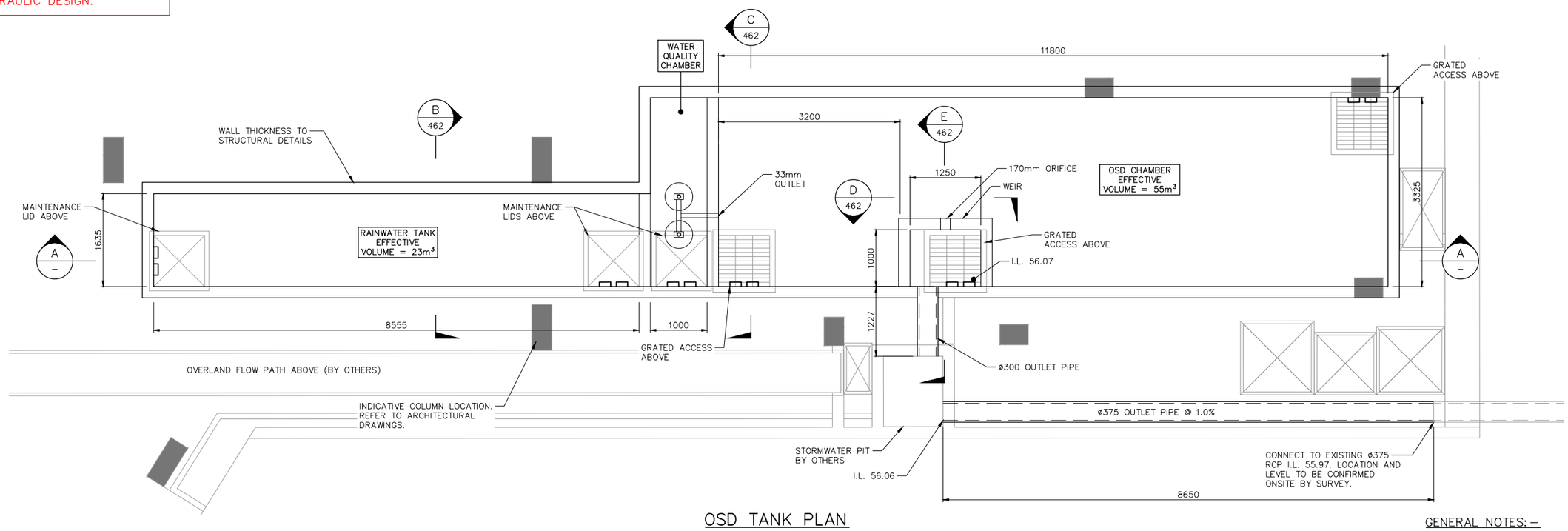
GENERAL NOTES:

1. OUTLET PIPE TYPE & CONSTRUCTION METHODOLOGY TO BE NOMINATED BY HYDRAULIC ENGINEER.
2. REFER TO OCEAN PROTECT GUIDELINES FOR WQ CHAMBER CONSTRUCTION.



SECTION A
SCALE 1:40

NOTE:
1. PENETRATIONS FOR INLET PIPES NOT SHOWN. REFER TO HYDRAULIC DESIGN.



OSD TANK PLAN
SCALE 1:40

GENERAL NOTES: –

1. TANK LOCATION INDICATIVE ONLY. REFER TO ARCHITECTURAL DRAWINGS

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1	23.08.21	FOR CONSTRUCTION	B.M.	J.J.	B.M.	B.M.

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PROPERTY DESCRIPTION: BUILDING A1 MIDTOWN, IVANHOE ESTATE MACQUARIE PARK, 2322

PROJECT: PROPOSED OSD TANK

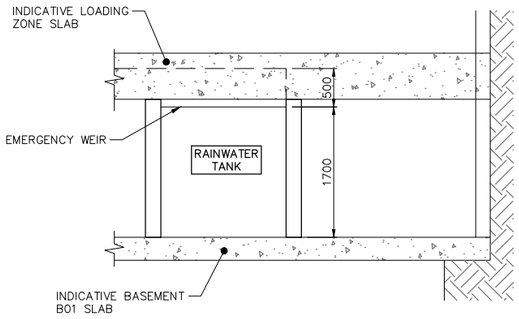
PLAN TITLE: OSD TANK DETAILS SHEET 1

SURVEYED	DATUM	PROJECT No.	DISCIPLINE	NUMBER	REV.
ADWJ	AHD GDA 94	300001(A1) –	CV	– 461	1

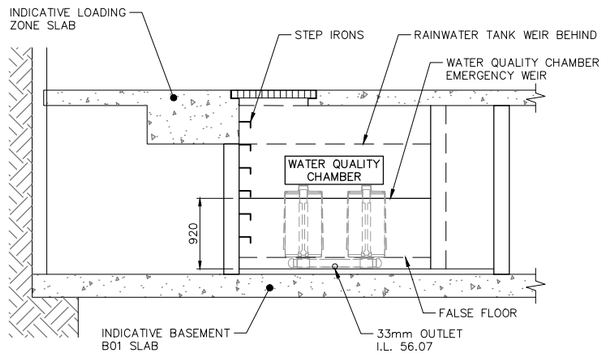
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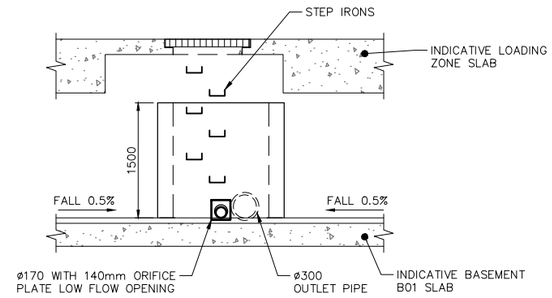
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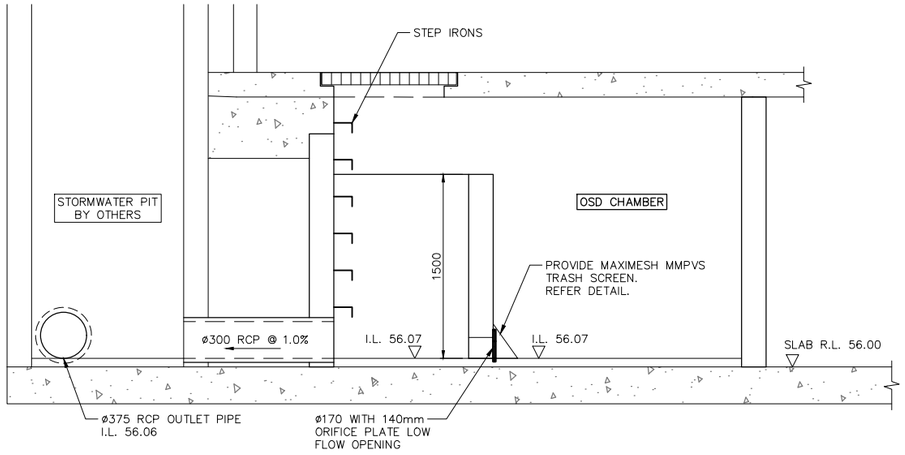
SECTION B
SCALE 1:40
461



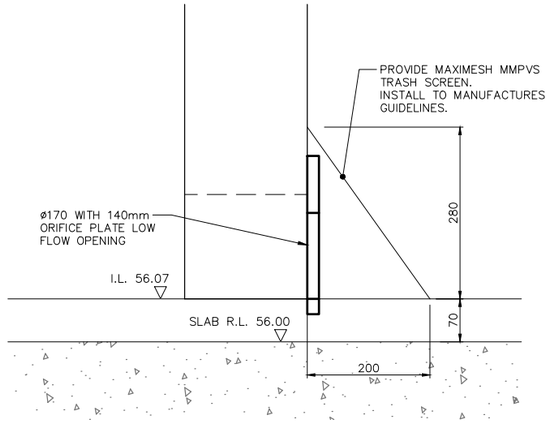
SECTION C
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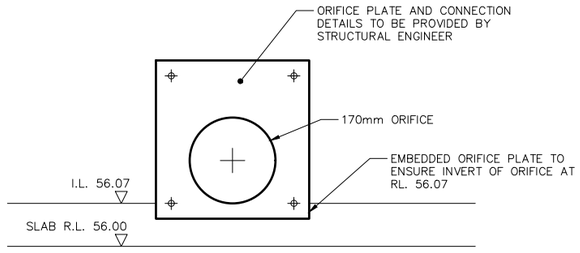
SECTION D
SCALE 1:40
461



SECTION E
SCALE 1:25
461



TRASH SCREEN DETAIL
SCALE 1:5



ORIFICE PLATE DETAIL
SCALE 1:5

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1	23.08.21	FOR CONSTRUCTION	B.M.	J.J.	B.M.	B.M.

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SCALES
A1 1:5 — 0, 0.125, 0.25m — A3 1:10
A1 1:25 — 0, 0.25, 0.50, 0.75, 1.00, 1.25m — A3 1:50
A1 1:40 — 0, 1.0, 2.0m — A3 1:80
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PROPERTY DESCRIPTION
BUILDING A1 MIDTOWN,
IVANHOE ESTATE
MACQUARIE PARK, 2322

SURVEYED ADWJ
DATUM AHD GDA 94

PROJECT
PROPOSED OSD TANK

PLAN TITLE
OSD TANK DETAILS
SHEET 2

PROJECT No.	DISCIPLINE	NUMBER	REV.
300001(A1) –	CV	– 462	1

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CONSTRUCTION MANAGEMENT PLAN FOR:

Ivanhoe Estate – Building A1, Macquarie Park NSW



1 INTRODUCTION / SCOPE

This document outlines a Construction Management Plan for the associated works involved with Frasers Property Australia - Ivanhoe Estate – Building A1 referred to as 'Ivanhoe Estate – Building A1' situated within the Ivanhoe Estate off Herring Road, Macquarie Park NSW, which falls within the Ryde City Council. The Ivanhoe Estate – Building A1 Apartments is the first residential apartment project within the Ivanhoe Estate an is located directly off the main entry to the estate, bounded by Herring Road, Ivanhoe Place, the adjacent Building A2 site and the neighbouring COLI project.

The fundamental aim of this Plan is to ensure all construction is properly facilitated, integrated, and coordinated to deliver certainty to the objectives of the Project.

This Construction Management Plan (CMP) has been prepared to communicate the management strategies that will be utilised on the construction of the project. It describes the construction methodologies, processes, and procedures from site establishment through to practical completion.

This plan documents Parkview Construction Pty Ltd construction management planning for this tender submission in line with the Project Brief provided by the Client for the above-mentioned project.

1.1 PROJECT DETAILS

PROJECT NAME	**Ivanhoe Estate – Building A1**
ORGANISATION NAME	Parkview Constructions Pty Ltd
ORGANISATION ADDRESS	Level 7, 60 Union Street, Pyrmont NSW 2009
SITE ADDRESS	**Building A1, Ivanhoe Place, Macquarie Park NSW 2113**
PHONE	(02) 9506 1500
ACN / ABN	41 078 064 963
PROPOSED PROJECT WORKS	The proposed project works are for: • 269 residential apartments • Childcare cold shell • Three levels of basement car parking, storage and plant rooms • Common landscaped area surrounding the building on Ground Floor and throughout the niches up the tower • Public Domain works to the back of kerb around the A1 site
PROJECT COMMENCEMENT DATE	16 September 2021
ESTIMATED PROJECT COMPLETION DATE	17 July 2023
PROJECT DIRECTOR	Anthony Sakkal
PROJECT MANAGER	Antonio Screnci
SITE MANAGER	Peter Doyle

1.2 SCOPE OF PLAN

Construction of a residential building comprising 269 units known as 'Ivanhoe Estate – Building A1'. The apartments are contained within a single 24 story tower on the site. The construction of this project also comprises of:

- A 3 level basement car park to accommodate 233 car spaces
- Carpark areas inclusive of the residential bin store, storage cages for the dwellings, loading bay, vehicle turntable, and plant rooms.
- Chamber Substation
- Stormwater easement and Mains Sewer diversion
- Landscape works within the A1 site surrounding the tower on Ground floor.
- Landscape works within the tower from Level 02 to Level 15 situated within the niches of the tower
- Public Domain works to the back of kerb around the A1 site

Construction Management Plan (CMP) describes the construction methodologies, processes and procedures from construction documentation completion, site establishment and works through to practical completion.

All other management plans not included in this document will be addressed in separate reports by the relevant consultants.

1.3 SITE AND LOCATION DESCRIPTION

The site located within the Ivanhoe Estate development which is currently being redeveloped by a joint venture between Frasers Property and the Land and Housing Corporation. It is bounded by an Herring Road to the North-West, neighbouring COLI apartments, and adjacent future stage A2 to the South-West, and Ivanhoe Place to the East.
The site has a total area of 3,186 m². The site has been demolished and is currently awaiting the commencement of the Early Works Contractor which will be completing bulk excavation and shoring to the site.



1.4 INTERFACE WITH OTHER PROJECT PLANS AND PROCEDURES

The Construction Management Plan forms part of an integrated set of Project Management Plans and should be read in conjunction with these other management plans. The Construction Management Plan - will be updated post project award to include these management sub-plans;

- Work Health Safety & Environment Management Plan
- Stakeholder Management Plan
- Community Consultation Plan
- Industrial Relations Plan
- Traffic Management Plan
- Noise, Vibration & Dust Management Plan
- Air Quality Management Plan

- Quality Management Plan
- Design Management Plan
- Development Application Plan
- Parkview Programming Procedure
- Completion, Commissioning and Handover Plan

1.5 MANAGEMENT AND TRAINING

Each Parkview team member has both general and specific responsibilities regarding the implementation of this Construction Management Plan.

The Parkview Constructions project staff is to have general and specific responsibilities regarding the implementation of this Construction Management Plan. Parkview Constructions project staff and subcontractors are required to undergo a site induction which outlines the construction procedures and management framework.

All Parkview staff and subcontractors are required to undergo a site induction which outlines the construction procedures and management framework specific to the project. The inductions are to ensure a common-sense approach to safety, responsible environmental practices and awareness needed to deliver the project in accordance with the relevant regulations, standards, and client expectations.

A record of all site inducted personnel will be retained on site. All site personnel are required to have completed their White Card Training. A copy of the White Card will be recorded and kept on site. This requirement will be confirmed during the site induction.

The Parkview Constructions Project Manager is to ensure that all personnel are made aware of their obligations under this Construction Management Plan and the general compliance with Regulations, Acts and Codes of Practices having jurisdiction over the works, namely:

- Co-ordination as to the implementation of the Construction Management Plan
- Monitoring the implementation of inspections and test plans to the works;
- Ensuring personnel are trained and aware of obligations;
- Ensuring subcontractors are aware of their safety and environment obligations; and,
- Overseeing the day-to-day activities required by the Construction Management Plan.

2 DOCUMENT CONTROL

This Construction Management Plan has been documented to describe how the Project Management team shall implement and conduct its allocated site management responsibilities during the construction phase of the project.

A fundamental aim of this Plan is to ensure all construction is properly facilitated, integrated, and coordinated to deliver certainty to the objectives of the Project.

This Construction Management Plan shall be kept on site and made available to all employees and contractors involved in the project. Amendments that are made to this document are recorded on the register of amendments table below.

This document shall be created prior to commencement and revised throughout the course of the project as required. A copy shall be supplied to all interested parties.

REVISION	REASON FOR CHANGE	DATE	CHANGED BY
B	Contract	8.3.21	Antonio Screnci
A	Tender	10.11.20	Antonio Screnci

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4 PROJECT STRUCTURE

4.1 RESOURCE STRUCTURE

The indicative design team, based on information at the tender stage are as follows:

ROLE	NAME
Principal	Frasers Property Ivanhoe Pty Limited
Project Manager	Frasers Property Australia
Contractor	Parkview Constructions Pty Ltd
Architect & Interior Design	Bates Smart
Fire Engineer	Affinity Fire Engineer
Structural	Enstruct
Services Engineer (Elec, Mec, Hyd, Elec,)	WSP
Landscaping and Public Domain	Hassell
Level 3 Design Consultant	Sheldermines

The positions held by the respective personnel have responsibility and authority to ensure that works carried out by Parkview, our Consultants and Subcontractors meet the requirements of the Principals Project Requirements (PPR), Specifications and Drawings, and this Construction Management Plan (CMP).

The project team will be responsible for the design, construction, and completion of the project in accordance with the requirements of the Project Agreement. Roles and authorities of all Parkview personnel associated with the project will be further detailed in the Project Quality, Health & Safety Management and Environmental Management Plans.

5 SITE INTERFACE

5.1 STAKEHOLDER & USER GROUP MANAGEMENT

Our Project Manager and Site Manager will have a key role in maintaining relationships with project stakeholders to ensure that the project objectives are achieved with minimal disruption to the adjoining owners, businesses, the authorities and service providers that we interact with.

We will seek to achieve a workable balance between maintaining project momentum in accordance with the delivery program and the needs and expectations of stakeholders. Some of which are listed below:

- Frasers Property Australia
- Ryde City Council
- Neighbours (The COLI site, the Midtown Sales Suite, and adjacent sites within the Ivanhoe Estate)
- Authorities – e.g. Ausgrid, Sydney Water, NBN and/or Telstra, RMS, Fibercorp, Fire Rescue etc.

5.2 STAKEHOLDER MANAGEMENT PLAN

Parkview Constructions is to consult with the Client, authorities and its advisors as to forming a Stakeholder Management Plan with 'Communications Matrix' outlining the agreed response strategies to all understood and foreseen construction activities and/or events that may impact adjacent neighbours, utilities, authorities and the wider community.

The Stakeholder Management Plan and Communications Matrix is to be completed in partnership and agreed with the Client and its advisors prior to commencement of the works. The Stakeholder Management Plan is to ensure that all foreseen construction activities and/or events are identified and discussed together with agreed mitigation and communication strategies put in place by both Parkview Construction and the Client with clear delineations as to who is to action what communication strategy during which activity and/or what event.

5.3 CONSTRUCTION LIAISON

Access to the site, material movement and hours of work will be in accordance with development application approval. Parkview will co-operate with the regulatory authorities by involving them early in the project and promoting a proactive "hand-in-hand" approach to the project delivery.

Parkview will continue to liaise with Ryde City Council, the Department of Planning and other relevant authorities in order that appropriate Management Plans are lodged in accordance with the requirements.
Parkview will have a member of their site team appointed as the Liaison Officer enabling ongoing communication of upcoming works and defining a contact point in the event of any issues requiring

clarification or resolution. The purpose is to provide a forum for stakeholders to discuss issues, project progress and special activities.

5.4 COMMUNITY CONSULTATION

Parkview recognize the importance of informing the local community of activities occurring within their surroundings. As noise and traffic is generated by the construction process, the community must be kept informed of the progress to ensure understanding.

Parkview will consult with the Client to assist and detail the proposed works that may interfere with surrounding communities and the strategies we propose to minimise any impact on access, amenity, staging and program as well as the impact on surrounding facilities and services. Parkview will advise on the proposed traffic management controls to be implemented as required.

Complaints or concerns that residents have with the site or any construction related activity should be firstly raised with the Project Manager or Site Manager where practical. The Project or Site Manager's contact details will be posted on signage near the entrances to the site.

A complaints register will be kept and maintained. Parkview will establish and maintain good relations with the community. Parkview will develop a Stakeholder Management Plan prior to commencement of the Project.

6 DESIGN FINALISATION & PROCUREMENT

6.1 DESIGN FINALISATION

A Consultant Team has been allocated for the completion of the 'As for Construction' (AFC) Documentation to permit Sub-Contractor trade tendering, trade letting together with the dimensional 'Set- Out' and 'Build-From' aspect of the works. The Design Manager, together with support from the Site Team namely the Project Engineer and/or Site Engineer, is to manage the Consultant Team through the completion of the AFC Documentation to the point of internal handover to the Project Site Team. The completion of the AFC Documentation is to consider the following items:

- Safety In Design (SID) items to be acknowledged, mitigated or eliminated;
- Head Contract Value Engineering (VE) items to be captured within AFC Documentation;
- Documentation Program, relative to the site works and trade procurement strategies;
- Construction Certificate (CC) and Occupation Certificate (OC) strategy to the works;
- Principal's Project Requirements, Functional Brief and/or Minimum Standards;
- Construction Management Methodology (i.e. Tower Crane, Hoist Penetrations, Pour Breaks);
- Lessor Works to be completed by Parkview on behalf of the Principal;
- Development Approval (DA) Consent Conditions and their requirements;
- Head Contract 'Separable Portions' in terms of services and compliance for CC and OC'
- Parkview Workmanship requirements, namely weatherproofing and waterproofing details; and
- Alternative construction building products, finishes and materials for durability and maintenance.

6.2 DOCUMENTATION PROGRAM & CRITICAL PATH

The Documentation Program is a key time management tool for the Architect as Lead Consultant to ensure that the AFC Documentation is coordinated and completed in an 'order of precedence' relative to both the critical trade works together with their letting via the 'Off Site Activities Schedule' (OSAS).

It is imperative that the Documentation Program is reviewed and calibrated to the OSAS Schedule by the Design Manager and Contracts Administrator to ensure trades are tendered and let with the most appropriate Head Contract Documentation and AFC Documentation.

The following steps are to be taken by the Design Manager to establish the Documentation Program;

- Assessment and verification of the areas or levels to be 'Grouped' and which are to have a common completion date to their AFC Documentation as required to the OSAS Schedule;
- Assess and verify the Target Program to identify the key dates to the five (5) critical 'order of precedence' work elements from the Parkview Documentation Pro-Forma, namely:
  - Concrete Profiles – First Project Pour Date;
  - External Walls Windows and Doors – First Survey Setout / Floor;
  - Partitions and Ceilings – First Survey Setout / Floor;
  - Joinery and Interiors – Completion Wall Framing / Floor;
  - Building Services – Commencement of High Levels Services
- Review the Documentation Program with the Project Contracts Administrator, Project Manager and Construction Manager to calibrate any start dates with the most recent Head Contract and/or Target Program;
- Final Review of the Documentation Program with deletion or grouping of all final agreed areas or levels relative to the OSAS Schedule together with final calibrated start dates to the critical work elements relative to the Target Program; and
- Submission and review with the Architect as Lead Consultant, together with the wider Consultant Team to ensure all key dates have been conveyed, acknowledged and accepted by the Architect and Consultant Team;
- Ongoing Status Maintenance and reporting to the Architect and Consultant Team as to their completion of the Issued for Coordination (IFC) and AFC Documentation relative to the Documentation Program on a weekly and/or fortnightly basis via the Consultant Team Meetings

The Design Manager, together with support from the Project Engineer and/or Site Engineer, is to manage any change in the strategy to the Documentation Program to ensure that it is updated to reflect any change. All changes and/or updates are to be made by the Design Manager and verified by the Contract Administrator and Project Manager to ensure that any change is in accordance with all letting requirements from the OSAS Schedule prior to resubmission to the Architect and wider Consultant Team.

The Documentation Program is supplemented with Aconex management of the D&C Sub-Contractor's Submittals and Shop Drawing process via a 'Workflow' process of verification and approval. The reporting status of the Submittals and Shop Drawing Workflows is to be conveyed to the Architect as Lead Consultant on a weekly and/or fortnightly basis to ensure all key dates are acknowledged and accepted and that appropriate resource management has been applied so as not to delay the completion of concurrent AFC Documentation. All documents are to be loaded up to the Aconex Document register.

6.3 PROCUREMENT STRATEGY

A crucial element for the Parkview Project Team will be the development of a detailed Procurement Strategy. The procurement strategy will be incorporated into an offsite activity schedule "OSAS" which will be used to monitor the various stages of the procurement of the works.

The Procurement Strategy will be provided to the Client, and will need to consider the design process, the procurement process and the construction program, particularly the critical path.

The Procurement Strategy will divide the Project into logical trade elements. The trade element will be developed to inform the design program and will be based on the following criteria:

- Capacity of the design team
- Capability, capacity, and expertise of the sub-contractor market
- The Tender, recommendation, approval and letting process
- Construction sequence and requirements

The aim will be to develop in conjunction with the Design Team, a Procurement Strategy and program that provides sufficient time for the design team to develop trade package documentation, that the Administration team can procure in a timely manner to satisfy the construction requirements.

In the early stages of the project this may mean splitting packages to ensure that construction can proceed while certain aspects of design is being finalised.

6.4 PROCUREMENT METHODOLOGY

The Project Team is responsible for the preparation of subcontractor tender documentation, the examination and analysis of tenders, and the internal recommendations as to which tender should be accepted.

We propose to commence the tender process with Approved for Tender (AFT) documentation. Subcontractor tender proposals will be finalised during the tender period, following the issue of Approved for Construction (AFC) documentation at which point we will finalise our trade package recommendation.

Parkview believe that by considering the following, during the tender period, we will obtain maximum value for money via the subcontractor tender & engagement process.

- Fitness for Purpose, Compliance with Building Codes & Australian Standards.
- Financial capacity of each prospective tenderer.
- Financial considerations including all relevant direct and indirect benefits and costs over the whole procurement cycle.
- Performance history of each prospective supplier.
- Comparative analysis of all relevant costs and benefits of each proposal throughout the whole procurement cycle (whole-of-life costing).
- Distribution of risk in each proposal.
- Flexibility to adapt to possible change over the lifecycle of the property or service.
- Promoting the use of resources in an efficient, effective and ethical manner.
- Making decisions in an accountable and transparent manner.
- Provision of documentation that is logical, clearly articulated, comprehensive and relevant.
- Develop evaluation criteria which will enable the proper identification, assessment and comparison of the costs and benefits of tenderers.
- Consultant sign off on all samples and shop drawings.

Selection of subcontractors with working procedures and systems that ensure a quality product is safely delivered within the allocated program.

6.5 DESIGN MANAGEMENT

Parkview's expertise is in managing the completion of the design and AFC Documentation as an Off-Site 'Lead-in Activity' concurrent to the construction works. The completion of the design and AFC Documentation concurrent to these lead in trades leverages the procurement of specialist trades on a Design & Construct (D&C) basis where design responsibility and the completion of the respective AFC Documentation is transferred to these trades (i.e. Piling, Post Tension, Building Services, etc).

Under this method the completion of the design and AFC Documentation by these specialist D&C Sub- Contractors is via a Submittals and Shop Drawing process managed and tracked by the Design Team and Site Team via a 'Workflow' process of verification and approval to proceed with manufacturing and construction.

This permits the Architect and the Design Engineers from the D&C Sub-Contractors to coordinate and complete their Submittals and Shop Drawings in a 'Just-In-Time' (JIT) method mitigating time and costs spent on abortive documentation exclusive of any specialist Sub-Contractor input, albeit with high levels of spatial services coordination required by the Architect as Lead Consultant.

6.6 DESIGN TEAM

Parkview provides a dedicated Design Team to service, manage, and drive the completion of the design AFC Documentation to the project. Parkview's Design Team acts as the leading face of Parkview to the Principal in the management of design risk, change, authority approvals (in partnership with the Client), and the completion of the AFC Documentation to the point of internal handover to the Project Site Team.

The services of the Design Team to the project include the following:

- Management and Coordination that all Safety in Design (SID) risks have been identified and transferred from the 'Designers' within the Consultant Team to the Construction Team as required under regulation 295 of the 'Work Health and Safety Regulation 2011 NSW';
- Management and coordination of the Consultant Team Scopes, Engagement and Fees together with any agreed changes and/or variations;
- Management and coordination of the weekly / fortnightly Consultant Team Meeting (Agenda & Minutes) for project reporting and driving the team's completion of the AFC Documentation;
- Management and coordination of the agreed contract Value Engineering (VE) items to ensure that they have been captured by the Architect and Consultant Team into the Construction Documentation;
- Management and coordination of the 'Documentation Program' relative to the order of site works with the Architect and Consultant Team;
- Management and coordination of any D&C Sub-Contractor build-ability input to Architect and Consultant Team in their completion of the AFC Documentation; and
- Management and coordination of the Principal's PCA to ensure all deliverables and AFC Documentation are completed to program to permit the Principal's application for CC relative to the order of site works (i.e. CC Matrix Management)

Oversight services are also provided by the Design Team and include the following:

- Verification of the Principal's Project Requirements (PPR), Functional Brief and/or Minimum Standards to ensure that all represented project objectives have been captured in the AFC Documentation by the Architect and Consultant Team;

- Verification that the Construction Management Methodology has been captured into the AFC Documentation by the Consultant Team (i.e. Tower Crane and Hoist Penetrations, Pour Breaks and Sequencing, etc.);
- Verification of all Lessor Works to be completed by Parkview to ensure that they have been captured in the AFC Documentation by the Architect and Consultant Team;
- Verification of the Architect's and Consultant Team's deliverables (AFC Documentation, Schedules, etc.) to the relative Building Regulations (NCC), Australian Standards, etc.;
- Verification of the Development Approval (DA) requirements to ensure they have been captured in the AFC Documentation by the Architect and Consultant Team (i.e. DA Matrix Management);
- Verification with the Principal and their PCA that any proposed 'Separable Portions' and/or 'Staged CC / OC' are permissible in terms of compliance and occupation;
- Verification that systemic Sub-Contractor 'Build-Ability' and 'Workmanship' issues have been appropriately captured and mitigated in the AFC Documentation, namely weatherproofing, waterproofing, etc; and
- Advice regarding potential alternative construction building products, finishes and materials which may assist construction, improve durability, and reduce future maintenance costs

7 AUTHORITY APPROVALS

There are several key activities which are to be completed to enable either the major works to commence and/or continue in accordance with the construction programme. These activities are essential to allow the major works to proceed unrestrained by external conditions. These included but are not limited to:

- Construction Certificate for the Main Construction Works
- Construction Certificate for Public Domain Works
- Installation of Substation Approval
- Sydney Water Section 73
- Ausgrid Level 3 Certified Design
- National Broadband Network
- Fire and Rescue NSW

7.1 AUTHORITY APPLICATIONS, APPROVALS AND PERMITS

Prior to commencement of any site works the relevant Authorities are be contacted and where required have applications lodged to obtain all necessary approvals and permits. All required notifications and timeframes are to be established for any authority inspections and attendance required by the relevant authority. All authority inspections and attendance are to be coordinated by Parkview Constructions and its relevant subcontractor's representative on site together with the Principal Certifying Authority if required to ensure continuity of workflow, commissioning, testing, and acceptance into service.

AUTHORITY	ITEM
Ryde Council	Hoarding Continuance, Construction Zones (if required), Footpath & Driveway Crossings, Out of Hours Operation, Stormwater Sewer connections, Public Domain Approval
Ryde Council	Construction Soil and Water Management Plan, Construction Waste Management Plan, Construction Environmental Management Plan, Construction Pedestrian and Traffic Management Plan, Construction Noise and Vibration Management Plan, Air Quality and Odour Management Plan
Ausgrid	Power supply and Electrical Infrastructure
Sydney Water	Water, sewer & wastewater services

7.2 EXISTING SERVICE DISCONNECTIONS, DISRUPTIONS & DIVERSIONS

It is not expected that service disruptions will occur to surrounding owners during disconnection or re- diversion works as these works will be coordinated with and agreed with the relevant Authority, who will in turn make the relevant notifications. If any further service works are required, a notification will be issued to the affected authority/neighbors'/owners to agree a strategy for those works.

No ground works are to commence until all underground services have been surveyed, identified, and located. This is to incorporate all data collected and obtained by Parkview Constructions from all Dial Before U Dig (DBYD) enquiries. No disconnections and/or diversions to 'house' utility services (i.e. sewer, gas and water) within the site are to take place without the utility service surveyed, identified and located.

All disconnection and/or diversion works to utility services are to be co-ordinated with the relevant utility and/or authority with the relevant notifications made for disconnection and discontinuation of the utility service. Where utility services are required to be diverted outside of the site to enable the works (i.e. driveway crossovers within the road reserve) a notification is to be issued to the effected utility to obtain a costs, program and strategy by the utility for those works.

Parkview will require approval from Ausgrid for all the electrical works associated with the electrical substation.

Parkview will require approval from Sydney Water for the Sewer diversion works.

8 CONSTRUCTION MANAGEMENT

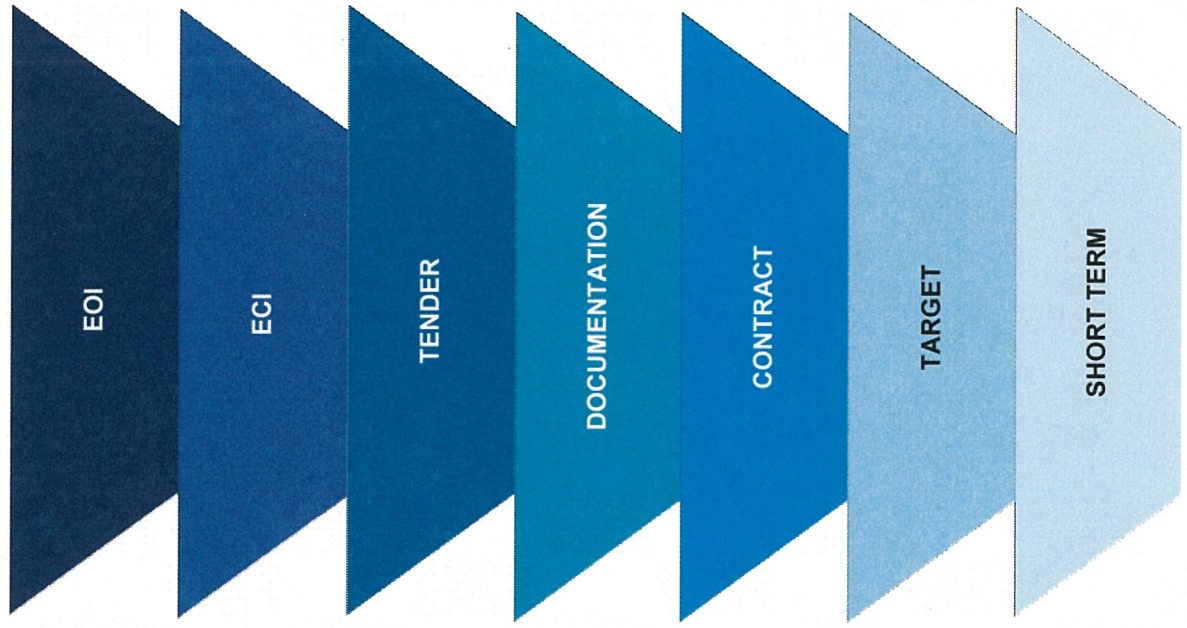
8.1 PROGRAMMING AND PLANNING

Our aim with regards to Programming and Planning is to deliver the works safely and in a timely construction period, within commercial constraints. This will be achieved through the active management of all phases of the project from design through to construction, commissioning and handover, by anticipating issues and pro-actively responding.

Our approach to programming and planning at Parkview is defined in the Parkview Programming Management Procedures document. The purpose of this document is to establish a consistent model for the programming across the business at all phases of use, so that Parkview's minimum expectations and standards are clearly defined.

This document illustrates Parkview's stages of programming from initial tender to on-site short-term programmes and clarifies the responsibilities at each level for the production, review, status and maintenance of these programmes.

Compliance with this programming procedural guideline is mandatory across all projects and is based upon the below hierarchy of programmes:



The programmes will be refined as the project evolves through design development and value engineering phases and will take account of and make allowances for the following:

- Design development
- Authority's coordination and approval
- Site and existing conditions/services investigation/confirmation
- Outcomes from consultation with the key design team representatives, subcontractors, stakeholders and tenancy user groups (when required).
- Evolving procurement methodologies
- Options/opportunities including build ability assessments that will allow us to lock-in the optimal timing and extent of options

- Development of temporary works proposals and designs.

During all phases, Parkview adopts the optimum delivery strategy, formulating a construction methodology, and calculating the project's needs in terms of resources. This process has considered past performance and established techniques, specific external constraints, and seeks to identify any innovations which may assist the project.
An important consideration for successful planning and programme management is the open and collaborative identification of areas of potential quality, safety, environmental, time, and accordingly costrelated risks. The measures to be implemented include:

- The establishment of programmesdetailing
- overall site investigation & identification ofconstraints
- site establishment & temporaryprotection
- construction activities
- look ahead or short- termactivities
- procurement including the identification of long lead-timerisks
- commissioning and handover activities to identify the processes and timing of actions leading up to delivery of the facilities to the endusers.

Periodic and regular programme reviews to identify areas of departure and opportunities to increase the rate of activity, such as through re-sequencing, thus allowing expedient attention by the Project Team. These reviews are carried out both internally with the project team and externally with Parkview Programming management and senior management.

Periodic and regular reporting to management for tracking and resourcing purposes.

Periodic and regular site level programming and planning meetings wherein all medium and shorter-term site activities are tool boxed and micromanaged by our Project Team.

A Project Control Group (PCG) report inclusive of a status programme will be provided regularly (monthly).

8.2 DOCUMENTATION PROGRAMME

The Documentation Programme is a key document to be provided to the Consultant Team and Architect, as Lead Consultant, and primary audience to ensure that the 'For Construction' Documentation is completed on time and aligned to both critical trades and the Contract Administrator's Letting Schedule. The Documentation Programme is to set out the **'drop dead dates'** to the 'For Construction' Documentation over the five (5) key critical areas of works, namely 1. Concrete Profiles, 2. External Walls, Windows and Doors, 3. Partitions and Ceilings, 4. Joinery and Interiors together with 5. Building Services.

It is imperative that the Documentation Programme is reviewed and calibrated to the Project Letting Schedule by the Design Manager and Contracts Administrator to ensure trades are tendered and let with the most appropriate For Construction Documentation

The Documentation Programme works in conjunction with the contract and target programmes to ensure that the right standard of information is available to the project delivered when it is required.

8.3 CONSTRUCTION PROGRAM AND STAGING / SEQUENCING

This project has an Onsite Construction Program. This program will be reviewed on a monthly basis and revised as the project requires.

Site possession date is anticipated to be: September 2021Upon

possession, immediatetasks: will be to: 1.Locate a site office

and site amenities

1. Undertake a survey of the site to confirm Works completed by Early Works Contractor (August 2021).
2. Confirm locations of existing services
3. Obtain approvals and carry out works associated with stormwater works and substation works
4. Obtain all necessary permits and licenses and approvals
5. Arrange for installation of temporary services – power, water, and sewer to service the site works and amenities
6. Obtain Work Zone and Traffic Management approvals

The project contains the following key milestones for completion which are included on the programme:

1. Site Possession
2. Commence Works Onsite
3. Basement 3 Slab on Ground Poured
4. Substructure Complete (up to ground floor slab)
5. Structure Complete
6. Building Mainly Watertight
7. Substation Works complete
8. Permanent Power Available
9. Childcare ready for fitout
10. Prototype Lobby approved
11. Prototype Unit approved
12. Internal Services and Finishes Complete
13. External Works, Civil Works, Services & Landscaping Works Complete
14. Occupation Certificate
15. Practical Complete

The Construction (Target Programme) is one of the key documents for identifying the critical activities and the resourcing of the project.

The Procurement Strategy will be agreed and will need to consider the design process, the procurement process, and the construction program, particularly the critical path.

The Procurement Strategy will divide the Project into logical trade elements. The trade element will be developed to inform the design program and will be based on the following criteria:

- Capacity of the design team
- Capability, capacity, and expertise of the sub-contractor market
- The tender, recommendation, approval and letting process
- Construction sequence and requirements

The aim will be to develop in conjunction with the Design Team, a Procurement Strategy and programme that provides sufficient time for the design team to develop trade package documentation, that the Administration team can procure in a timely manner to satisfy the construction requirements.

8.4 CONSTRUCTION SITE OPERATING HOURS

The Hours of Work throughout the Project will be adhered to throughout the project, allowing for reasonable interaction with the adjoining residents and businesses.

In accordance with the conditions of Development consent, the proposed Site Working Hours including the delivery of materials to in accordance with Ryde City Council's consent conditions.

All work including the activities in the vicinity of the site generating noise associated with preparation for the commencement of work (e.g. loading and unloading of goods, transferring of tools, machinery etc.) in

connection with **the proposed development must only be carried out between the hours of 7.00am and 7.00pm on Monday to Fridays inclusive, and 8.00am to 4.00pm on Saturdays**. No work is to be carried out on Sundays & public holidays.

Rock breaking, rock hammering, sheet piling, pile driving and similar activities can only be carried out between **9.00am to 12.00pm, 2.00pm to 5.00pm on Monday to Friday, and 9.00 to12.00pm on Saturday.**

8.5 KEY SITE PERSONNEL CONTACT DETAILS

POSITION / TITLE	NAME	Email
CONSTRUCTION MANAGER	Glenn Moran	glenn.moran@parkview.com.au
PROJECT MANAGER	Antonio Screnci	antonio.screnci@parkview.com.au
DESIGN MANAGER	Agnes Szymanski	agnes.szymanski@parkview.com.au
SITE MANAGER	Peter Doyle	peter.doyle@parkview.com.au
SENIOR CONTRACTS ADMINISTRATOR	Harj Atwal	Harj.atwal@parkview.com.au
WHSE REPRESENTATIVE	Joseph Moussa	joseph.moussa@parkview.com.au

8.6 NEIGHBOURS COMPLAINTS / CONCERNS

It is understood that a Community Communication Strategy will be implemented prior to the main works commencing onsite. All efforts will be made to undertake works with minimal impact on neighbours. Complaints or concerns that neighbouring residents have with the site or any construction related activity should be raised with the Project Manager or Site Manager. The Project or Site Manager's contact details will be posted on the main site entry gate. A complaints register will be maintained.

8.7 SITE BOUNDARY & HOARDING

The site perimeter boundaries consist of **A Class** hoarding which will be installed during the initial site setup. The A Class hoarding that is proposed to be installed is a solid plywood hoarding, to be painted black. This will allow the client to utilise the hoarding for marketing signage.



8.8 SITE ACCESS CONTROL

Signage will be placed at all site entrances clearly stating that access is for authorised persons only. The construction workforce will be required to undertake site specific safety induction training and will be issued with project specific identification to confirm this has been completed.

Only those workers who have completed site specific inductions will be allowed to enter the site and undertake works, through dedicated construction gate entry points.

Daily sign-in registers will be kept, and each sub-contracting entity will be required to advise of numbers of personnel on site each day.

Parkview is to maintain a site entry register requiring all visitors to sign in upon entry. All visitors are always required to wear an identification 'visitor' badge and wear appropriate PPE while on site.
Parkview is to manage the site access in a secure manner to ensure the mitigation of un-authorized access and/or vandalism. All gates are securely locked outside of working hours and may be regularly patrolled by security staff.

8.9 SITE SECURITY

The site will be bounded by timber hoardings and / or a perimeter fence where works are required at the boundary. Gates will be used on all designated access points onto the site with security staff as required. The site will be secured out of hours and patrolled by qualified security guards as required. Hoardings will be used as required along the site boundaries to maintain pedestrian access and safety. All hoarding installations will be subject to council approval and permits. This security network will continue to work closely with Parkview to ensure that security is being maintained throughout construction.

8.10 SITE SIGNAGE

Project Works Signage will be erected in prominent locations at all site entrances clearly stating that access is for authorised personnel only. Appropriate signage will include but not be limited to the following:

- Contractor signage in high visible locations.
- Unauthorised entry of persons to the site prohibited.
- Directions to worker parking.
- Demolition works in progress.
- Excavation.
- Contact details.
- Reporting instructions for authorised visitors.
- Location of site office, toilets, lunch sheds and first aid office.
- Restricted access for persons without appropriate protective equipment.
- The Principal will have signage rights on all hoardings and Cranes

8.11 SITE ACCESS, ACCOMMODATION AND PARKING

Site access will only be permitted to contractors and site staff. Members of the public will not be allowed on site without prior approval from the Site Manager. All visitors to the site will be required to report to the site office and will be appropriately inducted and registered in a visitors' logbook.

The proposed main entry gates into the site will be via Road No 2 . All other access points will be locked, and access will only be as required. Parkview will also maintain the main gate proposed to be installed at the entry of Road No 2 from Road No 1 and will provide access to other Contractors as requested by Frasers.

The site office and amenities / accommodation compound for workers will be within the allocated area highlighted on the attached Construction Management Plan for Building Construction.

8.12 SITE ESTABLISHMENT



8.13 ESTIMATED WORK FORCE AND CONSTRUCTION CODE OF PRACTICE

The project anticipated work force numbers are provided below:

Subcontractor Workforce: Approximate maximum of 250 workers
Based on the above, site establishment as per WorkSafe NSW code of practice will be provided on site to accommodate the maximum number of workers (including Parkview wages employees and subcontract workforce). The Project Management Team from Parkview will be accommodated in separate accommodation within the site compound.

8.14 SITE ACCOMMODATION

Site accommodation will consist of a variety of amenity & office compartments, with segregated access ways, allowing for clean and defined separation of vehicle and pedestrian pathways. The site accommodation will include an entry gate for security, first aid facilities, induction rooms, change rooms, toilet & shower facilities for both male and female workers.

Access to the site accommodation shall be Road No 2. All other access points will be locked. This access point will be maintained throughout the span of the project. If applicable to the project, stretcher stairs and hoist access will be implemented to allow access to the site. Once the main works commences, scaffold stretcher stairs will be used by site personnel entering the site to travel between the levels, until means of vertical movement methods are incorporated. A combination of stairs and man and materials hoists will be used.

Note: The Parkview crane crew, hoist & lift drivers, first aid, carpenters & laborer's have been included in general workforce site accommodation numbers.

8.15 DELIVERIES AND MATERIALS HANDLING

Parkview will provide suitable access for deliveries associated with contract works. No deliveries will be allowed outside the site working hours. All unloading and loading of vehicles will be carried out within the site boundaries or work zones. The site will be serviced by tower cranes for loading / unloading materials to the buildings under construction.

8.16 TOWER CRANE

A luffing tower crane is proposed to be used. Parkview will provide Frasers illuminated Crane Signage.

The proposed luffing crane will have an approximate radius of 45 metres which is sufficient to service the entire site.

The crane location has been centralised to ensure that it has full reach to the entire building footprint. It is assumed that there will be no requirements for air rights over neighbouring properties.

The Loading / lifting zones would be located within the A2 site, and irregular deliveries may be taken directly from Road No2.

The relevant traffic control measure will be in place accordingly to accommodate such works occurring, in line with the appropriate traffic and pedestrian management plans being reviewed to ensure the safety of the general public when entering and leaving the site.

8.17 LOADING ZONES / WORK ZONES

It is assumed that Road No 2 in its entirety will be available to be used throughout the entire construction period.

The compound area adjacent to the site will take most deliveries and will be suitable for concrete pumping until the building reaches ground level. Above ground level, Parkview will seek to start pumping in a position on Ground floor beside the basement entry driveway, and behind the hoarding which we propose to place on the back of kerb. We then envisage concrete trucks arriving into Road 2, and then reversing onto a temporary layback onto the static concrete pump. Trucks will then leave in a forward-facing manner and exit the site.

Indicative location for the loading zone is indicated on the following diagram.



8.18 CONSTRUCTION HOISTS & MATERIALS MOVEMENT

During detailed excavation and substructure phase, material movement will be provided by crane. Personnel access will be provided by a stretcher stair adjacent to the excavation.

During the structure and façade cycles in the tower , a formwork hoist will be utilised to facilitate formwork movement from the level that has just been stripped to the level that is just about to commence formwork. The crane will provide all other material movement. The tower will also be serviced with a twin car man and materials hoist. This will provide personnel access to the level below the formwork deck. Once a floor has been stripped loading platforms will be utilised for bulk material loading (Hebel, windows, gyprock and the like) as well as rubbish removal.

Once the façade is complete and bulk material is loaded, loading platforms will be removed. The twin car man and material hoist will provide personnel movement up and down the building, as well as facilitating deliveries and rubbish removal during off peak times.

8.19 PERIMETER PROTECTION SYSTEMS

During construction and installation of the structure and façade, fall protection will typically be provided by a mixture of scaffold and screens. Scaffold will be utilised off Ground floor up until Level 3 for perimeter protection and then perimeter screens will be erected and used for the entirety of the structure and façade. Perimeter scaffold will also be utilised as falsework within the tower niche alternating balconies, as well as the rooftop where the building steps inwards. Scaffold will also be utilised from Ground floor to the underside of Level 8 to the niche on Grid 09, where it is not feasible to rely on a screen.

8.20 SCAFFOLD AND SCREENS

Scaffold will be 3 board/ 2 hop up wide allowing for hop up movements throughout the works as required for the structural and façade finish works.

Scaffold falsework will be utilised in the niches that alternate around the tower.

The perimeter screen system proposed for this project will be 5.5 levels high, supported off needles off and diagonal braces from the structure. Needle locations will need to be coordinated with the precast design. The screens will provide edge protection on the formwork deck, as well as 5 floors beneath. Parkview envisage that below the screens, no further temporary edge protection will be required as balustrades and windows will be complete.

8.21 FAÇADE & FAÇADE MAINTENANCE

The building's external façade has been designed by Bates Smart. The façade systems, including precast concrete , aluminum glazed windows and doors, sunshade, and balustrades, will require appropriate design and quality management strategies to ensure a quality outcome. A third-party façade consultant will be engaged in order to Peer Review all design documents and to carry out inspections and tests of the completed works.

A façade maintenance strategy will be developed during the course of the design finalisation process.

8.22 STORAGE OF MATERIALS

All materials will be stored on site with hazardous materials stored in accordance with EPA regulations.

In general, structural materials will need to be delivered only when they are ready for use. Co-ordination of works and deliveries is therefore required.

- The Site Manager shall coordinate the allocation of space to subcontractors.
- Subcontractors must always give advance notice of their storage requirements.
- All materials stored on site must be neatly stacked - Materials must be stacked horizontally not vertically (i.e. – not learning against walls)
- Clear access ways must be maintained at all times.
- Materials must not be stored to create fire hazards.
- Some small compounds will be built on the site as required.
- Gas bottles will be stored in accordance with the current regulations.
- Pallets of bricks, blocks etc. will not be stacked any more than two (2) high.

8.23 PEDESTRIAN MANAGEMENT DURING CONSTRUCTION

The General Public will not be allowed access to the site. Parkview will provide a dedicated traffic & pedestrian management team adjacent to the publicly accessible roads. This will ensure deliveries are received efficiently and safely. Parkview is committed to a proactive Management Process for the Public Safety which will progressively increase and develop as the Project evolves including particular attention to the Public interface associated with the proposal.

Parkview will ensure that the proposed hoardings are maintained in a clean and safe manner at all times. Parkview will ensure that signage will be fitted with appropriate directional signage.

Parkview will provide dedicated traffic and pedestrian management personnel that will manage the main gate at the entry to Road No 1 and Road No 2, as well as the proposed laybacks to the site compound and site. This management is to ensure work deliveries are received safely and efficiently with proactive management to public safety.

8.24 TRAFFIC MANAGEMENT PLAN

A construction Traffic Management Plan is to be provided to the site and the surrounding streets by Parkview Constructions.

Safe access and adequate visibility for both pedestrians and vehicles will be maintained at all times for any traffic that enters and exits the site. Vehicle deliveries will be managed by Traffic Controllers as required to ensure that public safety is maintained and to minimise the impact of construction vehicles on local traffic management and flow.

The Traffic Management Plan will be further developed for the project prior to commencement. This plan will be commissioned following project contract execution.

A full consultative approach will be undertaken when finalising the Traffic and Pedestrian Management Plan. The Traffic and Pedestrian Management Plan will ensure the following are implemented during the construction period:

- Maintain full operations and access to adjoining residents throughout construction.
- Maintain continuous operation and full access to utility services.
- Provide designated safe pedestrian routes around the perimeter of the site.
- Provide designated vehicle access routes.
- Create and maintain construction zones within the site.
- Control, manage and clean all construction traffic to and from the construction zones.
- Ensure suitable traffic control personnel is in places at all times/as required.

8.25 VEHICLE PARKING

It is understood that Frasers would like to restrict all parking on the site. Parkview would like the opportunity to propose site parking for Parkview personnel and site supervisors. This will be managed by our traffic management team and strictly enforced.

Parkview will advise employees and subcontractors of the various parking options in close proximity to site, as well as public transport available.

8.26 NOISE, VIBRATION & DUST CONTROLS

Construction works will occur within proposed site working hours and will always comply with noise requirements of the EPA and DA.

All practical and possible methods of construction will be used to comply with AS 2436-1981 – *'Guide to Noise Control on Construction, Maintenance and Demolition Sites'.*

No ground works will commence until all underground services have been identified and located. This incorporates the data collection obtained from Dial Before U Dig enquiries.

A draft of the Noise & Vibration Management Plan will be produced for this site prior to commencement. The plan will outline the information gathering process, impact statements, control measures and implementation requirements for the site.

All construction works will be completed in a manner so as not to cause undue damage to adjoining infrastructure, properties, and waterways. An acoustic consultant will be appointed to provide appropriate vibration monitoring to sensitive site locations. Part of the Communications / Stakeholder Engagement Plan will address noise, dust and vibration.

Dust control caused by groundwork's (detail excavation) trades will be via the use of gurneys and hoses and street sweeping of the area adjacent the site will occur when required. Tarpaulins will cover truck trailers and bogies to ensure containment of material during transit.

No construction works shall commence unless the subcontractor has submitted a Risk Assessment and Work Method Statement which details the schedule of plant and equipment describing the equipment types to be used, noise levels these will generate, expected time and duration of use, and any measures required to ensure the noise levels are acceptable (such as screen mufflers), or monitored.

8.27 AIR QUALITY AND ODOUR MANAGEMENT PLAN

The Site Manager will monitor background levels of dust deposition and air quality, the effectiveness of dust emission controls on the construction site and the impacts of any nuisance on adjoining properties or other affected properties.

The Site Manager may require the Subcontractor to carry out additional Air monitoring if a complaint regarding Air Quality is received.

The Site Manager in consultation with the OHSE Manager will advise the monitoring location and the monitoring required will be manned monitoring.

Non-conformances are to be recorded by way of the Parkview's Notification process. *Refer the Site Environmental Management Plan for further details.*

The Subcontractor (and Parkview's Site Manager / OHSE Manager) shall review and analyse the cause of the detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by Site Manager / OHSE Manager.

It is the responsibility of the Site Manager to immediately initiate corrective actions, if required. The non- conformance and corrective action must include details of the action proposed and an appropriate close out date. The system defects report should be signed dated and filed.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the Construction Manager / OHSE Manager.

8.28 VEHICLE TYRES

Where roads surrounding the site are hard surface roads, Parkview will install appropriate wheel washing measures to ensure that road surfaces are always kept clean. This will be supplemented by manually sweeping when needed.

All vehicles will be loaded from concrete or sealed hardstands and any minor spillages shall be swept up immediately by onsite staff in line with compliance measures.

8.29 STORMWATER & EROSION CONTROL

Parkview ensure that sedimentation and erosion control measures will be installed at critical locations around the site to divert, dam and remove, filter or catch water containing sediment from entering the existing storm water or sewerage systems. This will also include but not limited to sediment fences, sandbag traps, mesh and gravel inlet filters, geotextile filter pits etc.

Any ground water or stormwater entering the basement excavation area shall be collected via a sump and processed through the temporary ground water treatment plant in accordance with relevant and respective licence conditions.

All excavation works will comply with:

- The Department of Land and Water Conservation's Erosion and Sediment Control Manual and the Department of Housing Manual Managing Urban Stormwater – Soils and Construction (August 1998)
- NSW Protection of the Environmental Operations Act 1997.

Should groundwater require dewatering, further advise will be sought from the geotechnical engineers and dewatering systems shall be designed and implement under the direction of the relevant engineers and authorities.

The Stormwater Management Plan is in accordance with the following principles: Planning:

- Divert runoff around disturbed areas
- Limit disturbance to the area
- Stormwater drainage
- Site access will be limited to the minimum number of entry and exit points required
- All approved access points shall be marked prior to the commencement of construction within that area
- Dissipated uncontrolled flow by sediment fencing/ devices placed across the line of water flow
- Reduce the erosive energy (concentrate d flow and velocity) of water using measures such as temporary storage, dissipaters, and excavated holding ponds.
- Where practicable maintain stormwater inlets and protect the drainage line from erosion
- Direct runoff from disturbed areas through sediment traps or filters
- Loss of soil from stockpiles is minimised using filter barriers and temporary covering Dispersal Control:
- Prevent deposition of sediment on the public road network due to truck / equipment movements to and from the site
- A purpose-built wheel wash/ shaker facility will be constructed at the exit gates of the site
- Main construction roads on site to be all weather and adequately drained
- Collection of onsite stormwaters into temporary detention basins as part of excavation as required Rehabilitation:

On completion of works remove sediment traps constructed as part of the temporary works to all kerb inlets on streets by removing all silt material from the base of the pit, removing the sedimentation control material and check off.

Temporary silt traps or sediment control devices will not be removed but shall only be removed following completion of surrounding works.

For landscaped areas, maintenance will continue until vegetation is well established, is independent of further artificial watering.

Erosion and Sediment Control:

It is encouraged that excavation activity is completed in periods of dry weather. The nature of construction allows for runoff to be trapped on site. All existing gutter inlets shall be monitored and controlled within sedimentation guidelines.

Sediment Fences / Devices:

Sediment fences and devices will be used in areas where temporary sediment control is required. These relatively simple devices will dissipate stormwater velocity and collect moving solids.

Throughout the detailed excavation and Post Road Construction period of excavation and construction, temporary sediment fences and devices will need to be positioned where erosion is most severe.

Sediment fences will be placed downstream of stockpiles and disturbed areas. It is important that sediment is collected adjacent to these areas to prevent loss of material downstream.

Sediment devices will be placed in areas where energy dissipation is required. When constructed these systems are commonly known as check dams and are placed in areas where major flow path exists. Straw bales filter course sediments but tend to be less effective with fine sediments. For this reason, all Straw bales will be lined on the upstream side with geotextile filter fabric where appropriate. Straw bales will be secured with three stakes and positioned so the bale twine does not degrade due to direct sunlight.

Fencing:

Fencing is an effective and simple way to identify areas that require protection in a construction site. If areas are selected for protection they will be fenced and protected throughout the duration of the construction period.

Orange mesh fencing will be used to distinctly fence-protect trees and any other area or object susceptible to being disturbed by machinery or construction activity.

De-watering:

Management practices have been implemented to address all sources of pollution on the site in accordance with current practices.

Parkview Constructions is committed to Stormwater Management during construction, and as such operates in accordance with industry best practice for the management of stormwater and de-watering discharge.

All site waters during construction and landscaping shall be contained on site and released only when suspended solids are less than 50mg/L (for storms less than 1 in 5-year time of concentration) in order to avoid pollutants entering the Council's stormwater drainage system.

The collection of stormwater / ground water on a project could be discharged to the stormwater system if it meets certain criteria. This would involve an analysis of the quality of receiving waterways and the collected water within the project boundary. This analysis would need to be carried out by a NATA accredited laboratory and the results and final report supplied to Parkview Constructions.

The analysis would need to demonstrate that the collected water within the project boundary does not exceed the tested parameters and have no evidence of the following substances detected:

- Nutrients, from fertilisers
- Herbicides and pesticides used in landscaping
- Acids from washing

- Building wastes and litter
- Paint and paint wastes
- Oils, grease and fuel from equipment operation and maintenance.

Non-conformances are to be recorded by way of the Parkview's Notification process. *Refer the Site Environmental Management Plan for further details.*

It is the responsibility of the OHSE Manager / Site Manager to immediately initiate corrective actions, if required. The non-conformance and corrective action must include details of the action proposed and an appropriate close out date. The corrective action should be signed, dated, and filed.
If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the Site Manager in consultation with the OHSE Manger and Construction Manager.

8.30 WASTE TRANSPORT AND DISPOSAL

All contaminated and non-recyclable materials to be loaded and transported to an EPA approved landfill sites. All loads departing the site shall be covered with tarpaulins to ensure that any sediment does not escape the truck or bin body.

All recycled materials (minimal) will be disposed of at the closest and relevant recycling depot. Details of the recycling depots will be described in the future site Waste Management Plan.

8.31 STORAGE OF DANGEROUS GOODS

Flammable fuels such as petrol, diesel, Oxy-acetylene, oils, etc. will be stored in bunded and lockable compounds with sufficient ventilation. Material safety data sheets for all flammable and potentially harmful liquids will be stored on site.

8.32 WASTE MANAGEMENT PLAN & REPORTING

Waste bins will be stored on site within the site boundaries. General construction waste will be separated between recyclable and non-recyclable off site. Waste will be removed in a combination of bin sizes dependent on the method of delivery.

Any demolition materials are to be recycled in accordance with both council requirements together with the Development Consent. Food waste will be separated and contained within a bin with a lid. This bin will be changed over at regular intervals to avoid smells and the attraction of rodents.

Waste will be treated as mixed waste and will be delivered to an approved waste recycling facility where it will be processed. Accurate reporting will be available and efficient management of waste separation for recycling is assured.

8.34 ENVIRONMENTAL MANAGEMENT PLAN

- Parkview is committed to pursuing a responsible approach to a sustainable community environment through all its operational activities. An Environmental Management Plan (EMP) will be developed during the contract finalisation phase of the project, to comply with environmental legislation and standards by:
- Implementing programs to assess risk and eliminate or minimise any negative impact on the environment by; recycling materials where possible, facilitating waste reduction of natural resources and implementing waste minimisation disposal methods.
- Embracing a best practice approach to environmental performance through a process of continual review development and improvement.
- Integration of environmental considerations into planning operational activities such as the impact of traffic, plant and work methods.

- Education of staff, employees and subcontractors in responsible environmental stewardship and responsibilities.
- Conduct business with suppliers and contractors who also demonstrate a commitment to responsible environmental management.
- Establish relevant environmental standards, goals or objectives for each issue, based on the findings of the Preliminary Environmental Assessment, specific conditions imposed by licences and approvals;
- Develop management strategies and actions to meet the environmental objectives, including specific safeguards as identified in the Preliminary Environmental Assessment and conditions of approval;
- Allocate responsibility and timing for the execution of the environmental action and provide a mechanism to ensure that the principles of environmental management are understood by all personnel;
- Develop an appropriate review regime to ensure a documented, periodic and objective system for the evaluation of environmental performance;
- Ensure that all required environmental controls and environmental plans are in place before the commencement of specific works or activities, and
- Develop a process for implementing corrective action, to ensure that recommendations are implemented.

On award of contract, Parkview will develop a detailed Environmental Management Plan. As a minimum this plan will address the following;

- Sediment laden water from the construction site that may potentially flow into the stormwater.
- Stormwater collected in excavations and requiring disposal.
- Groundwater entering excavations and requiring disposal after dewatering.
- Vehicles leaving the site depositing dirt/mud on public roads after rain periods.
- Removal of materials off site escaping from vehicles and polluting roadways.
- Debris and litter collecting along roads and in catch drains and consequently.

Planning for environmental elements including;

- Noise: minimizing noise impacts on the environment - Residents and the surrounding Community and Businesses, by ensuring that the approved noise levels are not exceeded where practical. Noise monitoring will be undertaken during construction activities which create an increase level of noise above acceptable levels on site.
- Vibration: Minimise impact to structure and Residents of the surrounding Community and Businesses. If structures are damaged the necessary remedial measures will be completed satisfactorily.
- Greenhouse Gas emissions: All greenhouse gas emissions generated as a result of construction to be reduced where practical and kept to a minimum.
- Water Quality: Water quality in receiving waters will not be affected by the construction activities. All Stormwater leaving the site, at any time up to 1 in 20-year storm event, is treated /filtered in accordance with the Australian and New Zealand Environment Conservation Council (ANZECC)'s Guidelines for Urban Stormwater Management.
- Water Minimisation: Practices during construction will be aimed at minimising water usage, all fixtures (taps, toilets, urinals, etc) for the use of construction personnel, will archive a minimum 3-star WELS or equivalent.
- Erosion: Conserve the soils in the areas affected by the construction activities and areas affected by runoff. All Precautions shall be taken to minimise erosion and sediment runoff to watercourses.
- Flora & Fauna: All precautions will be taken to protect the Flora (Mangroves) and Fauna (Large-footed

Myotis), including nominated trees on site and street trees in accordance with Council's Tree Preservation Order.

- Weed Management: All precautions shall be taken to ensure that the spread of weeds in the locality is not exacerbated by the project.
- Waste Management & Minimisation: 80% of construction waste will be reused or recycled in accordance with the Construction Waste Management Plan (CWMP) prepared by the site when the detailed design of materials has been finalised. Recycle Bins shall be procured, and construction waste materials placed in the appropriate bins on site. All other office waste (glass, paper, etc) will be recycled and placed and in the appropriated recycle bins.
- Light: All precautions will be taken to reduce pollution from the unnecessary dispersion of light into the night sky and onto neighbouring property.
- Hazardous Materials storage and handling: Removal of hazardous material from the site will be in accordance with local requirements. All hazardous material is to be handled in accordance with the relevant guidelines, as well as the procedures in the Site Work Health & Safety Plan.
- Rehabilitation: Rehabilitation of disturbed areas shall be undertaken and completed to original conditions or better in accordance with Landscape Consultant. Materials used for rehabilitation and site control works are to originate from the site as much as possible, and areas disturbed by construction activities will be revegetated as soon as possible.

Site specific reports relating to some of the elements above and as required by the Concept Plan approval conditions shall be submitted by individual consultants and address accordingly.

These activities and more specific details relating to the environmental management plan will be documented within the Parkview Environmental Management Plan.

9 PROJECT WHSE PLAN

As stated within this document, it is imperative that the safety and wellbeing of all stakeholders, the Client, the general public and visitors to the site, subcontractors, consultants and all Parkview staff are addressed in all of our planning, design and management decisions.

The comprehensive Health & Safety Management Plan will be provided and developed further on award of contract. It will address how Parkview intends to manage health and safety during the construction of the project and will be further developed and implemented prior to contract award. The Plan is a blueprint for implementing the requirements of the Parkview HSE Management System. This is achieved through;

The allocation of responsibilities to internal and external stakeholders;
The identification, assessment and control of Workplace specific HSE impacts (risks); and
Ongoing management review and consultation with the site team on the effectiveness of the plan and its related documents.

This Health & Safety Management Plan will constantly be reviewed as the design and construction methodology progress.

Please refer to the **WHS - Project WHSE Plan** for further details on the arrangements for managing health, safety and environment on site. This purpose of this plan is to ensure that processes are in place to manage the risks associated with construction.

9.1 WORK HEALTH AND SAFETY POLICY

At Parkview we are committed to ensuring the health, safety and welfare of all our employees, subcontractors and visitors at our workplace.

To achieve this, we will maintain a culture of continuous improvement, which adopts principals of risk management practices and facilities the integration of health and safety into all activities.

Parkview will maintain an OHS system that complies with AS/NZ 4801 standards and meets regulatory and legislative frame works. We will enforce, monitor and review this policy on a continual basis.

Parkview's OHS will:

- Identify and assess potential hazards and control the risks
- Develop and maintain safe working procedures and programs
- Provide training, information and instruction
- Implement injury management and rehabilitation of injured employees
- Facilitate consultation in workplace health and safety
- Provide adequate resources to facilitate this policy
- Monitor and review OHS compliance

All levels of supervision will be responsible in the areas of their control for the enforcement of Parkview's policy and the health and safety system. Employees and subcontractors will be required to cooperate with Parkview's policies and procedures and any site health and safety requirements by following correct safe work procedures and report any unsafe conditions and accidents to their supervisor and advise the site foreman.

In promoting continuous improvement, and to ensure that the OHS and associated processes on site are being implemented as required, Parkview regularly conduct audits of all sites, policies and objectives. Executives will seek commitment and improvements from all stakeholders: employees, sub-contractors, clients and consults.

23 August 2021

Design Compliance Declaration
Supplementary Information
Other Regulated Designs

C & M CONSULTING ENGINEERS

C & M Consulting Engineers Pty Ltd
ABN 21 118 134 240
Suite 26, 11-13 Brookhollow Avenue
Norwest NSW 2153
PO Box 7849
Norwest NSW 2153
T: (02) 9680 3100
F: (02) 9634 6989
E: info@cmce.com.au

Project Number: 02527
Project Name: Building A1, Midtown MacPark, Ivanhoe Estate, Macquarie Park
Description: CC2 Basement 3
Building element: Fire Safety (Fire Hose Reel) / Drainage

This document is provided as supplementary information to a design compliance declaration, providing details about the other regulated designs that have been integrated into this regulated design in order to achieve compliance with the BCA.

A03.A1.003	GA Plan – Basement 3	01
A04.A1.003	Concrete Profile Plans Basement 03	01
A1-ST-000-00	Cover Sheet	01
A1-ST-000-01	Drawing List	01
A1-ST-001-01	General Notes	01
A1-ST-003-00	Foundation General Arrangement	01
A1-ST-003-31	Foundation Sections And Details Sheet 1	01
A1-ST-003-32	Foundation Sections And Details Sheet 2	01
A1-ST-003-33	Foundation Sections And Details Sheet 3	01
A1-ST-005-01	Column Schedule Sheet 1	01
A1-ST-005-02	Column Schedule Sheet 2	01
A1-ST-005-03	Column Schedule Sheet 3	01
A1-ST-005-04	Column Schedule Sheet 4	01
A1-ST-005-05	Column Schedule Sheet 5	01
A1-ST-005-31	Column Details Sheet 1	01
A1-ST-005-41	Column Transition Details	01
A1-ST-005-51	Typical R.C. Wall Details Sheet 1	01
A1-ST-005-52	Typical R.C. Wall Details Sheet 2	01
A1-ST-005-53	Typical R.C. Wall Details - Penetrations	01
A1-ST-005-54	Typical R.C. Wall Link Beam Details	01
A1-ST-005-61	Core Wall Elevations Sheet 1	01
A1-ST-005-62	Core Wall Elevations Sheet 2	01
A1-ST-005-63	Core Wall Elevations Sheet 3	01
A1-ST-005-64	Core Wall Elevations Sheet 4	01
A1-ST-005-65	Core Wall Elevations Sheet 5	01
A1-ST-005-66	Core Wall Elevations Sheet 6	01
A1-ST-005-67	Core Wall Elevations Sheet 7	01
A1-ST-005-68	Core Wall Elevations Sheet 8	01
A1-ST-005-69	Core Wall Elevations Sheet 9	01
A1-ST-005-70	Core Wall Elevations Sheet 10	01
A1-ST-005-71	Core Wall Elevations Sheet 11	01

A1-ST-005-72	Core Wall Elevations Sheet 12	01
A1-ST-005-73	Core Wall Elevations Sheet 13	01
A1-ST-005-74	Core Wall Elevations Sheet 14	01
A1-ST-005-75	Core Wall Elevations Sheet 15	01
A1-ST-005-76	Core Wall Elevations Sheet 16	01
A1-ST-005-77	Core Wall Elevations Sheet 17	01
A1-ST-005-78	Core Wall Elevations Sheet 18	01
A1-ST-006-00	Core Structure Isometric Views	01
A1-ST-008-01	Carpark Ramp Sections And Details	01
A1-ST-009-21	Stair Elevations Sheet 1	01
A1-ST-009-22	Stair Elevations Sheet 2	01
A1-ST-009-31	Typical Stair Details	01
A1-ST-011-31	Typical Slab Details Sheet 1	01
A1-ST-096-00	Basement 03 General Arrangement	01
A1-ST-096-31	Typical Slab On Grade Details	01
A1-ST-296-00	Basement 03 Loading Diagram	01
A1-ME-3-000-01	Ventilation Schematic	01
A1-ME-4-B01-03	Basement 03	01
A1-ME-4-BLG-01	Lower Ground	01
A1-ME-4-L00-01	Ground Floor	01
IFS-F-W-001	Schematic (Wet)	01
IFS-F-W-101	Basement 03 Wet Fire Layout	01
IFS-F-W-104	Lower Ground Wet Fire Layout	01
IFS-F-W-105	Ground Floor Wet Fire Layout	01
IFS-F-D-002	Schematic (Dry)	01
IFS-F-D-201	Basement 03 Dry Fire Layout	01
IFS-F-D-204	Lower Ground Dry Fire Layout	01
IFS-F-D-205	Ground Floor Dry Fire Layout	01
E000	Electrical Services Legend & Drawing Schedule	01
E100	Basement 03 - Lighting, Power & Security Layout	01

NSW GOVERNMENT | Fair Trading

This form relates to obligations under the *Design and Building Practitioners Act 2020* and supporting Regulation

Design Compliance Declaration—multiple regulated designs

Instructions for completing this form

You must complete all Parts of this form.

This form is for multiple regulated designs, and the details must be given in Part 2 of this form in relation to each regulated design to which this form applies.

Where this form requires you to summarise information on which you intend to rely to support your answer, you must describe that information in sufficient detail for the Secretary to fully understand the basis of your answer.

Where this form indicates that material must be attached to the form, you must number each attachment sequentially and identify the number of that attachment in the relevant answer.

The drawing title, number and variation should correspond with the detail in the title block for the design to which this declaration relates.

Part 1. Details

For registered body corporates, give full names of the registered individuals and the corporation on behalf of which the declaration is made.

Design Practitioner name

KA KI CHAN

Body corporate name (if applicable)

Registration number of Design Practitioner signing

DEP0000137

Registration number of body corporate (if applicable)

ABN/ACN

21 118 134 240

Phone

0403 052 709

Email address

gary@cmce.com.au

Drawing title	Drawing number	Variation number
Notes and Legends	0250-HY-A1-001	
Hydraulic Services - basement 3	0250-HY-A1-201	
General Details 1	0250-HY-A1-500	

Part 2. Declaration matters

I, KA KI CHAN,

Name

DIRECTOR,

Title *acting on behalf of Corporation Name (if relevant)*

have prepared the attached regulated designs.

I declare:

1. Each regulated design for which this design compliance declaration is being made complies with the requirements of the *Building Code of Australia*.

   ☑ Yes ☐ No

2. Each regulated design for which this design compliance declaration is being made integrates details of other aspects of building work to which the design relates, and other regulated designs for the work, in order to achieve compliance with the *Building Code of Australia*.

   ☑ Yes ☐ No

   If yes, provide details or attach information about the other regulated designs that have been integrated into the regulated design for which this design compliance declaration is being made.

   Refer to separated statement for other regulated designs

3. Other standards, codes or requirements have been applied in preparing one or more of the regulated designs.

   ☑ Yes ☐ No

   If yes, provide details or attach information about the standards, codes or requirements that have been applied.

   BCA E1.4 Fire Hose Reel
   AS3500.1 - 2018 Water Service
   AS3500.2 - 2018 Sanitary Plumbing and Drainage
   AS3500.3 - 2018 Stormwater Drainage
   AS2441 - 1988 Installation Fire Hose Reels

4. A building product referred to in each regulated design would, if used in a manner consistent with the design, achieve compliance with the *Building Code of Australia*.

   ☐ Yes ☑ No

   If yes, describe or attach information about how the building product would achieve compliance with the *Building Code of Australia*, including the relevant provisions of the *Building Code of Australia*.

5. I have sought and considered specialist advice in preparing each regulated design.

☐ Yes ☑ No

If yes, provide the name and contact details of the person who provided you with the specialist advice.

6. The regulated designs involve a performance solution.

☐ Yes ☑ No

If yes, provide details of the performance solution and the name and contact details of the person who prepared the performance solution report if this declaration is not for the report.

7. Each regulated design accords with the *Regulated Design Guidance Material* relevant to the design.

☑ Yes ☐ No

Part 3. Signature

Signature	Title	Date
	Director	23/08/2021

This form relates to obligations under the *Design and Building Practitioners Act 2020* and supporting Regulation.
For more information visit the NSW Fair Trading website:
www.fairtrading.nsw.gov.au/housing-and-property/changes-to-class-2-buildings

NSW GOVERNMENT | Fair Trading

This form relates to obligations under the *Design and Building Practitioners Act 2020* and supporting Regulation

Design Compliance Declaration—multiple regulated designs

Instructions for completing this form

You must complete all Parts of this form.

This form is for multiple regulated designs, and the details must be given in Part 2 of this form in relation to each regulated design to which this form applies.

Where this form requires you to summarise information on which you intend to rely to support your answer, you must describe that information in sufficient detail for the Secretary to fully understand the basis of your answer.

Where this form indicates that material must be attached to the form, you must number each attachment sequentially and identify the number of that attachment in the relevant answer.

The drawing title, number and variation should correspond with the detail in the title block for the design to which this declaration relates.

Part 1. Details

For registered body corporates, give full names of the registered individuals and the corporation on behalf of which the declaration is made.

Design Practitioner name

Kim Anh Thi Vu

Body corporate name (if applicable)

Registration number of Design Practitioner signing

DEP0000222

Registration number of body corporate (if applicable)

ABN/ACN

ABN 13 119 013 928

Phone

(02) 93131700

Email address

kanh@interspan.com.au

Drawing title	Drawing number	Variation number

Refer page number 2 for drawing list

Drawing title	Drawing number	Variation number
GENERAL NOTES	INT-PT-001.dwg	
BASEMENT 2 - POUR 1, 2, 3 SHEAR DETAILS	INT-PT-010.dwg	
BASEMENT 2 - POUR 4 SHEAR DETAILS	INT-PT-011.dwg	
BASEMENT 1 - POUR 1, 2 SHEAR DETAILS	INT-PT-013.dwg	
BASEMENT 1 - POUR 3, 4 SHEAR DETAILS	INT-PT-014.dwg	
BASEMENT 2 GENERAL ARRANGEMENT PLAN	INT-PT-100.dwg	
BASEMENT 2 - POUR 1 POST-TENSIONING PLAN	INT-PT-111.dwg	
BASEMENT 2 - POUR 1 BOTTOM REINFORCEMENT PLAN	INT-PT-112.dwg	
BASEMENT 2 - POUR 1 TOP REINFORCEMENT PLAN	INT-PT-113.dwg	
BASEMENT 2 - POUR 2 POST-TENSIONING PLAN	INT-PT-121.dwg	
BASEMENT 2 - POUR 2 BOTTOM REINFORCEMENT PLAN	INT-PT-122.dwg	
BASEMENT 2 - POUR 2 TOP REINFORCEMENT PLAN	INT-PT-123.dwg	
BASEMENT 2 - POUR 3 POST-TENSIONING PLAN	INT-PT-131.dwg	
BASEMENT 2 - POUR 3 BOTTOM REINFORCEMENT PLAN	INT-PT-132.dwg	
BASEMENT 2 - POUR 3 TOP REINFORCEMENT PLAN	INT-PT-133.dwg	
BASEMENT 2 - POUR 4 POST-TENSIONING PLAN	INT-PT-141.dwg	
BASEMENT 2 - POUR 4 BOTTOM REINFORCEMENT PLAN	INT-PT-142.dwg	
BASEMENT 2 - POUR 4 TOP REINFORCEMENT PLAN	INT-PT-143.dwg	
BASEMENT 1 GENERAL ARRANGEMENT PLAN	INT-PT-150.dwg	
BASEMENT 1 - POUR 1 POST-TENSIONING PLAN	INT-PT-151.dwg	
BASEMENT 1 - POUR 1 BOTTOM REINFORCEMENT PLAN	INT-PT-152.dwg	
BASEMENT 1 - POUR 1 TOP REINFORCEMENT PLAN	INT-PT-153.dwg	
BASEMENT 1 - POUR 2 POST-TENSIONING PLAN	INT-PT-161.dwg	
BASEMENT 1 - POUR 2 BOTTOM REINFORCEMENT PLAN	INT-PT-162.dwg	
BASEMENT 1 - POUR 2 TOP REINFORCEMENT PLAN	INT-PT-163.dwg	
BASEMENT 1 - POUR 3 POST-TENSIONING PLAN	INT-PT-171.dwg	
BASEMENT 1 - POUR 3 BOTTOM REINFORCEMENT PLAN	INT-PT-172.dwg	
BASEMENT 1 - POUR 3 TOP REINFORCEMENT PLAN	INT-PT-173.dwg	
BASEMENT 1 - POUR 4 POST-TENSIONING PLAN	INT-PT-181.dwg	
BASEMENT 1 - POUR 4 BOTTOM REINFORCEMENT PLAN	INT-PT-182.dwg	
BASEMENT 1 - POUR 4 TOP REINFORCEMENT PLAN	INT-PT-183.dwg	
RAMP BASEMENT 3 TO BASEMENT 2	INT-PT-192.dwg	
RAMP BASEMENT 2 TO BASEMENT 1	INT-PT-193.dwg	

Part 2. Declaration matters

I, Kim Anh Thi Vu,

Name

Principal/Structural Design Manager, Interspan (NSW) Pty Ltd

Title *acting on behalf of Corporation Name (if relevant)*

have prepared the attached regulated designs.

I declare:

1. Each regulated design for which this design compliance declaration is being made complies with the requirements of the *Building Code of Australia*.

   ☑ Yes ☐ No

2. Each regulated design for which this design compliance declaration is being made integrates details of other aspects of building work to which the design relates, and other regulated designs for the work, in order to achieve compliance with the *Building Code of Australia*.

   ☑ Yes ☐ No

   If yes, provide details or attach information about the other regulated designs that have been integrated into the regulated design for which this design compliance declaration is being made.

   Enstruct group Pty Ltd (Structural/Civil consultant) specifications; loadings and structural slab profiles.
   Bastes Smart Pty Ltd (Architecture) concrete set out plans and Fire Compartment Plans
   Fire protections of conduits/pipes; openings and penetrations in slab per other consultants
   Water proofing at movement joint and wet areas per other consultant

3. Other standards, codes or requirements have been applied in preparing one or more of the regulated designs.

   ☑ Yes ☐ No

   If yes, provide details or attach information about the standards, codes or requirements that have been applied.

   BCA Clause B1.2
   Relevant FRL's achieved in accordance with Bastes Smart FRL Plans
   AS3600-2018 Concrete Structures
   AS1170.0-2002 Structural design actions - General principles
   AS1170.1-2002 Structural design actions - Permanent, imposed ad other actions
   ASNZS1314-2003 Pre-stressing anchorages
   ASNZS4672.1-2007 & ASNZS4672.2-2007 Steel pre stressing materials - General & Testing Requirements

4. A building product referred to in each regulated design would, if used in a manner consistent with the design, achieve compliance with the *Building Code of Australia*.

   ☑ Yes ☐ No

   If yes, describe or attach information about how the building product would achieve compliance with the *Building Code of Australia*, including the relevant provisions of the *Building Code of Australia*.

   Reid Key box and steel reinforcing are supplied and certified by the Australian Certification Authority for Reinforcing Steels Ltd (ACRS) to comply with ASNZS 4671: 2001
   Hercuslip slip joint by Hercules Engineering
   Crosbe PT Grout complies with AS3600 and AS1478.2 Appendix A; AS1012; ASTMC939
   Stressing wires are supplied and certified by the Australian Certification Authority for Reinforcing Steels Ltd (ACRS) to comply with ASNZS 4671: 2001
   Concrete and fly ash content to comply with AS3600 & AS3582.1

5. I have sought and considered specialist advice in preparing each regulated design.

☐ Yes ☑ No

If yes, provide the name and contact details of the person who provided you with the specialist advice.

6. The regulated designs involve a performance solution.

☐ Yes ☑ No

If yes, provide details of the performance solution and the name and contact details of the person who prepared the performance solution report if this declaration is not for the report.

7. Each regulated design accords with the *Regulated Design Guidance Material* relevant to the design.

☑ Yes ☐ No

Part 3. Signature

Signature	Title	Date
	Principal/Structural Design Manager	19/08/2021

This form relates to obligations under the *Design and Building Practitioners Act 2020* and supporting Regulation.
For more information visit the NSW Fair Trading website:
www.fairtrading.nsw.gov.au/housing-and-property/changes-to-class-2-buildings

NSW GOVERNMENT | Fair Trading

This form relates to obligations under the
Design and Building Practitioners Act 2020
and supporting Regulation

Design Compliance Declaration—multiple regulated designs

Instructions for completing this form

You must complete all Parts of this form.

This form is for multiple regulated designs, and the details must be given in Part 2 of this form in relation to each regulated design to which this form applies.

Where this form requires you to summarise information on which you intend to rely to support your answer, you must describe that information in sufficient detail for the Secretary to fully understand the basis of your answer.

Where this form indicates that material must be attached to the form, you must number each attachment sequentially and identify the number of that attachment in the relevant answer.

The drawing title, number and variation should correspond with the detail in the title block for the design to which this declaration relates.

Part 1. Details

For registered body corporates, give full names of the registered individuals and the corporation on behalf of which the declaration is made.

Design Practitioner name	Body corporate name (if applicable)
Patrick Shephard	enstruct group pty ltd
Registration number of Design Practitioner signing	**Registration number of body corporate (if applicable)**
DEP0000043	DEP0000819
ABN/ACN	**Phone**
32 094 570 671	02 8904 1444

Email address

patrick.shephard@enstruct.com.au

Drawing title	Drawing number	Variation number
GENERAL NOTES	001-01	N/A
SOIL LOADING DIAGRAM - BASEMENT 01	002-02	N/A
SOIL LOADING DIAGRAM - BASEMENT 03	002-06	N/A
SOIL LOADING DIAGRAM - BASEMENT 02	002-07	N/A
FOUNDATION GENERAL ARRANGEMENT	003-00	N/A
FOUNDATION SECTIONS AND DETAILS SHEET 1	003-31	N/A
FOUNDATION SECTIONS AND DETAILS SHEET 2	003-32	N/A
FOUNDATION SECTIONS AND DETAILS SHEET 3	003-33	N/A
CORE BASE REINFORCEMENT PLANS SHEET 1	003-51	N/A
CORE BASE REINFORCEMENT PLANS SHEET 2	003-52	N/A
COLUMN SCHEDULE SHEET 1	005-01	N/A
COLUMN SCHEDULE SHEET 2	005-02	N/A
COLUMN SCHEDULE SHEET 3	005-03	N/A
COLUMN SCHEDULE SHEET 4	005-04	N/A
COLUMN SCHEDULE SHEET 5	005-05	N/A
COLUMN DETAILS SHEET 1	005-31	N/A
COLUMN TRANSITION DETAILS	005-41	N/A
TYPICAL R.C. WALL DETAILS SHEET 1	005-51	N/A
TYPICAL R.C. WALL DETAILS SHEET 2	005-52	N/A
TYPICAL R.C. WALL DETAILS - PENETRATIONS	005-53	N/A
TYPICAL R.C. WALL LINK BEAM DETAILS	005-54	N/A
CORE WALL ELEVATIONS SHEET 1	005-61	N/A
CORE WALL ELEVATIONS SHEET 4	005-64	N/A
CORE WALL ELEVATIONS SHEET 7	005-67	N/A
CORE WALL ELEVATIONS SHEET 10	005-70	N/A
CORE WALL ELEVATIONS SHEET 11	005-71	N/A
CORE WALL ELEVATIONS SHEET 12	005-72	N/A
CORE WALL ELEVATIONS SHEET 13	005-73	N/A
CORE WALL ELEVATIONS SHEET 14	005-74	N/A
CORE WALL ELEVATIONS SHEET 15	005-75	N/A
CORE WALL ELEVATIONS SHEET 16	005-76	N/A
CARPARK RAMP SECTIONS AND DETAILS	008-01	N/A
STAIR ELEVATIONS SHEET 1	009-21	N/A
STAIR ELEVATIONS SHEET 2	009-22	N/A
TYPICAL STAIR DETAILS	009-31	N/A
TYPICAL SLAB DETAILS SHEET 1	011-31	N/A
CORE KEYBOX PART PLANS SHEET 1	012-01	N/A
BASEMENT 03 GENERAL ARRANGEMENT	096-00	N/A
TYPICAL SLAB ON GRADE DETAILS	096-31	N/A
BASEMENT 02 GENERAL ARRANGEMENT	097-00	N/A
BASEMENT 01 GENERAL ARRANGEMENT	098-00	N/A
BASEMENT 01 SECTIONS AND DETAILS SHEET 1	098-31	N/A
BASEMENT 01 SECTIONS AND DETAILS SHEET 2	098-32	N/A
BASEMENT 01 SECTIONS AND DETAILS SHEET 3	098-33	N/A
BASEMENT 01 SECTIONS AND DETAILS SHEET 4	098-34	N/A
BASEMENT 03 LOADING DIAGRAM	296-00	N/A
BASEMENT 03 CONSTRUCTION LOADING DIAGRAM	296-10	N/A
BASEMENT 02 LOADING DIAGRAM	297-00	N/A
BASEMENT 02 CONSTRUCTION LOADING DIAGRAM	297-10	N/A
BASEMENT 02 LATERAL SHEAR LOADING DIAGRAM	297-20	N/A
BASEMENT 01 LOADING DIAGRAM	298-00	N/A
BASEMENT 01 CONSTRUCTION LOADING DIAGRAM	298-10	N/A
BASEMENT 01 LATERAL SHEAR LOADING DIAGRAM	298-20	N/A

Part 2. Declaration matters

I, Patrick Shephard ,

Name

Senior Associate , enstruct group pty ltd

Title *acting on behalf of Corporation Name (if relevant)*

have prepared the attached regulated designs. I declare:

1. Each regulated design for which this design compliance declaration is being made complies with the requirements of the *Building Code of Australia*.

☒ Yes ☐ No

2. Each regulated design for which this design compliance declaration is being made integrates details of other aspects of building work to which the design relates, and other regulated designs for the work, in order to achieve compliance with the *Building Code of Australia*.

☒ Yes ☐ No

If yes, provide details or attach information about the other regulated designs that have been integrated into the regulated design for which this design compliance declaration is being made.

A04.A1.001	Concrete Profile Plans Basement 01
A04.A1.002	Concrete Profile Plans Basement 02
A04.A1.003	Concrete Profile Plans Basement 03

3. Other standards, codes or requirements have been applied in preparing one or more of the regulated designs.

☒ Yes ☐ No

If yes, provide details or attach information about the standards, codes or requirements that have been applied.

Standard or Performance	**Year**
NCC Part B Structure Provisions, Performance Requirements	2019 Amdt 1
NCC Part C, Fire Resistance, Performance Requirements	2019 Amdt 1
AS/NZS 1170.0 General Principles	2002
AS/NZS 1170.1 (R2016) Permanent, Imposed & Other Actions	2002
AS/NZS 1170.2:(R2016) Wind Actions	2011
AS 1170.4 (R2018) Earthquake Actions in Australia	2007
AS 3700 Masonry Structures	2018
AS 4100 (R2016) Steel Structures	1998
AS 3600 Concrete Structures	2018 Amdt 2

4. A building product referred to in each regulated design would, if used in a manner consistent with the design, achieve compliance with the *Building Code of Australia*.

☒ Yes ☐ No

If yes, describe or attach information about how the building product would achieve compliance with the *Building Code of Australia*, including the relevant provisions of the *Building Code of Australia*.

Ancon Keybox Reinforcement Continuity System use ACRS approved bar which meets the requirements of AS/NZS 4671: 2001. The grade of reinforcing bar used is Grade 500N, minimum yield 500MPa, minimum uniform elongation Agt 5%. The bars are bent in accordance with AS/NZS 4671: 2001.
Ancon BT Couplers and Bartek reinforcing couplers are deemed to meet the requirements of AS3600 when used with reinforcing bars to AS4671.

5. I have sought and considered specialist advice in preparing each regulated design.

☒ Yes ☐ No

If yes, provide the name and contact details of the person who provided you with the specialist advice.

Wind Tunnel Testing: Windtech Consultants PTY Ltd, Simon Ronald. 02 9503 0300
WD867-04F03(rev1) - PI report,
WD867-04 Final Load Cases (rev1) - Ultimate Case, 1000yr@2.0%,
WD867-04 Final Load Cases (rev1) - Serviceability Case, 25yr@1.5%

Geotechnical Engineers: Douglas Partners Pty Ltd, Sally Peacock. 02 9808 0666
86043.01.R.001.Rev1.Greater "Report on Preliminary Geotechnical Investigation of Ivanhoe Estate"
86043.01.R.002.Rev0.Stage 1 "Report on Geotechnical Investigation of Ivanhoe Estate – Stage 1"
86043.01.R.005.Rev0.Groundwater monitoring
86043.05.R.001.Rev1.Analysis Summary Report
86043.05.R.002.Rev0 "Proposed A1 Building Geotechnical Input into Shoring Design"
86043.03.C.002.Rev0

Fire Compartment Plans: Bates Smart. Bianca Heinemann. 02 8354 5100
A2601 Basement 3 Fire Compartment Plan Rev 1
A2602 Basement 2 Fire Compartment Plan Rev 1
A603 Basement 1 Fire Compartment Plan Rev 1

6. The regulated designs involve a performance solution.

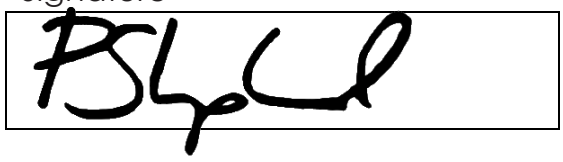
☐ Yes ☒ No

If yes, provide details of the performance solution and the name and contact details of the person who prepared the performance solution report if this declaration is not for the report.

7. Each regulated design accords with the *Regulated Design Guidance Material* relevant to the design.

☒ Yes ☐ No

Part 3. Signature

Signature	Title	Date
	Senior Associate	20/08/2021

This form relates to obligations under the *Design and Building Practitioners Act 2020* and supporting Regulation. For more information visit the NSW Fair Trading website:
www.fairtrading.nsw.gov.au/housing-and-property/changes-to-class-2-buildings

Regulated Design Record				
Project Address: Ivanhoe Estate, Macquarie Park				
Project Title: Building A1, Midtown MacPark				
Consent No: SSD NO# 8903			Body Corporate No: DEP0001256	
Drawing Title: Lower Ground Fire Compartment Plan			Drawing No: A20.A1.0LG	
Rev	Date dd.mm.yy	Description	DP Full Name	Reg No
1	19.08.21	CC2 FOR CONSTRUCTION	Matthew Allen	DEP0000800

Check all dimensions and site conditions prior to commencement of any work, the purchase or ordering of any materials, fittings, plant, services or equipment and the preparation of shop drawings and or the fabrication of any components.

Do not scale drawings - refer to figured dimensions only. Any discrepancies shall immediately be referred to the architect for clarification.

All drawings may not be reproduced or distributed without prior permission from the architect.

Legend

Classifications
Class 2 (Residential) , Class 7a (Carpark),
Class 7b (Storage), Class 9b (Childcare)

Basement 3,2,1	Class 7a
Lower Ground	Class 2, 7a, 7b and 9b
Upper Ground	Class 9b
Level 1 - 23	Class 2

- Class 2 Residential - Slab FRL 90
- Class 7a Carpark - Slab FRL 120
- Class 7b Storage - Slab FRL 120
- Class 9b Childcare - Slab FRL 120
- Class 8 - Substation
- non-loadbearing precast elements
- load-bearing in situ columns

All external columns and beams to achieve **FRL** of **ITS CLASS**
All internal columns and beams to achieve **FRL** of **ITS CLASS**

Fire resistance level [FRL]	Structure/ Integrity/ Insulation
	120/90/90
	---/90/90
	120/120/120
	120/---/---
	---/120/120
	180/180/180
	240/240/240

DOORS

Fire Doors within FRL walls to be fire rated doors
---/xxx (same as wall)/ 30

- SD — smoke door
- FD — fire door

Regulated Design Record
The Building Element for which this design has been prepared and the subject of this Design Declaration is: (Refer to checked item below)
☒ Fire Safety Systems
☐ Waterproofing
☐ Building Structure
☐ Building Enclosure
☐ Building Services

Revision	Date	Description	Initial	Checked
1	19.08.21	CC2 - For Construction	JT/CK	BH
	16.07.21	As For Construction	JT	BH
D	15.07.21	For Approval	BH	BH
C	11.06.20	Tender Amendments	BH	BH
B	27.02.20	TENDER	JU,MA,M T	BH
A	21.02.20	DRAFT TENDER	BH	BH

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

Fire Compartment Plan
Lower Ground

Status	CD
Scale	1 : 100 @ B1
Drawn	Author
Checked	Checker
Project No.	S12067.A
Plot Date	20/08/2021 9:51:39 AM
Plot File	
Drawing no.	A20.A1.0LG
Revision	1

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Bates Smart Pty Ltd ABN 70 004 999 400

AS FOR CONSTRUCTION

BATESSMART

BIM 360://Projects_Ivanhoe/IVANHOE_BS_AR/Cd_Ivanhoe/IVANHOE_BS_AR(Cd)_R20/20.Ivt

Regulated Design Record				
Project Address: Ivanhoe Estate, Macquarie Park				
Project Title: Building A1, Midtown MacPark				
Consent No: SSD NO# 8903			Body Corporate No: DEP0001256	
Drawing Title: Basement 01 Fire Compartment Plan			Drawing No: A20.A1.001	
Rev	Date dd.mm.yy	Description	DP Full Name	Reg No
1	19.08.21	CC2 FOR CONSTRUCTION	Matthew Allen	DEP0000800



Check all dimensions and site conditions prior to commencement of any work, the purchase or ordering of any materials, fittings, plant, services or equipment and the preparation of shop drawings and or the fabrication of any components.

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Legend

Classifications
Class 2 (Residential) , Class 7a (Carpark),
Class 7b (Storage), Class 9b (Childcare)

Basement 3,2,1	Class 7a
Lower Ground	Class 2, 7a, 7b and 9b
Upper Ground	Class 9b
Level 1 - 23	Class 2

- Class 2 Residential - Slab FRL 90
- Class 7a Carpark - Slab FRL 120
- Class 7b Storage - Slab FRL 120
- Class 9b Childcare - Slab FRL 120
- Class 8 - Substation
- non-loadbearing precast elements
- load-bearing in situ columns

All external columns and beams to achieve **FRL** of **ITS CLASS**
All internal columns and beams to achieve **FRL** of **ITS CLASS**

Fire resistance level [FRL]	Structure/ Integrity/ Insulation
	120/90/90
	---/90/90
	120/120/120
	120/---/---
	---/120/120
	180/180/180
	240/240/240

DOORS

- Fire Doors within FRL walls to be fire rated doors ---/xxx (same as wall)/ 30
- SD — smoke door
- FD — fire door

Regulated Design Record
The Building Element for which this design has been prepared and the subject of this Design Declaration is: (Refer to checked item below)
☒ Fire Safety Systems
☐ Waterproofing
☐ Building Structure
☐ Building Enclosure
☐ Building Services

Revision	Date	Description	Initial	Checked
1	19.08.21	CC2 - For Construction	JT/CK	BH
	16.07.21	As For Construction	JT	BH
D	15.07.21	For Approval	BH	BH
C	11.06.20	Tender Amendments	BH	BH
B	27.02.20	TENDER	JU,JM,M T	BH
A	21.02.20	DRAFT TENDER	BH	BH

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

Fire Compartment Plan
Basement 01

Status	CD		
Scale	1 : 100	@ B1	
Drawn	Author	Checked	Checker
Project No.	S12067.A		
Plot Date	20/08/2021 9:52:16 AM		
Plot File			
Drawing no.	A20.A1.001	Revision	1

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email syd@batessmart.com.au
http://www.batessmart.com.au

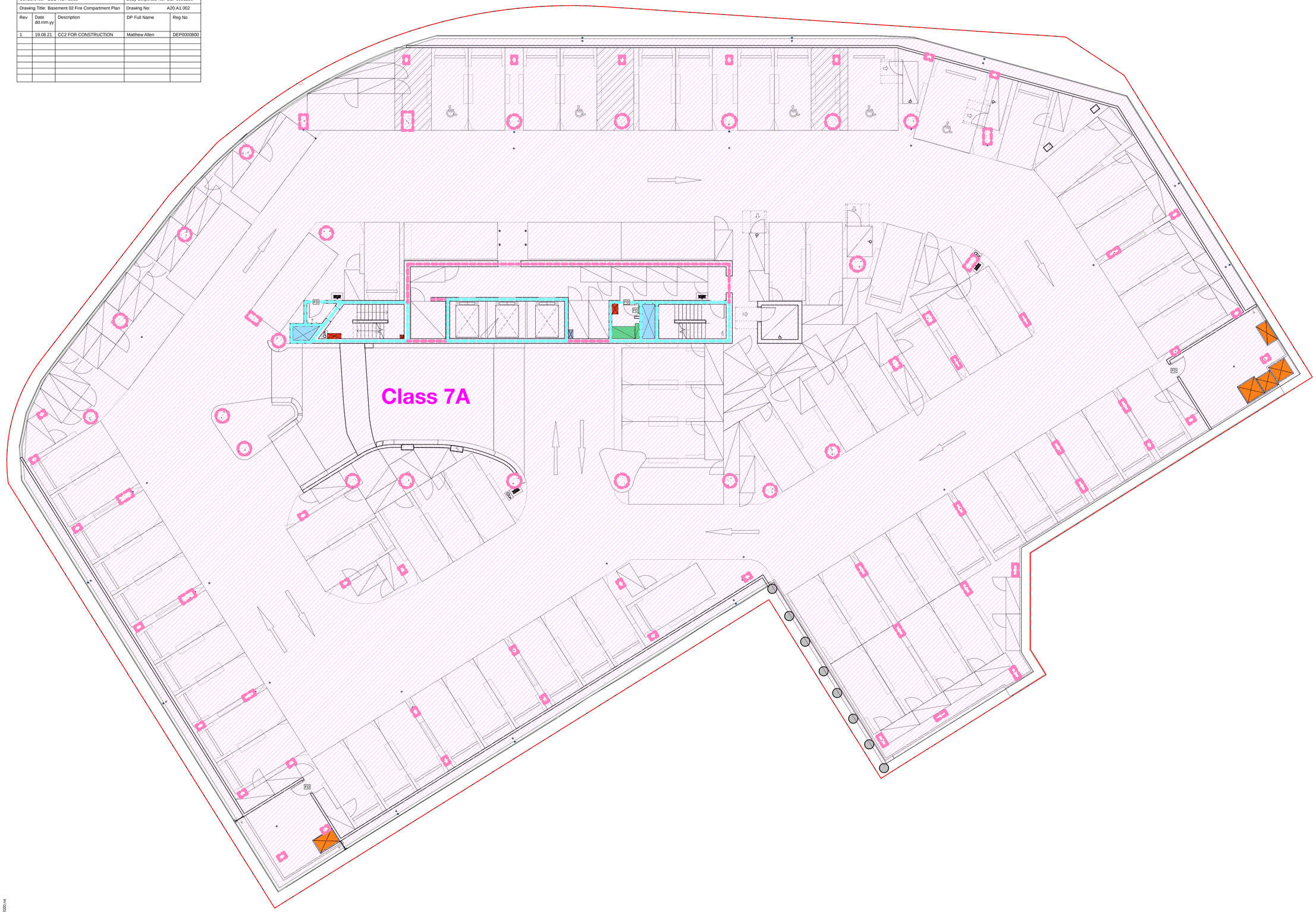
Bates Smart Pty Ltd ABN 70 004 999 400

FOR CONSTRUCTION

BATESSMART

BIM 360://Teams_Ivanhoe/IVANHOE_BS_ARCH_R2020.rvt

Regulated Design Record				
Project Address: Ivanhoe Estate, Macquarie Park				
Project Title: Building A1, Midtown MacPark				
Consent No: SSD NO# 8903			Body Corporate No: DEP0001256	
Drawing Title: Basement 02 Fire Compartment Plan			Drawing No: A20.A1.002	
Rev	Date dd.mm.yy	Description	DP Full Name	Reg No
1	19.08.21	CC2 FOR CONSTRUCTION	Matthew Allen	DEP0000800



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Legend

Classifications
Class 2 (Residential) , Class 7a (Carpark),
Class 7b (Storage), Class 9b (Childcare)

Basement 3,2,1	Class 7a
Lower Ground	Class 2, 7a, 7b and 9b
Upper Ground	Class 9b
Level 1 - 23	Class 2

- Class 2 Residential - Slab FRL 90
- Class 7a Carpark - Slab FRL 120
- Class 7b Storage - Slab FRL 120
- Class 9b Childcare - Slab FRL 120
- Class 8 - Substation
- non-loadbearing precast elements
- load-bearing in situ columns

All external columns and beams to achieve **FRL** of **ITS CLASS**
All internal columns and beams to achieve **FRL** of **ITS CLASS**

Fire resistance level [FRL]	Structure/ Integrity/ Insulation
	120/90/90
	---/90/90
	120/120/120
	120/---/---
	---/120/120
	180/180/180
	240/240/240

DOORS

- Fire Doors within FRL walls to be fire rated doors ---/xxx (same as wall)/ 30
- smoke door (SD)
- fire door (FD)

Regulated Design Record
The Building Element for which this design has been prepared and the subject of this Design Declaration is: (Refer to checked item below) ☒ Fire Safety Systems ☐ Waterproofing ☐ Building Structure ☐ Building Enclosure ☐ Building Services

Revision	Date	Description	Initial	Checked
1	19.08.21	CC2 - For Construction	JT/CK	BH
	16.07.21	As For Construction	JT	BH
C	15.07.21	For Approval	BH	BH
B	27.02.20	TENDER	JU,JM,MT	BH
A	21.02.20	DRAFT TENDER	BH	BH

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

Fire Compartment Plan
Basement 02

Status	CD
Scale	1 : 100 @ B1
Drawn	Author
Checked	Checker
Project No.	S12067.A
Plot Date	20/08/2021 9:52:03 AM
Plot File	
Drawing no.	A20.A1.002
Revision	1

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http://www.batessmart.com.au

Bates Smart Pty Ltd ABN 70 004 999 400

FOR CONSTRUCTION

BATESSMART

BIM 360://Teams_Ivanhoe/IVANHOE_BS_ARCH_R2020.rvt

Regulated Design Record				
Project Address: Ivanhoe Estate, Macquarie Park				
Project Title: Building A1, Midtown MacPark				
Consent No: SSD NO# 8903			Body Corporate No: DEP0001256	
Drawing Title: Basement 03 Fire Compartment Plan			Drawing No: A20.A1.003	
Rev	Date dd.mm.yy	Description	DP Full Name	Reg No
1	19.08.21	CC2 FOR CONSTRUCTION	Matthew Allen	DEP0000800



Check all dimensions and site conditions prior to commencement of any work, the purchase or ordering of any materials, fittings, plant, services or equipment and the preparation of shop drawings and or the fabrication of any components.

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Legend

Classifications
Class 2 (Residential) , Class 7a (Carpark),
Class 7b (Storage), Class 9b (Childcare)

Basement 3,2,1	Class 7a
Lower Ground	Class 2, 7a, 7b and 9b
Upper Ground	Class 9b
Level 1 - 23	Class 2

- Class 2 Residential - Slab FRL 90
- Class 7a Carpark - Slab FRL 120
- Class 7b Storage - Slab FRL 120
- Class 9b Childcare - Slab FRL 120
- Class 8 - Substation
- non-loadbearing precast elements
- load-bearing in situ columns

All external columns and beams to achieve **FRL** of **ITS CLASS**
All internal columns and beams to achieve **FRL** of **ITS CLASS**

Fire resistance level [FRL]	Structure/ Integrity/ Insulation
	120/90/90
	---/90/90
	120/120/120
	120/---/---
	---/120/120
	180/180/180
	240/240/240

DOORS

- Fire Doors within FRL walls to be fire rated doors ---/xxx (same as wall)/ 30
- SD — smoke door
- FD — fire door

Regulated Design Record
The Building Element for which this design has been prepared and the subject of this Design Declaration is: (Refer to checked item below)
☒ Fire Safety Systems
☐ Waterproofing
☐ Building Structure
☐ Building Enclosure
☐ Building Services

Revision	Date	Description	Initial	Checked
1	19.08.21	CC2 - For Construction	JT/CK	BH
	16.07.21	As For Construction	JT	BH
C	15.07.21	For Approval	BH	BH
B	27.02.20	TENDER	JU,JM,M T	BH
A	21.02.20	DRAFT TENDER	BH	BH

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

Fire Compartment Plan
Basement 03

Status	CD
Scale	1 : 100 @ B1
Drawn	Author
Checked	Checker
Project No.	S12067.A
Plot Date	20/08/2021 9:51:51 AM
Plot File	
Drawing no.	A20.A1.003
Revision	1

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http://www.batessmart.com.au

Bates Smart Pty Ltd ABN 70 004 999 400

FOR CONSTRUCTION

BATESSMART

BIM 360://Fraser's_Ivanhoe/IVANHOE_BS_ARCH_R22020.rvt

Regulated Design Record				
Project Address: IVANHOE PL, MACQUARIE PARK NSW 2113 AUSTRALIA				
Project Title: BUILDING A1 - IVANHOE ESTATE				
Consent No: SSDA8903		Body Corporate Reg No: -		
Drawing Title: NOTES AND LEGEND		Drawing No: 02507-A1-HY-001		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	ISSUE FOR CONSTRUCTION	KA KI CHAN	DEP0000137

IVANHOE ESTATE, MACQUARIE PARK - BUILDING A1
HYDRAULIC SERVICES

GENERAL NOTES

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE LOCAL SUPPLY AUTHORITIES REGULATIONS, THE NSW PLUMBING CODE OF PRACTICE, AS3500 AND AS5601.
2. THE CONTRACTOR SHALL PROVIDE COORDINATED "SHOP DRAWINGS" OR DRAWINGS "FOR CONSTRUCTION" TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO THE CONSTRUCTION OF ANY HYDRAULIC SERVICES WORKS. THE DRAWINGS SHALL CLEARLY NOMINATE AND DIMENSION THE EXACT SIZE AND LOCATION OF ALL STRUCTURAL PENETRATIONS AND DETAIL THE POSITION AND LEVEL OF ALL HYDRAULIC SERVICES PIPEWORK IN RELATION TO THE STRUCTURE AND OTHER SERVICES.
3. ALL HYDRAULIC DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE RELEVANT AND MOST RECENT ARCHITECTURAL, STRUCTURAL, CIVIL, MECHANICAL, ELECTRICAL AND LANDSCAPING DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL ADVISE THE SUPERINTENDENT IMMEDIATELY OF ANY TECHNICAL OR COORDINATION ISSUES THAT MAY ARISE.
4. THE LOCATION AND LEVELS OF EXISTING SERVICES SHOWN ARE APPROXIMATE ONLY AND SHALL BE VERIFIED ON SITE BY THE CONTRACTOR PRIOR TO COMMENCING WORKS. THE CONTRACTOR SHALL ADVISE THE SUPERINTENDENT IMMEDIATELY OF ANY DISCREPANCIES THAT MAY PREVENT CONSTRUCTION OF THE WORKS GENERALLY AS PER THE DRAWINGS.
5. THE CONTRACTOR SHALL TAKE ALL REASONABLE CARE WHEN EXCAVATING NEAR EXISTING SERVICE AND SHALL FOLLOW THE RELEVANT SERVICE AUTHORITIES GUIDELINES FOR EXCAVATION NEAR EXISTING SERVICES. IF THERE IS ANY DOUBT AS TO THE ACTUAL LOCATION OF AN EXISTING SERVICE, THEN THE CONTRACTOR SHALL CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO ANY EXCAVATION WORK COMMENCING.
6. ALL LEVELS REFER TO AUSTRALIAN HEIGHT DATUM (AHD) UNLESS NOTED OTHERWISE.
7. THE CONTRACTOR SHALL ALLOW FOR ALL SURVEY AND SETOUT REQUIRED TO INSTALL THE WORKS. "WORK AS EXECUTED" SURVEY AND DRAWINGS OF ANY STORMWATER DRAINAGE AND ON-SITE STORMWATER DETENTION MUST BE PREPARED AND SIGNED BY A REGISTERED SURVEYOR.
8. THE CONTRACTOR SHALL ALLOW TO MAKE ALL APPLICATIONS AND PAY ALL ASSOCIATED FEES RELATING TO ROAD OPENING AS REQUIRED, TO THE SATISFACTION OF THE GOVERNING ROAD AUTHORITY. THE CONTRACTOR SHALL ALSO ALLOW FOR THE PREPARATION OF TRAFFIC CONTROL PLANS AND PROVISION OF TRAFFIC CONTROL AS MAY BE REQUIRED.
9. UPON PRACTICAL COMPLETION OF THE WORKS, THE CONTRACTOR SHALL:
   - PROVIDE "WORK AS EXECUTED" DRAWINGS OF THE COMPLETED WORKS.
   - PROVIDE COPIES OF ALL TEST RESULTS AND CERTIFICATES RELATING TO THE INSTALLATION OF THE WORKS.
   - PROVIDE MANUFACTURERS SPECIFICATIONS AND MANUALS FOR INSTALLED PLANT ITEMS, COMPONENTS, ETC.
   - TRANSFER ALL WARRANTIES FOR INSTALLED PLANT ITEMS, COMPONENTS, ETC., TO THE PRINCIPAL.

FIRE SEALING OF PENETRATIONS

1. PENETRATIONS THROUGH CONCRETE SLABS SHALL BE SEALED TO PROVIDE A MINIMUM TWO HOUR FRL TO AS1530.
2. PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE SEALED TO PROVIDE THE SAME FRL AS THE ELEMENT BEING PENETRATED AS PER AS1530.
3. THE CONTRACTOR SHALL SUBMIT IN WRITING AND SEEK APPROVAL FROM THE PRINCIPAL CERTIFYING AUTHORITY FOR THE INTENDED METHODS TO BE USED FOR FIRE SEALING PENETRATIONS PRIOR TO THEIR SUPPLY AND INSTALLATION.
4. WHERE UPVC PIPES PENETRATE CONCRETE SLABS OR FIRE RATED WALLS, THEY SHALL BE PROVIDED WITH AN APPROVED FIRE RATED COLLAR HAVING THE SAME FIRE RATING OR GREATER THAN THE ELEMENT BEING PENETRATED.
5. WHERE SERVICES OTHER THAN UPVC PENETRATE CONCRETE OR MASONARY BUILDING ELEMENTS, SEAL ANY GAPS BETWEEN THE SERVICES AND THE ELEMENT WITH AN APPROVED MASTIC FIRE-STOP FOAM HAVING THE SAME FIRE RATING OR GREATER THAN THE ELEMENT BEING PENETRATED.

SANITARY PLUMBING

1. ALL PIPE WORK SHALL BE INSTALLED AND TESTED TO AS3500.
2. ALL VENTS SHALL BE OFFSET WITHIN THE ROOF SPACE AS REQUIRED TO PROVIDE MINIMUM OF 600mm FROM EAVES.
3. ALL PIPE PENETRATIONS AT WALLS SHALL BE FITTED WITH A PUDDLE FLANGE AND MADE GOOD TO ENSURE WATER TIGHTNESS.
4. ALL PIPE PENETRATIONS THROUGH CONCRETE STRUCTURAL ELEMENTS SHALL BE COORDINATED AND WHERE POSSIBLE CAST-IN PRIOR TO THE PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOT CUT OR MOVE ANY STEEL REINFORCING BARS TO SUIT A PIPE PENETRATION UNLESS APPROVED IN WRITING BY THE SUPERINTENDENT AND OR THE PROJECTS STRUCTURAL ENGINEER.
5. ALL CORE HOLE LOCATIONS SHALL BE APPROVED IN WRITING BY THE SUPERINTENDENT AND OR THE PROJECTS STRUCTURAL ENGINEER PRIOR TO THE COMMENCEMENT OF ANY CORING ACTIVITIES.
6. ALL PIPE WORK SHALL BE ACOUSTICALLY INSULATED TO ACHIEVE THE MINIMUM STC REQUIREMENT OR BETTER AS PER THE CURRENT BUILDING CODE OF AUSTRALIA. THE CONTRACTOR SHALL SUBMIT IN WRITING AND SEEK APPROVAL FROM THE PRINCIPAL CERTIFYING AUTHORITY FOR THE INTENDED METHOD TO BE USED FOR ACHIEVING THE STC REQUIREMENTS PRIOR TO THE SUPPLY AND INSTALLATION OF THE ACOUSTIC TREATMENT.

FIRE HYDRANT SERVICE

1. THE CONTRACTOR SHALL MAKE ALL APPLICATIONS AND PAY ALL ASSOCIATED FEES AND CHARGES TO THE LOCAL SUPPLY AUTHORITY TO ENABLE CONNECTION OF THE WATER SUPPLY TO THE AUTHORITIES WATER MAIN.
2. THE CONTRACTOR SHALL MAKE ALL APPLICATIONS AND PAY ALL ASSOCIATED FEES AND CHARGES TO THE LOCAL SUPPLY AUTHORITY TO ENABLE THE INSTALLATION OF ANY WATER SUPPLY PUMP-SETS FOR THE FIRE HYDRANT SERVICE.
3. ALL PIPE WORK SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH AS2419.1 AND AS3500.
4. TEMPORARY FIRE HYDRANT SYSTEM TO BE INSTALLED DURING CONSTRUCTION WHEN BUILDING EFFECTIVE HEIGHT HAS REACHED 12m. FIRE HYDRANT SYSTEM SHALL BE OPERATIONAL, MINIMUM 2 STOREYS BELOW TOP DECKING. REFER TO BCA CLAUSE E 1.9.

HYDRAULIC SERVICE MATERIALS

1. POTABLE WATER SUPPLY
   - SMALLER THAN DN100 SHALL BE COPPER TUBING TYPE B TO AS 1432 UNLESS NOTED OTHERWISE.
   - DN100 OR LARGER SHALL BE DUCTILE IRON CEMENT LINED (DICL) PIPE CLASS K9 TO AS2280 WITH POLYETHYLENE SLEEVING WHEN INSTALLED IN GROUND OR MPVC PIPE CLASS 16 AND BLUE IN COLOUR UNLESS NOTED OTHERWISE.
2. NON-POTABLE WATER SUPPLY
   - SMALLER THAN DN100 SHALL BE COPPER TUBING TYPE B TO AS 1432 UNLESS NOTED OTHERWISE. THE PIPE SHALL BE APPROPRIATELY MARKED TO IDENTIFY THAT THE SUPPLIED WATER IS NON-POTABLE
   - DN100 OR LARGER SHALL BE MPVC PIPE CLASS 16 LILAC IN COLOUR UNLESS NOTED OTHERWISE. THE PIPE SHALL BE APPROPRIATELY MARKED TO IDENTIFY THAT THE SUPPLIED WATER IS NON-POTABLE.

3 GAS SUPPLY
   - SMALLER THAN DN150 SHALL BE COPPER TUBING TYPE B TO AS 1432 UNLESS NOTED OTHERWISE.

4. HOT WATER SUPPLY
   - SMALLER THAN DN100 SHALL BE COPPER TUBING TYPE B TO AS 1432 UNLESS NOTED OTHERWISE. ALL HOT WATER FLOW AND RETURN LINES SHALL BE INSULATED WITH 25mm THERMOTECH 4 – ZERO OR EQUAL.

5 SEWER DRAINAGE
   - DN225 OR SMALLER SHALL BE UPVC PIPE CLASS SN4 TO AS1260 WITH SOLVENT WELD JOINTS (EXCEPT WHERE EXPANSION JOINTS ARE REQUIRED) UNLESS NOTED OTHERWISE.
   - DN300 OR LARGER SHALL BE VITRIFIED CLAY (VC) PIPE CLASS 3 TO AS1741 WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE.

6. SANITARY PLUMBING
   - ALL PIPES SHALL BE UPVC PIPE TYPE SWV TO AS1415 WITH SOLVENT WELD JOINTS (EXCEPT WHERE EXPANSION JOINTS ARE REQUIRED) UNLESS NOTED OTHERWISE.

7. HOT WATER LAGGING
   - 25mm THERMOTEC 4–ZERO.

8. TRADE WASTE DRAINAGE
   - ALL PIPE SHALL BE HIGH DENSITY POLYETHLENE SEWER GRADE.

9. FIRE HYDRANT SERVICE
   - ALL BELOW GROUND PIPES SHALL BE COPPER TUBING TYPE B TO AS1432 OR PVC (BLUE BRUTE) CLASS 16.
   - ALL ABOVE GROUND PIPES SHALL BE GALVANISED MILD STEEL PIPE TO AS1074

SEWER DRAINAGE

1. THE CONTRACTOR SHALL MAKE ALL APPLICATIONS AND PAY ALL ASSOCIATED FEES AND CHARGES TO THE LOCAL SUPPLY AUTHORITY TO ENABLE CONNECTION OF THE SEWER DRAINAGE TO THE AUTHORITIES SEWER MAIN.
2. THE CONTRACTOR SHALL PROVIDE AND REMOVE ON COMPLETION ALL TIMBERING AND SHORING AS NECESSARY TO CONSTRUCT THE PIPEWORK.
3. ALL PIPE WORK SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH AS3500.
4. DRAINS UNDER STRUCTURES SHALL BE RETESTED AS REQUIRED BY THE LOCAL SUPPLY AUTHORITY, PLUMBING AND DRAINAGE INSPECTOR OR THE SUPERINTENDENT.
5. WHERE THE CLEARANCE FROM THE TOP OF PIPE WORK TO THE UNDERSIDE OF A FOOTING IS LESS THAN 150mm THEN THE CONTRACTOR SHALL INSTALL AN 80mm COMPRESSIBLE MATERIAL OVER THE PIPE WORK.
6. AN INSPECTION OPENING SHALL BE PROVIDED AT:
   - THE PROPERTY BOUNDARY (OR BOUNDARY TRAP IF REQUIRED
   - EACH WATER CLOSET OR BRANCH
   - MAXIMUM 30m INTERVALS ALONG DRAINS
   - IMMEDIATELY UPSTREAM AND DOWNSTREAM OF ALL JUMP-UPS
   - DRAINS EXITING FROM UNDER A BUILDING OR STRUCTURE
   - ANY LOCATION ALONG A DRAIN THAT MAY BE DIFFICULT FOR A PLUMBER TO ACCESS IN FUTURE FOR MAINTENANCE PURPOSES
7. ALL DRAINS SHALL BE SUPPORTED ON FIRM GROUND. UPON EXCAVATION TO THE REQUIRED LEVELS, IF SOFT OR WATER CHARGED GROUND IS ENCOUNTERED, THEN THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY AND AWAIT FURTHER DIRECTION PRIOR TO PROCEEDING WITH ANY PIPE LAYING.

HYDRAULIC SERVICES MATERIAL ABBREVIATIONS

Cu	COPPER PIPE
DICL	DUCTILE IRON CEMENT LINED PIPE
GMS	GALVANISED MILD STEEL PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
MPVC	MODIFIED POLYVINYL CHLORIDE PIPE
RC	REINFORCED CONCRETE PIPE
UPVC	UNPLASTICISED POLYVINYL CHLORIDE PIPE
VC	VITRIFIED CLAY PIPE

WATER SUPPLY

1. THE CONTRACTOR SHALL MAKE ALL APPLICATIONS AND PAY ALL ASSOCIATED FEES AND CHARGES TO THE LOCAL SUPPLY AUTHORITY TO ENABLE CONNECTION OF THE WATER SUPPLY TO THE AUTHORITIES WATER MAIN.
2. THE CONTRACTOR SHALL MAKE ALL APPLICATIONS AND PAY ALL ASSOCIATED FEES AND CHARGES TO THE LOCAL SUPPLY AUTHORITY TO ENABLE THE INSTALLATION OF ANY WATER SUPPLY PUMP-SETS FOR THE WATER SUPPLY SERVICE.
3. ALL PIPE WORK SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH AS3500.
4. EACH WATER METER TO HAVE A MINIMUM 100MM CLEARANCE, PERPENDICULAR TO THE DIRECTION OF THE PIPES, BETWEEN SUBMETERS.
5. A MINIMUM 100MM CLEARANCE BETWEEN THE OUTERMOST VALVES AND THE EDGES OF THE CUPBOARD.
6. THE CUPBOARD SHALL HAVE A MINIMUM 150MM WATER PROOF AND DRAINED BUND AT THE OPENING IF IT IS LOCATED INSIDE A BUILDING.
7. THE SUBMETERS SHALL BE EASILY ACCESSIBLE AND READABLE FROM FLOOR LEVEL OF THE COMMON PROPERTY.
8. MAXIMUM HEIGHT FOR THE HIGHER OF EITHER THE CENTRELINE OF SUBMETERS OR THE TOP OF THE SUBMETERING ASSEMBLY = 1.6M.
9. A MINIMUM OF 2 SQUARE METRES IS AVAILABLE IN FRONT OF THE CUPBOARD AS FREE WORKING SPACE.

HOT WATER

1. THE CONTRACTOR SHALL MAKE ALL APPLICATIONS AND PAY ALL ASSOCIATED FEES AND CHARGES TO THE LOCAL ELECTRICITY SUPPLY AND OR GAS SUPPLY AUTHORITY FOR CONNECTION OF HOT WATER PLANT.
2. ALL PIPE WORK SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH AS3500.
3. ALL HOT WATER FLOW AND RETURN LINES SHALL BE INSULATED WITH 25mm THERMOTECH 4 – ZERO OR EQUAL.
4. A PRESSURE LIMITING VALVE SHALL BE INSTALLED ON THE COLD WATER INLET MANIFOLD TO THE HOT WATER PLANT IF THE PRESSURE EXCEEDS 600kPa.
5. HOT WATER METERS WITH REMOTE READING DEVICES SHALL BE INSTALLED IN METER CUPBOARDS (AS SHOWN ON THE DRAWINGS) TO EMBEDDED NETWORK RETAILER'S SPECIFICATION. TYPICAL ALL UNITS.
6. TEMPERING OR THERMOSTATIC MIXING VALVES SHALL BE INSTALLED DOWNSTREAM OF HOT WATER METERS IN ACCORDANCE WITH AS3500 AND THE NSW PLUMBING CODE OF PRACTICE.
7. A MASTER COLD WATER METER SHALL BE INSTALLED ON THE COLD WATER INLET MANIFOLD TO THE CENTRAL HOT WATER PLANT.

STORMWATER NOTES

1. PIPES DN375 AND LARGER TO BE STEEL REINFORCED CONCRETE PIPES CLASS '2' APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS U.N.O.
2. PIPES DN300 AND SMALLER SHALL BE GRADE SH (SEWER GRADE) uPVC WITH RUBBER RING JOINTS.
3. EQUIVALENT STRENGTH FIBRE REINFORCED CONCRETE PIPES MAY BE USED UP TO DN450.
4. PIPES FOR SUB-SOIL DRAINS SHALL BE SLOTTED 100MM DIAMETER CLASS 1000 WRAPPED IN GEOFABRIC, U.O.N, COMPLYING WITH THE REQUIREMENTS OF AS 2439.
5. PRECAST PITS, WHERE ALLOWED, AND THE INSITU BASE SHALL COMPLY WITH THE REQUIREMENT OF THE MANUFACTURER.
6. ALL MILD STEEL FIXTURES INCLUDING GRATES, FRAMES, STEP IRONS, LADDERS, ETC., SHALL BE HOT DIP GALVANISED. GALVANISING SHALL COMPLY WITH THE REQUIREMENTS OF AS 1214 OR AS 1650, AS APPROPRIATE.
7. GEOFABRIC FILTER SHALL BE PERMEABLE, NON-WOVEN FABRIC MANUFACTURED FROM A POLYMER SUCH AS POLYPROPYLENE OR POLYESTER OF MASS NOT LESS THAN 135G/M2.
8. THE MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:
   CONCRETE AND FRC PIPES: EXTERNAL PIPE DIAMETER PLUS 400MM.
   uPVC PIPE: EXTERNAL DIAMETER OF PIPE PLUS 200MM.
   SUBSOIL PIPE: 250MM.
9. ALL PIPES SHALL BE PLACED CENTRALLY WITHIN THE TRENCH WITH EQUAL CLEARANCE EACH SIDE.
10. PIPE BEDDING MATERIAL SHALL BE CLEAN COARSE RIVER SAND WITH DEPTH AS FOLLOWS:
    CONCRETE AND FRC PIPES: 100MM (175MM IN ROCK)
    UPVC PIPE: 75MM (100MM IN ROCK)
    SUBSOIL DRAINS: 50MM
11. ALL PIPES SHALL BE BACKFILLED WITH GRANULAR MATERIAL SUCH AS QUARRY FINES OR COARSE RIVER SAND TO A MINIMUM OF 150MM ABOVE THE PIPE. THE GRANULAR MATERIAL SHALL BE PLACED IN 150MM THICK MAXIMUM LAYERS AND COMPACTED TO ACHIEVE A DENSITY INDEX (ID) OF 70%. FREQUENCIES OF COMPACTION TESTS FOR TRENCHES SHALL BE 1 TEST PER 2 LAYERS PER 40 LINEAR METRE.
12. BACKFILL THE REMAINDER OF THE TRENCH ABOVE THE SAND TO SUBGRADE LEVEL WITH TRENCH MATERIAL. PLACE AND COMPACT MATERIALS IN LAYERS NOT EXCEEDING 150MM LOOSE THICKNESS. MATERIAL LOWER THAN 500MM BELOW SUBGRADE LEVEL SHALL BE COMPACTED TO AT LEAST 95% OF STANDARD MAXIMUM DRY DENSITY. THE TOP 500MM BELOW PAVEMENT SUBGRADE LEVELS SHALL BE COMPACTED TO AT LEAST 100% STANDARD MAXIMUM DRY DENSITY.
13. FILTER MATERIAL FOR SUBSOIL SHALL BE COARSE SAND OR CRUSHED STONE COMPLYING WITH ONE OF THE GRADINGS IN THE TABLE BELOW. WHERE NOTED ON THE DRAWINGS THE 7MM CRUSHED ROCK FILTER MATERIAL SHALL BE ENCLOSED WITHIN FILTER FABRIC SHEET AS SPECIFIED. FILTER MATERIAL SHALL BE PLACED IN 250MM LAYERS AND COMPACTED TO DENSITY INDEX (ID) OF 60%.

AS SIEVE SIZE (mm)	SAND	7mm ROCK
9.5	100	100
6.7	-	75–100
4.75	90–100	20–55
2.36	75–100	0–15
1.18	50–90	
0.6	20–60	
0.3	10–30	
0.15	2–10	
0.075	0–3	0–2

14. UNLESS OTHERWISE DETAILED OR PERMITTED, THE MINIMUM GRADE OF ALL PIPE WORKS SHALL BE 1.00%.

ABBREVIATIONS

PIPE FITTINGS

	AIR ADMITTANCE VALVE
	BALANCING VALVE
BT	BOUNDARY TRAP
	BUCKET TRAP FLOOR WASTE
	BALL VALVE
	CLEAR OUT
	CHECK VALVE
DFH	DOUBLE CHECK VALVE
	DUAL FIRE HYDRANT
C	DROPPER
	END CAP
	FIRE BRIGADE BOOSTER ASSEMBLY
FH	FIRE HYDRANT
FHR	FIRE HOSE REEL
	FILTER
	FLOW VALVE
F	FLOW SWITCH
	DIRECTION OF FLOW
	FLOOR WASTE
	GULLY
	HOSE TAP
HWU	HOT WATER UNIT - INSTANTANEOUS
IPMF	HOT WATER UNIT - CYLINDER
	IN-DUCT MICRO FLAP (LOW LEVEL VENT)
	METER (GAS/WATER)
	MONITOR VALVE
	PRESSURE LIMITING VALVE
	PRESSURE GAUAGE
	PRESSURE REDUCING VALVE
	PUMP
	REGULATOR (GAS)
	REDUCED PRESSURE ZONE DEVICE (RPZD)
	RISER
	REFLUX VALVE
SMH	SEWER MAINTANENCE HOLE
	SOLENOID VALVE
	STRAINER
	STOP VALVE
	STORMWATER PIT
	TAPPING
	TEMPERING VALVE
	THERMOSTATIC MIXING VALVE
	TUNDISH

LEVELS

FFL	FINISH FLOOR LEVEL
FSL	FINISH SURFACE LEVEL
HL	HIGH LEVEL
IL	INVERT LEVEL
LL	LOW LEVEL
RL	REDUCED LEVEL

FIXTURES

AAV	AIR ADMITTANCE VALVE
B	BASIN
BTH	BATH
CT	COOKTOP
FW	FLOOR WASTE
HT	HOSE TAP
LT	LAUNDRY TUB
ORG	OVERFLOW RELIEF GULLY
RWO	RAINWATER OUTLET
SHR	SHOWER
SK	SINK
TD	TUNDISH
WM	WASHING MACHINE
WC	WATER CLOSET

PIPES

AD	AERIAL DRAINAGE
CVP	CHAMBER VENT
CW	COLD WATER
DE	DIESEL EXHAUST
DP	DOWNPIPE
DTU	DRAINAGE TURN UP
FH	FIRE HYDRANT
FVM	FULLY VENTED MODIFIED
GS	GREASE SUCTION
HW	HOT WATER
HWR	HOT WATER RETURN
NPCW	NON POTABLE COLD WATER
RV	RELIEF VENT
RD	ROOF DRAINAGE
SRM	SEWER RISING MAIN
SST	SINGLE STACK
SW	STORMWATER
SWRM	STORMWATER RISING MAIN
SDP	SYPHONIC DRAINAGE
TW	TRADE WASTE
TWTU	TRADE WASTE TURN UP
TWVP	TRADE WASTE VENT PIPE
VP	VENT PIPE
WW	WARMWATER

HYDRAULIC SERVICES LEGEND

PIPES

	RISER
	SERVICE TYPE
	SERVICE SIZE
	DROPPER
eG	EXISTING GAS MAIN
eS	EXISTING SEWER MAIN
eW	EXISTING WATER MAIN
eRW	EXISTING RECYCLE WATER MAIN
eSW	EXISTING STORMWATER MAIN
eSW	EXISTING STORMWATER MAIN
CCD	COMMON CONDENSATE DRAIN
C	CONDUIT
DE	DIESEL EXHAUST
FHR	FIRE HOSE REEL
FH	FIRE HYDRANT
G	GAS SERVICE
	HOT WATER
	HOT WATER RETURN
NPCW	NON POTABLE COLD WATER
RW	RECYCLED WATER
RD	ROOF DRAINAGE
	SANITARY PLUMBING
SRM	SEWER RISING MAIN
SW	STORM WATER
SWRM	STORM WATER RISING MAIN
SS	SUBSOIL
SDP	SYPHONIC DOWNPIPE
TW	TRADE WASTE
	VENT PIPE
WW	WARM WATER

DRAWING LIST

DRAWING NUMBER	DRAWING NAME
A1-HY-001	NOTES AND LEGEND
A1-HY-100	SITE PLAN
A1-HY-201	BASEMENT 3 PLAN
A1-HY-202	BASEMENT 2 PLAN
A1-HY-203	BASEMENT 1 PLAN
A1-HY-301	LOWER GROUND FLOOR PLAN
A1-HY-302	GROUND FLOOR PLAN
A1-HY-303	LEVEL 1 PLAN
A1-HY-304	LEVEL 2 PLAN
A1-HY-305	LEVEL 3 PLAN
A1-HY-306	LEVEL 4 PLAN
A1-HY-307	LEVEL 5 PLAN
A1-HY-308	LEVEL 6 PLAN
A1-HY-309	LEVEL 7 PLAN
A1-HY-310	LEVEL 8 PLAN
A1-HY-311	LEVEL 9 PLAN
A1-HY-312	LEVEL 10 PLAN
A1-HY-313	LEVEL 11 PLAN
A1-HY-314	LEVEL 12 PLAN
A1-HY-315	LEVEL 13 PLAN
A1-HY-316	LEVEL 14 PLAN
A1-HY-317	LEVEL 15 PLAN
A1-HY-318	LEVEL 16 PLAN
A1-HY-319	LEVEL 17 PLAN
A1-HY-320	LEVEL 18 PLAN
A1-HY-321	LEVEL 19 PLAN
A1-HY-322	LEVEL 20 PLAN
A1-HY-323	LEVEL 21 PLAN
A1-HY-324	LEVEL 22 PLAN
A1-HY-325	LEVEL 23 PLAN
A1-HY-326	ROOF PLAN
A1-HY-400	TYPICAL UNITS LAYOUT
A1-HY-401	POTABLE COLD WATER SCHEMATIC
A1-HY-402	POTABLE HOT WATER SCHEMATIC
A1-HY-403	SANITARY PLUMBING SCHEMATIC 1
A1-HY-404	SANITARY PLUMBING SCHEMATIC 2
A1-HY-405	STORMWATER SCHEMATIC 1
A1-HY-406	SIPHONIC DRAINAGE SCHEMATIC 1
A1-HY-500	GENERAL DETAILS 1
A1-HY-501	GENERAL DETAILS 2

CAD FILENAME: G:\EMP\Projects\02507-IVANHOE ESTATE MACQUARIE PARK - BUILDING A1\ACAD\02507-A1-HY-001.dwg

REV.	DES.	DATE	VER.	DESCRIPTION
1	E.W.	20.08.21	G.C.	ISSUE FOR CONSTRUCTION

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BUILDING A1, MIDTOWN MACPACK IVANHOE ESTATE, MACQUARIE PARK

HYDRAULIC SERVICES
NOTES AND LEGEND

STATUS	FOR CONSTRUCTION	DRAWING No. 02507-A1-HY-001	REV. 1

Regulated Design Record				
Project Address: IVANHOE PL, MACQUARIE PARK NSW 2113 AUSTRALIA				
Project Title: BUILDING A1 - IVANHOE ESTATE				
Consent No: SSDA8903		Body Corporate Reg No: -		
Drawing Title: HYDRAULIC SERVICES - BASEMENT 3		Drawing No: 02507-A1-HY-201		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	ISSUE FOR CONSTRUCTION	KA KI CHAN	DEP0000137

PIPE GUARD TO BE INSTALLED WHEN PIPEWORKS LOCATE IN FRONT OF COLUMN (TYPICAL). REFER TO DETAIL

FIRE HOSE REEL WITH LOCKABLE ISOLATION VALVE (TYPICAL). REFER TO 02507-A1-HY-500 FOR DETAILS

PROVISION FOR 1000 GENERAL PURPOSED PIT. REFER TO DRAWING - 02507-A1-HY-500 FOR GENERAL PURPOSED PIT DETAILS

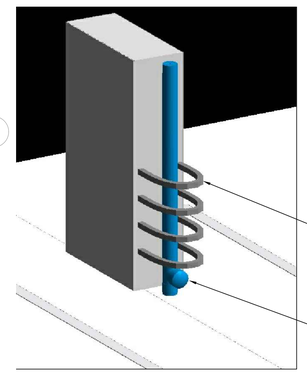
STORMWATER PUMPOUT AND SEWER PUMPOUT CONTROL PANEL. TO BE INSTALLED EQUAL TO ALINE FPC-SERIES MODEL ALI-30240 THREE PHASE DUAL PUMP CONTROLLER WITH BMS

1000LT SEWER PUMP STATION. REFER TO 02507-A1-HY-500 FOR SEWER PUMP DETAILS

MIN. 6m³ STORMWATER PUMP PIT. FINAL DEPTH / DIMENSION / DETAIL AND VOLUME SUBJECT TO SEEPAGE RATE AND LIFT DETAILS

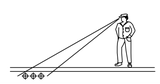
300mm WIDE HEAVY DUTY GRATE AND FRAME TRENCH DRAIN TO BE INSTALLED

REFER TO 02507-A1-HY-500 FOR STORMWATER PUMP PIT DETAILS



PIPE GUARD DETAILS
SCALE: N.T.S.

SERVICES OUT OF STRATA



REV.	DES.	DATE	VER.	DESCRIPTION
1	E.W.	20.08.21	G.C.	ISSUE FOR CONSTRUCTION

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PROJECT VERIFIER'S SIGNATURE: DATE:

ARCHITECT

CLIENT

C&M CONSULTING ENGINEERS
CIVIL AND HYDRAULIC ENGINEERING DESIGN AND PROJECT MANAGEMENT
SUITE 26
11 - 13 BROOKHOLLOW AVE
BAULKHAM HILLS NSW 2153
PHONE: (02) 9680 3100
FAX: (02) 9634 6989
ABN 21 118 134 240

DESIGNED	G. CHAN
VERIFIED	G. CHAN
DRAWN	E. WU
DATE 1st ISSUED	20.08.21
LGA	CITY OF RYDE
SCALE @ B1	1:100

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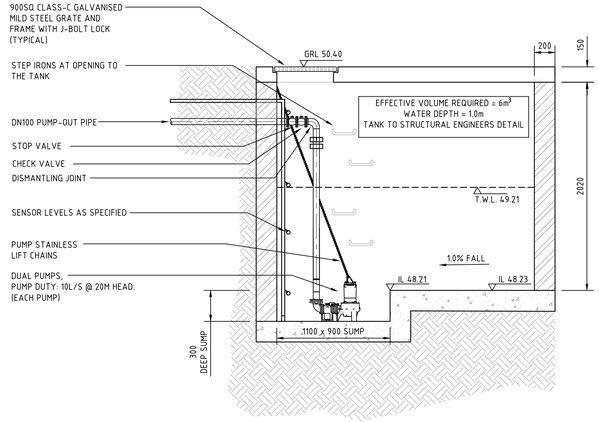
BUILDING A1, MIDTOWN MACPACK IVANHOE ESTATE, MACQUARIE PARK

HYDRAULIC SERVICES BASEMENT 3 PLAN

STATUS FOR CONSTRUCTION | DRAWING No. 02507-A1-HY-201 | REV. 1

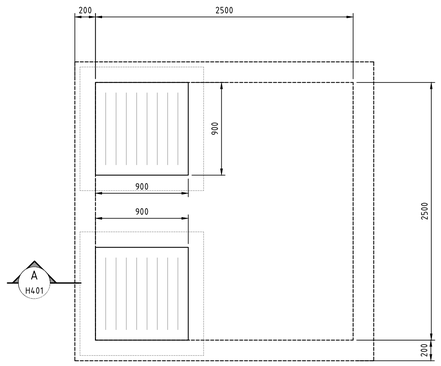
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Regulated Design Record				
Project Address: IVANHOE PL, MACQUARIE PARK NSW 2113 AUSTRALIA				
Project Title: BUILDING A1 - IVANHOE ESTATE				
Consent No: SSDA8903		Body Corporate Reg No: -		
Drawing Title: GENERAL DETAILS 1		Drawing No: 02507-A1-HY-500		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	ISSUE FOR CONSTRUCTION	KA KI CHAN	DEP0000137



SECTION A

SCALE 1:25



PUMP OUT TANK PLAN

SCALE 1:25

STORMWATER PUMP-OUT SYSTEM SPECIFICATION:

ALL COMPONENTS OF THE PUMP-OUT SYSTEM SHALL BE INSTALLED TO THE MANUFACTURER'S SPECIFICATION CONSISTING OF THE FOLLOWING MINIMUM COMPONENTS:

- PUMPS: DUAL PUMPS (CLASS 1 ZONE 2) INSTALLED TO OPERATE WITH AN ALTERNATING DUTY AND STANDBY ARRANGEMENT
- PUMP DUTIES AND STORAGE

PUMP DUTY (EACH)	TANK STORAGE	ABOVE GROUND
2 PUMPS	10YR-2HR	N/A
10L/s @ 20m HEAD	6m3	N/A

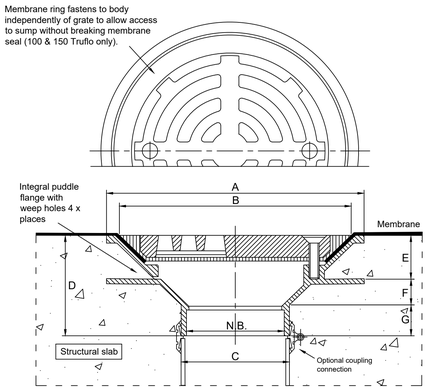
- SENSORS: LEVEL SENSORS FOR PUMP ON, PUMP OFF, HIGH LEVEL ALARM AND LOW LEVEL ALARM
- SWITCHGEAR HOUSING: VANDALPROOF CABINET LOCATED ADJACENT TO THE PUMPING STATION IN A LOCATION TO BE APPROVED BY THE ARCHITECT
- CONTROLS: FPC SERIES DUAL PUMP CONTROLLERS WITH BMS
- INDICATORS: POWER ON LIGHT, PUMP RUN LIGHT, FLASHING LIGHT AND AUDIBLE ALARMS, VOLTMETER, AMMETER, HOURS RUN METER
- POWER SUPPLY: THE CONTRACTOR SHALL PROVIDE ALL NECESSARY POWER SUPPLY AND METERING TO THE PUMP-OUT SYSTEM AND SHALL BE RESPONSIBLE FOR MAKING ALL APPLICATIONS AND PAYING ALL FEES AND CHARGES TO THE ELECTRICITY SUPPLY AUTHORITY

STORMWATER PUMP STATION OPERATION LEVEL		
SABRE AL7500 RISING LEVEL CYCLE		
WATER LEVEL ELEVATION	ACTION	PUMPS IN OPERATION
-	LEAD PUMP TURNS "ON", FS-2	LEAD PUMP "ON"
-	LAG PUMP TURNS "ON", FS-3	LEAD & LAG PUMPS "ON"
-	PUMPS "OFF" LEVEL, FS-4	PUMPS "OFF" GRAVITY FLOW
-	HIGH WATER IN DITCH, FS-4	ALL PUMPS "OFF"
FALLING LEVEL CYCLE		
-	PUMPS "ON" LEVEL, FS-4	PUMPS "ON" PUMPED DISCHARGE
-	DITCH FLOAT HIGH WATER. FS-5	ALL PUMPS "ON"
-	PUMPS "OFF" LEVEL, FS-1	ALL PUMPS "OFF" LAG PUMP SWITCHES TO LEAD PUMP

SPS Truflo & Superflo Flat Grate RWO (2-Piece Grate, Membrane Clamp)

Specification codes:
TIA * F2 (CI body, gal. CI flat grate & aluminum membrane ring)
TIB * F2 (CI body, bronze flat grate & bronze membrane ring)
TBA * F2 (all-bronze assembly)
where * = 80, 100 or 150 n.b.
SIA150F2 (Superflo all-cast iron assembly, 150 outlet only)

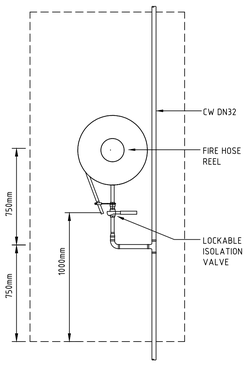
Suggested application:
Membraned floors or roofs with no further topping, eg planter boxes, plant rooms, roof decks.



N.B.	A	B	C	D	E	F	G	Flow rate* L/S
80	200	180	85	80	33	22	25	
100	260	240	110	95	44	26	25	8.2
150	260	240	160	80	48	4	28	10.2
SUPERFLO**	400	300	160	143	66	39	38	17

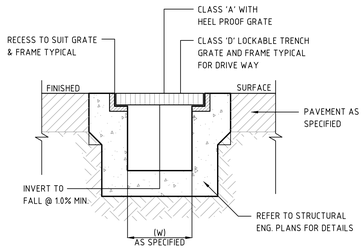
RAIN WATER OUTLET DETAIL

SCALE: N.T.S.



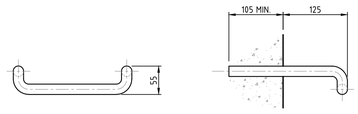
FIRE HOSE REEL - WITH LOCKABLE ISOLATION VALVE

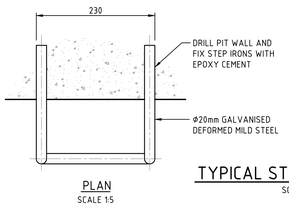
SCALE: N.T.S.



GRATED DRAIN DETAIL

SCALE 1:10

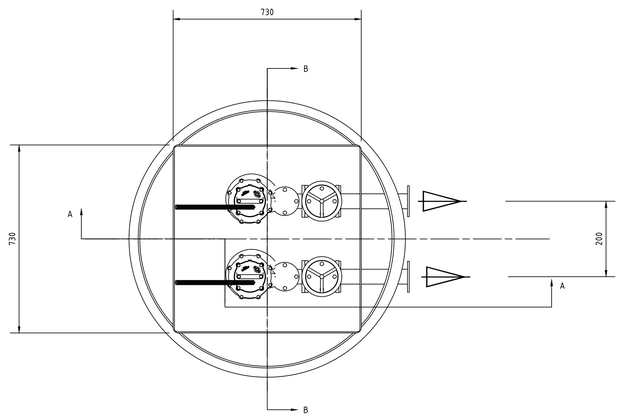




TYPICAL STEP IRON DETAIL

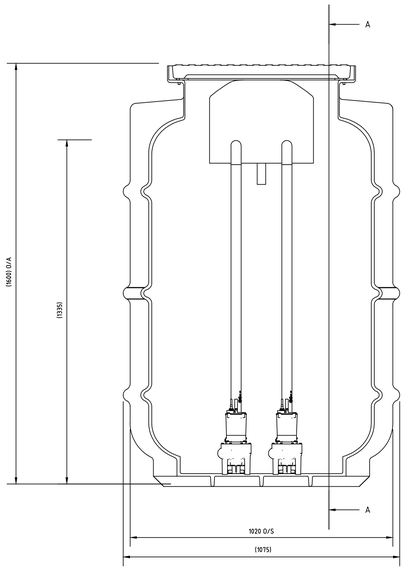
SCALE 1:5

KPPS1200 SPECIFICATIONS	
DEPTH	1600mm
OUTER DIAMETER	1075mm
INNER DIAMETER	1000mm
NOMINAL LITRES	1200L
APPROXIMATE WEIGHT	62kg
ACCESS COVER	600mm x 600m



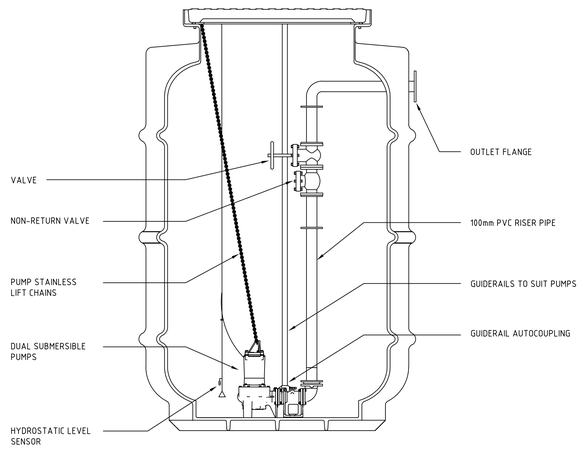
SEWER PUMP OUT DETAIL - TOP VIEW

SCALE: N.T.S.



SEWER PUMP OUT DETAIL - SECTION B-B

SCALE: N.T.S.



SEWER PUMP OUT DETAIL - SECTION A-A

SCALE: N.T.S.

SEWER PUMP-OUT SYSTEM SPECIFICATION:

ALL COMPONENTS OF THE PUMP-OUT SYSTEM SHALL BE INSTALLED TO THE MANUFACTURER'S SPECIFICATION CONSISTING OF THE FOLLOWING MINIMUM COMPONENTS:

- PUMPS: DUAL GRINDER PUMPS TO BE INSTALL TO OPERATE WITH AN ALTERNATING DUTY AND STANDBY ARRANGEMENT
- PUMP DUTIES AND STORAGE

PUMP DUTY (EACH)	TANK STORAGE	ABOVE GROUND
2 PUMPS	-	N/A
1L/s @ 20m HEAD	1000 LITRES	N/A

- SENSORS: LEVEL SENSORS FOR PUMP ON, PUMP OFF, HIGH LEVEL ALARM AND LOW LEVEL ALARM
- SWITCHGEAR HOUSING: VANDALPROOF CABINET LOCATED ADJACENT TO THE PUMPING STATION IN A LOCATION TO BE APPROVED BY THE ARCHITECT
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- INDICATORS: POWER ON LIGHT, PUMP RUN LIGHT, FLASHING LIGHT AND AUDIBLE ALARMS, VOLTMETER, AMMETER, HOURS RUN METER
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SEWER STATION OPERATION LEVEL		
SABRE ALG1500-3 RISING LEVEL CYCLE		
WATER LEVEL ELEVATION	ACTION	PUMPS IN OPERATION
-	LEAD PUMP TURNS "ON", FS-2	LEAD PUMP "ON"
-	LAG PUMP TURNS "ON", FS-3	LEAD & LAG PUMPS "ON"
-	PUMPS "OFF" LEVEL, FS-4	PUMPS "OFF" GRAVITY FLOW
-	HIGH WATER IN DITCH, FS-4	ALL PUMPS "OFF"
FALLING LEVEL CYCLE		
-	PUMPS "ON" LEVEL, FS-4	PUMPS "ON" PUMPED DISCHARGE
-	DITCH FLOAT HIGH WATER. FS-5	ALL PUMPS "ON"
-	PUMPS "OFF" LEVEL, FS-1	ALL PUMPS "OFF" LAG PUMP SWITCHES TO LEAD PUMP

REV.	DES.	DATE	VER.	DESCRIPTION
1	E.W.	20.08.21	G.C.	ISSUE FOR CONSTRUCTION

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PROJECT VERIFIER'S SIGNATURE: DATE:

ARCHITECT

CLIENT

C&M CONSULTING ENGINEERS

CIVIL AND HYDRAULIC ENGINEERING DESIGN AND PROJECT MANAGEMENT

SUITE 26
11 - 13 BROOKHOLLOW AVE
BAULKHAM HILLS NSW 2153

PHONE: (02) 9680 3100
FAX: (02) 9634 6989

ABN 21 118 134 240

DESIGNED	G. CHAN
VERIFIED	G. CHAN
DRAWN	E. WU
DATE 1st ISSUED	20.08.21
LGA	CITY OF RYDE
SCALE @ B1	AS SHOWN

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BUILDING A1, MIDTOWN MACPACK IVANHOE ESTATE, MACQUARIE PARK

HYDRAULIC SERVICES
GENERAL DETAILS 1

STATUS FOR CONSTRUCTION | DRAWING No. 02507-A1-HY-500 | REV. 1

CAD FILENAME: Q:\C&M Projects\02501-02600\PA-02507 - IVANHOE ESTATE MACQUARIE PARK - BUILDING A1\ACAD\02507-A1-HY-500.dwg

Long Service Corporation

23 July 2021

FRASERS PROPERTY IVANHOE PTY LTD
PO BOX 3307
RHODES NSW 2113

Levy Receipt

Receipt No.
00496423

Received from: (Name of person or organisation paying for levy)

FRASERS PROPERTY IVANHOE PTY LTD

the amount of

$316,382.00

Payment details:

Direct Deposit **$316,382.00**

being payment for Long Service Levy as detailed below

Levy Payment Form number	0361647
Council/Department/Authority	DEPT OF PLANNING, INDUSTRY & ENVIRO
D.A. Number	SSD-8903-A1
Work address	(BUILDING A1) IVANHOE PLACE MACQUARIE PARK NSW 2113
Estimated value of work	$90,394,792.00
Levy payable (No exemption)	**$316,381.00**
Total levy paid	**$316,382.00**
Credit Card Surcharge (non-refundable)	**$0.00**
Total Amount Paid	**$316,382.00**

Signed: (Signature of authorised person)

Date

23/07/2021

510298

DESIGN CERTIFICATE – FOR CC2
SUSPENDED POST TENSION SLABS AT BASEMENT LEVELS B2 AND B1

Date: *23/08/2021*

To: *Mackenzie Group Consulting*
ABN 77092469344
of Level 6, 189 Kent Street, Sydney NSW, Australia 2000
(Principal Certifier)

and *Parkview Constructions Pty Limited*
ABN 41 078 064 963
of Level 7, 60 Union St,
Pyrmont NSW 2009
(Builder)

From: *Interspan (NSW) Pty Ltd*
ABN 13 119 013 928
of Suite 5.04 77 Dunning Ave
Rosebery, NSW 2018

With respect to the completed For Construction Documentation, Specifications and Schedules (Documentation) submitted by the Consultant which are the subject of the documentation under the Agreement, and pursuant to the provisions of the ***National Construction Code (NCC) 2019, Vol 1 Clause A2.3****, we hereby certify as* ***Evidence of Suitability*** *that:*

1. *The completed Documentation is in accordance with industry-accepted design, the relevant Australian Standards, the National Construction Code (NCC), the Environmental Planning and Assessment Regulations, the relevant Fire Performance Solution Report, the relevant conditions of the Development Consent and best practice deign principles and which are attached to this Certificate as* ***Schedule A;***

2. *The completed Documentation is in accordance in particular with the following:*

Standard or Performance Referenced	***Year***
NCC Part B1 Structure Provisions, Performance Requirements	*2019*
NCC Part C, Fire Resistance, Performance Requirements	*2019*
AS/NZS 1170.0 General Principles	*2002*
AS/NZS 1170.1 (R2016) Permanent, Imposed & Other Actions	*2002*
AS/NZS 1170.2:(R2016) Wind Actions	*2011*
AS 1170.4 (R2018) Earthquake Actions In Australia	*2007*
AS 3600 Concrete Structures (Amd 2)	*2018*
AS/NZS 4672.1 Steel Prestressing Materials - General Requirements	*2007*
AS/NZS 4672.2 Steel prestressing materials - Testing Requirements	*2007*
AS/NZS 1314 (R2016) Prestressing Anchorages	*2003*
AS 1349 (R2018) Bourdon Tube Pressure and Vacuum Gauges	*1986*
AS 2670.1 (R2016) Evaluation Human Exposure Vibration General Requirements	*2001*

3. *I am a properly qualified, in accordance with Schedule 1 of the Building Professionals Regulation 2007 and Building Professionals Act 2005 (together with the Building and Development Certifiers Act 2018 and the Building and Development Certifiers Regulation 2019) and have a good working knowledge of the relevant codes and standard referenced above.*

My qualifications and accreditations are listed below

Signed for and on behalf of Interspan (NSW)Pty Ltd

Full Name	*Kim Anh Thi Vu*
Qualifications & Accreditations	*PhD, FIEAust, CPEng, NER2901432, DEP0000222*
Company	*Interspan (NSW) Pty Ltd*
ABN	13 119 013 928
Address	*Suite 5.04 77 Dunning Ave, Rosebery, NSW, 2018*

Signature



Date 24/08/2021

Interspan
Specialist Concrete Slab Solutions

SCHEDULE A – FOR CONSTRUCTION DOCUMENT REGISTER

Project No.:	INPT20373	Project:	IVANHOE BUILDING A1 MACQUARIE PARK	Office:	Sheet No.: 1

Date of Receipt:	Day	18
	Month	08
	Year	21

Received from:	No. of Copies:
INTERSPAN PTY LTD	1

Document description:	Doc No.	Revisions
GENERAL NOTES	INT-PT-001	1
BASEMENT 2 - POUR 1 & 2 SECTION DETAILS	INT-PT-010	1
BASEMENT 2 - POUR 3 & 4 SECTION DETAILS	INT-PT-011	1
BASEMENT 1 - POUR 1 & 2 SECTION DETAILS	INT-PT-013	1
BASEMENT 1 - POUR 3 & 4 SECTION DETAILS	INT-PT-014	1
BASEMENT 2 - GENERAL ARRANGEMENT PLAN	INT-PT-100	1
BASEMENT 2 - POUR 1 POST TENSIONING PLAN	INT-PT-111	1
BASEMENT 2 - POUR 1 BOTTOM REINFORCEMENT PLAN	INT-PT-112	1
BASEMENT 2 - POUR 1 TOP REINFORCEMENT PLAN	INT-PT-113	1
BASEMENT 2 - POUR 2 POST TENSIONING PLAN	INT-PT-121	1
BASEMENT 2 - POUR 2 BOTTOM REINFORCEMENT PLAN	INT-PT-122	1
BASEMENT 2 - POUR 2 TOP REINFORCEMENT PLAN	INT-PT-123	1
BASEMENT 2 - POUR 3 POST TENSIONING PLAN	INT-PT-131	1
BASEMENT 2 - POUR 3 BOTTOM REINFORCEMENT PLAN	INT-PT-132	1
BASEMENT 2 - POUR 3 TOP REINFORCEMENT PLAN	INT-PT-133	1
BASEMENT 2 - POUR 4 POST TENSIONING PLAN	INT-PT-141	1
BASEMENT 2 - POUR 4 BOTTOM REINFORCEMENT PLAN	INT-PT-142	1
BASEMENT 2 - POUR 4 TOP REINFORCEMENT PLAN	INT-PT-143	1
BASEMENT 1 - GENERAL ARRANGEMENT PLAN	INT-PT-150	1
BASEMENT 1 - POUR 1 POST TENSIONING PLAN	INT-PT-151	1
BASEMENT 1 - POUR 1 BOTTOM REINFORCEMENT PLAN	INT-PT-152	1
BASEMENT 1 - POUR 1 TOP REINFORCEMENT PLAN	INT-PT-153	1
BASEMENT 1 - POUR 2 POST TENSIONING PLAN	INT-PT-161	1
BASEMENT 1 - POUR 2 BOTTOM REINFORCEMENT PLAN	INT-PT-162	1
BASEMENT 1 - POUR 2 TOP REINFORCEMENT PLAN	INT-PT-163	1
BASEMENT 1 - POUR 3 POST TENSIONING PLAN	INT-PT-171	1
BASEMENT 1 - POUR 3 BOTTOM REINFORCEMENT PLAN	INT-PT-172	1
BASEMENT 1 - POUR 3 TOP REINFORCEMENT PLAN	INT-PT-173	1
BASEMENT 1 - POUR 4 POST TENSIONING PLAN	INT-PT-181	1
BASEMENT 1 - POUR 4 BOTTOM REINFORCEMENT PLAN	INT-PT-182	1
BASEMENT 1 - POUR 4 TOP REINFORCEMENT PLAN	INT-PT-183	1
RAMP BASEMENT 3 TO BASEMENT 2 - REINFORCEMENT PLAN	INT-PT-192	1
RAMP BASEMENT 2 TO BASEMENT 1 - REINFORCEMENT PLAN	INT-PT-193	1

Issued to:	No. of Copies:

Drawing status:	C

key: A = Approval C = Construction E = Electronic R = Revision T = Tender P = Preliminary M = Mark-up
I = Information Plt = Plot File X = Other

Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: GENERAL NOTES			Drawing No: INT-PT-001	
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222

IVANHOE
BUILDING A1
MACQUARIE PARK

GENERAL

G1 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS, SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ALL DISCREPANCIES WITH THESE DRAWINGS AND THE INTENT OF OTHER DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF INTERSPAN.

G2 ALL DIMENSIONS RELEVANT TO SETTING OUT SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED. THESE DRAWINGS SHALL NOT BE SCALED.

G3 DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN A STABLE CONDITION AND ENSURING NO PART SHALL BE OVER LOADED UNDER CONSTRUCTION ACTIVITIES.

G4 WORKMANSHIP AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RELEVANT CURRENT S.A.A CODES AND B.C.A. (INCLUDING ALL AMENDMENTS) LOCAL STATUTORY AUTHORITIES, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

G5 THE APPROVAL OF A SUBSTITUTION SHALL BE SOUGHT FROM THE ENGINEER.

G6 ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METERS UNLESS STATED OTHERWISE.

G7 BUILDING ELEMENTS LIKELY TO BE DAMAGED BY DEFLECTION ARE NOT TO BE ERECTED ON SUSPENDED CONCRETE UNTIL ALL PROPPING HAS BEEN REMOVED AND CONCRETE DESIGN STRENGTH IS ACHIEVED.

G8 ALL NON LOAD BEARING WALLS SHALL BE KEPT CLEAR OF THE UNDERSIDE OF THE SLABS AND BEAMS BY 20mm UNLESS OTHERWISE SHOWN AND IF REQUIRED, FIXED TO THE UNDERSIDE OF SLABS OR BEAMS BY APPROVED MEANS.

G9 ALL LOAD BEARING ELEMENTS UNDER ARE SHOWN SHADED.

G10 OTHER THAN FOR THE PURPOSES OF THIS CONTRACT AND SUBJECT TO THE CONDITIONS PRESCRIBED UNDER THE COPYRIGHT ACT, NO PART OF THESE DRAWINGS MAY (IN ANY FORM OR BY ANY MEANS) BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED WITHOUT THE PRIOR WRITTEN PERMISSION.

CONCRETE AND REINFORCEMENT

C1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS3600 AND RELEVANT CODES MENTIONED THEREIN.

C2 CONCRETE TEST CYLINDERS FOR TEST PERIODS EARLIER THAN 28 DAYS, SHALL BE SITE AIR CURED IN AN ENVIRONMENT REPRESENTATIVE OF THE CONCERNING ELEMENT.

C3 SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.

C4 WHERE FALLS IN SLABS OCCUR, THICKNESSES NOTED ARE MINIMUM REQUIRED.

C5 ALL BARS SHALL BE FIXED IN PLACE PRIOR TO ENGINEERS INSPECTION. ENGINEER SHALL BE GIVEN 24 HOURS MINIMUM NOTICE OF ALL SITE INSPECTIONS.

C6 PLASTIC BAR CHAIRS SHALL BE USED IN ALL EXTERNAL SOFFITS AND SIDES.

C7 NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THESE DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL BY ENGINEER. REINFORCEMENT NEAR SUCH APPROVED PENETRATIONS SHALL BE DISPLACED AND NOT CUT, WHERE A CONFLICT WOULD OTHERWISE OCCUR.

C8 CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE SHOWN OR SPECIFICALLY APPROVED BY THE ENGINEER.

C9 CURING AND EVAPORATION CONTROL OF CONCRETE SHALL BE IN ACCORDANCE WITH THE RELEVANT CONCRETE STANDARDS AND A CURING REGIME IS TO BE FOLLOWED OR ARCHITECTS/PROJECT ENGINEER'S SPECIFICATIONS WHICHEVER IS MORE ONEROUS. THIS IS THE BUILDER'S RESPONSIBILITY TO ENSURE A CURING REGIME IS FOLLOWED

C10 THE ENGINEER'S APPROVAL IS REQUIRED ON STRIPPING TIMES AND ADDITIVES IN CONCRETE.

C11 UNLESS MORE ONEROUSLY SPECIFIED ELSEWHERE, THE CONCRETE DESIGN MIX SHALL SATISFY THE FOLLOWING REQUIREMENTS:
- GRADE f'c (MPa) – AS DENOTED ON CONSULTANTS DRAWINGS, EARLY STRENGTH SHALL BE IN ACCORDANCE WITH CONTRACTOR'S AND ENGINEER'S REQUIREMENTS, PARTICULARLY WHERE THERE ARE POST TENSIONED ELEMENTS.
- BASIC SHRINKAGE STRAIN – 600um AT 56 DAYS (MEASURED AND TESTED IN ACCORDANCE WITH AS1012.13)
- MAXIMUM AGGREGATE SIZE – 20mm
- SLUMP – 80mm
- MAXIMUM FLY ASH CONTENT:
  - POST TENSIONED SLABS – 20% BY WEIGHT OF CEMENTITIOUS MATERIAL.
  - REINFORCED ONLY SLABS – TO BE PROPOSED BY CONCRETE SUPPLIER.

C12 SPLICES OF REINFORCEMENT SHALL ONLY BE MADE IN THE POSITION SHOWN OR AS OTHERWISE APPROVED BY THE ENGINEER.

C13 REINFORCEMENT SHALL BE SUPPLIED AND BENT IN ACCORDANCE WITH THE CURRENT EDITIONS AND AMENDMENTS OF S.A.A. STANDARDS AS1302, AS1303 AND AS1304. TYPE OF REINFORCEMENT IS DENOTED BY THE FOLLOWING SYMBOLS:
- R – PLAIN ROUND BAR, GRADE 250 MPa
- N – DEFORMED BAR, GRADE 500 MPa
- W – STEEL DEFORMED WIRE, GRADE 450 MPa
- F – WELDED WIRE FABRIC, GRADE 450 MPa

C14 FORMWORK SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH AS3610. STRIPPING OF FORMWORK AND BACKPROPPING SHALL BE IN ACCORDANCE TO PROJECT ENGINEER'S SPECIFICATIONS.

C15 COVER TO REINFORCEMENT SHALL BE IN ACCORDANCE WITH AS3600 TABLE 4.10.3.2 AND THE FRL AS NOMINATED ON THE DRAWINGS.

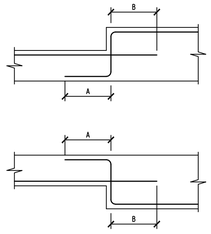
C16 REINFORCEMENT MUST NOT BE TIED TO POST TENSIONED CABLES. ALL REINFORCEMENT SHALL BE INDEPENDENTLY CHAIRED. FAILURE TO CHAIR REINFORCEMENT INDEPENDENTLY, WILL RESULT IN THE SLAB BEING REJECTED ON INSPECTION.

C17 LAPS IN REINFORCEMENT U.N.O.

DEPTH	N12	N16	N20	N24	N28	N32
<300	400	700	950	1300	1700	1850
≥300	500	750	950	1600	2100	2300

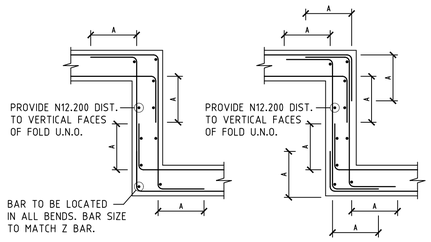
C18 FABRIC LAPS SHALL BE 1 SQUARE PLUS 25mm

C19 TYPICAL Z BAR ANCHORAGE REQUIREMENTS:



Z BAR ANCHORAGE REQUIREMENTS		
BARS	A (mm)	B (mm)
N10	200	450
N12	250	500
N16	400	850
N20	600	1250
N24	750	1500
N28	900	1650

C20 TYPICAL FOLD ANCHORAGE REQUIREMENTS:

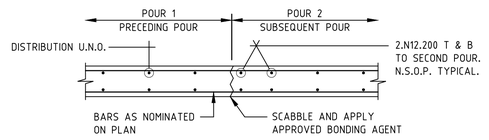


TYPICAL FOLD ARRANGEMENT

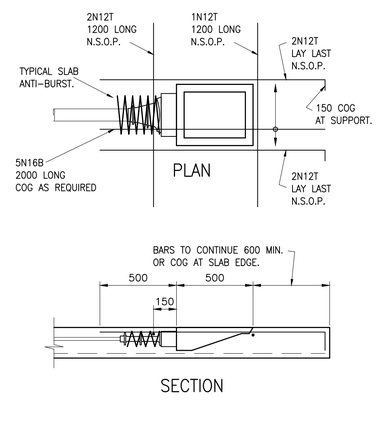
ALTERNATIVE FOLD ARRANGEMENT (ON APPROVAL OF ENGINEER)

FOLD ANCHORAGE REQUIREMENTS	
BARS	A (mm)
N10	200
N12	250
N16	400
N20	600
N24	750
N28	900

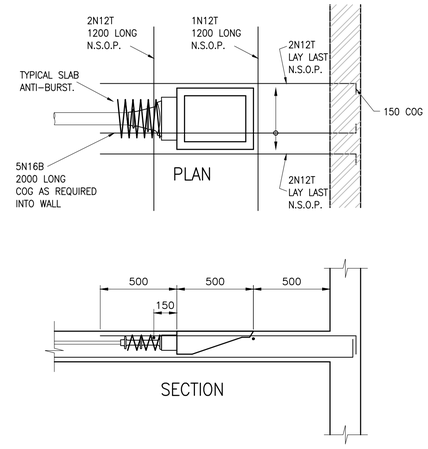
C21 TYPICAL CONSTRUCTION JOINT DETAIL:



TYPICAL STRESSING PAN DETAIL:



TYPICAL STRESSING PAN DETAIL AT WALLS:



POST TENSIONING

P1 THESE NOTES SHALL BE READ IN CONJUNCTION WITH ALL OTHER NOTES.

P2 ALL STRANDS TO BE 12.7mm 7 WIRE SUPER GRADE, LOW RELAXATION STRAND TO AS4672.1 2007 U.N.O

P3 STRESSING SEQUENCE FOR 12.7mm STRAND U.N.O. :

STRESSING SEQUENCE	MONOSTRAND TENDON	MULTISTRAND TENDON	% UTS	STRAND FORCE (KN)
INITIAL STRESS	24 HOURS AND CONCRETE STRENGTH = 7 MPa	24 HOURS AND CONCRETE STRENGTH = 10 MPa	25	46
FINAL STRESS	5 DAYS AND CONCRETE STRENGTH = 22 MPa	5 DAYS AND CONCRETE STRENGTH = 25 MPa	85	156

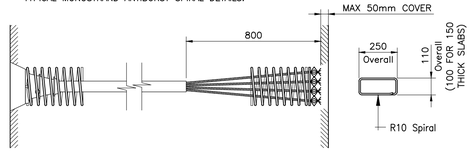
P4 STRESSING SEQUENCE FOR 15.2mm STRAND U.N.O. :

STRESSING SEQUENCE	MONOSTRAND TENDON	MULTISTRAND TENDON	% UTS	STRAND FORCE (KN)
INITIAL STRESS	24 HOURS AND CONCRETE STRENGTH = 10 MPa	24 HOURS AND CONCRETE STRENGTH = 12 MPa	25	53
FINAL STRESS	5 DAYS AND CONCRETE STRENGTH = 25 MPa	5 DAYS AND CONCRETE STRENGTH = 30 MPa	85	212

P5 TENDON PROFILES NOMINATED ARE TO THE UNDERSIDE OF DUCT. NOMINATED HEIGHTS AT THE ANCHORAGES ARE TO THE CENTRELINE OF THE STRAND.

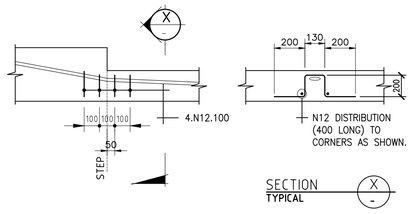
P6 EXTENSIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CUTTING OFF AND GROUTING.

TYPICAL MONOSTRAND ANTIBURST SPIRAL DETAILS:

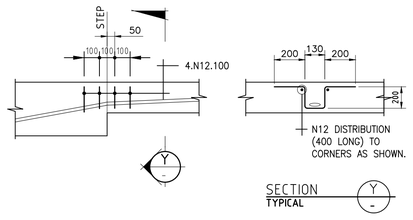


STRAND	PITCH	No. OF TURNS
1–5 x 12.7mm	50mm	7
1–5 x 15.2mm	30mm	10

– TYPICAL TOP HAT BARS TO LOCATIONS AS DENOTED BY ⌖ ON POST TENSIONING DRAWING.



– TYPICAL TOP HAT BARS TO LOCATIONS AS DENOTED BY ✥ ON POST TENSIONING DRAWING.



INSPECTIONS SHALL BE BOOKED AT MINIMUM 24 HOURS, 48 HOURS PREFERRED, PRIOR TO CONCRETE POUR. FOR BOOKINGS CALL HEAD OFFICE: (61) 3 8396 9600. BOOKINGS ARE THE RESPONSIBILITY OF THE BUILDER.

1	15/08/21	AS FOR CONSTRUCTION
Rev	Date	Status

Interspan

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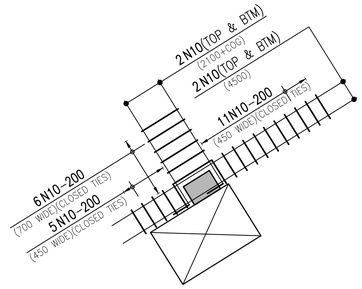
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Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed:
	Drawn:
Drawing Title: GENERAL NOTES	Checked:
	Scale: 1:100 @ A1
Project No.: INPT20373	Date:
Drawing No.: 001	Revision: 1

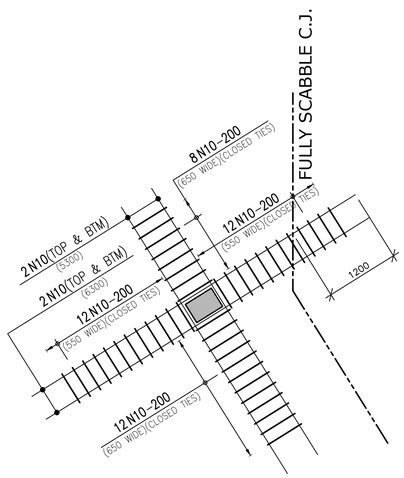
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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 2 POUR 1, 2 SHEAR DETAILS			Drawing No: INT-PT-010	
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



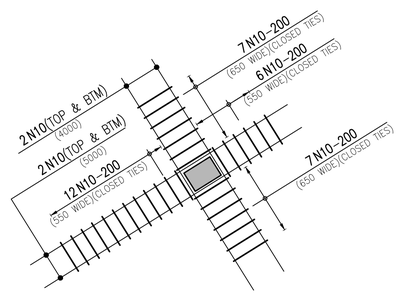
SHEAR DETAIL SD1 / 112
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



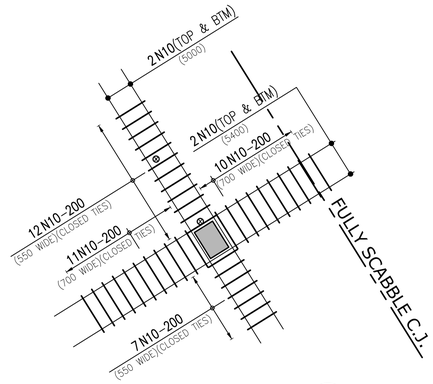
SHEAR DETAIL SD2 / 112 / 132
SCALE 1:50

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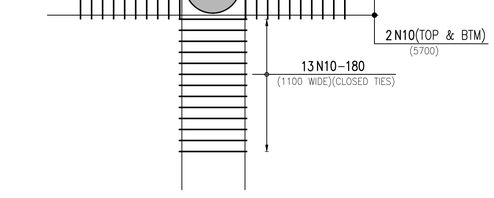
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SCALE 1:50

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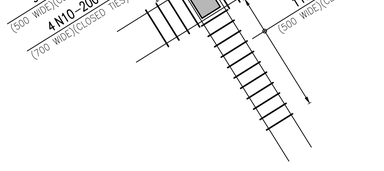
SHEAR DETAIL SD4 / 112
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



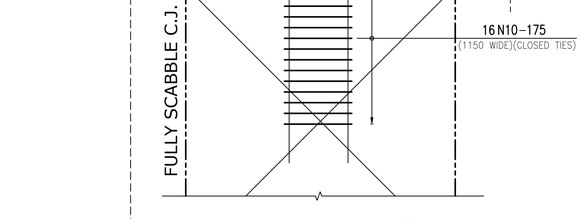
SHEAR DETAIL SD5 / 122
SCALE 1:50
(3 No. off)

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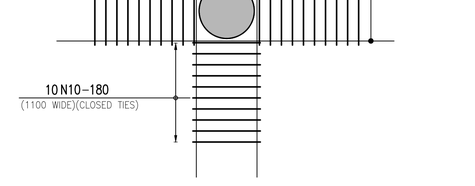
SHEAR DETAIL SD6 / 132
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



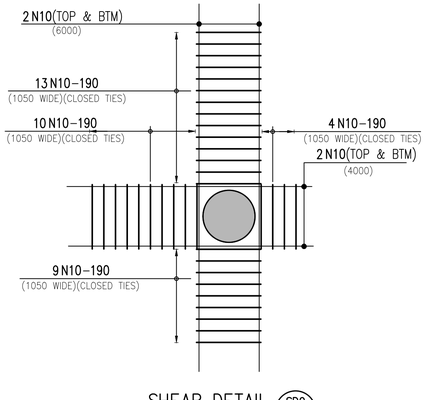
SHEAR DETAIL SD7 / 132
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



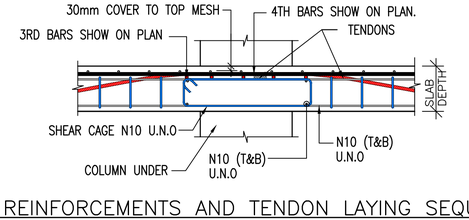
SHEAR DETAIL SD8 / 132
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



SHEAR DETAIL SD9 / 132
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



TYPICAL REINFORCEMENTS AND TENDON LAYING SEQUENCE AT INTERNAL COLUMN UNLESS NOTE OTHERWISE. REFER TO TENDON PROFILE FOR DETAILS.

REINFORCEMENT WEIGHT ON PLAN : 0.86 T

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

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MELBOURNE
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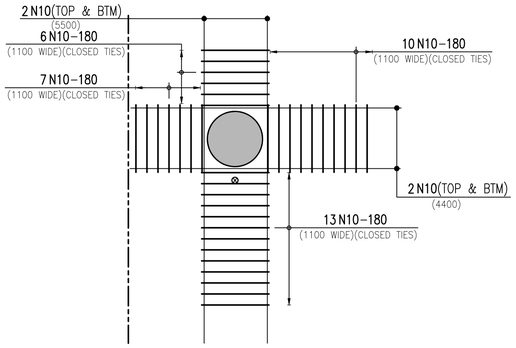
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Website: www.interspan.com.au

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 2 - POUR 1, 2, 3 SHEAR DETAILS	Checked: CC
	Scale: 1:50 @ A1
Project No.: INPT20373	Date: 26-07-21
Drawing No.: INT-PT-010	Revision: 1

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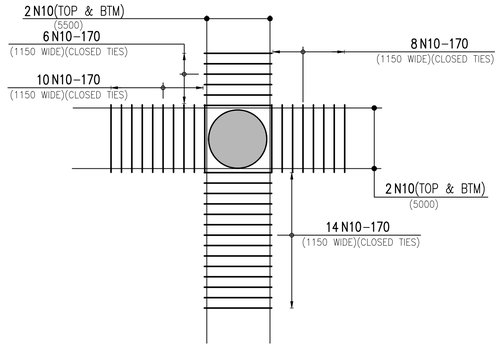
Regulated Design Record			
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK			
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK			
Consent No: SSDA8903		Body Corporate Reg No: NIL	
Drawing Title: BASEMENT 2 POUR 3, 4 SHEAR DETAILS		Drawing No: INT-PT-011	

Rev	Date dd.mm.yy	Description	DP Full Name	Reg No
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



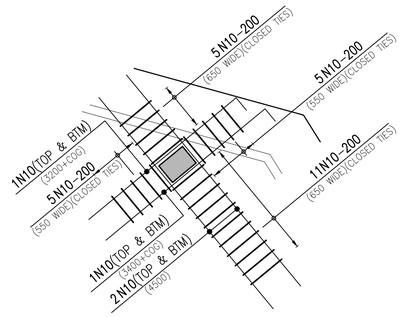
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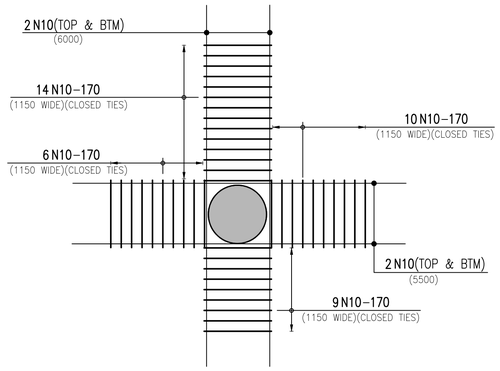
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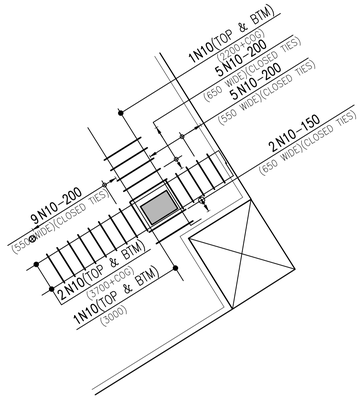
SHEAR DETAIL SD3 142
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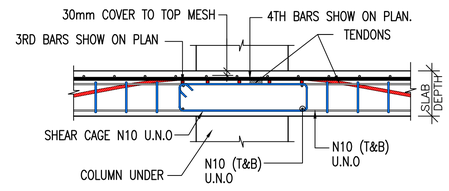
SHEAR DETAIL SD4 142
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



SHEAR DETAIL SD5 142
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



TYPICAL REINFORCEMENTS AND TENDON LAYING SEQUENCE AT INTERNAL COLUMN UNLESS NOTE OTHERWISE. REFER TO TENDON PROFILE FOR DETAILS.

REINFORCEMENT WEIGHT ON PLAN : 0.35 T

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

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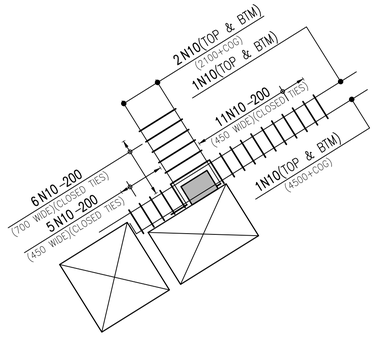
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Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 2 - POUR 4 SHEAR DETAILS	Checked: CC
	Scale: 1:50 @ A1
Project No.: INPT20373	Date: 26-07-21
Drawing No.: INT-PT-011	Revision: 1

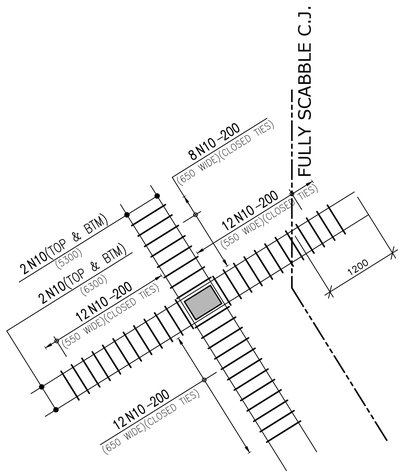
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Regulated Design Record			
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK			
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK			
Consent No: SSDA8903		Body Corporate Reg No: NIL	
Drawing Title: BASEMENT 2 POUR 1, 2 SHEAR DETAILS		Drawing No: INT-PT-010	

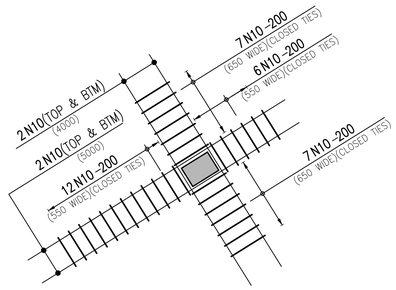
Rev	Date dd.mm.yy	Description	DP Full Name	Reg No
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



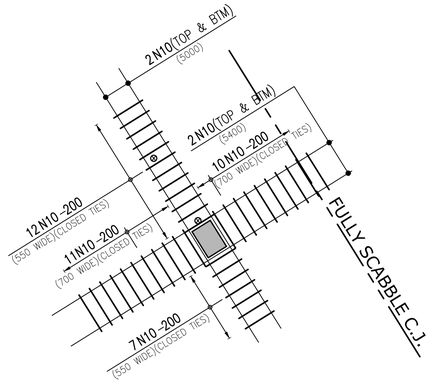
SHEAR DETAIL SD1 / 152
SCALE 1:50
FIRST TIE TO BE 50MM FROM COLUMN FACE



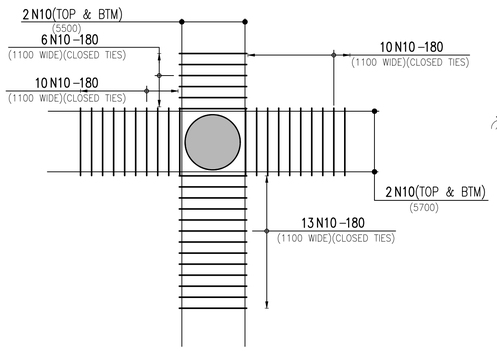
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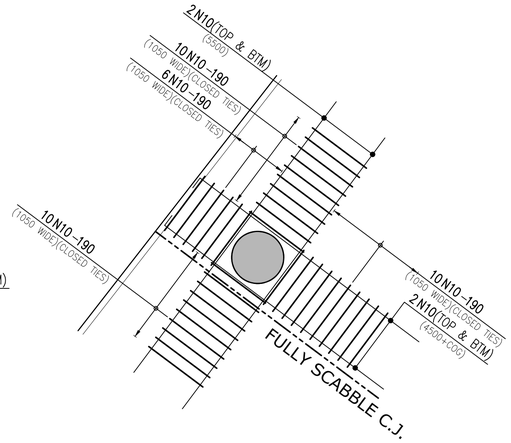
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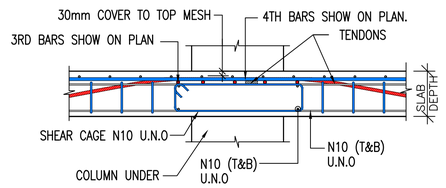
SHEAR DETAIL SD4 / 152
SCALE 1:50
FIRST TIE TO BE 50MM FROM COLUMN FACE



SHEAR DETAIL SD5 / 162
SCALE 1:50
(3 No. off)
FIRST TIE TO BE 50MM FROM COLUMN FACE



SHEAR DETAIL SD6 / 152 / 162
SCALE 1:50
FIRST TIE TO BE 50MM FROM COLUMN FACE



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REINFORCEMENT WEIGHT ON PLAN : 0.6 T

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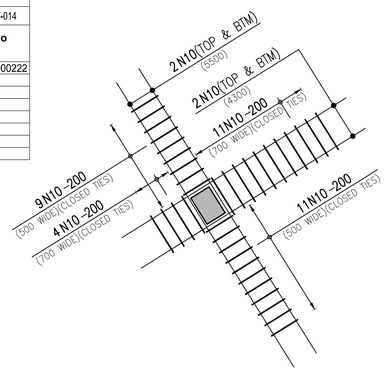
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F: +61 3 8396 9640

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Website: www.interspan.com.au

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 1 - POUR 1, 2 SHEAR DETAILS	Checked: CC
	Scale: 1:50 @ A1
Project No.: INPT20373	Date: 26-07-21
Drawing No.: INT-PT-013	Revision: 1

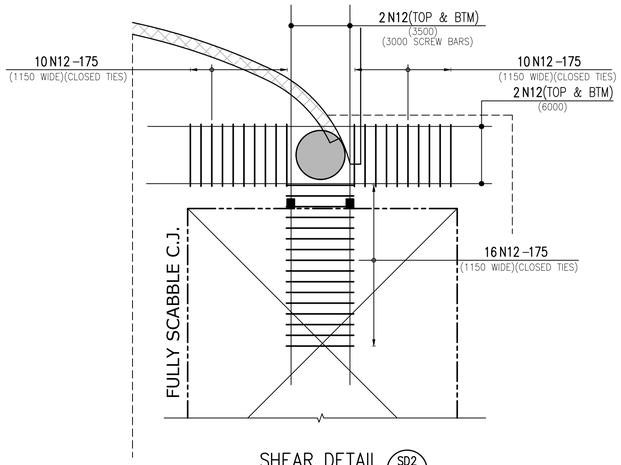
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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 1 POUR 3, 4 SHEAR DETAILS		Drawing No: INT-PT-014		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



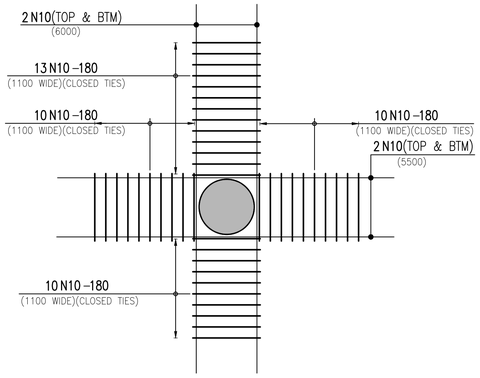
SHEAR DETAIL SD1 / 172
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



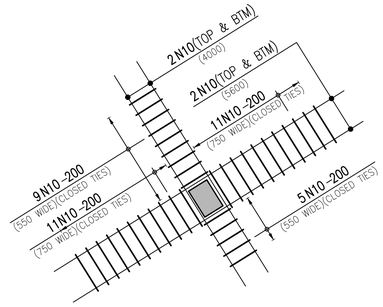
SHEAR DETAIL SD2 / 172
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



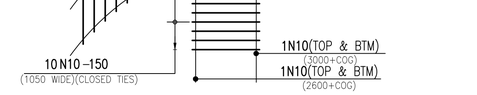
SHEAR DETAIL SD3 / 172
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



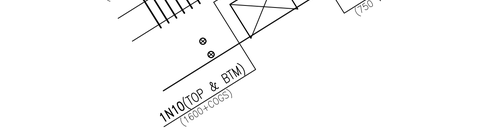
SHEAR DETAIL SD4 / 172
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



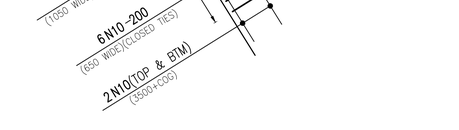
SHEAR DETAIL SD5 / 172
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



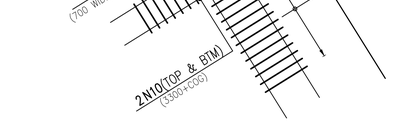
SHEAR DETAIL SD6 / 172
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



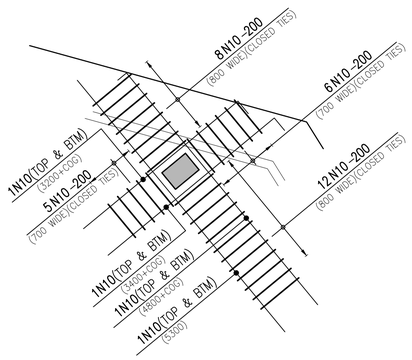
SHEAR DETAIL SD7 / 182
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



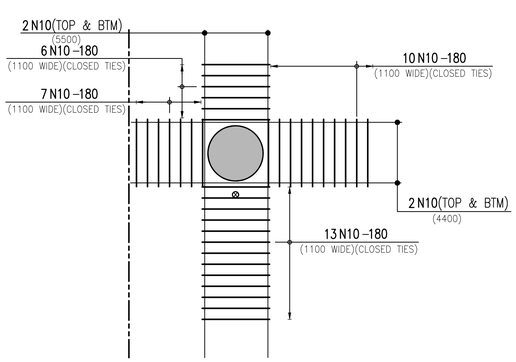
SHEAR DETAIL SD8 / 182
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



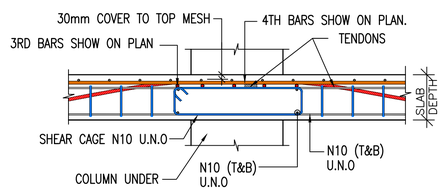
SHEAR DETAIL SD9 / 182
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



SHEAR DETAIL SD10 / 182
SCALE 1:50

FIRST TIE TO BE 50MM FROM COLUMN FACE



TYPICAL REINFORCEMENTS AND TENDON LAYING SEQUENCE AT INTERNAL COLUMN UNLESS NOTE OTHERWISE. REFER TO TENDON PROFILE FOR DETAILS.

REINFORCEMENT WEIGHT ON PLAN : 0.71 T

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

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Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 1 - POUR 3, 4 SHEAR DETAILS	Checked: CC
	Scale: 1:50 @ A1
Project No.: INPT20373	Date: 26-07-21
Drawing No.: INT-PT-014	Revision: 1

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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 2 GENERAL ARRANGEMENT PLAN		Drawing No: INT-PT-100		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222

COLUMN STIFFNESS 50%
REACTION MOMENTS AS SHOWN.
SIM SITUATION TO OTHER
COLUMNS.

PROVIDE PROPPING UNDER ALONG C.J UNTIL FUTURE POUR IS POURED AND REACHES 28 DAYS DESIGN STRENGTH

PROVIDE PROPPING UNDER ALONG C.J UNTIL FUTURE POUR IS POURED AND REACHES 28 DAYS DESIGN STRENGTH

PROVIDE PROPPING UNDER ALONG C.J UNTIL FUTURE POUR IS POURED AND REACHES 28 DAYS DESIGN STRENGTH

PROVIDE PROPPING UNDER ALONG C.J UNTIL FUTURE POUR IS POURED AND REACHES 28 DAYS DESIGN STRENGTH

POUR 1

POUR 2

POUR 3

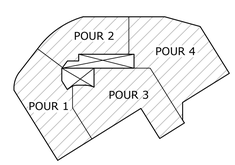
POUR 4

FULLY SCABBLE C.J.

1.100 FALL TO SLAB EDGE

T.M.J

GENERAL ARRANGEMENT PLAN



KEY PLAN
BASEMENT 2

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT: enstruct
DRAWING NO: ST-097-00 ST-297-00
REVISION: 1 1

CONSULTANT: Bates Smart
DRAWING NO: A04.A1.002 A03.A1.002
REVISION: 1 I

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

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Website: www.interspan.com.au

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: TT
	Drawn: TP
Drawing Title: BASEMENT 2 GENERAL ARRANGEMENT PLAN	Checked: TT3
	Scale: 1:100 @ B1
Project No.: INPT20373	Date: 25-07-21
Drawing No.: INT-PT-100	Revision: 1

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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No:		NIL
Drawing Title: BASEMENT 2 POUR 1 POST-TENSIONING PLAN		Drawing No:		INT-PT-111
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



POST TENSIONING PLAN

ANTI BURST REINFORCEMENT WEIGHT: 0.28 T

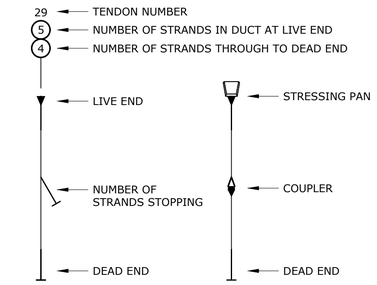
PAN REINFORCEMENT WEIGHT: 0.51 T

STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWING 001 U.N.O.

[*] DENOTES PAN TRIMMER REINFORCEMENTS AS PER DRAWING 001 ARE NOT REQUIRED.

POST - TENSIONING NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. ALL STRAND TO BE 12.7mm 7 WIRE SUPER GRADE, LOW RELAXATION STRAIN TO AS4672.1-2007 U.N.O.
4. ✳ INDICATES HEIGHT MEASURED FROM ADJACENT SOFFIT IN WHICH TENDON RUNS.
5. POST - TENSIONING LEGEND



THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

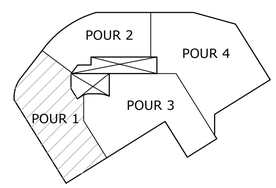
CONSULTANT:	enstruct	
DRAWING NO:	ST-097-00	ST-297-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.002	A03.A1.002
REVISION:	1	I

1	15/08/21	FOR CO-ORDINATION
Rev	Date	Status

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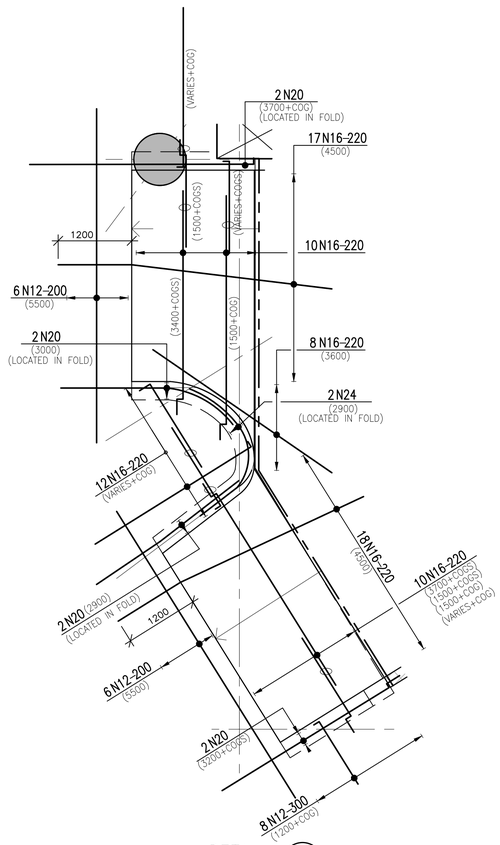


KEY PLAN
BASEMENT 2

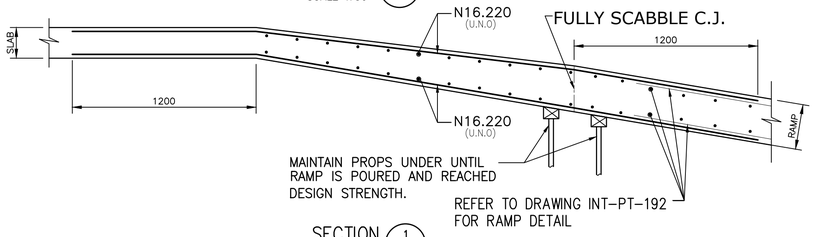
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: TT
	Drawn: MK
Drawing Title: BASEMENT 2 - POUR 1 POST-TENSIONING PLAN	Checked: TT3
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 26-07-21
Drawing No.: INT-PT-111	Revision: 1

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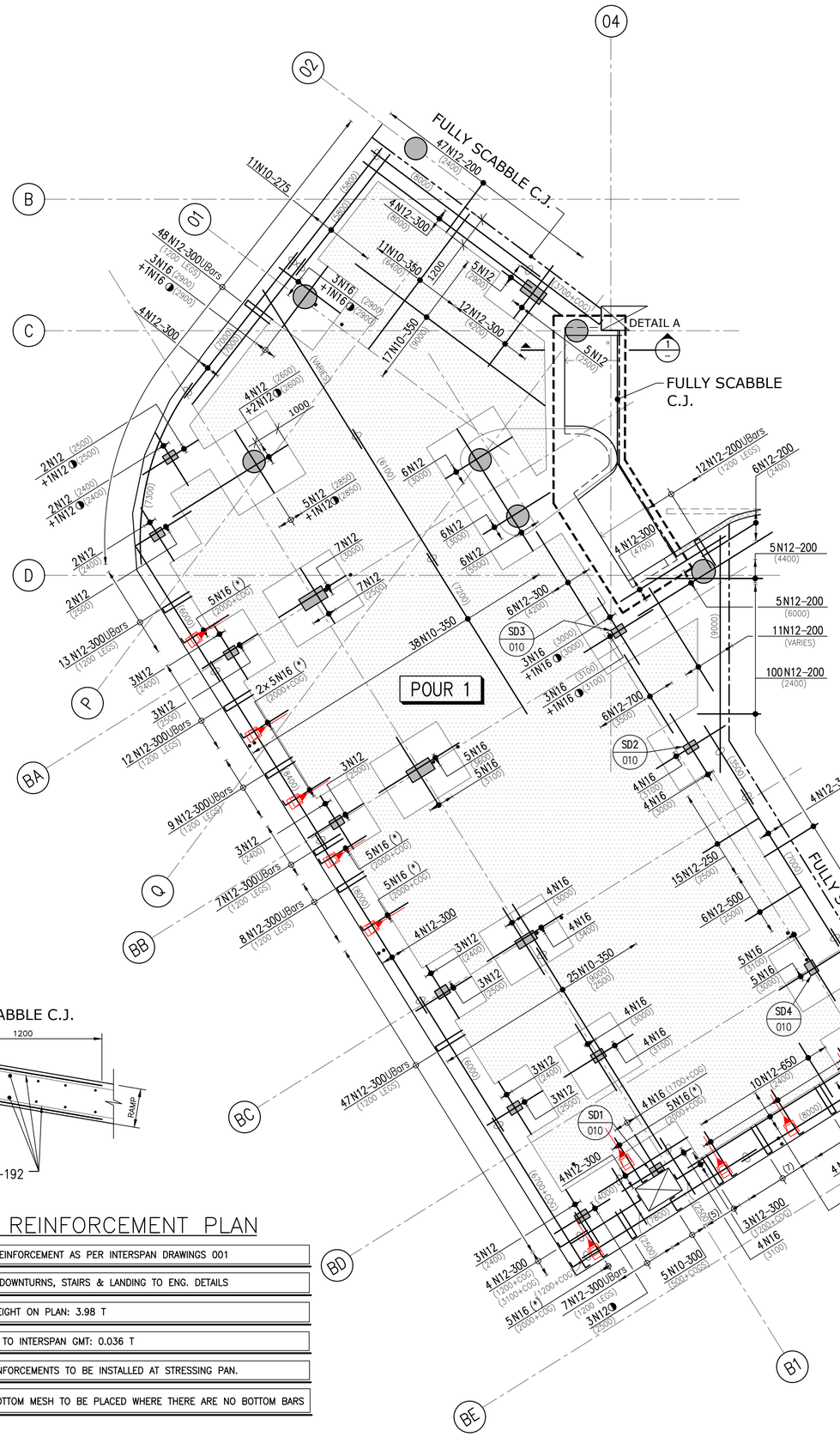
Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 2 POUR 1 BTM REINFORCEMENT PLAN		Drawing No: INT-PT-112		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



DETAIL A
SCALE 1:50



SECTION 1
SCALE 1:20



BOTTOM REINFORCEMENT PLAN

STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWINGS 001
HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
REINFORCEMENT WEIGHT ON PLAN: 3.98 T
◑ BARS ARE NOT TO INTERSPAN GMT: 0.036 T
(*) TRIMMER REINFORCEMENTS TO BE INSTALLED AT STRESSING PAN.
SL82 BOTTOM MESH TO BE PLACED WHERE THERE ARE NO BOTTOM BARS



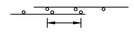
BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS $\frac{17.N20.250.X}{(2000)}$
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: $\frac{5.A.200.X}{}$
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.



MINIMUM 1 WIRE SPACING PLUS 25mm
DO NOT LAP TOP FABRIC OVER SUPPORTS

8. BAR CRANKS MAX. $\frac{10}{1}$
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER



'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS



'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG



THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-097-00	ST-297-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.002	A03.A1.002
REVISION:	1	I

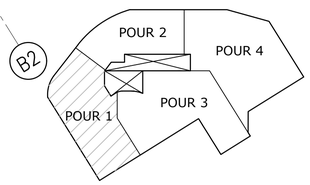
Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

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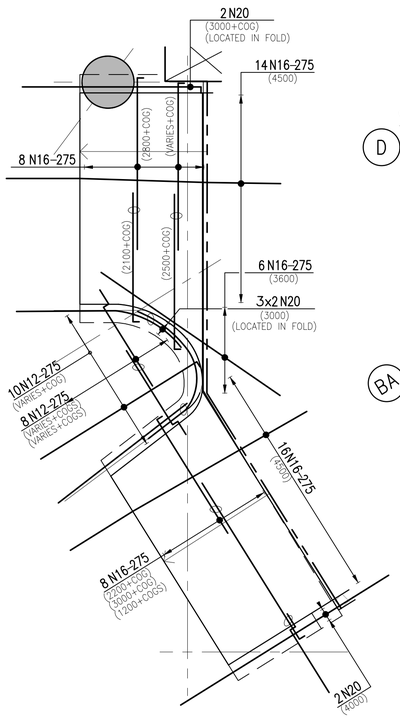
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: TT
	Drawn: HN1
Drawing Title: BASEMENT 2 - POUR 1 BOTTOM REINFORCEMENT PLAN	Checked: TT3
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-112	Revision: 1



KEY PLAN
BASEMENT 2

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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 2 POUR 1 TOP REINFORCEMENT PLAN		Drawing No: INT-PT-113		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



DETAIL A
SCALE 1:50



TOP REINFORCEMENT PLAN

HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
PROVIDE SL82 TOP MESH THROUGHOUT
REINFORCEMENT WEIGHT ON PLAN: 3.57 T
(*) TRIMMER REINFORCEMENTS FOR STRESSING PAN.



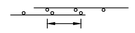
BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.



MINIMUM 1 WIRE SPACING PLUS 25mm
DO NOT LAP TOP FABRIC OVER SUPPORTS

8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER



'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS



'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG



THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-097-00	ST-297-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.002	A03.A1.002
REVISION:	1	I

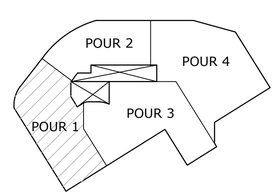
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Website: www.interspan.com.au

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 2 - POUR 1 TOP REINFORCEMENT PLAN	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-113	Revision: 1



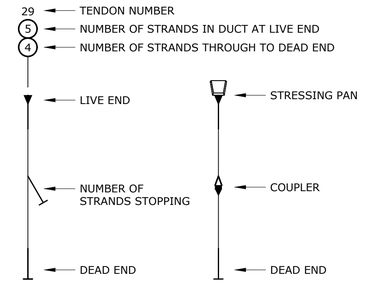
KEY PLAN
BASEMENT 2

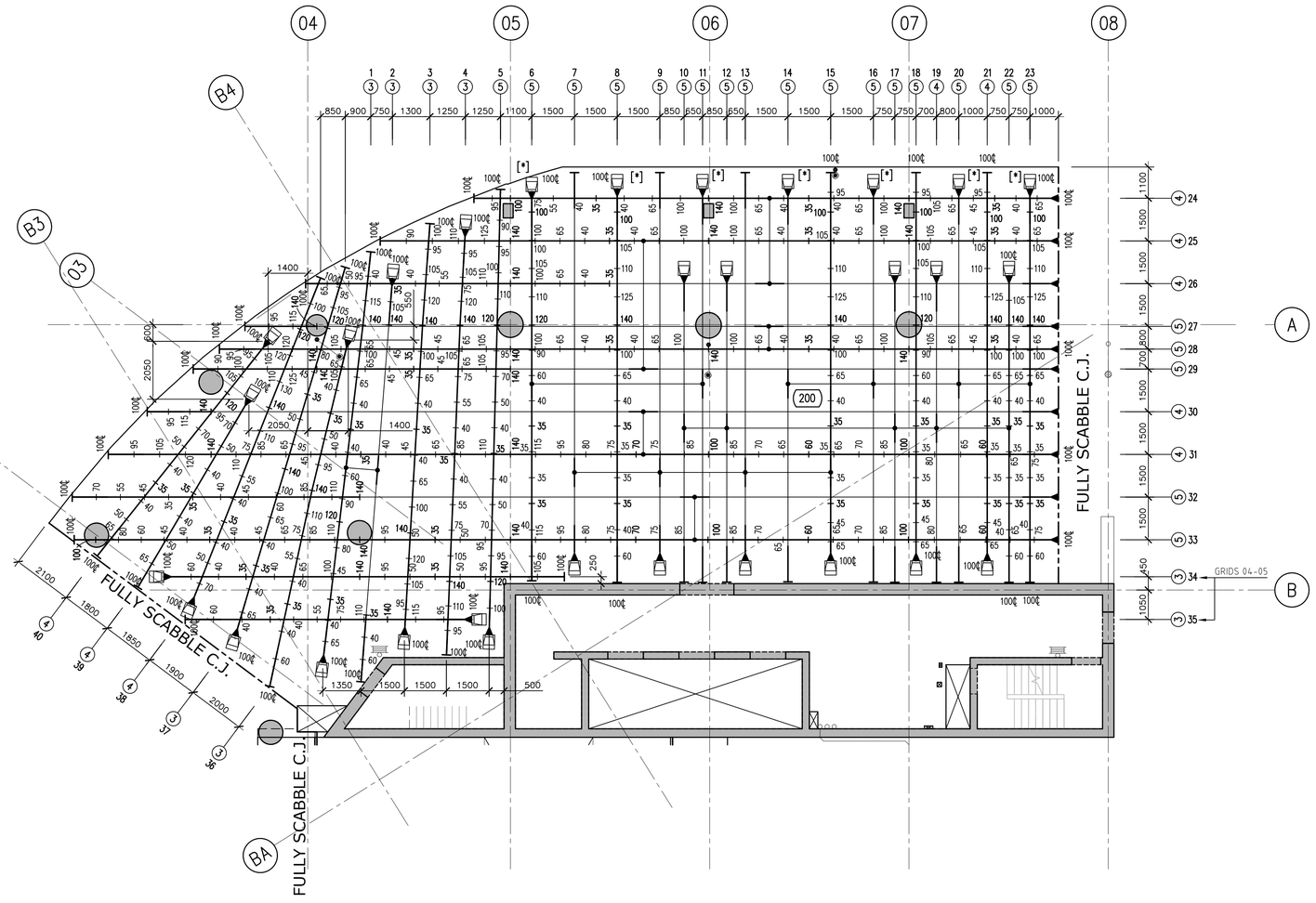
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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 2 POUR 2 POST-TENSIONING PLAN		Drawing No: INT-PT-121		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222

POST - TENSIONING NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. ALL STRAND TO BE 12.7mm 7 WIRE SUPER GRADE, LOW RELAXATION STRAIN TO AS4672.1-2007 U.N.O.
4. ✳ INDICATES HEIGHT MEASURED FROM ADJACENT SOFFIT IN WHICH TENDON RUNS.
5. POST - TENSIONING LEGEND





POST TENSIONING PLAN

- ANTI BURST REINFORCEMENT WEIGHT: 0.25 T
- PAN REINFORCEMENT WEIGHT: 0.62 T
- STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWING 001 U.N.O
- [*] DENOTES PAN TRIMMER REINFORCEMENTS AS PER DRAWING 001 ARE NOT REQUIRED.

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

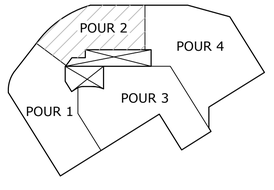
CONSULTANT:	enstruct	
DRAWING NO:	ST-097-00	ST-297-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.002	A03.A1.002
REVISION:	1	I

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

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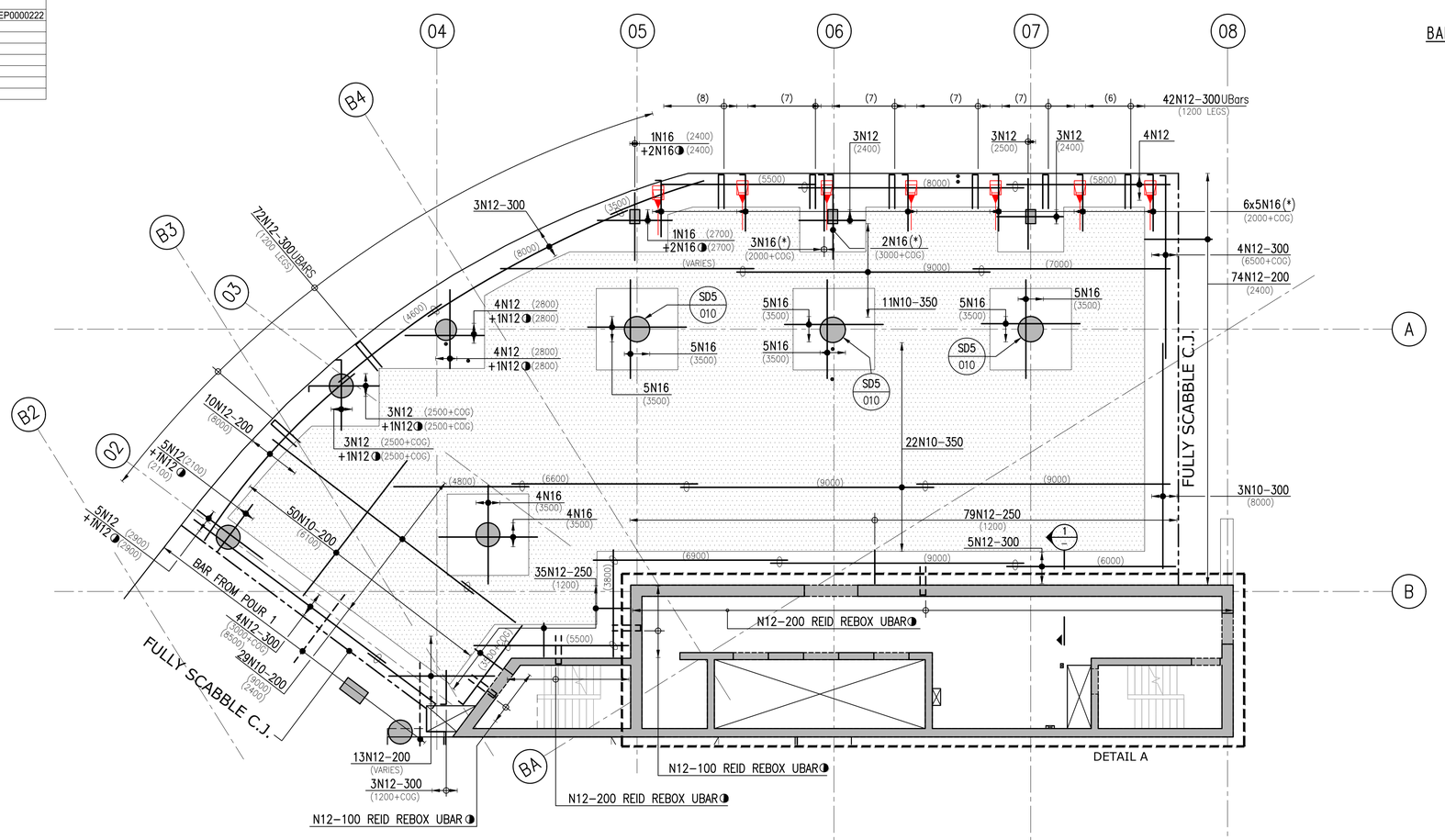


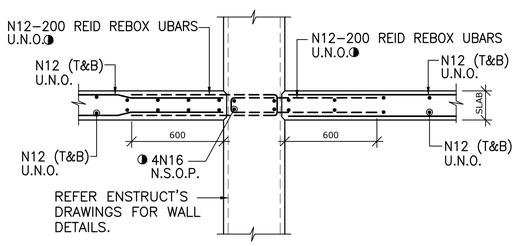
KEY PLAN
BASEMENT 2

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: TT
	Drawn: MK
Drawing Title: BASEMENT 2 - POUR 2 POST-TENSIONING PLAN	Checked: TT3
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 26-07-21
Drawing No.: INT-PT-121	Revision: 1

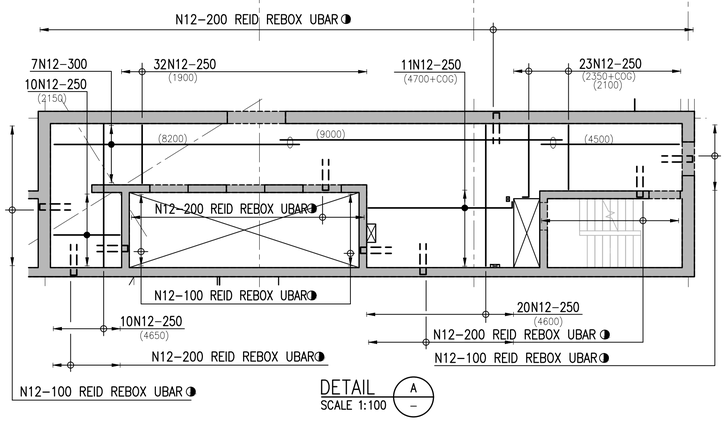
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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 2 POUR 2 BOTTOM REINFORCEMENT		Drawing No: INT-PT-122		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222





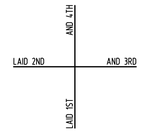
SECTION 1 — SCALE 1:20



DETAIL A — SCALE 1:100

BOTTOM REINFORCEMENT PLAN

- STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWINGS 001
- HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
- REINFORCEMENT WEIGHT ON PLAN: 2.84 T
- ◑ BARS ARE NOT TO INTERSPAN GMT: 0.1 T
- (*) TRIMMER REINFORCEMENTS TO BE INSTALLED AT STRESSING PAN.
- SL82 BOTTOM MESH TO BE PLACED WHERE THERE ARE NO BOTTOM BARS



BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.

   MINIMUM 1 WIRE SPACING PLUS 25mm
   DO NOT LAP TOP FABRIC OVER SUPPORTS
8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER

'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS

'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-097-00	ST-297-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.002	A03.A1.002
REVISION:	1	I

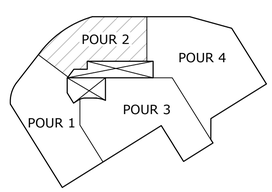
1	15/08/21	AS FOR CONSTRUCTION
Rev	Date	Status

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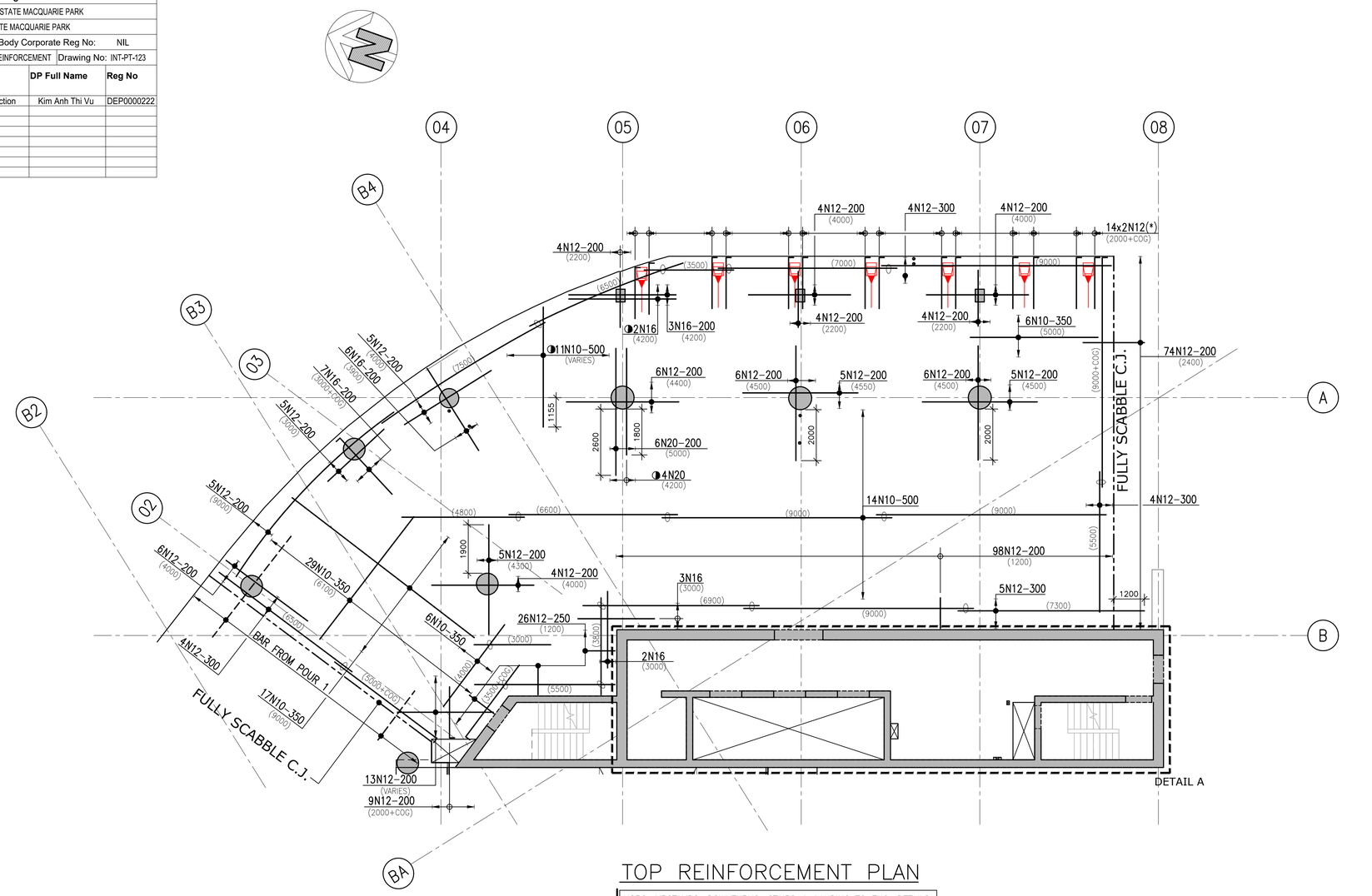


KEY PLAN
BASEMENT 2

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 2 - POUR 2 BOTTOM REINFORCEMENT PLAN	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-122	Revision: 1

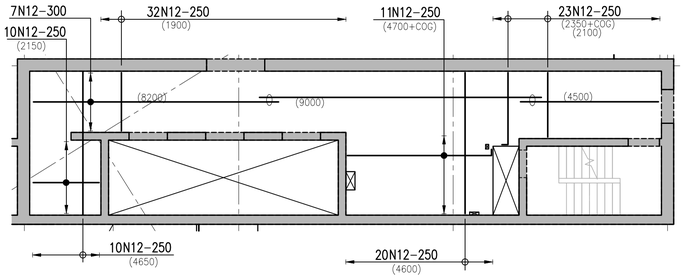
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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 2 POUR 2 TOP REINFORCEMENT		Drawing No: INT-PT-123		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



TOP REINFORCEMENT PLAN

HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
PROVIDE SL82 TOP MESH THROUGHOUT
REINFORCEMENT WEIGHT ON PLAN: 2.22 T
◑ BARS IS NOT TO INTERSPAN GMT: 0.087 T
(*) TRIMMER REINFORCEMENTS FOR STRESSING PAN.



DETAIL A
SCALE 1:100



BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.

   MINIMUM 1 WIRE SPACING PLUS 25mm
   DO NOT LAP TOP FABRIC OVER SUPPORTS
8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER



'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS



'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG



THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT: enstruct
DRAWING NO: ST-097-00 ST-297-00
REVISION: 1 1

CONSULTANT: Bates Smart
DRAWING NO: A04.A1.002 A03.A1.002
REVISION: 1 I

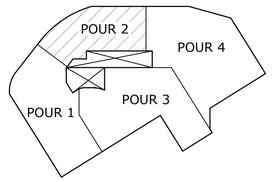
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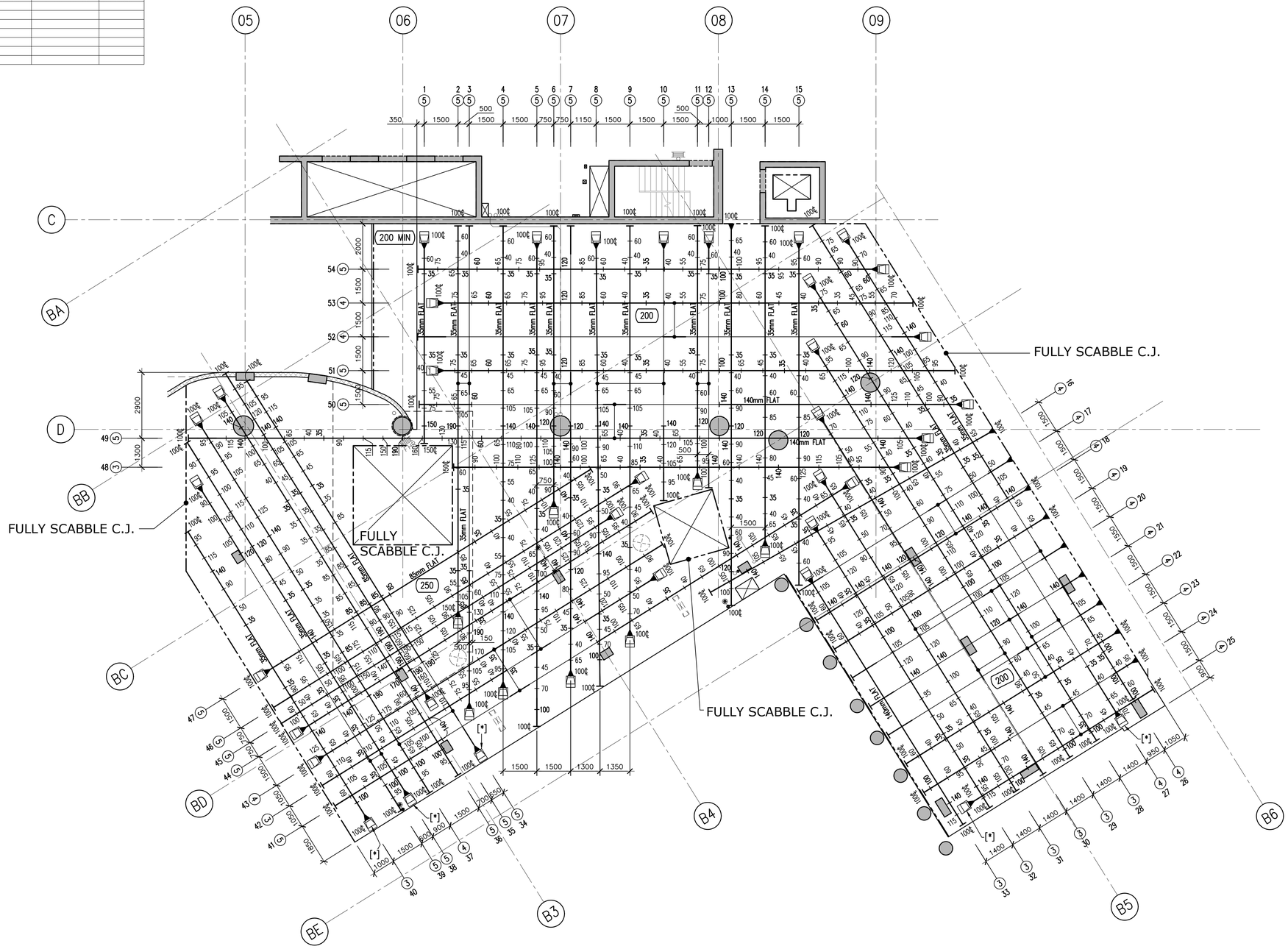


KEY PLAN
BASEMENT 2

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 2 - POUR 2 TOP REINFORCEMENT PLAN	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-123	Revision: 1

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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 2 POUR 3 POST-TENSIONING PLAN		Drawing No: INT-PT-131		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



POST TENSIONING PLAN

ANTI BURST REINFORCEMENT WEIGHT: 0.33 T

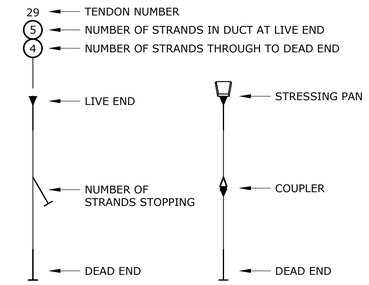
REINFORCEMENT WEIGHT: 1.08 T

STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWING 001 U.N.O.

[*] DENOTES PAN TRIMMER REINFORCEMENTS AS PER DRAWING 001 ARE NOT REQUIRED.

POST - TENSIONING NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. ALL STRAND TO BE 12.7mm 7 WIRE SUPER GRADE, LOW RELAXATION STRAIN TO AS4672.1-2007 U.N.O.
4. ✳ INDICATES HEIGHT MEASURED FROM ADJACENT SOFFIT IN WHICH TENDON RUNS.
5. POST - TENSIONING LEGEND



THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

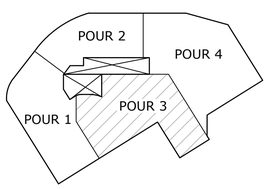
CONSULTANT:	enstruct	
DRAWING NO:	ST-097-00	ST-297-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.002	A03.A1.002
REVISION:	1	I

Rev	Date	Status
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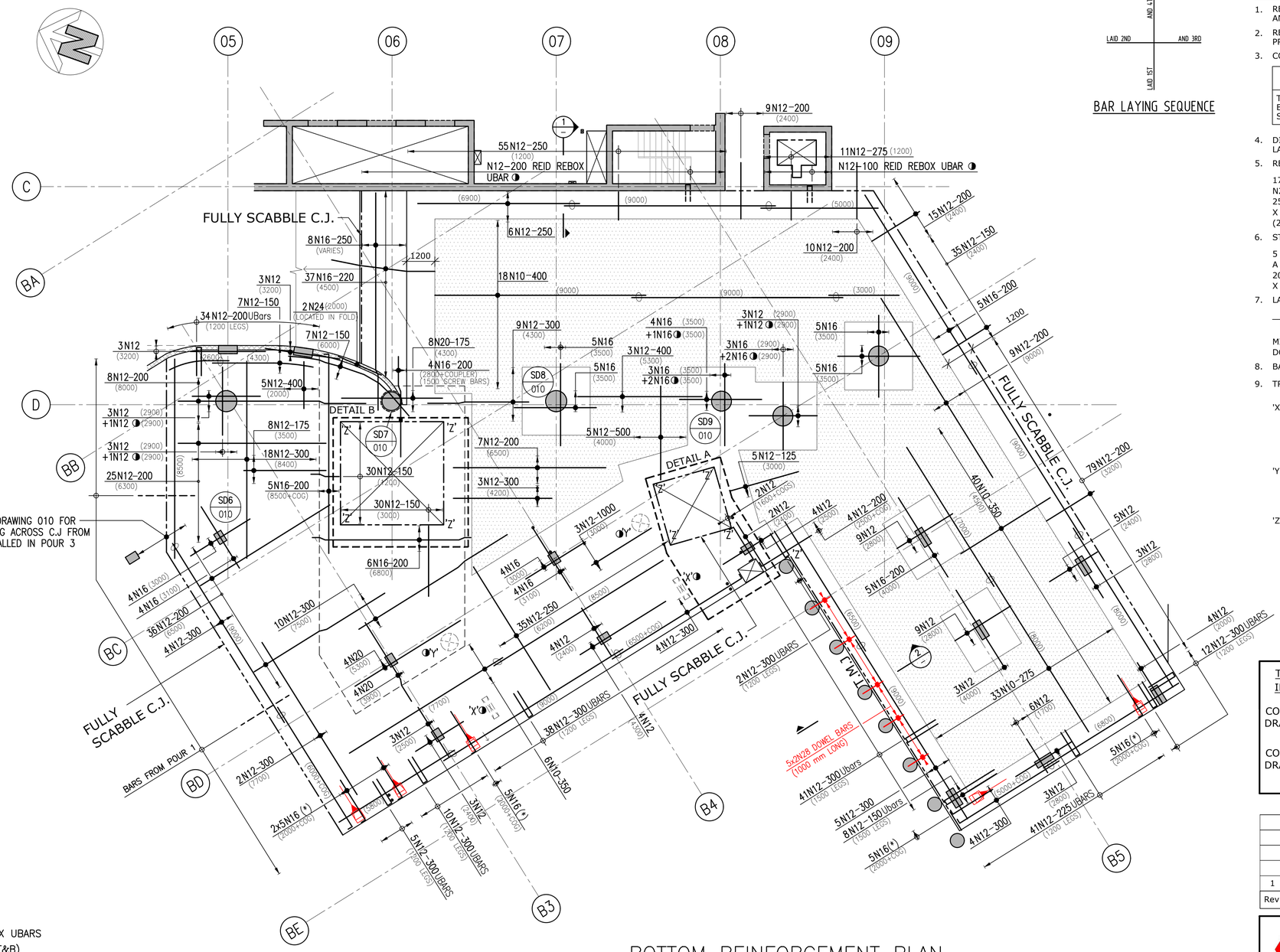


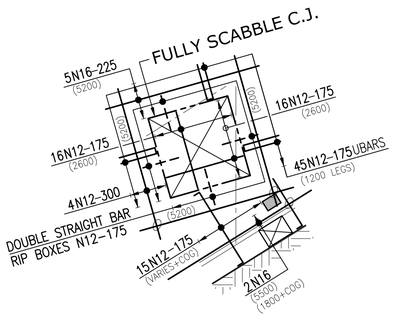
KEY PLAN
BASEMENT 2

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: TT
	Drawn: MK
Drawing Title: BASEMENT 2 - POUR 3 POST-TENSIONING PLAN	Checked: TT3
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 26-07-21
Drawing No.: INT-PT-131	Revision: 1

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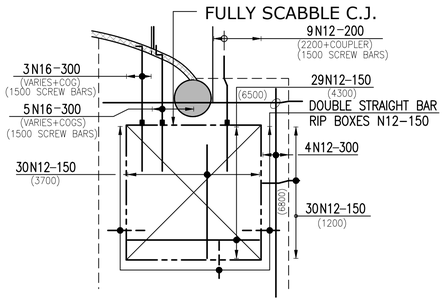
Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 2 POUR 3 BTM REINFORCEMENT PLAN		Drawing No: INT-PT-132		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



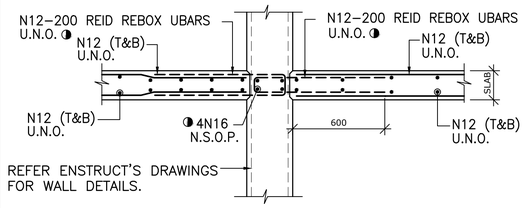


DETAIL A
SCALE 1:100

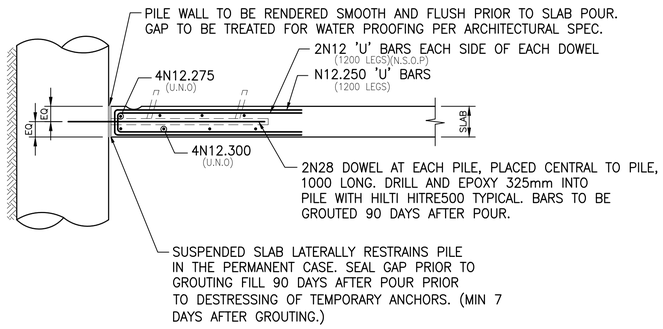
REFER TO SD2 ON DRAWING 010 FOR CLOSED TIES RUNNING ACROSS C.J FROM POUR 1 TO BE INSTALLED IN POUR 3



DETAIL B
SCALE 1:100



SECTION 1
SCALE 1:20



SECTION 2
SCALE 1:20

BOTTOM REINFORCEMENT PLAN

- STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWINGS 001
- HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
- REINFORCEMENT WEIGHT ON PLAN: 5.54 T
- ◑ BARS ARE NOT TO INTERSPAN GMT: 0.075 T
- (*) TRIMMER REINFORCEMENTS TO BE INSTALLED AT STRESSING PAN.
- SL82 BOTTOM MESH TO BE PLACED WHERE THERE ARE NO BOTTOM BARS



BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.

   MINIMUM 1 WIRE SPACING PLUS 25mm
   DO NOT LAP TOP FABRIC OVER SUPPORTS
8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N10 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER

'Y' DENOTES 8N10 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS

'Z' DENOTES 2N10 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-097-00	ST-297-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.002	A03.A1.002
REVISION:	1	I

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

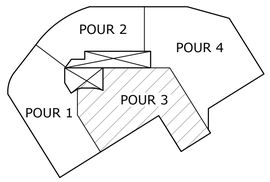
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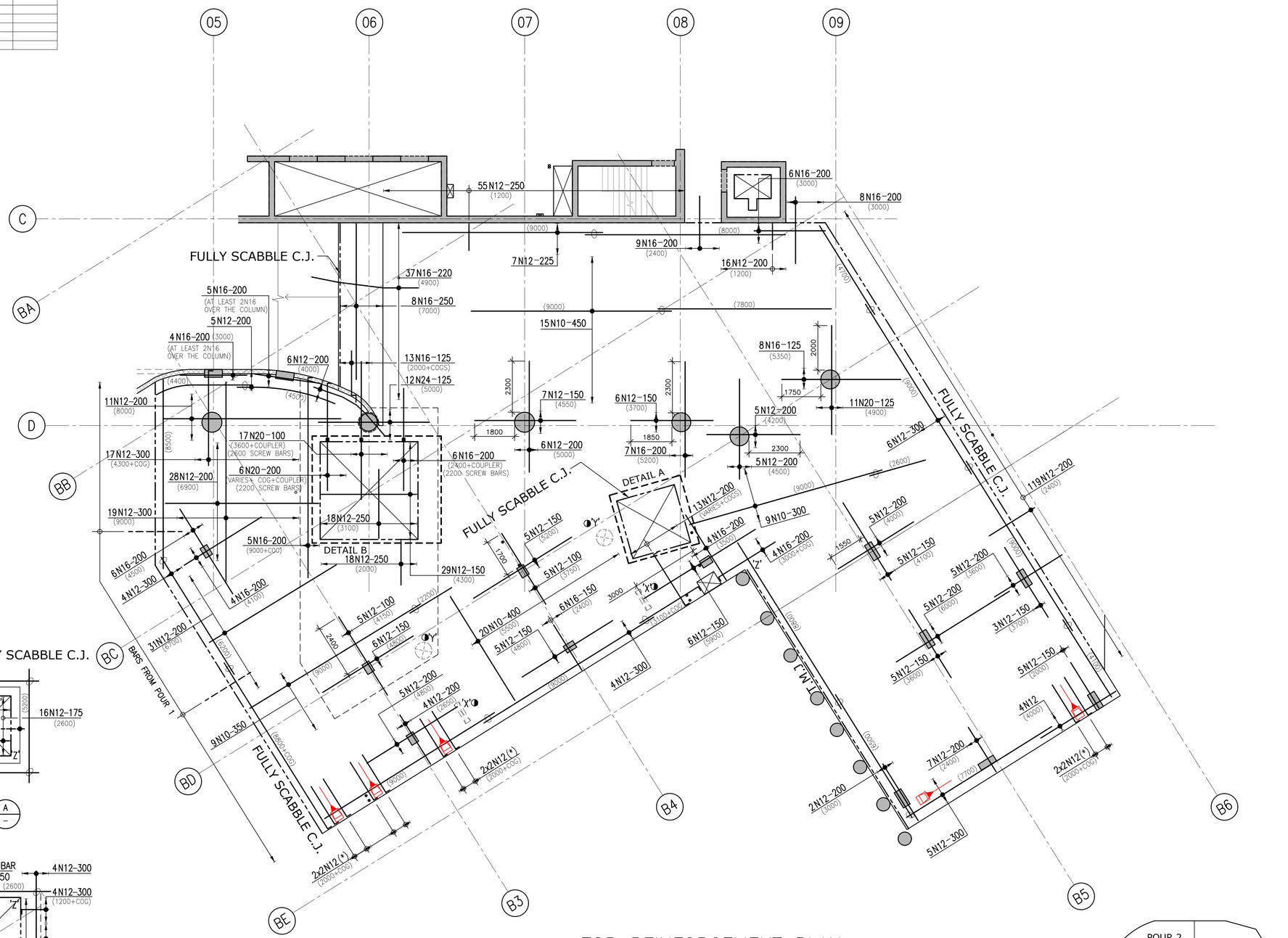
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 2 - POUR 3 BOTTOM REINFORCEMENT PLAN	Checked: CC
	Scale: 1:100 @ B1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-132	Revision: 1

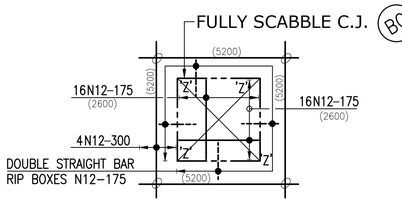


KEY PLAN
BASEMENT 2

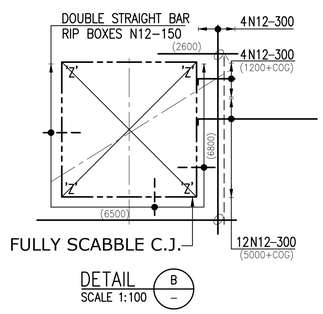
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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 2 POUR 3 TOP REINFORCEMENT PLAN		Drawing No: INT-PT-133		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222





DETAIL A
SCALE 1:100



DETAIL B
SCALE 1:100

TOP REINFORCEMENT PLAN

- HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
- PROVIDE SL82 TOP MESH THROUGHOUT
- REINFORCEMENT WEIGHT ON PLAN: 4.56 T
- ◑ BARS ARE NOT TO INTERSPAN GMT: 0.042 T
- (*) TRIMMER REINFORCEMENTS TO BE INSTALLED AT STRESSING PAN.



BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.

   MINIMUM 1 WIRE SPACING PLUS 25mm
   DO NOT LAP TOP FABRIC OVER SUPPORTS
8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N10 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER

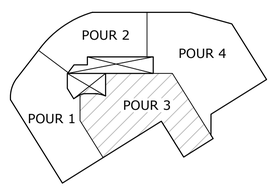
'Y' DENOTES 8N10 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS

'Z' DENOTES 2N10 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-097-00	ST-297-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.002	A03.A1.002
REVISION:	1	I

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION



KEY PLAN
BASEMENT 2

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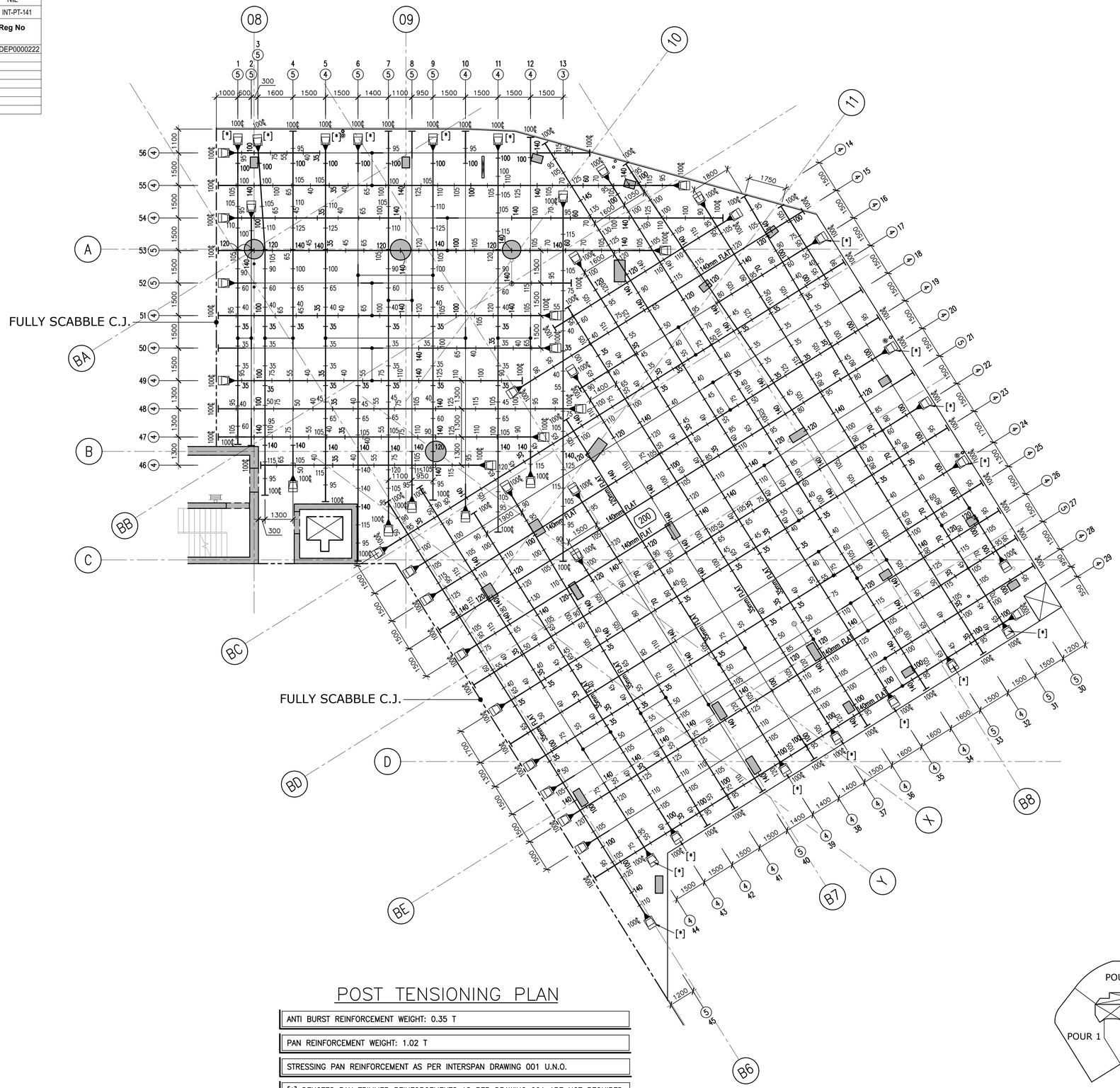
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Website: www.interspan.com.au

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 2 - POUR 3 TOP REINFORCEMENT PLAN	Checked: CC
	Scale: 1:100 @ B1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-133	Revision: 1

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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 2 POUR 4 POST-TENSIONING PLAN		Drawing No: INT-PT-141		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



POST TENSIONING PLAN

ANTI BURST REINFORCEMENT WEIGHT: 0.35 T

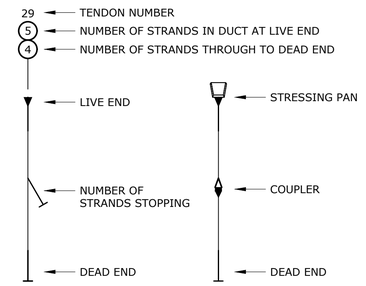
PAN REINFORCEMENT WEIGHT: 1.02 T

STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWING 001 U.N.O.

[*] DENOTES PAN TRIMMER REINFORCEMENTS AS PER DRAWING 001 ARE NOT REQUIRED.

POST - TENSIONING NOTES

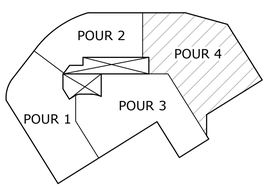
1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. ALL STRAND TO BE 12.7mm 7 WIRE SUPER GRADE, LOW RELAXATION STRAIN TO AS4672.1-2007 U.N.O.
4. ✳ INDICATES HEIGHT MEASURED FROM ADJACENT SOFFIT IN WHICH TENDON RUNS.
5. POST - TENSIONING LEGEND



THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-097-00	ST-297-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.002	A03.A1.002
REVISION:	1	I

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION



KEY PLAN
BASEMENT 2

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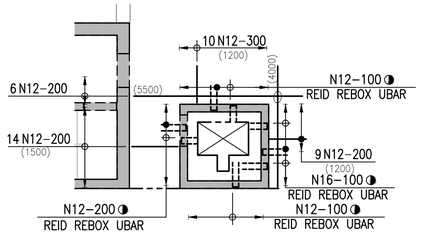
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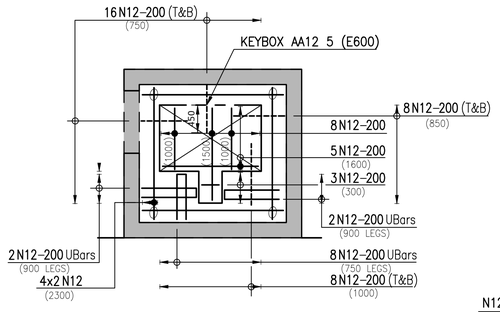
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: TT
	Drawn: MK
Drawing Title: BASEMENT 2 - POUR 4 POST-TENSIONING PLAN	Checked: TT3
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 26-07-21
Drawing No.: INT-PT-141	Revision: 1

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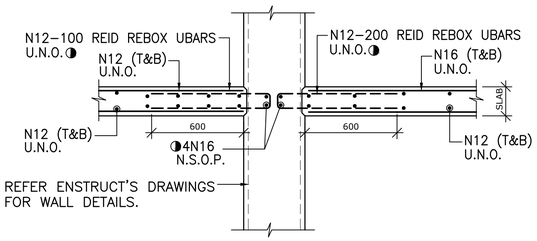
Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 2 POUR 4 BTM REINFORCEMENT PLAN		Drawing No: INT-PT-142		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



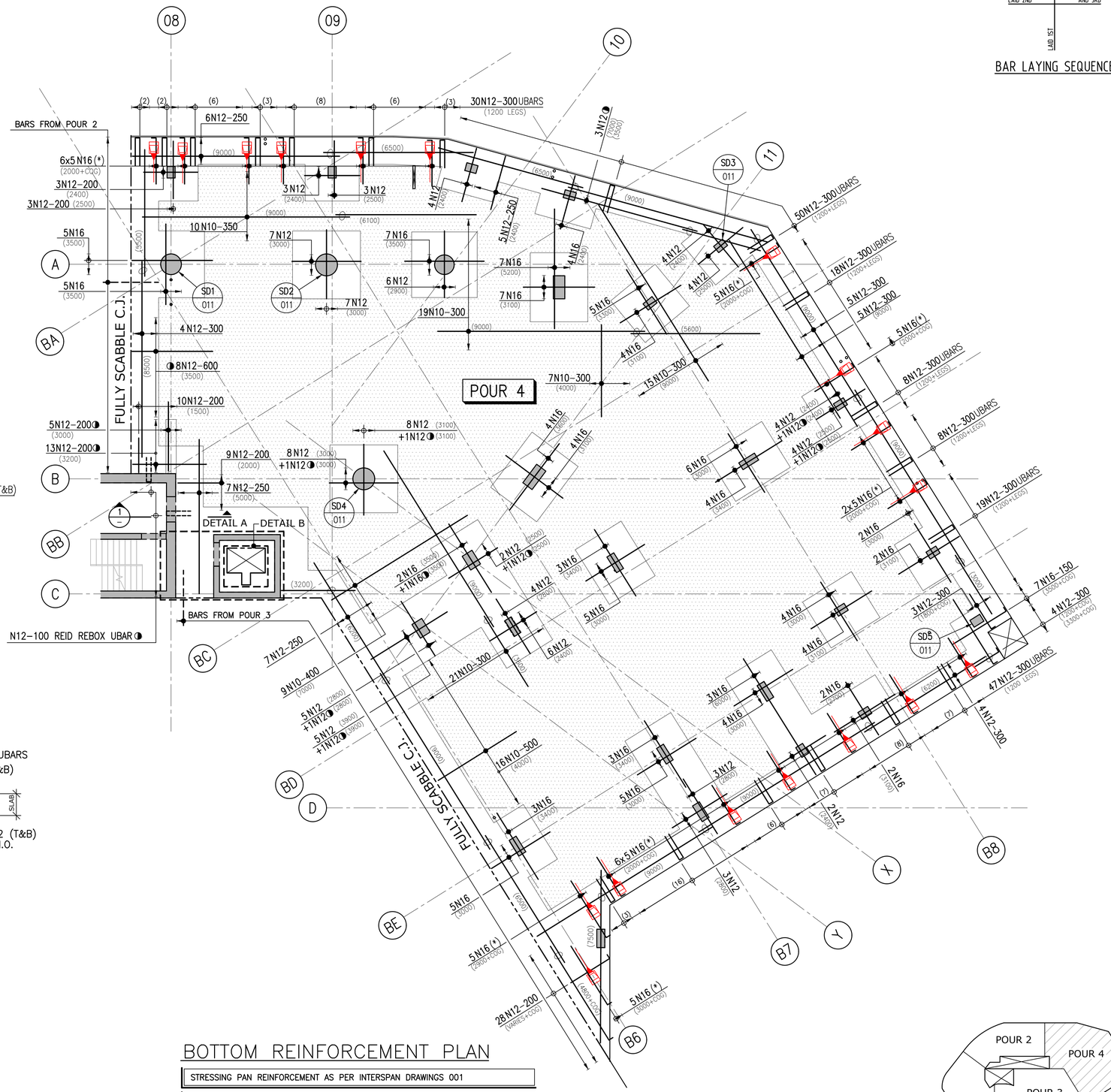
DETAIL A / 1 — SCALE 1:100



DETAIL B / 1 — SCALE 1:50



SECTION 1 / 1 — SCALE 1:20



BOTTOM REINFORCEMENT PLAN

- STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWINGS 001
- HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
- REINFORCEMENT WEIGHT ON PLAN: 3.3 T
- ◑ BARS ARE NOT TO INTERSPAN GMT: 0.12 T
- (*) TRIMMER REINFORCEMENTS TO BE INSTALLED AT STRESSING PAN.
- SL82 BOTTOM MESH TO BE PLACED WHERE THERE ARE NO BOTTOM BARS



BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.

   MINIMUM 1 WIRE SPACING PLUS 25mm
   DO NOT LAP TOP FABRIC OVER SUPPORTS
8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER

'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS

'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-097-00	ST-297-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.002	A03.A1.002
REVISION:	1	I

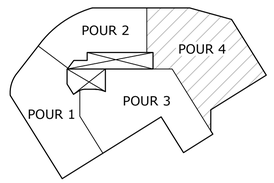
Rev	Date	Status
1	15/08/21	FOR CO-ORDINATION

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KEY PLAN
BASEMENT 2

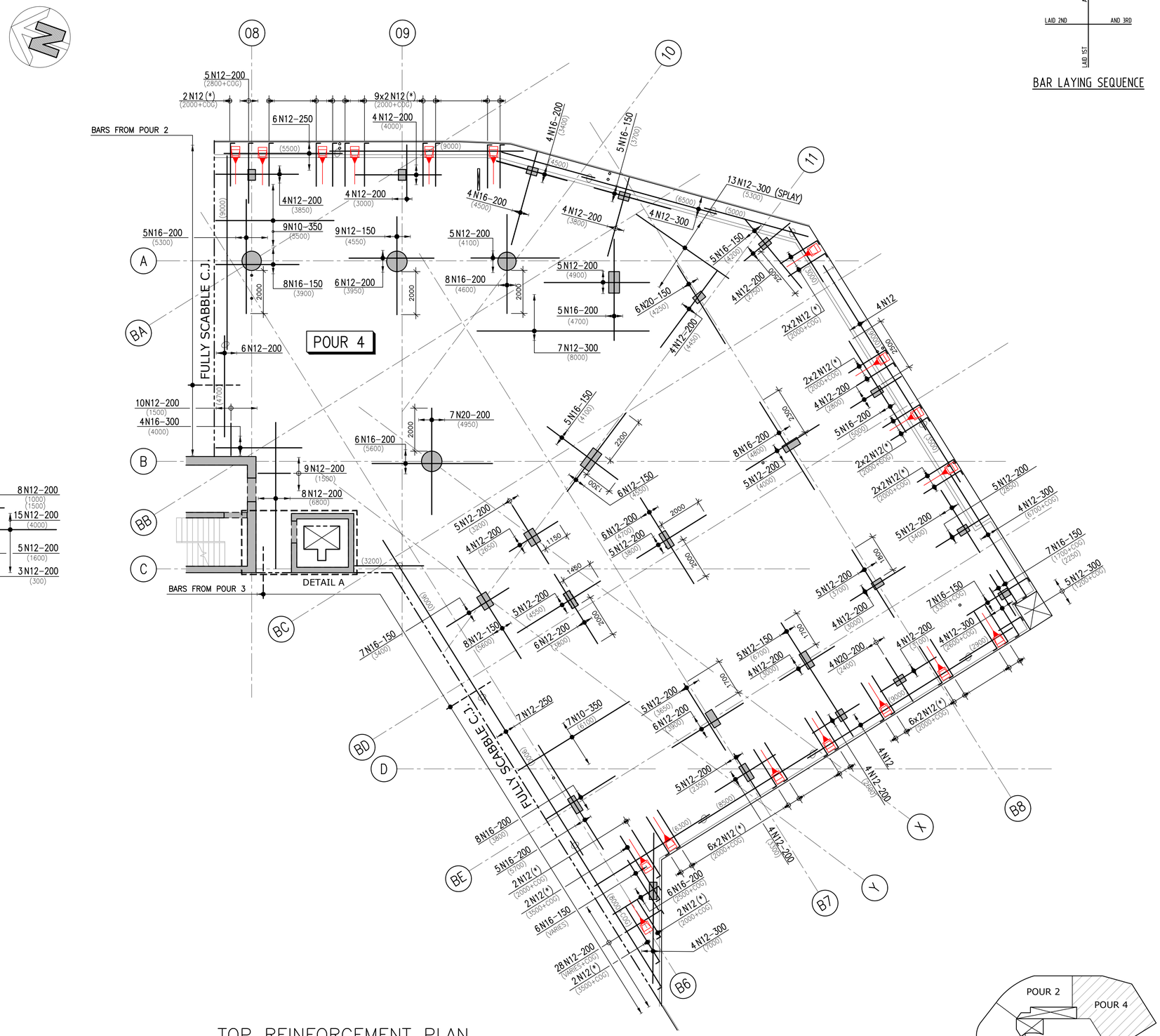
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 2 - POUR 4 BOTTOM REINFORCEMENT PLAN	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 29-07-21
Drawing No.: INT-PT-142	Revision: 1

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Regulated Design Record

Project Address:	BUILDING A1 IVANHOE ESTATE MACQUARIE PARK		
Project Title:	BUILDING A1 IVANHOE ESTATE MACQUARIE PARK		
Consent No:	SSDA8903	Body Corporate Reg No:	NIL
Drawing Title:	BASEMENT 2 POUR 4 TOP REINFORCEMENT PLAN	Drawing No:	INT-PT-143

Rev	Date dd.mm.yy	Description	DP Full Name	Reg No
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222


08
09
10
11
A
BA
B
BB
C
BC
D
BD
BE
B8
X
Y
B7
B6
BARS FROM POUR 2
BARS FROM POUR 3
FULLY SCABBLE C.J.
POUR 4
DETAIL A
5N12–200 (2800+COG)
2N12 (*) (2000+COG)
9x2N12 (*) (2000+COG)
6N12–250
4N12–200 (4000)
4N16–200 (3400)
5N16–150 (3700)
13N12–300 (SPLAY) (5300)
4N12–300 (6500)
4N12–200 (3850)
4N12–200 (3000)
4N16–200 (4500)
4N12–200 (3800)
5N16–200 (5300)
9N10–350 (3500)
9N12–150 (4550)
5N12–200 (4100)
5N16–150 (4000)
8N16–150 (3900)
6N12–200 (3950)
8N16–200 (4600)
5N12–200 (4900)
6N20–150 (4250)
5N16–200 (4700)
4N12–200 (4450)
7N12–300 (8000)
6N12–200
10N12–200 (1500)
4N16–300 (4000)
7N20–200 (4950)
6N16–200 (5600)
5N16–150 (4100)
9N12–200 (1550)
8N12–200 (6800)
5N12–200 (3200)
4N12–200 (2650)
6N12–150 (4350)
6N12–200 (4150)
5N12–200 (3800)
5N12–200 (4550)
8N12–150 (5600)
6N12–200 (3800)
7N16–150 (3400)
7N12–250
7N10–350 (6100)
5N12–200 (3650)
6N12–200 (3900)
5N12–200 (2350)
8N16–200 (3800)
5N16–200 (5700)
2N12 (*) (2000+COG)
2N12 (*) (3500+COG)
6N16–150 (VARIES)
28N12–200 (VARIES+COG)
2N12 (*) (3500+COG)
6N16–200 (3550+COG)
2N12 (*) (2000+COG)
4N12–300 (7000)
4N12–200 (3300)
6x2N12 (*) (2000+COG)
4N12 (6300)
2x2N12 (*) (2000+COG)
4N12–200 (2600)
5N16–200 (3900)
8N16–200 (4800)
5N12–200 (4000)
2x2N12 (*) (2000+COG)
5N12–200 (4850)
4N12–300 (6700+COG)
5N12–200 (3400)
7N16–150 (1700+COG) (2250)
5N12–300 (1700+COG)
5N12–200 (3700)
4N12–200 (3000)
4N20–200 (2400)
4N12–200 (3400)
4N12–300 (2600+COG) (2900)
6x2N12 (*) (2000+COG)
4N12 (6300)
4N12–200 (3300)
5N12–150 (6700)
4N12–200 (3000)
5N12–200 (4850)
5N16–150 (4000)
4N12–200 (2450)
2x2N12 (*) (2000+COG)
4N12 (6300)
4N12–200 (2600)
2x2N12 (*) (2000+COG)
2x2N12 (*) (2000+COG)
2x2N12 (*) (2000+COG)
2300
2000
1200
1150
1450
1700
1800
2200
2000
2000
2000

Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No:	NIL	
Drawing Title: BASEMENT 1 GENERAL ARRANGEMENT PLAN		Drawing No:	INT-PT-150	
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222

PROVIDE PROPPING UNDER ALONG C.J UNTIL FUTURE POUR IS POURED AND REACHES 28 DAYS DESIGN STRENGTH

PROVIDE PROPPING UNDER ALONG C.J UNTIL FUTURE POUR IS POURED AND REACHES 28 DAYS DESIGN STRENGTH

PROVIDE PROPPING UNDER ALONG C.J UNTIL FUTURE POUR IS POURED AND REACHES 28 DAYS DESIGN STRENGTH

POUR 1

POUR 2

POUR 3

POUR 4

1:100 FALL TO SLAB EDGE

HOB

COLUMN STIFFNESS 50% REACTION MOMENTS AS SHOWN. SIM SITUATION TO OTHER COLUMNS.

Fz=643 Mr=-122 Ms=74.9

Fz=596 Mr=-176 Ms=-5.22

Fz=607 Mr=-175 Ms=-10.2

Fz=563 Mr=-156 Ms=23.9

Fz=437 Mr=-78.2 Ms=-3.18

Fz=362 Mr=-27.4 Ms=-4.64

Fz=469 Mr=-55 Ms=-36.7

Fz=473 Mr=53.7 Ms=45

Fz=942 Mr=124 Ms=90.6

FULLY SCABBLE C.J.

1700DX2500W UPSTAND WALL – REFER TO ENSTRUCT'S DRAWINGS FOR DETAIL

REFER TO ENSTRUCT'S DRAWINGS FOR DETAIL

REFER TO ENSTRUCT'S DRAWINGS FOR DETAIL

Fz=110 Mr=-82.2 Ms=-2.97

200MIN TO 300MAX

200 MIN

SSL 56.000

SSL 55.750

300 FOLD

Fz=352 Mr=38.4 Mr=-22.1

Fz=303 Mr=-105 Ms=-111

Fz=766 Mr=-158 Ms=-71.7

Fz=696 Mr=48 Ms=-41.8

Fz=564 Mr=-27.1 Mr=-50.7

Fz=298 Mr=-27.1 Mr=-50.7

Fz=550 Mr=74.8 Mr=-8.05

150D x 300W TRENCH DRAIN

700Dx250W

600Dx450W

SSL 56.250

4500

900

250

TEMPORARY HOIST PENETRATION

TEMPORARY CRANE PENETRATION

300W STRUCTURAL CONCRETE WALL – REFER TO ENSTRUCT'S DRAWING FOR DETAIL

370 MIN

420

70 min

RUNNING BOND

GENERAL ARRANGEMENT PLAN

: DENOTE 50Mpa CONCRETE STRENGTH

: DENOTE WALL TO SUPPORT SLAB. PROVIDE PROPPING UNDER SLAB UNTIL WALL'S REACHES DESIGN STRENGTH

: DENOTE STRUCTURAL UPSTAND WALL TO SUPPORT SLAB. PROVIDE PROPPING UNDER SLAB UNTIL UPSTAND WALL'S REACHES DESIGN STRENGTH

KEY PLAN
BASEMENT 1

POUR 1 POUR 2 POUR 3 POUR 4

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT: enstruct
DRAWING NO: ST-098-00 ST-298-00
REVISION: 1 1

CONSULTANT: Bates Smart
DRAWING NO: A04.A1.001 A03.A1.001
REVISION: 1 L

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

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Website: www.interspan.com.au

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 1 GENERAL ARRANGEMENT PLAN	Checked: CC
	Scale: 1:100 @ B1
Project No.: INPT20373	Date: 25-07-21
Drawing No.: INT-PT-150	Revision: 1

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Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 1 POUR 1 BTM REINFORCEMENT PLAN		Drawing No: INT-PT-152		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



POST TENSIONING PLAN

ANTI BURST REINFORCEMENT WEIGHT: 0.28 T

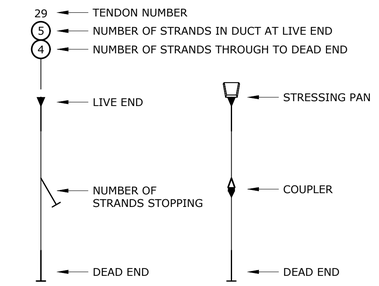
PAN REINFORCEMENT WEIGHT: 0.51 T

STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWING 001 U.N.O.

[*] DENOTES PAN TRIMMER REINFORCEMENTS AS PER DRAWING 001 ARE NOT REQUIRED.

POST - TENSIONING NOTES

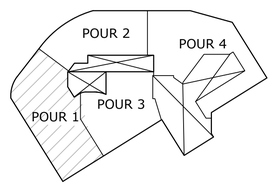
1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. ALL STRAND TO BE 12.7mm 7 WIRE SUPER GRADE, LOW RELAXATION STRAIN TO AS4672.1-2007 U.N.O.
4. ✳ INDICATES HEIGHT MEASURED FROM ADJACENT SOFFIT IN WHICH TENDON RUNS.
5. POST - TENSIONING LEGEND



THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-098-00	ST-298-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.001	A03.A1.003
REVISION:	1	J

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION



KEY PLAN
BASEMENT 1

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Rosebery, NSW 2018
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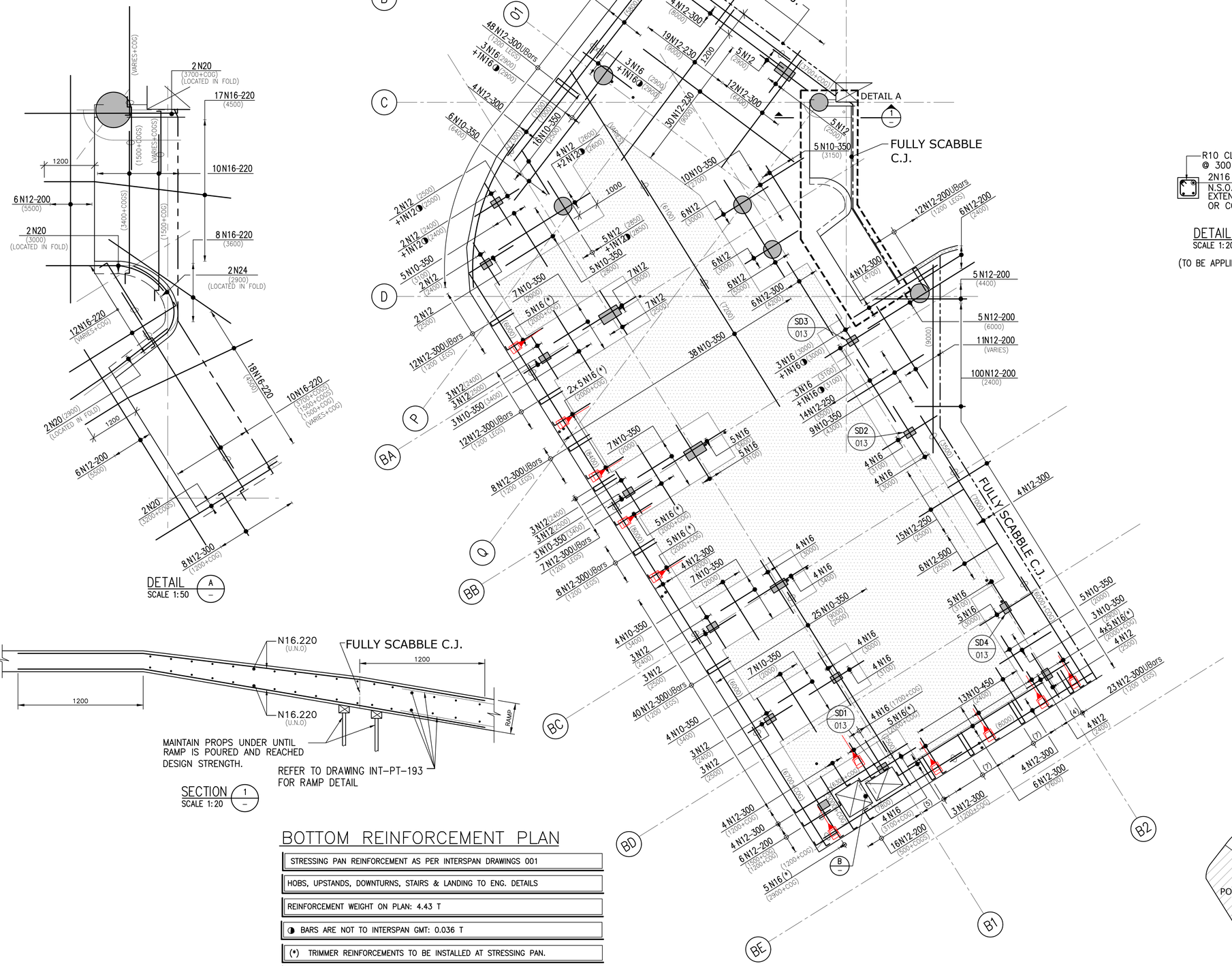
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Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: TT
	Drawn: HN1
Drawing Title: BASEMENT 1 - POUR 1 POST-TENSIONING PLAN	Checked: TT3
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-151	Revision: 1

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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 1 POUR 1 BTM REINFORCEMENT PLAN		Drawing No: INT-PT-152		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



DETAIL A
SCALE 1:50

SECTION 1
SCALE 1:20

BOTTOM REINFORCEMENT PLAN

- STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWINGS 001
- HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
- REINFORCEMENT WEIGHT ON PLAN: 4.43 T
- ◑ BARS ARE NOT TO INTERSPAN GMT: 0.036 T
- (*) TRIMMER REINFORCEMENTS TO BE INSTALLED AT STRESSING PAN.
- SL82 BOTTOM MESH TO BE PLACED WHERE THERE ARE NO BOTTOM BARS



BAR LAYING SEQUENCE

R10 CLOSED TIES @ 300 CTS N.S.O.P
2N16 T&B N.S.O.P
EXTEND 600 PAST CORNERS OR COG AS REQUIRED

DETAIL B
SCALE 1:20

(TO BE APPLIED BETWEEN PENOS)

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.

   MINIMUM 1 WIRE SPACING PLUS 25mm
   DO NOT LAP TOP FABRIC OVER SUPPORTS
8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER

'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS

'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-098-00	ST-298-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.001	A03.A1.003
REVISION:	1	J

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

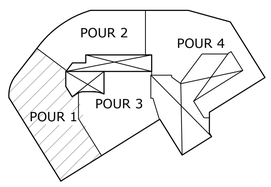
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Website: www.interspan.com.au

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: TT
	Drawn: HN1
Drawing Title: BASEMENT 1 - POUR 1 BOTTOM REINFORCEMENT PLAN	Checked: TT3
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-152	Revision: 1

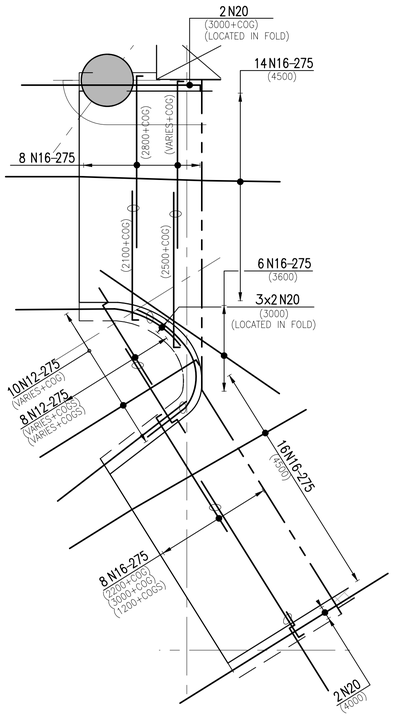


KEY PLAN
BASEMENT 1

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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No:	NIL	
Drawing Title: BASEMENT 1 POUR 1 TOP REINFORCEMENT PLAN		Drawing No:	INT-PT-153	
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222





DETAIL A
SCALE 1:50

TOP REINFORCEMENT PLAN

- HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
- PROVIDE SL82 TOP MESH THROUGHOUT
- REINFORCEMENT WEIGHT ON PLAN: 3.54 T
- (*) TRIMMER REINFORCEMENTS FOR STRESSING PAN.



BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.

   MINIMUM 1 WIRE SPACING PLUS 25mm
   DO NOT LAP TOP FABRIC OVER SUPPORTS
8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER

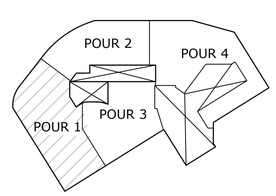
'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS

'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-098-00	ST-298-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.001	A03.A1.003
REVISION:	1	J

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION



KEY PLAN
BASEMENT 1

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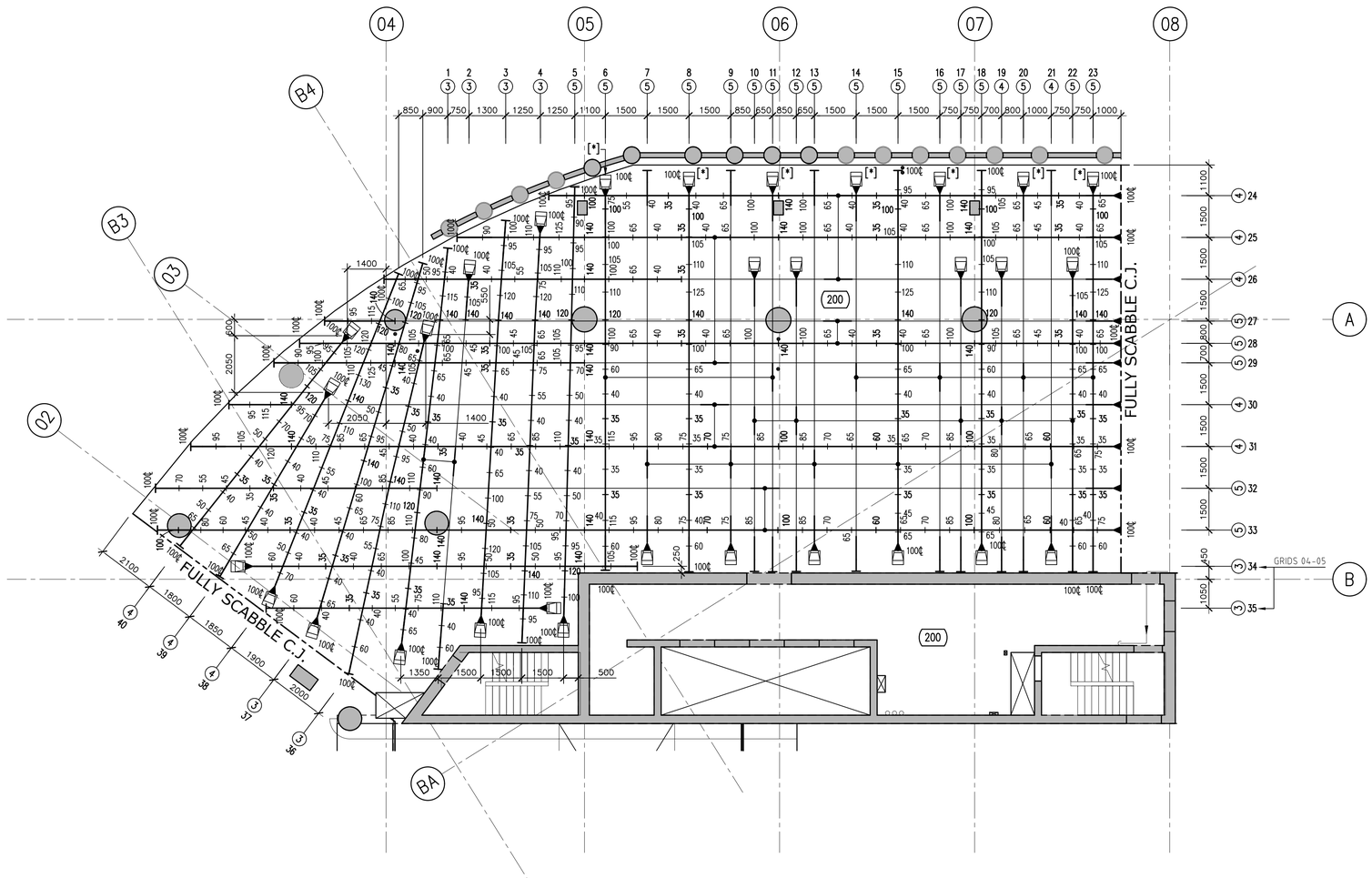
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Website: www.interspan.com.au

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 1 - POUR 1 TOP REINFORCEMENT PLAN	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-153	Revision: 1

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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 1 POUR 2 POST-TENSIONING PLAN		Drawing No: INT-PT-161		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



POST TENSIONING PLAN

ANTI BURST REINFORCEMENT WEIGHT: 0.25 T

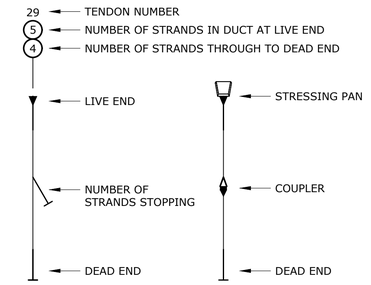
PAN REINFORCEMENT WEIGHT: 0.62 T

STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWING 001 U.N.O

[*] DENOTES PAN TRIMMER REINFORCEMENTS AS PER DRAWING 001 ARE NOT REQUIRED.

POST - TENSIONING NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. ALL STRAND TO BE 12.7mm 7 WIRE SUPER GRADE, LOW RELAXATION STRAIN TO AS4672.1-2007 U.N.O.
4. ✳ INDICATES HEIGHT MEASURED FROM ADJACENT SOFFIT IN WHICH TENDON RUNS.
5. POST - TENSIONING LEGEND



THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT: enstruct		
DRAWING NO: ST-098-00		ST-298-00
REVISION: 1		1
CONSULTANT: Bates Smart		
DRAWING NO: A04.A1.001		A03.A1.003
REVISION: 1		J

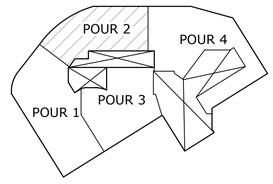
Rev	Date	Status
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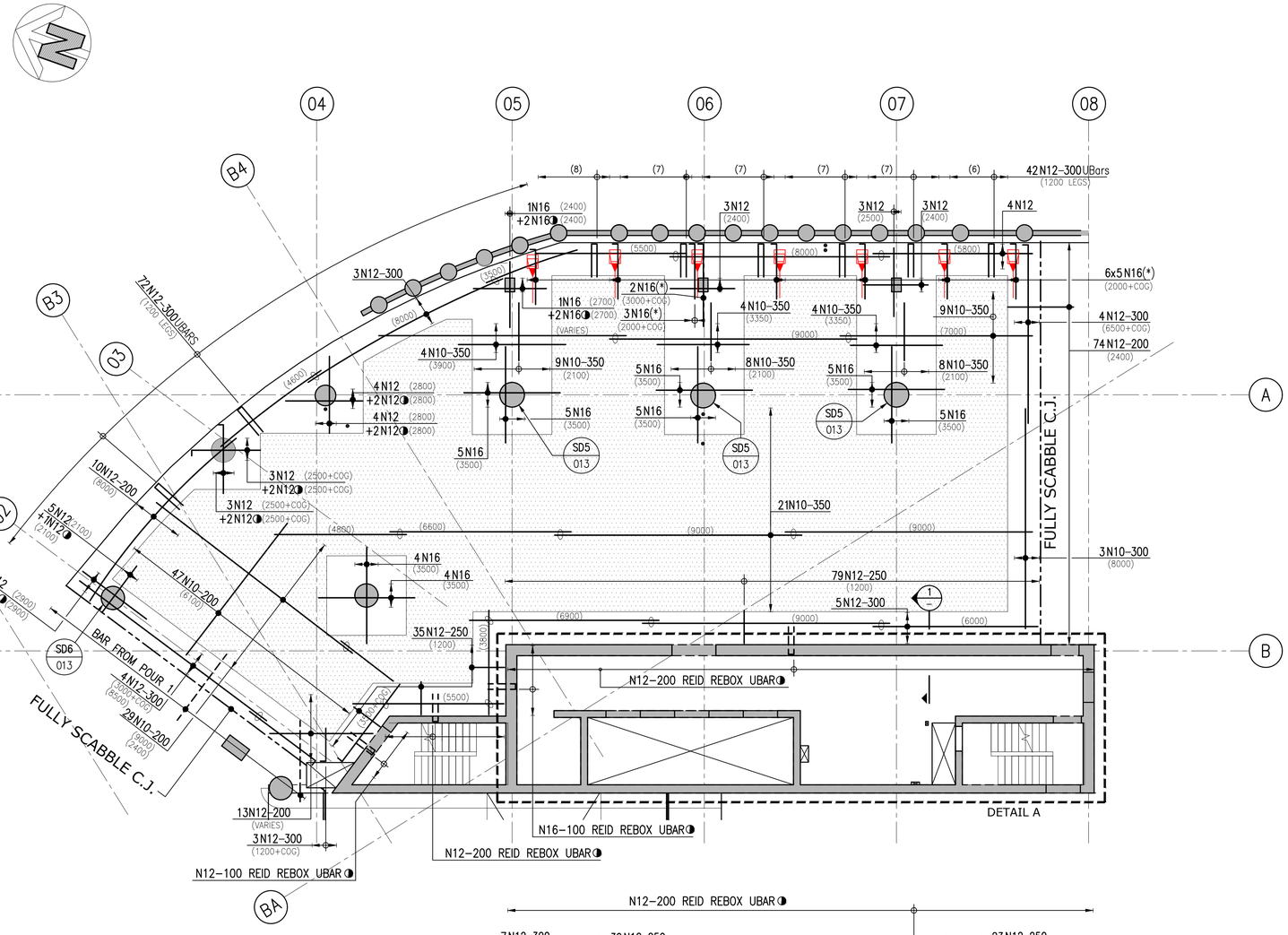


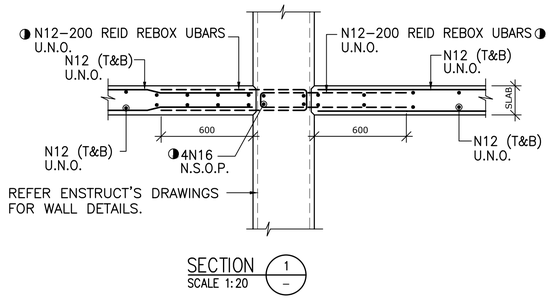
KEY PLAN
BASEMENT 1

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: TT
	Drawn: HN1
Drawing Title: BASEMENT 1 - POUR 2 POST-TENSIONING PLAN	Checked: TT3
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-161	Revision: 1

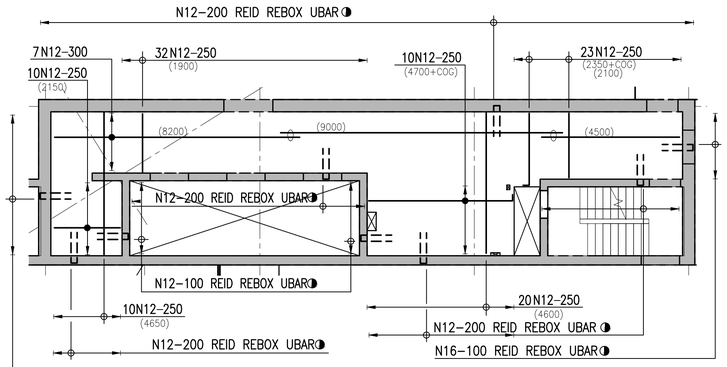
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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 1 POUR 2 POST-TENSIONING PLAN			Drawing No: INT-PT-161	
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222





SECTION 1 / SCALE 1:20



DETAIL A / SCALE 1:100

BOTTOM REINFORCEMENT PLAN

- STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWINGS 001
- HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
- REINFORCEMENT WEIGHT ON PLAN: 2.85 T
- ◑ BARS ARE NOT TO INTERSPAN GMT: 0.1 T
- (*) TRIMMER REINFORCEMENTS TO BE INSTALLED AT STRESSING PAN.
- SL82 BOTTOM MESH TO BE PLACED WHERE THERE ARE NO BOTTOM BARS



BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.

   MINIMUM 1 WIRE SPACING PLUS 25mm
   DO NOT LAP TOP FABRIC OVER SUPPORTS
8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER

'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS

'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT: enstruct	
DRAWING NO: ST-098-00	ST-298-00
REVISION: 1	1
CONSULTANT: Bates Smart	
DRAWING NO: A04.A1.001	A03.A1.003
REVISION: 1	J

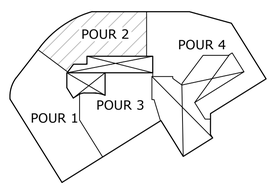
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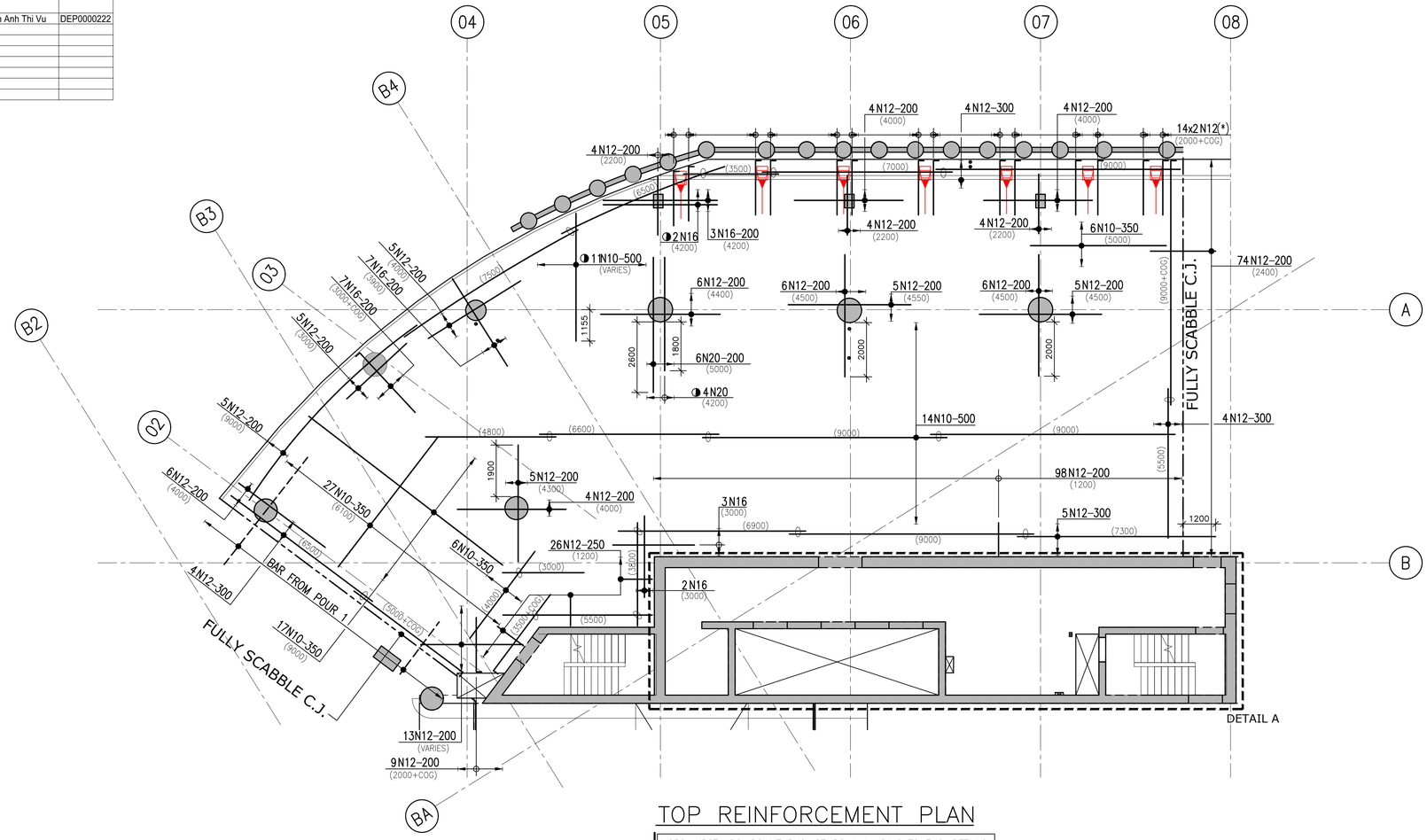


KEY PLAN
BASEMENT 1

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 1 - POUR 2 BOTTOM REINFORCEMENT PLAN	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-162	Revision: 1

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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 1 POUR 2 POST-TENSIONING PLAN		Drawing No: INT-PT-161		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222





BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.

   MINIMUM 1 WIRE SPACING PLUS 25mm
   DO NOT LAP TOP FABRIC OVER SUPPORTS
8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER

'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS

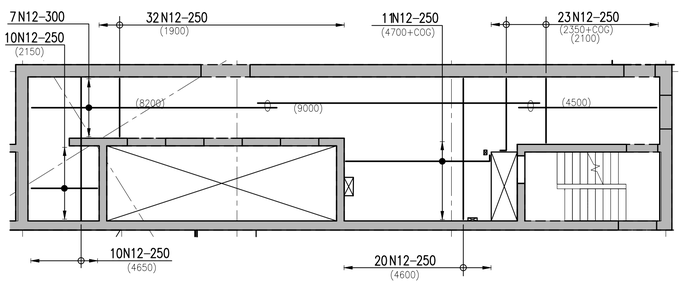
'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

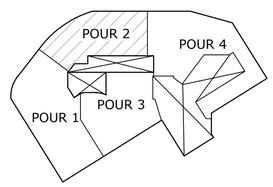
CONSULTANT: enstruct
DRAWING NO: ST-098-00 ST-298-00
REVISION: 1 1
CONSULTANT: Bates Smart
DRAWING NO: A04.A1.001 A03.A1.003
REVISION: 1 J

TOP REINFORCEMENT PLAN

HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
PROVIDE SL82 TOP MESH THROUGHOUT
REINFORCEMENT WEIGHT ON PLAN: 2.22 T
◑ BARS IS NOT TO INTERSPAN GMT: 0.087 T
(*) TRIMMER REINFORCEMENTS FOR STRESSING PAN.



DETAIL A SCALE 1:100



KEY PLAN
BASEMENT 1

1	15/08/21	AS FOR CONSTRUCTION
Rev	Date	Status

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Website: www.interspan.com.au

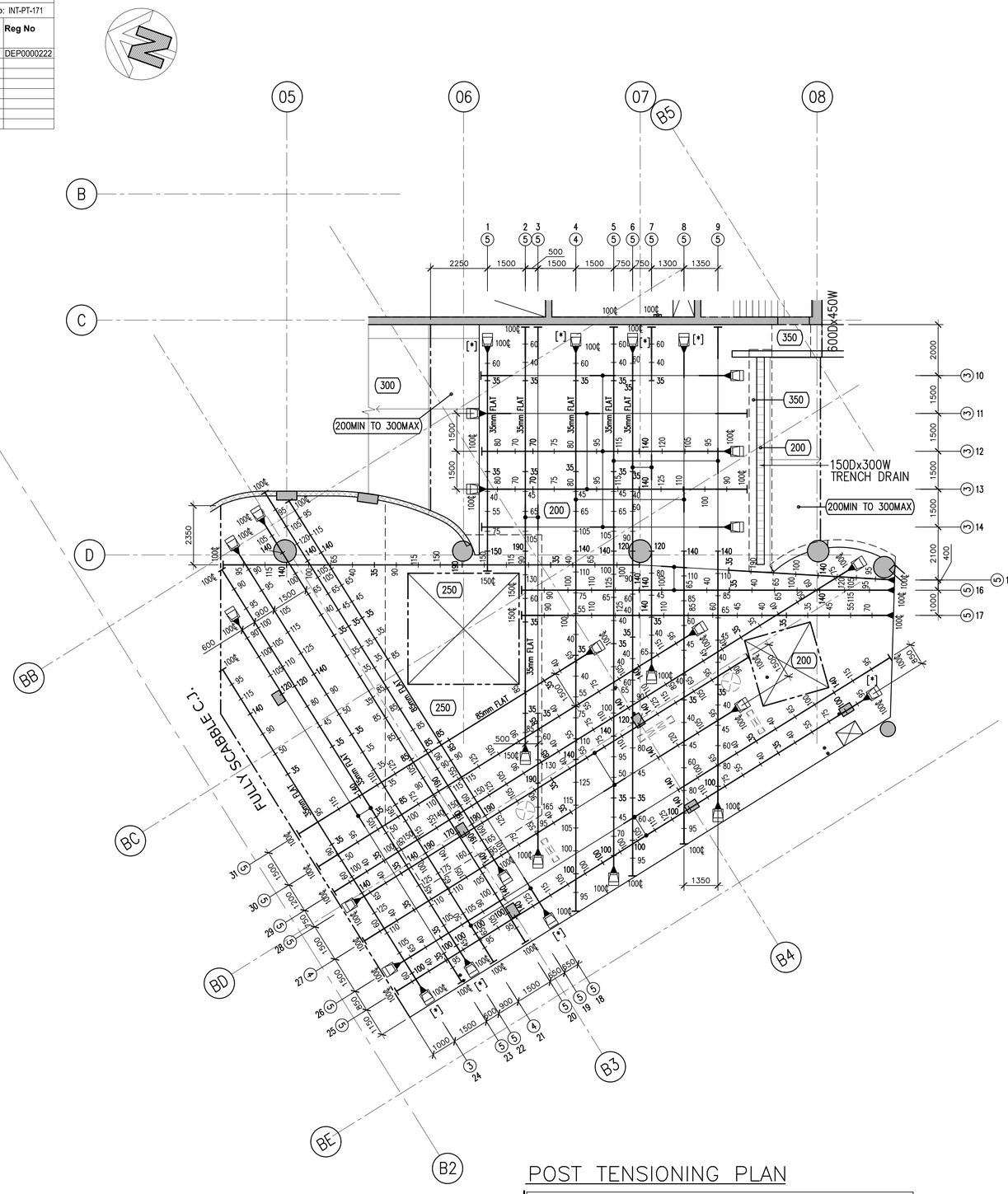
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 1 - POUR 2 TOP REINFORCEMENT PLAN	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-163	Revision: 1

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~~Regulated Design Record~~

Project Address:	BUILDING A1 IVANHOE ESTATE MACQUARIE PARK			
Project Title:	BUILDING A1 IVANHOE ESTATE MACQUARIE PARK			
Consent No:	SSDA8903	Body Corporate Reg No:	NIL	
Drawing Title:	BASEMENT 1 POUR 3 POST-TENSIONING PLAN	Drawing No:	INT-PT-171	

Rev	Date dd.mm.yy	Description	DP Full Name	Reg No
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



POST TENSIONING PLAN

ANTI BURST REINFORCEMENT WEIGHT: 0.19 T

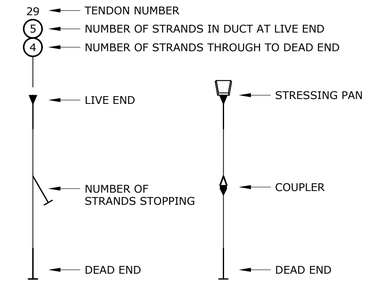
PAN REINFORCEMENT WEIGHT: 0.535 T

STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWING 001

[*] DENOTES PAN TRIMMER REINFORCEMENTS AS PER DRAWING 001 NOT REQUIRED.

POST - TENSIONING NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. ALL STRAND TO BE 12.7mm 7 WIRE SUPER GRADE, LOW RELAXATION STRAIN TO AS4672.1-2007 U.N.O.
4. ✳ INDICATES HEIGHT MEASURED FROM ADJACENT SOFFIT IN WHICH TENDON RUNS.
5. POST - TENSIONING LEGEND



THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-098-00	ST-298-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.001	A03.A1.003
REVISION:	1	J

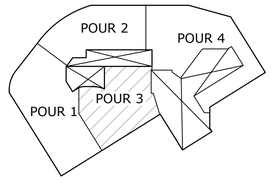
Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

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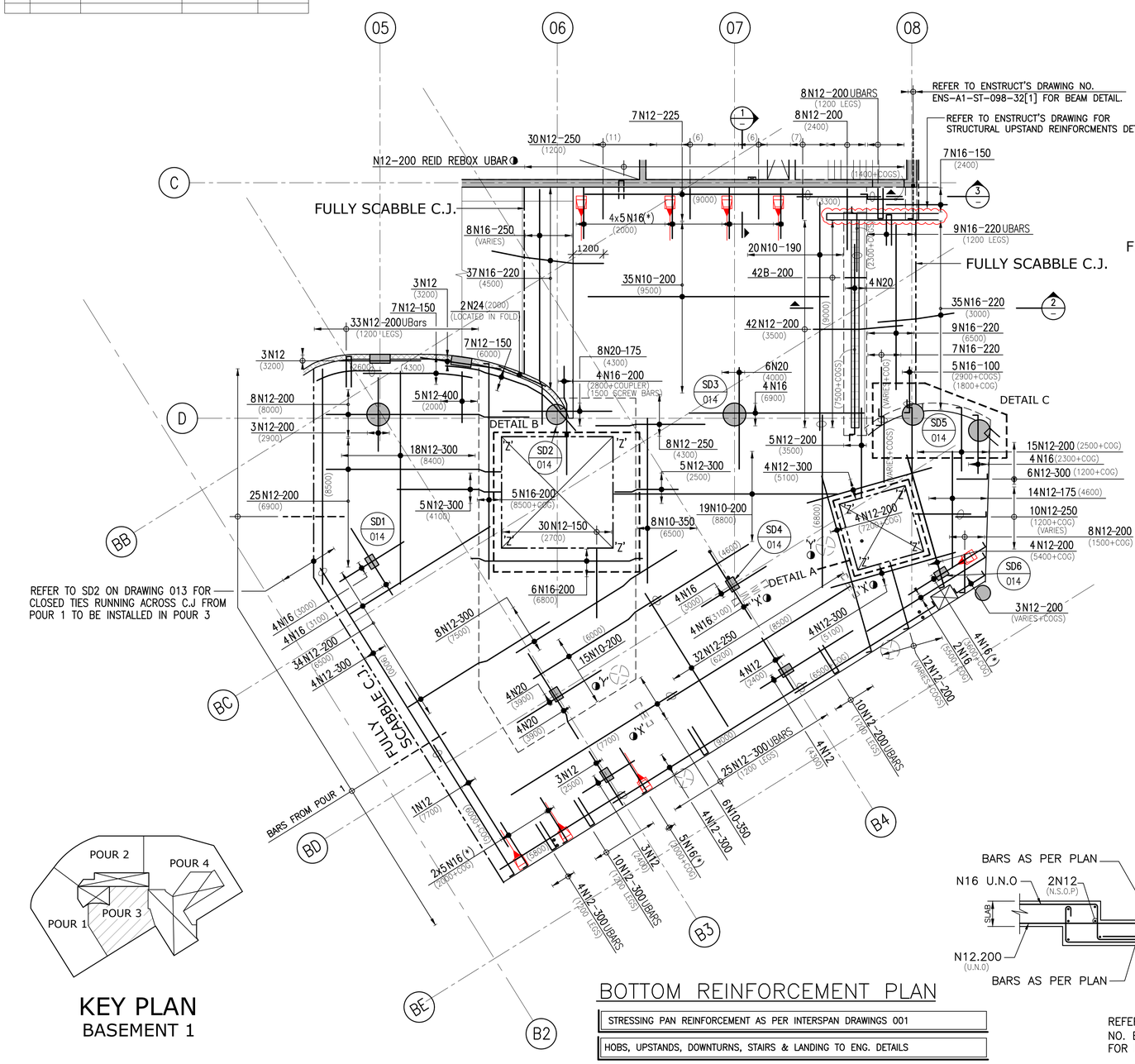


KEY PLAN
BASEMENT 1

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: TT
	Drawn: MT
Drawing Title: BASEMENT 1 - POUR 3 POST-TENSIONING PLAN	Checked: TT3
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-171	Revision: 1

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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No:	NIL	
Drawing Title: BASEMENT 1 POUR 3 BTM REINFORCEMENT PLAN		Drawing No:	INT-PT-172	
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



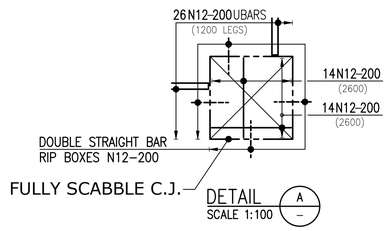
KEY PLAN
BASEMENT 1

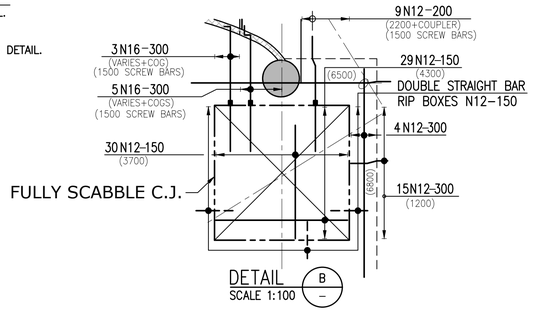
BOTTOM REINFORCEMENT PLAN

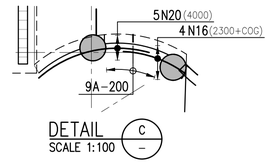
- STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWINGS 001
- HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
- REINFORCEMENT WEIGHT ON PLAN: 4.97 T
- ◑ BARS ARE NOT TO INTERSPAN GMT: 0.057 T
- (*) TRIMMER REINFORCEMENTS TO BE INSTALLED AT STRESSING PAN.

STIRRUP SCHEDULE

A	N12 CLOSED TIE TOP & BOTTOM BARS AS NOTED ON PLAN. FIRST TIE TO BE 50mm FROM COLUMN FACE	
B	2 LEGS N12 TOP & BOTTOM BARS AS NOTED ON PLAN. FIRST TIE TO BE 50mm FROM COLUMN FACE	

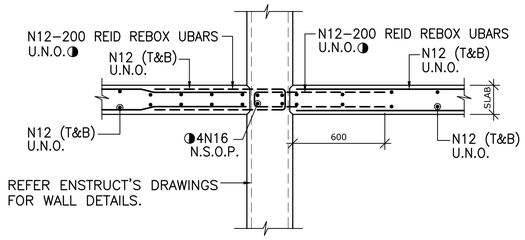


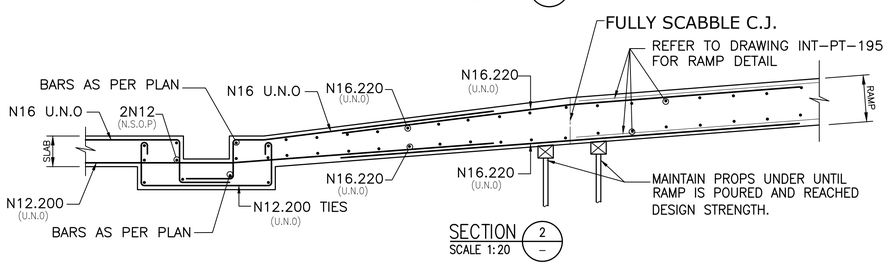


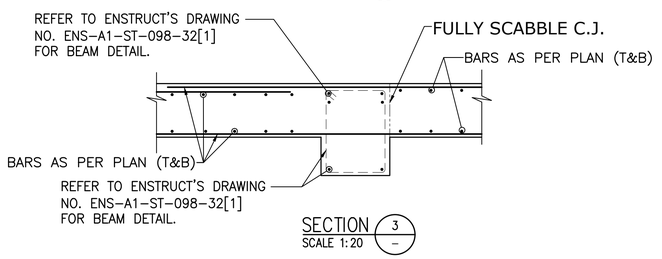




BAR LAYING SEQUENCE





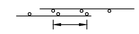


REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.



MINIMUM 1 WIRE SPACING PLUS 25mm
DO NOT LAP TOP FABRIC OVER SUPPORTS

8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER



'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS



'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG



THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT: enstruct	
DRAWING NO: ST-098-00	ST-298-00
REVISION: 1	1
CONSULTANT: Bates Smart	
DRAWING NO: A04.A1.001	A03.A1.003
REVISION: 1	J

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

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Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 1 - POUR 3 BOTTOM REINFORCEMENT PLAN	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-172	Revision: 1

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Regulated Design Record			
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK			
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK			
Consent No: SSDA8903		Body Corporate Reg No:	NIL
Drawing Title: BASEMENT 1 POUR 3 TOP REINFORCEMENT PLAN		Drawing No:	INT-PT-173

Rev	Date dd.mm.yy	Description	DP Full Name	Reg No
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222

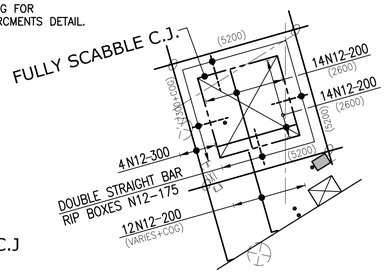


TOP REINFORCEMENT PLAN

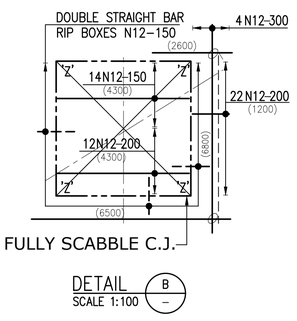
- HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
- PROVIDE SL82 TOP MESH THROUGHOUT
- REINFORCEMENT WEIGHT ON PLAN: 4.81 T
- ◑ BARS ARE NOT TO INTERSPAN GMT: 0.057 T
- (*) TRIMMER REINFORCEMENTS TO BE INSTALLED AT STRESSING PAN.



BAR LAYING SEQUENCE



DETAIL A / SCALE 1:100



DETAIL B / SCALE 1:100

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.

   MINIMUM 1 WIRE SPACING PLUS 25mm
   DO NOT LAP TOP FABRIC OVER SUPPORTS
8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER

'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS

'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-098-00	ST-298-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.001	A03.A1.003
REVISION:	1	J

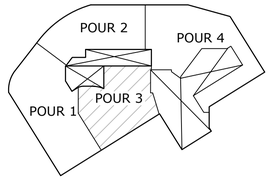
1	15/08/21	AS FOR CONSTRUCTION
Rev	Date	Status

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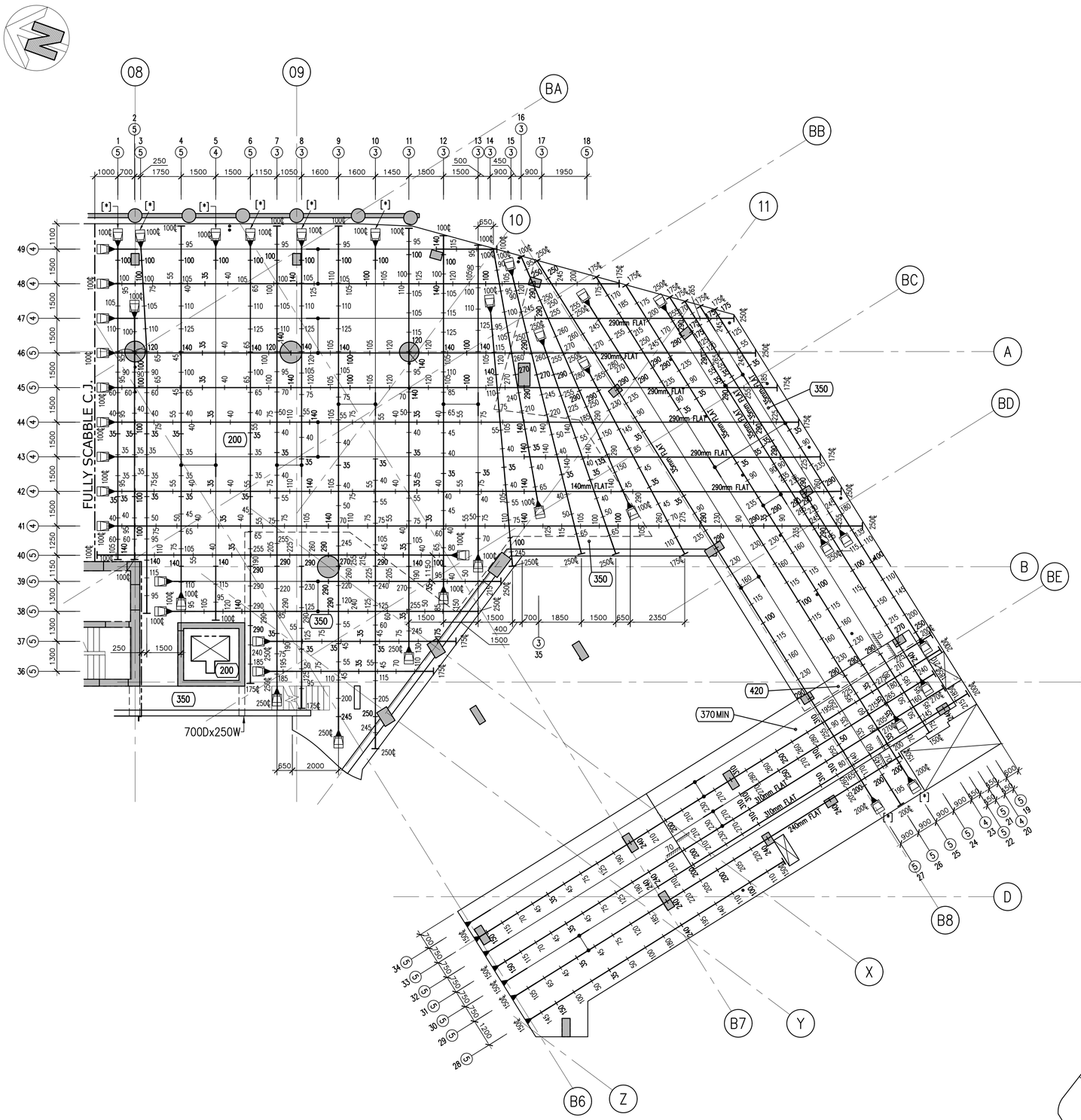


KEY PLAN
BASEMENT 1

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 1 - POUR 3 TOP REINFORCEMENT PLAN	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-173	Revision: 1

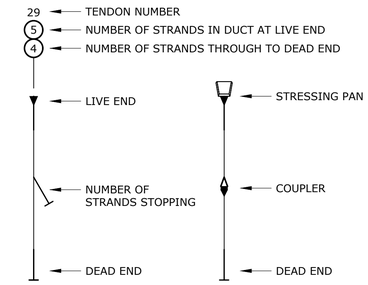
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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: BASEMENT 1 POUR 4 POST-TENSIONING PLAN		Drawing No: INT-PT-181		
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



POST - TENSIONING NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. ALL STRAND TO BE 12.7mm 7 WIRE SUPER GRADE, LOW RELAXATION STRAIN TO AS4672.1-2007 U.N.O.
4. ✳ INDICATES HEIGHT MEASURED FROM ADJACENT SOFFIT IN WHICH TENDON RUNS.
5. POST - TENSIONING LEGEND



THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-098-00	ST-298-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.001	A03.A1.003
REVISION:	1	J

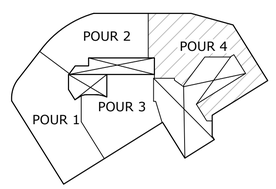
POST TENSIONING PLAN

ANTI BURST REINFORCEMENT WEIGHT: 0.3 T

PAN REINFORCEMENT WEIGHT: 0.92 T

STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWING 001

[*] DENOTES PAN TRIMMER REINFORCEMENTS AS PER DRAWING 001 NOT REQUIRED.



KEY PLAN
BASEMENT 1

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

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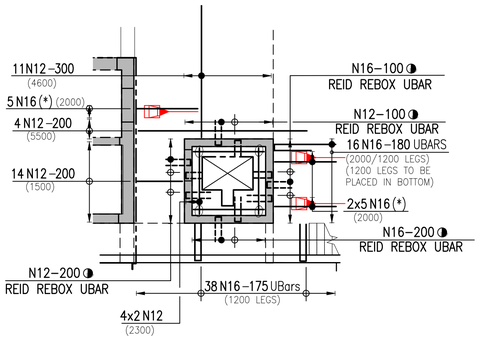
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Website: www.interspan.com.au

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: MT
Drawing Title: BASEMENT 1 - POUR 4 POST-TENSIONING PLAN	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-181	Revision: 1

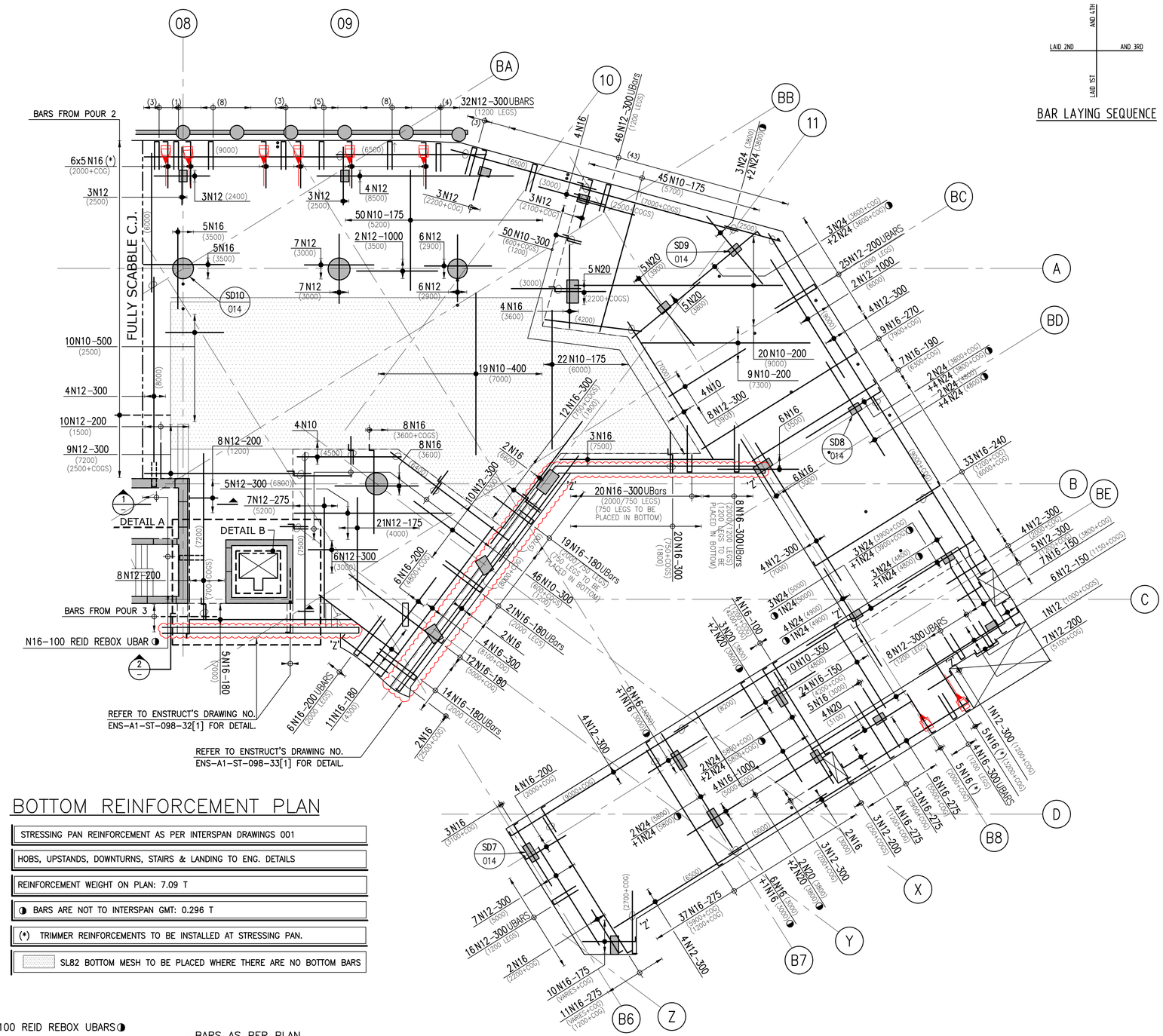
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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No:		NIL
Drawing Title: BASEMENT 1 POUR 4 BTM REINFORCEMENT PLAN		Drawing No:		INT-PT-182
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



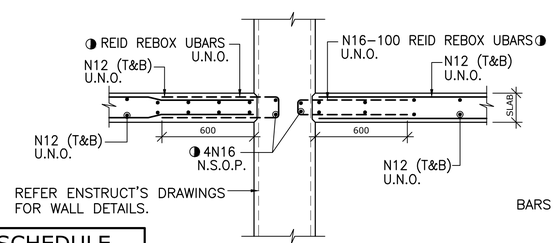
DETAIL A / SCALE 1:100

DETAIL B / SCALE 1:50

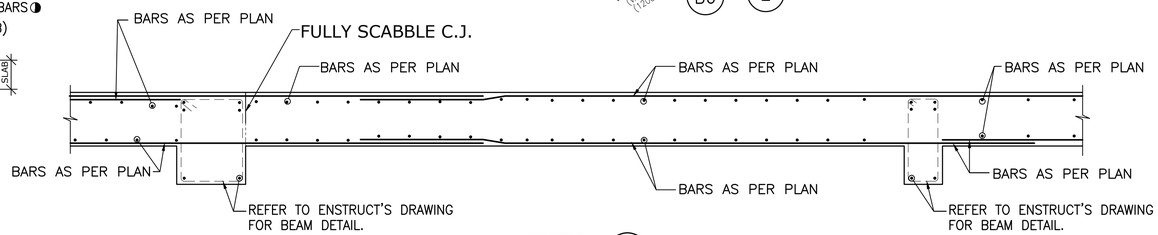


BOTTOM REINFORCEMENT PLAN

- STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWINGS 001
- HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
- REINFORCEMENT WEIGHT ON PLAN: 7.09 T
- ◑ BARS ARE NOT TO INTERSPAN GMT: 0.296 T
- (*) TRIMMER REINFORCEMENTS TO BE INSTALLED AT STRESSING PAN.
- SL82 BOTTOM MESH TO BE PLACED WHERE THERE ARE NO BOTTOM BARS



SECTION 1 / SCALE 1:20



SECTION 2 / SCALE 1:20

STIRRUP SCHEDULE

A	N16 CLOSED TIE TOP & BOTTOM BARS AS NOTED ON PLAN. FIRST TIE TO BE 50mm FROM COLUMN FACE	
B	2 LEGS N12 TOP & BOTTOM BARS AS NOTED ON PLAN. FIRST TIE TO BE 50mm FROM COLUMN FACE	

BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.

MINIMUM 1 WIRE SPACING PLUS 25mm
DO NOT LAP TOP FABRIC OVER SUPPORTS

8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER



'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS



'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG



THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT: enstruct
DRAWING NO: ST-098-00 — ST-298-00
REVISION: 1 — 1
CONSULTANT: Bates Smart
DRAWING NO: A04.A1.001 — A03.A1.003
REVISION: 1 — J

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

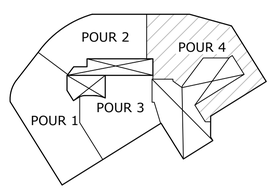
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F: +61 3 8396 9640

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Website: www.interspan.com.au

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 1 - POUR 4 BOTTOM REINFORCEMENT PLAN	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-182	Revision: 1

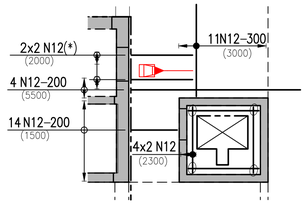


KEY PLAN
BASEMENT 1

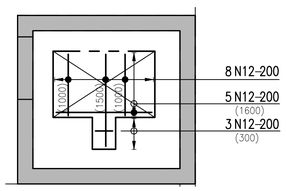
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Regulated Design Record				
Project Address:	BUILDING A1 IVANHOE ESTATE MACQUARIE PARK			
Project Title:	BUILDING A1 IVANHOE ESTATE MACQUARIE PARK			
Consent No:	SSDA8903	Body Corporate Reg No:	NIL	
Drawing Title:	BASEMENT 1 POUR 4 TOP REINFORCEMENT PLA	Drawing No:	INT-PT-183	

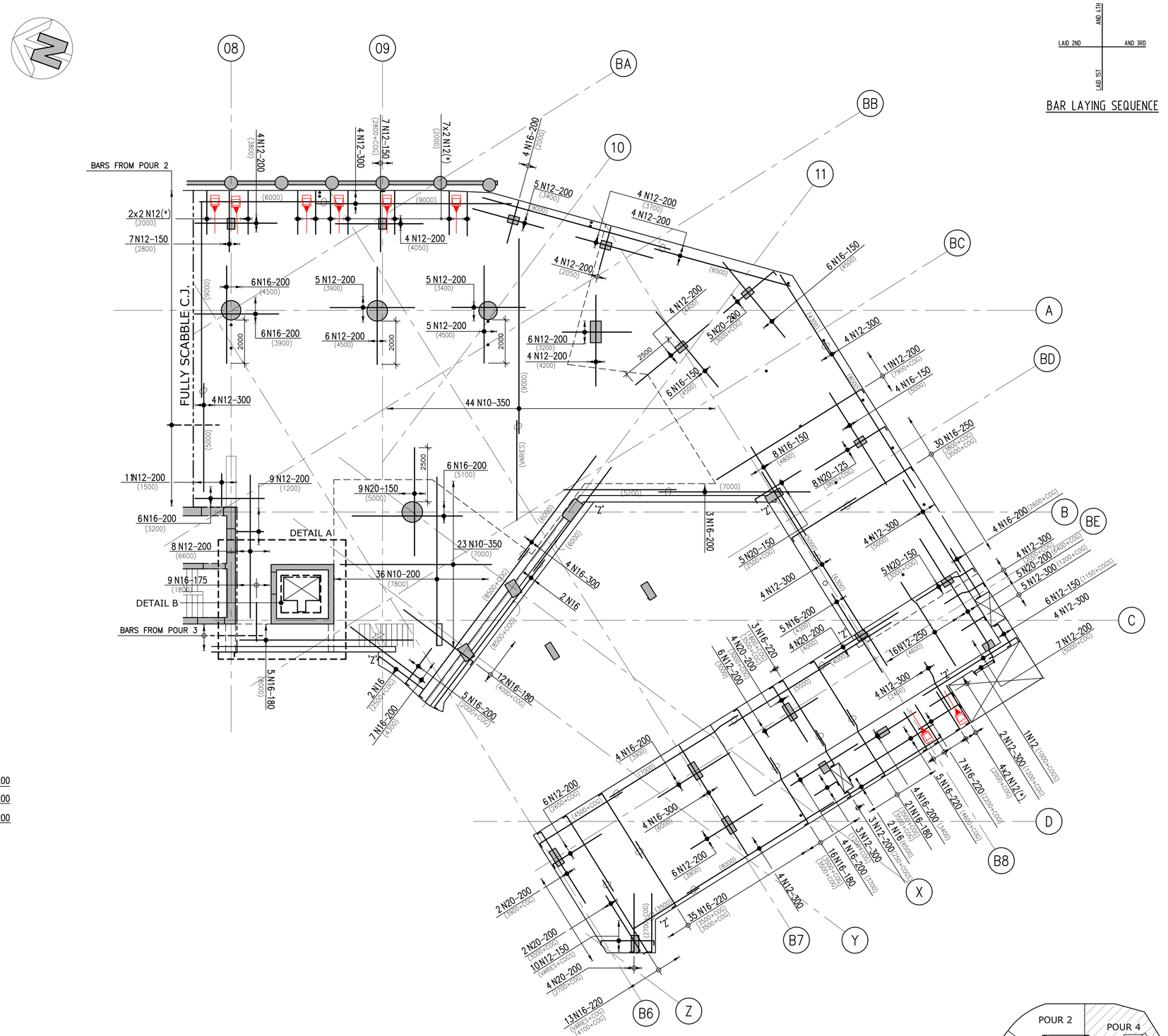
Rev	Date dd.mm.yy	Description	DP Full Name	Reg No
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



DETAIL A
SCALE 1:100



DETAIL B
SCALE 1:50



TOP REINFORCEMENT PLAN

- HOBS, UPSTANDS, DOWNTURNS, STAIRS & LANDING TO ENG. DETAILS
- PROVIDE SL82 TOP MESH THROUGHOUT
- REINFORCEMENT WEIGHT ON PLAN: 4.77 T
- (*) TRIMMER REINFORCEMENTS FOR STRESSING PAN.



BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

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   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
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   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.

   MINIMUM 1 WIRE SPACING PLUS 25mm
   DO NOT LAP TOP FABRIC OVER SUPPORTS
8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER



'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS



'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG



THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-098-00	ST-298-00
REVISION:	1	1
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.001	A03.A1.003
REVISION:	1	J

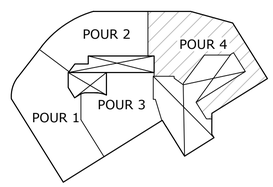
Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

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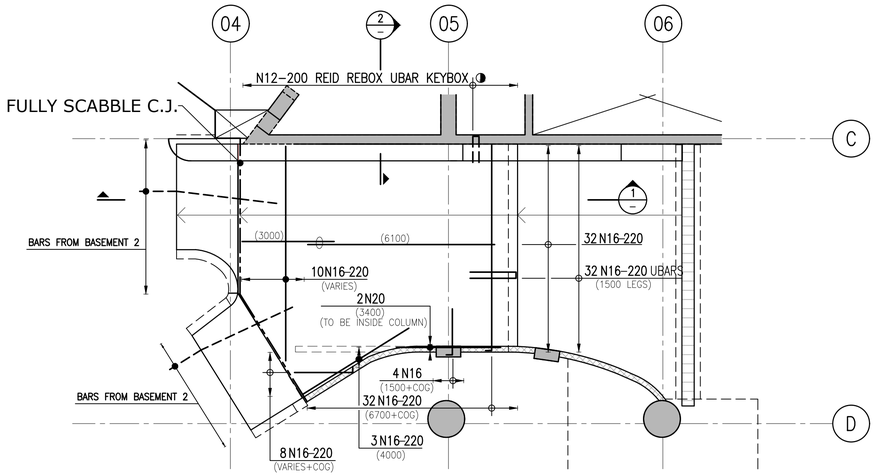


KEY PLAN
BASEMENT 1

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: BASEMENT 1 - POUR 4 TOP REINFORCEMENT PLAN	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-183	Revision: 1

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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: RAMP BASEMENT 3 TO BASEMENT 2			Drawing No: INT-PT-192	
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



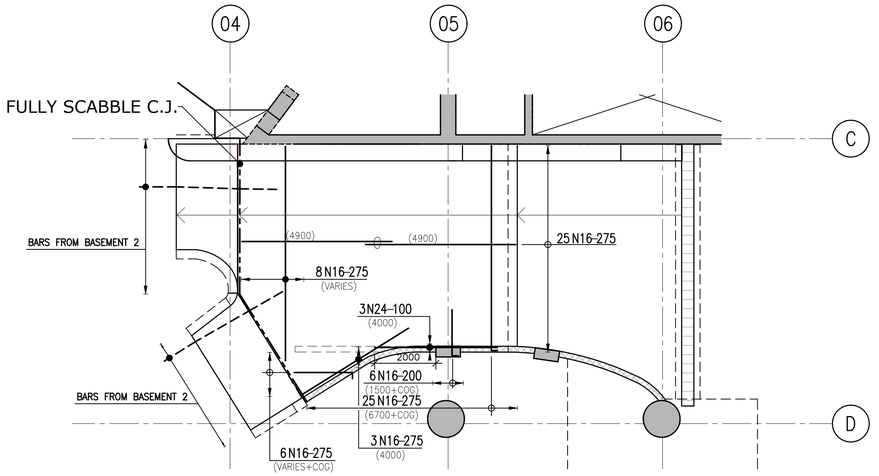
BOTTOM REINFORCEMENT PLAN

STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWINGS 001

KERB, HOBS, UPSTANDS, STAIRS AND LANDINGS TO ENGINEER'S DETAILS

REINFORCEMENT WEIGHT ON PLAN: 1.13 T

◑ BARS IS NOT TO INTERSPAN GMT



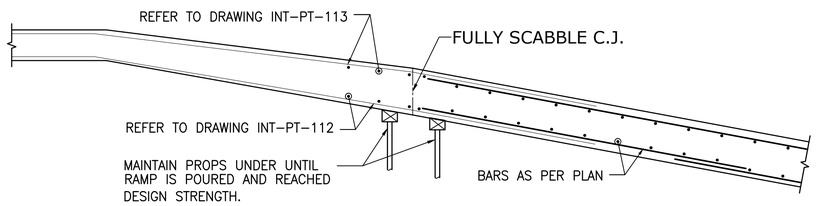
TOP REINFORCEMENT PLAN

KERB, HOBS, UPSTANDS, STAIRS AND LANDINGS TO ENGINEER'S DETAILS

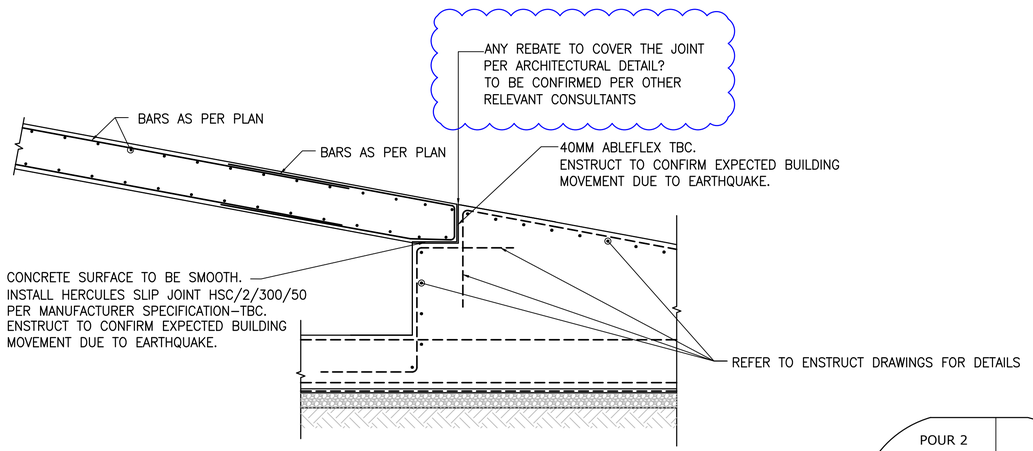
REINFORCEMENT WEIGHT ON PLAN: 1.03 T

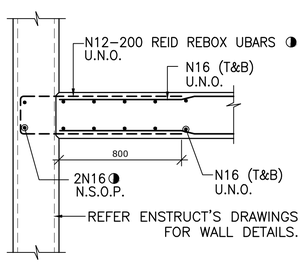
◑ BARS IS NOT TO INTERSPAN GMT

PROVIDE SL82 TOP MESH THROUGHOUT



SECTION 1
SCALE 1:20





SECTION 2
SCALE 1:20



BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
   - N20 - DENOTES BAR GRADE AND DIAMETER
   - 250 - DENOTES BAR SPACINGS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
   - 5 - DENOTES NUMBER OF STIRRUP SETS IN GROUP
   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
   - 200 - DENOTES SPACING OF STIRRUP SETS (mm)
   - X - DENOTES BAR MARK FOR REBAR SCHEDULING
7. LAPS IN MESH U.N.O.

   MINIMUM 1 WIRE SPACING PLUS 25mm
   DO NOT LAP TOP FABRIC OVER SUPPORTS
8. BAR CRANKS MAX. 10 1
9. TRIMMER BARS TO PENETRATIONS.

'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER

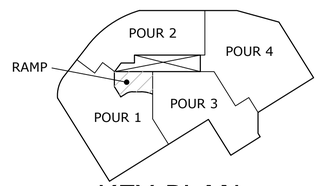
'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS

'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-097-00	ST-008-01
REVISION:	1	1
DRAWING NO:	ST-098-00	
REVISION:	1	
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.002	A03.A1.002
REVISION:	1	I
DRAWING NO:	A04.A1.001	A03.A1.003
REVISION:	1	J

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION



KEY PLAN

RAMP BASEMENT 3 TO BASEMENT 2

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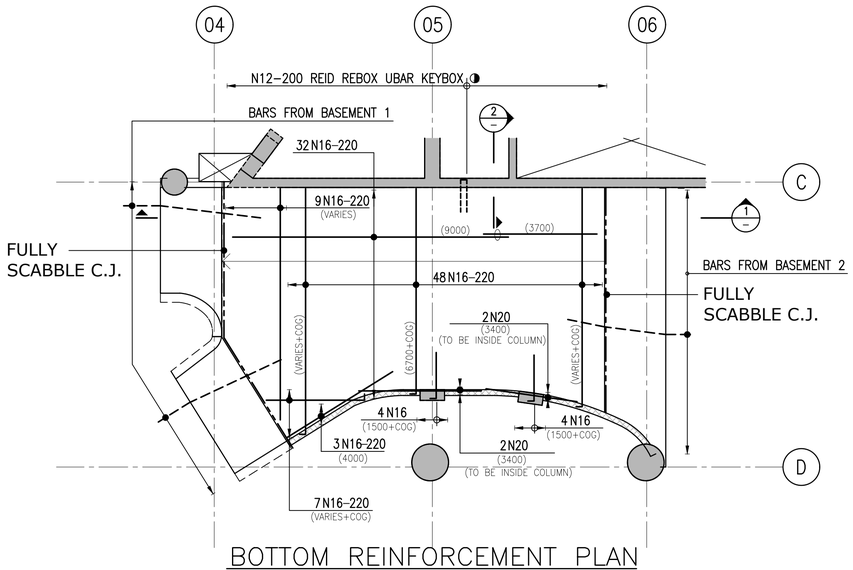
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F: +61 3 8396 9640

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Website: www.interspan.com.au

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: PT
Drawing Title: RAMP BASEMENT 3 TO BASEMENT 2 REINFORCEMENT PLAN SECTION DETAILS	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-192	Revision: 1

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Regulated Design Record				
Project Address: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK				
Consent No: SSDA8903		Body Corporate Reg No: NIL		
Drawing Title: RAMP BASEMENT 2 TO BASEMENT 3			Drawing No: INT-PT-193	
Rev	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	15.08.21	As For Construction	Kim Anh Thi Vu	DEP0000222



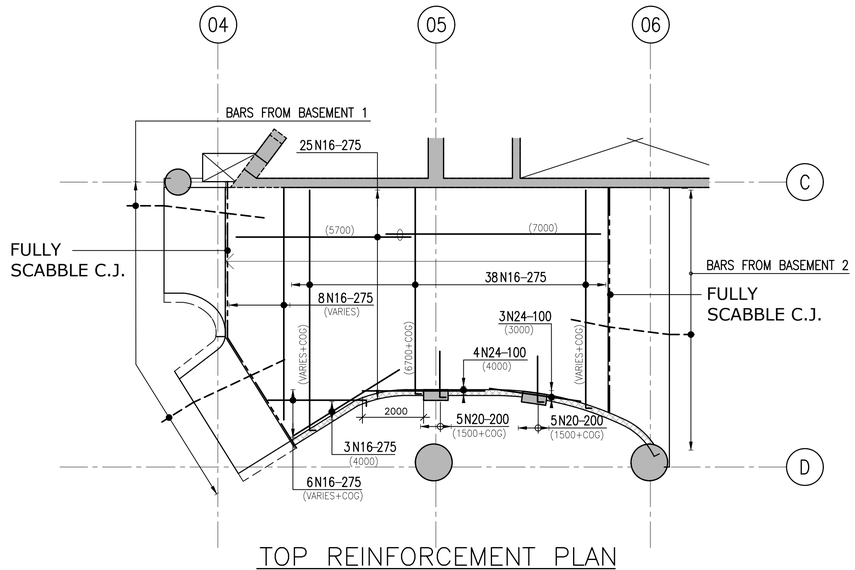
BOTTOM REINFORCEMENT PLAN

STRESSING PAN REINFORCEMENT AS PER INTERSPAN DRAWINGS 001

KERB, HOBS, UPSTANDS, STAIRS AND LANDINGS TO ENGINEER'S DETAILS

REINFORCEMENT WEIGHT ON PLAN: 1.49 T

◑ BARS IS NOT TO INTERSPAN GMT



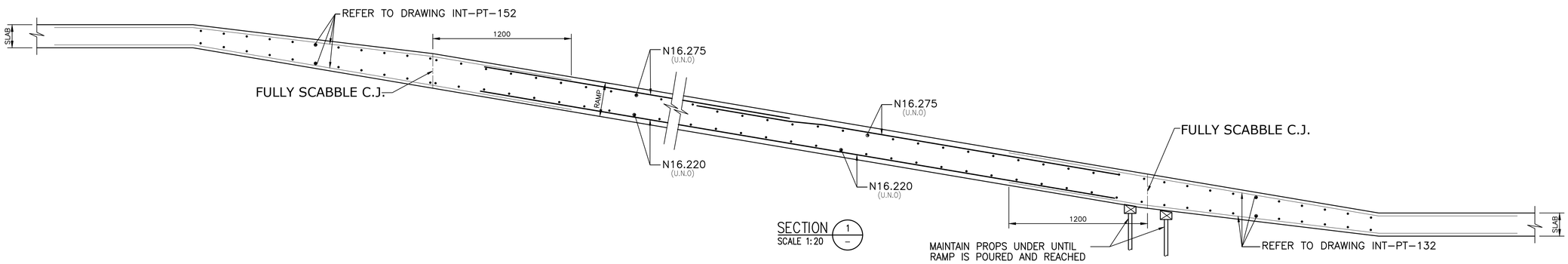
TOP REINFORCEMENT PLAN

KERB, HOBS, UPSTANDS, STAIRS AND LANDINGS TO ENGINEER'S DETAILS

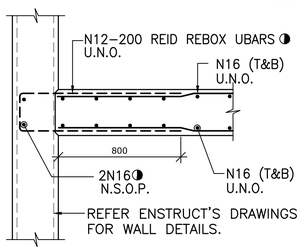
REINFORCEMENT WEIGHT ON PLAN: 1.27 T

◑ BARS IS NOT TO INTERSPAN GMT

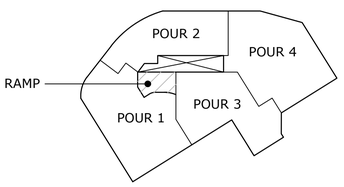
PROVIDE SL82 TOP MESH THROUGHOUT



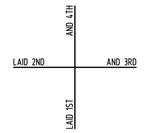
SECTION 1 / SCALE 1:20



SECTION 2 / SCALE 1:20



KEY PLAN
RAMP BASEMENT 2 TO BASEMENT 1



BAR LAYING SEQUENCE

REINFORCEMENT NOTES

1. REFER TO DRAWING 001 FOR GENERAL NOTES AND ANTI-BURST REINFORCEMENT DETAILS.
2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR CONCRETE PROFILE DETAILS.
3. COVER TO REINFORCEMENT AS PER TABLE BELOW U.N.O.

	SLABS		BANDS		BEAMS	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
TOP	30	35	30	40	30	40
BTM	30	35	30	40	30	40
SIDES	30	35	30	40	30	40

4. DISTRIBUTION BARS SHALL BE N10.1000 U.N.O. LAP AND COG AS REQUIRED
5. REINFORCEMENT BAR TAGS 17.N20.250.X (2000)
   - 17 - DENOTES NUMBER OF BARS IN GROUP
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   - 250 - DENOTES BAR SPACINGS (mm)
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   - (2000) - DENOTES BAR LENGTH
6. STIRRUP BAR TAGS: 5.A.200.X
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   - A - DENOTES STIRRUP TYPE. REFER TO STIRRUP SCHEDULE.
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9. TRIMMER BARS TO PENETRATIONS.

   'X' DENOTES 2N12 AT 100 SPACING EACH SIDE OF PENETRATION EXTEND 600 PAST EACH CORNER

   'Y' DENOTES 8N12 AROUND PENETRATION EXTEND 400 PAST INTERSECTING BARS

   'Z' DENOTES 2N12 AT 100 SPACING ACROSS RE-ENTRANT CORNERS 1200 LONG

THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION AS PROVIDED TO INTERSPAN:

CONSULTANT:	enstruct	
DRAWING NO:	ST-097-00	ST-008-01
REVISION:	A	A
DRAWING NO:	ST-098-00	
REVISION:	A	
CONSULTANT:	Bates Smart	
DRAWING NO:	A04.A1.002	A03.A1.002
REVISION:	A	I
DRAWING NO:	A04.A1.001	A03.A1.003
REVISION:	A	J

Rev	Date	Status
1	15/08/21	AS FOR CONSTRUCTION

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Website: www.interspan.com.au

Project Title: BUILDING A1 IVANHOE ESTATE MACQUARIE PARK	Designed: LT
	Drawn: HN1
Drawing Title: RAMP BASEMENT 2 TO BASEMENT 1 REINFORCEMENT PLAN SECTION DETAILS	Checked: CC
	Scale: 1:100 @ A1
Project No.: INPT20373	Date: 30-07-21
Drawing No.: INT-PT-193	Revision: 1

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1 DESIGN CERTIFICATE – PHASE 4A

Date: *24/08/2021*

To: *Mackenzie Group Consulting*
ABN 77 092 469 344
of Level 6, 189 Kent Street,
Sydney NSW 2000
(Principal Certifier)

and *Parkview Constructions Pty Limited*
ABN 41 078 064 963
of Level 6, 235 Pyrmont St,
Pyrmont NSW 2009
(Builder)

From: *enstruct group pty ltd*
ABN 32 094 570 671
of Level 4, 2 Glen Street, Milsons Point NSW 2061
(Consultant)

With respect to the completed For Construction Documentation, Specifications and Schedules (Documentation) submitted by the Consultant which are the subject of this Design Certificate and pursuant to the provisions of the ***National Construction Code (NCC) 2019 Amdt 1, Vol 1 Clause A2.3****, we hereby certify as* ***Evidence of Suitability*** *that:*

1. *The Documentation in Schedule A is in accordance with the structural requirements of the relevant Australian Standards, the National Construction Code (NCC), the Environmental Planning and Assessment Regulations, the relevant Fire Performance Solution Report, the relevant conditions of the Development Consent and best practice deign principles and which are attached to this Certificate as* ***Schedule A;***
2. *The Documentation is in accordance in particular with the following:*

Standard or Performance	***Year***
NCC Part B Structure Provisions, Performance Requirements	*2019 Amdt 1*
NCC Part C, Fire Resistance, Performance Requirements	*2019 Amdt 1*
AS/NZS 1170.0 General Principles	*2002*
AS/NZS 1170.1 (R2016) Permanent, Imposed & Other Actions	*2002*
AS/NZS 1170.2:(R2016) Wind Actions	*2011*
AS 1170.4 (R2018) Earthquake Actions in Australia	*2007*
AS 3700 Masonry Structures	*2018*
AS 4100 (R2016) Steel Structures	*1998*
AS 3600 Concrete Structures	*2018 Amdt 2*
FER REFERENCE	

3. *In providing this Design Certificate, we have relied upon the Evidence of Suitability Certificates from other Consultants or from Design and Construct (D&C) Subcontractors. We certify as part of this Design Certificate that we have reviewed these Evidence of Suitability Certificates and their associated Documentation. We confirm that the structural input design parameters presented in the aforementioned documentation have been reviewed only, and that detailed design calculations have not been checked. Our review does not reduce the contractor's responsibility for design and certification.*
4. *The Documentation together with the structural design to the remaining stages has been completed to a degree deemed necessary that this Design Certificate and its associated Documentation has considered the structure holistically;*
5. *In providing this Design Certificate, we have specifically relied upon the following Evidence of Suitability Certificates from other Consultants or Design and Construct (D&C) Subcontractors for the following structural elements – as* ***Schedule B****.*

Drawings *– as* ***Schedule A****.*
Element *Suspended Concrete Slabs, Conventionally & Post Tension Reinforced*

Company *Interspan (NSW) Pty Ltd* ***ABN*** *13 119 013 928*
Address *Suite 5.04 77 Dunning Ave, Rosebery, NSW 2018*
Date of Certificate *24/08/2021*
NCC *NCC Vol 1 2019 Amdt 1*

Standard or Performance Referenced	***Year***
NCC Part B Structure Provisions, Performance Requirements	*2019 Amdt 1*
NCC Part C, Fire Resistance, Performance Requirements	*2019 Amdt 1*
AS/NZS 1170.0 General Principles	*2002*
AS/NZS 1170.1 (R2016) Permanent, Imposed & Other Actions	*2002*
AS/NZS 1170.2:(R2016) Wind Actions	*2011*
AS 1170.4 (R2018) Earthquake Actions in Australia	*2007*
AS 3600 Concrete Structures	*2018*
AS/NZS 4672.1 Steel Prestressing Materials - General Requirements	*2007*
AS/NZS 4672.2 Steel prestressing materials - Testing Requirements	*2007*
AS/NZS 1314 (R2016) Prestressing Anchorages	*2003*
AS 1349 (R2018) Bourdon Tube Pressure and Vacuum Gauges	*1986*
AS 2670.1 (R2016) Evaluation Human Exposure Vibration General Requirements	*2001*

I am an appropriately qualified and competent person in this area and as such can certify that the design and performance of the design systems which are detailed on the attached structural drawing list have been designed to comply with the above.

My qualifications and accreditations are listed below

Signed for and on behalf of the Consultant:

Full Name	Patrick Arthur Shephard
Qualifications & Accreditations	BE (Civil and Arch) Hons , CPEng MIEAust NER, VBA, DBP: DEP0000043
Company	enstruct group pty ltd | DEP0000819
ABN	32 094 570 671
Address	Level 4, 2 Glen Street, Milsons Point NSW 2061

Signature ..... *Date* 24/08/2021

SCHEDULE A – CONSULTANT DOCUMENT REGISTER (AS ATTACHED)

SCHEDULE B – EVIDENCE OF SUITABILITY CERTIFICATES FROM OTHER CONSULTANTS AND D&C SUBCONTRACTORS

Appendix A - Building A1 - Ivanhoe Estate Structural Drawing List -CC2

SHEET NUMBER	SHEET NAME	REVISION
A1-ST-000-00	COVER SHEET	1
A1-ST-000-01	DRAWING LIST	1
A1-ST-001-01	GENERAL NOTES	1
A1-ST-002-02	SOIL LOADING DIAGRAM - BASEMENT 01	1
A1-ST-002-06	SOIL LOADING DIAGRAM - BASEMENT 03	1
A1-ST-002-07	SOIL LOADING DIAGRAM - BASEMENT 02	1
A1-ST-003-00	FOUNDATION GENERAL ARRANGEMENT	1
A1-ST-003-31	FOUNDATION SECTIONS AND DETAILS SHEET 1	1
A1-ST-003-32	FOUNDATION SECTIONS AND DETAILS SHEET 2	1
A1-ST-003-33	FOUNDATION SECTIONS AND DETAILS SHEET 3	1
A1-ST-003-51	CORE BASE REINFORCEMENT PLANS SHEET 1	1
A1-ST-003-52	CORE BASE REINFORCEMENT PLANS SHEET 2	1
A1-ST-005-01	COLUMN SCHEDULE SHEET 1	1
A1-ST-005-02	COLUMN SCHEDULE SHEET 2	1
A1-ST-005-03	COLUMN SCHEDULE SHEET 3	1
A1-ST-005-04	COLUMN SCHEDULE SHEET 4	1
A1-ST-005-05	COLUMN SCHEDULE SHEET 5	1
A1-ST-005-31	COLUMN DETAILS SHEET 1	1
A1-ST-005-41	COLUMN TRANSITION DETAILS	1
A1-ST-005-51	TYPICAL R.C. WALL DETAILS SHEET 1	1
A1-ST-005-52	TYPICAL R.C. WALL DETAILS SHEET 2	1
A1-ST-005-53	TYPICAL R.C. WALL DETAILS - PENETRATIONS	1
A1-ST-005-54	TYPICAL R.C. WALL LINK BEAM DETAILS	1
A1-ST-005-61	CORE WALL ELEVATIONS SHEET 1	1
A1-ST-005-64	CORE WALL ELEVATIONS SHEET 4	1
A1-ST-005-67	CORE WALL ELEVATIONS SHEET 7	1
A1-ST-005-70	CORE WALL ELEVATIONS SHEET 10	1
A1-ST-005-71	CORE WALL ELEVATIONS SHEET 11	1
A1-ST-005-72	CORE WALL ELEVATIONS SHEET 12	1
A1-ST-005-73	CORE WALL ELEVATIONS SHEET 13	1
A1-ST-005-74	CORE WALL ELEVATIONS SHEET 14	1
A1-ST-005-75	CORE WALL ELEVATIONS SHEET 15	1
A1-ST-005-76	CORE WALL ELEVATIONS SHEET 16	1
A1-ST-008-01	CARPARK RAMP SECTIONS AND DETAILS	1
A1-ST-009-21	STAIR ELEVATIONS SHEET 1	1
A1-ST-009-22	STAIR ELEVATIONS SHEET 2	1
A1-ST-009-31	TYPICAL STAIR DETAILS	1
A1-ST-011-31	TYPICAL SLAB DETAILS SHEET 1	1
A1-ST-012-01	CORE KEYBOX PART PLANS SHEET 1	1
A1-ST-096-00	BASEMENT 03 GENERAL ARRANGEMENT	1
A1-ST-096-31	TYPICAL SLAB ON GRADE DETAILS	1
A1-ST-097-00	BASEMENT 02 GENERAL ARRANGEMENT	1
A1-ST-098-00	BASEMENT 01 GENERAL ARRANGEMENT	1
A1-ST-098-31	BASEMENT 01 SECTIONS AND DETAILS SHEET 1	1
A1-ST-098-32	BASEMENT 01 SECTIONS AND DETAILS SHEET 2	1
A1-ST-098-33	BASEMENT 01 SECTIONS AND DETAILS SHEET 3	1
A1-ST-098-34	BASEMENT 01 SECTIONS AND DETAILS SHEET 4	1
A1-ST-296-00	BASEMENT 03 LOADING DIAGRAM	1
A1-ST-296-10	BASEMENT 03 CONSTRUCTION LOADING DIAGRAM	1
A1-ST-297-00	BASEMENT 02 LOADING DIAGRAM	1
A1-ST-297-10	BASEMENT 02 CONSTRUCTION LOADING DIAGRAM	1
A1-ST-297-20	BASEMENT 02 LATERAL SHEAR LOADING DIAGRAM	1
A1-ST-298-00	BASEMENT 01 LOADING DIAGRAM	1
A1-ST-298-10	BASEMENT 01 CONSTRUCTION LOADING DIAGRAM	1
A1-ST-298-20	BASEMENT 01 LATERAL SHEAR LOADING DIAGRAM	1

DESIGN CERTIFICATE – FOR CC2
SUSPENDED POST TENSION SLABS AT BASEMENT LEVELS B2 AND B1

Date: *23/08/2021*

To: *Mackenzie Group Consulting*
ABN 77092469344
of Level 6, 189 Kent Street, Sydney NSW, Australia 2000
(Principal Certifier)

and *Parkview Constructions Pty Limited*
ABN 41 078 064 963
of Level 7, 60 Union St,
Pyrmont NSW 2009
(Builder)

From: *Interspan (NSW) Pty Ltd*
ABN 13 119 013 928
of Suite 5.04 77 Dunning Ave
Rosebery, NSW 2018

With respect to the completed For Construction Documentation, Specifications and Schedules (Documentation) submitted by the Consultant which are the subject of the documentation under the Agreement, and pursuant to the provisions of the ***National Construction Code (NCC) 2019, Vol 1 Clause A2.3****, we hereby certify as* ***Evidence of Suitability*** *that:*

1. *The completed Documentation is in accordance with industry-accepted design, the relevant Australian Standards, the National Construction Code (NCC), the Environmental Planning and Assessment Regulations, the relevant Fire Performance Solution Report, the relevant conditions of the Development Consent and best practice deign principles and which are attached to this Certificate as* ***Schedule A;***

2. *The completed Documentation is in accordance in particular with the following:*

Standard or Performance Referenced	***Year***
NCC Part B1 Structure Provisions, Performance Requirements	*2019*
NCC Part C, Fire Resistance, Performance Requirements	*2019*
AS/NZS 1170.0 General Principles	*2002*
AS/NZS 1170.1 (R2016) Permanent, Imposed & Other Actions	*2002*
AS/NZS 1170.2:(R2016) Wind Actions	*2011*
AS 1170.4 (R2018) Earthquake Actions In Australia	*2007*
AS 3600 Concrete Structures (Amd 2)	*2018*
AS/NZS 4672.1 Steel Prestressing Materials - General Requirements	*2007*
AS/NZS 4672.2 Steel prestressing materials - Testing Requirements	*2007*
AS/NZS 1314 (R2016) Prestressing Anchorages	*2003*
AS 1349 (R2018) Bourdon Tube Pressure and Vacuum Gauges	*1986*
AS 2670.1 (R2016) Evaluation Human Exposure Vibration General Requirements	*2001*

3. *I am a properly qualified, in accordance with Schedule 1 of the Building Professionals Regulation 2007 and Building Professionals Act 2005 (together with the Building and Development Certifiers Act 2018 and the Building and Development Certifiers Regulation 2019) and have a good working knowledge of the relevant codes and standard referenced above.*

My qualifications and accreditations are listed below

Signed for and on behalf of Interspan (NSW)Pty Ltd

Full Name	*Kim Anh Thi Vu*
Qualifications & Accreditations	*PhD, FIEAust, CPEng, NER2901432, DEP0000222*
Company	*Interspan (NSW) Pty Ltd*
ABN	13 119 013 928
Address	*Suite 5.04 77 Dunning Ave, Rosebery, NSW, 2018*

Signature



Date 24/08/2021

Interspan
Specialist Concrete Slab Solutions

SCHEDULE A – FOR CONSTRUCTION DOCUMENT REGISTER

Project No.:	INPT20373	Project:	IVANHOE BUILDING A1 MACQUARIE PARK	Office:	Sheet No.: 1

Date of Receipt:	Day	18
	Month	08
	Year	21

Received from:	No. of Copies:
INTERSPAN PTY LTD	1

Document description:	Doc No.	Revisions
GENERAL NOTES	INT-PT-001	1
BASEMENT 2 - POUR 1 & 2 SECTION DETAILS	INT-PT-010	1
BASEMENT 2 - POUR 3 & 4 SECTION DETAILS	INT-PT-011	1
BASEMENT 1 - POUR 1 & 2 SECTION DETAILS	INT-PT-013	1
BASEMENT 1 - POUR 3 & 4 SECTION DETAILS	INT-PT-014	1
BASEMENT 2 - GENERAL ARRANGEMENT PLAN	INT-PT-100	1
BASEMENT 2 - POUR 1 POST TENSIONING PLAN	INT-PT-111	1
BASEMENT 2 - POUR 1 BOTTOM REINFORCEMENT PLAN	INT-PT-112	1
BASEMENT 2 - POUR 1 TOP REINFORCEMENT PLAN	INT-PT-113	1
BASEMENT 2 - POUR 2 POST TENSIONING PLAN	INT-PT-121	1
BASEMENT 2 - POUR 2 BOTTOM REINFORCEMENT PLAN	INT-PT-122	1
BASEMENT 2 - POUR 2 TOP REINFORCEMENT PLAN	INT-PT-123	1
BASEMENT 2 - POUR 3 POST TENSIONING PLAN	INT-PT-131	1
BASEMENT 2 - POUR 3 BOTTOM REINFORCEMENT PLAN	INT-PT-132	1
BASEMENT 2 - POUR 3 TOP REINFORCEMENT PLAN	INT-PT-133	1
BASEMENT 2 - POUR 4 POST TENSIONING PLAN	INT-PT-141	1
BASEMENT 2 - POUR 4 BOTTOM REINFORCEMENT PLAN	INT-PT-142	1
BASEMENT 2 - POUR 4 TOP REINFORCEMENT PLAN	INT-PT-143	1
BASEMENT 1 - GENERAL ARRANGEMENT PLAN	INT-PT-150	1
BASEMENT 1 - POUR 1 POST TENSIONING PLAN	INT-PT-151	1
BASEMENT 1 - POUR 1 BOTTOM REINFORCEMENT PLAN	INT-PT-152	1
BASEMENT 1 - POUR 1 TOP REINFORCEMENT PLAN	INT-PT-153	1
BASEMENT 1 - POUR 2 POST TENSIONING PLAN	INT-PT-161	1
BASEMENT 1 - POUR 2 BOTTOM REINFORCEMENT PLAN	INT-PT-162	1
BASEMENT 1 - POUR 2 TOP REINFORCEMENT PLAN	INT-PT-163	1
BASEMENT 1 - POUR 3 POST TENSIONING PLAN	INT-PT-171	1
BASEMENT 1 - POUR 3 BOTTOM REINFORCEMENT PLAN	INT-PT-172	1
BASEMENT 1 - POUR 3 TOP REINFORCEMENT PLAN	INT-PT-173	1
BASEMENT 1 - POUR 4 POST TENSIONING PLAN	INT-PT-181	1
BASEMENT 1 - POUR 4 BOTTOM REINFORCEMENT PLAN	INT-PT-182	1
BASEMENT 1 - POUR 4 TOP REINFORCEMENT PLAN	INT-PT-183	1
RAMP BASEMENT 3 TO BASEMENT 2 - REINFORCEMENT PLAN	INT-PT-192	1
RAMP BASEMENT 2 TO BASEMENT 1 - REINFORCEMENT PLAN	INT-PT-193	1

Issued to:	No. of Copies:

Drawing status:	C

key: A = Approval C = Construction E = Electronic R = Revision T = Tender P = Preliminary M = Mark-up
I = Information Plt = Plot File X = Other

Bates Smart
Architects Pty Ltd
ABN 68 094 740 986

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02 August 2021

Architecture
Interior Design
Urban Design
Strategy

Linda Yeh
Design Manager
Parkview Constructions
Level 7, 60 Union Street
Pyrmont NSW 2009

BATESSMART.™

Design Statement - SEPP 65 Design Verification for Structural Construction Certificate – CC2 - Structure

Dear Linda,

In my professional opinion and to the best of my knowledge, I verify that the development as shown in the plans and specifications issued by Bates Smart in respect of which the construction certificates were issued, are consistent with the design quality principles set out in Schedule 1 of State Environmental Planning Policy No 65 – Design Quality of Residential Flat Development.

For the purposes of this certification:

Project
Ivanhoe Estate,
Lot A1
Macquarie Park
NSW 2113
SSD Application Number: 8903

Yours sincerely
Bates Smart Architects Pty Ltd



Matthew Allen
Director
Registered Architect #8498

Bates Smart
Architects Pty Ltd
ABN 68 094 740 986

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2 August 2021

Architecture
Interior Design
Urban Design
Strategy

BATESSMART™

Design Consultant Statement
For Construction Certificate

Project: Lot A1, Ivanhoe Estate, Macquarie Park NSW 2113
SSD Application Number: 8903
Reference: Construction Certificate CC2 – Structure
Description: Certification by Design Consultant for Structural Construction Certificate

In my professional opinion and to the best of my knowledge the design documents prepared by Bates Smart for the purposes of Construction Certificate CC2, are consistent with the Consent Drawings architectural design intent.

This statement in no way relieves any other parties contributing to the design or providing instructions or advice in relation to the design of their obligation to ensure consistency with the Consent Drawings and Conditions.

I am an appropriately qualified and competent person practising in the relevant area of work.

This statement refers specifically to DA conditions listed below and references other documents tabled at the end of this document.

Items from Crown Certificate Checklist:

B14 and B15 – In relation to building A1 design we confirm the finishes and claddings specified comply with the requirements of the BCA 2019 Amendment 1.

B26 - The GFA of A1 does not exceed the 21,580m2.
Please refer to drawings A50.A1.001[A] and A50.A1.004[B].

B27 – Maximum height – Building height for A1 does not exceed RL 138.3m.
We confirm that the roof height of building A1 does not exceed RL 138.3m and that any elements above this level are consistent with the requirements of condition B28 as amended by S4.55(1A).

B37 – The visible light reflectivity (VLR) from building facade materials does not exceed 20 per cent in order to minimise glare.

B68 – Installation of water efficient Fixtures and Fittings – All toilets specified are 4 Star Rating under the WELS scheme and are of water efficient dual flush capacity. Refer to A40.000[T4] and attached WELS certificates. To also meet the requirements of BASIX Report produced by WSP Titled Lot A1 – Ivanhoe Estate (Dated August 2020) and relevant conditions of the consent.

B69 – All Shower Heads specified are to be a minimum of 4 Star WELS rated. Refer to A40.000[T4] and WELS certificates to be provided upon receipt from the manufacturer. To also meet the requirements of BASIX Report produced by WSP

Titled Lot A1 – Ivanhoe Estate (Dated August 2020) and relevant conditions of the consent.

B69 – All Taps specified are a minimum of 5 Star WELS rated. Refer to A40.000[T4] and attached WELS certificates. To also meet the requirements of BASIX Report produced by WSP Titled Lot A1 – Ivanhoe Estate (Dated August 2020) and relevant conditions of the consent.

B77 – There is a maximum of 208 residential parking spaces, 13 visitor car spaces and a minimum of 12 childcare centre parking spaces in building A1. Refer to GA Plans for reference.

B81 – Number of bicycle parking spaces –Building A1 has 269 bike parking spaces and 14 visitor bike parking spaces. Refer to GA Plans for reference. All resident bike parking spaces are intended to be provided within basement storage cages. Visitor bike parking spaces are intended to be provided within the basement carpark.

B82 – The layout, design and security of bicycle facilities either on-street or off-street is capable to comply with the minimum requirements of Australian Standard AS 2890.3 — 2015.



Matthew Allen
Director
Registered Architect #8498

Referenced documents

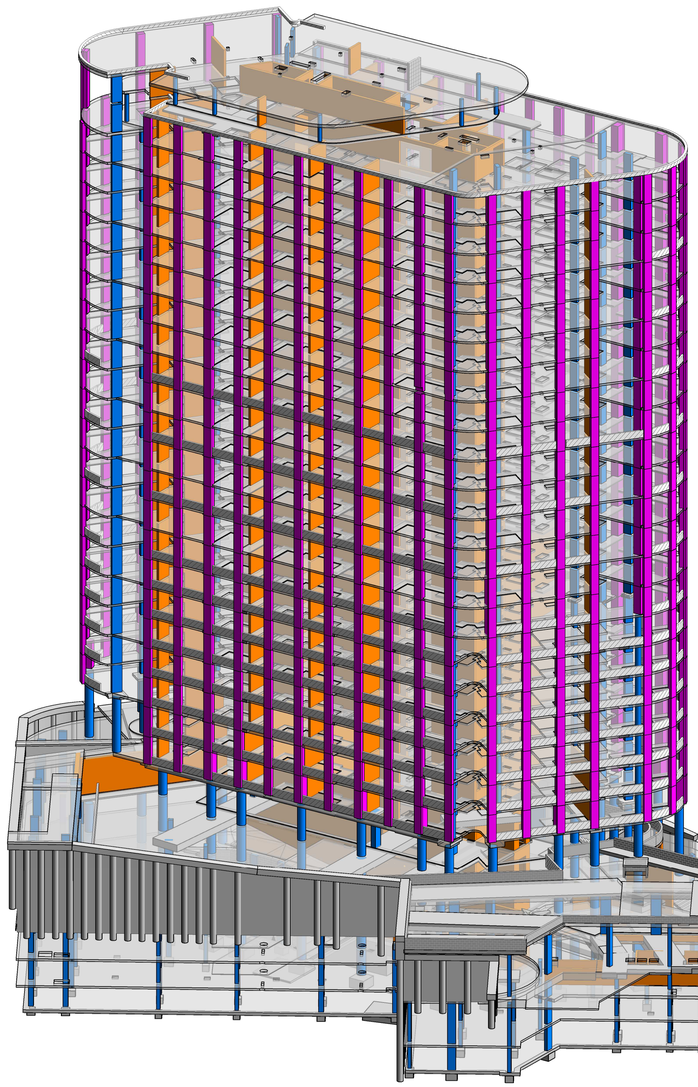
Title	**Revision date**
KWF NatHERS and Section J Constructions – WSP letter	1 April 2020
BASIX Report produced by WSP Titled Lot A1 – Ivanhoe Estate	August 2020
BCA Report produced by Mc Kenzie Group titled BCA Assessment	14th Feb 2020

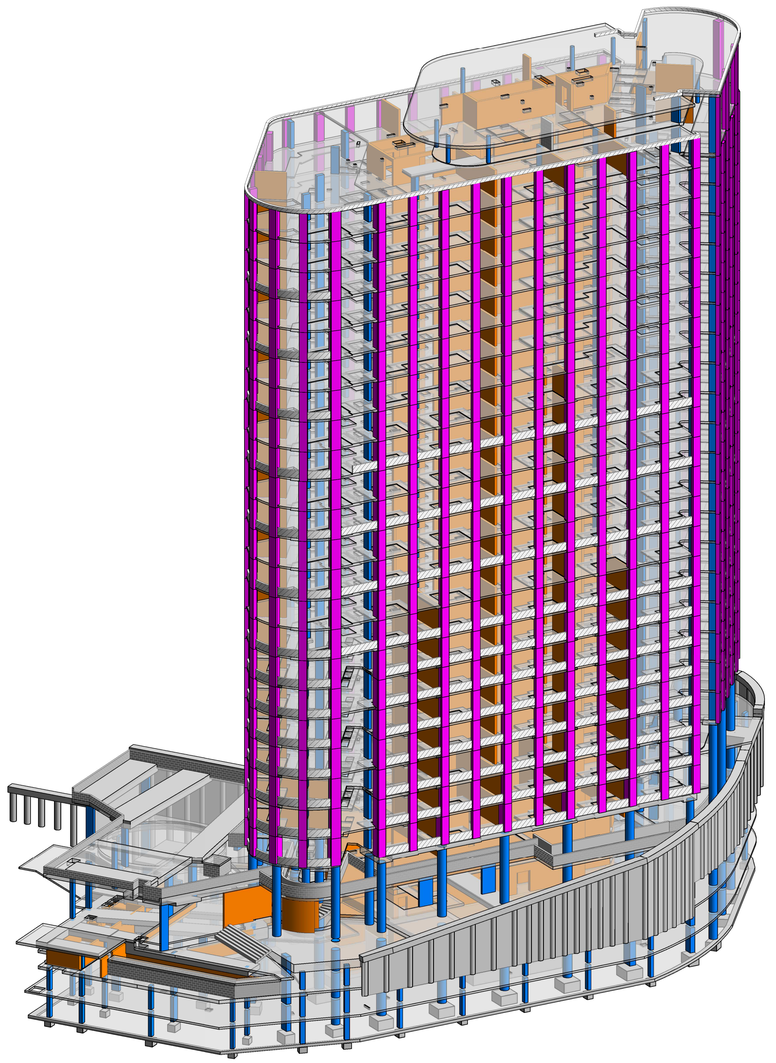
B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

BUILDING A1
IVANHOE ESTATE, MACQUARIE PARK

enstruct





20/08/2021 4:41:55 PM

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION

STRUCTURAL / CIVIL CONSULTANT

enstruct

enstruct group pty ltd

Level 4, 2 Glen Street, Milsons Point NSW 2061
Telephone (02) 8904 1444
http: //www.enstruct.com.au

CLIENT

FRASERS PROPERTY

BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

COVER SHEET

SCALE AT B1:
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-000-00

REV.: 1

B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: DRAWING LIST		Drawing No: A1-ST-000-01	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

STRUCTURAL DRAWING LIST

SHEET NUMBER	SHEET NAME
000-00	COVER SHEET
000-01	DRAWING LIST
001-01	GENERAL NOTES
002-00	SITE RETENTION GENERAL ARRANGEMENT
002-01	SITE RETENTION LOADING DIAGRAM
002-02	SOIL LOADING DIAGRAM - BASEMENT 01
002-03	SOIL LOADING DIAGRAM - LOWER GROUND
002-04	SOIL LOADING DIAGRAM - GROUND FLOOR
002-05	SOIL LOADING DIAGRAM - LEVEL 01
002-06	SOIL LOADING DIAGRAM - BASEMENT 03
002-07	SOIL LOADING DIAGRAM - BASEMENT 02
002-08	SITE RETENTION SHOTCRETE WALL EXTENT PLAN
002-10	SITE RETENTION ISOMETRIC VIEWS
002-21	SITE RETENTION ELEVATIONS AND SECTIONS SHEET 1
002-22	SITE RETENTION ELEVATIONS AND SECTIONS SHEET 2
002-23	SITE RETENTION ELEVATIONS AND SECTIONS SHEET 3
002-24	SITE RETENTION ELEVATIONS AND SECTIONS SHEET 4
002-25	SITE RETENTION ELEVATIONS AND SECTIONS SHEET 5
002-26	SITE RETENTION ELEVATIONS AND SECTIONS SHEET 6
002-27	SITE RETENTION ELEVATIONS AND SECTIONS SHEET 7
002-28	SITE RETENTION ELEVATIONS AND SECTIONS SHEET 8
002-29	SITE RETENTION ELEVATIONS AND SECTIONS SHEET 9
002-30	SITE RETENTION ELEVATIONS AND SECTIONS SHEET 10
002-31	SITE RETENTION ELEVATIONS AND SECTIONS SHEET 11
002-41	SITE RETENTION TRUSS PLANS AND SECTIONS SHEET 1
002-42	SITE RETENTION TRUSS PLANS AND SECTIONS SHEET 2
002-43	SITE RETENTION TRUSS PLANS AND SECTIONS SHEET 3
002-61	TYPICAL SITE RETENTION DETAILS SHEET 1
002-62	TYPICAL SITE RETENTION DETAILS SHEET 2
002-63	TYPICAL SITE RETENTION DETAILS SHEET 3
002-64	TYPICAL SITE RETENTION DETAILS SHEET 4
003-00	FOUNDATION GENERAL ARRANGEMENT
003-31	FOUNDATION SECTIONS AND DETAILS SHEET 1
003-32	FOUNDATION SECTIONS AND DETAILS SHEET 2
003-33	FOUNDATION SECTIONS AND DETAILS SHEET 3
003-51	CORE BASE REINFORCEMENT PLANS SHEET 1
003-52	CORE BASE REINFORCEMENT PLANS SHEET 2
005-01	COLUMN SCHEDULE SHEET 1
005-02	COLUMN SCHEDULE SHEET 2
005-03	COLUMN SCHEDULE SHEET 3
005-04	COLUMN SCHEDULE SHEET 4
005-05	COLUMN SCHEDULE SHEET 5
005-31	COLUMN DETAILS SHEET 1
005-41	COLUMN TRANSITION DETAILS
005-51	TYPICAL R.C. WALL DETAILS SHEET 1
005-52	TYPICAL R.C. WALL DETAILS SHEET 2
005-53	TYPICAL R.C. WALL DETAILS - PENETRATIONS
005-54	TYPICAL R.C. WALL LINK BEAM DETAILS
005-61	CORE WALL ELEVATIONS SHEET 1
005-62	CORE WALL ELEVATIONS SHEET 2
005-63	CORE WALL ELEVATIONS SHEET 3
005-64	CORE WALL ELEVATIONS SHEET 4
005-65	CORE WALL ELEVATIONS SHEET 5
005-66	CORE WALL ELEVATIONS SHEET 6
005-67	CORE WALL ELEVATIONS SHEET 7
005-68	CORE WALL ELEVATIONS SHEET 8
005-69	CORE WALL ELEVATIONS SHEET 9
005-70	CORE WALL ELEVATIONS SHEET 10
005-71	CORE WALL ELEVATIONS SHEET 11
005-72	CORE WALL ELEVATIONS SHEET 12
005-73	CORE WALL ELEVATIONS SHEET 13
005-74	CORE WALL ELEVATIONS SHEET 14
005-75	CORE WALL ELEVATIONS SHEET 15
005-76	CORE WALL ELEVATIONS SHEET 16
005-77	CORE WALL ELEVATIONS SHEET 17
005-78	CORE WALL ELEVATIONS SHEET 18
005-79	CORE WALL ELEVATIONS SHEET 19
005-80	CORE WALL ELEVATIONS SHEET 20
005-81	CORE WALL ELEVATIONS SHEET 21
005-82	CORE WALL ELEVATIONS SHEET 22
005-83	CORE WALL ELEVATIONS SHEET 23
005-84	CORE WALL ELEVATIONS SHEET 24
005-85	CORE WALL ELEVATIONS SHEET 25
005-86	CORE WALL ELEVATIONS SHEET 26
005-87	CORE WALL ELEVATIONS SHEET 27
005-88	CORE WALL ELEVATIONS SHEET 28
006-00	CORE STRUCTURE ISOMETRIC VIEWS
006-31	TYPICAL PRECAST DETAILS SHEET 1
006-32	TYPICAL PRECAST DETAILS SHEET 2
008-01	CARPARK RAMP SECTIONS AND DETAILS
008-02	ENTRY RAMP SECTIONS AND DETAILS
009-21	STAIR ELEVATIONS SHEET 1
009-22	STAIR ELEVATIONS SHEET 2
009-31	TYPICAL STAIR DETAILS
010-31	TYPICAL BLOCKWORK DETAILS SHEET 1
010-32	TYPICAL BLOCKWORK DETAILS SHEET 2
010-33	TYPICAL BLOCKWORK DETAILS SHEET 3
010-34	TYPICAL BLOCKWORK DETAILS SHEET 4
010-35	TYPICAL BLOCKWORK DETAILS SHEET 5
011-31	TYPICAL SLAB DETAILS SHEET 1
012-01	CORE KEYBOX PART PLANS SHEET 1
096-00	BASEMENT 03 GENERAL ARRANGEMENT
096-31	TYPICAL SLAB ON GRADE DETAILS
097-00	BASEMENT 02 GENERAL ARRANGEMENT
098-00	BASEMENT 01 GENERAL ARRANGEMENT
098-31	BASEMENT 01 SECTIONS AND DETAILS SHEET 1
098-32	BASEMENT 01 SECTIONS AND DETAILS SHEET 2
098-33	BASEMENT 01 SECTIONS AND DETAILS SHEET 3
098-34	BASEMENT 01 SECTIONS AND DETAILS SHEET 4
099-00	LOWER GROUND GENERAL ARRANGEMENT
099-31	LOWER GROUND SECTIONS AND DETAILS SHEET 1
099-32	LOWER GROUND SECTIONS AND DETAILS SHEET 2
099-35	Unnamed
100-00	GROUND FLOOR GENERAL ARRANGEMENT
100-31	GROUND FLOOR SECTIONS AND DETAILS SHEET 1
100-32	GROUND FLOOR SECTIONS AND DETAILS SHEET 2
101-00	LEVEL 01 GENERAL ARRANGEMENT
101-31	LEVEL 01 SECTIONS AND DETAILS SHEET 1
102-00	LEVEL 02 GENERAL ARRANGEMENT
103-00	LEVEL 03 GENERAL ARRANGEMENT
104-00	LEVEL 04 GENERAL ARRANGEMENT
105-00	LEVEL 05 GENERAL ARRANGEMENT
106-00	LEVEL 06 GENERAL ARRANGEMENT
107-00	LEVEL 07 GENERAL ARRANGEMENT
108-00	LEVEL 08 GENERAL ARRANGEMENT
109-00	LEVEL 09 GENERAL ARRANGEMENT
110-00	LEVEL 10 GENERAL ARRANGEMENT
111-00	LEVEL 11 GENERAL ARRANGEMENT
112-00	LEVEL 12 GENERAL ARRANGEMENT
113-00	LEVEL 13 GENERAL ARRANGEMENT
114-00	LEVEL 14 GENERAL ARRANGEMENT
115-00	LEVEL 15 GENERAL ARRANGEMENT
116-00	LEVEL 16 GENERAL ARRANGEMENT
117-00	LEVEL 17 GENERAL ARRANGEMENT
118-00	LEVEL 18 GENERAL ARRANGEMENT
119-00	LEVEL 19 GENERAL ARRANGEMENT

STRUCTURAL DRAWING LIST

SHEET NUMBER	SHEET NAME
120-00	LEVEL 20 GENERAL ARRANGEMENT
121-00	LEVEL 21 GENERAL ARRANGEMENT
122-00	LEVEL 22 GENERAL ARRANGEMENT
123-00	LEVEL 23 GENERAL ARRANGEMENT
124-00	LEVEL 24 GENERAL ARRANGEMENT
296-00	BASEMENT 03 LOADING DIAGRAM
296-10	BASEMENT 03 CONSTRUCTION LOADING DIAGRAM
297-00	BASEMENT 02 LOADING DIAGRAM
297-10	BASEMENT 02 CONSTRUCTION LOADING DIAGRAM
297-20	BASEMENT 02 LATERAL SHEAR LOADING DIAGRAM
298-00	BASEMENT 01 LOADING DIAGRAM
298-10	BASEMENT 01 CONSTRUCTION LOADING DIAGRAM
298-20	BASEMENT 01 LATERAL SHEAR LOADING DIAGRAM
299-00	LOWER GROUND LOADING DIAGRAM
300-00	GROUND FLOOR LOADING DIAGRAM
301-00	LEVEL 01 LOADING DIAGRAM
302-00	LEVEL 02 LOADING DIAGRAM
303-00	LEVEL 03 LOADING DIAGRAM
304-00	LEVEL 04 & 06 LOADING DIAGRAM
305-00	LEVEL 05 & 07 LOADING DIAGRAM
308-00	LEVEL 08, 10, 12 & 14 LOADING DIAGRAM
309-00	LEVEL 09, 11, 13 & 15 LOADING DIAGRAM
316-00	LEVEL 16, 18, & 20 LOADING DIAGRAM
317-00	LEVEL 17, 19, & 21 LOADING DIAGRAM
322-00	LEVEL 22 LOADING DIAGRAM
323-00	LEVEL 23 LOADING DIAGRAM
324-00	LEVEL 24 LOADING DIAGRAM
SK007	Unnamed

1 20.08.21 AS FOR CONSTRUCTION

Rev. Date Description

STRUCTURAL / CIVIL CONSULTANT

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CLIENT

FRASERS PROPERTY

BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

DRAWING LIST

SCALE AT B1:
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER REV.

A1-ST-000-01 1

20/08/2021 4:42:19 PM

Regulated Design Record

Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia

Project Title: Building A1 - Ivanhoe Estate

Consent No: SSDA8903 | Body Corporate Reg No: DEP0000819

Drawing Title: GENERAL NOTES | Drawing No: A1-ST-001-01

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

GENERAL

1. Structural drawings to be read in conjunction with the structural specification and all documents produced by all other consultants.
2. The contractor shall obtain a copy of the enstruct Safety in Design report and adhere to the recommendations of that report.
3. When considering discrepancies between drawings, notes and specifications, the drawings shall take precedence over the notes and specifications and the notes shall take precedence over the specifications.
4. Refer to the architectural documents for all setting out dimensions. Any discrepancies shall be reported to the architect.
5. The documents describe the as completed structure. The contractor shall be responsible for the stability of the structure during erection. No part of the structure is to be overstressed during construction. The contractor shall provide a proposed construction sequence prior to the commencement of works. A submission of a proposed method of construction by the contractor and acceptance by the engineer does not absolve the contractor from accepting full responsibility for the submitted document. If required by the engineer, the contractor shall submit calculations justifying the adequacy of the structure to carry the loads from construction procedures.
6. The engineer shall be given the opportunity to inspect all structural works prior to their concealment; 48 hours notice for inspection shall be provided. The contractor remains responsible for the works notwithstanding any inspection by the engineer.
7. All workmanship and material shall be in accordance with the current Australian Standards and Codes of Practice.
8. Any variation to the structure, as described in the documents, shall be via a written request, copied to the architect, and work related to the variation shall not proceed prior to the receipt of written approval.
9. Any changes to the structural drawings required by the contractor including but not limited to changes to the building services, architectural design or detailing will be charged at the applicable hourly rate.
10. Should the contractor require the engineer to provide advice on temporary works, buildability, construction sequencing, temporary loading on alternate materials, applicable hourly rate charges will apply.
11. The engineer will provide periodic site attendance to confirm the design intent shown on the drawings is being carried out on site (excluding floor plates).
12. It is the contractors responsibility to carry out a pre-pour inspection of reinforcement and confirm in writing that the reinforcement is installed in accordance with the drawings prior to the engineers inspection. Rectification work required to be carried out by the engineer where the contractors works are defective will be charged at the applicable hourly rate.
13. Full services design including fully dimensioned shop drawings showing all service penetrations or holes is required prior to pouring concrete. Any request for approval to core hole will be charges at the applicable hourly rate.
14. All Precast elements are to be designed and detailed by the precast supplier.
15. All dimensions are expressed in millimetres. All levels are expressed in metres.
16. No contract work is to commence until formal approval is received from the relevant authorities.
17. Drawing status noted on the drawings must be 'FOR CONSTRUCTION' before being used for permanent works.
18. The structural drawings do not show all relevant fixings, cleats, openings, etc. necessary for the completion of the works, including work by other trades.
19. The tender price must allow for all details necessary for the completion of the works, whether shown on the drawings or not.
20. All loading applied to the structure during construction requiring assessment by the engineer,whether shown on the drawings or not, shall be liable for charging by the engineer at current hourly rates. Submission of items for approval must be made a minimum of 7 working days before incorporation in the works.
21. Design of all formwork and falsework shall remain the responsibility of the contractor and shall comply with the relevant Australian Standards.
22. Finish to formed and unformed surfaces shall be described by the architect and in accordance with AS 3610.
23. The use of proprietary products shall be in strict accordance with manufacturer's recommendations and instructions and is subject to engineer's approval where relevant.
24. All materials and workmanship shall be in accordance with Australian standards and codes of practice except where varied by the specification and/or drawings. The applicable Standards shall be the referenced Standards current at commencement of construction. These Standards for this project shall be determined by reference to the document history on the Standards Australia website. This determination of applicable Standards shall be carried out during the Tender period and any queries relating to the appropriate Standard shall be raised with Enstruct during this period.
25. Works shall be carried out in accordance with all Work cover requirements and the Work Health and Safety Act and the Work Health and Safety regulation.
26. Structure has not been designed to be water retaining. All waterproofing is the responsibility of the Architect and the Contractor.
27. The structural engineer is not responsible for the design of bracing as per NCC requirements for non-structural elements

LOADING

1. All loadings have been assessed in accordance with AS1170.0 and the National Construction Code of Australia (NCC)
2. The structural components in these drawings have been designed for the loads noted on Loading Diagrams
3. The design wind criteria to AS1170.2 are as follows:
   - Design Life: 50 Years
   - Region: A2
   - Importance Level: 3
   - Terrain Category: 3
   - Topographic Multiplier, Mt: 1.0
   - Terrain/Height Multiplier, Mz, CAT: Varies
   - Shielding Multiplier, Ms: 1.0
4. The design earthquake criteria to AS1170.4 are as follows:
   - Importance Level: 3
   - Probability Factor, *kp*: 1.3
   - Hazard Factor, Z: 0.08
   - Site Subsoil Class: Be
   - Structural Ductility Factor (μ): 1.00
   - Structural Performance Factor (Sp): 0.77
   - Earthquake Design Category (EDC): III
5. Do not place or store building materials on concrete members without the contract administrator's approval.

FIRE RESISTANCE LEVELS

1. For fire resistance levels of structure, refer to Bates Smart Architectural Fire Compartment Plans.

PERMANENT / TEMPORARY GROUND ANCHORS

1. All ground anchor loads nominated are minimum long term ultimate residual loads.
2. Ground anchors are to be designed to withstand the working load as shown on the drawings. All workmanship and materials shall be in accordance with AS 3600, AS 1310, AS 1311, AS 1313 and AS 1314. The design and details are to be certified by an independent engineer prior to commencement of works.
3. Anchors shall consist of low relaxation stress relieved super grade strand to AS 1313 and anchorages shall conform to AS 1314.
4. The contractor shall determine the ground anchor type, size and lengths required. The contractor shall be required to verify anchor lengths by two test anchors and to proof load each anchor as noted below. The actual minimal number of test anchors is to be determined by the engineer on site.
5. Details of the proposed anchor system shall be forwarded to the engineer for review and shall include assumptions used in designing the anchors, including fixed anchor length or grouted length, free anchor length soil or rock assumptions and corrosion protection.
6. Prior to any drilling operations, the contractor shall acquaint themselves with all adjacent underground services and ensure that none of these are disrupted by ground anchors. All appropriate approval, permits and agreements shall be obtained before commencement of the work. Services locations shown on the drawings are indicative only.
7. Anchors shall be stressed at the appropriate stages of the construction sequence, provided that the bond anchorage grout has reached the required strength. Sufficient strands shall be left projecting from the anchorage to \ enable any subsequent re-stressing.
8. Proof testing of anchors shall be advised prior to construction for permanent anchors. As a minimum, temporary anchors shall be tested as follows:
   a. jack to required working load, check and record the load after a minimum period of 24 hours then gradually jack to the test load (1.5 times the working load) and hold for a minimum period of 5 minutes.
   b. Slowly de-stress to the working load, should the ground anchor fail to hold the test load for minimum period, it shall be rejected and another constructed as specified. Failure is determined by more than 5% drop in load.
   c. Re-check and record the ground anchor load not less than 3 days after the initial check and again at 21 days.
   d. If the load is greater than 90% of the working load, the anchors shall be stressed back to the working load. If the load is less than 90% of the working load, the anchors shall be rejected and another constructed as specified.
9. The contractor shall maintain on site an adequate supply of anchor cables,grout and such equipment as necessary for emergency use.
10. Anchors holes shall be drilled to the line shown on the drawings and tolerances specified. Casings shall be provided when necessary to prevent collapse of the hole during construction of the anchor. On completion of drilling, all holes shall be cleared out and suitably plugged or otherwise protected to prevent entry of foreign matter. Under no circumstances shall holes be water jetted.
11. At the designated stage of the construction sequence, temporary anchors shall be de-stressed, anchor heads removed and surfaces made good. All drilled holes shall be fully grouted including those rejected after anchors have been de-stressed.
12. The contractor shall keep accurate records of the ground anchors in a logbook on site which shall be kept up to date as work proceeds.

The following data shall be recorded:

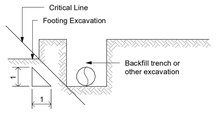
- Ground anchor identification
- Drilled date, total anchor length and angle
- Grouted date and grouted length
- Working load and date applied
- Test load and date applied
- 3 day load check and date
- 21 day load check and date
- Wedge and barrel identification numbers

LEGEND / ABBREVIATIONS

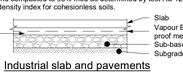
Abbreviation	Description
HORIZ	HORIZONTAL
VERT	VERTICAL
CENTRAL	CENTRALLY PLACED
CRS	CENTRES
T or TOP	TOP or TOP FACE
B or BTM	BOTTOM or BOTTOM FACE
T&B	TOP & BOTTOM
NF	NEAR FACE
FF	FAR FACE
INTF	INTERNAL FACE
EXTF	EXTERNAL FACE
EF	EACH FACE
EW	EACH WAY
EQ	EQUAL
NSOP	NOT SHOWN ON PLAN
NSOE	NOT SHOWN ON ELEVATION
UNO	UNLESS NOTED OTHERWISE
TYP	TYPICAL
CL	CENTRE LINE
PL	PLATE
SV	SIZE VARIES
STG	STAGGERED
N/S	NEAR SIDE
F/S	FAR SIDE
B/S	BOTH SIDES
U/S	UNDER SIDE
L	LENGTHLONG
W	WIDTHWIDE
H	HEIGHTHIGH
D	DEPTHDEEP
NOM	NOMINAL
REQ'D	REQUIRED
REINF	REINFORCEMENT
OPP	OPPOSITE
SIM	SIMILAR
GA	GENERAL ARRANGEMENT
PT	POST TENSION
DRG	DRAWINGS
NTS	NOT TO SCALE
LV	LENGTH VARIES
ABR	ALTERNATE BAR REVERSED
MAX	MAXIMUM
MIN	MINIMUM
CONT	CONTINUOUS
FFL	FINISHED FLOOR LEVEL
SSL	STRUCTURAL SLAB LEVEL
Galv.	GALVANISED
COS	CONFIRM ON SITE

FOUNDATIONS

1. The contractor shall obtain a copy of the site geotechnical report and adhere to the recommendations of that report.
2. All foundation works shall be inspected and approved by the geotechnical engineer. The contractor shall allow for these costs in the tender.
3. Refer to the site geotechnical report for allowable bearing pressures and founding levels. The contractor shall report founding levels to the engineer prior to pouring footings.
4. No excavation shall fall within the zone of influence of any adjacent foundation without prior approval.



5. Subgrade:
   a. Natural Subgrade shall be proof-rolled with a roller of 80 kN minimum static weight, (minimum of10 passes), unless otherwise stated in the site geotechnical report, to detect soft or loose areas. Such areas should be treated in accordance with the geotechnical engineer's recommendation.
   b. All proof rolling should be completed in the presence of an experienced geotechnical engineer or geotechnician. Where soft or heaving zones are identified they should be excavated down to a sound base and replaced with engineered fill as described below.
   c. Where fill is placed against slopes, such as the backfilling of temporary batters associated with the realignment of the stormwater system, benches should be formed in the batter slopes. This will allow the fill to be compacted as described below in *Engineered Fill*.
   d. Unless otherwise specified the subgrade below base courses for slabs shall be suitable density material compacted to 100% std as determined by test AS 1289.5.1.1 or 70% minimum index for cohesionless soils.
6. Sub-base: Unless otherwise specified
   a. Base shall be approved well graded slag aggregate or crushed rock (maximum size of 40mm)placed and compacted to 98% mod as determined by test AS 1289.5.2.1 or 80% minimum density index for cohesionless soils.



Industrial slab and pavements

7. Cohesive (Loamey and Clayey) Soils:
   a. Underside of footings to be a minimum of 600mm below natural ground level.
   b. Excavate to firm ground and maintain the excavation in a dry condition Remove any soft ground as directed by the geotechnical engineer.
   c. Where over-excavation in soft ground is required, filling to the correct level shall be with concrete of f'c = 15 MPa.
   d. Blinding of 50mm concrete (f'c = 15 MPa) to be placed in footing excavations as soon as the foundations have been inspected by the geotechnical engineer.
8. Non-Cohesive (Sandy) Soils:
   a. Compaction under footings and slabs to be measured using a penetrometer in accordance with AS 1289.F3.2 or AS 1289.F3.3. Compaction under footings and slabs to be 10 blows per 300mm minimum from 150mm to 750mm deep. Results to be submitted to the geotechnical engineer.
   b. Penetrometer testing to be carried out as follows:Under pad footings : One per ten square metres or one per pad. Under strip footings : One per five metre length. Under slabs : One per twenty square metres.

STRUCTURAL STEELWORK

1. All workmanship and materials in accordance with AS 4100 and AS 4600.
2. Steel shall have the following minimum properties unless noted otherwise:

COMPONENT	STANDARD	GRADE
Plates	AS 3678	350
Hot rolled sections	AS 3679	300
CHS	AS 1163	C350
RHS and SHS	AS 1163	C450
Welded beams and columns	AS 3679	300
Flat bars and Rods	AS 3679	300
Purlins and girts	AS 1397	450

3. All bolts shall be M20 Grade 8.8/s in 22mm diameter holes with a minimum of two bolts per connection unless noted otherwise. A washer shall be provided under the head of the bolt and where the bolt is to be tightened and additional washer is to be placed under the bolt head.
4. Where slotted or oversize holes are permitted, a hardened plate washer of 8mm minimum thickness shall be placed under the nut and the bolt head to completely cover the slot. Unless noted otherwise, the washer shall be 6mm continuous fillet welded to the element containing the slot.
5. After tightening bolts shall project beyond the nut a minimum of 1 full thread.
6. All welding is to be in accordance with AS 1554, special purpose (SP) using E48XXX electrodes in accordance with AS1553. All welding shall be carried out by suitably qualified personnel. Testing of welds to be carried out by qualified testers in accordance with AS 2214 and notes on the drawings.
7. Minimum fillet welds to be 6mm continuous fillet. All butt welds to be complete penetration with non-destructive testing in accordance with the specification unless noted otherwise.
8. The following refers to bolting procedures:
   a. 4.6/S - Commercial bolts (or black bolts), Grade 4.6 to AS 1111, tightened to snug tight condition using a standard wrench.
   b. 8.8/S - High strength bolts (or structural bolts), Grade 8.8 to AS 1252, tightened to snug tight condition using a standard wrench.
   c. 8.8/TF - High strength bolts (or structural bolts), Grade 8.8 to AS 1252, fully tensioned to AS 4100, designed as a friction type joint.
   d. 8.8/TB - High strength bolts (or structural bolts), Grade 8.8 to AS 1252, fully tensioned to AS 4100, designed as a bearing type joint.
9. Contact surfaces in connections incorporating 'TF' bolts shall be left unpainted unless noted otherwise. Bolts in 'TF' and 'TB' connections shall be tightened using the part-turn method or load indicating washers. A hardened washer is to be placed under the nut or bolt head, whichever is to be rotated. Bolts that have been fully tensioned shall not be re-used.
10. Shop drawings are to be submitted for approval a minimum of 3 weeks prior to fabrication.
11. No steelwork shall be fabricated until final approval of the shop detail drawings has been received by the builder and all review comments on the workshop drawings have been resolved to the engineer's satisfaction.
12. All plates to be 10mm thick unless noted otherwise.
13. All axial member connections (compression or tension) shall be capable of transferring a force equal to the member capacity.
14. All hollow sections to be sealed with a 3mm plate unless noted otherwise.\
15. Corrosion protection:
   a. Refer to the specification
   b. All members in external masonry walls shall be hot dip galvanised in accordance AS 1650 with a minimum coating of 600 grams per square metre.
   c. Bolts, nuts and washers to be hot dip galvanised to manufacturer's specifications
   d. Exterior, fully exposed pin connection components to be hot dip galvanised with a minimum coating of 600 grams per square metre.
   e. In addition to the specified finish, steelwork in contact with the ground is to be coated with Interzone 954 or approved equivalent, to a minimum thickness of 0.4mm.
   f. steelwork encased in concrete shall be covered with a minimum thickness of 50mm and be wrapped in SL41 galvanised mesh with 12mm bars inside the 4 corners of the mesh. Lap mesh 150mm minimum. Lap N12 bars 400mm minimum.
   g. All sealed hollow sections to be galvanised shall have vent holes as per manufacturer's
16. Grout under base plates to be high strength cementitious non-shrink grout (Masterflow 870 by Master Builders or approved equivalent).
17. All chemical fixings to existing structure to be formed using Epcon C8 (or equivalent approved in writing)
18. All chemical anchors to existing concrete structure to be site drilled and surveyed prior to steelwork fabrications. Coring of existing structure for anchors is not permitted/
19. Connection of steelwork to concrete or masonry using chemical anchors through steel plates shall have the gap between the bolt holes in the plate and the bolts fully filled with epoxy mortar prior to installing the bolt washers and nuts.
20. Purlins and Girts:
   a. Cleats to be as per purlin manufacturer's specifications. For purlin top flange greater than 250mm above top of supporting steelwork, use 75x75x8 angle unless noted otherwise.
   b. Bridging as per manufacturer's specifications. Bridging to wall girts commence from supporting structure under (slab) and be continuous up to eaves line. Bridging to purlins to be continuous across roof ridges.
   c. Ceiling systems, ductwork etc, to be suspended from purlins web via hook bolts. Bolts supporting services off the bottom flange of purlins will not be permitted.
21. All steelwork connections not indicated in the documentation to be assumed to be standard cleat and end plate member connections in accordance with the Australian Steel Institute design guides for simple connections.
22. All steelwork to be fire protected by approved spray or board to architects details U.N.O
23. All secondary steelwork for support of facade, internal partitions, acoustic panels, balustrades etc. are to the contractors design and detail. Contractor to submit details to engineer prior to fabrication.
24. Bracing turnbuckles must be capable of carrying the full capacity of the brace.

FORMWORK

1. The contractor shall be fully responsible for the design of all formwork, unless a product is specified on the drawings as being the responsibility of the engineer e.g.. a profiled steel decking acting compositely with the concrete, such as Bondek, Condek or Xingfor.
2. All formwork shall be designed in accordance with AS 3600 and AS 3610.
3. Formwork shall remain in place undisturbed for the following minimum periods:
   a. Slab edges - 2 days
   b. Beams and slabs - 7 days
   c. Backprops to beams and slabs - 28 days
4. In multi-level construction, the contractor shall take into account the age of the floors previously cast, necessary to support the weight of the wet concrete along with any applied load due to be placed on the formwork to ensure the maximum out of position eccentricity of 75mm in addition to a lateral stability load of 2.5% of the maximum vertical load in the pile, applied at the top of the pile.
5. The contractor shall submit for review by the engineer, full details of the propping system proposed to be used. This shall include the weight of the formwork system to be used and any heavy loading such as reinforcement bundles or bins to be placed on the slab. Details of each pile type and capacity are to be submitted to the superintendent as required before any piling is commenced.
6. Piling is to be designed, constructed and certified in accordance with the specification and requirements set out on the drawings. Details of each pile type and capacity are to be submitted to the superintendent as required before any piling is commenced.
7. All piles are to be inspected by a qualified geotechnical engineer to verify design bearing pressures.
8. All pile borings are to be inspected to ensure they are cleaned and free of loose material and water prior to pouring concrete, which should be within 3 hours of excavation of works required by the engineer arising from the review. These costs will be charged at current hourly rates.
9. All exposed formed corners shall have 20mm x 20mm timber fillets or chamfers added to formed or cast edges, unless noted on the architectural drawings.
   a. All drip grooves required as noted on the architectural drawings shall be constructed with reinforcement adjusted to ensure concrete cover is maintained across the drip groove. Refer to concrete notes for cover requirements.

CONCRETE

1. All works to be in accordance with AS 3600, AS 3610 and the specification.
2. Beam dimensions on the drawings indicate the depth first, width second. Normal downturn beam depth includes slab thickness. Upstand beam depth includes slab depth.
3. Dimensions for all concrete elements do not include thickness of applied finishes.
4. Refer to drawings for notes on cambers.
5. Construction joints, where not indicated on the drawings, shall be approved by the engineer.
6. Remove all formwork, to engineer's approval, prior to the construction of masonry above.
7. Concrete shall conform to the following unless noted otherwise:
   a. Cement : Type SL to AS 3972.
   b. Ready-mixed concrete : AS 1379
   c. Concrete aggregates : AS 2758.1
   d. Slump: 80mm
   e. Maximum aggregate size: 20mm
   f. Maximum drying shrinkage strain (to AS 1012 Part 13) less than 650 microstrain at 56 days.
   g. Strength Grades: S32, S40 or S50 as shown on the drawings.
8. All concrete is to be properly cured using an approved method within 2 hours of finishing. Curing shall be continuous for 7 days by one of the following methods:
   a. Ponding with water or continuous spraying with water
   b. Use of continuous absorptive cover, such as hessian, kept continuously wet
   c. Coating with an approved curing compound compatible with any applied finish
   d. Use of an approved impervious covering to the whole of the surface of the concrete, securely kept in position to prevent passage of air between the concrete and the covering. The covering is to remain undisturbed in place for the duration of the curing period.
9. If plastic shrinkage of the concrete is observed due to rapid drying shrinkage or other conditions, apply a single spray coat of aliphatic alcohol evaporation retardant after the initial rough screed, while the concrete is still wet (Masterkure 111CF-Confilm by Master Builders or approved equivalent).
10. Any cast in elements, such as conduits and piping, not indicated on the structural drawings, are to be approved by the engineer. Where pipes and conduits are cast in slabs and walls, these are to be placed in the mid third depth of the member to prevent the layers of reinforcement. Where conduits are to be cast in slabs on ground and there is only one layer of reinforcement, the minimum gap between the conduit and the reinforcement is to be 50mm.
11. Formwork for all external corners of concrete shall incorporate a 20 by 20 fillet, unless noted otherwise.
12. Unless noted otherwise, the characteristic strength and clear cover to the reinforcement, including fitments shall be as follows

ELEMENT	EXTERNAL	INTERNAL
	Grade (MPa)	Grade (MPa)
Blinding and mass concrete	N25	N25
Footings	S40	S40
Slabs and beams	S40	S40
Columns	S50	S50
Stairs	S40	S40
Retaining walls	S40	S40
Shotcrete walls	S40	S40
Non-Non-load bearing precast walls	S40	S40

ELEMENT	EXPOSURE CONDITION			
	CAST AGAINST FORMS (mm)		CAST AGAINST FORMS WATERPROOF MEMBRANE (mm)	CAST AGAINST GROUND (mm)
	INTERNAL	EXTERNAL		
Footings	40	40	40	75
Slab on ground				
Top	25	40		
Bottom			30	75
Columns	30	40		
Walls	30	40		
Beams	30	40	40	75
Suspended slabs				
Top	30	35		
Bottom	30	35	40	

13. No brickwork or partition walls are to be constructed on suspended slabs until all propping is removed and the slab has undertaken its dead load deflection.
14. All concrete, including slabs on ground, shall be deposited in place using approved methods, in uniform layers and shall be compacted using mechanical means such as insertion vibrators. Insertion vibrators shall not be used to move concrete in the forms. A spare vibrator shall be kept on site at all times during concrete pours.
15. All concrete surfaces required to receive additional concrete from subsequent pours shall be suitable roughened by mechanical means to remove laitance and other soft material.
16. Oil or any other deleterious product spilt on the surface of concrete shall be remove to the satisfaction of the engineer.
17. Provide 2 layers of full width slip joint material such as Alcor or galvanised strip on top of masonry required to support the concrete. The slip joint material shall be properly secured in place to ensure it is not dislodged during concreting.
18. Penetrations through concrete shall be made using percussion drilling. The use of diamond coring for penetrations shall not be permitted without written permission from the engineer. No reinforcement is to be cut in making any penetration without written approval from the engineer. The use of ground penetrating radar is suggested as one means of locating reinforcement and post tensioning ducts in slabs of normal thickness.
19. Requests for approval for any penetration or chasing of concrete shall be submitted to the engineer on a 'Request for Penetration' form and shall describe fully the location and size of the penetration. No penetration shall be made without a 'Request for Penetration' form being signed by he engineer, a copy of which must be kept on the person carrying out the work. A register of 'Request for Penetration' forms must be kept on site for the duration of the works. If coring of the structure is approved by the engineer, the extracted cores are to be logged and kept on site for the duration of the works for review, if deemed necessary by the engineer. Approval to create penetrations through the structure relates only to structural adequacy and does not address other services that may be buried in the concrete. The contractor is to make all necessary enquiries regarding safety for the drilling operator before commencing any drilling or coring.
20. Refer to the specification for placement of concrete during periods of extreme heat or cold.
21. If the concrete strength specified for the floor system is less than 0.75 times that specified for the column, the column shall be mushroomed through the floor with concrete strength greater than or equal to 0.75 times that specified for the column U.N.O.
22. Slurry used to lubricate the pump lines shall not be used in any structural member.
23. Reinforcement nominated on the enstruct documentation to be drilled and epoxied into concrete shall use HILTI HIT-RE 500 V3 injection mortar, installed in accordance with ETA-16/0143. Details of proposed alternative must be submitted to enstruct for review and approval prior to works commencing.

SHOTCRETE

1. General - The concrete in the panels of retaining walls may be placed by the shotcreting process.
2. Definitions - The following definitions explain the meaning of certain words and terms as used in this specification:
   a. Sprayed concrete is a mixture of cement, aggregate and water projected at high velocity from a nozzle into place to produce a dense homogenous mass.
   b. Shotcrete is a term used for sprayed concrete where the maximum aggregate size is not more than 20mm.
   c. Rebound is a term used for all material having passed through the nozzle which does not conform to the definition of sprayed concrete
   d. Nozzle is the attachment at the end of the material hose from which the material is jetted at high velocity.
   e. Nozzleman is the workman who manipulates the nozzle, contains consistency and makes the final disposition of the material.
3. Mix Design - Mix proportions shall be designed by the contractor and shall be to the approval of the engineer. All concrete shall be obtained from an approved concrete supplier and shall be premixed and delivered to site in accordance with AS 1379. Where admixtures are approved by the engineer for addition to the mix to speed the setting rate of the cement, the following setting times and strengths shall apply unless otherwise stated:
   a. Initial set of cement/admixture paste : 3 minutes Final set of cement/admixture paste : 12 minutes
   b. 8 hour strength of concrete : 3 MPa
      24 hour strength of concrete : 10 MPa
      All constituents shall be uniformly dispersed throughout the mix.
4. Qualifications of Operators - All operators shall be to the approval of the engineer prior to commencement of spraying. The contractor shall certify to the engineer that the foreman, nozzleman and delivery equipment operatives have completed satisfactory work in similar capacities elsewhere. Where required by the engineer, the operator shall spray pre-construction panels which shall be approved by the engineer before the operators are employed on the works. Such panels may also be used by the engineer to assess the competence of operators or trainees for whom such certification is not available.
5. Plant - The contractor shall state the numbers and type of plant which he proposes to use for the construction of the works.
6. Substrate Preparation - The surface shall be compacted, tined and graded as required and dampened before the application of sprayed concrete. Natural surfaces must be sufficiently cohesive to prevent erosion when the sprayed concrete is applied.
7. Spraying Procedure - No concrete shall be sprayed in air temperatures less than 1° Celsius. Freshly sprayed concrete shall be protected from rain or water until the surface is of sufficient hardness to prevent damage. Spraying shall be discontinued if wind or air currents cause separation of the nozzle stream during placement. During starting or stopping of the spraying operation or whenever spraying is irregular, the nozzle shall be directed away from the works, all corners and any areas where rebound cannot escape or be blown free, shall be filled prior to general spraying. Rebound shall not be worked into the construction or reused in the works. Guides shall be set up to establish finished surfaces. These guides shall be to the approval of the engineer prior to spraying. Sprayed concrete shall be applied so that it neither sags nor slumps. Sprayed concrete shall be trowelled to a smooth surface. Maximum deviation from a 1 metre straight edge shall be 10mm. Full records of all materials delivered to the sprayed concrete mixer shall be kept and made available to the construction manager.
8. Joints - The position and type of all construction joints shall be approved by the engineer.
9. Quality Control - Testing of shotcrete shall be carried out in accordance with the sprayed concrete manual 'Recommended Practice : Sprayed Concrete' Clause A12 of the reference specification prepared by the Concrete Institute of Australia.

PILING

1. Piles and piling to be in accordance with AS 2159 and are to be designed by the specialist sub-contractor, engaged by the contractor.
2. The contractor shall investigate the presence of any existing services in the ground likely to be affected by the piling operations. Confirmation of the investigation and the final design drawings shall be forwarded to the engineer, in CAD form, prior to commencement of any piling on site.
3. Refer geotechnical information note for site investigation information.
4. The contractor is responsible for the set out of the piles. Maximum acceptable deviation from correct position of piles is 75mm. Maximum acceptable deviation form vertical alignment is 1 in 100.
5. Piles are to be designed for the loads indicated on the engineer's drawings and shall incorporate the maximum out of position eccentricity of 75mm in addition to a lateral stability load of 2.5% of the maximum vertical load in the pile, applied at the top of the pile.
6. Piling is to be designed, constructed and certified in accordance with the specification and requirements set out on the drawings. Details of each pile type and capacity are to be submitted to the superintendent as required before any piling is commenced.
7. All piles are to be inspected by a qualified geotechnical engineer to verify design bearing pressures.
8. All pile borings are to be inspected to ensure they are cleaned and free of loose material and water prior to pouring concrete, which should be within 3 hours of excavation of works required by the engineer arising from the review. These costs will be charged at current hourly rates.
9. The inspection should ensure adequate roughness is achieved in the pile shaft to guarantee shaft adhesion, the use of a roughening tool is recommended.
10. Some groundwater seepage into piles can be expected. Water should be pumped from the piles immediately prior to pouring concrete. Tremie methods should be used if depth of water exceeds 1000mm.
11. Obstructions may be expected when drilling through existing fill.
12. Concrete cover to pile reinforcement to be 75mm.
13. Concrete strength to be 40 MPa.
14. The contractor should make all necessary site investigations to confirm the accuracy or otherwise of the geotechnical report. Tender to nominate unit rates for variation in pile lengths from estimated values.
15. On completion of piling, a drawing prepared by a registered surveyor shall be prepared giving the position of the piles relative to their nominated position and the level of the top of the piles. The drawing shall be forwarded to the engineer for approval before any further work associated with the piles commences.
16. The contractor shall be responsible for the design and rectification of any work associated with the use of piles exceeding the above tolerances.
    This shall include the following:
    a. Design checking by the engineer
    b. Assessment by the engineer of any rectification proposals
    c. Design of any rectification works
    d. Inspection by the engineer of and rectification works
    e. Costs for any work associated with these activities shall be payable by the contractor to the engineer at current hourly rates.

MASONRY

1. All materials and workmanship to be in accordance with AS 3700, AS4455 and AS4773.
2. Minimum durability classification of built in components to be R3 unless noted otherwise to AS 4773.
3. Minimum cover to reinforcement and tendons in grouted cavities or cores to be 30mm unless noted otherwise, measured from inside face of block core.
4. Strengths of bricks, class of blocks, type of mortar and maximum joint spacing shall be as follows:Bricks shall be solid or perforated to a maximum of 25%. The contractor shall submit to the engineer,before construction commences, expected moisture expansion characteristic values for the bricks to be used on the project.

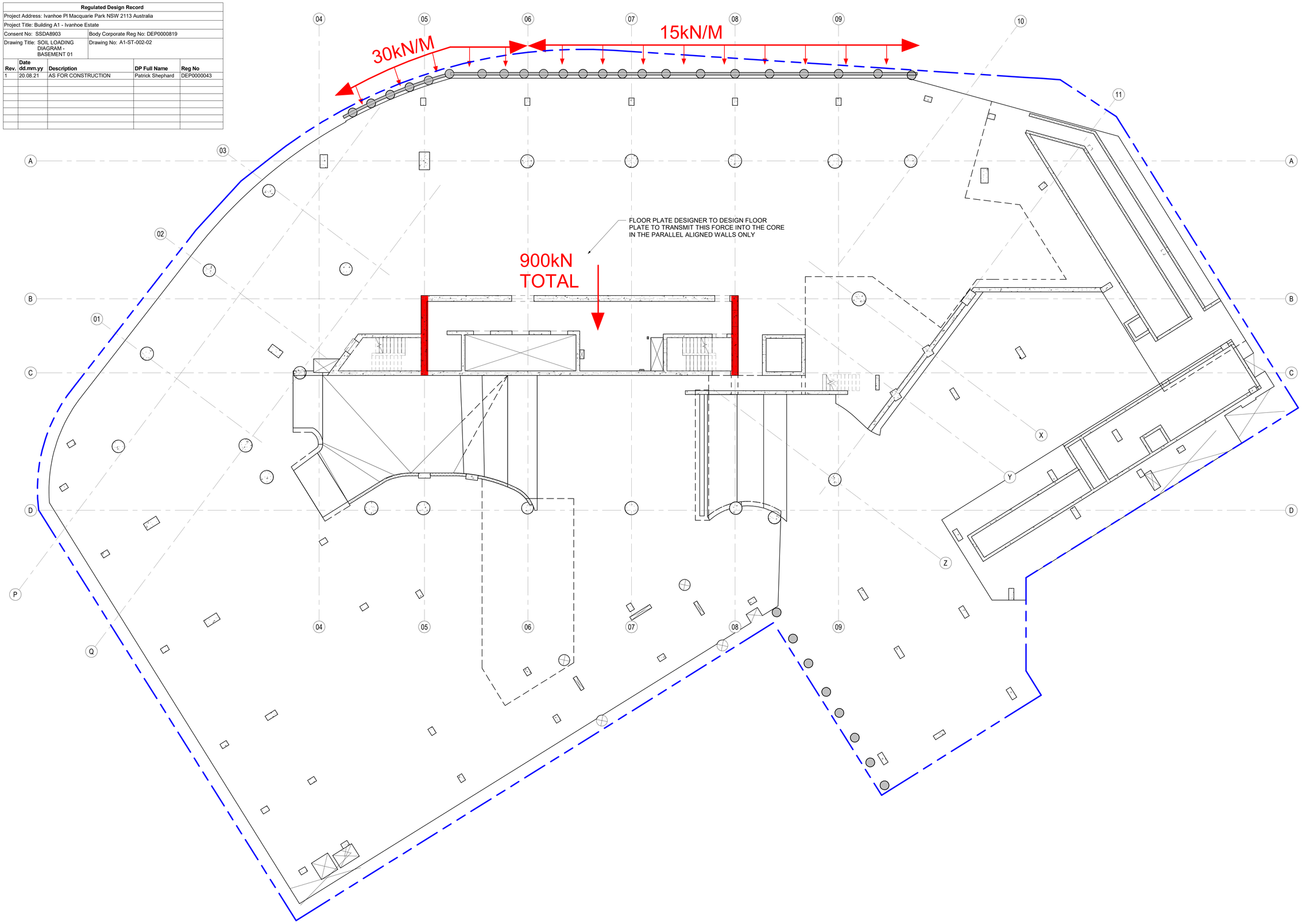
ELEMENT	MATERIAL	Strength (f'uc)	Mortar classifi-cations	Mortar Mix C : L : S	Maximum joint spacing
Reinforced Brickwork	Concrete Block	15 MPa	M4	1 : 0.5 : 4.5	10
Unreinforced Brickwork External face finished, rendered and or painted	Concrete Block	15 MPa	M3	1 : 1 : 6	7
Unreinforced Brickwork External with openings more than 900mm in height	Concrete Block	15 MPa	M3	1 : 1 : 6	5
Unreinforced Brickwork Internal face finished or sheeted	Concrete Block	15 MPa	M3	1 : 1 : 6	6
Unreinforced Brickwork Internal rendered and or painted	Concrete Block	15 MPa	M3	1 : 1 : 6	5
Load-bearing Brickwork	Brick	20 MPa	M3	1 : 1 : 6	6

5. Load-bearing masonry shall have full bedded joint unless noted otherwise. All mortar joints to be finished with standard tooling rods to produce compacted joints to a maximum depth of 3mm. Perpends shall be fully filled.
6. Mortar admixtures shall not be used without the written approval of the engineer.
7. All masonry supporting or supported by concrete floors shall be provided with vertical joints to match any control joints in the concrete.
8. For joint locations in brickwork and blockwork, refer to architectural drawings Joints in straight continuous walls shall not exceed the values given in Note 4.Joints to be 10mm wide unless noted otherwise.
9. No horizontal or diagonal chasing of walls will be allowed. Maximum depth of vertical chasing in core filled blockwork to be 20mm. Chasing of load bearing masonry shall only be permitted where shown on engineering drawings.
10. Slabs that are to support masonry are not be de-propped for 28 days.
11. Do not load masonry units onto a supporting slab until the slab is de-propped.
12. Load all masonry pallets onto the slab prior to laying and finishing head details.
13. Do not load pallets on cantilevered slabs.
14. Only load-bearing masonry is indicated on the drawings. Refer to architectural drawings for extent of masonry elements.
15. All masonry is to be tied to abutting steel or concrete columns and where relevant provide head restraints attached to underside of structure above. For wall ties and head restraints refer to the specification. Ties to be heavy duty galvanised unless noted otherwise.
16. Grout for core filling, where required, shall have a nominal composition of C1 : S3 : A2 (10mm coarse aggregate). The grout shall have a slump of 230mm plus or minus 30mm and a compressive strength of 25 MPa minimum.
17. Walls to be full height before grouting cores.
18. Clean out openings to be provided at bottom course in all cores.
19. Before placing vertical reinforcement, if any, cores are to be cleaned of all mortar fins and droppings through clean out openings, which are not be closed until inspected by the engineer.
20. Maximum continuous pour height of grout to be 3600mm.
21. Backfill to retaining walls to be free draining granular material unless otherwise noted.
22. Provide subsoil drain to falls or weep holes as noted. Refer also to Note 23.
23. Retaining walls (other than cantilever walls) shall not be backfilled until the (floor) construction at the top and bottom has been completed and has attained adequate strength. Cantilever walls shall not be backfilled until they have attained adequate strength.
24. Ensure free draining backfill and drainage lines to falls (or weep holes) are in place.
25. Refer to architectural drawings for location of all joints in masonry. Control joints to be at 6 metre centres maximum.
26. Vertical control joints are to be as described in AS 4773.1 or as indicated on the drawings. Joints shall be maintained to be free of all non-compressible material.
27. Vertical control joints shall be 20mm wide and be provided with flexible masonry anchors across the joint, placed in accordance with manufacturer's recommendations. Joints are to be treated at the outside using an approved flexible polyurethane base caulking sealant jointing material placed against a 25mm diameter closed cellular polythene foam backing rod.
28. The following conditions must also be satisfied:
    a. Fire rating
    b. Sound insulation
    c. Waterproofing
29. Non-load bearing masonry shall be constructed to within 20mm of the underside of the structure or shelf angles over.
30. Gaps are to be built to a tolerance of -0mm, +3mm.
31. Mortar and other material shall not be allowed to fall into cavities or remain in control joints.
32. Place polystyrene foam in all vertical joints during construction to ensure mortar droppings do not fall into the joints.
33. The contractor shall submit the names of all proprietary products proposed to be used in masonry construction before commencement of the works.
34. Where masonry abuts to the underside of any member, sloping or horizontal, provide flexible perpend fixings at 3 masonry units spacing. Perpend fixings shall be equivalent to M.E.T. 4-3 and shall be secured to the structure over using 2 x 6mm diameter Ramset head drive pins (or approved equivalent).
35. Fixing of masonry ties to steelwork shall be designed by the contractor and shall have load capacity not less than that specified by the manufacturer of the ties.
36. In cavity construction, ties between skins of the masonry shall be rated for the width of the cavity. Spacing of ties shall be designed by the contractor for the wind pressure to which the wall will be subjected. Cavity ties shall be heavy duty, spaced at 600mm x 600mm centres maximum. At control joints, door and window openings the spacing shall be at 300mm centres maximum.
37. In solid masonry construction, ties between contiguous leaves shall be heavy duty spaced at 400mm x 400mm centres.
38. In hollow block construction, grout fill end blocks (or use solid blocks) at control joints,door or window openings.
39. All fixings, drive pins, nails, screws, bolts, nuts and washers into masonry shall be galvanised to R2 level in accordance with AS 3700 and AS 269
40. 9.All steelwork built into or abutting masonry shall be hot dip galvanised.
41. Where needling and propping of openings is required, the builder shall provide all details to the engineer for review before the work commences.
42. In reinforced masonry all reinforcement is to be continuous, fully lapped and anchored. Minimum lap/anchorage length to be 40 x bar diameter. Provide continuous horizontal reinforcement at all "T' and 'L' junctions as required.
43. Minimum reinforcement in blockwork nominated as core filled to be as follows U.N.O.:
    a. 140 Blockwork - N12-400 each way, central
    b. 190 Blockwork - N16-400 each way, central

B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: SOIL LOADING DIAGRAM - BASEMENT 01		Drawing No: A1-ST-002-02	
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



SOIL LOADING DIAGRAM - BASEMENT 01

SCALE: 1 : 100

SOIL LOADING NOTES:

- LOADS ARE TO BE READ IN CONJUNCTION WITH THE SITE RETENTION LOADING DIAGRAM
- FLOOR PLATE DESIGNER IS TO ALLOW FOR THE FACTORED IN-PLANE LOADS DUE TO SOIL AND SURCHARGE AS NOMINATED ON THE SOIL LOADING DIAGRAMS. LOADS ARE TO BE TRANSMITTED THROUGH THE FLOOR DIAPHRAGM AND OUT TO THE OPPOSITE SIDE OF TE SITE IN BEARING COMPRESSION U.N.O.
- PILE WALL DESIGNER TO DESIGN FOR THE SHEAR LOADS AS NOMINATED.

1 20.08.21 AS FOR CONSTRUCTION

Rev. Date Description

STRUCTURAL / CIVIL CONSULTANT

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CLIENT

FRASERS PROPERTY

BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

SOIL LOADING DIAGRAM - BASEMENT 01

SCALE AT B1: 1 : 100
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-002-02

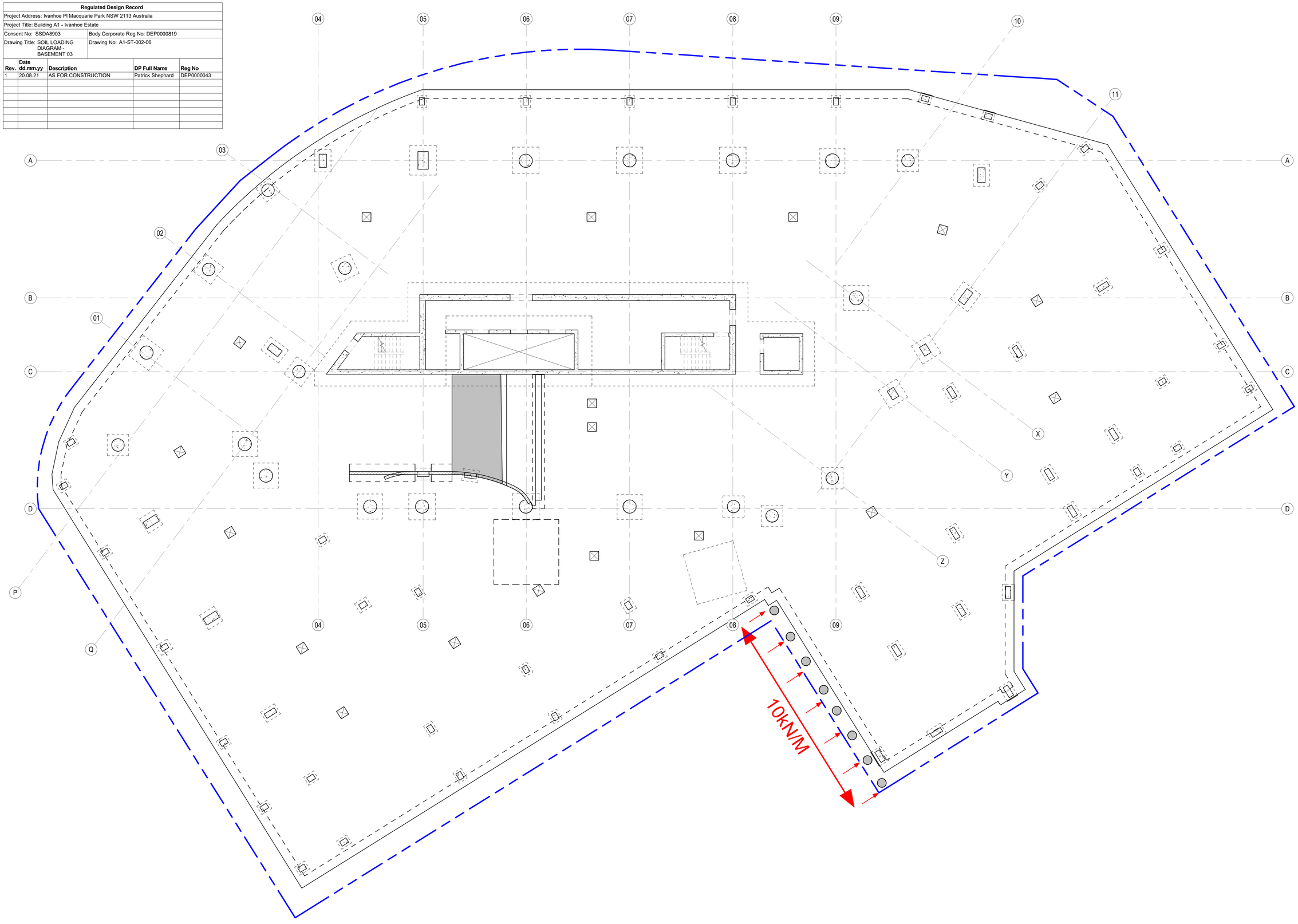
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FOR GENERAL NOTES REFER TO DRAWING ST-001-01

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: SOIL LOADING DIAGRAM - BASEMENT 03		Drawing No: A1-ST-002-06	
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



SOIL LOADING DIAGRAM - BASEMENT 03

SCALE: 1 : 100

SOIL LOADING NOTES:
- LOADS ARE TO BE READ IN CONJUNCTION WITH THE SITE RETENTION LOADING DIAGRAM
- FLOOR PLATE DESIGNER IS TO ALLOW FOR THE FACTORED IN-PLANE LOADS DUE TO SOIL AND SURCHARGE AS NOMINATED ON THE SOIL LOADING DIAGRAMS. LOADS ARE TO BE TRANSMITTED THROUGH THE FLOOR DIAPHRAGM AND OUT TO THE OPPOSITE SIDE OF TE SITE IN BEARING COMPRESSION U.N.O.
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PROJECT NUMBER: 5543

DRAWING TITLE

SOIL LOADING DIAGRAM - BASEMENT 03

SCALE AT B1: 1 : 100
DRAWN BY: WAS
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DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-002-06

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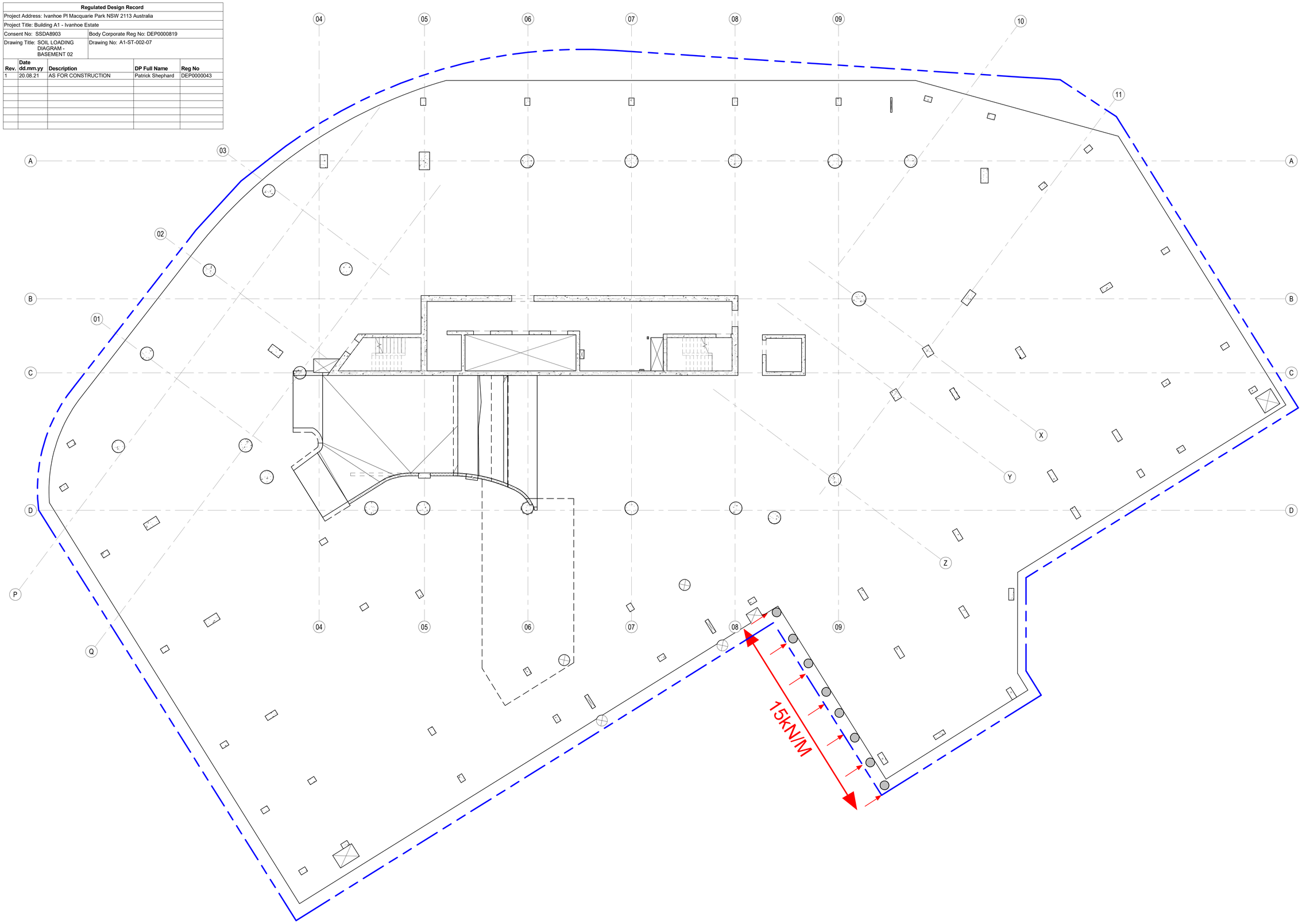
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FOR GENERAL NOTES REFER TO DRAWING ST-001-01

Regulated Design Record

Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia	
Project Title: Building A1 - Ivanhoe Estate	
Consent No: SSDA8903	Body Corporate Reg No: DEP0000819
Drawing Title: SOIL LOADING DIAGRAM - BASEMENT 02	Drawing No: A1-ST-002-07

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



SOIL LOADING DIAGRAM - BASEMENT 02

SCALE: 1 : 100

SOIL LOADING NOTES:

- LOADS ARE TO BE READ IN CONJUNCTION WITH THE SITE RETENTION LOADING DIAGRAM
- FLOOR PLATE DESIGNER IS TO ALLOW FOR THE FACTORED IN-PLANE LOADS DUE TO SOIL AND SURCHARGE AS NOMINATED ON THE SOIL LOADING DIAGRAMS. LOADS ARE TO BE TRANSMITTED THROUGH THE FLOOR DIAPHRAGM AND OUT TO THE OPPOSITE SIDE OF TE SITE IN BEARING COMPRESSION U.N.O.
- PILE WALL DESIGNER TO DESIGN FOR THE SHEAR LOADS AS NOMINATED.

1 20.08.21 AS FOR CONSTRUCTION

Rev. Date Description

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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

SOIL LOADING DIAGRAM - BASEMENT 02

SCALE AT B1: 1 : 100
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-002-07

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Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: FOUNDATION GENERAL ARRANGEMENT		Drawing No: A1-ST-003-00	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
A	19.07.21	ISSUED FOR COORDINATION		
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

GROUND ANCHOR TENSION LOAD SCHEDULE			
GROUND ANCHOR MARK	NUMBER OF GROUND ANCHORS	NUMBER OF 15.2 DIA. STRANDS PER ANCHOR	MINIMUM RESIDUAL CAPACITY (kN)
GA1	1	18	2250
GA2	1	10	1250
GA3	2	17	4250 TOTAL 2125 PER ANCHOR
GA4	1	11	1375
GA5	1	10	1250

NOTE:
THE TENSION LOAD NOMINATED IS THE MINIMUM RESIDUAL FORCE AFTER ALL LONG TERM LOSSES

GROUND ANCHOR NOTES:

GA?? DENOTES GROUND ANCHOR LOCATION. REFER TO GROUND ANCHOR SCHEDULE FOR SPECIFICATIONS

- GROUND ANCHOR ARRANGEMENT AND QUANTITY SUBJECT TO REVIEW
- STRANDS TO ACHIEVE MINIMUM RESIDUAL FORCE LONG TERM AFTER LOSSES OF 125kN
- GROUND ANCHORS TO GEOTECHNICAL ENGINEER'S DESIGN AND DOCUMENTATION. DESIGN COMPUTATIONS TO BE SUBMITTED TO ENSTRUCT FOR REVIEW.
- REFER TO DRAWING ST-003-31 FOR TYPICAL DETAILS
- REFER TO DRAWING ST-003-51 FOR ANCHOR SETOUT

HYDRAULIC PITS AND PIPES LOCATIONS SHOWN FOR CLARITY ONLY. ALL IN GROUND PITS, TANKS AND PIPES MUST BE CAPABLE OF RESISTING THE LOAD OF THE OVERBURDEN, SLAB ON GRADE AND VEHICLE LOADING. THE SLAB ON GRADE RELIES ON THE INGROUND INFRASTRUCTURE BEING LOADBEARING.

1200 FOLD

1000mm Foundation Slab

1200 FOLD

1000mm Foundation Slab

1100

HYDRAULIC PITS AND PIPES LOCATIONS SHOWN FOR CLARITY ONLY. ALL IN GROUND PITS, TANKS AND PIPES MUST BE CAPABLE OF RESISTING THE LOAD OF THE OVERBURDEN, SLAB ON GRADE AND VEHICLE LOADING. THE SLAB ON GRADE RELIES ON THE INGROUND INFRASTRUCTURE BEING LOADBEARING.

REFER TO TYPICAL REINFORCED BLOCKWORK WALL AT B3 RAMP DETAIL ON DRAWING ST-008-01 FOR BEAM REINFORCEMENT

350 D x 1200 W

350 D x 1200 W

REFER TO DRAWING A1-ST-008-01 FOR CARPARK RAMP SECTIONS AND DETAILS.

CONDUITS TO EARTHING RODS PRESENT. REFER TO SHELMERDINES DRAWINGS

REFER TO D.J.HIBBERT DRAWINGS FOR CRANE BASE DETAILS

INCORPORATE COLUMN INTO CRANE BASE

NOTES:

- BUILDER TO ENSURE THAT COLUMN FOOTING BASE R.L'S TO BE LOW ENOUGH SO EDGE BEAM RUNS OVER THE TOP OF COLUMN FOOTING

DRAWINGS TO BE READ IN CONJUNCTION WITH THIS DRAWING:

- ST-003-31 TO 33 - FOUNDATIONS SECTIONS AND DETAILS
- ST-005-31 - COLUMN DETAILS
- ST-005-41 - COLUMN TRANSITION DETAILS
- REFER TO DRAWING ST-003-51 FOR CORE BASE REINFORCEMENT
- REFER TO DRAWING ST-003-52 FOR WALL STARTER BARS
- REFER TO DRAWING ST-096-31 FOR TYPICAL SLAB ON GRADE DETAILS

Pad Foundation Schedule											
Foundation Type	Length (mm)	Width (mm)	Depth (mm)	Bearing Pressure (kPa)	B1' Bottom Reinforcement	B2' Bottom Reinforcement	T1' Top Reinforcement	T2' Top Reinforcement	Side face Reinforcement	Concrete Strength	Count
PF1	800	650	600	6000	4N24	4N20	N12-400	N12-400	-	50	33
PF2	900	750	650	6000	4N28	4N28	N12-400	N12-400	-	50	4
PF3	1100	800	700	6000	6N28	4N24	N12-400	N12-400	-	50	14
PF4	1500	1100	1000	6000	6N32	4N32	N12-400	N12-400	N12-200	50	2
PF5	1150	1150	800	6000	6N28	6N28	N12-400	N12-400	N12-200	50	3
PF6	1450	1450	800	6000	10N28	10N28	N12-400	N12-400	N12-200	50	12
PF7	1700	1700	1000	6000	10N36	10N36	N12-400	N12-400	N12-200	50	7
PF8	1800	1800	1000	6000	10N36	10N36	N12-400	N12-400	N12-200	50	5
PF9	2000	1800	1000	6000	12N36	8N36	N12-400	N12-400	N12-200	50	1

NOTES:
1. BEARING PRESSURE TO BE CONFIRMED DURING CONSTRUCTION BY CONTRACTOR / GEOTECH ENGINEER.
2. REFER TO COLUMN DETAILS SHEET FOR COLUMN STARTER BARS.
3. CONTRACTOR TO CONDUCT SPOON TESTING ON MINIMUM 50% OF ALL PAD FOOTINGS TO CONFIRM 6000kPa ALLOWABLE BEARING CAPACITY IS ACHIEVED UNDER ALL PAD FOOTINGS.
4. ALL PAD FOOTINGS AND CORE RAFT TO BE FOUNDED ON ABP = 6000 kPa ROCK.
5. PROVIDE ADDITIONAL DETAILED EXCAVATION AND MASS CONCRETE IF REQUIRED TO REACH ALLOWABLE BEARING CAPACITY.
6. ALLOW FOR GEOTECHNICAL ENGINEER TO INSPECT FOUNDING MATERIAL PRIOR TO POURING CONCRETE.
7. REINFORCEMENT COVER TO BOTTOM AND SIDES 75mm

DRAWING TO BE PRINTED IN COLOUR

FOUNDATION GENERAL ARRANGEMENT

SCALE: 1 : 100

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION
A	19.07.21	ISSUED FOR COORDINATION

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BUILDER

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Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
FOUNDATION GENERAL ARRANGEMENT

SCALE AT B1: 1 : 100
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-003-00
REV. 1

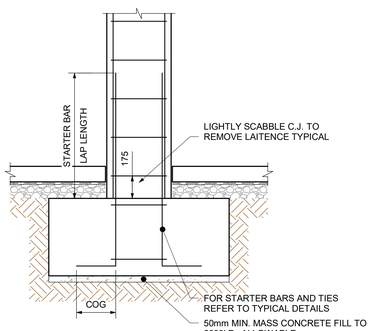
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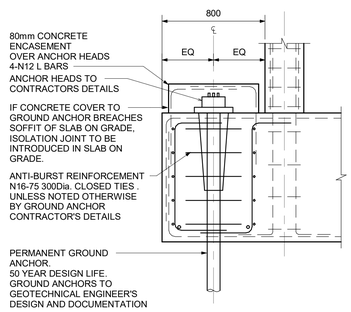
FOR GENERAL NOTES REFER TO DRAWING ST-001-01

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: FOUNDATION SECTIONS AND DETAILS SHEET 1		Drawing No: A1-ST-003-31	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

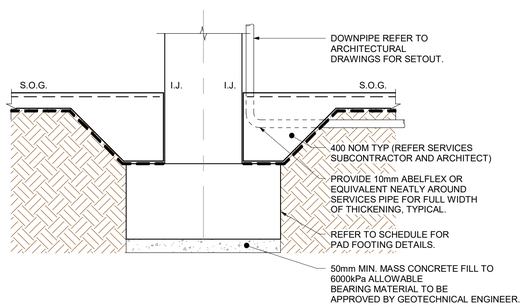


TYPICAL STARTER DETAIL - PADS



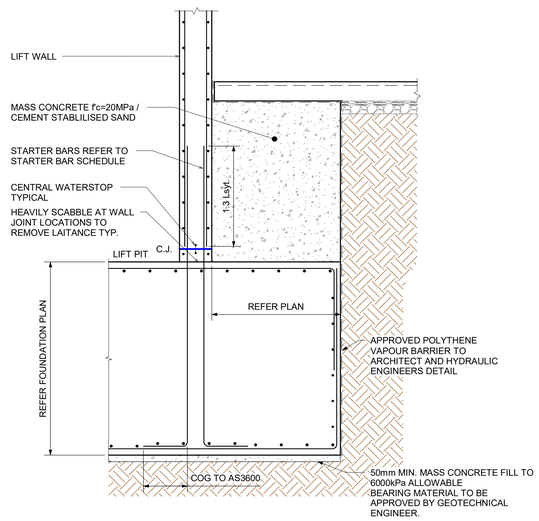
TYPICAL GROUND ANCHOR REINFORCEMENT DETAIL

SCALE: 1 : 20



TYPICAL SECTION AT COLUMNS WITH SERVICES

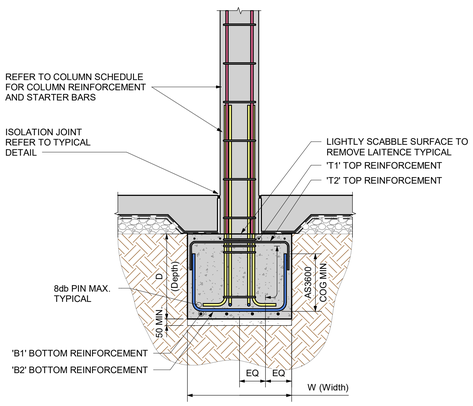
SCALE: 1 : 20

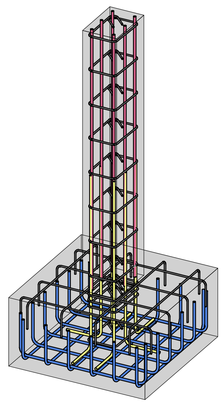


TYPICAL DETAIL AT LIFT / STAIR BASE

SCALE: 1 : 20

PLAN





SECTION

1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

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Level 4, 2 Glen Street, Milsons Point NSW 2061
Telephone (02) 8904 1444
http: //www.enstruct.com.au

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FRASERS PROPERTY

BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
FOUNDATION SECTIONS AND DETAILS SHEET 1

SCALE AT B1: 1 : 20
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

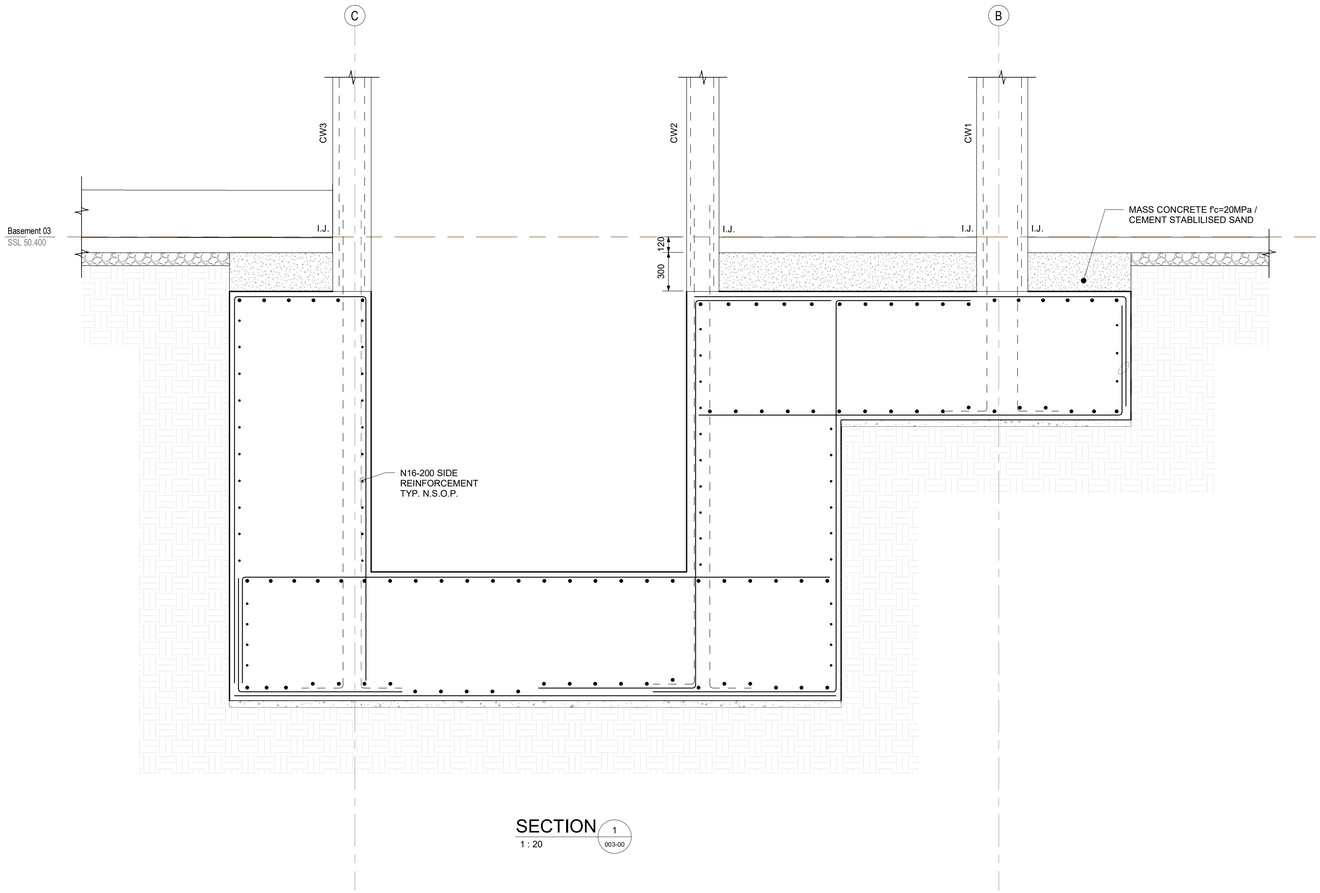
DRAWING NUMBER A1-ST-003-31
REV. 1

20/08/2021 4:43:17 PM

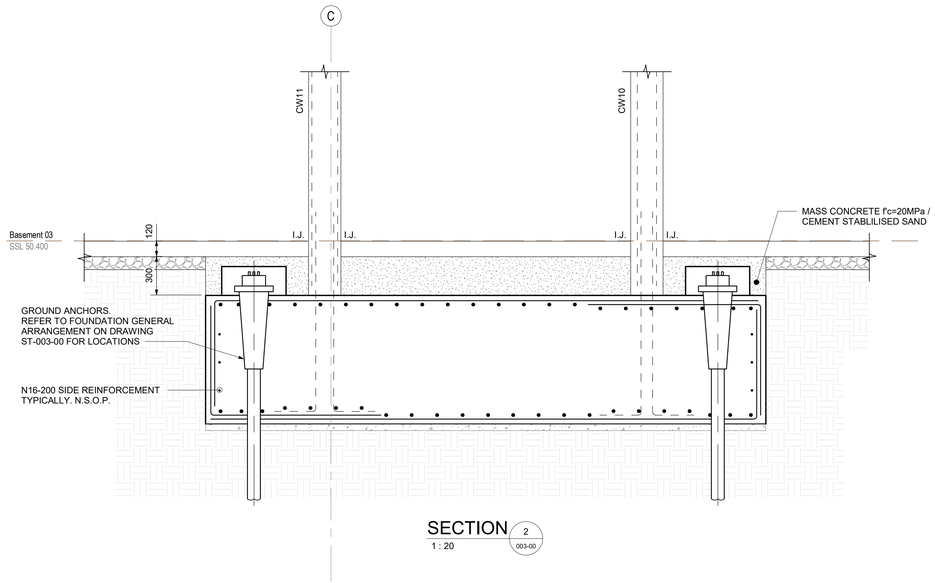
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Regulated Design Record	
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia	
Project Title: Building A1 - Ivanhoe Estate	
Consent No: SSDA8903	Body Corporate Reg No: DEP0000819
Drawing Title: FOUNDATION SECTIONS AND DETAILS SHEET 2	Drawing No: A1-ST-003-32

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



SECTION 1 (003-00)
1 : 20



SECTION 2 (003-00)
1 : 20

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

NOTES:

- REFER TO DRAWING ST-003-00 FOR CORE BASE THICKNESS
- REFER TO DRAWING ST-003-31 FOR TYPICAL FOUNDATION DETAILS
- REFER TO DRAWING ST-003-51 FOR CORE BASE REINFORCEMENT
- REFER TO DRAWING ST-003-52 FOR WALL STARTER BARS
- REFER TO DRAWING ST-096-31 FOR TYPICAL SLAB ON GRADE DETAILS

1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

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PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
FOUNDATION SECTIONS AND DETAILS SHEET 2

SCALE AT B1: 1 : 20
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-003-32
REV.: 1

20/08/2021 4:43:27 PM

B1

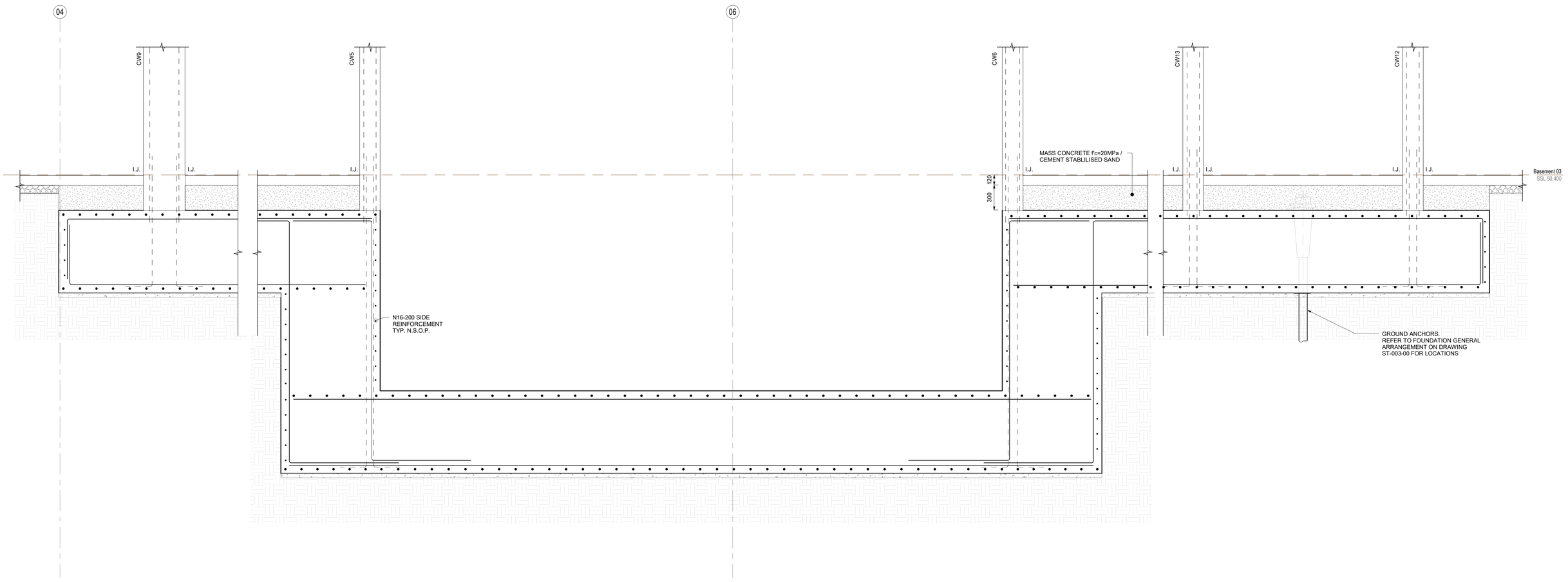
Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: FOUNDATION SECTIONS AND DETAILS SHEET 3		Drawing No: A1-ST-003-33	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

NOTES:

- REFER TO DRAWING ST-003-00 FOR CORE BASE THICKNESS
- REFER TO DRAWING ST-003-31 FOR TYPICAL FOUNDATION DETAILS
- REFER TO DRAWING ST-003-51 FOR CORE BASE REINFORCEMENT
- REFER TO DRAWING ST-003-52 FOR WALL STARTER BARS
- REFER TO DRAWING ST-096-31 FOR TYPICAL SLAB ON GRADE DETAILS



SECTION 3 / 003-00
1 : 20

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION

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PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
FOUNDATION SECTIONS AND DETAILS SHEET 3

SCALE AT B1: 1 : 20
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-003-33
REV.: 1

20/08/2021 4:43:43 PM

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: CORE BASE REINFORCEMENT PLANS SHEET 1		Drawing No: A1-ST-003-51	

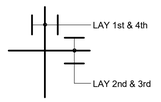
Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

B1

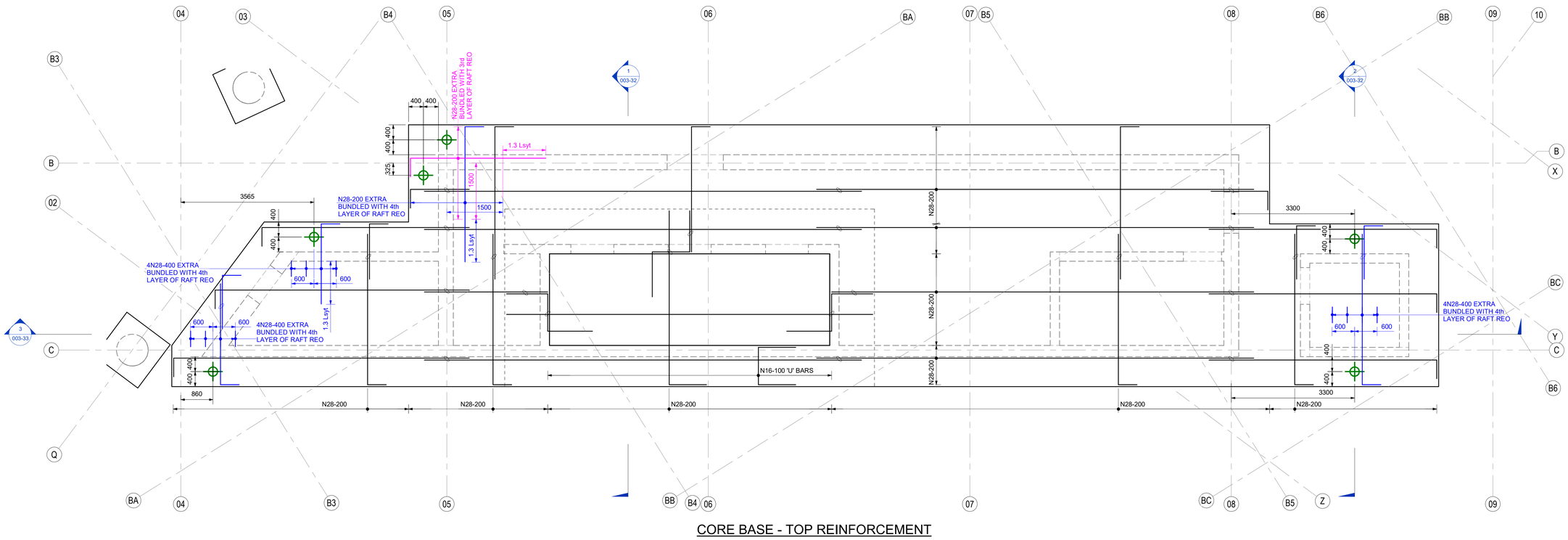
FOR GENERAL NOTES REFER TO DRAWING ST-001-01

NOTES:

- REFER TO DRAWING ST-003-00 FOR CORE BASE THICKNESS
- REFER TO DRAWING ST-003-00 FOR GROUND ANCHOR SCHEDULE AND TAGS
- REFER TO DRAWING ST-003-31 FOR TYPICAL FOUNDATION DETAILS
- REFER TO DRAWING ST-096-31 FOR TYPICAL SLAB ON GRADE DETAILS

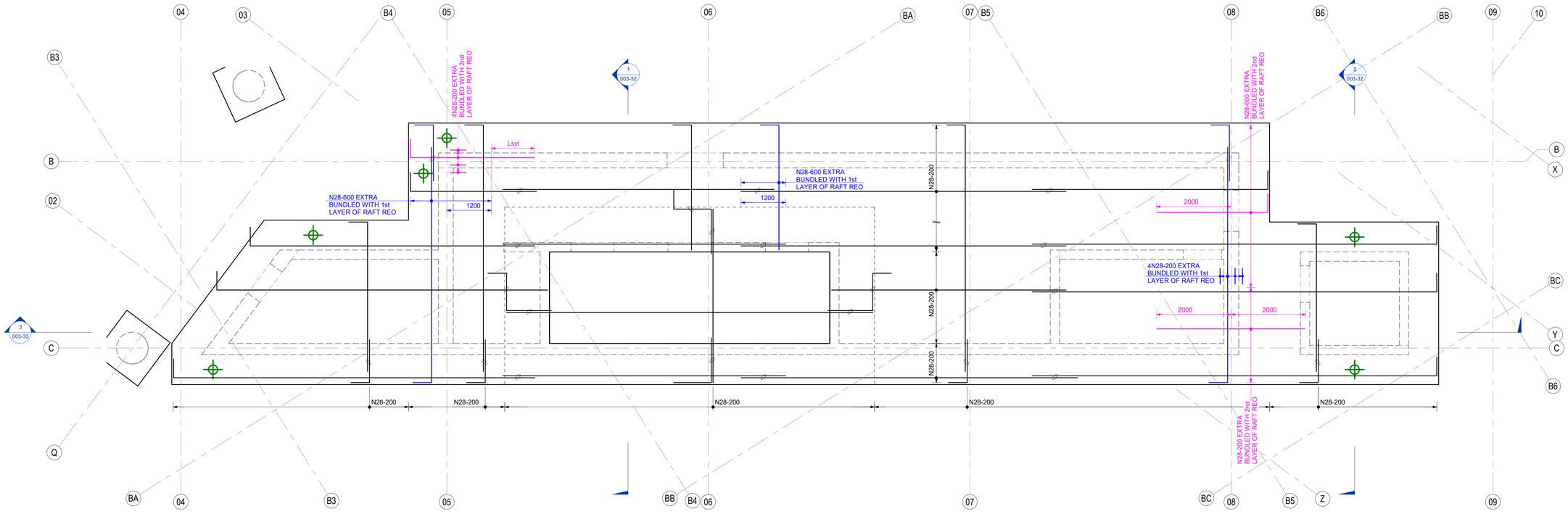


TYPICAL REINFORCEMENT BAR LAYING SEQUENCE U.N.O.



CORE BASE - TOP REINFORCEMENT

SCALE: 1 : 50



CORE BASE - BOTTOM REINFORCEMENT

SCALE: 1 : 50

20/08/2021 4:43:59 PM

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION

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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

CORE BASE REINFORCEMENT PLANS SHEET 1

SCALE AT B1: 1 : 50
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-003-51
REV.: 1

B1

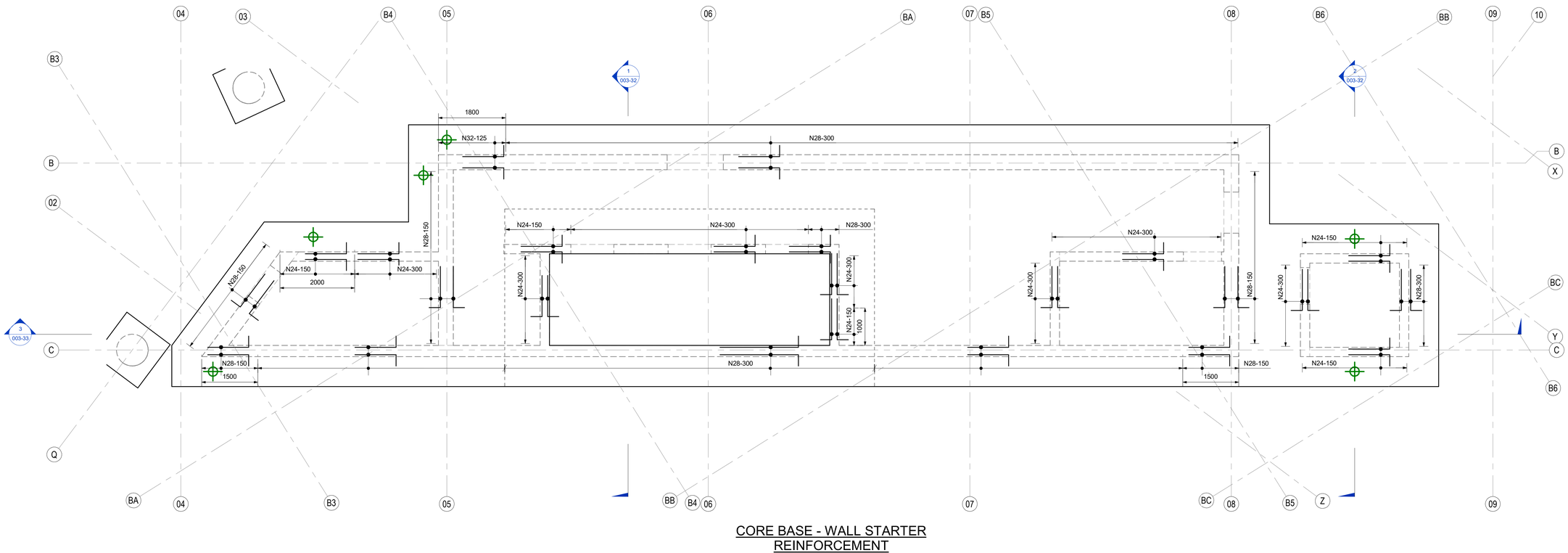
Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: CORE BASE REINFORCEMENT PLANS SHEET 2		Drawing No: A1-ST-003-52	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

NOTES:

- REFER TO DRAWING ST-003-00 FOR CORE BASE THICKNESS
- REFER TO DRAWING ST-003-00 FOR GROUND ANCHOR SCHEDULE AND TAGS
- REFER TO DRAWING ST-003-31 FOR TYPICAL FOUNDATION DETAILS
- REFER TO DRAWING ST-096-31 FOR TYPICAL SLAB ON GRADE DETAILS



CORE BASE - WALL STARTER REINFORCEMENT

SCALE: 1 : 50

20/08/2021 4:44:06 PM

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION

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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

CORE BASE REINFORCEMENT PLANS SHEET 2

SCALE AT B1: 1 : 50
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-003-52
REV.: 1

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: COLUMN SCHEDULE SHEET 1		Drawing No: A1-ST-005-01	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
A	19.07.21	ISSUED FOR COORDINATION		
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

STRUCTURAL COLUMN SCHEDULE - SHEET 1

Mark	Base Level	Top Level	Type	Vertical Reinforcement	Concrete Strength	Ties	Reinforcement Arrangement	Column Tie Type	Top of Column Transition	Column Location Mark
C1	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 5	B5(-1384)-06
C1	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B5(-1384)-06
C1	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B5(-1384)-06
C2	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 5	A(4000)-07
C2	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	A(4000)-07
C2	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	A(4000)-07
C3	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 5	A(4000)-05
C3	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	A(4000)-05
C3	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	A(4000)-05
C4	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 5	A(4000)-08
C4	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	A(4000)-08
C4	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	A(4000)-08
C5	Basement 01	Lower Ground	350 x 500mm	6N28	65 MPa	N12-175	TYPE A	OPTION 2	TYPE 5	BA-09
C5	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	BA-09
C5	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	BA-09
C6	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 5	B8(-3479)-10(-1855)
C6	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B8(-3479)-10(-1855)
C6	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B8(-3479)-10(-1855)
C7	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-150	TYPE A	OPTION 2	TYPE 5	B8(-474)-BB(989)
C7	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 2	B8(-474)-BB(989)
C7	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 2	B8(-474)-BB(989)
C8	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 2	A(799)-11(566)
C8	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 2	A(799)-11(566)
C9	Level 22	Level 23	400 x 800mm							A-04
C9	Level 21	Level 22	400 x 800mm							A-04
C9	Level 20	Level 21	400 x 800mm							A-04
C9	Level 19	Level 20	400 x 800mm							A-04
C9	Level 18	Level 19	400 x 800mm							A-04
C9	Level 17	Level 18	400 x 800mm							A-04
C9	Level 16	Level 17	400 x 800mm							A-04
C9	Level 15	Level 16	400 x 800mm							A-04
C9	Level 14	Level 15	400 x 800mm							A-04
C9	Level 13	Level 14	400 x 800mm							A-04
C9	Level 12	Level 13	400 x 800mm							A-04
C9	Level 11	Level 12	400 x 800mm							A-04
C9	Level 10	Level 11	400 x 800mm							A-04
C9	Level 09	Level 10	400 x 800mm							A-04
C9	Level 08	Level 09	400 x 800mm							A-04
C9	Level 07	Level 08	400 x 800mm							A-04
C9	Level 06	Level 07	400 x 800mm							A-04
C9	Level 05	Level 06	400 x 800mm							A-04
C9	Level 04	Level 05	400 x 800mm							A-04
C9	Level 03	Level 04	400 x 800mm							A-04
C9	Level 02	Level 03	400 x 800mm							A-04
C9	Level 01	Level 02	400 x 800mm							A-04
C9	Ground Floor	Level 01	750mm							A-04
C9	Lower Ground	Ground Floor	750mm							A-04
C9	Basement 01	Lower Ground	500 x 900mm	10N24	80 MPa	N16-275	TYPE E	OPTION 2	TYPE 2	A-04(324)
C9	Basement 02	Basement 01	500 x 900mm	10N24	80 MPa	N16-275	TYPE E	OPTION 2	TYPE 2	A-04(324)
C9	Basement 03	Basement 02	500 x 900mm	10N24	80 MPa	N16-275	TYPE E	OPTION 2	TYPE 2	A-04(324)
C10	Level 22	Level 23	LBP - 650 x 800mm							A(250)-05
C10	Level 21	Level 22	LBP - 650 x 800mm							A(250)-05
C10	Level 20	Level 21	LBP - 650 x 800mm							A(250)-05
C10	Level 19	Level 20	LBP - 650 x 800mm							A(250)-05
C10	Level 18	Level 19	LBP - 650 x 800mm							A(250)-05
C10	Level 17	Level 18	LBP - 650 x 800mm							A(250)-05
C10	Level 16	Level 17	LBP - 650 x 800mm							A(250)-05
C10	Level 15	Level 16	LBP - 650 x 800mm							A(250)-05
C10	Level 14	Level 15	LBP - 650 x 800mm							A(250)-05
C10	Level 13	Level 14	LBP - 650 x 800mm							A(250)-05
C10	Level 12	Level 13	LBP - 650 x 800mm							A(250)-05
C10	Level 11	Level 12	LBP - 650 x 800mm							A(250)-05
C10	Level 10	Level 11	LBP - 650 x 800mm							A(250)-05
C10	Level 09	Level 10	LBP - 650 x 800mm							A(250)-05
C10	Level 08	Level 09	LBP - 650 x 800mm							A(250)-05
C10	Level 07	Level 08	LBP - 650 x 800mm							A(250)-05
C10	Level 06	Level 07	LBP - 650 x 800mm							A(250)-05
C10	Level 05	Level 06	LBP - 650 x 800mm							A(250)-05
C10	Level 04	Level 05	LBP - 650 x 800mm							A(250)-05
C10	Level 03	Level 04	LBP - 650 x 800mm							A(250)-05
C10	Level 02	Level 03	LBP - 650 x 800mm							A(250)-05
C10	Level 01	Level 02	LBP - 800 x 1150mm							A-05
C10	Ground Floor	Level 01	900mm							A-05
C10	Lower Ground	Ground Floor	900mm							A-05
C10	Basement 01	Lower Ground	700 x 1200mm	18N28	65 MPa	N16-300	TYPE K	OPTION 1	TYPE 2	A-05
C10	Basement 02	Basement 01	700 x 1200mm	18N28	65 MPa	N16-300	TYPE K	OPTION 1	TYPE 2	A-05
C10	Basement 03	Basement 02	700 x 1200mm	18N28	65 MPa	N16-300	TYPE K	OPTION 1	TYPE 2	A-05
C11	Level 02	Level 03	LBP - 650 x 800mm							A(250)-06
C11	Level 01	Level 02	LBP - 800 x 1150mm							A-06
C11	Ground Floor	Level 01	900mm							A-06
C11	Lower Ground	Ground Floor	900mm							A-06
C11	Basement 01	Lower Ground	900mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	A-06
C11	Basement 02	Basement 01	900mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	A-06
C11	Basement 03	Basement 02	900mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	A-06
C12	Level 02	Level 03	LBP - 650 x 800mm							A(250)-07
C12	Level 01	Level 02	LBP - 800 x 1150mm							A-07
C12	Lower Ground	Level 01	900mm							A-07
C12	Basement 01	Lower Ground	900mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	A-07
C12	Basement 02	Basement 01	900mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	A-07
C12	Basement 03	Basement 02	900mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	A-07
C13	Level 22	Level 23	LBP - 650 x 800mm							A(250)-08
C13	Level 21	Level 22	LBP - 650 x 800mm							A(250)-08
C13	Level 20	Level 21	LBP - 650 x 800mm							A(250)-08
C13	Level 19	Level 20	LBP - 650 x 800mm							A(250)-08
C13	Level 18	Level 19	LBP - 650 x 800mm							A(250)-08
C13	Level 17	Level 18	LBP - 650 x 800mm							A(250)-08
C13	Level 16	Level 17	LBP - 650 x 800mm							A(250)-08
C13	Level 15	Level 16	LBP - 650 x 800mm							A(250)-08
C13	Level 14	Level 15	LBP - 650 x 800mm							A(250)-08
C13	Level 13	Level 14	LBP - 650 x 800mm							A(250)-08
C13	Level 12	Level 13	LBP - 650 x 800mm							A(250)-08
C13	Level 11	Level 12	LBP - 650 x 800mm							A(250)-08
C13	Level 10	Level 11	LBP - 650 x 800mm							A(250)-08
C13	Level 09	Level 10	LBP - 650 x 800mm							A(250)-08
C13	Level 08	Level 09	LBP - 650 x 800mm							A(250)-08
C13	Level 07	Level 08	LBP - 650 x 800mm							A(250)-08
C13	Level 06	Level 07	LBP - 650 x 800mm							A(250)-08
C13	Level 05	Level 06	LBP - 650 x 800mm							A(250)-08
C13	Level 04	Level 05	LBP - 650 x 800mm							A(250)-08
C13	Level 03	Level 04	LBP - 650 x 800mm							A(250)-08
C13	Level 02	Level 03	LBP - 650 x 800mm							A(250)-08
C13	Level 01	Level 02	LBP - 800 x 1150mm							A-08
C13	Lower Ground	Level 01	900mm							A-08
C13	Basement 01	Lower Ground	900mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	A-08
C13	Basement 02	Basement 01	900mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	A-08
C13	Basement 03	Basement 02	900mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	A-08

STRUCTURAL COLUMN SCHEDULE - SHEET 1

Mark	Base Level	Top Level	Type	Vertical Reinforcement	Concrete Strength	Ties	Reinforcement Arrangement	Column Tie Type	Top of Column Transition	Column Location Mark
C14	Level 22	Level 23	LBP - 800 x 1125mm							A-09
C14	Level 21	Level 22	LBP - 800 x 1125mm							A-09
C14	Level 20	Level 21	LBP - 800 x 1125mm							A-09
C14	Level 19	Level 20	LBP - 800 x 1125mm							A-09
C14	Level 18	Level 19	LBP - 800 x 1125mm							A-09
C14	Level 17	Level 18	LBP - 800 x 1125mm							A-09
C14	Level 16	Level 17	LBP - 800 x 1125mm							A-09
C14	Level 15	Level 16	LBP - 800 x 1125mm							A-09
C14	Level 14	Level 15	LBP - 800 x 1125mm							A-09
C14	Level 13	Level 14	LBP - 800 x 1125mm							A-09
C14	Level 12	Level 13	LBP - 800 x 1125mm							A-09
C14	Level 11	Level 12	LBP - 800 x 1125mm							A-09
C14	Level 10	Level 11	LBP - 800 x 1125mm							A-09
C14	Level 09	Level 10	LBP - 800 x 1125mm							A-09
C14	Level 08	Level 09	LBP - 800 x 1125mm							A-09
C14	Level 07	Level 08	LBP - 800 x 1125mm							A-09
C14	Level 06	Level 07	LBP - 800 x 1125mm							A-09
C14	Level 05	Level 06	LBP - 800 x 1125mm							A-09
C14	Level 04	Level 05	LBP - 800 x 1125mm							A-09
C14	Level 03	Level 04	LBP - 800 x 1125mm							A-09
C14	Level 02	Level 03	LBP - 800 x 1125mm							A-09
C14	Level 01	Level 02	LBP - 800 x 1125mm							A-09
C14	Lower Ground	Level 01	850mm							A-09
C14	Basement 01	Lower Ground	950mm	10N32	80 MPa	N16-125	TYPE B	-	TYPE 2	A-09
C14	Basement 02	Basement 01	950mm	10N32	80 MPa	N16-125	TYPE B	-	TYPE 2	A-09
C14	Basement 03	Basement 02	950mm	10N32	80 MPa	N16-125	TYPE B	-	TYPE 2	A-09
C15	Level 22	Level 23	LBP - 750 x 1000mm							A-10
C15	Level 21	Level 22	LBP - 750 x 1000mm							A-10
C15	Level 20	Level 21	LBP - 750 x 1000mm							A-10
C15	Level 19	Level 20	LBP - 750 x 1000mm							A-10
C15	Level 18	Level 19	LBP - 750 x 1000mm							A-10
C15	Level 17	Level 18	LBP - 750 x 1000mm							A-10
C15	Level 16	Level 17	LBP - 750 x 1000mm							A-10
C15	Level 15	Level 16	LBP - 750 x 1000mm							A-10
C15	Level 14	Level 15	LBP - 750 x 1000mm							A-10
C15	Level 13	Level 14	LBP - 750 x 1000mm							A-10
C15	Level 12	Level 13	LBP - 750 x 1000mm							A-10
C15	Level 11	Level 12	LBP - 750 x 1000mm							A-10
C15	Level 10	Level 11	LBP - 750 x 1000mm							A-10
C15	Level 09	Level 10	LBP - 750 x 1000mm							A-10
C15	Level 08	Level 09	LBP - 750 x 1000mm							A-10
C15	Level 07	Level 08	LBP - 750 x 1000mm							A-10
C15	Level 06	Level 07	LBP - 750 x 1000mm							A-10
C15	Level 05	Level 06	LBP - 750 x 1000mm							A-10
C15	Level 04	Level 05	LBP - 750 x 1000mm							A-10
C15	Level 03	Level 04	LBP - 750 x 1000mm							A-10
C15	Level 02	Level 03	LBP - 750 x 1000mm							A-10
C15	Level 01	Level 02	LBP - 1050 x 1000mm							A-10
C15	Lower Ground	Level 01	850mm							A-10
C15	Basement 01	Lower Ground	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	A-10
C15	Basement 02	Basement 01	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	A-10
C15	Basement 03	Basement 02	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	A-10
C16	Basement 01	Lower Ground	500 x 1000mm	12N32	65 MPa	N16-300	TYPE C	OPTION 1	TYPE 5	A(-1000)-BB(-2160)
C16	Basement 02	Basement 01	500 x 1000mm	12N32	65 MPa	N16-300	TYPE C	OPTION 1	TYPE 2	A(-1000)-BB(-2160)
C16	Basement 03	Basement 02	500 x 1000mm	12N32	65 MPa	N16-300	TYPE C	OPTION 1	TYPE 2	A(-1000)-BB(-2160)
C17	Basement 01	Lower Ground	350 x 500mm	6N28	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 5	B8-11(-393)
C17	Basement 02	Basement 01	350 x 500mm	6N28	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 2	B8-11(-393)
C17	Basement 03	Basement 02	350 x 500mm	6N28	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 2	B8-11(-392)
C18	Level 22	Level 24	300 x 700mm							P(-2600)-03
C18	Level 21	Level 22	300 x 700mm							P(-2600)-03
C18	Level 20	Level 21	300 x 700mm							P(-2600)-03
C18	Level 19	Level 20	300 x 700mm							P(-2600)-03
C18	Level 18	Level 19	300 x 700mm							P(-2600)-03
C18	Level 17	Level 18	300 x 700mm							P(-2600)-03
C18	Level 16	Level 17	300 x 700mm							P(-2600)-03
C18	Level 15	Level 16	300 x 700mm							P(-2600)-03
C18	Level 14	Level 15	300 x 700mm							P(-2600)-03
C18	Level 13	Level 14	300 x 700mm							P(-2600)-03
C18	Level 12	Level 13	300 x 700mm							P(-2600)-03
C18	Level 11	Level 12	300 x 700mm							P(-2600)-03
C18	Level 10	Level 11	300 x 700mm							P(-2600)-03
C18	Level 09	Level 10	300 x 700mm							P(-2600)-03
C18	Level 08	Level 09	300 x 700mm							P(-2600)-03
C18	Level 07	Level 08	300 x 700mm							P(-2600)-03
C18	Level 06	Level 07	300 x 700mm							P(-2600)-03
C18	Level 05	Level 06	300 x 700mm							P(-2600)-03
C18	Level 04	Level 05	300 x 700mm							P(-2600)-03
C18	Level 03	Level 04	300 x 700mm							P(-2600)-03
C18	Ground Floor	Level 03	850mm							P(-2625)-03
C18	Lower Ground	Ground Floor	850mm							P(-2625)-03
C18	Basement 01	Lower Ground	850mm	10N28	80 MPa	N12-200	TYPE B	-	TYPE 2	P(-2625)-03
C18	Basement 02	Basement 01	850mm	10N28	80 MPa	N12-200	TYPE B	-	TYPE 2	P(-2625)-03
C18	Basement 03	Basement 02	850mm	10N28	80 MPa	N12-200	TYPE B	-	TYPE 2	P(-2624)-03
C19	Level 22	Level 24	LBP - 650 x 800mm							P(-2896)-02
C19	Level 21	Level 22	LBP - 650 x 800mm							P(-2900)-02
C19	Level 20	Level 21	LBP - 650 x 800mm							P(-2900)-02
C19	Level 19	Level 20	LBP - 650 x 800mm							P(-2900)-02
C19	Level 18	Level 19	LBP - 650 x 800mm							P(-2900)-02
C19	Level 17	Level 18	LBP - 650 x 800mm							P(-2900)-02
C19	Level 16	Level 17	LBP - 650 x 800mm							P(-2900)-02
C19	Level 15	Level 16	LBP - 650 x 800mm							P(-2900)-02
C19	Level 14	Level 15	LBP - 650 x 800mm							P(-2900)-02
C19	Level 13	Level 14	LBP - 650 x 800mm							P(-2900)-02
C19	Level 12	Level 13	LBP - 650 x 800mm							P(-2900)-02
C19	Level 11	Level 12	LBP - 650 x 800mm							P(-2900)-02
C19	Level 10	Level 11	LBP - 650 x 800mm							P(-2900)-02
C19	Level 09	Level 10	LBP - 650 x 800mm							P(-2900)-02
C19	Level 08	Level 09	LBP - 650 x 800mm							P(-2900)-02
C19	Level 07	Level 08	LBP - 650 x 800mm							P(-2900)-02
C19	Level 06	Level 07	LBP - 650 x 800mm							P(-2900)-02
C19	Level 05	Level 06	LBP - 650 x 800mm							P(-2900)-02
C19	Level 04	Level 05	LBP - 650 x 800mm							P(-2900)-02
C19	Level 03	Level 04	LBP - 800 x 1200mm							P(-2900)-02
C19	Ground Floor	Level 03	850mm							P(-2625)-02
C19	Lower Ground	Ground Floor	850mm							P(-2625)-02
C19	Basement 01	Lower Ground	850mm	14N36	80 MPa	N16-150	TYPE F	-	TYPE 2	P(-2625)-02
C19	Basement 02	Basement 01	850mm	14N36	80 MPa	N16-150	TYPE F	-	TYPE 2	P(-2625)-02
C19	Basement 03	Basement 02	850mm	14N36	80 MPa	N16-150	TYPE F	-	TYPE 2	P(-2625)-02

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

NOTES:

1. REFER TO DRAWINGS ST-005-41 FOR COLUMN TRANSITION DETAILS
2. REFER TO DRAWING ST-005-31 FOR COLUMN REINFORCEMENT ARRANGEMENT DETAILS

1 20.08.21 AS FOR CONSTRUCTION
A 19.07.21 ISSUED FOR COORDINATION
Rev. Date Description

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BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
COLUMN SCHEDULE SHEET 1

SCALE AT B1:
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-005-01
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Regulated Design Record	
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Drawing Title: COLUMN SCHEDULE SHEET 2	Drawing No: A1-ST-005-02

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A	19.07.21	ISSUED FOR COORDINATION		
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FOR GENERAL NOTES REFER TO DRAWING ST-001-01

NOTES:

1. REFER TO DRAWINGS ST-005-41 FOR COLUMN TRANSITION DETAILS
2. REFER TO DRAWING ST-005-31 FOR COLUMN REINFORCEMENT ARRANGEMENT DETAILS

STRUCTURAL COLUMN SCHEDULE - SHEET 2

Mark	Base Level	Top Level	Type	Vertical Reinforcement	Concrete Strength	Ties	Reinforcement Arrangement	Column Tie Type	Top of Column Transition	Column Location Mark	Comments
C20	Level 23	Level 24	250 x 1000mm							B(1910)-Q(-1825)	
C20	Level 22	Level 23	250 x 1000mm							B(1910)-Q(-1825)	
C20	Level 21	Level 22	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 20	Level 21	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 19	Level 20	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 18	Level 19	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 17	Level 18	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 16	Level 17	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 15	Level 16	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 14	Level 15	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 13	Level 14	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 12	Level 13	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 11	Level 12	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 10	Level 11	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 09	Level 10	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 08	Level 09	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 07	Level 08	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 06	Level 07	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 05	Level 06	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 04	Level 05	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 03	Level 04	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 02	Level 03	400 x 800mm							B(1910)-Q(-1825)	
C20	Level 01	Level 02	400 x 800mm							B(1910)-Q(-1825)	
C20	Ground Floor	Level 01	850mm							B(2016)-Q(-1707)	
C20	Lower Ground	Ground Floor	850mm							B(2016)-Q(-1707)	
C20	Basement 01	Lower Ground	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	B(2016)-Q(-1707)	
C20	Basement 02	Basement 01	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	B(2016)-Q(-1707)	
C20	Basement 03	Basement 02	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	B(2016)-Q(-1707)	
C21	Level 22	Level 23	400 x 800mm							B-X	
C21	Level 21	Level 22	400 x 800mm							B-X	
C21	Level 20	Level 21	400 x 800mm							B-X	
C21	Level 19	Level 20	400 x 800mm							B-X	
C21	Level 18	Level 19	400 x 800mm							B-X	
C21	Level 17	Level 18	400 x 800mm							B-X	
C21	Level 16	Level 17	400 x 800mm							B-X	
C21	Level 15	Level 16	400 x 800mm							B-X	
C21	Level 14	Level 15	400 x 800mm							B-X	
C21	Level 13	Level 14	400 x 800mm							B-X	
C21	Level 12	Level 13	400 x 800mm							B-X	
C21	Level 11	Level 12	400 x 800mm							B-X	
C21	Level 10	Level 11	400 x 800mm							B-X	
C21	Level 09	Level 10	400 x 800mm							B-X	
C21	Level 08	Level 09	400 x 800mm							B-X	
C21	Level 07	Level 08	400 x 800mm							B-X	
C21	Level 06	Level 07	400 x 800mm							B-X	
C21	Level 05	Level 06	400 x 800mm							B-X	
C21	Level 04	Level 05	400 x 800mm							B-X	
C21	Level 03	Level 04	400 x 800mm							B-X	
C21	Ground Floor	Level 01	850mm							B-X	
C21	Lower Ground	Ground Floor	850mm							B-X	
C21	Basement 01	Lower Ground	950mm	14N36	80 MPa	N16-125	TYPE F	-	TYPE 3	B-X	
C21	Basement 02	Basement 01	950mm	14N36	80 MPa	N16-125	TYPE F	-	TYPE 2	B-X	
C21	Basement 03	Basement 02	950mm	14N36	80 MPa	N16-125	TYPE F	-	TYPE 2	B-X	
C22	Level 22	Level 23	LBP - 400 x 800mm							B-11	
C22	Level 21	Level 22	LBP - 400 x 800mm							B-11	
C22	Level 20	Level 21	LBP - 400 x 800mm							B-11	
C22	Level 19	Level 20	LBP - 400 x 800mm							B-11	
C22	Level 18	Level 19	LBP - 400 x 800mm							B-11	
C22	Level 17	Level 18	LBP - 400 x 800mm							B-11	
C22	Level 16	Level 17	LBP - 400 x 800mm							B-11	
C22	Level 15	Level 16	LBP - 400 x 800mm							B-11	
C22	Level 14	Level 15	LBP - 400 x 800mm							B-11	
C22	Level 13	Level 14	LBP - 400 x 800mm							B-11	
C22	Level 12	Level 13	LBP - 400 x 800mm							B-11	
C22	Level 11	Level 12	LBP - 400 x 800mm							B-11	
C22	Level 10	Level 11	LBP - 400 x 800mm							B-11	
C22	Level 09	Level 10	LBP - 400 x 800mm							B-11	
C22	Level 08	Level 09	LBP - 400 x 800mm							B-11	
C22	Level 07	Level 08	600mm							B-11	
C22	Level 06	Level 07	600mm							B-11	
C22	Level 05	Level 06	600mm							B-11	
C22	Level 04	Level 05	600mm							B-11	
C22	Level 03	Level 04	600mm							B-11	
C22	Level 02	Level 03	600mm							B-11	
C22	Level 01	Level 02	600mm							B-11	
C22	Ground Floor	Level 01	850mm							B-11	
C22	Lower Ground	Ground Floor	850mm							B-11	
C22	Basement 01	Lower Ground	500 x 1000mm	12N28	80 MPa	N16-300	TYPE C	OPTION 1	TYPE 2	B-11	
C22	Basement 02	Basement 01	500 x 1000mm	12N28	80 MPa	N16-300	TYPE C	OPTION 1	TYPE 2	B-11	
C22	Basement 03	Basement 02	500 x 1000mm	12N28	80 MPa	N16-300	TYPE C	OPTION 1	TYPE 2	B-11	
C23	Basement 01	Lower Ground	350 x 800mm	10N32	65 MPa	N12-225	TYPE D	OPTION 1	TYPE 5	B(757)-B8	
C23	Basement 02	Basement 01	350 x 800mm	10N32	65 MPa	N16-300	TYPE D	OPTION 1	TYPE 2	B(757)-B8	
C23	Basement 03	Basement 02	350 x 800mm	10N32	65 MPa	N16-300	TYPE D	OPTION 1	TYPE 2	B(757)-B8	
C24	Basement 02	Basement 01	350 x 500mm	6N24	65 MPa	N16-300	TYPE A	OPTION 1	TYPE 2	B(3243)-BD(1305)	
C24	Basement 03	Basement 02	350 x 500mm	6N24	65 MPa	N16-300	TYPE A	OPTION 1	TYPE 2	B(3243)-BD(1305)	
C25	Level 22	Level 24	LBP - 650 x 800mm							C(1455)-01	
C25	Level 21	Level 22	LBP - 650 x 800mm							C(1455)-01	
C25	Level 20	Level 21	LBP - 650 x 800mm							C(1455)-01	
C25	Level 19	Level 20	LBP - 650 x 800mm							C(1455)-01	
C25	Level 18	Level 19	LBP - 650 x 800mm							C(1455)-01	
C25	Level 17	Level 18	LBP - 650 x 800mm							C(1455)-01	
C25	Level 16	Level 17	LBP - 650 x 800mm							C(1455)-01	
C25	Level 15	Level 16	LBP - 650 x 800mm							C(1455)-01	
C25	Level 14	Level 15	LBP - 650 x 800mm							C(1455)-01	
C25	Level 13	Level 14	LBP - 650 x 800mm							C(1455)-01	
C25	Level 12	Level 13	LBP - 650 x 800mm							C(1455)-01	
C25	Level 11	Level 12	LBP - 650 x 800mm							C(1455)-01	
C25	Level 10	Level 11	LBP - 650 x 800mm							C(1455)-01	
C25	Level 09	Level 10	LBP - 650 x 800mm							C(1455)-01	
C25	Level 08	Level 09	LBP - 650 x 800mm							C(1455)-01	
C25	Level 07	Level 08	LBP - 650 x 800mm							C(1455)-01	
C25	Level 06	Level 07	LBP - 650 x 800mm							C(1455)-01	
C25	Level 05	Level 06	LBP - 650 x 800mm							C(1455)-01	
C25	Level 04	Level 05	LBP - 650 x 800mm							C(1455)-01	
C25	Level 03	Level 04	LBP - 800 x 1100mm							C(1455)-01	
C25	Level 01	Level 03	850mm							C(1290)-01	
C25	Ground Floor	Level 01	850mm							C(1290)-01	
C25	Lower Ground	Ground Floor	850mm							C(1290)-01	
C25	Basement 01	Lower Ground	900mm	8N32	80 MPa	N16-150	TYPE H	-	TYPE 2	C(1292)-01	
C25	Basement 02	Basement 01	900mm	8N32	80 MPa	N16-150	TYPE H	-	TYPE 2	C(1291)-01	
C25	Basement 03	Basement 02	900mm	8N32	80 MPa	N16-150	TYPE H	-	TYPE 2	C(1289)-01	

STRUCTURAL COLUMN SCHEDULE - SHEET 2

Mark	Base Level	Top Level	Type	Vertical Reinforcement	Concrete Strength	Ties	Reinforcement Arrangement	Column Tie Type	Top of Column Transition	Column Location Mark	Comments
C26	Level 21	Level 22	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 20	Level 21	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 19	Level 20	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 18	Level 19	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 17	Level 18	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 16	Level 17	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 15	Level 16	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 14	Level 15	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 13	Level 14	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 12	Level 13	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 11	Level 12	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 10	Level 11	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 09	Level 10	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 08	Level 09	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 07	Level 08	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 06	Level 07	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 05	Level 06	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 04	Level 05	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 03	Level 04	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 02	Level 03	400 x 800mm							C(1471)-Q(-2201)	
C26	Level 01	Level 02	400 x 800mm							C(1471)-Q(-2201)	
C26	Ground Floor	Level 01	500 x 900mm							C(1471)-Q(-2201)	
C26	Lower Ground	Ground Floor	500 x 900mm							C(1471)-Q(-2201)	
C26	Basement 01	Lower Ground	500 x 900mm	10N24	80 MPa	N16-275	TYPE E	OPTION 1	TYPE 2	C(1471)-Q(-2201)	
C26	Basement 02	Basement 01	500 x 900mm	10N24	80 MPa	N16-275	TYPE E	OPTION 1	TYPE 2	C(1471)-Q(-2201)	
C26	Basement 03	Basement 02	500 x 900mm	10N24	80 MPa	N16-275	TYPE E	OPTION 1	TYPE 2	C(1471)-Q(-2201)	
C27	Lower Ground	Ground Floor	850mm							C-Q	
C27	Basement 01	Lower Ground	850mm	10N28	80 MPa	N16-200	TYPE B	-	TYPE 2	C-Q	
C27	Basement 02	Basement 01	850mm	10N28	80 MPa	N16-200	TYPE B	-	TYPE 2	C-Q	
C27	Basement 03	Basement 02	850mm	10N28	80 MPa	N16-200	TYPE B	-	TYPE 2	C-Q	
C28	Ground Floor	Level 01	850mm							X-11	
C28	Lower Ground	Ground Floor	850mm							X-11	
C28	Basement 01	Lower Ground	500 x 700mm	10N28	80 MPa	N16-150	TYPE E	OPTION 1	TYPE 2	X-11	
C28	Basement 02	Basement 01	500 x 700mm	10N28	80 MPa	N16-150	TYPE E	OPTION 1	TYPE 2	X-11	
C28	Basement 03	Basement 02	500 x 700mm	10N28	80 MPa	N16-150	TYPE E	OPTION 1	TYPE 2	X-11	
C29	Basement 02	Lower Ground	350 x 800mm	10N32	65 MPa	N12-225	TYPE D	OPTION 2	TYPE 5	C(1353)-BD(641)	CONDUITS TO EARTHING RODS PRESENT. REFER TO SHELMERDINES DRAWINGS
C29	Basement 03	Basement 02	350 x 800mm	10N32	65 MPa	N16-300	TYPE D	OPTION 2	TYPE 2	C(1353)-BD(641)	CONDUITS TO EARTHING RODS PRESENT. REFER TO SHELMERDINES DRAWINGS
C30	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 5	C(1795)-BE(1265)	
C30	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-150	TYPE A	OPTION 2	TYPE 2	C(1795)-BE(1265)	
C30	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	C(1795)-BE(1265)	
C31	Ground Floor	Level 01	300 x 800mm							B1(-1770)-P(-3076)	
C31	Lower Ground	Ground Floor	300 x 800mm							B1(-1770)-P(-3076)	
C31	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B1(-1770)-P(-3076)	
C31	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B1(-1770)-P(-3076)	
C31	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B1(-1770)-P(-3076)	
C32	Level 22	Level 24	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 21	Level 22	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 20	Level 21	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 19	Level 20	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 18	Level 19	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 17	Level 18	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 16	Level 17	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 15	Level 16	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 14	Level 15	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 13	Level 14	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 12	Level 13	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 11	Level 12	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 10	Level 11	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 09	Level 10	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 08	Level 09	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 07	Level 08	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 06	Level 07	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 05	Level 06	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 04	Level 05	LBP - 650 x 800mm							B1(571)-P(-592)	
C32	Level 03	Level 04	LBP - 800 x 1100mm							B1(571)-P	
C32	Level 01	Level 03	850mm							B1(841)-P	
C32	Ground Floor	Level 01	850mm							B1(842)-P	
C32	Lower Ground	Ground Floor	850mm							B1(842)-P	
C32	Basement 01	Lower Ground	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	B1(842)-P	
C32	Basement 02	Basement 01	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	B1(842)-P	
C32	Basement 03	Basement 02	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	B1(842)-P	
C33	Lower Ground	Ground Floor	850mm							B2-Q	
C33	Basement 01	Lower Ground	900mm	12N32	80 MPa	N16-150	TYPE G	-	TYPE 2	B2-Q	
C33	Basement 02	Basement 01	900mm	12N32	80 MPa	N16-150	TYPE G	-	TYPE 2	B2-Q	
C33	Basement 03	Basement 02	900mm	12N32	80 MPa	N16-150	TYPE G	-	TYPE 2	B2-Q	
C34	Level 22	Level 23	LBP - 650 x 800mm							Y-11(442)	
C34	Level 21	Level 22	LBP - 650 x 800mm							Y-11(442)	
C34	Level 20	Level 21	LBP - 650 x 800mm							Y-11(442)	
C34	Level 19	Level 20	LBP - 650 x 800mm							Y-11(442)	
C34	Level 18	Level 19	LBP - 650 x 800mm							Y-11(442)	
C34	Level 17	Level 18	LBP - 650 x 800mm							Y-11(442)	
C34	Level 16	Level 17	LBP - 650 x 800mm							Y-11(442)	
C34	Level 15	Level 16	LBP - 650 x 800mm							Y-11(442)	
C34	Level 14	Level 15	LBP - 650 x 800mm							Y-11(442)	
C34	Level 13	Level 14	LBP - 650 x 800mm							Y-11(442)	
C34	Level 12	Level 13	LBP - 650 x 800mm							Y-11(442)	
C34	Level 11	Level 12	LBP - 650 x 800mm							Y-11(442)	
C34	Level 10	Level 11	LBP - 650 x 800mm							Y-11(442)	
C34	Level 09	Level 10	LBP - 650 x 800mm							Y-11(442)	
C34	Level 08	Level 09	LBP - 650 x 800mm							Y-11(442)	
C34	Level 07	Level 08	LBP - 650 x 800mm							Y-11(442)	
C34	Level 06	Level 07	LBP - 650 x 800mm							Y-11(442)	
C34	Level 05	Level 06	LBP - 650 x 800mm							Y-11(442)	
C34	Level 04	Level 05	LBP - 650 x 800mm							Y-11(442)	
C34	Level 03	Level 04	LBP - 650 x 800mm							Y-11(442)	
C34	Level 02	Level 03	LBP - 650 x 800mm							Y-11(442)	
C34	Level 01	Level 02	LBP - 800 x 1100mm							Y-11	
C34	Ground Floor	Level 01	850mm							Y-11	
C34	Lower Ground	Ground Floor	850mm							Y-11	
C34	Basement 01	Lower Ground	500 x 700mm	10N24	80 MPa	N16-175	TYPE E	OPTION 1	TYPE 2	Y-11	
C34	Basement 02	Basement 01	500 x 700mm	10N24	80 MPa	N16-175	TYPE E	OPTION 1	TYPE 2	Y-11	
C34	Basement 03	Basement 02	500 x 700mm	10N24	80 MPa	N16-175	TYPE E	OPTION 1	TYPE 2	Y-11	
C35	Basement 02	Lower Ground	300 x 800mm	10N32	65 MPa	N12-225	TYPE D	OPTION 2	TYPE 5	C(-1426)-X(-1271)	
C35	Basement 03	Basement 02	350 x 800mm	10N32	65 MPa	N16-300	TYPE D	OPTION 2	TYPE 2	C(-1426)-X(-1271)	

1 20.08.21 AS FOR CONSTRUCTION
A 19.07.21 ISSUED FOR COORDINATION
Rev. Date Description

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FRASERS PROPERTY

BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
COLUMN SCHEDULE SHEET 2

SCALE AT B1:
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
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A	19.07.21	ISSUED FOR COORDINATION		
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STRUCTURAL COLUMN SCHEDULE - SHEET 3

Mark	Base Level	Top Level	Type	Vertical Reinforcement	Concrete Strength	Ties	Reinforcement Arrangement	Column Tie Type	Top of Column Transition	Column Location Mark
C36	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 5	B8-C(-692)
C36	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 2	B8-C(-692)
C36	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 2	B8-C(-692)
C37	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 5	C(-1169)-BE(-2260)
C37	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-150	TYPE A	OPTION 2	TYPE 2	C(-1169)-BE(-2260)
C37	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	C(-1169)-BE(-2260)
C38	Ground Floor	Level 01	300 x 800mm							D(1552)-P(-1709)
C38	Lower Ground	Ground Floor	300 x 800mm							D(1552)-P(-1709)
C38	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	D(1552)-P(-1709)
C38	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	D(1552)-P(-1709)
C38	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	D(1552)-P(-1709)
C39	Ground Floor	Level 01	850mm							B2-BA(-1368)
C39	Lower Ground	Ground Floor	850mm							B2-BA(-1368)
C39	Basement 01	Lower Ground	900mm	8N32	80 MPa	N16-150	TYPE H	-	TYPE 2	B2-BA(-1367)
C39	Basement 02	Basement 01	900mm	8N32	80 MPa	N16-150	TYPE H	-	TYPE 2	B2-BA(-1367)
C39	Basement 03	Basement 02	900mm	8N32	80 MPa	N16-150	TYPE H	-	TYPE 2	B2-BA(-1367)
C40	Level 22	Level 23	LBP - 800 x 800mm							Z-09
C40	Level 21	Level 22	LBP - 800 x 800mm							Z-09
C40	Level 20	Level 21	LBP - 800 x 800mm							Z-09
C40	Level 19	Level 20	LBP - 800 x 800mm							Z-09
C40	Level 18	Level 19	LBP - 800 x 800mm							Z-09
C40	Level 17	Level 18	LBP - 800 x 800mm							Z-09
C40	Level 16	Level 17	LBP - 800 x 800mm							Z-09
C40	Level 15	Level 16	LBP - 800 x 800mm							Z-09
C40	Level 14	Level 15	LBP - 800 x 800mm							Z-09
C40	Level 13	Level 14	LBP - 800 x 800mm							Z-09
C40	Level 12	Level 13	LBP - 800 x 800mm							Z-09
C40	Level 11	Level 12	LBP - 800 x 800mm							Z-09
C40	Level 10	Level 11	LBP - 800 x 800mm							Z-09
C40	Level 09	Level 10	LBP - 800 x 1150mm							Z-09
C40	Level 08	Level 09	LBP - 800 x 1150mm							Z-09
C40	Level 07	Level 08	400 x 800mm							Z-11
C40	Level 06	Level 07	400 x 800mm							Z-11
C40	Level 05	Level 06	400 x 800mm							Z-11
C40	Level 04	Level 05	400 x 800mm							Z-11
C40	Level 03	Level 04	400 x 800mm							Z-11
C40	Level 02	Level 03	400 x 800mm							Z-11
C40	Level 01	Level 02	400 x 800mm							Z-11
C40	Ground Floor	Level 01	850mm							Z-11
C40	Lower Ground	Ground Floor	400 x 1000mm	14N20	80 MPa	N16-300	TYPE J	OPTION 1		Z-09
C40	Basement 02	Lower Ground	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 4	Z-09
C40	Basement 03	Basement 02	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	Z-09
C41	Basement 01	Lower Ground	350 x 800mm	10N20	65 MPa	N16-300	TYPE D2	OPTION 2	TYPE 5	B7-BE
C41	Basement 02	Basement 01	350 x 800mm	10N20	65 MPa	N12-225	TYPE D2	OPTION 2	TYPE 2	B7-BE
C41	Basement 03	Basement 02	350 x 800mm	10N20	65 MPa	N16-300	TYPE D2	OPTION 2	TYPE 2	B7-BE
C42	Basement 01	Lower Ground	350 x 800mm	10N28	65 MPa	N16-175	TYPE D2	OPTION 2	TYPE 5	B8(-4675)-BE
C42	Basement 02	Basement 01	350 x 800mm	10N28	65 MPa	N12-150	TYPE D2	OPTION 2	TYPE 2	B8(-4675)-BE
C42	Basement 03	Basement 02	350 x 800mm	10N28	65 MPa	N16-150	TYPE D2	OPTION 2	TYPE 2	B8(-4675)-BE
C43	Basement 01	Ground Floor	350 x 500mm	6N28	65 MPa	N16-300	TYPE A2	OPTION 2	TYPE 5	B7(5300)-D(2496)
C43	Basement 02	Basement 01	350 x 500mm	6N28	65 MPa	N12-175	TYPE A2	OPTION 2	TYPE 2	B7(5300)-D(2496)
C43	Basement 03	Basement 02	350 x 500mm	6N28	65 MPa	N12-175	TYPE A2	OPTION 2	TYPE 2	B7(5300)-D(2496)
C44	Basement 01	Ground Floor	350 x 500mm	6N28	65 MPa	N16-300	TYPE A2	OPTION 2	TYPE 5	B8(-1500)-BE(-3080)
C44	Basement 02	Basement 01	350 x 500mm	6N28	65 MPa	N12-175	TYPE A2	OPTION 2	TYPE 2	B8(-1500)-BE(-3080)
C44	Basement 03	Basement 02	350 x 500mm	6N28	65 MPa	N12-175	TYPE A2	OPTION 2	TYPE 2	B8(-1500)-BE(-3080)
C45	Ground Floor	Level 01	300 x 800mm							D(-2945)-P(3230)
C45	Lower Ground	Ground Floor	300 x 800mm							D(-2945)-P(3230)
C45	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A2	OPTION 2	TYPE 2	D(-2945)-P(3230)
C45	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-175	TYPE A2	OPTION 2	TYPE 2	D(-2945)-P(3230)
C45	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-175	TYPE A2	OPTION 2	TYPE 2	D(-2945)-P(3230)
C46	Ground Floor	Level 01	500 x 1000mm							B1-BA
C46	Lower Ground	Ground Floor	500 x 1000mm							B1-BA
C46	Basement 01	Lower Ground	500 x 1000mm	12N24	65 MPa	N16-300	TYPE C2	OPTION 2	TYPE 2	B1-BA
C46	Basement 02	Basement 01	500 x 1000mm	12N24	65 MPa	N16-300	TYPE C2	OPTION 2	TYPE 2	B1-BA
C46	Basement 03	Basement 02	500 x 1000mm	12N24	65 MPa	N16-300	TYPE C2	OPTION 2	TYPE 2	B1-BA
C47	Lower Ground	Ground Floor	350 x 500mm							B2(550)-04
C47	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A2	OPTION 2	TYPE 2	B2(550)-04
C47	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A2	OPTION 2	TYPE 2	B2(550)-04
C47	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-175	TYPE A2	OPTION 2	TYPE 2	B2(550)-04
C48	Level 22	Level 23	LBP - 650 x 800mm							D-BB
C48	Level 21	Level 22	LBP - 650 x 800mm							D-BB
C48	Level 20	Level 21	LBP - 650 x 800mm							D-BB
C48	Level 19	Level 20	LBP - 650 x 800mm							D-BB
C48	Level 18	Level 19	LBP - 650 x 800mm							D-BB
C48	Level 17	Level 18	LBP - 650 x 800mm							D-BB
C48	Level 16	Level 17	LBP - 650 x 800mm							D-BB
C48	Level 15	Level 16	LBP - 650 x 800mm							D-BB
C48	Level 14	Level 15	LBP - 650 x 800mm							D-BB
C48	Level 13	Level 14	LBP - 650 x 800mm							D-BB
C48	Level 12	Level 13	LBP - 650 x 800mm							D-BB
C48	Level 11	Level 12	LBP - 650 x 800mm							D-BB
C48	Level 10	Level 11	LBP - 650 x 800mm							D-BB
C48	Level 09	Level 10	LBP - 650 x 800mm							D-BB
C48	Level 08	Level 09	LBP - 650 x 800mm							D-BB
C48	Level 07	Level 08	LBP - 650 x 800mm							D-BB
C48	Level 06	Level 07	LBP - 650 x 800mm							D-BB
C48	Level 05	Level 06	LBP - 650 x 800mm							D-BB
C48	Level 04	Level 05	LBP - 650 x 800mm							D-BB
C48	Level 03	Level 04	LBP - 650 x 800mm							D-BB
C48	Level 02	Level 03	LBP - 650 x 800mm							D-BB
C48	Level 01	Level 02	LBP - 800 x 1100mm							D-BB
C48	Ground Floor	Level 01	900mm							D-BB(711)
C48	Lower Ground	Ground Floor	900mm							D-BB(711)
C48	Basement 01	Lower Ground	900mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	D-BB(713)
C48	Basement 02	Basement 01	900mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	D-BB(711)
C48	Basement 03	Basement 02	900mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	D-BB(711)
C49	Level 02	Level 03	LBP - 650 x 800mm							D-05
C49	Level 01	Level 02	LBP - 800 x 1100mm							B3-05
C49	Ground Floor	Level 01	900mm							B3-05
C49	Lower Ground	Ground Floor	900mm							B3-05
C49	Basement 01	Lower Ground	900mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	B3-05
C49	Basement 02	Basement 01	900mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	B3-05
C49	Basement 03	Basement 02	900mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	B3-05
C50	Level 02	Level 03	LBP - 650 x 800mm							D-06
C50	Level 01	Level 02	LBP - 800 x 1100mm							D-06
C50	Ground Floor	Level 01	800mm							D-06
C50	Lower Ground	Ground Floor	800mm							D-06
C50	Basement 01	Lower Ground	800mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	D-06
C50	Basement 02	Basement 01	800mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	D-06
C50	Basement 03	Basement 02	900mm	14N36	65 MPa	N16-175	TYPE F	-	TYPE 2	D-06
C51	Level 02	Level 03	LBP - 650 x 800mm							D-07
C51	Level 01	Level 02	LBP - 800 x 1100mm							D-07
C51	Ground Floor	Level 01	850mm							D-07
C51	Lower Ground	Ground Floor	900mm							D-07
C51	Basement 01	Lower Ground	900mm	12N32	80 MPa	N16-150	TYPE G	-	TYPE 2	D-07
C51	Basement 02	Basement 01	900mm	12N32	80 MPa	N16-150	TYPE G	-	TYPE 2	D-07
C51	Basement 03	Basement 02	900mm	12N32	80 MPa	N16-150	TYPE G	-	TYPE 2	D-07

STRUCTURAL COLUMN SCHEDULE - SHEET 3

Mark	Base Level	Top Level	Type	Vertical Reinforcement	Concrete Strength	Ties	Reinforcement Arrangement	Column Tie Type	Top of Column Transition	Column Location Mark
C52	Level 22	Level 23	LBP - 650 x 800mm							D-08
C52	Level 21	Level 22	LBP - 650 x 800mm							D-08
C52	Level 20	Level 21	LBP - 650 x 800mm							D-08
C52	Level 19	Level 20	LBP - 650 x 800mm							D-08
C52	Level 18	Level 19	LBP - 650 x 800mm							D-08
C52	Level 17	Level 18	LBP - 650 x 800mm							D-08
C52	Level 16	Level 17	LBP - 650 x 800mm							D-08
C52	Level 15	Level 16	LBP - 650 x 800mm							D-08
C52	Level 14	Level 15	LBP - 650 x 800mm							D-08
C52	Level 13	Level 14	LBP - 650 x 800mm							D-08
C52	Level 12	Level 13	LBP - 650 x 800mm							D-08
C52	Level 11	Level 12	LBP - 650 x 800mm							D-08
C52	Level 10	Level 11	LBP - 650 x 800mm							D-08
C52	Level 09	Level 10	LBP - 650 x 800mm							D-08
C52	Level 08	Level 09	LBP - 650 x 800mm							D-08
C52	Level 07	Level 08	LBP - 650 x 800mm							D-08
C52	Level 06	Level 07	LBP - 650 x 800mm							D-08
C52	Level 05	Level 06	LBP - 650 x 800mm							D-08
C52	Level 04	Level 05	LBP - 650 x 800mm							D-08
C52	Level 03	Level 04	LBP - 650 x 800mm							D-08
C52	Level 02	Level 03	LBP - 650 x 800mm							D-08
C52	Level 01	Level 02	LBP - 800 x 1100mm							D-08
C52	Ground Floor	Level 01	850mm							D-08
C52	Lower Ground	Ground Floor	850mm							D-08
C52	Basement 01	Lower Ground	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	D-08
C52	Basement 02	Basement 01	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	D-08
C52	Basement 03	Basement 02	850mm	10N28	80 MPa	N16-150	TYPE B	-	TYPE 2	D-08
C53	Lower Ground	Ground Floor	850mm							D(-485)-BD
C53	Basement 02	Lower Ground	850mm	10N28	65 MPa	N12-100	TYPE B	-	TYPE 2	D(-485)-BD
C53	Basement 03	Basement 02	850mm	10N28	65 MPa	N16-200	TYPE B	-	TYPE 2	D(-485)-BD
C54	Basement 01	Lower Ground	350 x 800mm	10N20	65 MPa	N12-150	TYPE D	OPTION 2	TYPE 5	B6(200)-BE
C54	Basement 02	Basement 01	350 x 800mm	10N20	65 MPa	N12-150	TYPE D	OPTION 2	TYPE 2	B6(200)-BE
C54	Basement 03	Basement 02	350 x 800mm	10N20	65 MPa	N16-150	TYPE D	OPTION 2	TYPE 2	B6(200)-BE
C55	Basement 01	Ground Floor	350 x 800mm	10N24	65 MPa	N16-300	TYPE D	OPTION 2	TYPE 2	B7-D
C55	Basement 02	Basement 01	350 x 800mm	10N24	65 MPa	N12-150	TYPE D	OPTION 2	TYPE 2	B7-D
C55	Basement 03	Basement 02	350 x 800mm	10N24	65 MPa	N12-225	TYPE D	OPTION 2	TYPE 2	B7-D
C56	Ground Floor	Level 01	300 x 800mm							B1(-3748)-BB
C56	Lower Ground	Ground Floor	300 x 800mm							B1(-3748)-BB
C56	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-175	TYPE A1	OPTION 1	TYPE 2	B1(-3748)-BB
C56	Basement 02	Basement 01	350 x 500mm	6N28	65 MPa	N12-175	TYPE A1	OPTION 1	TYPE 2	B1(-3748)-BB
C56	Basement 03	Basement 02	350 x 500mm	6N28	65 MPa	N12-175	TYPE A1	OPTION 1	TYPE 2	B1(-3748)-BB
C57	Ground Floor	Level 01	500 x 1000mm							B1-BB
C57	Lower Ground	Ground Floor	500 x 1000mm							B1-BB
C57	Basement 01	Lower Ground	500 x 1000mm	12N24	65 MPa	N16-300	TYPE C	OPTION 2	TYPE 2	B1-BB
C57	Basement 02	Basement 01	500 x 1000mm	12N24	65 MPa	N16-175	TYPE C	OPTION 2	TYPE 2	B1-BB
C57	Basement 03	Basement 02	500 x 1000mm	12N24	65 MPa	N16-300	TYPE C	OPTION 2	TYPE 2	B1-BB
C58	Lower Ground	Ground Floor	350 x 800mm							B2(550)-BC(2898)
C58	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N16-300	TYPE A1	OPTION 1	TYPE 2	B2(550)-BC(2898)
C58	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N16-300	TYPE A1	OPTION 1	TYPE 2	B2(550)-BC(2898)
C58	Basement 03	Basement 02	350 x 500mm	6N28	65 MPa	N16-300	TYPE A1	OPTION 1	TYPE 2	B2(550)-BC(2898)
C59	Lower Ground	Ground Floor	350 x 800mm							BC(1650)-05
C59	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	BC(1650)-05(-324)
C59	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	BC(1650)-05(-324)
C59	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-175	TYPE A	OPTION 2	TYPE 2	BC(1650)-05(-324)
C60	Lower Ground	Ground Floor	350 x 800mm							B4-07
C60	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-175	TYPE A	OPTION 1	TYPE 2	B4-07
C60	Basement 02	Basement 01	350 x 500mm	6N28	65 MPa	N12-175	TYPE A	OPTION 1	TYPE 2	B4-07
C60	Basement 03	Basement 02	350 x 500mm	6N28	65 MPa	N16-300	TYPE A	OPTION 1	TYPE 2	B4-07
C61	Lower Ground	Ground Floor	350 x 800mm							BD(-4000)-08(1170)
C61	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	BD(-4000)-08(1170)
C61	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-175	TYPE A	OPTION 2	TYPE 2	BD(-4000)-08(1170)
C61	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-175	TYPE A	OPTION 2	TYPE 2	BD(-4000)-08(1170)
C62	Basement 02	Lower Ground	350 x 800mm	10N20	65 MPa	N16-300	TYPE D	OPTION 2	TYPE 5	B5(250)-BE
C62	Basement 03	Basement 02	350 x 800mm	10N20	65 MPa	N12-225	TYPE D	OPTION 2	TYPE 2	B5(250)-BE
C63	Basement 02	Lower Ground	350 x 800mm	10N20	65 MPa	N12-300	TYPE D	OPTION 2	TYPE 5	Z(-1915)-BE(-4649)
C63	Basement 03	Basement 02	350 x 800mm	10N20	65 MPa	N12-150	TYPE D	OPTION 2	TYPE 2	Z(-1915)-BE(-4649)
C64	Lower Ground	Ground Floor	350 x 800mm							B6(1150)-BE(-5319)
C64	Basement 02	Lower Ground	350 x 800mm	10N32	65 MPa	N16-300	TYPE D	OPTION 2	TYPE 2	B6(1150)-BE(-5319)
C64	Basement 03	Basement 02	350 x 800mm	10N32	65 MPa	N16-300	TYPE D	OPTION 2	TYPE 2	B6(1150)-BE(-5319)
C65	Ground Floor	Level 01	300 x 800mm							B1(-3748)-BC
C65	Lower Ground	Ground Floor	300 x 800mm							B1(-3748)-BC
C65	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 2	B1(-3748)-BC
C65	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 2	B1(-3748)-BC
C65	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N16-300	TYPE A	OPTION 1	TYPE 2	B1(-3748)-BC
C66	Ground Floor	Level 01	300 x 800mm							B1-BC
C66	Lower Ground	Ground Floor	350 x 800mm							B1-BC
C66	Basement 01	Lower Ground	350 x 800mm	10N20	65 MPa	N16-150	TYPE D	OPTION 2	TYPE 2	B1-BC
C66	Basement 02	Basement 01	350 x 800mm	10N20	65 MPa	N16-300	TYPE D	OPTION 2	TYPE 2	B1-BC
C66	Basement 03	Basement 02	350 x 800mm	10N20	65 MPa	N16-300	TYPE D	OPTION 2	TYPE 2	B1-BC
C67	Lower Ground	Ground Floor	350 x 800mm							B3-BD
C67	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B3-BD
C67	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-175	TYPE A	OPTION 2	TYPE 2	B3-BD
C67	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-175	TYPE A	OPTION 2	TYPE 2	B3-BD
C68	Lower Ground	Ground Floor	300 x 800mm							B4-BE(3556)
C68	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B4-BE(3556)
C68	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B4-BE(3556)
C68	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-175	TYPE A	OPTION 2	TYPE 2	B4-BE(3556)
C69	Basement 02	Lower Ground	350 x 800mm	10N20	65 MPa	N12-300	TYPE D	OPTION 2	TYPE 5	B5(250)-BE(-4649)
C69	Basement 03	Basement 02	350 x 800mm	10N20	65 MPa	N12-150	TYPE D	OPTION 2	TYPE 2	B5(250)-BE(-4649)
C70	Ground Floor	Level 01	300 x 800mm							B1(-3748)-BD(1450)
C70	Lower Ground	Ground Floor	300 x 800mm							B1(-3748)-BD(1450)
C70	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B1(-3748)-BD(1450)
C70	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B1(-3748)-BD(1450)
C70	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B1(-3748)-BD(1450)
C71	Ground Floor	Level 01	300 x 800mm							B1-BD(1475)
C71	Lower Ground	Ground Floor	350 x 800mm							B1-BD(1450)
C71	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B1-BD(1450)
C71	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-175	TYPE A	OPTION 2	TYPE 2	B1-BD(1450)
C71	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-175	TYPE A	OPTION 2	TYPE 2	B1-BD(1450)
C72	Lower Ground	Ground Floor	350 x 800mm							B2-BD
C72	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B2-BD
C72	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-175	TYPE A	OPTION 2	TYPE 2	B2-BD
C72	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-175	TYPE A	OPTION 2	TYPE 2	B2-BD
C73	Lower Ground	Ground Floor	300 x 800mm							B3-BD(-3754)
C73	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B3-BD(-3754)
C73	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B3-BD(-3754)
C73	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-175	TYPE A	OPTION 2	TYPE 2	B3-BD(-3754)
C74	Lower Ground	Ground Floor	350 x 800mm							Z(-4410)-BE(-11019)
C74	Basement 02	Lower Ground	350 x 800mm	10N20	65 MPa	N16-300	TYPE D	OPTION 2	TYPE 2	Z(-4410)-BE(-11019)
C74	Basement 03	Basement 02	350 x 800mm	10N20	65 MPa	N12-150	TYPE D	OPTION 2	TYPE 2	Z(-4410)-BE(-11019)

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

NOTES:

1. REFER TO DRAWINGS ST-005-41 FOR COLUMN TRANSITION DETAILS
2. REFER TO DRAWING ST-005-31 FOR COLUMN REINFORCEMENT ARRANGEMENT DETAILS

1 20.08.21 AS FOR CONSTRUCTION
A 19.07.21 ISSUED FOR COORDINATION
Rev. Date Description

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BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
COLUMN SCHEDULE SHEET 3

SCALE AT B1:
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CHECKED BY: PAS

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STRUCTURAL COLUMN SCHEDULE - SHEET 4

Mark	Base Level	Top Level	Type	Vertical Reinforcement	Concrete Strength	Ties	Reinforcement Arrangement	Column Tie Type	Top of Column Transition	Column Location Mark
C75	Ground Floor	Level 01	300 x 800mm							B1(-3749)-BD(-3404)
C75	Lower Ground	Ground Floor	300 x 800mm							B1(-3749)-BD(-3404)
C75	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B1(-3749)-BD(-3404)
C75	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B1(-3749)-BD(-3404)
C75	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B1(-3749)-BD(-3404)
C76	Level 01	Level 02	300 x 800mm							B1-BD(-3404)
C76	Ground Floor	Level 01	300 x 800mm							B1-BD(-3404)
C76	Lower Ground	Ground Floor	300 x 800mm							B1-BD(-3404)
C76	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B1(-400)-BD(-3404)
C76	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 2	B1(-400)-BD(-3404)
C76	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 2	B1(-400)-BD(-3404)
C77	Lower Ground	Ground Floor	300 x 800mm							B2-BD(-3754)
C77	Basement 01	Lower Ground	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B2-BD(-3754)
C77	Basement 02	Basement 01	350 x 500mm	6N20	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	B2-BD(-3754)
C77	Basement 03	Basement 02	350 x 500mm	6N20	65 MPa	N16-300	TYPE A	OPTION 2	TYPE 2	B2-BD(-3754)
C78	Basement 02	Lower Ground	300 x 800mm	10N20	65 MPa	N12-150	TYPE D	OPTION 2	TYPE 2	B5(-401)-BE(-10803)
C78	Basement 03	Basement 02	300 x 800mm	10N20	65 MPa	N12-150	TYPE D	OPTION 2	TYPE 2	B5(-401)-BE(-10803)
C79	Basement 01	Lower Ground	250 x 1000mm	10N20	80 MPa	N16-125	TYPE D	OPTION 1	TYPE 5	C(-665)-Y
C80	Lower Ground	Ground Floor	200 x 1500mm							BA(1023)-07
C81	Lower Ground	Ground Floor	200 x 1500mm							B6(-871)-08
C82	Level 22	Level 23	350 x 900mm							BB(1917)-09
C82	Level 21	Level 22	350 x 900mm							BB(1917)-09
C82	Level 20	Level 21	350 x 900mm							BB(1917)-09
C82	Level 19	Level 20	350 x 900mm							BB(1917)-09
C82	Level 18	Level 19	350 x 900mm							BB(1917)-09
C82	Level 17	Level 18	350 x 900mm							BB(1917)-09
C82	Level 16	Level 17	350 x 900mm							BB(1917)-09
C82	Level 15	Level 16	350 x 900mm							BB(1917)-09
C82	Level 14	Level 15	350 x 900mm							BB(1917)-09
C82	Level 13	Level 14	350 x 900mm							BB(1917)-09
C82	Level 12	Level 13	350 x 900mm							BB(1917)-09
C82	Level 11	Level 12	350 x 900mm							BB(1917)-09
C82	Level 10	Level 11	350 x 900mm							BB(1917)-09
C82	Level 09	Level 10	350 x 900mm							BB(1917)-09
C82	Level 08	Level 09	350 x 900mm							BB(1917)-09
C82	Level 07	Level 08	350 x 900mm							BB(1917)-09
C82	Level 06	Level 07	350 x 900mm							BB(1917)-09
C82	Level 05	Level 06	350 x 900mm							BB(1917)-09
C82	Level 04	Level 05	350 x 900mm							BB(1917)-09
C82	Level 03	Level 04	350 x 900mm							BB(1917)-09
C82	Level 02	Level 03	350 x 900mm							BB(1917)-09
C82	Level 01	Level 02	350 x 900mm							BB(1917)-09
C82	Ground Floor	Level 01	850mm							BB(2023)-09
C82	Lower Ground	Ground Floor	850mm							BB(2023)-09
C83	Level 22	Level 23	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 21	Level 22	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 20	Level 21	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 19	Level 20	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 18	Level 19	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 17	Level 18	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 16	Level 17	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 15	Level 16	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 14	Level 15	LBP - 650 x 800mm							BC(3586)-11(-2686)
C83	Level 13	Level 14	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 12	Level 13	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 11	Level 12	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 10	Level 11	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 09	Level 10	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 08	Level 09	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 07	Level 08	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 06	Level 07	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 05	Level 06	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 04	Level 05	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 03	Level 04	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 02	Level 03	LBP - 650 x 800mm							BC(3589)-11(-2689)
C83	Level 01	Level 02	LBP - 800 x 1100mm							BC(3586)-11(-2684)
C83	Lower Ground	Level 01	850mm							BC(3621)-11(-2818)
C84	Level 22	Level 23	400 x 800mm							B7(558)-10(3140)
C84	Level 21	Level 22	400 x 800mm							B7(558)-10(3140)
C84	Level 20	Level 21	400 x 800mm							B7(558)-10(3140)
C84	Level 19	Level 20	400 x 800mm							B7(558)-10(3140)
C84	Level 18	Level 19	400 x 800mm							B7(558)-10(3140)
C84	Level 17	Level 18	400 x 800mm							B7(558)-10(3140)
C84	Level 16	Level 17	400 x 800mm							B7(558)-10(3140)
C84	Level 15	Level 16	400 x 800mm							B7(558)-10(3140)
C84	Level 14	Level 15	400 x 800mm							B7(558)-10(3140)
C84	Level 13	Level 14	400 x 800mm							B7(558)-10(3140)
C84	Level 12	Level 13	400 x 800mm							B7(558)-10(3140)
C84	Level 11	Level 12	400 x 800mm							B7(558)-10(3140)
C84	Level 10	Level 11	400 x 800mm							B7(558)-10(3140)
C84	Level 09	Level 10	400 x 800mm							B7(558)-10(3140)
C84	Level 08	Level 09	400 x 800mm							B7(558)-10(3140)
C84	Level 07	Level 08	400 x 800mm							B7(558)-10(3140)
C84	Level 06	Level 07	400 x 800mm							B7(558)-10(3140)
C84	Level 05	Level 06	400 x 800mm							B7(558)-10(3140)
C84	Level 04	Level 05	400 x 800mm							B7(558)-10(3140)
C84	Level 03	Level 04	400 x 800mm							B7(558)-10(3140)
C84	Level 02	Level 03	400 x 800mm							B7(558)-10(3140)
C84	Level 01	Level 02	400 x 800mm							B7(558)-10(3140)
C84	Lower Ground	Level 01	750mm							B7(558)-10(3140)
C85	Lower Ground	Ground Floor	300 x 800mm							B(315)-B8(485)
C86	Lower Ground	Ground Floor	400 x 1000mm							C(-883)-BD(-2615)
C87	Lower Ground	Ground Floor	400 x 1000mm							B7(-1170)-X(-1184)
C88	Lower Ground	Ground Floor	400 x 1000mm							B5(-596)-09
C89	Level 22	Level 23	500 x 500							B3(834)-BA(-1651)
C89	Level 21	Level 22	500 x 500							B3(834)-BA(-1651)
C89	Level 20	Level 21	500 x 500							B3(834)-BA(-1651)
C89	Level 19	Level 20	500 x 500							B3(834)-BA(-1651)
C89	Level 18	Level 19	500 x 500							B3(834)-BA(-1651)
C89	Level 17	Level 18	500 x 500							B3(834)-BA(-1651)
C89	Level 16	Level 17	500 x 500							B3(834)-BA(-1651)
C89	Level 15	Level 16	500 x 500							B3(834)-BA(-1651)
C89	Level 14	Level 15	500 x 500							B3(834)-BA(-1651)
C89	Level 13	Level 14	500 x 500							B3(834)-BA(-1651)
C89	Level 12	Level 13	500 x 500							B3(834)-BA(-1651)
C89	Level 11	Level 12	500 x 500							B3(834)-BA(-1651)
C89	Level 10	Level 11	500 x 500							B3(834)-BA(-1651)
C89	Level 09	Level 10	500 x 500							B3(834)-BA(-1651)
C89	Level 08	Level 09	500 x 500							B3(834)-BA(-1651)
C89	Level 07	Level 08	500 x 500							B3(834)-BA(-1651)
C89	Level 06	Level 07	500 x 500							B3(834)-BA(-1651)
C89	Level 05	Level 06	500 x 500							B3(834)-BA(-1651)
C89	Level 04	Level 05	500 x 500							B3(834)-BA(-1651)
C89	Level 03	Level 04	500 x 500							B3(834)-BA(-1651)
C89	Level 02	Level 03	500 x 500							B3(834)-BA(-1651)
C89	Level 01	Level 02	500 x 500							B3(834)-BA(-1651)
C89	Ground Floor	Level 01	500 x 500							B3(834)-BA(-1651)

STRUCTURAL COLUMN SCHEDULE - SHEET 4

Mark	Base Level	Top Level	Type	Vertical Reinforcement	Concrete Strength	Ties	Reinforcement Arrangement	Column Tie Type	Top of Column Transition	Column Location Mark
C90	Level 22	Level 23	400 x 800mm							BC(-535)-08(299)
C90	Level 21	Level 22	400 x 800mm							BC(-535)-08(299)
C90	Level 20	Level 21	400 x 800mm							BC(-535)-08(299)
C90	Level 19	Level 20	400 x 800mm							BC(-535)-08(299)
C90	Level 18	Level 19	400 x 800mm							BC(-535)-08(299)
C90	Level 17	Level 18	400 x 800mm							BC(-535)-08(299)
C90	Level 16	Level 17	400 x 800mm							BC(-535)-08(299)
C90	Level 15	Level 16	400 x 800mm							BC(-535)-08(299)
C90	Level 14	Level 15	400 x 800mm							BC(-535)-08(299)
C90	Level 13	Level 14	400 x 800mm							BC(-535)-08(299)
C90	Level 12	Level 13	400 x 800mm							BC(-535)-08(299)
C90	Level 11	Level 12	400 x 800mm							BC(-535)-08(299)
C90	Level 10	Level 11	400 x 800mm							BC(-535)-08(299)
C90	Level 09	Level 10	400 x 800mm							BC(-535)-08(299)
C90	Level 08	Level 09	400 x 800mm							BC(-535)-08(299)
C90	Level 07	Level 08	400 x 800mm							BC(-535)-08(299)
C90	Level 06	Level 07	400 x 800mm							BC(-535)-08(299)
C90	Level 05	Level 06	400 x 800mm							BC(-535)-08(299)
C90	Level 04	Level 05	400 x 800mm							BC(-535)-08(299)
C90	Level 03	Level 04	400 x 800mm							BC(-535)-08(299)
C90	Level 02	Level 03	400 x 800mm							BC(-535)-08(299)
C90	Level 01	Level 02	400 x 800mm							BC(-535)-08(299)
C90	Ground Floor	Level 01	400 x 800mm							BC(-535)-08(299)
C91	Ground Floor	Level 01	500 x 900mm							BC(1143)-07
C92	Level 22	Level 23	400 x 800mm							D-BD
C92	Level 21	Level 22	400 x 800mm							D-BD
C92	Level 20	Level 21	400 x 800mm							D-BD
C92	Level 19	Level 20	400 x 800mm							D-BD
C92	Level 18	Level 19	400 x 800mm							D-BD
C92	Level 17	Level 18	400 x 800mm							D-BD
C92	Level 16	Level 17	400 x 800mm							D-BD
C92	Level 15	Level 16	400 x 800mm							D-BD
C92	Level 14	Level 15	400 x 800mm							D-BD
C92	Level 13	Level 14	400 x 800mm							D-BD
C92	Level 12	Level 13	400 x 800mm							D-BD
C92	Level 11	Level 12	400 x 800mm							D-BD
C92	Level 10	Level 11	400 x 800mm							D-BD
C92	Level 09	Level 10	400 x 800mm							D-BD
C92	Level 08	Level 09	400 x 800mm							D-BD
C92	Level 07	Level 08	400 x 800mm							D-BD
C92	Level 06	Level 07	400 x 800mm							D-BD
C92	Level 05	Level 06	400 x 800mm							D-BD
C92	Level 04	Level 05	400 x 800mm							D-BD
C92	Level 03	Level 04	400 x 800mm							D-BD
C92	Level 02	Level 03	400 x 800mm							D-BD
C92	Level 01	Level 02	400 x 800mm							D-BD
C92	Ground Floor	Level 01	850mm							D-BD
C93	Level 21	Level 22	400 x 800mm							P(2680)-01(-1490)
C93	Level 20	Level 21	400 x 800mm							P(2680)-01(-1490)
C93	Level 19	Level 20	400 x 800mm							P(2680)-01(-1490)
C93	Level 18	Level 19	400 x 800mm							P(2680)-01(-1490)
C93	Level 17	Level 18	400 x 800mm							P(2680)-01(-1490)
C93	Level 16	Level 17	400 x 800mm							P(2680)-01(-1490)
C93	Level 15	Level 16	400 x 800mm							P(2680)-01(-1490)
C93	Level 14	Level 15	400 x 800mm							P(2680)-01(-1490)
C93	Level 13	Level 14	400 x 800mm							P(2680)-01(-1490)
C93	Level 12	Level 13	400 x 800mm							P(2680)-01(-1490)
C93	Level 11	Level 12	400 x 800mm							P(2680)-01(-1490)
C93	Level 10	Level 11	400 x 800mm							P(2680)-01(-1490)
C93	Level 09	Level 10	400 x 800mm							P(2680)-01(-1490)
C93	Level 08	Level 09	400 x 800mm							P(2680)-01(-1490)
C93	Level 07	Level 08	400 x 800mm							P(2680)-01(-1490)
C93	Level 06	Level 07	400 x 800mm							P(2680)-01(-1490)
C93	Level 05	Level 06	400 x 800mm							P(2680)-01(-1490)
C93	Level 04	Level 05	400 x 800mm							P(2680)-01(-1490)
C93	Level 03	Level 04	400 x 800mm							P(2680)-01(-1490)
C93	Level 01	Level 03	850mm							P(2680)-01(-1490)
C94	Level 22	Level 23	400 x 800mm							C(-806)-BC(649)
C94	Level 21	Level 22	400 x 800mm							C(-806)-BC(649)
C94	Level 20	Level 21	400 x 800mm							C(-806)-BC(649)
C94	Level 19	Level 20	400 x 800mm							C(-806)-BC(649)
C94	Level 18	Level 19	400 x 800mm							C(-806)-BC(649)
C94	Level 17	Level 18	400 x 800mm							C(-806)-BC(649)
C94	Level 16	Level 17	400 x 800mm							C(-806)-BC(649)
C94	Level 15	Level 16	400 x 800mm							C(-806)-BC(649)
C94	Level 14	Level 15	400 x 800mm							C(-806)-BC(649)
C94	Level 13	Level 14	400 x 800mm							C(-806)-BC(649)
C94	Level 12	Level 13	400 x 800mm							C(-806)-BC(649)
C94	Level 11	Level 12	400 x 800mm							C(-806)-BC(649)
C94	Level 10	Level 11	400 x 800mm							C(-806)-BC(649)
C94	Level 09	Level 10	400 x 800mm							C(-806)-BC(649)
C94	Level 08	Level 09	400 x 800mm							C(-806)-BC(649)
C94	Level 07	Level 08	400 x 800mm							C(-806)-BC(649)
C94	Level 06	Level 07	350 x 900mm							C(-786)-BC(658)
C94	Level 05	Level 06	350 x 900mm							C(-786)-BC(658)
C94	Level 04	Level 05	350 x 900mm							C(-786)-BC(658)
C94	Level 03	Level 04	350 x 900mm							C(-786)-BC(658)
C94	Level 02	Level 03	350 x 900mm							C(-761)-BC(669)
C94	Level 01	Level 02	350 x 900mm							C(-761)-BC(669)
C95	Level 01	Level 03	850mm							B2-Q
C96	Level 23	Level 24	300 x 1050mm							D(547)-Q
C96	Level 22	Level 23	300 x 1050mm							D(547)-Q
C96	Level 21	Level 22	300 x 1050mm							D(547)-Q
C96	Level 20	Level 21	300 x 1050mm							D(547)-Q
C96	Level 19	Level 20	300 x 1050mm							D(547)-Q
C96	Level 18	Level 19	300 x 1050mm							D(547)-Q
C96	Level 17	Level 18	300 x 1050mm							D(547)-Q
C96	Level 16	Level 17	300 x 1050mm							D(547)-Q
C96	Level 15	Level 16	300 x 1050mm							D(547)-Q
C96	Level 14	Level 15	300 x 1050mm							D(547)-Q
C96	Level 13	Level 14	300 x 1050mm							D(547)-Q
C96	Level 12	Level 13	300 x 1050mm							D(547)-Q
C96	Level 11	Level 12	300 x 1050mm							D(547)-Q
C96	Level 10	Level 11	300 x 1050mm							D(547)-Q
C96	Level 09	Level 10	300 x 1050mm							D(547)-Q
C96	Level 08	Level 09	300 x 1050mm							D(547)-Q
C96	Level 07	Level 08	300 x 1050mm							D(547)-Q
C96	Level 06	Level 07	300 x 1050mm							D(547)-Q
C96	Level 05	Level 06	300 x 1050mm							D(547)-Q
C96	Level 04	Level 05	300 x 1050mm							D(547)-Q
C96	Level 03	Level 04	300 x 1050mm							D(547)-Q
C96	Level 01	Level 03	850mm							D(549)-Q
C97	Level 22	Level 23	LBP - 650 x 800mm							A(250)-06
C97	Level 21	Level 22	LBP - 650 x 800mm							A(250)-06
C97	Level 20	Level 21	LBP - 650 x 800mm							A(250)-06
C97	Level 19	Level 20	LBP - 650 x 800mm							A(250)-06
C97	Level 18	Level 19	LBP - 650 x 800mm							A(250)-06
C97	Level 17	Level 18	LBP - 650 x 800mm							A(250)-06
C97	Level 16	Level 17	LBP - 650 x 800mm							A(250)-06
C97	Level 15	Level 16	LBP - 650 x 800mm							A(250)-06
C97	Level 14	Level 15	LBP - 650 x 800mm							A(250)-06
C98	Level 20	Level 20	400 x 800mm							B4(723)-05
C98	Level 20	Level 20	400 x 800mm							B4(723)-05
C98	Level 20	Level 20	250 x 1000mm							B4(723)-05
C98	Level 19	Level 20	400 x 800mm							B4(723)-05
C98	Level 18	Level 19	400 x 800mm							B4(723)-05
C98	Level 17	Level 18	400 x 800mm							B4(723)-05
C98	Level 16	Level 17	400 x 800mm							B4(723)-05

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

NOTES:

1. REFER TO DRAWINGS ST-005-41 FOR COLUMN TRANSITION DETAILS
2. REFER TO DRAWING ST-005-31 FOR COLUMN REINFORCEMENT ARRANGEMENT DETAILS

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION
A	19.07.21	ISSUED FOR COORDINATION

STRUCTURAL / CIVIL CONSULTANT

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Level 4, 2 Glen Street, Milsons Point NSW 2061
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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

COLUMN SCHEDULE SHEET 4

SCALE AT B1:
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-005-04

REV.: 1

20/08/2021 4:44:45 PM

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: COLUMN SCHEDULE SHEET 5		Drawing No: A1-ST-005-05	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
A	19.07.21	ISSUED FOR COORDINATION		
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

STRUCTURAL COLUMN SCHEDULE - SHEET 5

Mark	Base Level	Top Level	Type	Vertical Reinforcement	Concrete Strength	Ties	Reinforcement Arrangement	Column Tie Type	Top of Column Transition	Column Location Mark
C99	Level 22	Level 23	250 x 1000mm							BA(2969)-06
C99	Level 21	Level 22	400 x 800mm							BA(2969)-06
C99	Level 20	Level 21	400 x 800mm							BA(2969)-06
C99	Level 19	Level 20	400 x 800mm							BA(2969)-06
C99	Level 18	Level 19	400 x 800mm							BA(2969)-06
C99	Level 17	Level 18	400 x 800mm							BA(2969)-06
C99	Level 16	Level 17	400 x 800mm							BA(2969)-06
C101	Level 22	Level 23	400 x 800mm							B6(-1968)-08
C101	Level 21	Level 22	400 x 800mm							B6(-1968)-08
C101	Level 20	Level 21	400 x 800mm							B6(-1968)-08
C101	Level 19	Level 20	400 x 800mm							B6(-1968)-08
C101	Level 18	Level 19	400 x 800mm							B6(-1968)-08
C101	Level 17	Level 18	400 x 800mm							B6(-1968)-08
C101	Level 16	Level 17	400 x 800mm							B6(-1968)-08
C102	Level 23	Level 24	300 x 900mm							03-04
C102	Level 22	Level 23	300 x 900mm							03-04
C103	Level 22	Level 23	400mm							C-P(500)
C104	Level 22	Level 23	400mm							P(1453)-01(-3475)
C105	Level 22	Level 23	400mm							Q(-2126)-BA(2103)
C107	Level 23	Level 24	400mm							BA(1046)-07
C108	Level 23	Level 24	400mm							B5(2622)-07(3368)
C109	Level 23	Level 24	400mm							B-B5(-609)
C110	Level 23	Level 24	400mm							B2(814)-BA(-970)
C111	Level 23	Level 24	400mm							BA(-3395)-04(1857)
C112	Level 23	Level 24	400mm							B4(-660)-06
C113	Basement 01	Lower Ground	350 x 800mm	10N20	80 MPa	N12-150	TYPE D	OPTION 1	TYPE 5	BB(677)-05
C113	Basement 02	Basement 01	350 x 800mm	10N20	80 MPa	N12-150	TYPE D	OPTION 1	TYPE 2	BB(677)-05
C113	Basement 03	Basement 02	350 x 800mm	10N20	80 MPa	N12-150	TYPE D	OPTION 1	TYPE 2	BB(677)-05
C114	Basement 01	Lower Ground	350 x 800mm	10N20	80 MPa	N12-150	TYPE D	OPTION 1	TYPE 5	BB(-1113)-05(3213)
C114	Basement 02	Basement 01	350 x 800mm	10N20	80 MPa	N12-150	TYPE D	OPTION 1	TYPE 2	BB(-1113)-05(3213)
C114	Basement 03	Basement 02	350 x 800mm	10N20	80 MPa	N12-150	TYPE D	OPTION 1	TYPE 2	BB(-1113)-05(3213)
C115	Lower Ground	Ground Floor	350 x 800mm							BE(-10140)-09(2986)
C115	Basement 02	Lower Ground	350 x 800mm	6N28	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	BE(-10140)-09(2986)
C115	Basement 03	Basement 02	350 x 800mm	6N28	65 MPa	N12-300	TYPE A	OPTION 2	TYPE 2	BE(-10140)-09(2986)
C116	Lower Ground	Herring Rd B1	350 x 500mm							B7(-519)-D(-799)

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

NOTES:

1. REFER TO DRAWINGS ST-005-41 FOR COLUMN TRANSITION DETAILS
2. REFER TO DRAWING ST-005-31 FOR COLUMN REINFORCEMENT ARRANGEMENT DETAILS

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION
A	19.07.21	ISSUED FOR COORDINATION

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Telephone (02) 8904 1444
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BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
COLUMN SCHEDULE SHEET 5

SCALE AT B1:
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER
A1-ST-005-05

REV.
1

20/08/2021 4:44:53 PM

B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

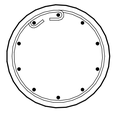
Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: COLUMN DETAILS SHEET 1		Drawing No: A1-ST-005-31	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
A	19.07.21	ISSUED FOR COORDINATION		
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



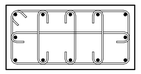
REINFORCEMENT ARRANGEMENT TYPE A

6 BARS



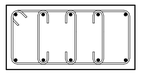
REINFORCEMENT ARRANGEMENT TYPE B

10 BARS



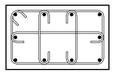
REINFORCEMENT ARRANGEMENT TYPE C

12 BARS



REINFORCEMENT ARRANGEMENT TYPE D

10 BARS



REINFORCEMENT ARRANGEMENT TYPE E

10 BARS



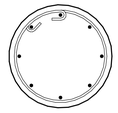
REINFORCEMENT ARRANGEMENT TYPE F

14 BARS



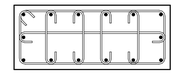
REINFORCEMENT ARRANGEMENT TYPE G

12 BARS



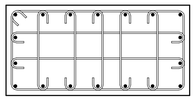
REINFORCEMENT ARRANGEMENT TYPE H

8 BARS



REINFORCEMENT ARRANGEMENT TYPE J

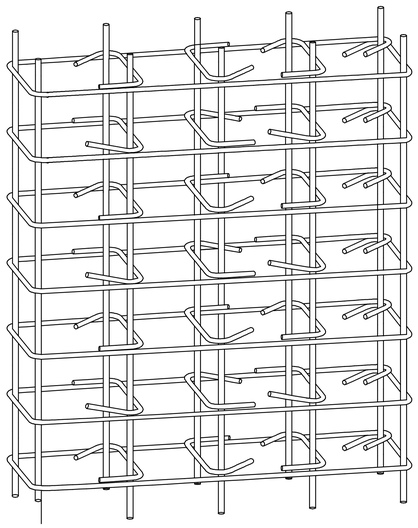
14 BARS



REINFORCEMENT ARRANGEMENT TYPE K

18 BARS

COLUMN REINFORCEMENT LAP LENGTH SCHEDULE									
COVER (mm)	BAR SIZE	f'c = 40 MPa		f'c = 50 MPa		f'c = 65 MPa		f'c = 80 MPa	
		1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt
30	N10	300	400	300	400	300	400	300	400
	N12	350	500	350	500	350	500	350	500
	N16	500	650	500	650	500	650	500	650
	N20	700	900	650	800	600	800	600	800
	N24	900	1150	800	1050	700	950	700	950
	N28	1100	1400	1000	1250	850	1100	850	1100
	N32	1300	1650	1150	1500	1000	1300	1000	1300
	N36	1500	1950	1350	1750	1200	1550	1200	1550
	N40	1750	2250	1550	2000	1350	1800	1350	1800
40	N10	300	400	300	400	300	400	300	400
	N12	350	500	350	500	350	500	350	500
	N16	500	650	500	650	500	650	500	650
	N20	600	800	600	800	600	800	600	800
	N24	800	1050	750	950	700	950	700	950
	N28	1000	1300	900	1200	850	1100	850	1100
	N32	1250	1600	1100	1450	1000	1250	1000	1250
	N36	1500	1900	1350	1700	1150	1500	1150	1500
	N40	1750	2250	1550	2000	1350	1800	1350	1800



SECONDARY COLUMN TIES TO ALTERNATE HORIZONTALLY AND VERTICALLY

COLUMN TIE ARRANGEMENT

SECONDARY TIE TYPES	
OPTION 1	OPTION 2
	 (COLUMN TIE ARRANGEMENT MUST ALTERNATE HORIZONTALLY AND VERTICALLY SEE 3D IMAGE)
COLUMN TIE ARRANGEMENT ONLY APPLIES TO REINFORCEMENT ARRANGEMENT TYPE A, C, D AND E. REFER TO COLUMN SCHEDULE FOR LOCATIONS	

REFER TO COLUMN SCHEDULE FOR COLUMN SIZE, REINFORCEMENT AND SECONDARY TIE OPTION SPECIFICATION

1 20.08.21 AS FOR CONSTRUCTION
A 19.07.21 ISSUED FOR COORDINATION
Rev. Date Description

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http://www.enstruct.com.au

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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

COLUMN DETAILS SHEET 1

SCALE AT B1: 1 : 20
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-005-31

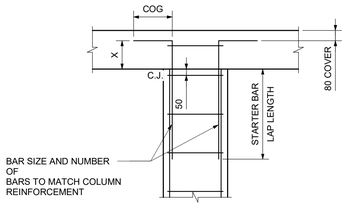
REV. 1

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FOR GENERAL NOTES REFER TO DRAWING ST-001-01

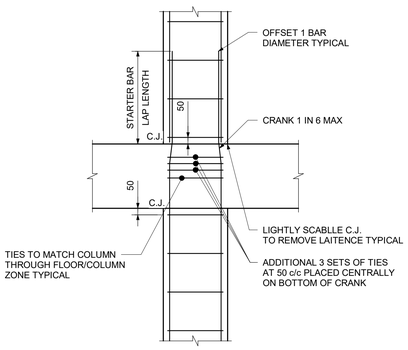
Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: COLUMN TRANSITION DETAILS		Drawing No: A1-ST-005-41	

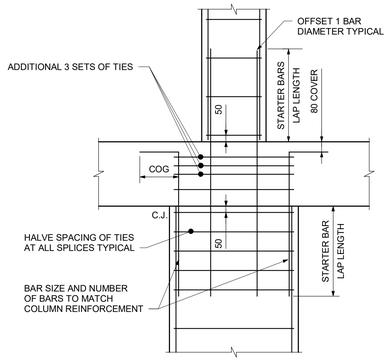
Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
A	19.07.21	ISSUED FOR COORDINATION		
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

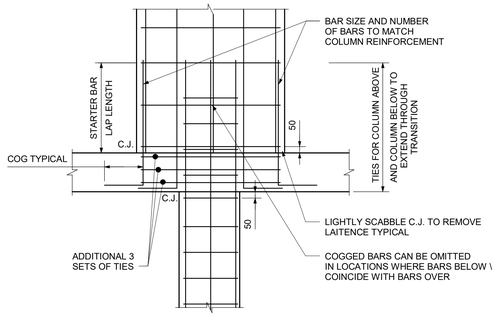


NOTE:
COGS FOR TERMINATING COLUMN REINFORCEMENT CAN BE OMITTED WHERE X >=Lsyt

SPLICE DETAIL TYPE 5
TYPICAL TERMINATING COLUMN DETAIL

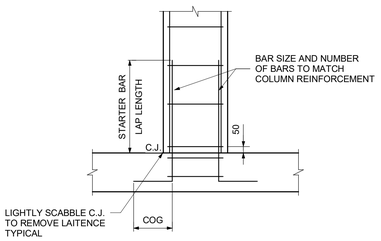




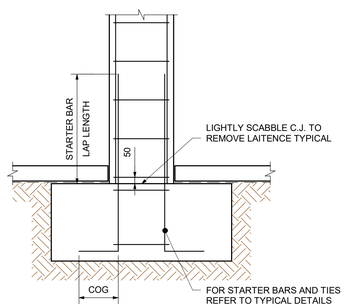


TYPICAL COG LENGTH = 400mm

SPLICE DETAIL TYPE 2
TYPICAL CONTINUOUS COLUMN DETAIL

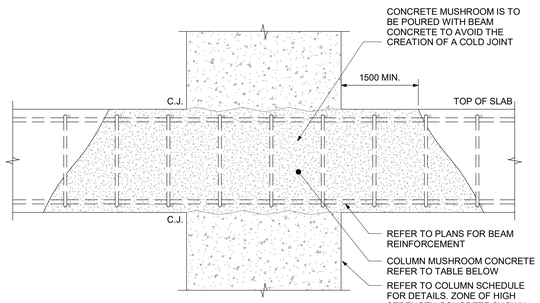


SPLICE DETAIL TYPE 1
TYPICAL COLUMNS STARTER DETAIL SLAB/BEAM



TYPICAL STARTER DETAIL - PADS
REFER TO TYPICAL DETAIL ON DRAWING ST-003-31

SPLICE DETAIL TYPE 3



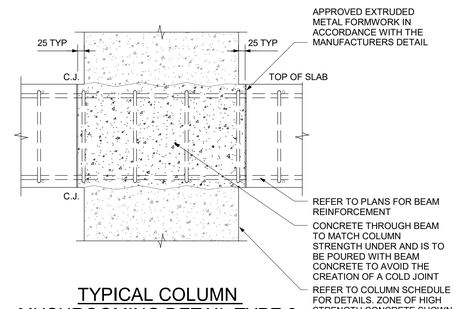
TYPICAL COLUMN MUSHROOMING DETAIL TYPE 1

MAX. COLUMN ABOVE/BELOW f'c (MPa)	MIN. COLUMN MUSHROOM CONCRETE 90 DAY STRENGTH (MPa)
80	60
65	50*

MUSHROOM NOT REQUIRED FOR f'c = 65 MPa COLUMNS IF 40 MPa SLAB/BEAM CONCRETE CAN ACHIEVE 90 DAY COMPRESSIVE STRENGTH OF AT LEAST f'c =50 MPa

NOTES:
- JOINT TO BE REVIEWED AND APPROVED BY THE FLOOR PLATE POST TENSIONING CONTRACTOR.

SPLICE DETAIL TYPE 4
LONG FACE OF COLUMN ELEVATED



TYPICAL COLUMN MUSHROOMING DETAIL TYPE 2

NOTES:
1. FOR PLANTROOM AND HIGH CORROSION RISK LOCATIONS, A PROTECTIVE COATING IS TO BE APPLIED TO EXPANDED METAL FORMWORK.
2. JOINT TO BE REVIEWED AND APPROVED BY THE FLOOR PLATE POST TENSIONING CONTRACTOR.
3. DETAIL NOT TO BE USED ON FLAT SLABS.

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Rev.	Date	Description
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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

COLUMN TRANSITION DETAILS

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-005-41
REV.: 1

B1

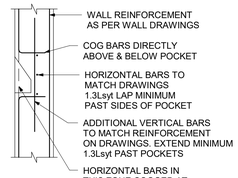
FOR GENERAL NOTES REFER TO DRAWING ST-001-01

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: TYPICAL R.C. WALL DETAILS SHEET 1		Drawing No: A1-ST-005-51	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

30mm COVER TO WALL REINFORCEMENT LAP SCHEDULE												
	f'c=32MPa		f'c=40MPa		f'c=50MPa		f'c=65MPa		f'c=80MPa		f'c=100MPa	
SIZE	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt
N10	300	400	300	400	300	400	300	400	300	400	300	400
N12	350	500	350	500	350	500	350	500	350	500	350	500
N16	550	700	500	650	500	650	500	650	500	650	500	650
N20	750	950	700	850	600	800	600	800	600	800	600	800
N24	950	1250	850	1100	800	1000	700	950	700	950	700	950
N28	1200	1550	1100	1400	950	1250	850	1100	850	1100	850	1100
N32	1450	1850	1300	1650	1150	1500	1000	1300	1000	1300	1000	1300
N36	1700	2200	1500	1950	1350	1750	1200	1550	1200	1550	1200	1550
N40	1950	2500	1750	2250	1550	2000	1350	1800	1350	1800	1350	1800

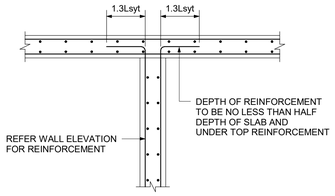
* USE 1.3Lsyt FOR ALL HORIZONTAL REINFORCEMENT WHEN MORE THAN 300mm OF CONCRETE IS CAST BELOW THE BAR



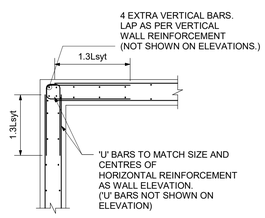
INDICATIVE SECTION AT JUMPFORM POCKET >150 THICK WALL

PULL OUT BAR SCHEDULE			
SLAB DEPTH (mm)	PULL OUT TYPE	PULL OUT DIMENSIONS	
		WIDTH	DEPTH
130			
130	1	110	35
150	1	125	35
200	1	175	40
250	1	235	40
300	2	2x110	35
325	2	2x110	35
350	1	330	40
400	2	2x110	35
500	2	2x175	40
540	2	2x175	40
700	2	2x175	40

NOTES :
1. REFER GENERAL ARRANGEMENT DRAWINGS FOR SLAB THICKNESSES.
2. REFER REINFORCEMENT PLANS FOR BAR LAYING SEQUENCE AND COVER.
3. REFER PULL-OUT BAR PLANS ON DRAWING A1-ST-012-01 FOR PULL-OUT BAR LOCATION AND EXTENT AS WELL AS PULL-OUT BAR SIZE AND SPACING.

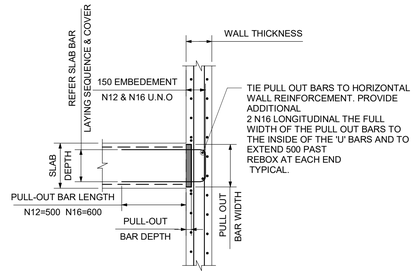


TYPICAL TOP OF WALL REINFORCEMENT (DOUBLE LAYER REINFORCEMENT)

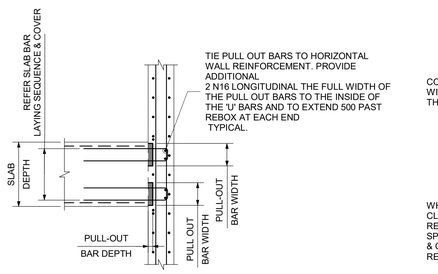


TYPICAL CORNER DETAIL (DOUBLE LAYER REINFORCEMENT)

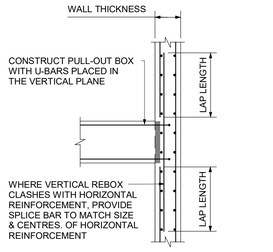
135° HOOK NOT REQUIRED TO HORIZONTAL REINFORCEMENT AT CONTINUOUS CORNER



PULL-OUT BAR TYPE 1 DETAIL

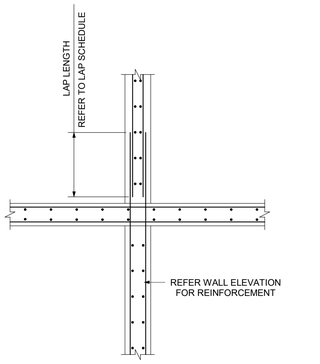


PULL-OUT BAR TYPE 2 DETAIL

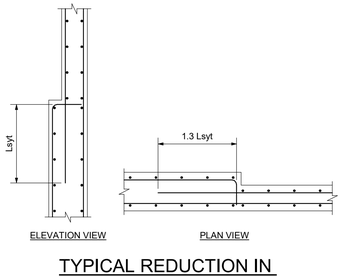


PLAN VIEW

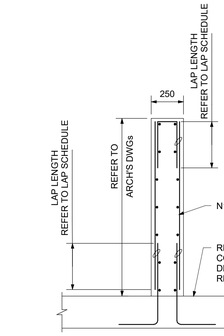
VERTICAL PULL-OUT BAR DETAIL



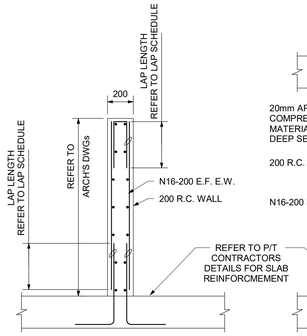
TYPICAL WALL REINFORCEMENT SPLICE DETAIL (DOUBLE LAYER REINFORCEMENT)



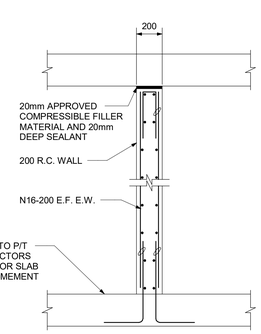
TYPICAL REDUCTION IN WALL THICKNESS DETAILS



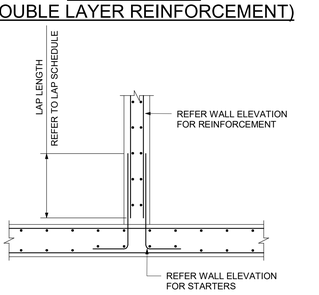
TYPICAL 250 R.C. UPSTAND DETAIL



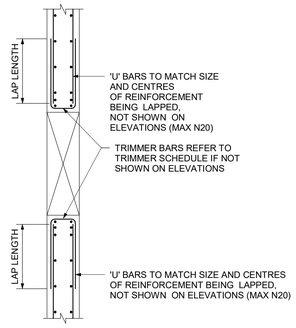
TYPICAL 'TW1' NON-LOADBEARING R.C. WALL REINFORCEMENT DETAIL



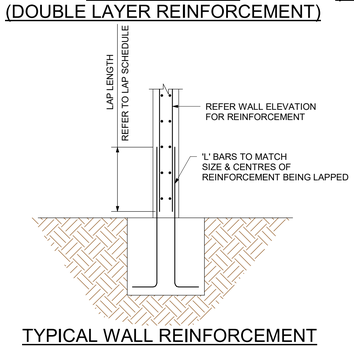
TYPICAL 'TW2' NON-LOADBEARING R.C. WALL REINFORCEMENT DETAIL



TYPICAL WALL REINFORCEMENT STARTER DETAIL (DOUBLE LAYER REINFORCEMENT)



PENETRATION SECTION DETAIL (DOUBLE LAYER REINFORCEMENT)



TYPICAL WALL REINFORCEMENT STARTER DETAIL AT GROUND (DOUBLE LAYER REINFORCEMENT)

20/08/2021 4:45:17 PM

1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

STRUCTURAL / CIVIL CONSULTANT

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enstruct group pty ltd
Level 4, 2 Glen Street, Milsons Point NSW 2061
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CLIENT

FRASERS PROPERTY

BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
TYPICAL R.C. WALL DETAILS SHEET 1

SCALE AT B1: 1 : 20
DRAWN BY: WAS
CHECKED BY: PAS

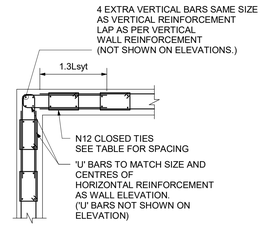
DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-005-51
REV. 1

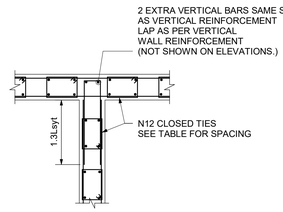
Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: TYPICAL R.C. WALL DETAILS SHEET 2		Drawing No: A1-ST-005-52	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

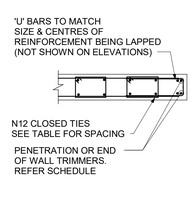
FOR GENERAL NOTES REFER TO DRAWING ST-001-01



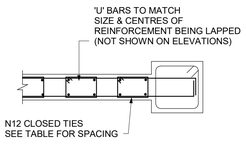
TYPICAL CORNER DETAIL



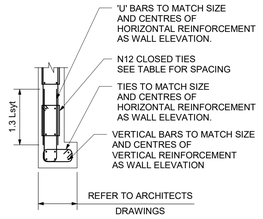
TYPICAL 'T' INTERSECTION DETAIL



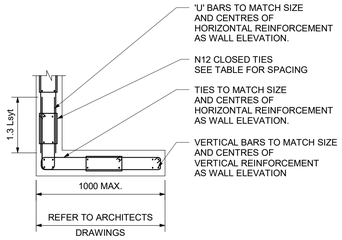
END OF WALL, EDGE OF PENETRATION OR TOP OF WALL DETAIL



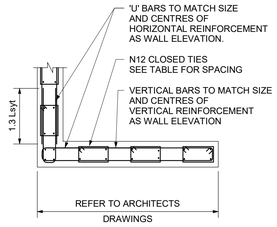
TYPICAL WALL TO COLUMN



RETURN WHERE 1.3Lsyt LAP CANNOT BE ACHIEVED



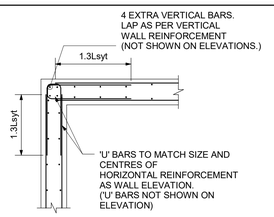
RETURN WHERE EXTENT IS LESS THEN 1000mm MAX. CANNOT BE ACHIEVED



RETURN WHERE 1.3Lsyt LAP CAN BE ACHIEVED

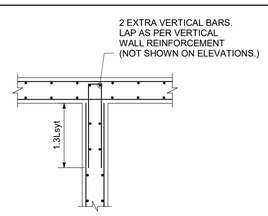
TYPICAL WALL DETAILS WHERE TYPE 2 CLOSED TIES ARE REQUIRED REFER TO ELEVATIONS FOR HATCHED ZONES

SPACING OF CLOSED TIES	
HATCH	SPACING
TYPE 2A	N10-160
TYPE 2B	-
TYPE 2C	-

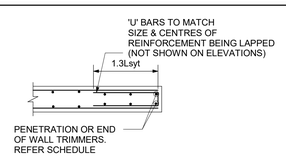


TYPICAL CORNER DETAIL (DOUBLE LAYER REINFORCEMENT)

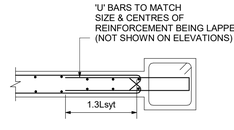
135º HOOK NOT REQUIRED TO HORIZONTAL REINFORCEMENT AT CONTINUOUS CORNER



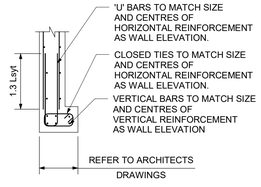
TYPICAL 'T' INTERSECTION DETAIL (DOUBLE LAYER REINFORCEMENT)



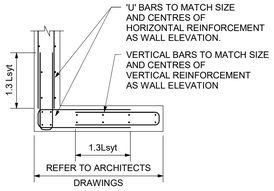
END OF WALL, EDGE OF PENETRATION OR TOP OF WALL DETAIL



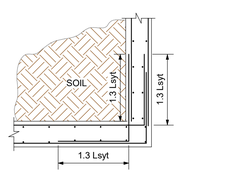
TYPICAL WALL TO COLUMN (DOUBLE LAYER REINFORCEMENT)



RETURN WHERE 1.3Lsyt LAP CANNOT BE ACHIEVED

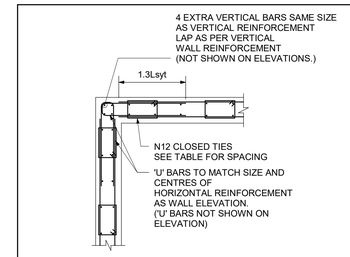


RETURN WHERE 1.3Lsyt LAP CAN BE ACHIEVED

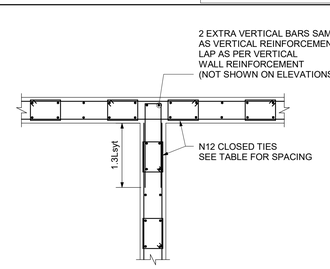


TYPICAL PLANTER WALL CORNER DETAIL - PLAN VIEW

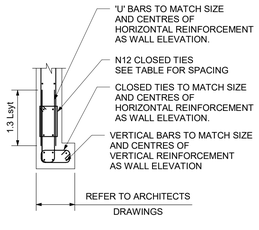
TYPICAL WALL DETAILS WHERE CLOSED TIES ARE NOT REQUIRED



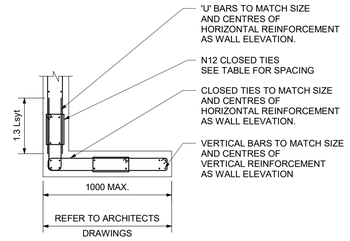
TYPICAL CORNER DETAIL



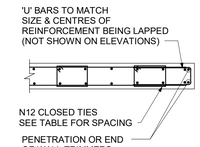
TYPICAL 'T' INTERSECTION DETAIL



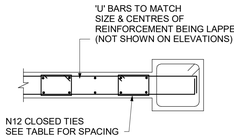
RETURN WHERE 1.3Lsyt LAP CANNOT BE ACHIEVED



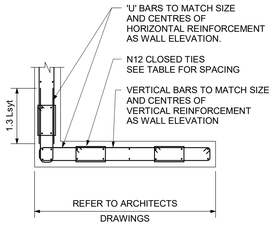
RETURN WHERE EXTENT IS LESS THEN 1000mm MAX. CANNOT BE ACHIEVED



END OF WALL, EDGE OF PENETRATION OR TOP OF WALL DETAIL

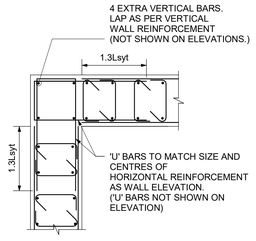


TYPICAL WALL TO COLUMN

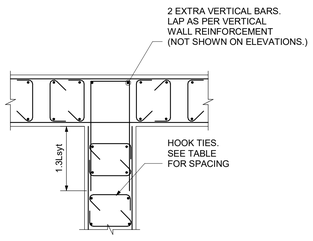


RETURN WHERE 1.3Lsyt LAP CAN BE ACHIEVED

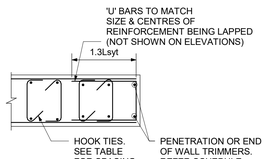
TYPICAL WALL DETAILS WHERE TYPE 3 CLOSED TIES ARE REQUIRED REFER TO ELEVATIONS FOR HATCHED ZONES



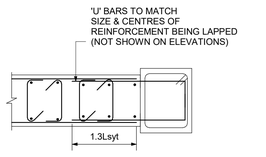
TYPICAL CORNER DETAIL (DOUBLE LAYER REINFORCEMENT)



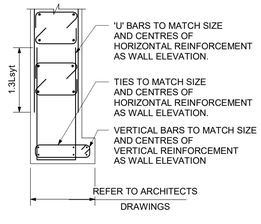
TYPICAL 'T' INTERSECTION DETAIL (DOUBLE LAYER REINFORCEMENT)



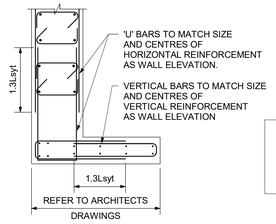
END OF WALL, EDGE OF PENETRATION OR TOP OF WALL DETAIL (DOUBLE LAYER REINFORCEMENT)



TYPICAL WALL TO COLUMN (DOUBLE LAYER REINFORCEMENT)



RETURN WHERE 1.3Lsyt LAP CANNOT BE ACHIEVED



RETURN WHERE 1.3Lsyt LAP CAN BE ACHIEVED

TYPICAL WALL DETAILS WHERE TYPE 1 HOOK TIES ARE REQUIRED REFER TO ELEVATIONS FOR HATCHED ZONES

SPACING OF CLOSED TIES	
HATCH	SPACING
TYPE 1A	N10-300
TYPE 1B	N10-200
TYPE 1C	N10-240
TYPE 1D	-
TYPE 1E	-

30mm COVER TO WALL REINFORCEMENT LAP SCHEDULE												
	f'c=32MPa		f'c=40MPa		f'c=50MPa		f'c=65MPa		f'c=80MPa		f'c=100MPa	
SIZE	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt
N10	300	400	300	400	300	400	300	400	300	400	300	400
N12	350	500	350	500	350	500	350	500	350	500	350	500
N16	550	700	500	650	500	650	500	650	500	650	500	650
N20	750	950	700	850	600	800	600	800	600	800	600	800
N24	950	1250	850	1100	800	1000	700	950	700	950	700	950
N28	1200	1550	1100	1400	950	1250	850	1100	850	1100	850	1100
N32	1450	1850	1300	1650	1150	1500	1000	1300	1000	1300	1000	1300
N36	1700	2200	1500	1950	1350	1750	1200	1550	1200	1550	1200	1550
N40	1950	2500	1750	2250	1550	2000	1350	1800	1350	1800	1350	1800

* USE 1.3Lsyt FOR ALL HORIZONTAL REINFORCEMENT WHEN MORE THAN 300mm OF CONCRETE IS CAST BELOW THE BAR

1 20.08.21 AS FOR CONSTRUCTION

Rev. Date Description

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CLIENT
FRASERS PROPERTY

BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
TYPICAL R.C. WALL DETAILS SHEET 2

SCALE AT B1: 1 : 20
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-005-52

REV. 1

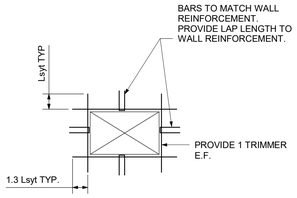
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B1

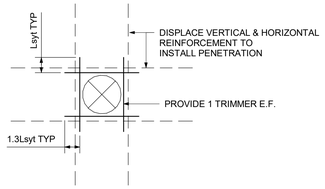
FOR GENERAL NOTES REFER TO DRAWING ST-001-01

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: TYPICAL R.C. WALL DETAILS - PENETRATIONS		Drawing No: A1-ST-005-53	

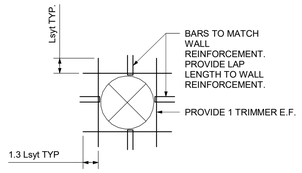
Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



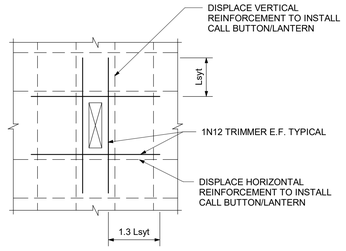
TYPICAL REINFORCEMENT FOR WALL OPENINGS AND FREE EDGES



TYPICAL REINFORCEMENT FOR PENETRATION ≤300mm

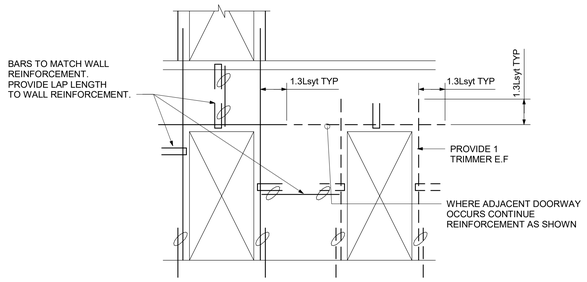


TYPICAL REINFORCEMENT FOR PENETRATION >300mm

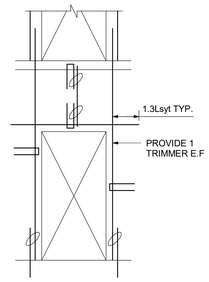


TYPICAL CALL BUTTON AND LANTERN TRIMMER DETAIL

- REFER TO LIFT ENGINEERS DRAWINGS FOR LOCATIONS (NOT SHOWN ON STRUCTURAL ELEVATIONS)



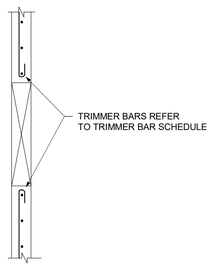
TYPICAL DOOR OPENING



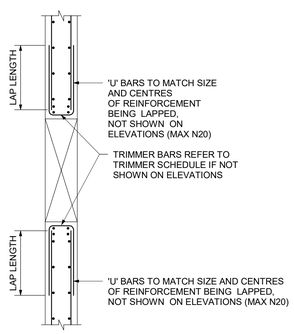
TYPICAL DOOR OPENING

TYPICAL PENETRATION DETAILS

- ALL STARTERS AND TRIMMERS DETAILED ABOVE ARE ADDITIONAL TO THOSE DETAILED ON WALL SCHEDULE U.N.O.
- ALL TRIMMER BARS INDICATED TO MATCH ADJACENT REINFORCEMENT. N16 MINIMUM.



PENETRATION SECTION DETAIL (150 THICK WALL)



PENETRATION SECTION DETAIL (>200 THICK WALL)

1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

STRUCTURAL / CIVIL CONSULTANT

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Telephone (02) 8904 1444
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CLIENT

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BUILDER

PROJECT NAME
Building A1, Midtown MacPark Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
TYPICAL R.C. WALL DETAILS - PENETRATIONS

SCALE AT B1: 1 : 20
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-005-53
REV. 1

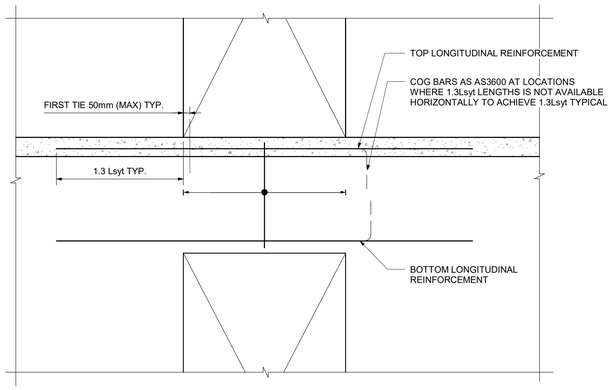
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B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

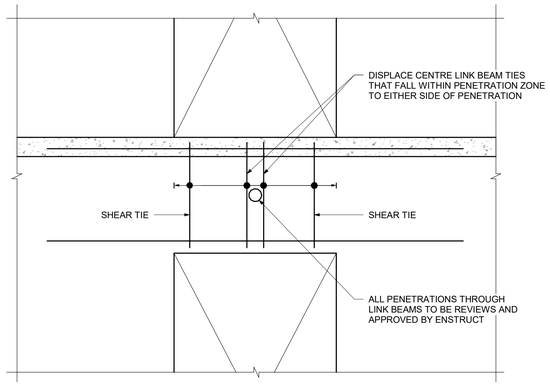
Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: TYPICAL R.C. WALL LINK BEAM DETAILS		Drawing No: A1-ST-005-54	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

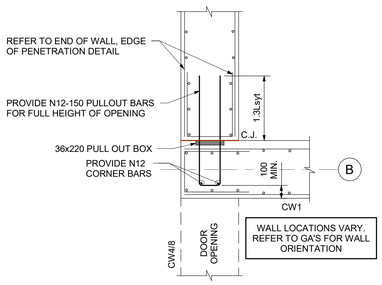


TYPICAL LINK BEAM ARRANGEMENT U.N.O.

NOTE
1. REFER TO ST-005-52 FOR REINFORCEMENT LAP SCHEDULE.
2. NO PENETRATIONS IN LINK BEAMS WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.
3. NO JUMPFORM POCKETS ARE TO BE LOCATED IN LINK BEAMS. THE CONTRACTOR SHALL INFORM THE STRUCTURAL ENGINEER AND REQUEST WRITTEN APPROVAL OF ALL JUMPFORM POCKETS PRIOR TO FORMING.

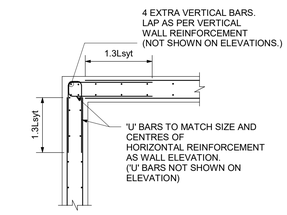


TYPICAL LINK BEAM PENETRATION TRIMMER DETAIL

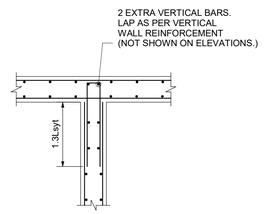


PLAN VIEW

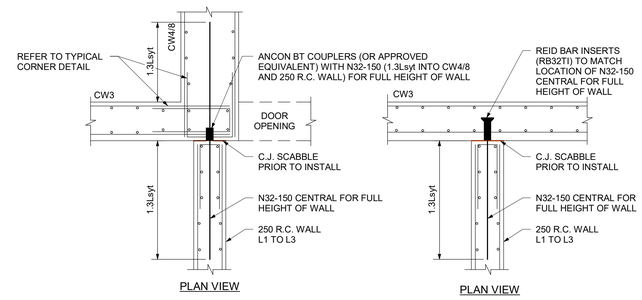
TYPICAL WALL TO WALL DETAIL AT JUMP FORM CONSTRUCTION JOINT



TYPICAL CORNER DETAIL (DOUBLE LAYER REINFORCEMENT)

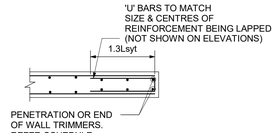


TYPICAL 'T' INTERSECTION DETAIL (DOUBLE LAYER REINFORCEMENT)

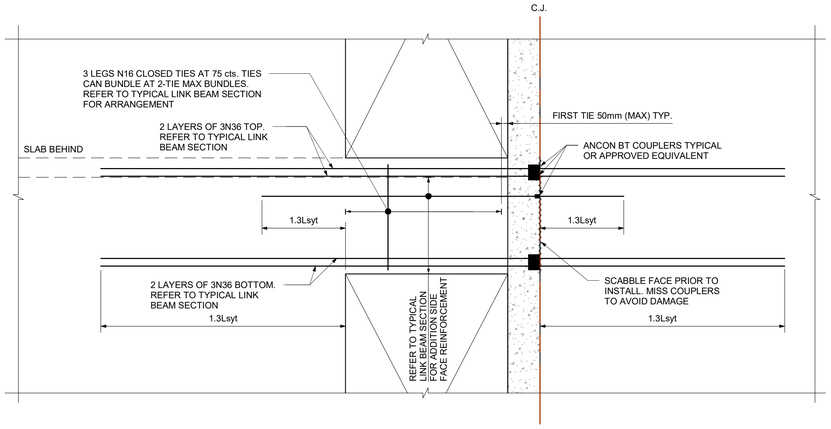


PLAN VIEW PLAN VIEW

TYPICAL L01-L03 250 R.C. OUTRIGGER WALL TO CORE WALL JUMP FORM CONSTRUCTION JOINT DETAILS



END OF WALL, EDGE OF PENETRATION OR TOP OF WALL DETAIL (DOUBLE LAYER REINFORCEMENT)



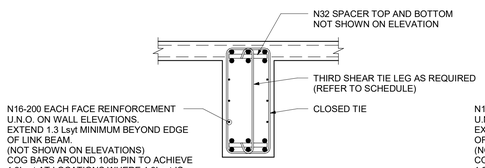
TYPICAL LINK BEAM AT JUMP FORM C.J. ARRANGEMENT U.N.O.

TAG	CORE WALL	MINIMUM LINK BEAM DEPTH (mm)	MAXIMUM LINK BEAM LENGTH (mm)	MINIMUM LINK BEAM STRENGTH (f'c)	ACCEPTED SERVICES PENETRATIONS THROUGH LINK BEAM	TOP LONGITUDINAL REINFORCEMENT		BOTTOM LONGITUDINAL REINFORCEMENT		MINIMUM SIDE FACE...	CLOSED SHEAR TIES (2 LEGS U.N.O.)
						NO. LAYERS	TOTAL REINFORCEMENT	NO. LAYERS	TOTAL REINFORCEMENT		
LB1-A	1	460	1900	65	nil	2	4N24	2	4N24	N16-200	N12-200
LB2-A	2	400	1150	65	nil	1	2N24	1	2N24	N16-200	N12-200
LB2-B	2	705	1000	65	150 Dia. Pipe. Refer Elevation	1	2N20	1	2N20	N12-200	N12-300
LB2-C	2	750	1150	65	nil	1	2N28	1	2N28	N16-100	N16-200
LB2-D	2	1350	1000	65	nil	1	2N20	1	2N20	N12-200	N12-300
LB8-A	8	800	1100	65	nil	2	6N36	2	6N36	N20-75	3-legs N20-100
LB9-A	9	700	1000	65	150 Dia. Pipe. Refer Elevation	1	2N24	1	2N24	N16-200	N12-300
LB9-B	9	1230	1000	65	150 Dia. Pipe. Refer Elevation	1	2N24	1	2N24	N16-200	N12-300
LB13-A	13	705	1020	50	nil	2	4N20	2	4N20	N16-100	N16-200

NOTE:
- REFER TO TYPICAL LINK BEAM ARRANGEMENT FOR DETAILS.
- DRAWING TO BE READ IN CONJUNCTION WITH TYPICAL R.C. WALL DETAILS. REFER TO DRAWINGS A1-ST-005-51 TO A1-ST-005-53

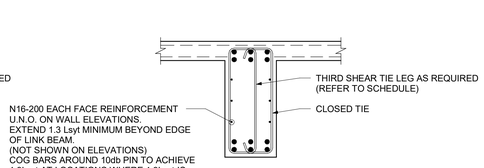
30/40mm COVER LINK BEAM REINFORCEMENT LAP SCHEDULE						
	f'c=40MPa		f'c=50MPa		f'c=65MPa	
SIZE	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt	1.0Lsyt	1.3Lsyt
N10	300	400	300	400	300	400
N12	350	500	350	500	350	500
N16	500	650	500	650	500	650
N20	700	850	600	800	600	800
N24	850	1100	800	1000	700	950
N28	1100	1400	950	1250	850	1100
N32	1300	1650	1150	1500	1000	1300
N36	1500	1950	1350	1750	1200	1550
N40	1750	2250	1550	2000	1350	1800

- USE 1.3Lsyt FOR ALL HORIZONTAL REINFORCEMENT AND WHEN MORE THAN 300mm OF CONCRETE IS CAST BELOW THE BAR.
- LINK BEAM LONGITUDINAL REINFORCEMENT NOT TO BE LAPPED ABOVE VALUES TO BE USED FOR BAR EXTENSIONS PAST SUPPORT AS SHOWN IN TYPICAL DETAIL.
- DRAWING TO BE READ IN CONJUNCTION WITH DRAWING ST-005-81 (TYPICAL R.C. WALL DETAILS)



TYPICAL LINK BEAM SECTION

NOTE
REFER TO LINK BEAM SCHEDULE FOR TAGS AND WALL ELEVATIONS FOR LOCATIONS.



TYPICAL LINK BEAM SECTION AT JUMP FORM C.J. ARRANGEMENT U.N.O.

NOTE
REFER TO LINK BEAM SCHEDULE FOR TAGS AND WALL ELEVATIONS FOR LOCATIONS.

20/08/2021 4:45:43 PM

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Rev. Date Description

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http://www.enstruct.com.au

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BUILDER

PROJECT NAME
Building A1, Midtown MacPark Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
TYPICAL R.C. WALL LINK BEAM DETAILS

SCALE AT B1: 1 : 20
DRAWN BY: WAS
CHECKED BY: PAS

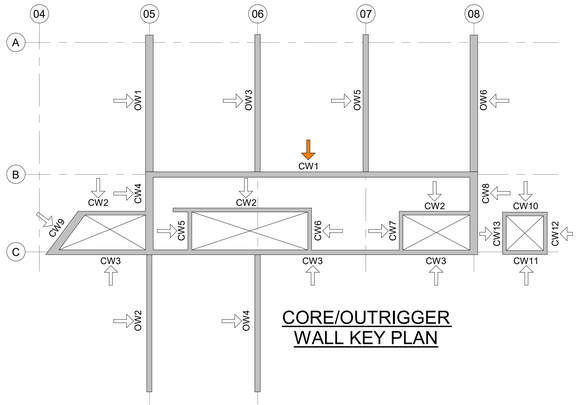
DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-005-54
REV. 1

Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819		
Drawing Title: CORE WALL ELEVATIONS SHEET 1		Drawing No: A1-ST-005-61		
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

CORE WALL 1 (CW1) SCHEDULE

Mark	Width	Base Constraint	Top Constraint	Vertical Reinforcement	Horizontal Reinforcement	Concrete Strength (MPa)
CW1	250	Level 22	Up to level: Level 23			40
CW1	250	Level 21	Up to level: Level 22			40
CW1	250	Level 20	Up to level: Level 21			40
CW1	250	Level 19	Up to level: Level 20			40
CW1	250	Level 18	Up to level: Level 19			40
CW1	250	Level 17	Up to level: Level 18			40
CW1	250	Level 16	Up to level: Level 17			40
CW1	250	Level 15	Up to level: Level 16			40
CW1	300	Level 14	Up to level: Level 15			50
CW1	300	Level 13	Up to level: Level 14			50
CW1	300	Level 12	Up to level: Level 13			50
CW1	300	Level 11	Up to level: Level 12			50
CW1	300	Level 10	Up to level: Level 11			50
CW1	300	Level 09	Up to level: Level 10			50
CW1	300	Level 08	Up to level: Level 09			50
CW1	300	Level 07	Up to level: Level 08			50
CW1	300	Level 06	Up to level: Level 07			50
CW1	300	Level 05	Up to level: Level 06			50
CW1	300	Level 04	Up to level: Level 05			50
CW1	300	Level 03	Up to level: Level 04			50
CW1	300	Level 02	Up to level: Level 03			50
CW1	400	Level 01	Up to level: Level 02			50
CW1	400	Ground Floor	Up to level: Level 01			65
CW1	400	Lower Ground	Up to level: Ground Floor			65
CW1	400	Basement 01	Up to level: Lower Ground	N20-300 E.F.	N20-200 E.F.	65
CW1	400	Basement 02	Up to level: Basement 01	N20-300 E.F.	N20-200 E.F.	65
CW1	400	Basement 03	Up to level: Basement 02	N20-300 E.F.	N20-200 E.F.	65

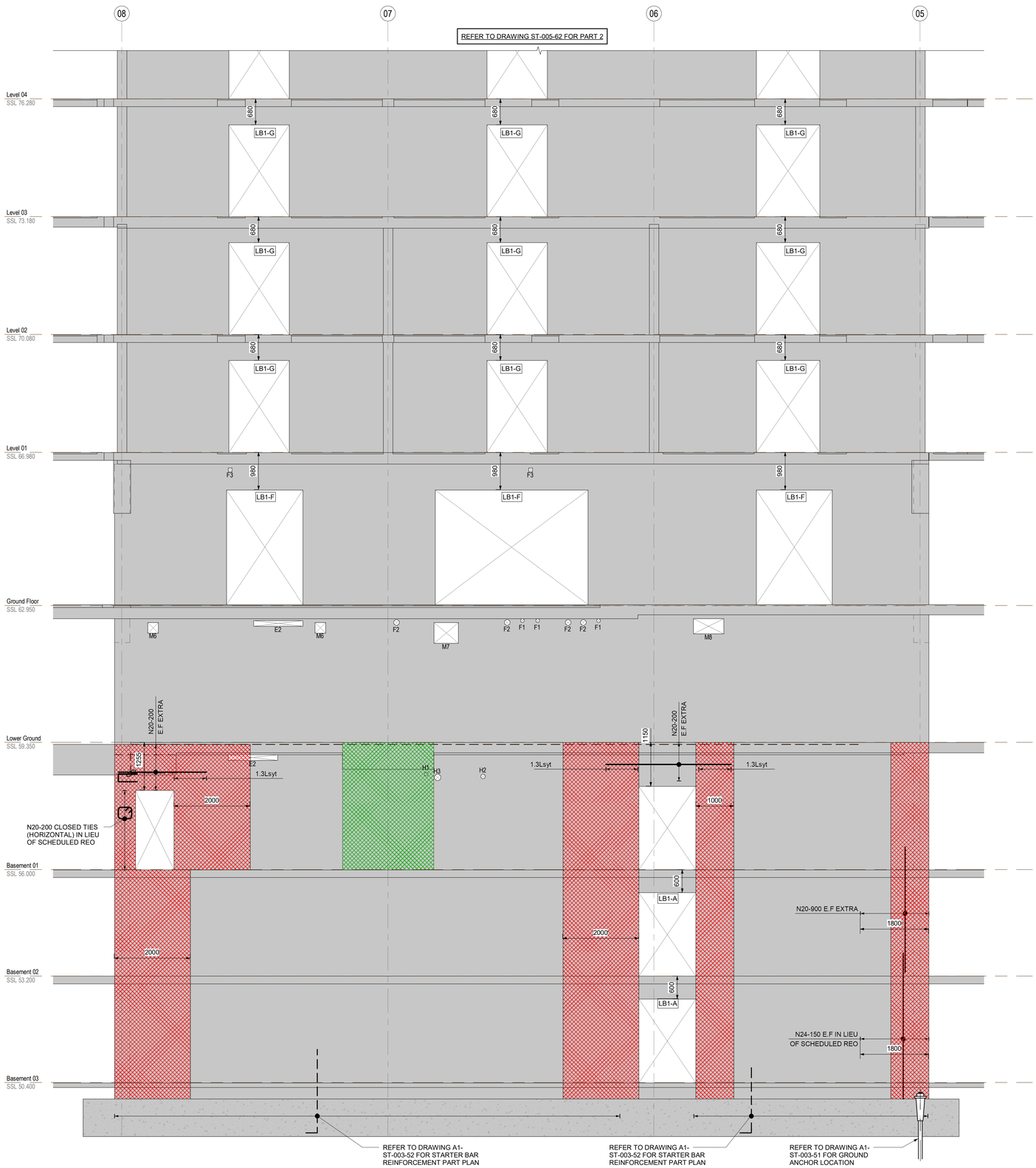


CORE/OUTRIGGER WALL KEY PLAN

DENOTES TYPE 1A TIES REQUIRED
DENOTES TYPE 1B TIES REQUIRED
DENOTES TYPE 1C TIES REQUIRED
DENOTES TYPE 1D TIES REQUIRED
DENOTES TYPE 1E TIES REQUIRED
DENOTES TYPE 2A TIES REQUIRED
DENOTES TYPE 2B TIES REQUIRED

REFER TO TYP. R.C. WALL DETAILS ON DRG. ST-005-52 FOR TIES SPACING

SERVICES OPENINGS SCHEDULE	
MARK	SIZE
E1	E1 - 100 x 400mm
E2	E2 - 150 x 1300mm
E3	E3 - 100 x 1300mm
F1	F1 - 100mm Diameter
F2	F2 - 150mm Diameter
F3	F3 - 100 x 100mm
F4	F4 - 100 x 150mm
F5	F5 - 200 x 200mm
F6	F6 - 100 x 200mm
F8	F8 - 600 x 1900mm
H1	H1 - 95mm Diameter
H2	H2 - 120mm Diameter
H3	H3 - 170mm Diameter
H4	H4 - 270mm Diameter
M2	M2 - 600 x 1500mm
M3	M3 - 900 x 900mm
M4	M4 - 1000 x 1200mm
M6	M6 - 280 x 280mm
M7	M7 - 550 x 650mm
M8	M8 - 400 x 800mm
M9	M9 - 1000 x 1000mm
M10	M10 - 230 x 230mm



CORE WALL 1 (CW1) ELEVATION - PART 1

SCALE: 1 : 50

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

WALL NOTES:

- REFER TO GENERAL NOTES FOR REINFORCEMENT CONCRETE COVER
- DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND SERVICE ENGINEERS DRAWINGS FOR PENETRATIONS.
- REFER TO DRAWING ST-005-51 TO ST-005-52 FOR TYPICAL R.C. WALL DETAILS
- REFER TO DRAWING ST-005-53 FOR SERVICES OPENING SCHEDULE
- REFER TO DRAWING ST-005-54 FOR TYPICAL R.C. WALL LINK BEAM DETAILS
- ALL VERTICAL LAPS TO BE 1.0 Lsyt TYPICAL.
- ALL HORIZONTAL LAPS TO BE 1.3 Lsyt TYPICAL.
- HEAVILY SCABBLE AT WALL TO FOUNDATION INTERFACE TO REMOVE LAITANCE TYP.
- PENETRATIONS LESS THAN OR EQUAL TO 100mm ARE NOT SHOWN BY THE STRUCTURAL ENGINEER BUT MUST AVOID REINFORCEMENT AND MAINTAIN CONCRETE COVER
- PENETRATIONS GREATER THAN 100mm OR ANY GROUPED PENETRATIONS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL
- NO PENETRATIONS THROUGH LINK BEAMS WITHOUT SPECIFIC APPROVAL OF STRUCTURAL ENGINEER
- LIFT DOOR OPENING SIZE AND SETOUT TO BE CONFIRMED BY LIFT CONTRACTOR
- CONTRACTOR TO SUBMIT PROPOSED REQUIREMENTS FOR ANY CRANES, JUMPFORMS AND TEMPORARY PENETRATIONS AS NO ALLOWANCE HAS BEEN MADE FOR TEMPORARY ITEMS IN CURRENT CORE DESIGN
- CONTRACTOR TO SUBMIT PROPOSED JUMP AND POUR SEQUENCE FOR APPROVAL PRIOR TO COMMENCEMENT OF WORKS.
- POST FIXED STEEL BEAMS WITHIN DOOR OPENINGS TO SUPPORT THE JUMPFORM ARE TO BE DRILLED SO AS TO NOT DAMAGE WALL REINFORCEMENT

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BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
CORE WALL ELEVATIONS SHEET 1

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

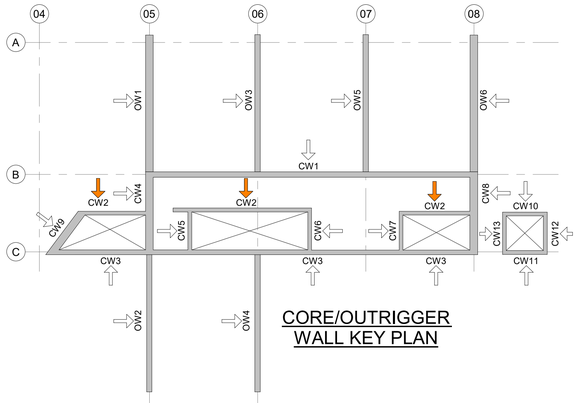
DRAWING NUMBER: A1-ST-005-61
REV.: 1

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Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819		
Drawing Title: CORE WALL ELEVATIONS SHEET 4		Drawing No: A1-ST-005-64		
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

CORE WALL 2 (CW2) SCHEDULE

Mark	Width	Base Constraint	Top Constraint	Vertical Reinforcement	Horizontal Reinforcement	Concrete Strength (MPa)
CW2	250	Level 23	Up to level: Level 24			40
CW2	250	Level 22	Up to level: Level 23			40
CW2	250	Level 21	Up to level: Level 22			40
CW2	250	Level 20	Up to level: Level 21			40
CW2	250	Level 19	Up to level: Level 20			40
CW2	250	Level 18	Up to level: Level 19			40
CW2	250	Level 17	Up to level: Level 18			40
CW2	250	Level 16	Up to level: Level 17			40
CW2	250	Level 15	Up to level: Level 16			40
CW2	250	Level 14	Up to level: Level 15			50
CW2	250	Level 13	Up to level: Level 14			50
CW2	250	Level 12	Up to level: Level 13			50
CW2	250	Level 11	Up to level: Level 12			50
CW2	250	Level 10	Up to level: Level 11			50
CW2	250	Level 09	Up to level: Level 10			50
CW2	250	Level 08	Up to level: Level 09			50
CW2	250	Level 07	Up to level: Level 08			50
CW2	250	Level 06	Up to level: Level 07			50
CW2	250	Level 05	Up to level: Level 06			50
CW2	250	Level 04	Up to level: Level 05			50
CW2	250	Level 03	Up to level: Level 04			50
CW2	250	Level 02	Up to level: Level 03			50
CW2	250	Level 01	Up to level: Level 02			50
CW2	250	Ground Floor	Up to level: Level 01			65
CW2	250	Lower Ground	Up to level: Ground Floor			65
CW2	250	Basement 01	Up to level: Lower Ground	N16-300 E.F.	N12-200 E.F.	65
CW2	250	Basement 02	Up to level: Basement 01	N16-300 E.F.	N12-200 E.F.	65
CW2	250	Basement 03	Up to level: Basement 02	N16-300 E.F.	N12-200 E.F.	65



CORE/OUTRIGGER WALL KEY PLAN

DENOTES TYPE 1A TIES REQUIRED
DENOTES TYPE 1B TIES REQUIRED
DENOTES TYPE 1C TIES REQUIRED
DENOTES TYPE 1D TIES REQUIRED
DENOTES TYPE 1E TIES REQUIRED
DENOTES TYPE 2A TIES REQUIRED
DENOTES TYPE 2B TIES REQUIRED

REFER TO TYP. R.C. WALL DETAILS ON DRG. ST-005-52 FOR TIES SPACING

SERVICES OPENINGS SCHEDULE	
MARK	SIZE
E1	E1 - 100 x 400mm
E2	E2 - 150 x 1300mm
E3	E3 - 100 x 1300mm
F1	F1 - 100mm Diameter
F2	F2 - 150mm Diameter
F3	F3 - 100 x 100mm
F4	F4 - 100 x 150mm
F5	F5 - 200 x 200mm
F6	F6 - 100 x 200mm
F8	F8 - 600 x 1900mm
H1	H1 - 95mm Diameter
H2	H2 - 120mm Diameter
H3	H3 - 170mm Diameter
H4	H4 - 270mm Diameter
M2	M2 - 600 x 1500mm
M3	M3 - 900 x 900mm
M4	M4 - 1000 x 1200mm
M6	M6 - 280 x 280mm
M7	M7 - 550 x 650mm
M8	M8 - 400 x 800mm
M9	M9 - 1000 x 1000mm
M10	M10 - 230 x 230mm



CORE WALL 2 (CW2) ELEVATION - PART 1

SCALE: 1 : 50

B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

WALL NOTES:

- REFER TO GENERAL NOTES FOR REINFORCEMENT CONCRETE COVER
- DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND SERVICE ENGINEERS DRAWINGS FOR PENETRATIONS.
- REFER TO DRAWING ST-005-51 TO ST-005-52 FOR TYPICAL R.C. WALL DETAILS
- REFER TO DRAWING ST-005-53 FOR SERVICES OPENING SCHEDULE
- REFER TO DRAWING ST-005-54 FOR TYPICAL R.C. WALL LINK BEAM DETAILS
- ALL VERTICAL LAPS TO BE 1.0 Lsyt TYPICAL
- ALL HORIZONTAL LAPS TO BE 1.3 Lsyt TYPICAL
- HEAVILY SCABBLE AT WALL TO FOUNDATION INTERFACE TO REMOVE LAITANCE TYP.
- PENETRATIONS LESS THAN OR EQUAL TO 100mm ARE NOT SHOWN BY THE STRUCTURAL ENGINEER BUT MUST AVOID REINFORCEMENT AND MAINTAIN CONCRETE COVER
- PENETRATIONS GREATER THAN 100mm OR ANY GROUPED PENETRATIONS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL
- NO PENETRATIONS THROUGH LINK BEAMS WITHOUT SPECIFIC APPROVAL OF STRUCTURAL ENGINEER
- LIFT DOOR OPENING SIZE AND SETOUT TO BE CONFIRMED BY LIFT CONTRACTOR
- CONTRACTOR TO SUBMIT PROPOSED REQUIREMENTS FOR ANY CRANES, JUMPFORMS AND TEMPORARY PENETRATIONS AS NO ALLOWANCE HAS BEEN MADE FOR TEMPORARY ITEMS IN CURRENT CORE DESIGN
- CONTRACTOR TO SUBMIT PROPOSED JUMP AND POUR SEQUENCE FOR APPROVAL PRIOR TO COMMENCEMENT OF WORKS.
- POST FIXED STEEL BEAMS WITHIN DOOR OPENINGS TO SUPPORT THE JUMPFORM ARE TO BE DRILLED SO AS TO NOT DAMAGE WALL REINFORCEMENT

1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

STRUCTURAL / CIVIL CONSULTANT
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enstruct group pty ltd
Level 4, 2 Glen Street, Milsons Point NSW 2061
Telephone (02) 8904 1444
http: //www.enstruct.com.au

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BUILDER

PROJECT NAME
Building A1, Midtown MacPark Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
CORE WALL ELEVATIONS SHEET 4

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER
A1-ST-005-64

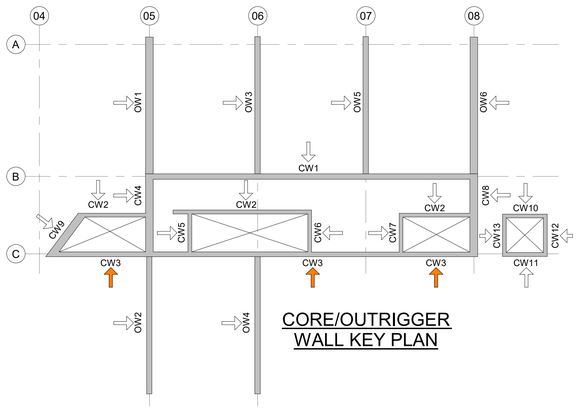
REV.
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Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819		
Drawing Title: CORE WALL ELEVATIONS SHEET 7		Drawing No: A1-ST-005-67		
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

CORE WALL 3 (CW3) SCHEDULE

Mark	Width	Base Constraint	Top Constraint	Vertical Reinforcement	Horizontal Reinforcement	Concrete Strength (MPa)
CW3	250	Level 23	Up to level: Level 24			40
CW3	250	Level 22	Up to level: Level 23			40
CW3	250	Level 21	Up to level: Level 22			40
CW3	250	Level 20	Up to level: Level 21			40
CW3	250	Level 19	Up to level: Level 20			40
CW3	250	Level 18	Up to level: Level 19			40
CW3	250	Level 17	Up to level: Level 18			40
CW3	250	Level 16	Up to level: Level 17			40
CW3	250	Level 15	Up to level: Level 16			40
CW3	250	Level 14	Up to level: Level 15			50
CW3	250	Level 13	Up to level: Level 14			50
CW3	250	Level 12	Up to level: Level 13			50
CW3	250	Level 11	Up to level: Level 12			50
CW3	300	Level 10	Up to level: Level 11			50
CW3	300	Level 09	Up to level: Level 10			50
CW3	300	Level 08	Up to level: Level 09			50
CW3	300	Level 07	Up to level: Level 08			50
CW3	300	Level 06	Up to level: Level 07			50
CW3	300	Level 05	Up to level: Level 06			50
CW3	300	Level 04	Up to level: Level 05			50
CW3	300	Level 03	Up to level: Level 04			50
CW3	300	Level 02	Up to level: Level 03			50
CW3	300	Level 01	Up to level: Level 02			50
CW3	300	Ground Floor	Up to level: Level 01			65
CW3	300	Lower Ground	Up to level: Ground Floor			65
CW3	300	Basement 01	Up to level: Lower Ground	N20-300 E.F.	N16-150 E.F.	65
CW3	300	Basement 02	Up to level: Basement 01	N20-300 E.F.	N16-150 E.F.	65
CW3	300	Basement 03	Up to level: Basement 02	N20-300 E.F.	N16-150 E.F.	65

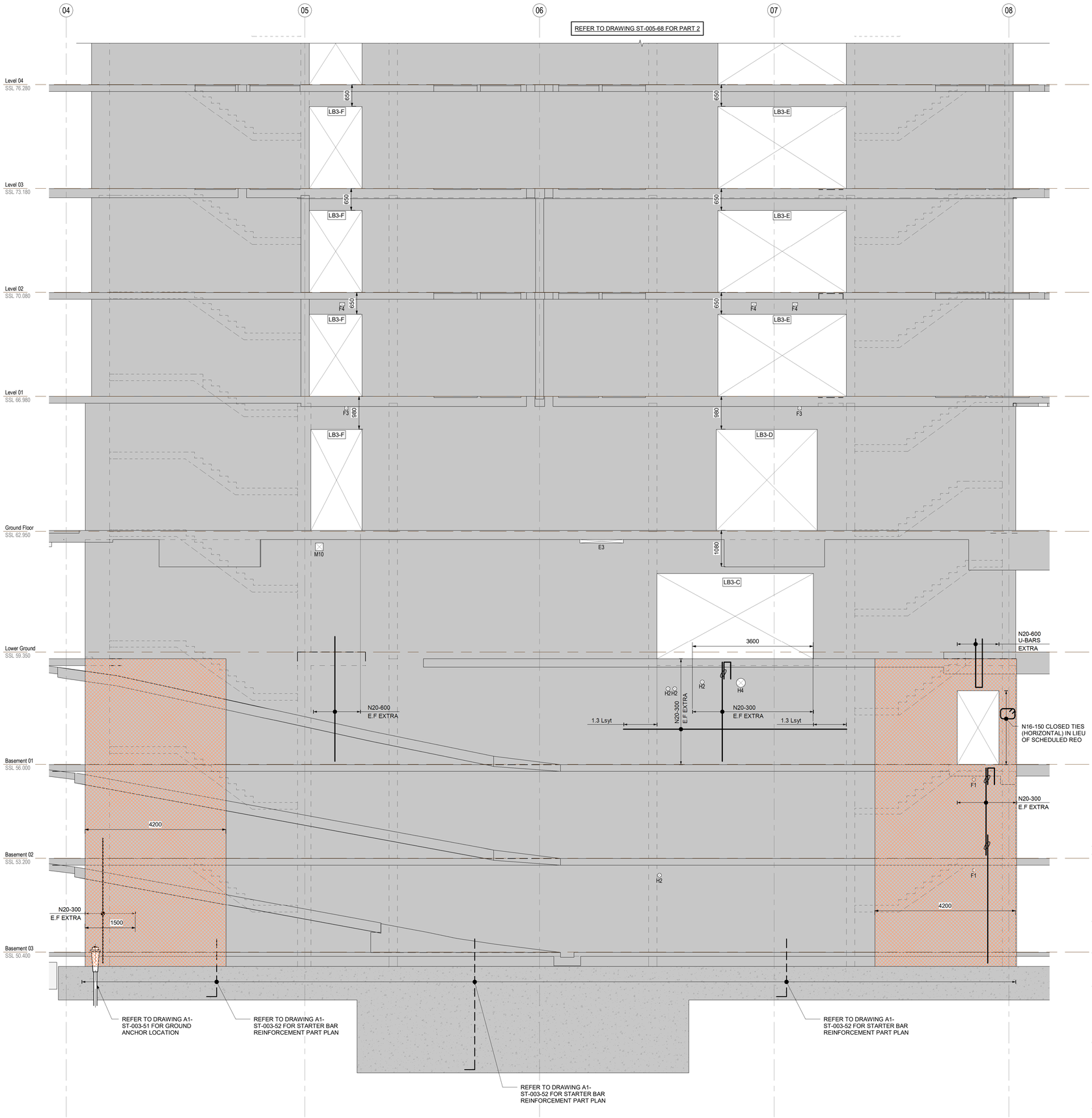


CORE/OUTRIGGER WALL KEY PLAN

- DENOTES TYPE 1A TIES REQUIRED
- DENOTES TYPE 1B TIES REQUIRED
- DENOTES TYPE 1C TIES REQUIRED
- DENOTES TYPE 1D TIES REQUIRED
- DENOTES TYPE 1E TIES REQUIRED
- DENOTES TYPE 2A TIES REQUIRED
- DENOTES TYPE 2B TIES REQUIRED

REFER TO TYP. R.C. WALL DETAILS ON DRG. ST-005-52 FOR TIES SPACING

SERVICES OPENINGS SCHEDULE	
MARK	SIZE
E1	E1 - 100 x 400mm
E2	E2 - 150 x 1300mm
E3	E3 - 100 x 1300mm
F1	F1 - 100mm Diameter
F2	F2 - 150mm Diameter
F3	F3 - 100 x 100mm
F4	F4 - 100 x 150mm
F5	F5 - 200 x 200mm
F6	F6 - 100 x 200mm
F8	F8 - 600 x 1900mm
H1	H1 - 95mm Diameter
H2	H2 - 120mm Diameter
H3	H3 - 170mm Diameter
H4	H4 - 270mm Diameter
M2	M2 - 600 x 1500mm
M3	M3 - 900 x 900mm
M4	M4 - 1000 x 1200mm
M6	M6 - 280 x 280mm
M7	M7 - 550 x 650mm
M8	M8 - 400 x 800mm
M9	M9 - 1000 x 1000mm
M10	M10 - 230 x 230mm



CORE WALL 3 (CW3) ELEVATION - PART 1

SCALE: 1 : 50

B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

WALL NOTES:

- REFER TO GENERAL NOTES FOR REINFORCEMENT CONCRETE COVER
- DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND SERVICE ENGINEERS DRAWINGS FOR PENETRATIONS.
- REFER TO DRAWING ST-005-51 TO ST-005-52 FOR TYPICAL R.C. WALL DETAILS
- REFER TO DRAWING ST-005-53 FOR SERVICES OPENING SCHEDULE
- REFER TO DRAWING ST-005-54 FOR TYPICAL R.C. WALL LINK BEAM DETAILS
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- ALL HORIZONTAL LAPS TO BE 1.3 Lsyt TYPICAL.
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1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

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BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
CORE WALL ELEVATIONS
SHEET 7

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-005-67
REV.: 1

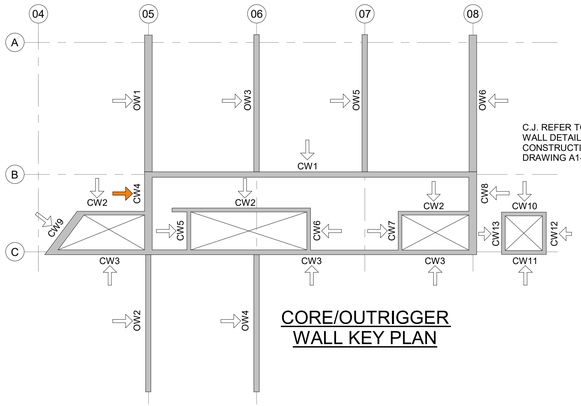
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Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: CORE WALL ELEVATIONS SHEET 10		Drawing No: A1-ST-005-70	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

CORE WALL 4 (CW4) SCHEDULE

Mark	Width	Base Constraint	Top Constraint	Vertical Reinforcement	Horizontal Reinforcement	Concrete Strength (MPa)
CW4	250	Level 23	Up to level: Level 24			40
CW4	250	Level 22	Up to level: Level 23			40
CW4	250	Level 21	Up to level: Level 22			40
CW4	250	Level 20	Up to level: Level 21			40
CW4	250	Level 19	Up to level: Level 20			40
CW4	250	Level 18	Up to level: Level 19			40
CW4	250	Level 17	Up to level: Level 18			40
CW4	250	Level 16	Up to level: Level 17			40
CW4	250	Level 15	Up to level: Level 16			40
CW4	250	Level 14	Up to level: Level 15			50
CW4	250	Level 13	Up to level: Level 14			50
CW4	250	Level 12	Up to level: Level 13			50
CW4	250	Level 11	Up to level: Level 12			50
CW4	250	Level 10	Up to level: Level 11			50
CW4	250	Level 09	Up to level: Level 10			50
CW4	250	Level 08	Up to level: Level 09			50
CW4	250	Level 07	Up to level: Level 08			50
CW4	250	Level 06	Up to level: Level 07			50
CW4	250	Level 05	Up to level: Level 06			50
CW4	250	Level 04	Up to level: Level 05			50
CW4	250	Level 03	Up to level: Level 04			50
CW4	250	Level 02	Up to level: Level 03			50
CW4	250	Level 01	Up to level: Level 02			50
CW4	400	Ground Floor	Up to level: Level 01			65
CW4	400	Lower Ground	Up to level: Ground Floor			65
CW4	400	Basement 01	Up to level: Lower Ground	N20-300 E.F.	N20-125 E.F.	65
CW4	400	Basement 02	Up to level: Basement 01	N20-300 E.F.	N20-125 E.F.	65
CW4	400	Basement 03	Up to level: Basement 02	N20-150 E.F.	N20-125 E.F.	65

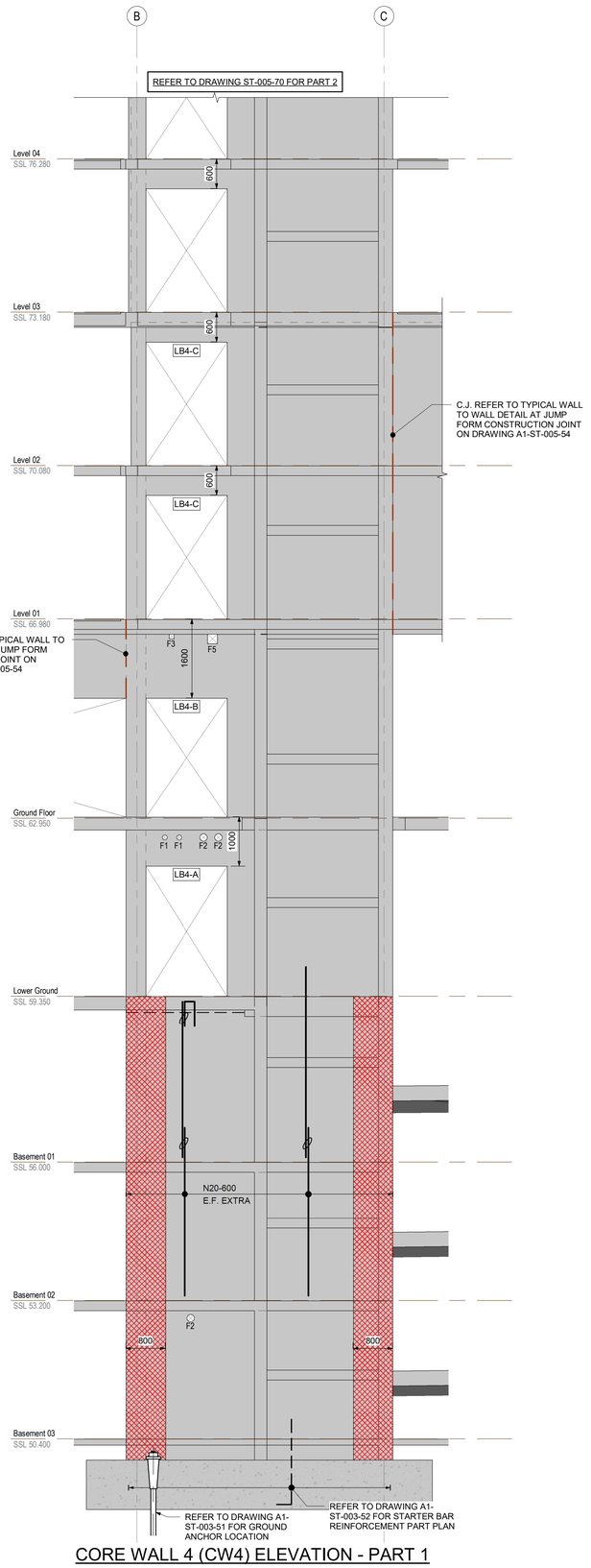


CORE/OUTRIGGER WALL KEY PLAN

- DENOTES TYPE 1A TIES REQUIRED
- DENOTES TYPE 1B TIES REQUIRED
- DENOTES TYPE 1C TIES REQUIRED
- DENOTES TYPE 1D TIES REQUIRED
- DENOTES TYPE 1E TIES REQUIRED
- DENOTES TYPE 2A TIES REQUIRED
- DENOTES TYPE 2B TIES REQUIRED

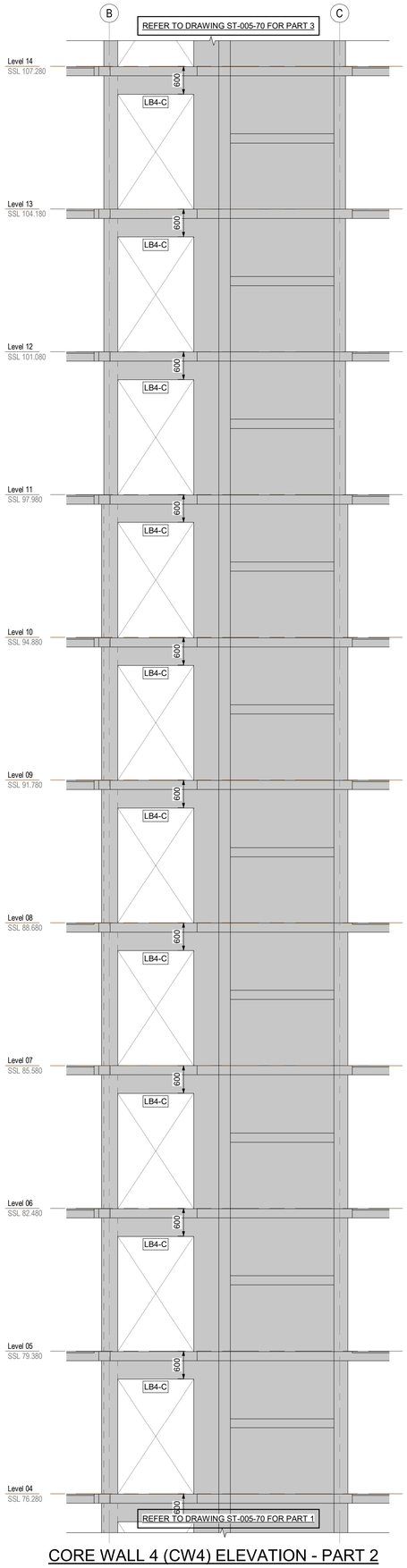
REFER TO TYP. R.C. WALL DETAILS ON DRG. ST-005-52 FOR TIES SPACING

SERVICES OPENINGS SCHEDULE	
MARK	SIZE
E1	E1 - 100 x 400mm
E2	E2 - 150 x 1300mm
E3	E3 - 100 x 1300mm
F1	F1 - 100mm Diameter
F2	F2 - 150mm Diameter
F3	F3 - 100 x 100mm
F4	F4 - 100 x 150mm
F5	F5 - 200 x 200mm
F6	F6 - 100 x 200mm
F8	F8 - 600 x 1900mm
H1	H1 - 95mm Diameter
H2	H2 - 120mm Diameter
H3	H3 - 170mm Diameter
H4	H4 - 270mm Diameter
M2	M2 - 600 x 1500mm
M3	M3 - 900 x 900mm
M4	M4 - 1000 x 1200mm
M6	M6 - 280 x 280mm
M7	M7 - 550 x 650mm
M8	M8 - 400 x 800mm
M9	M9 - 1000 x 1000mm
M10	M10 - 230 x 230mm



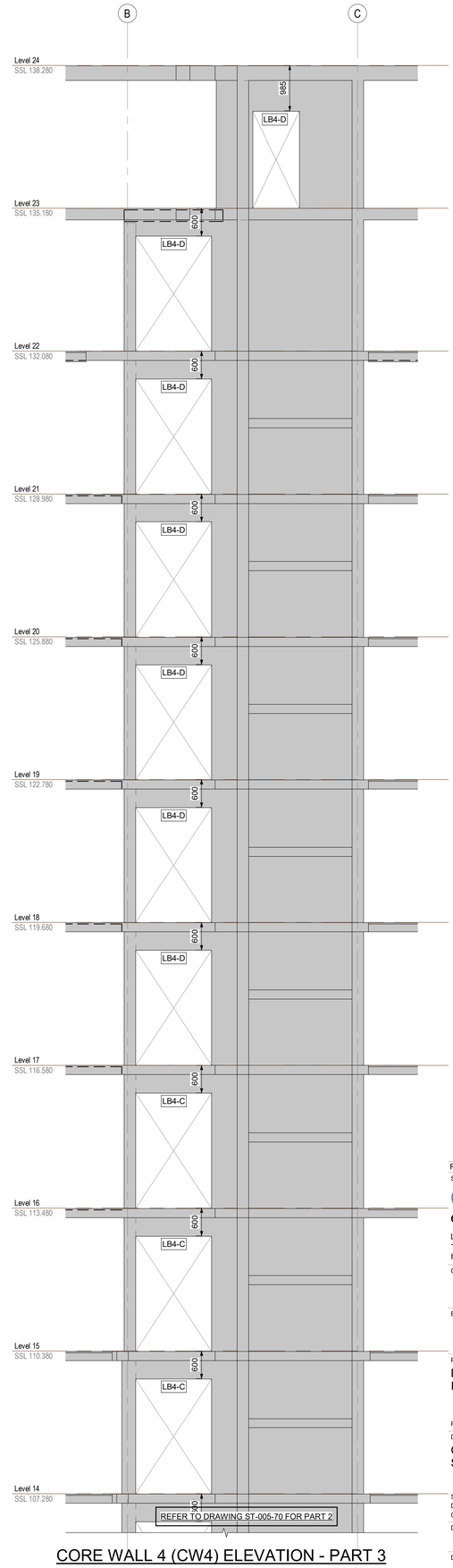
CORE WALL 4 (CW4) ELEVATION - PART 1

SCALE: 1 : 50



CORE WALL 4 (CW4) ELEVATION - PART 2

SCALE: 1 : 50



CORE WALL 4 (CW4) ELEVATION - PART 3

SCALE: 1 : 50

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

WALL NOTES:

- REFER TO GENERAL NOTES FOR REINFORCEMENT CONCRETE COVER
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1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

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Level 4, 2 Glen Street, Milsons Point NSW 2061
Telephone (02) 8904 1444
http://www.enstruct.com.au

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BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
CORE WALL ELEVATIONS
SHEET 10

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER
A1-ST-005-70

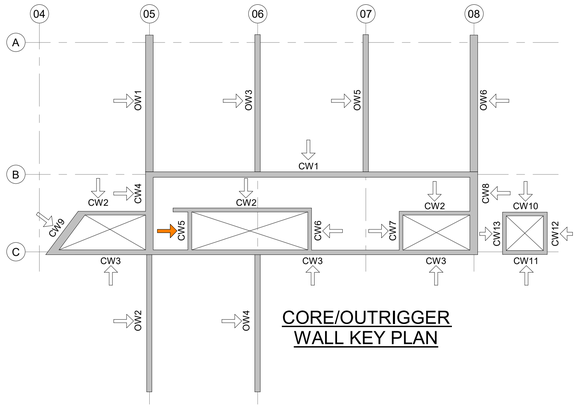
REV.
1

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Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819		
Drawing Title: CORE WALL ELEVATIONS SHEET 11		Drawing No: A1-ST-005-71		
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

CORE WALL 5 (CW5) SCHEDULE

Mark	Width	Base Constraint	Top Constraint	Vertical Reinforcement	Horizontal Reinforcement	Concrete Strength (MPa)
CW5	250	Level 23	Up to level: Level 24			65
CW5	250	Level 22	Up to level: Level 23			65
CW5	250	Level 21	Up to level: Level 22			65
CW5	250	Level 20	Up to level: Level 21			65
CW5	250	Level 19	Up to level: Level 20			65
CW5	250	Level 18	Up to level: Level 19			65
CW5	250	Level 17	Up to level: Level 18			65
CW5	250	Level 16	Up to level: Level 17			65
CW5	250	Level 15	Up to level: Level 16			65
CW5	250	Level 14	Up to level: Level 15			50
CW5	250	Level 13	Up to level: Level 14			50
CW5	250	Level 12	Up to level: Level 13			50
CW5	250	Level 11	Up to level: Level 12			50
CW5	250	Level 10	Up to level: Level 11			50
CW5	250	Level 09	Up to level: Level 10			50
CW5	250	Level 08	Up to level: Level 09			50
CW5	250	Level 07	Up to level: Level 08			50
CW5	250	Level 06	Up to level: Level 07			50
CW5	250	Level 05	Up to level: Level 06			50
CW5	250	Level 04	Up to level: Level 05			50
CW5	250	Level 03	Up to level: Level 04			50
CW5	250	Level 02	Up to level: Level 03			50
CW5	250	Level 01	Up to level: Level 02			50
CW5	250	Ground Floor	Up to level: Level 01			50
CW5	250	Lower Ground	Up to level: Ground Floor			50
CW5	250	Basement 01	Up to level: Lower Ground	N16-300 E.F.	N16-200 E.F.	50
CW5	250	Basement 02	Up to level: Basement 01	N16-300 E.F.	N16-200 E.F.	50
CW5	250	Basement 03	Up to level: Basement 02	N16-300 E.F.	N16-150 E.F.	50

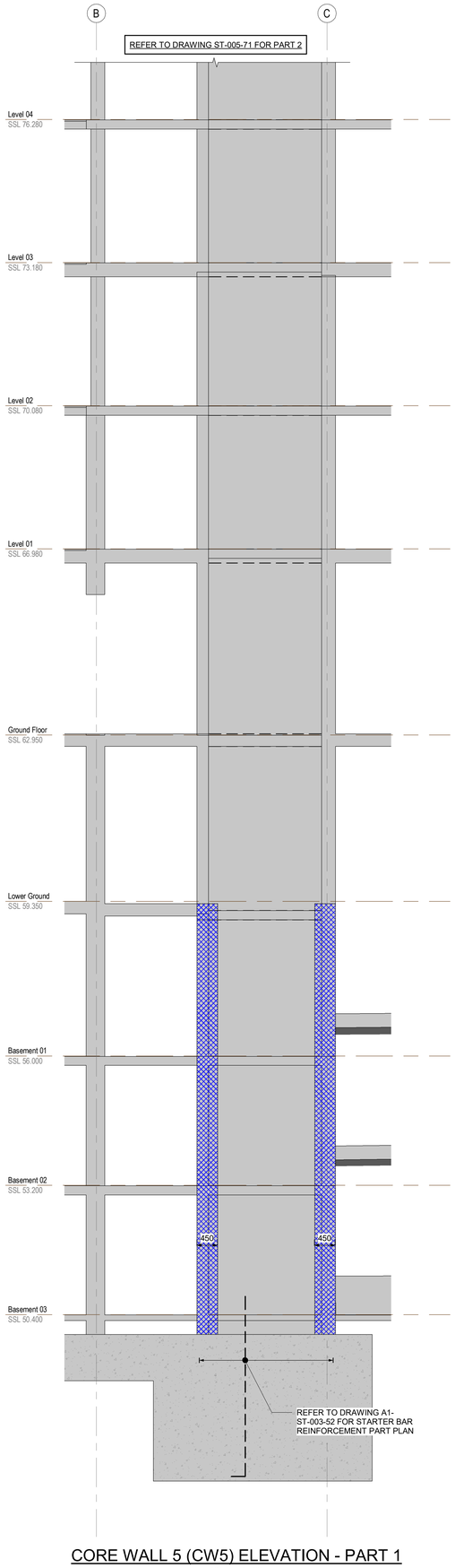


CORE/OUTRIGGER WALL KEY PLAN

- DENOTES TYPE 1A TIES REQUIRED
- DENOTES TYPE 1B TIES REQUIRED
- DENOTES TYPE 1C TIES REQUIRED
- DENOTES TYPE 1D TIES REQUIRED
- DENOTES TYPE 1E TIES REQUIRED
- DENOTES TYPE 2A TIES REQUIRED
- DENOTES TYPE 2B TIES REQUIRED

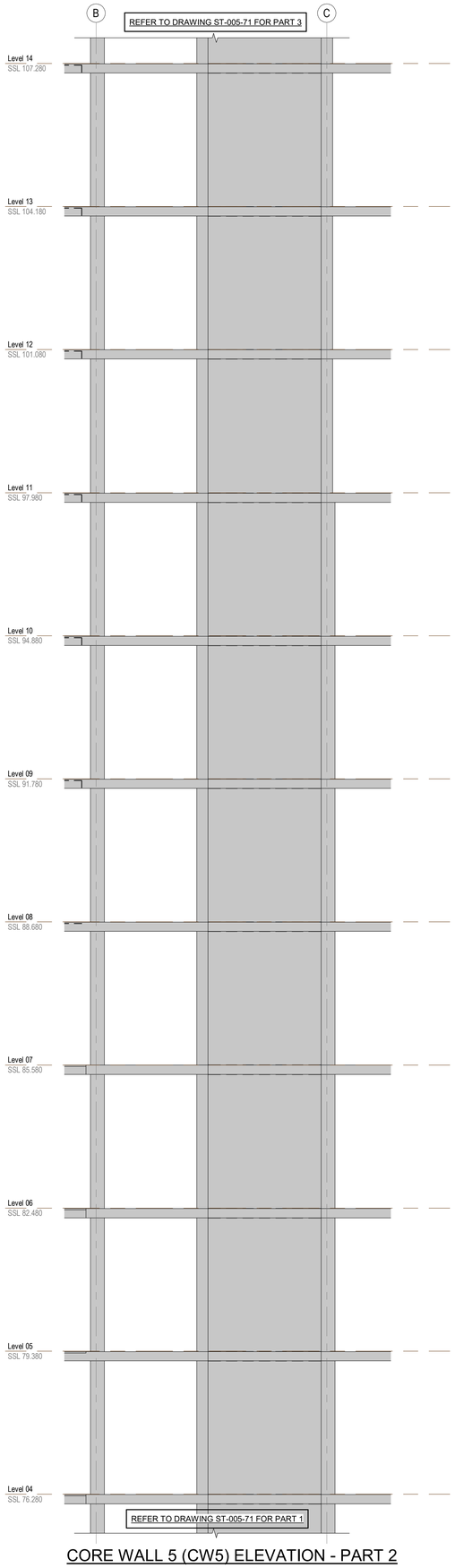
REFER TO TYP. R.C. WALL DETAILS ON DRG. ST-005-52 FOR TIES SPACING

SERVICES OPENINGS SCHEDULE	
MARK	SIZE
E1	E1 - 100 x 400mm
E2	E2 - 150 x 1300mm
E3	E3 - 100 x 1300mm
F1	F1 - 100mm Diameter
F2	F2 - 150mm Diameter
F3	F3 - 100 x 100mm
F4	F4 - 100 x 150mm
F5	F5 - 200 x 200mm
F6	F6 - 100 x 200mm
F8	F8 - 600 x 1900mm
H1	H1 - 95mm Diameter
H2	H2 - 120mm Diameter
H3	H3 - 170mm Diameter
H4	H4 - 270mm Diameter
M2	M2 - 600 x 1500mm
M3	M3 - 900 x 900mm
M4	M4 - 1000 x 1200mm
M6	M6 - 280 x 280mm
M7	M7 - 550 x 650mm
M8	M8 - 400 x 800mm
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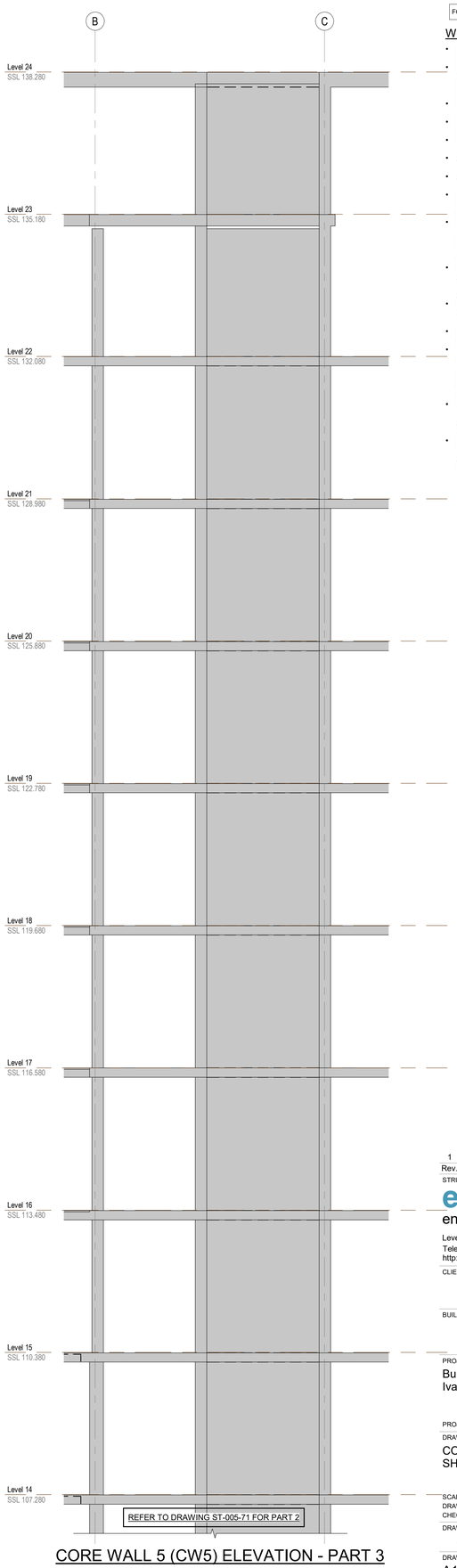
CORE WALL 5 (CW5) ELEVATION - PART 1

SCALE: 1 : 50



CORE WALL 5 (CW5) ELEVATION - PART 2

SCALE: 1 : 50



CORE WALL 5 (CW5) ELEVATION - PART 3

SCALE: 1 : 50

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

WALL NOTES:

- REFER TO GENERAL NOTES FOR REINFORCEMENT CONCRETE COVER
- DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND SERVICE ENGINEERS DRAWINGS FOR PENETRATIONS.
- REFER TO DRAWING ST-005-51 TO ST-005-52 FOR TYPICAL R.C. WALL DETAILS
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- NO PENETRATIONS THROUGH LINK BEAMS WITHOUT SPECIFIC APPROVAL OF STRUCTURAL ENGINEER
- LIFT DOOR OPENING SIZE AND SETOUT TO BE CONFIRMED BY LIFT CONTRACTOR
- CONTRACTOR TO SUBMIT PROPOSED REQUIREMENTS FOR ANY CRANES, JUMPFORMS AND TEMPORARY PENETRATIONS AS NO ALLOWANCE HAS BEEN MADE FOR TEMPORARY ITEMS IN CURRENT CORE DESIGN
- CONTRACTOR TO SUBMIT PROPOSED JUMP AND POUR SEQUENCE FOR APPROVAL PRIOR TO COMMENCEMENT OF WORKS.
- POST FIXED STEEL BEAMS WITHIN DOOR OPENINGS TO SUPPORT THE JUMPFORM ARE TO BE DRILLED SO AS TO NOT DAMAGE WALL REINFORCEMENT

1 20.08.21 AS FOR CONSTRUCTION

Rev. Date Description

STRUCTURAL / CIVIL CONSULTANT

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Level 4, 2 Glen Street, Milsons Point NSW 2061
Telephone (02) 8904 1444
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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

CORE WALL ELEVATIONS
SHEET 11

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-005-71

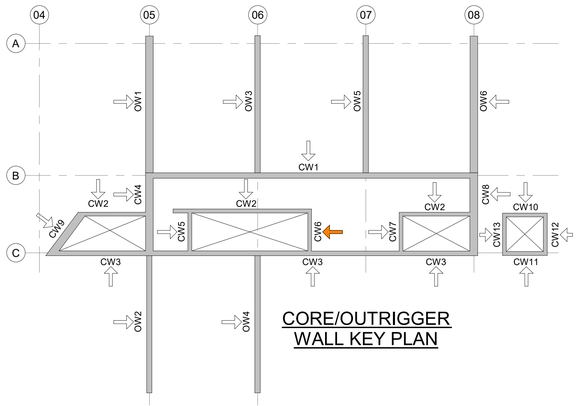
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Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819		
Drawing Title: CORE WALL ELEVATIONS SHEET 12		Drawing No: A1-ST-005-72		
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

CORE WALL 6 (CW6) SCHEDULE

Mark	Width	Base Constraint	Top Constraint	Vertical Reinforcement	Horizontal Reinforcement	Concrete Strength (MPa)
CW6	250	Level 23	Up to level: Level 24			40
CW6	250	Level 22	Up to level: Level 23			40
CW6	250	Level 21	Up to level: Level 22			40
CW6	250	Level 20	Up to level: Level 21			40
CW6	250	Level 19	Up to level: Level 20			40
CW6	250	Level 18	Up to level: Level 19			40
CW6	250	Level 17	Up to level: Level 18			40
CW6	250	Level 16	Up to level: Level 17			40
CW6	250	Level 15	Up to level: Level 16			40
CW6	250	Level 14	Up to level: Level 15			50
CW6	250	Level 13	Up to level: Level 14			50
CW6	250	Level 12	Up to level: Level 13			50
CW6	250	Level 11	Up to level: Level 12			50
CW6	250	Level 10	Up to level: Level 11			50
CW6	250	Level 09	Up to level: Level 10			50
CW6	250	Level 08	Up to level: Level 09			50
CW6	250	Level 07	Up to level: Level 08			50
CW6	250	Level 06	Up to level: Level 07			50
CW6	250	Level 05	Up to level: Level 06			50
CW6	250	Level 04	Up to level: Level 05			50
CW6	250	Level 03	Up to level: Level 04			50
CW6	250	Level 02	Up to level: Level 03			50
CW6	250	Level 01	Up to level: Level 02			50
CW6	250	Ground Floor	Up to level: Level 01			65
CW6	250	Lower Ground	Up to level: Ground Floor			65
CW6	250	Basement 01	Up to level: Lower Ground	N16-300 E.F.	N16-200 E.F.	65
CW6	250	Basement 02	Up to level: Basement 01	N16-300 E.F.	N16-200 E.F.	65
CW6	250	Basement 03	Up to level: Basement 02	N16-300 E.F.	N16-150 E.F.	65

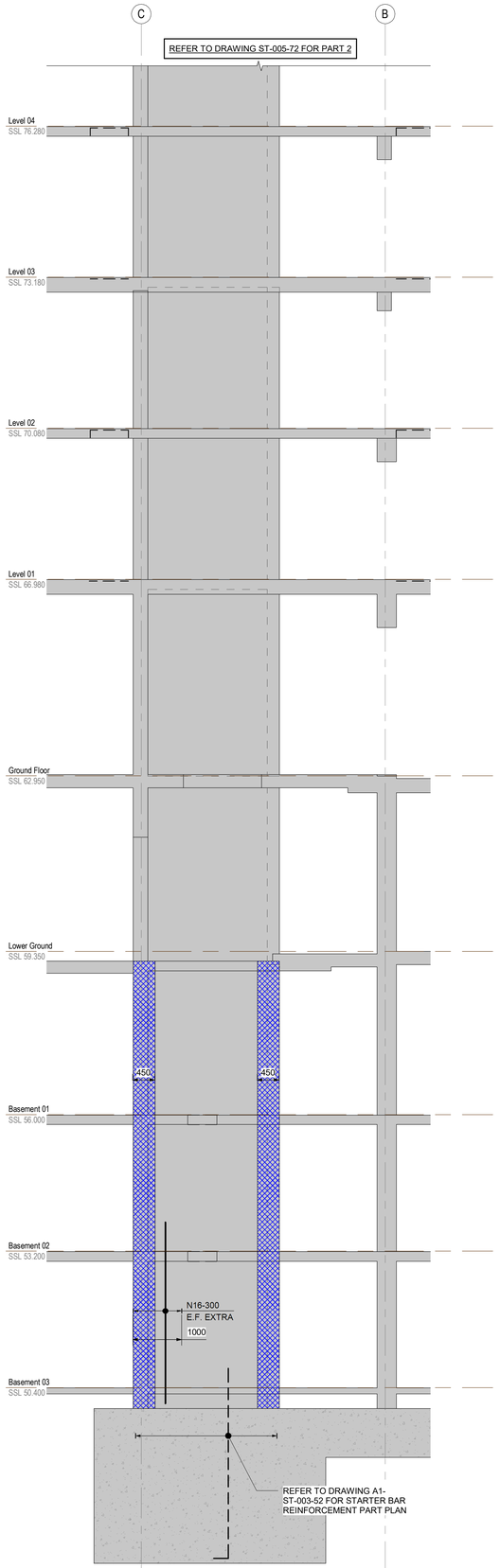


CORE/OUTRIGGER WALL KEY PLAN

DENOTES TYPE 1A TIES REQUIRED
DENOTES TYPE 1B TIES REQUIRED
DENOTES TYPE 1C TIES REQUIRED
DENOTES TYPE 1D TIES REQUIRED
DENOTES TYPE 1E TIES REQUIRED
DENOTES TYPE 2A TIES REQUIRED
DENOTES TYPE 2B TIES REQUIRED

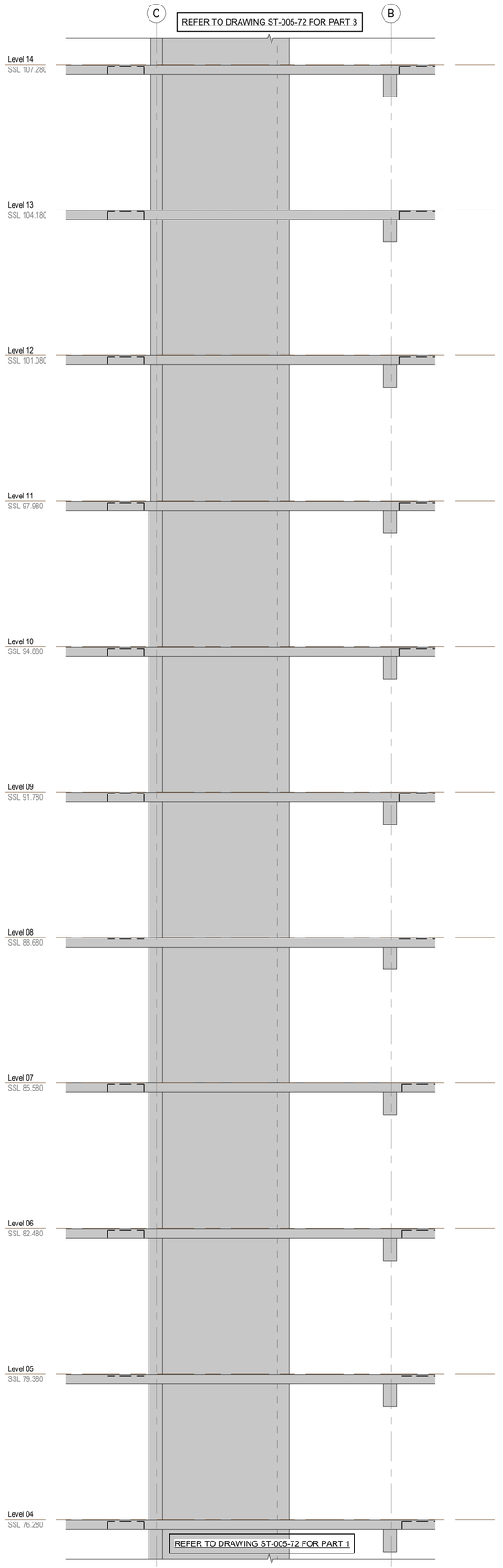
REFER TO TYP. R.C. WALL DETAILS ON DRG. ST-005-52 FOR TIES SPACING

SERVICES OPENINGS SCHEDULE	
MARK	SIZE
E1	E1 - 100 x 400mm
E2	E2 - 150 x 1300mm
E3	E3 - 100 x 1300mm
F1	F1 - 100mm Diameter
F2	F2 - 150mm Diameter
F3	F3 - 100 x 100mm
F4	F4 - 100 x 150mm
F5	F5 - 200 x 200mm
F6	F6 - 100 x 200mm
F8	F8 - 600 x 1900mm
H1	H1 - 95mm Diameter
H2	H2 - 120mm Diameter
H3	H3 - 170mm Diameter
H4	H4 - 270mm Diameter
M2	M2 - 600 x 1500mm
M3	M3 - 900 x 900mm
M4	M4 - 1000 x 1200mm
M6	M6 - 280 x 280mm
M7	M7 - 550 x 650mm
M8	M8 - 400 x 800mm
M9	M9 - 1000 x 1000mm
M10	M10 - 230 x 230mm



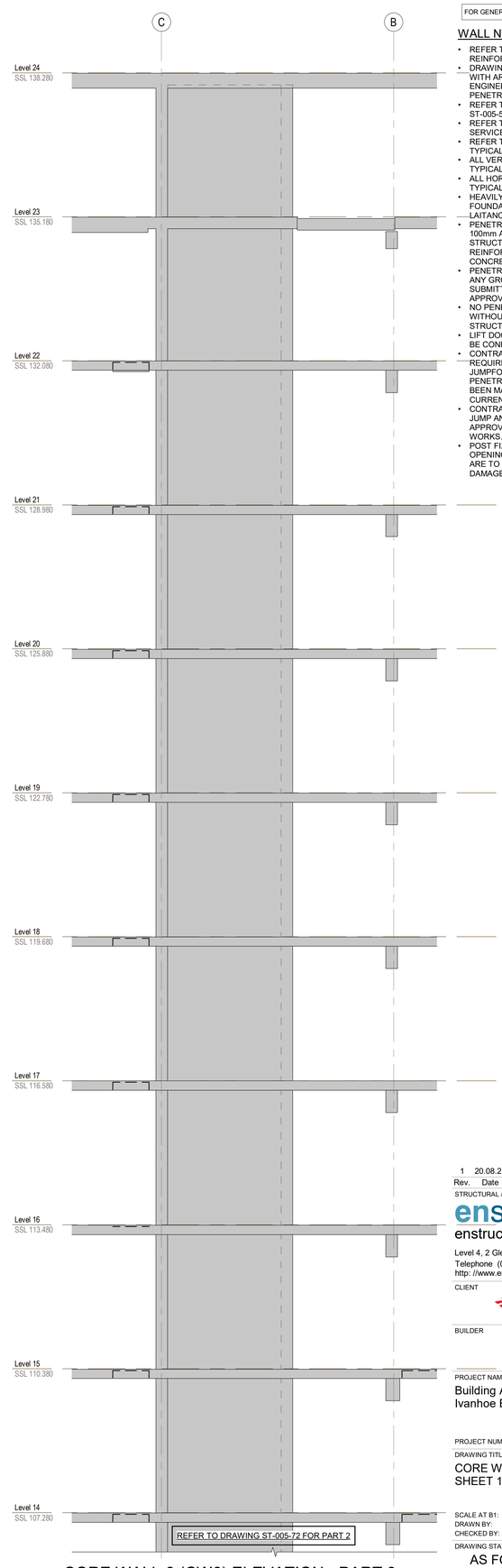
CORE WALL 6 (CW6) ELEVATION - PART 1

SCALE: 1 : 50



CORE WALL 6 (CW6) ELEVATION - PART 2

SCALE: 1 : 50



CORE WALL 6 (CW6) ELEVATION - PART 3

SCALE: 1 : 50

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

WALL NOTES:

- REFER TO GENERAL NOTES FOR REINFORCEMENT CONCRETE COVER
- DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND SERVICE ENGINEERS DRAWINGS FOR PENETRATIONS.
- REFER TO DRAWING ST-005-51 TO ST-005-52 FOR TYPICAL R.C. WALL DETAILS
- REFER TO DRAWING ST-005-53 FOR SERVICES OPENING SCHEDULE
- REFER TO DRAWING ST-005-54 FOR TYPICAL R.C. WALL LINK BEAM DETAILS
- ALL VERTICAL LAPS TO BE 1.0 Lsyt TYPICAL.
- ALL HORIZONTAL LAPS TO BE 1.3 Lsyt TYPICAL.
- HEAVILY SCABBLE AT WALL TO FOUNDATION INTERFACE TO REMOVE LAITANCE TYP.
- PENETRATIONS LESS THAN OR EQUAL TO 100mm ARE NOT SHOWN BY THE STRUCTURAL ENGINEER BUT MUST AVOID REINFORCEMENT AND MAINTAIN CONCRETE COVER
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Rev. Date Description

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BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
CORE WALL ELEVATIONS
SHEET 12

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

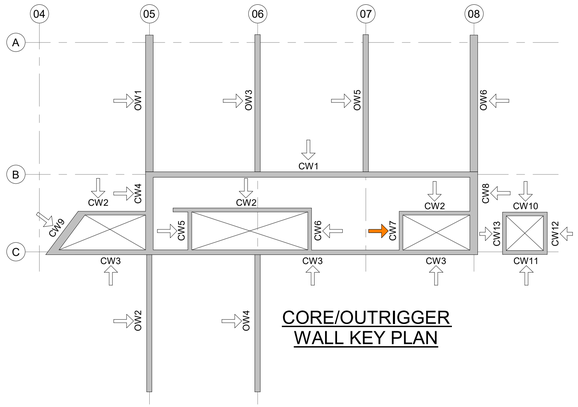
DRAWING NUMBER A1-ST-005-72
REV. 1

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Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819		
Drawing Title: CORE WALL ELEVATIONS SHEET 13		Drawing No: A1-ST-005-73		
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

CORE WALL 7 (CW7) SCHEDULE

Mark	Width	Base Constraint	Top Constraint	Vertical Reinforcement	Horizontal Reinforcement	Concrete Strength (MPa)
CW7	250	Level 22	Up to level: Level 23			40
CW7	250	Level 21	Up to level: Level 22			40
CW7	250	Level 20	Up to level: Level 21			40
CW7	250	Level 19	Up to level: Level 20			40
CW7	250	Level 18	Up to level: Level 19			40
CW7	250	Level 17	Up to level: Level 18			40
CW7	250	Level 16	Up to level: Level 17			40
CW7	250	Level 15	Up to level: Level 16			40
CW7	250	Level 14	Up to level: Level 15			50
CW7	250	Level 13	Up to level: Level 14			50
CW7	250	Level 12	Up to level: Level 13			50
CW7	250	Level 11	Up to level: Level 12			50
CW7	250	Level 10	Up to level: Level 11			50
CW7	250	Level 09	Up to level: Level 10			50
CW7	250	Level 08	Up to level: Level 09			50
CW7	250	Level 07	Up to level: Level 08			50
CW7	250	Level 06	Up to level: Level 07			50
CW7	250	Level 05	Up to level: Level 06			50
CW7	250	Level 04	Up to level: Level 05			50
CW7	250	Level 03	Up to level: Level 04			50
CW7	250	Level 02	Up to level: Level 03			50
CW7	250	Level 01	Up to level: Level 02			50
CW7	250	Ground Floor	Up to level: Level 01			65
CW7	250	Lower Ground	Up to level: Ground Floor			65
CW7	250	Basement 01	Up to level: Lower Ground	N16-300 E.F.	N16-150 E.F.	65
CW7	250	Basement 02	Up to level: Basement 01	N16-300 E.F.	N16-150 E.F.	65
CW7	250	Basement 03	Up to level: Basement 02	N16-300 E.F.	N16-150 E.F.	65

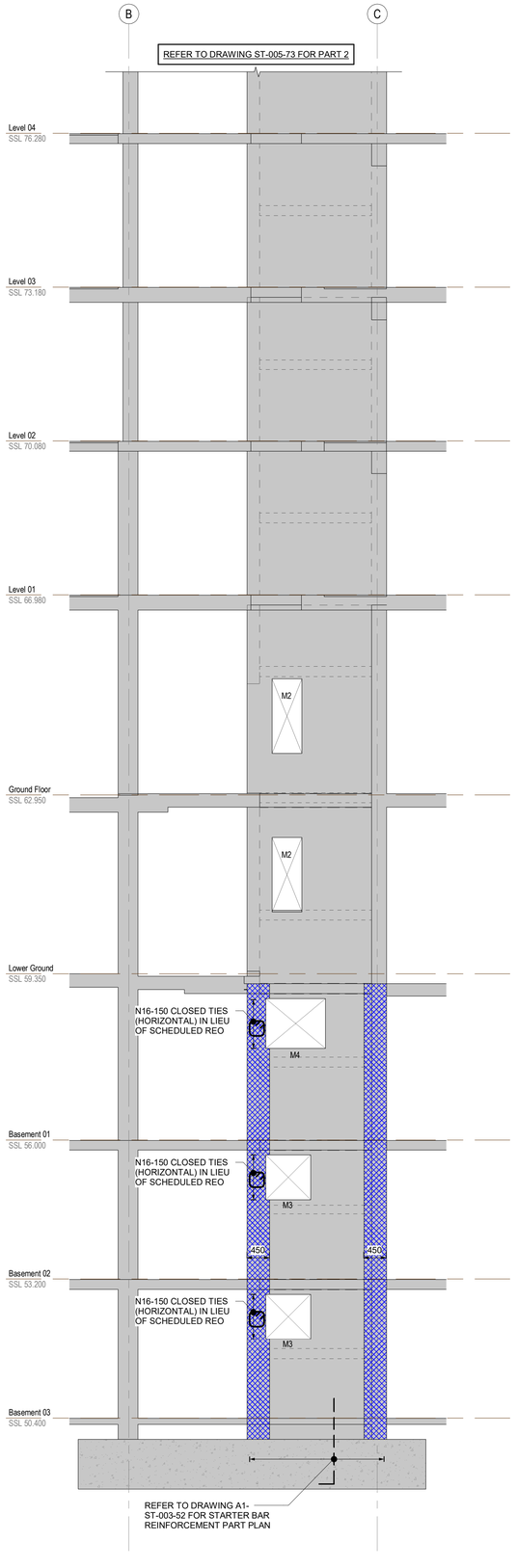


CORE/OUTRIGGER WALL KEY PLAN

DENOTES TYPE 1A TIES REQUIRED
DENOTES TYPE 1B TIES REQUIRED
DENOTES TYPE 1C TIES REQUIRED
DENOTES TYPE 1D TIES REQUIRED
DENOTES TYPE 1E TIES REQUIRED
DENOTES TYPE 2A TIES REQUIRED
DENOTES TYPE 2B TIES REQUIRED

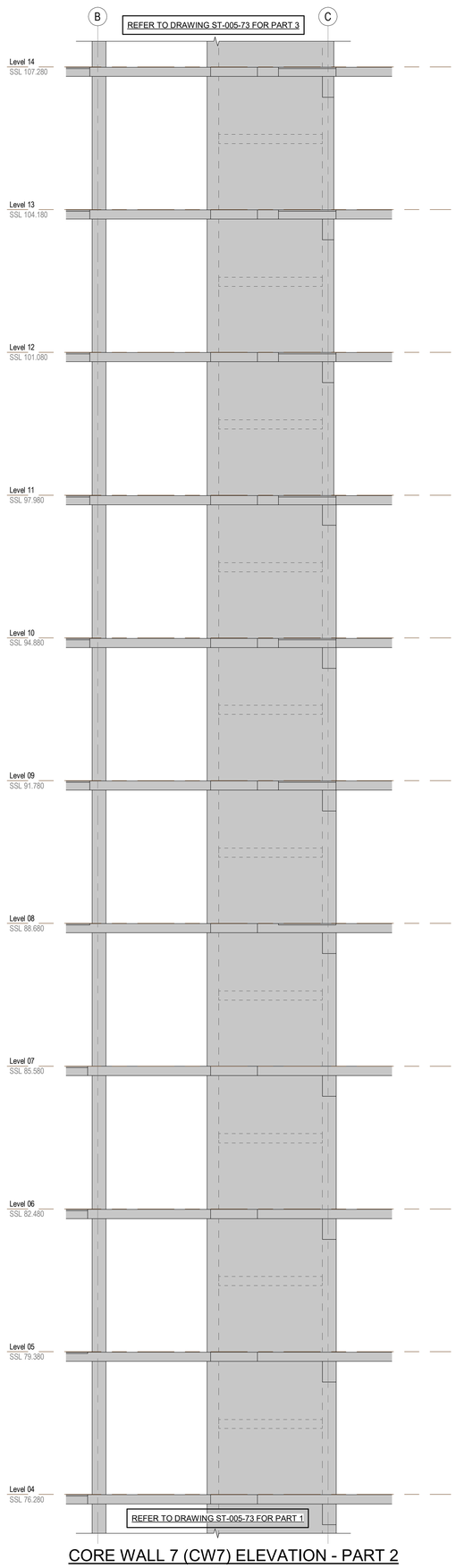
REFER TO TYP. R.C. WALL DETAILS ON DRG. ST-005-52 FOR TIES SPACING

SERVICES OPENINGS SCHEDULE	
MARK	SIZE
E1	E1 - 100 x 400mm
E2	E2 - 150 x 1300mm
E3	E3 - 100 x 1300mm
F1	F1 - 100mm Diameter
F2	F2 - 150mm Diameter
F3	F3 - 100 x 100mm
F4	F4 - 100 x 150mm
F5	F5 - 200 x 200mm
F6	F6 - 100 x 200mm
F8	F8 - 600 x 1900mm
H1	H1 - 95mm Diameter
H2	H2 - 120mm Diameter
H3	H3 - 170mm Diameter
H4	H4 - 270mm Diameter
M2	M2 - 600 x 1500mm
M3	M3 - 900 x 900mm
M4	M4 - 1000 x 1200mm
M6	M6 - 280 x 280mm
M7	M7 - 550 x 650mm
M8	M8 - 400 x 800mm
M9	M9 - 1000 x 1000mm
M10	M10 - 230 x 230mm



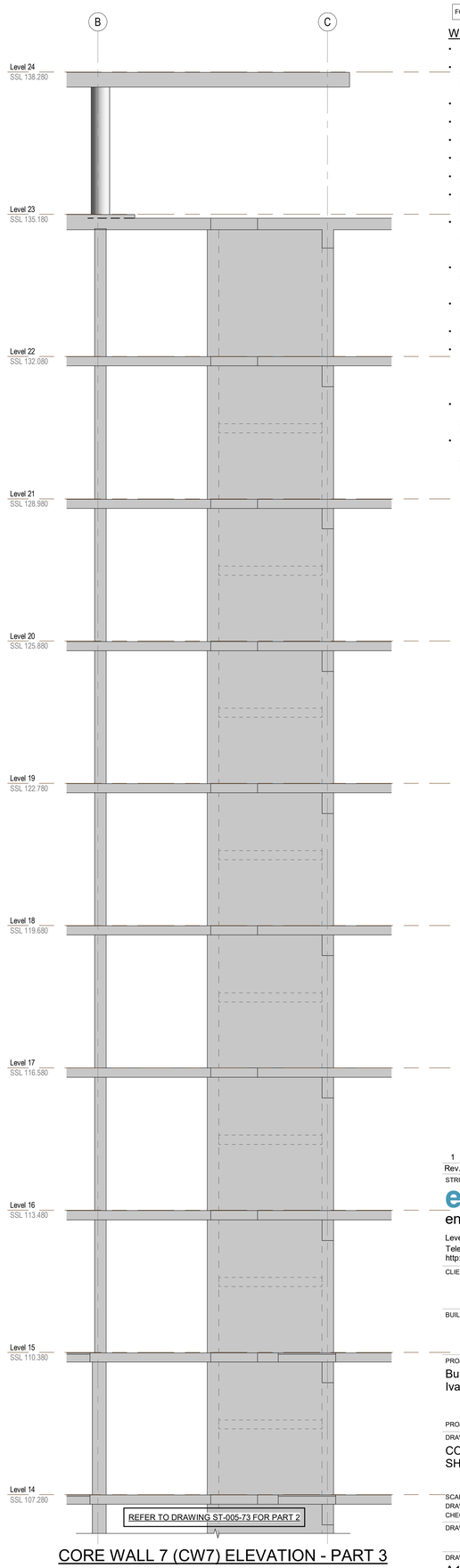
CORE WALL 7 (CW7) ELEVATION - PART 1

SCALE: 1 : 50



CORE WALL 7 (CW7) ELEVATION - PART 2

SCALE: 1 : 50



CORE WALL 7 (CW7) ELEVATION - PART 3

SCALE: 1 : 50

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

WALL NOTES:

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- REFER TO DRAWING ST-005-53 FOR SERVICES OPENING SCHEDULE
- REFER TO DRAWING ST-005-54 FOR TYPICAL R.C. WALL LINK BEAM DETAILS
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1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

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BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
CORE WALL ELEVATIONS
SHEET 13

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

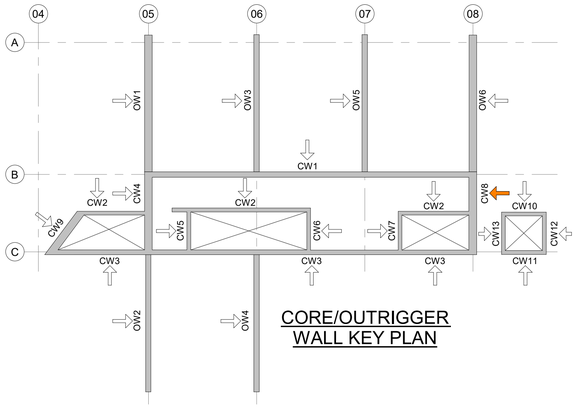
DRAWING NUMBER: A1-ST-005-73
REV.: 1

20/08/2021 5:14:17 PM

Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819		
Drawing Title: CORE WALL ELEVATIONS SHEET 14		Drawing No: A1-ST-005-74		
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

CORE WALL 8 (CW8) SCHEDULE

Mark	Width	Base Constraint	Top Constraint	Vertical Reinforcement	Horizontal Reinforcement	Concrete Strength (MPa)
CW8	250	Level 22	Up to level: Level 23			40
CW8	250	Level 21	Up to level: Level 22			40
CW8	250	Level 20	Up to level: Level 21			40
CW8	250	Level 19	Up to level: Level 20			40
CW8	250	Level 18	Up to level: Level 19			40
CW8	250	Level 17	Up to level: Level 18			40
CW8	250	Level 16	Up to level: Level 17			40
CW8	250	Level 15	Up to level: Level 16			40
CW8	250	Level 14	Up to level: Level 15			50
CW8	250	Level 13	Up to level: Level 14			50
CW8	250	Level 12	Up to level: Level 13			50
CW8	250	Level 11	Up to level: Level 12			50
CW8	250	Level 10	Up to level: Level 11			50
CW8	250	Level 09	Up to level: Level 10			50
CW8	250	Level 08	Up to level: Level 09			50
CW8	250	Level 07	Up to level: Level 08			50
CW8	250	Level 06	Up to level: Level 07			50
CW8	250	Level 05	Up to level: Level 06			50
CW8	250	Level 04	Up to level: Level 05			50
CW8	250	Level 03	Up to level: Level 04			50
CW8	250	Level 02	Up to level: Level 03			50
CW8	250	Level 01	Up to level: Level 02			50
CW8	400	Ground Floor	Up to level: Level 01			65
CW8	400	Lower Ground	Up to level: Ground Floor			65
CW8	400	Basement 01	Up to level: Lower Ground	N20-300 E.F.	N20-125 E.F.	65
CW8	400	Basement 02	Up to level: Basement 01	N20-300 E.F.	N20-125 E.F.	65
CW8	400	Basement 03	Up to level: Basement 02	N20-150 E.F.	N20-125 E.F.	65

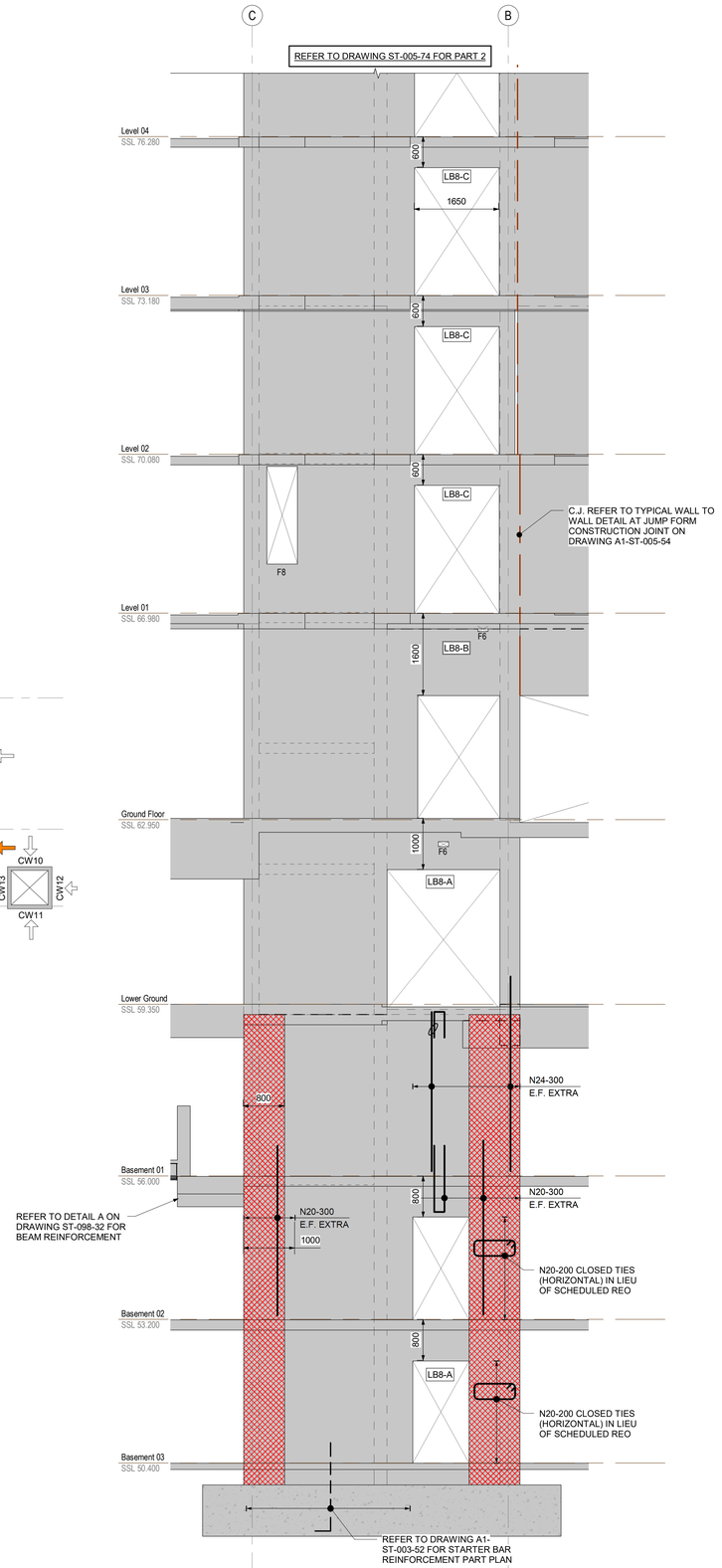


CORE/OUTRIGGER WALL KEY PLAN

DENOTES TYPE 1A TIES REQUIRED
DENOTES TYPE 1B TIES REQUIRED
DENOTES TYPE 1C TIES REQUIRED
DENOTES TYPE 1D TIES REQUIRED
DENOTES TYPE 1E TIES REQUIRED
DENOTES TYPE 2A TIES REQUIRED
DENOTES TYPE 2B TIES REQUIRED

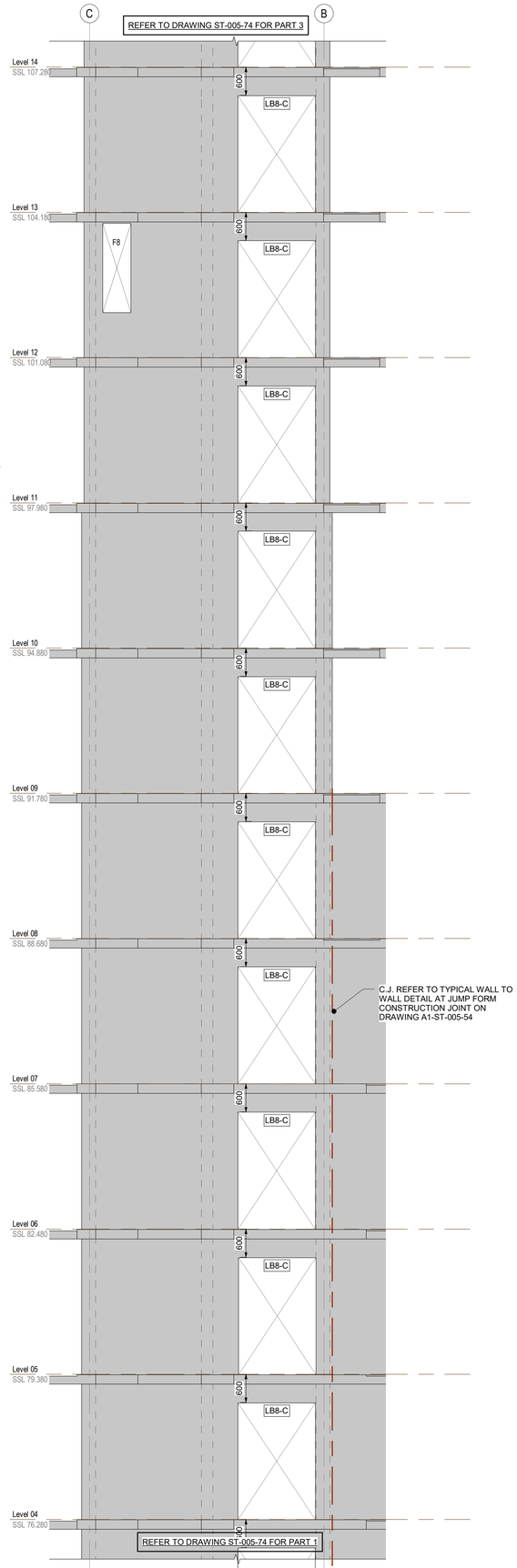
REFER TO TYP. R.C. WALL DETAILS ON DRG. ST-005-52 FOR TIES SPACING

SERVICES OPENINGS SCHEDULE	
MARK	SIZE
E1	E1 - 100 x 400mm
E2	E2 - 150 x 1300mm
E3	E3 - 100 x 1300mm
F1	F1 - 100mm Diameter
F2	F2 - 150mm Diameter
F3	F3 - 100 x 100mm
F4	F4 - 100 x 150mm
F5	F5 - 200 x 200mm
F6	F6 - 100 x 200mm
F8	F8 - 600 x 1900mm
H1	H1 - 95mm Diameter
H2	H2 - 120mm Diameter
H3	H3 - 170mm Diameter
H4	H4 - 270mm Diameter
M2	M2 - 600 x 1500mm
M3	M3 - 900 x 900mm
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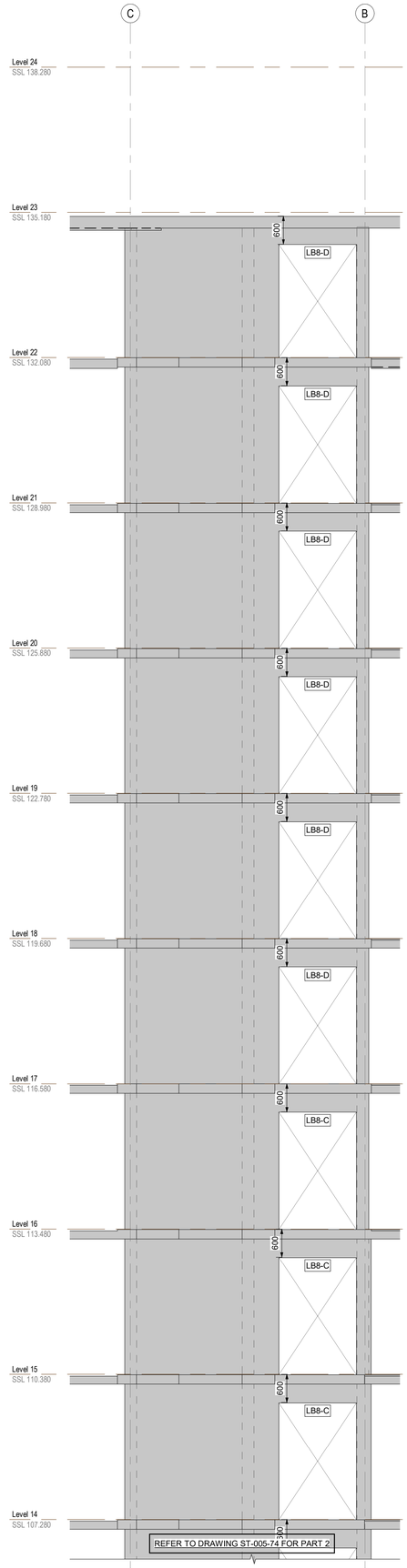
CORE WALL 8 (CW8) ELEVATION - PART 1

SCALE: 1 : 50



CORE WALL 8 (CW8) ELEVATION - PART 2

SCALE: 1 : 50



CORE WALL 8 (CW8) ELEVATION - PART 3

SCALE: 1 : 50

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

WALL NOTES:

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Rev. Date Description

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FRASERS PROPERTY

BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
CORE WALL ELEVATIONS
SHEET 14

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER
A1-ST-005-74

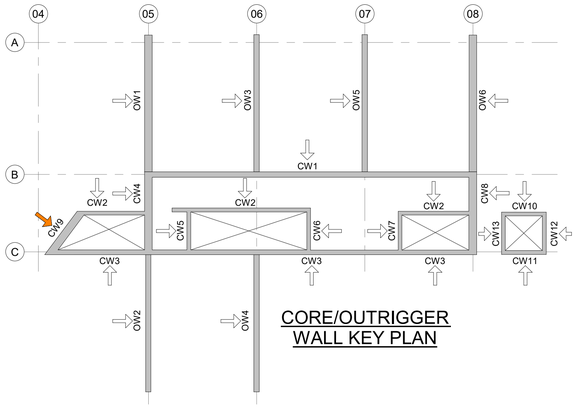
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1

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Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819		
Drawing Title: CORE WALL ELEVATIONS SHEET 15		Drawing No: A1-ST-005-75		
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

CORE WALL 9 (CW9) SCHEDULE

Mark	Width	Base Constraint	Top Constraint	Vertical Reinforcement	Horizontal Reinforcement	Concrete Strength (MPa)
CW9	250	Level 23	Up to level: Level 24			40
CW9	250	Level 22	Up to level: Level 23			40
CW9	250	Level 21	Up to level: Level 22			40
CW9	250	Level 20	Up to level: Level 21			40
CW9	250	Level 19	Up to level: Level 20			40
CW9	250	Level 18	Up to level: Level 19			40
CW9	250	Level 17	Up to level: Level 18			40
CW9	250	Level 16	Up to level: Level 17			40
CW9	250	Level 15	Up to level: Level 16			40
CW9	250	Level 14	Up to level: Level 15			50
CW9	250	Level 13	Up to level: Level 14			50
CW9	250	Level 12	Up to level: Level 13			50
CW9	250	Level 11	Up to level: Level 12			50
CW9	250	Level 10	Up to level: Level 11			50
CW9	250	Level 09	Up to level: Level 10			50
CW9	250	Level 08	Up to level: Level 09			50
CW9	250	Level 07	Up to level: Level 08			50
CW9	250	Level 06	Up to level: Level 07			50
CW9	250	Level 05	Up to level: Level 06			50
CW9	250	Level 04	Up to level: Level 05			50
CW9	250	Level 03	Up to level: Level 04			50
CW9	250	Level 02	Up to level: Level 03			50
CW9	250	Level 01	Up to level: Level 02			50
CW9	400	Ground Floor	Up to level: Level 01			65
CW9	400	Lower Ground	Up to level: Ground Floor			65
CW9	400	Basement 01	Up to level: Lower Ground	N20-300 E.F.	N16-200 E.F.	65
CW9	400	Basement 02	Up to level: Basement 01	N20-300 E.F.	N16-200 E.F.	65
CW9	400	Basement 03	Up to level: Basement 02	N20-150 E.F.	N16-200 E.F.	65

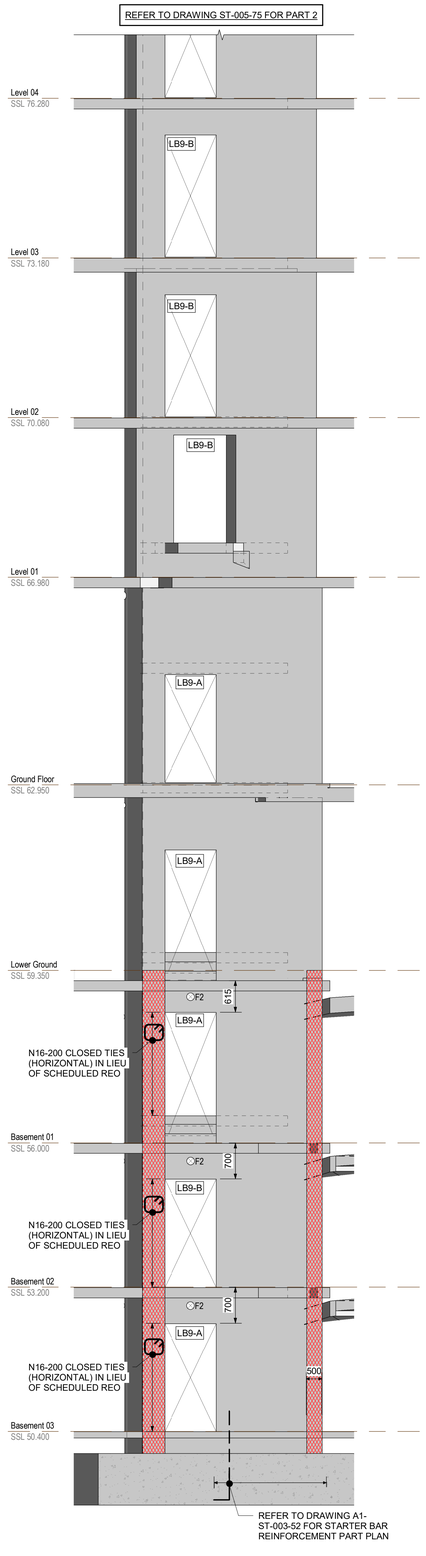


CORE/OUTRIGGER WALL KEY PLAN

- DENOTES TYPE 1A TIES REQUIRED
- DENOTES TYPE 1B TIES REQUIRED
- DENOTES TYPE 1C TIES REQUIRED
- DENOTES TYPE 1D TIES REQUIRED
- DENOTES TYPE 1E TIES REQUIRED
- DENOTES TYPE 2A TIES REQUIRED
- DENOTES TYPE 2B TIES REQUIRED

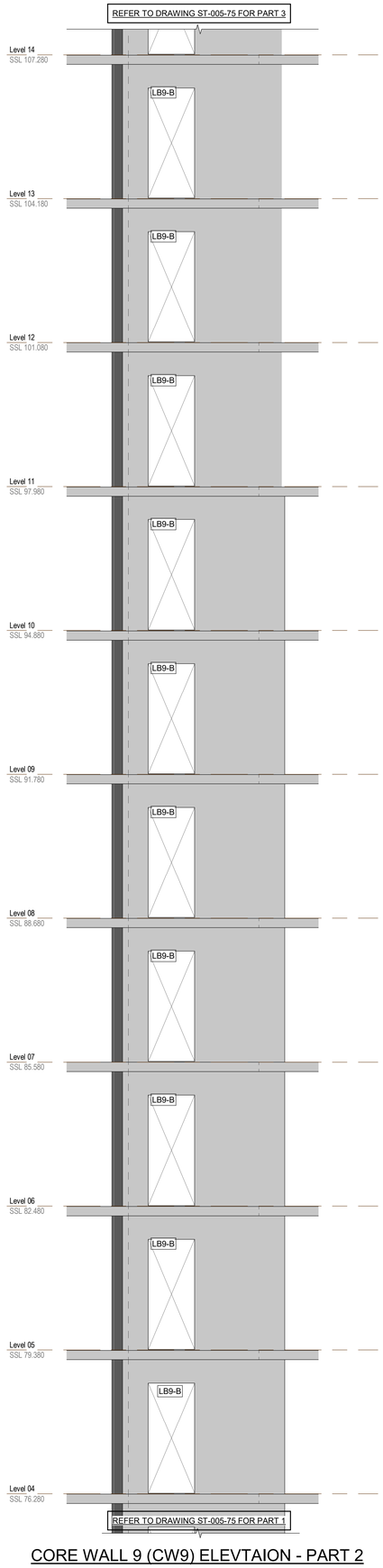
REFER TO TYP. R.C. WALL DETAILS ON DRG. ST-005-52 FOR TIES SPACING

SERVICES OPENINGS SCHEDULE	
MARK	SIZE
E1	E1 - 100 x 400mm
E2	E2 - 150 x 1300mm
E3	E3 - 100 x 1300mm
F1	F1 - 100mm Diameter
F2	F2 - 150mm Diameter
F3	F3 - 100 x 100mm
F4	F4 - 100 x 150mm
F5	F5 - 200 x 200mm
F6	F6 - 100 x 200mm
F8	F8 - 600 x 1900mm
H1	H1 - 95mm Diameter
H2	H2 - 120mm Diameter
H3	H3 - 170mm Diameter
H4	H4 - 270mm Diameter
M2	M2 - 600 x 1500mm
M3	M3 - 900 x 900mm
M4	M4 - 1000 x 1200mm
M6	M6 - 280 x 280mm
M7	M7 - 550 x 650mm
M8	M8 - 400 x 800mm
M9	M9 - 1000 x 1000mm
M10	M10 - 230 x 230mm



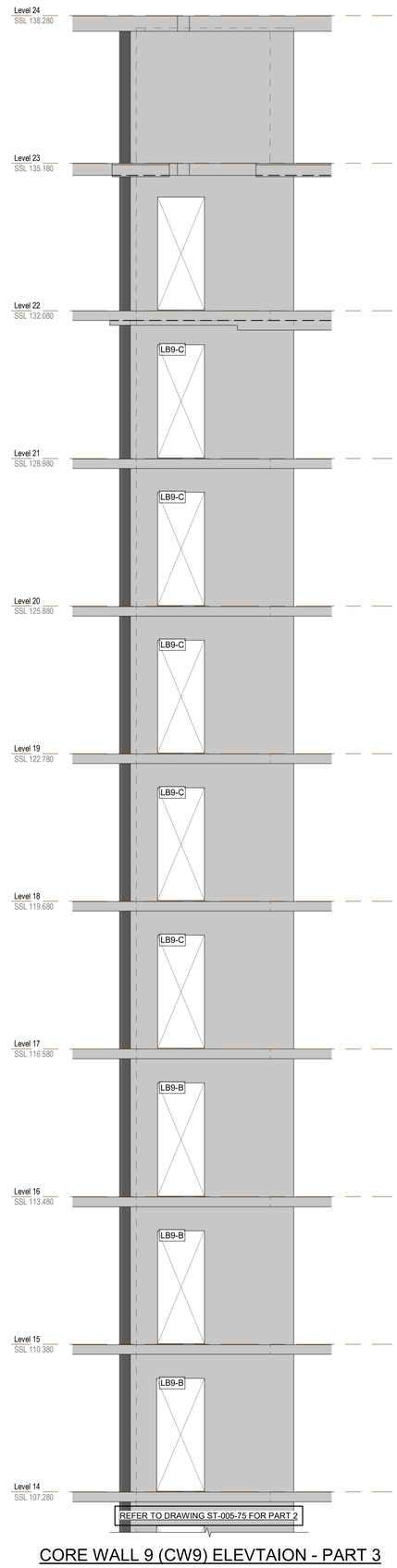
CORE WALL 9 (CW9) ELEVTAION - PART 1

SCALE: 1 : 50



CORE WALL 9 (CW9) ELEVTAION - PART 2

SCALE: 1 : 50



CORE WALL 9 (CW9) ELEVTAION - PART 3

SCALE: 1 : 50

B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

WALL NOTES:

- REFER TO GENERAL NOTES FOR REINFORCEMENT CONCRETE COVER
- DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND SERVICE ENGINEERS DRAWINGS FOR PENETRATIONS.
- REFER TO DRAWING ST-005-51 TO ST-005-52 FOR TYPICAL R.C. WALL DETAILS
- REFER TO DRAWING ST-005-53 FOR SERVICES OPENING SCHEDULE
- REFER TO DRAWING ST-005-54 FOR TYPICAL R.C. WALL LINK BEAM DETAILS
- ALL VERTICAL LAPS TO BE 1.0 Lsyt TYPICAL
- ALL HORIZONTAL LAPS TO BE 1.3 Lsyt TYPICAL
- HEAVILY SCABBLE AT WALL TO FOUNDATION INTERFACE TO REMOVE LAITANCE TYP.
- PENETRATIONS LESS THAN OR EQUAL TO 100mm ARE NOT SHOWN BY THE STRUCTURAL ENGINEER BUT MUST AVOID REINFORCEMENT AND MAINTAIN CONCRETE COVER
- PENETRATIONS GREATER THAN 100mm OR ANY GROUPED PENETRATIONS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL
- NO PENETRATIONS THROUGH LINK BEAMS WITHOUT SPECIFIC APPROVAL OF STRUCTURAL ENGINEER
- LIFT DOOR OPENING SIZE AND SETOUT TO BE CONFIRMED BY LIFT CONTRACTOR
- CONTRACTOR TO SUBMIT PROPOSED REQUIREMENTS FOR ANY CRANES, JUMPFORMS AND TEMPORARY PENETRATIONS AS NO ALLOWANCE HAS BEEN MADE FOR TEMPORARY ITEMS IN CURRENT CORE DESIGN
- CONTRACTOR TO SUBMIT PROPOSED JUMP AND POUR SEQUENCE FOR APPROVAL PRIOR TO COMMENCEMENT OF WORKS.
- POST FIXED STEEL BEAMS WITHIN DOOR OPENINGS TO SUPPORT THE JUMPFORM ARE TO BE DRILLED SO AS TO NOT DAMAGE WALL REINFORCEMENT

1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

STRUCTURAL / CIVIL CONSULTANT

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Level 4, 2 Glen Street, Milsons Point NSW 2061
Telephone (02) 8904 1444
http: //www.enstruct.com.au

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BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
CORE WALL ELEVATIONS
SHEET 15

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER
A1-ST-005-75

REV.
1

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Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819		
Drawing Title: CORE WALL ELEVATIONS SHEET 16		Drawing No: A1-ST-005-76		
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

CORE WALL 10 (CW10) SCHEDULE

Mark	Width	Base Constraint	Top Constraint	Vertical Reinforcement	Horizontal Reinforcement	Concrete Strength (MPa)
CW10	250	Ground Floor	Up to level: Level 01			50
CW10	250	Lower Ground	Up to level: Ground Floor			50
CW10	250	Basement 01	Up to level: Lower Ground	N16-300 E.F.	N12-200 E.F.	50
CW10	250	Basement 02	Up to level: Basement 01	N16-300 E.F.	N12-200 E.F.	50
CW10	250	Basement 03	Up to level: Basement 02	N16-150 E.F.	N12-200 E.F.	50

CORE WALL 11 (CW11) SCHEDULE

Mark	Width	Base Constraint	Top Constraint	Vertical Reinforcement	Horizontal Reinforcement	Concrete Strength (MPa)
CW11	250	Ground Floor	Up to level: Level 01			50
CW11	250	Lower Ground	Up to level: Ground Floor			50
CW11	250	Basement 01	Up to level: Lower Ground	N16-300 E.F.	N12-200 E.F.	50
CW11	250	Basement 02	Up to level: Basement 01	N16-300 E.F.	N12-200 E.F.	50
CW11	250	Basement 03	Up to level: Basement 02	N16-150 E.F.	N12-200 E.F.	50

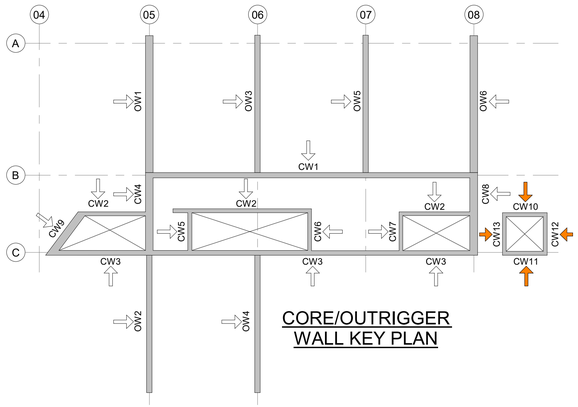
CORE WALL 12 (CW12) SCHEDULE

Mark	Width	Base Constraint	Top Constraint	Vertical Reinforcement	Horizontal Reinforcement	Concrete Strength (MPa)
CW12	250	Ground Floor	Up to level: Level 01			50
CW12	250	Lower Ground	Up to level: Ground Floor			50
CW12	250	Basement 01	Up to level: Lower Ground	N20-300 E.F.	N16-200 E.F.	50
CW12	250	Basement 02	Up to level: Basement 01	N20-300 E.F.	N16-200 E.F.	50
CW12	250	Basement 03	Up to level: Basement 02	N20-300 E.F.	N16-150 E.F.	50

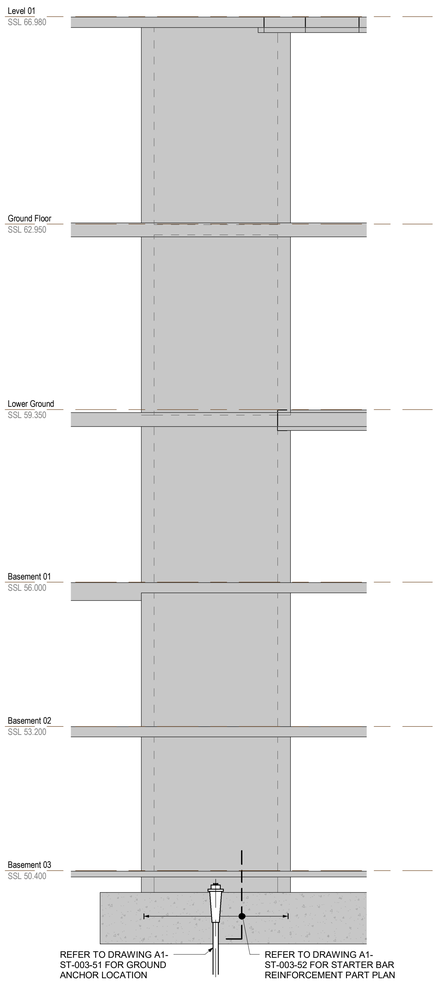
CORE WALL 13 (CW13) SCHEDULE

Mark	Width	Base Constraint	Top Constraint	Vertical Reinforcement	Horizontal Reinforcement	Concrete Strength (MPa)
CW13	250	Ground Floor	Up to level: Level 01			50
CW13	250	Lower Ground	Up to level: Ground Floor			50
CW13	250	Basement 01	Up to level: Lower Ground	N16-300 E.F.	N12-200 E.F.	50
CW13	250	Basement 02	Up to level: Basement 01	N16-300 E.F.	N12-200 E.F.	50
CW13	250	Basement 03	Up to level: Basement 02	N16-300 E.F.	N16-200 E.F.	50

SERVICES OPENINGS SCHEDULE	
MARK	SIZE
E1	E1 - 100 x 400mm
E2	E2 - 150 x 1300mm
E3	E3 - 100 x 1300mm
F1	F1 - 100mm Diameter
F2	F2 - 150mm Diameter
F3	F3 - 100 x 100mm
F4	F4 - 100 x 150mm
F5	F5 - 200 x 200mm
F6	F6 - 100 x 200mm
F8	F8 - 600 x 1900mm
H1	H1 - 95mm Diameter
H2	H2 - 120mm Diameter
H3	H3 - 170mm Diameter
H4	H4 - 270mm Diameter
M2	M2 - 600 x 1500mm
M3	M3 - 900 x 900mm
M4	M4 - 1000 x 1200mm
M6	M6 - 280 x 280mm
M7	M7 - 550 x 650mm
M8	M8 - 400 x 800mm
M9	M9 - 1000 x 1000mm
M10	M10 - 230 x 230mm

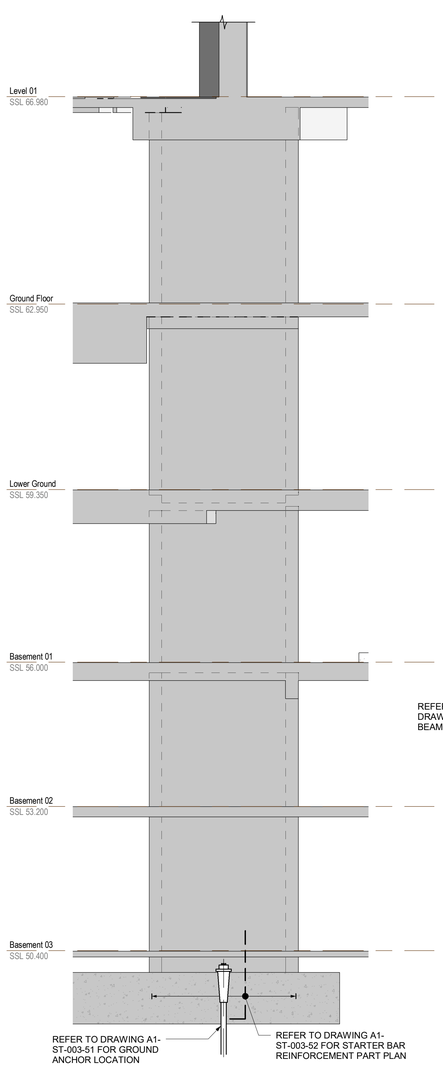


CORE/OUTRIGGER WALL KEY PLAN



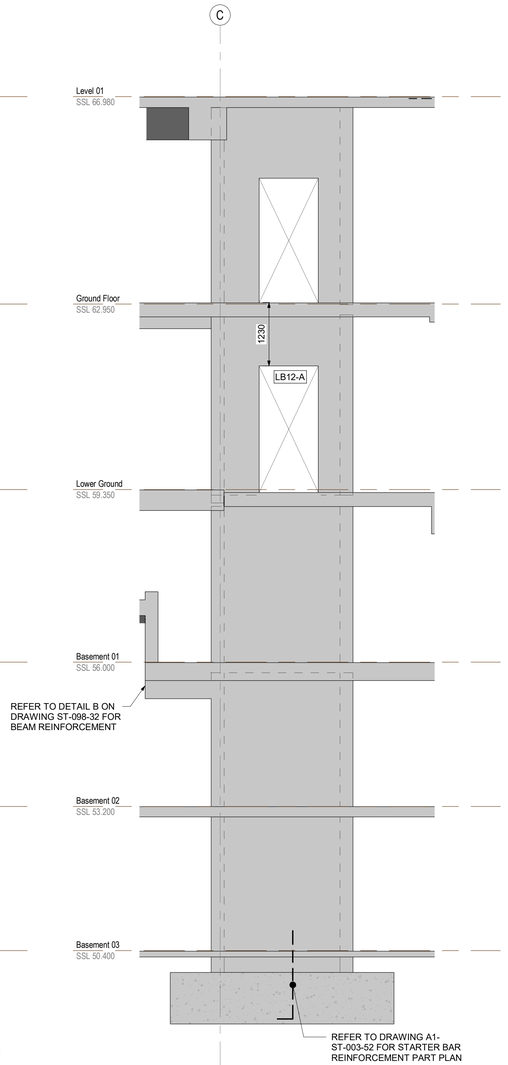
CORE WALL 10 (CW10) ELEVATION

SCALE: 1 : 50



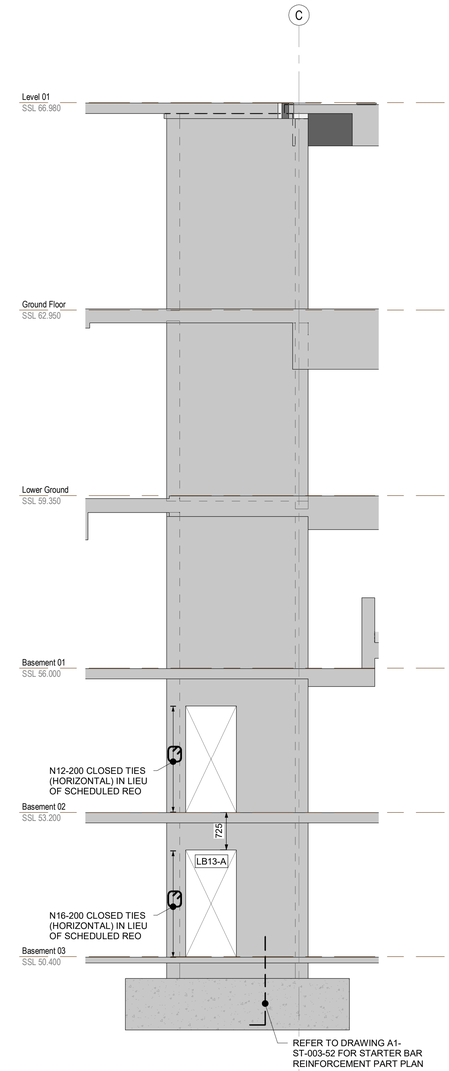
CORE WALL 11 (CW11) ELEVATION

SCALE: 1 : 50



CORE WALL 12 (CW12) ELEVATION

SCALE: 1 : 50



CORE WALL 13 (CW13) ELEVATION

SCALE: 1 : 50

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

WALL NOTES:

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- REFER TO DRAWING ST-005-51 TO ST-005-52 FOR TYPICAL R.C. WALL DETAILS
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1 20.08.21 AS FOR CONSTRUCTION

Rev. Date Description

STRUCTURAL / CIVIL CONSULTANT

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Level 4, 2 Glen Street, Milsons Point NSW 2061

Telephone (02) 8904 1444

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CLIENT

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BUILDER

PROJECT NAME

Building A1, Midtown MacPark Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

CORE WALL ELEVATIONS SHEET 16

SCALE AT B1: 1 : 50

DRAWN BY: WAS

CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-005-76

REV. 1

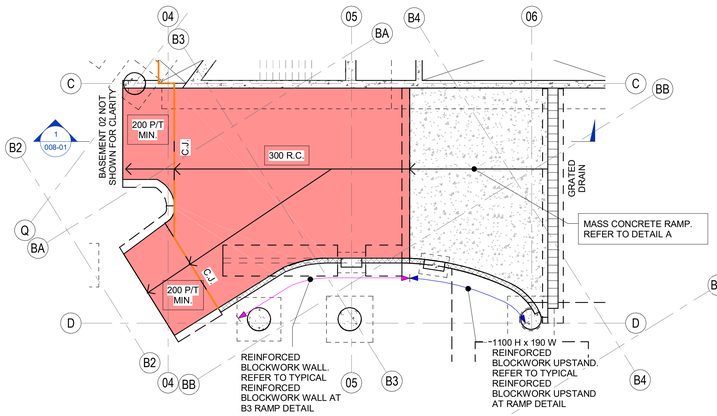
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Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: CARPARK RAMP SECTIONS AND DETAILS		Drawing No: A1-ST-008-01	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
A	19.07.21	ISSUED FOR COORDINATION		
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

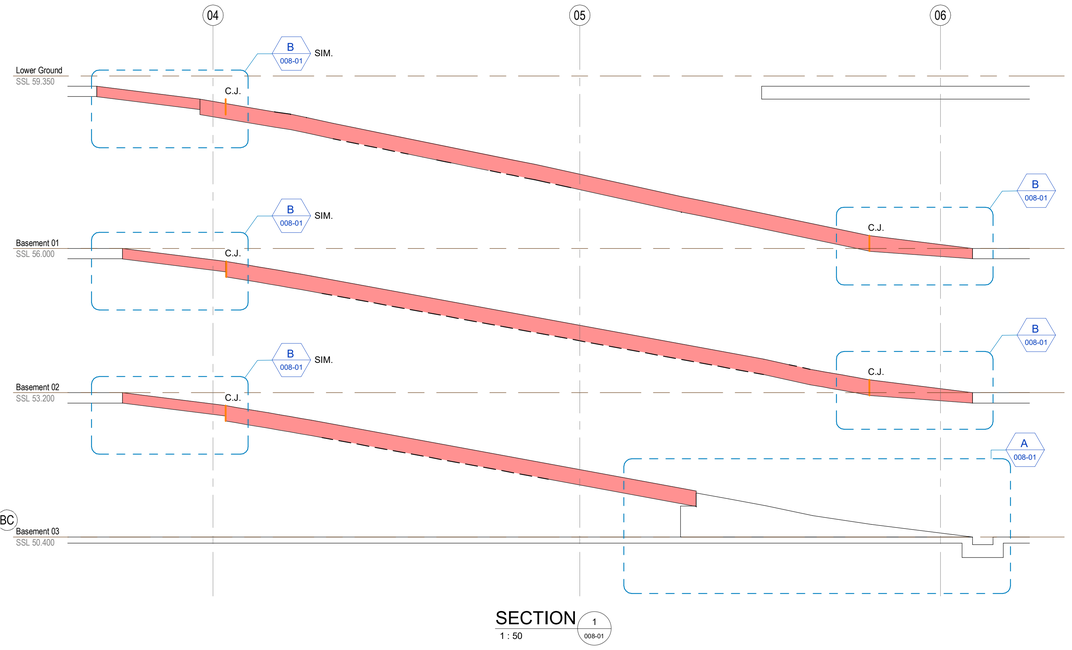
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FOR GENERAL NOTES REFER TO DRAWING ST-001-01



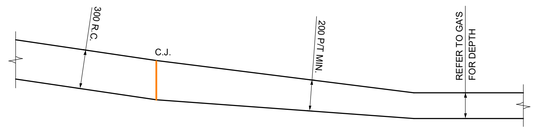
CARPARK RAMP BASEMENT 03 PLAN

SCALE: 1 : 100



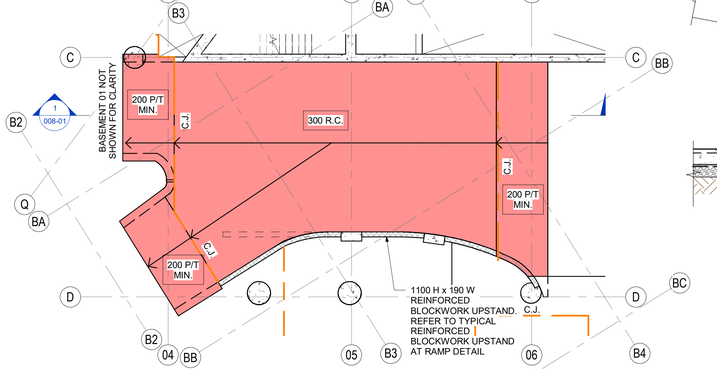
SECTION

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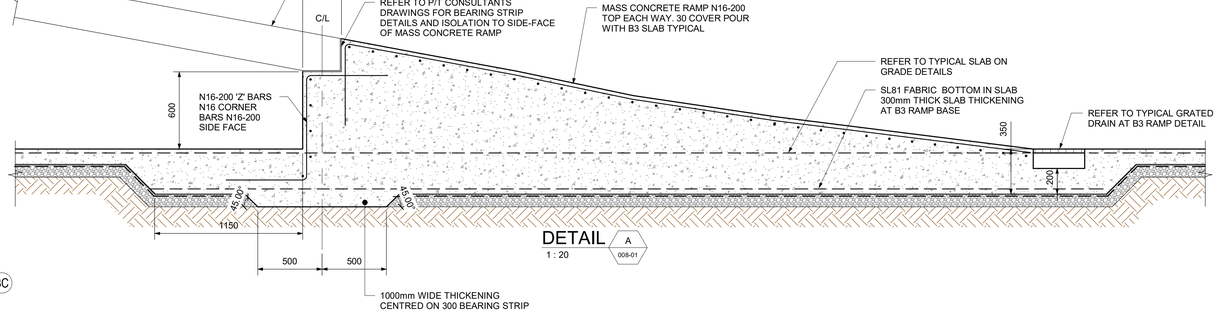
DETAIL

1 : 20 (B / 008-01)



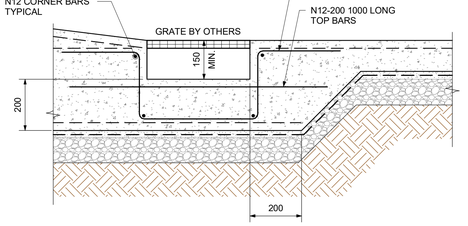
CARPARK RAMP BASEMENT 02 PLAN

SCALE: 1 : 100



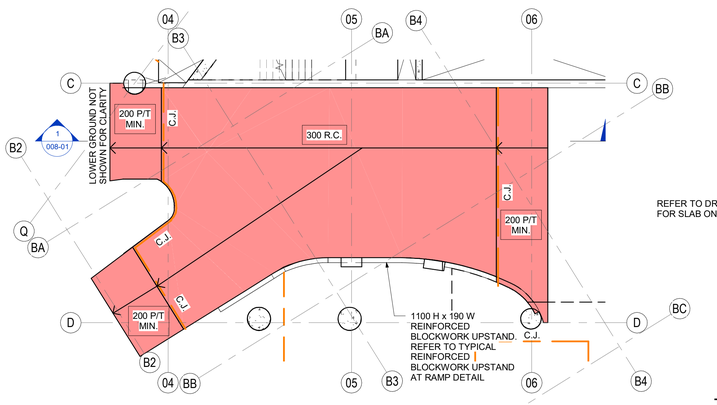
DETAIL

1 : 20 (A / 008-01)



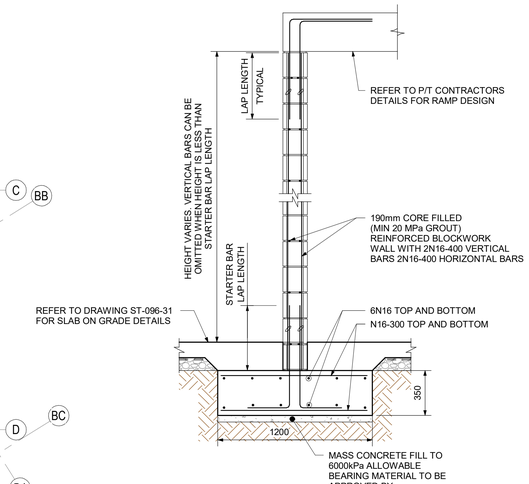
TYPICAL GRATED DRAIN AT B3 RAMP DETAIL

SCALE: 1 : 10



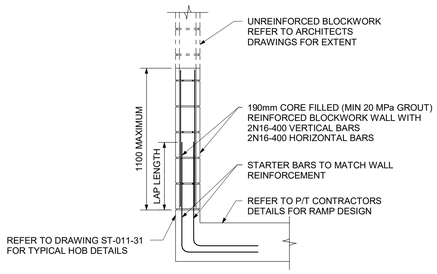
CARPARK RAMP BASEMENT 01 PLAN

SCALE: 1 : 100



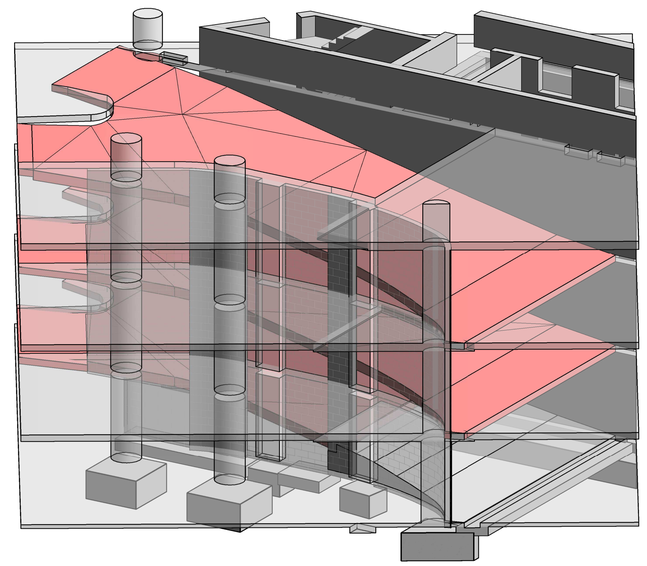
TYPICAL REINFORCED BLOCKWORK WALL AT B3 RAMP DETAIL

SCALE: 1 : 20



TYPICAL REINFORCED BLOCKWORK UPSTAND AT RAMP DETAIL

SCALE: 1 : 20



CARPARK RAMP ISOMETRIC

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION
A	19.07.21	ISSUED FOR COORDINATION

STRUCTURAL / CIVIL CONSULTANT

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Level 4, 2 Glen Street, Milsons Point NSW 2061
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http: //www.enstruct.com.au

CLIENT

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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

CARPARK RAMP SECTIONS AND DETAILS

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-008-01

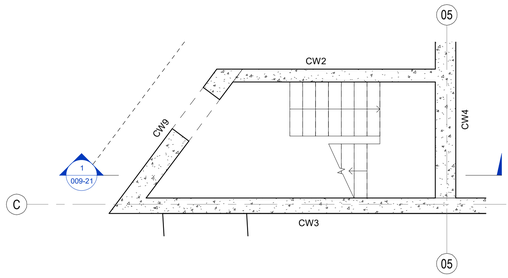
REV.: 1

20/08/2021 4:49:31 PM

B1

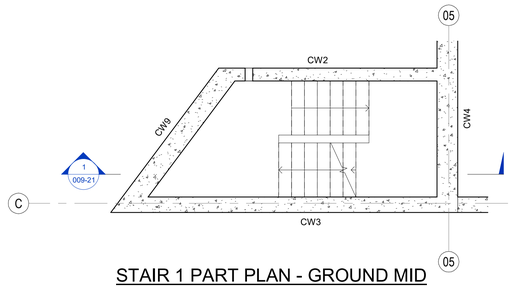
Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: STAIR ELEVATIONS SHEET 1		Drawing No: A1-ST-009-21	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



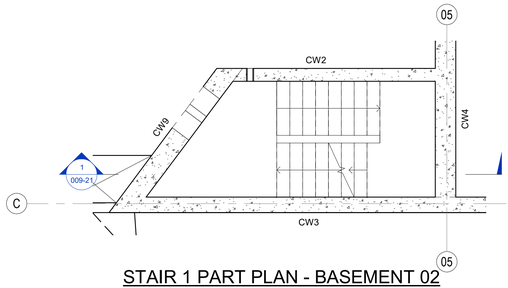
STAIR 1 PART PLAN - BASEMENT 03

SCALE: 1 : 50



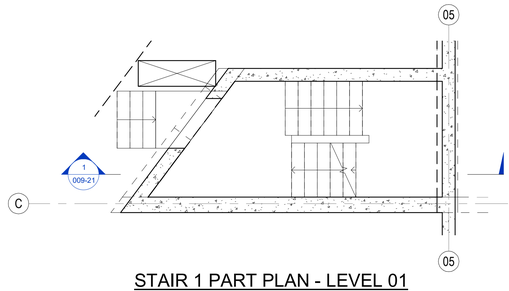
STAIR 1 PART PLAN - GROUND MID

SCALE: 1 : 50



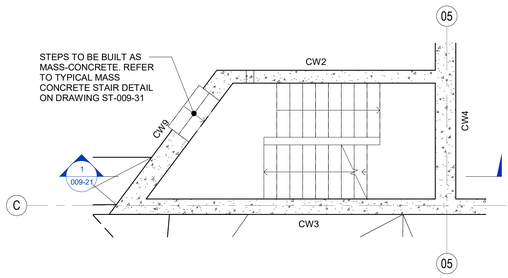
STAIR 1 PART PLAN - BASEMENT 02

SCALE: 1 : 50



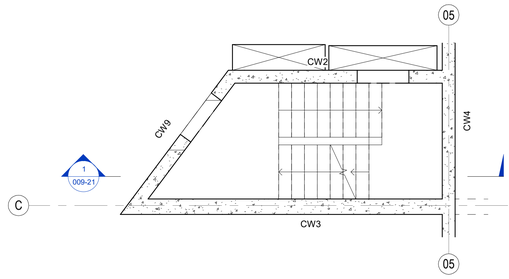
STAIR 1 PART PLAN - LEVEL 01

SCALE: 1 : 50



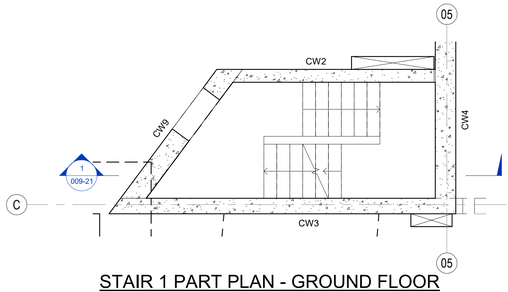
STAIR 1 PART PLAN - BASEMENT 01 & LOWER GROUND

SCALE: 1 : 50



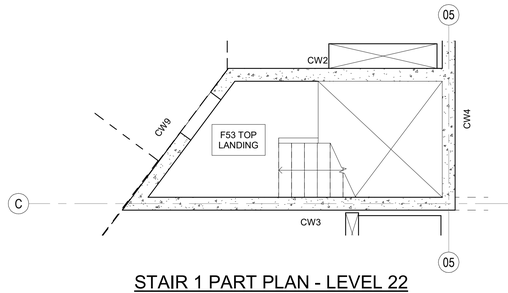
STAIR 1 PART PLAN - LEVEL 02 TO LEVEL 21

SCALE: 1 : 50



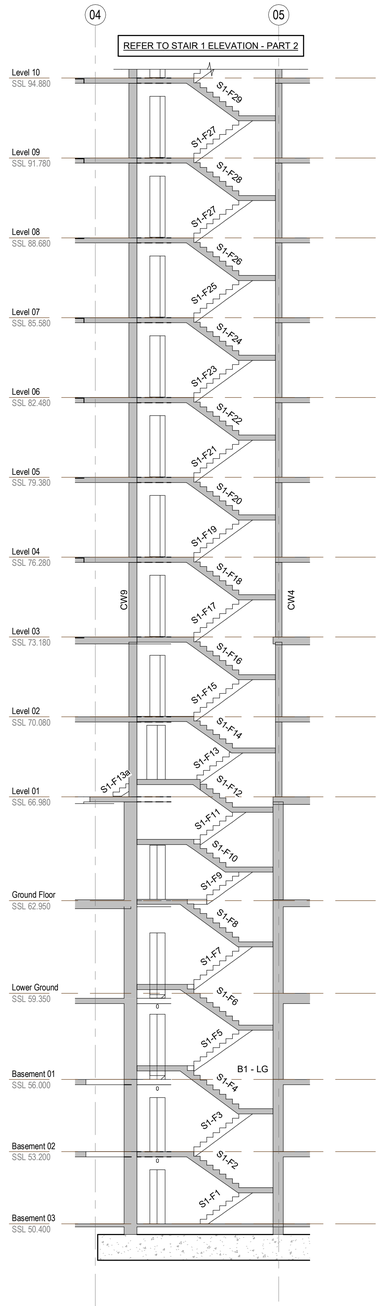
STAIR 1 PART PLAN - GROUND FLOOR

SCALE: 1 : 50



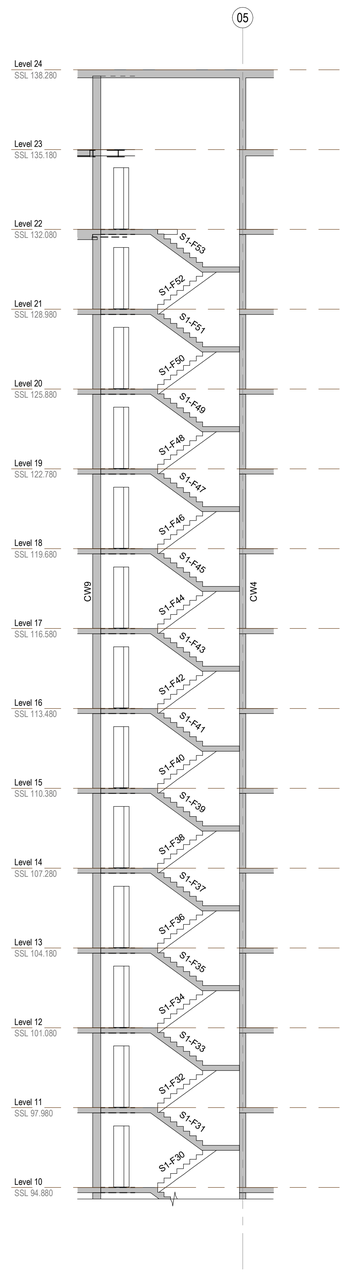
STAIR 1 PART PLAN - LEVEL 22

SCALE: 1 : 50



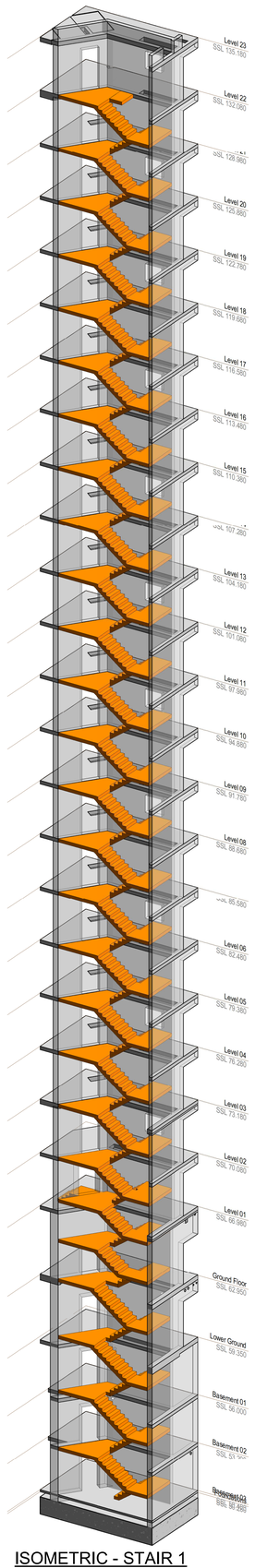
STAIR 1 ELEVATION - PART 1

SCALE: 1 : 100



STAIR 1 ELEVATION - PART 2

SCALE: 1 : 100



ISOMETRIC - STAIR 1

SCALE:

STAIR 1 SCHEDULE								
FLIGHT NUMBER	THROAT THICKNESS (mm)	MID. LANDING THICKNESS (mm)	LANDING THICKNESS (mm)	'BR1' BARS	'BR2' BARS	'BR3' BARS	'TR1' BARS	'TR2' BARS
S1-F1 - F53	175	175	175	N12-200	N12-200	N12-200	N12-200	N12-200
F53 TOP LANDING	N/A	N/A	200	N16-200	N16-200	N16-200	N16-200	N16-200

NOTE:
- REFER TO DRAWING ST-009-31 FOR TYPICAL STAIR REINFORCEMENT LAYOUT.

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

STAIR NOTES:

- ALL STAIR ELEVATIONS SHOWN ON THIS DRAWING ARE INDICATIVE ONLY. REFER TO ARCHITECT'S DRAWINGS FOR STAIR SETOUT DIMENSIONS.
- ALL LANDING THICKNESSES SHALL BE THE GREATER OF THE TWO ADJACENT STAIR THROATS U.N.O.
- CONCRETE STRENGTH f'c=40MPa U.N.O.
- COVER TO BOTTOM REINFORCEMENT = 35mm
- COVER TO TOP REINFORCEMENT = 20mm
- PROVIDE N12-250 DISTRIBUTION REINFORCEMENT U.N.O.

1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

STRUCTURAL / CIVIL CONSULTANT

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Level 4, 2 Glen Street, Milsons Point NSW 2061
Telephone (02) 8904 1444
http: //www.enstruct.com.au

CLIENT

FRASERS PROPERTY

BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
STAIR ELEVATIONS SHEET 1

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

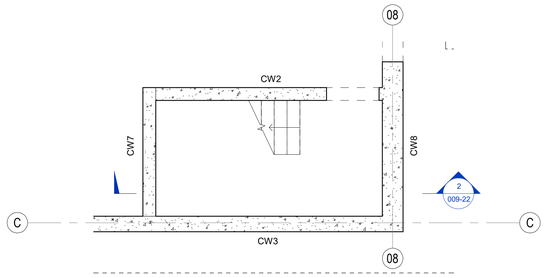
DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER
A1-ST-009-21

REV.
1

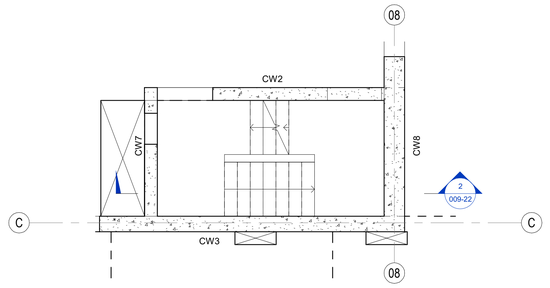
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Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819		
Drawing Title: STAIR ELEVATIONS SHEET 2		Drawing No: A1-ST-009-22		
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



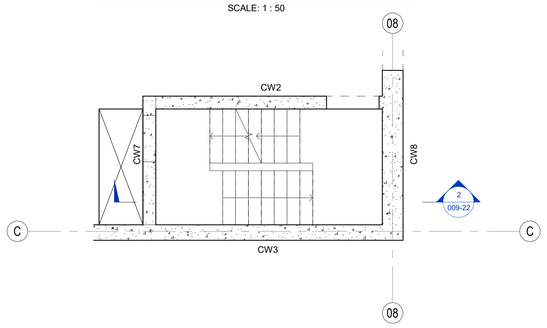
STAIR 2 PART PLAN - BASEMENT 03

SCALE: 1 : 50



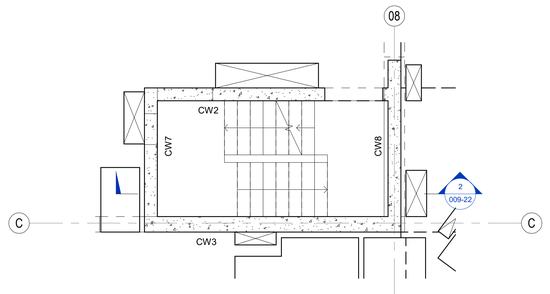
STAIR 2 PART PLAN - GROUND FLOOR

SCALE: 1 : 50



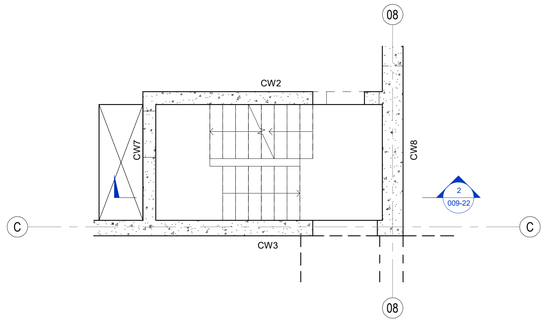
STAIR 2 PART PLAN - BASEMENT 02

SCALE: 1 : 50



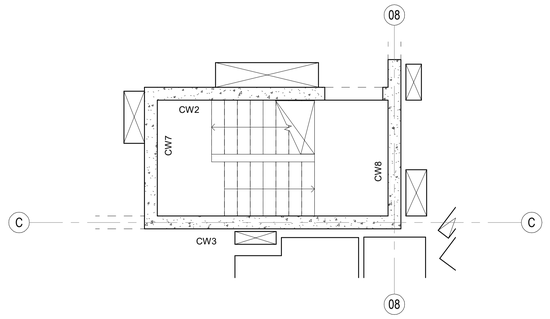
STAIR 2 PART PLAN - LEVEL 01 TO LEVEL 21

SCALE: 1 : 50



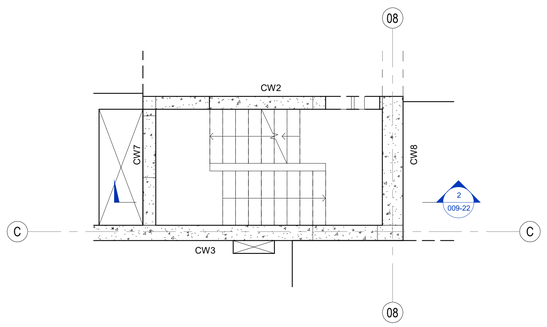
STAIR 2 PART PLAN - BASEMENT 01

SCALE: 1 : 50



STAIR 2 PART PLAN - LEVEL 22

SCALE: 1 : 50

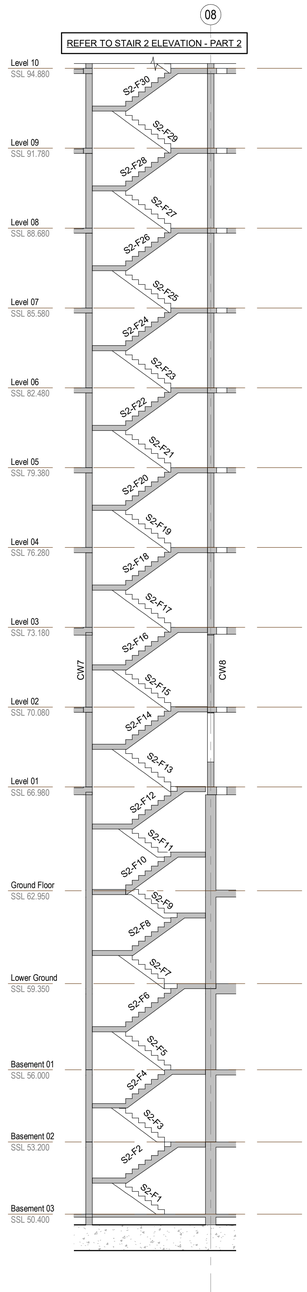


STAIR 2 PART PLAN - LOWER GROUND AND LOWER GROUND MID LANDING

SCALE: 1 : 50

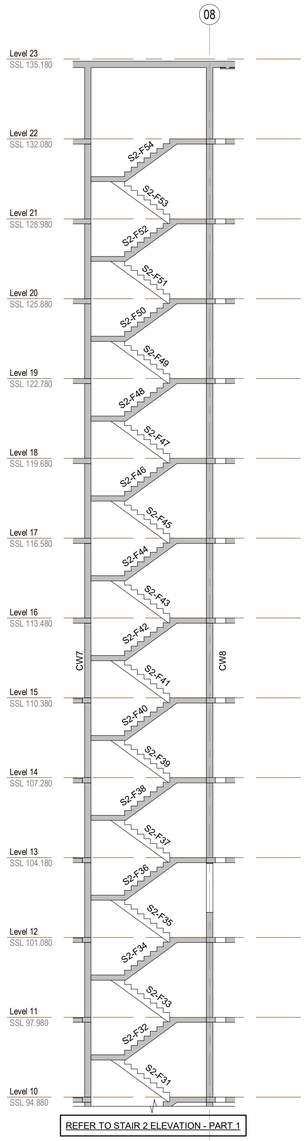
STAIR 2 SCHEDULE								
FLIGHT NUMBER	THROAT THICKNESS (mm)	MID. LANDING THICKNESS (mm)	LANDING THICKNESS (mm)	'BR1' BARS	'BR2' BARS	'BR3' BARS	'TR1' BARS	'TR2' BARS
S2 -F1 - F54	175	175	175	N12-200	N12-200	N12-200	N12-200	N12-200

NOTE:
- REFER TO DRAWING ST-009-31 FOR TYPICAL STAIR REINFORCEMENT LAYOUT.



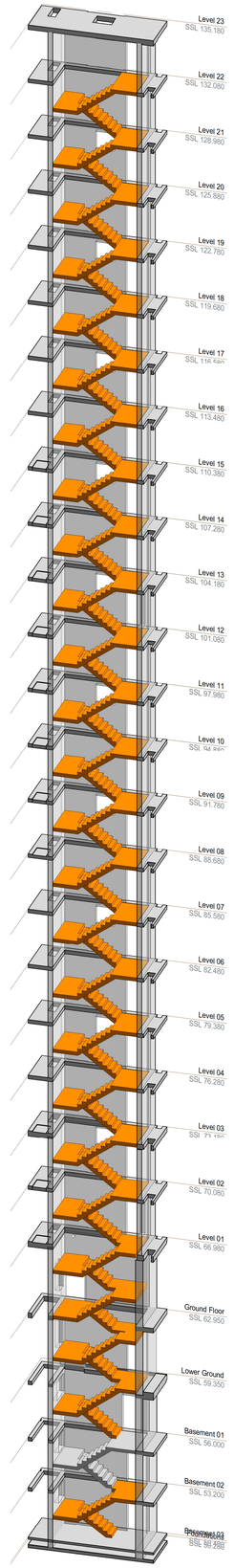
STAIR 2 ELEVATION - PART 1

SCALE: 1 : 100



STAIR 2 ELEVATION - PART 2

SCALE: 1 : 100



ISOMETRIC - STAIR 2

SCALE:

B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

STAIR NOTES:

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- CONCRETE STRENGTH f'c=40MPa U.N.O.
- COVER TO BOTTOM REINFORCEMENT = 35mm
- COVER TO TOP REINFORCEMENT = 20mm
- PROVIDE N12-250 DISTRIBUTION REINFORCEMENT U.N.O.

1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

STAIR ELEVATIONS SHEET 2

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

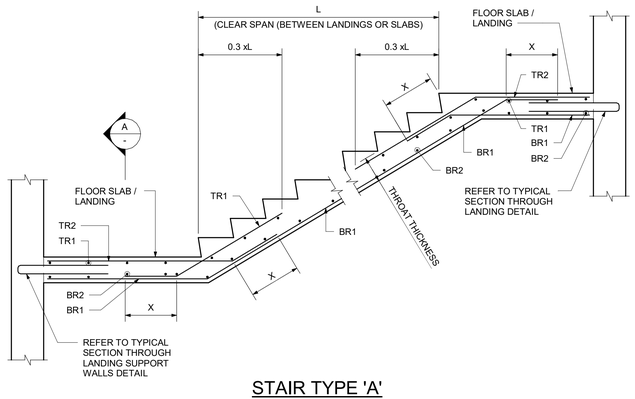
DRAWING NUMBER: A1-ST-009-22
REV.: 1

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Regulated Design Record	
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia	
Project Title: Building A1 - Ivanhoe Estate	
Consent No: SSDA8903	Body Corporate Reg No: DEP0000819
Drawing Title: TYPICAL STAIR DETAILS	Drawing No: A1-ST-009-31

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

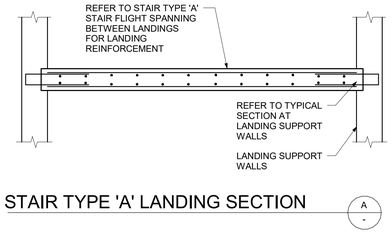


STAIR TYPE 'A'
STAIR FLIGHT SPANNING BETWEEN WALLS / STRUCTURE

NOTES:
- STAIR FLIGHTS TO BE 175 THICK U.N.O, LANDINGS TO 175 THICK U.N.O
- MAIN REINFORCEMENT BARS TO BE N12-200 TOP AND BOTTOM (U.N.O), PROVIDE N12-250 DISTRIBUTION REINFORCEMENT BARS TOP AND BOTTOM (U.N.O)
- COVER TO REINFORCEMENT TO BE 25mm TOP AND BOTTOM 35mm
- CONCRETE STRENGTH (f'c) = 40 MPa
- FOR REINFORCEMENT BAR DESIGNATIONS REFER TO STAIR ELEVATIONS DRAWINGS FOR REINFORCEMENT SCHEDULE

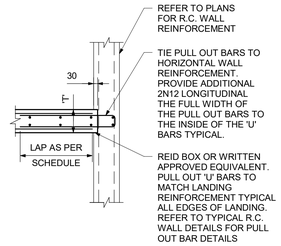
REINFORCEMENT LAP SCHEDULE

BAR	LAP LENGTH 'X' (mm)
N12	500
N16	650
N20	800



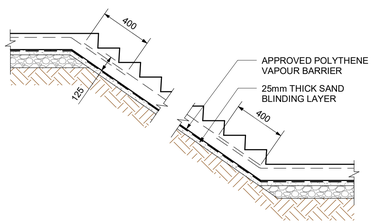
STAIR TYPE 'A' LANDING SECTION

A
-

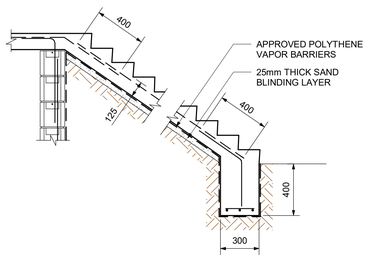


TYPICAL AT R.C. WALL

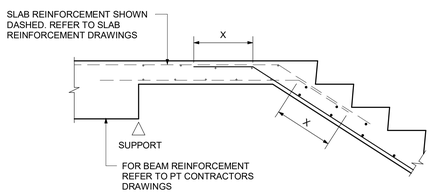
TYPICAL SECTION AT LANDING SUPPORT WALLS



TYPICAL STAIR ON GRADE SECTION

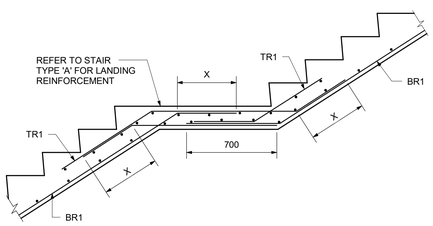


TYPICAL STAIR ON GRADE SECTION

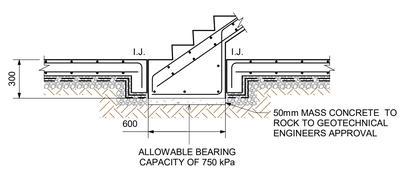


R.C BEAM

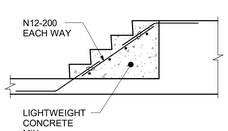
TYPICAL STAIR SUPPORT DETAILS



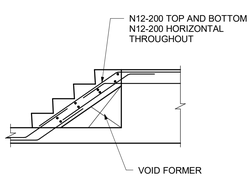
TYPICAL SECTION THROUGH MID-LANDING



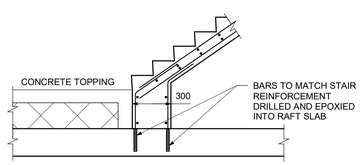
STAIRS POURED ONTO ROCK BASE



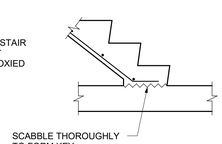
MASS CONCRETE STAIR



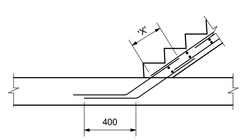
VOID FORMER STAIR



TYPICAL STAIR TURNDOWN AT CONCRETE TOPPING



STAIR BUILT ONTO SLAB



TYPICAL DETAIL AT STAIR BASE

TYPICAL STAIR BASE DETAILS

20/08/2021 4:50:36 PM

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION

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Level 4, 2 Glen Street, Milsons Point NSW 2061
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http: //www.enstruct.com.au

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BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
TYPICAL STAIR DETAILS

SCALE AT B1: 1 : 20
DRAWN BY: WAS
CHECKED BY: PAS

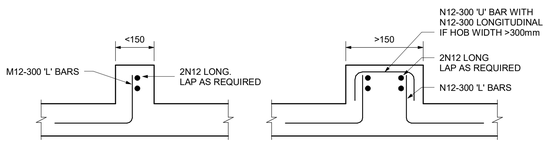
DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-009-31
REV.: 1

B1

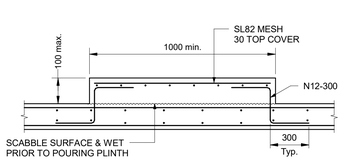
FOR GENERAL NOTES REFER TO DRAWING ST-001-01

Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903			Body Corporate Reg No: DEP0000819	
Drawing Title: TYPICAL SLAB DETAILS SHEET 1		Drawing No: A1-ST-011-31		
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



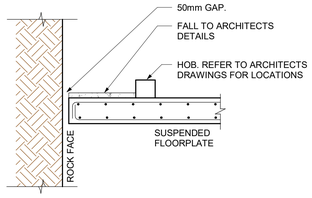
NOTE:
- REFER ARCHITECTS DRAWINGS FOR HOB LOCATIONS.
- JOINTS IN HOBS TO CORRESPOND WITH SLAB JOINT LOCATIONS.
- ALL HOBS TO BE POURED INTEGRAL WITH PRIMARY STRUCTURAL SLAB.

TYPICAL HOB DETAILS



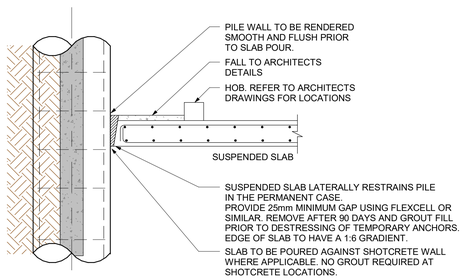
NOTE:
- REFER ARCHITECTS DRAWINGS FOR HOB LOCATIONS.
- JOINTS IN HOBS TO CORRESPOND WITH SLAB JOINT LOCATIONS.
- ALL HOBS TO BE POURED INTEGRAL WITH PRIMARY STRUCTURAL SLAB.

TYPICAL PLINTH DETAIL



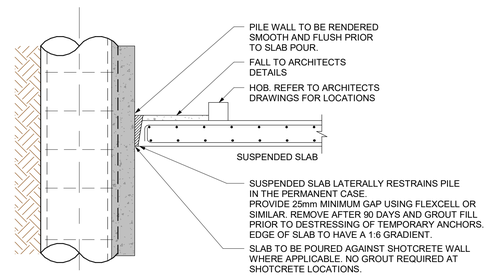
SUSPENDED FLOORPLATE AT ROCK INTERFACE DETAIL

SCALE 1:20



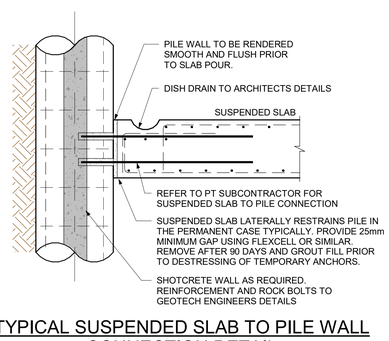
TYPICAL SUSPENDED SLAB TO PILE WALL WITH CENTRAL SHOTCRETE WALL RESTRAINT DETAIL

SCALE 1:20



TYPICAL SUSPENDED SLAB TO PILE WALL WITH OFF SET SHOTCRETE WALL RESTRAINT DETAIL

SCALE 1:20



TYPICAL SUSPENDED SLAB TO PILE WALL CONNECTION DETAIL

SCALE: 1 : 20

20/08/2021 4:50:43 PM

1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

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BUILDER

PROJECT NAME
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Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
TYPICAL SLAB DETAILS SHEET 1

SCALE AT B1: 1 : 20
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

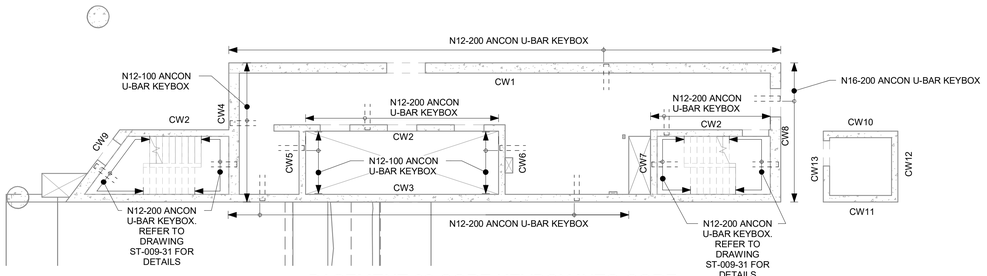
DRAWING NUMBER A1-ST-011-31
REV. 1

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: CORE KEYBOX PART PLANS SHEET 1		Drawing No: A1-ST-012-01	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

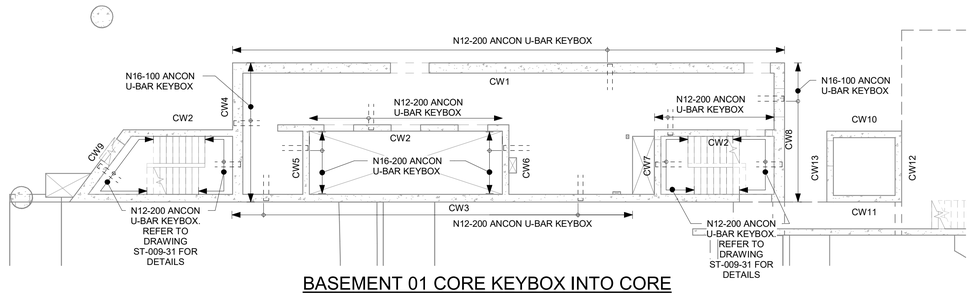
B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01



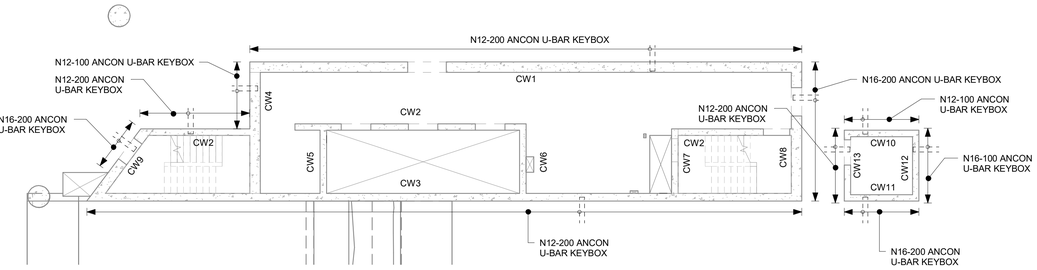
BASEMENT 02 CORE KEYBOX INTO CORE SLAB PART PLAN

SCALE: 1 : 100



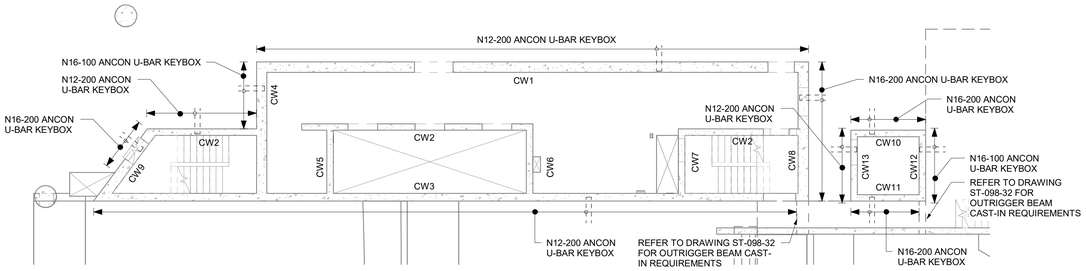
BASEMENT 01 CORE KEYBOX INTO CORE SLAB PART PLAN

SCALE: 1 : 100



BASEMENT 02 CORE KEYBOX INTO FLOOR PLATE PART PLAN

SCALE: 1 : 100



BASEMENT 01 CORE KEYBOX INTO FLOOR PLATE PART PLAN

SCALE: 1 : 100

1 20.08.21 AS FOR CONSTRUCTION

Rev. Date Description

STRUCTURAL / CIVIL CONSULTANT

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enstruct group pty ltd
Level 4, 2 Glen Street, Milsons Point NSW 2061
Telephone (02) 8904 1444
http://www.enstruct.com.au

CLIENT

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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

CORE KEYBOX PART PLANS
SHEET 1

SCALE AT B1: 1 : 100
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER REV.

A1-ST-012-01 1

20/08/2021 4:50:52 PM

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: BASEMENT 03 GENERAL ARRANGEMENT		Drawing No: A1-ST-096-00	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
A	19.07.21	ISSUED FOR COORDINATION		
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

BOUNDARY LINE

300 D x 600 W

120 S.O.G. TYPICAL U.N.O.

REFER TO TYPICAL PRECAST PIT DETAIL ON DRAWING A1-ST-096-31

1 003-32

2 003-32

3 003-33

GA1 GA2 GA3 GA4 GA5

CW1 CW2 CW3 CW4 CW5 CW6 CW7 CW8 CW9 CW10 CW11 CW12 CW13

1200 FOLD

ASSUMED TEMPORARY CONCRETE BOOM PENETRATION LOCATION

HYDRAULIC PITS AND PIPES LOCATIONS SHOWN FOR CLARITY ONLY. ALL IN GROUND PITS, TANKS AND PIPES MUST BE CAPABLE OF RESISTING THE LOAD OF THE OVERBURDEN, SLAB ON GRADE AND VEHICLE LOADING. THE SLAB ON GRADE RELIES ON THE INGROUND INFRASTRUCTURE BEING LOADBEARING.

190 R.C. BLOCKWORK. REFER TO TYPICAL REINFORCED BLOCKWORK WALL AT B3 RAMP DETAIL ON DRAWING ST-008-01 FOR WALL REINFORCEMENT

REFER TO DRAWING A1-ST-008-01 FOR CARPARK RAMP SECTIONS AND DETAILS.

FOUNDATION FOR TEMPORARY HOIST TO BE A THICKENING 4400x4400mm WIDE AND 300mm DEEP WITH N16-200 REINFORCEMENT TOP AND BOTTOM IN EACH DIRECTION

TEMPORARY HOIST LOCATION. REFER TO ARCHITECTURAL DRAWINGS FOR SETOUT LOCATION.

TEMPORARY CRANE PENETRATION. FOOTING BY SUB-CONTRACTOR. REFER TO CRANE SUPPLIERS DRAWINGS FOR DETAILED DESIGN

BORED HOLE, TEMPORARY WALERS AND STRUTS. REFER TO DRAWING ST-002-00. BLOCKOUT IN SLABS REQUIRED FOR STEEL MEMBERS.

BORED HOLE, TEMPORARY WALERS AND STRUTS. REFER TO DRAWING ST-002-00. BLOCKOUT IN SLABS REQUIRED FOR STEEL MEMBERS.

BASEMENT 03 GENERAL ARRANGEMENT

SCALE: 1 : 100

JOINT LEGEND

- DENOTES S.C.J. (SAWN CONSTRUCTION JOINT) REFER TO DRAWING A1-ST-096-31 FOR TYPICAL DETAILS
- DENOTES E.J. (EXPANSION JOINT) REFER TO DRAWING A1-ST-096-31 FOR TYPICAL DETAILS
- I.J. DENOTES I.J. (ISOLATION JOINT) REFER TO DRAWING A1-ST-096-31 FOR TYPICAL DETAILS

NOTES:

- REFER TO DRAWING ST-003-00 FOR GROUND ANCHOR SCHEDULE
- BUILDER TO ENSURE THAT COLUMN FOOTING BASE R.L'S TO BE LOW ENOUGH SO EDGE BEAM RUNS OVER THE TOP OF COLUMN FOOTING
- REFER TO DRAWING ST-005-01 - ST-005-05 FOR COLUMN SCHEDULE
- REFER TO DRAWING ST-096-31 FOR TYPICAL SLAB ON GRADE DETAILS

DRAWING TO BE PRINTED IN COLOUR

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION
A	19.07.21	ISSUED FOR COORDINATION

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CLIENT

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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

BASEMENT 03 GENERAL ARRANGEMENT

SCALE AT B1: 1 : 100
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-096-00

REV.: 1

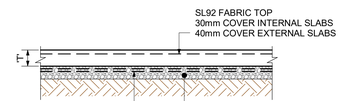
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Regulated Design Record	
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia	
Project Title: Building A1 - Ivanhoe Estate	
Consent No: SSDA8903	Body Corporate Reg No: DEP0000819
Drawing Title: TYPICAL SLAB ON GRADE DETAILS	Drawing No: A1-ST-096-31

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

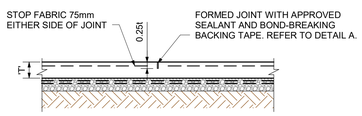
B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01



TYPICAL 120mm SLAB ON GRADE SECTION

SCALE 1:20

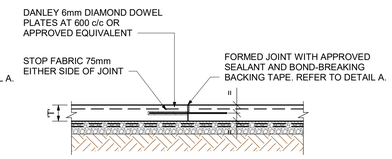


NOTE: SAW CUT TO BE WITHIN THE FOLLOWING TIME LIMITS.

DAILY MAXIMUM TEMPERATURE (°C)	MAXIMUM TIME AFTER CONCRETE PLACEMENT FOR SAWING TO OCCUR (HOURS)
<10	48
10-20	36
20-30	24
>30	12

TYPICAL SAWN CONTRACTION JOINT (S.C.J)

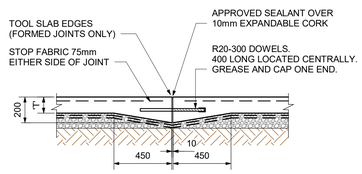
SCALE 1:20



NOTE:
NOT SHOWN ON PLAN - TO BE USED AT SLAB POUR BREAKS (LOCATIONS DETERMINED BY CONTRACTOR)

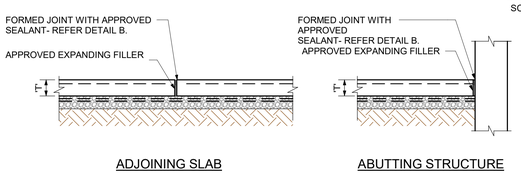
FORMED CONSTRUCTION JOINT (F.C.J)

SCALE 1:20



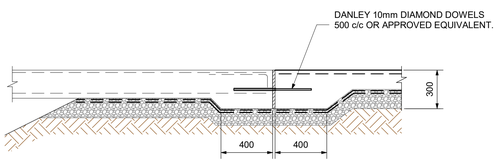
EXPANSION JOINT (E.J.)

SCALE 1:20



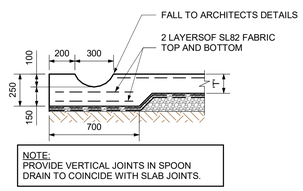
TYPICAL ISOLATION JOINT (I.J)

SCALE 1:20



MOVEMENT JOINT (M.J.) CONNECTION TO SUSPENDED SLAB

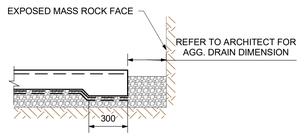
SCALE 1:20



NOTE:
PROVIDE VERTICAL JOINTS IN SPOON DRAIN TO COINCIDE WITH SLAB JOINTS.

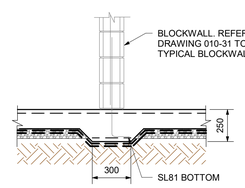
SPOON DRAIN DETAIL

SCALE 1:20



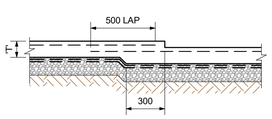
TYPICAL SLAB EDGE THICKENING (ET1)

SCALE 1:10

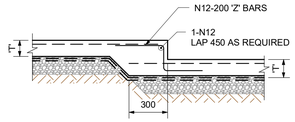


TYPICAL INTERNAL BEAM

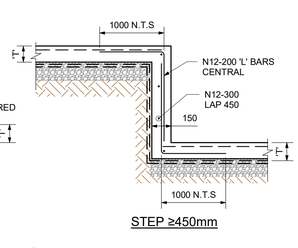
SCALE 1:10



STEP <50mm



STEP ≥ 50mm AND < 450mm

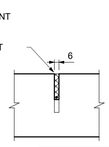


STEP ≥450mm

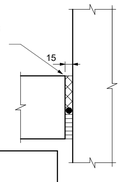
TYPICAL SLAB ON GRADE STEP DETAIL

SCALE 1:20

FORMED OR SAW CUT JOINT WITH DOW CORNING 888 SILICONE JOINT SEALANT WITH BACKING ROD. JOINT DETAILS STRICTLY TO MANUFACTURERS REQUIREMENTS.



DOW CORNING 888 SILICONE JOINT SEALANT WITH BACKING ROD. JOINT DETAILS STRICTLY TO MANUFACTURERS REQUIREMENTS.

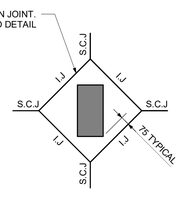


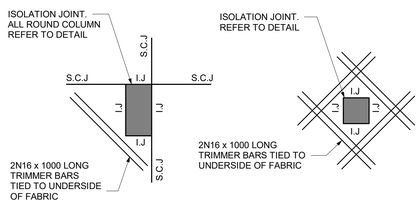
SEALANT INSTALLATION NOTES:

1. SEALANT TO OVERFILL JOINT WHEN APPLIED.
2. SEALANT TO BE CUT FLUSH WITH CONCRETE ONCE CURED.

DETAIL A
SCALE = 1:20

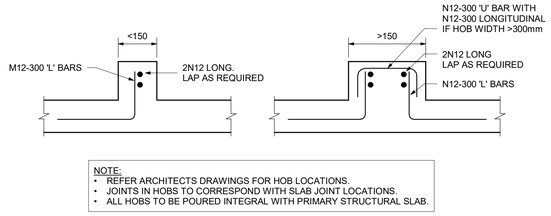
DETAIL B
SCALE = 1:20





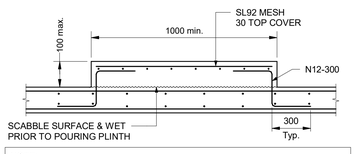
TYPICAL PLAN AT JOINT JUNCTION

SCALE 1:20



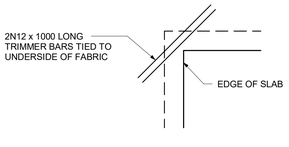
NOTE:
- REFER ARCHITECTS DRAWINGS FOR HOB LOCATIONS.
- JOINTS IN HOBS TO CORRESPOND WITH SLAB JOINT LOCATIONS.
- ALL HOBS TO BE POURED INTEGRAL WITH PRIMARY STRUCTURAL SLAB.

TYPICAL HOB DETAILS



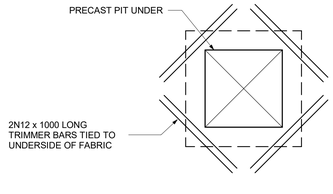
NOTE:
- REFER ARCHITECTS DRAWINGS FOR HOB LOCATIONS.
- JOINTS IN HOBS TO CORRESPOND WITH SLAB JOINT LOCATIONS.
- ALL HOBS TO BE POURED INTEGRAL WITH PRIMARY STRUCTURAL SLAB.

TYPICAL PLINTH DETAIL



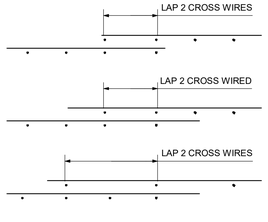
TYPICAL RE-ENTRANT CORNER DETAIL

SCALE 1:20



TYPICAL PRECAST PIT PLAN DETAIL

SCALE 1:20



MESH REINFORCEMENT LAP DETAILS

SCALE 1:20

20/08/2021 4:51:12 PM

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION

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Telephone (02) 8904 1444
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CLIENT

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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

TYPICAL SLAB ON GRADE DETAILS

SCALE AT B1: 1 : 20
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-096-31

REV.: 1

B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

Regulated Design Record

Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia	
Project Title: Building A1 - Ivanhoe Estate	
Consent No: SSDA8903	Body Corporate Reg No: DEP0000819
Drawing Title: BASEMENT 02 GENERAL ARRANGEMENT	Drawing No: A1-ST-097-00

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
A	19.07.21	ISSUED FOR COORDINATION		
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

BOUNDARY LINE

POUR 1

POUR 2

POUR 3

POUR 4

C.J.

T.M.J.

CW1 CW2 CW3 CW4 CW5 CW6 CW7 CW8 CW9 CW10 CW11 CW12 CW13

ASSUMED TEMPORARY CONCRETE BOOM PENETRATION LOCATION

REFER TO DRAWING A1-ST-008-01 FOR CARPARK RAMP SECTIONS AND DETAILS.

200 P/T
TYPICAL U.N.O.

TEMPORARY HOIST PENETRATION. PROPPING AROUND TEMPORARY PENETRATION TO PT SUBCONTRACTORS DETAILS. REFER TO ARCHITECTURAL DRAWINGS FOR SETOUT LOCATION

TEMPORARY CRANE PENETRATION. PROPPING AROUND TEMPORARY PENETRATION TO PT SUBCONTRACTORS DETAILS. REFER TO ARCHITECTURAL DRAWINGS FOR SETOUT LOCATION

TEMPORARY PENETRATIONS FOR TEMPORARY WALERS AND STRUTS. LOCATION TBC ON SITE

250 P/T

SOFFIT STEP

900

300 FOLD

PT D&C CONTRACTOR TO DETERMINE TEMPORARY PROPPING REQUIREMENTS AT C.J.'S TYPICAL.

TEMPORARY PENETRATIONS FOR TEMPORARY WALERS AND STRUTS. LOCATION TBC ON SITE

BASEMENT 02 GENERAL ARRANGEMENT

SCALE: 1 : 100

JOINT LEGEND

C.J.	DENOTES C.J. (CONSTRUCTION JOINT) REFER TO DRAWING A1-ST-096-31 FOR TYPICAL DETAILS
T.M.J.	DENOTES T.M.J. (TEMPORARY MOVEMENT JOINT) REFER TO DRAWING A1-ST-002-61 FOR TYPICAL SUSPENDED SLAB TO PILE WALL DETAIL FOR SITE RETENTION ELEVATION 12

NOTES:

- ALL P/T SLABS TO BE GROUTED BETWEEN FLOORPLATE AND PILE WALLS TYPICAL.
- ALL NON-LOADING PRECAST PANELS AND BEAMS SHOWN INDICATIVELY. REFER TO ARCHITECTS DRAWINGS FOR SIZE AND LOCATION
- REFER TO ARCHITECTS DRAWINGS FOR SETDOWNS, PLINTH AND HOB SETOUT, SIZES AND LOCATIONS
- ALL EXTERNAL SLABS TO BE LAID TO FALLS. REFER TO ARCHITECTS DRAWINGS FOR DETAILS
- REFER TO DRAWING 005-01 - 005-05 FOR COLUMN SCHEDULE

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION
A	19.07.21	ISSUED FOR COORDINATION

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Telephone (02) 8904 1444
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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

BASEMENT 02 GENERAL ARRANGEMENT

SCALE AT B1: 1 : 100
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-097-00

REV.: 1

DRAWING TO BE PRINTED IN COLOUR

20/08/2021 4:51:23 PM

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: BASEMENT 01 GENERAL ARRANGEMENT		Drawing No: A1-ST-098-00	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
A	19.07.21	ISSUED FOR COORDINATION		
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

BOUNDARY LINE

POUR 1

POUR 2

POUR 3

POUR 4

200 P/T TYPICAL U.N.O.

350 P/T

370 P/T MIN.

200 P/T MIN.

300 P/T

250 P/T

900

C.J.

T.M.J.

CW1 CW2 CW3 CW4 CW5 CW6 CW7 CW8 CW9 CW10 CW11 CW12 CW13

600 D x 450 W f'c = 50MPa

700 D x 250 W f'c = 50MPa

350 D x 850 W

300 R.C. WALL

250 R.C. UPSTAND

250 R.C. WALL

300 R.C.

300 WIDE FOLD

300 FOLD

600 FOLD

900 FOLD

SOFFIT STEP

GRATED DRAIN 300 MAX. WIDTH 150 MAX. DEPTH

VOID

100 R.C. BLOCKWORK

TW1 TW2

ASSUMED TEMPORARY CONCRETE BOOM PENETRATION LOCATION

REFER TO DRAWING ST-098-34 FOR WALL ELEVATION AND SECTIONS

REFER TO DRAWING ST-098-33 FOR WALL ELEVATION AND SECTIONS

REFER TO DRAWING ST-098-32 FOR WALL ELEVATION, SECTIONS AND TRANSFER BEAM DETAILS.

REFER TO DRAWING A1-ST-008-01 FOR CARPARK RAMP SECTIONS AND DETAILS.

REFER TO DRAWING ST-005-51 FOR TYPICAL TW1 AND TW2 WALL DETAILS

FIRE PROOFING TO WALLS THAT ARE PART OF SUBSTATION AT LG. REFER TO ARCHITECTS DETAILS. LOCATION SHOWN INDICATIVELY

LAID TO FALLS IN OSD CHAMBER AND WATER QUALITY CHAMBER

WALL REINFORCEMENT TO CONTINUE THROUGH COLUMN. COLUMN AND WALL TO BE POURED MONOLITHICALLY

TEMPORARY HOIST PENETRATION. PROPPING AROUND TEMPORARY PENETRATION TO PT SUBCONTRACTORS DETAILS. REFER TO ARCHITECTURAL DRAWINGS FOR SETOUT LOCATION

TEMPORARY CRANE PENETRATION. PROPPING AROUND TEMPORARY PENETRATION TO PT SUBCONTRACTORS DETAILS. REFER TO ARCHITECTURAL DRAWINGS FOR SETOUT LOCATION

TEMPORARY PENETRATIONS FOR TEMPORARY WALERS AND STRUTS. LOCATION TBC ON SITE

PT D&C CONTRACTOR TO DETERMINE TEMPORARY PROPPING REQUIREMENTS AT C.J.'S TYPICAL.

BASEMENT 01 GENERAL ARRANGEMENT

SCALE: 1 : 100

JOINT LEGEND

C.J. — DENOTES C.J. (CONSTRUCTION JOINT) REFER TO DRAWING A1-ST-096-31 FOR TYPICAL DETAILS

T.M.J. — DENOTES T.M.J. (TEMPORARY MOVEMENT JOINT) REFER TO DRAWING A1-ST-002-61 FOR TYPICAL SUSPENDED SLAB TO PILE WALL DETAIL FOR SITE RETENTION ELEVATION 12

NOTES:

- ALL P/T SLABS TO BE GROUTED BETWEEN FLOORPLATE AND PILE WALLS TYPICAL
- ALL NON-LOADING PRECAST PANELS AND BEAMS SHOWN INDICATIVELY. REFER TO ARCHITECTS DRAWINGS FOR SIZE AND LOCATION
- REFER TO ARCHITECTS DRAWINGS FOR SETDOWNS, PLINTH AND HOB SETOUT, SIZES AND LOCATIONS
- ALL EXTERNAL SLABS TO BE LAID TO FALLS. REFER TO ARCHITECTS DRAWINGS FOR DETAILS
- REFER TO DRAWING 005-01 - 005-05 FOR COLUMN SCHEDULE

DRAWING TO BE PRINTED IN COLOUR

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION
A	19.07.21	ISSUED FOR COORDINATION

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BUILDER

PROJECT NAME

Building A1, Midtown MacPark Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

BASEMENT 01 GENERAL ARRANGEMENT

SCALE AT B1: 1 : 100
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-098-00

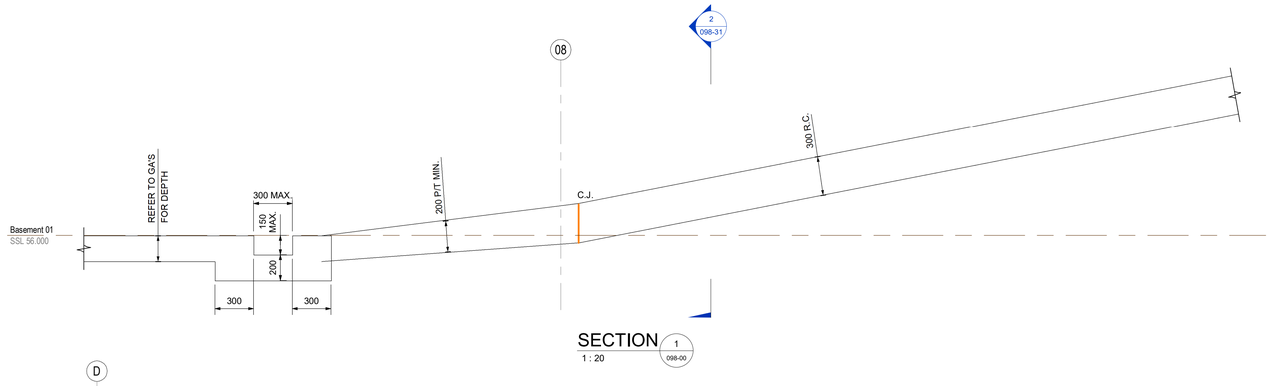
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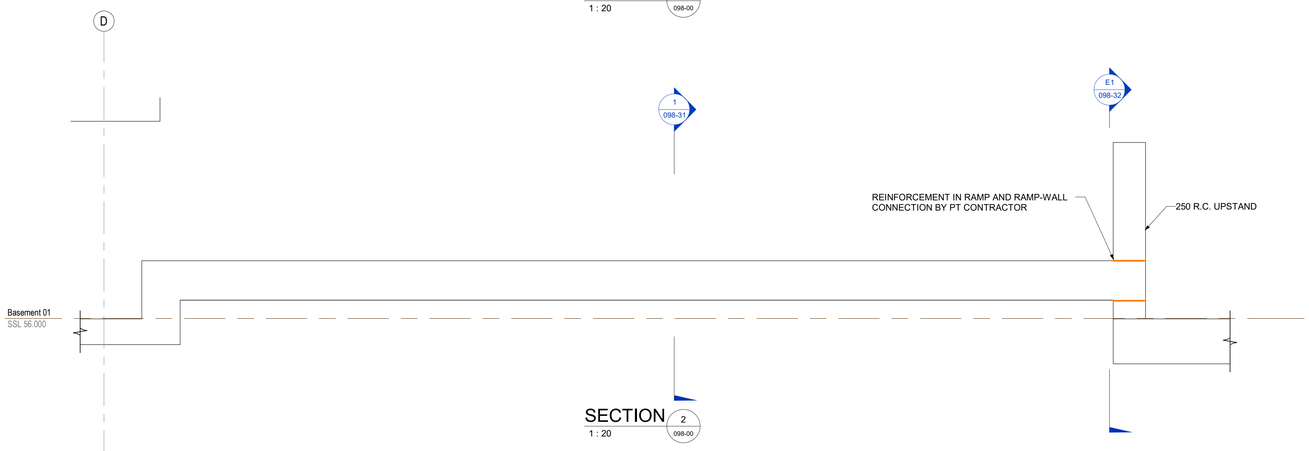
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FOR GENERAL NOTES REFER TO DRAWING ST-001-01

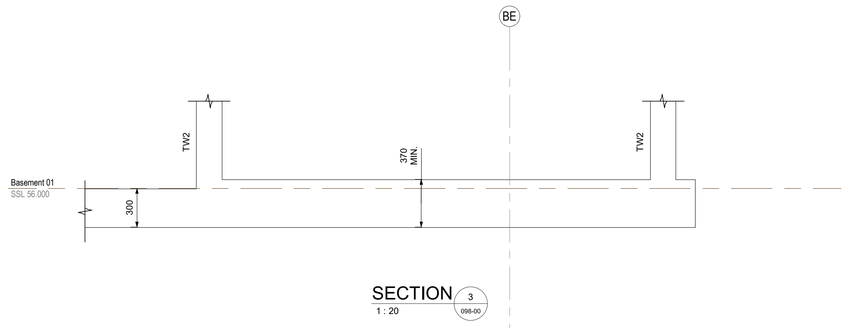
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Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: BASEMENT 01 SECTIONS AND DETAILS SHEET 1		Drawing No: A1-ST-098-31	
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



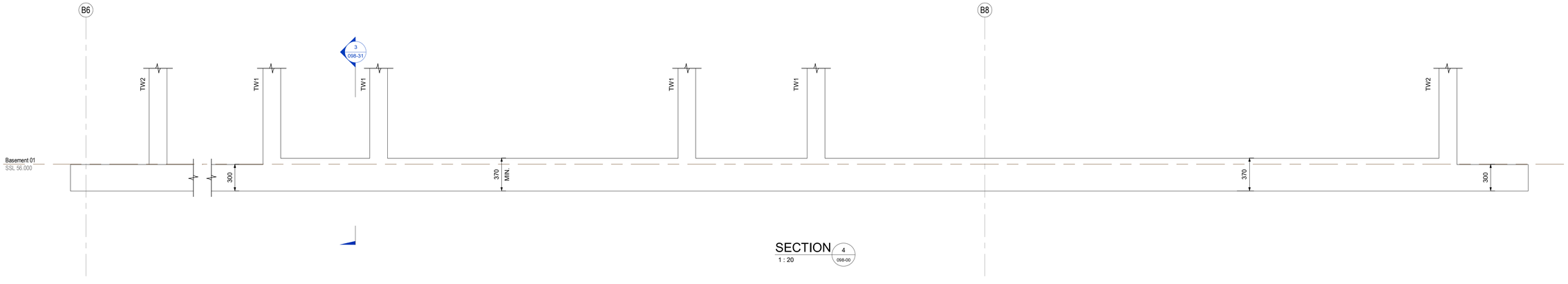
SECTION 1 / 098-00
1 : 20



SECTION 2 / 098-00
1 : 20



SECTION 3 / 098-00
1 : 20



SECTION 4 / 098-00
1 : 20

1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

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BUILDER

PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
BASEMENT 01 SECTIONS AND DETAILS SHEET 1

SCALE AT B1: 1 : 20
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-098-31
REV.: 1

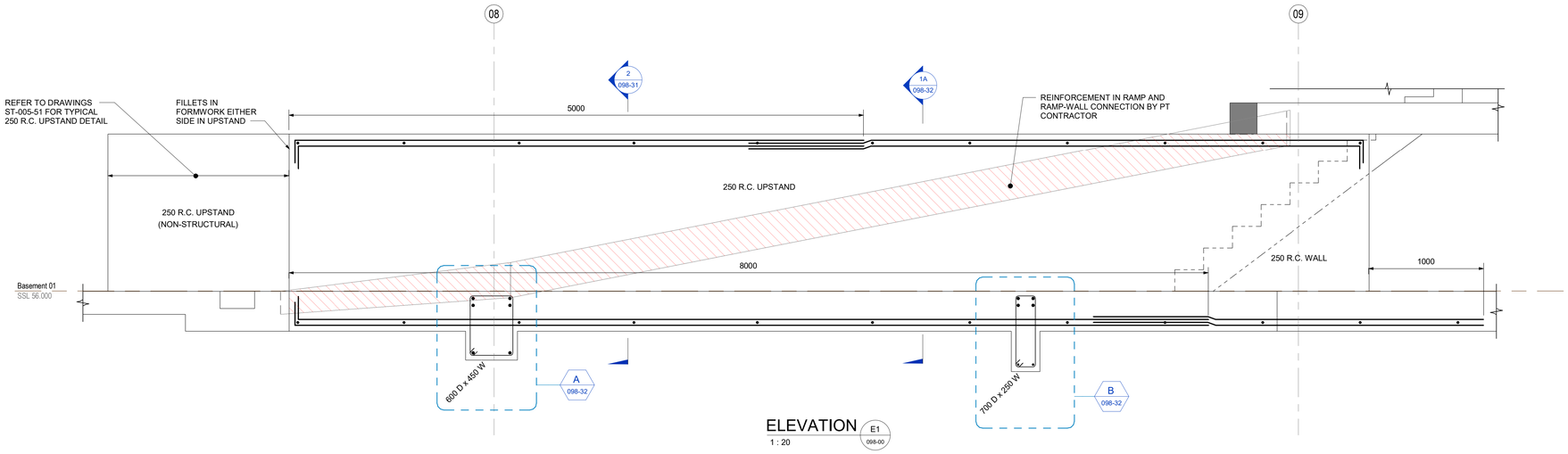
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Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: BASEMENT 01 SECTIONS AND DETAILS SHEET 2		Drawing No: A1-ST-098-32	

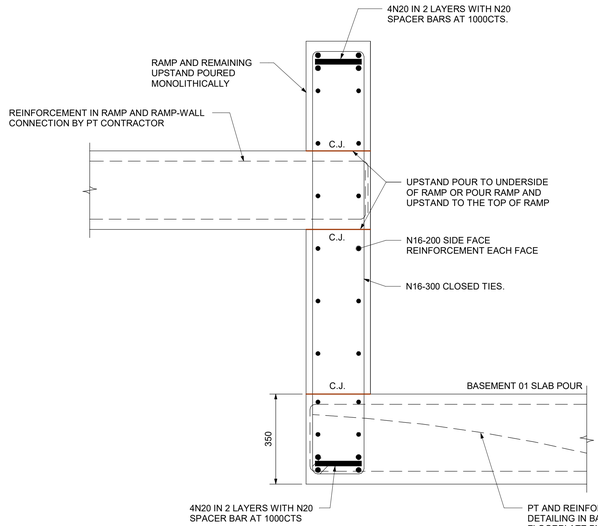
Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01

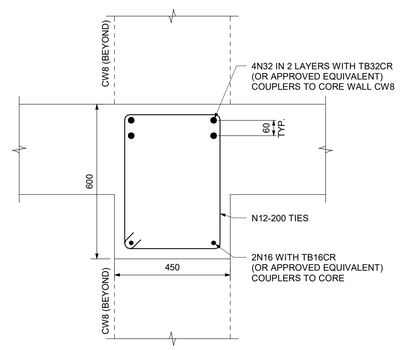


ELEVATION E1 098-00
1 : 20

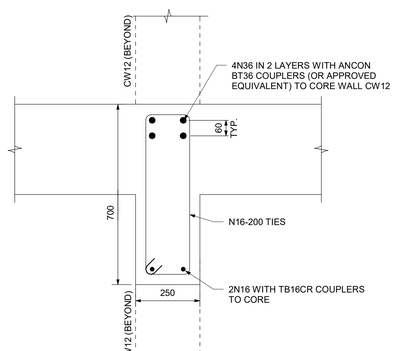


NOTE:
REINFORCEMENT SPLICED AT 1.3Lsyt AT LOCATION SHOWN ON ELEVATION. ALTERNATIVELY, USE TB32CR BARTEK REINFORCING BAR COUPLER OR APPROVED EQUIVALENT.

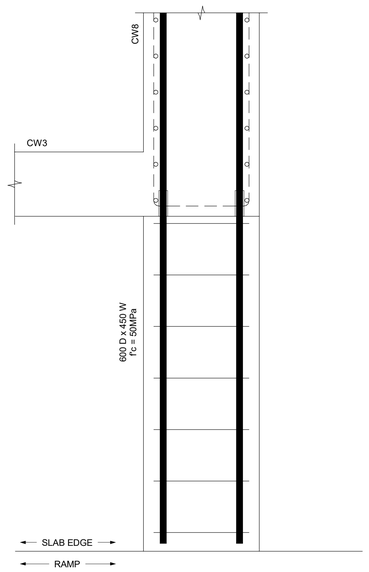
SECTION 1A 098-32
1 : 10



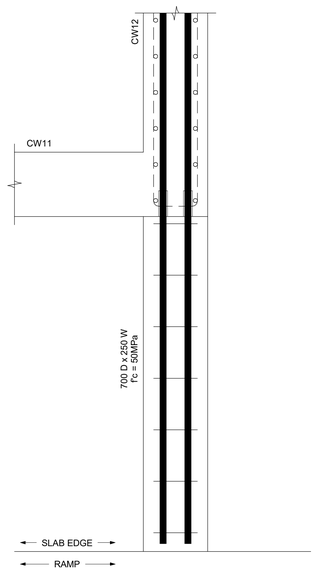
DETAIL A 098-32
1 : 10



DETAIL B 098-32
1 : 10



PLAN VIEW OF DETAIL A
SCALE: 1 : 10
TOP OF SLAB NOT SHOWN FOR CLARITY



PLAN VIEW OF DETAIL B
SCALE: 1 : 10
TOP OF SLAB NOT SHOWN FOR CLARITY

1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

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PROJECT NAME
Building A1, Midtown MacPark Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
BASEMENT 01 SECTIONS AND DETAILS SHEET 2

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER
A1-ST-098-32

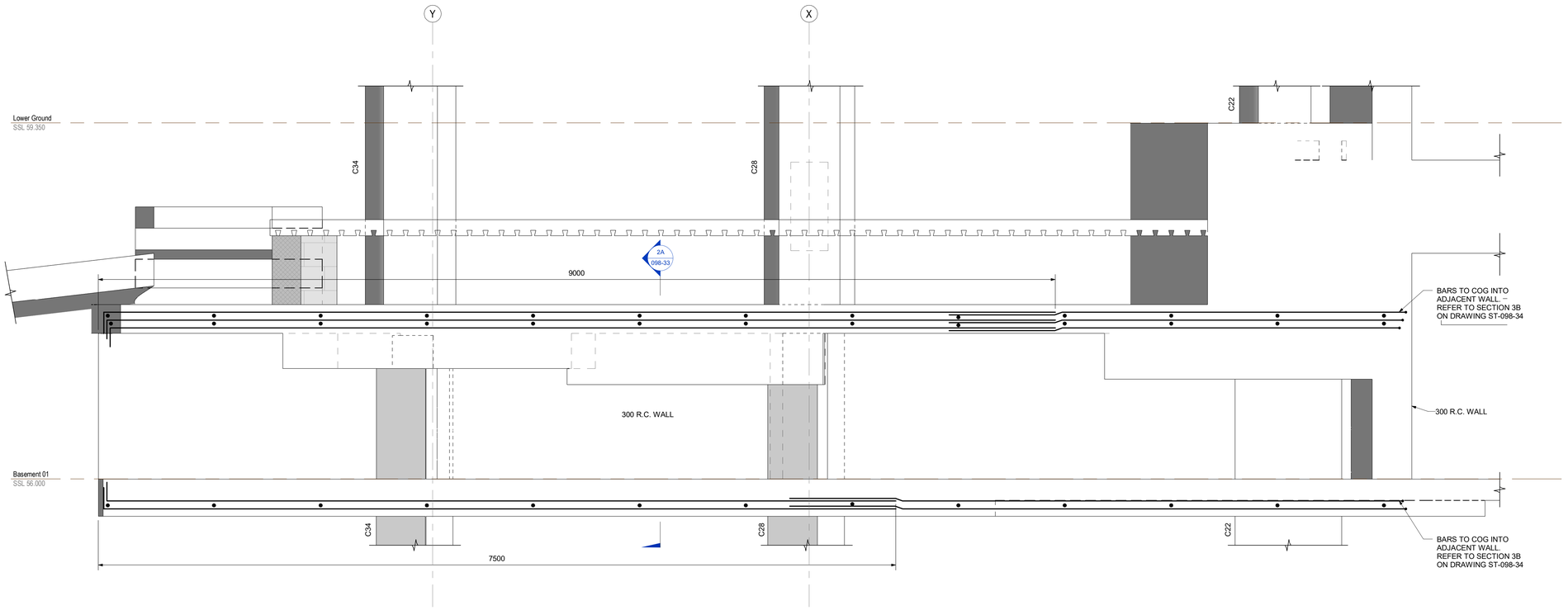
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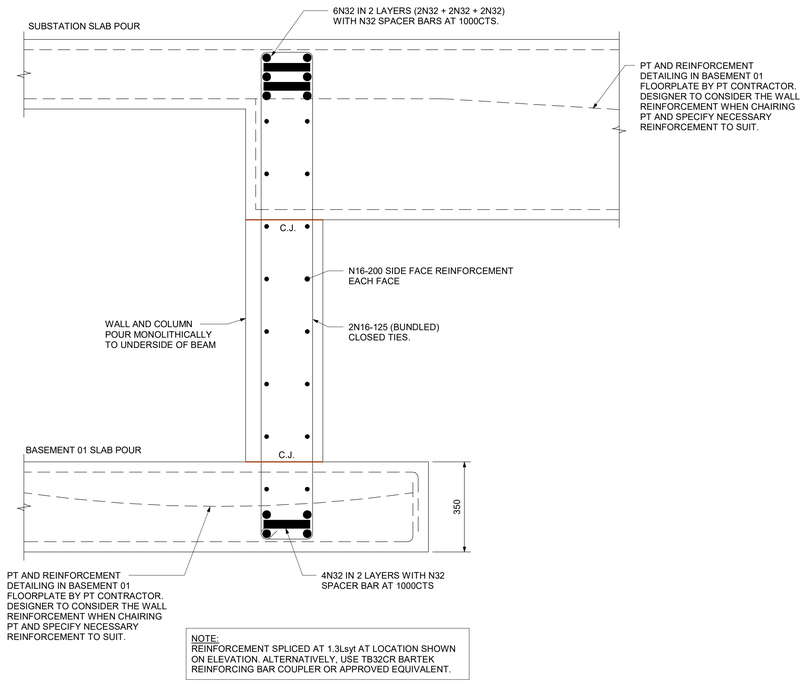
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FOR GENERAL NOTES REFER TO DRAWING ST-001-01

Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903			Body Corporate Reg No: DEP0000819	
Drawing Title: BASEMENT 01 SECTIONS AND DETAILS SHEET 3			Drawing No: A1-ST-098-33	
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



ELEVATION E2 098-00
1 : 20



NOTE:
REINFORCEMENT SPLICED AT 1.3Lsyt AT LOCATION SHOWN ON ELEVATION. ALTERNATIVELY, USE TB32CR BARTEK REINFORCING BAR COUPLER OR APPROVED EQUIVALENT.

SECTION 2A 098-33
1 : 10

1 20.08.21 AS FOR CONSTRUCTION
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PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
BASEMENT 01 SECTIONS AND DETAILS SHEET 3

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-098-33
REV. 1

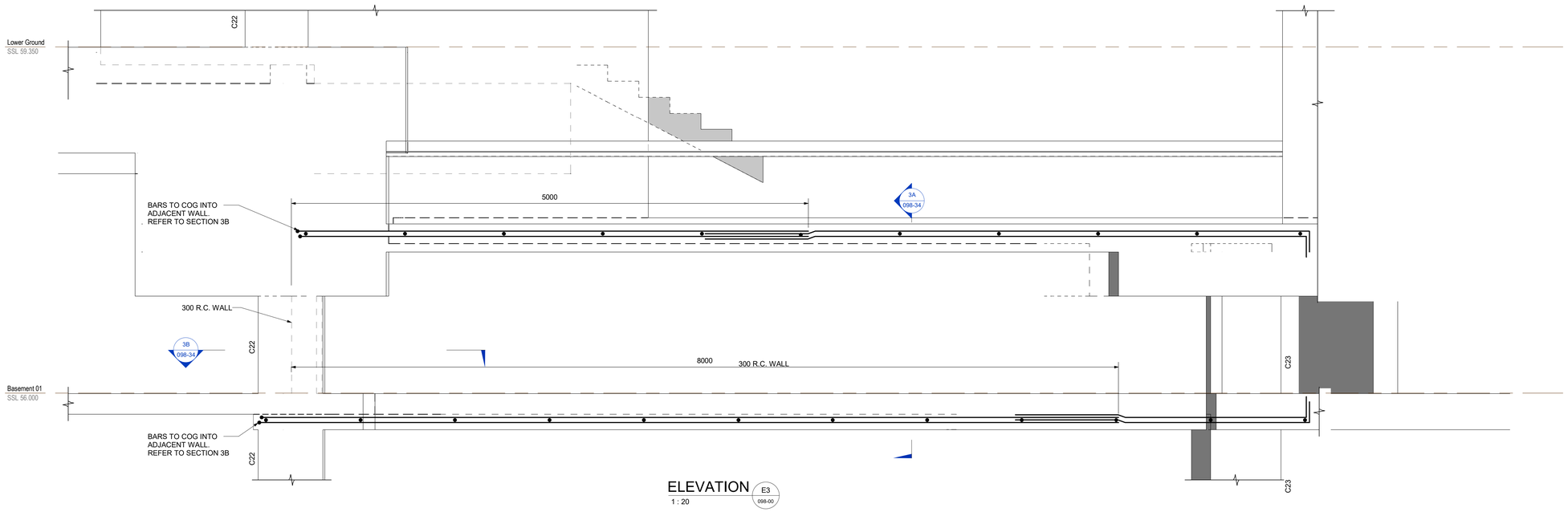
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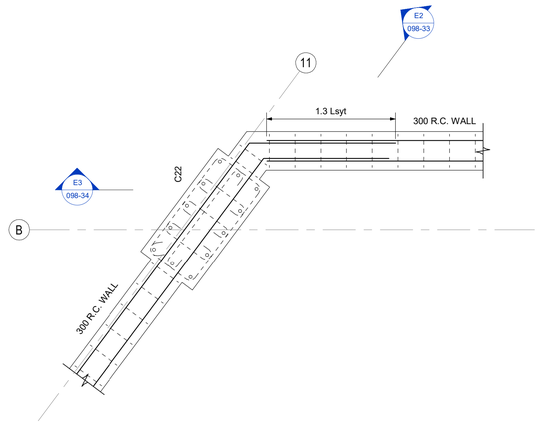
FOR GENERAL NOTES REFER TO DRAWING ST-001-01

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: BASEMENT 01 SECTIONS AND DETAILS SHEET 4		Drawing No: A1-ST-098-34	

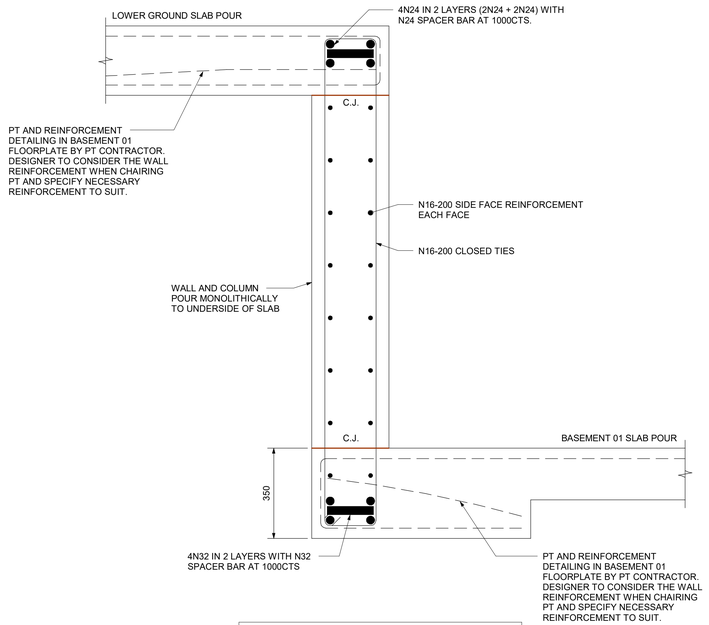
Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



ELEVATION E3 (098-00)
1 : 20



SECTION 3B (098-34)
1 : 20



NOTE:
REINFORCEMENT SPLICED AT 1.3Lsyt AT LOCATION SHOWN ON ELEVATION. ALTERNATIVELY, USE TB32CR BARTEK REINFORCING BAR COUPLER OR APPROVED EQUIVALENT.

SECTION 3A (098-34)
1 : 10

1 20.08.21 AS FOR CONSTRUCTION
Rev. Date Description

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PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
BASEMENT 01 SECTIONS AND DETAILS SHEET 4

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-098-34
REV. 1

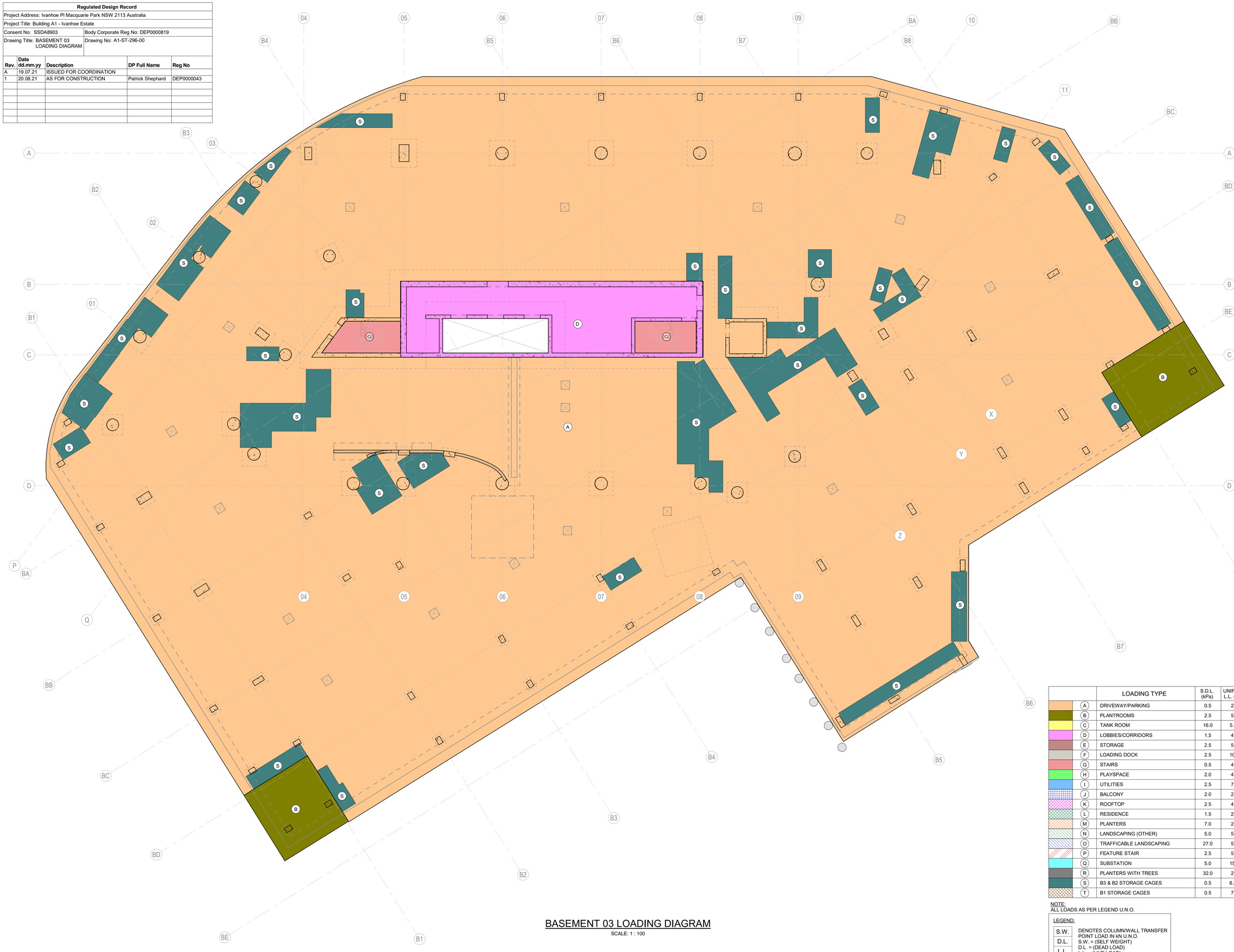
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Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: BASEMENT 03 LOADING DIAGRAM		Drawing No: A1-ST-296-00	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
A	19.07.21	ISSUED FOR COORDINATION		
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01



BASEMENT 03 LOADING DIAGRAM

SCALE: 1 : 100

		LOADING TYPE	S.D.L. (kPa)	UNIFORM L.L. (kPa)
	A	DRIVEWAY/PARKING	0.5	2.5
	B	PLANTROOMS	2.5	5.0
	C	TANK ROOM	16.0	5.0
	D	LOBBIES/CORRIDORS	1.5	4.0
	E	STORAGE	2.5	5.0
	F	LOADING DOCK	2.5	10.0
	G	STAIRS	0.5	4.0
	H	PLAYSPACE	2.0	4.0
	I	UTILITIES	2.5	7.5
	J	BALCONY	2.0	2.0
	K	ROOFTOP	2.5	4.0
	L	RESIDENCE	1.5	2.0
	M	PLANTERS	7.0	2.0
	N	LANDSCAPING (OTHER)	5.0	5.0
	O	TRAFFICABLE LANDSCAPING	27.0	5.0
	P	FEATURE STAIR	2.5	5.0
	Q	SUBSTATION	5.0	15.0
	R	PLANTERS WITH TREES	32.0	2.0
	S	B3 & B2 STORAGE CAGES	0.5	6.25
	T	B1 STORAGE CAGES	0.5	7.2

NOTE:
ALL LOADS AS PER LEGEND U.N.O.

LEGEND:

S.W.	DENOTES COLUMN/WALL TRANSFER POINT LOAD IN kN U.N.O.
D.L.	S.W. = (SELF WEIGHT)
L.L.	D.L. = (DEAD LOAD)
	L.L. = (LIVE LOAD)

DRAWING TO BE PRINTED IN COLOUR

1 20.08.21 AS FOR CONSTRUCTION
A 19.07.21 ISSUED FOR COORDINATION
Rev. Date Description

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PROJECT NAME
Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE
BASEMENT 03 LOADING DIAGRAM

SCALE AT B1: 1 : 100
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS
AS FOR CONSTRUCTION

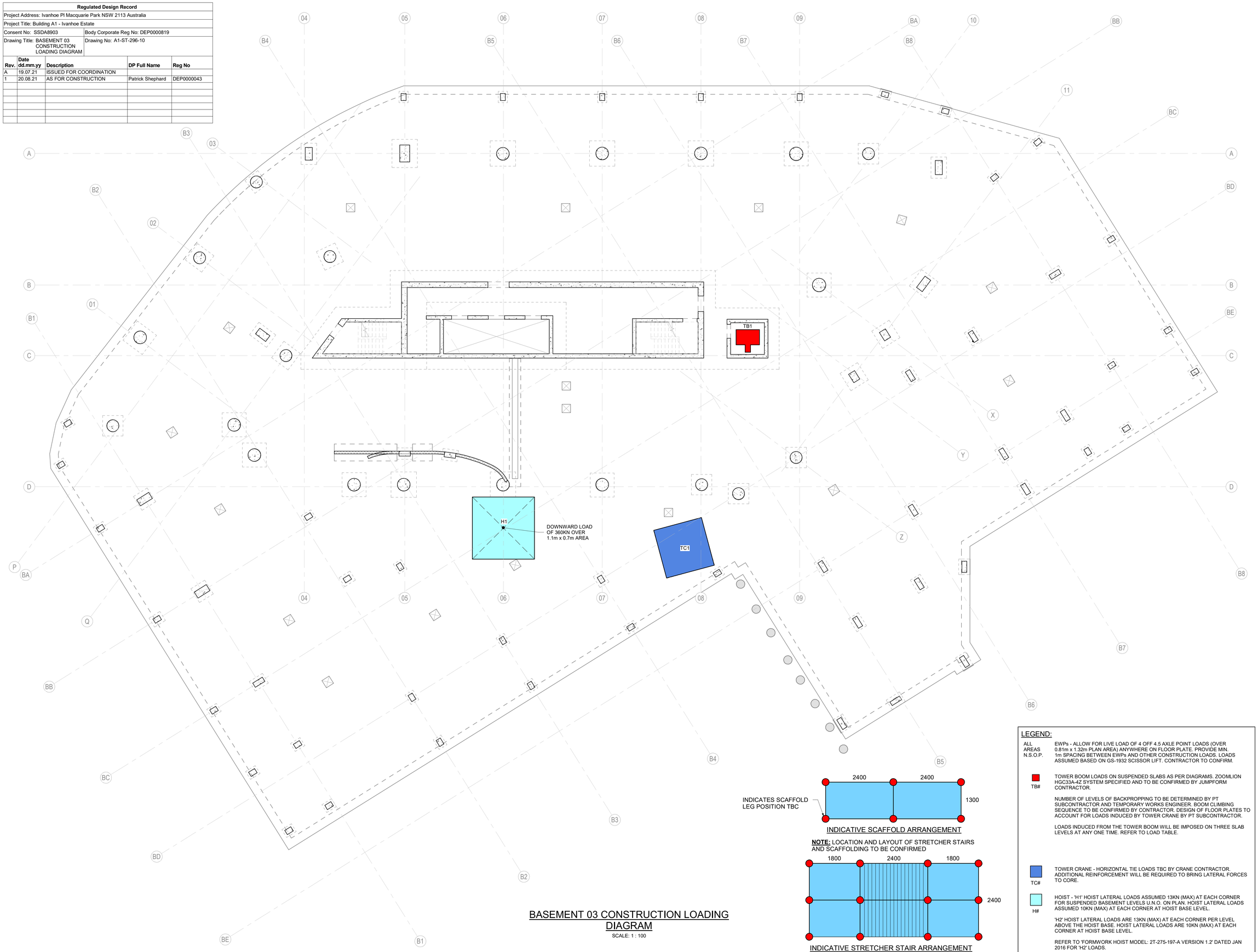
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FOR GENERAL NOTES REFER TO DRAWING ST-001-01

Regulated Design Record			
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Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: BASEMENT 03 CONSTRUCTION LOADING DIAGRAM		Drawing No: A1-ST-296-10	
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
A	19.07.21	ISSUED FOR COORDINATION		
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



BASEMENT 03 CONSTRUCTION LOADING DIAGRAM

SCALE: 1 : 100

INDICATIVE SCAFFOLD ARRANGEMENT

NOTE: LOCATION AND LAYOUT OF STRETCHER STAIRS AND SCAFFOLDING TO BE CONFIRMED

INDICATIVE STRETCHER STAIR ARRANGEMENT

NOTE: LOCATION AND LAYOUT OF STRETCHER STAIRS AND SCAFFOLDING TO BE CONFIRMED

LEGEND:

ALL AREAS N.S.O.P. — EWPs - ALLOW FOR LIVE LOAD OF 4 OFF 4.5 AXLE POINT LOADS (OVER 0.81m x 1.32m PLAN AREA) ANYWHERE ON FLOOR PLATE. PROVIDE MIN. 1m SPACING BETWEEN EWPs AND OTHER CONSTRUCTION LOADS. LOADS ASSUMED BASED ON GS-1932 SCISSOR LIFT. CONTRACTOR TO CONFIRM.

TB# — TOWER BOOM LOADS ON SUSPENDED SLABS AS PER DIAGRAMS. ZOOMLION HGC33A-4Z SYSTEM SPECIFIED AND TO BE CONFIRMED BY JUMPFORM CONTRACTOR.

NUMBER OF LEVELS OF BACKPROPPING TO BE DETERMINED BY PT SUBCONTRACTOR AND TEMPORARY WORKS ENGINEER. BOOM CLIMBING SEQUENCE TO BE CONFIRMED BY CONTRACTOR. DESIGN OF FLOOR PLATES TO ACCOUNT FOR LOADS INDUCED BY TOWER CRANE BY PT SUBCONTRACTOR.

LOADS INDUCED FROM THE TOWER BOOM WILL BE IMPOSED ON THREE SLAB LEVELS AT ANY ONE TIME. REFER TO LOAD TABLE.

TC# — TOWER CRANE - HORIZONTAL TIE LOADS TBC BY CRANE CONTRACTOR. ADDITIONAL REINFORCEMENT WILL BE REQUIRED TO BRING LATERAL FORCES TO CORE.

H# — HOIST - 'H1' HOIST LATERAL LOADS ASSUMED 13KN (MAX) AT EACH CORNER FOR SUSPENDED BASEMENT LEVELS U.N.O. ON PLAN. HOIST LATERAL LOADS ASSUMED 10KN (MAX) AT EACH CORNER AT HOIST BASE LEVEL.

'H2' HOIST LATERAL LOADS ARE 13KN (MAX) AT EACH CORNER PER LEVEL ABOVE THE HOIST BASE. HOIST LATERAL LOADS ARE 10KN (MAX) AT EACH CORNER AT HOIST BASE LEVEL.

REFER TO 'FORMWORK HOIST MODEL: 2T-275-197-A VERSION 1.2' DATED JAN 2016 FOR 'H2' LOADS.

DRAWING TO BE PRINTED IN COLOUR

Rev.	Date	Description
1	20.08.21	AS FOR CONSTRUCTION
A	19.07.21	ISSUED FOR COORDINATION

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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

BASEMENT 03 CONSTRUCTION LOADING DIAGRAM

SCALE AT B1: As indicated
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-296-10

REV.: 1

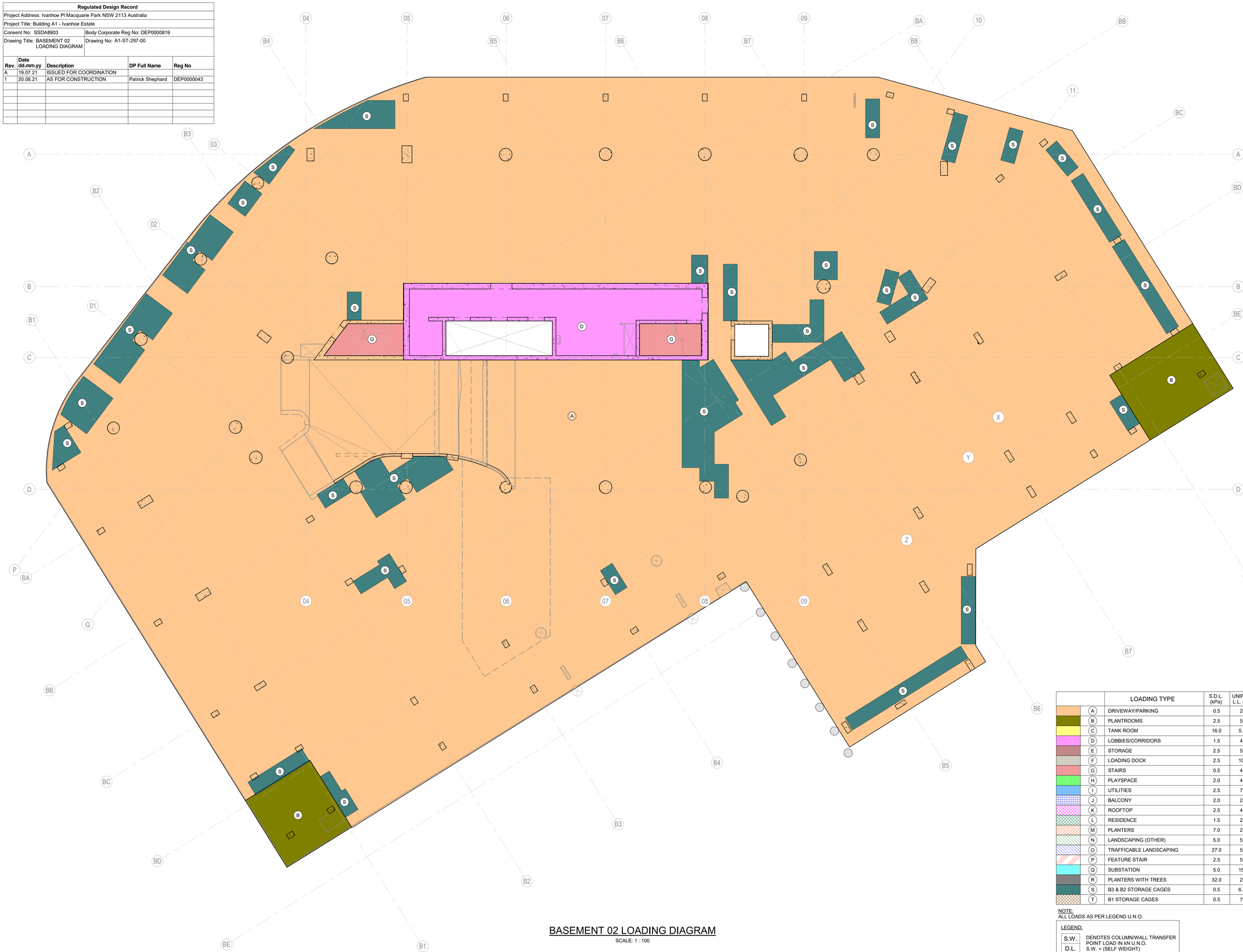
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FOR GENERAL NOTES REFER TO DRAWING ST-001-01

Regulated Design Record			
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia			
Project Title: Building A1 - Ivanhoe Estate			
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819	
Drawing Title: BASEMENT 02 LOADING DIAGRAM		Drawing No: A1-ST-297-00	

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
A	19.07.21	ISSUED FOR COORDINATION		
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043



BASEMENT 02 LOADING DIAGRAM

SCALE: 1 : 100

		LOADING TYPE	S.D.L. (kPa)	UNIFORM L.L. (kPa)
	A	DRIVEWAY/PARKING	0.5	2.5
	B	PLANTROOMS	2.5	5.0
	C	TANK ROOM	16.0	5.0
	D	LOBBIES/CORRIDORS	1.5	4.0
	E	STORAGE	2.5	5.0
	F	LOADING DOCK	2.5	10.0
	G	STAIRS	0.5	4.0
	H	PLAYSPACE	2.0	4.0
	I	UTILITIES	2.5	7.5
	J	BALCONY	2.0	2.0
	K	ROOFTOP	2.5	4.0
	L	RESIDENCE	1.5	2.0
	M	PLANTERS	7.0	2.0
	N	LANDSCAPING (OTHER)	5.0	5.0
	O	TRAFFICABLE LANDSCAPING	27.0	5.0
	P	FEATURE STAIR	2.5	5.0
	Q	SUBSTATION	5.0	15.0
	R	PLANTERS WITH TREES	32.0	2.0
	S	B3 & B2 STORAGE CAGES	0.5	6.25
	T	B1 STORAGE CAGES	0.5	7.2

NOTE:
ALL LOADS AS PER LEGEND U.N.O.

LEGEND:

S.W.	DENOTES COLUMN/WALL TRANSFER POINT LOAD IN kN U.N.O.
D.L.	S.W. = (SELF WEIGHT)
L.L.	D.L. = (DEAD LOAD)
	L.L. = (LIVE LOAD)

DRAWING TO BE PRINTED IN COLOUR

1 20.08.21 AS FOR CONSTRUCTION
A 19.07.21 ISSUED FOR COORDINATION
Rev. Date Description

STRUCTURAL / CIVIL CONSULTANT

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BUILDER

PROJECT NAME

Building A1, Midtown MacPark
Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

BASEMENT 02 LOADING DIAGRAM

SCALE AT B1: 1 : 100
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER A1-ST-297-00

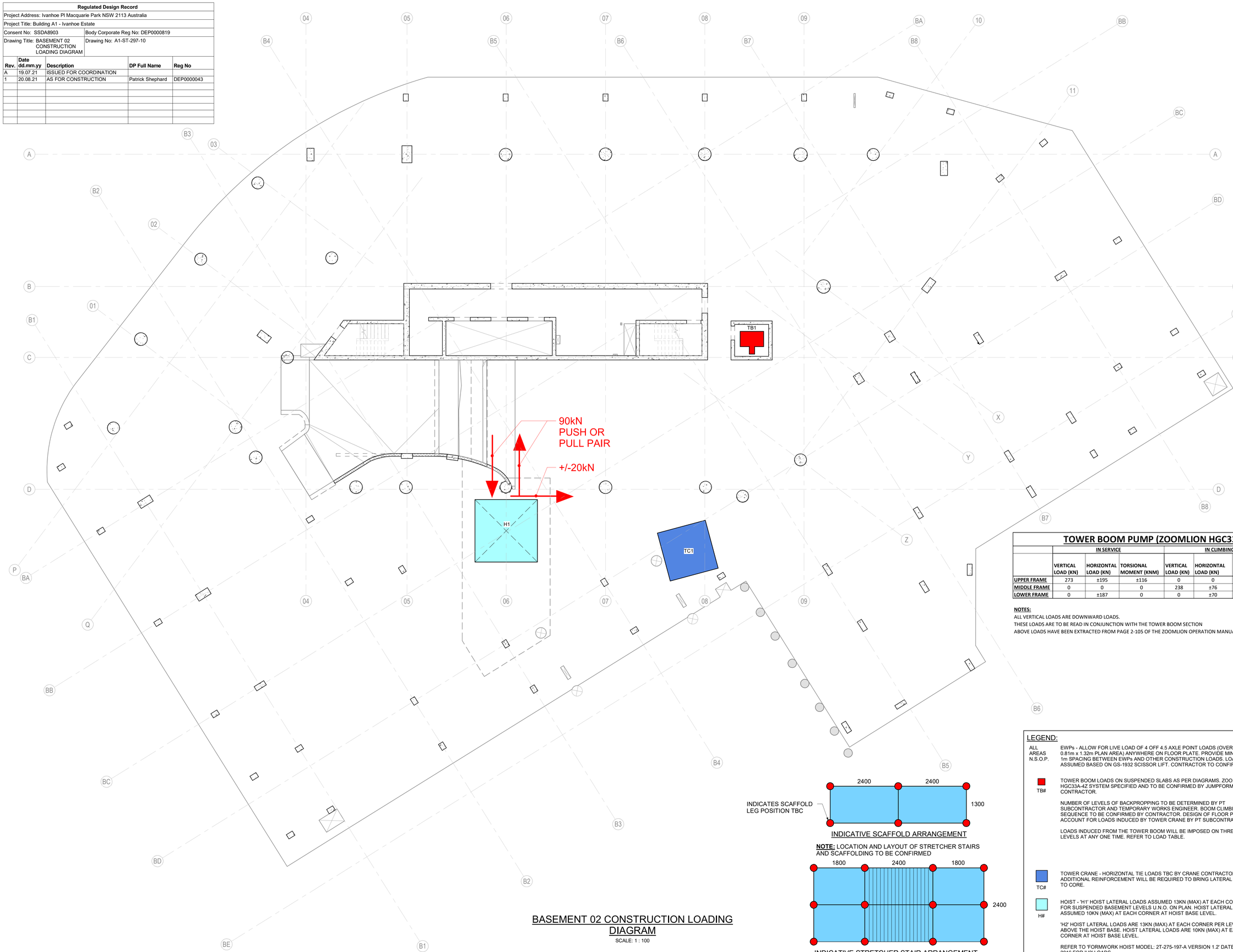
REV. 1

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Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819		
Drawing Title: BASEMENT 02 CONSTRUCTION LOADING DIAGRAM		Drawing No: A1-ST-297-10		
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
A	19.07.21	ISSUED FOR COORDINATION		
1	20.08.21	AS FOR CONSTRUCTION	Patrick Shephard	DEP0000043

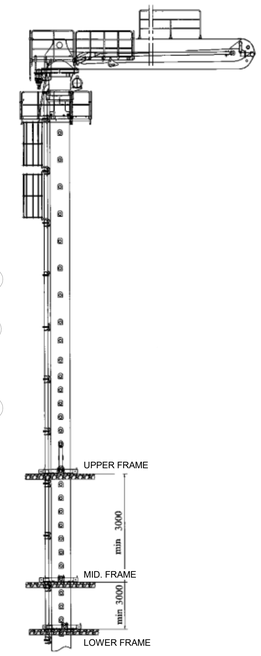
B1

FOR GENERAL NOTES REFER TO DRAWING ST-001-01



BASEMENT 02 CONSTRUCTION LOADING DIAGRAM

SCALE: 1 : 100



TOWER BOOM PUMP (ZOOMLION HGC33A-4Z)

TOWER BOOM PUMP (ZOOMLION HGC33A-4Z) LOADING TABLE

	IN SERVICE			IN CLIMBING			AT REST		
	VERTICAL LOAD (KN)	HORIZONTAL LOAD (KN)	TORSIONAL MOMENT (KNM)	VERTICAL LOAD (KN)	HORIZONTAL LOAD (KN)	TORSIONAL MOMENT (KNM)	VERTICAL LOAD (KN)	HORIZONTAL LOAD (KN)	TORSIONAL MOMENT (KNM)
UPPER FRAME	273	±195	±116	0	0	0	207	±228	±200
MIDDLE FRAME	0	0	0	238	±76	0	0	0	0
LOWER FRAME	0	±187	0	0	±70	0	0	±166	0

NOTES:

ALL VERTICAL LOADS ARE DOWNWARD LOADS.

THESE LOADS ARE TO BE READ IN CONJUNCTION WITH THE TOWER BOOM SECTION

ABOVE LOADS HAVE BEEN EXTRACTED FROM PAGE 2-105 OF THE ZOOMLION OPERATION MANUAL

INDICATIVE SCAFFOLD ARRANGEMENT

NOTE: LOCATION AND LAYOUT OF STRETCHER STAIRS AND SCAFFOLDING TO BE CONFIRMED

INDICATIVE STRETCHER STAIR ARRANGEMENT

NOTE: LOCATION AND LAYOUT OF STRETCHER STAIRS AND SCAFFOLDING TO BE CONFIRMED

LEGEND:

ALL AREAS N.S.O.P. — EWPs - ALLOW FOR LIVE LOAD OF 4 OFF 4.5 AXLE POINT LOADS (OVER 0.81m x 1.32m PLAN AREA) ANYWHERE ON FLOOR PLATE. PROVIDE MIN. 1m SPACING BETWEEN EWPs AND OTHER CONSTRUCTION LOADS. LOADS ASSUMED BASED ON GS-1932 SCISSOR LIFT. CONTRACTOR TO CONFIRM.

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LOADS INDUCED FROM THE TOWER BOOM WILL BE IMPOSED ON THREE SLAB LEVELS AT ANY ONE TIME. REFER TO LOAD TABLE.

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'H2' HOIST LATERAL LOADS ARE 13KN (MAX) AT EACH CORNER PER LEVEL ABOVE THE HOIST BASE. HOIST LATERAL LOADS ARE 10KN (MAX) AT EACH CORNER AT HOIST BASE LEVEL.

REFER TO 'FORMWORK HOIST MODEL: 2T-275-197-A VERSION 1.2' DATED JAN 2016 FOR 'H2' LOADS.

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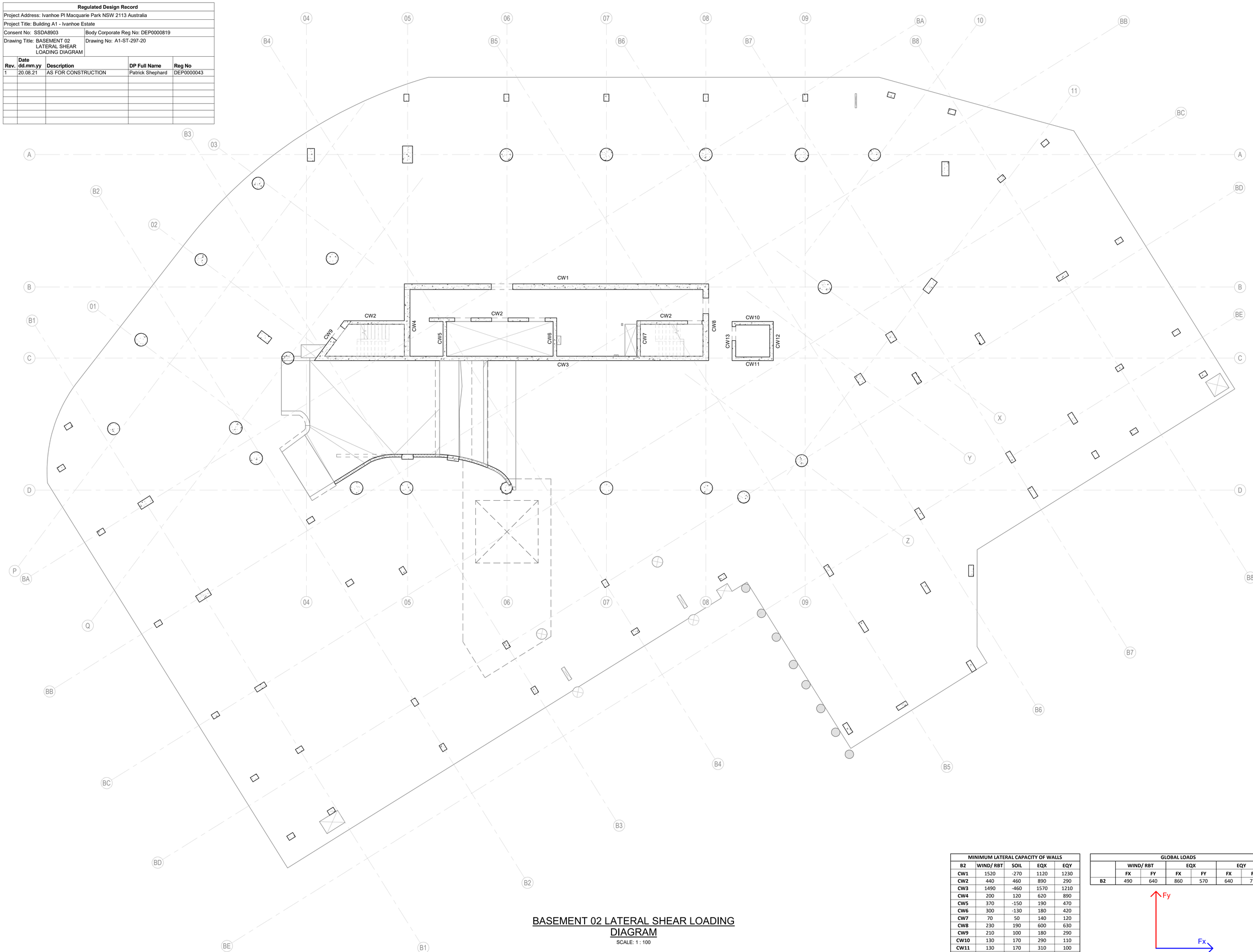
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DRAWING NUMBER: A1-ST-297-10

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Regulated Design Record				
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia				
Project Title: Building A1 - Ivanhoe Estate				
Consent No: SSDA8903		Body Corporate Reg No: DEP0000819		
Drawing Title: BASEMENT 02 LATERAL SHEAR LOADING DIAGRAM		Drawing No: A1-ST-297-20		
Rev.	**Date dd.mm.yy**	**Description**	**DP Full Name**	**Reg No**
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BASEMENT 02 LATERAL SHEAR LOADING DIAGRAM

SCALE: 1 : 100

B1

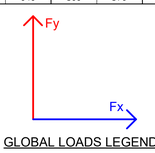
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NOTES:

- GLOBAL LOADS SHOWN ARE TO DETERMINE FORCES ACROSS THE FLOORPLATE ONLY. WALL TO SLAB CONNECTIONS MUST BE DESIGNED USING THE INDIVIDUAL CORE REACTIONS TABLE. LOADS ARE TO BE TAKEN IN PLANE WITH THEIR RESPECTIVE WALLS.
- THE GLOBAL DIAPHRAGM FORCES ARE TO BE DISTRIBUTED EVENLY ACROSS THE FLOORPLATE IN ACCORDANCE WITH AS3600 CL14.4.5.2.
- GLOBAL SOIL LOADS TO BE TAKEN FROM ENSTRUCT SOIL LOADING DIAGRAMS.
- MASS OFFSETS IN ACCORDANCE WITH AS1170.4 SHOULD ALSO BE INCORPORATED IN THE DESIGN.
- THE CORE SHEAR FORCES CAN BE IN EITHER DIRECTION (+/-) FOR WIND/ RBT AND EARTHQUAKE.
- THE EARTHQUAKE FORCES IN EACH DIRECTION SHALL BE COMBINED IN ACCORDANCE WITH 1170.4 TO CONSIDER 30% IN THE TRANSVERSE DIRECTION. (IE. 100% EQx PLUS 30% EQy AND VICE VERSA). BOTH THE POSITIVE AND NEGATIVE DIRECTIONS MUST BE CONSIDERED FOR BOTH THE PRIMARY AND TRANSVERSE ACTIONS.
- FORCES ARE TO BE COMBINED WITH GRAVITY LOADS IN ACCORDANCE WITH AS1170.0.
- SOIL FORCES CAN OCCUR SIMULTANEOUSLY WITH WIND/ RBT AND EARTHQUAKE, AND ALL COMBINATIONS OF EARTHQUAKE +/- SOIL, WIND/ RBT +/- SOIL OR WITHOUT SOIL MUST BE CONSIDERED.
- A SOIL LOAD FACTOR OF 1.0 SHALL BE USED FOR STRENGTH AND SERVICE.
- EARTHQUAKE DIAPHRAGM FORCES HAVE BEEN CALCULATED BASED ON A STRUCTURAL DUCTILITY FACTOR OF 1.0 AND A STRUCTURAL PERFORMANCE FACTOR OF 0.77.
- DIAPHRAGMS ARE TO BE DESIGNED IN ACCORDANCE WITH AS3600-2018.
- ALL FORCES ARE GIVEN IN kN.

MINIMUM LATERAL CAPACITY OF WALLS				
B2	**WIND/ RBT**	**SOIL**	**EQX**	**EQY**
CW1	1520	-270	1120	1230
CW2	440	460	890	290
CW3	1490	-460	1570	1210
CW4	200	120	620	890
CW5	370	-150	190	470
CW6	300	-130	180	420
CW7	70	50	140	120
CW8	230	190	600	630
CW9	210	100	180	290
CW10	130	170	290	110
CW11	130	170	310	100
CW12	320	-190	390	580
CW13	160	-60	130	210

GLOBAL LOADS						
	WIND/ RBT		**EQX**		**EQY**	
	FX	**FY**	**FX**	**FY**	**FX**	**FY**
B2	490	640	860	570	640	770



GLOBAL LOADS LEGEND

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Ivanhoe Estate, Macquarie Park

PROJECT NUMBER: 5543

DRAWING TITLE

BASEMENT 02 LATERAL SHEAR LOADING DIAGRAM

SCALE AT B1: 1 : 100
DRAWN BY: WAS
CHECKED BY: PAS

DRAWING STATUS

AS FOR CONSTRUCTION

DRAWING NUMBER: A1-ST-297-20
REV.: 1

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Regulated Design Record	
Project Address: Ivanhoe Pl Macquarie Park NSW 2113 Australia	
Project Title: Building A1 - Ivanhoe Estate	
Consent No: SSDA8903	Body Corporate Reg No: DEP0000819
Drawing Title: BASEMENT 01 LOADING DIAGRAM	Drawing No: A1-ST-298-00

Rev.	Date dd.mm.yy	Description	DP Full Name	Reg No
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FOR GENERAL NOTES REFER TO DRAWING ST-001-01

SDL = 15kN/m
LL = 3kN/m

ALLOW FOR 1.3m DEEP PLANTER MAX PLUS ALLOWANCE FOR BUILD-UP MATERIAL ON L.G (E.G. SCREEDS AND PAVERS)

SDL = 9.5kN/m
MOMENT (SOIL UNFACTORED) = 10kNm/m

SDL = 9.5kN/m
MOMENT (SOIL UNFACTORED) = 10kNm/m

SDL = 9.5kN/m

NOMINATED SDL OF 16kPa ALLOWS FOR 1.5m DEEP WATER AND 1kPa FOR SUSPENDED SERVICES BELOW.

SDL = 11kN/m
LL = 10kN/m

SDL = 11kN/m
LL = 10kNm/m

160
70
190

BASEMENT 01 LOADING DIAGRAM

SCALE: 1 : 100

		LOADING TYPE	S.D.L. (kPa)	UNIFORM L.L. (kPa)
	A	DRIVEWAY/PARKING	0.5	2.5
	B	PLANTROOMS	2.5	5.0
	C	TANK ROOM	16.0	5.0
	D	LOBBIES/CORRIDORS	1.5	4.0
	E	STORAGE	2.5	5.0
	F	LOADING DOCK	2.5	10.0
	G	STAIRS	0.5	4.0
	H	PLAYSPACE	2.0	4.0
	I	UTILITIES	2.5	7.5
	J	BALCONY	2.0	2.0
	K	ROOFTOP	2.5	4.0
	L	RESIDENCE	1.5	2.0
	M	PLANTERS	7.0	2.0
	N	LANDSCAPING (OTHER)	5.0	5.0
	O	TRAFFICABLE LANDSCAPING	27.0	5.0
	P	FEATURE STAIR	2.5	5.0
	Q	SUBSTATION	5.0	15.0
	R	PLANTERS WITH TREES	32.0	2.0
	S	B3 & B2 STORAGE CAGES	0.5	6.25
	T	B1 STORAGE CAGES	0.5	7.2

NOTE:
ALL LOADS AS PER LEGEND U.N.O.

LEGEND:

S.W.	DENOTES COLUMN/WALL TRANSFER POINT LOAD IN kN U.N.O.
D.L.	S.W. = (SELF WEIGHT)
L.L.	D.L. = (DEAD LOAD)
	L.L. = (LIVE LOAD)

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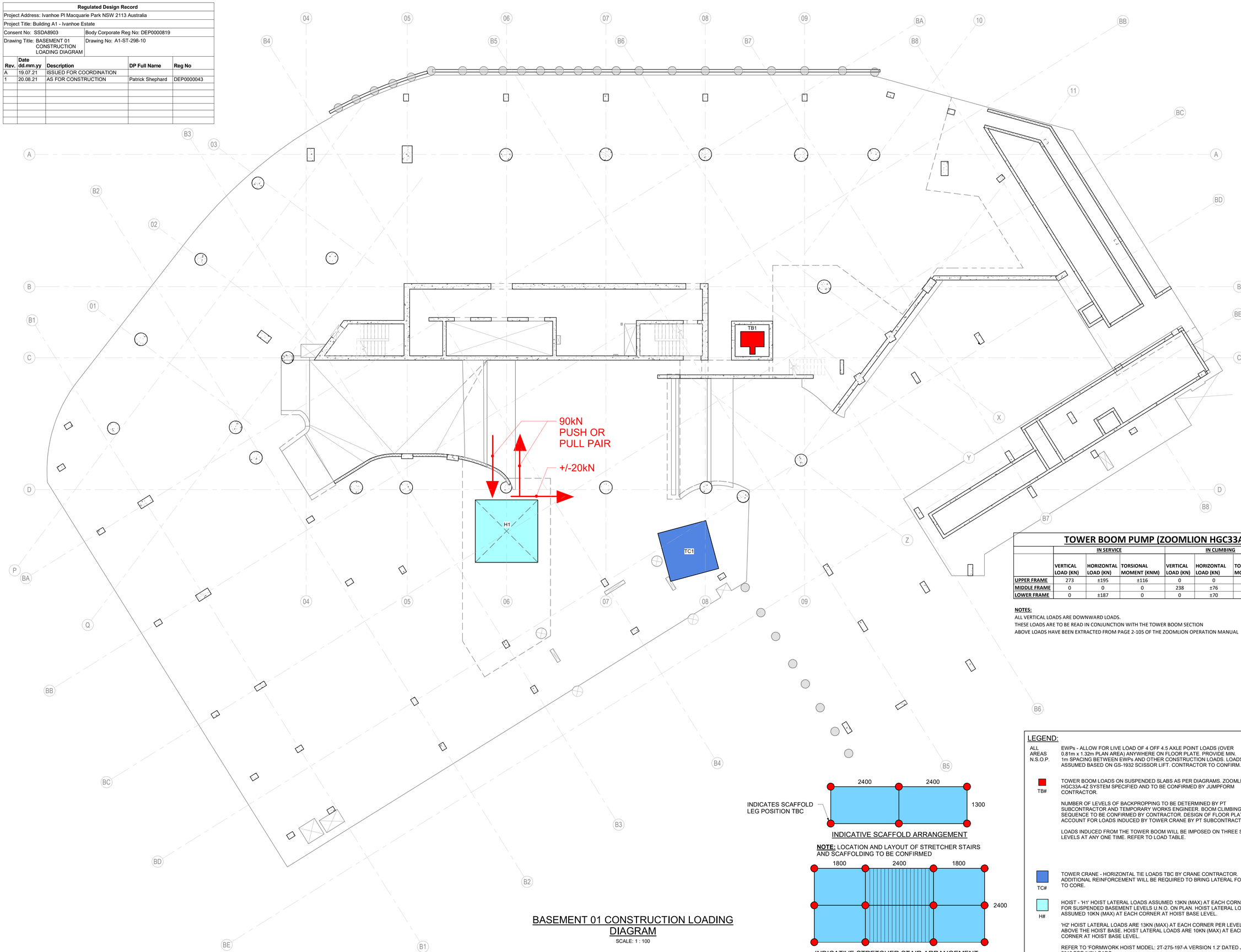
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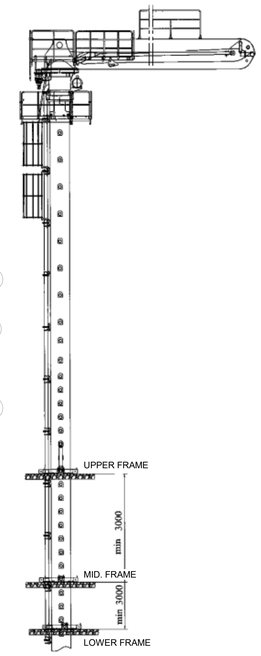
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BASEMENT 01 CONSTRUCTION LOADING DIAGRAM

SCALE: 1 : 100



TOWER BOOM PUMP (ZOOMLION HGC33A-4Z)

TOWER BOOM PUMP (ZOOMLION HGC33A-4Z) LOADING TABLE

	IN SERVICE			IN CLIMBING			AT REST		
	VERTICAL LOAD (KN)	HORIZONTAL LOAD (KN)	TORSIONAL MOMENT (KNM)	VERTICAL LOAD (KN)	HORIZONTAL LOAD (KN)	TORSIONAL MOMENT (KNM)	VERTICAL LOAD (KN)	HORIZONTAL LOAD (KN)	TORSIONAL MOMENT (KNM)
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LOWER FRAME	0	±187	0	0	±70	0	0	±166	0

NOTES:

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ABOVE LOADS HAVE BEEN EXTRACTED FROM PAGE 2-105 OF THE ZOOMLION OPERATION MANUAL

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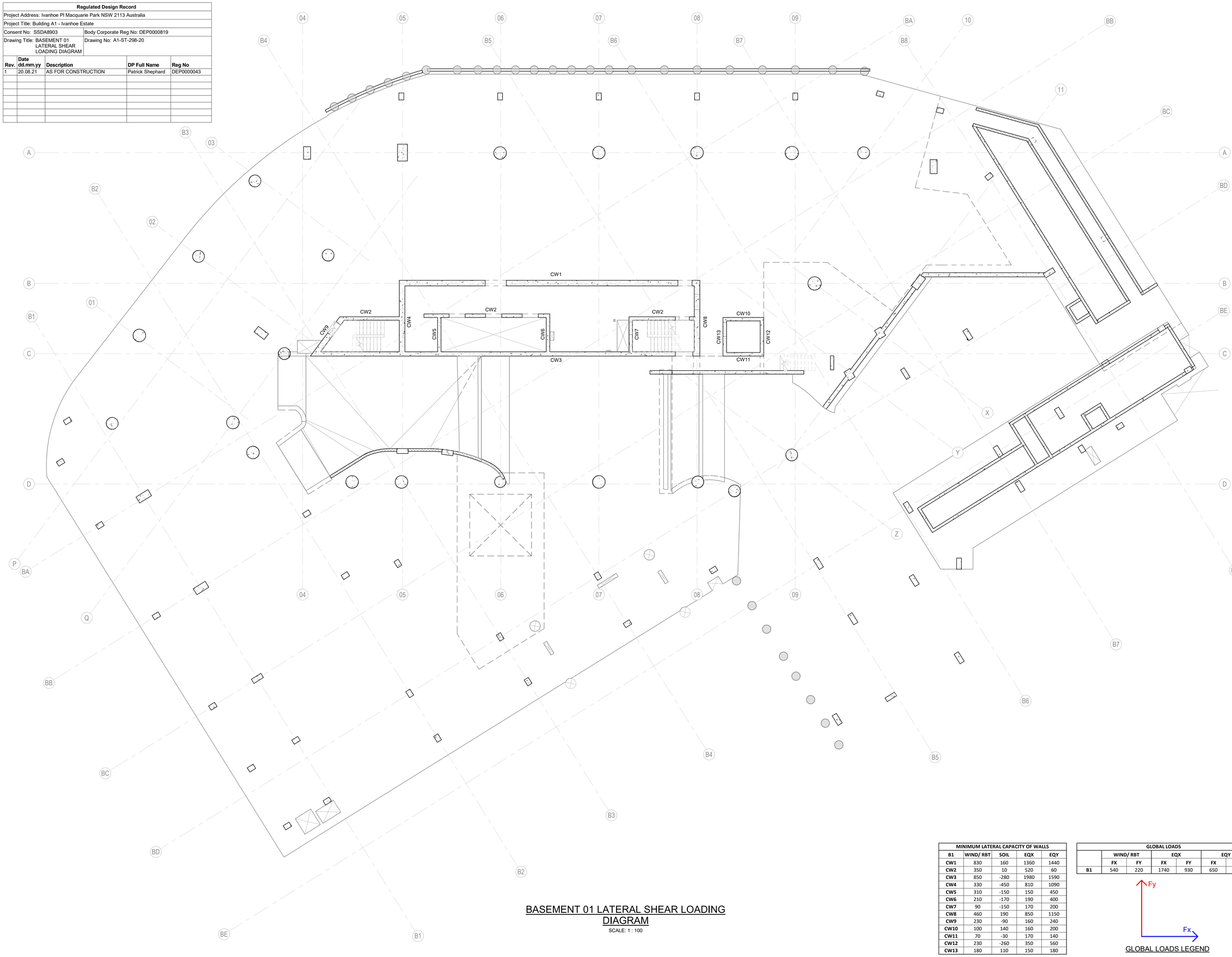
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BASEMENT 01 LATERAL SHEAR LOADING DIAGRAM

SCALE: 1 : 100

MINIMUM LATERAL CAPACITY OF WALLS				
B1	**WIND/ RBT**	**SOIL**	**EQX**	**EQY**
CW1	830	160	1360	1440
CW2	350	10	520	60
CW3	850	-280	1980	1590
CW4	330	-450	810	1090
CW5	310	-150	150	450
CW6	210	-170	190	400
CW7	90	-150	170	200
CW8	460	190	850	1150
CW9	230	-90	160	240
CW10	100	140	160	200
CW11	70	-30	170	140
CW12	230	-260	350	560
CW13	180	110	150	180

GLOBAL LOADS						
	WIND/ RBT		**EQX**		**EQY**	
	FX	**FY**	**FX**	**FY**	**FX**	**FY**
B1	540	220	1740	930	650	1230

GLOBAL LOADS LEGEND

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B1

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