

Workplace Assessment 1 – Observation Form

(This form is for the assessor's use only)

Purpose

This *Observation Form* lists the practical skills that the candidate must demonstrate/perform while completing **Workplace Assessment 1**.

This form is to be completed by the candidate's assessor to document their observations on the candidate's performance in Workplace Assessment 1.

Task Overview

For this task, the candidate is required to meet with relevant construction personnel to confirm the currency of plans, specifications and amendments, while being observed by the assessor. The construction personnel to be consulted with must be:

- Architects for architectural plan
- Structural Designers for structural plan
- Mechanical Engineer for mechanical plan
- Electrical Engineer for electrical plans
- Plumbing Engineer for plumbing and drainage plans
- The developer of the specifications for the verifying of specifications

In this task, the candidate will be assessed in their:

- Practical knowledge of building and construction plans
- Practical skills relevant to confirming the currency of plans, specifications and amendments with relevant construction personnel

Instructions to the Assessor

Before the assessment

- Provide the candidate with a copy of policies and procedures relevant to contacting and consulting relevant construction personnel and discuss these policies and procedures with them.
- Provide the candidate with copies of the construction plans and specifications.
- Organise workplace resources required for the candidate to complete this assessment.
- Contextualise the criteria in this form to ensure they reflect the actual project the candidate is undertaking as part of the assessment.
- Discuss this assessment task with the candidate, including the practical skills they need to demonstrate during this task and the criteria for satisfactorily demonstrating each skill.
- Review this form with the candidate and address any queries or concerns they may have about it.

Resources required for the assessment	☒ Building and construction project <i>Day Workforce</i> ☒ People resources (i.e. relevant construction personnel) ☒ Opportunities to meet with relevant construction personnel to confirm the currency of plans, specifications and amendments ☒ Policies and procedures relevant to contacting and consulting relevant construction personnel ☒ Construction plans ☒ Construction specifications ☒ Meeting minutes template
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Candidate Assessment Briefing

Date of assessment briefing	27/10/22
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The assessor confirms:	YES/NO
1. They have discussed with the candidate the workplace task they are required to complete for this assessment.	☒ YES ☐ NO
2. The candidate understands they will be assessed while completing this workplace task, as well as any document(s) they will complete as part of this task.	☒ YES ☐ NO
3. They have discussed with the candidate instructions how they are to undertake the workplace task.	☒ YES ☐ NO
4. They have provided the candidate guidance on how they can satisfactorily complete the task.	☒ YES ☐ NO
5. They have discussed with the candidate the practical skills (listed below) they are required to demonstrate while completing this task.	☒ YES ☐ NO
6. They have addressed the candidate's questions or concerns about the workplace task and the assessment process.	☒ YES ☐ NO

During the confirming of the currency of architectural plans:	YES/NO	Date observed	Assessor's comments
vii. The candidate records the confirmation of the currency of the plans of the architect in the meeting minutes.	☒ YES ☐ NO	27/10/22	

During the confirming of the currency of structural plans:	YES/NO	Date observed	Assessor's comments
1. The candidate meets with the structural designer who had developed the plan. Assessor to tick the communication method used for the meeting: ☒ Face-to-face meeting ☐ Video conferencing	☒ YES ☐ NO	27/10/22	
2. The candidate verifies the currency of the plans and amendments.			
i. The candidate identifies the date of the amendments specified on the plans.	☒ YES ☐ NO		rev D.
ii. The candidate asks the structural designer if the specified amendments are the most recent ones.	☒ YES ☐ NO		10 revisions visible.
iii. The candidate asks the structural designer if all amendments specified are incorporated into the plan.	☒ YES ☐ NO		
iv. The candidate records the confirmation of the currency of the amendments of the structural designer in the meeting minutes.	☒ YES ☐ NO		
v. The candidate identifies the publication date of the plans.	☒ YES ☐ NO		

During the confirming of the currency of mechanical plans:		YES/NO	Date observed	Assessor's comments
v.	The candidate identifies the publication date of the plans.	☒ YES ☐ NO	27/10/22	Anya was able to witness a publish date that was dated after the revision. She has an <u>excellent</u> solid understanding of navigating information on drawings.
vi.	The candidate asks the mechanical engineer if the plans in use are the current ones, based on the publication date specified on the plans.	☒ YES ☐ NO		
vii.	The candidate records the confirmation of the currency of the plans of the mechanical engineer in the meeting minutes.	☒ YES ☐ NO		

During the confirming of the currency of electrical plans:		YES/NO	Date observed	Assessor's comments
1.	The candidate meets with the electrical engineer who had developed the plan. Assessor to tick the communication method used for the meeting: ☒ Face-to-face meeting ☐ Video conferencing	☒ YES ☐ NO	27/10/22	
2.	The candidate verifies the currency of the plans and amendments.			
i.	The candidate identifies the date of the amendments specified on the plans.	☒ YES ☐ NO		
ii.	The candidate asks the electrical engineer if the specified amendments are the most recent ones.	☒ YES ☐ NO		
iii.	The candidate asks the electrical engineer if all amendments specified are incorporated into the plan.	☒ YES ☐ NO		

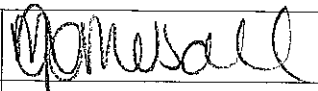
During the confirming of the currency of plumbing and drainage plans:		YES/NO	Date observed	Assessor's comments
iii.	The candidate asks the plumbing engineer if all amendments specified are incorporated into the plan.	☒ YES ☐ NO	27/10/22	Correct job
iv.	The candidate records the confirmation of the currency of the amendments of the plumbing engineer in the meeting minutes.	☒ YES ☐ NO		
v.	The candidate identifies the publication date of the plans.	☒ YES ☐ NO		
vi.	The candidate asks the plumbing engineer if the plans in use are the current ones, based on the publication date specified on the plans.	☒ YES ☐ NO		
vii.	The candidate records the confirmation of the currency of the plans of the plumbing engineer in the meeting minutes.	☒ YES ☐ NO		

During the confirming of the currency of specifications:		YES/NO	Date observed	Assessor's comments
1.	The candidate meets with the developer of the specifications.	☒ YES ☐ NO	27/10/22	
Assessor to tick the communication method used for the meeting:				
☒ Face-to-face meeting				
☐ Video conferencing				

Assessor Declaration

By signing here, I confirm that I have observed the candidate, whose name appears above, meet with relevant construction personnel to confirm the currency of plans, specifications and amendments.

I confirm that the information recorded on this *Observation Form* is true and accurately reflects the candidate's performance during their completion of the workplace task.

Assessor's signature	
Assessor's name	Michelle Cromer
Date signed	27/10/22

End of Workplace Assessment – Observation Form

Meeting Minutes Template

Meeting Details

Meeting called	Anya English
Date of meeting	28/10/2022
Time of meeting	10:00 am
Location of meeting	Quay Waterfront Newstead

Meeting Participants

Facilitator	Rik Taylor
Note-taker	Anya English
Attendees	Rik Taylor, Michelle Gomersall, Dan O'Brien, Anya English

Agenda Item 1- Architectural Drawings

Discussion point 1	Date of amendments were last updated in June 2022 and is the most current version, they have not been edited since.
Discussion point 2	All of the dates of revisions have been added into the drawings accordingly.
Discussion point 3	The most recent version of these plans are as Revision W as of 17/09/22 publish date 9/2/22 Rev U

Agenda Item 4 Electrical

Discussion point 1	The latest revision is Revision 3 14/06/2022
Discussion point 2	Not all revisions are stated because of not having enough room.
Discussion point 3	Original publish date is not stated.

Agenda Item 6 Plumbing and Drainage

Discussion point 1	The latest revision is 08/05/2020 and refers to the correct drawing Rev P7.
Discussion point 2	Publication date not specified but revised sent accordingly.
Discussion point 3	Plumbing and drainage specifications only one amendment; which is Revision 1 + original

Action Items

Action Item	Assigned	Due Date
Find Revision list for electrical plan	Rik	15/12/22
Find the original publish date for electrical	Rik	15/12/22
Find publish date for plumbing and drainage	Rik	15/12/22

End of Meeting Minutes Template

PRINT IN COLOUR

1. REFER TO DRAWING SERIES S01 FOR THE FOLLOWING:
 - GENERAL AND CONSTRUCTION NOTES
 - ABBREVIATIONS
 - NOTATIONS
 - SYMBOLS
2. FOR DETAILS OF RL, DIMENSIONS AND SET OUT ETC. REFER TO LATEST ARCHITECT'S DETAILS. ENGINEER TO BE NOTIFIED OF ANY VARIATION TO THAT SHOWN ON ENGINEER'S DRAWINGS PRIOR TO THE COMMENCEMENT OF ANY WORKS.

ELEMENT	CONCRETE STRENGTH f_c	CONCRETE COVER			SPECIAL REQUIREMENTS
		TOP	BTH	SIDE	
INTERNAL	N40	30mm	30mm	30mm	-
EXTERNAL	N40	30mm	30mm	30mm	-

 INDICATES EXTENT OF 30mm MAXIMUM SETDOWN
IN TOP OF SLAB TO WET AREAS.

B	05.08.22	CONSTRUCTION ISSUE	GT	DB
C	21.02.22	CONSTRUCTION ISSUE	GT	DB
B	08.10.21	Sections Added, Revised as Clouded	BR	DB
A	27.09.21	CONSTRUCTION ISSUE	BR	DB
8	30.07.21	TENDER ISSUE	JH	DB
7	14.06.21	PRELIMINARY ISSUE	GT	DB
6	04.09.20	ISSUED FOR INFORMATION	GT	DB
5	01.07.20	ISSUED FOR INFORMATION	GT	DB
4	21.05.20	ISSUED FOR INFORMATION	GT	DB
3	14.05.20	ISSUED FOR INFORMATION	GT	DB

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Project Name
QUAY
57 SKYRING TERRACE, NEWSTEAD

Discipline STRUCTURAL		Status CONSTRUCTION
Designed By VR	Checked By DB	Approved By AK
Project No. 22307	Drawn By LK	Scale 1 : 100 (H&A5)

Drawing No.	Revision
S10-10.1	D

↳ matches latest revision.

FAN COIL UNIT SCHEDULE (VRV/VRF SYSTEM) - LEVEL 10

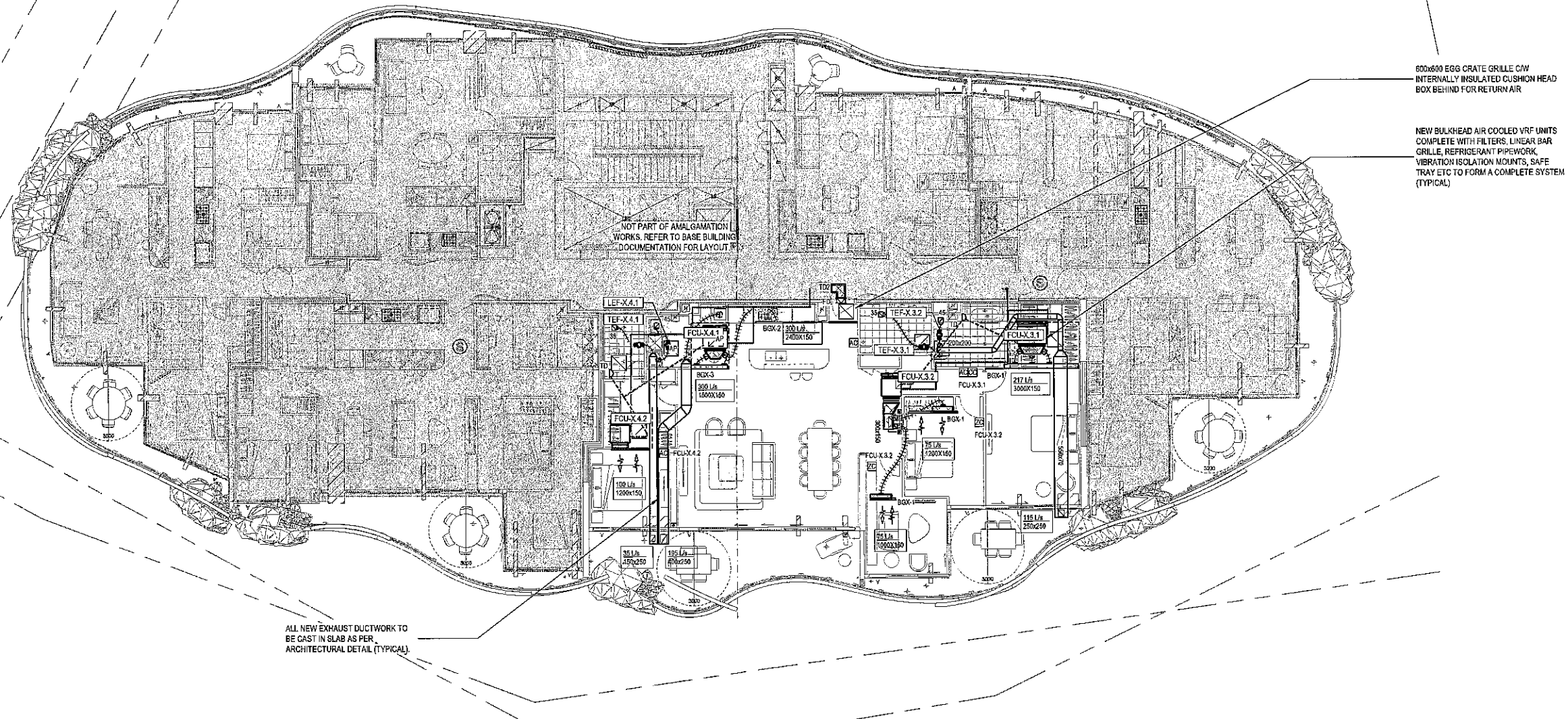
UNIT REFERENCE	CONDENSING UNIT	AREA SERVED	SUPPLY (L/s)	COOLING CAPACITY TOTAL/SENSIBLE	AIR ON COIL (°C/°F)	HEATING (kW)	FILTER TYPE & SIZE	POWER (kW/HP)	OUTSIDE AIR (L/s)	NOMINAL SELECTION
FCU-X.3.1	CU-X.3	BEDROOM 1	217	5.60/5.04	27.0/19.0	RC	100mm G4	1.03/1	-	PEFY-P60VMS1-E
FCU-X.3.2	CU-X.3	BEDROOM 2	180	3.04/2.37	27.0/19.0	RC	100mm G4	1.16/1	-	PEFY-P32VMA-E
CU-X.3	-	CONDENSER 1	-	8kW	35dB	-	-	30.5/1	-	PUMY-SP80VKMD-A
FCU-X.4.1	CU-X.4	LOUNGE	300	7.52/5.57	27.0/19.0	RC	100mm G4	2.46/1	-	PEFY-P71VMA-E
FCU-X.4.2	CU-X.4	BEDROOM 3	133	2.42/2.00	27.0/19.0	RC	100mm G4	0.63/1	-	PEFY-P32VMS1-E
FCU-X.4.3	CU-X.4	BEDROOM 4	100	1.81/1.48	27.0/19.0	RC	100mm G4	0.53/1	-	PEFY-P45VMS1-E
CU-X.4	-	CONDENSER 2	-	12.4kW	35dB	-	-	30.5/1	-	PUMY-SP80VKMD-A

- UNITS TO BE MITSUBISHI HEAT PUMP INVERTER OR APPROVED EQUAL, SIZED FOR 130% OF CONNECTED FCU LOAD.
 - UNITS TO BE ELECTRICALLY SUPPLIED VIA ISOLATOR PROVIDED BY ELECTRICAL CONTRACTOR, WIRING FROM ISOLATOR TO EQUIPMENT BY MECHANICAL CONTRACTOR.
 - ALL DUCTED FAN COIL UNITS TO BE PROVIDED WITH 7mm EXTERNALLY INSULATED SAFE TRAY EXTENDING TO COVER THE UNITS REFRIGERATION VALVES.

FAN SCHEDULE - LEVEL 10

UNIT REFERENCE	APPLICATION	FAN LOCATION (AREA SERVED)	FAN TYPE	AIR FLOW (L/s)	EXTERNAL STATIC (Pa)	MAXIMUM FAN SPEED (R.P.M)	IMPELLER DIAMETER (mm)	MOTOR RATING (A/HP)	MOTOR DRIVE (VSD/DOL)	BASE SELECTION	COMMENTS
LEF-X.4.1	LAUNDRY EXHAUST	LOT 4 LAUNDRY	MIXED FLOW	45	85	1900	125	0.1/1	DOL	TD-350/125SIL	INTERLOCK WITH CURRENT SENSOR
TEF-X.3.1	TOILET EXHAUST	LOT 3 BATHROOM 1	MIXED FLOW	35	75	1850	100	0.1/1	DOL	TD-250/100SIL	INTERLOCK WITH LIGHTING CIRCUIT
TEF-X.3.2	TOILET EXHAUST	LOT 3 BATHROOM 2	MIXED FLOW	35	75	1850	100	0.1/1	DOL	TD-250/100SIL	INTERLOCK WITH LIGHTING CIRCUIT, C/W NRD ON DISCHARGE
TEF-X.4.1	TOILET EXHAUST	LOT 4 BATHROOM 1	MIXED FLOW	35	75	1850	100	0.1/1	DOL	TD-250/100SIL	INTERLOCK WITH LIGHTING CIRCUIT

- FANS TO BE MANUFACTURED BY FANTECH OR AS APPROVED EQUAL. ALL MIXED FLOW FANS ARE TO BE SELECTED WITH BACKDRAFT DAMPERS.
 - FANS TO BE ELECTRICALLY SUPPLIED VIA ISOLATOR PROVIDED BY THE ELECTRICAL CONTRACTOR IN CEILING SPACE ADJACENT UNIT. WIRING FROM ISOLATOR TO EQUIPMENT BY MECHANICAL CONTRACTOR.
 - EXTERNAL STATIC PRESSURE IS ESTIMATED ONLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASCERTAINING THE ACTUAL PRESSURE DROP AND SELECTION OF APPROPRIATE RATED FAN.



0 1 2 3 4 5m 10m
1:100

REV	DESCRIPTION	DATE
C3	CONSTRUCTION ISSUE	23.03.2022

30/03/2022 12:56:30 PM

ARCHITECT

**MIRVAC
DESIGN**

CLIENT

mirvac

SERVICES ENGINEER

BSE
BUILDING SERVICES ENGINEERS
Level 2, 168 Edward Street
Brisbane QLD 4000
Tel: (07) 3210 0044 Email: mail@bse.com.au
www.bse.com.au

PROJECT

SKY NEWSTEAD RESIDENTIAL
BUILDING STAGE 1
57 SKYRING TERRACE,
NEWSTEAD, QLD 4006

DRAWING TITLE

MECHANICAL SERVICES
LEVEL 10 - AMALGAMATION
LAYOUT

SCALE: 1:100

DATE: MARCH 2020

DRAWN: SZ

DESIGNED: GK

NORTH

PROJECT No:

DRAWING No:

ISSUE:

20190333

100-M-3001

C3

BIM 3001/4/003.1 - Newstead - Riverside - Sky Project - Stage 1/SKY-SEEN-ME-S1131-R20.rvt

date of last revision/publish date

This matches last revision date

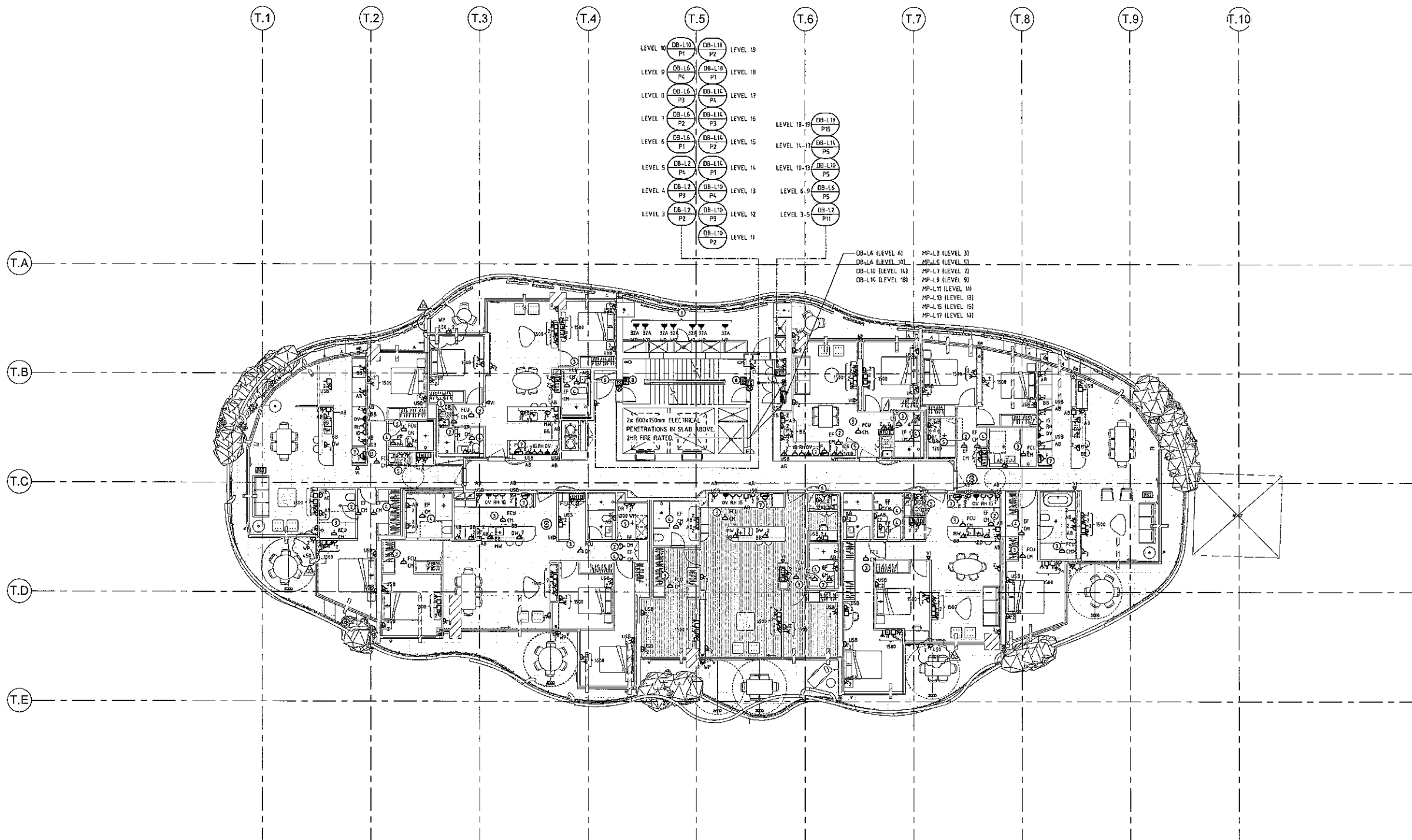
last revision/publish date.

SPECIFIC NOTES:

- ① SINGLE PHASE WEATHERPROOF ISOLATOR FOR UNIT A/C FED FROM RESPECTIVE UNIT DB.
- ② SINGLE PHASE OUTLET IN CEILING SPACE FOR LAUNDRY EXHAUST FAN FED FROM CURRENT SENSING DEVICE ON DRYER GPO.
- ③ SINGLE PHASE ISOLATOR IN CEILING SPACE FOR FAN COIL UNIT (FCU).
- ④ SINGLE PHASE OUTLET IN CEILING SPACE FOR TOILET EXHAUST FAN CONTROLLED OFF INDIVIDUAL LIGHT SWITCH. ELECTRICAL SUB-CONTRACTOR TO SUPPLY AND INSTALL SWITCH TO MATCH LIGHT SWITCH SELECTION.
- ⑤ PROVIDE CURRENT SENSING DEVICE ON DRYER CIRCUIT FOR MECHANICAL EXHAUST FAN CONTROL.
- ⑥ PROVIDE POWER AND DATA FOR ALL METER READING PANELS AS REQUIRED. FINAL LOCATION AND QUANTITY TO BE CONFIRMED WITH HYDRAULIC CONTRACTOR.
- ⑦ UNIT SWITCH-BOARD MOUNTED WITHIN JOINERY ABOVE THE FRIDGE IN ACCORDANCE WITH AS3000 REQUIREMENTS.
- ⑧ WHITE BREAK GLASS UNIT FOR FIRE STAIR RE-ENTRY. TO BE PROVIDED ON EVERY FORTH LEVEL ACCORDANCE WITH THE FIRE ENGINEERING REPORT.

GENERAL NOTES:

1. ALL BALCONY WEATHERPROOF OUTLETS TO BE INSTALLED IN ACCORDANCE WITH SAFETY IN DESIGN RECOMMENDATIONS.
2. APARTMENT NTD LOCATIONS TO SATISFY NBNCo VENTILATION REQUIREMENTS AS SET OUT IN THE NBNCo BUILDING ENGINEERING AND DESIGN STANDARD.
3. REFER TO ARCHITECT JOINERY DETAILS FOR FINAL HEIGHTS AND LOCATIONS OF GPOS.
4. INSTALL ALL OUTLETS TO WET AREAS IN ACCORDANCE WITH AS3000 REQUIREMENTS.



last revised.

original publish date

correct revision number.

REV	DESCRIPTION	DN	CHK	DATE
01	REVISED IFC ISSUE	APG	LR	11.06.20
02	REVISED IFC ISSUE	APG	LR	31.01.22
03	IFC ISSUE	APG	LR	20.10.21
04	ISSUE FOR TENDER	APG	LR	23.07.21
05	ISSUE FOR TENDER	APG	LR	10.06.21
06	REVISED PRE-TENDER ISSUE	APG	LR	28.04.21
07	TENDER ISSUE	APG	LR	01.06.20



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Architects
Interior designers
Level 26, 206 George St.
Sydney NSW, 2000
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Fax: 02 6090 8181
Mirvac Design Pty. Ltd
ABN 78 003 350 153

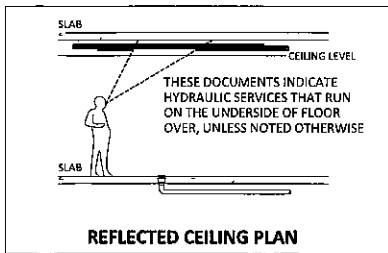


PROJECT: QUAY RESIDENTIAL PROJECT
57 SKYRING TERRACE,
NEWSTEAD

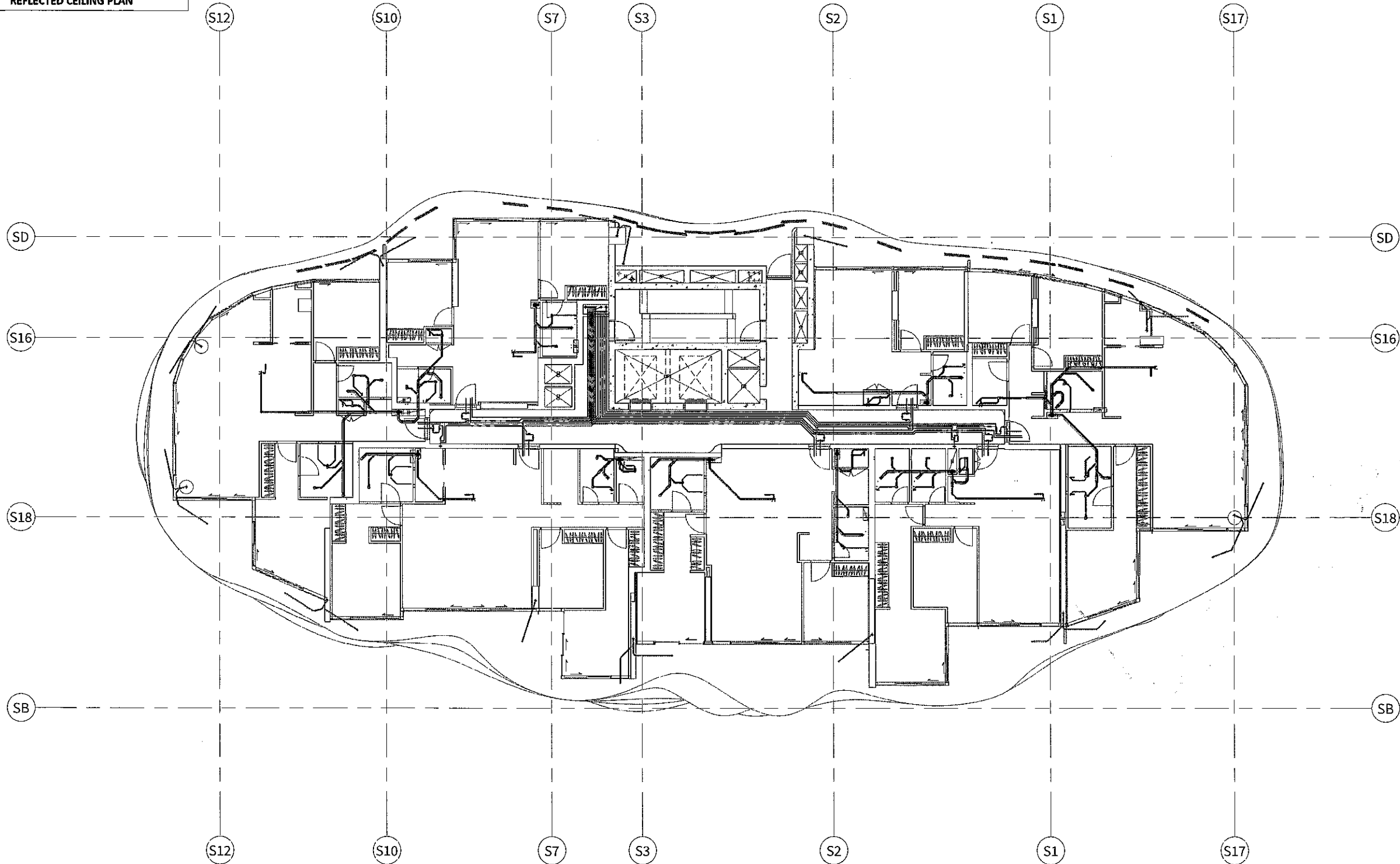
SERVICE: ELECTRICAL SERVICES
TYPICAL LEVELS 3-19 POWER,
SECURITY AND
COMMUNICATIONS LAYOUT

SCALE: 1:100 @ B1	DATE: 03/11/20
DRAWN: APG	CHECKED: LR
PROJECT NO: 2190142	DATE: 03/11/20
DRAWING NO: E4006	

03



REFLECTED SLAB PLAN - FOR INFORMATION ONLY



REFLECTED L03-L18 SLAB LAYOUT (FROM FLOOR UNDER)
1:100

REFLECTED SLAB PLAN - FOR INFORMATION ONLY

DRAINAGE PLAN
FREEHOLD TITLE
No. of Fixtures: Total Fixture Units:
Designed to comply with Plumbing and Drainage Act 2018.
Services designed to comply with:
Cold Water to AS3500.1.2
Hot Water to AS3500.4.2
Sanitary Plumbing & Drainage to AS3500.2.2
Trade Waste Drainage to AS3500.2.2

P6	PRELIMINARY	24/04/20
P7	PRELIMINARY	08/05/20

Locality Plan

FOR INFORMATION ONLY

RPD

Client

mirvac

Architect/Client

Hydraulic Consultant

AQUALOGICAL
Plumbing Design Solutions

QBCC License No: 1099893
A.C.N.: 116 871 544
A.B.N.: 241 1687 1544
Unit B5, Commercial Court
130 Kingston Rd, Qld 4119
PO Box 220 Rochdale South 4123
(07) 3208 5233
admin@aqualogical.com.au
www.aqualogical.com.au

ISO 9001
JAS-ANZ
AHSCA

Project
SKY NEWSTEAD
57 SKYRING TERRACE, NEWSTEAD

LEVEL 02-18
ALL SERVICES
REFLECTED L03-18 SLAB
SERVICES PLAN Validated A.F.

Scale 1:100 @ A1 1:200 @ A3

A190308-H-5605 P7

last revised

This matches.

SKY PRECINCT

57 SKYRING TERRACE, NEWSTEAD

GENERAL

- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS OR SKETCHES AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE SUPERINTENDENT BEFORE PROCEEDING WITH WORK.
- SETTING-OUT DIMENSIONS AND SIZES OF STRUCTURAL MEMBERS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS. ANY SETTING-OUT DIMENSIONS SHOWN IN THE STRUCTURAL DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR BEFORE CONSTRUCTION COMMENCES.
- UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.
- MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE SPECIFICATION, CURRENT NCC BUILDING REGULATIONS AND AUSTRALIAN STANDARDS CODES AND THE REQUIREMENTS OF ANY OTHER RELEVANT STATUTORY AUTHORITIES.
- DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED.
- UNLESS SPECIFICALLY STATED OTHERWISE, DOCUMENTATION RELATES TO STRUCTURE IN ITS PERMANENT CONDITION ONLY. ADDITIONAL REQUIREMENTS OF CONSTRUCTION SEQUENCING, TEMPORARY WORKS, PROPPING, BRACING, CONSTRUCTION LOADING ETC WILL NEED TO BE DOCUMENTED BY SPECIALIST CONSULTANTS AND CONTRACTORS.
- CONTRACTOR TO COORDINATE ALL SERVICES TO AVOID CLASHES WITH STRUCTURAL ELEMENTS. ALL EXISTING SERVICES SHALL BE LOCATED PRIOR TO THE COMMENCEMENT OF WORKS.
- CONTRACTOR TO PROVIDE MINIMUM 24 HOURS NOTICE FOR ALL ENGINEERS INSPECTIONS.
- CONTRACTOR TO OBTAIN WRITTEN INSTRUCTION FOR VARIATIONS, ALTERNATIVE DETAILS OR WHERE DETAILS HAVE NOT BEEN INCLUDED WITHIN THE CURRENT DOCUMENTATION PRIOR TO PROCEEDING WITH WORKS.
- NO PENETRATIONS, CORING OR CHASING OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE PERMITTED WITHIN STRUCTURAL ELEMENTS WITHOUT WRITTEN APPROVAL.
- PROPRIETARY ITEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. ELEMENTS DESIGNED BY OTHERS SHALL BE INSPECTED AND CERTIFIED BY THE SAME AND WILL NOT BE INCLUDED WITHIN THE STRUCTURAL CERTIFICATION PROVIDED BY ADG ENGINEERS.

STRUCTURAL MONITORING

- PRIOR TO THE COMMENCEMENT OF EXCAVATION, THE CONTRACTOR SHALL UNDERTAKE A COMPREHENSIVE DILAPIDATION SURVEY OF EXISTING ADJACENT BUILDINGS, PAVEMENTS AND SERVICES.
- ESTABLISH SURVEY MARKS AND MONITORING EQUIPMENT AT CRITICAL LOCATIONS OR IN THE LOCATIONS NOMINATED ON PLANS.
- SURVEY MARKS ARE TO BE ACCURATELY SURVEYED BY A LICENSED SURVEYOR.
- RECORDS SHALL BE REGULARLY MAINTAINED OF ALL MONITORING RESULTS AND SUBMITTED TO THE PROJECT TEAM FOR REVIEW. SHOULD THERE BE MORE THAN 5mm MOVEMENT OR MORE THAN THE NOMINATED TRIGGER LEVELS, THE CONTRACTOR IS TO NOTIFY ADG ENGINEERS IMMEDIATELY.
- REFER TO THE GEOTECHNICAL CONSULTANT FOR ANY GEOTECHNICAL AND GROUND WATER MONITORING REQUIREMENTS.

DESIGN CRITERIA

- THE STRUCTURAL COMPONENTS DETAILED ON THESE DRAWINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH AS/NZS10 AND LOCAL AUTHORITY ORDINANCES. REFER TO STRUCTURAL PERFORMANCE BRIEF DOCUMENT UNLESS NOTED OTHERWISE.
- FOR SURVEY INFORMATION RELATED TO THIS PROJECT. REFER TO DRAWING B90M0372-CLIN-20-5 UND. BY: LAND PARTNERS.
- REFER TO ADG STRUCTURAL PERFORMANCE BRIEF FOR FURTHER INFORMATION. REPORT NO. SP001 UND.
- FOR GEOTECHNICAL INFORMATION RELATED TO THIS PROJECT. REFER TO GEOTECHNICAL INVESTIGATION BY: DOUGLAS PARTNERS. REPORT NO. R8052.00 DATED: SEPTEMBER 2016.

REFER TO LOADING PLANS FOR FLOOR DESIGN LOADS.

7. WIND LOADING

AS/NZS10:2011
IMPORTANCE LEVEL: 2
VU: 57 M/S (ULT)
VS: 39 M/S (SER)
REGION: B
TERRAIN CATEGORY: 2.5
ANNUAL PROBABILITY OF EXCEEDANCE: 1:500
FOR WIND TUNNEL RESULTS REFER TO REPORT 1902831 BY RWD DATED APRIL 2020.

8. EARTHQUAKE LOADING

AS/NZS10:2007
IMPORTANCE LEVEL: 2
HAZARD FACTOR: 0.08
STRUCTURAL DUCTILITY FACTOR: 1
EARTHQUAKE DESIGN CATEGORY: III
KP: 10 (ULT)
SITE SUB-SOIL CLASS: C₆

9. DURABILITY

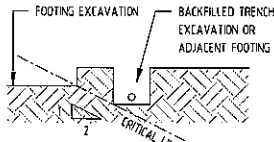
CONCRETE
INTERNALLY: A1
EXTERNALLY: B1
IN CONTACT WITH THE GROUND: A2
STRUCTURAL STEEL
EXPOSED INTERNALLY: C1
EXPOSED EXTERNALLY: C2
NON-EXPOSED: C2

SUB GRADE PREPARATION

- ALL PIPE AND TRENCH EXCAVATIONS SHALL BE CARRIED OUT CAREFULLY AND SHALL BE KEPT TO A MINIMUM SIZE. EXCAVATIONS SHALL BE BACKFILLED WITH APPROVED GRANULAR MATERIAL AND SHALL BE PLACED IN LAYERS NOT EXCEEDING 200mm LOOSE DEPTH AND COMPACTED BY VIBRATING PLATE TO A MINIMUM DRY DENSITY OF 100%.
- THE CONTRACTOR SHALL ALLOW FOR 2 NO. FIELD DRY DENSITY TESTS TO BE CARRIED OUT AT MID-HEIGHT AND FINAL SURFACE LEVEL OF BACKFILL IN PIPE TRENCHES EXCEEDING 1 METRE DEEP. FIELD DRY DENSITY TESTS TO BE CARRIED OUT IN ACCORDANCE WITH AUSTRALIAN STANDARD AS 1269 - TEST E3.2.
- EXCAVATE FOR BEAMS AND FOOTINGS TO THE DIMENSIONS SHOWN ON THE DRAWINGS, ENSURING THAT THE BASE AND SIDES OF THE EXCAVATIONS ALWAYS REMAIN FULLY COMPACTED.
- TRIM PLATFORM TO THE REQUIRED LEVEL.
- PLACE 50mm MINIMUM COMPACTED SAND BEDDING.
- LAY 0.2mm THICK POLYTHENE MOISTURE BARRIER TO THE ENTIRE UNDERSIDE OF SLAB AREA AND ASSOCIATED BEAMS. THE MEMBRANE SHALL BE LAPPED 300mm MINIMUM AT JOINTS AND TAPED CONTINUOUSLY WITH MOISTURE PROOF PRESSURE SENSITIVE TAPE. WRAP AND TAPE ALL PIPE PENETRATIONS. ANY HOLES ARE TO BE PATCHED AND TAPED.

FOUNDATION

- THIS FOOTING DESIGN HAS BEEN PREPARED BASED ON INFORMATION PROVIDED IN THE GEOTECHNICAL REPORT. IT IS THE BUILDERS RESPONSIBILITY TO MAKE REFERENCE TO THIS REPORT AND ITS RECOMMENDATIONS.
- THE BUILDER MUST BE AWARE THAT FOUNDATIONS MAY VARY BETWEEN TEST LOCATIONS REFERRED TO IN THE GEOTECHNICAL REPORT. IF FOUNDATION CONDITIONS DIFFER FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT IN PERFORMING EARTHWORKS OR FOOTING EXCAVATION, THEN ADG ENGINEERS MUST BE NOTIFIED IN WRITING IMMEDIATELY AS AN AMENDMENT TO THE SITE CLASSIFICATION AND/OR DESIGN MAY BE REQUIRED.
- THIS DESIGN HAS BEEN BASED ON THE ASSUMPTION THAT THE FOUNDING MATERIAL SATISFIES THE MINIMUM BEARING CAPACITY. REFER DESIGN CRITERIA SECTION ON THIS DRAWING. FURTHERMORE THE PROPOSED LOCATION OF THE STRUCTURE IS NOT SUBJECT TO POSSIBLE GEOTECHNICAL OR OTHER SLOPE INSTABILITY PROBLEMS.
- FOOTINGS SHALL BE LOCATED CENTRALLY UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE.
- ALL LOOSE MATERIALS AND WATER TO BE CLEANED OUT OF THE FOUNDATION FORM WORK TO BE USED WHERE THE SIDES OF THE FOUNDATION ARE NOT STABLE.
- A 50mm MINIMUM BLINDING LAYER SHOULD BE APPLIED TO THE BASE OF ALL FOUNDATIONS IMMEDIATELY AFTER VERIFICATION OF THE BEARING CAPACITY BY THE GEOTECHNICAL ENGINEER. WHERE THE FOUNDING MATERIAL IS DEEPER THAN REQUIRED FOR THE FOOTING, THE EXCAVATION IS TO BE BACKFILLED WITH A WEAK MIX CONCRETE (N10) TO THE UNDERSIDE OF THE FOOTING.
- UNLESS OTHERWISE APPROVED BY ADG ENGINEERS, THE LIMITATIONS OF EXCAVATIONS NEAR FOOTINGS SHALL BE AS FOLLOWS...



- EXCAVATION NEAR EXISTING FOOTINGS SHALL NOT EXTEND BELOW FOUNDATION LEVEL WITHOUT THE APPROVAL OF ADG ENGINEERS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ANY EXCAVATION IN A STABLE CONDITION WITHOUT ADVERSELY AFFECTING SURROUNDING PROPERTY, INCLUDING SERVICES. THIS INCLUDES OBTAINING ALL NECESSARY APPROVALS FOR SHORING AND ANCHORING SYSTEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AND LOCATING ALL EXISTING UNDERGROUND SERVICES PRIOR TO ANY EXCAVATION COMMENCING.
- DEPTHS SPECIFIED FOR FOOTINGS ARE MINIMUM DIMENSIONS ONLY. GREATER DEPTH MAY BE NECESSARY TO ACHIEVE SPECIFIED FOUNDING BASE.
- IF THE MATERIAL UNDERLYING THE SITE IS EXPANSIVE CLAY, PRECAUTIONS ARE TO BE TAKEN TO AVOID MOISTURE VARIATIONS. IF THE MATERIAL UNDERLYING THE SITE IS EXPANSIVE CLAY, THE FOLLOWING PRECAUTIONS ARE TO BE TAKEN TO AVOID MOISTURE VARIATIONS:
 - AVOID LANDSCAPE PLANTING CLOSE TO FOOTINGS.
 - PROMPT REPAIR OF LEAKING SERVICES.
 - FINISHED LEVELS SHALL ENSURE SURFACE WATER CAN NOT POOL AGAINST FOOTING.

CONCRETE

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 AND THE CONCRETE SPECIFICATION.
- CONCRETE SIZES DO NOT INCLUDE FINISHES.
- NO HOLES, CHASES OR EMBEDMENTS OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL BE MADE IN CONCRETE ELEMENTS WITHOUT ENGINEER'S APPROVAL.
- FOR CHAMFERS, DRIP GROOVES, FILLETS ETC. REFER TO ARCHITECT'S DETAILS. MAINTAIN MINIMUM COVER TO REINFORCEMENT AT THESE LOCATIONS.
- DEPTHS OF BEAMS ARE GIVEN FIRST AND INCLUDE SLAB THICKNESS. SLABS AND BEAMS SHALL BE CAST TOGETHER UNLESS OTHERWISE NOTED.
- PROVIDE A HORIZONTAL SLP JOINT TO THE UNDERSIDE OF CONCRETE SLABS AND SUPPORTING MASONRY WITH TWO LAYERS OF SUITABLE MEMBRANE (MALTHOID OR EQUIVALENT). VERTICAL FACES SHALL BE SEPARATED BY APPROVED BOND BREAKER.
- CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED AND DETAILED TO THE APPROVAL OF ADG ENGINEERS.
- A BOND BREAKING MATERIAL SHALL BE PLACED BETWEEN CONTACTING SURFACES AT CONTRACTION JOINTS. REINFORCEMENT SHALL NOT BE CONTINUOUS THROUGH CONTRACTION JOINTS.
- THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED THOROUGHLY.
- CURE CONCRETE BY AN APPROVED METHOD FOR THE FOLLOWING PERIODS (HAVING REGARD TO THE FLOOR FINISHES):
 - EXPOSURE CLASSIFICATION A1, A2, CONTINUOUSLY CURE FOR 3 DAYS.
 - EXPOSURE CLASSIFICATION B1, B2, C1, C2 CONTINUOUSLY CURE FOR 7 DAYS.
- CONSTRUCTION SUPPORT PROPPING SHALL BE LEFT IN PLACE WHERE REQUIRED TO AVOID OVERSTRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING.
- STRIPPING AND BACK PROPPING OF SOFFITS SHALL NOT OCCUR UNTIL CONCRETE HAS REACHED 75% OF SPECIFIED 28 DAY STRENGTH. NO MASONRY WALLS SHALL BE BUILT ON SUSPENDED ELEMENTS UNTIL REMOVAL OF ALL FORMS AND PROPS.
- UNO ALL CONCRETE SHALL HAVE A SLUMP OF 80mm AND A MAXIMUM NOMINAL AGGREGATE SIZE OF 20mm.
- CONDUITS AND PIPES WHEN CAST IN SLABS OR WALLS ARE TO BE PLACED BETWEEN THE TWO REINFORCEMENT LAYERS IN THE MIDDLE THIRD OF THE SLAB. WHERE THERE IS ONLY ONE LAYER OF REINFORCEMENT, PROVIDE 50mm COVER TO CONDUIT. PROVIDE MINIMUM 100mm CLEARANCE BETWEEN CONDUITS.
- PROVIDE UPWARD CAMBER TO FORMWORK OF CANTILEVERS OF L/200, WHERE L IS THE PROJECTION BEYOND COLUMN OR WALL FACE, AND TO FORMWORK OF SLABS WHERE NOTED ON PLAN. MAINTAIN THE SLAB AND BEAM DEPTHS SHOWN.
- DO NOT BUILD BRICK OR BLOCKWORK ON SUSPENDED WORK UNTIL ALL SHORING HAS BEEN REMOVED AND THEN ONLY AFTER BRICKS OR BLOCKS HAVE BEEN STACKED ADJACENT TO THEIR FUTURE POSITION.
- THE BELOW TABLE IS TO BE USED WHEN CONCRETE PROPERTIES ARE NOT SHOWN ON STRUCTURAL DRAWINGS.

CONCRETE PROPERTIES SCHEDULE					
ELEMENT	TYPE	CONCRETE STRENGTH	COVER (mm)		SPECIAL REQUIREMENTS
			CAST AGAINST GROUND	FORMED OR FINISHED	
FOOTINGS	ALL	N32	75	50	-
	INTERNAL	N32	50	40	-
WALLS	INTERNAL	N32	50	30	-
	EXTERNAL	N32	50	40	-
BEAMS	INTERNAL	N32	50	30	-
	EXTERNAL	N32	50	40	-
SLABS / BAND BEAMS	INTERNAL	N32	30	20	-
	EXTERNAL	N32	50	40	-

CONCRETE CONTINUED

- COVER IS THE CLEAR DISTANCE BETWEEN ANY REINFORCING (INCLUDING FITTINGS AND THE FACE OF THE STRUCTURAL ELEMENT).
- PROVIDE 0.2mm POLYTHENE MOISTURE BARRIER FOR SLABS AND BEAMS CAST AGAINST THE GROUND.
- THE COVERS SHALL BE MAINTAINED USING APPROVED BAR CHAIRS. IN SLABS THE BAR CHAIRS SHALL BE AT 1000 x 1000mm MAXIMUM CENTRES. BAR CHAIRS SHALL BE PROVIDED ALONG THE EDGES OF ALL CONSTRUCTION JOINTS. STOP ENDS SHALL NOT BE USED TO MAINTAIN THE COVERS.
- FOR ALL EXTERNAL SURFACES, PROVIDE FULLY PLASTIC BAR CHAIRS. THE WIRE SHALL NOT BE NAILED TO THE FORMS, REINFORCING BARS SHALL NOT BE USED TO KEEP FORMS APART AND A THROUGH TIE SYSTEM SHALL BE USED TO TIE FORMS.
- UNO EXTERNAL ELEMENTS ARE THOSE EXPOSED TO WEATHER, RAIN AND WATER PENETRATION AND ARE CLASSIFIED B1.
- IN EXPOSURE CONDITIONS GREATER THAN B1 USE ONLY PLASTIC CHAIRS.

REINFORCEMENT

- ALL MATERIAL SUPPLIERS TO HAVE A CURRENT AUSTRALASIAN CERTIFICATION AUTHORITY FOR REINFORCING AND STRUCTURAL STEEL (ACRS) PRODUCER CERTIFICATE.
- THE ENGINEER SHALL BE GIVEN A MINIMUM OF 24 HOURS NOTICE FOR REINFORCEMENT INSPECTION AND CONCRETE SHALL NOT BE ORDERED UNTIL FINAL APPROVAL IS OBTAINED.
- SLAB REINFORCEMENT SHALL EXTEND 65mm ONTO MASONRY SUPPORT WALLS AND 50% OF BOTTOM REINFORCEMENT SHALL BE COGGED TO ACHIEVE ANCHORAGE AT SIMPLY SUPPORTED ENDS.
- REINFORCEMENT IS SHOWN DIAGRAMMATICALLY AND IS NOT NECESSARILY IN TRUE PROJECTION. SPLICES TO REINFORCEMENT SHALL BE MADE ONLY AT THE LOCATION SHOWN OR AS OTHERWISE APPROVED BY THE ENGINEER.
- UNO AT PENETRATIONS DETAILED REINFORCEMENT SHALL NOT BE CUT BUT SHALL BE GATHERED EQUALLY TO EACH SIDE OF PENETRATION AND EXTRA REINFORCEMENT PROVIDED BETWEEN THE PENETRATIONS AS DIRECTED BY THE ENGINEER.
- WHERE DISTRIBUTION BARS TO MAIN REINFORCEMENT ARE NOT SHOWN ON DRAWINGS PROVIDE MINIMUM N12 AT 300 CENTRES FOR RC SLABS AND N12 AT 400 CENTRES FOR PT SLABS, LAPPED 450mm WHERE REQUIRED.
- THE FIGURE FOLLOWING THE MESH SYMBOL SL OR RL IS THE REFERENCE NUMBER FOR MESH TO AS 4671.
- LAP MESH 2 TRANSVERSE BARS PLUS 50mm OR 250mm WHICHEVER IS THE GREATER.
- ALL PULL-OUT BARS SHALL BE "TEMPCORE" OR QUENCHED AND TEMPERED PRODUCT. ALL BENDING AND REBENDING OF REINFORCEMENT SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF AUSTRALIAN STANDARD AS 3600.
- WHERE DRILL & EPOXY GROUT IS CALLED UP ON THE DRAWINGS USE HILTI HY-200-R MORTAR INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR AN APPROVED EQUIVALENT UNLESS NOTED OTHERWISE. REFER TO POST FIXED ANCHOR NOTES FOR DETAILED REQUIREMENTS.
- IF REINFORCEMENT AND POST TENSIONING RATES ARE NOTED IN THE DOCUMENTATION THESE ARE AN ESTIMATE OF THE QUANTITIES REQUIRED FOR STRUCTURAL ELEMENTS IN THE FINAL CASE ONLY. THE CONTRACTOR SHOULD MAKE APPROPRIATE ALLOWANCES FOR NON-STRUCTURAL ELEMENTS (E.G. TRIMMING OF SERVICES PENETRATIONS, KERBS, PLINths, SCREEDS ETC.), ROLLING MARGINS, WASTE AND ADDITIONAL QUANTITIES REQUIRED FOR CONSTRUCTION ACTIVITIES.
- ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON REINFORCEMENT CHAIRS AT NOT GREATER THAN 1000mm CENTRES BOTH WAYS. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS. IN EXPOSURE CONDITIONS GREATER THAN B1 USE ONLY PLASTIC CHAIRS.
- WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER (AFTER WRITTEN REQUEST).
- JOGGLES TO BARS SHALL BE 1x BAR DIAMETER OVER A LENGTH OF 12 BAR DIAMETERS UNO.
- ALL BARS IN TRIMMER BAR GROUPS SHALL BE THE SAME LENGTH (SYMBOLOLOGY IS SHOWN ON PLAN). SPACE BARS AT APPROXIMATELY 100mm CENTRES.
- CRANKS WHERE SHOWN IN N12 BARS ARE INDICATIVE ONLY. THESE BARS TO BE SCHEDULED AS STRAIGHT AND DRAPED ON SITE IN DIRECTIONS INDICATED ON PLAN AT TIME OF PLACING BAR.
- DISTRIBUTION REINFORCEMENT WHERE REQUIRED TO BE LAPPED 450mm MINIMUM AND COGGED 300mm AS REQUIRED. ALL DISTRIBUTION BARS TO BE COGGED AND LAPPED AS REQUIRE (AS MAIN BARS) LOCAL TO SET DOWNS AND STEPS/FOLDS IN SLAB.

TOP BAR: LAP AND COG ALL DISTRIBUTION BARS AS REQUIRED TO SUIT TOP - SOFFIT STEPS IN SLAB PROFILE.
BOTTOM BAR:

- ALL ADDITIONAL BARS UNLESS NOTED OTHERWISE LOCAL TO COLUMNS TO BE LOCATED ON CENTRE LINE OF COLUMN IN BOTH DIRECTIONS OR MIDSPAN BETWEEN COLUMNS AS INDICATED.

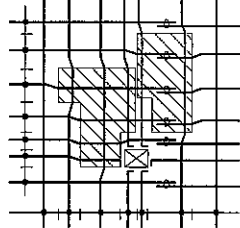
REINFORCEMENT CONTINUED

- THE BELOW TABLE IS TO BE USED WHERE REINFORCEMENT LAP LENGTHS ARE NOT SHOWN ON STRUCTURAL DRAWINGS.

BAR SIZE	BAR SIZE / LAP LENGTHS (mm)						
	N12	N16	N20	N24	N28	N32	N40
LAP LENGTH	450	700	800	1000	1200	1300	1500

20. TYPICAL TOP REINFORCEMENT DRAPE / CRANK DETAILS AT WET AREA SET DOWNS FOR N12 BARS.

DETAILS APPLICABLE AT MAXIMUM 30mm SET DOWNS GREATER THAN 30mm SET DOWNS PROVIDE CRANK IN OR LAP - COG BARS.



- CRANKS WHERE SHOWN IN N12 BARS ABOVE ARE INDICATIVE ONLY. THESE BARS TO BE SCHEDULED AS STRAIGHT AND DRAPED ON SITE IN DIRECTIONS INDICATED ON THIS PLAN AT TIME OF PLACING BAR. THESE BARS WILL BE SHOWN STRAIGHT ON TOP REINFORCEMENT PLAN BARS N16 DIAMETER AND ABOVE - PROVIDE WITH PRE FORMED CRANKS AS INDICATED ON REINFORCEMENT PLANS.

ADG STRUCTURAL SERVICES

LOT 20 - 74/75/24/25/26/27/28/29/30/31/32/33/34/35/36/37/38/39/40/41/42/43/44/45/46/47/48/49/50/51/52/53/54/55/56/57/58/59/60/61/62/63/64/65/66/67/68/69/70/71/72/73/74/75/76/77/78/79/80/81/82/83/84/85/86/87/88/89/90/91/92/93/94/95/96/97/98/99/100/101/102/103/104/105/106/107/108/109/110/111/112/113/114/115/116/117/118/119/120/121/122/123/124/125/126/127/128/129/130/131/132/133/134/135/136/137/138/139/140/141/142/143/144/145/146/147/148/149/150/151/152/153/154/155/156/157/158/159/160/161/162/163/164/165/166/167/168/169/170/171/172/173/174/175/176/177/178/179/180/181/182/183/184/185/186/187/188/189/190/191/192/193/194/195/196/197/198/199/200/201/202/203/204/205/206/207/208/209/210/211/212/213/214/215/216/217/218/219/220/221/222/223/224/225/226/227/228/229/230/231/232/233/234/235/236/237/238/239/240/241/242/243/244/245/246/247/248/249/250/251/252/253/254/255/256/257/258/259/260/261/262/263/264/265/266/267/268/269/270/271/272/273/274/275/276/277/278/279/280/281/282/283/284/285/286/287/288/289/290/291/292/293/294/295/296/297/298/299/300/301/302/303/304/305/306/307/308/309/310/311/312/313/314/315/316/317/318/319/320/321/322/323/324/325/326/327/328/329/330/331/332/333/334/335/336/337/338/339/340/341/342/343/344/345/346/347/348/349/350/351/352/353/354/355/356/357/358/359/360/361/362/363/364/365/366/367/368/369/370/371/372/373/374/375/376/377/378/379/380/381/382/383/384/385/386/387/388/389/390/391/392/393/394/395/396/397/398/399/400/401/402/403/404/405/406/407/408/409/410/411/412/413/414/415/416/417/418/419/420/421/422/423/424/425/426/427/428/429/430/431/432/433/434/435/436/437/438/439/440/441/442/443/444/445/446/447/448/449/450/451/452/453/454/455/456/457/458/459/460/461/462/463/464/465/466/467/468/469/470/471/472/473/474/475/476/477/478/479/480/481/482/483/484/485/486/487/488/489/490/491/492/493/494/495/496/497/498/499/500/501/502/503/504/505/506/507/508/509/510/511/512/513/514/515/516/517/518/519/520/521/522/523/524/525/526/527/528/529/530/531/532/533/534/535/536/537/538/539/540/541/542/543/544/545/546/547/548/549/550/551/552/553/554/555/556/557/558/559/560/561/562/563/564/565/566/567/568/569/570/571/572/573/574/575/576/577/578/579/580/581/582/583/584/585/586/587/588/589/590/591/592/593/594/595/596/597/598/599/600/601/602/603/604/605/606/607/608/609/610/611/612/613/614/615/616/617/618/619/620/621/622/623/624/625/626/627/628/629/630/631/632/633/634/635/636/637/638/639/640/641/642/643/644/645/646/647/648/649/650/651/652/653/654/655/656/657/658/659/660/661/662/663/664/665/666/667/668/669/670/671/672/673/674/675/676/677/678/679/680/681/682/683/684/685/686/687/688/689/690/691/692/693/694/695/696/697/698/699/700/701/702/703/704/705/706/707/708/709/710/711/712/713/714/715/716/717/718/719/720/721/722/723/724/725/726/727/728/729/730/731/732/733/734/735/736/737/738/739/740/741/742/743/744/745/746/747/748/749/750/751/752/753/754/755/756/757/758/759/760/761/762/763/764/765/766/767/768/769/770/771/772/773/774/775/776/777/778/779/780/781/782/783/784/785/786/787/788/789/790/791/792/793/794/795/796/797/798/799/800/801/802/803/804/805/806/807/808/809/810/811/812/813/814/815/816/817/818/819/820/821/822/823/824/825/826/827/828/829/830/831/832/833/834/835/836/837/838/839/840/841/842/843/844/845/846/847/848/849/850/851/852/853/854/855/856/857/858/859/860/861/862/863/864/865/866/867/868/869/870/871/872/873/874/875/876/877/878/879/880/881/882/883/884/885/886/887/888/889/890/891/892/893/894/895/896/897/898/899/900/901/902/903/904/905/906/907/908/909/910/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999/1000/1001/1002/1003/1004/1005/1006/1007/1008/1009/1010/1011/1012/1013/1014/1015/1016/1017/1018/1019/1020/1021/1022/1023/1024/1025/1026/1027/1028/1029/1030/1031/1032/1033/1034/1035/1036/1037/1038/1039/1040/1041/1042/1043/1044/1045/1046/1047/1048/1049/1050/1051/1052/1053/1054/1055/1056/1057/1058/1059/1060/1061/1062/1063/1064/1065/1066/1067/1068/1069/1070/1071/1072/1073/1074/1075/1076/1077/1078/1079/1080/1081/1082/1083/1084/1085/1086/1087/1088/1089/1090/1091/1092/1093/1094/1095/1096/1097/1098/1099/1100/1101/1102/1103/1104/1105/1106/1107/1108/1109/1110/1111/1112/1113/1114/1115/1116/1117/1118/1119/1120/1121/1122/1123/1124/1125/1126/1127/1128/1129/1130/1131/1132/1133/1134/1135/1136/1137/1138/1139/1140/1141/1142/1143/1144/1145/1146/1147/1148/1149/1150/1151/1152/1153/1154/1155/1156/1157/1158/1159/1160/1161/1162/1163/1164/1165/1166/1167/1168/1169/1170/1171/1172/1173/1174/1175/1176/1177/1178/1179/1180/1181/1182/1183/1184/1185/1186/1187/1188/1189/1190/1191/1192/1193/1194/1195/1196/1197/1198/1199/1200/1201/1202/1203/1204/1205/1206/1207/1208/1209/1210/1211/1212/1213/1214/1215/1216/1217/1218/1219/1220/1221/1222/1223/1224/1225/1226/1227/1228/1229/1230/1231/1232/1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