GENERAL NOTES:

G1. These drawings shall be read in conjunction with other consultants' drawings and specifications and with other such written instructions as may be issued during the course of the Contract. Any discrepancy shall be referred to the Engineer before proceeding with the work.
G2. All dimensions are in millimetres, UNO (unless noted otherwise).
G3. No dimension shall be obtained by scaling the drawings.
G4. All levels and setting out dimensions shown on the drawings shall be checked on site prior to the commencement of the work.
G5. During construction the structure shall be maintained in a stable condition and no part shall be overstressed.
G6. Damp-proofing & sealing details shall be in accordance with Architect's details. All joints in concrete elements shall be suitably sealed or damp-proofed.

CONCRETE NOTES:

C1. All workmanship and materials to be in accordance with AS3600: 2018, formwork to AS3610: 2018
C2. Unless noted otherwise, the clear concrete cover to reinforcement shall be as follows:

ELEMENT	FACE	CLEAR COVER (mm)	EXPOSURE CLASSIFICATION
SLAB ON GROUND	TOP	20	A1 (WAFFLE PANELS)
	TOP	30	EXPOSED, A2, f'c = 25MPa (RAFT)
	BOTTOM	30	A1, ON POLYTHENE
BORED PIERS	ALL	65	NON-AGGRESSIVE, 100 YEAR DESIGN LIFE
COLUMNS	ALL	30	A1
BEAMS	SIDES AND BOTTOM	50	A1
RIBS	SIDES AND BOTTOM	30	A1
STRIP/PAD FOOTINGS	ALL	50	A1
SUSPENDED SLABS	TOP	25	A1
	TOP	30	EXPOSED, A2, f'c = 25MPa
	BOTTOM	25	EXPOSED, A2, f'c = 25MPa

C3. Unless noted otherwise, the minimum concrete design strength grade to be as follows:
- 15 MPa for blinding concrete
- 25 MPa for waffles
- 25 MPa for footings and raft slabs
- 32 MPa for piers, suspended slabs and beams
- 25 MPa for all other concrete

C4. Concrete quality (engineer to approve any admixture used in concrete mix.)

ELEMENT	SLUMP	MAX. SIZE AGGREGATE
SLAB	80mm	20mm
FOOTING	80mm	20mm
PIERS	100mm	20mm

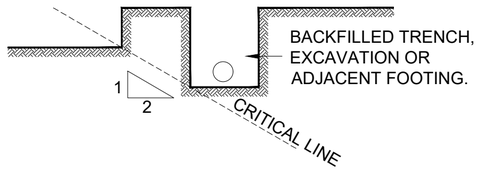
C5. Sizes of concrete elements do not include thickness of applied finishes.
C6. No loads including building materials and supplies shall be placed on a suspended concrete element until the concrete of that element has achieved its intended design strength.
C7. All concrete to be vibrated.
C8. No holes, chases or embedment of pipes other than those shown on structural drawings shall be made in concrete members without prior written approval of the engineer.
C9. Construction joints shall be properly formed and used only where shown or specifically approved by the engineer.
C10. Concrete slabs shall be moist cured for a minimum of 7 days immediately after concreting. formwork shall be left in place for the following times:
- SLABS : 21 DAYS
- BEAMS : 28 DAYS

C11. Camber - formwork to beams and slabs shall be set to a predetermined level (allowing for immediate deflection of supporting structure and formwork settlement) to give zero negative camber immediately after concrete placement. additional positive cambers shall be as noted on the drawings.
C12. REINFORCEMENT LAP TABLE:

BAR SIZE	N12	N16	N20	N24	N28	N32
LAP LENGTH	450	600	800	1200	1350	1650

FOUNDATION NOTES:

F1. The footing design has been based on the assumption that the founding material satisfies the minimum bearing capacity nominated on relevant structural drawings. Furthermore, the proposed location of the structure is not subject to possible geotechnical or other slope instability problems.
F2. 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 deemed stable.
F3. Footings shall be typically located centrally under walls and columns unless noted otherwise.
F4. Unless otherwise approved, in writing, by ZHA ENGINEERING SERVICES, a guide to the limitations of excavations near footings to be as follows.



excavation near existing footings shall not extend below foundation level without the approval, in writing, from ZHA ENGINEERING SERVICES.
F5. The builder shall be responsible for maintaining any excavation in a stable condition without adversely affecting surrounding properties also including any services. this includes obtaining all necessary approvals for shoring and anchoring systems. the builder shall be responsible for determining and locating all existing underground services prior to any excavation commencing.
F6. Depths specified for footings are minimum dimensions only. greater depth may be necessary to achieve specified founding base.
F7. A 50mm minimum blinding layer should be applied to the base of all foundations immediately after verification of the bearing capacity by an approved responsible 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.
F8. If on inspection, the material underlying the site is expansive clay, precautions are to be taken to avoid moisture variations...
1. Avoid landscape planting close to footings.
2. Prompt repair of leaking services.
3. Finished levels shall ensure surface water can not pond against footing.

F9. For details of r.l.'s, dimensions and set out etc. refer to latest architects details. any variation to that shown on the structural drawings to be notified to 'ZHA ENGINEERING SERVICES' prior to the commencement of any works.
F10. All footings set out central to wall or column construction over unless noted otherwise.

STEEL NOTES:

S1. STRUCTURAL STEEL:
a. All steel shall comply with requirement of following standards: AS1163, AS/NZS1594, AS/NZS3678, AS/NZS3679, AS/NZS3679.1 and AS/NZS3679.2.
b. All structural steel to be of the following grades:
b.1 Australian steel grade 250 - hot rolled plates & flats
b.2 Australian steel grade 300 plus - ub, uc, pfc & angles
b.3 Australian steel grade 300 - wb & wc
b.4 Australian steel grade 350 - chs
b.5 Australian steel grade 450 - rhs, and shs
b.6 where through thickness tensile forces are induced in members or connections in the following cases, Z grade quality steel grade Z35 to AS/NZS 3678:2016 UNO is required:
T (TEE) JOINTS: Fillet weld throat thickness > 35mm
X (CRUCIFORM) JOINTS: Across plate thickness > 25mm
L (CORNER) JOINTS: Cross plate thickness > 20mm
c. All steel deemed to be unidentified shall have their grade confirmed using a full test in accordance with AS1391.

S2. BOLTINGS:
a. All bolts shall be grade 8.8/s bolts uno. minimum size of bolts to be M16 UNO.
b. Steel bolts, nuts, washers and their installation shall comply with AS/NZS1252.
c. Bolts to be installed as follows:

BOLTING DESIGNATION	METHOD OF INSTALLATION
4.6/S	SNUG TIGHTENED
8.8/S	SNUG TIGHTENED
8.8/TB	FULLY TENSIONED USING LOAD INDICATING WASHERS
8.8/TF	FULLY TENSIONED USING LOAD INDICATING WASHERS

S3. WELDING CONSUMABLES:
a. Welding consumables to have nominal tensile strength Fuw=490MPa with consumables to be b-t49 to AS/NZS ISO 17632 or B-G49 to AS/NZS2717.1 UNO.
b. Electrodes for manual metal-arc welding shall comply with AS/NZS 4855 or AZ/NZS 4857.
c. Electrodes or filler wires for process other than manual metal- arc welding shall comply with AS1858.1, AS/NZS 1167.2, AS/NZS 2717.1, AS/NZS ISO 17632, ISO 14341 or ISO 636.

MASONRY NOTES:

M1. All workmanship and materials shall be in accordance with as 3700.
M2. Al blockwork walls shall be constructed in grade 16 blocks (15mpa) according to as 2733. all Bricks shall have a minimum unconfined compressive strength of 20 MPa according to as 3600. the maximum unrestrained five year expansion of bricks shall be in accordance with nata test bo1. All masonry supporting or supported by concrete floors shall be provided with vertical joints to match any control joints in the concrete.
M3. Non load bearing wall shall be separated from concrete above by 12mm thick close cell polyethelene strips.
M4. No chases or recesses are permitted in the load bearing masonry without the approval of the engineer.
M5. Mortar admixtures shall not be used without the written approval of the engineer. unless noted otherwise the nominal proportions by volume of mortar shall be 1:1:6 of cement, lime and sand. no plasticisers to be used in the mix.
M6. Grout used to fill cavities and cores in reinforced masonry 15mpa and a slump of 230mm (+/-25mm). maximum aggregate size of 10mm rounded gravel. nominal proportions shall be 1:0.3:3:2 of cement, lime, sand and aggregate and with a minimum cement content of 300 kg/cm. provide clean out holes at base of pilasters and every core of reinforced walls.
M7. Horizontal joint reinforcement shall be provided at maximum 600 vertical spacing for all concrete blockwork, concrete brickwork, and calcium silicote brickwork.
M8. Hollow blockwork openings greater than 600mm vertically or horizontally shall be trimmed at the sides and bottom by filling one core and reinforce with 1N12 extending 600mm past opening. the top of the opening shall have a reinforced lintel beam, arch bar or steel angle support as detailed. All ties and reinforcement shall have a minimum clear cover of 50mm to external face of masonry. All walls shall be tied or bonded at their intersections.
M9. No cavity or core shall be filled to a height greater than 1200mm without suitable shoring.
M10. All masonry walls and piers supporting slabs and beams between concrete soffit and the top of the masonry element, denoted as 's.j.' throughout.
M11. Provide vertical control joints at 10m maximum centres and 5m maximum from corners in all masonry walls, u.n.o. by AS2870.
M12. Backfill to retaining walls to be free draining granular material unless noted otherwise. provide subsoil drain to weep holes.
M13. Do not construct masonry walls on suspended concrete slabs until slab has been stripped and de-propped.
M14. All cavity construction to have galvanised/stainless steel wall ties installed as per clause 3.8, in AS 3700.

TIMBER NOTES:

T1. All workmanship and materials shall be in accordance with AS1720, AS1684.
T2. All timber connections to be in accordance with AS1684, U.N.O.
T3. All proprietary connectors are to be installed in accordance with manufacturers details.
T4. Softwood shall be minimum grade f5 U.N.O.
Hardwood shall be minimum grade f14 U.N.O.
T5. External timber shall be either hardwood durability class 1 or 2 or impregnated pine grade F7, pressure treated to AS1604 and re-dried prior to use. supplementary treatment shall be applied to all cut surfaces. supply supporting documentation for preservative treatment.
T6. Lintels have been designed so that long term deflection shall be less than either span/300 or 10mm.
T7. All timber joints and notches shall be 100mm minimum away from loose knots, severe sloping grain, gum views or other minor defects.
T8. All bolts in timber construction shall be minimum M16-U.N.O. All bolts, nuts and washers shall be hot dipped galvanized. bolt holes shall be drilled exact size and washers under heads and nuts shall be at least 2.5 times the bolt diameter.
T9. All timber exposed to weather to be installed as per manufacturers specifications and as per AS1684.2. provide capping to ends of weather exposed beams and to top of weather exposed joists and bearers - typical.

SUBGRADE PREPARATION NOTES:

P1. The site shall be stripped and excavated to the levels shown on the relevant drawings.
P2. The site shall be stripped of all vegetation and any soft spots. backfill or fill under slabs and / or footings to be placed in 250mm maximum layers and compacted to 95% dry density ratio (standard compaction) for cohesive materials or 70% relative density for non cohesive materials.
P3. Any local "soft" zones are to be excavated and compacted to achieve the above requirements and must be retested by a geotechnical engineer on completion.

Sr. No.	DESCRIPTION	DOC / DRAWING No.

REFERENCE DRAWING

REV No.	DATE	DESCRIPTION	CHK	APD
00	30-11-22	ISSUE FOR APPROVAL	ZE	ZE

REVISION RECORD

CONSULTANT:
ZHA Engineering Services
Structural – Forensic – Certification – Dilapidations

CLIENT:
NUSHAIBAH HAYAT PTY LTD

PROJECT:
PROPOSED RAMP
166 HALDON STREET LAKEMBA NSW

DRAWING TITLE: GENERAL NOTES

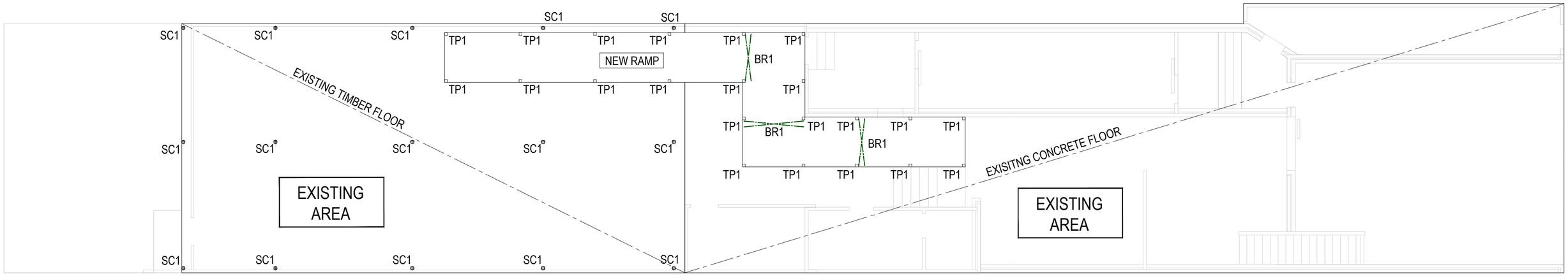
DRAWING STATUS: ISSUE FOR APPROVAL

SCALE:	CHECKED:	SHEET SIZE:
AS SHOWN	ZE	A3
PROJECT NO:	DRAWN:	DATE:
ZHA-P-08	KM	NOV-22

DRAWING NO.: S-001 REV.: 00

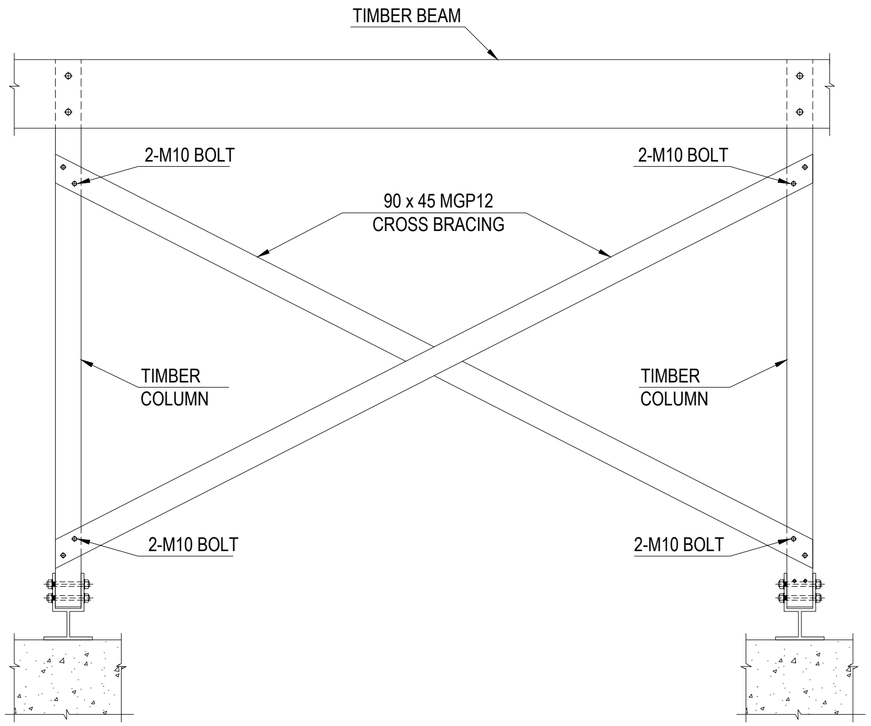
NOTES:

1. ALL DIMENSION ARE MILLIMETER AND LEVEL IN METER UNLESS OTHERWISE NOTED.



EXISTING & PROPOSED COLUMN LAYOUT PLAN

SCALE-1:125



TYP. TIMBER BRACING BR1 DETAIL

COLUMN SCHEDULE

MARK	SIZE	REMARKS
SC1	EXISTING STEEL POST (90 x 90 x 3 SHS)	
TP1	90 x 90 MGP10	NEW TIMBER POST TO RAMP

TIMBER BRACING SCHEDULE

MARK	DESCRIPTION
BR1	90 x 45 MGP12 CROSS BRACING

Sr. No.	DESCRIPTION	DOC / DRAWING No.
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Structural – Forensic – Certification – Dilapidations

CLIENT: **NUSHAIBAH HAYAT PTY LTD**

PROJECT: **PROPOSED RAMP**
166 HALDON STREET LAKEMBA NSW

DRAWING TITLE: EXISTING & PROPOSED COLUMN LAYOUT PLAN

DRAWING STATUS: ISSUE FOR APPROVAL

SCALE:	CHECKED:	SHEET SIZE:
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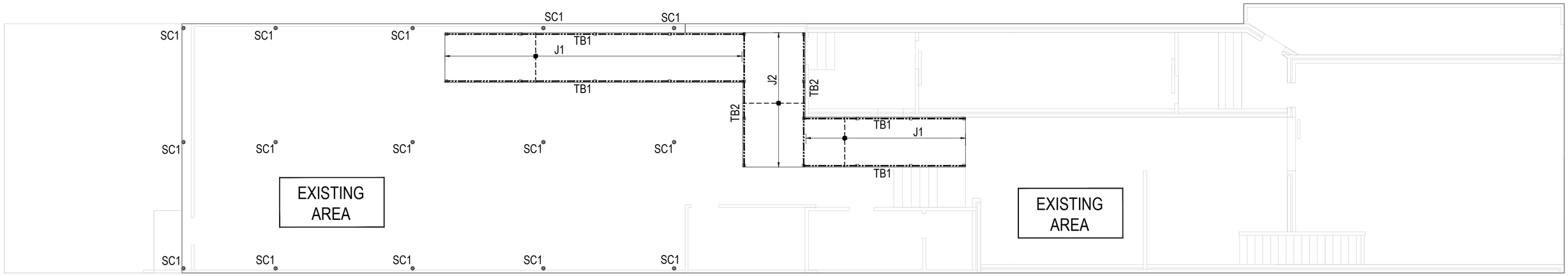

RAMP FRAMING LAYOUT PLAN

SCALE-1:125

MATERIAL SCHEDULE

MARK	SIZE
TB1	140x45 MGP10 BEARER
TB2	140x45 MGP10 BEARER
J1	90x45 MGP10 JOIST @ 450 CTS
J2	90x45 MGP10 JOIST @ 450 CTS

Sr. No.	DESCRIPTION	DOC / DRAWING No.
	REFERENCE DRAWING	

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166 HALDON STREET LAKEMBA NSW

DRAWING TITLE: RAMP FRAMING LAYOUT PLAN

DRAWING STATUS: ISSUE FOR APPROVAL

SCALE:	CHECKED:	SHEET SIZE:
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PROJECT NO:	DRAWN:	DATE:
ZHA-P-08	KM	NOV-22
DRAWING NO.: S-101		REV.: 00

NOTES:

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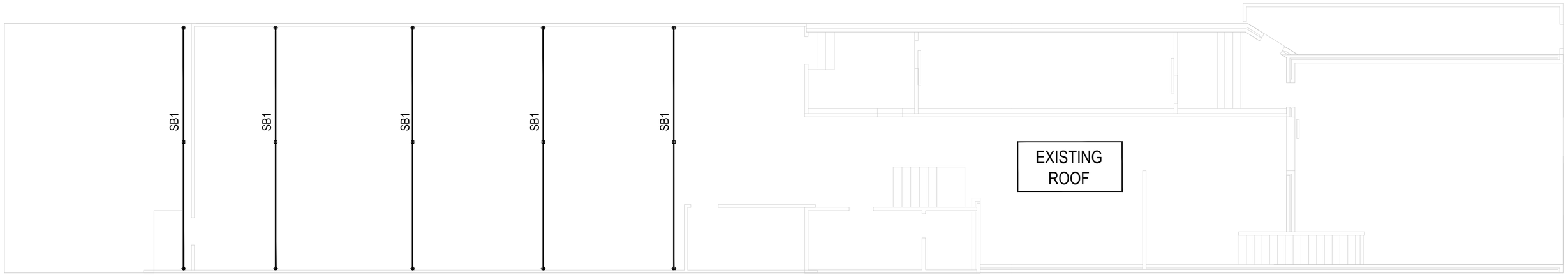

ROOF FRAMING PLAN

SCALE-1:125

MATERIAL SCHEDULE

MARK	SIZE
SB1	150x45x3 RHS (EXISTING STEEL BEAM)

Sr. No.	DESCRIPTION	DOC / DRAWING No.

REFERENCE DRAWING

REV No.	DATE	DESCRIPTION	CHK	APD
00	30-11-22	ISSUE FOR APPROVAL	ZE	ZE

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166 HALDON STREET LAKEMBA NSW

DRAWING TITLE: ROOF FRAMING PLAN

DRAWING STATUS: ISSUE FOR APPROVAL

SCALE:	CHECKED:	SHEET SIZE:
AS SHOWN	ZE	A3
PROJECT NO:	DRAWN:	DATE:
ZHA-P-08	KM	NOV-22
DRAWING NO.: S-200		REV.: 00

NOTES:

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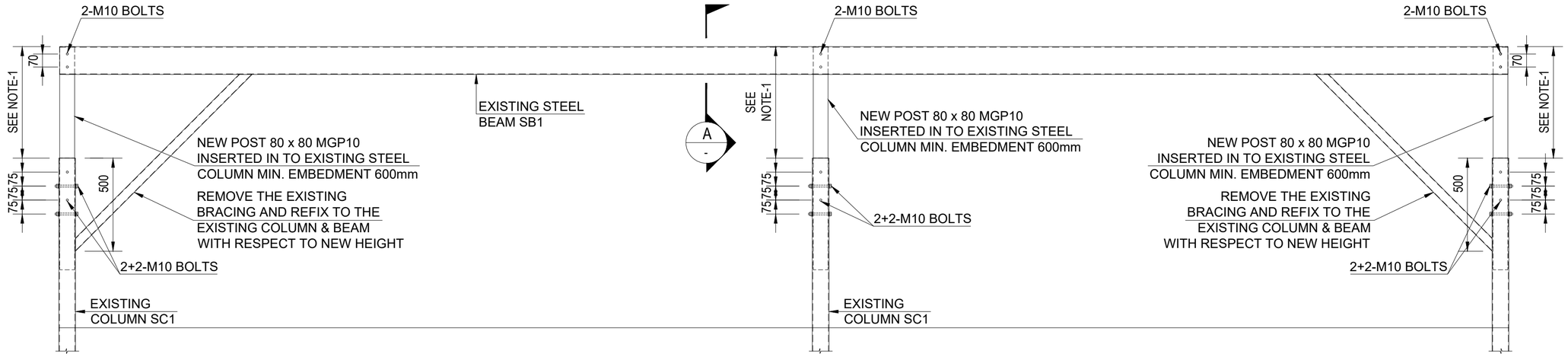
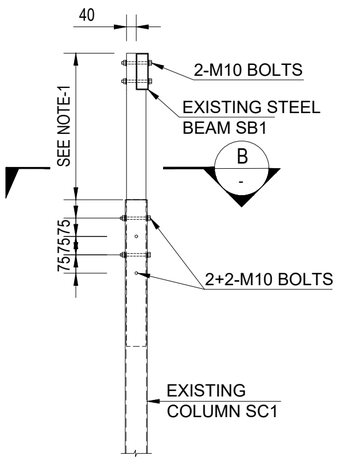


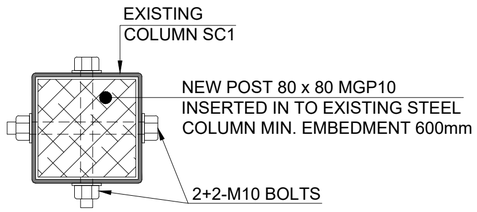
TYP. STEEL BEAM SB1 & MODIFIED COLUMN SC1 ELEVATION

SCALE-1:25



SECTION A-A

SCALE-1:25



SECTION B-B

SCALE-1:5

NOTES :

1. ADJUST TIMBER POST EXPOSED HEIGHT AT SITE TO ACHIEVE FINAL CLEAR HEIGHT OF THE UNDERSIDE OF ROOF , 3400MM.

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	REFERENCE DRAWING	

REV No.	DATE	DESCRIPTION	CHK	APD
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	REVISION RECORD			

CONSULTANT:

ZHA Engineering Services

Structural – Forensic – Certification – Dilapidations

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PROJECT: **PROPOSED RAMP**
166 HALDON STREET LAKEMBA NSW

DRAWING TITLE: TYP. EXISTING STEEL BEAM & MODIFIED COLUMN FIXING DETAIL

DRAWING STATUS: ISSUE FOR APPROVAL

SCALE:	CHECKED:	SHEET SIZE:
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ZHA-P-08	KM	NOV-22
DRAWING NO.: S-201		REV.: 00

NOTES:

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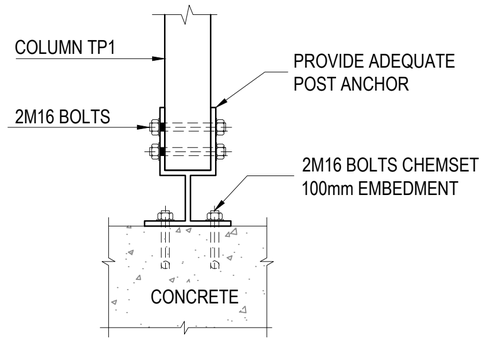
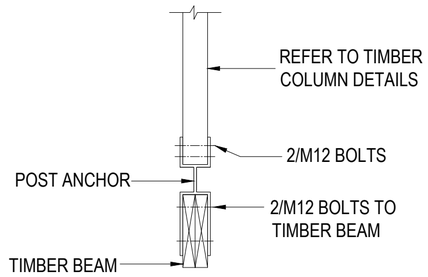
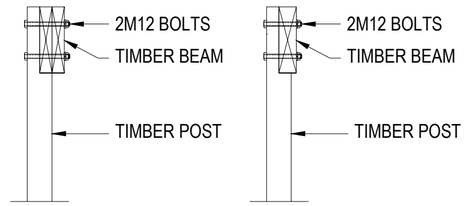


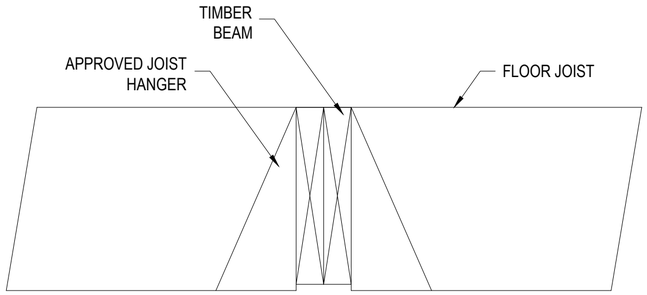
TYPICAL COLUMN TP1 CONNECTION DETAIL



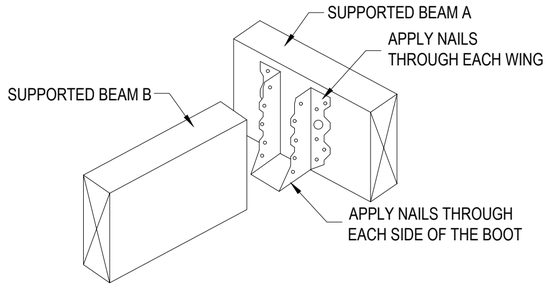
TIMBER POST ANCHOR DETAIL



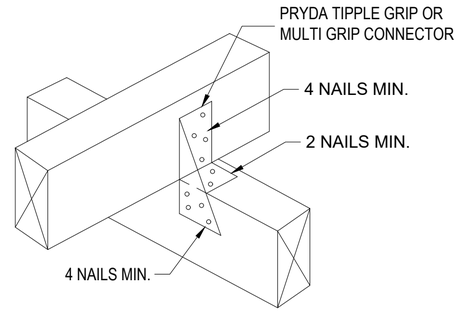
TYP. TIMBER POST TO TIMBER BEAM CONNECTION



TYP. JOIST TO TIMBER BEAM DETAIL



TYP. JOIST HANGER DETAIL



TYP. TIMBER CONNECTOR DETAIL

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DRAWING TITLE: TYP. CONNECTION DETAILS

DRAWING STATUS: ISSUE FOR APPROVAL

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