Taylor Thomson Whitting

Structural 30% Design Development Report

Walsh Bay Arts Precinct

Prepared for Infrastructure NSW / 13 February 2017

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1.0 Background

TTW has been engaged by Infrastructure NSW (INSW) to provide structural and façade engineering input as part of the design team through schematic design development phase of the proposed Walsh Bay Arts Precinct (WBAP) development at Walsh Bay. Similarly, TTW has been engaged by the Sydney Theatre Company (STC) to provide structural engineering input for the proposed STC50 development.

The existing structures in the WBAP, namely Pier 2/3, Pier 4/5 and the Shore Sheds are all timber structures originally constructed in the 1920's as cargo wharfs and storage sheds. The original structures have undergone various alterations, upgrades and repairs. In the past decade most of the engineering advice for upgrades and repairs has been provided by GHD for Wharf 4/5 and by TTW for Pier 2/3.

The original two-level structure was mostly built from hardwood. They consist of a sub-structure of piles, headstocks and girders supporting a concrete deck around the perimeter of the Piers; a timber deck inside the building; and a superstructure consisting of floor trusses and roof trusses.

The current structural design for WBAP is shown on the 30% design development drawings enclosed in Appendix A. This information has been provided for pricing of the structural items in the updated cost plan and for ongoing coordination with the design team. It includes coordinated and developed advice regarding new mezzanine floor structures; performance space floor slab to achieve acoustic performance; and steel floor and roof framing where columns are to be removed. No advice has been provided regarding ongoing maintenance requirements for the timber structure.

2.0 Structural Assessment & Maintenance

Detailed condition surveys and structural assessments of both Pier 2/3 and Wharf 4/5 have been carried over the last decade. This work has been carried out for NSW Public Works with TTW acting as their consultant for Pier 2/3 and GHD for Wharf 4/5. TTW issued their final "Preliminary Structural Assessment" report for Pier 2/3 on 24th November 2010. For both Pier 2/3 and Wharf 4/5 the results of the condition surveys of the sub-structure and super-structure has been used to carry out a structural analysis of the piers for gravity and lateral loads (wind and earthquake) for compliance with current Australian Standards. The results of the analysis and design checks has enabled repair work to be specified and prioritised. Technical Specifications have been prepared by TTW for Pier 2/3 (issued May 2013) and by GHD for Wharf 4/5 (issued November 2010).

The condition surveys consist of visual surveys plus termite monitoring and inspections. From 2011 until now detailed surveys of all of the piles, headstocks and storey posts have been carried out. Structural Maintenance specifications have been prepared for Pier 2/3 and Wharf 4/5 which detail the requirements for pile repair & replacement for piles, headstocks, girders, storey posts and other miscellaneous items.

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The structural maintenance work required for the piers has been documented by TTW and GHD including priorities on the importance of the repair work. A 10 year maintenance program is now in place which has both preventative and planned maintenance items. Preventative items include ongoing condition surveys (including pile surveys) every 4 years and termite control. Planned maintenance is the repair/replacement work documented by TTW and GHD. The majority of this work is the repair of timber piles and the replacement of timber piles with jack-up piles in cases where the pile has degraded beyond the point of being repairable. Other maintenance items in the 10 year program consist of repair/replacement of non-structural items such as drainage, doors & windows and weatherboards.

A detailed substructure condition survey for both Pier 2/3 and Wharf 4/5 is currently being carried out, with a superstructure condition survey planned to follow. A detailed structural assessment of the results will be carried out by TTW, providing restoration and maintenance advice as required with consideration for proposed developments. This work is being carried out for Arts NSW with TTW acting as their consultant.

3.0 Sub-Structure

An idealized geotechnical section along Wharf 4/5 is shown in Fig 1 and cross sections in Fig 2 (Pier 2/3 similar). During the original construction of the Wharf, fill material appears to have been placed within the Pier footprint to create a “fill mound” as shown in the cross sections. The alluvium beneath the fill mound comprises two distinct units. A very soft layer unit up to 6m thick overlies medium dense sand up to 12m thick which overlies sandstone bedrock.

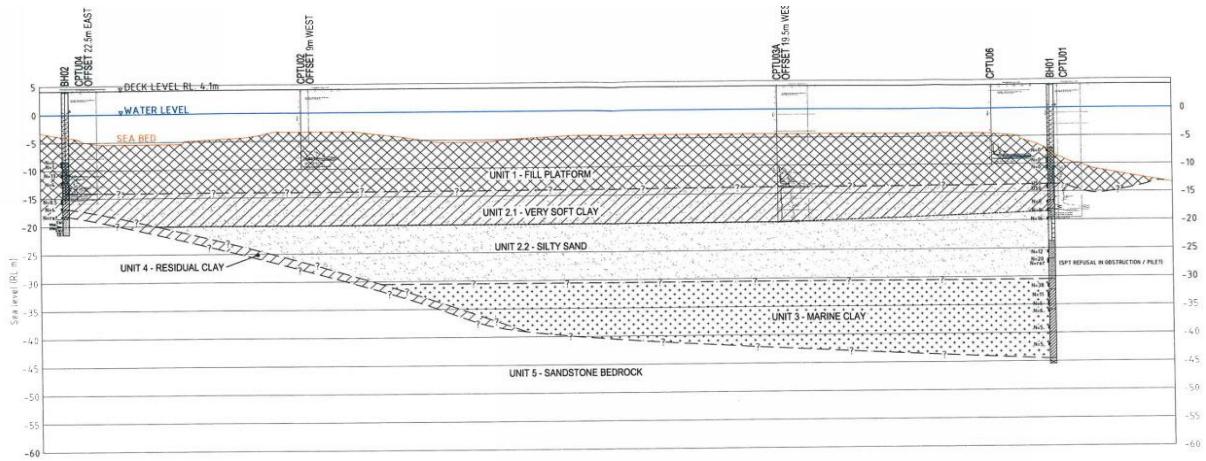

Fig 1: Long Section of Ground Conditions beneath Pier [from GHD LM report 7 Dec 2004]

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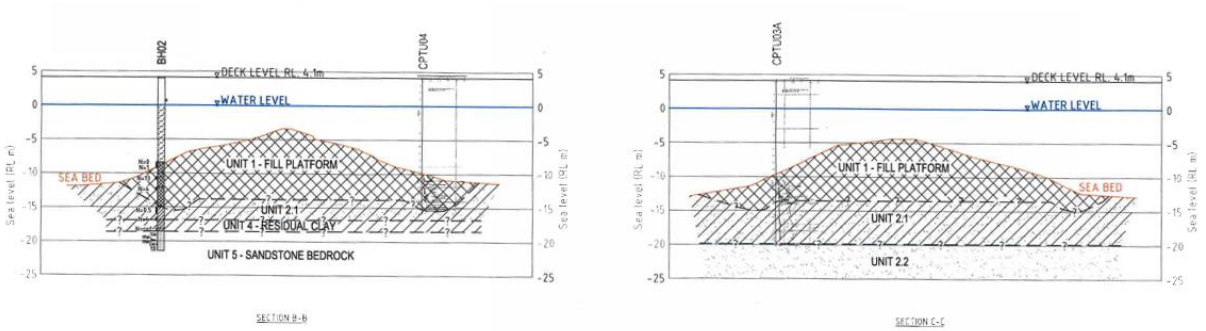

Fig 2: Cross Sections of Ground Conditions beneath Pier [from GHD LM report 7 Dec 2004]

The original timber piles are set out on a 10ft by 10ft grid in the Pier, with between one and four original piles at each grid location. In the maintenance work carried out on the Pier some of the piles have been regarded as redundant and not repaired as the floor load for the recent use of the Wharf is much less than the floor load required for its original function as a cargo wharf. The approach taken by GHD for Wharf 4/5 is to treat the piles on grids E, G, J and L as redundant (refer their pile layout plans in Appendix B) and similarly for Pier 2/3, but for each middle structural grid between storey posts for piles under the internal space.

The portion of the timber piles subject to most degradation is at the water level. As part of the maintenance work piles are either repaired or replaced. If replaced only the length of pile from the 'mud line' up to the underside of the Pier deck is replaced. For heritage reasons the outer two rows of piles are always replaced with timber piles. All other pile replacements utilize a steel tube.

The proposed new lifts will require pits below deck level, which are proposed to be reinforced concrete structures supported on timber piles. If required the base of the pits and tanks could be below the water level.

The aspects of the proposed development that will result in increased pile loads are:

- Removal of posts supporting the roof which results in increased loads on neighbouring posts
- Addition of floors levels: Mezzanine, Level 2, and Level 3.
- Addition of acoustic double slab at Level 2 for the two theatres and rehearsal spaces

Changes to the Wharf 4/5 building above Level 1 which may occur as part of STC50 may also significantly alter pile loads. There may end up being situations where loads at particular pile grids are significantly affected by both the STC50 development and the WBAP.

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4.0 Mezzanine & Level 2 Administration & Function Space

The new mezzanine floor structures are proposed to be of lightweight construction to minimise the additional load applied to the existing columns and piles. The proposed structure will consist of steel floor beams, steel joists and plywood or fibre cement flooring. There are other miscellaneous new floors for plant, storage, theatre and rehearsal support, and theatre balcony seating, which are similar in structure.

The structural intent is to locate new columns over existing posts so to prevent overloading existing floor structure. Where this was not achievable, additional steel beams strengthening is proposed to the soffit of existing Level 1. A high level of development and coordination was conducted by the team to minimize this type of framing to limit impact on tenancy beneath and Heritage significance.

Refer to Appendix A for structural 30% design development drawings.

5.0 Level 1 Rehearsal & Performance Space

Acoustic requirements for the rehearsal and performance spaces will require new single and double concrete slabs to be constructed over the existing Level 2 floor structure. Timber framed ramps will be required up to the slab floor level. The acoustic floor construction has been developed and coordinated by the design to minimize the structural impact.

Some existing posts are to be removed. This requires new roof framing. In addition to the primary framing there will be additional secondary steel for support of pipe grids, rigging points, lighting bridges, theatre doors and other in-ceiling elements.

Refer to Appendix A for structural 30% design development drawings and typical acoustic floor details.

6.0 Raised Roof

In places the central spine of the existing roof is to be raised to heighten the space for performance and rehearsal activity and services reticulation and equipment. The proposed structure will consist of steel rafters, steel purlins, and steel strengthening to existing timber trusses where required, e.g. at locations previously mentioned where existing storey posts are to be removed.

A portion of the existing roof over the STC50 workshop is proposed to be raised. This requires removal of one existing post and the addition of four new posts and new roof framing. In addition to the primary framing there will be additional secondary steel for support of rigging points.

Refer to Appendix A for structural 30% design development drawings.

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7.0 External Lifts, Stairs & Balconies

New external stairs and lift structures are proposed to be of light weight steel construction with a concrete lift pit. New external balconies are proposed to be of similar construction to new Mezzanine and Levels 2 structures with support posts that acknowledge the Heritage history of the Wharves.

Refer to Appendix A for structural 30% design development drawings.

8.0 Fire Protection

Typically throughout for theatre type use, the BCA consultant has advised that structure supporting floors requires fire protection to 60FRL. Some key structural elements have been reviewed subject to a typical floor loading. For new floor structures, the structure is to fire protected using fire-rated board or intumescent paint. For existing timber structure, members are protected by charring. Where the existing timber structure is inadequate for fire, additional fire-rated steel strengthening has been proposed.

Generally throughout Wharf 4/5, the triangular steel haunches support the Level 1 timber bearers will required fire protection. Intumescent paint is suggested to maintain the heritage significance.

As advised by the Principal Certifier, a performance solution under Ground Level Class 6 (retail type use) will be required from a Fire Engineer to avoid / limit the fire rating upgrade to substructure below.

Refer to Appendix A for structural 30% design development drawings and further comments regarding fire protection.

9.0 Heritage Policies

The underlying structural design intent is to treat the existing structure and heritage fabric with a high priority and to minimise the structural impact whilst expressing the existing structure where possible. Different structural approaches and systems have been considered, with the least invasive adopted.

With the proposed upgrade and alterations it is inevitable that loading on the existing structure would increase. At locations where existing structural members become overloaded, where possible the existing structure is utilised by strengthening with steel plates and members in a manner acknowledging their heritage, rather than removing and replacing with new.

For the proposed performance and theatre type building use and increased number of occupants, a number of acoustic and fire safety related design aspects require upgrading.

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Similar to the structural alterations and strengthening, a number of approaches and systems were considered. Where achievable, the existing timber structure was reviewed and deemed adequate to provide the required insulation and protection. For existing structural elements that require fire protection, intumescent paint is specified for its minimalist impact on the existing form.

The structural design of the Walsh Bay Arts Precinct and STC50 alterations acknowledges the history and heritage aspects of the existing structure and environment in which it is located. Structural solutions will continue to be considered and adopted based on the most minimalist impact on the existing structure and heritage fabric. Existing structure will be sensitively re-used where possible, and all new structure will be detailed to compliment and express the existing.

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Appendix A

Structural 30% Design Development Drawings

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THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING NO. S001

WALSH BAY ARTS PRECINCT

GENERAL NOTES

1. These drawings are for structural purposes only and are to be read in conjunction with the specification, architectural drawings, other contract documentation and the requirements of the relevant authorities.
2. Verify all setting out dimensions with the Architect.
3. Do not obtain dimensions by scaling the structural elements.
4. Should any ambiguity, error, omission, discrepancy, inconsistency or other fault exist or seem to exist in the contract documents, immediately notify in writing to the Superintendent.
5. Maintain the structure in a stable condition during construction. Temporary bracing/shoring shall be provided by the contractor to keep the structure and excavations stable at all times, ensuring that no part of the documented structure becomes overstressed. For all temporary batters obtain geotechnical engineer's recommendations.
6. All workmanship and materials shall be in accordance with the requirements of current Standards Australia codes and the bylaws, ordinances or other requirements of the relevant building authorities.
7. All proprietary items are to be installed and fixed in accordance with the manufacturers specifications and instructions.
8. All work is to be carried out in accordance with all Workcover requirements and occupational health and safety act regulations
9. Construction using these drawings shall not commence until a Construction Certificate is issued by the Principal Certifying Authority.

DESIGN LOADS:

Floor loads : REFER LOADING PLANS

Wind Loads : Vs = 46m/s Where R = 1000 years
Region = A2
Terrain Category = 2.0

Earthquake Loads: Design Category = II
Site Sub-soil class = Ce
Hazard Factor Z = 0.08
Probability Factor kp = 1.3

SAFETY IN DESIGN

Taylor Thomson Whitting (NSW) Pty Ltd operates under Safe Work Australia's Code of Conduct for the Safe Design of Structures.
These drawings shall be read in conjunction with the Taylor Thomson Whitting Transfer of Information Letter and Structural Risk and Solutions Register.
Under the Code of Conduct it is the Client's responsibility to provide a copy of the Structural Risk and Solutions Register to the Principal Contractor.
It is the Principal Contractor's responsibility to review the hazards and risks identified during the design process to ensure a safe workplace is maintained for the construction, maintenance and eventual demolition of the structure.

CONCRETE NOTES

EXPOSURE CLASSIFICATION : External -
Internal -

CONCRETE
Place concrete of the following characteristic compressive strength f'c as defined in AS 1379.

Location	fc MPa at 28 days	Specified Slump	Nominal Agg. size
ALL U.N.O.	S32	80	20

1. Use Type 'GP' cement, unless otherwise specified.
2. All concrete shall be subject to project assessment and testingto AS 1379.
3. Consolidate by mechanical vibration. Cure all concrete surfaces as directed in the Specification.
4. For all falls in slab, drip grooves, reglets, chamfers etc. refer to Architects drawings and specifications.
5. Unless shown on the drawings, the location of all construction joints shall be submitted to Engineer for review.
6. No holes or chases shall be made in the slab without the approval of the Engineer.
7. Conduits and pipes are to be fixed to the underside of the top reinforcement layer.
8. Slurry used to lubricate concrete pump lines is not to be used in any structural members.
9. All slabs cast on ground require sand blinding with a Concrete Underlay
10. (175) Indicates slab or band thickness

FORMWORK

1. The design,certification,construction and performance of the formwork, falsework and backpropping shall be the responsibility of the contractor. The proposed method of installation and removal of formwork is to be submitted to the Superintendent for comment prior to work being carried out.

REINFORCEMENT NOTES

1. Fix reinforcement as shown on drawings. The type and grade is indicated by a symbol as shown below.
   On the drawings this is followed by a numeral which indicates the size in millimetres of the reinforcement.

   N. Hot rolled ribbed bar — grade D500N
   R. Plain round bar — grade R250N
   SL. Square mesh — grade 500L
   RL. Rectangular mesh — grade 500L

2. Provide bar supports or spacers to give the following concrete cover to all reinforcement unless otherwise noted on drawings.

   Footings - __ top, __ bottom, __ sides.
   Slabs - __ top, __ bottom, __ sides.
   - __ when exposed to weather or ground.
   Beams - __ bottom, __ sides, __ top to ties
   Columns - __ to ties and spirals.
   - __ when exposed to weather or ground.
   Walls - __ generally
   - __ when cast in forms but later exposed to weather or ground.
   - __ when cast directly in contact with ground

3. Cover to reinforcement ends to be 50 mm u.n.o.
4. Provide N12-450 support bars to top reinforcement as required. Tension Lap U.N.O.
5. Maintain cover to all pipes, conduits, reglets, drip grooves etc.
6. All cogs to be standard cogs unless noted otherwise.
7. Fabric end and side laps are to be placed strictly in accordance with the manufacturers requirements to achieve a full tensile lap. Fabric shall be laid so that there is a maximum of 3 layers at any location.

FABRIC LAPS

8. Laps in reinforcement shall be made only where shown on the drawings unless otherwise approved. Lap lengths as per table below.

TENSION LAPS

BAR SIZE	TOP BARS IN BANDS AND BEAMS	ALL OTHER BARS
N12	570	480
N16	800	700
N20	1150	950
N24	1500	1250
N28	1850	1500
N32	2250	1800
N36	2700	2100

COMPRESSION LAPS

BAR SIZE	
N16	640
N20	800
N24	960
N28	1120
N32	1280
N36	1440

REINFORCEMENT LEGEND

1. Denotes the extent of area covered by bars.
2. Denotes a change in bar shape and/or length.
3. T1 Indicates to repeat bars tagged thus (T1) etc. LAY BARS IN DIRECTION INDICATED BY ARROW
4. Bars shown staggered on plan are to be placed alternately.
5. ALT. denotes bars of different length and/or shape to be laid alternately.
6. 13N16 10-250=3 Indicates 10 bars at 250 centres plus 3 bars placed one per space centrally over column.

ABBREVIATIONS USED ON DRAWINGS :

U.N.O.	-	Unless Noted Otherwise	E.W.	-	Each Way
N.S.O.P.	-	Not Shown On Plan	E.F.	-	Each Face
N.S.O.E.	-	Not Shown On Elevation	N.F.	-	Near Face
L.V.	-	Bar Lengths Vary	F.F.	-	Far Face
N.T.S.	-	Not To Scale			

STRUCTURAL STEELWORK NOTES

1. Provide temporary bracing to maintain stability of steelwork during construction.
2. Unless noted otherwise.
   a. Use 10mm thick gusset, fin & end plates welded all round.
   b. Provide 6mm seal plate to all open ends of tube members U.N.O.
   c. All welds 6mm continuous fillet made with E48XX electrode or W50X
   d. All bolts 20mm dia.
   e. All bolts grade 8.8/S. (including purlin / girt bolts)
   f. All holding down bolts are grade 4.6 U.N.O
   g. All bolts, including holding down bolts are to be hot dip galvanized.
   h. All fillet welds to be category GP.
   i. Butt weld all flanges at end plates and at all mitre cuts.
   j. Gussets to end plates to be butt welded.
   k. All butt welds shall be full penetration, grade SP.
   l. All connections to have a minimum of 2 bolts.
   m. Provide 6mm seal plate to all open ends of tube members U.N.O.
   n. Provide all cleats and holes necessary for fixing Timber and other elements to the steel whether or not detailed on the Structural drawings.
   o. Studs fabricated to AS1554.2
   p. All shear studs (composite slab to steel) grade 410 MPa.
   q. All threaded studs (steel to steel) grade 380 MPa.
   r. Turnbuckles to be quality grade 'S' to AS2319
   s. Stainless steel to be grade 316
3. Bolting categories are identified on the drawings in the following manner.

   4.6/S Commercial bolts of grade 4.6 snug tightened.
   8.8/S High strength bolts of grade 8.8 snug tightened.
   8.8/TB High strength bolts of grade 8.8 fully tensioned to AS4100 as a bearing type joint.
   8.8/TF High strength bolts of grade 8.8 fully tensioned to AS4100 as a friction type joint with faying surfaces left uncoated.

   Note: Grade 8.8 bolts are NOT to be welded.

4. Chip all welds free of slag.
5. Contractor is to confirm with Architect as to where exposed welds are to be ground flush / smooth.
6. Do not grout under base plates until first level steelwork is plumb and fixed by welding or bolting.
7. Submit all shop drawings to the Superintendent before commencing fabrication.

STEEL TYPES AND GRADES

Type of steel	Grade
UC, UB, WC, WB, PFC	300
BT, CT	300
SHS, RHS	350
CHS	250 and 350
EA, UA	300
Rods, Flats, Plates	250

PURLINS AND GIRTS

1. All purlins to be grade AS1397/G450-Z350 U.N.O.
2. Unless noted otherwise, the fixing of purlins, girts, bridging, sheeting and any other component shall be in accordance with the Manufacturer's specification and recommendations.
3. Sheeting / cladding is to be screw fixed to the purlins / girts to provide lateral restraint to the purlins/girts in accordance with the Manufacturer's requirements.
4. Provide double purlins at expansion joints in roof sheeting.
5. Purlin / girt sizes shown are based on the current BLUESCOPE LYSAGHT purlins and girts design data, including restraint from roof sheeting and bridging. The manufacturer should confirm any alternative systems used are equivalent or redesign the purlins / girts to provide an equivalent system.
6. Purlin / girt cleats are to be in accordance with the Manufacturers details. Where the distance between the bottom flange of the purlin and the rafter is greater than 100mm use 75 x 75 x BEA cleats.
7. Provide 75 x 75 x 4 duragal galvanized angle trimmers to support roof sheeting edges at all hips,valleys and angled sheet edges. Fix to each purlin with one No. 14 Tek screw.
8. Bridging shall be designed and erected in accordance with the Manufacturer's requirements. Rod bridging is not acceptable unless approved in writing.
9. For bridging members to purlins at curved roof areas provide bridging suitable for curved roofs to Manufacturer's details.

STEELWORK FINISHES

1. Refer to structural and architectural specifications.

TIMBER NOTES

1. All timber framing, including bracing, shall be constructed in accordance with "AS 1684.4-2010, Residential timber-framed construction. Part 4: Simplified - Non-cyclonic areas" unless noted otherwise on the drawings, specifications, or notes.
2. All timber sizes shall be as shown on these drawings with no undersize for Radiata pine and a 5mm maximum undersize for all other species. Refer to the Architect's drawings and the Specification for sizes not shown on these drawings.
3. All timber members shown on the drawings are to be seasoned and have the following characteristics:

MEMBER	STRESS GRADE
ALL U.N.O	F22 SEASONED

4. All timber shall be free of gum veins, pockets, knots holes or splits within 250mm of any connection.
5. Refer to the Specification for preservatives and finishes to timbers.
6. All bolts, nuts, washers and timber connectors shall be hot dip galvanised unless noted otherwise.
7. Bolts to be 16 dia U.N.O. and are to be re-tightened 6 months and 12 months after initial tightening.
8. All structural timber shall have its stress grade identified in accordance with the relevant Australian timber product Standard.
9. Plywood panels to be laid with face grain in the direction of the span

MASONRY NOTES

1. Temporary bracing shall be provided by the contractor to keep the masonry stable at all times.
2. Masonry to be in accordance with AS 3700
3. Masonry units shall comply with AS/NZS 4455 and as follows:

Type of masonry unit	Characteristic unconfined compressive strength (f'uc)	Characteristic lateral modulus of rupture (f'ut)
Clay & Calcium silicate	15 MPa	0.8 MPa
Concrete	15 MPa (hollow units) 10 MPa (solid or cored units)	0.8 MPa

4. Mortar shall consist of the following:
   M3 for general applications
   1 part Type GP cement: 5 parts sand plus water thickener
   M4 for elements in interior environments subject to saline wetting and drying; below a damp-proof course or in contact with ground in aggressive soils; in severe marine environments; in saline or contaminated water including tidal splash zones; and within 1km of an industry producing chemical pollutants.
   1 part Type GP cement: 4 parts sand plus water thickener
5. Provide vertical control joints in masonry over permanent floor joints and as per the architectural drawings.
6. Masonry walls shown on the structural plans are load-bearing UNO. Non-loadbearing walls shall be separated from the concrete structure above with 20mm compressible filler. Masonry walls supporting slabs shall have a layer of mortar troweled smooth on top. Provide M.E.T. slipjoint to separate floor slabs and masonry. Provide Hercules HERCUSLIP COMPOSITE to separate roof slabs and masonry.
7. Other than what is allowed in the specification no chasing or rebates may be made in masonry walls without written approval.
8. The contractor shall provide records that demonstrate all masonry bed joint reinforcement, masonry ties and masonry wall stiffeners have been installed in accordance with the drawings and specification.
9. All load bearing concrete masonry walls shall have all cores filled with grout UNO. Core filling grout shall be thoroughly compacted. Grout to be in accordance with AS3700 and as follows:

Location	f'cg MPa	Specified Slump	Max' Aggregate size
Grout	20	230	10mm

10. All core filled blockwalls shall be constructed with "Double U" blocks
11. In core filled blockwalls cleanout openings shall be provided at the bottom of each core and shall be cleaned of mortar protrusions before grouting.
12. All core filled block walls shall have all cores filled with grout UNO. Core filling grout to be in accordance with note 4.
13. Cover to reinforcement to be 50mm to face of block UNO.
14. Provide bed joint reinforcement as follows
    M.E.T. galvanized masonry reo where M3 mortar is used (supplied by DUNSTONE MAZE in NSW)
    Ancon stainless steel where M4 mortar is used and located as follows
    - in 2 bed joints below and above head and sill flashings to openings
    - in 2 bed joints below and above openings
    - in third bed joint above bottom of wall
    - in second bed joint below top of wall

STEEL WALL FRAMING NOTES

1. All design, materials and workmanship shall be in accordance with AS 4600 Cold Formed Steel Structures Code.
2. Unless noted otherwise on the drawings all wall framing shall be designed and installed by the manufacturer in accordance with the specification and relevant Australian Standards. Refer to General Notes for Design Loads.
3. All framing shall be designed to carry the dead load of all framing members, cladding, linings, folding doors, services etc. as shown on the Architects and other Consultants drawings.
4. All framing dimensions shall be obtained from the Architectural drawings.
5. All wall framing shall be designed as loadbearing to resist all lateral loads. Sufficient bracing shall be provided to resist the full wind load effects from both the walls and roof of the building in all directions.
6. In addition to other design loads all wall framing shall be designed to support the following loads:
   - Up to two rows of 300mm wide shelves. Each row of shelves shall be capable of supporting a vertical load of 50 kg per metre length of the shelf.
   - Comply with the requirements of BCA specification C1.8
7. In addition to the deflection limits specified in the relevant Australian Standards, wall framing shall be designed to achieve the following additional deflection limits:

   ELEMENT MAXIMUM DEFLECTION
   Supporting frame masonry walls Span / 1000
8. The contractor must submit a design certificate to certify the wall framing design is in accordance with AS 4600 for the relevant loads signed by a NPER registered engineer.

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Rev	Description	Eng	Draft	Date
P1	30% DOCUMENTATION	G.B	P.S.H	13.02.17

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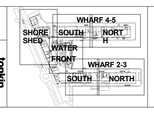

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PROJECT :
WALSH BAY ARTS PRECINCT

TTW PROJECT No : 161280

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DRAWING TITLE NOTES SHEET
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APPROVED D.C
SCALES 1 : 1 @A0
DATE 16/01/2017
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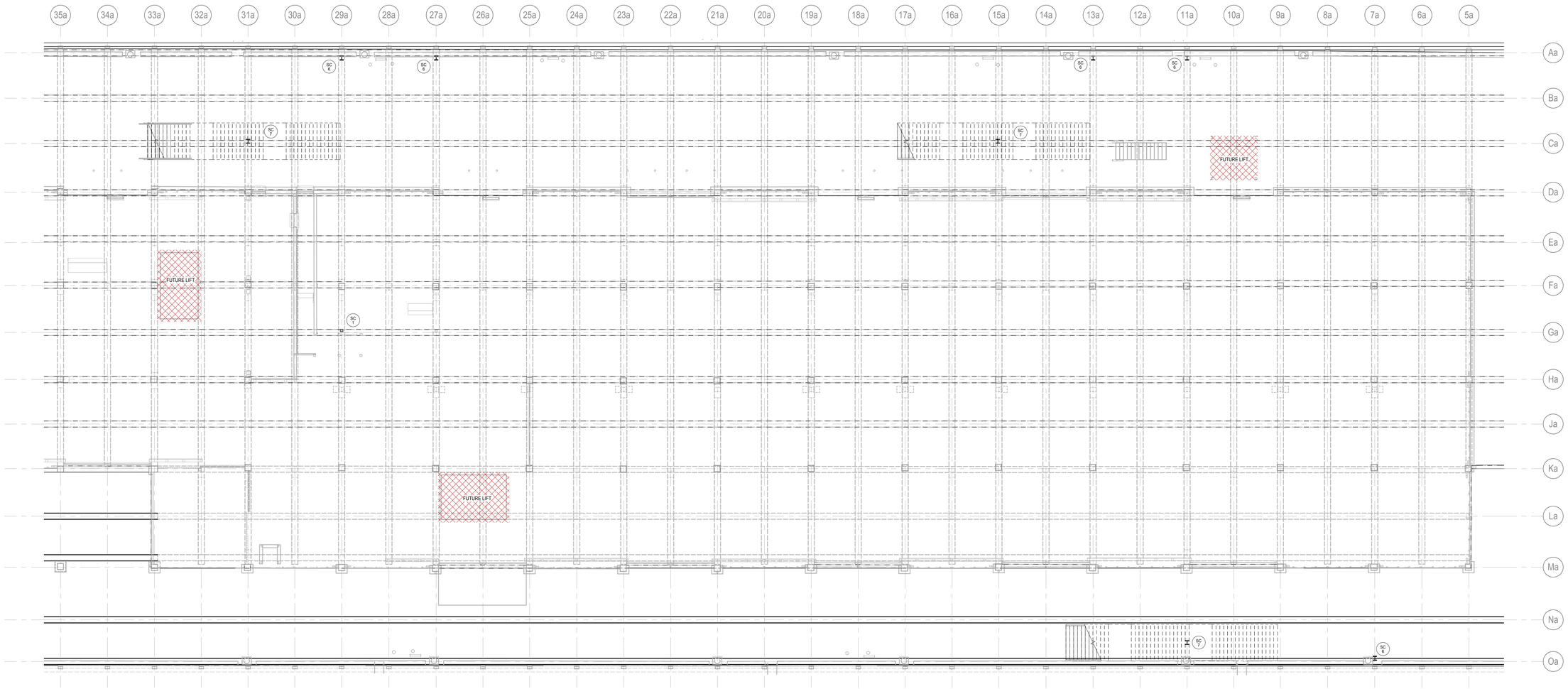

GROUND MARKING PLAN - NORTH

SCALE 1:100

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P1	30% DOCUMENTATION	G.B	P.S.H	13.02.17

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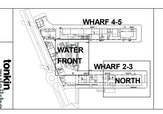

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TTW PROJECT No : 161280

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DRAWING TITLE
PIER 2_3 NORTH GROUND FLOOR PLAN

DRAWN BY

APPROVED D.C

SCALES 1 : 100 @A0

DATE 16/01/2017

PHASE FOR APPROVAL

DRAWING NO S200

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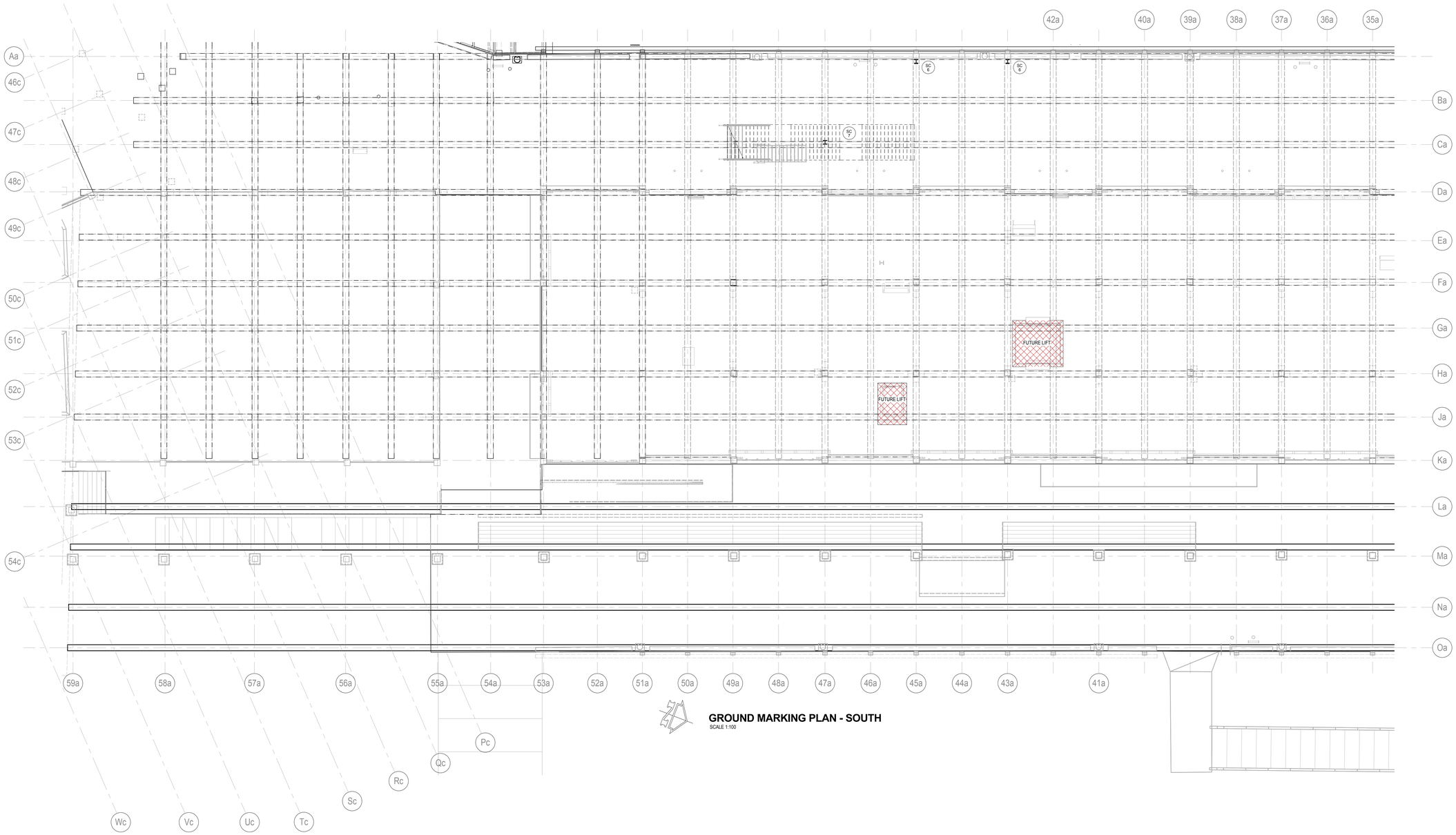

GROUND MARKING PLAN - SOUTH

SCALE 1:100

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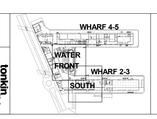

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DRAWING TITLE	PIER 2_3 SOUTH GROUND FLOOR PLAN
DRAWN BY	
APPROVED	D.C
SCALES	1 : 100 @A0
DATE	16/01/2017
PHASE	FOR APPROVAL
DRAWING NO	S201
REV	P1

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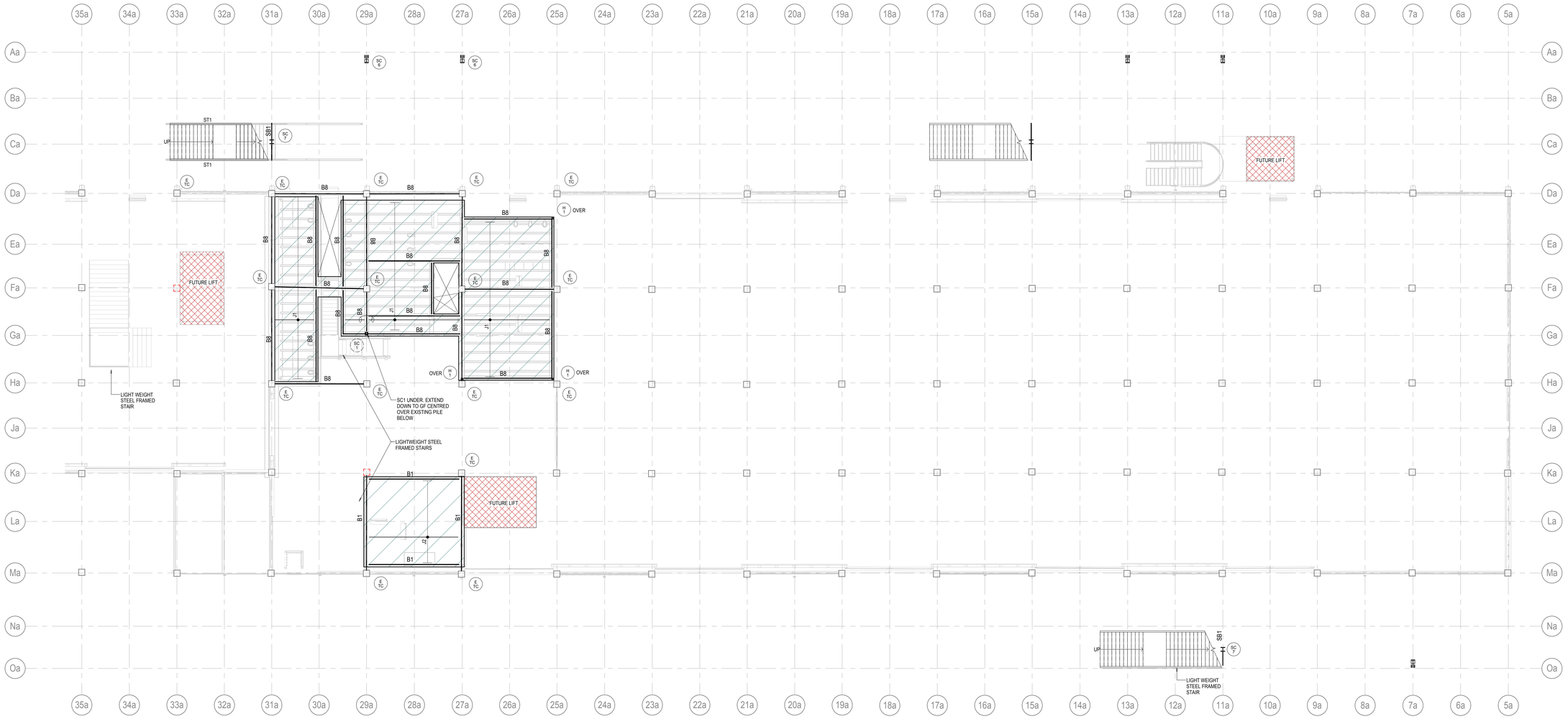

MEZZANINE MARKING PLAN - NORTH

SCALE 1:100

NOTES:

1. DENOTES ON PLAN 25mm PLYWOOD OR FC SHEETING.
   FLOOR FRAMING AND SHEETING TO BE FIRE RATED AT SOFFIT BY FIRE RATED BOARD, FIRE SPRAY, INTUMESCENT PAINT ETC TYPICAL.

STEEL COLUMN SCHEDULE

TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101.2
SC	7	250UC72.9

STEEL MEMBER SCHEDULE

MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x20 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
J2	200UB22.3	JOISTS AT 600 MAX CTS
J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

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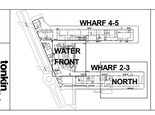

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DRAWING TITLE
PIER 2_3 NORTH MEZZANINE MARKING PLAN

DRAWN BY

APPROVED D.C

SCALES As indicated @A0

DATE 16/01/2017

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MEZZANINE MARKING PLAN - SOUTH

SCALE 1:100

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B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
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J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

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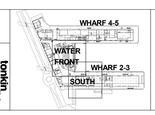

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PROJECT :
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TTW PROJECT No : 161280

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WEB: www.ttw.com.au

DRAWING TITLE
PIER 2_3 SOUTH MEZZANINE MARKING PLAN

DRAWN BY

APPROVED D.C

SCALES As indicated @A0

DATE 16/01/2017

PHASE FOR APPROVAL

DRAWING NO S203

REV P1

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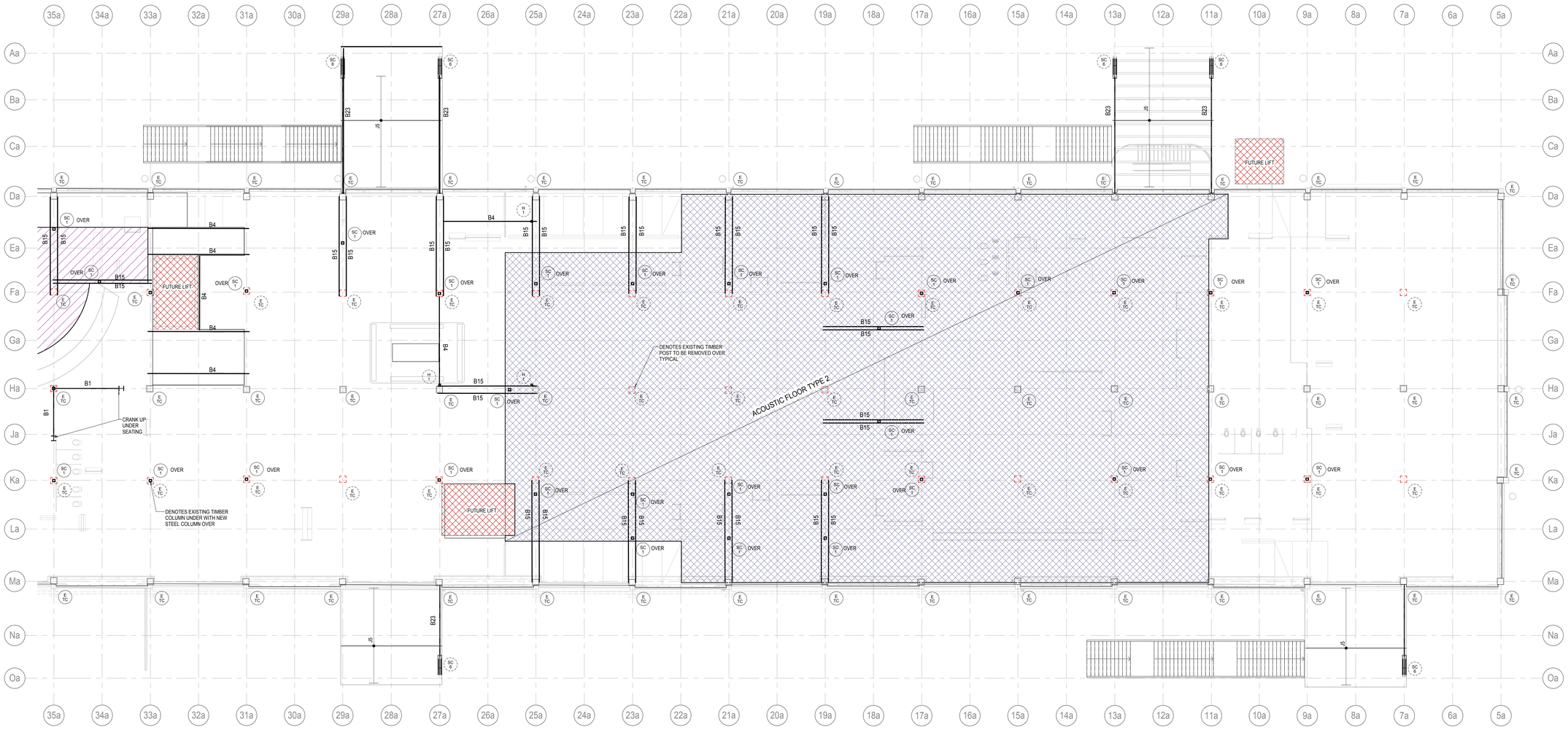


LEVEL 1 MARKING PLAN - NORTH

SCALE 1:100

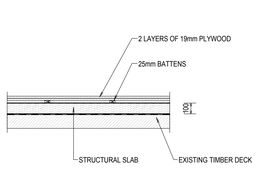
NOTES:

1. DENOTES ON PLAN 25mm PLYWOOD OR FC SHEETING.
   FLOOR FRAMING AND SHEETING TO BE FIRE RATED AT SOFFIT BY FIRE RATED BOARD, FIRE SPRAY, INTUMESCENT PAINT ETC TYPICAL.
2. DENOTES ON PLAN TYPE 1 ACOUSTIC FLOOR AS PER THE ATTACHED TYPICAL DETAILS.
   THEATRE AUDITORIUM FLOOR LOADING = 5kPa (TO BE CONFIRMED).
   REHEARSAL FLOOR LOADING = 5kPa (TO BE CONFIRMED).
3. DENOTES ON PLAN TYPE 2 ACOUSTIC FLOOR AS PER THE ATTACHED TYPICAL DETAILS.
   THEATRE FLOOR LOADING = ___kPa (TO BE CONFIRMED.
   REHEARSAL FLOOR LOADING = 5kPa (TO BE CONFIRMED).
4. DENOTES ON PLAN TYPE 3 ACCOUSTIC FLOOR AS PER ATTACHED TYPICAL DETAILS.
   THEATRE FLOOR LOADING = 7.5kPa.

NOTE: EXISTING STEEL BEARER HAUNCHES UNDER LEVEL 1 THROUGHOUT WILL REQUIRE FIRE-RATING. INTUMESCENT PAINT IS SUGGESTED

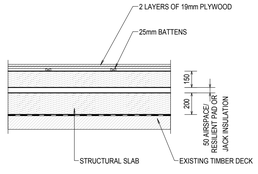
STEEL COLUMN SCHEDULE		
TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101 2
SC	7	250UC72.9

STEEL MEMBER SCHEDULE		
MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	BEAM
B25	200x10 FLAT	
B26	240x20 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
J2	200UB22.3	JOISTS AT 600 MAX CTS
J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM



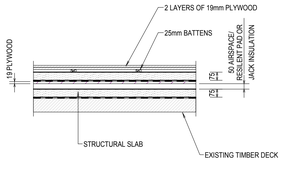
ACOUSTIC FLOOR TYPE 1

SCALE 1:20



ACOUSTIC FLOOR TYPE 2

SCALE 1:20



ACOUSTIC FLOOR TYPE 3

SCALE 1:20

SLABS TO BE LIGHT WEIGHT WITH MAXIMUM DENSITY OF 130 kg/m3.
SL82 MESH THROUGHOUT. SAWN JOINTS AT 3m x 3m CENTRES.
CAST ON DOUBLE LAYER OF 0.2mm THICK CONCRETE UNDERLAY.

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PRELIMINARY

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P1	30% DOCUMENTATION	G.B	P.S.H	13.02.17

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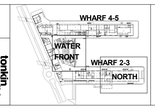

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DRAWING TITLE PIER 2_3 NORTH LEVEL 1 MARKING PLAN		DRAWN BY	
		APPROVED	D.C
SCALES	As Indicated @A0	DATE	16/01/2017
PHASE FOR APPROVAL	DRAWING No S204	REV	P1

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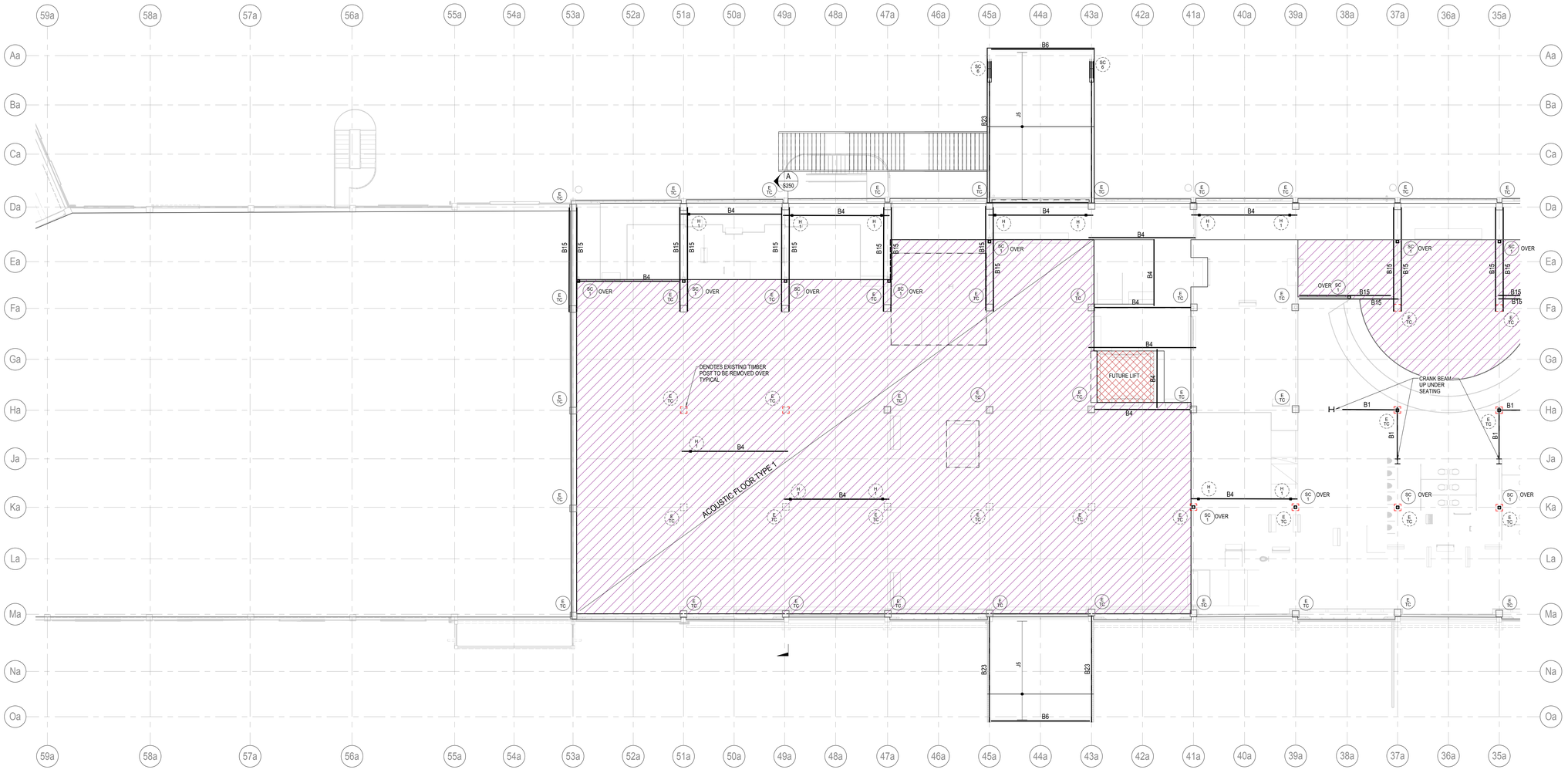


LEVEL 1 MARKING PLAN - SOUTH

SCALE 1:100

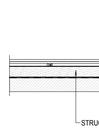
NOTES:

1. DENOTES ON PLAN 25mm PLYWOOD OR FC SHEETING. FLOOR FRAMING AND SHEETING TO BE FIRE RATED AT SOFFIT BY FIRE RATED BOARD, FIRE SPRAY, INTUMESCENT PAINT ETC TYPICAL.
2. DENOTES ON PLAN TYPE 1 ACOUSTIC FLOOR AS PER THE ATTACHED TYPICAL DETAILS. THEATRE AUDITORIUM FLOOR LOADING = 5kPa (TO BE CONFIRMED). REHEARSAL FLOOR LOADING = 5kPa (TO BE CONFIRMED).
3. DENOTES ON PLAN TYPE 2 ACOUSTIC FLOOR AS PER THE ATTACHED TYPICAL DETAILS. THEATRE FLOOR LOADING = ____kPa (TO BE CONFIRMED. REHEARSAL FLOOR LOADING = 5kPa (TO BE CONFIRMED).
4. DENOTES ON PLAN TYPE 3 ACCOUSTIC FLOOR AS PER ATTACHED TYPICAL DETAILS. THEATRE FLOOR LOADING = 7.5kPa.

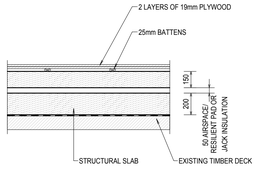
NOTE: EXISTING STEEL BEARER HAUNCHES UNDER LEVEL 1 THROUGHOUT WILL REQUIRE FIRE-RATING. INTUMESCENT PAINT IS SUGGESTED

STEEL COLUMN SCHEDULE		
TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101 2
SC	7	250UC72.9

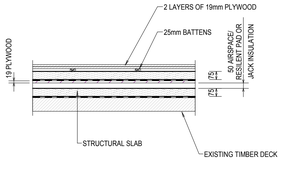
STEEL MEMBER SCHEDULE		
MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x20 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
J2	200UB22.3	JOISTS AT 600 MAX CTS
J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM



ACOUSTIC FLOOR TYPE 1
SCALE 1:20



ACOUSTIC FLOOR TYPE 2
SCALE 1:20



ACOUSTIC FLOOR TYPE 3
SCALE 1:20

SLABS TO BE LIGHT WEIGHT WITH MAXIMUM DENSITY OF 130 kg/m3. SL82 MESH THROUGHOUT. SAWN JOINTS AT 3m x 3m CENTRES. CAST ON DOUBLE LAYER OF 0.2mm THICK CONCRETE UNDERLAY.

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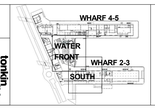

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DRAWING TITLE
PIER 2_3 SOUTH LEVEL 1 MARKING PLAN

DRAWN BY

APPROVED D.C

SCALES As Indicated @A0

DATE 16/01/2017

PHASE FOR APPROVAL

DRAWING No S205

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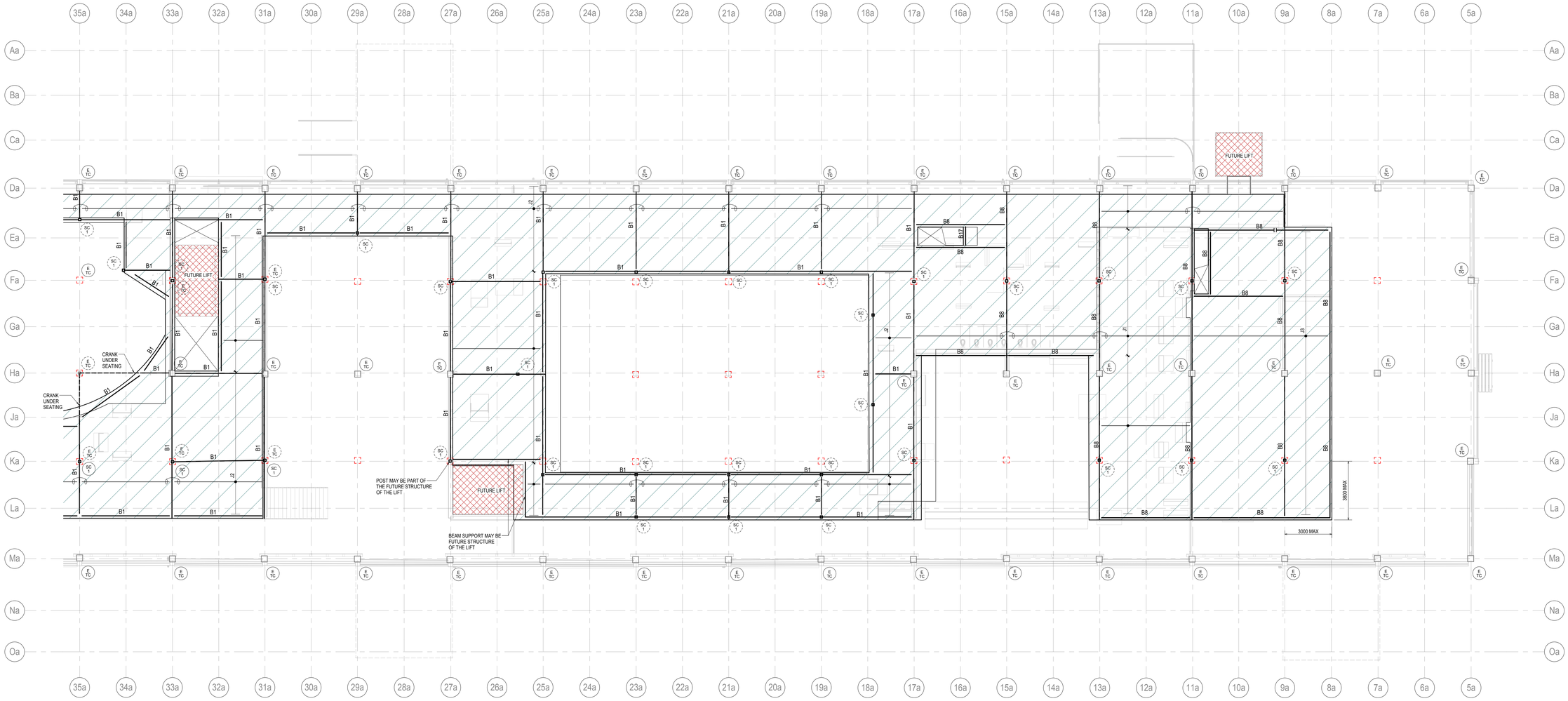

LEVEL 2 MARKING PLAN - NORTH

SCALE 1:100

NOTES:

1. DENOTES ON PLAN 25mm PLYWOOD OR FC SHEETING. FLOOR FRAMING AND SHEETING TO BE FIRE RATED AT SOFFIT BY FIRE RATED BOARD, FIRE SPRAY, INTUMESCENT PAINT ETC TYPICAL.

STEEL COLUMN SCHEDULE

TYPE	MARK	SIZE
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STEEL MEMBER SCHEDULE

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B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x20 FLAT	
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J5	200x100x5.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

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Rev	Description	Eng	Draft	Date
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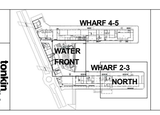

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PROJECT :
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PRELIMINARY

DRAWING TITLE	PIER 2_3 NORTH LEVEL 2 MARKING PLAN
DRAWN BY	
APPROVED	D.C
DATE	16/01/2017
SCALES	As indicated @A0
PHASE	FOR APPROVAL
DRAWING NO	S206
REV	P1

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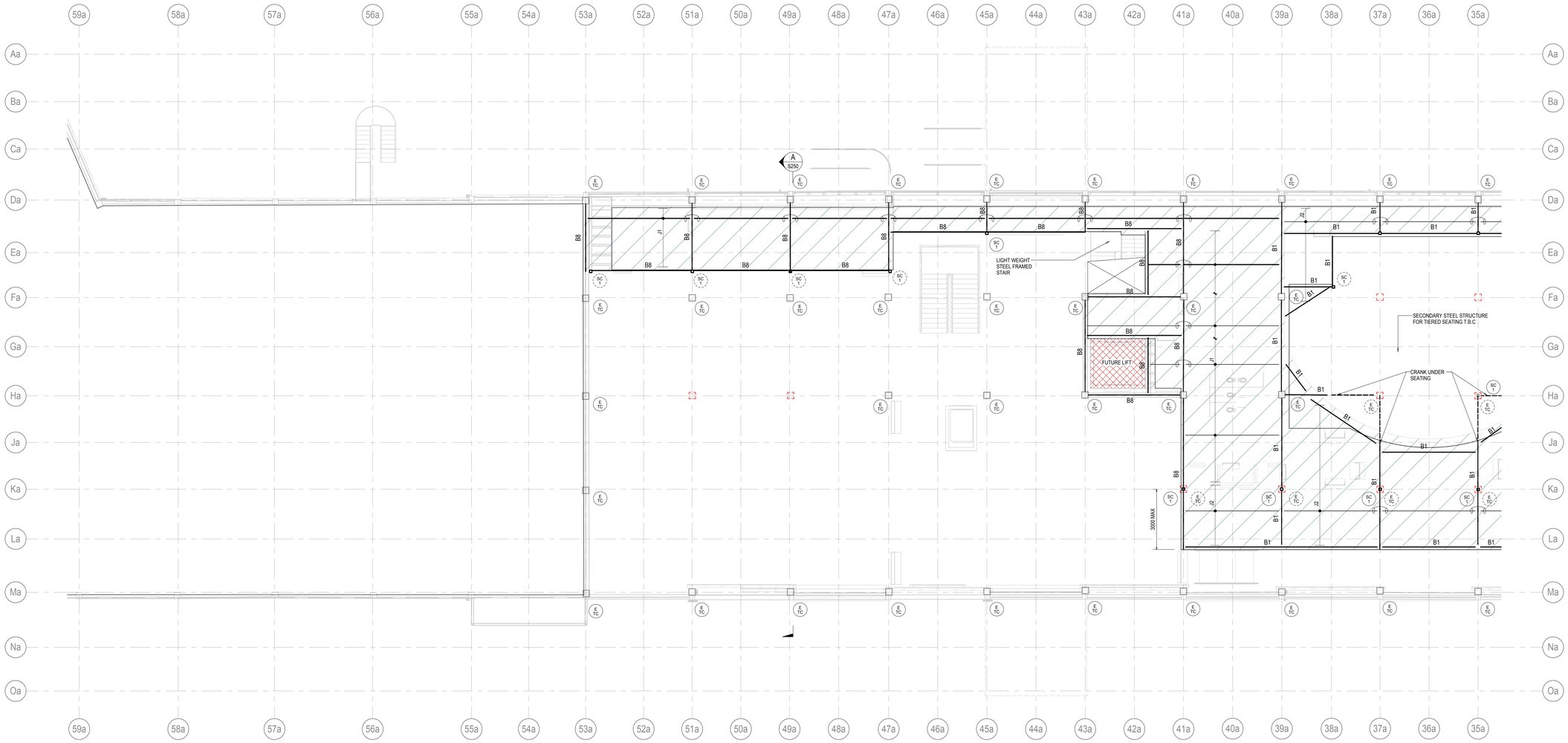

LEVEL 2 MARKING PLAN - SOUTH

SCALE 1:100

NOTES:

1. DENOTES ON PLAN 25mm PLYWOOD OR FC SHEETING. FLOOR FRAMING AND SHEETING TO BE FIRE RATED AT SOFFIT BY FIRE RATED BOARD, FIRE SPRAY, INTUMESCENT PAINT ETC TYPICAL.

STEEL COLUMN SCHEDULE

TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101 2
SC	7	250UC72.9

STEEL MEMBER SCHEDULE

MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x20 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
J2	200UB22.3	JOISTS AT 600 MAX CTS
J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

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PRELIMINARY

A0 0 1 2 3 4 5 6 7 8 9 10

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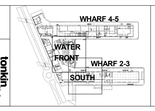

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DRAWING TITLE
PIER 2_3 SOUTH LEVEL 2 MARKING PLAN

DRAWN BY

APPROVED D.C

SCALES As indicated @A0

DATE 16/01/2017

PHASE FOR APPROVAL

DRAWING No S207

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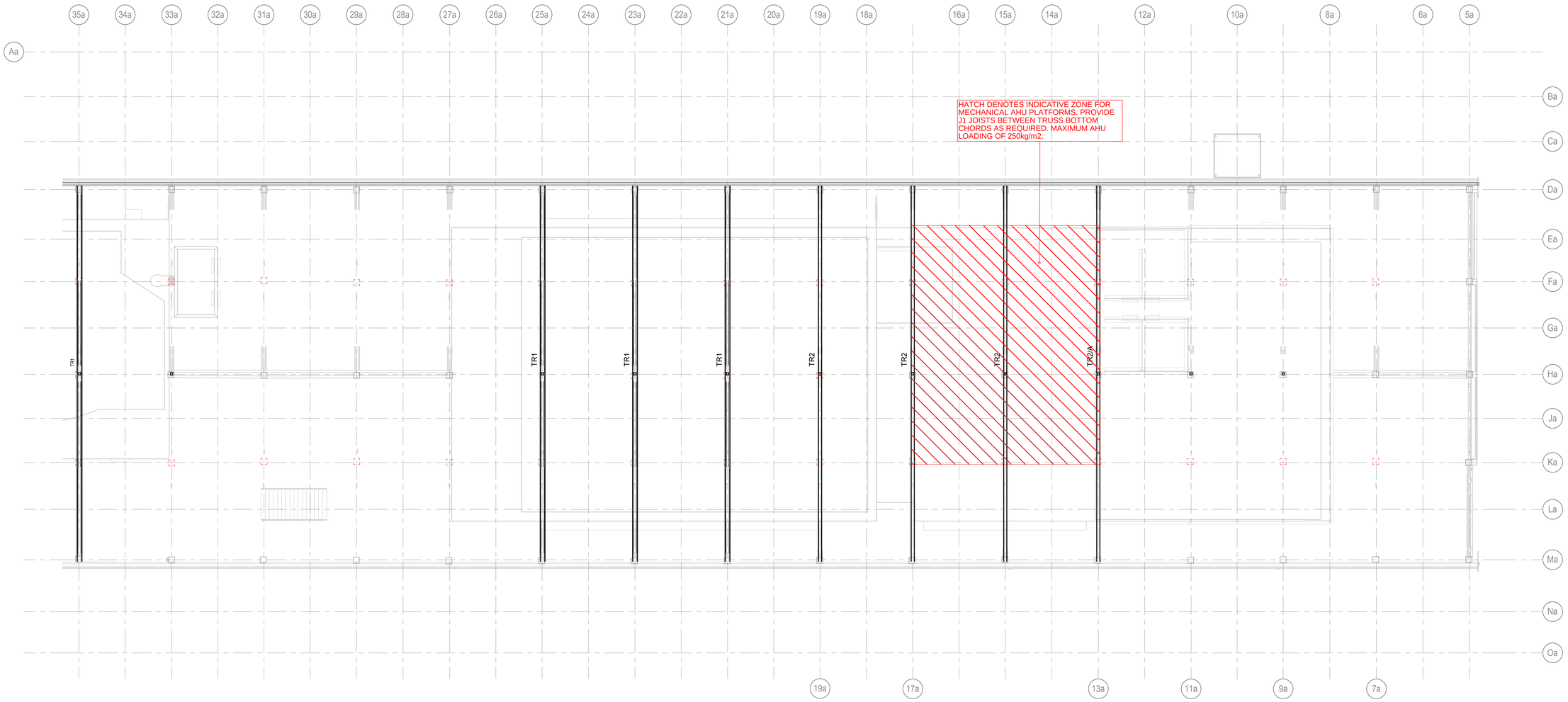

LEVEL 3 MARKING PLAN - NORTH

SCALE 1:100

13/02/2017 4:09:32 PM

A0 ..... 0 1 2 3 4 5 6 7 8 9 10

Rev	Description	Eng	Draft	Date
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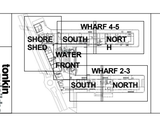

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DRAWING TITLE PIER 2_3 NORTH LEVEL 3 MARKING PLAN		**DRAWN BY**
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PHASE FOR APPROVAL	**DRAWING NO** S208	**REV** P1

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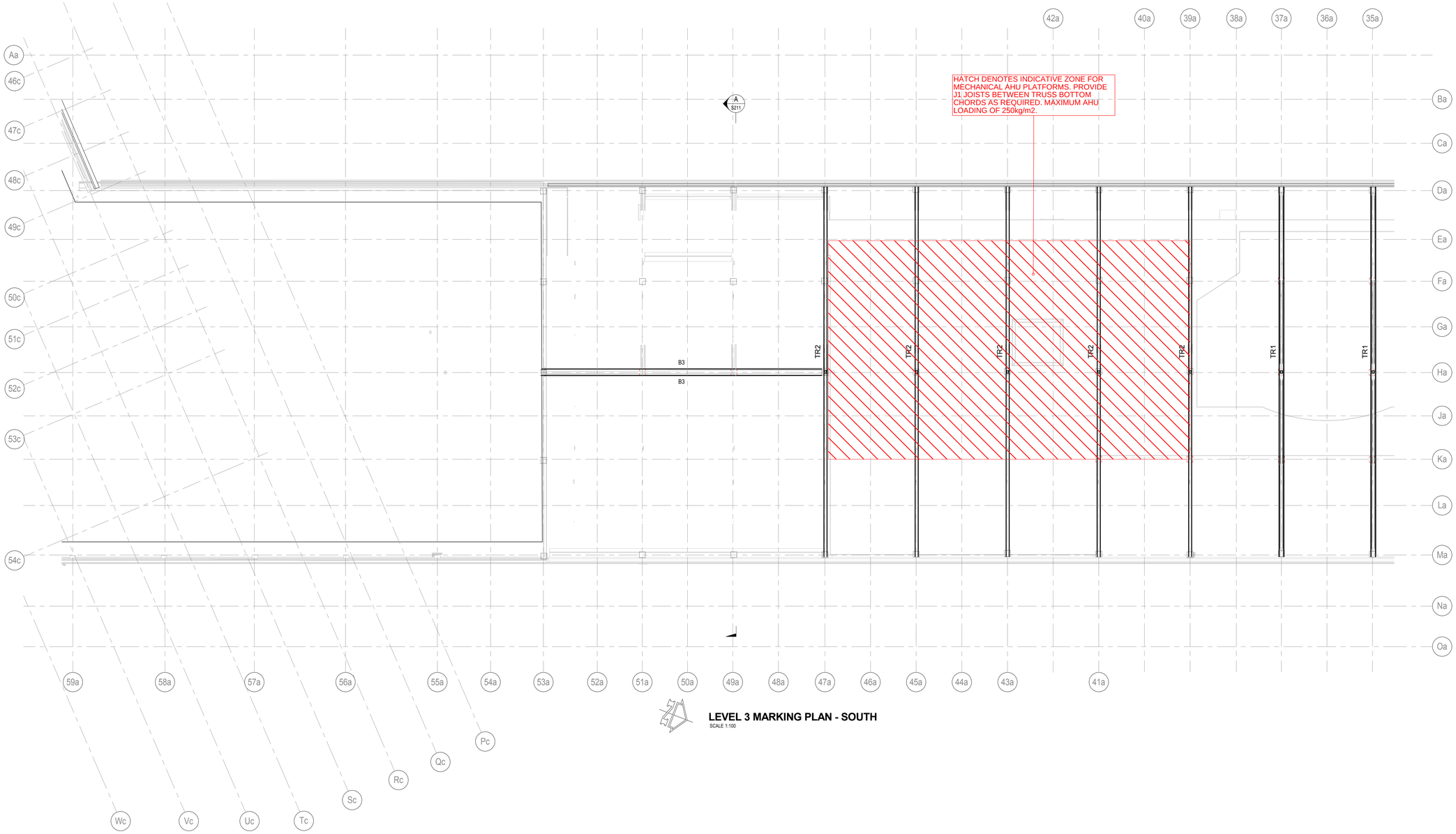

LEVEL 3 MARKING PLAN - SOUTH

SCALE 1:100

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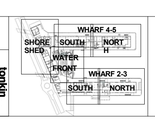

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			APPROVED D.C
SCALES 1 : 100 @A0			**DATE** 16/01/2017
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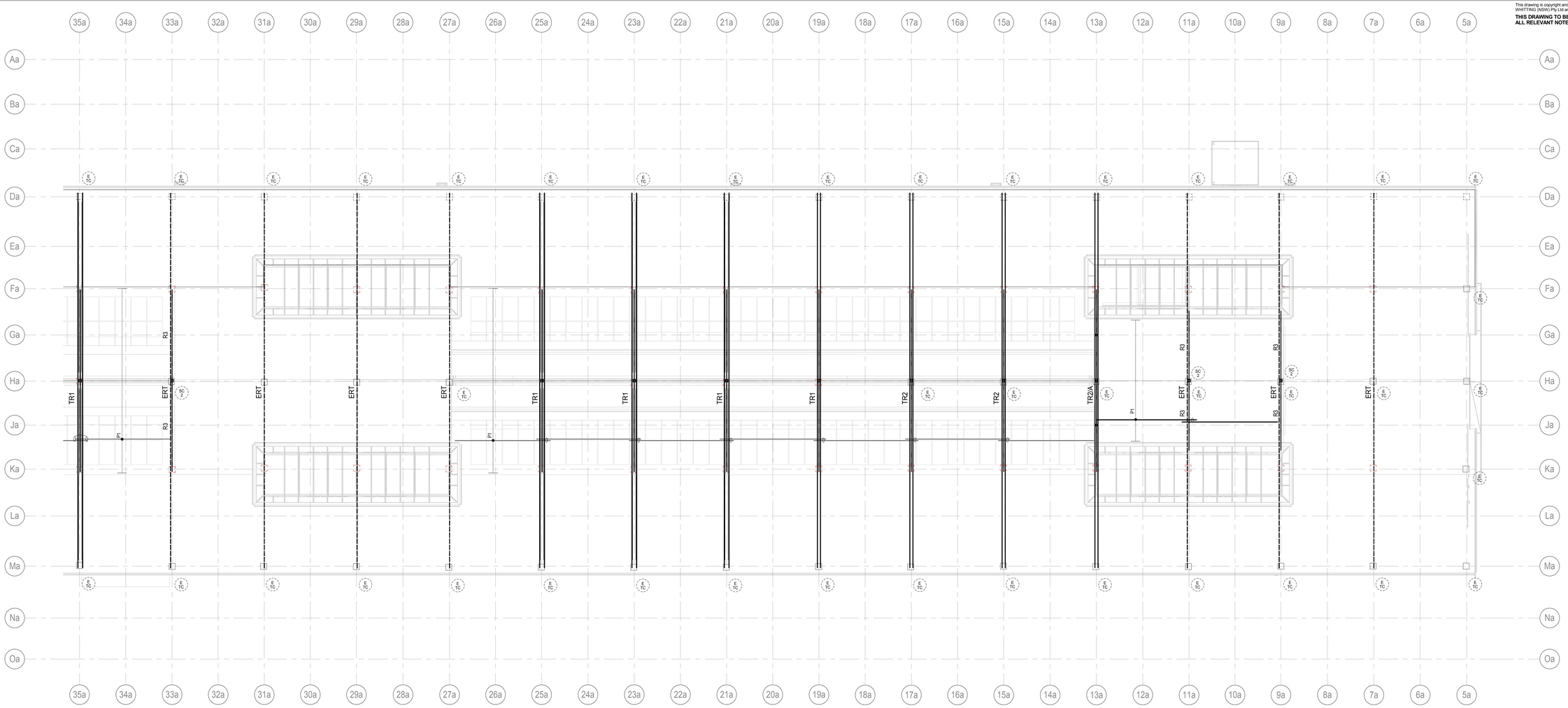

ROOF MARKING PLAN - NORTH

SCALE 1:100

STEEL MEMBER SCHEDULE		
MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
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B20	530UB92.4	BEAM
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SB1	200UB18.2	BEAM

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SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101 2
SC	7	250UC72.9

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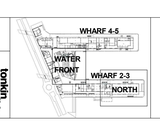

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TTW PROJECT No : 161280

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DRAWING TITLE	PIER 2_3 NORTH ROOF MARKING PLAN
DRAWN BY	
APPROVED	D.C
SCALES	1 : 100 @A0
DATE	16/01/2017
PHASE	FOR APPROVAL
DRAWING NO	S210
REV	P1

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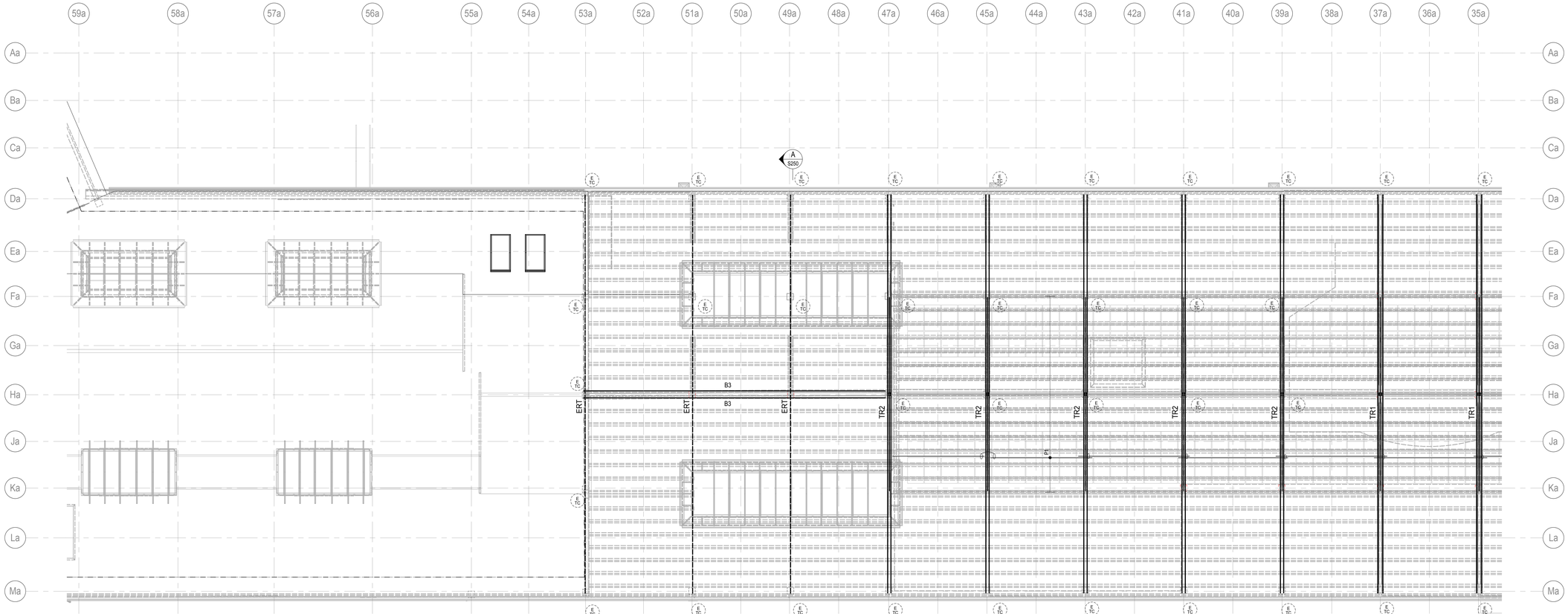

ROOF MARKING PLAN - SOUTH

SCALE 1:100

STEEL COLUMN SCHEDULE		
TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101.2
SC	7	250UC72.9

STEEL MEMBER SCHEDULE		
MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x20 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
J2	200UB22.3	JOISTS AT 600 MAX CTS
J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

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A0 0 1 2 3 4 5 6 7 8 9 10

Rev	Description	Eng	Draft	Date
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DRAWING TITLE
PIER 2_3 SOUTH ROOF MARKING PLAN

DRAWN BY

APPROVED D.C

SCALES 1 : 100 @A0

DATE 16/01/2017

PHASE FOR APPROVAL

DRAWING NO S211

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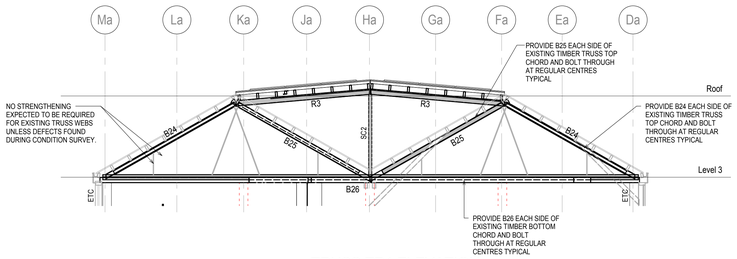

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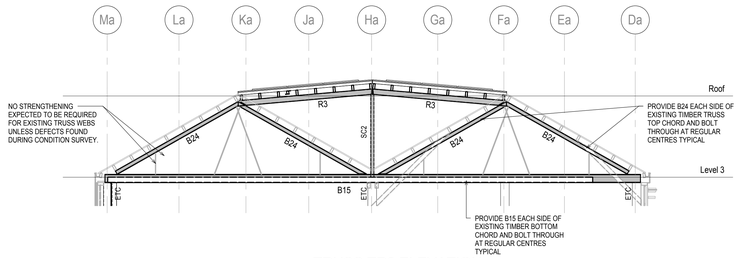
SCALE 1:100



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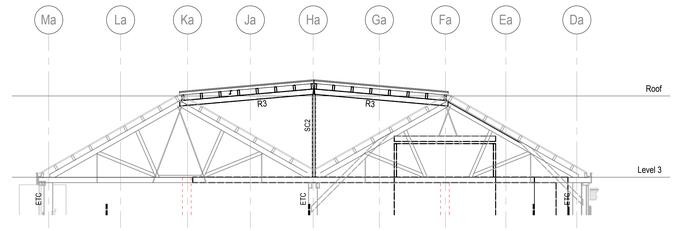
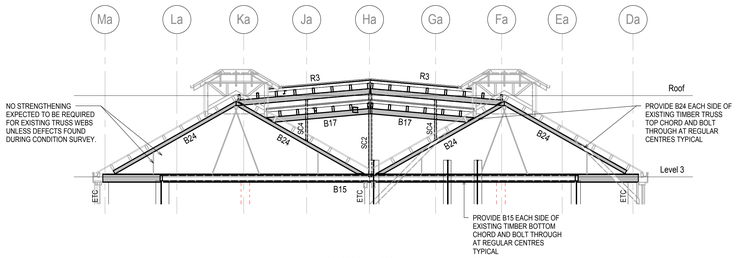


GRID 33a ELEVATION
GRID 9a & 11a SIMILAR
SCALE 1:100



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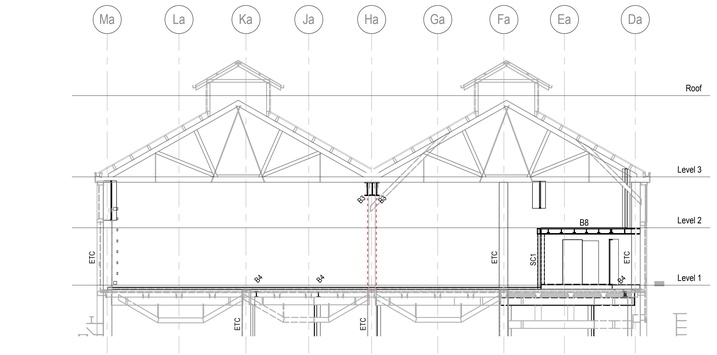

SECTION A
Scale 1 : 100
S205

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A0 0 1 2 3 4 5 6 7 8 9 10

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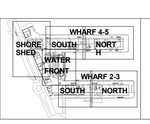

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DATE 16/01/2017

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DRAWING NO S250

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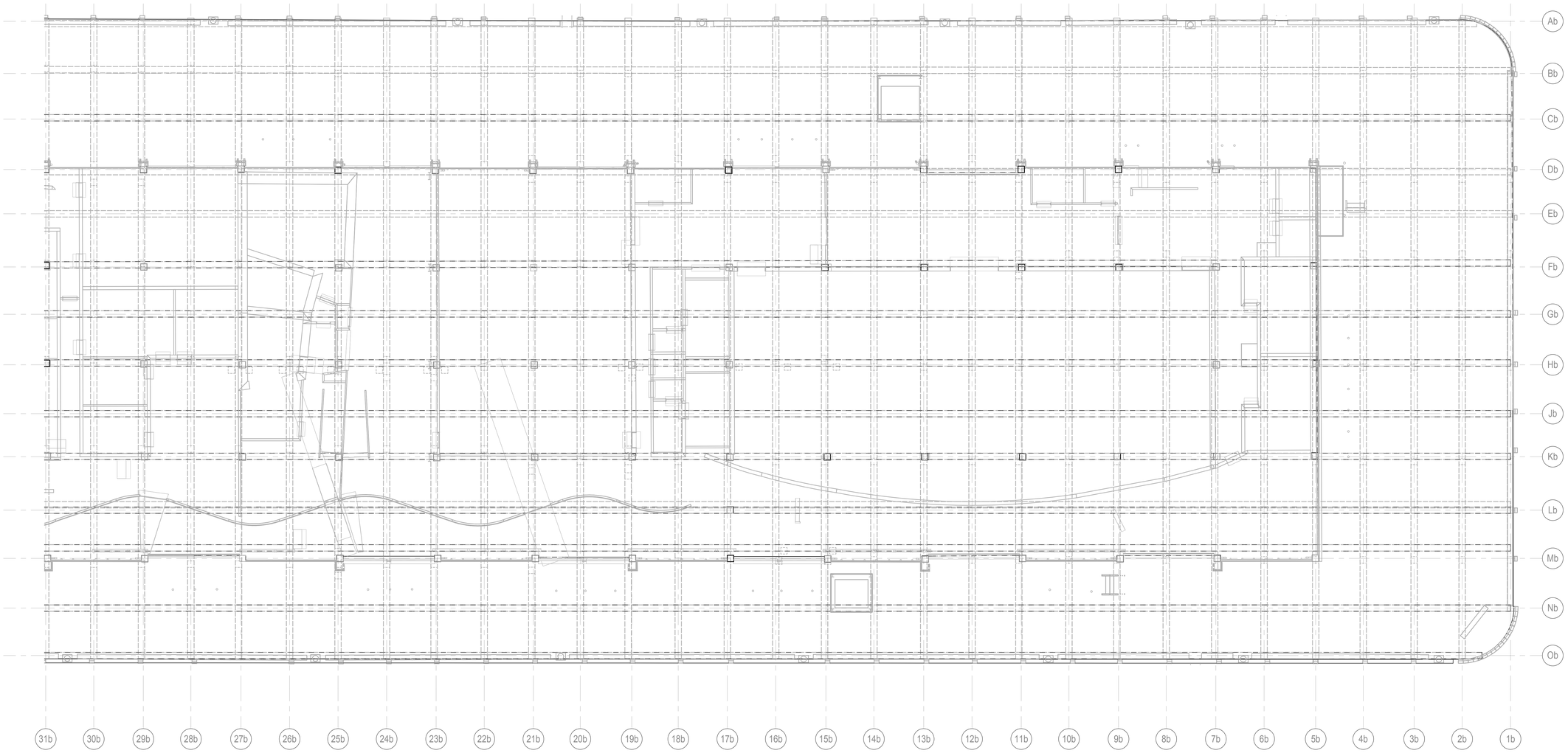

GROUND MARKING PLAN - NORTH

SCALE 1:100

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A0 0 1 2 3 4 5 6 7 8 9 10

Rev	Description	Eng	Draft	Date
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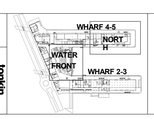

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DRAWING TITLE
WHARF 4_5 NORTH GROUND FLOOR PLAN

DRAWN BY

APPROVED D.C

SCALES 1 : 100 @A0

DATE 16/01/2017

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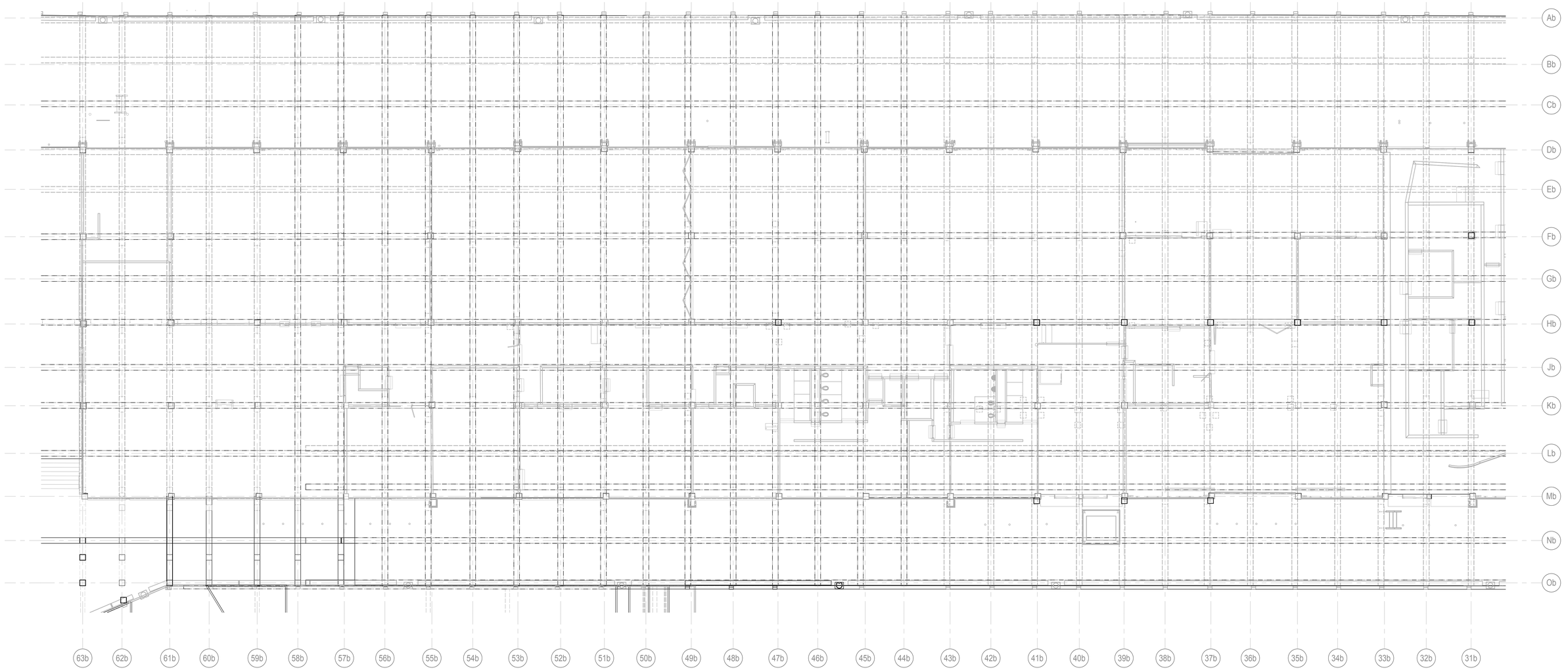

GROUND MARKING PLAN - SOUTH

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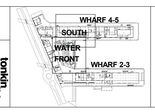

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DRAWING TITLE
WHARF 4_5 SOUTH GROUND FLOOR PLAN

DRAWN BY

APPROVED D.C

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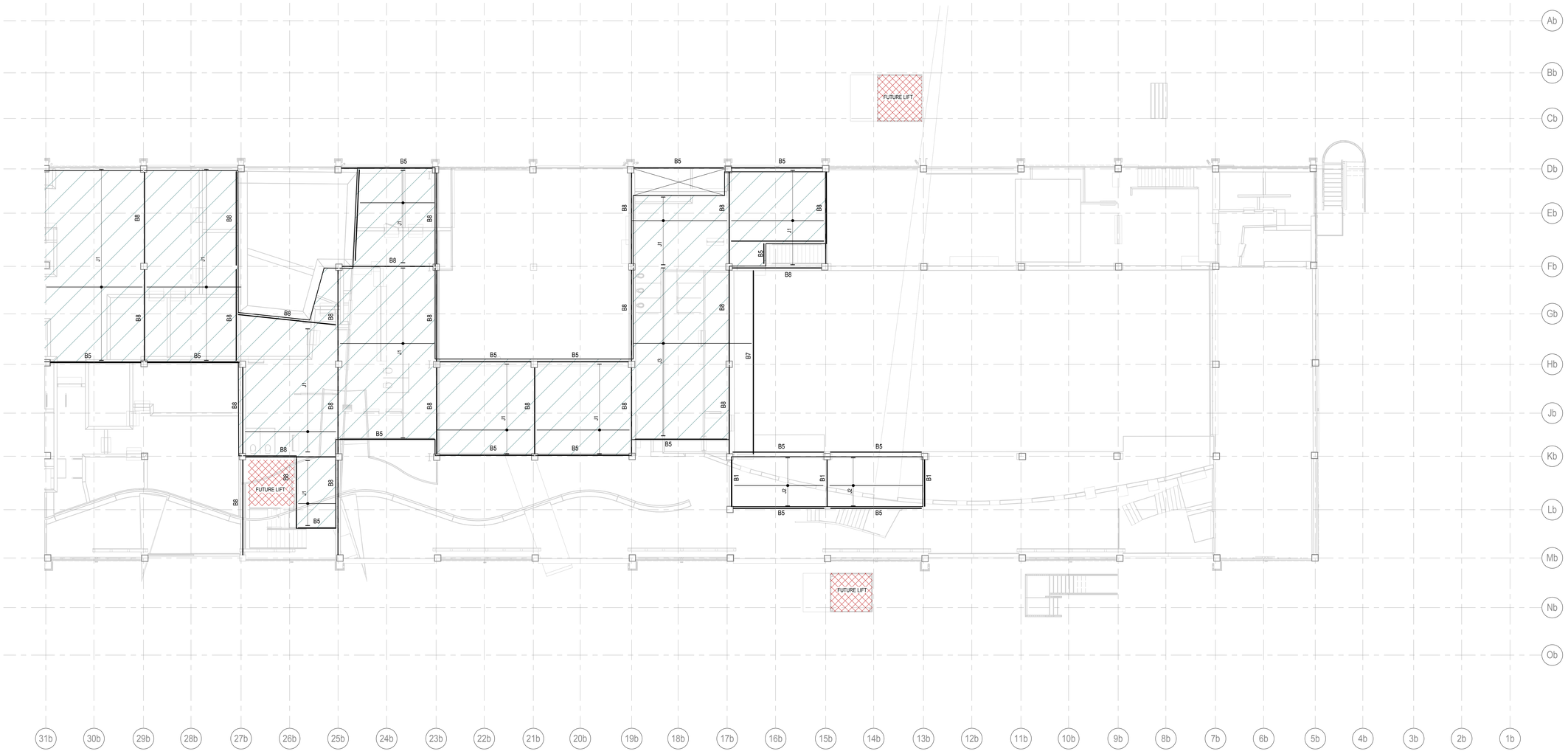

MEZZANINE MARKING PLAN - NORTH

SCALE 1:100

NOTES:

1. DENOTES ON PLAN 25mm PLYWOOD OR FC SHEETING. FLOOR FRAMING AND SHEETING TO BE FIRE RATED AT SOFFIT BY FIRE RATED BOARD, FIRE SPRAY, INTUMESCENT PAINT ETC TYPICAL.

STEEL COLUMN SCHEDULE		
TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101 2
SC	7	250UC72.9

STEEL MEMBER SCHEDULE		
MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x20 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
J2	200UB22.3	JOISTS AT 600 MAX CTS
J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

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PRELIMINARY

A0 0 1 2 3 4 5 6 7 8 9 10

Rev	Description		Eng	Draft	Date
P1	30% DOCUMENTATION	G.B	P.S.H		13.02.17

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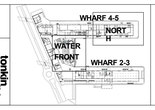

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TTW PROJECT No : 161280

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DRAWING TITLE
WHARF 4_5 NORTH
MEZZANINE MARKING PLAN

SCALES: As indicated @A0

PHASE: FOR APPROVAL

DRAWING No: S402

REV: P1

DRAWN BY:

APPROVED: D.C

DATE: 16/01/2017

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MEZZANINE MARKING PLAN - SOUTH

SCALE 1:100

NOTES:

1. DENOTES ON PLAN 25mm PLYWOOD OR FC SHEETING. FLOOR FRAMING AND SHEETING TO BE FIRE RATED AT SOFFIT BY FIRE RATED BOARD, FIRE SPRAY, INTUMESCENT PAINT ETC TYPICAL.

STEEL COLUMN SCHEDULE

TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
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SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101 2
SC	7	250UC72.9

STEEL MEMBER SCHEDULE

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B4	250UB31.4	BEAM
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B6	250PFC	BEAM
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B8	250UC72.9	BEAM
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B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
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J1	200UB18.2	JOISTS AT 600 MAX CTS
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J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

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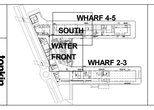

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WHARF 4_5 SOUTH
MEZZANINE MARKING PLAN

SCALES: As Indicated @A0

PHASE: FOR APPROVAL

DRAWING No: S403

REV: P1

DRAWN BY:

APPROVED: D.C

DATE: 16/01/2017

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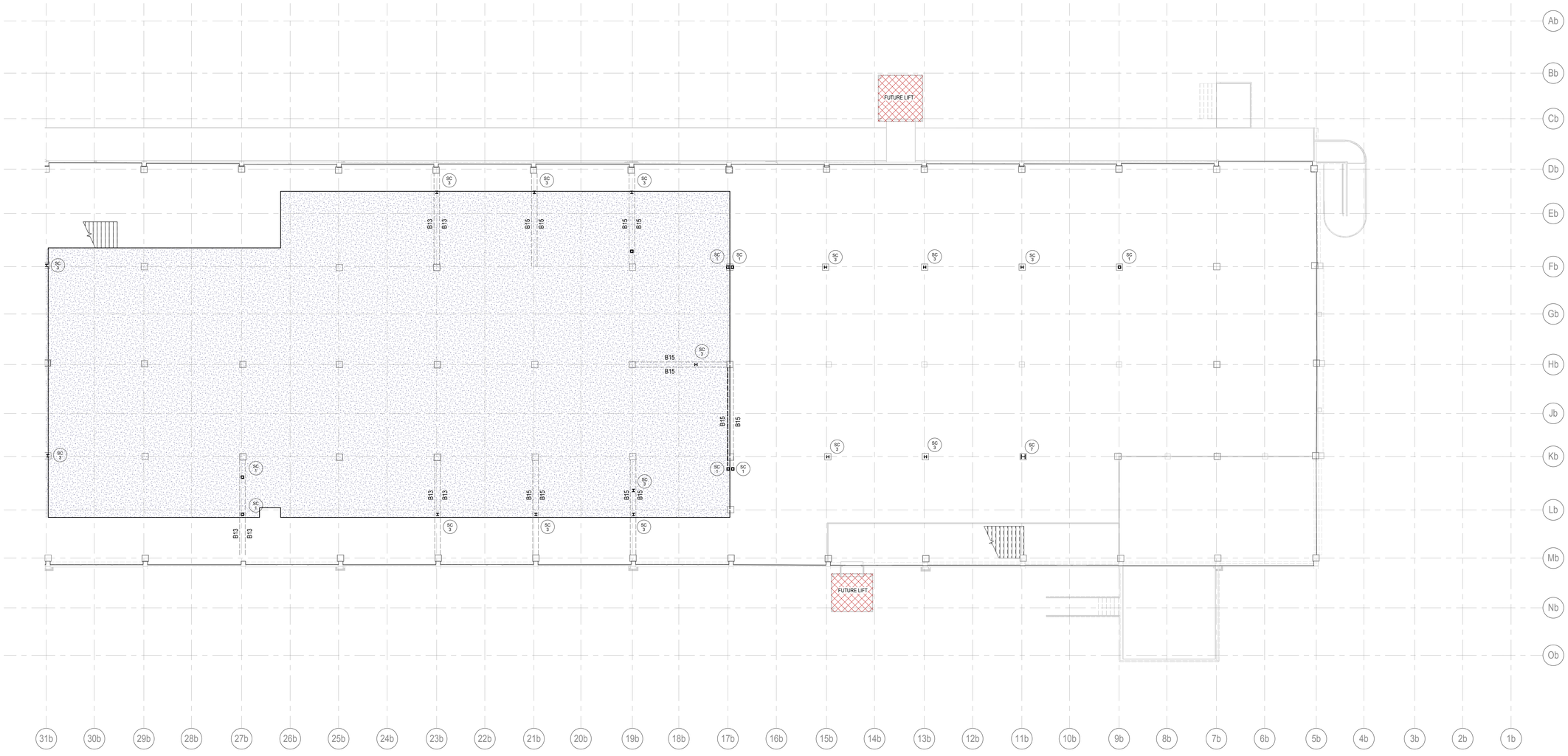
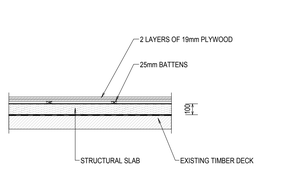
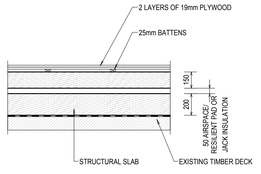
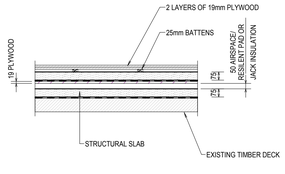




ACOUSTIC FLOOR TYPE 1
SCALE 1:20



ACOUSTIC FLOOR TYPE 2
SCALE 1:20



ACOUSTIC FLOOR TYPE 3
SCALE 1:20

SLABS TO BE LIGHT WEIGHT WITH MAXIMUM DENSITY OF 130 kg/m3.
SL82 MESH THROUGHOUT, SAWN JOINTS AT 3m x 3m CENTRES.
CAST ON DOUBLE LAYER OF 0.2mm THICK CONCRETE UNDERLAY.

LEVEL 1 MARKING PLAN - NORTH

SCALE 1:100

NOTES:

1. DENOTES ON PLAN 25mm PLYWOOD OR FC SHEETING.
   FLOOR FRAMING AND SHEETING TO BE FIRE RATED AT SOFFIT BY FIRE RATED BOARD, FIRE SPRAY, INTUMESCENT PAINT ETC TYPICAL.
2. DENOTES ON PLAN TYPE 1 ACOUSTIC FLOOR AS PER THE ATTACHED TYPICAL DETAILS.
   THEATRE AUDITORIUM FLOOR LOADING = 5kPa (TO BE CONFIRMED).
   REHEARSAL FLOOR LOADING = 5kPa (TO BE CONFIRMED).
3. DENOTES ON PLAN TYPE 2 ACOUSTIC FLOOR AS PER THE ATTACHED TYPICAL DETAILS.
   THEATRE FLOOR LOADING = ___kPa (TO BE CONFIRMED.
   REHEARSAL FLOOR LOADING = 9kPa (TO BE CONFIRMED).
4. DENOTES ON PLAN TYPE 3 ACCOUSTIC FLOOR AS PER ATTACHED TYPICAL DETAILS.
   THEATRE FLOOR LOADING = 7.5kPa.

NOTE: EXISTING STEEL BEARER HAUNCHES UNDER LEVEL 1 THROUGHOUT WILL REQUIRE FIRE-RATING. INTUMESCENT PAINT IS SUGGESTED

STEEL COLUMN SCHEDULE		
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H	1	100x100x5.0 SHS
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P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
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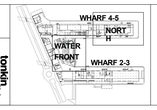

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DRAWING TITLE
WHARF 4_5 NORTH LEVEL 1 MARKING PLAN

DRAWN BY

APPROVED D.C

SCALES: As indicated @A0

DATE: 16/01/2017

PHASE: FOR APPROVAL

DRAWING No: S404

REV: P1

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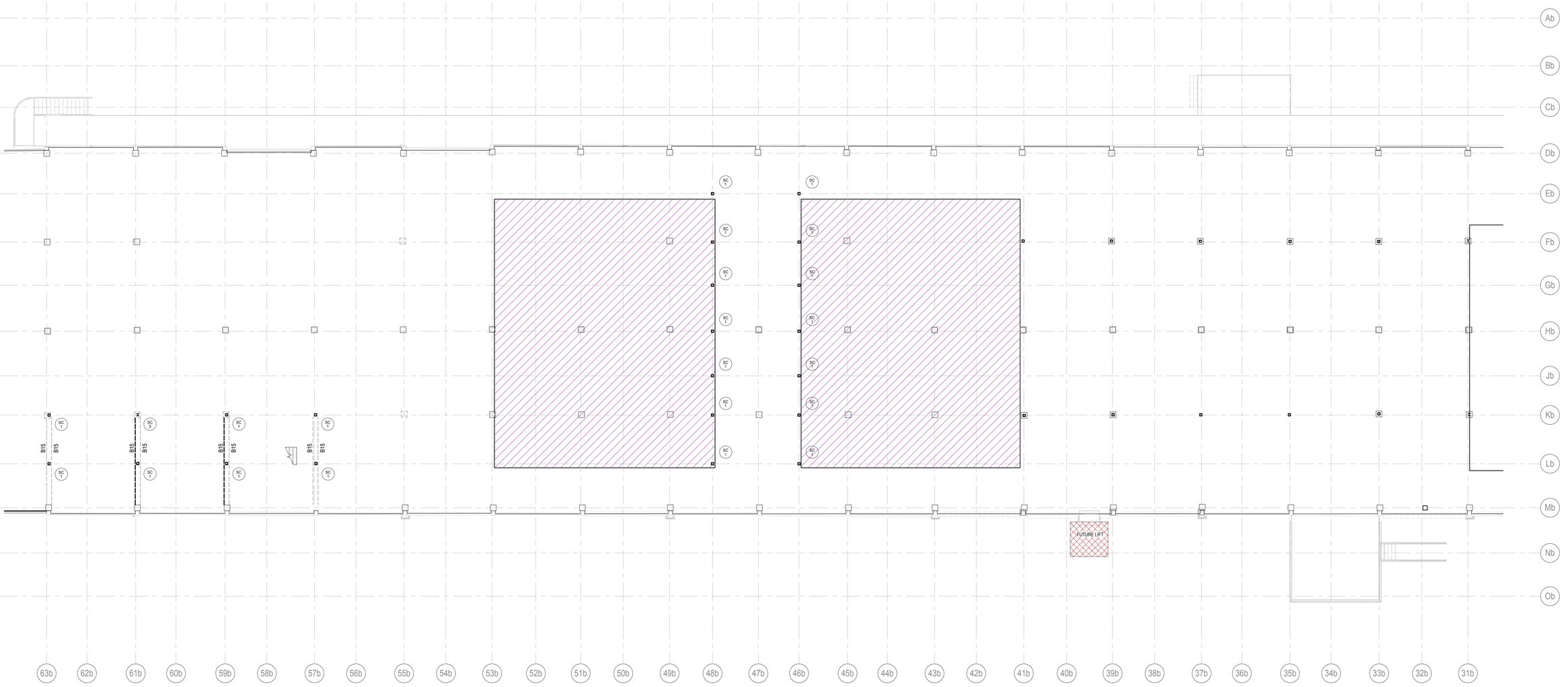
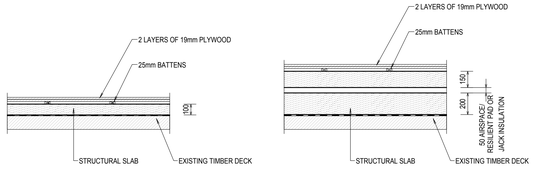
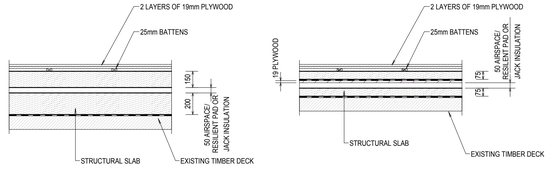




ACOUSTIC FLOOR TYPE 1
SCALE 1:20



ACOUSTIC FLOOR TYPE 2
SCALE 1:20

ACOUSTIC FLOOR TYPE 3
SCALE 1:20

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CAST ON DOUBLE LAYER OF 0.2mm THICK CONCRETE UNDERLAY.

LEVEL 1 MARKING PLAN - SOUTH
SCALE 1:100

NOTES:

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3. DENOTES ON PLAN TYPE 2 ACOUSTIC FLOOR AS PER THE ATTACHED TYPICAL DETAILS.
   THEATRE FLOOR LOADING = ___kPa (TO BE CONFIRMED.
   REHEARSAL FLOOR LOADING = 5kPa (TO BE CONFIRMED).
4. DENOTES ON PLAN TYPE 3 ACCOUSTIC FLOOR AS PER ATTACHED TYPICAL DETAILS.
   THEATRE FLOOR LOADING = 7.5kPa.

NOTE: EXISTING STEEL BEARER HAUNCHES UNDER LEVEL 1 THROUGHOUT WILL REQUIRE FIRE-RATING. INTUMESCENT PAINT IS SUGGESTED

STEEL COLUMN SCHEDULE		
TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101 2
SC	7	250UC72.9

STEEL MEMBER SCHEDULE		
MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x20 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
J2	200UB22.3	JOISTS AT 600 MAX CTS
J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	2150/19	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

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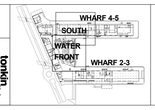

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DRAWING TITLE
WHARF 4_5 SOUTH LEVEL 1 MARKING PLAN

DRAWN BY

APPROVED D.C

SCALES As Indicated @A0

DATE 16/01/2017

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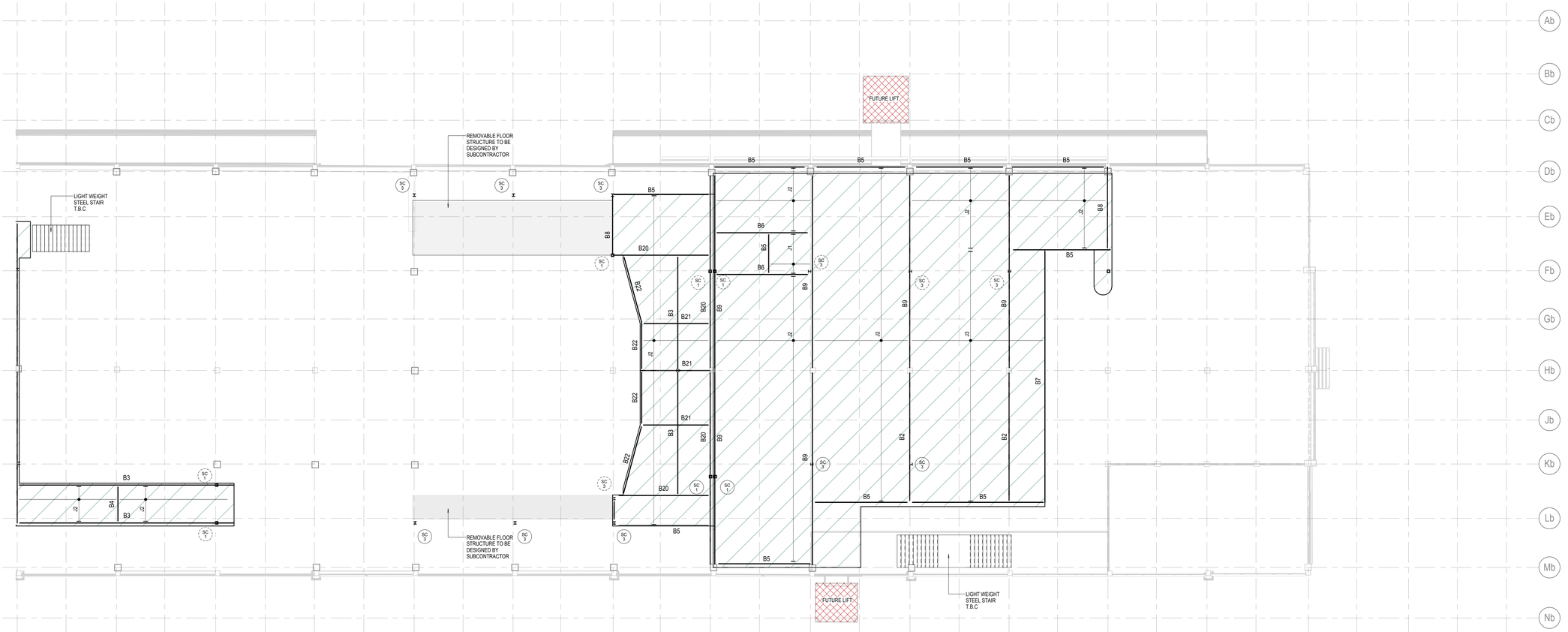

LEVEL 1 MARKING PLAN - NORTH

SCALE 1:100

NOTES:

1. DENOTES ON PLAN 25mm PLYWOOD OR FC SHEETING. FLOOR FRAMING AND SHEETING TO BE FIRE RATED AT SOFFIT BY FIRE RATED BOARD, FIRE SPRAY, INTUMESCENT PAINT ETC TYPICAL.

STEEL COLUMN SCHEDULE		
TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101 2
SC	7	250UC72.9

STEEL MEMBER SCHEDULE		
MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x20 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
J2	200UB22.3	JOISTS AT 600 MAX CTS
J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

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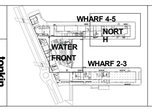

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DRAWN BY	
APPROVED	D.C
SCALES	As Indicated @A0
DATE	16/01/2017
PHASE	FOR APPROVAL
DRAWING No	S406
REV	P1

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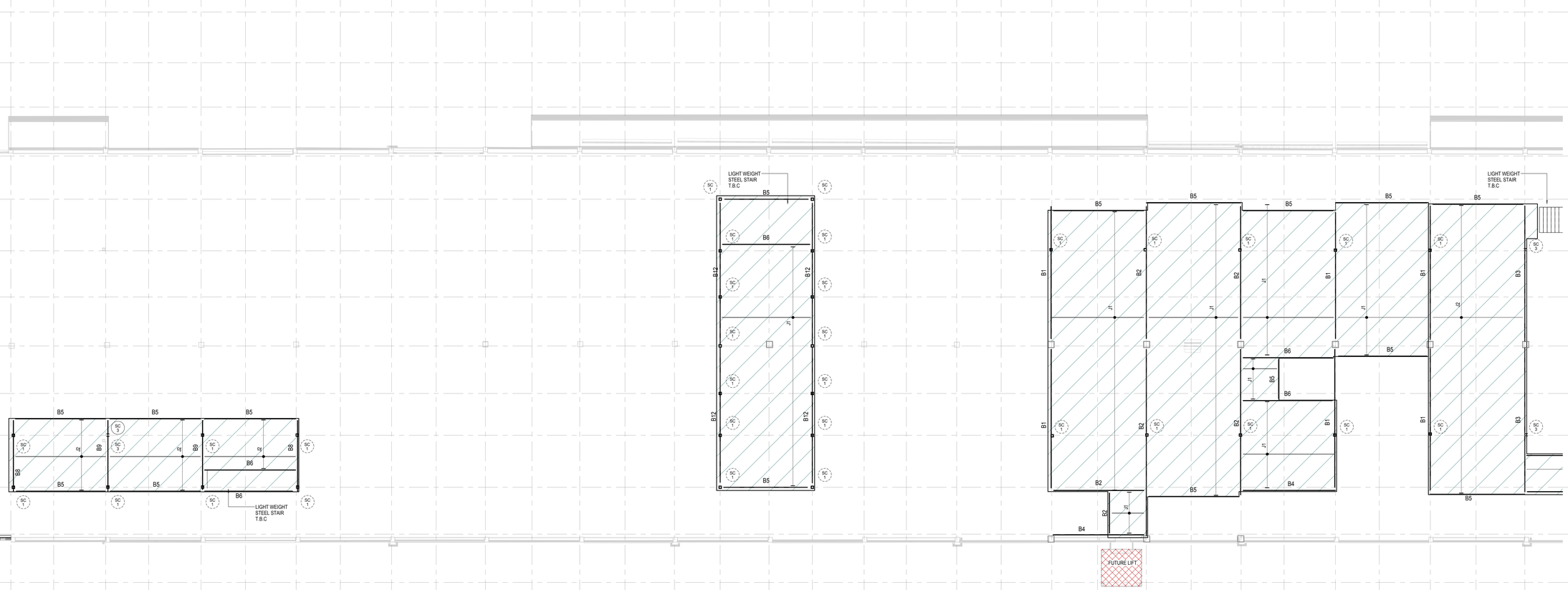

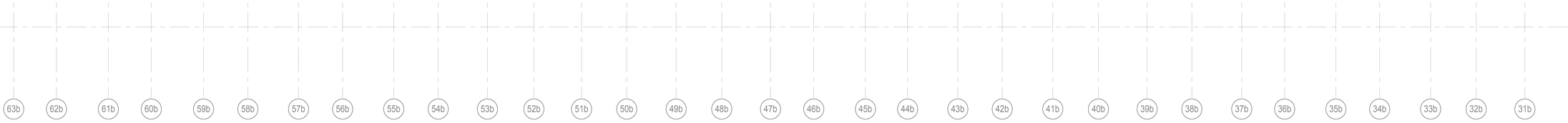

LEVEL 2 MARKING PLAN - SOUTH

SCALE 1:100

NOTES:

1. DENOTES ON PLAN 25mm PLYWOOD OR FC SHEETING.
   FLOOR FRAMING AND SHEETING TO BE FIRE RATED AT SOFFIT BY FIRE RATED BOARD, FIRE SPRAY, INTUMESCENT PAINT ETC TYPICAL.

STEEL COLUMN SCHEDULE

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SC	4	100x100x5.0 SHS
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SC	6	TAPERED FROM 610UB101.2
SC	7	250UC72.9

STEEL MEMBER SCHEDULE

MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	360PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x20 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
J2	200UB22.3	JOISTS AT 600 MAX CTS
J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

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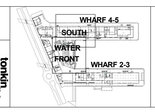

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DRAWN BY

APPROVED D.C

SCALES As indicated @A0

DATE 16/01/2017

PHASE FOR APPROVAL

DRAWING NO S407

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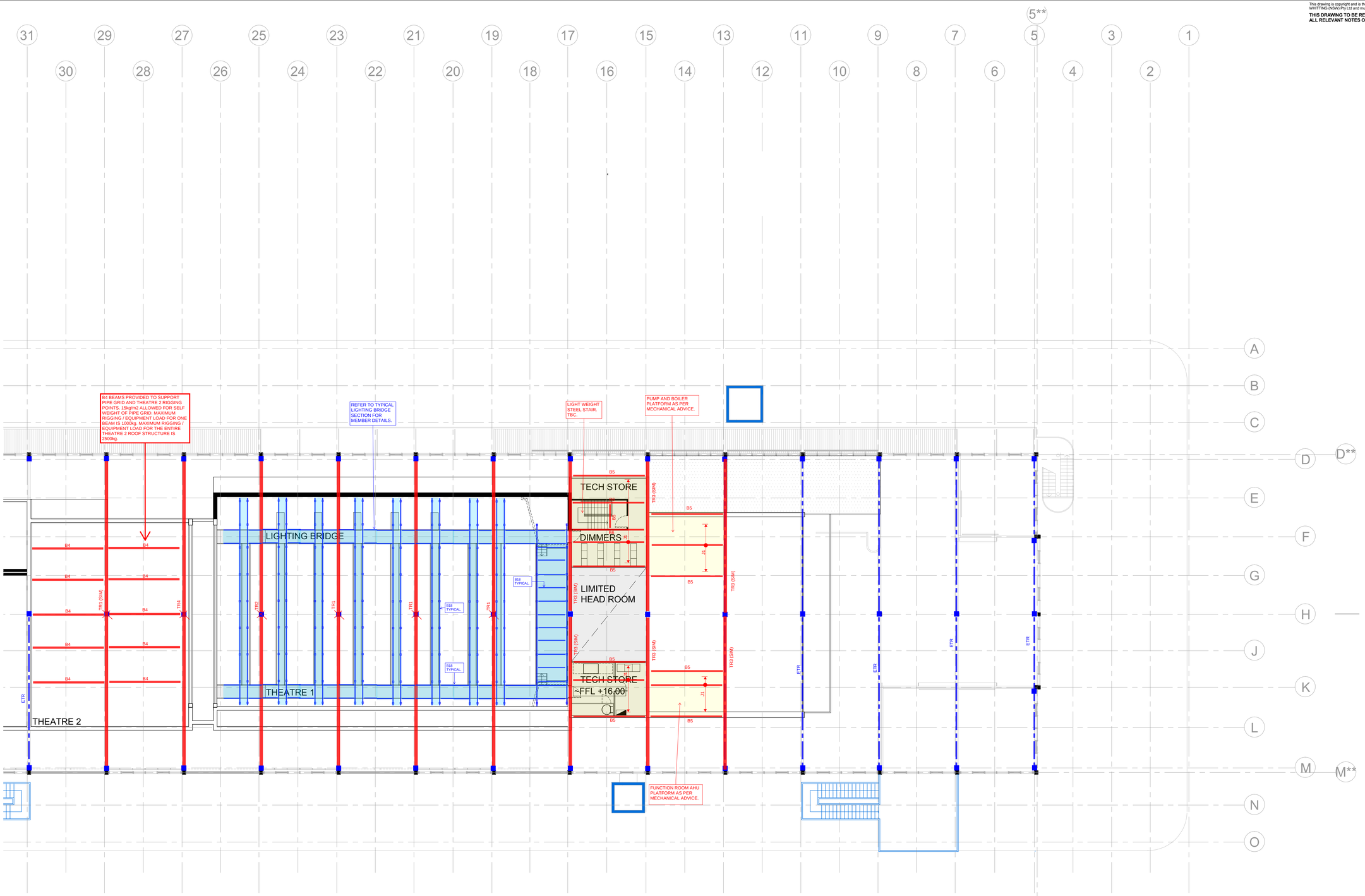

LEVEL 3 MARKING PLAN - NORTH

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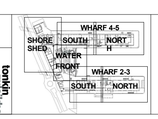

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APPROVED D.C

DATE 16/01/2017

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66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31

EB
SC2
SC1 OVER
ETR
EX. STEEL TRANSFER TRUSS
B3
PLANT
THE
TRS
DOTTED HATCH DENOTES ROOF TO EXISTING ENCLOSURE BELOW

MAXIMUM RIGGING LOAD IN EACH REHEARSAL SPACE IS AS FOLLOWS:

- 250kg SWL MAXIMUM PER RIGGING POINT.
- 750kg SWL MAXIMUM ALONG ANY TRUSS.
- 1500kg SWL MAXIMUM TOTAL WITHIN THE REHEARSAL SPACE.

MAXIMUM RIGGING LOAD IN EACH REHEARSAL SPACE IS AS FOLLOWS:

- 250kg SWL MAXIMUM PER RIGGING POINT.
- 750kg SWL MAXIMUM ALONG ANY TRUSS.
- 1500kg SWL MAXIMUM TOTAL WITHIN THE REHEARSAL SPACE.

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LEVEL 3 MARKING PLAN - SOUTH

NOT TO SCALE

A0 0 1 2 3 4 5 6 7 8 9 10

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WHARF 4-5 SHORE SHED SOUTH NORTH WATER FRONT WHARF 2-3 SOUTH NORTH

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WALSH BAY ARTS PRECINCT

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DRAWING TITLE WHARF 4_5 SOUTH LEVEL 3 MARKING PLAN			**DRAWN BY**
			APPROVED D.C
SCALES 1 : 100 @A0			**DATE** 16/01/2017
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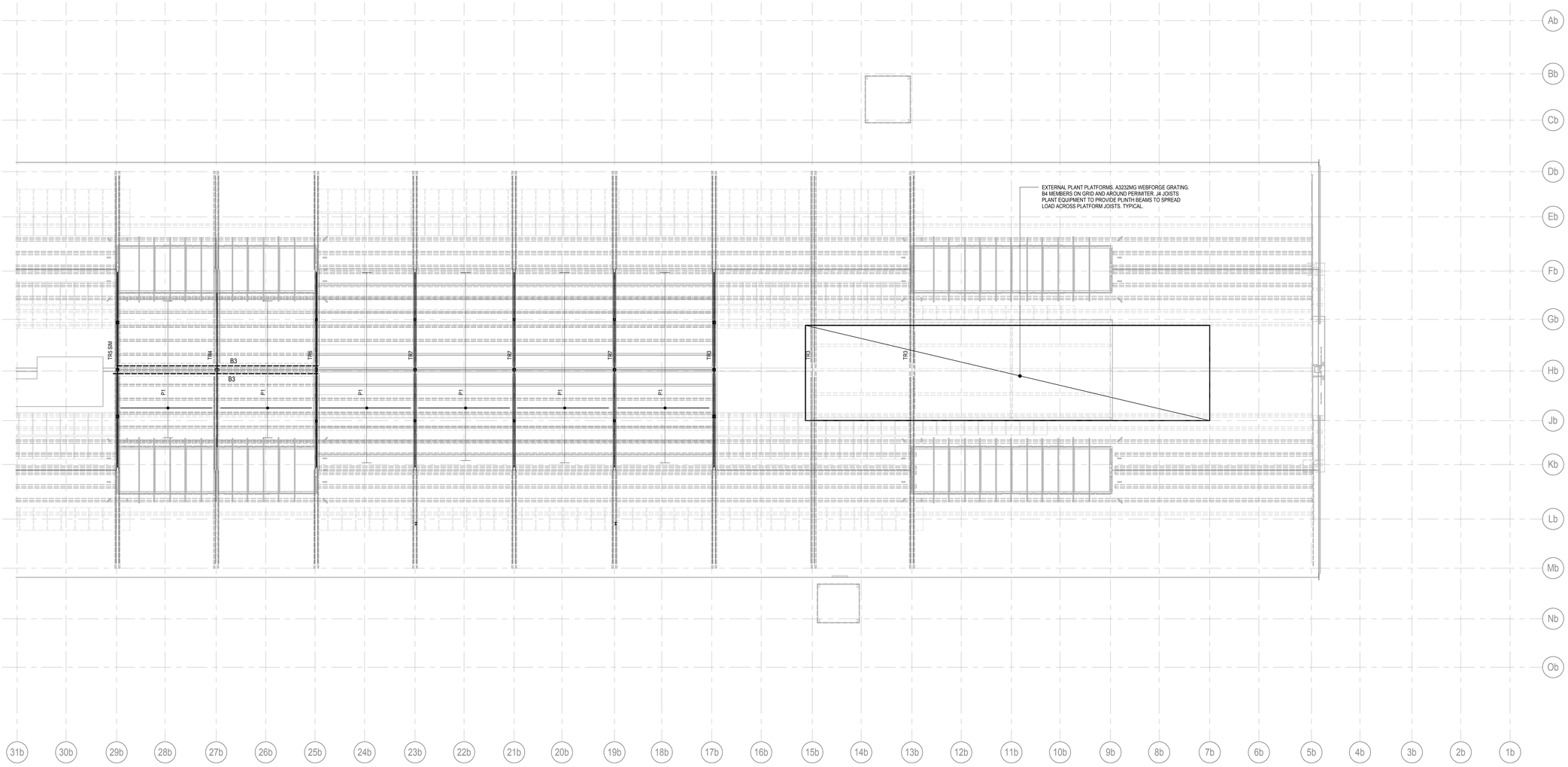

ROOF MARKING PLAN - NORTH

SCALE 1:100

STEEL COLUMN SCHEDULE		
TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101 2
SC	7	250UC72.9

STEEL MEMBER SCHEDULE		
MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x20 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
J2	200UB22.3	JOISTS AT 600 MAX CTS
J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

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DRAWING TITLE
WHARF 4_5 NORTH ROOF MARKING PLAN

DRAWN BY

APPROVED D.C

SCALES 1 : 100 @A0

DATE 16/01/2017

PHASE FOR APPROVAL

DRAWING NO S410

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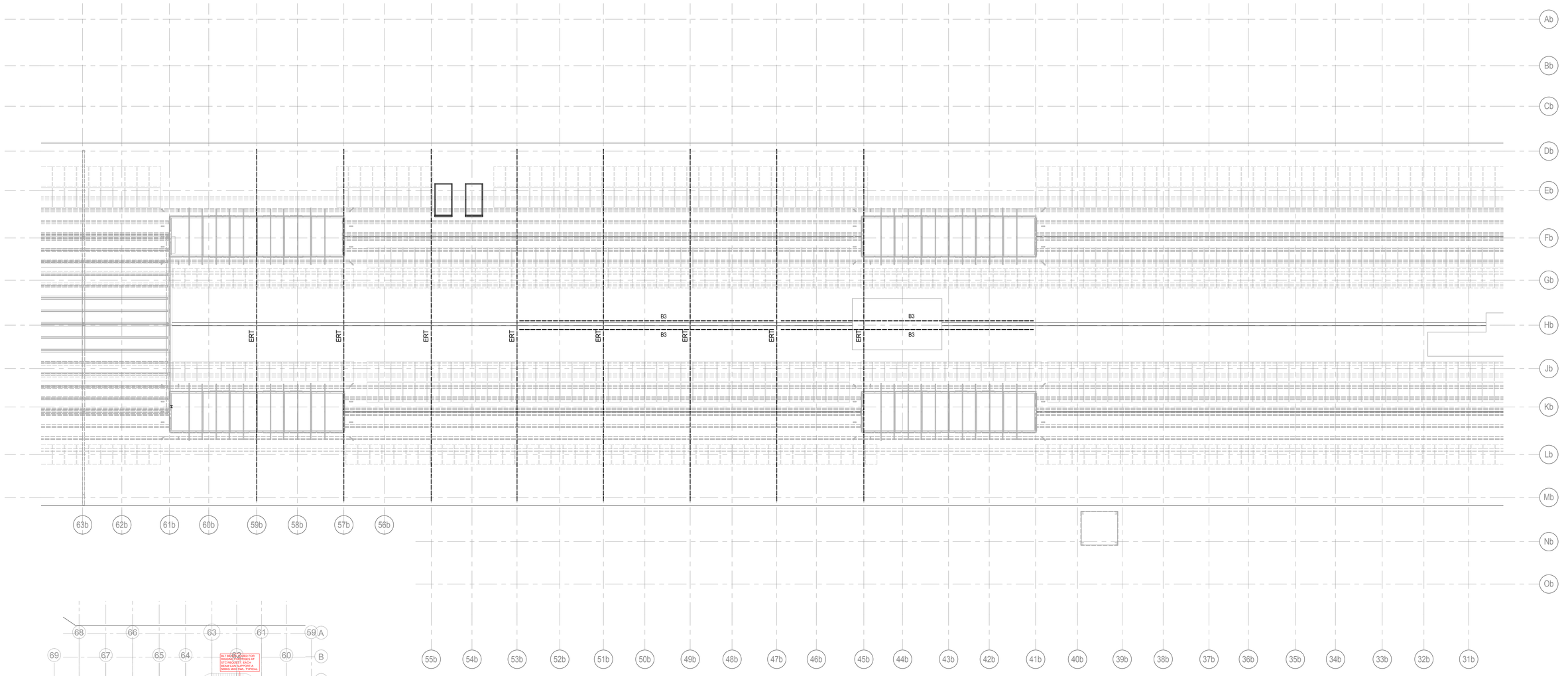

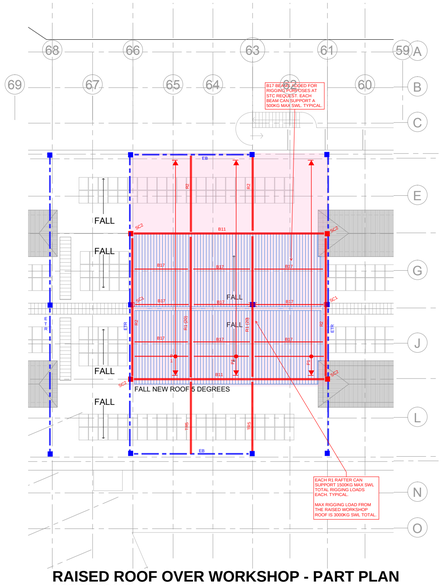

RAISED ROOF OVER WORKSHOP - PART PLAN
NOT TO SCALE

ROOF MARKING PLAN - SOUTH
SCALE 1:100

STEEL COLUMN SCHEDULE		
TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	1	250UC72.9
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101 2
SC	7	250UC72.9

STEEL MEMBER SCHEDULE		
MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x10 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
J2	200UB22.3	JOISTS AT 600 MAX CTS
J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z150/19	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

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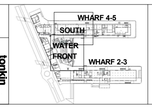

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DRAWING TITLE
WHARF 4_5 SOUTH ROOF MARKING PLAN

DRAWN BY

APPROVED D.C

SCALES 1 : 100 @A0

DATE 16/01/2017

PHASE FOR APPROVAL

DRAWING NO S411

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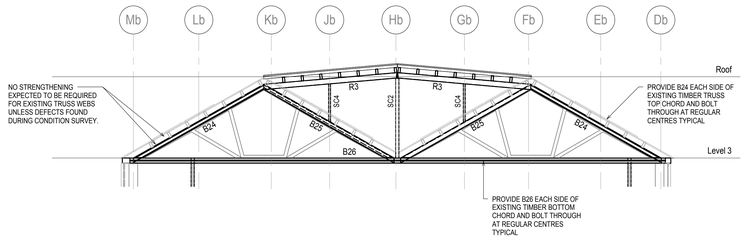

TRUSS TR7 ELEVATION

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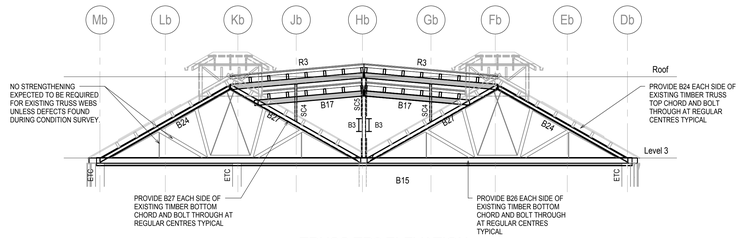
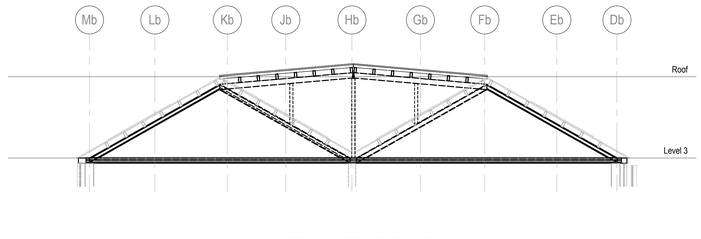


TRUSS TR6 ELEVATION

SCALE 1:100



TRUSS TR3 ELEVATION

SCALE 1:100

TRUSS TR4 ELEVATION

SCALE 1:100

TRUSS TR8 ELEVATION

SCALE 1:100

STEEL MEMBER SCHEDULE		
MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x20 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
J2	200UB22.3	JOISTS AT 600 MAX CTS
J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

STEEL COLUMN SCHEDULE		
TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101 2
SC	7	250UC72.9

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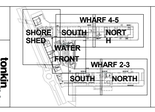

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PROJECT :
WALSH BAY ARTS PRECINCT

TTW PROJECT No : 161280

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DRAWING TITLE
WHARF 4_5 ROOF TRUSS ELEVATIONS

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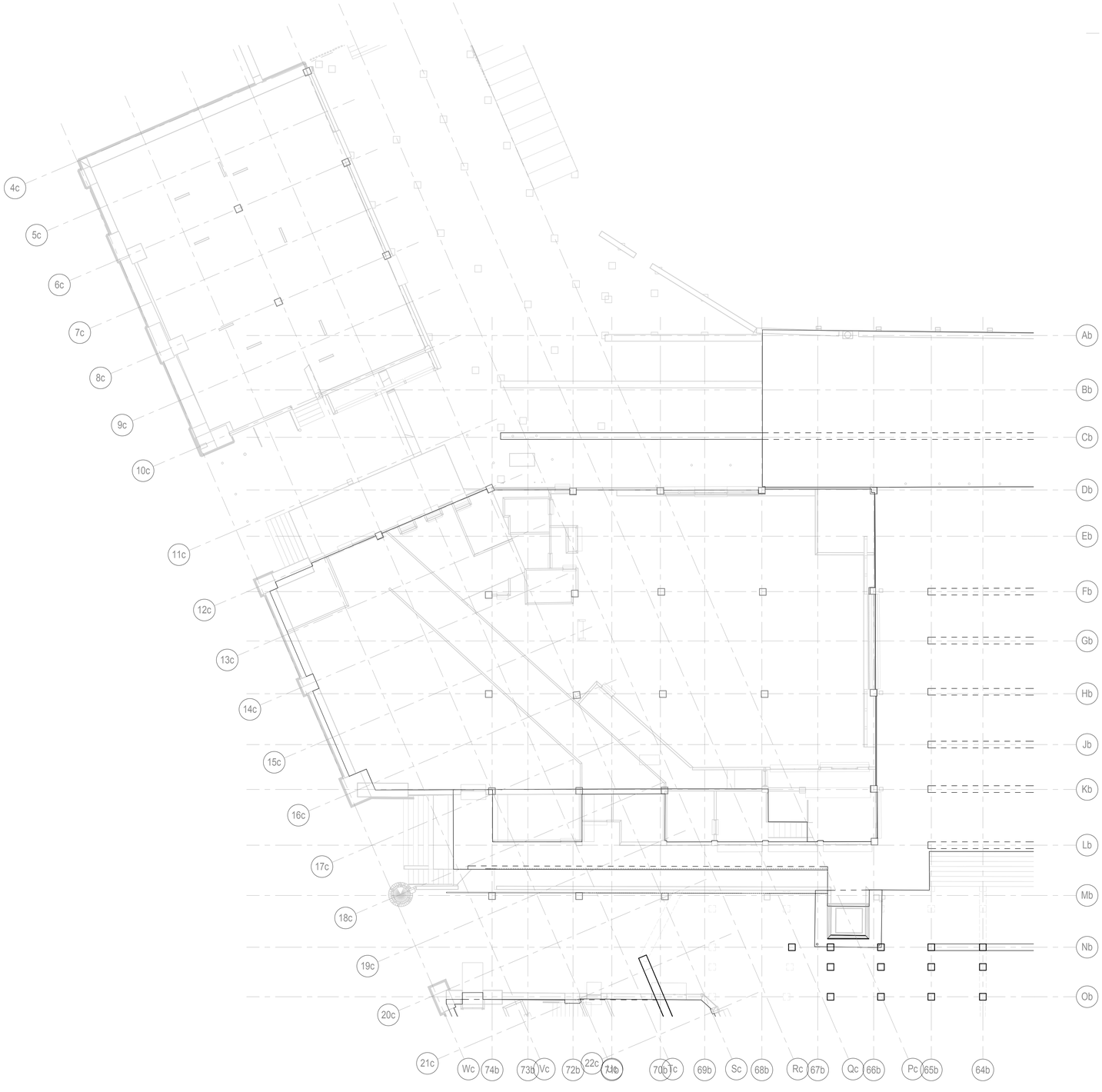
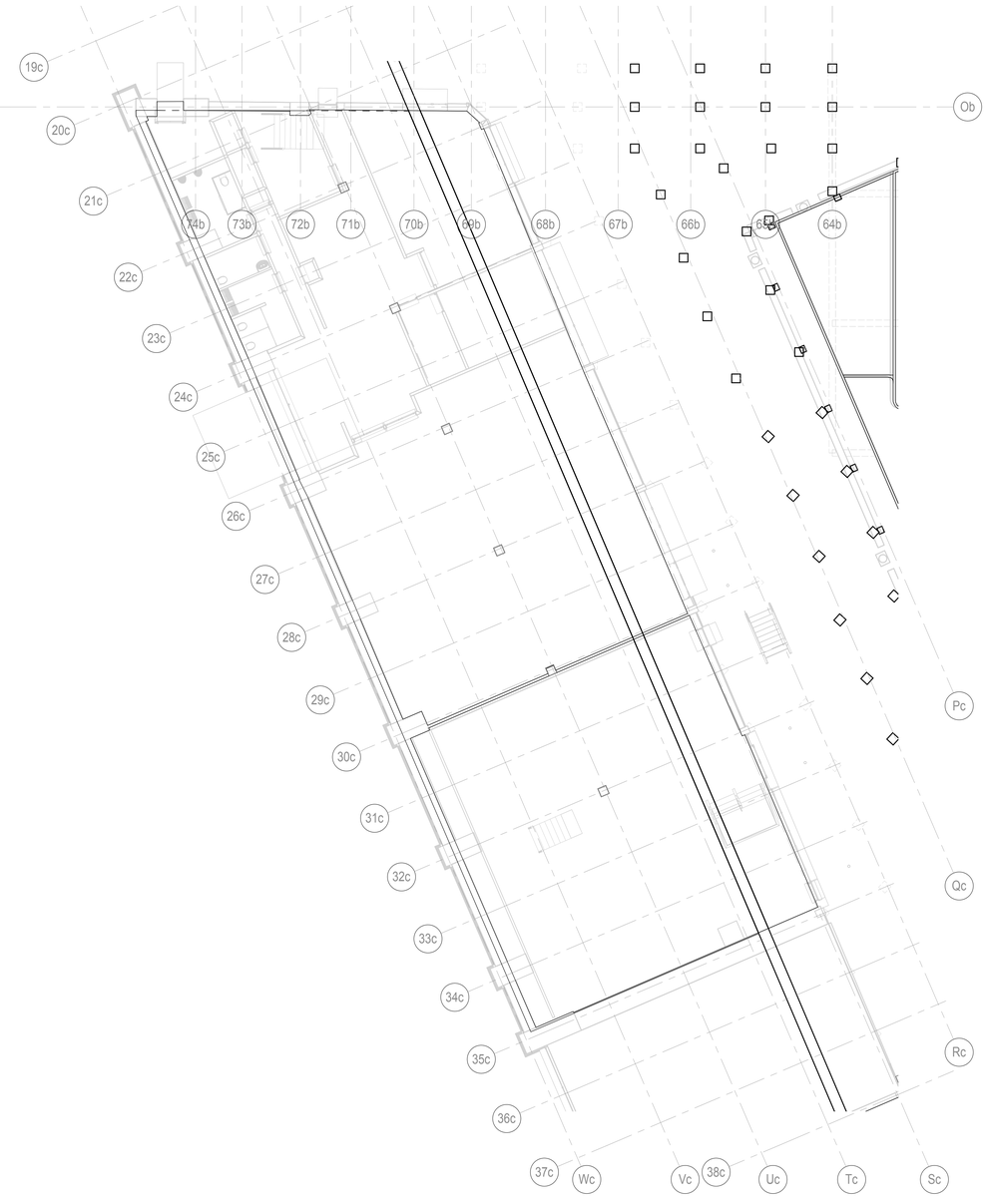


GROUND MARKING PLAN - SHORESHED WEST

SCALE 1:100



GROUND MARKING PLAN - SHORESHED EAST

SCALE 1:100

STEEL MEMBER SCHEDULE		
MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x20 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
J2	200UB22.3	JOISTS AT 600 MAX CTS
J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

STEEL COLUMN SCHEDULE		
TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101.2
SC	7	250UC72.9

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Rev	Description	Eng	Draft	Date
P1	30% DOCUMENTATION	G.B	P.S.H	13.02.17

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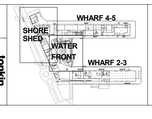

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DRAWING TITLE
SHORESHED GROUND FLOOR PLAN

DRAWN BY

APPROVED D.C

SCALES 1 : 100 @A0

DATE 16/01/2017

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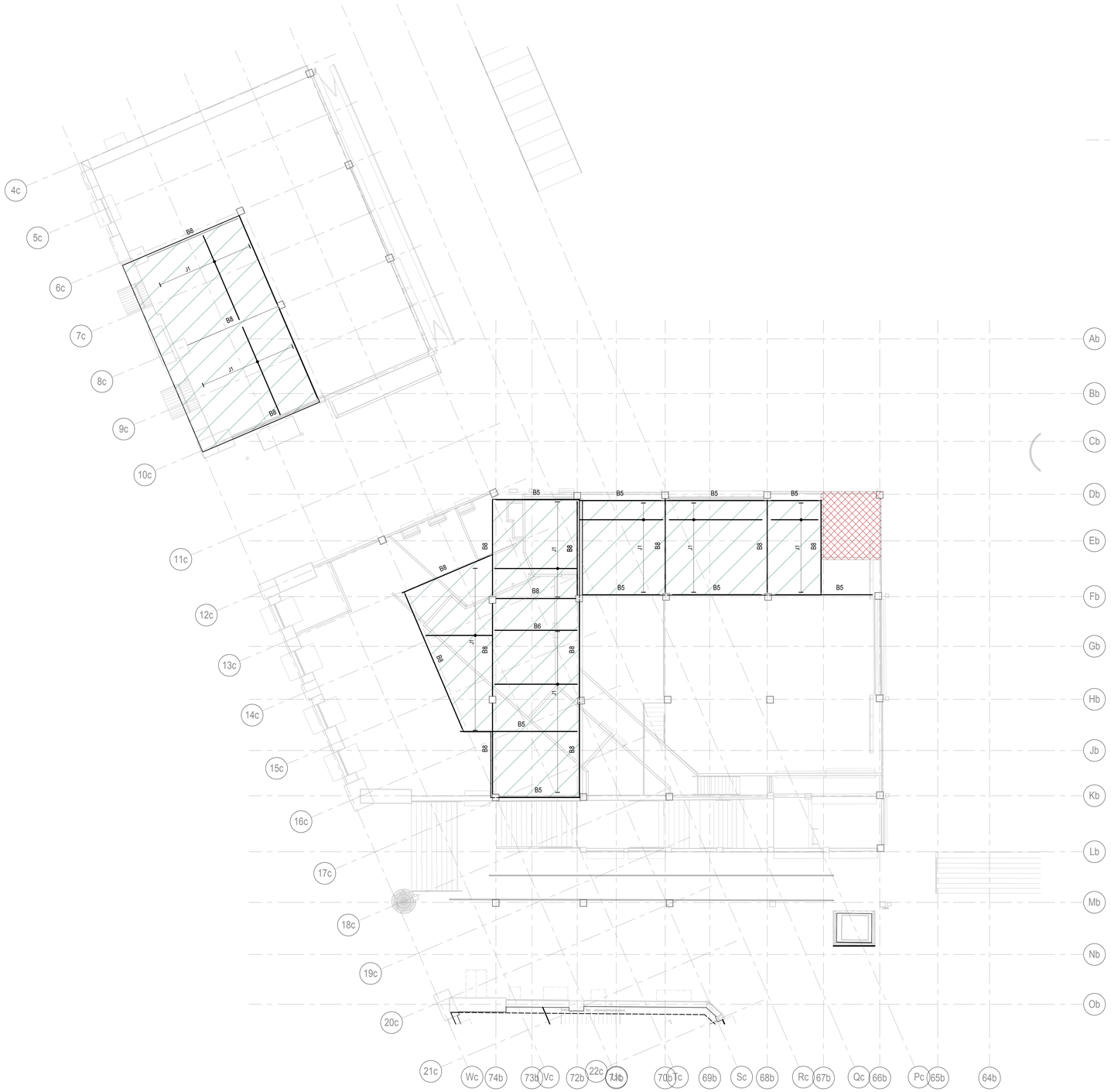
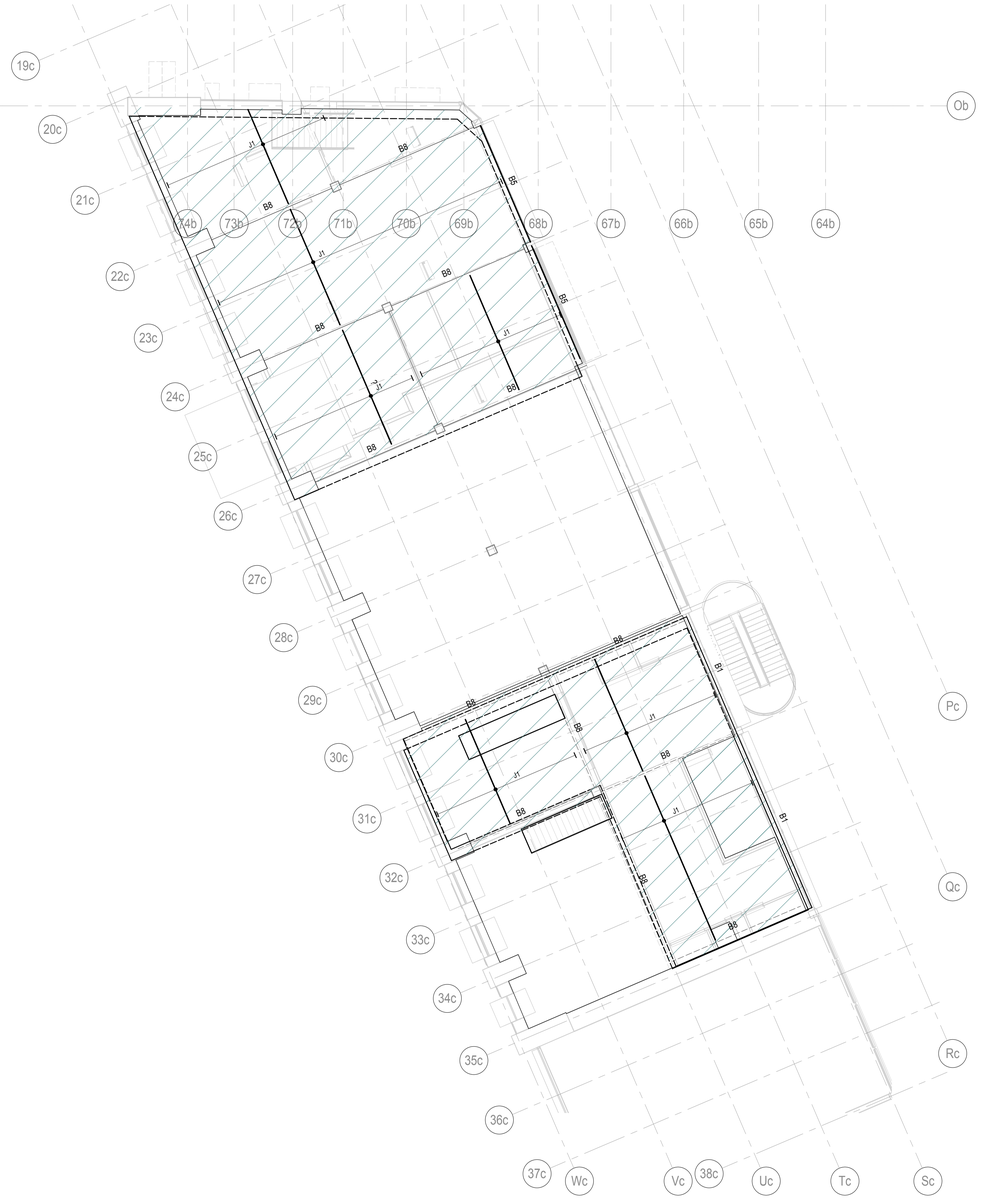


MEZZANINE MARKING PLAN - SHORESHED WEST

SCALE 1:100

NOTES:

1. DENOTES ON PLAN 25mm PLYWOOD OR FC SHEETING. FLOOR FRAMING AND SHEETING TO BE FIRE RATED AT SOFFIT BY FIRE RATED BOARD, FIRE SPRAY, INTUMESCENT PAINT ETC TYPICAL.



MEZZANINE MARKING PLAN - SHORESHED EAST

SCALE 1:100

STEEL MEMBER SCHEDULE		
MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x20 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
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J3	200UB25.4	JOISTS AT 600 MAX CTS
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P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

STEEL COLUMN SCHEDULE		
TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101 2
SC	7	250UC72.9

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Rev	Description	Eng	Draft	Date
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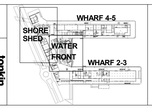

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DRAWING TITLE
SHORESHED MEZZANINE MARKING PLAN

DRAWN BY

APPROVED D.C

SCALES As indicated @A0

DATE 16/01/2017

PHASE FOR APPROVAL

DRAWING No S502

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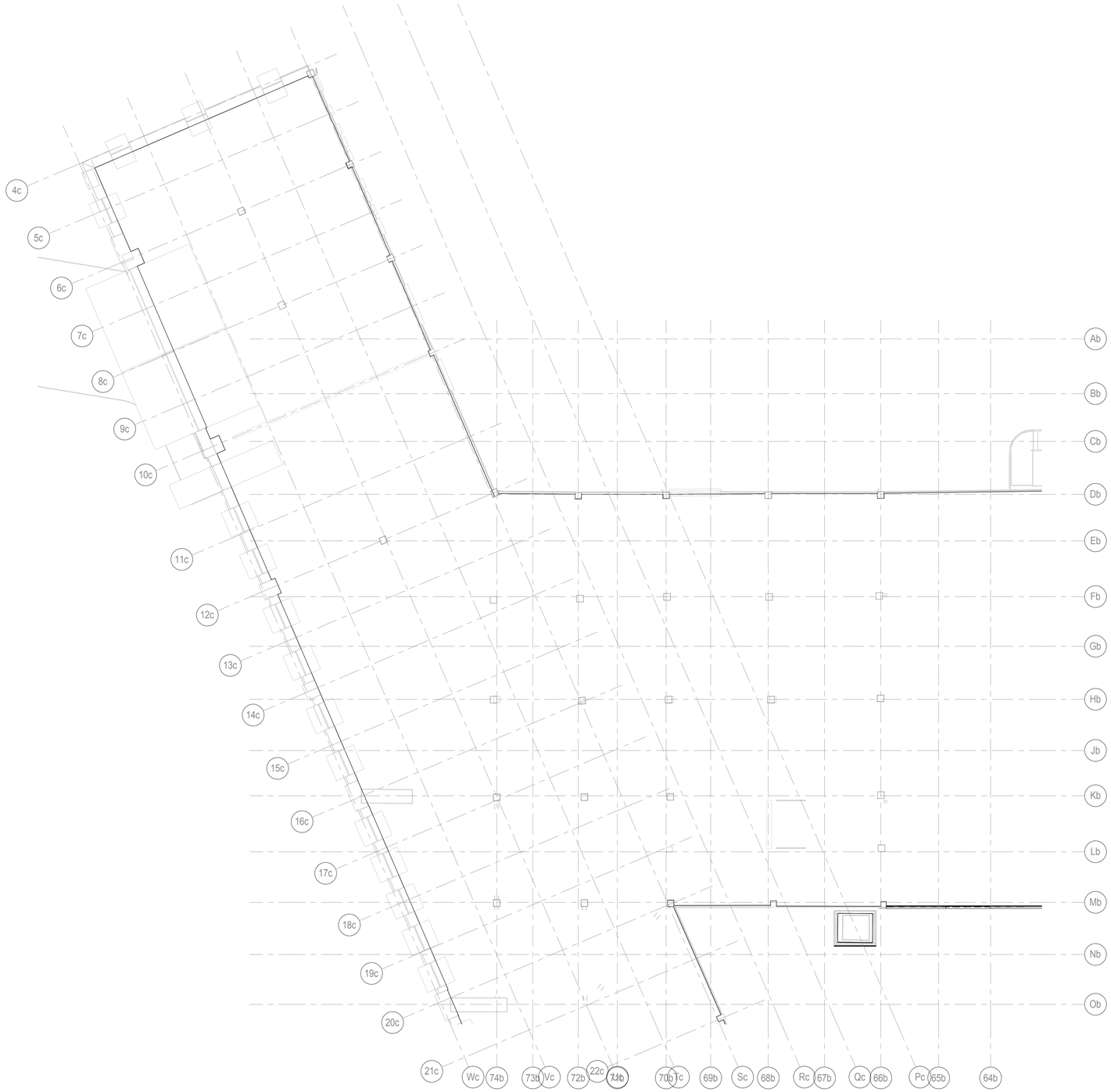
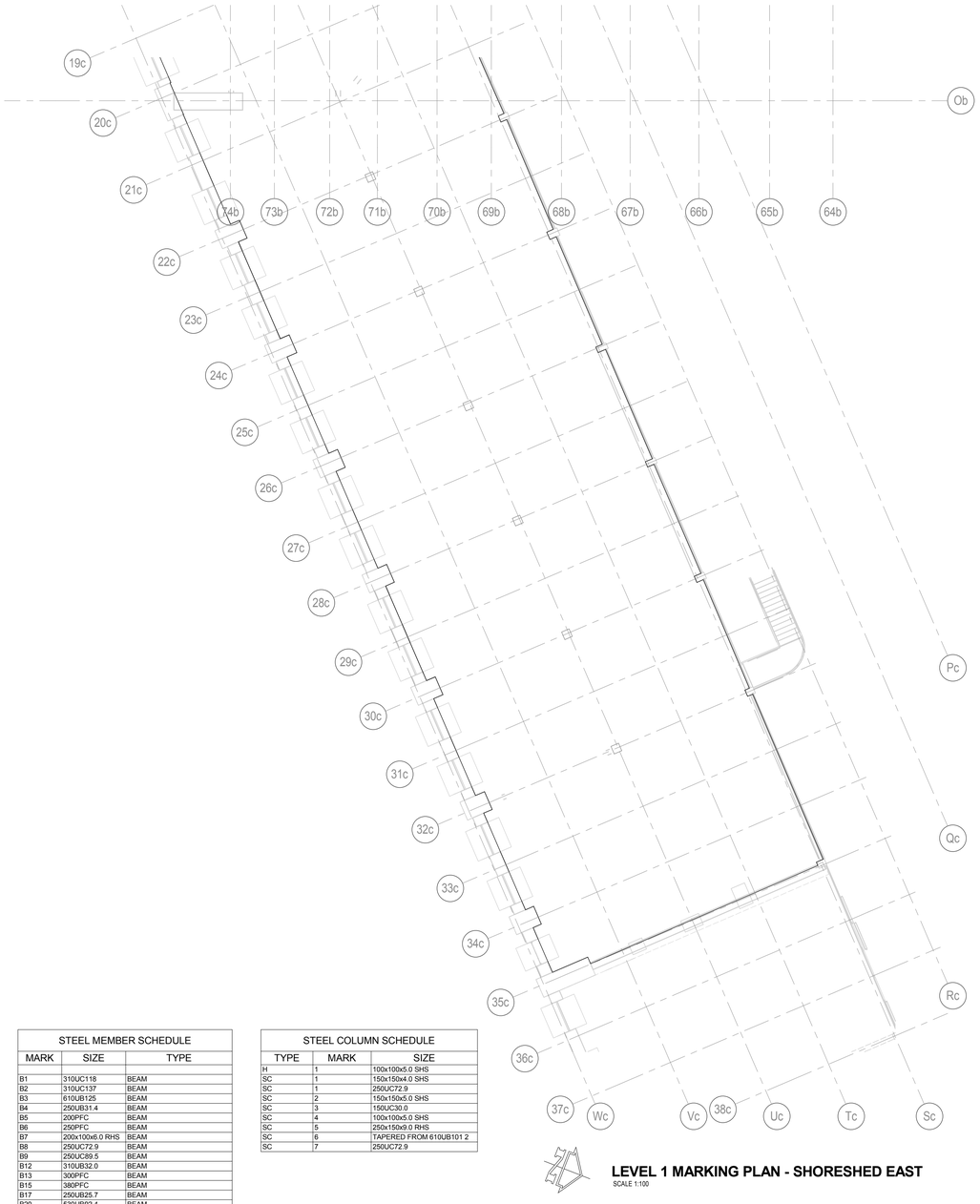


LEVEL 1 MARKING PLAN - SHORESHED WEST

SCALE 1:100



LEVEL 1 MARKING PLAN - SHORESHED EAST

SCALE 1:100

STEEL MEMBER SCHEDULE		
MARK	SIZE	TYPE
B1	310UC118	BEAM
B2	310UC137	BEAM
B3	610UB125	BEAM
B4	250UB31.4	BEAM
B5	200PFC	BEAM
B6	250PFC	BEAM
B7	200x100x6.0 RHS	BEAM
B8	250UC72.9	BEAM
B9	250UC89.5	BEAM
B12	310UB32.0	BEAM
B13	300PFC	BEAM
B15	380PFC	BEAM
B17	250UB25.7	BEAM
B20	530UB92.4	BEAM
B22	200x200x9.0 SHS	BEAM
B23	610UB101	BEAM
B24	180PFC	
B25	200x10 FLAT	
B26	240x10 FLAT	
B27	200x12 FLAT	
J1	200UB18.2	JOISTS AT 600 MAX CTS
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J3	200UB25.4	JOISTS AT 600 MAX CTS
J4	250UB31.4	JOISTS AT 1500 MAX CTS
J5	200x100x9.0 RHS	JOISTS AT 600 MAX CTS
P1	Z15019	AT 1200 CTS WITH 1 ROW OF BRIDGING MIDSPAN
R3	250x150x5.0 RHS	RAFTER
SB1	200UB18.2	BEAM

STEEL COLUMN SCHEDULE		
TYPE	MARK	SIZE
H	1	100x100x5.0 SHS
SC	1	150x150x4.0 SHS
SC	1	250UC72.9
SC	2	150x150x5.0 SHS
SC	3	150UC30.0
SC	4	100x100x5.0 SHS
SC	5	250x150x9.0 RHS
SC	6	TAPERED FROM 610UB101 2
SC	7	250UC72.9

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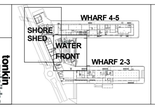

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APPROVED	D.C
SCALES	1 : 100 @A0
DATE	16/01/2017
PHASE	FOR APPROVAL
DRAWING NO	S504
REV	P1

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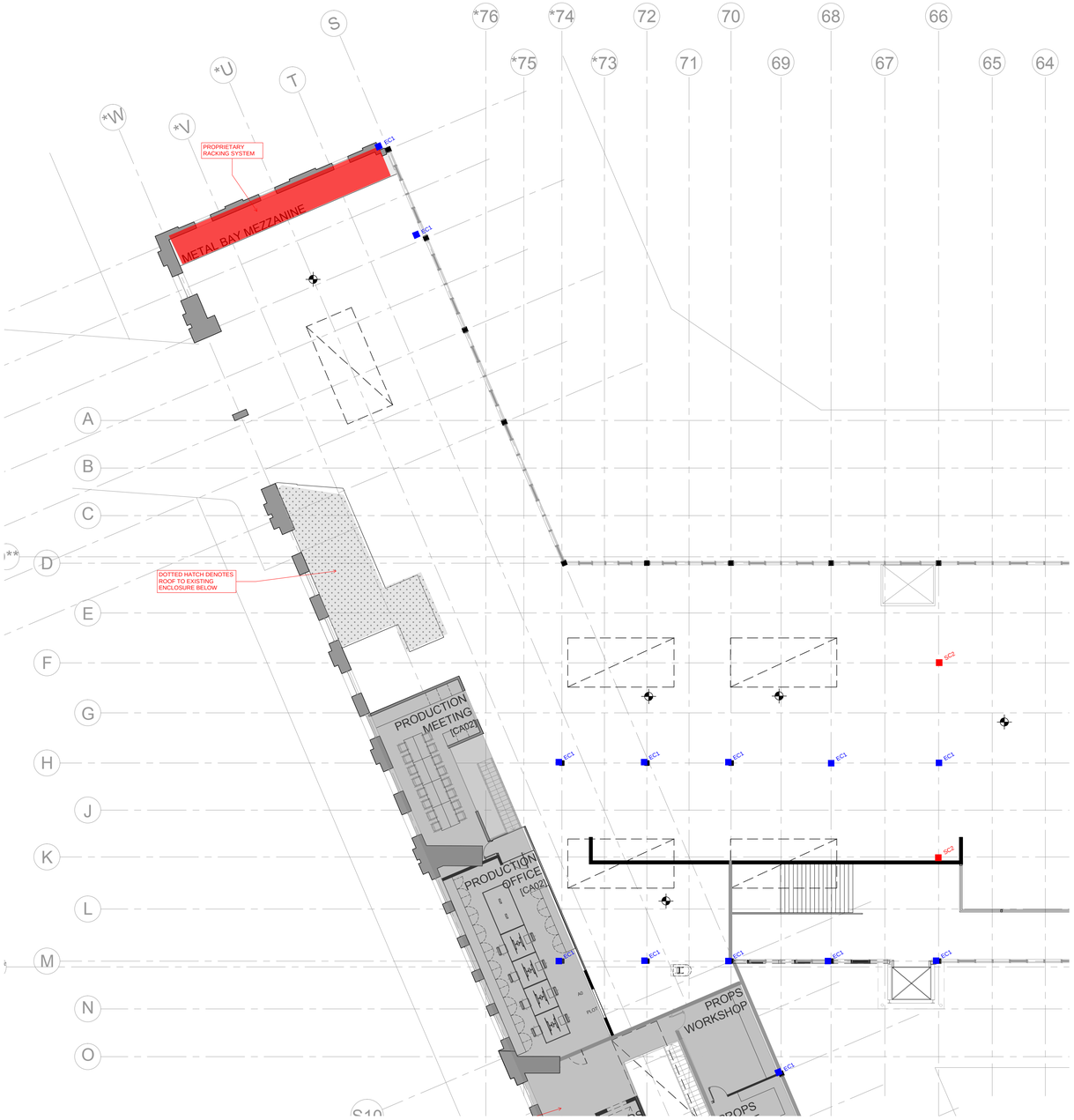
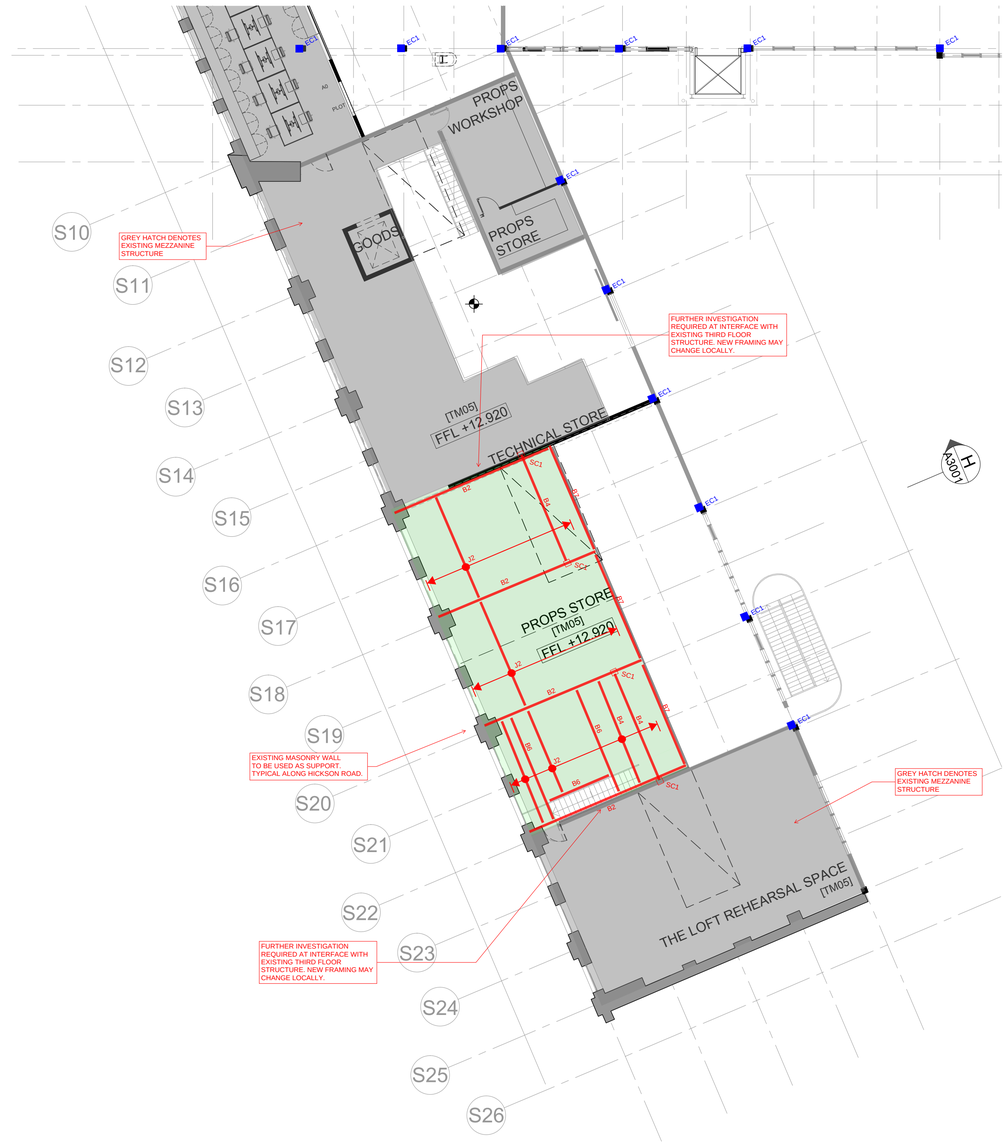


LEVEL 2 MARKING PLAN - SHORESHED WEST



LEVEL 2 MARKING PLAN - SHORESHED EAST

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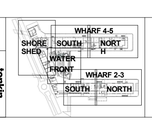

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TTW PROJECT No : 161280

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DRAWING TITLE
SHORESHED LEVEL 2 MARKING PLAN

DRAWN BY

APPROVED D.C

SCALES 1 : 100 @A0

DATE 16/01/2017

PHASE FOR APPROVAL

DRAWING NO S506

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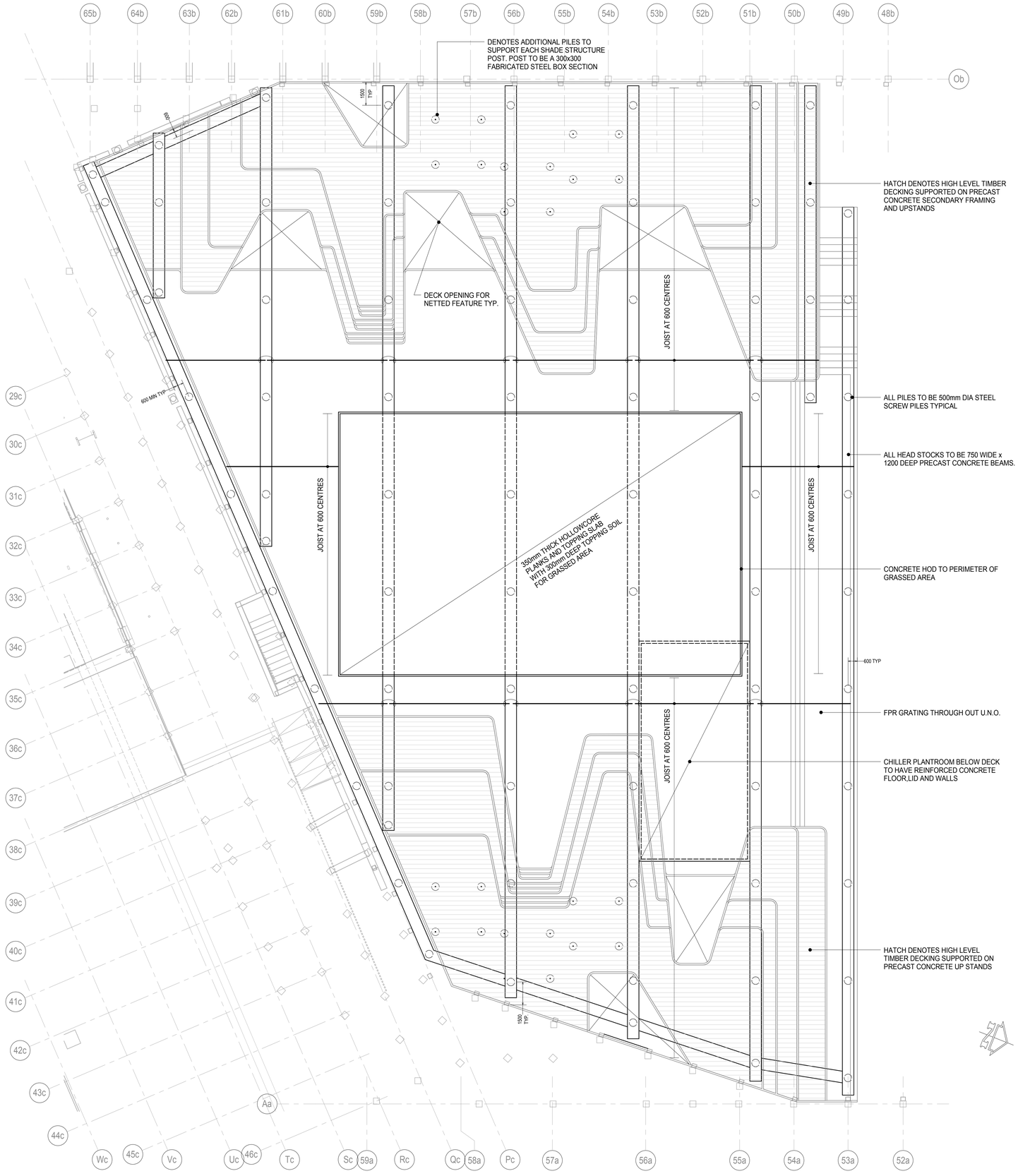

WATERFRONT SQUARE

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Rev	Description	Eng	Draft	Date
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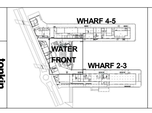

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DRAWING TITLE
WATERFRONT SQUARE
GROUND FLOOR MARKING PLAN

DRAWN BY

APPROVED D.C

SCALES 1 : 100 @A0

DATE 16/01/2017

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DRAWING NO S600

REV P1

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PRELIMINARY

Appendix B

Existing Wharf 4/5 GHD Pile Layout Plans

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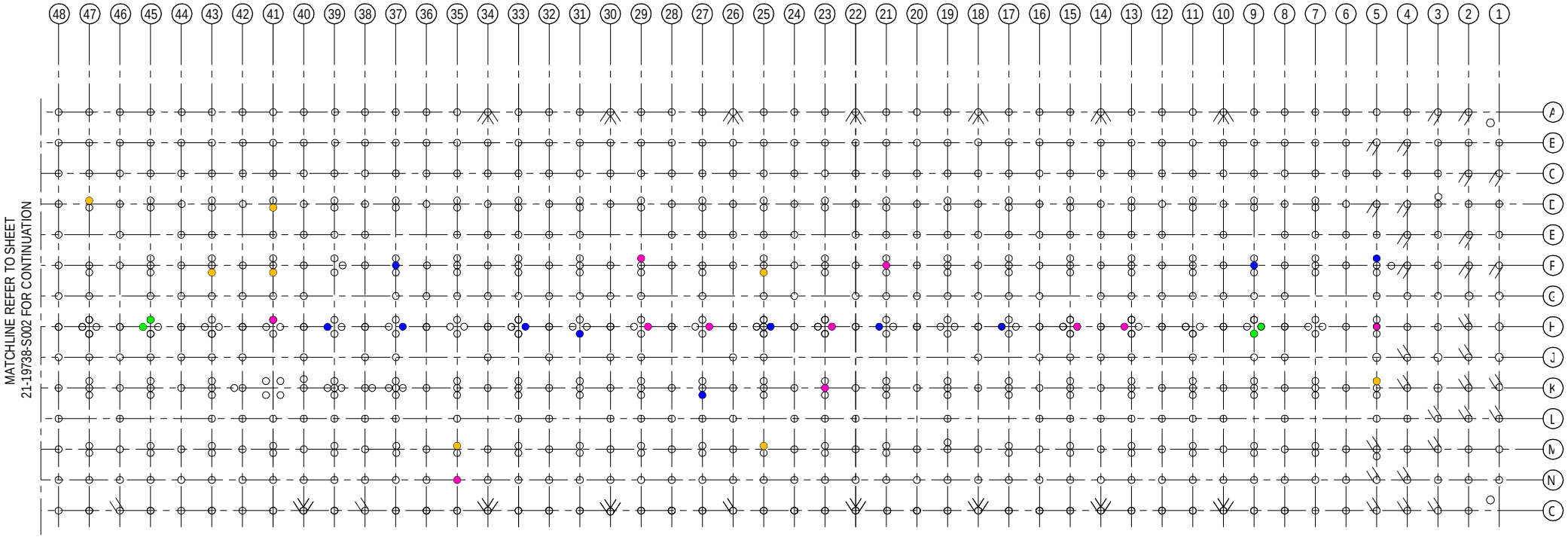

PILE LAYOUT PLAN

SCALE 1:100

NOTE

- PILES TO BE REPAIRED/REPLACED IN YEAR 1
- PILES TO BE REPAIRED/REPLACED IN YEAR 2
- PILES TO BE REPAIRED/REPLACED IN YEAR 3
- PILES TO BE REPAIRED/REPLACED IN YEAR 4

LEGEND

- VERTICAL PILE
- SINGLE RAKE PILE
- DOUBLE RAKE PILE

PRELIMINARY

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
A	ISSUED FOR MAINTENANCE ADVICE		JB	DWM	JY	11.02.11

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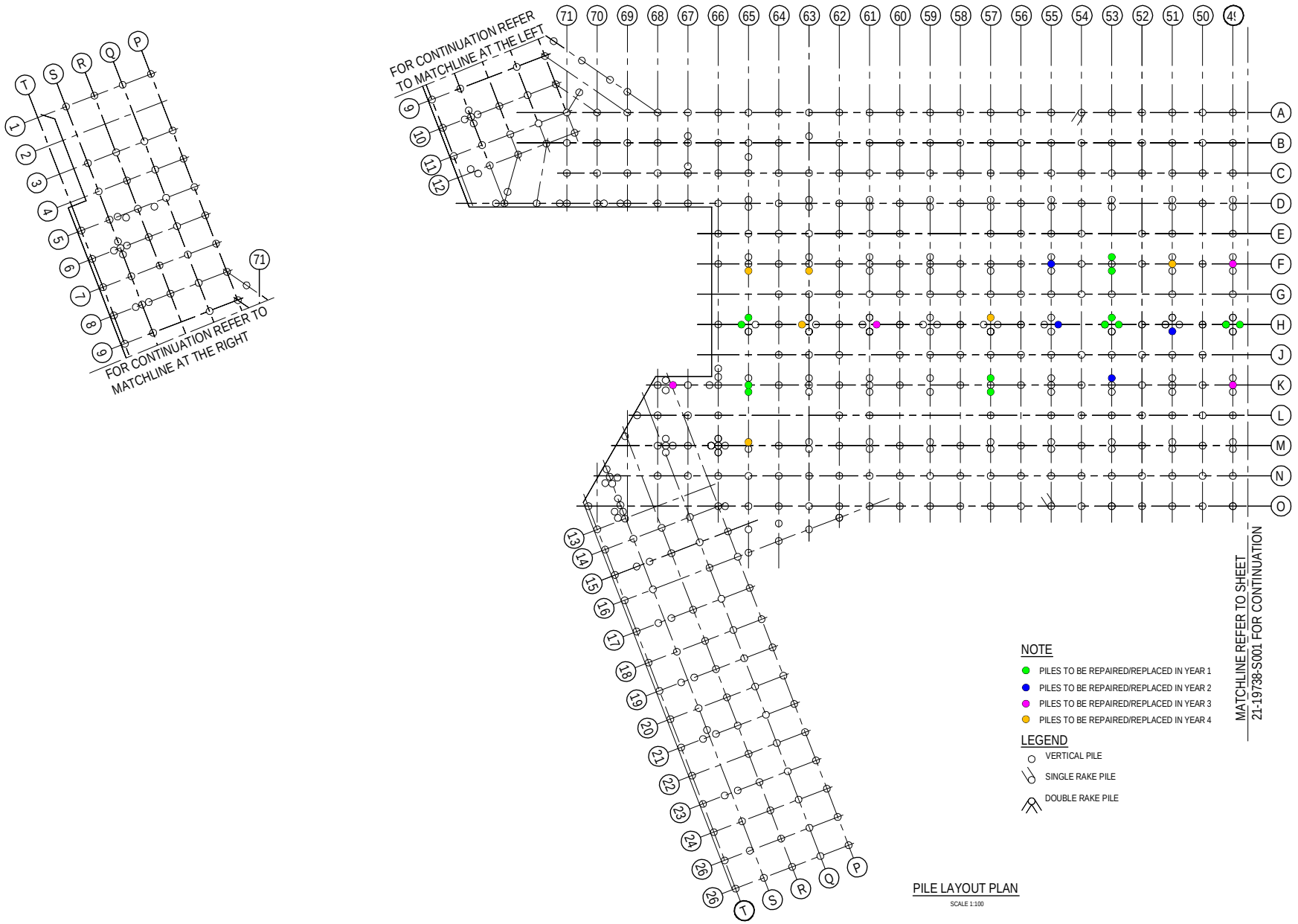
Project WALSH BAY 4/5
Title PILE LAYOUT PLAN SHEET 1/2

Original Size A1 | Drawing No: 21-19738-S001 | Rev: A

Plot Date: 11 February 2011 - 12:20 PM Plotted by: Jennifer R Bularin/Manila/GHD/AU Cad File No: G:\21\19738\CADD\Drawings\21-19738-S001.dwg



PILE LAYOUT PLAN

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Approved (Project Director)			
Date			
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Client: NSW PUBLIC WORKS
Project: WALSH BAY 4/5
Title: PILE LAYOUT PLAN SHEET 2/2

Original Size: A1
Drawing No: 21-19738-S002
Rev: A

Plot Date: 11 February 2011 - 12:20 PM Plotted by: Jennifer R Bularin/Manila/GHD/AU Cad File No: G:\21\19738\ICADD\Drawings\21-19738-S002.dwg