

DA Structural Report

**41 McLaren Street North
Sydney**

14 August 2017

161744

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**Structural
Civil
Traffic
Facade
Consulting
Engineers**

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1.0 Introduction

At the request of Erolcene Pty Ltd and Claijade Pty Ltd, Taylor Thomson Whitting have been commissioned to prepare a DA structural report on the proposed redevelopment of 41 McLaren St North Sydney.

The report is based on the architectural design by Harry Seidler and Associates dated July 2017.

2.0 Existing Structure

The existing structure is a 6 storey reinforced concrete structure with 4 split basement levels. The building was constructed in 1973 and the structural design was carried out by Ove Arup and Partners in 1971.

The typical floor is a 200mm thick reinforced concrete flat slab with drop panels at the columns. The floors are supported by reinforced concrete columns on a 7m grid (approx.).

The building foundations are pad footings founded on rock.

3.0 Geotechnical Conditions

A preliminary geotechnical investigation has been carried out by JK Geotechnics Report dated March 2017. The investigation involved the drilling of 1 borehole to a depth of 30m.

The geological profile is:

1. Fill - 0.25m deep
2. Very Low strength sandstone transitioning to high strength sandstone – 0.25m to 7.9m deep
3. High strength sandstone – 7.9m deep onwards

Groundwater was not encountered on completion of drilling. Due to the low permeability of the bedrock groundwater seepage is expected to be very low. The geotechnical engineers conclude that a drained basement would be feasible.

4.0 Proposed Development

The proposed development comprises

- 46 storey tower (levels 1 to 7 commercial, levels 9 to 44 residential)
- 5 basement carparking levels

The new structure will be a reinforced and post tensioned concrete structure supported by pad footings on rock. The building will be laterally stabilised by a combination of lift and stair core walls and shear walls.

The basements will be excavated into the sandstone with shoring for the upper 1 to 2 basement levels. The lower basements will be excavated into high strength sandstone and will not require retention.

5.0 Retention of Existing Structure

Due to the heritage listing of the building façade it is proposed to retain the perimeter 4m of structure and façade of the east and west elevations and up to 10m of the northern elevation on levels ground to 3.

The remainder of the structure within these zones are proposed to be demolished

The retained structure will be temporarily supported by a structural steel braced frame supported by new pad footings founded on sandstone.

The non-retained areas can be demolished traditionally from roof level down to existing basement. The future basements is proposed to be excavated in 3 stages (refer SK01-SK08).

- Stage 1- excavate to bulk level whilst retaining platforms of rock to support the existing perimeter pad footings and new temporary steel bracing frame pad footings.
- Stage 2- construction of the new building up to level 6 and re-supporting the existing structure off the new building structure.
- Stage 3 – remove the temporary steel support frame and the rock platforms in the basement levels.

6.0 Future Sydney Metro Rail Corridor

The proposed Chatswood to Sydenham rail tunnel is located approximately 70m to the west of 41 McLaren Street. The invert of the tunnels are at approximately RL 27m AHD.

The proposed basement excavation RL 52m AHD. The basement is located well outside the 1st and 2nd reserve of the rail tunnels.

The proposed basements comply with the development guidelines setout by Sydney Trains.

Prepared by

TAYLOR THOMSON WHITTING (NSW) PTY LTD

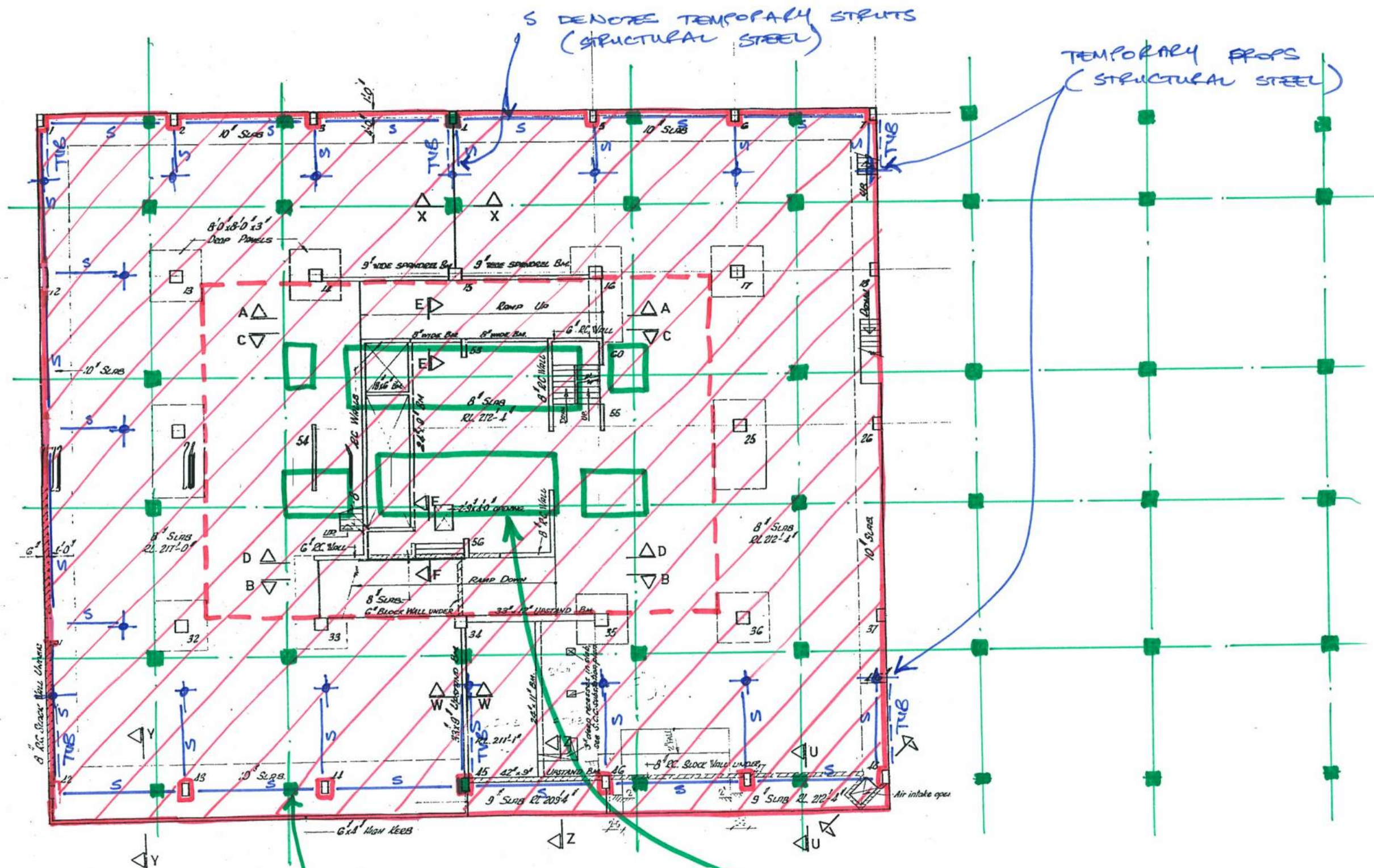


BARRY YOUNG
Director

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Appendix A

Sketches SK01 – SK08



FOR SECTIONS A-A, B-B, C-C, D-D, E-E & F-F SEE
DES 150567/B.
FOR COL. SCHEDULE SEE DRG 567/S.

NEW CONCRETE
COLUMNS SHOWN
IN GREEN

B1/B2 CARPARK LEVEL



DENOTES SLAB TO BE
DEMOLISHED.



DENOTES MINIMUM
DEMOLITION ZONE

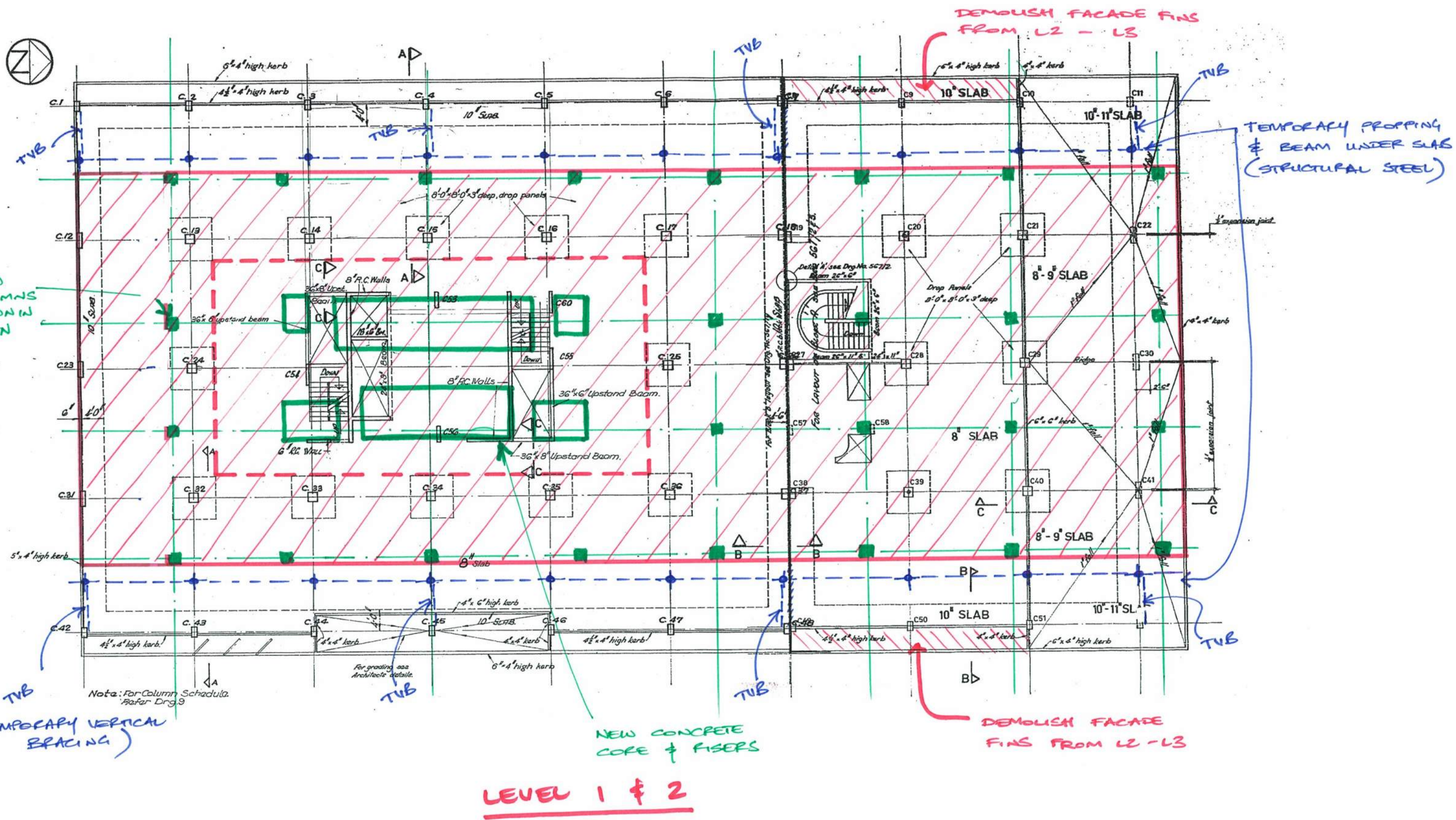
NEW CONCRETE
CORE & PIERS

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Sketch Title:
PRELIMINARY STRUCTURE & DEMO PLANS

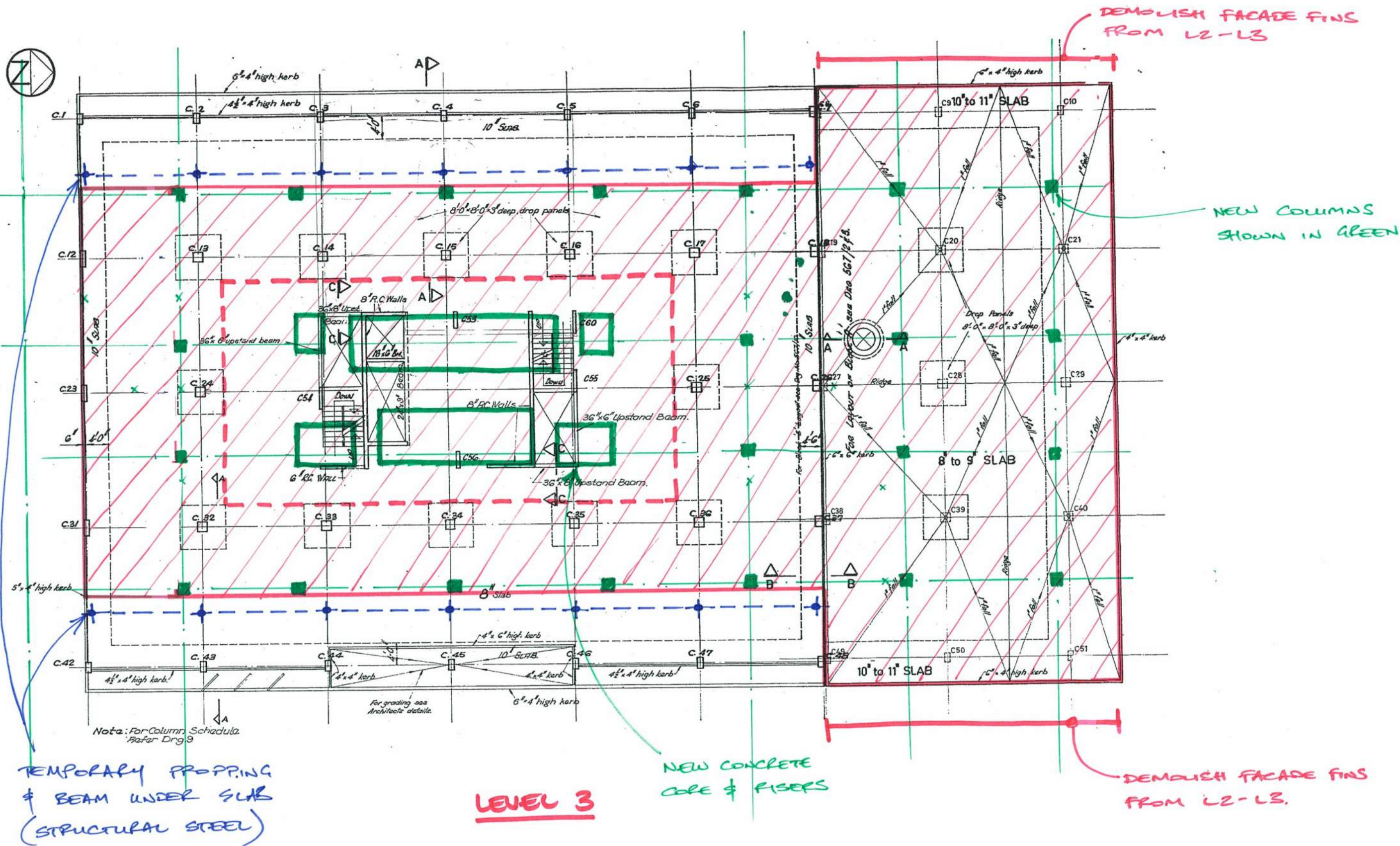
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Job Number: 161744
Sketch No. : SK02



Job Name : 41 MCLAREN ST, NORTH SYDNEY
Sketch Title:
PRELIMINARY STRUCTURE & DEMO PLANS
Date: 23/11/16
By: WJA
Job Number: 161744
Sketch No. : SK04



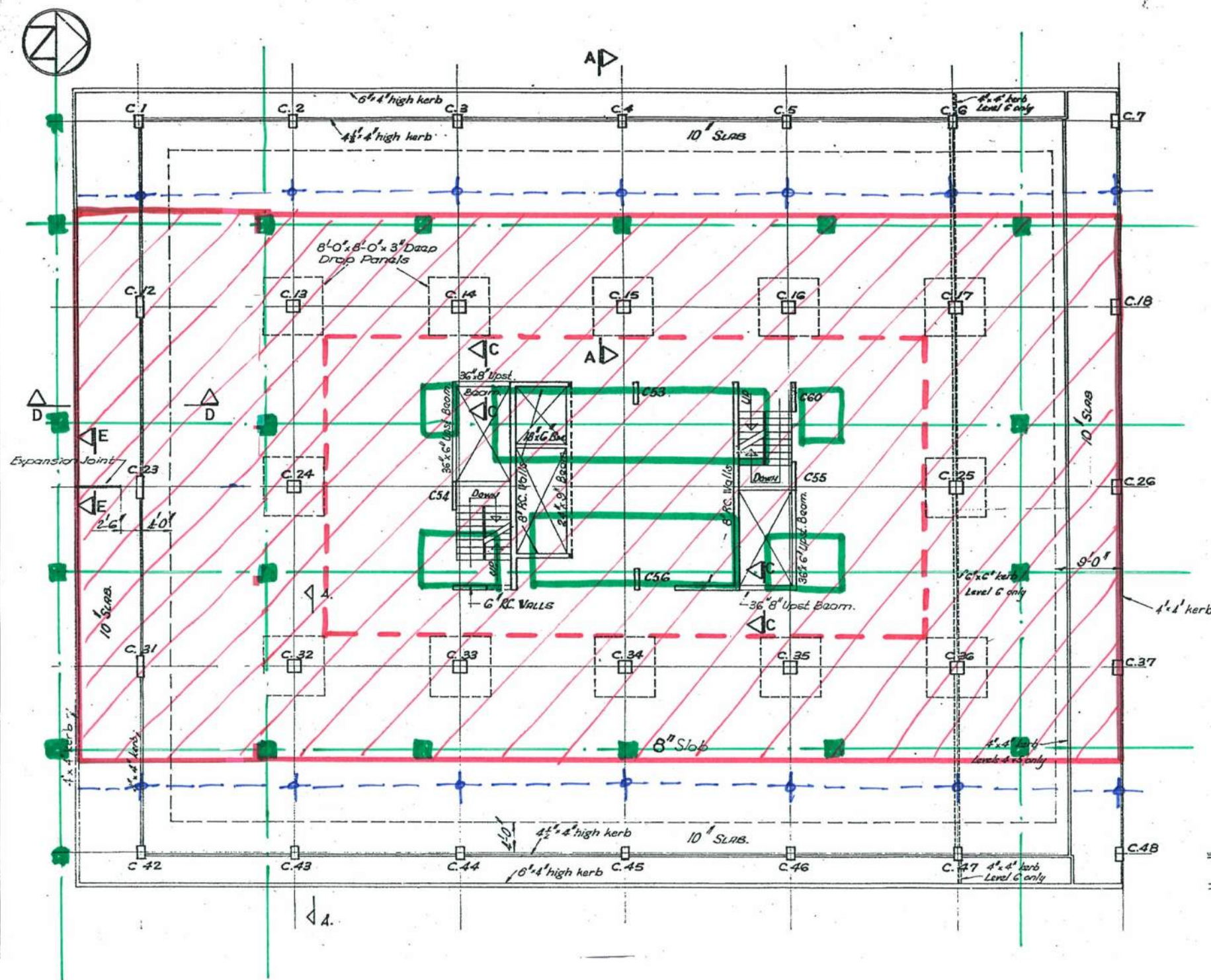
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Sketch Title:
PRELIMINARY STRUCTURE & DEMO PLANS

Date: 23/11/16

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Job Number: 161744
Sketch No. : SK05

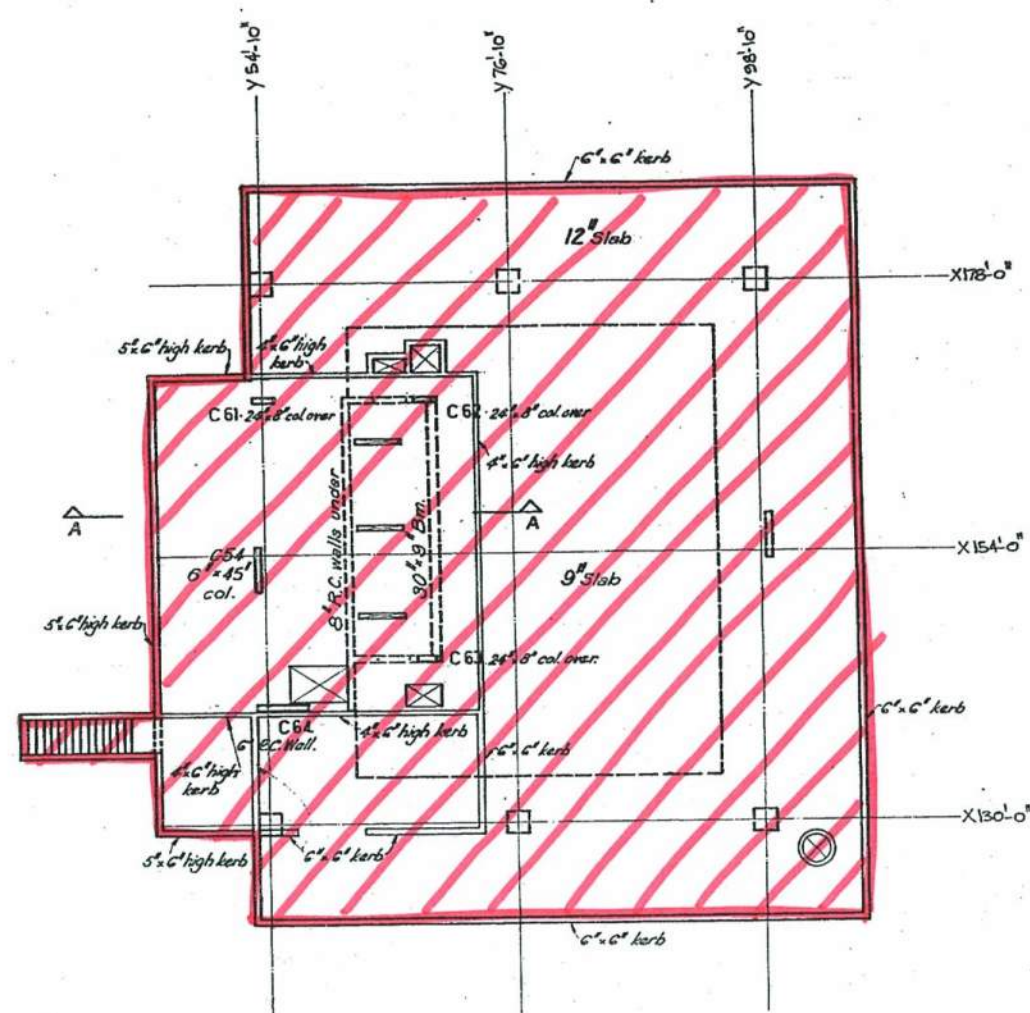


LEVEL 4 - ROOF

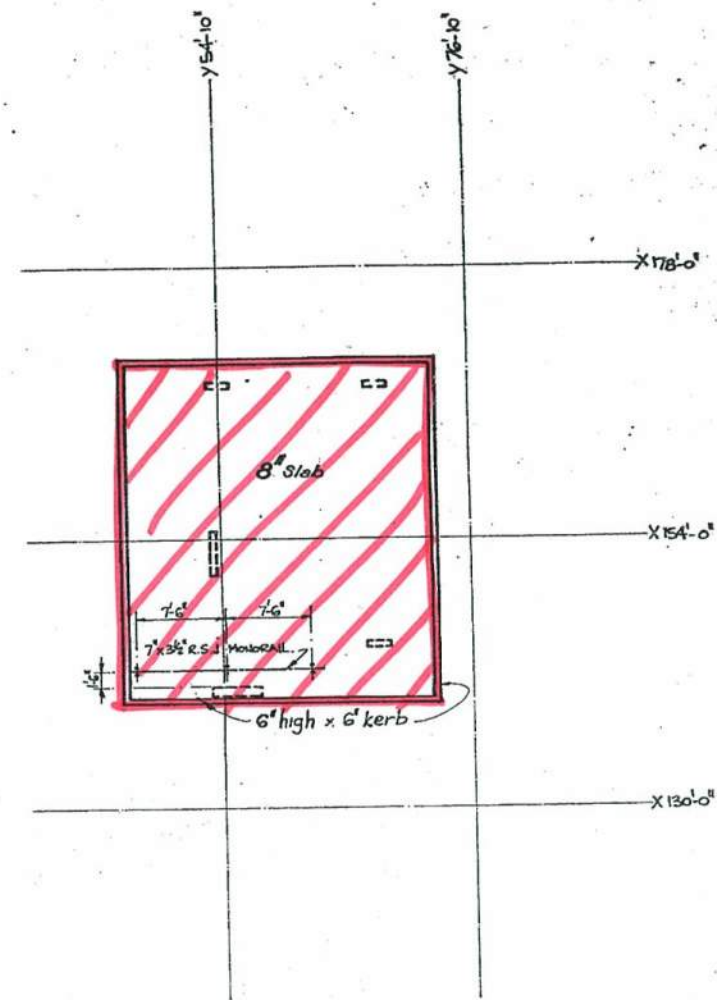
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 By: WJA

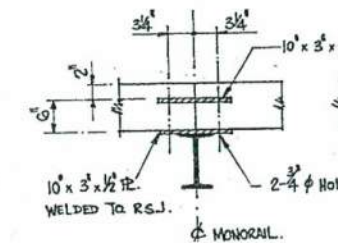
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LIFT MOTOR ROOM FLOOR PLAN



LIFT MOTOR ROOM ROOF PLAN



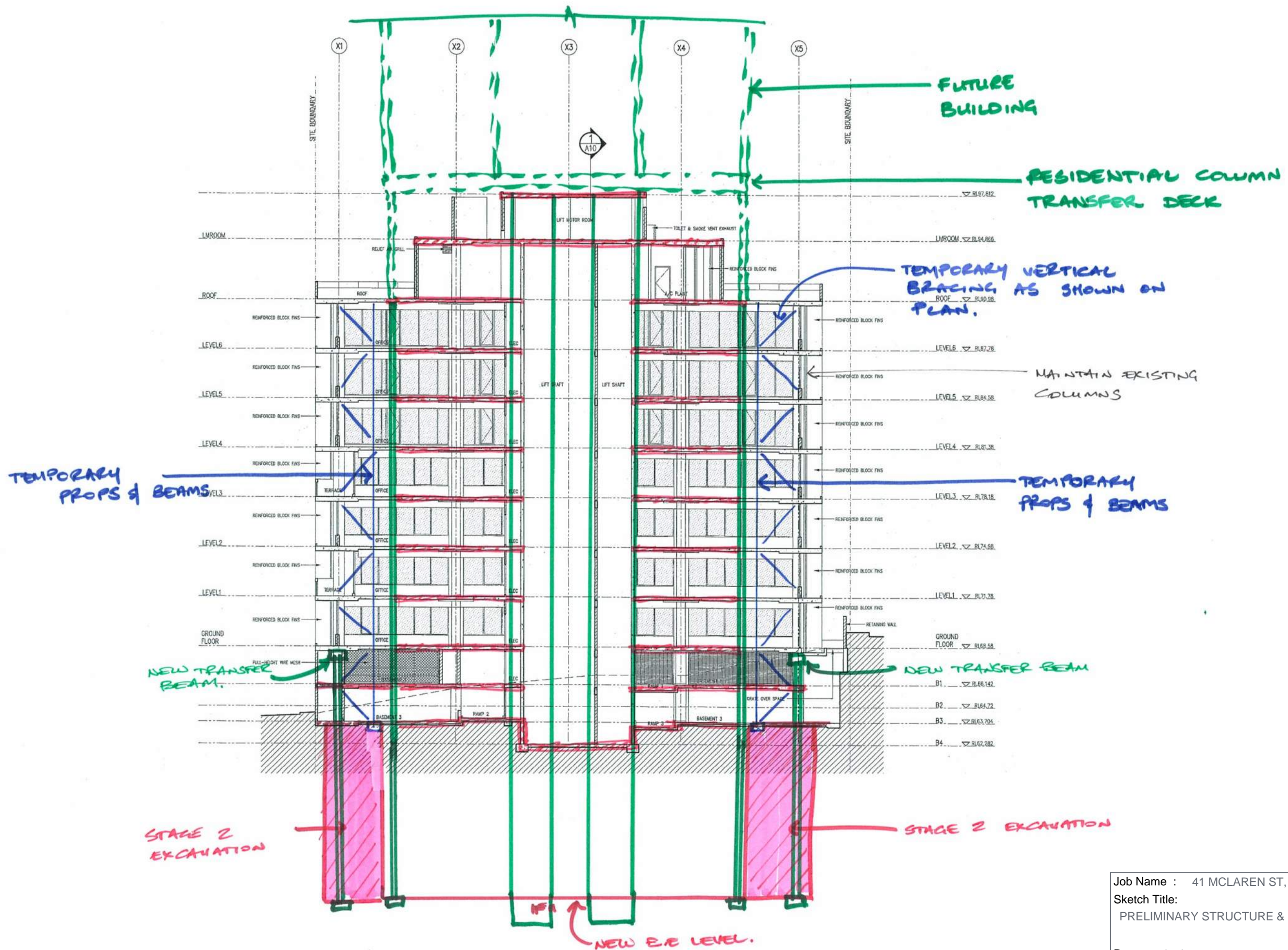
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 Sketch No. : SK07

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EAST-WEST SECTION

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 Sketch No. : SK08