



# STRUCTURAL NOTES

Diagram illustrating the difference between continuous and simply supported deck slabs:

- CONTINUOUS DECK SLAB:** Shows a single continuous slab with a single arrow indicating the direction of traffic flow.
- SIMPLY SUPPORTED DECK SLAB:** Shows two separate slabs supported by a central pier, with two arrows indicating the direction of traffic flow.



REGULATED DESIGN RECORD				REV	DATE	DESCRIPTION	DP FULL NAME	REG NO	 <b>pmiengineers</b>	SUITE 302/59 GREAT BUCKINGHAM ST REDFERN 2016 +61 9332 4084 ADMIN@PMIENGINEERS.COM WWW.PMIENGINEERS.COM ABN: 90 651 637 955	ISSUE:	FOR CONSTRUCTION
PROJECT ADDRESS: 30 DIGGINGS TERRACE, THREDBO					07.09.2021	ISSUE FOR COMMENT	THOMAS WILLIAMS	PRE0001122				
PROJECT TITLE: BLACK BEAR INN				1	15.09.2021	ISSUED FOR CC	THOMAS WILLIAMS	PRE0001122				
CONSENT NUMBER:				2	07.10.2021	FOR CONSTRUCTION	THOMAS WILLIAMS	PRE0001122				
				3	16.11.2021	REVISED FOR ANCHORAGES	THOMAS WILLIAMS	PRE0001122				
				4	01.02.2022	REVISED FOR PARTICULARS OF REGULATED DESIGN - GROUND ANCHORS	THOMAS WILLIAMS	PRE0001122				
DRAWING TITLE EXCAVATION PLAN ASDAD				JOB NUMBER <b>PMI-2021-053</b>	5	28.02.2022	CONSOLIDATED SHEETS FOR DA SUBMISSION	THOMAS WILLIAMS	PRE0001122	CLIENT: HIDALI PTY LTD	ARCHITECT <b>PopovBass</b>	 ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH ARCHITECT AND BUILDER BEFORE COMMENCING SHOP DRAWINGS OR SITE WORK. ENGINEER ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.
DRAWING NUMBER <b>S10</b>		REVISION <b>5</b>	THE COPYRIGHT OF THIS DRAWING REMAINS WITH PMI ENGINEERS		PO Box 334 Sunny Hills NSW 2010 T: 02 9965 5004 E: info@popovbass.com.au W: popovbass.com.au							
SCALE AT B1: As indicated												

NOTE:

ALL ANCHORS TO BE TESTED TO TEST LOAD FOR 15 MINUTES AND ANCHOR IS TO BE CONFIRMED HOLDING 'TEST LOAD' FOR THE FULL 15 MIN DURATION  
ANCHOR WORKING LOADS TEST LOADS AND LOCK-OFF LOADS ARE SOURCED FROM THE ANCHOR SCHEDULE - SEE S104, S10e + S10f

TOLERANCES:

- ALL ANCHORS TO BE LOCATED WITHIN 250mm OF THE STATED RL
- WITHIN 5 DEG OF STATED ANGLE OFF HORIZONTAL
- ALL ANCHORS TO BE PERPENDICULAR TO EXCAVATION CUT WITHIN 5 DEG
- MINIMUM FREE LENGTH OF ANCHORS OF 3m AS NOTED ON SECTIONS

#SCHEDULE - P - RETAINING	
Type Mark	Description
ANCHORS	
RA1	26.5mm DYWIDAG Y1050H PRESTRESSING STEEL BAR - OR OTHER APPROVED - SEE ACCOMPANYING SHEET FOR LOADS
RA2	32mm DYWIDAG Y1050H PRESTRESSING STEEL BAR - OR OTHER APPROVED - SEE ACCOMPANYING SHEET FOR LOADS
RA3	36mm DYWIDAG Y1050H PRESTRESSING STEEL BAR - OR OTHER APPROVED - SEE ACCOMPANYING SHEET FOR LOADS

NOTE:

ALL ANCHORS TO BE TESTED TO TEST LOAD FOR 15 MINUTES AND ANCHOR IS TO BE CONFIRMED HOLDING 'TEST LOAD' FOR THE FULL 15 MIN DURATION  
ANCHOR WORKING LOADS TEST LOADS AND LOCK-OFF LOADS ARE SOURCED FROM THE ANCHOR SCHEDULE - SEE S10b, S10e + S10f

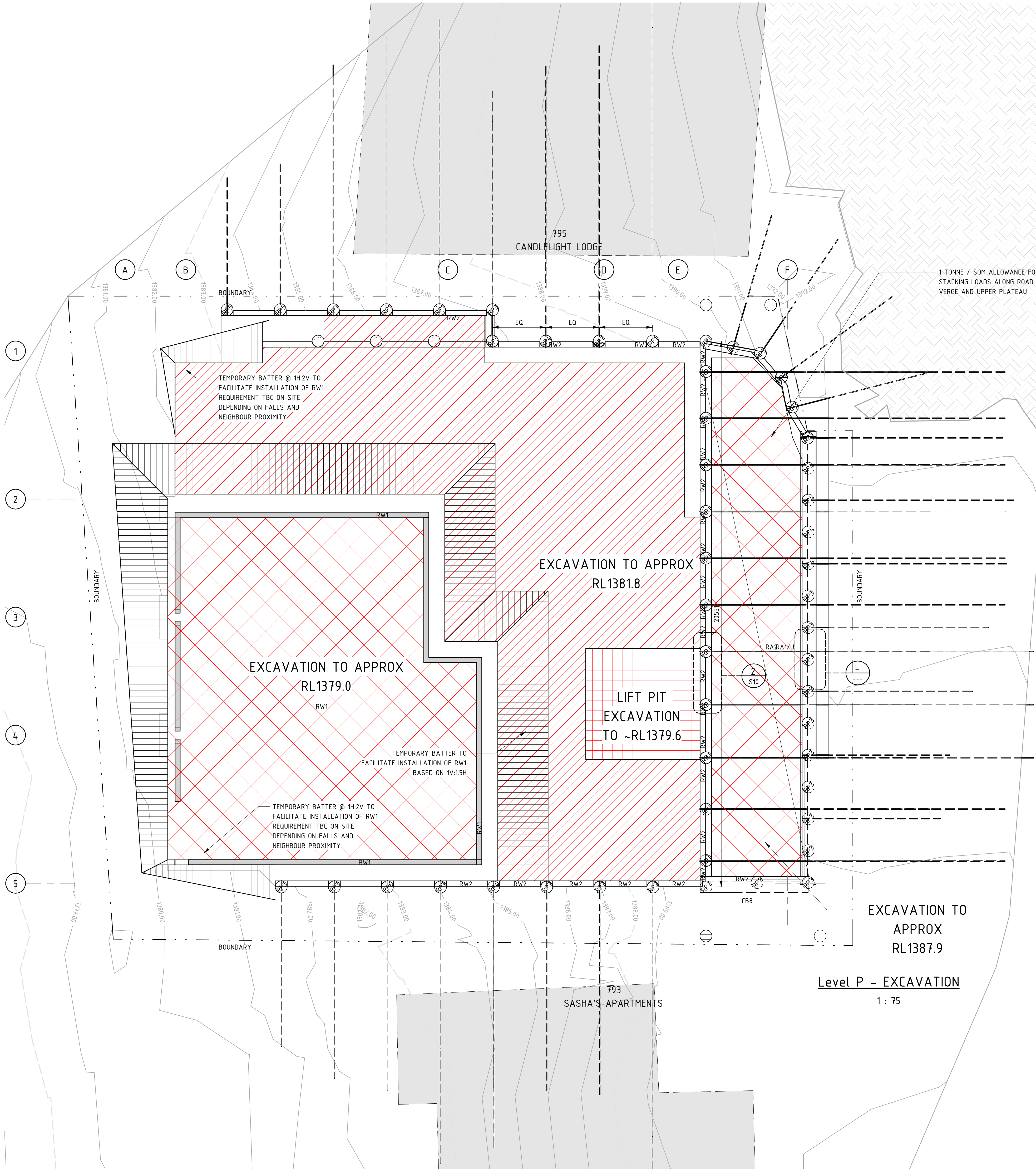
TOLERANCES:

- ALL ANCHORS TO BE LOCATED WITHIN 250mm OF THE STATED RL
- WITHIN 5 DEG OF STATED ANGLE OFF HORIZONTAL
- ALL ANCHORS TO BE PERPENDICULAR TO EXCAVATION CUT WITHIN 5 DEG
- MINIMUM FREE LENGTH OF ANCHORS OF 3m AS NOTED ON SECTIONS

#SCHEDULE - P - RETAINING	
Type	Description
Mark	
ANCHORS	
RA1	26.5mm DYWIDAG Y1050H PRESTRESSING STEEL BAR - OR OTHER APPROVED - SEE ACCOMPANYING SHEET FOR LOADS
RA2	32mm DYWIDAG Y1050H PRESTRESSING STEEL BAR - OR OTHER APPROVED - SEE ACCOMPANYING SHEET FOR LOADS
RA3	36mm DYWIDAG Y1050H PRESTRESSING STEEL BAR - OR OTHER APPROVED - SEE ACCOMPANYING SHEET FOR LOADS
FOUNDATIONS	
CB8	600Wx400D CAPPING BEAM TO ROAD - 3N20s TOP & BTM with N12 STIRRUPS @ 300 CRS
RETAINING SYSTEM	
RP1	450 DIA PIER REINFORCED WITH 6/N28s @ N12 SPIRAL @ 250 PITCH
RP2	450 DIA PIER REINFORCED WITH 4/N16s @ N10 SPIRAL @ 300 PITCH
RP3	450 DIA PIER REINFORCED WITH 4/N20s @ N12 SPIRAL @ 300 PITCH
RP4	450 DIA PIER REINFORCED WITH 4/N24s @ N10 SPIRAL @ 300 PITCH
RP5	450 DIA PIER REINFORCED WITH 4/N16s @ N12 SPIRAL @ 300 PITCH
RP6	450 DIA PIER REINFORCED WITH 6/N20s @ N12 SPIRAL @ 300 PITCH
RP7	450 DIA PIER REINFORCED WITH 6/N24s @ N12 SPIRAL @ 300 PITCH
RW1	190 COREFILLED BLOCKWORK WALLS - N16s @ 400 CRS VERTICAL - N12s @ 400 CRS HORIZONTAL - TEMP RESTRAINT REQUIRED AT TOP PRIOR TO SLAB OVER BEING POURED
RW2	200mm 32MPa SHOTCRETE WALLS - SEE S10 FOR DETAILS

NOTE:

- RETAINING PILES DESIGNED BASED ON RECTANGULAR PRESSURE DISTRIBUTION
- BH + 5kPa SURCHARGE, 10kPa SURCHARGE FROM ROAD
- ADDITIONAL 64kN/m LATERAL LOAD AT TOP OF N1/N2 PILES TO ACCOUNT FROM PRESSURE FROM ROAD RETENTION PILES
- GROUND SUPPORT MEASURES ARE INDICATIVE ONLY PRIOR TO CONFIRMATION OF GROUND CONDITIONS ON OPENING UP OF SITE
- ALLOWABLE TEMPORARY/PERMANENT BATTER ANGLES TO BE VERIFIED ONSITE WITH GROUND INVESTIGATIONS AND AS EXCAVATION PROCEEDS





REGULATED DESIGN RECORD

PROJECT ADDRESS: 30 DIGGINGS TERRACE, THREDBO

PROJECT TITLE: BLACK BEAR INN

CONSENT NUMBER:

REV	DATE	DESCRIPTION	DP FULL NAME	REG NO
1	07.09.2021	ISSUED FOR COMMENT	THOMAS WILLIAMS	PRE0001122
2	15.09.2021	ISSUED FOR CC	THOMAS WILLIAMS	PRE0001122
3	07.10.2021	FOR CONSTRUCTION	THOMAS WILLIAMS	PRE0001122
4	16.11.2021	REVISED FOR ANCHORAGES	THOMAS WILLIAMS	PRE0001122
4	01.02.2022	REVISED FOR PARTICULARS OF REGULATED DESIGN - GROUND ANCHORS	THOMAS WILLIAMS	PRE0001122

pmiengineers

SUITE 302/59 GREAT BUCKINGHAM ST REDFERN 2016  
+61 9332 4084  
ADMIN@PMIENGINEERS.COM  
WWW.PMIENGINEERS.COM  
ABN: 90 651 637 955

FOR CONSTRUCTION

ISSUE:

ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH ARCHITECT AND BUILDER BEFORE COMMENCING SHOP DRAWINGS OR SITE WORK. ENGINEER ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.

DRAWING TITLE  
EXCAVATION DETAILS - 1

JOB NUMBER  
PMI-2021-053

DRAWING NUMBER  
S10a

REVISION  
4

SCALE AT B1: 1 : 50

CLIENT: HIDALI PTY LTD

ARCHITECT  
PopovBass  
PO Box 834  
Sunny Hills NSW 2010  
T: 02 9965 5004  
E: info@popovbass.com.au  
W: popovbass.com.au

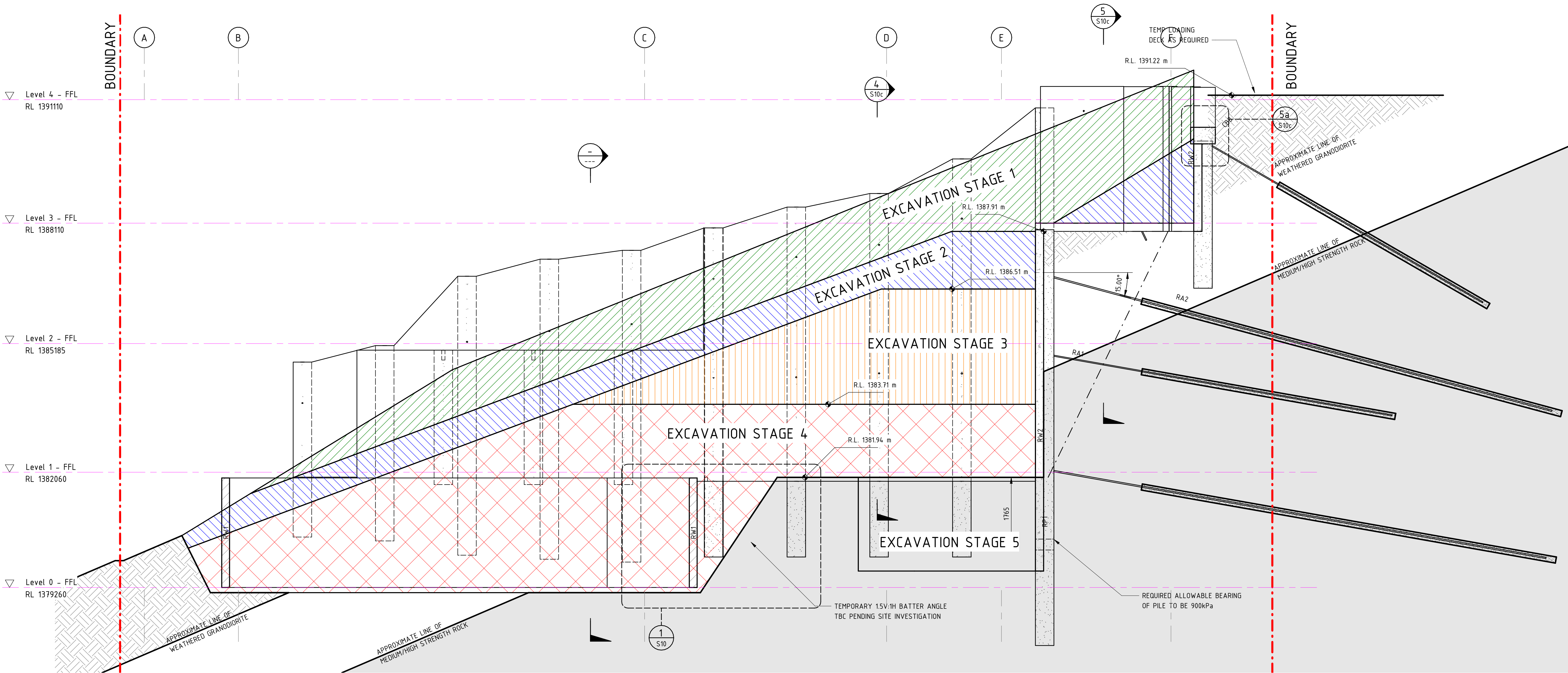
THE COPYRIGHT OF THIS DRAWING REMAINS WITH PMI ENGINEERS

PROPOSED METHODOLOGY

- INSTALL PILES TO LEVEL 4 @ 1.2m AND AROUND EXCAVATION PERIMETER @ ~2m CRS AND INSTALL CAPPING BEAMS AS REQUIRED
- EXCAVATE STAGE 1 AS INDICATED TO SHOTCRETING PILES AS REQUIRED AND TAKING READINGS OF PILES TO CHECK DEFLECTIONS
- INSTALLING ANCHORS TO SOUTHERN PILES AND FIRST ROW OF EAST AND WESTERN PILES
- INSTALL LOWER PILES ALONG GRID E WITH ADDITIONAL EXCAVATION AS REQUIRED
- TEST SELECTED ROCK ANCHORS TO NOMINATED LOAD TO CONFIRM CAPACITY
- EXCAVATE STAGE 2 AS INDICATED SLOPING TO THE NORTH AS NECESSARY TO ENABLE ACCESS TO ANCHORAGES TAKING READINGS OF PILES TO CHECK DEFLECTIONS
- SHOTCRETE BETWEEN PILES
- POUR 200mm CS6 CAPPING SLAB TO CONNECT RP1 AND RP2 PILES AT RL1387.90
- INSTALL TOP STAGE OF ROCK ANCHORS TO PILES ON GRID E AND OTHER PERIMETER PILES AS AVAILABLE
- TEST SELECTED ROCK ANCHORS TO NOMINATED LOAD TO CONFIRM CAPACITY
- EXCAVATE STAGE 3 TAKING READINGS OF PILES TO CHECK DEFLECTIONS
- INSTALL NEXT ROW OF ANCHORS ALONG GRID E AND 2nd ROW OF ANCHORS TO EAST AND WEST WINGS
- SHOTCRETE BETWEEN PILES
- TEST SELECTED ROCK ANCHORS TO 1.3x WORKING LOAD TO CONFIRM CAPACITY
- EXCAVATE STAGE 4, SHOTCRETING WALLS AS NECESSARY
- INSTALL FINAL ROW OF ANCHORS AROUND LIFT PIT AND TEST SELECTED ROCK ANCHORS TO NOMINATED LOAD TO CONFIRM CAPACITY
- EXCAVATE STAGE 5 LIFT PIT
- PROGRESSIVELY CONSTRUCT STRUCTURE TAKING READINGS OF WALLS AT KEY STAGES TO MONITOR DEFLECTIONS
- ONCE LEVEL 3 SLAB HAS REACHED DESIGN STRENGTH (40 MPa), DE-STRESS ROCK ANCHORS

WITNESS, HOLD AND MONITORING POINTS

- GEOTECHNICAL INVESTIGATION ONSITE POST DEMOLITION OF EXISTING STRUCTURE TO CONFIRM ASSUMPTIONS
- GEOTECHNICAL INVESTIGATION ONSITE EVERY 1.5m DEPTH OF EXCAVATION TO CONFIRM GROUND CONDITIONS
- STRUCTURAL INSPECTION REQUIRED:
  - PRIOR TO POURING CONCRETE PILES/PIERS TO CONFIRM BEARING CAPACITY AND REINFORCING
  - PRIOR TO SHOTCRETING WALLS
  - PRIOR TO STRESSING OF ROCK ANCHORS
  - PRIOR TO EXCAVATION RESUMING AFTER TEMPORARY BRACING STEEL INSTALLED
- VIBRATION MONITORING TO BE CARRIED OUT ON BOUNDARIES IN ACCORDANCE WITH GEOTECHNICAL RECOMMENDATIONS DURING EXCAVATION
- SURVEY POINTS TO BE ESTABLISHED AND LOCATIONS SUBMITTED FOR APPROVAL TO ALL RETAINING WALLS. SURVEY TO BE SUBMITTED TO GEOTECH AND STRUCTURAL ENGINEER TO MONITOR MOVEMENTS. SURVEY TO BE CARRIED OUT AT FOLLOWING STAGES:
  - COMPLETION OF TOP RP2 PILE INSTALLATION
  - COMPLETION OF EXCAVATION STAGE 1
  - PRIOR TO ROCK ANCHOR STRESSING
  - COMPLETION OF ROCK ANCHOR STRESSING AND TEMPORARY PROP INSTALLATION
  - ONCE EXCAVATION ACHIEVES ~RL1381.94
  - ONCE EXCAVATION IS COMPLETED



NOTE:

- EXCAVATION TO NOT EXCEED 1.5m IN ONE GO.
- EACH 1.5m EXCAVATION TO BE INSPECTED BY A COMPETENT GETOECHNICAL ENGINEER AND SIGNED OFF PRIOR TO PROGRESSING EXCAVATION TO FURTHER DEPTH











REGULATED DESIGN RECORD

PROJECT ADDRESS: 30 DIGGINGS TERRACE, THREDBO

PROJECT TITLE: BLACK BEAR INN

CONSENT NUMBER:

REV

DATE

DESCRIPTION

DP FULL NAME

REG NO

1

01.02.2022

REVISED FOR PARTICULARS OF REGULATED DESIGN - GROUND ANCHORS

THOMAS WILLIAMS

PRE0001122

2

28.02.2022

CONSOLIDATED SHEETS FOR DA SUBMISSION

THOMAS WILLIAMS

PRE0001122

pmiengineers

SUITE 302/59 GREAT BUCKINGHAM ST REDFERN 2016

+61 9332 4084

ADMIN@PMIENGINEERS.COM

WWW.PMIENGINEERS.COM

ABN: 90 651 637 955

ISSUE:

FOR CONSTRUCTION

DRAWING TITLE

PILING PLAN

JOB NUMBER

PMI-2021-053

DRAWING NUMBER

S10d

REVISION

2

CLIENT:

HIDALI PTY LTD

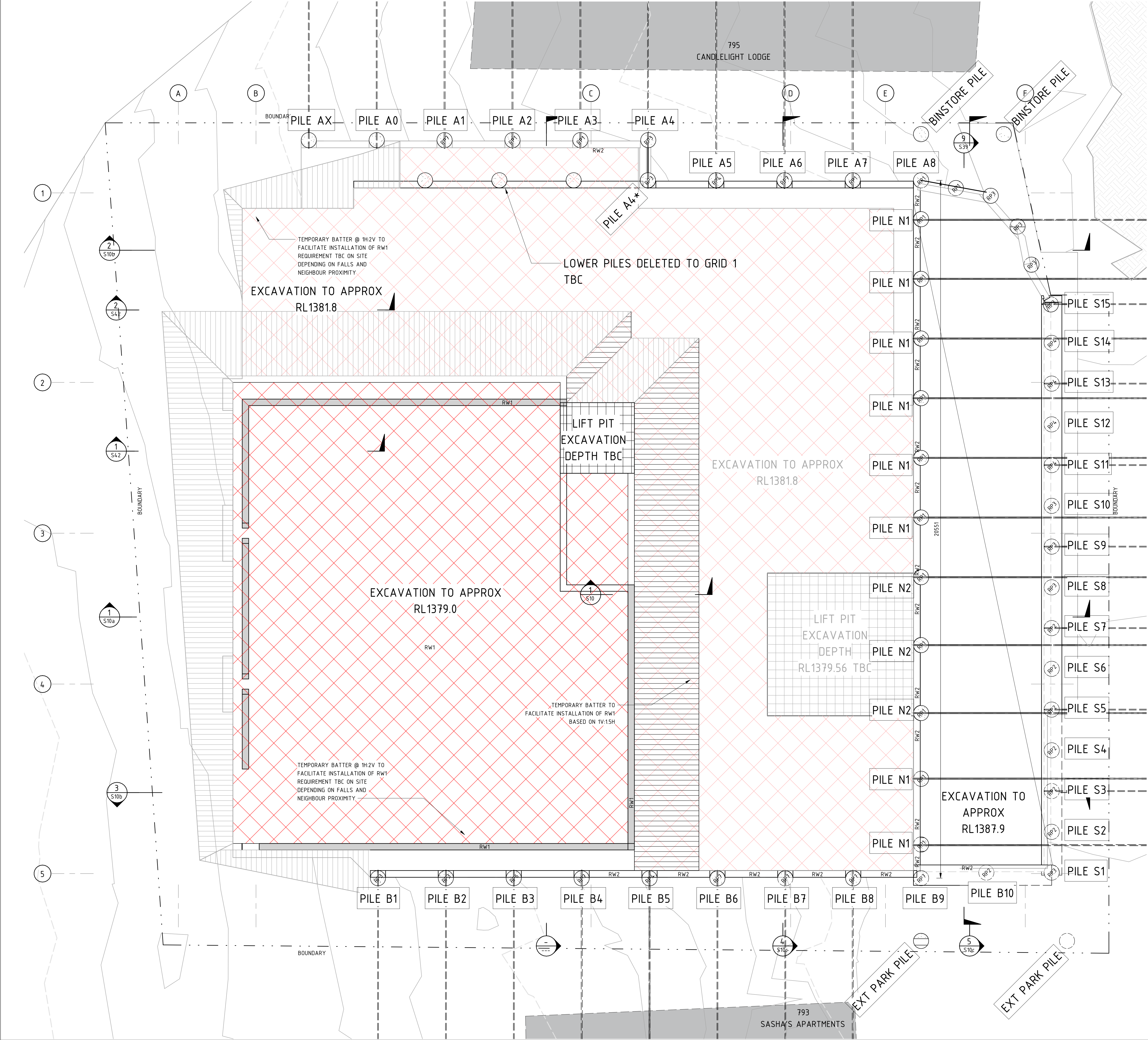
ARCHITECT

PopovBass

THE COPYRIGHT OF THIS DRAWING REMAINS WITH PMI ENGINEERS

PO Box 334  
Surry Hills NSW 2010  
T: 02 9965 5004  
E: info@popovbass.com.au  
W: popovbass.com.au

SCALE AT B1: 1 : 50



ANCHOR SCHEDULE										
IDENTIFIER	TYPE MARK	DIAMETER	LENGTH (mm)	ANCHOR RL	ANGLE	WORKING LOAD (kN)	TEST LOAD (kN)	LOCK OFF LOAD (kN)	MIN EXTENSION - TEST LOAD (mm)	MAX EXTENSION - TEST LOAD (mm)
A0	RA1	26.5mm	6600	1384.12	30°	130	270	130	7.16	11.46
A1	RA2	32mm	10900	1385.24	30°	290	580	290	10.55	24.45
A2	RA2	32mm	12200	1385.50	30°	340	680	340	12.37	31.35
A3	RA2	32mm	12900	1385.67	30°	360	730	360	13.28	35.20
A4-1	RA1	26.5mm	9800	1386.77	30°	300	500	300	13.27	28.30
A4-2	RA1	26.5mm	10100	1384.37	17.5°	320	520	320	13.80	30.12
A5-1	RA2	32mm	10500	1387.30	30°	330	550	330	10.01	22.52
A5-2	RA2	32mm	11100	1384.38	17.5°	360	590	360	10.74	25.23
A6-1	RA2	32mm	11200	1387.60	30°	360	600	360	10.92	25.84
A6-2	RA2	32mm	11900	1384.48	17.5°	390	650	390	11.83	29.37
A7-1	RA3	36mm	13900	1388.24	30°	480	800	480	11.50	32.40
A7-2	RA3	36mm	13900	1384.48	17.5°	480	800	480	11.50	32.40
AX	RA1	26.5mm	6000	1383.75	30°	110	220	110	5.84	8.76
B1	RA1	26.5mm	7200	1381.45	30°	150	310	150	8.23	13.98
B2	RA1	26.5mm	8600	1381.75	30°	210	410	210	10.88	21.03
B3	RA1	26.5mm	9100	1382.20	30°	220	450	220	11.94	24.08
B4	RA2	32mm	12300	1382.91	30°	340	680	340	12.37	31.55
B5-1	RA1	26.5mm	9000	1384.27	30°	270	440	270	11.67	23.35
B5-2	RA2	32mm	10400	1381.68	15°	330	540	330	9.83	21.94
B6	RA1	26.5mm	9100	1384.79	30°	220	450	220	11.94	24.08
B7	RA1	26.5mm	9300	1384.85	30°	230	470	230	12.47	25.56
B8-1	RA2	32mm	11100	1387.55	30°	360	590	360	10.74	25.23
B8-2	RA2	32mm	11600	1384.48	15°	380	630	380	11.46	27.89
N1-1	RA2	32mm	11900	1386.93	15°	390	650	390	11.83	29.37
N1-1	RA2	32mm	11900	1386.93	15°	390	650	390	11.83	29.37
N1-2	RA1	26.5mm	8800	1383.98	10°	260	420	260	11.14	21.92
N1-2	RA1	26.5mm	8800	1383.98	10°	260	420	260	11.14	21.92
N2-1	RA2	32mm	13000	1386.93	15°	440	730	440	13.28	35.42
N2-2	RA1	26.5mm	8200	1384.98	10°	230	380	230	10.08	18.82
N2-3	RA2	32mm	12600	1382.18	10°	420	700	420	12.74	33.12
S3	RA1	26.5mm	6000	1389.66	30°	140	220	140	5.84	8.76
S5	RA1	26.5mm	6400	1389.79	30°	150	250	150	6.63	10.39
S7	RA1	26.5mm	7400	1390.07	30°	200	320	200	8.49	14.72
S9	RA1	26.5mm	8100	1390.25	30°	230	370	230	9.82	18.16
S11	RA1	26.5mm	8900	1390.40	30°	260	430	260	11.41	22.63
S13	RA1	26.5mm	9200	1390.59	30°	270	450	270	11.94	24.28
S15	RA1	26.5mm	8800	1390.91	30°	260	420	260	11.14	21.92







