

energy uses were kept constant and have been excluded from the results.

Table 1: Energy Simulation Results

	Heating (kWh)	Cooling (kWh)	Total (kWh)
1 BCA Allowance	23	2979	3002
Abs = 0.7 (standard)			
2 Steel only	8	8245	8253
3 Proposed	22	2699	2721
Abs = 0.248			
4 Steel only	24	4212	4236
5 Steel + Airgap + Plasterboard	37	3166	3203
6 Steel + Airgap + Polyair + Plasterboard	38	2468	2506
7 Steel + Airgap + Bondor	27	2447	2474
8 Proposed	25	2401	2426

These preliminary results show that, whilst the currently proposed design is compliant under the verification method, reducing the absorptance of the external walls and roof has a positive effect on the building's cooling requirements. This indicates a significant impact on internal conditions.

By comparing instances 3 and 8 above, the results show a reduction in cooling load of approximately 10% through reducing the absorptance of the walls and roof. Furthermore, the results for variations 5, 6 and 7 show that the building can achieve compliance without needing both the proposed insulation products (Bondor panel and Polyair).

Please be aware that these results apply only to the building under consideration as the design of an individual building and the buildings location and orientation has a large influence on the simulation results.

Please contact me if you would like to discuss these results, or if you wish us to do any further research into the performance of the buildings under consideration in other climate zones (please see Appendix 1 for preliminary results of this building in Climate Zone 2).

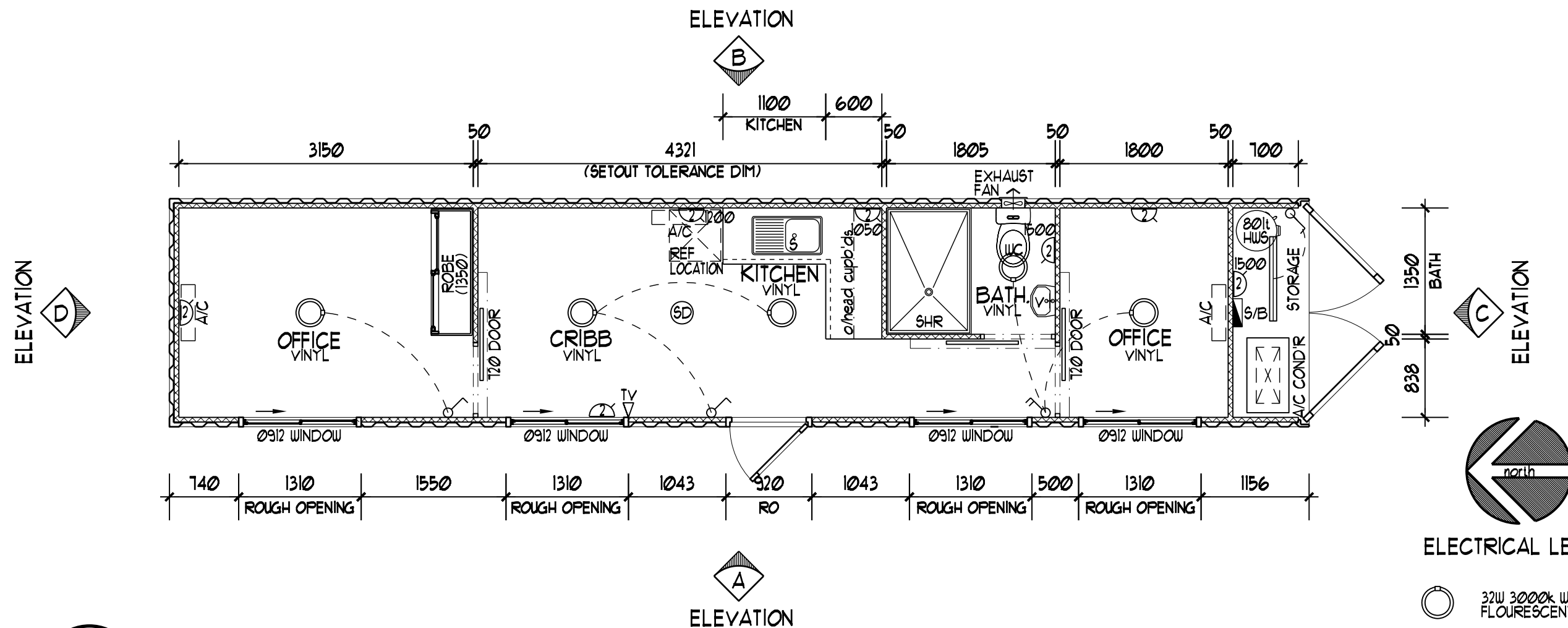
Regards,

Sebastian Carr
1300 308 525

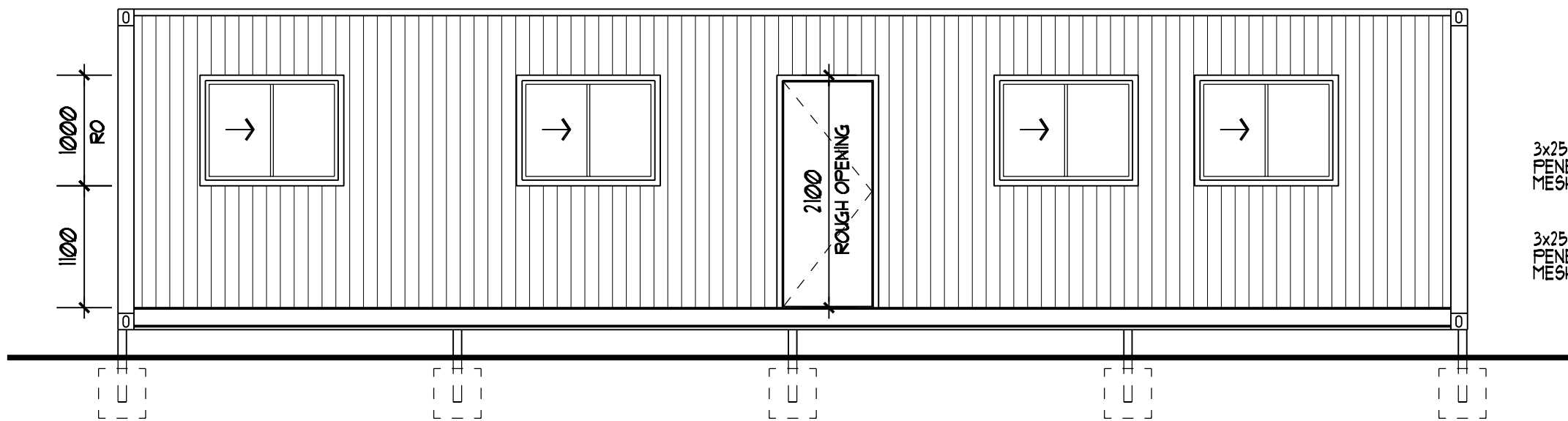
Appendix 1 – Alternative Climate Zone

In order to show the application of the process across various locations, we have run a trial of the same building in Mackay, QLD (BCA Climate Zone 2). All elements were kept constant except for the use of underfloor insulation (as this is not a requirement for climate zone 2). The results below indicate that compliance should be achieved without the need for any bulk insulation.

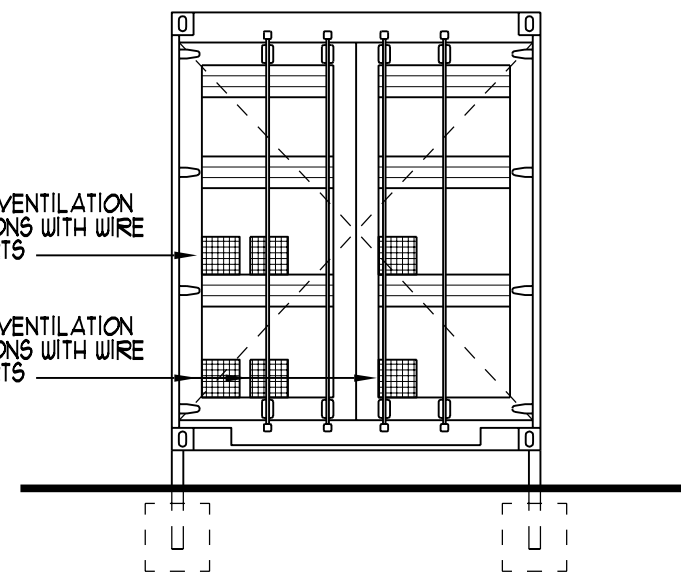
Mackay QLD		BCA Climate 2		
		Heating	Cooling	TOTAL (kWh)
1	BCA Allowance	15	2546	2561
Abs = 0.7 (standard)				
2	Steel	4	5843	5847
3	Proposed	15	2269	2284
Abs = 0.248				
4	Steel + Astec	17	2639	2656
5	Steel + Airgap + Plasterboard	27	2176	2203
6	Steel + Airgap + Polyair + Plasterboard	30	1852	1882
7	Steel + Airgap + Bondor	19	2053	2072
8	Proposed	19	2020	2039



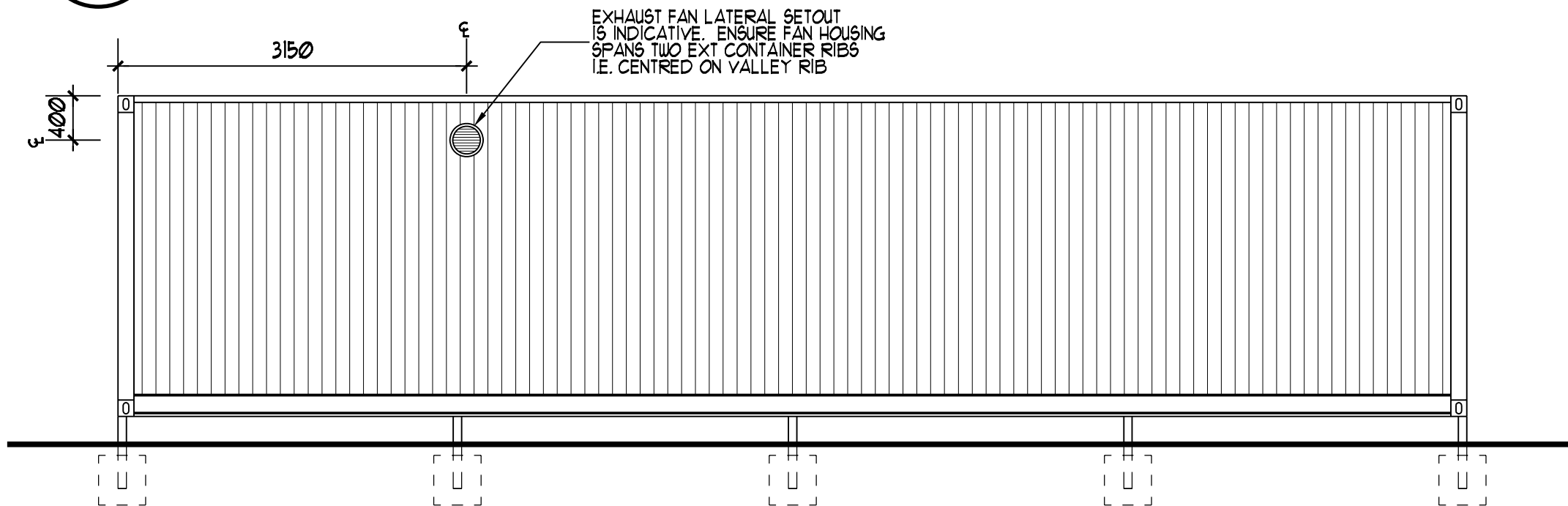
COUNTRY ESCAPE - 12 (OPTION #2)
SCALE -1 : 50



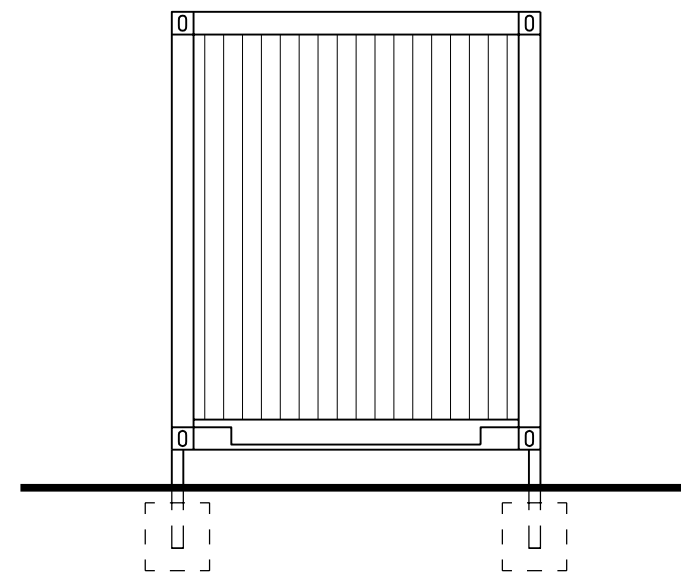
A
ELEVATION
SCALE -1 : 50



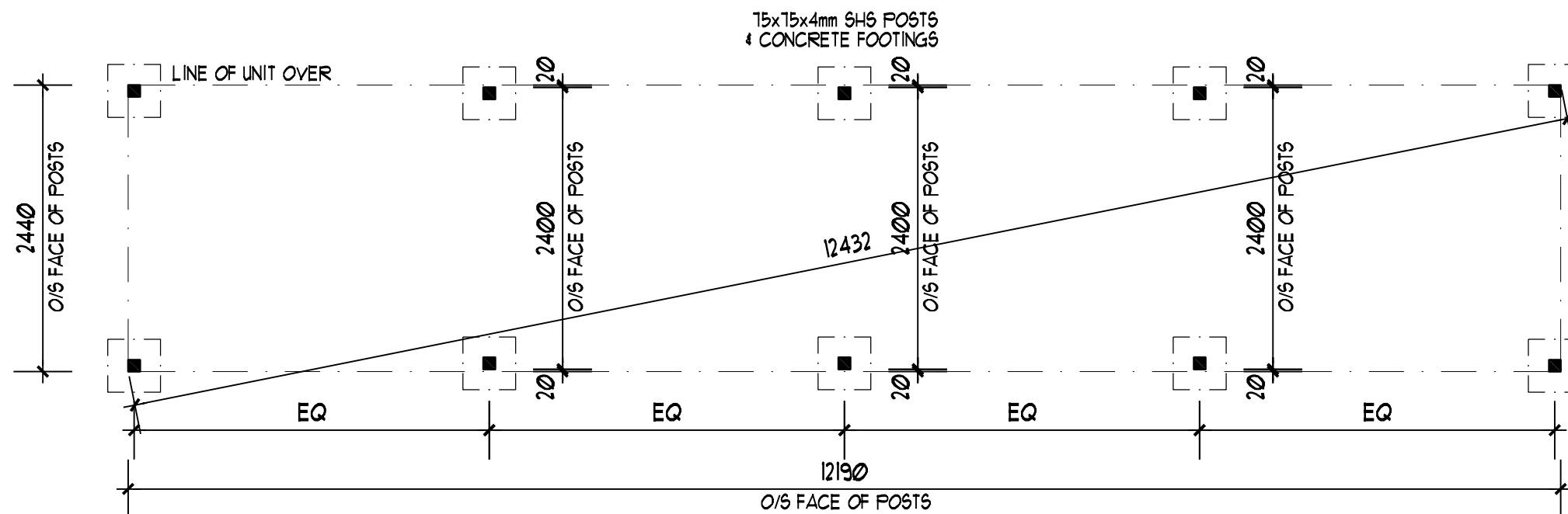
C
ELEVATION
SCALE -1 : 50



B
ELEVATION
SCALE -1 : 50

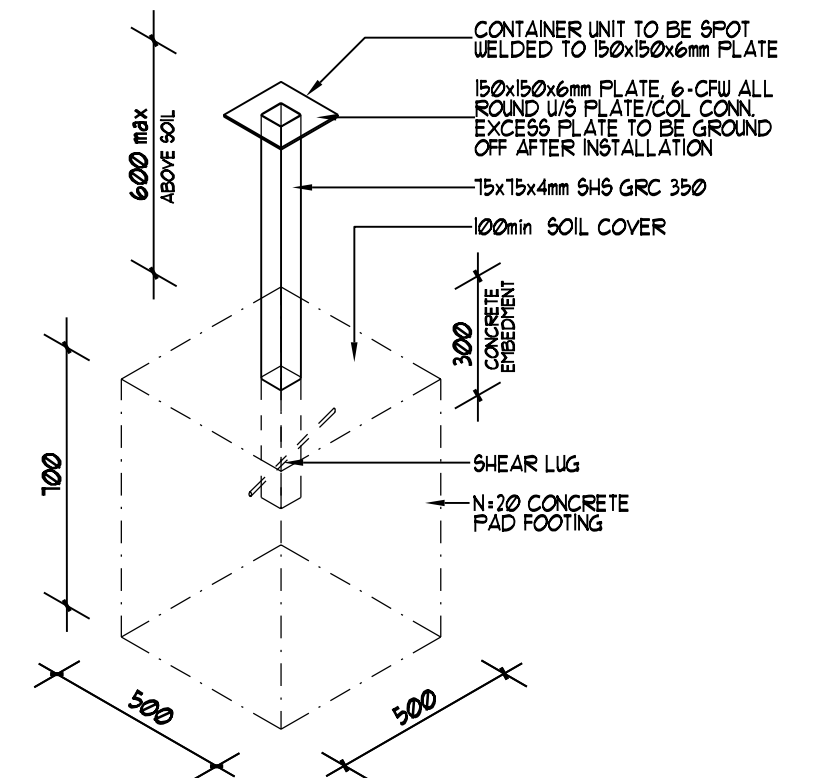


D
ELEVATION
SCALE -1 : 50



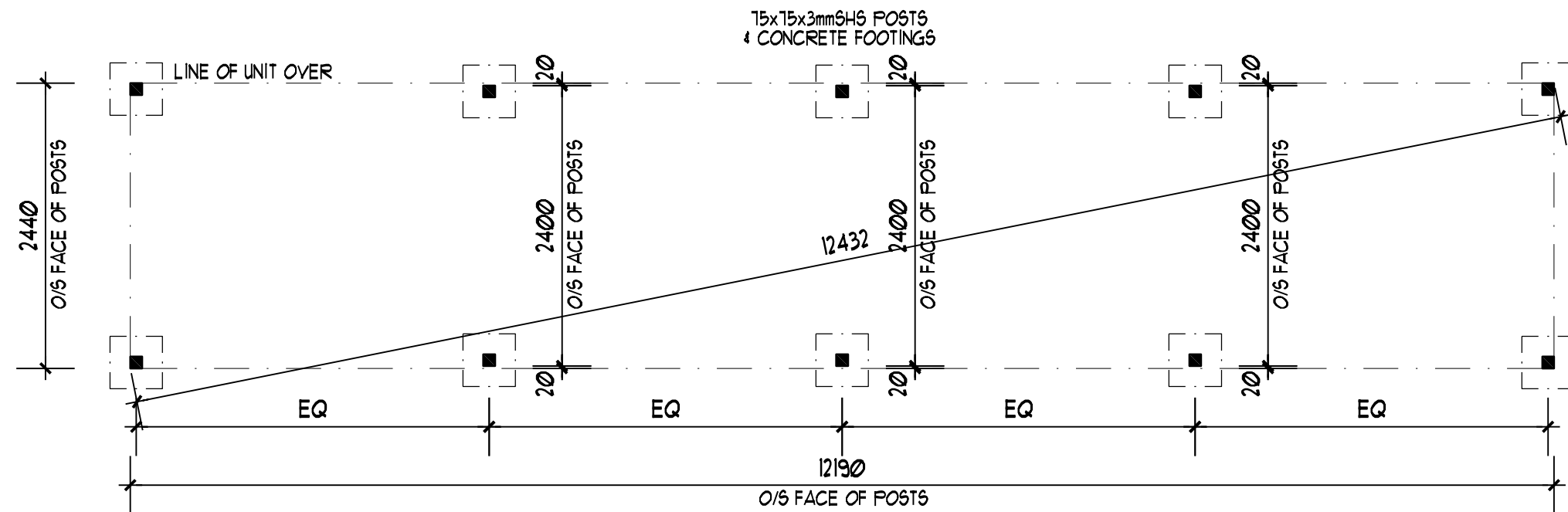
12M UNIT SHS STUMP & FOOTING PLAN (REGION "D")
SCALE -1 : 50

NOTE:
4 x CORNER STUMP HEIGHTS ARE 15mm
LOWER THAN 6 x INTERMEDIATE STUMPS



REGION "D" TERRAIN CATEGORY 2
SOIL CLASS A, S, M, FOR CLASS H
INCREASE SOIL COVER TO 200mm
SOIL BEARING CAPACITY = 100kPa

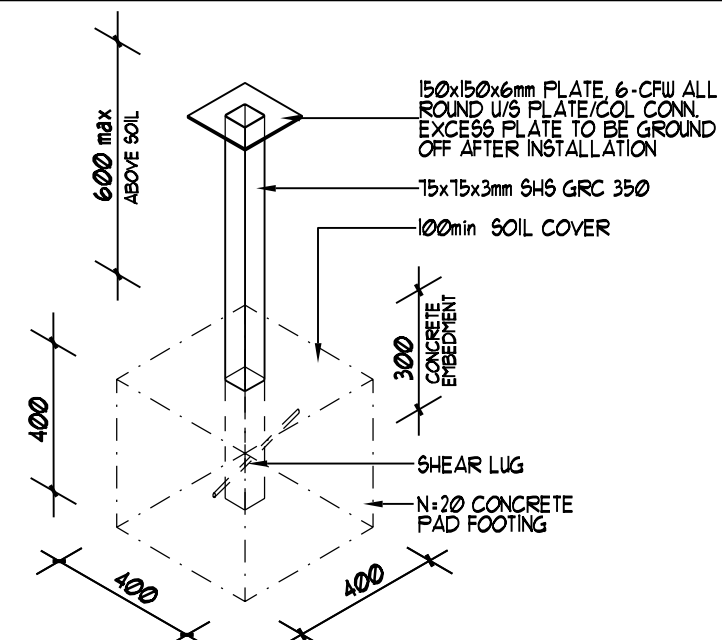
3 SHS FOOTING DETAIL
SCALE -1 : NTS



12M UNIT SHS STUMP & FOOTING PLAN
SCALE -1 : 50

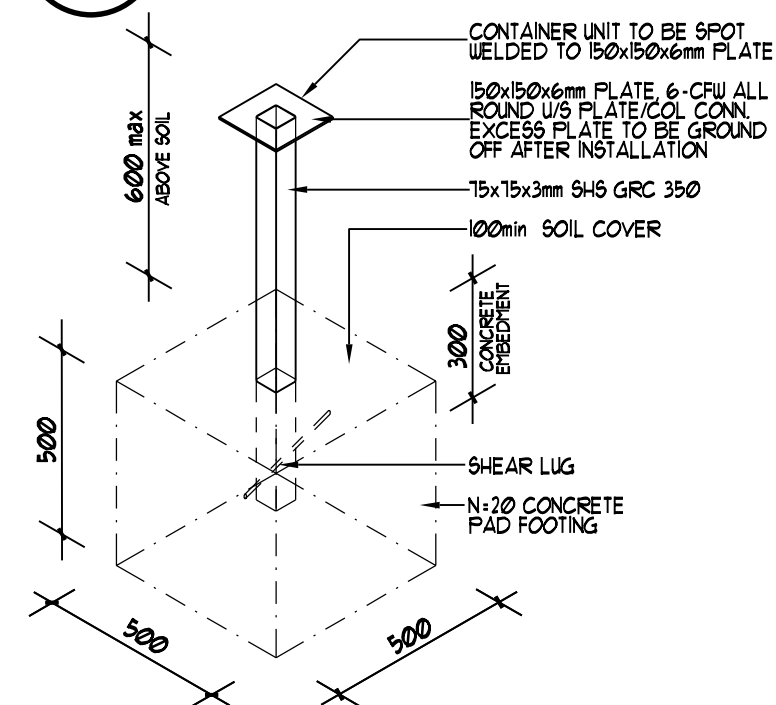
NOTE:
4 x CORNER STUMP HEIGHTS ARE 15mm
LOWER THAN 6 x INTERMEDIATE STUMPS

Registered Professional Engineer 326457
Mr George Zuev
MIEAust CPEng
Signature Date 10/11/07
Registered on the NPER in the Category of
Civil
National Professional Engineers Register



REGIONS "A & B" TERRAIN CATEGORY 2
SOIL CLASS A, S, M, FOR CLASS H
INCREASE SOIL COVER TO 200mm
SOIL BEARING CAPACITY = 100kPa

1 SHS FOOTING DETAIL
SCALE -1 : NTs



REGION "C" TERRAIN CATEGORY 2
SOIL CLASS A, S, M, FOR CLASS H
INCREASE SOIL COVER TO 200mm
SOIL BEARING CAPACITY = 100kPa

2 SHS FOOTING DETAIL
SCALE -1 : NTs