

PROPOSED CONCRETE SLEEPER RETAINING WALLS

SUNVALE CALAMVALE DEVELOPMENT

148 ALGESTER ROAD, CALAMVALE QLD 4116

GENERAL NOTES

1. THE ENCLOSED CONCRETE SLEEPER RETAINING WALLS HAVE BEEN DESIGNED IN ACCORDANCE WITH:

- AS4678:2002 - EARTH RETAINING STRUCTURES
- AS3600:2018 - CONCRETE STRUCTURES
- AS1170.0:2002 - STRUCTURAL DESIGN ACTIONS - GENERAL PRINCIPLES
- AS1170.1:2002 - STRUCTURAL DESIGN ACTIONS - PERMANENT, IMPOSED AND OTHER ACTIONS
- AS1170.2:2021 - STRUCTURAL DESIGN ACTIONS - WIND ACTIONS

2. NO ANALYSIS OF GLOBAL STABILITY HAS BEEN UNDERTAKEN AS PART OF THIS DESIGN. IT IS THE RESPONSIBILITY OF THE OWNER OR OWNER'S REPRESENTATIVE TO ENGAGE A GEOTECHNICAL CONSULTANT TO DETERMINE THE SUSCEPTIBILITY OF THE PROPOSED SITE TO SLOPE INSTABILITIES.

3. THE CLIENT OR CLIENT'S REPRESENTATIVE SHALL ENGAGE A GEOTECHNICAL CONSULTANT TO EVALUATE THE FOUNDATION SOILS PRIOR TO CONSTRUCTION. UNSUITABLE SOILS (IF ANY), AS DETERMINED BY THE GEOTECHNICAL CONSULTANT SHALL BE REMOVED AND REPLACED WITH PROPERLY COMPACTED SOIL AS DIRECTED BY THE GEOTECHNICAL CONSULTANT. UNSUITABLE SOILS ARE DEFINED AS ANY SOIL THAT DOES NOT HAVE SUFFICIENT BEARING CAPACITY OR WILL CAUSE EXCESSIVE SETTLEMENT.

4. DESIGN PARAMETERS IN NOTE 5 ARE ASSUMED BASED ON ASCT TECHNICAL MEMO 1369_3112 DATED 3 NOVEMBER 2022 FOR CLAYEY SAND AND SILTY CLAY.

5. DESIGN SOIL STRENGTH PARAMETERS:

- RETAINED SOIL: CONTROLLED CLASS 1 COMPACTED SITE FILL
 - FRICITION ANGLE (ϕ) = 28°
 - DENSITY (γ) = 18 kN/m³
- FOUNDATION SOIL: NATURAL INSITU MATERIAL
 - FRICITION ANGLE (ϕ) = 28°
 - COHESION (c) = 2 kPa
 - DENSITY (γ) = 18 kN/m³

6. DESIGN LOADS:

- LIVE LOAD = 5 kPa
- DEAD LOAD = nil
- FENCE
 - H_{MAX} = 1.8m (SOLID CONSTRUCTION)
 - DESIGN WIND q = 0.74kPa
 - WIND REGION B1
 - TERRAIN CATEGORY 3

6. ANY EXCAVATION SUPPORT, INCLUDING THE STABILITY OF THE EXCAVATION AND ITS INFLUENCE ON ADJACENT STRUCTURES IS THE RESPONSIBILITY OF THE CLIENT.

7. WALL GEOMETRY, LOCATIONS, SLOPES AND SURCHARGE LOADS FOR THE RETAINING WALL DESIGN WERE MEASURED FROM THE SITE PLANS MADE AVAILABLE TO THE ENGINEER. IF CONDITIONS VARY IN THE FIELD FROM THOSE SHOWN ON THESE PLANS, THE ENGINEER OF RECORD MUST BE NOTIFIED PRIOR TO CONSTRUCTION OF THE RETAINING WALLS TO REVIEW THE DESIGN AND/OR PLANS. MODIFICATIONS TO THE DESIGN AND/OR PLANS MAY BE REQUIRED AFTER THE REVIEW, AND MAY TAKE UP TO TEN BUSINESS DAYS TO COMPLETE.

8. LOCATION OF THE RETAINING WALL IN RELATION TO PROPERTY LINES, UTILITY EASEMENTS, WATERSHED EASEMENTS, OR ANY OTHER TYPE OF EASEMENTS ARE THE RESPONSIBILITY OF THE OWNER. THE ENGINEER OF RECORD ASSUMES NO LIABILITY FOR THE LOCATION OF THE RETAINING WALLS, OR IF CONSTRUCTION OF THE PROPOSED CONCRETE SLEEPER RETAINING WALLS ENCROACHES ANY PROPERTY LINES OR EASEMENTS.

9. RETAINING WALL SETOUT INFORMATION IS PROVIDED IN THE FOLLOWING PEAKURBAN PROJECT CIVIL PLANS:

- 21-0333-102 REV A
- 21-0333-200 REV A
- 21-0333-201 REV A

10. IF THERE ARE DISCREPANCIES BETWEEN ANY INFORMATION ON THESE PLANS AND INFORMATION IN THE PROJECT SPECIFICATIONS, ADBRI MASONRY ENGINEERS SHOULD BE NOTIFIED BEFORE CONSTRUCTION COMMENCES.

11. NO EXCAVATIONS SHALL BE MADE BELOW THE 'ZONE OF INFLUENCE' EXTENDING AT 45° BELOW THE BASE OF THE RETAINING WALL STRUCTURE.

12. LOADS EXCEEDING THE DESIGN LIVE LOAD WITHIN A DISTANCE BEHIND THE RETAINING WALL EQUAL TO 1.5 TIMES THE HEIGHT OF THE RETAINING WALL MUST BE PIERED BELOW STRUCTURAL LOAD LINE.

13. IN ADDITION TO NOTE 12 ABOVE, NO MACHINERY GREATER THAN 0.5t ALLOWABLE WITHIN A DISTANCE OF 1.5m DIRECTLY BEHIND RETAINING WALL OR GREATER THAN 1.5t ALLOWABLE WITHIN A DISTANCE OF 1.5 TIMES THE HEIGHT OF THE WALL DIRECTLY BEHIND RETAINING WALL. ONLY LIGHTWEIGHT (I.E. 500kg MAXIMUM VIBRATING PLATE OR ROLLER) HAND OPERATED COMPACTION EQUIPMENT IS ALLOWED WITHIN 1.5m OF THE RETAINING WALL UNITS. LOOSE LAYER THICKNESS MAY NEED TO BE REDUCED IN THIS ZONE TO ALLOW PROPER COMPACTION TO BE ACHIEVED.

14. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE

MATERIAL NOTES

1. ALL CONCRETE SLEEPERS SHALL BE ADBRI MASONRY CONCRETE SLEEPERS UNLESS OTHERWISE APPROVED BY THE APPROVING ENGINEER ON THESE PLANS.

2. CONCRETE: ALL CONCRETE SHALL BE OF MINIMUM 25MPa COMPRESSIVE STRENGTH, CONTAIN A MAXIMUM AGGREGATE SIZE OF 20mm AND PROVIDE AT LEAST 50mm COVER TO STEEL ELEMENTS

3. SUBSOIL DRAINAGE PIPE: ϕ 100MM PERFORATED OR SLOTTED PVC OR CORRUGATED HDPE PIPE MANUFACTURED IN ACCORDANCE WITH AS2566. SUBSOIL DRAINAGE PIPES TO DISCHARGE FROM WALL EVERY 20m UNI AND ARE TO BE CONNECTED TO A LAWFUL POINT OF DISCHARGE BY OTHERS.

4. ALL SURFACE AND SUBSURFACE DRAINAGE SHALL BE DESIGNED IN ACCORDANCE WITH AS4678:2002

5. FILTER FABRIC: PROFAB AS140 NON-WOVEN GEOTEXTILE OR EQUIVALENT

CONSTRUCTION NOTES

1. HOLES SHALL BE LOCATED TO ALLOW POST TO BE INSTALLED CENTRALLY, PROVIDE SUFFICIENT POST/SLEEPER CONTACT WIDTH AND ENSURE AT LEAST 50mm COVER TO STEEL COMPONENTS.

2. HOLES SHALL BE FIRM, DRY AND FREE OF LOOSE MATERIALS PRIOR TO PLACEMENT OF CONCRETE.

3. CHECK EACH POST FOR LEVEL AND ALIGNMENT. POSTS SHOULD BE SET SUCH THAT THE TOP OF THE POST DOES NOT PROTRUDE BEYOND THE UPPERMOST COURSE OF SLEEPERS.

4. INSTALL DRAINAGE PIPE AT THE LOWEST POSSIBLE ELEVATION AND MAINTAIN A 2% FALL TO DISCHARGE AWAY FROM WALL FOUNDATION AND AT MAXIMUM 20m CENTRES

5. CHECK EACH COURSE OF SLEEPERS FOR LEVEL, AND ALIGNMENT PRIOR TO PROCEEDING WITH EACH ADDITIONAL COURSE.

6. PRIOR TO PLACING BACKFILL IT MAY BE NECESSARY TO WEDGE SLEEPERS AGAINST THE FRONT FLANGE OF THE POST.

7. WALL CONSTRUCTION TOLERANCES (IN ACCORDANCE WITH AS 4678 TABLE 6.1)

a. VERTICAL ALIGNMENT : PLUS OR MINUS 20mm OVER ANY 3m DISTANCE, WITH A MAXIMUM DIFFERENTIAL OF 50mm OVER THE LENGTH OF THE WALL.

b. HORIZONTAL ALIGNMENT : PLUS OR MINUS 20mm OVER ANY 3m DISTANCE, WITH A MAXIMUM DIFFERENTIAL OF 50mm OVER THE LENGTH OF THE WALL.

c. SLEEPER BOWING : UP TO 16mm FOR 2.4m LONG SLEEPERS AND UP TO 14mm FOR 2.0m LONG SLEEPERS.

8. RETAINED SOIL OVEREXCAVATION IS TO BE BACKFILLED WITH 20mm CLEAN DRAINAGE AGGREGATE UNO.

9. ALL CUT SLEEPERS TO BE TREATED WITH HIGH BUILD EPOXY OR INORGANIC ZINC SILICATE TO AS2312.1:2014. SURFACE TO BE TREATED IS TO BE DRY, CLEAN, AND FREE OF DUST, DEBRIS AND SLURRY.

10. ALL CUT STEEL POST MEMBERS AND WELD SURFACES TO BE TREATED USING AN ORGANIC ZINC RICH EPOXY PAINT TO COMPLY WITH AS3750.9, APPLIED TO REPAIR AREA IN TWO COATS, EACH COAT WITH A MINIMUM DRY FILM THICKNESS OF 50 MICRONS.

11. WHERE PFC CHANNELS NOT USED FOR CORNER DETAILS, GENERAL PURPOSE NON-SHRINK GROUT MAY BE USED TO ACHIEVE MIN 35mm SLEEPER BEARING.

12. AS PER THE CONCRETE INSTITUTE OF AUSTRALIA RECOMMENDED PRACTICE NOTE Z7/06 CONCRETE CRACKING AND CRACK CONTROL, ANY HAIRLINE CRACKING LESS

THAN OR EQUAL TO 0.4mm IN WIDTH IS DEEMED TO REMAIN STRUCTURALLY ADEQUATE.

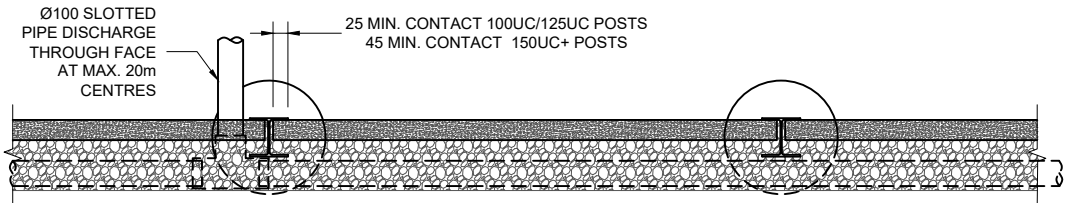
POST DETAILS

POST DESIGNATION	POST SIZE	OVERALL LENGTH	USEABLE UC LENGTH	REINFORCEMENT GRADE AND LENGTH
B-2000	100x100 UC	2000	800	4 - N12 x 1200mm
B-2600	100x100 UC	2600	1200	4 - N12 x 1200mm
B-2900	100x100 UC	2900	1400	4 - N12 x 1300mm
B-3200	100x100 UC	3200	1400	4 - N12 x 1600mm
C-3500	125x125 UC	3500	1600	4 - N12 x 1700mm
C-3900	125x125 UC	3900	1800	4 - N12 x 1800mm
C-4400	125x125 UC	4400	2200	4 - N12 x 2000mm
D-4900	150x150 UC	4900	2400	4 - N16 x 2200mm
D-5500	150x150 UC	5500	2600	4 - N16 x 2600mm
E-5900	175x175 UC	5900	3000	4 - N24 x 2600mm
E-6600	175x175 UC	6600	3200	4 - N28 x 3100mm
F-7000	200x200 UC	7000	3600	4 - N32 x 3100mm

^ USEABLE UC LENGTH IS LENGTH OF UC AVAILABLE FOR SUPPORTING CONCRETE SLEEPERS

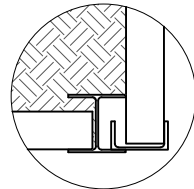
A-ASSEMBLIES ALLOW FENCE POSTS FIXED DIRECT TO TOP 400mm OF USEABLE UC SECTION

ALL OTHER ASSEMBLIES REQUIRE BRACKET FOR FENCE POST FIXING

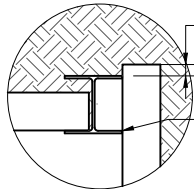


TYPICAL WALL PLAN VIEW

1:30

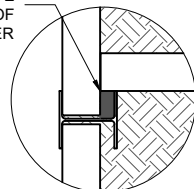


TYPICAL EXTERNAL
90° CORNER DETAIL
NTS

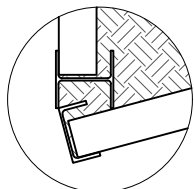


TYPICAL INTERNAL
90° CORNER DETAIL
NTS

NON-SHRINK GROUT (GP)
FILL TO ACHIEVE
MIN 35mm BEARING OF
PERPENDICULAR SLEEPER



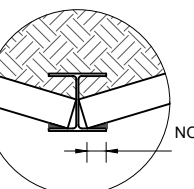
TYPICAL
T-JUNCTION
DETAIL
NTS



TYPICAL
EXTERNAL ANGLE
DETAIL
NTS



ALTERNATIVE
INTERNAL ANGLE
DETAIL
NTS



ALTERNATIVE
EXTERNAL ANGLE
DETAIL
NTS

35 MIN
WHERE SLEEPER
ONLY BEARS ON ONE
FLANGE END, FILL
POST VOID WITH NON-
SHRINK GROUT (GP)
TO ACHIEVE SLEEPER
BEARING

NON-SHRINK GROUT (GP)
FILL TO ACHIEVE
MIN 35mm BEARING

-			DESIGNED BY	WK
-			DRAWN BY	WK
-			APPROVED BY	
B	04/11/22	DESIGNS UPDATED TO ASCT SOIL REPORT	QUALIFICATIONS	
A	29/08/22	ISSUED FOR CONSTRUCTION	RPEQ 08869	
No.	DATE	AMENDMENT		

adbri MASONRY

Adbri Masonry Pty Ltd
ABN: 31 009 687 521

P.O. Box 623
Beenleigh, QLD 4207

Phone: (07) 3382 4100
Fax: (07) 3382 4185
Web: www.adbrimasonry.com.au

Fishwick (ACT): (02) 6239 1255
Coffs Harbour (NSW): (02) 6655 9972
Moorebank (NSW): (02) 9822 6822
Newcastle (NSW): (02) 4967 3611
Nowra (NSW): (02) 4421 3500
Brisbane (QLD): (07) 3382 4100
Coirns (QLD): (07) 4051 6944
Gladstone (QLD): (07) 4979 3355
Mackay (QLD): (07) 4955 6966
Morrochdore (QLD): (07) 5477 3300
Toowoomba (QLD): (07) 4688 9600
Townsville (QLD): (07) 4774 5155
Ottaway (SA): (08) 8304 2323
Bendigo (VIC): (03) 5447 8866
Combeville (VIC): (03) 9305 0900
Essendon (VIC): (03) 9375 8500
Hobart (TAS): (03) 6244 3822
Ulverstone (TAS): (03) 6425 1899

PROJECT TITLE	
SUNVALE CALAMVALE RECONFIGURE LOT 3 ON SP186470	
148 ALGESTER ROAD CALAMVALE QLD 4116	
DRAWING SCALE	ORIGINAL DRAWING SIZE
NTS	A3

SHEET TITLE	
CONCRETE SLEEPER RETAINING WALLS DESIGN AND CONSTRUCTION NOTES	
CLIENT	
DAC CONSTRUCTIONS	
DRAWING No.	ISSUE
CIV-3043-001	B