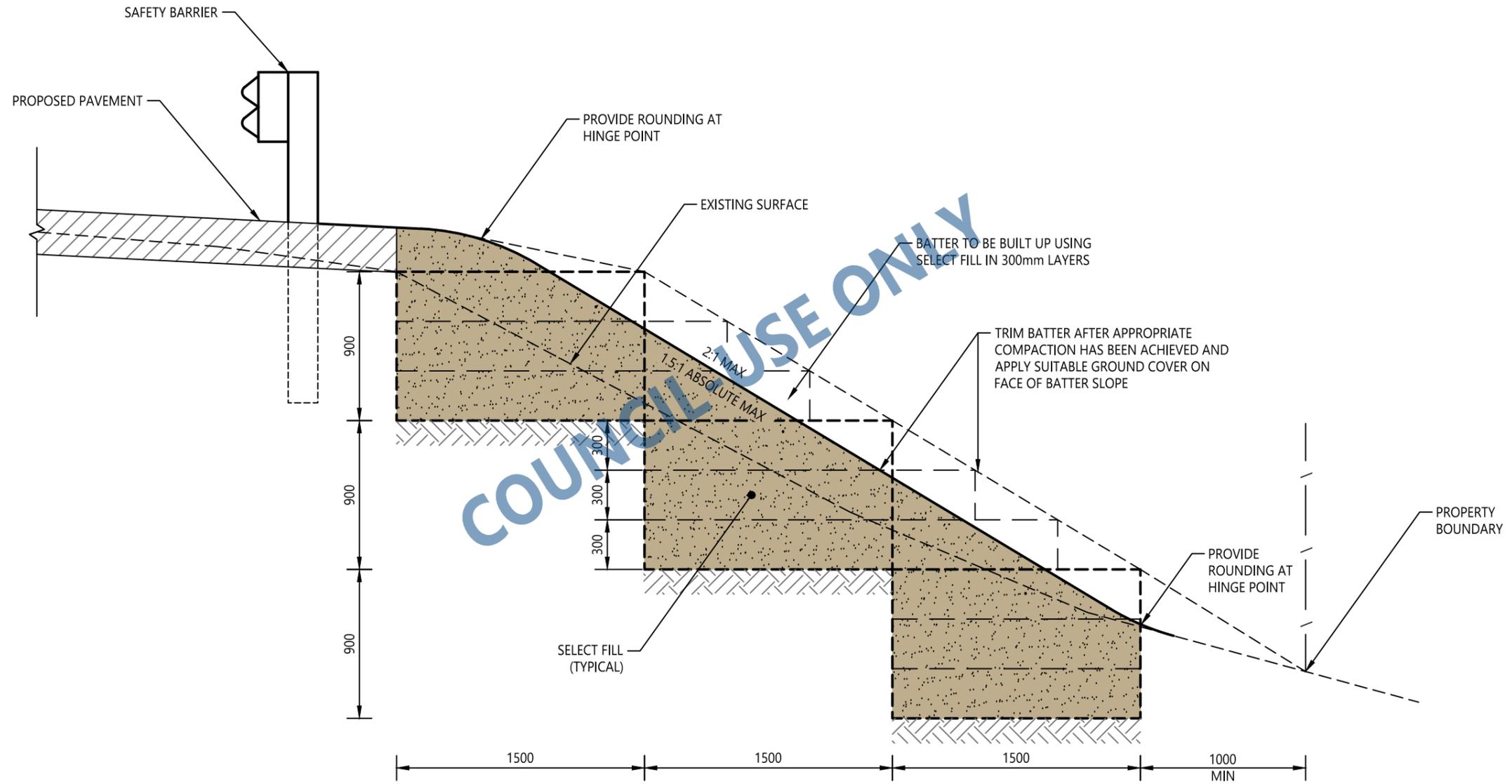
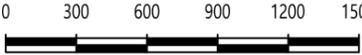


NOTES:

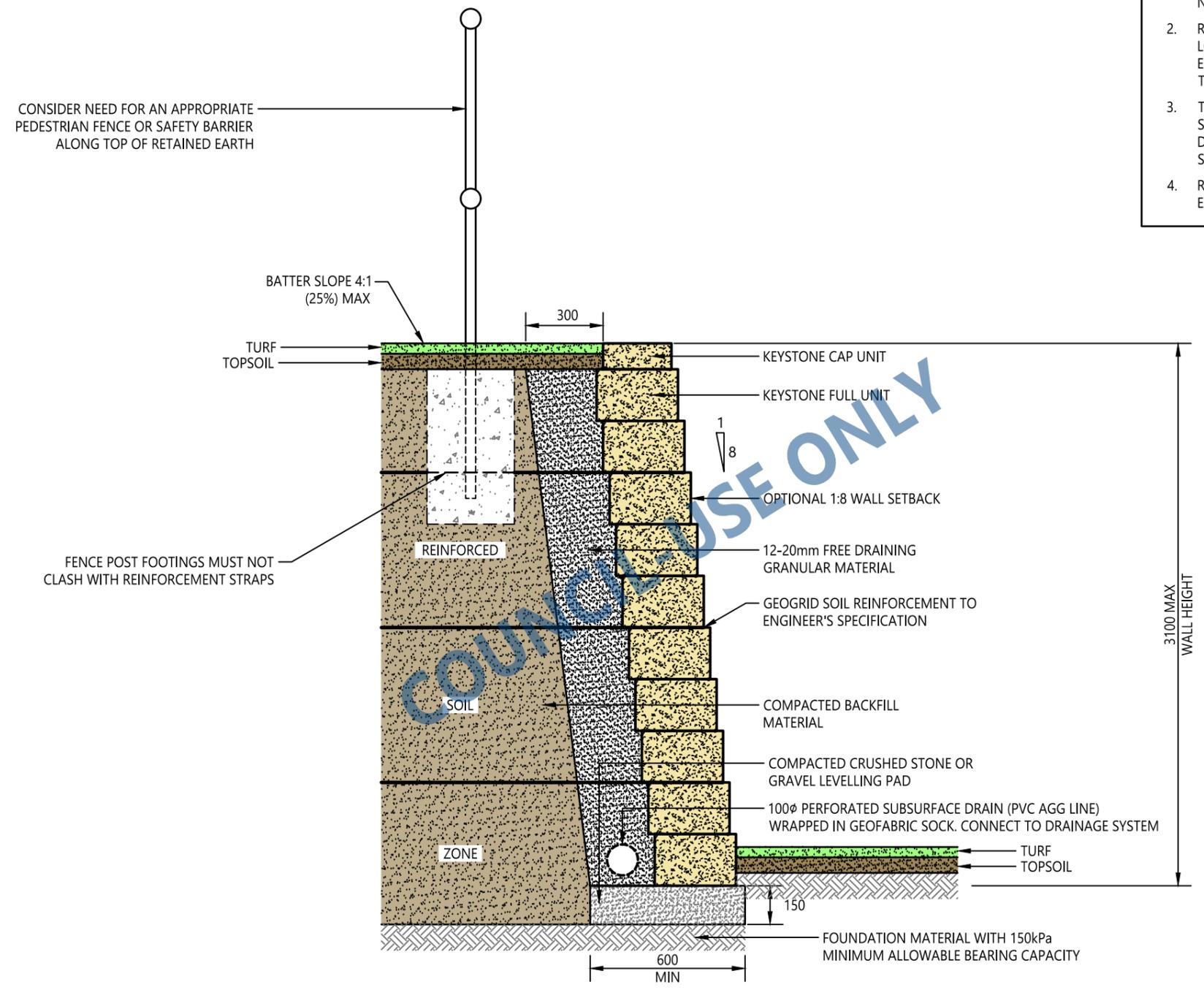
1. VEGETATION TO BE REMOVED AS REQUIRED TO ENABLE ROADSIDE BATTER CONSTRUCTION.
2. BENCH SELECT FILL INTO EXISTING SURFACE, EXTEND COMPACTED FILL BEYOND BATTER FINISHED SURFACE LEVEL AND TRIM TO EVEN PROFILE. PLACE FILL IN 300mm MAX LAYERS TO 95% STANDARD COMPACTION.
3. FINAL LAYER 300mm BELOW FINISHED SURFACE LEVEL SHALL BE COMPACTED TO MINIMUM RELATIVE DENSITY OF 100% STANDARD.
4. CONSIDER INSTALLING GEOGRID OR EQUIVALENT ON TOP OF EACH TERRACED LAYER.



ROADSIDE BATTER CROSS SECTION
SCALE 1:30

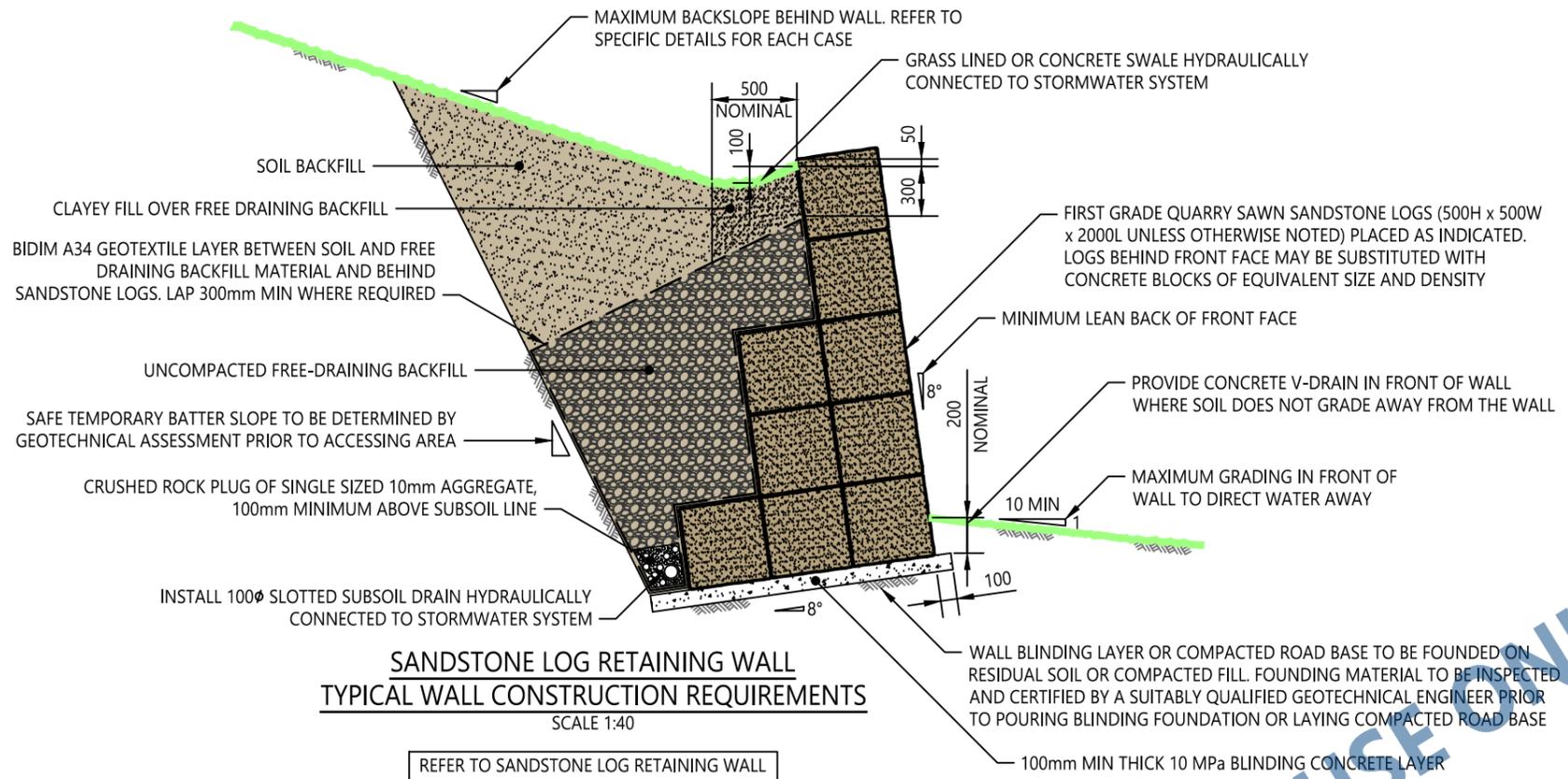
REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	T WILLIS		Central Coast Council	STANDARD DRAWING	
					 1:30	CHECKED	M BAMBER			DRAWING NUMBER	REV
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	DATE	28/4/20			SD0201	-
						UNIT MANAGER APPROVAL				EARTHWORKS SERIES	
						 ASSETS PLANNING AND DESIGN				ROADSIDE BATTER CONSTRUCTION	
											SHEET 1 OF 1
											A3

- NOTES:**
1. THIS STANDARD DRAWING IS TO BE USED FOR GUIDANCE ONLY AND SHALL NOT BE USED AS A DESIGN OR FOR CONSTRUCTION PURPOSES.
 2. RETAINING WALLS GREATER THAN 1m IN HEIGHT AND/OR SUBJECT TO LIVE LOADS SHALL BE DESIGNED BY A SUITABLY QUALIFIED AND EXPERIENCED ENGINEER, TAKING INTO ACCOUNT PREVAILING GROUND CONDITIONS, TRAFFIC LOADING AND STRUCTURAL LOADINGS.
 3. THE DESIGNER OF AN EARTH RETAINING STRUCTURE SHALL PROVIDE A SAFETY IN DESIGN REPORT THAT SPECIFIES THE HAZARDS RELATING TO THE DESIGN OF THE STRUCTURE, IN ACCORDANCE WITH WORK HEALTH AND SAFETY LEGISLATION.
 4. RETAINING WALLS SHALL BE DESIGNED IN ACCORDANCE WITH AS 4678 EARTH RETAINING STRUCTURES AND THE MANUFACTURER'S SPECIFICATION.



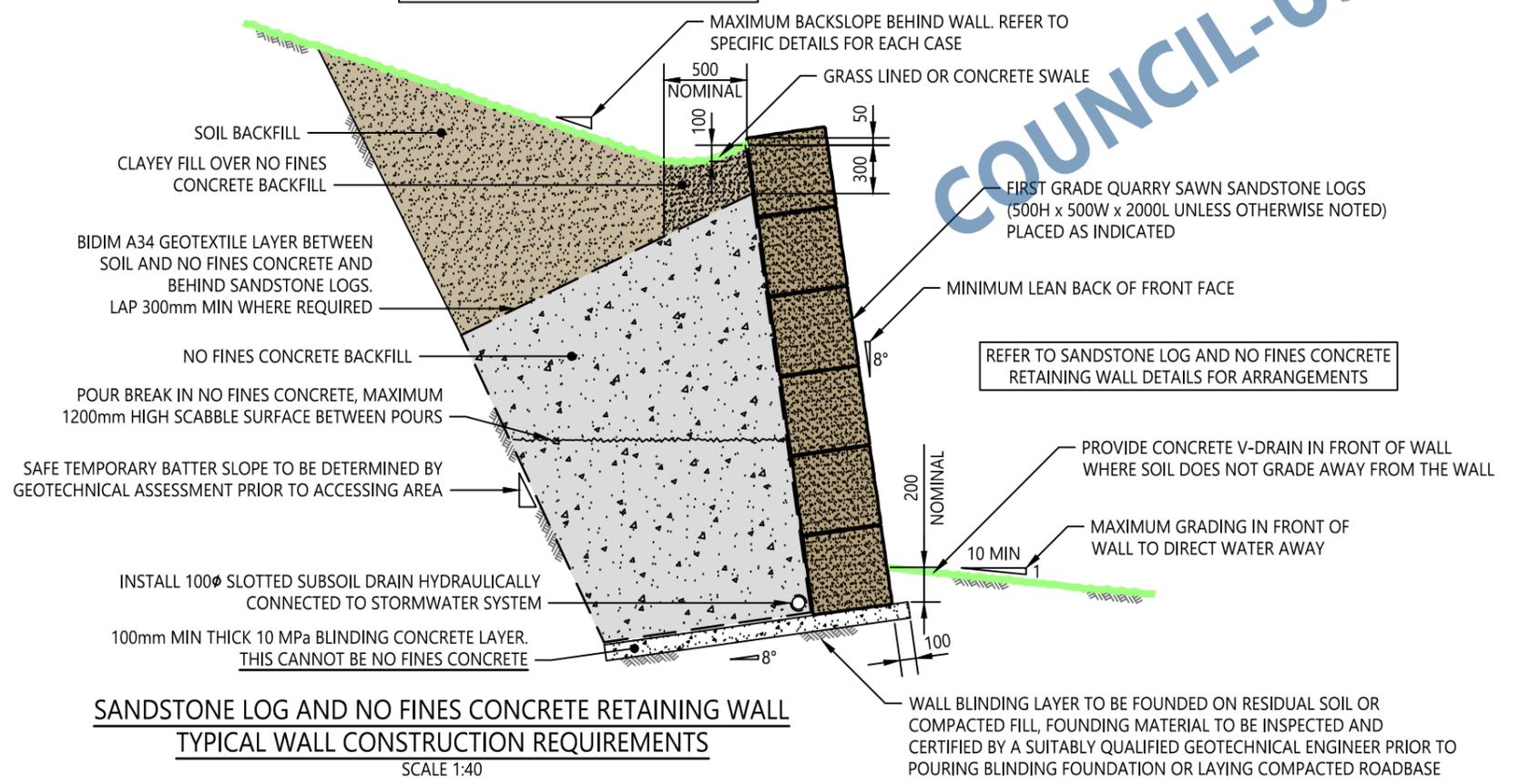
TYPICAL KEYSTONE WALL CROSS SECTION
SCALE 1:20

REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	T WILLIS	Central Coast Council	Central Coast Council	STANDARD DRAWING	
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	CHECKED	M BAMBER			DRAWING NUMBER	REV
					0 200 400 600 800 1000	DATE	28/4/20	EARTHWORKS SERIES KEYSTONE RETAINING WALL	SD0202	-	SHEET 1 OF 1
					1:20	UNIT MANAGER APPROVAL					
						ASSETS PLANNING AND DESIGN		ROADS TRANSPORT DRAINAGE AND WASTE			



SANDSTONE LOG RETAINING WALL
TYPICAL WALL CONSTRUCTION REQUIREMENTS
 SCALE 1:40

REFER TO SANDSTONE LOG RETAINING WALL
 DETAILS SHEET 4 AND 5 FOR ARRANGEMENTS



SANDSTONE LOG AND NO FINES CONCRETE RETAINING WALL
TYPICAL WALL CONSTRUCTION REQUIREMENTS
 SCALE 1:40

REFER TO SANDSTONE LOG AND NO FINES CONCRETE
 RETAINING WALL DETAILS FOR ARRANGEMENTS

NOTES:

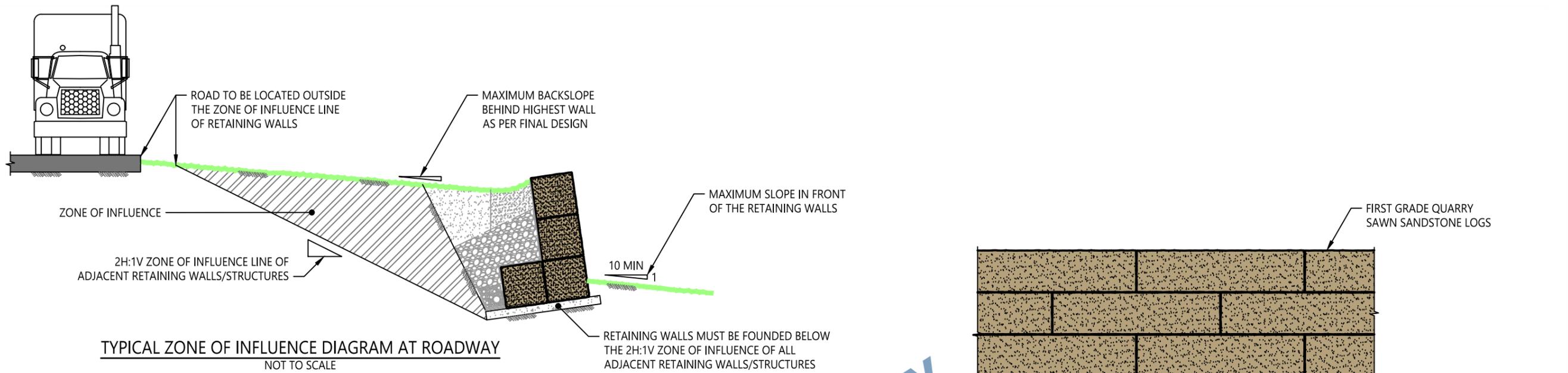
1. THIS STANDARD DRAWING IS BASED ON STRUCTURAL ENGINEERING DRAWING NUMBERS S01-S06 PREPARED BY NORTHROP CONSULTING ENGINEERING SERVICES FOR CENTRAL COAST COUNCIL DATED 29/8/19.
2. THIS STANDARD DRAWING IS TO BE USED FOR GUIDANCE ONLY AND SHALL NOT BE USED AS A DESIGN OR FOR CONSTRUCTION PURPOSES. CENTRAL COAST COUNCIL AND NORTHROP CONSULTING ENGINEERING SERVICES SHALL NOT BE HELD LIABLE FOR THE FAILURE OF ANY EARTH-RETAINING STRUCTURES BASED ON THE USE OF THIS STANDARD DRAWING, NEGLIGENCE ON THE PART OF THE DESIGNER OR CONSTRUCTOR AND THE LIMITATIONS EXPRESSED WITHIN COUNCIL'S COMPLETE CIVIL WORKS SPECIFICATION.
3. THIS STANDARD DRAWING IS TO BE USED FOR GUIDANCE ONLY AND SHALL NOT BE USED AS A DESIGN OR FOR CONSTRUCTION PURPOSES.
4. RETAINING WALLS GREATER THAN 1m HEIGHT AND/OR SUBJECT TO LIVE LOADS AND/OR CONSTRUCTED WITHIN THE ZONE OF INFLUENCE OF ANOTHER RETAINING WALL OR STRUCTURE SHALL BE DESIGNED BY A SUITABLY QUALIFIED (NER) AND EXPERIENCED ENGINEER, TAKING INTO ACCOUNT PREVAILING GROUND CONDITIONS AND STRUCTURAL LOADINGS ON A CASE-BY-CASE BASIS.
5. THE DESIGNER OF AN EARTH-RETAINING STRUCTURE SHALL PROVIDE A SAFETY IN DESIGN REPORT THAT SPECIFIES THE HAZARDS RELATING TO THE DESIGN OF THE STRUCTURE, IN ACCORDANCE WITH WORK HEALTH AND SAFETY LEGISLATION.
6. RETAINING WALLS SHALL BE DESIGNED IN ACCORDANCE WITH AS 4678 EARTH-RETAINING STRUCTURES.
7. SANDSTONE LOGS SHALL BE PLACED IN A STABLE INTERLOCKING MANNER, ROUGHLY COURSED AND BEDDED ON THEIR SAWN FACE.
8. FRONT FACING LOGS TO BE FIRST GRADE QUARRY SAWN.
9. RETAINING WALLS SHOULD NOT BE CONSTRUCTED WITHIN THE ZONE OF INFLUENCE OF ANOTHER RETAINING WALL OR STRUCTURAL FOUNDATION, REFER TO SHEET 2 FOR ZONE OF INFLUENCE DIAGRAMS.

DESIGN ASSUMPTIONS:

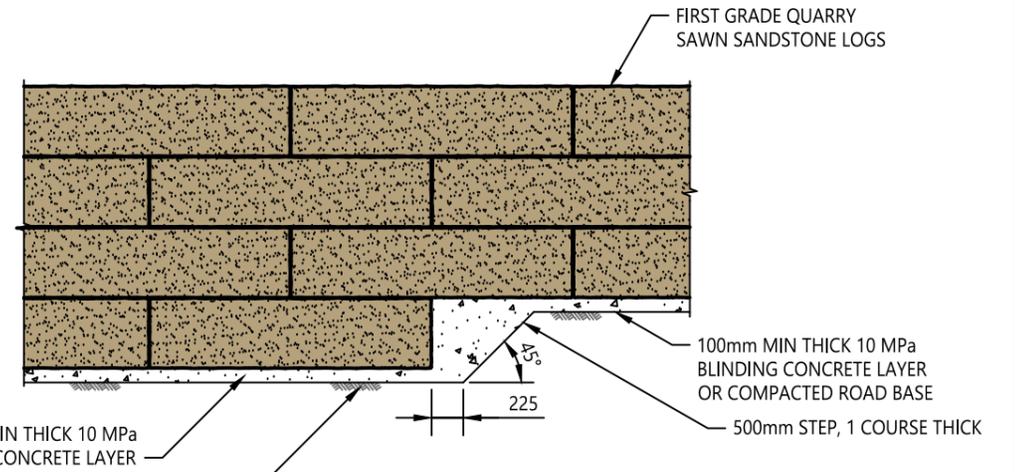
THE FOLLOWING ASSUMPTIONS HAVE BEEN ADOPTED IN PREPARING THESE SANDSTONE LOG RETAINING WALL EXAMPLES. THE DESIGN ENGINEER MUST NOTE THESE ASSUMPTIONS AND ENSURE THE PROJECT SPECIFIC DESIGN PARAMETERS ARE USED IN THE DESIGN OF EACH AND EVERY "FOR CONSTRUCTION" SANDSTONE LOG RETAINING WALL.

PARAMETER	ADOPTED VALUE	COMMENTS
WALL CLASSIFICATION	B	
SURCHARGE LIVE LOAD	5kPa	
SOIL DENSITY (γ)	19 kN/m ³	
INTERNAL FRICTION ANGLE (ϕ')	28°	
DRAINED COHESION (c')	0kPa	CONSERVATIVELY IGNORED IN DESIGN.
WALL FRICTION (δ)	0°	BETWEEN THE SOIL AND BACK FACE OF THE WALL. CONSERVATIVELY IGNORED IN DESIGN DUE TO VARIANCE IN POTENTIAL GEOTEXTILE MATERIAL TO BE USED.
COEFFICIENT OF FRICTION 1 (μ_1) (SANDSTONE TO SOIL)	0.5	FRICTION BETWEEN THE BASE OF THE WALL/FOUNDATION AND THE SOIL. ADAPTED AS $\tan\phi'$.
COEFFICIENT OF FRICTION 2 (μ_2) (SANDSTONE TO SANDSTONE)	0.6	FRICTION ANGLE BETWEEN THE SANDSTONE LOGS.
ALLOWABLE BEARING CAPACITY OF SANDSTONE LOGS	700kPa	
10. ROAD TRAFFIC SURCHARGE LOADS HAVE NOT BEEN ALLOWED FOR IN THE DESIGN.		
11. FENCE AND/OR BARRIER LOADS HAVE NOT BEEN ALLOWED FOR IN THE DESIGN.		
12. NO HYDROSTATIC LOADS ARE APPLIED TO THE SANDSTONE LOG RETAINING WALLS. ALL RETAINING WALLS ARE INSTALLED WITH FREE DRAINING BACKFILL AND SUBSOIL DRAINAGE HYDRAULICALLY LINKED TO THE STORMWATER SYSTEM.		
13. NO FINES CONCRETE BACKFILL TO HAVE MINIMUM DENSITY OF 18 kN/m ³ AND SHALL BE Poured IN MAXIMUM HEIGHTS OF 1200mm.		

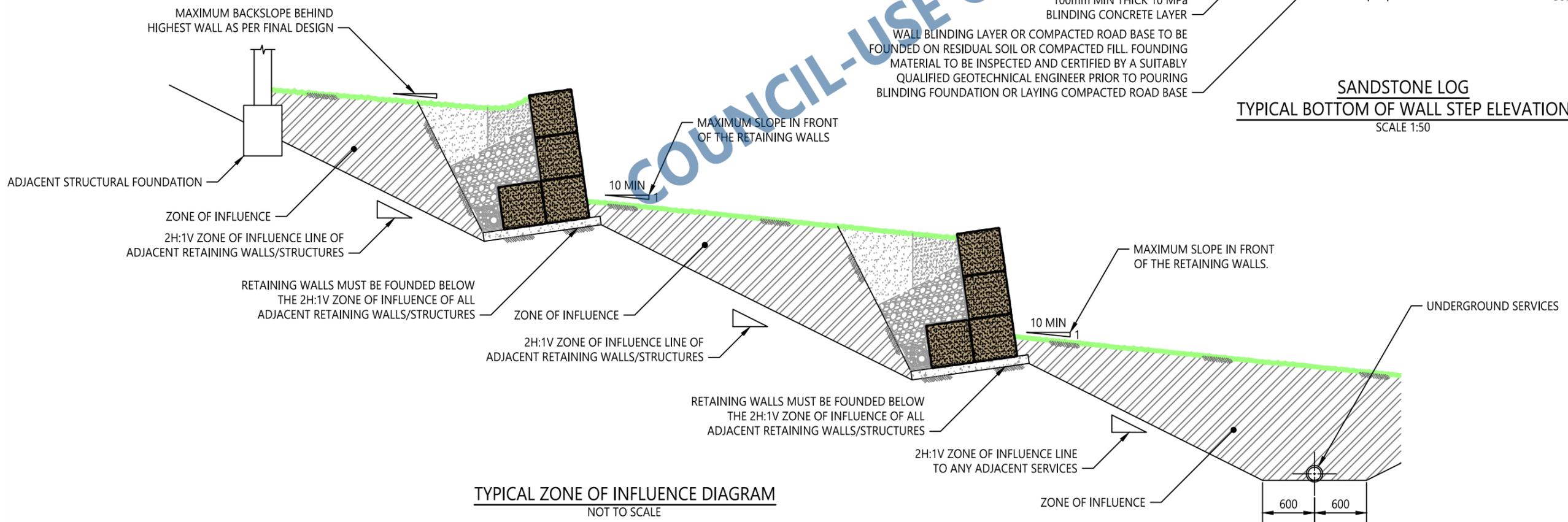
A	ENHANCED DETAILS FOR VARIOUS WALL HEIGHTS	23/3/20	TW	MB	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	T WILLIS		<h2 style="margin: 0;">Central Coast Council</h2>	STANDARD DRAWING	
					<p>1:40</p>	CHECKED	M BAMBER			DRAWING NUMBER	REV
REV	AMENDMENT	DATE	DRAWN	APRVD	ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	DATE	28/4/20	UNIT MANAGER APPROVAL	<h3 style="margin: 0;">EARTHWORKS SERIES</h3> <h3 style="margin: 0;">SANDSTONE LOG RETAINING WALL</h3>	SD0203	A
						ASSETS PLANNING AND DESIGN	ROADS TRANSPORT DRAINAGE AND WASTE		SHEET 1 OF 5	A3	



TYPICAL ZONE OF INFLUENCE DIAGRAM AT ROADWAY
NOT TO SCALE



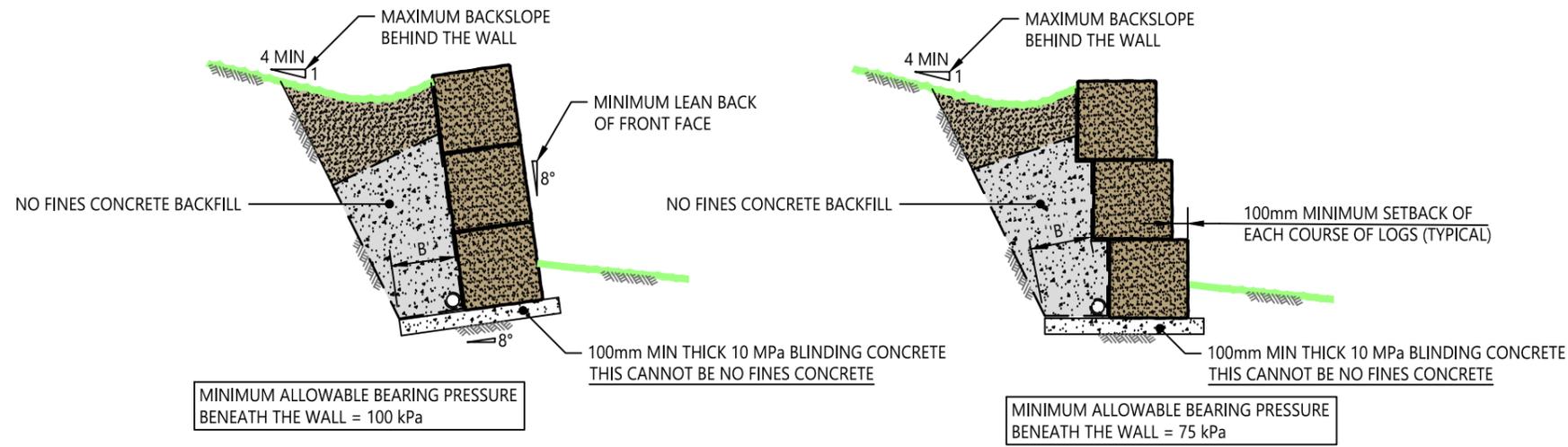
SANDSTONE LOG
TYPICAL BOTTOM OF WALL STEP ELEVATION
SCALE 1:50



TYPICAL ZONE OF INFLUENCE DIAGRAM
NOT TO SCALE

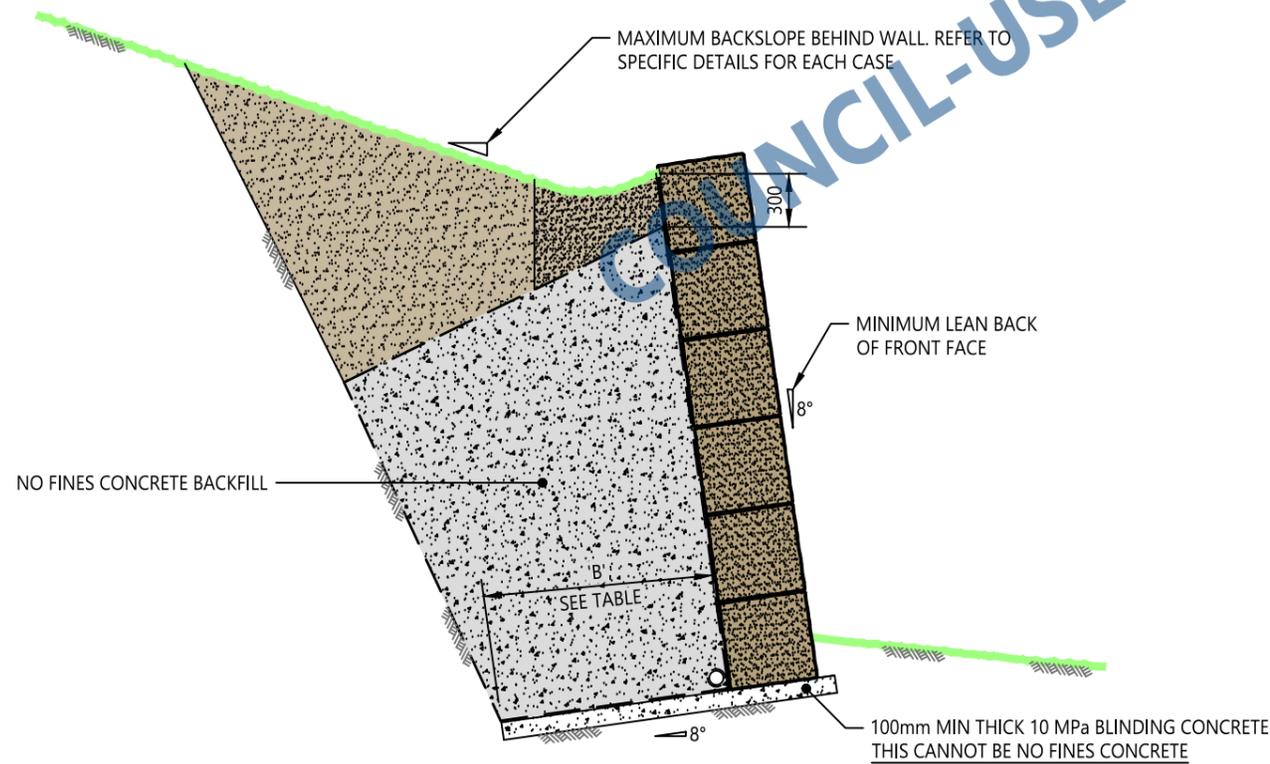
RETAINING WALLS SHOULD NOT BE CONSTRUCTED WITHIN THE ZONE OF INFLUENCE OF ANOTHER RETAINING WALL OR STRUCTURAL FOUNDATION

A	ENHANCED DETAILS FOR VARIOUS WALL HEIGHTS	23/3/20	TW	MB	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	T WILLIS	Central Coast Council	Central Coast Council	STANDARD DRAWING
					CHECKED	M BAMBER				
REV	AMENDMENT	DATE	DRAWN	APRVD	0 500 1000 1500 2000 2500 1:50	DATE	28/4/20	ASSETS PLANNING AND DESIGN	ROADS TRANSPORT DRAINAGE AND WASTE	DRAWING NUMBER
										SD0203
										A
										SHEET 2 OF 5
										A3



NUMBER OF LOGS HIGH	MINIMUM WIDTH OF NO FINES CONCRETE BACKFILL 'B'	REQUIRED ALLOWABLE BEARING CAPACITY
2	200mm	50 kPa
3	500mm	100 kPa

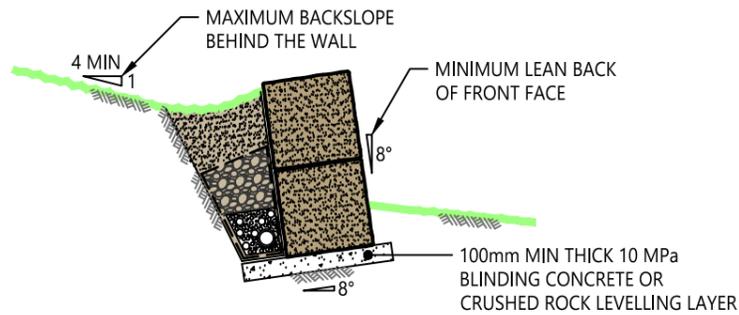
2 AND 3 LOG HIGH ARRANGEMENT UP TO 4H:1V BACKSLOPE
SCALE 1:40



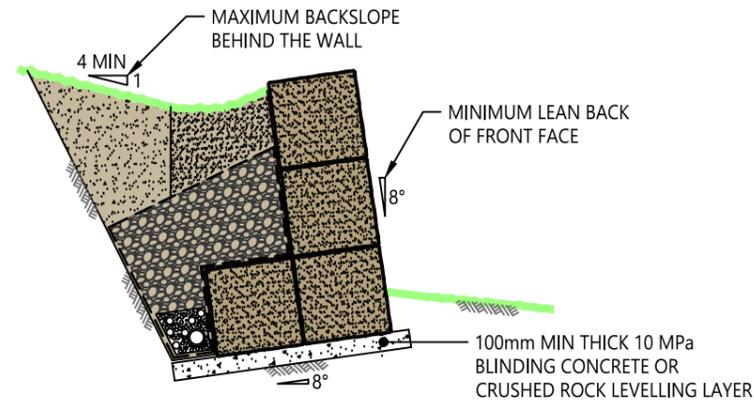
NUMBER OF LOGS HIGH	MINIMUM WIDTH OF NO FINES CONCRETE BACKFILL 'B'	REQUIRED ALLOWABLE BEARING CAPACITY
4	800mm	125 kPa
5	1000mm	150 kPa
6	1250mm	150 kPa
7	1500mm	175 kPa
8	1750mm	175 kPa

4-8 LOG HIGH ARRANGEMENT UP TO 4H:1V BACKSLOPE
SCALE 1:40

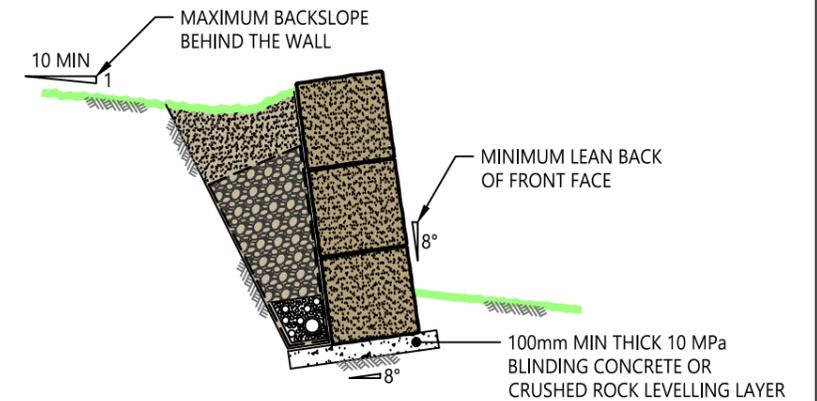
A	ENHANCED DETAILS FOR VARIOUS WALL HEIGHTS	23/3/20	TW	MB	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	T WILLIS	Central Coast Council	Central Coast Council	STANDARD DRAWING	
					CHECKED	M BAMBER					
REV	AMENDMENT	DATE	DRAWN	APRVD	0 400 800 1200 1600 2000 1:40	DATE	28/4/20	ASSETS PLANNING AND DESIGN	ROADS TRANSPORT DRAINAGE AND WASTE	EARTHWORKS SERIES SANDSTONE LOG RETAINING WALL	
											DRAWING NUMBER
										SD0203	A
										SHEET 3 OF 5	A3



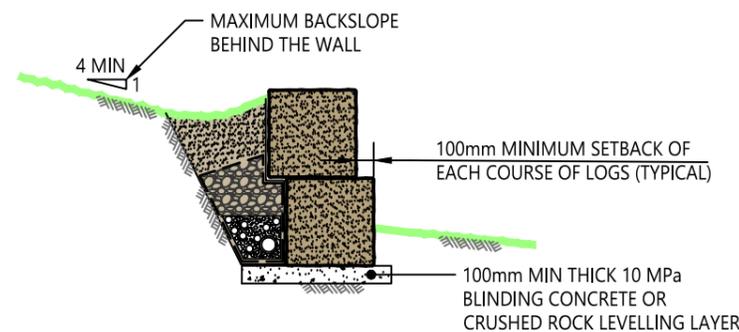
MINIMUM ALLOWABLE BEARING PRESSURE BENEATH THE WALL = 50 kPa



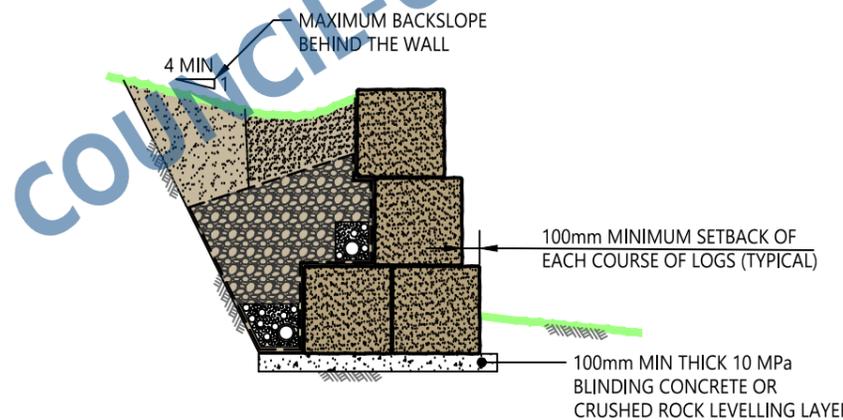
MINIMUM ALLOWABLE BEARING PRESSURE BENEATH THE WALL = 100 kPa



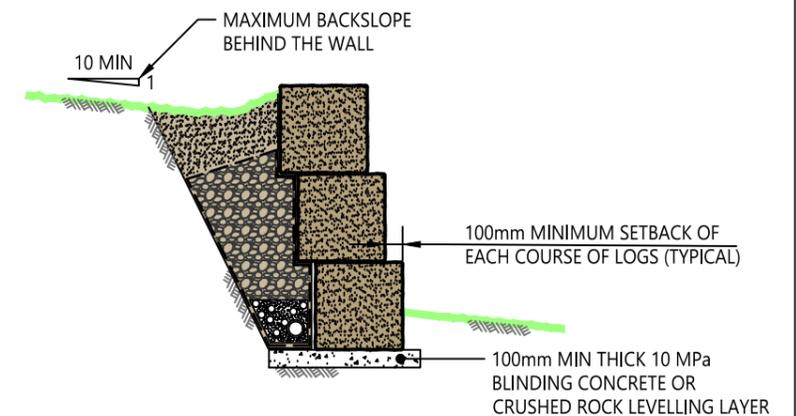
MINIMUM ALLOWABLE BEARING PRESSURE BENEATH THE WALL = 100 kPa



MINIMUM ALLOWABLE BEARING PRESSURE BENEATH THE WALL = 50 kPa



MINIMUM ALLOWABLE BEARING PRESSURE BENEATH THE WALL = 75 kPa



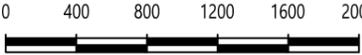
MINIMUM ALLOWABLE BEARING PRESSURE BENEATH THE WALL = 50 kPa

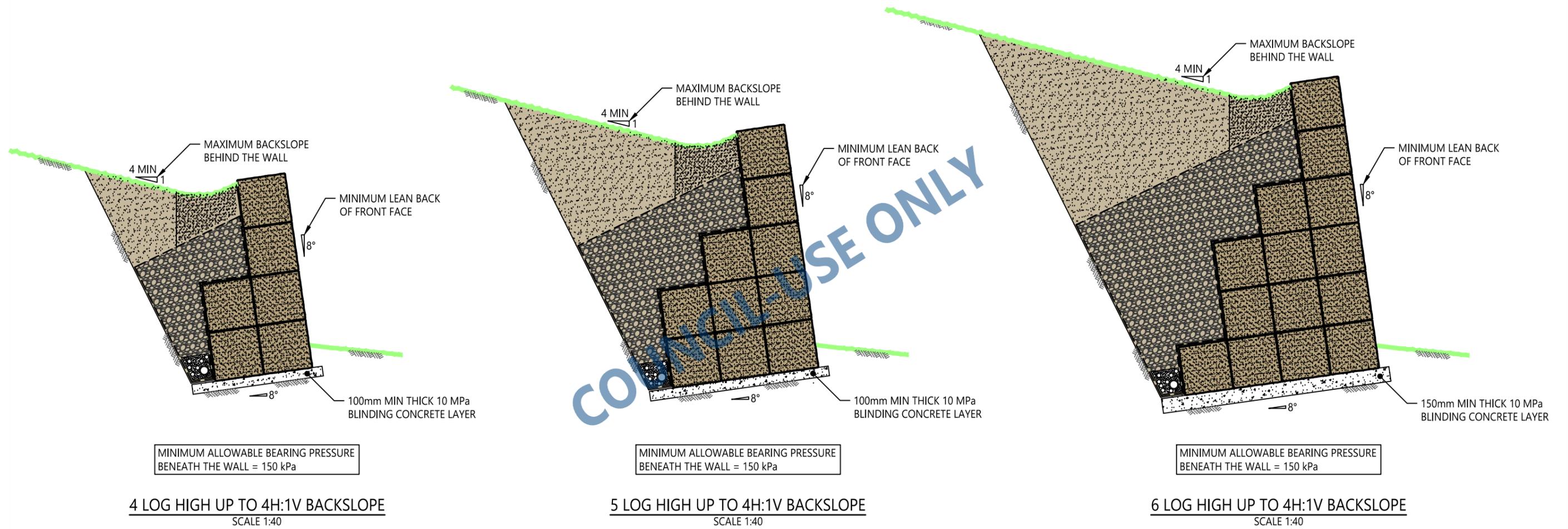
2 LOG HIGH ARRANGEMENTS UP TO 4H:1V BACKSLOPE
SCALE 1:40

3 LOG HIGH ARRANGEMENTS UP TO 4H:1V BACKSLOPE
SCALE 1:40

3 LOG HIGH ARRANGEMENTS UP TO 10H:1V BACKSLOPE
SCALE 1:40

INTERNAL FRICTION ANGLE OF RETAINED SOIL (ϕ') = 33° or GREATER

A	ENHANCED DETAILS FOR VARIOUS WALL HEIGHTS	23/3/20	TW	MB	SCALE ON ORIGINAL A3 SIZE DRAWING		DRAWN T WILLIS	CHECKED M BAMBER	DATE 28/4/20		Central Coast Council	STANDARD DRAWING	
												UNIT MANAGER APPROVAL 	ROADS TRANSPORT DRAINAGE AND WASTE
REV	AMENDMENT	DATE	DRAWN	APRVD	ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN		ASSETS PLANNING AND DESIGN			SHEET 4 OF 5		A3	



A	ENHANCED DETAILS FOR VARIOUS WALL HEIGHTS	23/3/20	TW	MB	SCALE ON ORIGINAL A3 SIZE DRAWING
					<p>0 400 800 1200 1600 2000</p> <p>1:40</p>
REV	AMENDMENT	DATE	DRAWN	APRVD	ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN

DRAWN	T WILLIS
CHECKED	M BAMBER
DATE	28/4/20
UNIT MANAGER APPROVAL	
ASSETS PLANNING AND DESIGN	

ROADS TRANSPORT DRAINAGE AND WASTE

Central Coast Council	
EARTHWORKS SERIES SANDSTONE LOG RETAINING WALL	

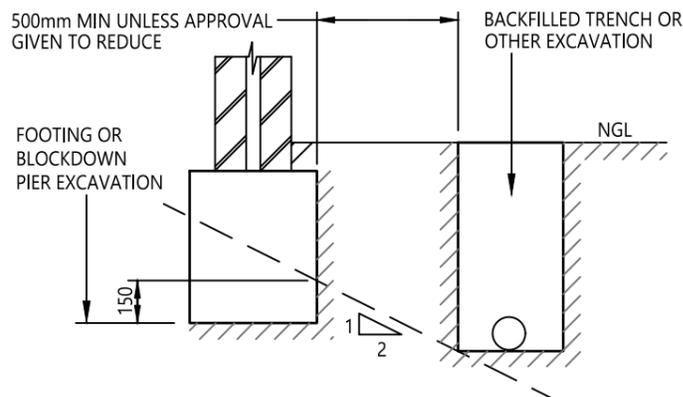
STANDARD DRAWING	
DRAWING NUMBER	REV
SD0203	A
SHEET 5 OF 5	A3

GENERAL NOTES:

- THIS STANDARD DRAWING IS BASED ON STRUCTURAL ENGINEERING DRAWING NUMBER 18099-ST PREPARED BY CUBO CONSULTING PTY LTD FOR CENTRAL COAST COUNCIL DATED 23/11/18.
- THIS STANDARD DRAWING IS TO BE USED FOR GUIDANCE ONLY AND SHALL NOT BE USED AS A DESIGN OR FOR CONSTRUCTION PURPOSES.
- CENTRAL COAST COUNCIL AND CUBO CONSULTING PTY LTD SHALL NOT BE HELD LIABLE FOR THE FAILURE OF ANY EARTH-RETAINING STRUCTURES BASED ON THE USE OF THIS STANDARD DRAWING, NEGLIGENCE ON THE PART OF THE DESIGNER OR CONSTRUCTOR AND THE LIMITATIONS EXPRESSED WITHIN COUNCIL'S COMPLETE CIVIL WORKS SPECIFICATION.
- RETAINING WALLS GREATER THAN 1m HEIGHT AND/OR SUBJECT TO LIVE LOADS AND/OR CONSTRUCTED WITHIN THE ZONE OF INFLUENCE OF ANOTHER RETAINING WALL OR STRUCTURE SHALL BE DESIGNED BY A SUITABLY QUALIFIED (NER) AND EXPERIENCED ENGINEER, TAKING INTO ACCOUNT PREVAILING GROUND CONDITIONS AND STRUCTURAL LOADINGS ON A CASE-BY-CASE BASIS.
- PIER HOLE INSPECTIONS FOR RETAINING WALLS SHALL BE UNDERTAKEN BY A GEOTECHNICAL ENGINEER TO VERIFY WALL DESIGN.
- STEEL POSTS TO BE HOT-DIP GALVANISED WITH A MINIMUM COATING THICKNESS OF 600 g/m² TO ENSURE A MIN COATING OF 85 MICRONS.
- RETAINING WALLS SHALL BE DESIGNED IN ACCORDANCE WITH AS 4678 EARTH-RETAINING STRUCTURES.
- DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED. TEMPORARY BRACING SHALL BE PROVIDED BY THE BUILDER TO KEEP THE WORKS AND EXCAVATIONS STABLE AT ALL TIMES.
- THE STRUCTURAL COMPONENTS DETAILED ON THESE DRAWINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS AND STATUTORY REGULATIONS FOR THE FOLLOWING LOADINGS: FOR IMPORTANCE LEVEL: 2 (AS/NZS 1170.0/BCA). THE RELEVANT PROVISIONS OF AS 1170.4 HAVE BEEN APPLIED FOR A HAZARD FACTOR (Z) OF 0.09 AND FOR A PROBABILITY FACTOR (kp) OF 1.0 AND A SUBSOIL CLASS Ce.

FOUNDATION NOTES:

- FOOTINGS HAVE BEEN DESIGNED FOR AN ALLOWABLE BEARING INTENSITY OF 100kPa ON STIFF CLAY. THIS FOUNDATION MATERIAL SHALL BE UNIFORM AND BE APPROVED BY THE ENGINEER FOR THIS PRESSURE BEFORE PLACING MEMBRANE, REINFORCEMENT OR CONCRETE.
- FOOTINGS SHALL BE LOCATED CENTRALLY UNDER WALLS AND COLUMNS UNLESS OTHERWISE NOTED.
- DO NOT EXCEED A RISE OF 1 IN A RUN OF 2 FOR THE LINE OF SLOPE BETWEEN ADJACENT FOOTINGS OR EXCAVATIONS.
- DO NOT BACKFILL RETAINING WALLS (OTHER THAN CANTILEVER WALLS) UNTIL FLOOR CONSTRUCTION AT TOP AND BOTTOM IS COMPLETED. BACKFILL SHALL BE COMPACTED TO 96% STANDARD MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT ± 2% (ENSURE FREE DRAINING BACKFILL AND DRAINAGE IS IN PLACE).
- UNLESS OTHERWISE APPROVED BY THE ENGINEER/SUPERINTENDENT, THE LIMITS OF EXCAVATIONS NEAR FOOTINGS SHALL BE AS SET OUT IN THE DETAIL BELOW.



PRIOR TO ANY EXCAVATION NEAR EXISTING FOOTINGS, THE BUILDER SHALL DETERMINE THE DEPTH OF FOUNDING OF EXISTING FOOTINGS BY LOCAL INVESTIGATORY EXCAVATION.

GENERAL EXCAVATION SHALL NOT PROCEED BELOW A LEVEL 150mm ABOVE THE UNDERSIDE OF EXISTING FOOTINGS UNTIL INSTRUCTION IS OBTAINED FROM THE ENGINEER ON PROCEDURES AND PRECAUTIONS TO BE TAKEN.

BACKFILL MATERIAL BEHIND GALVANISED STEEL POSTS:

- BACKFILL IS TO BE FREE DRAINING COARSE GRANULAR MATERIAL WITH THE FOLLOWING CHARACTERISTICS:

pH > 5
RESISTIVITY > 5000 OHM.CM
CHLORIDES < 5000 ppm (0.5%)

- THE USE OF BOTTOM ASH FROM FUEL RESIDUE OR OTHER SIMILAR MATERIAL IS NOT PERMITTED.
- THE CONTRACTOR IS TO PROVIDE A TEST CERTIFICATE CONFIRMING ADHERENCE TO THE ABOVE PARAMETERS PRIOR TO THE DELIVERY OR INSTALLATION OF THE FILL MATERIAL.

STRUCTURAL STEEL NOTES:

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 4100 AND AS 1554 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

- UNLESS OTHERWISE NOTED ALL MATERIAL SHALL BE:

- GRADE 250 HOT-ROLLED PLATES COMPLYING WITH AS 3678
- GRADE 250 HOT-ROLLED FLATS
- GRADE 300PLUS UB, UC, PFC, ANGLES, AND TFB
- GRADE 300 WB, WC COMPLYING WITH AS 3679.2
- GRADE C350 RHS, CHS COMPLYING WITH AS 1163

- BOLTS:

- 4.6/S - COMMERCIAL BOLTS OF GRADE 4.6 TO AS 1111, SNUG TIGHTENED.
- 8.8/S - HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 SNUG TIGHTENED.
- 8.8/TB - HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 FULLY TENSIONED TO AS 4100 AS BEARING JOINT.
- 8.8/TF - HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 FULLY TENSIONED TO AS 4100 AS A FRICTION JOINT WITH FACING SURFACES LEFT UNCOATED.

ALL BOLTS SHALL BE M20 GRADE 8.8/S UNLESS OTHERWISE NOTED.

NO CONNECTION SHALL HAVE LESS THAN 2 BOLTS.

ALL BOLTS, NUTS AND WASHERS TO BE GALVANISED.

TB AND TF BOLTS TO BE INSTALLED USING APPROVED LOAD INDICATING WASHERS, OR BY TURN OF NUT CONTROL OF TENSIONING.

- WELDING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1554.1. WELDING CONSUMABLES SHALL BE E48XX OR W50X U.N.O. ALL WELDS SHALL BE 6mm CFW SP CATEGORY U.N.O. CPBW SHALL BE SP CATEGORY U.N.O. INSPECTION SHALL BE CARRIED OUT TO AS 1554.1. ALL GP/SP WELDS SHALL BE 100% VISUALLY SCANNED. SP WELDS ALLOW FOR 100% VISUAL EXAMINATION U.N.O. BUTT WELDS SHALL BE COMPLETE PENETRATION WELDS TO AS 1554.

- ALL DETAILS, GAUGE LINES ETC. WHERE NOT SPECIFICALLY SHOWN ARE TO BE IN ACCORDANCE WITH AISC DESIGN CAPACITY TABLES FOR STRUCTURAL STEEL AND AISC STANDARDISED STRUCTURAL CONNECTIONS. PLATES TO BE 10mm THICK, EX-STANDARD SQUARE EDGE FLATS U.N.O.

- STEELWORK TO BE CONCRETE ENCASED SHALL BE WRAPPED WITH F41 STEELWIRE FABRIC AND SHALL HAVE 50 mm MINIMUM CONCRETE COVER TO THE STRUCTURAL STEEL.

- PROVIDE SEAL PLATES TO ALL HOLLOW SECTIONS. PROVIDE VENT HOLES TO HOLLOW MEMBERS AND DRAIN HOLES TO ALL MEMBERS TO BE HOT-DIP GALVANISED, TO ENSURE THAT SECTIONS DO NOT HOLD WATER WHEN ERECTED IN FINAL LOCATION ON SITE.

- IT IS THE BUILDER'S RESPONSIBILITY TO ENSURE THAT STEELWORK IS SECURELY TEMPORARILY BRACED AS NECESSARY TO STABILISE THE STRUCTURE DURING ERECTION.

- STRUCTURAL STEELWORK SHALL HAVE THE FOLLOWING SURFACE TREATMENT IN ACCORDANCE WITH AS/NZS 2312:

ELEMENT	SURFACE CLEANING	PROTECTIVE COATING
INTERNAL	CLASS St 2 ½	INORGANIC ZINC SILICATE 75µm
EXTERNAL (> 1km COAST)	CLASS St 2 ½	HOT-DIP GALVANISED (HDG600)

- THE BUILDER SHALL PROVIDE ALL CLEATS AND DRILL ALL HOLES NECESSARY FOR FIXING STEEL TO STEEL AND TIMBER TO STEEL WHETHER OR NOT DETAILED ON THE DRAWINGS.
- THE FABRICATION AND ERECTION OF THE STRUCTURAL STEELWORK SHALL BE UNDERTAKEN BY A QUALIFIED PERSON EXPERIENCED IN SUCH SUPERVISION, IN ORDER TO ENSURE THAT ALL REQUIREMENTS OF THE DESIGN ARE MET. ALL BEAMS AND RAFTERS SHALL BE FABRICATED AND ERECTED WITH NATURAL CAMBER UP.

CONCRETE NOTES:

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600, AS 1379 AND AS 3610 CURRENT EDITIONS WITH AMENDMENTS, EXCEPT WHERE VARIED BY ANY APPLICABLE CONTRACT DOCUMENTS.

- CONCRETE QUALITY:

ALL CEMENT TO BE TYPE SL, SHRINKAGE LIMITED CEMENT IN ACCORDANCE WITH AS 3972, EXCEPT THAT THE MAXIMUM SHRINKAGE OF THE CEMENT IN THE MORTAR TEST SAMPLE IN ACCORDANCE WITH AS 2350 SHALL BE LESS THAN 600 MICROSTRAIN.

ELEMENT	STRENGTH GRADE	SLUMP (mm)	MAX AGGREG SIZE (mm)	MIN CEMENT CONTENT (kg/m ³)
PIER HOLES	N20	80	20	150
WALERS	S40	80	20	300

PROJECT ASSESSMENT SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1379 CLAUSE B7.

- ALL CONCRETE IN SLABS AND BEAMS TO BE PROPORTIONED TO LIMIT DRYING SHRINKAGE TO 650 MICROSTRAIN AT 56 DAYS.
- DETAILS OF THE PROPOSED MIX TO BE SUBMITTED AND APPROVAL OBTAINED PRIOR TO POURING ANY CONCRETE.
- SHRINKAGE TESTS SHALL BE CARRIED OUT BY AN APPROVED NATA REGISTERED LABORATORY IN ACCORDANCE WITH AS 1012 PART 13. TESTS SHALL BE CONDUCTED ON THE FIRST BATCH OF CONCRETE USED IN SUSPENDED SLABS AND SUBSEQUENTLY AT THE RATE OF ONE TEST EVERY ADDITIONAL 100m³ OF CONCRETE SUPPLIED. THREE SPECIMENS SHALL BE TAKEN FOR EACH TEST AND THE SHRINKAGE SHALL BE THE AVERAGE OF THE THREE RESULTS. THE COST OF TESTING SHALL BE BORNE BY THE CONTRACTOR AS SHALL ANY ADDITIONAL TESTS REQUIRED IF THE CONCRETE FAILS TO MEET THE SPECIFIED SHRINKAGE LIMITS.
- NO ADMIXTURES OTHER THAN LOW RANGE WRA SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING.
- CLEAR CONCRETE COVER TO ALL REINFORCEMENT SHALL BE AS FOLLOWS UNLESS OTHERWISE SHOWN. COVER MAY NEED TO BE INCREASED FOR FIRE RATING.

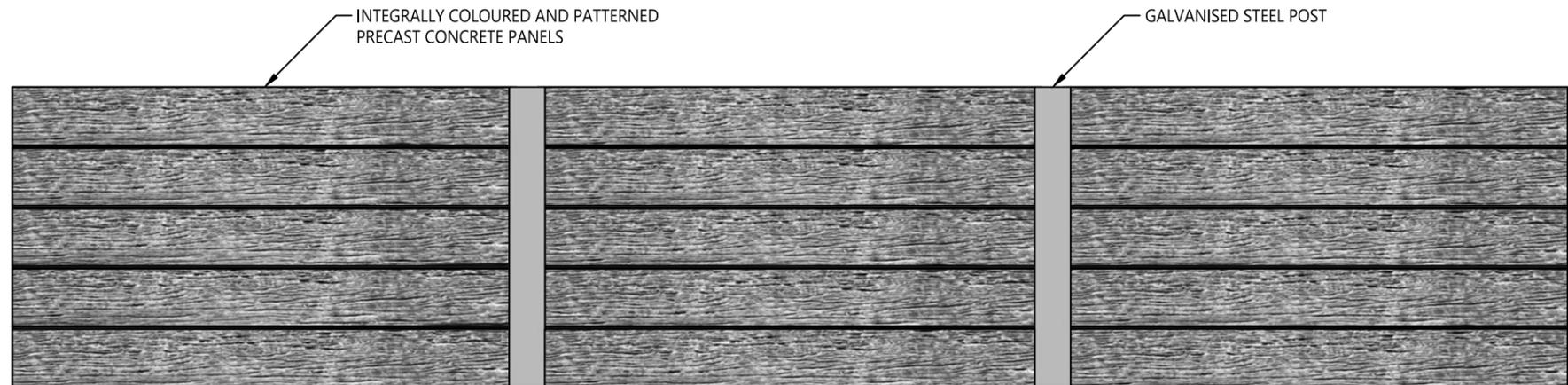
EXPOSURE CLASS TO AS 3600	MINIMUM CONCRETE GRADE	CAST AGAINST GROUND	CAST IN FORMS AND EXPOSED	CAST IN FORMS AND NOT EXPOSED
B1 (EXTERNAL) FOOTINGS	32 25	60mm 50mm	40mm -	- -

NOTE: WHERE CONCRETE IS POURED ON A VAPOURPROOF MEMBRANE 0.2 mm MINIMUM THICKNESS, THE COVER TO CONCRETE CAST AGAINST GROUND MAY BE REDUCED BY 10 mm.

REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	D MILLER / T WILLIS		Central Coast Council	STANDARD DRAWING
					NOT TO SCALE	CHECKED	M BAMBER			
						DATE	28/4/20			
						UNIT MANAGER APPROVAL				
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	ASSETS PLANNING AND DESIGN	ROADS TRANSPORT DRAINAGE AND WASTE		EARTHWORKS SERIES POST AND PANEL WALL	DRAWING NUMBER SD0204
										REV -
										SHEET 2 OF 3 A3

CONCRETE NOTES (CONTINUED):

8. CONCRETE SIZES SHOWN DO NOT INCLUDE THICKNESSES OF APPLIED FINISHES. NO FINISH WHICH DECREASES COVER IS ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
9. DEPTHS OF BEAMS ARE GIVEN FIRST AND INCLUDE SLAB THICKNESS.
10. NO HOLES, CHASES, BLOCKOUTS, DUCTS OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.
11. CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER.
12. ALL CONCRETE COLUMNS GREATER THAN 1.2 METRES IN HEIGHT SHALL BE POURED A MINIMUM OF 4 HOURS PRIOR TO SLAB OR BEAM OVER.
13. THE FINISHED CONCRETE SHALL BE MECHANICALLY VIBRATED TO ACHIEVE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED WITH MECHANICAL VIBRATORS.
14. CURING OF ALL CONCRETE IS TO BE ACHIEVED BY KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF THREE DAYS, AND THE PREVENTION OF LOSS OF MOISTURE FOR A TOTAL OF 7 DAYS FOLLOWED BY A GRADUAL DRYING OUT. APPROVED SPRAYED ON CURING COMPOUNDS THAT COMPLY WITH AS 3799 MAY BE USED WHERE FLOOR FINISHES WILL NOT BE AFFECTED (REFER MANUFACTURER'S SPECIFICATION). POLYTHENE SHEETING OR WET HESSIAN MAY BE USED IF PROTECTED FROM WIND AND TRAFFIC.
15. CONSTRUCTION SUPPORT PROPPING IS TO BE LEFT IN PLACE WHERE NEEDED TO AVOID OVERSTRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING. NO BRICKWORK OR PARTITION WALLS ARE TO BE CONSTRUCTED ON SUSPENDED LEVELS UNTIL SEVEN DAYS AFTER PROPPING HAS BEEN REMOVED AND THE SLAB PRE-LOADED WITH THE BRICKS OR UNITS TO BE USED IN THE WALL.
16. REPAIRS TO CONCRETE SHALL NOT BE ATTEMPTED WITHOUT THE PERMISSION OF THE ENGINEER.
17. CAST-IN FIXINGS, BOLTS ETC. SHALL NOT BE ALTERED WITHOUT THE PERMISSION OF THE ENGINEER.
18. CONDUITS, PIPES ETC. SHALL ONLY BE LOCATED IN THE MIDDLE THIRD OF THE SLAB DEPTH AND SPACED AT NOT LESS THAN 3 DIAMETERS. CONDUITS AND PIPES SHALL NOT BE PLACED WITHIN THE COVER TO REINFORCEMENT.
19. SLABS AND BEAMS SHALL BE CONSTRUCTED TO BEAR ONLY ON THE BEAMS, WALLS, COLUMNS ETC. SHOWN ON THE DRAWINGS. ALL OTHER BUILDING ELEMENTS SHALL BE KEPT 12mm CLEAR OF SOFFITS OF STRUCTURE.
20. INTEGRALLY COLOURED AND PATTERNED PRECAST CONCRETE PANELS SHOULD BE USED FOR AESTHETIC REASONS. REFER TO ADJACENT SAMPLE PANEL ELEVATIONS.



SAMPLE PANEL ELEVATIONS
NOT TO SCALE

REV	AMENDMENT	DATE	DRAWN	APRVD	SCALE ON ORIGINAL A3 SIZE DRAWING	DRAWN	D MILLER / T WILLIS		Central Coast Council	STANDARD DRAWING	
					NOT TO SCALE	CHECKED	M BAMBER			DRAWING NUMBER	REV
						DATE	28/4/20			SD0204	-
						UNIT MANAGER APPROVAL				SHEET 3 OF 3	A3
					ALL DIMENSIONS IN mm UNLESS OTHERWISE SHOWN	ASSETS PLANNING AND DESIGN		ROADS TRANSPORT DRAINAGE AND WASTE	EARTHWORKS SERIES POST AND PANEL WALL		