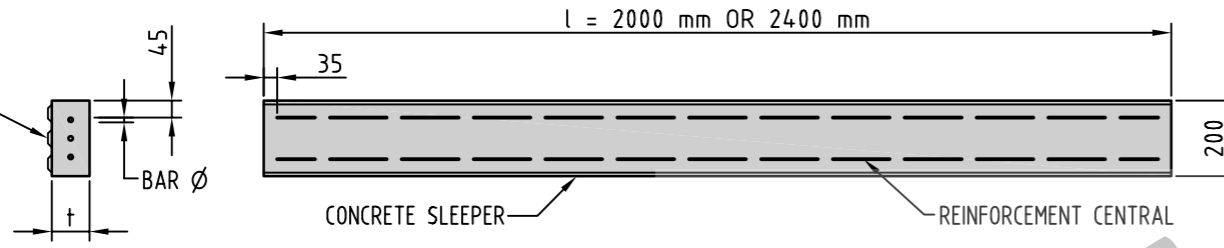


PLAN VIEW
SCALE 1:20



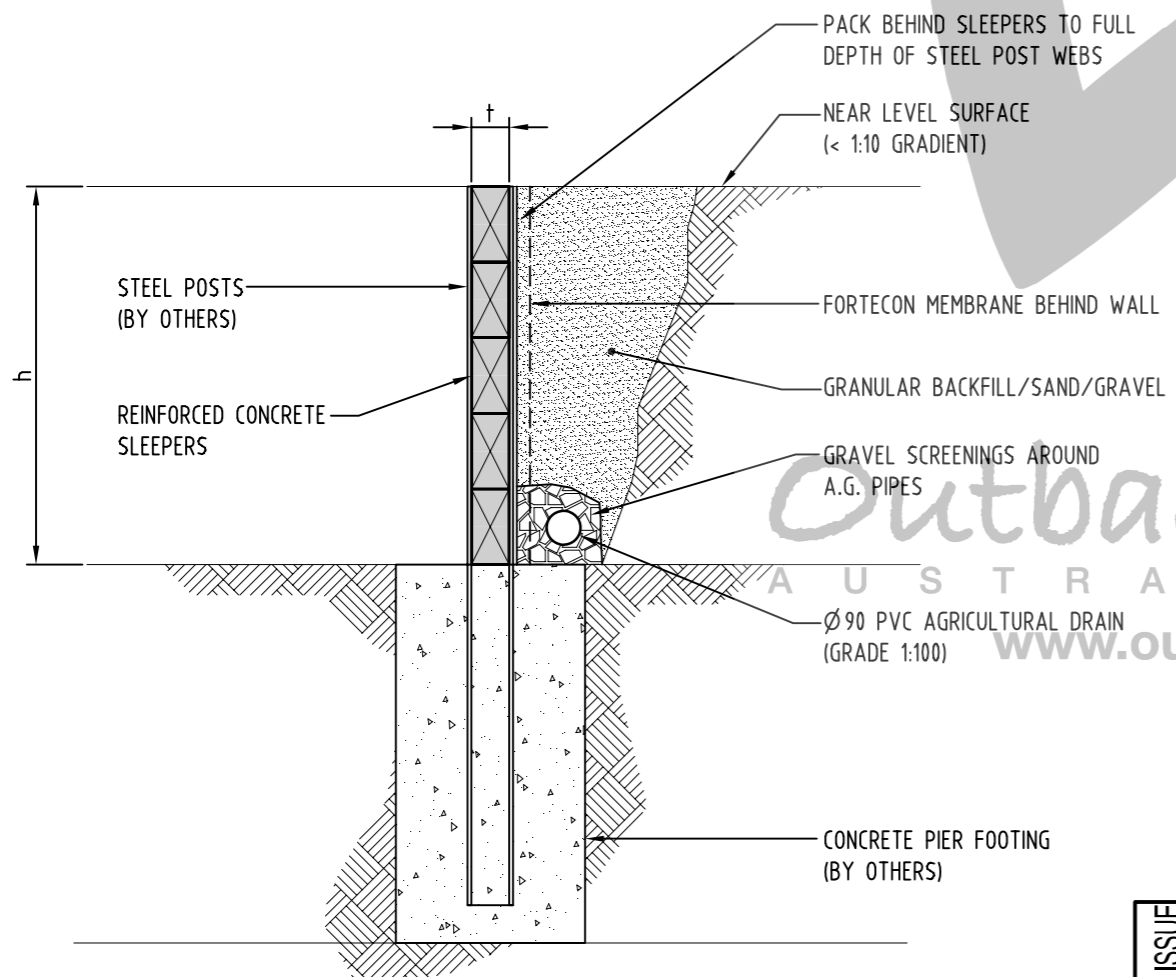
ELEVATION VIEW
SCALE 1:20

PATTERN FACE IF REQUIRED

NOTE:
PATTERN FACE SHALL NOT ENCROACH INTO SLEEPER MIN. THICKNESS 't'

SPECIFICATIONS

- SLEEPER CONCRETE GRADE TO BE N32, EXCEPT WITHIN 1 km OF THE COAST, WHERE THE GRADE SHALL BE INCREASED TO N40. RIGID FORMWORK & INTENSE CONCRETE COMPACTION IN ACCORDANCE WITH AS 3600 IS REQUIRED FOR CASTING EACH SLEEPER.
NOTE: FOR SLEEPERS WITH 3-N16 BARS USE S32 CONCRETE GRADE EXCEPT WITHIN 1 km OF THE COAST, WHERE THE GRADE SHALL BE INCREASED TO S40. SPECIAL MIX CONCRETE, S32 & S40, SHALL HAVE A MAXIMUM AGGREGATE OF 10mm.
- HAND COMPACTING EQUIPMENT ONLY IS PERMITTED TO BE USED ADJACENT SLEEPERS (WITHIN DISTANCE = 0.75H)
- THESE SLEEPER SPECIFICATIONS ARE ONLY SUITABLE FOR USE WITH RETAINING WALLS WHICH SATISFY THE FOLLOWING CONDITIONS/LIMITATIONS.
 - THE WALL IS NOT SUBJECT TO HEAVY SURCHARGE LOADS. FOR EXAMPLE, NEARBY EXISTING RETAINING WALLS, STRUCTURES OR BUILDINGS WITHIN A DISTANCE EQUAL TO TWO TIMES THE WALL HEIGHT.
 - THE FINAL SURFACE GRADIENT ABOVE THE WALL IS LEVEL OR ONLY SLIGHT - ie. LESS THAN 1 VERTICAL RISE IN 10 HORIZONTAL.
 - THE WALL BACKFILL IS FREE DRAINING, CONSISTING OF SAND &/OR GRAVEL.
 - ALL SUB-SURFACE WATER IS DRAINED BY MEANS OF AN AGRICULTURAL DRAIN, OR OTHER SUITABLE METHOD.
 - SLEEPERS ARE HANDLED WITH DUE CARE DURING TRANSPORTATION & ERECTION.
- SLEEPER MINIMUM END BEARING LENGTH SHALL NOT BE LESS THAN 25mm EACH END.
- FOR DETERMINATION OF THE APPROPRIATE SLEEPER TYPE, THE HEIGHT IS MEASURED FROM THE TOP OF THE WALL TO THE APPLICABLE SLEEPER. A WALL FACE CROSS SECTION MAY CONSIST OF VARIOUS SLEEPER TYPES.



TYPICAL SECTION
SCALE 1:20

ASSUMED SOIL PROPERTIES	
γ_s	= 18kN/m ³
ϕ	= 30°
ASSUMED MAX. SURCHARGE	
Q	= 5kPa

LENGTH SLEEPER (l) = 2000mm		
WALL HEIGHT (h)	THICKNESS t (mm)	REINFORCEMENT
≤ 1.0	80	2-N10
1.0m < h ≤ 2.4m	100	2-N10
2.4m < h ≤ 3.0m	100	3-N12
3.0m < h ≤ 4.0m	120	3-N16

LENGTH SLEEPER (l) = 2400mm		
WALL HEIGHT (h)	THICKNESS t (mm)	REINFORCEMENT
≤ 1.0	100	2-N10
1.0m < h ≤ 2.0m	100	2-N12
2.0m < h ≤ 2.4m	100	3-N12

Outback Sleepers
AUSTRALIA PTY LTD
www.outbacksleepers.net.au

CONSTRUCTION ISSUE
NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION	DRAFT	ENG.
0	04.08.06	CONSTRUCTION ISSUE	RS	CL
1	13.04.07	CONSTRUCTION RE-ISSUE	RS	CL
2	07.12.07	4.0m HIGH WALL	RS	CL
3	09.04.09	CONSTRUCTION RE-ISSUE	RS	CL

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	A3 Design C.LINDNER Drawn R.SALINAS	Job Number C060604