

MTCB
PLANNING DEPARTMENT

24 FEB 2021

Structural Design Check

for

Gabion Basket Retaining Wall

at

No20 Maesgwynne

Cefn Coed

CF48 2SB

MERTHYR TYDFIL
COUNTY BOROUGH
COUNCIL
OFFICE COPY
PLEASE DO NOT
REMOVE

Chris Meredith Designs
8 Beech Grove
Ebbw Vale
NP23 8WQ

PROJECT

PREPARED BY

DATE

JOB No. CW

Km

01

DRG No.

PAGE No. 2 of 4

CHECKED BY

DATE

REF

CALCULATIONS

$$P_{\text{asol}} = \frac{K \gamma h^2}{2} = \frac{0.24 \times 16 \times 0.5^2}{2} = 0.48 \rightarrow$$

$$M_{\text{asol}} = 0.48 \times \frac{0.5}{3} = 0.08 \text{ km/m} \downarrow$$

$$FOS_{\text{OT}} = \frac{4.00}{0.08} = 50 > 2 \rightarrow \text{O.K.}$$

LEVEL (2)

$$M_R = 0.5 \times (1 \times 1.5 \times 16) = 12.0 \text{ km/m} \swarrow$$

$$W_A = (1 \times 1.5 \times 16) = 24 \text{ k/m} \downarrow$$

$$P_{\text{asol}} = \frac{0.24 \times 16 \times 1.5^2}{2} = 4.32 \rightarrow$$

$$M_{\text{asol}} = 4.32 \times \frac{1.5}{3} = 2.16 \text{ km/m} \downarrow$$

$$FOS_{\text{OT}} = \frac{12.0}{2.16} = 5.56 > 2 \rightarrow \text{O.K.}$$

Sliding $F_R = \frac{2}{3} \tan 38^\circ \times 24 = 12.5 \text{ k/m} \downarrow$

$$FOS_{\text{sliding}} = \frac{12.5}{4.32} = 2.89 > 2 \rightarrow \text{O.K.}$$

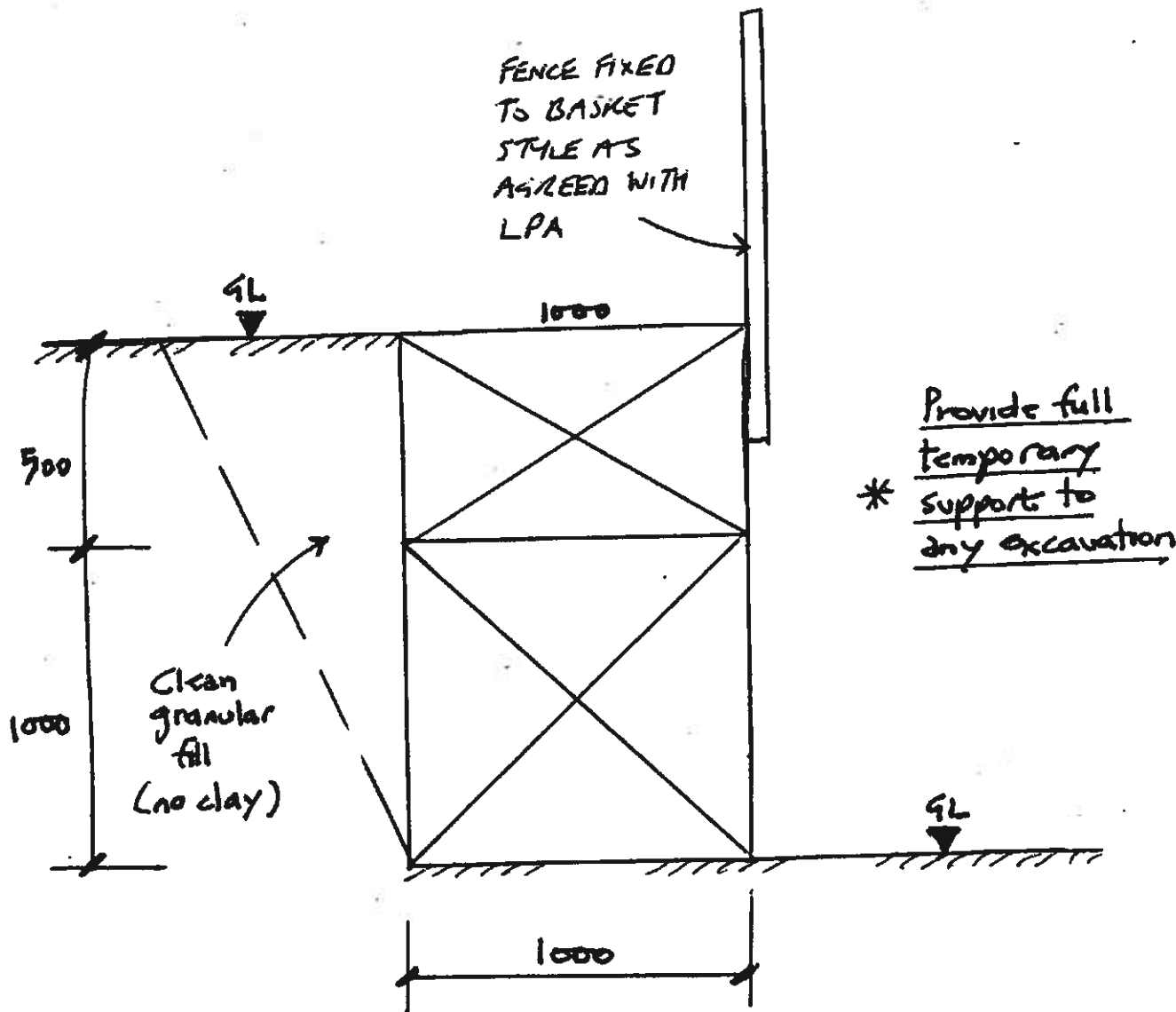
Bearing pressure

$$P_{\text{max/min}} = \frac{W}{b} \pm \frac{M}{z} \quad z = \frac{d^3}{6} = \frac{2}{3}$$

$$W = 24 \text{ k/m} \downarrow$$

DO NOT SCALE

414



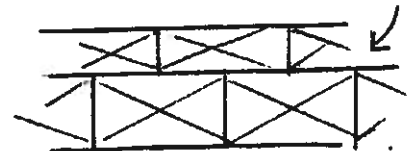
WALL CROSS SECTION

NOTES

REMOVE ANY SOFT SPOTS TO WALL FORMATION AND INFILL.
'BLIND' WITH MIN 75mm COMPACTED SUB-BASE

WALL HAND FILLED STONE TO FRONT TO AVOID BULGING. INSTALL TIE-WIRES AND CONSTRUCT BASKETS TO MANUFACTURERS SPECIFICATION / DETAILS
- INFILL BASKET WITH CLEAN STONE OR RUBBLE - NO CLAY, WOOD OR PLASTIC

BASKETS LAID X-BOND TO ENSURE INTEGRITY



Project Title		
GADION BASKET WALL AT 20.		
MAESGWYNNE, CEFNCOED		
Drawn	CM	Date JAN 21
Dwg.	CW/WALL/01	Rev. A