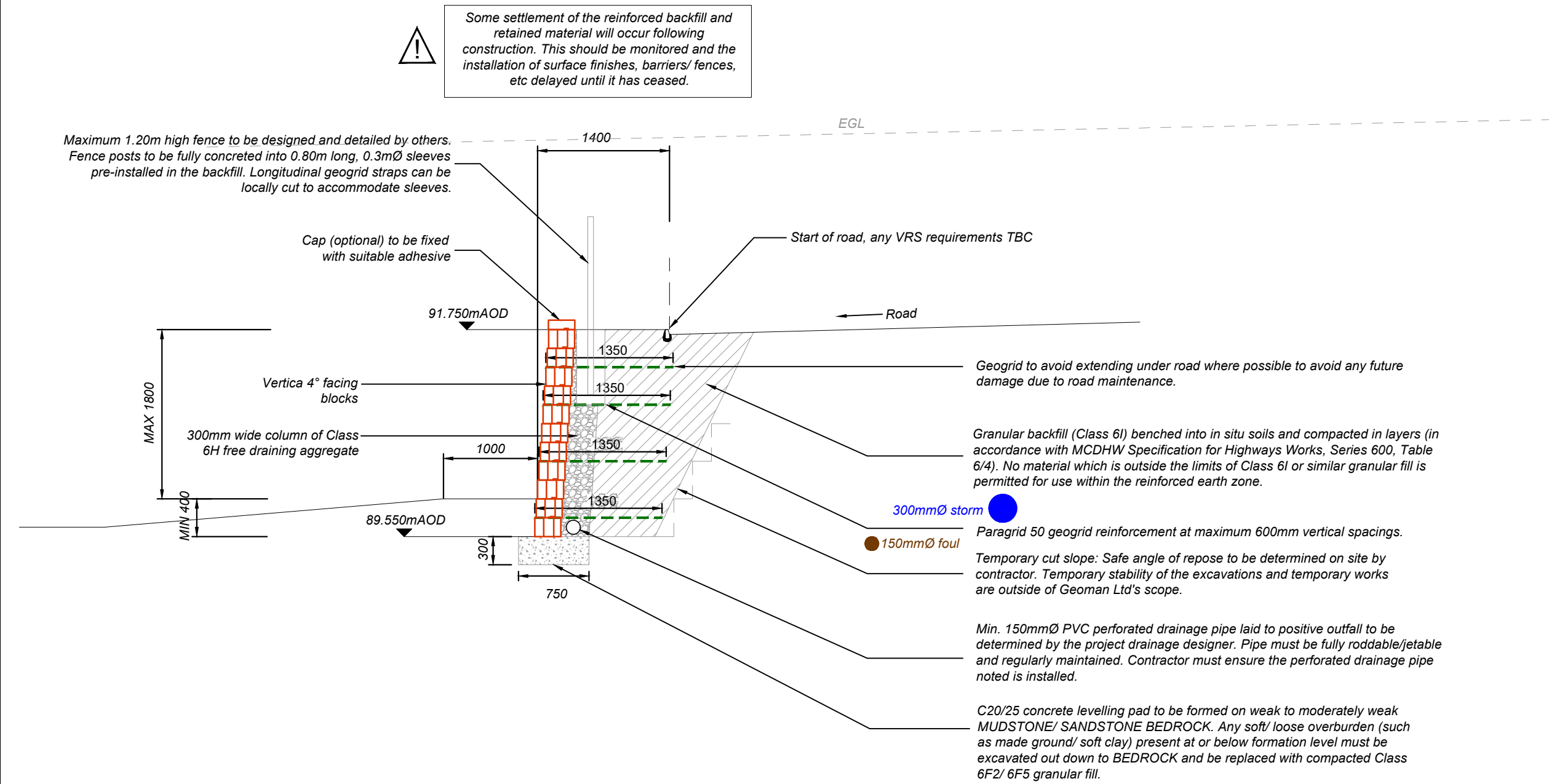
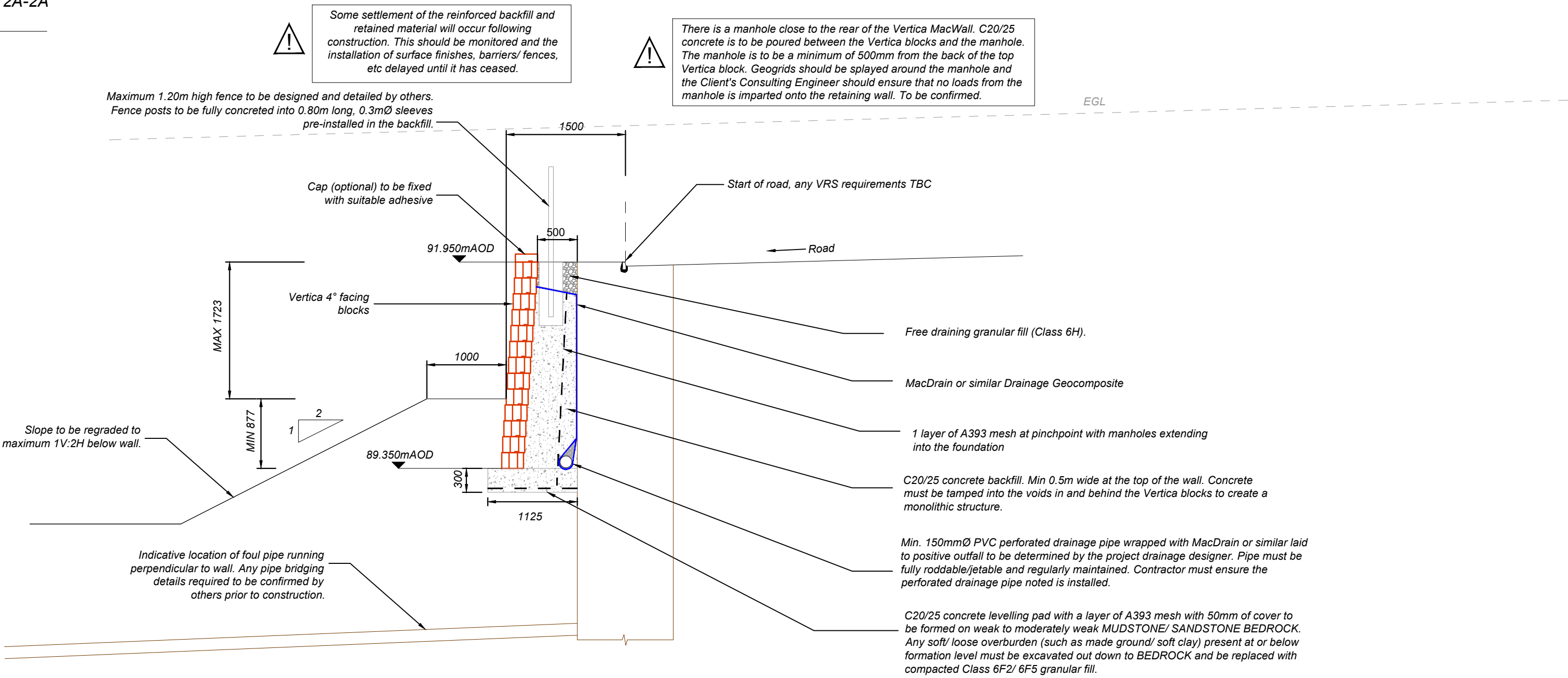


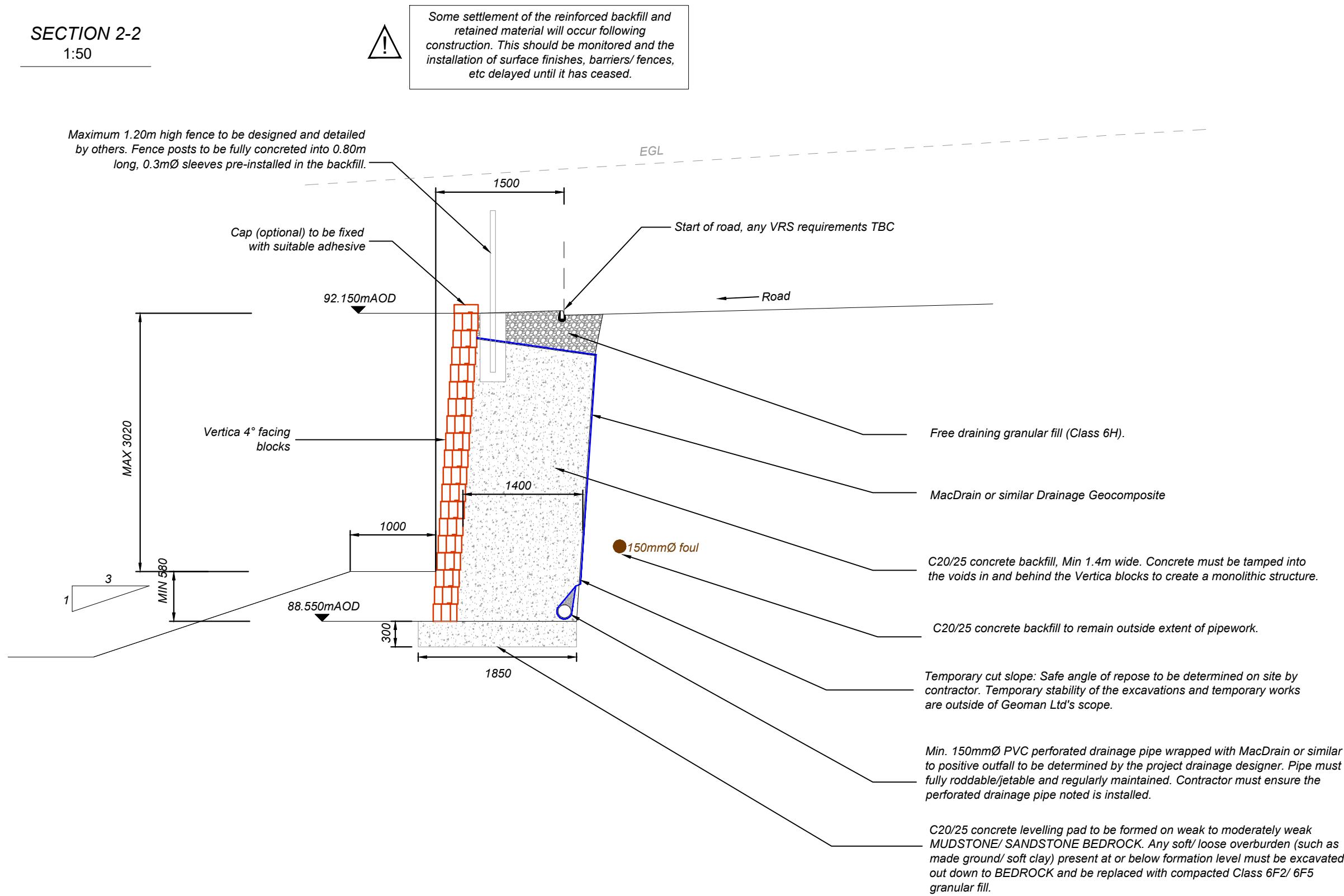
SECTION 1-1  
1:50



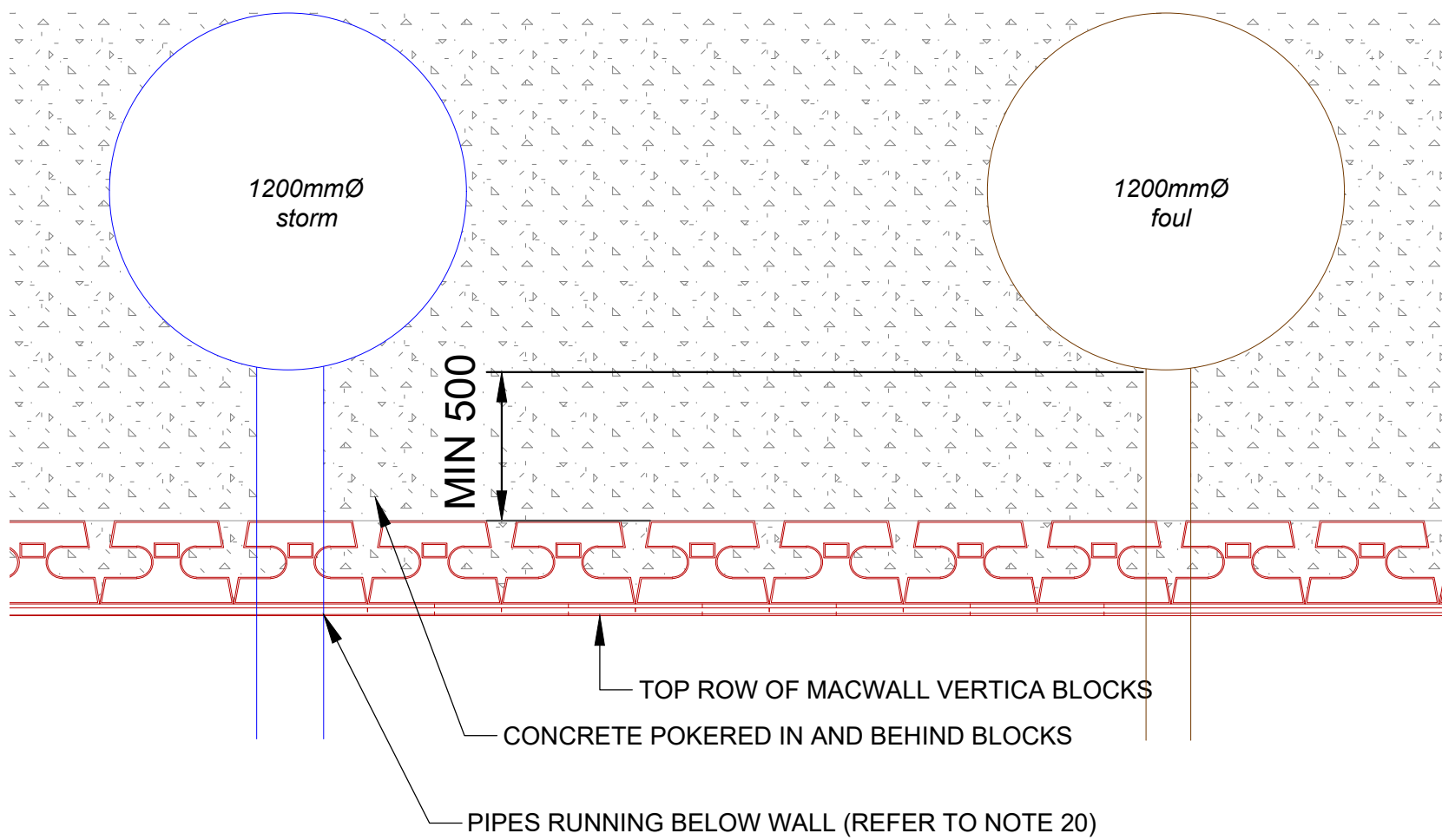
SECTION 2A-2A  
1:50



SECTION 2-2  
1:50



MANHOLE DETAIL  
NTS



- 1) All dimensions in mm's unless otherwise specified.
- 2) BLOCKS:  
Block type: MacWall Vertica 4 degree blocks
- 3) INSTALLATION:  
Please refer to standard Manufacturer's installation guidelines.
- 4) GEOGRID REINFORCEMENT:  
Paragrid 50/15 geogrid. Grids to be installed at maximum 3 block vertical centres with the bottom geogrid layer to be placed on top of the base Vertica block. Grid lengths to be as shown in sections. Intermediate wall heights to be constructed with grid lengths from the higher section.
- 5) BACKFILL:  
**GEOGRID SECTIONS**  
The reinforced backfill for the wall shall comprise a selected compacted granular fill material to comply with SFHW Class 6I or similar approved. This material is assumed to have the following characteristics:  $\Phi^i = 38$  degrees,  $\Gamma = 18 \text{ kN/m}^3$  and  $c' = 0 \text{ kPa}$ , compacted in accordance with SFHW Series 600, Table 6/4.
- The Contractor is responsible for the selection of this material to ensure compliance with the geotechnical characteristics as shown on the relevant drawings and in the design documents/ calculations.
- No material which is outside the limits of Class 6I or similar granular fill is permitted for use within the reinforced earth zone.
- CONCRETE BACKFILL**  
C20/25 concrete backfill with minimum density of  $24 \text{ kN/m}^3$ . The concrete backfill is to be placed in maximum 600mm high lifts per day. Concrete backfill to be tamped into the voids in and behind the Vertica blocks at the wall as per Section 2-2/ 2A-2A to create a monolithic structure.
- 6) DRAINAGE:  
Standard Vertica MacWall drainage detail is to be formed behind the facing blocks. This is to comprise a 300mm width of free draining aggregate (CLASS 6H) behind the blocks (with block voids filled with same material). A 150mmØ rigid perforated drainage pipe should be placed along the full length of the wall at the base of the drainage column. The pipe should be roddable and connected to an appropriate site drainage outlet with consent to discharge. To be confirmed by drainage designer. **Any run-off from the road must not enter the wall backfill, permanent and temporary drainage are outside the scope of this design.**
- Where concrete backfill is used, MacDrain drainage geocomposite or similar is to be installed behind the concrete backfill. The drainage pipe should be wrapped in MacDrain and surrounded in free draining pea gravel.
- The excavated slopes should be checked for any flows or seepage that require drainage measures. Any flows, seepage or standing water must be directed to a suitable outfall as soon as they are encountered. It should be ensured that adequate drainage is present beyond the crest of the Vertica MacWall to avoid excess surface water run-off from entering the backfill of the wall.
- 7) FOUNDATION FOR WALL:  
To achieve a suitable foundation for the block wall, excavation must take place down to the levels indicated on the drawing and allow for the placement of a 300mm deep C20/25 concrete foundation. It must be ensured that original, undisturbed weak to moderately weak SANDSTONE/ MUDSTONE BEDROCK at and below formation level. This should be confirmed prior to construction by the Contractor. Any soft/ loose overburden present at or below formation level must be excavated out down to original BEDROCK and replaced with compacted Class 6F2/6F5 granular fill.
- 8) SITE / IN-SITU SOILS:  
**FOUNDATION:**  
Original, weak to moderately weak SANDSTONE/ MUDSTONE, this material is assumed to have the following minimum properties:  
 $\Phi^i = 32^\circ$ ,  $\gamma = 21 \text{ kN/m}^3$ ,  $c' = 5 \text{ kPa}$   
**RETAINED:**  
Original, weak to moderately weak SANDSTONE/ MUDSTONE, this material is assumed to have the following minimum properties:  
 $\Phi^i = 32^\circ$ ,  $\gamma = 21 \text{ kN/m}^3$ ,  $c' = 5 \text{ kPa}$   
Granular fill (Road Build Up assumed for the top 500mm below finished road level where road is present), this material is assumed to have the following minimum properties:  
 $\Phi^i = 38^\circ$ ,  $\gamma = 18 \text{ kN/m}^3$ ,  $c' = 0 \text{ kPa}$   
Soft CLAY/ MADE GROUND or Class 1/2 engineered upfill (towards the end of the wall where the finished levels sit above existing levels), this material is assumed to have the following minimum properties:  
 $\Phi^i = 28^\circ$ ,  $\gamma = 18 \text{ kN/m}^3$ ,  $c' = 0 \text{ kPa}$   
As the wall is in a significant cut it is likely most of the soft stratum noted in High Huddleston & Associates Geo-Environmental Report No. E23/8060/R001A will be removed for large parts of the retaining wall prior to reaching finished retained levels at the site.
- 9) TYPICAL FRONT FACE STEP:  
Face angle  $\leq 4^\circ$
- 10) TEMPORARY EXCAVATION:  
This solution is for the permanent works only, and is issued on the basis that a safe system of works is provided for construction. Temporary stability and design of any temporary works is entirely outside our scope and should be confirmed by a Temporary Works Designer appointed by the Principal Contractor.
- 11) HEAVY CONSTRUCTION TRAFFIC OPERATING CLOSE TO THE WALL:  
It should be ensured that the face batter is not compromised by the use of heavy compaction plant machinery too close to the front face of the MacWall. If construction plant is to traffic the crest area of the wall, a suitable haul road design must be undertaken and be set back an adequate distance from the rear of the wall (designed by others). If construction plant operates on the unprotected retained material, bulging of the wall may occur.
- 12) SURCHARGE AT THE CREST OF THE WALL:  
A maximum live load of  $10 \text{ kN/m}^2$  was assumed to act on the slope on the retained side of the wall in the permanent condition. Please advise us if the surcharge on the retained side of the wall in the permanent condition is to exceed the assumed loads. The Principal Designer/ Client's Consulting Engineer must inform Geoman Ltd. prior to construction to allow this design to be reviewed.
- 13) PEDESTRIAN VEHICLE PROTECTION:  
It is assumed a maximum 1.2m high fence (designed by others) will be installed behind the MacWall. The geogrids may be cut locally in the secondary reinforcement direction to accommodate the fence post sleeves. Refer to notes regarding the fence in the temporary condition for more details.
- Any VRS requirements are outside the scope of this design and should be confirmed prior to construction.
- 14) STATUTORY APPROVALS:  
Any statutory approvals should be confirmed by others. We strongly recommend construction does not proceed until approvals have been granted (if required).
- 15) SETTLEMENT OF THE REINFORCED BACKFILL:  
Some settlement of the reinforced backfill and retained material will occur following construction. This should be monitored and the installation of surface finishes, barriers/fences, etc. delayed until it has ceased.
- 16) MAINTENANCE REQUIREMENTS:  
The client should be made aware of the maintenance requirements for the wall noted in Section 6.0 of the document.
- 17) SETTING OUT:  
Setting out to be provided by scheme designer. Wall line shown on plan is as per drawing provided (High Huddleston & Associates Drawing No. E23/8060/021, 018 External Works Plan). Fenceline is offset from toe of walls as shown on sections. any required correction to toe line to accommodate to be confirmed prior to construction.
- 18) PROPOSED BUILDING FOUNDATIONS:  
The proposed building foundations must be taken to such a level so as to ensure that no loads will be transferred to the retaining wall. The building foundations must not rely on the flexible wall for support (including lateral support), and are outside the scope of this design. This design considers a general uniformly distributed load of  $10 \text{ kN/m}^2$  on the retained side of the wall. The flexible wall retaining system is sensitive to additional surcharge loading. Please advise if a more onerous surcharge should be considered.
- 19) ATTENUATION TANK:  
The tank should be installed alongside the Vertica MacWall and any excavations between the two structures should be replaced with compacted granular fill to avoid the creation of a weak zone in the retained material and reduce the risk of differential settlement. The installer must ensure the tank is fully watertight so that water is not discharging into the walls backfill.
- 20) MANHOLES IN VICINITY OF RETAINING WALL:  
C20/25 concrete backfill is to be used at the pinchpoint with the manholes. A layer of A393 mesh is to be used in the concrete backfill and foundation and concrete is to be poked into Vertica blocks, refer to Section 2-2 for further details. Pipes are to run perpendicular to manholes, any pipe bridging details required are to be confirmed by others prior to construction.
- 21) NOTES ON CALCULATIONS/DRAWINGS:  
These plans and the accompanying design documentation should be thoroughly checked by the Client's Consulting Engineer/ Principal Designer. Any apparent errors, omissions or variations should be reported immediately to Geoman Ltd. Construction of the wall shall not commence unless and until the Client's Consulting Engineer/ Principal Designer has considered the Geoman Design Submission Document (Q06 Ref. 24-5915-F1) to ensure that there are no errors, omissions or conflict with the scheme design.
- Maccaferri will not be liable for any loss or damage resulting from or arising out of the use of its products where those products have been used other than in accordance with Maccaferri's advice and product specifications. Unless advice is specifically requested in respect of parts of the slope not within the area where the works are undertaken Maccaferri shall not be liable for any loss or damage resulting from or arising out of any weakness or other problem in the slope outside the area where the works are undertaken. This drawing, or design proposal, remains the copyright of Maccaferri Ltd and is not to be copied or disclosed to any persons other than the person to whom it is originally intended.

|                                                    |  |  |  |                                                                                                                                                                                                   |                   |                                                  |
|----------------------------------------------------|--|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------|
| Drawing Title:<br>VERTICA MACWALL SECTIONS         |  |  |  | Designed:<br>DMCG                                                                                                                                                                                 | Date:<br>07.11.25 | Project Title:<br>PENINSTONE LANE, FEANEY BRIDGE |
| Scale @ A1:<br>AS SHOWN                            |  |  |  | Drawn:<br>DMCG                                                                                                                                                                                    | Date:<br>07.11.25 | Client:<br>K HARAN CIVILS                        |
| Unit:<br>MM                                        |  |  |  | Revision:<br>GM                                                                                                                                                                                   |                   |                                                  |
| Project Number:<br>24-5915-F1                      |  |  |  | Drawing Status:<br>CONCEPT/PRELIMINARY ONLY <input type="checkbox"/> FOR APPROVAL <input checked="" type="checkbox"/> FOR CONSTRUCTION <input type="checkbox"/> AS BUILT <input type="checkbox"/> |                   |                                                  |
| Checked:<br>DMCG                                   |  |  |  | Date:<br>07.11.25                                                                                                                                                                                 |                   |                                                  |
| Drawn:<br>App:                                     |  |  |  | Date:                                                                                                                                                                                             |                   |                                                  |
| Description:<br>DIMENSIONS INCREASED CLOSE TO ROAD |  |  |  | Date:<br>07.11.25                                                                                                                                                                                 |                   |                                                  |
| DMCG                                               |  |  |  | Date:<br>22.08.25                                                                                                                                                                                 |                   |                                                  |
| DMCG                                               |  |  |  | Date:<br>21.03.25                                                                                                                                                                                 |                   |                                                  |
| DMCG                                               |  |  |  | Date:<br>21.03.25                                                                                                                                                                                 |                   |                                                  |

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