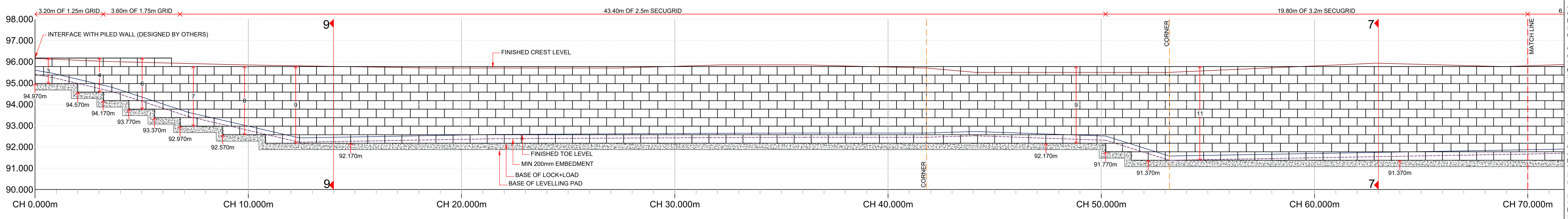
## WALL 03 ELEVATION* (TBC) (1/3)

1:100

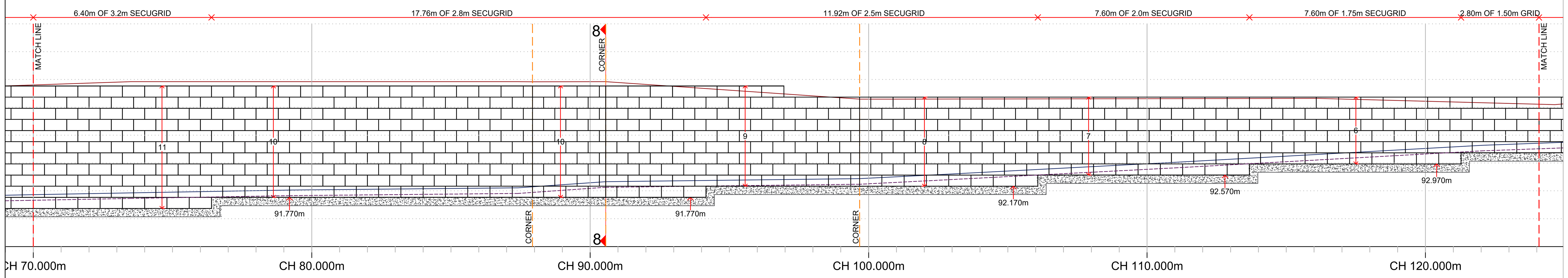
*WALL 03 DESIGN IN ABEYANCE PENDING CONFIRMATION OF WALL FOUNDATION SOLUTION AND PILING RIG LOADS




## WALL 03 ELEVATION* (TBC) (2/3)

1:100

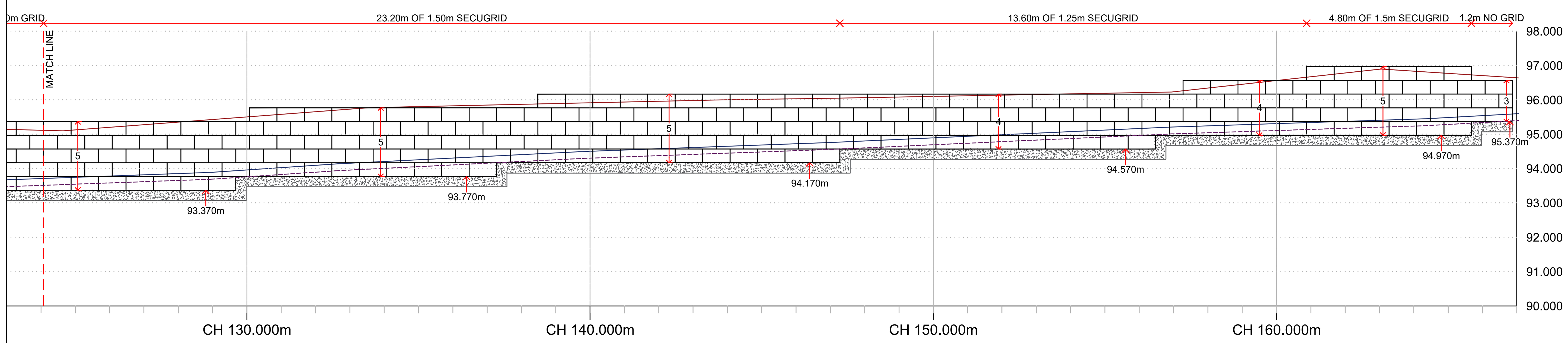
*WALL 03 DESIGN IN ABEYANCE PENDING CONFIRMATION OF WALL FOUNDATION SOLUTION AND PILING RIG LOADS



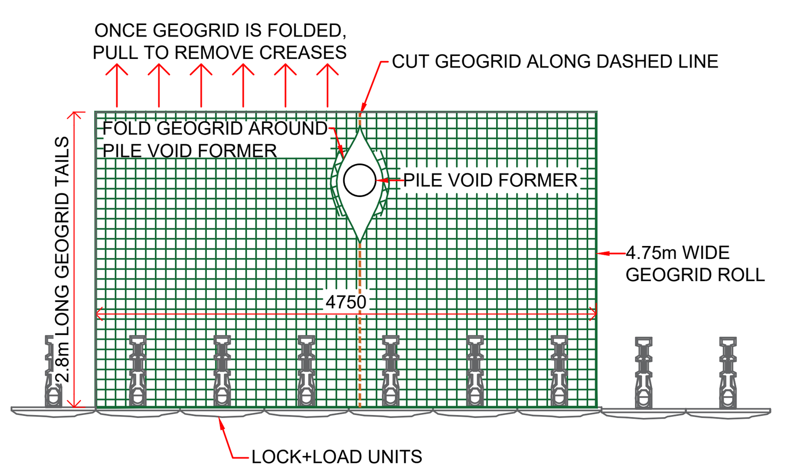

## WALL 03 ELEVATION* (TBC) (3/3)

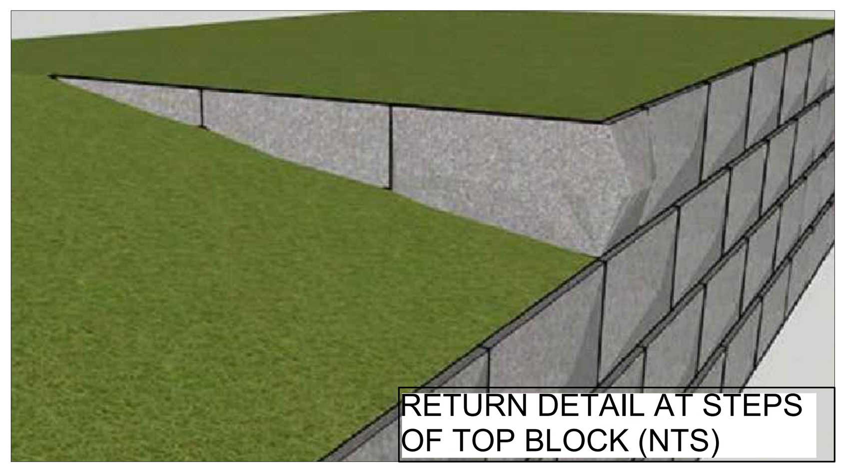
1:100

*WALL 03 DESIGN IN ABEYANCE PENDING CONFIRMATION OF WALL FOUNDATION SOLUTION AND PILING RIG LOADS




## DETAIL AT WALL 03 PILED FOUNDATIONS - TBC (NTS)



RETURN DETAIL AT STEPS OF TOP BLOCK (NTS)

## INDICATIVE LOCATION OF WALL 03

1:250

All wall geometry, setting out and required offsets to be confirmed by the Principal Contractor and/ or Client's Consulting Engineer prior to construction. The Principal Contractor and/ or Client's Consulting Engineer must also confirm the locations of all services on site prior to construction and ensure that none will be affected by the Lock+Load wall and its installation.


NOTES:

A1

1) All dimensions in mms unless otherwise specified.

2) BLOCKS: LOCK+LOAD GEOGRID: SECUGRID 40/40

3) INSTALLATION: Refer to standard Manufacturer's installation guidelines.

4) REINFORCED BACKFILL:
Class 6I granular fill, in accordance with MCHW SHW Series 600. Granular fill to be benched into in-situ soils and compacted in layers in accordance with the Specification for Highway Works, Series 600, Table 6/4. Class 6I fill to be restricted to '30mm down' for first 1m behind face.

Compliance testing must be undertaken on the Class 6I granular fill, both prior to commencement and throughout the works. This must include particle size testing and shear box of representative samples. Class 6I must have a maximum fines (63μm) content of 15% and comply with the limits in Table 6/3 of Series 600.

This material is assumed to have the following characteristics: Phi' = 35 degrees, Gamma = 19 kN/m³ and c' = 0 kPa, compacted to in accordance with SRW 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.

5) FOUNDATION FOR WALL 03:
Logs in Sirius 'Updated Factual Site Investigation Letter Report' C9907A/AMG/10556 suggest the presence of significant depths of soft (low strength) and very loose MADE GROUND & very low strength ALLUVIUM at the location of Wall 03. An undrained shear strength ($c_u$) of 18kPa was recorded in WS604 at a depth of 2.75m, and SPT 'N' values of 0 were recorded at depths of 3m and 5m in BH601 and BH602 respectively. WS703 encountered soft low strength made ground at a depth of 3m.

Such material would not be a suitable foundation material for the Lock+Load wall, and remedial action must therefore be undertaken to provide a competent base from which to construct Lock+Load Wall 03. We would suggest the following three broad options are considered:

1. Excavation of all soft/ soft-firm ($c_u$<70kPa) and loose material (including all alluvial deposits and cohesive made ground) down to SANDSTONE/ MUDSTONE bedrock. Compacted Class 6F2/ 6F5 granular fill to be used to replace excavated material back up to wall formation level. The depth of excavation and replacement required (5m+) may make this option unfeasible, particularly in such close proximity to the site boundary.
2. Some form of ground improvement (designed by others) to ensure a minimum safe bearing resistance of 140kPa at wall formation level and that global stability and settlement magnitudes satisfy design standards. The may take the form of deep soil mixing, vibro stone columns, etc. (to be confirmed by specialist ground improvement contractor).
3. A piled based (designed by others) for the Lock+Load wall.

**If any soft/ soft-firm, loose or unsuitable material ($c_u$<70kPa, SBR<140kPa) is left in place at or below wall formation level, instability and/ or excessive settlement of the Lock+Load wall may occur.**

6) SITE / IN-SITU SOILS :
Retained: MADE GROUND (ashy gravelly SAND [ASH & CLINKER]) & compacted Class 1/2 upfill. These materials are assumed to have the following minimum properties:
MADE GROUND $\phi' = 28°$, $\gamma = 18kN/m^3$ and c' = 0 kPa.
CLASS 1/2 FILL $\phi' = 28°$, $\gamma = 19kN/m^3$ and c' = 0 kPa.

Foundation solution for Wall 03 - **TBC**.

The Contractor & Client's Consulting Engineer are responsible for ensuring the in-situ soils comply with the geotechnical characteristics as shown on the relevant drawings and in the design calculations.

7) DRAINAGE:
A minimum 150mmØ perforated drain pipe should be placed along the full length of the wall. This should be roddable and connected to an appropriate site drainage outlet with consent to discharge. Intermediate rodding points will be required to allow the full length of drain to be maintained (to be determined by scheme drainage designer). Rodding points should be installed at maximum 20m spacings at the top of the walls. Intermediate outlets may be required at any low points in the wall formation (e.g. at CH53m) - to be determined by scheme drainage designer.

8) FACE ANGLE = 5.7°.

9) TEMPORARY EXCAVATIONS/ SETTING OUT
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 excavations have the potential to fail rapidly and without warning, particularly in granular material. The Principal Contractor/ Wall installer must produce a method statement and risk assessment for the works to be approved by the Client's Consulting Engineer. Temporary stability and design of any temporary works are outside our scope and should be confirmed by others.

All wall geometry, setting out and required offsets to be confirmed by the Principal Contractor and/ or Client's Consulting Engineer prior to construction.

10) BUILDING FOUNDATIONS
It is assumed that any building foundations in the vicinity of the wall will be taken to such a level that no loads will be transferred to the Lock+Load wall and reinforced backfill. Building foundations must not rely on the flexible Lock+Load wall and reinforced backfill for support (including lateral support), and are outside the scope of this design. Please advise us if a piling/ vibro rig and/ or large plant is to be used on the retained side of the Lock+Load wall, as well as their required minimum offsets and maximum operational surcharges, as the design will need to be checked for the rig loads.

11) SETTLEMENT
The Client's Consulting Engineer must assess the risk of settlement of ~4m of upfill over significant depths of very loose MADE GROUND & very low strength ALLUVIUM to the rear of the wall. Ground improvement (designed by others) such as deep soil mixing, vibro stone columns, etc. may be required to limit differential and total settlement (to be confirmed by specialist ground improvement contractor).

12) NOTES ON CALCULATIONS/DRAWINGS:
These plans and the accompanying design documentation should be thoroughly checked by the Client's Consulting Engineer. Any apparent errors, omissions or variations should be reported immediately to Geoman Ltd. Construction of this wall shall not commence unless and until the Client/ Client's Consulting Engineer has considered the Geoman Design Submission Document (QP06 Ref 24-5558) to ensure that there are no errors, omissions or conflict with the scheme design.

Geoman Ltd. will not be liable for any loss or damage resulting from or arising out of the use of this drawing where it has been used other than in accordance with Geoman's advice and specifications. Unless advice is specifically requested in respect of parts of the site not within the area where the works are undertaken, Geoman shall not be liable for any loss or damage resulting from or arising out of any weakness or other problem in the ground outside the area where the works are undertaken.



**CONCEPT ONLY**
**NOT FOR CONSTRUCTION**

| Rev. | Issue / Revision: | Drawn: | Date: |
|---|---|---|---|
| B | | WM | 25.03.25 |
| A | | WM | 04.03.25 |
| 0 | | WM | 27.09.24 |

GEOMAN
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Project Title: WESTGATE, CLECKHEATON

Client: GILLCON GROUP

Drawing Title: LOCK+LOAD WALL 03 ELEVATION

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|---|---|---|---|---|
| Designed: | | Date: | | Project No: 24-5558 |
| Drawn: | WM | Date: | 25.03.25 | Scale: AS INDICATED AT A1 |
| Checked: | | Date: | | |

Drawing No: SK24-5558-F1-04 Revision: B