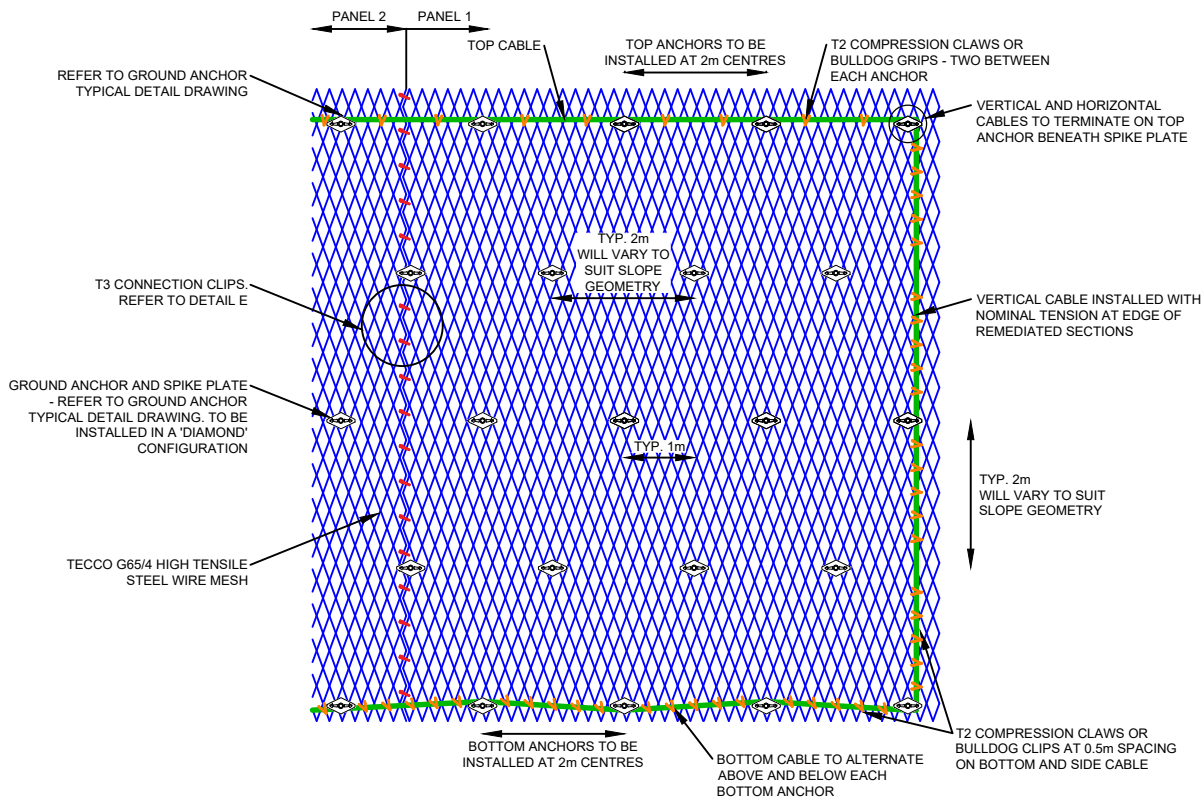
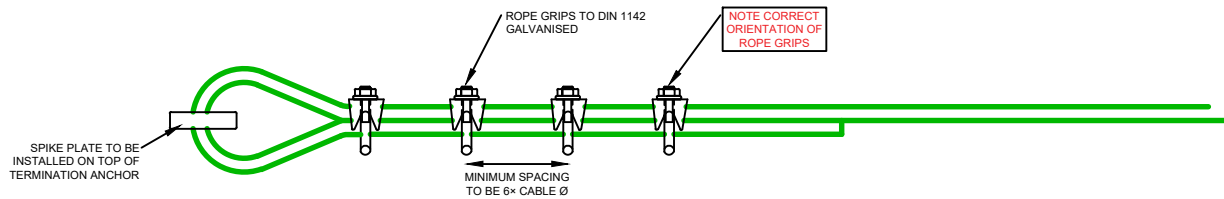
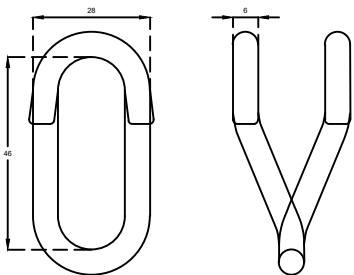




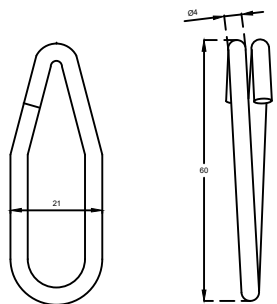
DETAIL A - TYPICAL SPIKE LAYOUT, ORIENTATION AND EDGE DETAILS ELEVATION  
NOT TO SCALE



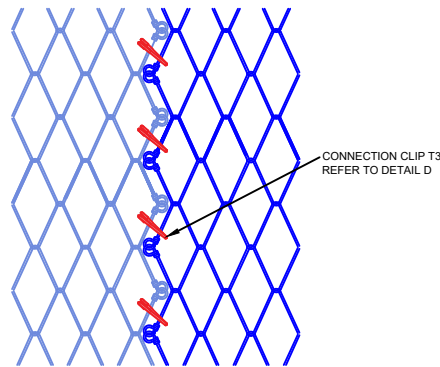
DETAIL B - TYPICAL CABLE END FIXING  
NOT TO SCALE



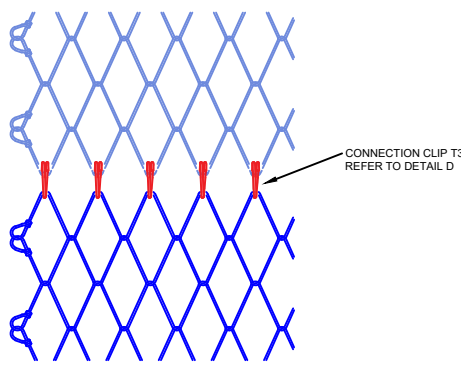
DETAIL C - T2 PRESS CLAW  
NOT TO SCALE



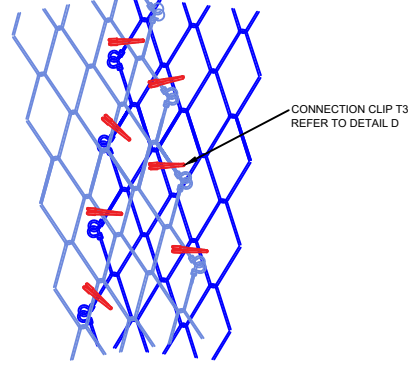
DETAIL D - T3 CONNECTION CLIP  
NOT TO SCALE



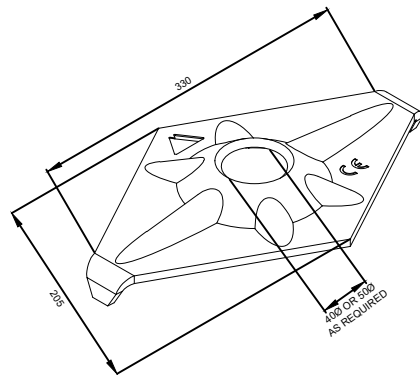
DETAIL E - TYPICAL VERTICAL MESH CONNECTION  
NOT TO SCALE



DETAIL F - TYPICAL HORIZONTAL MESH CONNECTION  
NOT TO SCALE



DETAIL G - TYPICAL OVERLAP MESH CONNECTION  
NOT TO SCALE



DETAIL H - GEOBRUGG TECCO P33 SPIKE PLATE  
NOT TO SCALE

#### SPECIFICATION FOR ACTIVE ROCKFALL NETTING

##### GENERAL

- ACTIVE ROCKFALL NETTING INSTALLATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SECTION. SHOULD ANY AMBIGUITY OR CONFUSION EXIST THE CONTRACTOR SHALL CONSULT THE ENGINEER BEFORE PROCEEDING.
- A METHOD STATEMENT FOR INSTALLATION SHALL BE SUBMITTED TO THE ENGINEER FOR THEIR APPROVAL PRIOR TO COMMENCEMENT OF WORK ON SITE.
- ACTIVE ROCKFALL NETTING IS TO COMPRISE GEOBRUGG TECCO G65/4, TO BE INSTALLED IN LINE WITH THE MANUFACTURER'S GUIDELINES USING PROPRIETARY ITEMS INCLUDING SPIKE PLATES, PRESS CLAWS AND CONNECTION CLIPS.
- ACTIVE ROCKFALL NETTING IS TO BE INSTALLED ON SLOPES 2 AND 3, AS HIGHLIGHTED ON THE OVERVIEW AND ARRANGEMENT DRAWINGS.

##### SETTING OUT

- IF, DURING THE WORKS THE CONTRACTOR ENCOUNTERS MATERIAL OUTSIDE THE SPECIFIED AREA TO BE NETTED THAT IN THEIR OPINION SHOULD BE NETTED THEY SHALL CONTACT THE ENGINEER IMMEDIATELY FOR FURTHER INSTRUCTIONS.
- THE TOP OF THE ACTIVE ROCKFALL NETTING SHALL BE POSITIONED AS CLOSE TO THE MASONRY WALL AT THE CREST AS PRACTICABLE.
- THE TOP FIXING ANCHORS ARE TO BE INSTALLED AT 2m CENTRES.
- NO FIXING ANCHORS ARE TO BE INSTALLED DIRECTLY THROUGH THE MASONRY WALL. IF THERE ARE ANY AREAS WHERE THE TOP ANCHORS ARE GOING TO BE PROBLEMATIC TO INSTALL, THE CONTRACTOR SHOULD CONTACT THE DESIGNER.
- BOTTOM ANCHORS SHALL BE INSTALLED APPROXIMATELY 0.3m ABOVE GROND LEVEL AND AT 2m CENTRES. IF THE SLOPE GEOMETRY IS SUCH THAT THE BOTTOM ANCHOR IS >0.3m FROM THE ROCK FACE, AN ADDITIONAL BOTTOM ANCHOR IS REQUIRED TO PULL THE CABLE IN TO THE ROCK SLOPE AND CLOSE THE GAP.
- INTERMEDIATE FIXING ANCHORS ARE REQUIRED TO PROFILE THE ROCKFALL NETTING INTO THE ROCK SLOPE, SUCH THAT THE NETTING IS IN POSITIVE CONTACT WITH THE ROCK SLOPE. WHERE THERE IS A VOID BETWEEN THE ROCK SLOPE AND NETTING, ADDITIONAL INTERMEDIATE FIXING(S) WILL BE REQUIRED. THESE WILL BE MARKED OUT ON SITE BY THE ENGINEER HOWEVER IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE NETTING IS IN POSITIVE CONTACT WITH THE ROCK SLOPE.

##### SLOPE PREPARATION

- HIGH TENSILE ROCK NETTING SHALL BE INSTALLED ON SPECIFIED AREAS OF THE FACE FOLLOWING SLOPE PREPARATION. THE SLOPE SURFACE SHALL BE PREPARED IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES. ALL WOODY VEGETATION SHALL BE REMOVED FROM THE WORKING AREA, INCLUDING TREES, SHRUBS, PLANTS AND FALLEN MATTER, CUT BACK AS CLOSE TO GROUND LEVEL AS PRACTICALLY POSSIBLE.
- ALL ROOTS, STUMPS AND CUT ENDS SHALL BE TREATED TO PREVENT REGROWTH.
- THE ROCK SLOPE SHALL BE SCALED TO REMOVE DETACHED OR LOOSE ROCK DEBRIS. ROCK SCALING SHALL ONLY BE UNDERTAKEN UNDER THE SUPERVISION OF THE DESIGNER.
- IN AREA 2, OVERHANGING ROCK REQUIRES REMOVAL BY NON-EXPLOSIVE. EXPANDING DEMOLITION GROUT.

##### WORKMANSHIP AND STABILITY

- THE HIGH TENSILE ROCK NETTING WORKS SHALL BE EXECUTED IN SUCH A MANNER THAT THERE IS NO DANGER TO THE CONTRACTORS PERSONNEL, THE ENGINEER'S STAFF, CLIENT'S STAFF, INFRASTRUCTURE OR OTHER THIRD PARTIES AND THAT ANY DAMAGE TO THE SITE ENVIRONMENT IS KEPT TO A MINIMUM.

##### MATERIALS

- ACTIVE ROCKFALL NETTING SHALL BE GEOBRUGG TECCO G65/4 OR SIMILAR APPROVED, WITH THE FOLLOWING CHARACTERISTICS:
  - 63mm INSCRIBED CIRCLE DIAMETER OF MESH (83 x 138mm MESH WIDTH)
  - 12 PCS/m NUMBER MESH TRANSVERSAL
  - 7 PCS/m NUMBER MESH LONGITUDINAL
  - 4mm WIRE DIAMETER
  - MINIMUM 1770 N/mm<sup>2</sup> TENSILE STRENGTH
  - HIGH TENSILE CARBON STEEL WIRES
  - MESH MINIMUM STRENGTH IN A VERTICAL DIRECTION 250kN/m
  - MINIMUM PUNCTURE RESISTANCE 280kN
  - MINIMUM SHEARING RESISTANCE OF THE TOP ANCHOR 140kN
  - ZINC "SUPERCOATING" WITH A MINIMUM DEPOSIT 150g/m<sup>2</sup> OR SIMILAR.
- ACTIVE ROCKFALL NETTING SHALL BE SUPPLIED WITH PROPRIETARY P33 SPIKE PLATES, T2 AND T3 CONNECTION CLIPS. ALL CLIPS AND SPIKE PLATES TO BE HOT DIP GALVANISED WITH A MINIMUM CORROSION PROTECTION DEPOSIT OF 500G/M<sup>2</sup>.
- GROUND ANCHORS - REFER TO SEPARATE GROUTED ANCHOR SPECIFICATION DRAWING.
- THE TOP, BOTTOM AND SIDE CABLES SHALL BE 12mm NOMINAL DIAMETER MULTI-STRAND GALVANISED STEEL ROPES TO BS EN 12385-4 (2002). ROPES SHALL BE GALVANISED IN ACCORDANCE WITH BS EN 10264. ALL CABLE ENDS SHALL BE PREVENTED FROM UNRAVELLING WITH HEAT SHRINK END CAP OR SIMILAR APPROVED.
- FIXING CABLES SHALL BE ATTACHED TO THE NETTING USING THE TYPE 2 PRESS CLAW (REFER TO DETAIL C) AT EVERY THIRD INDIVIDUAL MESH.

##### DRILLING AND INSTALLATION OF GROUND ANCHORS

- REFER TO SEPARATE GROUTED ANCHOR SPECIFICATION DRAWING.

- ALL ANCHORS SHALL BE INSTALLED WITH GEOBRUGG P33 SPIKE PLATES (REFER TO DETAIL H).

##### NETTING INSTALLATION

- ALL NETTING SHALL BE INSTALLED AS PER THE MANUFACTURER'S INSTRUCTIONS.
- ADJACENT MESH PANELS TO BE CONNECTED USING PROPRIETARY CONNECTION ELEMENTS (T3 CONNECTION CLIPS).
- PROPRIETARY SPIKE PLATES TO BE FITTED AT EACH FIXING GROUND ANCHOR ON THE FACE, UNLESS OTHERWISE DIRECTED BY THE DESIGNER.
- FIXING GROUND ANCHORS TO SECURE THE HIGH TENSILE NETTING ARE TO BE LOCATED IN NATURAL OR MAN MADE HOLLOWES TO ENABLE TENSIONING. THE NUT SHALL BE TIGHTENED TO 0.35kN/m TORQUE TO PROVIDE 30kN PRELOAD.

##### SUPERVISION

- THE CONTRACTOR SHALL PROVIDE ADEQUATELY EXPERIENCED FULL TIME SUPERVISORY PERSONNEL ON THE SITE FOR THE DURATION OF THE ROCK NETTING OPERATIONS.

##### INSPECTION AND TEST PLAN DETAILS

- REFER TO SEPARATE INSPECTION AND TEST PLAN DETAILS DRAWING.

DO NOT SCALE FROM THIS DRAWING

##### SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.

RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DRA001.

##### CONSTRUCTION

- RESTRICTED SITE / WORKING AT HEIGHT
- INTERFACE WITH PUBLIC
- NEAR TO WATERWAYS / TIDAL WORKING
- GROUND INSTABILITY
- SERVICES
- UNSTABLE STRUCTURES
- BOUNDARY MEASURES / VANDALISM
- TRIP HAZARD
- CORROSION
- SITE DESIGNATIONS
- ECOLOGY

##### MAINTENANCE AND INSPECTION

- RESTRICTED SITE
- INTERFACE WITH THE PUBLIC
- TRIP HAZARD

##### OPERATION

- TRIP HAZARD

FOR INFORMATION RELATING TO USE, CLEANING AND MAINTENANCE SEE THE HEALTH AND SAFETY FILE

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

##### NOTES

- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.
- DRAWING TO BE REPRODUCED IN COLOUR.
- FOR TYPICAL CROSS SECTIONS, REFER TO DRAWINGS 9005 AND 9006.

| Rev | Date | Description | Drawn | Chkd | Appd |
|-----|------|-------------|-------|------|------|
|     |      |             |       |      |      |

FOR LISTED BUILDING CONSENT

**FAIRHURST**

4th Floor, 300 Bath Street  
GLASGOW G2 4JR  
Tel: 0141 204 8800

**Fife**  
COUNCIL

Project Title  
**DYSART HARBOUR AND TUNNEL  
ROCK SLOPE REMEDIAL WORKS**

Drawing Title  
**4mm ACTIVE ROCKFALL  
NETTING SPECIFICATION  
AND DETAILS**

|               |                  |                 |                  |
|---------------|------------------|-----------------|------------------|
| Drawn<br>AC   | Date<br>21/02/25 | Designed<br>HL  | Date<br>21/02/25 |
| Checked<br>HL | Date<br>21/02/25 | Approved<br>ARB | Date<br>21/02/25 |

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| <b>A3</b> | Scale<br>NTS | 160757-9110 |
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| Drawing Number<br>160757/9110 | Revision<br>- |
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