Supplementary Information

The following information is associated with Network Rail Standard:
NR CIV/SD/581 Rev A

Additional Content Access

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CAD Drawing

- CIV/SD/581

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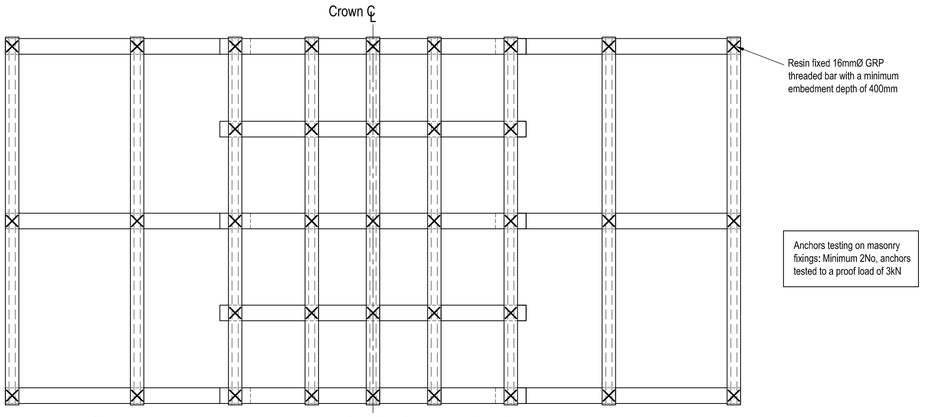
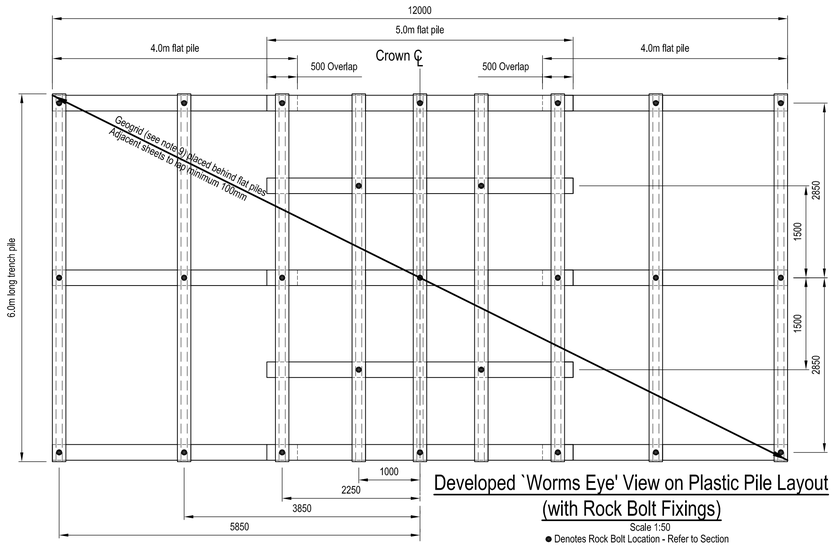


Developed `Worms Eye' View on Plastic Pile Layout (with Masonry Fixings)

Scale 1:50

✕ Denotes Masonry Anchor Location

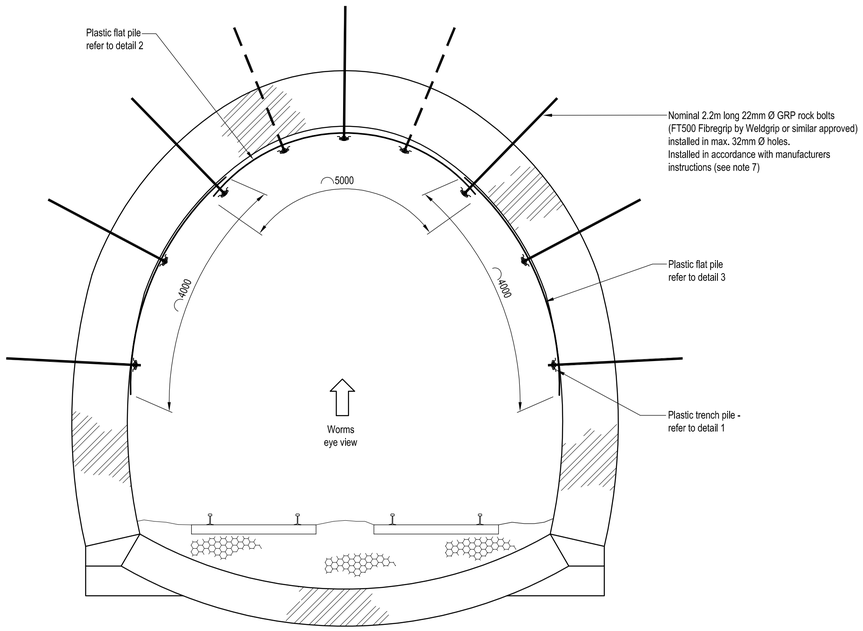


Anchor testing on rockbolts: minimum 2No. bolts tested to a proof load of 10kN. Refer to note 12

Developed `Worms Eye' View on Plastic Pile Layout (with Rock Bolt Fixings)

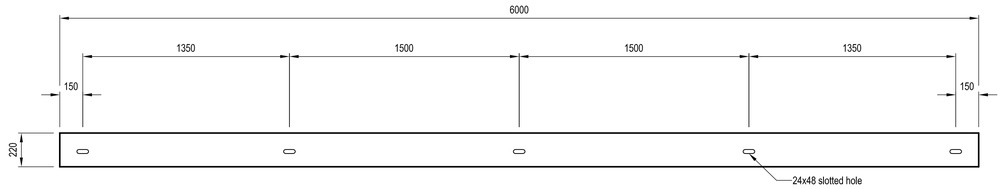
Scale 1:50

● Denotes Rock Bolt Location - Refer to Section



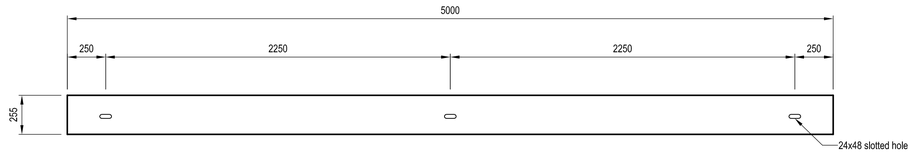
Typical Cross Section Through Tunnel

Scale 1:50



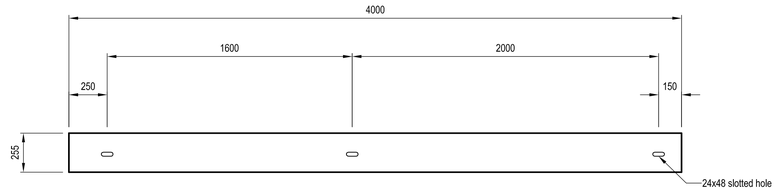
Detail 1 : 6.0m Long Trench Pile

Scale 1:20



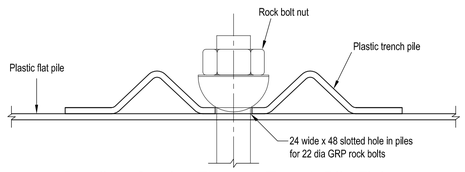
Detail 2 : 5.0m Long Flat Pile

Scale 1:20



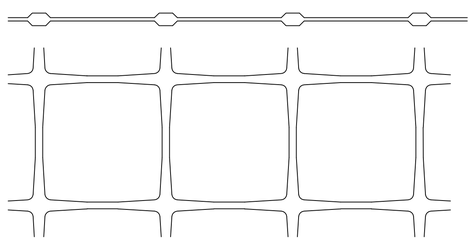
Detail 3 : 4.0m Long Flat Pile

Scale 1:20



Detail 4 : Section Through Trench Pile Fixing

Scale 1:2



Detail 5 : Geogrid Detail

Scale 1:1

SAFETY, HEALTH AND ENVIRONMENT RISK ASSESSMENT

Designer's note - CDM (2007)
The following are significant hazards/risks associated with the works outlined in this set of drawings. A site specific risk assessment shall always be undertaken prior to commencing any of the works described on site.

It is assumed that a competent contractor is aware of the risks associated with general construction activities undertaken in the railway environment.

RISK	STAGE	MITIGATING MEASURES
Bricks falling onto personnel	C/O	Remove very loose bricks prior to installation or secure with wedges.
Rock bolt or fixing failure leading to collapse	C	Carry out rock bolt and fixing tests on 5% of fixings - minimum 2No. per section of repair.
Repair detail struck by train	C/O	Gauging check to be carried out.
Design Assumptions	C	Investigations to be carried out prior to application of standard detail - refer to notes

Note: C = Construction, O = Operation, D = Demolition.

DRAWING No. NR/CIV/SD/581

NOTES

1. All dimensions are in millimetres unless stated otherwise.
2. All levels are in metres unless stated otherwise.
3. S&T troughs, ballast & track to be protected during the works.
4. Works to be carried out in accordance with network rail model clauses for civil engineering works.
5. All proprietary products are to be used in accordance with manufacturers instructions.
6. Areas where the inner ring of brickwork has missing bricks are to be timbered with 4" timbers, wedged against existing bricks.
7. Rock bolts to be designed to suit particular ground conditions.
8. Rockbolts may be substituted for masonry fixings where the patches of loose/poor brickwork are sparse enough to provide fixings at the required density shown on the plan. Fixings are to be located in competant brickwork (not loose) and the lining is to be 5 rings or thicker.
9. Geogrid to be Tensar SS20 or similar approved. Maximum aperture size to be 50mm.
10. Plastic piles by HL Plastics or similar approved
    Flat pile - Type HL 788/003
    Trench pile - Type HL 788/004
11. Mesh design life to be 5 years. Mesh to be fitted with a 'scaffolding tag' type label to indicate installation date and required removal date (max. 5 years)
12. For standard detail of rock bolt testing see drawing number NR/CIV/SD/591.

    Design Parameters

    i) A gauge clearance survey shall be carried out prior to the works.
    ii) No Rockbolts to be installed between 2.5m and 4.5m above rail level as this is a common tight point for gauge clearance. This may be contravened if clearances allow.
    iii) Minimum 2no. rock bolts tested to a proof load of 10kN.
    iv) Minimum 2no. masonry fixings tested to a proof load of 2kN.
    v) Maximum design loading is 5 bricks between fixings

MATERIALS SCHEDULE

ITEM	QUANTITY
ROCK BOLTS	25
MASONRY ANCHORS	37
TRENCH PILE 6m	9
FLAT PILE 5m	5
FLAT PILE 4m	6
GEOGRID	72m²

Rev	Date	Description of revision	Design'd	C'kd
A	JUL-10	FIRST ISSUE	NJ	PH

Network Rail

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Approved	P. Clark	Senior Prog. Engineering Manager	PC	JUL-10
	Name	Position	Signature	Date

Master copy with original signatures held by Network Rail HQ
CIVIL ENGINEERING STANDARD DESIGN

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STANDARD TUNNEL DETAILS

EMERGENCY TEMPORARY MESH REPAIR DETAIL IN TUNNELS WITH OLE

Scale	AS SHOWN	
Drawing Number	NR/CIV/SD/581	REV. A

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