Supplementary Information

The following information is associated with Network Rail Standard:
NR CIV/SD/243 Rev A

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CAD Drawing

- CIV/SD/243

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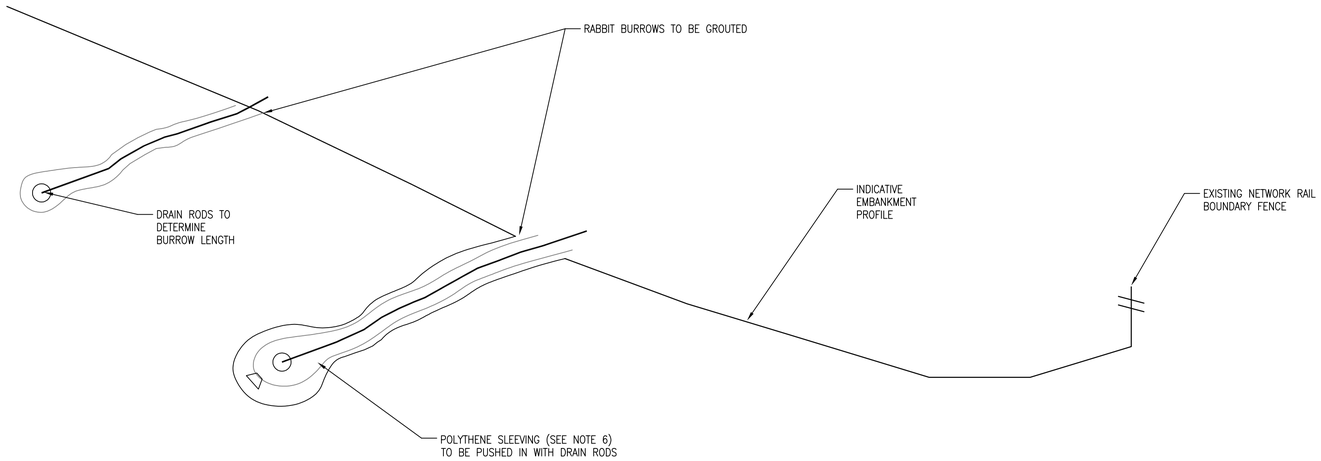

GROUTING OF BURROWS

GROUTED BURROW DETAILS

OUTLINE CONSTRUCTION SEQUENCE

a) QUALIFIED ECOLOGIST TO UNDERTAKE AN ECOLOGICAL SURVEY OF THE SITE TO IDENTIFY THE PRESENCE OF ANY PROTECTED SPECIES.

b) ECOLOGICAL REPORT OF THE SITE TO BE ISSUED AND APPROVED PRIOR TO COMMENCEMENT OF ANY PHYSICAL WORKS.

c) COSS TO ESTABLISH A SAFE SYSTEM OF WORK IN ACCORDANCE WITH THE RULE BOOK AND THE CONTRACTOR'S WORKS PACKAGE PLAN.

d) LOCATE AND MARK OUT SERVICES PRESENT ON SITE AND ESTABLISH PROTECTION SYSTEMS FOR TRACKSIDE SERVICES.

e) SECURE PERIMETER FENCING TO PROTECT THE SITE AND THE RAILWAY BOUNDARY.

f) MOBILISE AND ESTABLISH ALL REQUIRED SAFETY/WELFARE FACILITIES, STORES, COMPOUND AND SITE OFFICES.

g) DISMANTLE THE RAILWAY BOUNDARY FENCE AS REQUIRED AND CONSTRUCT PLANT ACCESS TO THE EARTHWORK.

h) UNDERTAKE SLOPE DE-VEGETATION WORKS REQUIRED.

i) ENCOURAGE THE EXISTING RABBIT/BADGER POPULATION AWAY FROM THE EARTHWORK USING TREATMENT IN ACCORDANCE WITH THE METHODS OUTLINED IN CIRIA C645.

j) LOCATE AND MARK OUT BURROWS THAT REQUIRE GROUTING.

k) DETERMINE THE LENGTH OF BURROWS USING DRAIN RODS WITH A WHEEL ATTACHMENT TO FACILITATE MANEOUVERING AROUND BENDS IN THE TUNNEL.

l) CUT CORRESPONDING LENGTH OF POLYTHENE SLEEVE AND TIE KNOT IN ONE END. PUSH SLEEVE DOWN BURROW WITH DRAIN RODS.

m) MIX GROUT AND POUR INTO THE SLEEVING UP TO THE LEVEL OF THE BURROW ENTRANCE.

n) KNOT THE TOP OF THE SLEEVING AND TRIM SURPLUS POLYTHENE.

o) BACKFILL BURROW ENTRANCE WITH COHESIVE FILL AND TRIM TO SLOPE PROFILE.

p) REINSTATE ALL AREAS OUTSIDE THE RAILWAY BOUNDARY AS REQUIRED.

q) DEMOBILISE.

DRAWING No. NR/CIV/SD/243

NOTES

1. THIS DRAWING FORMS A STANDARD DETAIL FOR GROUTING OF BURROWS AND SHOULD BE READ IN CONJUNCTION WITH THE GENERAL REQUIREMENTS OF DRAWING SD/240.

2. REFERENCE SHOULD ALSO BE MADE TO THE SCHEME SPECIFIC DRAWINGS AND SPECIFICATIONS FOR DETAILS OF THE WORKS TO BE UNDERTAKEN.

3. GROUT SHALL CONSIST OF A 10:1 RATIO OF PFA: PORTLAND CEMENT AVAILABLE AS A READY MIX (SUCH AS GM10 OR SIMILAR APPROVED).

4. A 0.4 RATIO OF WATER TO SOLIDS SHALL BE USED TO MIX THE GROUT.

5. IF EXCESSIVE SHRINKAGE (>10% VOLUME) OCCURS THEN CONBEX 100 OR SIMILAR APPROVED PRODUCT CAN BE USED.

6. POLYTHENE SLEEVING TO BE 305mm DIAMETER CONTINUOUS SLEEVING, WITH 100 MICRON THICKNESS.

7. REPROFILING WORKS, LEVELLING OR COMPACTION OF THE SLOPE WITHIN INFLUENCING DISTANCE OF THE GROUTED BURROW SHALL NOT BE CARRIED OUT WITHIN 24 HOURS OF POURING GROUT.

8. GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF $4N/mm^2$.

9. WHERE PRESSURISED GROUTING IS PROPOSED, TRACK MONITORING IS TO BE IMPLEMENTED TO ASSESS THE POTENTIAL HEAVE IMPACT.

10. REFER TO DEFRA R&D FINAL PRODUCT REPORT CSG 15. "DEVELOPING A METHOD FOR BLOCKING RABBIT BURROWS" FOR BACKGROUND INFORMATION .

Rev	Date	Description of revision	Design'd	C'kd
A	MAY 2011	FIRST ISSUE	CAM	GJPT

Network Rail

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	Name	Position	Signature	Date
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Master copy with original signatures held by Network Rail HQ CIVIL ENGINEERING STANDARD DESIGN

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STANDARD ECOLOGICAL DETAIL

GROUTING OF BURROWS

Scale	NOT TO SCALE	
Drawing Number	NR/CIV/SD/243	REV. A

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