knowledge.

i. Record omission, difficulties, failures and defects.

H. On submission of the trial report, the Engineer shall review the report and add his comments and instructions accordingly.

I. Until the Contractor proves that the trials have been carried out to the requirements of the specification and to the Engineer's satisfaction, no permanent repair works will be allowed to begin.

9.3.4 Removal of Areas of Defective Concrete

A. Areas to be repaired shall be surveyed, inspected and marked out by the Contractor in accordance with the preliminary repair maps accompanying the Engineer's instructions.

B. Prior to commencement of concrete removal the Engineer shall inspect the area marked, verify and issue instructions accordingly.

C. The Contractor shall map the depth of the reinforcement using an electronic cover meter over the area to be repaired before cutting the concrete. Each repair area shall be cut in a series of straight lines on the surface to a depth of approximately 25mm, 10mm for repairs using epoxy mortar, using a disc cutter or similar. The concrete shall be chipped out to the depths required. The exposed concrete surfaces shall be roughened and cleaned by sand blasting followed by high pressure water wash at the same time as cleaning the reinforcement.

D. No cutting out of either reinforcement or concrete shall be carried out without the Engineer's approval. Before cutting out an area the Engineer shall check that the structure is safe or made safe by propping or other suitable means.

E. Where the cover is low, disc cutting shall be omitted or limited in order to avoid damage to the reinforcement. Care shall be exercised when roughening the disc-cut surfaces to prevent damage to the surrounding sound concrete.

F. The power, size and suitability of the equipment used for concrete removal shall be relevant to the demands of the individual repair and shall be subject to the approval of the Engineer. Where percussive equipment is used particular care shall be taken to ensure that damage is not caused to adjoining sound concrete substrate and reinforcement.

G. Where there are environmental constraints, it may be necessary to use environmentally friendly methods.

H. Where concrete is to be replaced by shotcrete the slope of the cut out shall be