APPENDIX C: FLOWCHARTS FOR DATA ANALYSIS

Possible Distress	Present	
Error in mix proportioning	Yes	No
Poor placement	Yes	No
Poor finishing/curing	Yes	No
Poor steel placement	Yes	No
Carbonation at depths > 5-10 mm	Yes	No

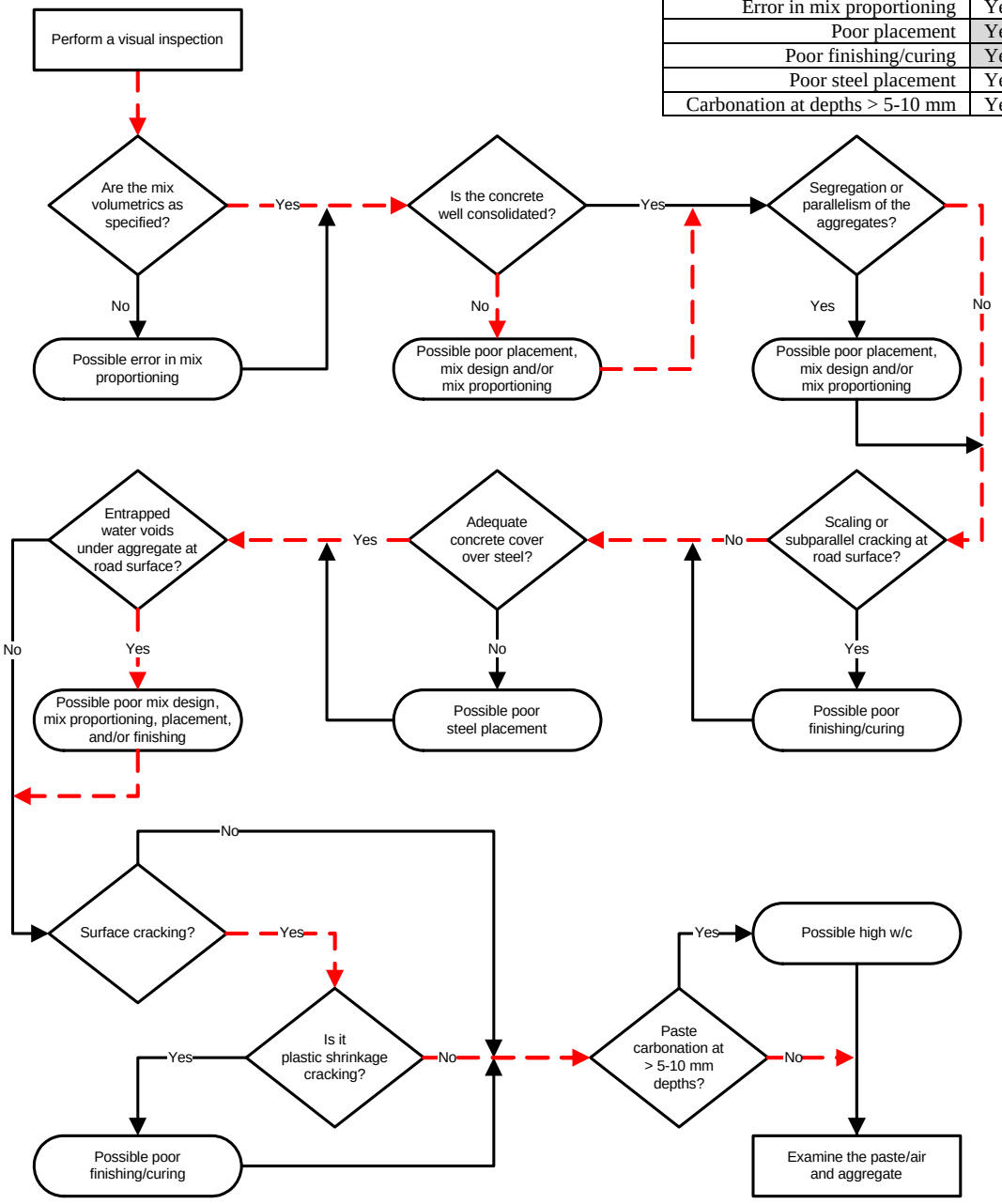


FIGURE C-1. AIRPORT ALPHA: FLOWCHART FOR ASSESSING GENERAL CONCRETE PROPERTIES BASED ON VISUAL EXAMINATION

Possible Distress	Present	
Shrinkage cracks or sample preparation cracks	Yes	No
Corrosion of embedded steel	Yes	No
Paste freeze-thaw	Yes	No
Aggregate freeze-thaw	Yes	No
Sulfate attack	Yes	No
Deicer attack	Yes	No
Infilling material	Yes	No

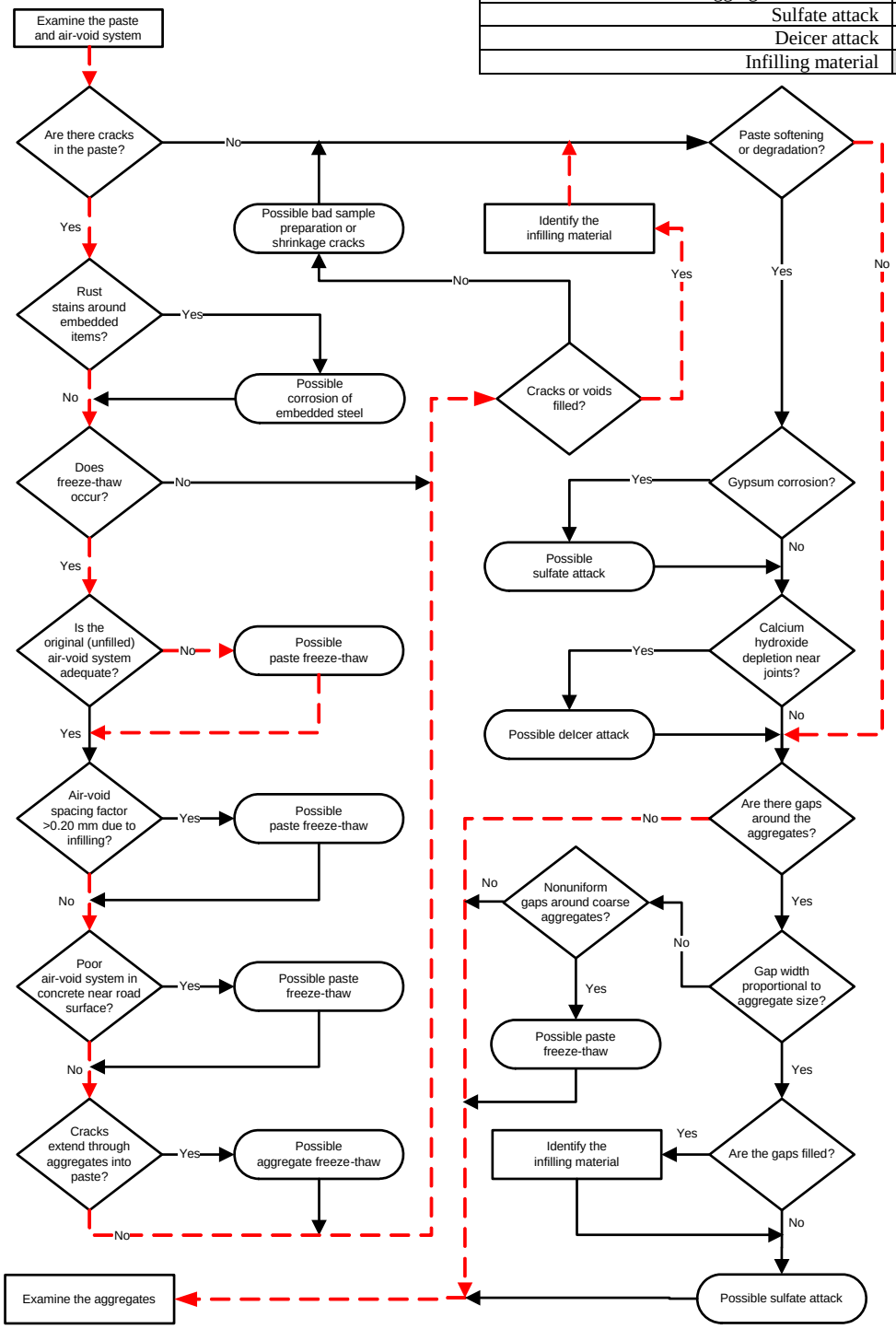


FIGURE C-2. AIRPORT ALPHA: FLOWCHART FOR ASSESSING THE CONDITION OF THE CONCRETE PASTE AND AIR

Possible Distress	Present	
Corrosion of embedded steel	Yes	No
Sulfate attack	Yes	No
Deicer attack	Yes	No
Alkali–silica reaction	Yes	No
Alkali–carbonate reaction	Yes	No

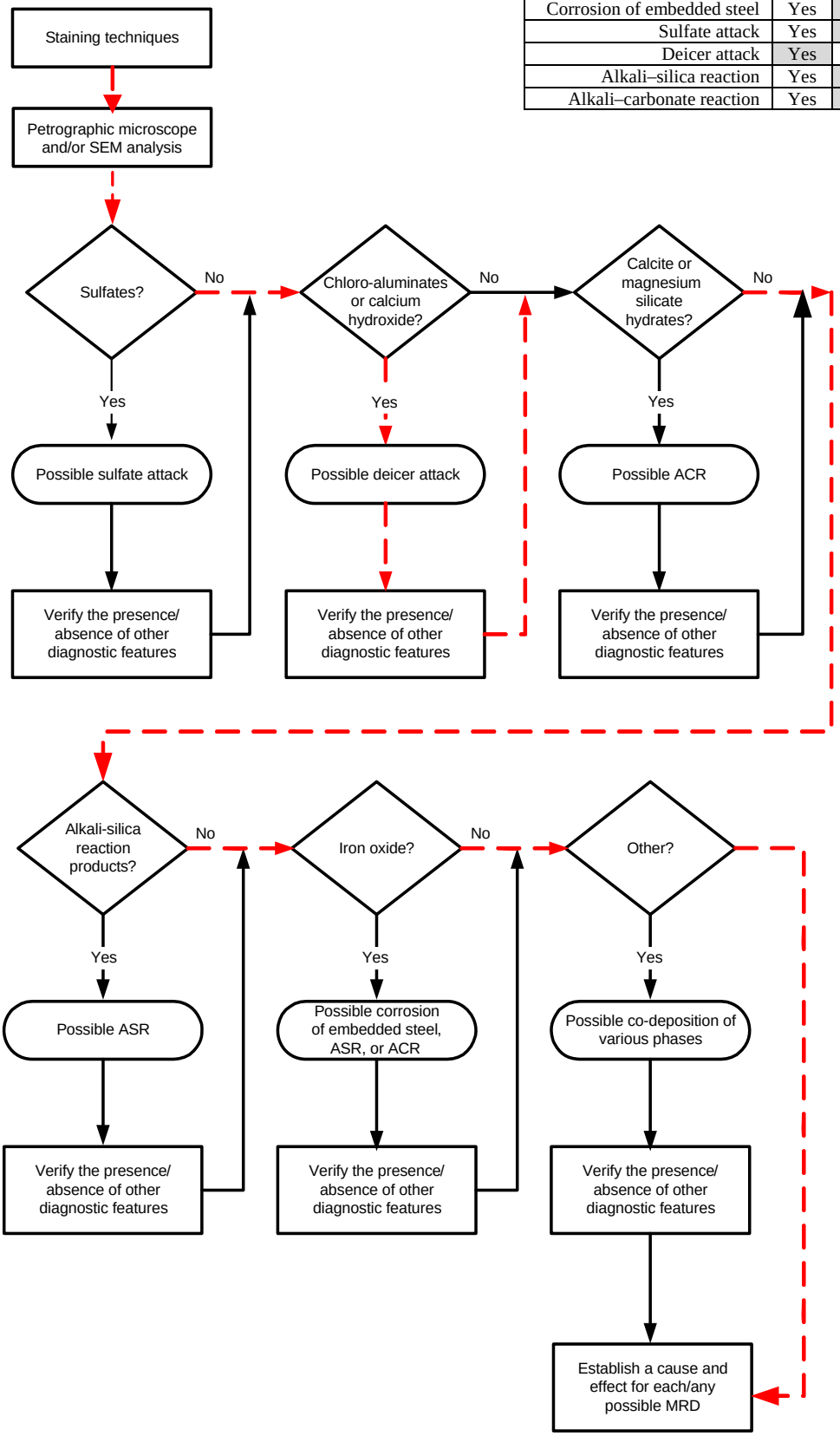


FIGURE C-3. AIRPORT ALPHA: FLOWCHART FOR IDENTIFYING INFILLING MATERIALS IN CRACKS AND VOIDS

Possible Distress	Present	
Natural cracking of aggregate	Yes	No
Sample preparation cracks	Yes	No
Aggregate freeze-thaw	Yes	No
Natural weathering of aggregates	Yes	No
Alkali–silica reaction	Yes	No
Alkali–carbonate reaction	Yes	No
Infilling material	Yes	No

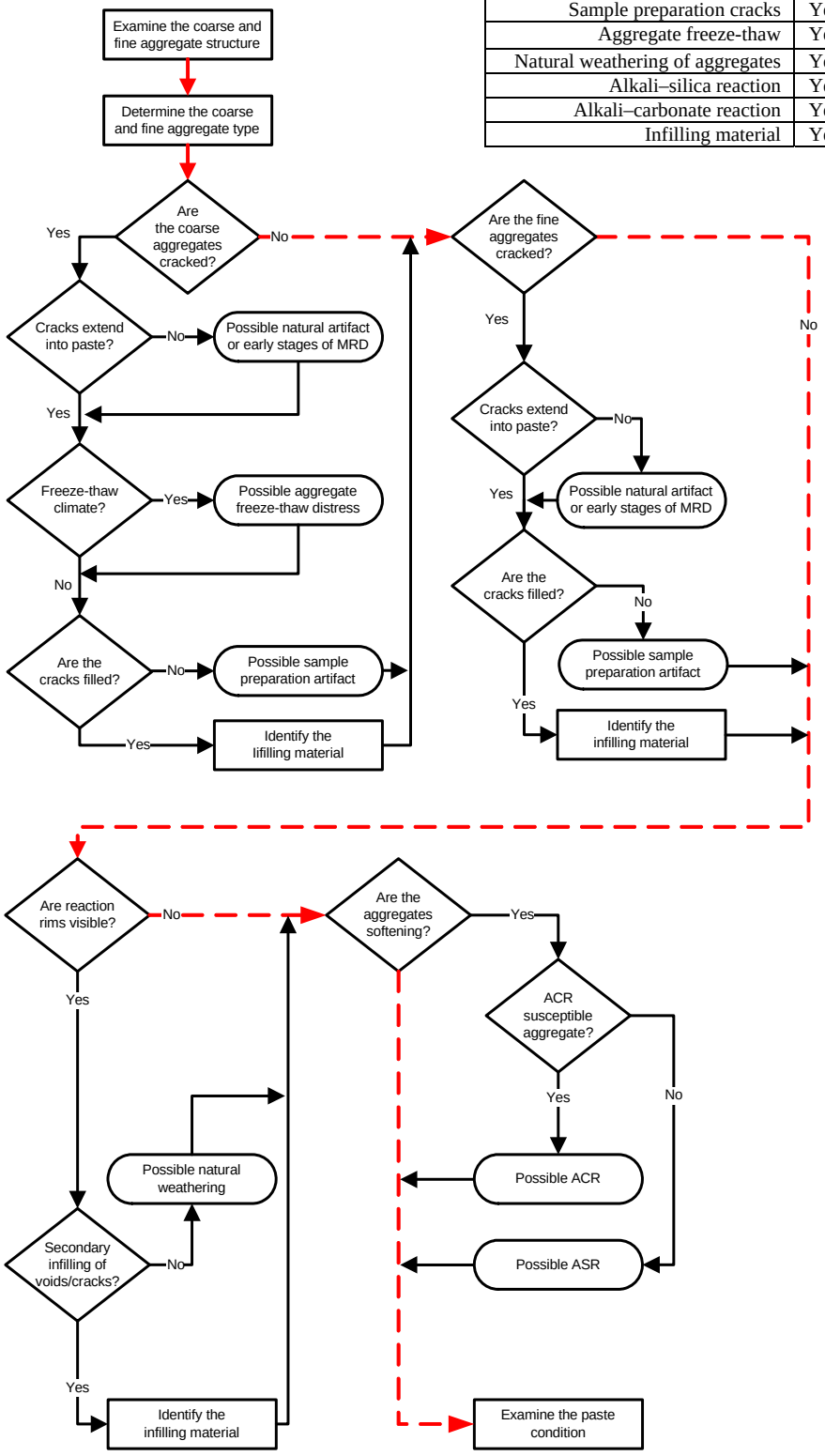


FIGURE C-4. AIRPORT ALPHA: FLOWCHART FOR ASSESSING THE CONDITION OF THE CONCRETE AGGREGATES

Possible Distress	Present	
Error in mix proportioning	Yes	No
Poor placement	Yes	No
Poor finishing/curing	Yes	No
Poor steel placement	Yes	No
Carbonation at depths > 5-10 mm	Yes	No

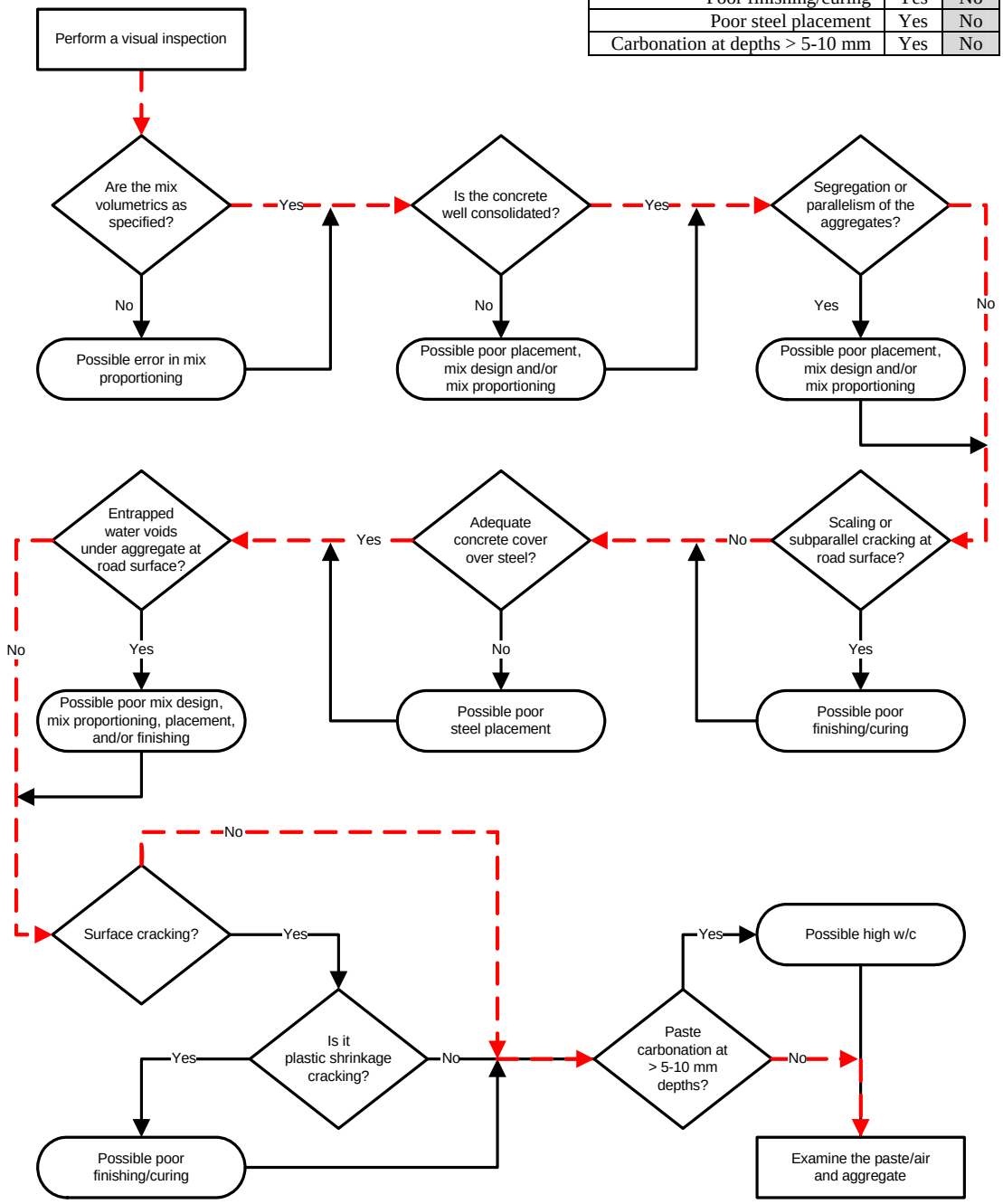


FIGURE C-5. AIRPORT DELTA: FLOWCHART FOR ASSESSING GENERAL CONCRETE PROPERTIES BASED ON VISUAL EXAMINATION

Possible Distress	Present	
Shrinkage cracks or sample preparation cracks	Yes	No
Corrosion of embedded steel	Yes	No
Paste freeze-thaw	Yes	No
Aggregate freeze-thaw	Yes	No
Sulfate attack	Yes	No
Deicer attack	Yes	No
Infilling material	Yes	No

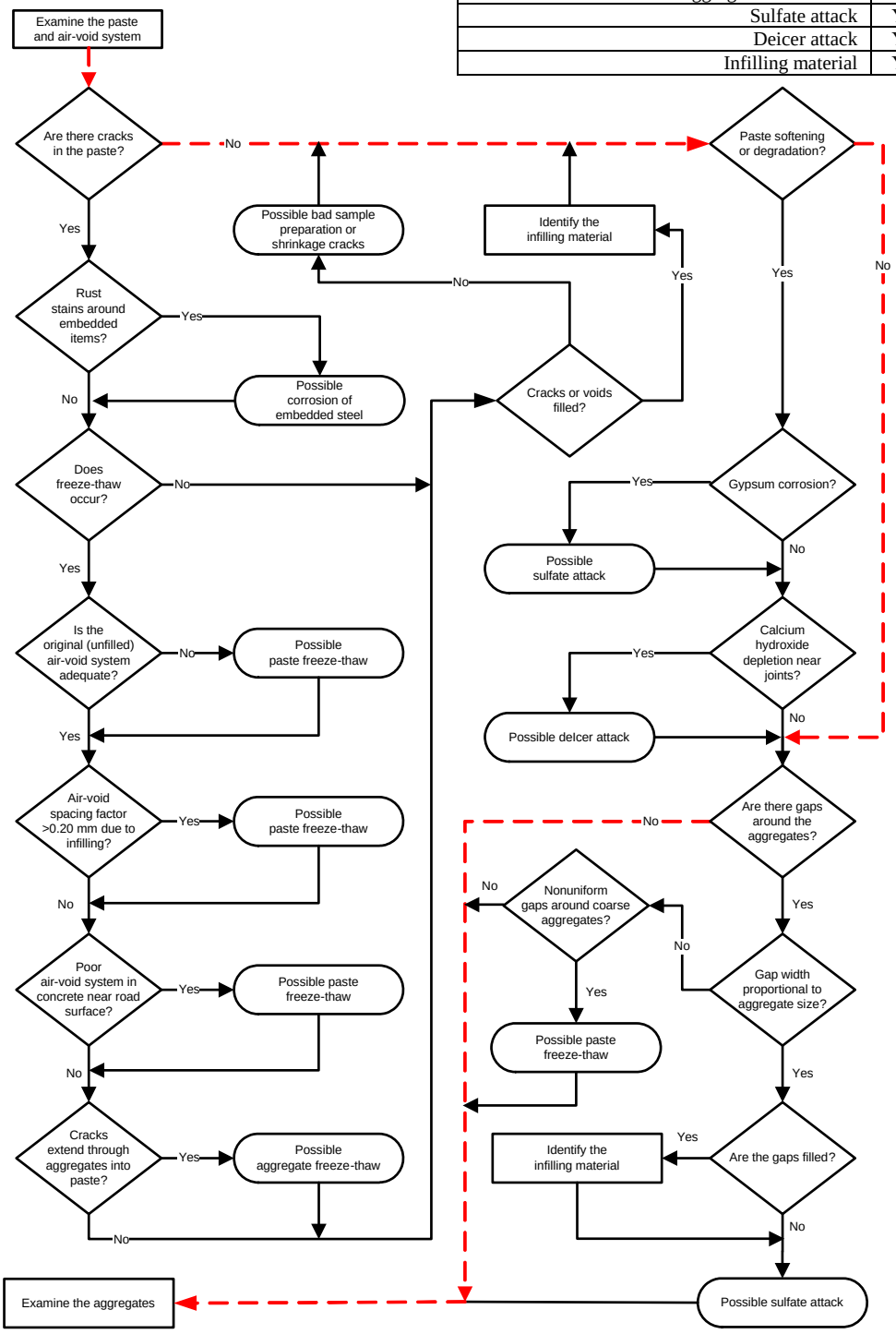
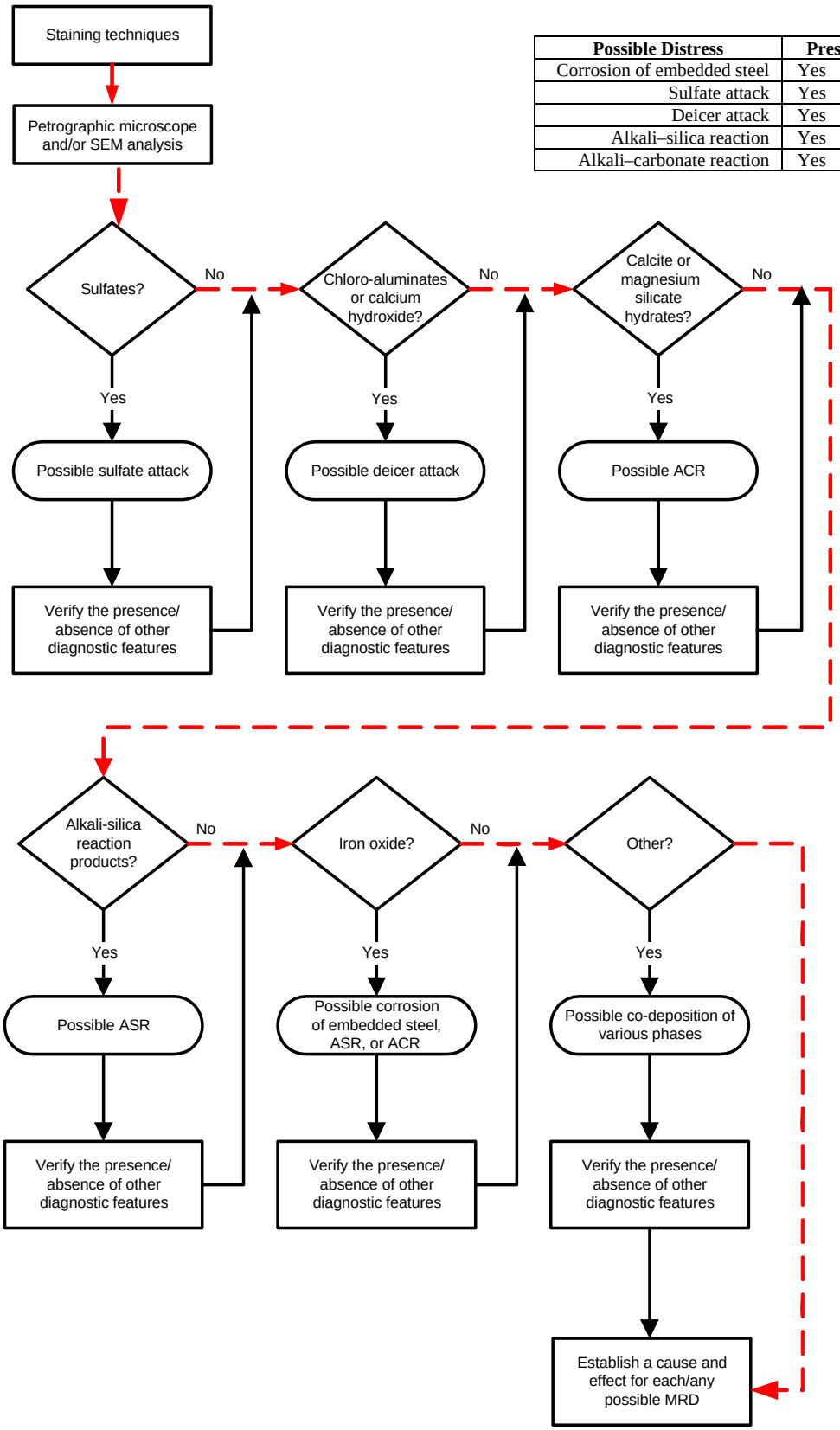


FIGURE C-6. AIRPORT DELTA: FLOWCHART FOR ASSESSING THE CONDITION OF THE CONCRETE PASTE AND AIR



Possible Distress	Present	
Corrosion of embedded steel	Yes	No
Sulfate attack	Yes	No
Deicer attack	Yes	No
Alkali–silica reaction	Yes	No
Alkali–carbonate reaction	Yes	No

FIGURE C-7. AIRPORT DELTA: FLOWCHART FOR IDENTIFYING INFILLING MATERIALS IN CRACKS AND VOIDS

Possible Distress	Present	
Natural cracking of aggregate	Yes	No
Sample preparation cracks	Yes	No
Aggregate freeze-thaw	Yes	No
Natural weathering of aggregates	Yes	No
Alkali–silica reaction	Yes	No
Alkali–carbonate reaction	Yes	No
Infilling material	Yes	No

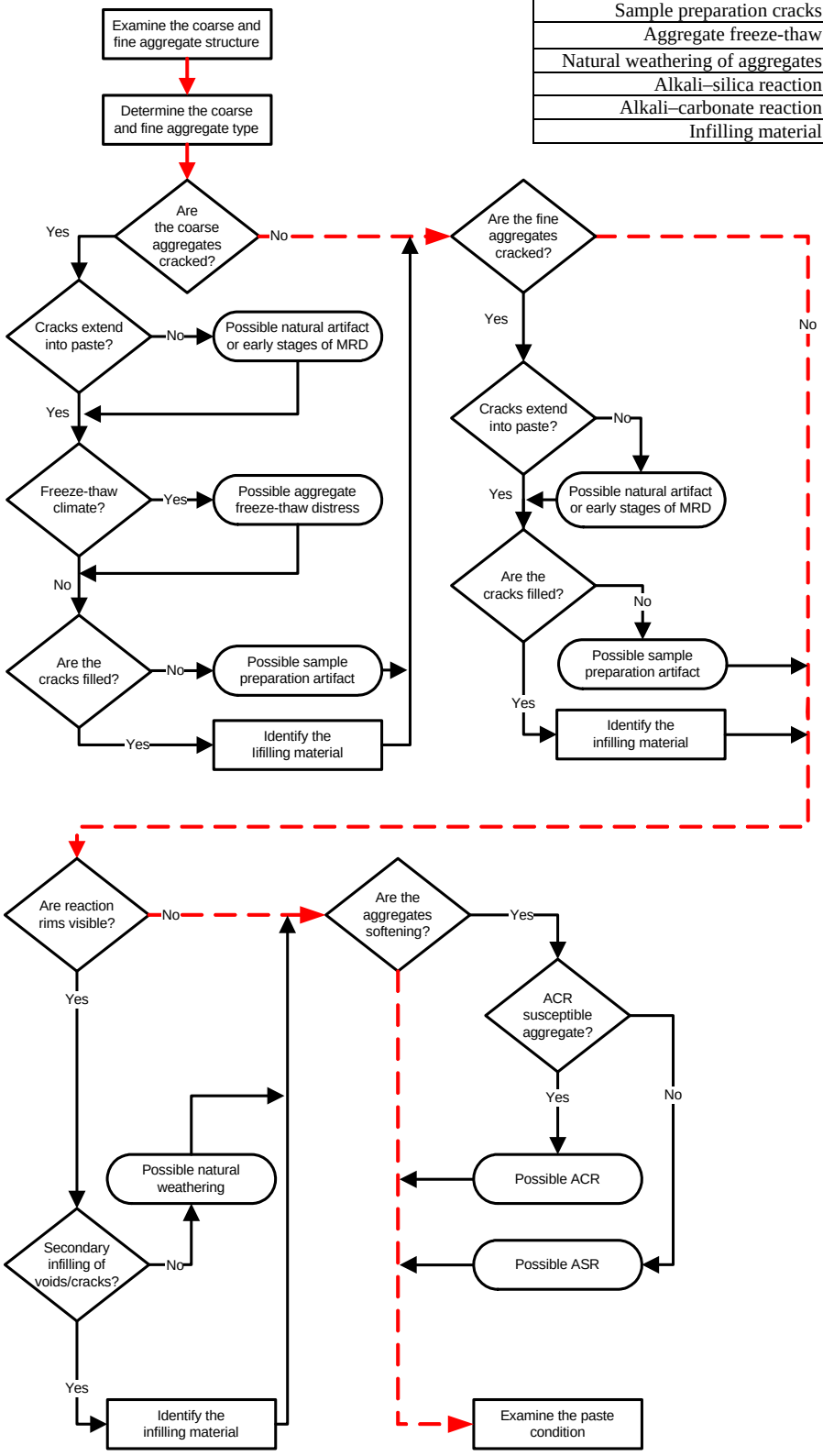


FIGURE C-8. AIRPORT DELTA: FLOWCHART FOR ASSESSING THE CONDITION OF THE CONCRETE AGGREGATES

Possible Distress	Present	
Error in mix proportioning	Yes	No
Poor placement	Yes	No
Poor finishing/curing	Yes	No
Poor steel placement	Yes	No
Carbonation at depths > 5-10 mm	Yes	No

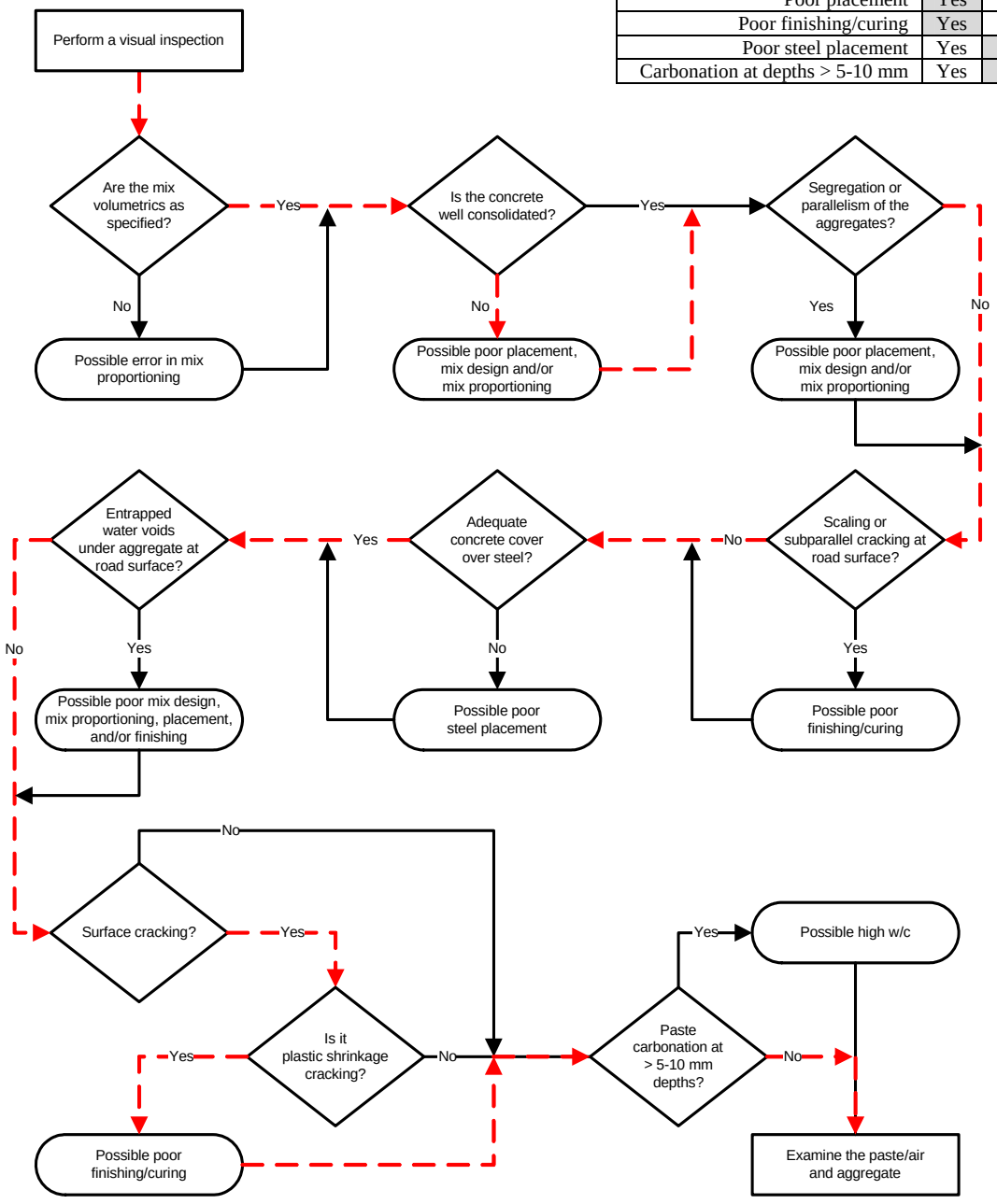


FIGURE C-9. AIRPORT ECHO: FLOWCHART FOR ASSESSING GENERAL CONCRETE PROPERTIES BASED ON VISUAL EXAMINATION

Possible Distress	Present	
Shrinkage cracks or sample preparation cracks	Yes	No
Corrosion of embedded steel	Yes	No
Paste freeze-thaw	Yes	No
Aggregate freeze-thaw	Yes	No
Sulfate attack	Yes	No
Deicer attack	Yes	No
Infilling material	Yes	No

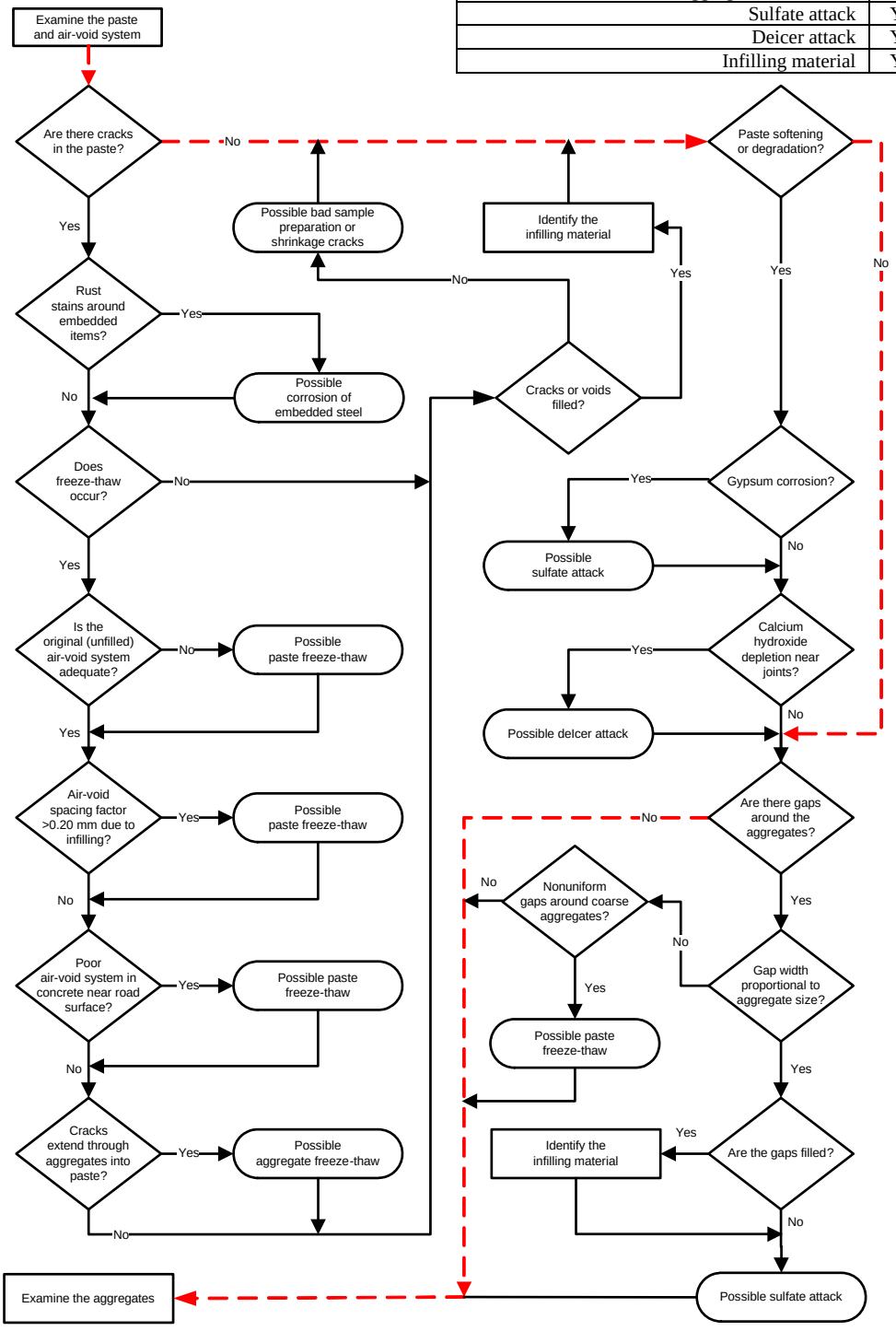
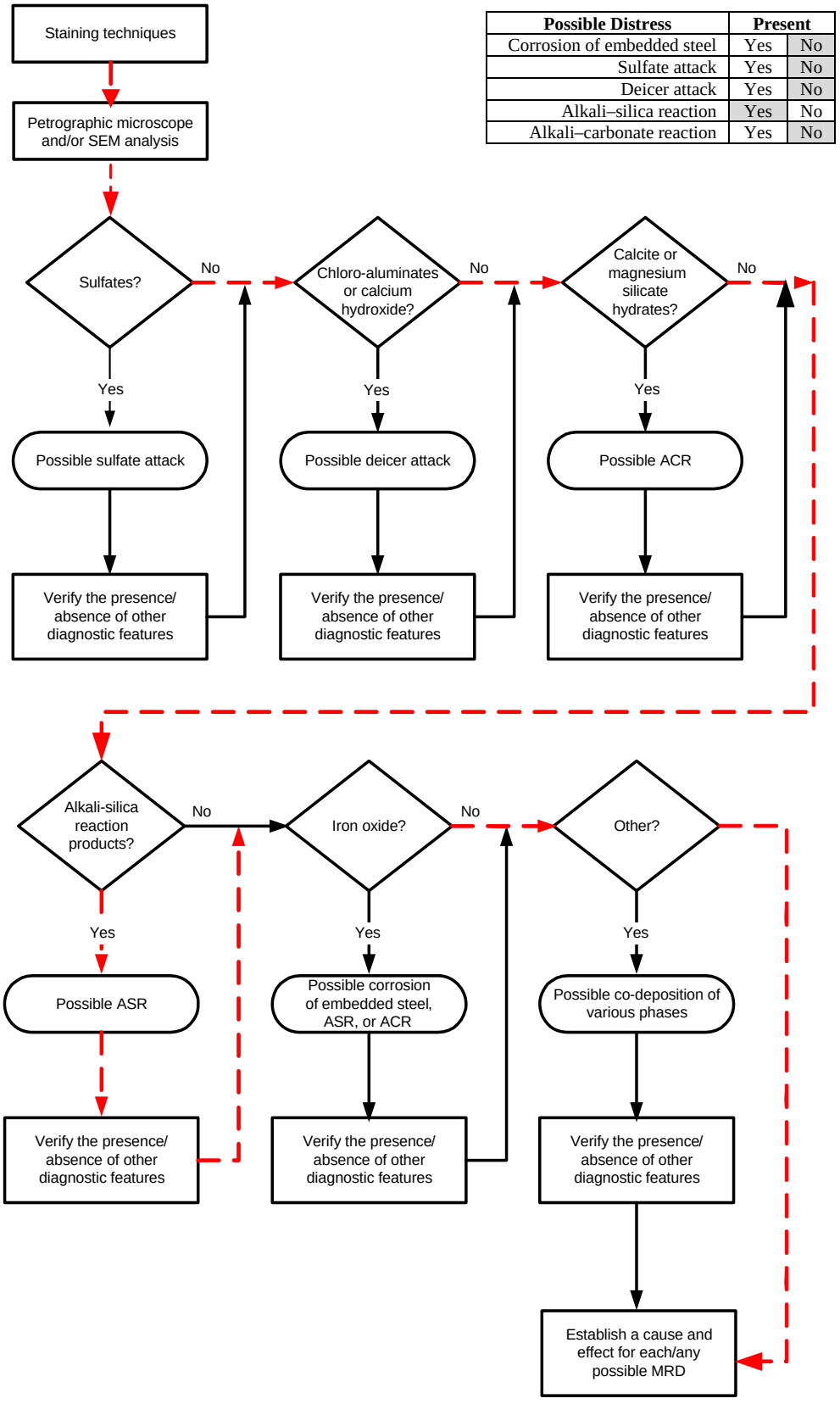


FIGURE C-10. AIRPORT ECHO: FLOWCHART FOR ASSESSING THE CONDITION OF THE CONCRETE PASTE AND AIR



Possible Distress	Present	
Corrosion of embedded steel	Yes	No
Sulfate attack	Yes	No
Deicer attack	Yes	No
Alkali–silica reaction	Yes	No
Alkali–carbonate reaction	Yes	No

FIGURE C-11. AIRPORT ECHO: FLOWCHART FOR IDENTIFYING INFILLING MATERIALS IN CRACKS AND VOIDS

Possible Distress	Present	
Natural cracking of aggregate	Yes	No
Sample preparation cracks	Yes	No
Aggregate freeze-thaw	Yes	No
Natural weathering of aggregates	Yes	No
Alkali–silica reaction	Yes	No
Alkali–carbonate reaction	Yes	No
Infilling material	Yes	No

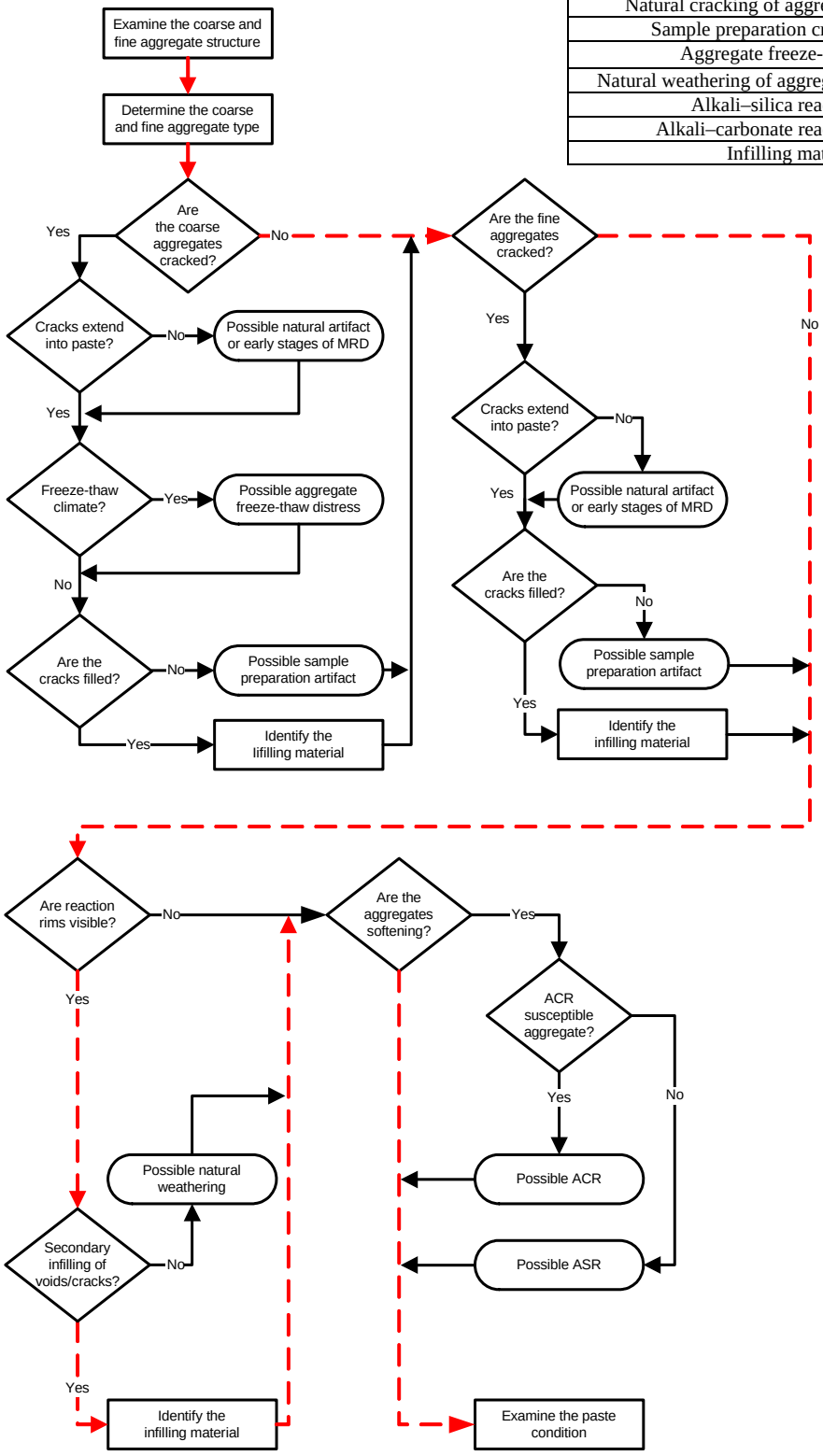


FIGURE C-12. AIRPORT ECHO: FLOWCHART FOR ASSESSING THE CONDITION OF THE CONCRETE AGGREGATES

Possible Distress	Present	
Error in mix proportioning	Yes	No
Poor placement	Yes	No
Poor finishing/curing	Yes	No
Poor steel placement	Yes	No
Carbonation at depths > 5-10 mm	Yes	No

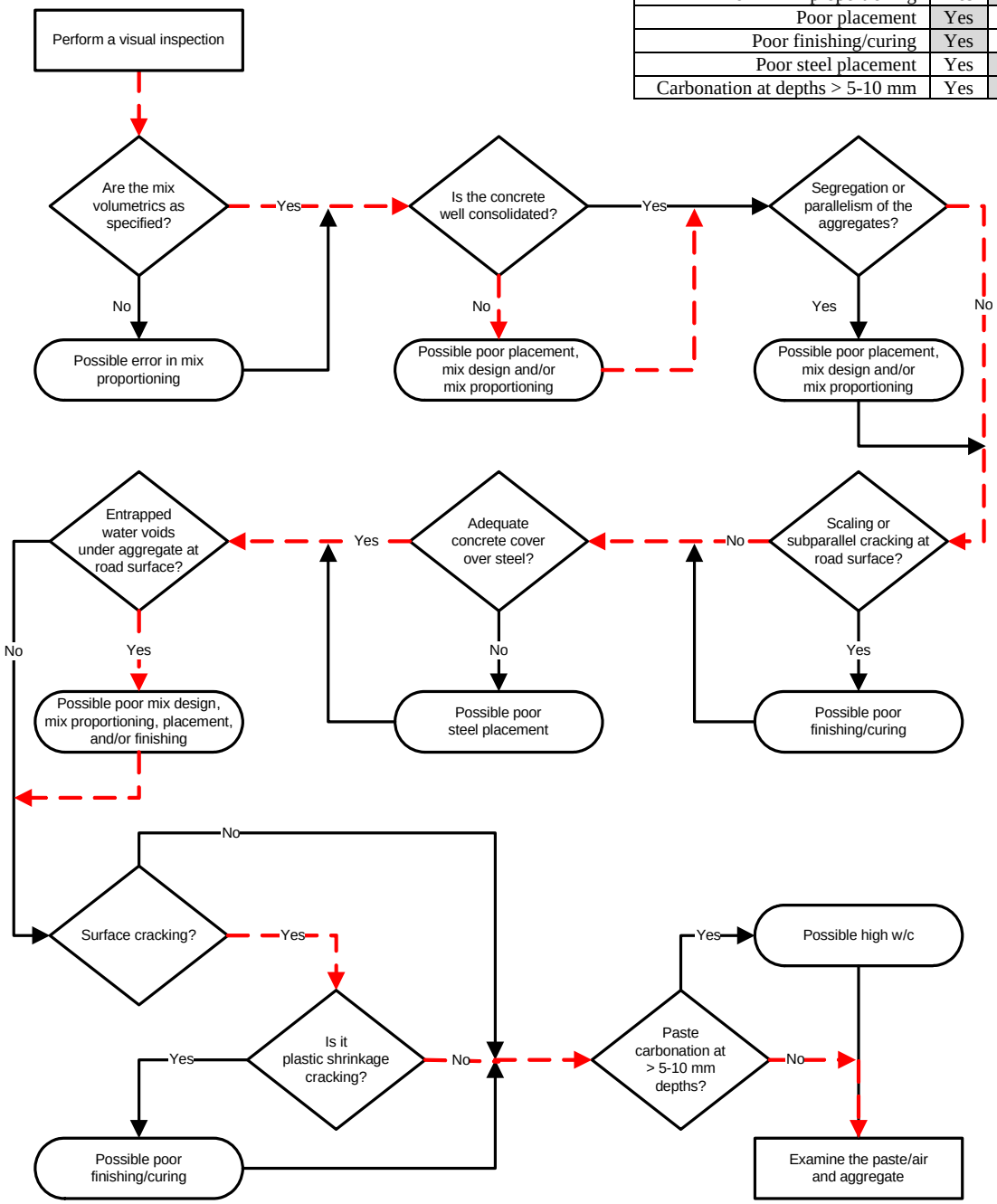


FIGURE C-13. AIRPORT FOXTROT: FLOWCHART FOR ASSESSING GENERAL CONCRETE PROPERTIES BASED ON VISUAL EXAMINATION

Possible Distress	Present	
Shrinkage cracks or sample preparation cracks	Yes	No
Corrosion of embedded steel	Yes	No
Paste freeze-thaw	Yes	No
Aggregate freeze-thaw	Yes	No
Sulfate attack	Yes	No
Deicer attack	Yes	No
Infilling material	Yes	No

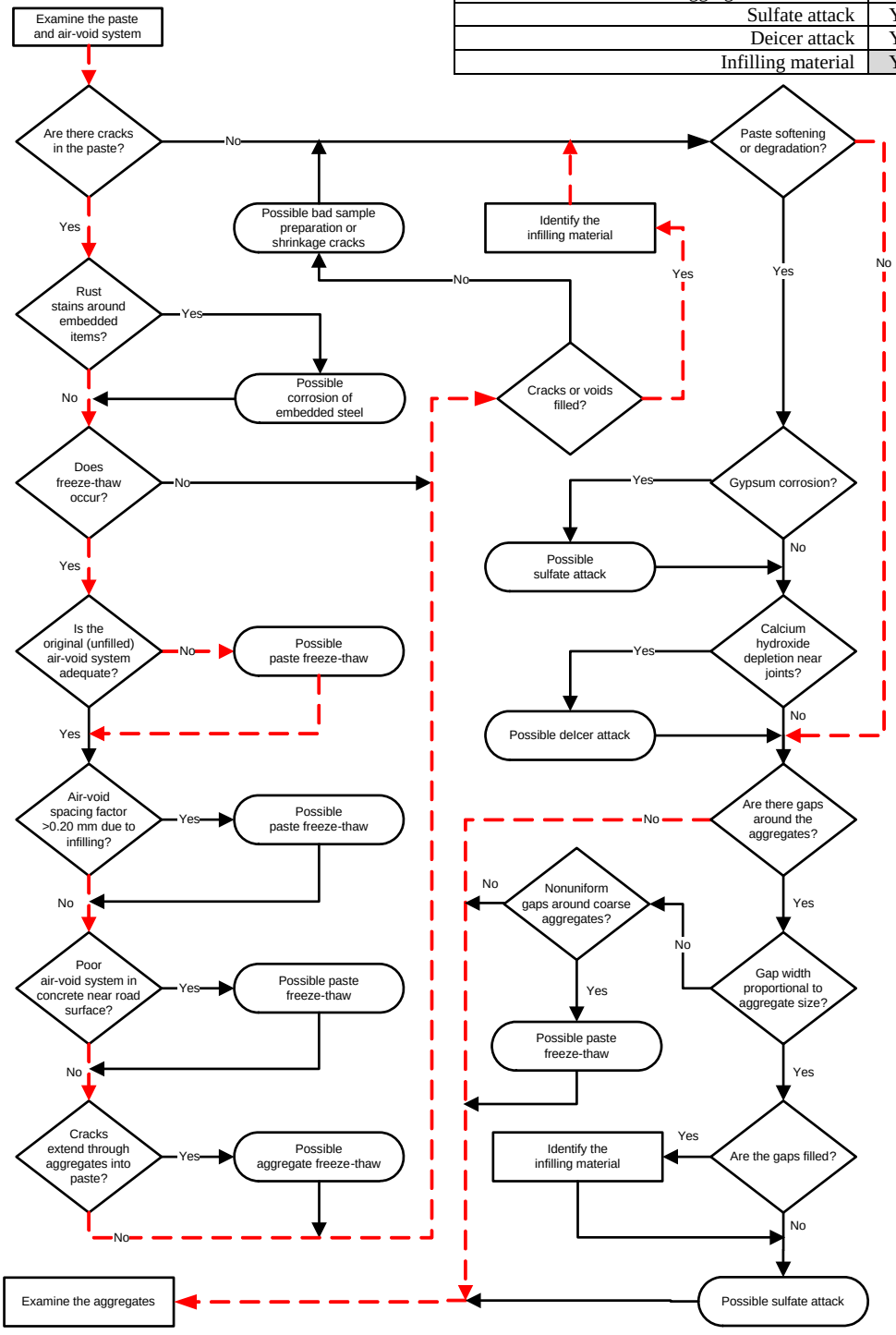
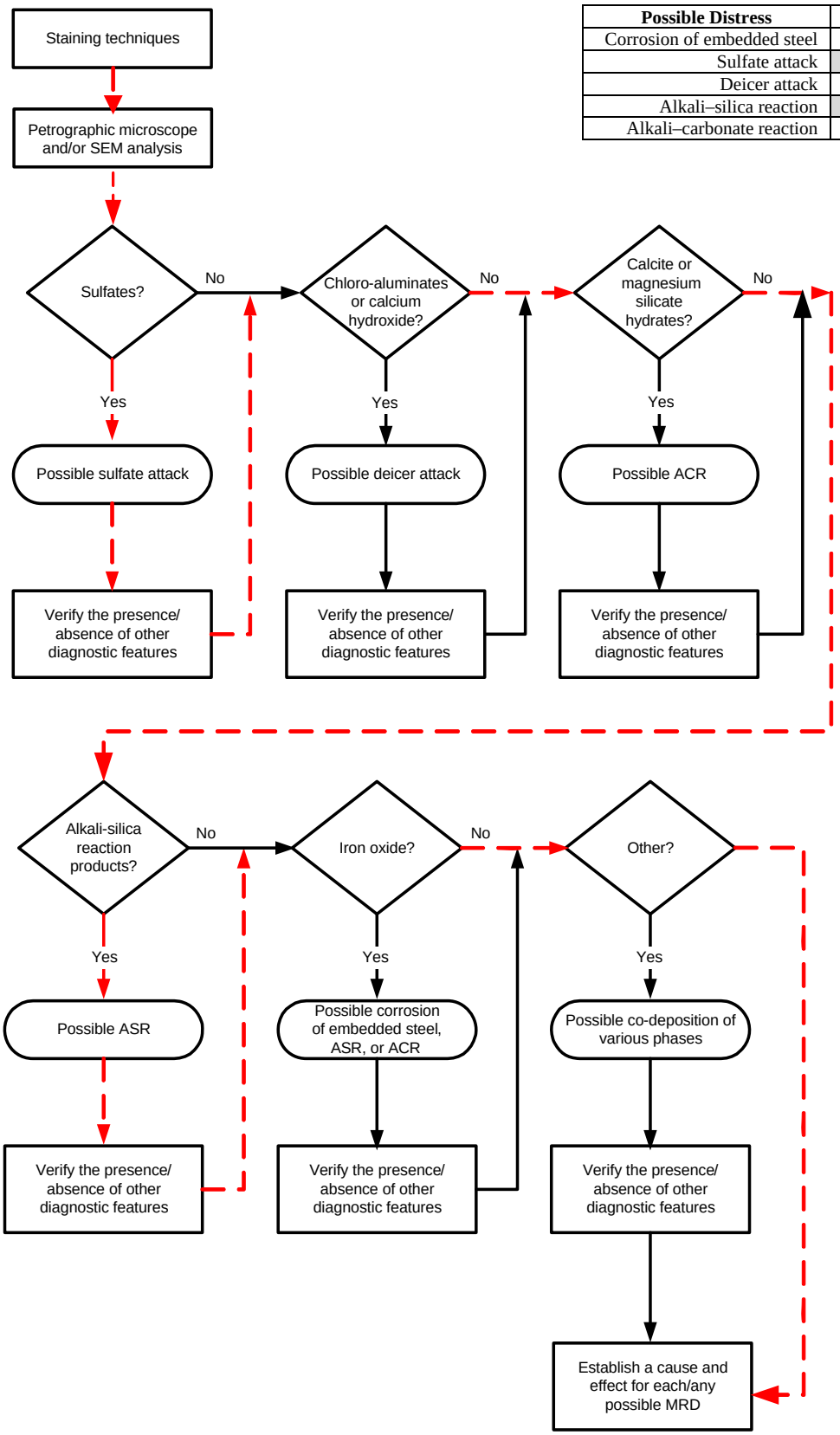


FIGURE C-14. AIRPORT FOXTROT: FLOWCHART FOR ASSESSING THE CONDITION OF THE CONCRETE PASTE AND AIR



Possible Distress	Present	
Corrosion of embedded steel	Yes	No
Sulfate attack	Yes	No
Deicer attack	Yes	No
Alkali–silica reaction	Yes	No
Alkali–carbonate reaction	Yes	No

FIGURE C-15. AIRPORT FOXTROT: FLOWCHART FOR IDENTIFYING INFILLING MATERIALS IN CRACKS AND VOIDS

Possible Distress	Present	
Natural cracking of aggregate	Yes	No
Sample preparation cracks	Yes	No
Aggregate freeze-thaw	Yes	No
Natural weathering of aggregates	Yes	No
Alkali–silica reaction	Yes	No
Alkali–carbonate reaction	Yes	No
Infilling material	Yes	No

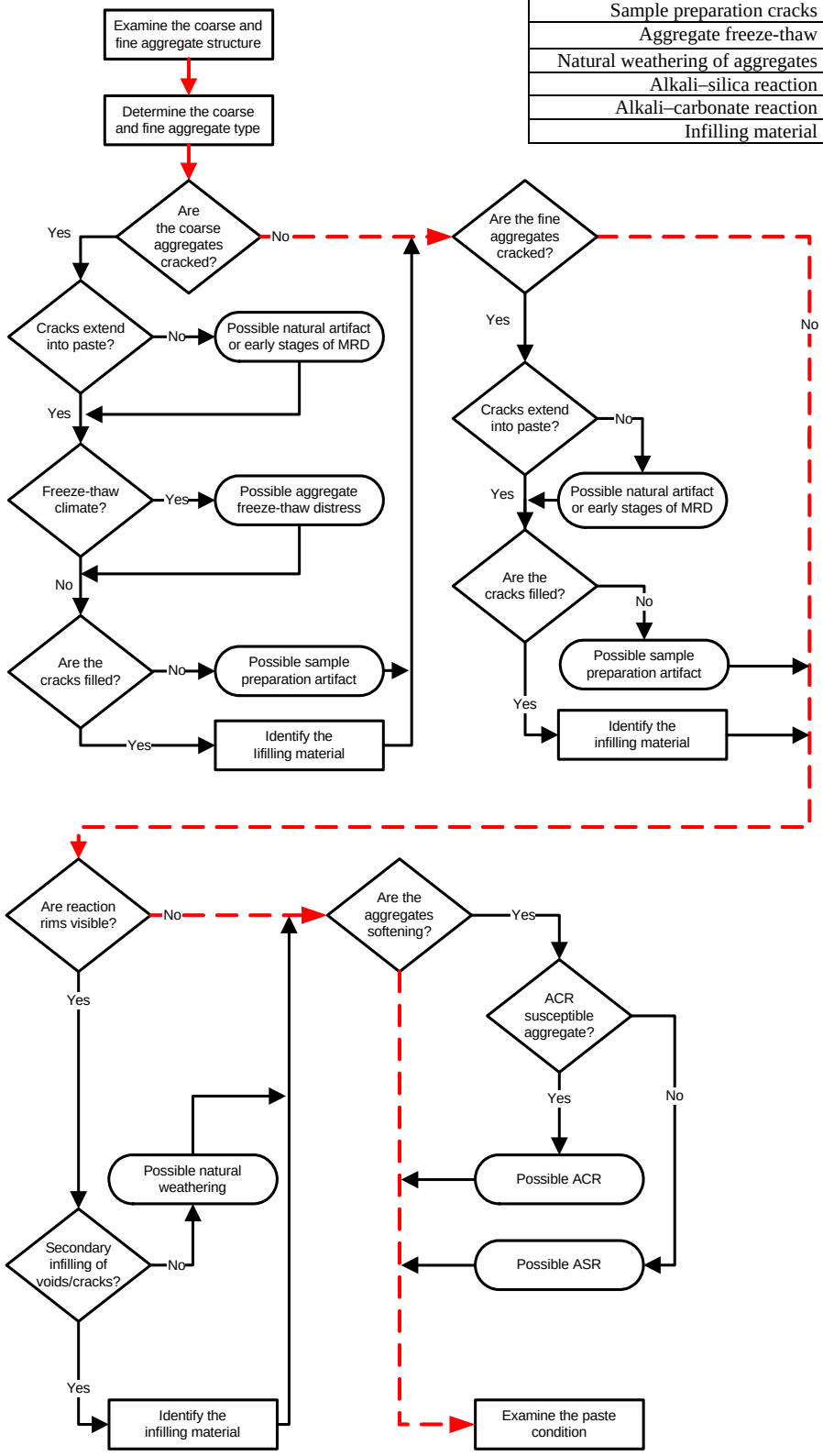


FIGURE C-16. AIRPORT FOXTROT: FLOWCHART FOR ASSESSING THE CONDITION OF THE CONCRETE AGGREGATES

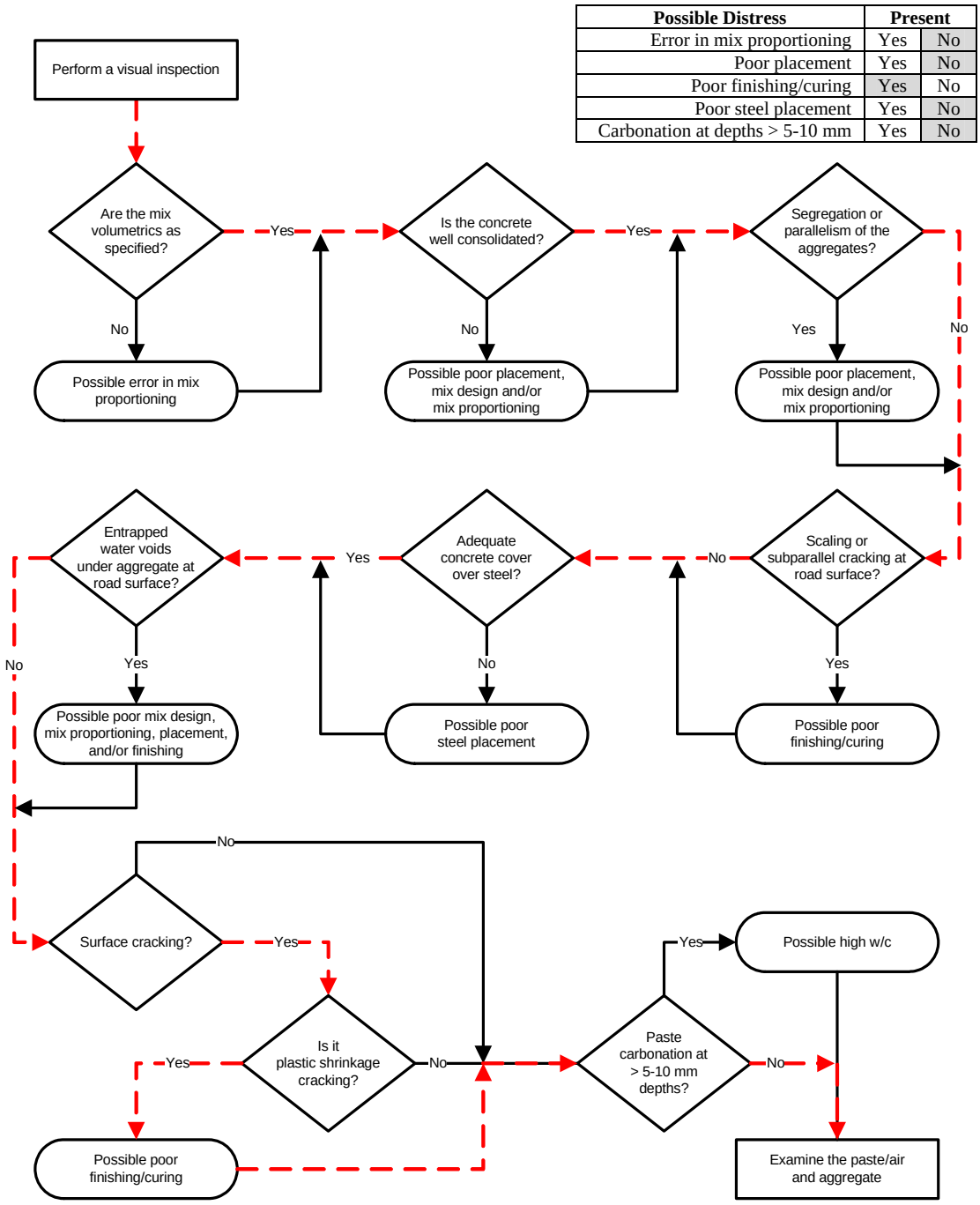


FIGURE C-17. AIRPORT GOLF: FLOWCHART FOR ASSESSING GENERAL CONCRETE PROPERTIES BASED ON VISUAL EXAMINATION

Possible Distress	Present	
Shrinkage cracks or sample preparation cracks	Yes	No
Corrosion of embedded steel	Yes	No
Paste freeze-thaw	Yes	No
Aggregate freeze-thaw	Yes	No
Sulfate attack	Yes	No
Deicer attack	Yes	No
Infilling material	Yes	No

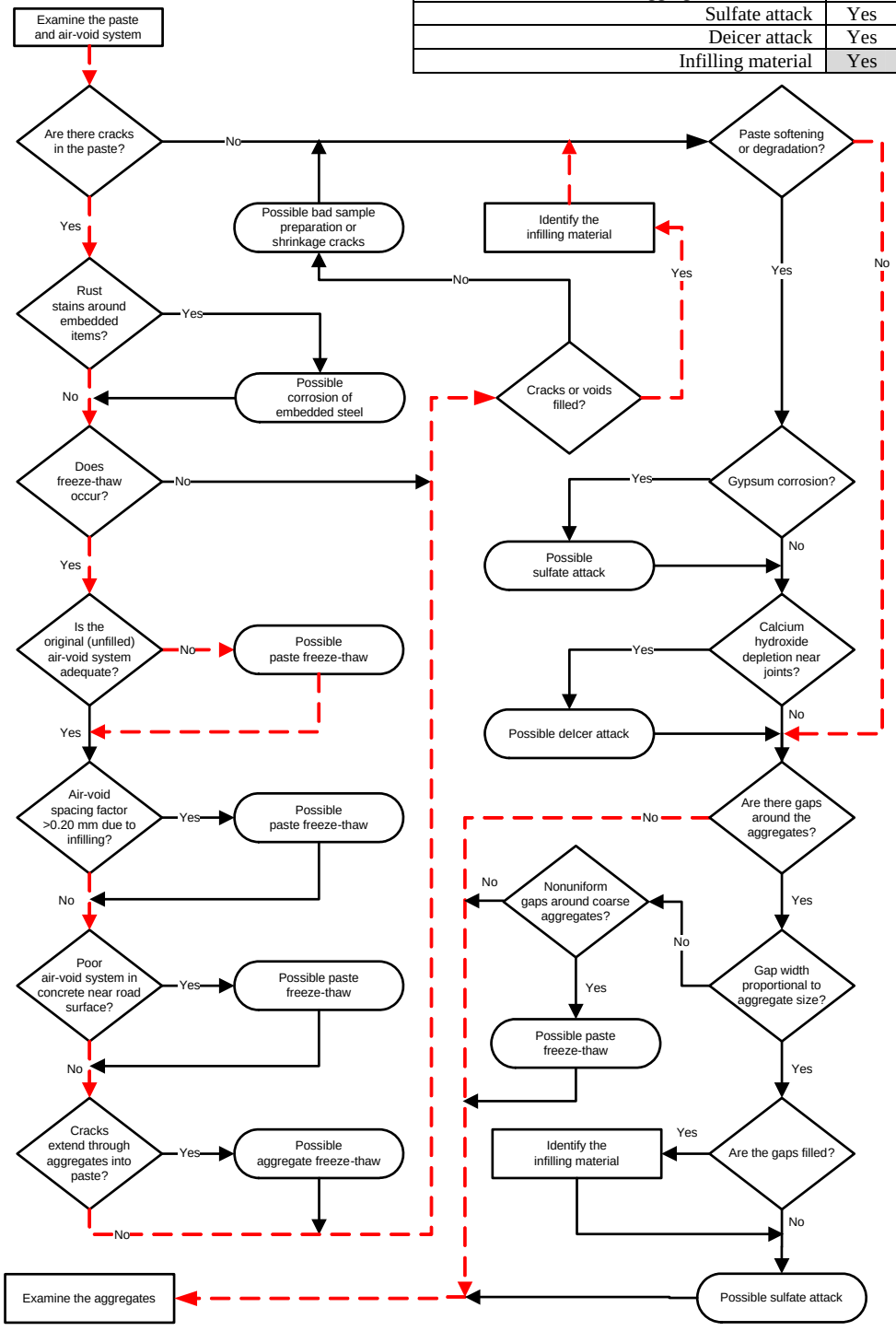
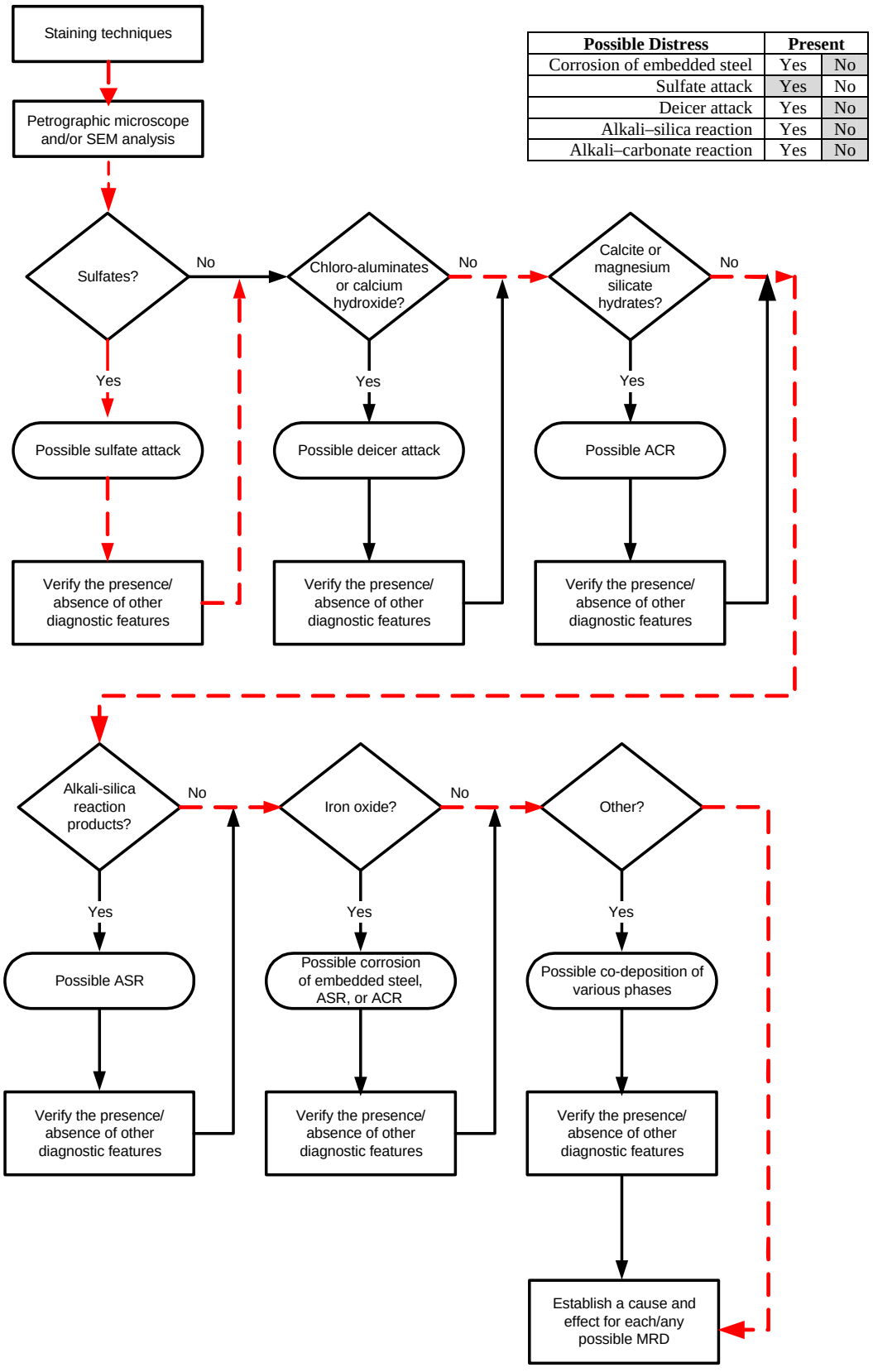


FIGURE C-18. AIRPORT GOLF: FLOWCHART FOR ASSESSING THE CONDITION OF THE CONCRETE PASTE AND AIR



Possible Distress	Present	
Corrosion of embedded steel	Yes	No
Sulfate attack	Yes	No
Deicer attack	Yes	No
Alkali–silica reaction	Yes	No
Alkali–carbonate reaction	Yes	No

FIGURE C-19. AIRPORT GOLF: FLOWCHART FOR IDENTIFYING INFILLING MATERIALS IN CRACKS AND VOIDS

Possible Distress	Present	
Natural cracking of aggregate	Yes	No
Sample preparation cracks	Yes	No
Aggregate freeze-thaw	Yes	No
Natural weathering of aggregates	Yes	No
Alkali–silica reaction	Yes	No
Alkali–carbonate reaction	Yes	No
Infilling material	Yes	No

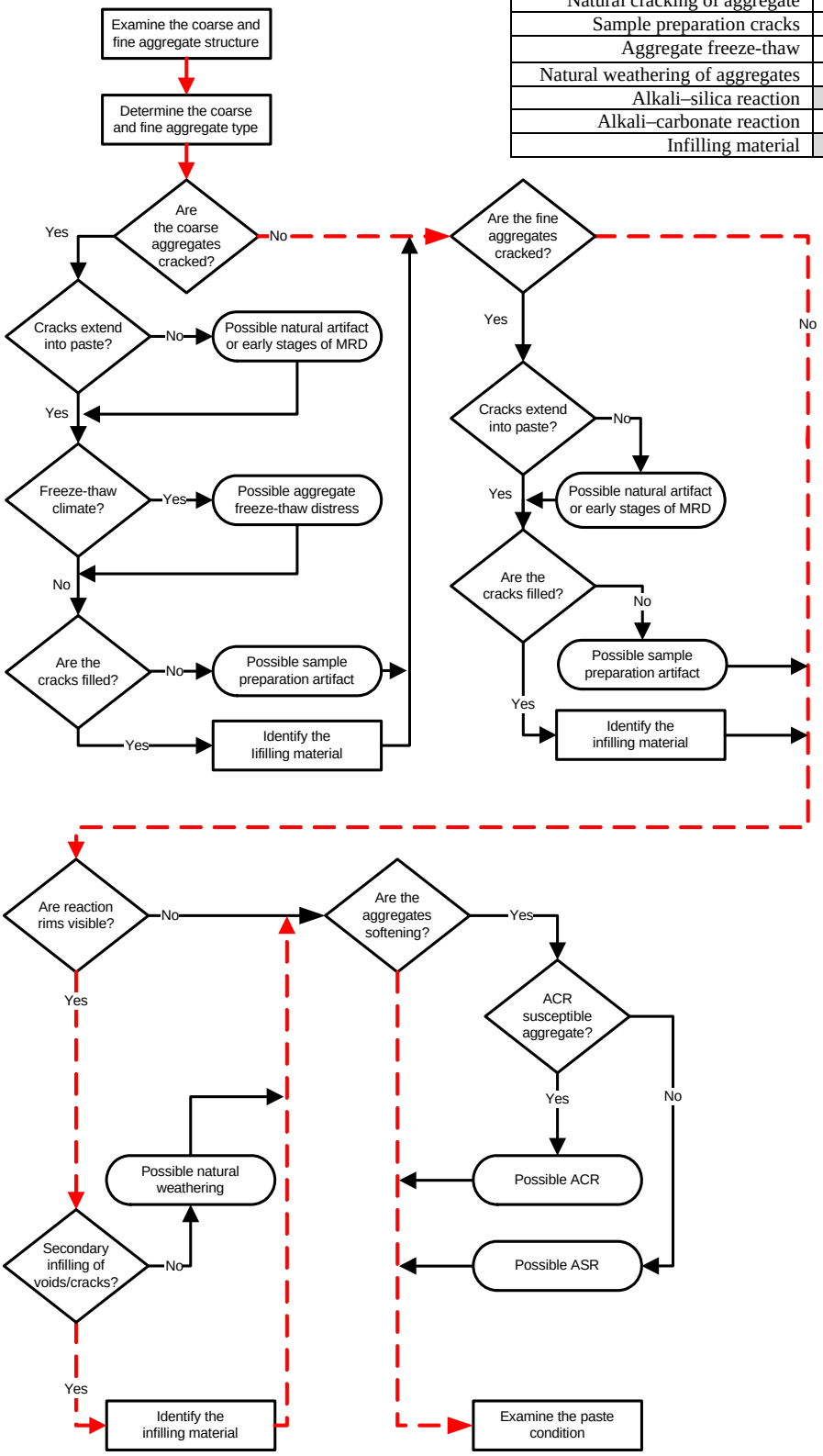


FIGURE C-20. AIRPORT GOLF: FLOWCHART FOR ASSESSING THE CONDITION OF THE CONCRETE AGGREGATES