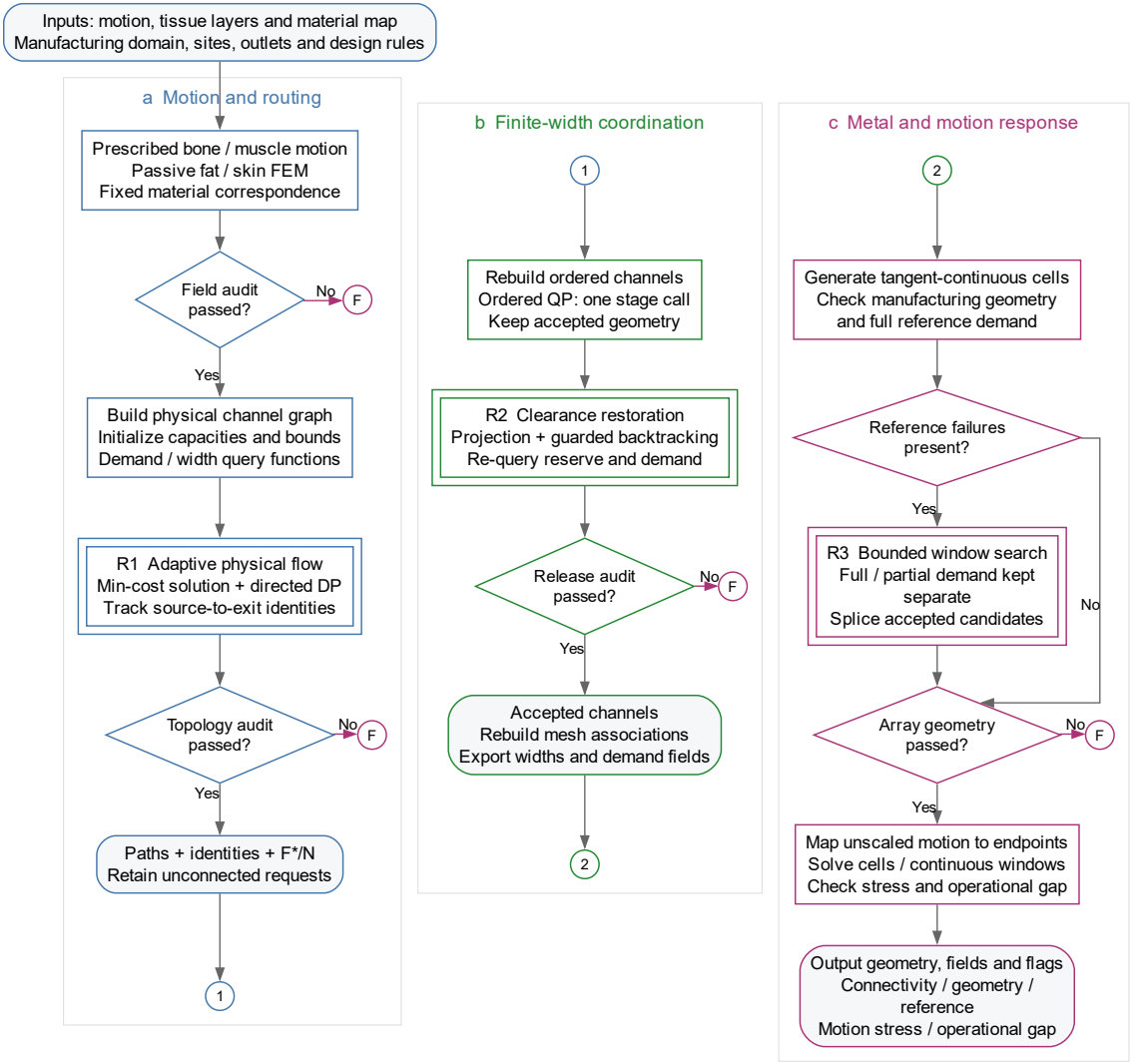
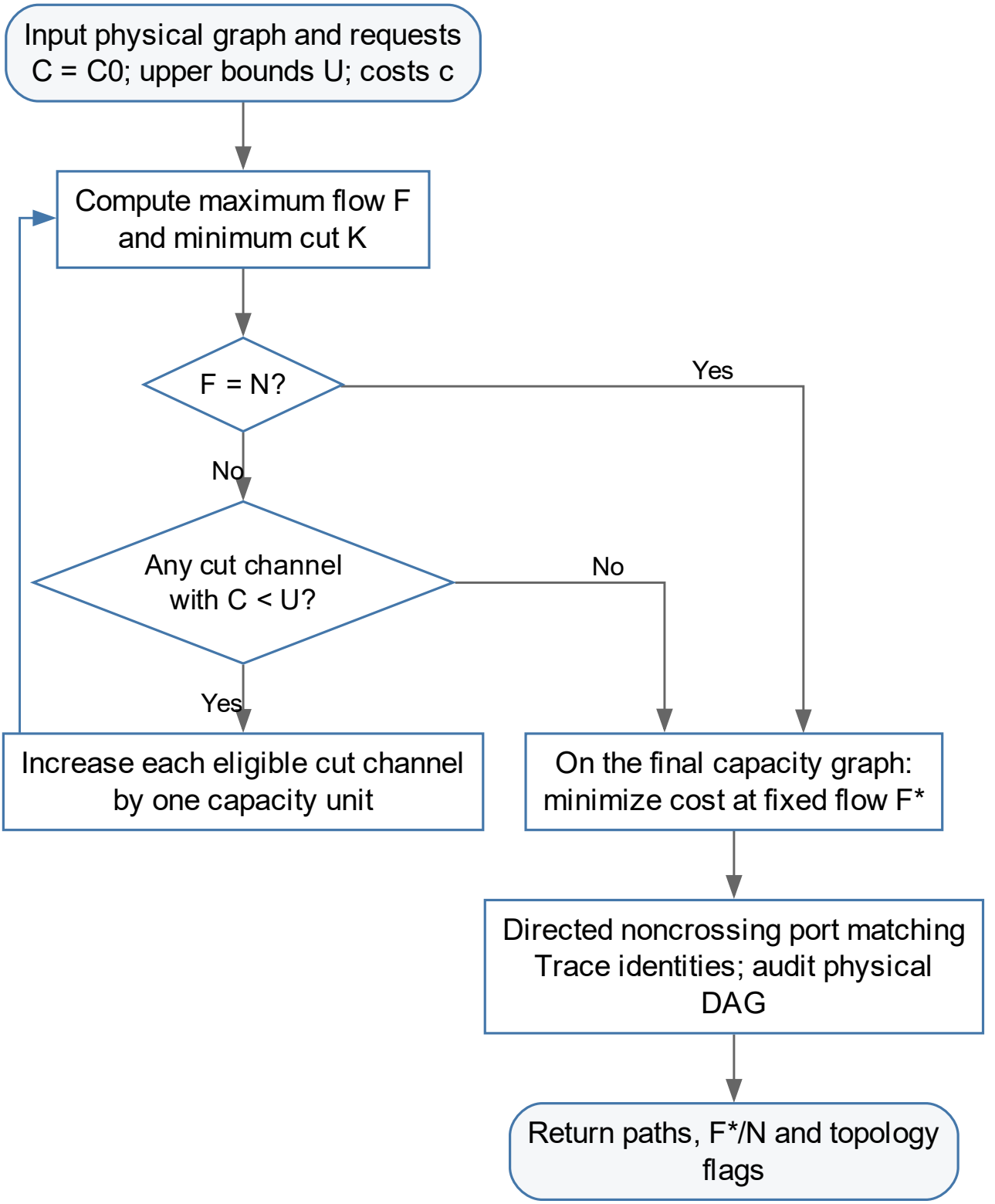
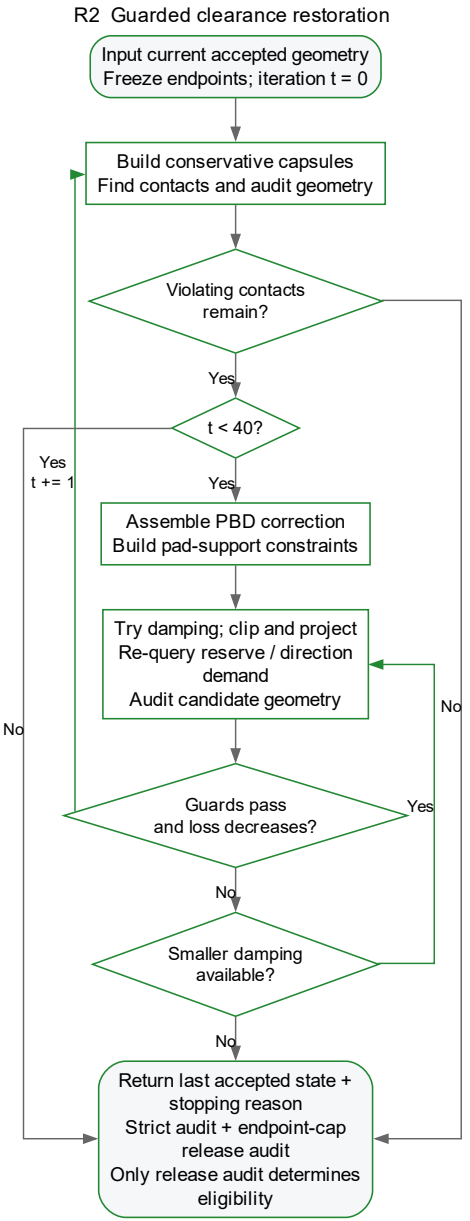
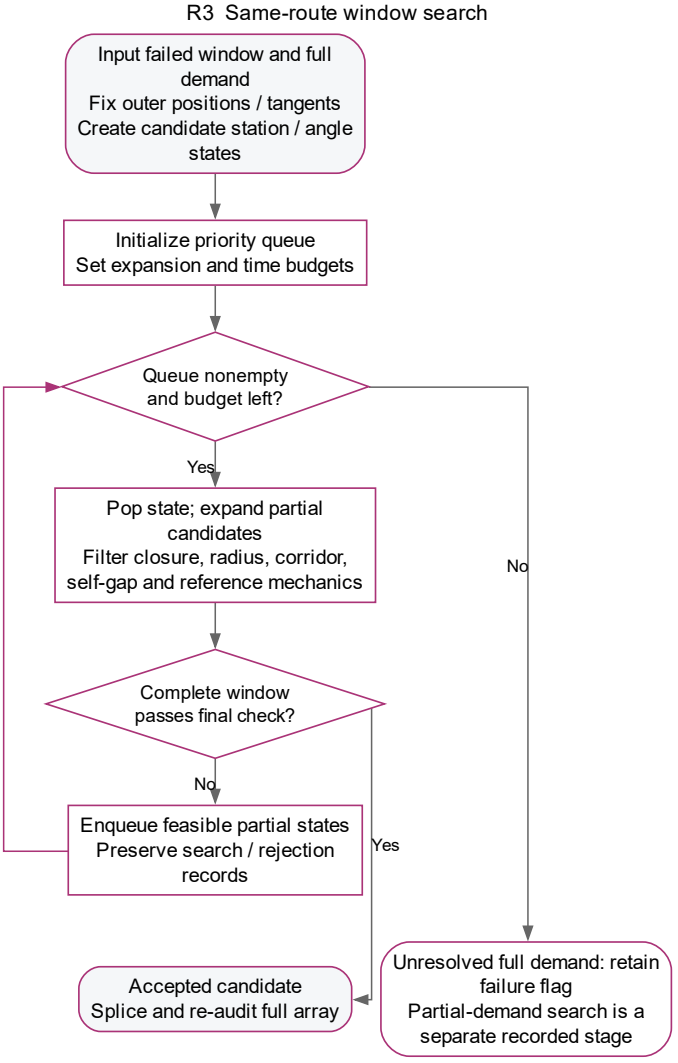


1, 2: continuation connectors. F: save intermediate state and failure reason.

R1 Adaptive physical flow




R2 Guarded clearance restoration
Input current accepted geometry
Freeze endpoints; iteration t = 0
Build conservative capsules
Find contacts and audit geometry
Violating contacts remain?
Yes
t < 40?
Yes
t += 1
Yes
Assemble PBD correction
Build pad-support constraints
Try damping; clip and project
Re-query reserve / direction demand
Audit candidate geometry
No
No
Guards pass and loss decreases?
Yes
No
Smaller damping available?
No
Return last accepted state + stopping reason
Strict audit + endpoint-cap release audit
Only release audit determines eligibility


R3 Same-route window search
Input failed window and full demand
Fix outer positions / tangents
Create candidate station / angle states
Initialize priority queue
Set expansion and time budgets
Queue nonempty and budget left?
Yes
No
Pop state; expand partial candidates
Filter closure, radius, corridor, self-gap and reference mechanics
Complete window passes final check?
No
Yes
Enqueue feasible partial states
Preserve search / rejection records
Accepted candidate
Splice and re-audit full array
Unresolved full demand: retain failure flag
Partial-demand search is a separate recorded stage