FIG 1a

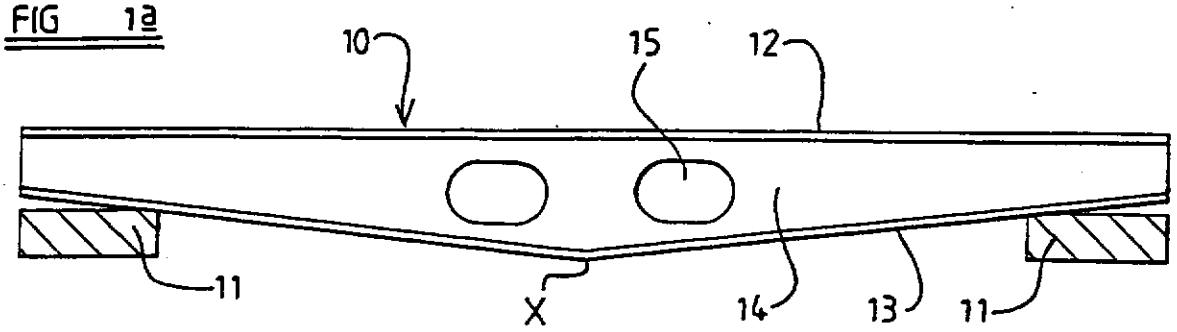


FIG 1b

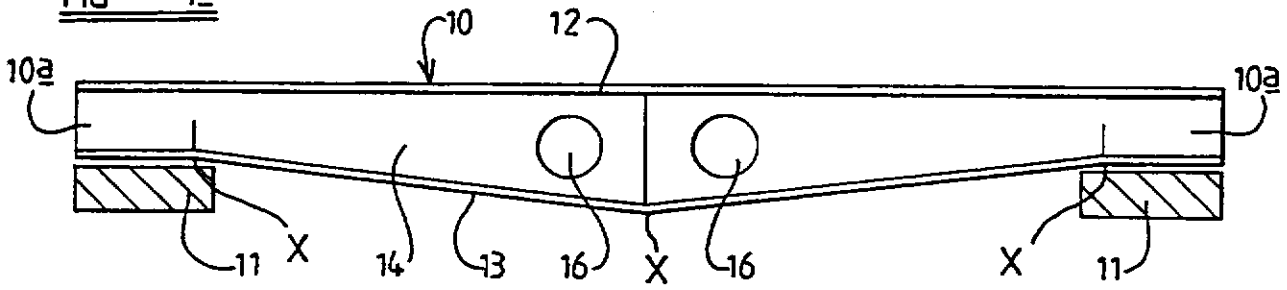


FIG 1c

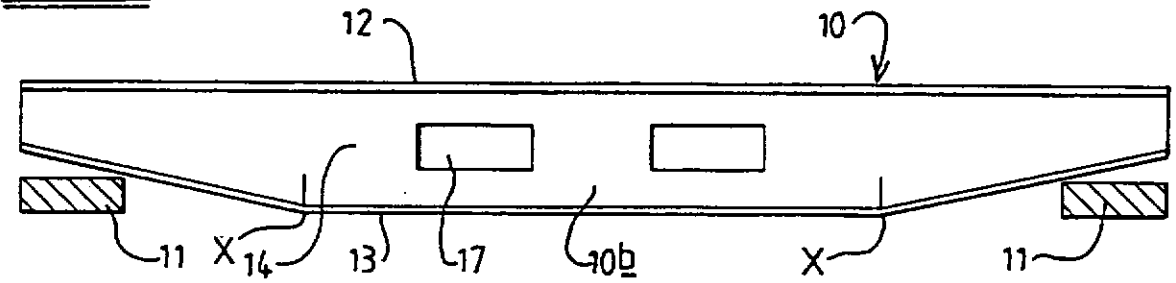


FIG 1d

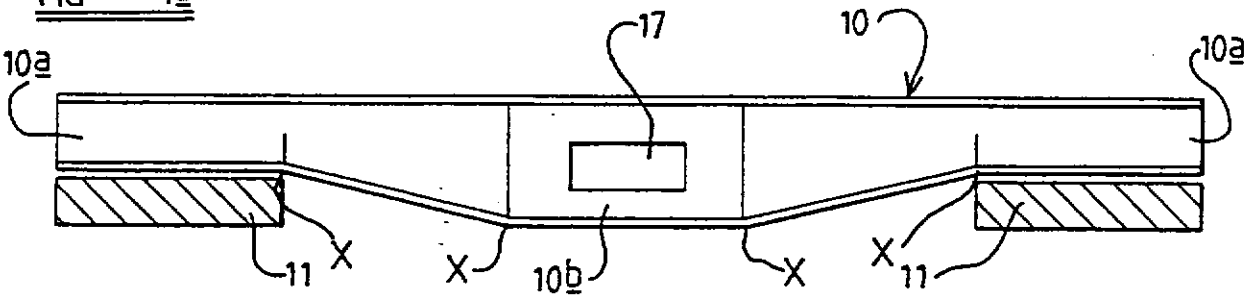
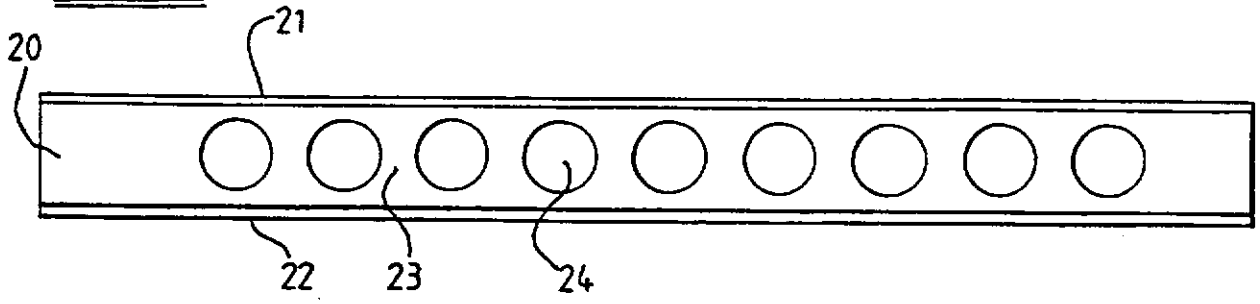


FIG 2



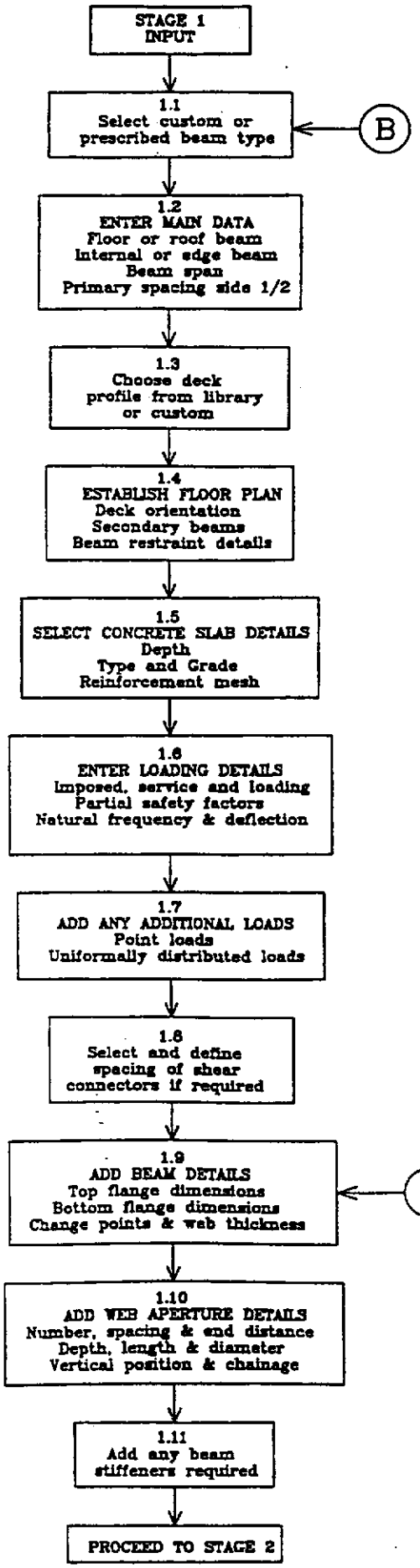
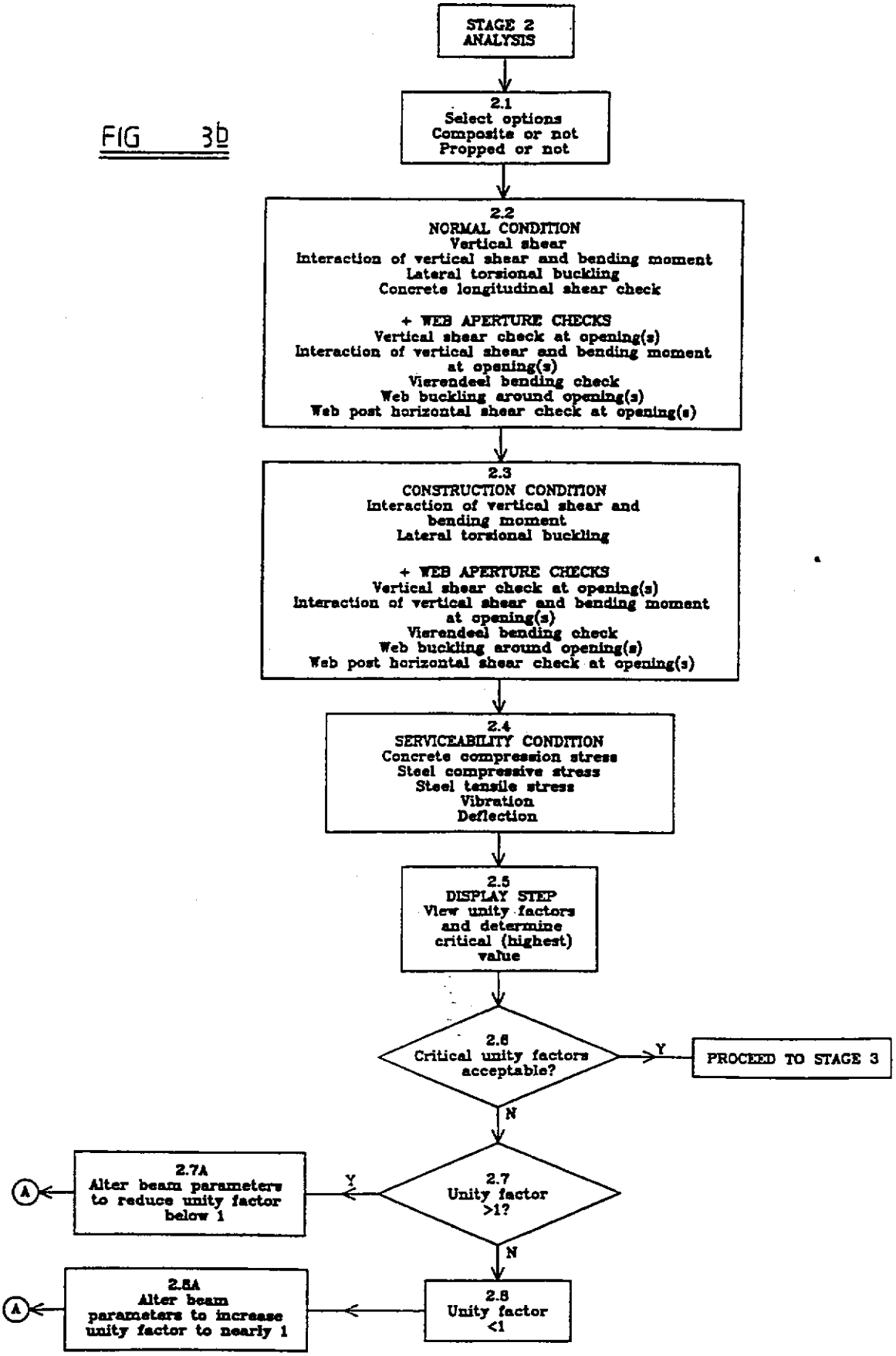

STAGE 1
INPUT
1.1
Select custom or
prescribed beam type
B
1.2
ENTER MAIN DATA
Floor or roof beam
Internal or edge beam
Beam span
Primary spacing side 1/2
1.3
Choose deck
profile from library
or custom
1.4
ESTABLISH FLOOR PLAN
Deck orientation
Secondary beams
Beam restraint details
1.5
SELECT CONCRETE SLAB DETAILS
Depth
Type and Grade
Reinforcement mesh
1.6
ENTER LOADING DETAILS
Imposed, service and loading
Partial safety factors
Natural frequency & deflection
1.7
ADD ANY ADDITIONAL LOADS
Point loads
Uniformally distributed loads
1.8
Select and define
spacing of shear
connectors if required
1.9
ADD BEAM DETAILS
Top flange dimensions
Bottom flange dimensions
Change points & web thickness
A
1.10
ADD WEB APERTURE DETAILS
Number, spacing & end distance
Depth, length & diameter
Vertical position & chainage
1.11
Add any beam
stiffeners required
PROCEED TO STAGE 2

FIG 3a

FIG 3b


STAGE 2 ANALYSIS
2.1 Select options Composite or not Propped or not
2.2 NORMAL CONDITION Vertical shear Interaction of vertical shear and bending moment Lateral torsional buckling Concrete longitudinal shear check
+ WEB APERTURE CHECKS Vertical shear check at opening(s) Interaction of vertical shear and bending moment at opening(s) Vierendeel bending check Web buckling around opening(s) Web post horizontal shear check at opening(s)
2.3 CONSTRUCTION CONDITION Interaction of vertical shear and bending moment Lateral torsional buckling
+ WEB APERTURE CHECKS Vertical shear check at opening(s) Interaction of vertical shear and bending moment at opening(s) Vierendeel bending check Web buckling around opening(s) Web post horizontal shear check at opening(s)
2.4 SERVICEABILITY CONDITION Concrete compression stress Steel compressive stress Steel tensile stress Vibration Deflection
2.5 DISPLAY STEP View unity factors and determine critical (highest) value
2.6 Critical unity factors acceptable?
Y
PROCEED TO STAGE 3
N
2.7 Unity factor >1?
Y
2.7A Alter beam parameters to reduce unity factor below 1
A
N
2.8 Unity factor <1
2.8A Alter beam parameters to increase unity factor to nearly 1
A

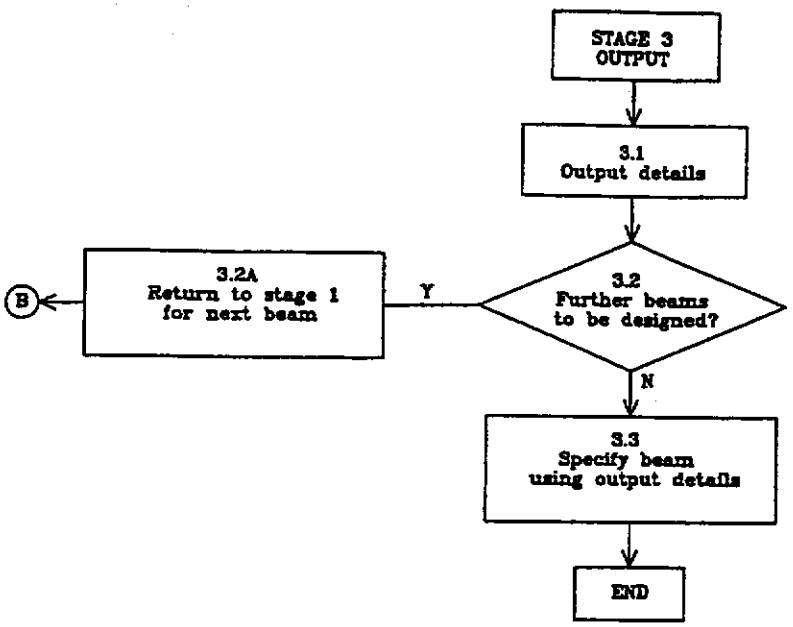

STAGE 3
OUTPUT
3.1
Output details
3.2
Further beams
to be designed?
Y
3.2A
Return to stage 1
for next beam
B
N
3.3
Specify beam
using output details
END

FIG 3C