

DRAWING TREE

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DRAWING TREE

WHAT - PLAN

WHEN - EACH NEW WORK PACKAGE

WHY - ORGANIZATION

HOW - BDS/CONTRACT

DRAWING TREE

WHAT

- A PRELIMINARY PLAN ON WHAT IS TO BE DONE
- ORGANIZES YOUR WORK
- PROVIDES PROGRAM VISIBILITY/REF
- CONTRACT REQUIREMENTS

DRAWING TREE

WHEN

- NEW PROGRAM
  - SUB-TIERED LEVELS
- ANY WORK EFFORT
  - IR&D
  - FSD
- PRODUCTION
- SUSTAINING

DRAWING TREE

WHY

- HELPS ESTABLISH PROGRAM CREDIBILITY
- USED TO ESTABLISH SCHEDULES/GOALS
- MANPOWER PLANNING
- DEVELOPS PROGRAM REQUIREMENTS
- CROSS CHECKS ON CONTRACT REQUIREMENTS
- IDENTIFIES END ITEM DELIVERABLES
- HELPS DEVELOP COST ACCOUNT REQUIREMENTS

DRAWING TREE

HOW

- PROCEDURE BDS 1000
- CONTRACT REQUIREMENTS

# BOEING DRAFTING STANDARD

BDS-1000

## 2.4 Drawing Types (Continued)

- u. Diagrammatic Drawing - A diagrammatic drawing delineates features and relationship of items forming an assembly or system by means of symbols and lines. A diagrammatic drawing is a graphic explanation of the manner by which an installation, assembly or system; e.g., mechanical, electrical, electronic, hydraulic, pneumatic, performs its intended function. See BDS. Functional Diagram Drawings. E
- v. Dimensioned Drawing - A dimensioned drawing is prepared on light drafting film. All dimensions required to interpret the drawing requirements are shown.
- w. Drawing Tree - A drawing tree is a block diagram or indented list that identifies drawings applicable to an item or program and illustrates the next assembly relationship between drawings.
- x. Electrical-Electronic Drawing - An electrical-electronic drawing describes the fabrication and assembly of electrical and electronic equipment along with the assembly and installation of interconnecting wiring. See BDS. Electrical-Electronic Drawings. R
- ac. Experimental Drawing - General requirements are similar to formal drawings. However, drawing refinement and degree of completeness are flexible to suit minimal data requirements of the program. Such drawings are normally supported by personal liaison and special handling to simplify or expedite the interchange of information between Engineering and the fabrication shops. See BDS, Drawing Control - Development/Test Hardware or BDS, Drawing Preparation-Development and Experimental Programs. E
- ad. Geometric Parameter Drawing - A geometric parameter drawing is an Engineering drawing of the loft control lines, defined by points and slopes, such as upper contour lines, maximum half breadth lines, upper shoulder lines, etc. Standard analytic geometry equations, usually second degree, are prepared by Engineering and included on the loft drawing for reference. See BDS, Master Dimensions. R
- ae. Hydraulic Diagram - See Diagrammatic Drawing. R
- af. Inseparable Assembly Drawing - An inseparable assembly drawing is a drawing of an assembly which is drawn as one unit and is not to be separated into individual parts. See BDS, Inseparable Assembly Drawings. R

# BOEING DRAFTING STANDARD

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## 5 DRAWING PLANNING

**5.1 General** – The drawing is the basic means of communication between Engineering and other organizations and therefore, must be clear, concise, subject to only one interpretation and free of extraneous or redundant information.

Plan all drawings in advance to avoid overly complex drawings and assure proper installation-assembly-detail breakdown. For more detailed planning for an individual drawing see BDS, Basic Drafting Practices.

a. **Drawing Tree** – Construct a drawing tree at the start of the detail drawing phase of a design to assure planning ahead for the overall drafting effect. Drawing trees are used for planning purposes and should be kept up to date.

Plan the drawings required for each end item to assure a proper drawing breakdown structure from the top drawing downward including all installations, assemblies, lower tier assemblies and detail drawings. Consult with Manufacturing Planning, Spares, and others as appropriate.

d. **Overall System Economy** – True economy is a function of minimizing engineering, planning, tooling, fabrication, assembly, inspection, and procurement costs, not engineering costs alone. Consider all these areas when planning the drawing breakdown.

**5.2 Production Drawing Application** – The production drawing system requires the selective use of separate drawings for detail parts, or delineation in separate detail views. Use axonometric or photo drawings when a cost savings can be realized. See the applicable BDS for information. Consider the detail delineation requirements, of the part, the fabrication method, and the parts function in the next assembly or installation per the following.

a. **Separate Detail Drawings** – Separate detail drawings delineate:

- A single part on a drawing.
- Two or more tabulated parts on a drawing.
- Two or more closely related items detailed in separate views on a drawing.

A single part on a detail drawing is preferred



**BOEING**

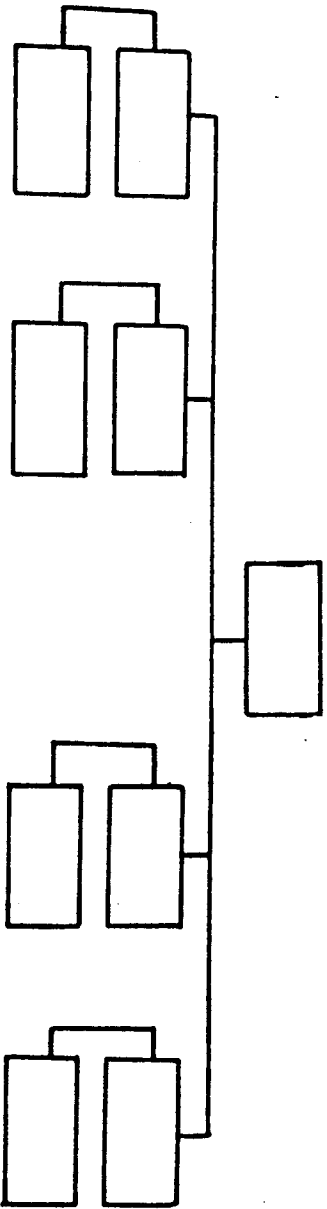
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**BNAC**

The coordinating group is required to prepare a drawing tree at the start of each program (CCP, BWP, ECP, etc.) to assure planning ahead for the overall drafting effect. Assign a drawing number (two less than the top drawing) to the drawing tree and add as a reference drawing in the parts list on the top drawing for the program. The design group responsible for the top drawing for the program is responsible for obtaining the drawing number. The drawing tree shall be maintained on a current basis and contain the following information: Responsible organization, drawing numbers and titles. On other than installations the noun or noun phrase may be used in lieu of the complete title.

When preparing a drawing tree for kits the deletions drawing shall be assigned one number less than the top kit drawing number.

When preparing a drawing tree use the block diagram format or the indented format, in the bookform drawing or on a rolled size drawing. The block diagram format in bookform drawing is preferred.



**BLOCK FORMAT**

1 2 3 4 5 6 7

361-50001 Drawing Tree

361-10023

361-10282

- 361-10496
- 361-10273
- 361-10276
- 361-10278
- 361-10294

361-10331  
361-10440

**INDENTURED FORMAT**

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DATE 84-11-16