



2024 Edition

SCOUTMASTER BUCKY

Drafting Merit Badge

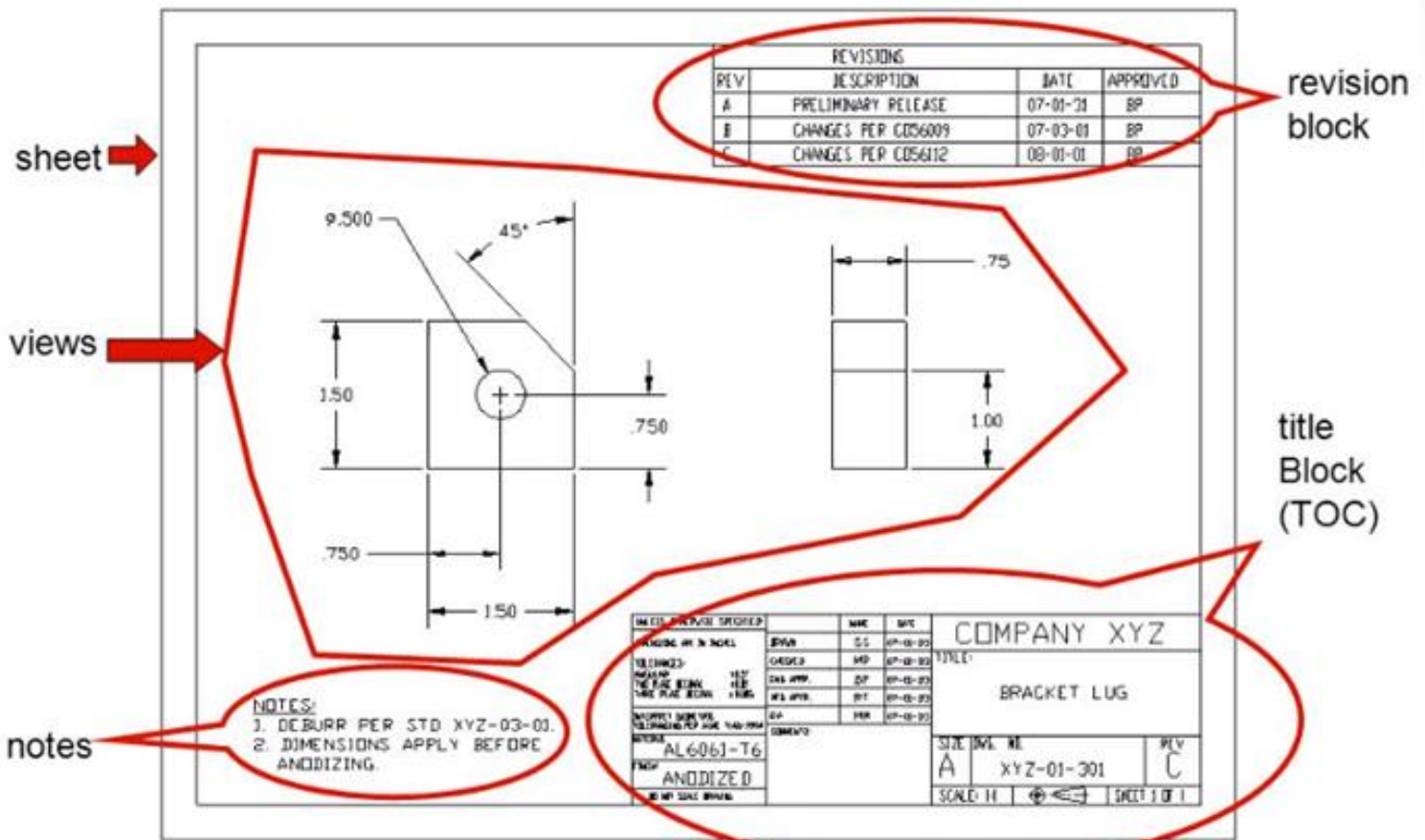
SCOUTS PARTICIPATING IN A SCOUTMASTER BUCKY MERIT BADGE OPPORTUNITY (ONLINE OR IN PERSON), PLEASE CONSIDER ALSO USING THE DRAFTING MERIT BADGE CLASS PREPARATION PAGE FOR CLARIFICATIONS, INSIGHTS, AND EXPECTATIONS.

<https://scoutmasterbucky.com/merit-badges/drafting/class-prep/>

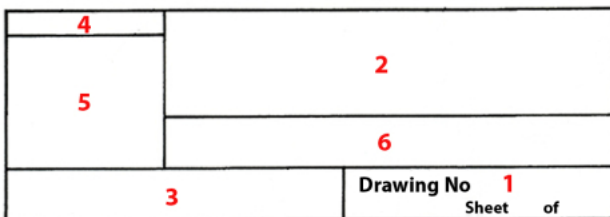
DRAFTING MERIT BADGE WORKBOOK

REQUIREMENT 1: Format TWO sheets of drawing paper with proper borders and title blocks—one for your manual project (see requirement 2) and one for your lettering project (see requirement 5).

PARTS OF A TYPICAL DETAIL DRAWING



SIMPLIFIED SAMPLE TITLE BLOCK



1. Drawing Number
2. Title or description of the drawing (part name)
3. Name of firm/organization
4. Original scale
5. General specifications and notes area (tolerances, finishes, etc.)
6. Drafter name area; signature, approval, etc



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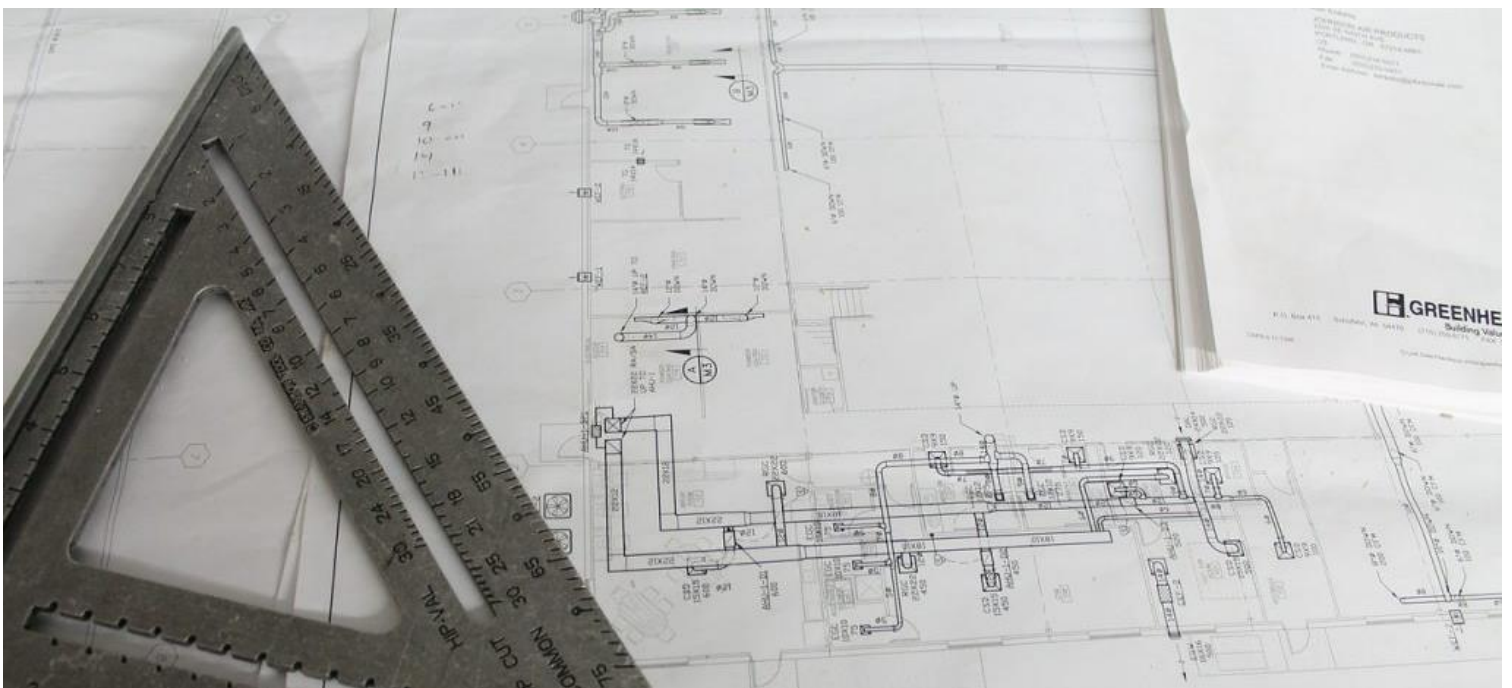
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REQUIREMENT 1a: Make a rough sketch for each of your project drawings to determine the correct size of paper to format.

DRAWING SHEET SIZES

North America		International	
A	8.5"x11"	A4	210mm x 297mm
B	11"x17"	A3	297mm x 420mm
C	17"x22"	A2	420mm x 594mm
D	22"x34"	A1	594mm x 841mm
E	34"x44"	A0	841mm x 1189mm

Choose sheet size such that drawing is filled but not crowded (based on number of views and dimensions needed).





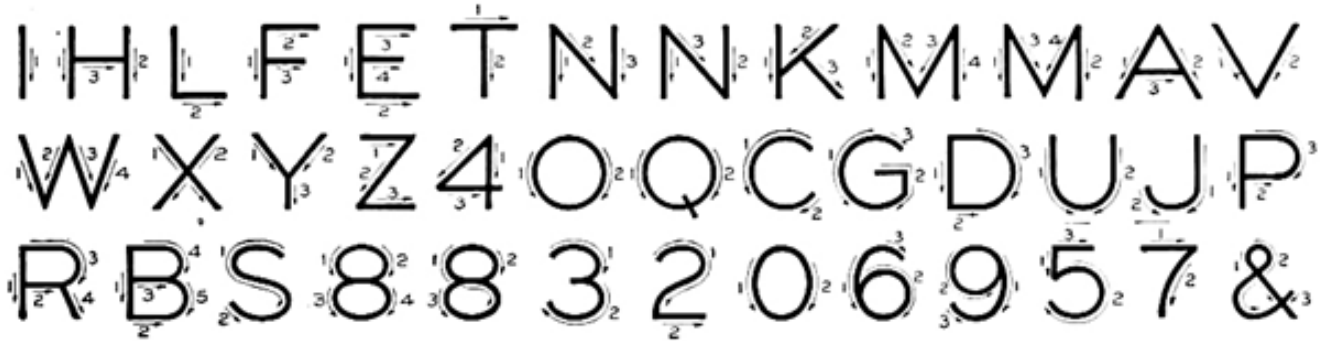
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REQUIREMENT 1b: Using either single-stroke vertical or slant Gothic lettering, fill in all important information in the title block sections of the formatted paper.

UPRIGHT SINGLE STROKE GOTHIC



THE ABILITY TO LETTER WELL CAN BE ACQUIRED ONLY BY PERSISTENT AND CAREFUL PRACTICE

ON WORKING DRAWINGS THE STYLE OF LETTERS IS USUALLY OF THE SIMPLEST CHARACTER, THE "COMMERCIAL GOTHIC" BEING USED MORE THAN ANY OTHER STYLE

LETTERS IN WORDS SHOULD BE CLOSE TOGETHER, BUT WORDS WELL SEPARATED.

THE LETTERS IN NOTES ON DRAWINGS SHOULD NOT BE LESS THAN ONE SIXTEENTH NOR MORE THAN ONE EIGHTH OF AN INCH IN HEIGHT

THESE LETTERS ARE MADE IN A SOMEWHAT EXTENDED FORM

INCLINED GOTHIC CAPITALS ARE USED BY MANY DRAFTSMEN IN PREFERENCE TO THE UPRIGHT SINGLE STROKE CAPITALS.

KEEP THE LETTERS CLOSE TOGETHER AND THE STROKES UNIFORM IN SLANT AND THICKNESS.



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REQUIREMENT 2:	Using the formatted sheet of paper you prepared for your manual project, produce a pencil drawing as it would be used for manufacturing. Fill in all title block information. The manual drawing may be any one of the following drawing types.
REQUIREMENT 2a:	Architectural: Make a scale drawing of an architectural project. The architectural drawing may be a floor plan; electrical, plumbing, or mechanical service plan; elevation plan; or landscaping plan. Use an architect's scale and show dimensions to communicate the actual size of features. Include any important sectional drawings, notes, and considerations necessary for construction.
REQUIREMENT 2b:	Mechanical: Make a scale drawing of some mechanical device or interesting object. The mechanical drawing may be of the orthographic or isometric style. Use an engineer's scale and show dimensions to communicate the actual size of features. Include any important sectional drawings, notes, and manufacturing considerations.
REQUIREMENT 2c:	Electrical: Draw a simple schematic of a radio or electronic circuit. Properly print a bill of materials including all of the major electrical components used in the circuit. Use standard drawing symbols to represent the electronic components.
REQUIREMENT 3:	Produce a computer-aided design (CAD) drawing as it would be used in manufacturing. Fill in all title block information. The CAD drawing may be any one of the following drawing types:
REQUIREMENT 3a:	Architectural: Make a scale drawing of an architectural project. The architectural drawing may be a floor plan; electrical, plumbing, or mechanical service plan; elevation plan; or landscaping plan. Use an architect's scale and show dimensions to communicate the actual size of features. Include any important sectional drawings, notes, and considerations necessary for construction.
REQUIREMENT 3b:	Mechanical: Make a scale drawing of some mechanical device or interesting object. The mechanical drawing may be of the orthographic or isometric style. Use an engineer's scale and show dimensions to communicate the actual size of features. Include any important sectional drawings, notes, and manufacturing considerations.
REQUIREMENT 3c:	Electrical: Draw a simple schematic of a radio or electronic circuit. Properly print a bill of materials including all of the major electrical components used in the circuit. Use standard drawing symbols to represent the electronic components.

Requirements 2 and 3, and their components, will be covered as a part of the class.

It is still the Scout's responsibility to review the Drafting Merit Badge Pamphlet to gain understanding and insight for the tasks they will be required to complete.



BE PREPARED!



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REQUIREMENT 4: Discuss with your counselor how fulfilling requirements 2 and 3 differed from each other.

Notes:

REQUIREMENT 4: Tell about the benefits derived from using CAD for requirement 3.

Notes:

REQUIREMENT 4: Tell about the software you used as well as other software options that are available.

Notes:

REQUIREMENT 5: Using single-stroke slant or vertical Gothic lettering (without the aid of a template or lettering guide), write a brief explanation of what you consider to be the most important benefit in using CAD in a particular industry (aerospace, electronics, manufacturing, architectural, or other). Use the experience gained in fulfilling requirements 2, 3, and 4 to support your opinion. Use the formatted sheet of paper you prepared in requirement 1 for your lettering project.

This Requirement will be covered during the class; however, no guarantee is made that Scouts will have the necessary time to complete this due to all the other work scheduled for the class.

This requirement must be reviewed with your merit badge counselor.



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DO ONE OF THE FOLLOWING (6A or 6B) FOR REQUIREMENT 6

REQUIREMENT 6a: Visit a facility or industry workplace where drafting is part of the business. Ask to see an example of the work that is done there, the different drafting facilities, and the tools used.

Facility of Industry Workplace:

Person's Name and Position that you spoke with:

Notes:

REQUIREMENT 6a1: Find out how much of the drafting done there is manual and how much is done using CAD. If CAD is used, find out what software is used and how and why it was chosen.

Notes:



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REQUIREMENT 6a2: Ask about the drafting services provided.

Notes:

REQUIREMENT 6a2: Ask who uses the designs produced in the drafting area and how those designs are used.

Notes:

REQUIREMENT 6a2: Discuss how the professionals who perform drafting cooperate with other individuals in the drafting area and other areas of the business.

Notes:



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REQUIREMENT 6a3: Ask how important the role of drafting is to producing the end product or service that this business supplies.

Notes:

REQUIREMENT 6a3: Find out how drafting contributes to the company's end product or service.

Notes:

REQUIREMENT 6b: Using resources you find on your own such as at the library and on the Internet (with your parent's permission), learn more about the drafting trade.

Notes:



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REQUIREMENT 6b1: Discuss with your counselor the drafting tools used in the past—why and how they were used.

Notes:

REQUIREMENT 6b1: Discuss with your counselor which tools are still used today and how their use has changed with the advent of new tools.

Notes:

REQUIREMENT 6b1: Discuss with your counselor which tools are being made obsolete by newer tools in the industry.

Notes:



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REQUIREMENT 6b2: Discuss with your counselor what media types were used in the past and how drawings were used, stored, and reproduced.

Notes:

REQUIREMENT 6b2: Discuss with your counselor how the advent of CAD has changed the media used, and discuss how these changes affect the storage or reproduction of drawings.

Notes:

REQUIREMENT 6b3: Discuss with your counselor whether the types of media have changed such that there are new uses for the drawings, or other outputs, produced by designers.

Notes:

REQUIREMENT 6b3: Briefly discuss how new media types are used in the industry today.

Notes:



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REQUIREMENT 7: Find out about three career opportunities in drafting.

Career Opportunity #1:

Career Opportunity #2:

Career Opportunity #3:

REQUIREMENT 7: Pick one and find out the education, training, and experience required for this profession. Discuss this with your counselor.

Selected Career Opportunity:

Educational Requirements:

Training Requirements:

Experience Requirements:

REQUIREMENT 7: Explain why this profession might interest you.

Notes: