USITT Scenic Design and Technical Production: Graphic Standard

USITT Education Commission

Graphic Standards Board -

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1.0 GENERAL

1.1 INTRODUCTION.

This first revision of the Scenic Design and Technical Production Graphic Standard is the result of many exchanges, both written and verbal. The initial document was published in the 1982 Spring volume of the USITT journal, Theatre Design & Technology. Thanks to a number of recently published scenery textbooks and the enthusiastic acceptance of the standard by the USITT membership, both the concept and content of this graphic standard now share a firm foundation upon which this and succeeding revisions can build.

Although there are many technical changes within this revision, the majority are clarifications. Some of the more significant modifications include:

1. Indexing of figures and text.
2. Ordered and expanded hardware symbols.
3. Line symbol alterations, clarifications or additions such as the “set line,” “break line,” “datum line,” and “section lines.”
4. Elimination of the practice of circumscribing elevation heights on levels.

As noted in the original document, the two-fold purpose for the creation and implementation of a scenic graphic standard is to provide practicing and incoming members of the industry with a means of efficient and accurate communication. In a profession as mobile as the performing arts, it is critical for practitioners to effectively communicate without the need for constant on-site residency. Likewise, the educator who has been charged with the task of preparing students for professional careers needs assurance that what is being taught is actually acceptable and useful to the majority of practicing professionals. In the context of both circumstances, it is obvious that there will need to be subsequent revision to this standard as new assemblies and fabrication techniques become available and as our understanding of standards becomes more refined.

These revisions have been made based on the assumption that the majority of scenic drafters will be using standard drafting tools rather than CADD equipment. To the extent possible, symbols and recommendations have been configured to allow for shapes which can be efficiently produced by either means. While it may not be possible to produce images identical to those recognized here as good drafting practice when using some CADD packages, it is hoped in those instances that the CADD drafter will work to produce images which follow this standard as closely as practicable.

1.2 SCOPE.

This standard is intended to be used by both scenery designers and scenic technicians. As such it is flawed because it is not in every instance specific to the discipline. However, as imperfect as this may be, the differences between design and shop drawings are not so great that two distinct standards need not be fashioned, nor is such a split even desirable since so many theatre professionals work in both capacities much of the time.

What is important is that drafters provide useful information to the end user (e.g., shop drawings need to show the breakdown of subassemblies, while design drawings typically convey information regarding profile and finish). In either instance, the information provided must be specific, accurate, comprehensive, and tailored to the needs of the end user.

Drafters must determine for themselves which elements of this standard apply to the specific use for which the drawing is being prepared. The determination of which elements are appropriate will be dependent on whether the drawing is being prepared for a rigging crew, stage manager, director, prop master, or one of the other many specialty areas of the performing arts which communicate through the use of graphics. Whatever choices are made, however, each choice must be in the form of communication that is clear, consistent, and efficient for both drafter and reader.

2.0 LINES.

2.1 LINE WEIGHTS.

The recommendation is a modified ANSI standard as follows:

- **Pen:** Thin: .010" to .0125" width. (ANSI standard = .016")
- **Thick:** .020" to .025" width (ANSI standard = .032")

- **Pencil:** Thin: 0.3mm
- **Thick:** 0.5mm

2.2 LINE TYPES.

**2.2.1 BORDER AND DRAWING DIVISION.**

At a thick single or double line. See fig. 2.2.1.

**2.2.2 VISIBLE EDGE LINE.**

At a single thick solid line.

**2.2.3 HIDDEN EDGE LINE.**

At a uniformly dotted line. See fig. 2.2.3.

**2.2.4 CEILING LINE.**

At a uniformly dashed line. See fig. 2.2.4. A local note, “CEILING LINE” is recommended.

**2.2.5 PLASTER LINE.**

At a uniformly dashed line. See fig. 2.2.5. A local note “PL” or “PLASTER LINE” may be required for clarity.

**2.2.6 SET LINE.**

At a thin solid line with short breaks
2.2.10.2 SECTION LINES - USUAL FORM.

Section lining — i.e. “cross-hatch” — consists of thin, uniformly spaced diagonal lines. See fig. 2.2.10.2. Other standard section lining patterns may be used to differentiate material as required. If used atypically these should be identified in the Legend or by local note.

2.2.10.3 SECTION VIEW OF ITEMS TOO THIN FOR SECTION LINING (i.e., CROSS-HATCH).

When a surface is too small to cross-hatch it may be depicted by a solid line of proper scale thickness. See fig. 2.2.10.3. (Variations from true scale are acceptable if required for clarity)

2.2.10.4 OUTLINE OF SECTIONED BODY — ARCHITECTURAL.

The outline of section views of large architectural solids may be described by an extra thick line in lieu of section lining (cross-hatching). See fig. 2.2.10.4.

2.2.10.5.1 CUTTING PLANE LINE.

A thick dashed line of the form long-short-long. Arrows at the ends of the cutting plane line indicate the direction of view. See fig. 2.2.10.5.1.

2.2.10.5.2 CUTTING PLANE LINE — ALTERNATE FORM.

Short thick lines at the terminations of the cutting plane. Arrows at the ends of the cutting plane line indicate the direction of view. See fig. 2.2.10.5.2.

2.2.11 BREAK LINE.

Athin line of the form shown in fig. 2.2.11. The line extends slightly beyond the edges of the object and is appropriate for both short and long break applications.

2.2.12 PHANTOM LINE.

Athin dashed line of the form long-short-long for use in adjacent part, alternate position or repeated feature applications. See fig. 2.2.12.

2.2.13 DAUM LINE.

Athin solid line with a locate note as “CL”, which may be used in situations where clearly definable reference planes are not available, i.e., “Plaster Lines” in ground plans. See Art. 4.1.3 (Reference Points and Planes). See fig. 2.2.13.
3.4 CROWDED DIMENSIONS.
Recommended methods include any of the configurations shown in fig. 3.4. Note that dots or slashes may be substituted when arrows are too big for the available space.

3.5 DIMENSIONING ARCS AND CIRCLES.
Recommended methods include any of the configurations shown in figs. 3.5.1.1, 3.5.1.2, 3.5.2 or 3.5.3.

3.5.1.1 LOCATING CENTERS OF ARCS AND CIRCLES.
Arcs and circles are located by crossed center lines of the form shown in fig. 3.5.1.1., 3.5.1.2, or 3.5.3.

3.5.1.2 CENTER LINES ON AND OFF ROUND OBJECT.
For purposes of dimensioning, a center line may be extended beyond the boundaries of the circle to which it applies in which case it becomes a thin solid extension line. See fig. 3.5.1.2.

3.5.2 SPECIFYING SIZE OF CIRCLES.
The size of circles are normally specified by their diameter. See fig. 3.5.2.

3.5.2.1 LARGE OBJECT EXCEPTION TO STANDARD METHOD FOR DIMENSIONING ROUND OBJECTS.
Very large round objects such as may be dimensioned by their radii if required for clarity or convenience of fabrication.

3.5.3 SIZE OF ARCS SPECIFIED BY RADII.
The size of arcs are normally specified by their radii. See fig. 3.5.3.

3.6 DIMENSIONING ANGLES.
See fig. 3.6.

4.0 GROUND (FLOOR) PLANS.

4.1 GENERAL.

4.1.1 TERMINOLOGY.

4.2 FLAT SCENERY IN GROUND PLANS.

4.2.1 SINGLE FLAT.
A flat is shown on a stage ground plan by a solid line of proper scale thickness. See Art. 2.2.10.3 (Section Views of Items Too Thin for Section Lining). See fig. 4.2.1. Note that the method used to generate such a line is not a part of these recommendations.

4.2.1.1 TWO OR MORE FLATS IN CONTACT.
When it is necessary to show how flats butt together in assembly, the method shown in fig. 4.2.1.1 is recommended. Note that the open line figure above is presented only to show the derivation of the plan view representation and is not a part of this recommendation.

4.2.2 STANDARD OPENINGS IN FLAT SCENERY.

4.2.2.1 ARCHWAY.
See fig. 4.2.2.1.

4.2.2.2 DOORWAY.
See fig. 4.2.2.2. The shutter is normally drawn standing partially open to show how it will be hung. Note the swing line is a thin solid line swung from the door hinge center. The swing line may extend to the limit of travel if required.

4.2.2.3 WINDOW.
See fig. 4.2.2.3. Show muntins and mullions of windows as designed.

4.2.2.4 SLIDING DOOR.
See fig. 4.2.2.4.

4.2.2.5 DOUBLE ACTING DOOR.
See fig. 4.2.2.5. Note the swing line is a thin solid line swung from the door hinge center. The swing line may extend to the limit of travel if required.

4.2.2.6 CASEMENT WINDOW.
See fig. 4.2.2.6. Show muntins and mullions of windows as designed. Note that the swing line is a thin solid line swung from the window hinge center. The swing line may extend to the limit of travel if required.

4.2.3 SHOWING CASINGS AROUND OPENINGS.
Casings may be shown in stage ground plans where their inclusion would significantly clarify information required for design, fabrication, or assembly.

4.3 PLATFORMS, STEPS, AND RAMPS IN GROUND PLANS.

4.3.1 PLATFORM BOUNDARIES.
The edges of platforms are shown by standard visible, i.e. thick, lines. See fig. 4.3.1.

4.3.2 CONFIRMING LEVEL STATUS OF PLATFORMS.
Platforms which are level are so indicated by thin crossed lines. See figs. 4.3.1 and 4.3.3.

4.3.3 PLATFORMS OF THE SAME HEIGHT IN CONTACT.
When necessary to show platforms of the same height in contact, the respective boundaries may be delineated by a thin solid line. See fig...
4.3.3.  

4.3.4 PLATFORM AND STEP HEIGHT. Platform and step height are indicated by the height in inches above or below the stage floor. Heights below the stage floor are shown by applying a negative sign to the figure. Heights without a negative sign are assumed to be positive.

4.3.4.1 INDICATING STEP HEIGHTS - REGULAR TREADS. See fig. 4.3.4.1. Note that an arrow points away from the principal level - typically the stage floor.

4.3.4.2 INDICATING STEP HEIGHTS - IRREGULAR TREADS. See fig. 4.3.4.2. This method may also be used for steps having regular tread heights if desired.

4.3.4.3 CIRCLES AROUND PLATFORM HEIGHT INDICATIONS. - DELETED

4.3.5 RAMPS. Note that an arrow points away from the principal level - typically the stage floor. See fig. 4.3.5.

4.4 SOFT GOODS IN GROUND PLANS.

4.4.1 DRAPES (LEGS) TOUCHING OR NEARLY TOUCHING THE FLOOR.

4.4.1.1 DRAPES FLAT HUNG. Flat hung drapes are indicated by a solid line of 1/2" scale thickness and by being terminated on each end by a short, thin perpendicular tic mark. See fig. 4.4.1.1.

4.4.1.2 DRAPES HUNG WITH FULLNESS. Drapery hung in fullness may be indicated by a wavy line approximating a sine wave having a peak to peak amplitude of 3" to 6" in the scale of the drawing. See fig. 4.4.1.2.

4.4.2 OVERHEAD DRAPES (BORDERS).

4.4.2.1 OVERHEAD DRAPES (BORDERS) FLAT HUNG. Flat hung overhead drapes (borders) are shown by a thin uniformly dotted line. See fig. 4.4.2.1.

4.4.2.2 OVERHEAD DRAPES (BORDERS) HUNG WITH FULLNESS. Overhead drapes (borders) hung in fullness are shown by a thin, wavy, uniformly dotted line approximating a sine wave having a peak to peak amplitude of 3" to 6" in the scale of the drawing. See fig. 4.4.2.2.

4.4.3 DROPS TOUCHING OR NEARLY TOUCHING THE FLOOR. Drops are indicated by a solid line of 1/2" scale thickness and by being terminated on each end by a short, thin perpendicular tic mark. See fig. 4.4.3.

4.4.4 DROPS OVERHEAD. Drops overhead—e.g., painted borders—are indicated by a thin, uniformly dashed line equivalent to that used for OVERHEAD DRAPES (BORDERS) FLAT HUNG. See fig. 4.4.4.

4.5 RIGID FOOT IRON. See fig. 5.2.1

4.5.1.1 TIGHT PIN HINGE. See fig. 5.3.1.1

4.5.1.2 TIGHT PIN HINGE ON OPPOSITE FACE. See fig. 5.3.1.2

4.5.2 FOLDING FOOT IRON. See fig. 5.2.2

4.5.2.1 LOOSE PIN HINGE. See fig. 5.3.2.1

4.5.2.2 LOOSE PIN HINGE ON OPPOSITE FACE. See fig. 5.3.2.2

4.5.3 TOP HANGER IRON. See fig. 5.4.1

4.5.4 BOTTOM HANGER IRON. See fig. 5.4.2

4.5.5 CEILING PLATE. See fig. 5.4.3

4.5.6 DEEPLINE PLATE. See fig. 5.4.4

4.5.7 LASHLINE IN CORNER BLOCK. See fig. 5.5.1.1

4.5.8 LASHLINE EYE. See fig. 5.5.1.2

4.5.9 LASH CLEAN. See fig. 5.5.2

5.0 HARDWARE SYMBOLS IN ELEVATION. See fig. 5.5.3.1

5.0.1 HIDDEN LINES IN ELEVATIONS. Hidden lines in elevation views may be omitted for clarity. See fig. 5.5.3.2

5.1 CORNER BLOCKS AND KEystones. See fig. 5.1.1

5.1.1 HIDDEN LINES IN ELEVATIONS. See fig. 5.5.3.2

5.1.2 KEYPER HOOK. See fig. 5.6.2
5.6.3 STIFFENING BATTEN
See fig. 5.6.3

upper case letters should be used on
drawings unless lower case letters are
needed to conform with other
established standards or
nomenclature. Hand lettering should
be generally similar to the
mechanically generated characters of
fig. 6.1 while acknowledging
individual stylistic differences.

5.7.1 ROTOLock
See fig. 5.7.1

5.7.2 PICTURE HOOK AND SOCKET
See fig. 5.7.2

6.0 MISCELLANEOUS.

6.1 LETTERING
Lettering should be legible and the
style should allow for easy and rapid
execution. Characters which generally
conform to the single stroke Gothic
style meet these requirements. Only

6.2 TITLE BLOCK

6.2.1 LOCATION
The title block should be in the same
location on all drawings of a single
project. The title block should be
located in either the lower right hand
corner of the drawing or in a strip
along the bottom of the drawing.

6.2.3 CONTENTS
Regardless of form, the following
information should be included:
1. Name of producing organization.
2. Name of production, act and scene,
   if appropriate.
3. Drawing title.
4. Drawing number.
5. Predominant scale of the drawing.
6. Date the drawing was drafted.
7. Designer of the production.
8. Drafter if different from the
designer.
9. Drawing approval, if applicable.

6.2.2 FORMAT
Internal title block division and
placement of information is generally
unique to the producing organization
and is not specified as a part of these
recommendations.

APPROVED BY
USITT BOARD OF DIRECTORS
DALLAS, TEXAS
21 NOVEMBER 1992
### USITT Scenic Design and Technical Production Graphic Standard

#### 2.2 - Line Types

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<tr>
<th>Type</th>
<th>Style</th>
<th>Notes</th>
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<td>Thick (2 Lines)</td>
<td></td>
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<tr>
<td>2.2.2 - Visible Outline</td>
<td>Thick</td>
<td></td>
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<td>2.2.3 - Hidden Line</td>
<td>Thin</td>
<td></td>
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<tr>
<td>2.2.4 - Ceiling Line</td>
<td>Thin - Local Note Required</td>
<td></td>
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<tr>
<td>2.2.5 - Plaster Line</td>
<td>Thin</td>
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<td>2.2.6 - Set Line</td>
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<td>2.2.7 - Center Line</td>
<td>Thin - Label</td>
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<td>2.2.8 - Leader Line</td>
<td>Thin to an Outline</td>
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<tr>
<td>2.2.9 - Extension Lines and Dimension Lines</td>
<td>Thin Full Arrowheads Preferred</td>
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<tr>
<td>2.2.10.1 - Section Outline</td>
<td>Thin</td>
<td></td>
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<tr>
<td>2.2.10.2 - Sectioned Solid</td>
<td>Thin - Evenly Spaced at 45 Deg to Object Outline or as Clarity Requires</td>
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<tr>
<td>2.2.10.3 - Sectioned Solid Too Thin to Crosshatch</td>
<td>Object is Shown As a Solid Line in Scale Thickness</td>
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<td>2.2.10.4 - Outline of Sectioned Bodies - Architectural Applications</td>
<td>Extra Thick-In Lieu of Crosshatching</td>
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<td>2.2.11 - Break Lines Short and Long</td>
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<td>2.2.11.5.1 - Cutting Plane Line</td>
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<td>Thick</td>
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<td>2.2.12 - Phantom Line</td>
<td>Thin - Used to Show Repeating Features, Alternate Position, or Adjacent Parts.</td>
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<tr>
<td>2.2.13 - Datum Line</td>
<td>Thin</td>
<td></td>
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</tbody>
</table>
3.0 - DIMENSIONING

3.4 - ALL OF THE ABOVE FOR CROWDED DIMENSIONS ONLY

3.5.1.1 - CENTERS
3.5.1.2 - CENTER LINES OFF OBJECT

3.5.2 - DIAMETER

3.5.3 - RADII

3.6 - ANGLES
4.0 - SCENERY SYMBOLS IN PLAN
(LINE THICKNESSES ARE EXAGGERATED FOR COMPARATIVE PURPOSES)

4.2.1 - SINGLE FLAT

THE DRAWING ABOVE ILLUSTRATES THE DERIVATION OF THE RESPECTIVE PARTIAL GROUNDPLAN BELOW.

4.2.1.1 - FLAT JOINTS/DIVISIONS
NOTE: SOME DETAILS ENLARGED FOR CLARITY.

4.2.2.1 - ARCHWAY
4.2.2.2 - DOORWAY (SHUTTER DRAWN AS IT WILL BE HUNG)
4.2.2.3 - WINDOW (SHOW MUNTINS AND MULLIONS OF WINDOW AS DESIGNED)

4.2.2.4 - FLAT WITH SLIDING DOOR
4.2.2.5 - FLAT WITH DOUBLE ACTING DOOR
4.2.2.6 - FLAT WITH CASEMENT WINDOW (SHOW MUNTINS AND MULLIONS OF WINDOW AS DESIGNED)
4.3.1 - PLATFORM

4.3.3 - PLATFORM BOUNDARIES THIN LINE

4.3.4.1 - REGULAR TREAD HEIGHT STAIRCASE

4.3.4.2 - IRREGULAR TREAD HEIGHT STAIRCASE - OPTIONAL FOR REGULAR TREAD HEIGHTS

4.3.5 - RAMP

4.4.1.1 - DRAPES WITHOUT FULLNESS

4.4.1.2 - DRAPES WITH FULLNESS

4.4.2.1 - BORDERS WITHOUT FULLNESS

4.4.2.2 - BORDERS WITH FULLNESS

4.3.3 - DROPS TOUCHING FLOOR

THIN-

4.4.4 - DROPS OVERHEAD (PAINTED BORDERS)

THIN-

4.4.5 - TRAVELERS SHOWN WITH FULLNESS IN THE OPEN POSITION

6.1 LETTERING

ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789

6.0 - MISCELLANEOUS
5.0 - HARDWARE SYMBOLS IN ELEVATION

5.1.1 - CORNER BLOCK AND KEYSTONE
5.1.2 - ALTERNATE
5.2.1 - RIGID FOOT IRON
5.2.2 - FOLDING FOOT IRON

5.3.1.1 - TIGHT PIN HINGE
5.3.1.2 - TIGHT PIN HINGE ON OPPOSITE FACE
5.3.2.1 - LOOSE PIN HINGE
5.3.2.2 - LOOSE PIN HINGE ON OPPOSITE FACE

5.4.1 - TOP HANGER IRON
5.4.2 - BOTTOM HANGER IRON
5.4.3 - CEILING PLATE
5.4.4 - DEE RING PLATE

5.5.1.1 - LASHLINE IN CORNER BLOCK
5.5.1.2 - LASHLINE EYE
5.5.2 - LASH CLEAT
5.5.3.1 - STOP CLEAT

5.5.3.2 - STOP BLOCK
5.6.1 - BRACE CLEAT
5.6.2 - KEEPER HOOK

5.6.3 - STIFFENING BATTEN
5.7.1 - ROTO LOCK
5.7.2 PICTURE HOOK & SOCKET