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."
- 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 drawing 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 to 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: .20" to .025" width (ANSI standard = .032")

Pencil: Thin: 0.3mm

Thick: 0.5mm

2.2 LINE TYPES.

2.2.1 BORDER AND DRAWING DIVISION.

2.2.1.1 BORDER.

A thick single or double line. See fig. 2.2.1.

2.2.1.2 TITLE BLOCK.

A thick single or double line.

2.2.1.3 DRAWING DIVISION.

A single thick solid line.

2.2.2 VISIBLE EDGE LINE.

A single thick solid line. See fig. 2.2.2.

2.2.3 HIDDEN EDGE LINE.

A thin, uniformly dotted line. See fig. 2.2.3.

2.2.4 "CEILING LINE."

A thin, uniformly dashed line. See fig. 2.2.4. A local note, "CEILING LINE" is recommended.

2.2.5 PLASTER LINE.

A thin, uniformly dashed line. See fig. 2.2.5. A local note "PL" or "PIASTER LINE" may be required for clarity.

2.2.6 **SET LINE.**

A thin solid line with short breaks

separating it from tormentors or other coplanar features. See fig. 2.2.6. A local note "SL" or "SET LINE" may be required for clarity.

2.2.7 CENTER LINES.

2.2.7.1 CENTER LINES IN GENERAL APPLICATIONS. A thin line of the form long-short-long. See fig. 2.2.7.

2.2.7.2 SPECIAL FORM FOR MAJOR ARCHITECTURAL FEATURES (e.g., STAGE CENTER LINES).

A thin line of the form long-short-long with a local note as "CL" appended near the lower edge of the view for emphasis. See fig. 2.2.7.

2.2.8 LEADERS.

2.2.8.1 LINEAR LEADERS.

A thin solid line which is inclined relative to the major horizontal and vertical axes and having an arrow pointing toward the feature referenced. See fig. 2.2.8.

2.2.8.2 SERPENTINE LEADERS.

A thin solid irregularly curved line with an arrow pointing toward the feature referenced. See fig. 2.2.8.

2.2.8.3 LEADERS TO AN OUTLINE.

A linear or serpentine form leader terminated by an arrow pointing to the referenced outline.

2.2.8.4 LEADERS TO A SURFACE.

A linear or serpentine form leader terminated by a dot on the referenced surface. See fig. 2.2.8.

2.2.9 EXTENSION AND DIMENSION LINES.

Thin lines of the form shown in fig. 2 2 9

2.2.10 LINES RELATED TO SECTION VIEWS.

2.2.10.1 SECTION OUTLINES.

A thick solid line equivalent to a VISIBLE EDGE LINE. See fig. 2.2.10.1.

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 crosshatch 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 longshort-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.

A thin 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.

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

2.2.13 DATUM LINE.

A thin, solid line with a locate note as "DL", 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.

2.3 LINES NOT SPECIFIED IN THESE RECOMMENDATIONS.

Any special lines not described in these recommendations should be noted in the legend of each sheet.

3.0 DIMENSIONING.

3.1 GENERAL.

3.1.1 CRITERIA.

Dimensions must be clear, consistent and easily understood.

3.2 UNITS.

3.2.1 **METRIC.**

Dimensions less than one meter are to be noted as a zero, decimal point, and portion of meter in numerals. All measurements one meter and greater shall be given as a whole meter number, decimal point, and portion of meter: 0.1m, 0.52m, 1.5m, 2.35m.

3.2.2 ENGLISH.

Dimensions less than 1'-0" are given in inches without a foot notation, such as 6", 9 1/2", etc. Dimensions 1'-0" and greater include the whole feet with a single apostrophe followed by a dash and then inches followed by a double apostrophe: 7'-1/2", 18'-5 1/4", 1'-3".

3.3 GENERAL FORM.

See fig. 2.2.9.

3.3.1 LINE WEIGHT.

See Art. 2.2.9 (Lines: Extension & Dimension) & fig. 2.2.9.

3.3.2 ORIENTATION.

Dimensions should be oriented to read from the bottom and/or right hand side of the drawing.

3.3.3 DIMENSION / EXTENSION LINES ON OBJECT.

Dimension and extension lines may be placed on a drawn object provided object lines are clearly differentiated from dimension and extension lines by contrasting line weight. See Art. 2.2.2 (Lines: Visible Edge), Art. 2.2.9 (Lines: Extension and Dimension) and fig. 3.5.1.1. ("Centers"). Extension

lines typically begin approximately 1/16" away from the referenced features.

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 fine. 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 IARGE OBJECT EXCEPTION TO STANDARD METHOD FOR DIMENSIONING ROUND OBJECTS.

Very large round objects such as revolves 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.

The terms "Ground Plan" and "Floor Plan" are considered to be synonymous for the purposes of these recommendations and are equally acceptable.

4.1.2 DEFINITION.

"A ground or floor plan is a horizontal section with the cutting plane passing at whatever level (normally 4'-0" above the stage floor) required to produce the most descriptive view. This cutting plane may be locally offset as required for clarity."

4.1.3 REFERENCE POINTS AND PLANES

Dimensions on Ground Plans and Sections are to be referenced from the stage floor (or ground level), Center Line, and Plaster Line. In the case of "found spaces" or other stage types where a clearly established Center Line and/or Plaster Line is not available, all dimensions are to be taken from easily established points or plane(s) of reference. The points or plane(s) of reference should be clearly labeled and noted both on the Ground Plan and or Section, and in the Key.

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 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.	4.4.2	OVERHEAD DRAPES (BORDERS).		AND KEYSTONES.
4.3.4	PLATFORM AND STEP HEIGHT. Platform and step height are indicated	4.4.2.1	OVERHEAD DRAPES (BORDERS) FIAT HUNG.		Corner blocks and keystones may be omitted from elevations at the discretion of the drafter except as
	by the height in inches above or below the stage floor. Heights below the		Flat hung overhead drapes (borders) are shown by a thin uniformly dotted		required for clarity. See fig. 5.1.2.
	stage floor are shown by applying a negative sign to the figure. Heights		line. See fig. 4.4.2.1.	5.2.1	RIGID FOOT IRON. See fig. 5.2.1
	without a negative sign are assumed to	4.4.2.2	OVERHEAD DRAPES (BORDERS)		
	be positive.		HUNG WITH FULINESS. Overhead drapes (borders) hung in	5.2.2	FOLDING FOOT IRON. See fig. 5.2.2
4.3.4.1	INDICATING STEP HEIGHTS - REGULAR TREADS.		fullness are shown by a thin, wavy, uniformly dotted line approximating a	5.3.1.1	TIGHT PIN HINGE.
	See fig. 4.3.4.1. Note that an arrow points away from the principal level -		sine wave having a peak to peak amplitude of 3" to 6" in the scale of	0.0.1.1	See fig. 5.3.1.1
	typically the stage floor.		the drawing. See fig. 4.4.2.2.	5.3.1.2	TIGHT PIN HINGE ON OPPOSITE FACE.
4.3.4.2	INDICATING STEP HEIGHTS - IRREGULAR TREADS.	4.4.2.3	OVERHEAD DRAPES (BORDERS) FLAT HUNG BUT SHOWN WITH		See fig. 5.3.1.2
	See fig. 4.3.4.2. This method may also		WAVY LINE.	5.3.2.1	LOOSE PIN HINGE.
	be used for steps having regular tread heights if desired.		An alternative to 4.4.2.1. (Overhead Drapes [Borders] Flat Hung). Flat		See fig. 5.3.2.1
4.3.4.3	CIDCLES ADOLIND DI ATEODM		hung overhead drapery (borders) may be shown by a thin, uniformly dotted,	5.3.2.2	LOOSE PIN HINGE ON OPPOSITE FACE.
4.3.4.3	CIRCLES AROUND PLATFORM HEIGHT INDICATIONS DELETED		wavy line otherwise similar to 4.4.2.2 but having a local note as "BORDERS -		See fig. 5.3.2.2
4.3.5	RAMPS.		FLAT HUNG" or equivalent.	5.4.1	TOP HANGER IRON.
	Note that an arrow points away from		DDODG TOUGHNIG OD NEADW		See fig. 5.4.1.
	the principal level - typically the stage floor. See fig. 4.3.5.	4.4.3	DROPS TOUCHING OR NEARLY TOUCHING THE FLOOR.	5.4.2	BOTTOM HANGER IRON.
4.4	SOFT GOODS IN GROUND PLANS.		Drops are indicated by a solid line of 1/2" scale thickness and by being	0.1.2	See fig. 5.4.2
	3011 40020 E. G.		terminated on each end by a short,	5.4.3	CEILING PLATE.
4.4.1	DRAPES (LEGS) TOUCHING OR NEARLY TOUCHING THE FLOOR.		thin perpendicular tic mark. See fig. 4.4.3.		See fig. 5.4.3
4.4.1.1	DRAPES FLAT HUNG.	4.4.4	DROPS OVERHEAD.	5.4.4	DEE RING PLATE.
4.4.1.1	Flat hung drapes are indicated by a	4.4.4	Drops overhead-—e.g., painted		See fig. 5.4.4
	solid line of 1/2" scale thickness and		borders—-are indicated by a thin,	5.5.1.1	LASHLINE IN CORNER BLOCK.
	by being terminated on each end by a short, thin perpendicular tic mark.		uniformly dashed line equivalent to that used for OVERHEAD DRAPES		See fig. 5.5.1.1.
	See fig. 4.4.1.1.		(BORDERS) FLAT HUNG. See fig. 4.4.4.	5.5.1.2	LASHLINE EYE. See fig. 5.5.1.2
4.4.1.2	DRAPES HUNG WITH FULLNESS.		1.1.1.		See lig. 5.5.1.2
	Drapery hung in fullness may be	4.4.5	TRAVELERS.	5.5.2	IASH CLEAT.
	indicated by a wavy line approximating a sine wave having a peak to peak		See fig. 4.4.5.		See fig. 5.5.2
	a sine wave naving a peak to peak amplitude of 3" to 6" in the scale of	5.0	HARDWARE SYMBOLS IN	5.5.3.1	STOP CLEAT.
	the drawing. See fig. 4.4.1.2.		ELEVATION.		See fig. 5.5.3.1
4.4.1.3	DRAPES (LEGS) FLAT HUNG BUT	5.0.1	HIDDEN LINES IN ELEVATIONS.	5.5.3.2	STOP BLOCK.
	SHOWN WITH WAVY LINE. An alternative to Art. 4.4.1.1. Flat hung		Hidden lines in elevation views may be omitted for clarity.		See fig. 5.5.3.2
	drapery may be shown by a thin wavy	511	CODNED DI OCUC AND	5.6.1	BRACE CLEAT.
	line otherwise similar to 4.4.1.2 but having a local note as "LEGS - FLAT	5.1.1	CORNER BLOCKS AND KEYSTONES. See fig. 5.1.1.	E 0 0	See fig. 5.6.1
	HUNG" or equivalent.	5.1.2	OMISSION OF CORNER BLOCKS	5.6.2	KEEPER HOOK. See fig, 5.6.2
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USITT SCENIC DESIGN AND TECHNICAL PRODUCTION GRAPHIC STANDARD

5.6.3 STIFFENING BATTEN

See fig. 5.6.3

5.7.1 ROTO LOCK.

See fig. 5.7.1

5.7.2 PICTURE HOOK AND SOCKET.

See fig. 5.7.2

6.0 MISCELIANEOUS.

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 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.

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.

6.2.2 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.

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.

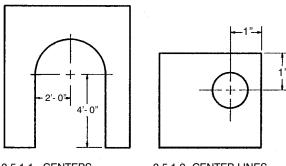
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USITT BOARD OF DIRECTORS
DALLAS, TEXAS
21 NOVEMBER 1992

2.2 - LINE TYPES	TYPE	STYLE	NOTES
	2.2.1 - PLATE BORDER		THICK (2 LINES)
	2.2.2 - VISIBLE OUTLINE		THICK THICK
	2.2.3 - HIDDEN LINE		THIN
	2.2.4 - CEILING LINE	CEILING LINE	THIN - LOCAL NOTE REQUIRED
	2.2.5 - PLASTER LINE	<u>P</u>	THIN
	2.2.6 - SET LINE		THIN
	2.2.7 - CENTER LINE		THIN - LABEL USED ON CENTER LINE OF SET
	2.2.8 - LEADER LINE	OR /	THIN ,TO AN OUTLINE
		TO DIMENSION	TO A SURFACE
	2.2.9 - EXTENSION LINES AND DIMENSION LINES		THIN FULL ARROWHEADS PREFERRED
	2.2.10.1 - SECTION OUTLINE		THICK
	2.2.10.2 - SECTIONED SOLID	·/////////////////////////////////////	THIN - EVENLY SPACED AT 45 DEG TO OBJECT OUTLINE OR AS CLARITY REQUIRES
	2.2.10.3 - SECTIONED SOLID TOO THIN TO CROSSHATCH	-WOOD 1/8" UPSON -WOOD	OBJECT IS SHOWN AS A SOLID LINE IN SCALE THICKNESS
	2.2.10.4 - OUTLINE OF SECTIONED BODIES- ARCHITECTURAL APPLICATIONS		EXTRA THICK-IN LIEU OF CROSS- HATCHING
	2.2.11 - BREAK LINES SHORT AND LONG		THIN - BOTH APPLICATIONS
	2.2.11.5.1 - CUTTING PLANE LINE		THICK
	2.2.11.5.2 - CUTTING PLANE LINE - ALTERNATE		THICK
	2.2.12 - PHANTOM LINE		THIN - USED TO SHOW REPREATING FEATURES, ALTERNATE POSITION, OR ADJACENT PARTS.
	2.2.13 - DATUM LINE		THIN

3.0 - DIMENSIONING

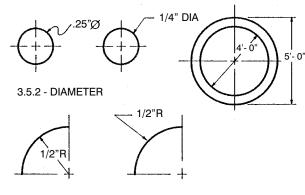
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3.4 - ALL OF THE ABOVE FOR CROWDED DIMENSIONS ONLY

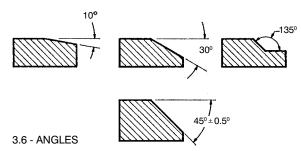


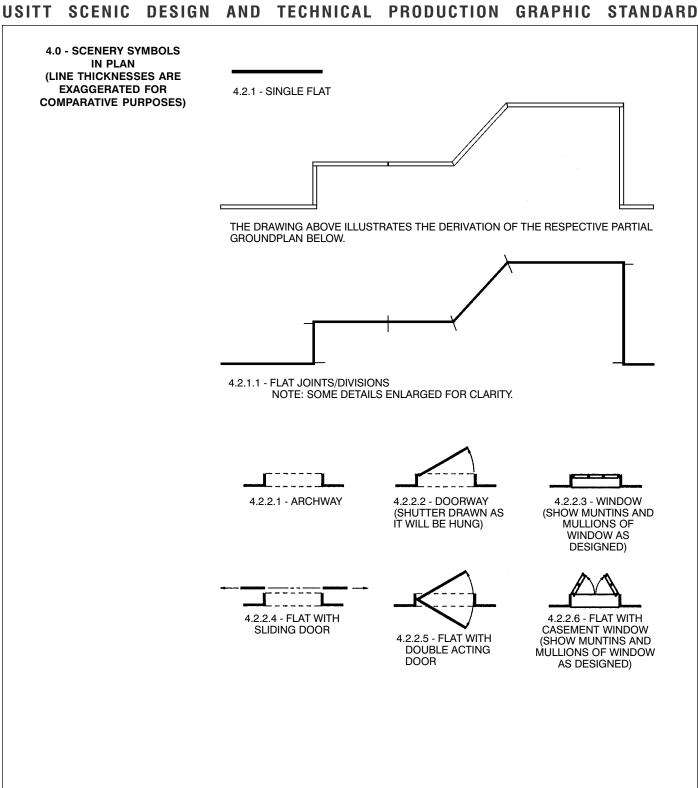
3.5.1.1 - CENTERS

3.5.1.2 -CENTER LINES OFF OBJECT



3.5.3 - RADII





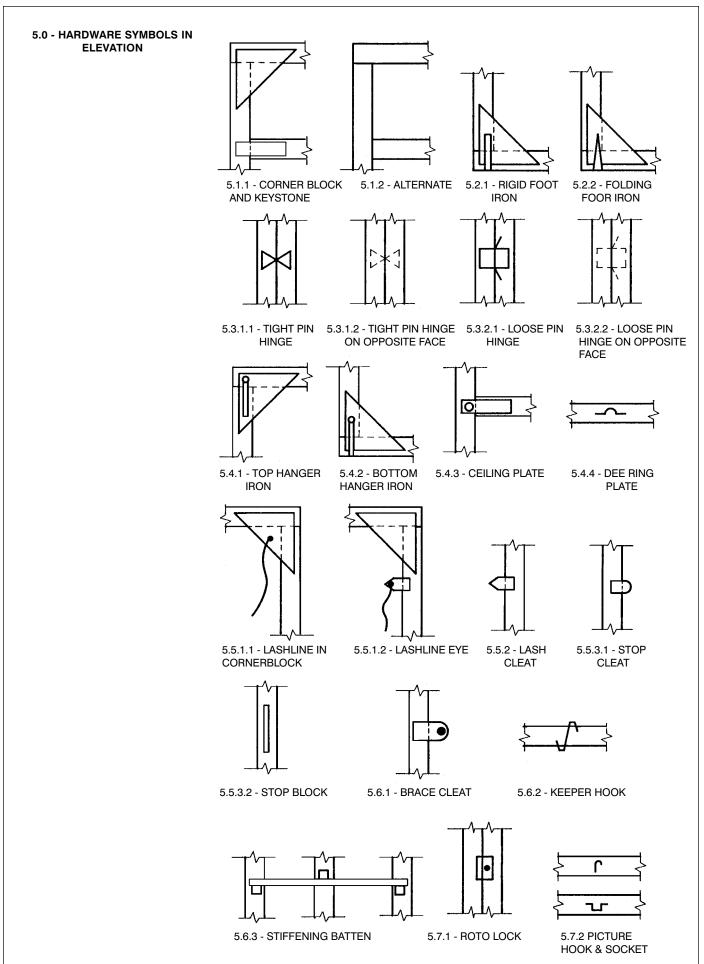
4.3.1 - PLATFORM 4.3.3 - PLATFORM **BOUNDARIES THIN LINE** 6" 24" 3" 6" 7" 9" 4.3.4.2 - IRREGULAR 4.3.4.1 - REGULAR 4.3.5 - RAMP TREAD HEIGHT TREAD HEIGHT STAIRCASE -**STAIRCASE** OPTIONAL FOR **REGULAR TREAD** HEIGHTS 4.4.1.1 - DRAPES WITHOUT 4.4.1.2 - DRAPES WITH **FULLNESS FULLNESS** 4.4.2.1 - BORDERS WITHOUT 4.4.2.2 - BORDERS WITH **FULLNESS FULLNESS** THIN 4.3.3 - DROPS TOUCHING FLOOR THIN-4.4.4 - DROPS OVERHEAD (PAINTED BORDERS) 4.4.5 - TRAVELERS SHOWN WITH FULLNESS IN THE OPEN POSITION

4.0 - SCENERY SYMBOLS IN PLAN (CONTINUED)

6.0 - MISCELLANEOUS

6.1 LETTERING

ABCDEFGHIJKLMNO PQRSTUVWXYZ 0 I 2 3 4 5 6 7 8 9



HAROWARE SYND IN ELEVATION 5.1.2 ALTERNATE 5.2.1 ROW LOOSE PIN 5.3 HINGE 5.3.2. PIN 5,3,12 UNITED STATES INSTITUTE FOR THEATRE TECHNOLOGY, INC.
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