SUPPLEMENT TO THE SPRING 1993 ISSUE OF TD&T

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EVATION

USITT SCENIC DESIGN AND TECHNICAL PRODUCTION GRAPHIC STANDARD

USITT Education Commission

LOOSE PIN 5.5

5.4.3 - CELING PLA

Graphic Standards Board -

Scenic Drafting Subcommittee Members

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> 18 March 1992 (reissued 15 April 1999)

1.0 GENERAL

1.1 INIRODUCTION.

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.

Athough 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.
- Line symbol alterations, clarifications or additions such as the "set line," "break line," "datum line," and "section lines."
- Himination 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.

LINES.

2.0

2.1

LINE WEICHIS. 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. Athick single or double line. See fig. 2.2.1.

- 2.2.1.2 **TITLE BLOCK.** Athick single or double line.
- 2.2.1.3 DRAWING DIVISION. Asingle thick solid line.
- 2.2.2 **VISIBLE EDGE LINE** Asingle thick solid line. See fig. 2.2.2.
- 2.2.3 HIDDEN EDGE LINE. Athin, uniformly dotted line. See fig. 2.2.3.
- 2.2.4 "CFILING LINE." Athin, uniformly dashed line. See fig. 2.2.4. Alocal note, "CHLINGLINE" is recommended.

2.2.5 PLASTER LINE. Athin, uniformly dashed line. See fig.

2.2.5. Alocal note "PL" or "PLASIER LINE' may be required for clarity.

2.2.6 SET LINE. Athin solid line with short breaks

separating it from tormentors or other coplanar features. See fig. 2.2.6. A local note "SL" or "SETLINE" maybe required for clarity.

2.2.7 CENIER LINES.

2.2.7.1 CENIER LINES IN CENERAL APPLICATIONS. Athin 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). Athin 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.

Athin 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 SERPENIINE LEADERS. Athin solid irregularly curved line with an arrow pointing toward the feature referenced. See fig. 2.2.8.

2.2.8.3 IEADERS TO AN OUTLINE. Alinear or serpentine form leader terminated by an arrow pointing to the referenced outline.

- 2.2.8.4 IEADERS TO A SURFACE. Alinear 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. Athick solid line equivalent to a VSIBLE EDCE 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 FIEMS TOO THIN FOR SECTION LINING (i.e., CROSS-HATCH).

> When a surface is too small to crosshatch it maybe 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.

Athick 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. 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 PHANIOMLINE

Athin 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 DATUMLINE.

Athin, 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.

UNTIS.

3.2

3.2.1

3.3

3.3.1

MEIRIC.

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".

GENERAL FORM See fig. 2.2.9.

> **LINE WEIGHT.** See Art. 2.2.9 (Lines: Extension &

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

3.3.2 ORIENIATION.

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

3.3.3 DIMENSION / EXIENSION 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

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 LOCALING CENIERS 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 CENIER 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 LARGE ORJECT EXCEPTION TO STANDARD METHOD FOR DIMENSIONING ROUND ORJECTS. 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 "Hoor Plan" are considered to be synonymous for the purposes of these recommendations and are equally acceptable.

4.1.2 DEFINITION.

"Aground or floor plan is a horizontal section with the cutting plane passing at whatever level (normally4'-0" above the stage floor) required to produce the most descriptive view. This cutting plane maybe 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.

Aflat is shown on a stage ground plan by a solid line of proper scale thickness. See At. 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 FLAIS IN CONTACT. When it is necessary to

show how flats but 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 SIIDING 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 windowhinge 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 PLAIFORMS, 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 PLAIFORMS OF THE SAME HEIGHT IN CONTACT.

When necessary to show platforms of the same height in contact, the respective boundaries maybe delineated by a thin solid line. See fig

4.3.3.

- 4.3.4 PLATFORMAND 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.** Hat 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 FULINESS.** 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.
- 4.4.1.3 DRAPES (IEGS) FLAT HUNG BUT SHOWN WITH WAVYLINE

An alternative to Art. 4.4.1.1. Hat hung drapery may be shown by a thin wavy line otherwise similar to 4.4.1.2 but having a local note as "IECS-HAT HUNG" or equivalent. 4.4.2 OVERHEAD DRAPES (BORDERS).

4.4.2.1 OVERHEAD DRAPES (BORDERS) FLAT HUNG.

Hat 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, way, 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.

4.4.2.3 OVERHEAD DRAPES (BORDERS) FLAT HUNG BUT SHOWN WITH WAVY LINE.

> An alternative to 4.4.2.1. (Overhead Drapes [Borders] Hat Hung). Hat hung overhead drapery (borders) may be shown by a thin, uniformly dotted, wavy line otherwise similar to 4.4.2.2 but having a local note as "BORDERS-HATHUNG" or equivalent.

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.

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

4.4.5 **TRAVELERS.** See fig. 4.4.5.

4.4.4

- 5.0 HARDWARE SYMBOLS IN ELEVATION.
- 5.0.1 HIDDEN LINES IN FLEVATIONS. Hidden lines in elevation views may be omitted for clarity.
- 5.1.1 CORNER BLOCKS AND KEYSTONES. See fig. 5.1.1.
- 5.1.2 OMISSION OF CORNER BLOCKS

AND KEYSTONES.

Corner blocks and keystones maybe omitted from elevations at the discretion of the drafter except as required for clarity. See fig. 5.1.2.

- 5.2.1 RIGID FOOT IRON. See fig. 5.2.1
- 5.2.2 FOLDING FOOT IRON. See fig. 5.2.2
- **5.3.1.1 TIGHT PIN HINGE.** See fig. 5.3.1.1
- 5.3.1.2 TIGHT PIN HINGE ON OPPOSITE FACE See fig. 5.3.1.2
- **5.3.2.1 LOOSE PIN HINGE** See fig. 5.3.2.1
- 5.3.2.2 LOOSE PIN HINGE ON OPPOSITE FACE See fig. 5.3.2.2
- 5.4.1 TOP HANGER IRON. See fig. 5.4.1.
- 5.4.2 BOITIOM HANGER IRON. See fig. 5.4.2
- 5.4.3 CEILING PLAIE. See fig. 5.4.3
- 5.4.4 DEE RING PLAIE. See fig. 5.4.4
- 5.5.1.1 LASHLINE IN CORNER BLOCK. See fig. 5.5.1.1.
- 5.5.1.2 LASHLINE EYE. See fig. 5.5.1.2
- 5.5.2 LASH CIEAT. See fig. 5.5.2
- **5.5.3.1 STOP CIFAT.** See fig. 5.5.3.1
- 5.5.3.2 STOP BLOCK. See fig. 5.5.3.2
- 5.6.1 BRACE CLEAT. See fig. 5.6.1
- 5.6.2 **KEEPER HOOK.** See fig, 5.6.2

- 5.6.3 SIIFFENING BAITEN See fig. 5.6.3
- 5.7.1 **ROIOLOCK.** 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 Cothic 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.

APPROVED BY USITT BOARD OF DIRECTORS DALLAS, TEXAS 21 NOVEMBER 1992

6.2.3 CONIENIS.

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.

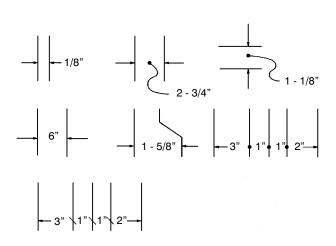
- 4. Drawing number.
- 5. Predominant scale of the drawing.
- 6. Date the drawing was drafted.
- 7. Designer of the production.

8. Drafter if different from the

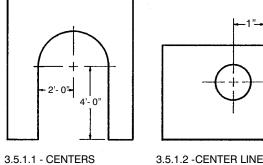
- designer.
- 9. Drawing approval, if applicable.

2.2 - LINE TYPES	TYPE	STYLE	NOTES
	2.2.1 - PLATE BORDER		THICK (2 LINES)
	2.2.2 - VISIBLE OUTLINE		THICK
	2.2.3 - HIDDEN LINE		THIN
	2.2.4 - CEILING LINE		THIN - LOCAL NOTE REQUIRED
	2.2.5 - PLASTER LINE	<u>-</u>	THIN
	2.2.6 - SET LINE	<u>\$</u>	THIN
	2.2.7 - CENTER LINE		THIN - LABEL USED ON CENTER LINE OF SET
	2.2.8 - LEADER LINE		THIN TO AN OUTLINE
		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

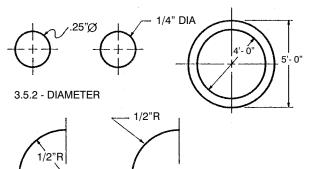
1"



3.4 - ALL OF THE ABOVE FOR CROWDED DIMENSIONS ONLY

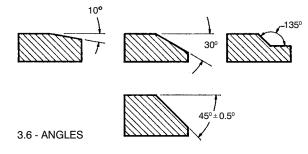


3.5.1.2 -CENTER LINES OFF OBJECT

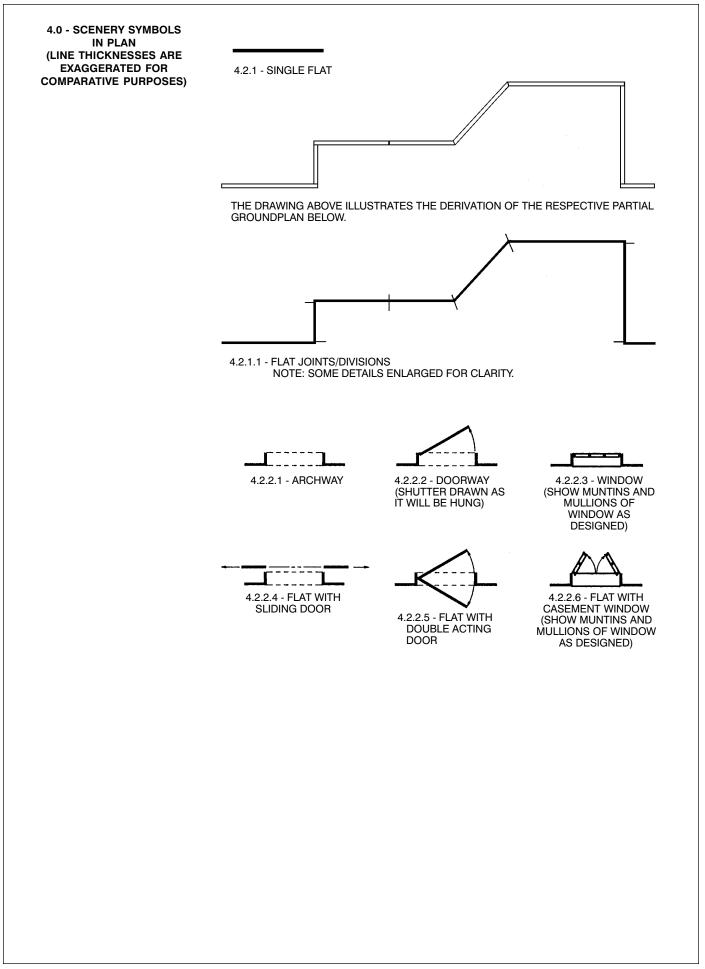


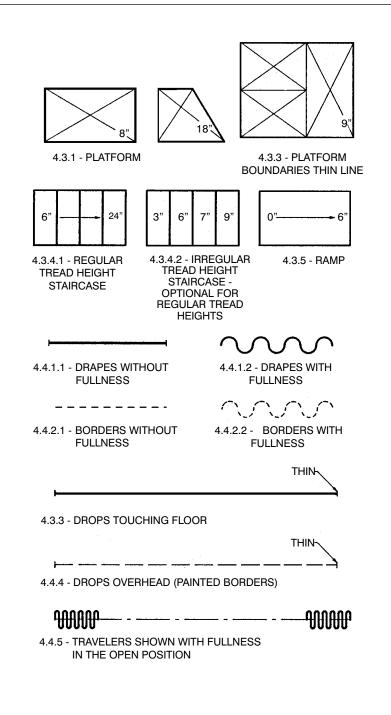
3.5.3 - RADII

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3.0 - DIMENSIONING



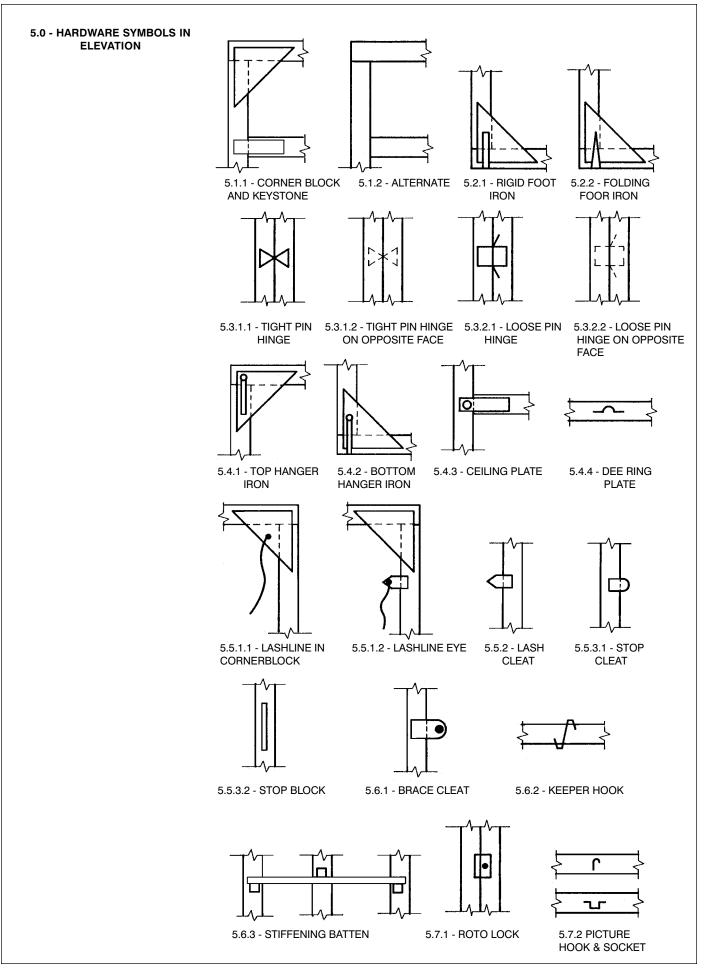


6.0 - MISCELLANEOUS

4.0 - SCENERY SYMBOLS IN PLAN (CONTINUED)

6.1 LETTERING

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



PIN 5.3.1.2

HINGE 5.3.2

5.1.2- ALTERNATE 5.2.1-RON 5.1.2-ALTERNATE

5-2-2-FOLU

LOOSE PIN 5.3

HARDWARESYND

(BLOCK

UNITED STATES INSTITUTE FOR THEATRE TECHNOLOGY, INC. 6443 RIDINGS ROAD SYRACUSE, NY 13206-1114 P: 800-93USITT(938-748P) 000 5.3.1.1 - TIG E: usittno@pppmail.appliedtheory.com www.usitt.org