

# NFPA® 170

## Standard for Fire Safety and Emergency Symbols

### 2012 Edition



NFPA, 1 Batterymarch Park, Quincy, MA 02169-7471  
An International Codes and Standards Organization



Become a  
Member

Subscribe  
to the



Register for  
Seminars, Webinars,  
and Online Courses

Visit the  
NFPA Catalog

**IMPORTANT NOTICES AND DISCLAIMERS CONCERNING NFPA® DOCUMENTS**  
**NOTICE AND DISCLAIMER OF LIABILITY CONCERNING THE USE OF NFPA DOCUMENTS**

NFPA® codes, standards, recommended practices, and guides (“NFPA Documents”), of which the document contained herein is one, are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together volunteers representing varied viewpoints and interests to achieve consensus on fire and other safety issues. While the NFPA administers the process and establishes rules to promote fairness in the development of consensus, it does not independently test, evaluate, or verify the accuracy of any information or the soundness of any judgments contained in NFPA Documents.

The NFPA disclaims liability for any personal injury, property or other damages of any nature whatsoever, whether special, indirect, consequential or compensatory, directly or indirectly resulting from the publication, use of, or reliance on NFPA Documents. The NFPA also makes no guaranty or warranty as to the accuracy or completeness of any information published herein.

In issuing and making NFPA Documents available, the NFPA is not undertaking to render professional or other services for or on behalf of any person or entity. Nor is the NFPA undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances.

The NFPA has no power, nor does it undertake, to police or enforce compliance with the contents of NFPA Documents. Nor does the NFPA list, certify, test, or inspect products, designs, or installations for compliance with this document. Any certification or other statement of compliance with the requirements of this document shall not be attributable to the NFPA and is solely the responsibility of the certifier or maker of the statement.

## **IMPORTANT NOTICES AND DISCLAIMERS CONCERNING NFPA DOCUMENTS**

### **ADDITIONAL NOTICES AND DISCLAIMERS**

#### **Updating of NFPA Documents**

Users of NFPA codes, standards, recommended practices, and guides (“NFPA Documents”) should be aware that these documents may be superseded at any time by the issuance of new editions or may be amended from time to time through the issuance of Tentative Interim Amendments. An official NFPA Document at any point in time consists of the current edition of the document together with any Tentative Interim Amendments and any Errata then in effect. In order to determine whether a given document is the current edition and whether it has been amended through the issuance of Tentative Interim Amendments or corrected through the issuance of Errata, consult appropriate NFPA publications such as the National Fire Codes® Subscription Service, visit the NFPA website at [www.nfpa.org](http://www.nfpa.org), or contact the NFPA at the address listed below.

#### **Interpretations of NFPA Documents**

A statement, written or oral, that is not processed in accordance with Section 6 of the Regulations Governing Committee Projects shall not be considered the official position of NFPA or any of its Committees and shall not be considered to be, nor be relied upon as, a Formal Interpretation.

#### **Patents**

The NFPA does not take any position with respect to the validity of any patent rights referenced in, related to, or asserted in connection with an NFPA Document. The users of NFPA Documents bear the sole responsibility for determining the validity of any such patent rights, as well as the risk of infringement of such rights, and the NFPA disclaims liability for the infringement of any patent resulting from the use of or reliance on NFPA Documents.

NFPA adheres to the policy of the American National Standards Institute (ANSI) regarding the inclusion of patents in American National Standards (“the ANSI Patent Policy”), and hereby gives the following notice pursuant to that policy:

**NOTICE:** The user’s attention is called to the possibility that compliance with an NFPA Document may require use of an invention covered by patent rights. NFPA takes no position as to the validity of any such patent rights or as to whether such patent rights constitute or include essential patent claims under the ANSI Patent Policy. If, in connection with the ANSI Patent Policy, a patent holder has filed a statement of willingness to grant licenses under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license, copies of such filed statements can be obtained, on request, from NFPA. For further information, contact the NFPA at the address listed below.

#### **Law and Regulations**

Users of NFPA Documents should consult applicable federal, state, and local laws and regulations. NFPA does not, by the publication of its codes, standards, recommended practices, and guides, intend to urge action that is not in compliance with applicable laws, and these documents may not be construed as doing so.

#### **Copyrights**

NFPA Documents are copyrighted by the NFPA. They are made available for a wide variety of both public and private uses. These include both use, by reference, in laws and regulations, and use in private self-regulation, standardization, and the promotion of safe practices and methods. By making these documents available for use and adoption by public authorities and private users, the NFPA does not waive any rights in copyright to these documents.

Use of NFPA Documents for regulatory purposes should be accomplished through adoption by reference. The term “adoption by reference” means the citing of title, edition, and publishing information only. Any deletions, additions, and changes desired by the adopting authority should be noted separately in the adopting instrument. In order to assist NFPA in following the uses made of its documents, adopting authorities are requested to notify the NFPA (Attention: Secretary, Standards Council) in writing of such use. For technical assistance and questions concerning adoption of NFPA Documents, contact NFPA at the address below.

#### **For Further Information**

All questions or other communications relating to NFPA Documents and all requests for information on NFPA procedures governing its codes and standards development process, including information on the procedures for requesting Formal Interpretations, for proposing Tentative Interim Amendments, and for proposing revisions to NFPA documents during regular revision cycles, should be sent to NFPA headquarters, addressed to the attention of the Secretary, Standards Council, NFPA, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02169-7471; email: [stds\\_admin@nfpa.org](mailto:stds_admin@nfpa.org)

For more information about NFPA, visit the NFPA website at [www.nfpa.org](http://www.nfpa.org).

Copyright © 2012 National Fire Protection Association®. All Rights Reserved.

**NFPA® 170**  
**Standard for**  
**Fire Safety and Emergency Symbols**  
**2012 Edition**

This edition of NFPA 170, *Standard for Fire Safety and Emergency Symbols*, was prepared by the Technical Committee on Fire Safety and Emergency Symbols. It was issued by the Standards Council on December 13, 2011, with an effective date of January 2, 2012, and supersedes all previous editions.

This edition of NFPA 170 was approved as an American National Standard on January 2, 2012.

**Origin and Development of NFPA 170**

The 1994 edition of NFPA 170 represented the completion of an effort to combine four previously separate documents that covered fire safety symbols for different purposes. These documents were the following:

NFPA 171, *Public Firesafety Symbols*

NFPA 172, *Fire Protection Symbols for Architectural and Engineering Drawings*

NFPA 174, *Fire Protection Symbols for Risk Analysis Diagrams*

NFPA 178, *Symbols for Fire Fighting Operations*

The Technical Committee on Fire Safety Symbols believed that placing all fire safety symbols in one document made it easier for users of symbols to find the one(s) most appropriate for their application. It also eliminated duplication between these and eventually other NFPA documents.

The first edition of NFPA 170, in 1991, placed these four documents in one document but did not combine them, except for definitions that were in each document.

For the second edition of NFPA 170, in 1994, the Technical Committee on Fire Safety Symbols completely restructured the text into a logical and cohesive arrangement. The duplication of symbols that occurred during the aforementioned consolidation of documents was eliminated. New symbols added included those for *campfire prohibitions*, *smoke barriers*, *illuminated exit signs*, and *belowground tanks*.

For the third (1996) edition of NFPA 170, changes included the following:

- (1) Upgrading recommendations on *pre-incident planning* to requirements
- (2) Adding new symbols for *pull station*, *area of refuge*, and *cooking prohibition*
- (3) Clarifying the symbols for *smoke detectors*, *battery-powered emergency lights*, and *fire service/emergency telephone station*
- (4) Recognizing the phaseout of Halon now taking place and the introduction of *clean agents*

The 1999 edition further recognized the introduction of clean agents by adding new symbols for *clean agent* and *water mist systems*. A new appendix (Appendix C) was added to include symbols that can be used for life safety planning.

The 2002 edition was reformatted to conform to the *Manual of Style for NFPA Technical Committee Documents*. Symbols for fire alarm system components were added for consistency with NFPA 72®, *National Fire Alarm Code*®.

In 2004, the scope of the committee was expanded to include emergency symbols to allow emergency mapping symbols in a new Chapter 8.

The 2006 edition of NFPA 170 included the refinement of exit symbology for better recognition of exit, arrow, and flame symbols that are consistent with international standards.

A new Chapter 8, Symbology for Emergency Management Mapping, was added to assist the user in the preparation for, prevention of, protection against, response to, and recovery from threats to the nation's population centers and critical infrastructure from terrorist, criminal, accidental, or natural origin.

The symbols in Chapter 8 were the result of efforts by the Federal Geographic Data Committee — Homeland Security Working Group (<http://www.fgdc.gov/fgdc/homeland/index.html>). The symbols were included in the 2006 edition so that they can be processed through an accredited standards-writing organization and made available to the public.

The 2009 edition of NFPA 170 included a new chapter (Chapter 9) that provided guidance on the development of emergency evacuation diagrams and plans.

The 2012 edition of NFPA 170 includes a new Chapter 7 and a new Chapter 8, previously all encompassed within the old Chapter 6. This affected symbol detail for various device symbols such as fire alarm devices, fire sprinkler devices, electronic fire and smoke detection, and so forth. This action better organizes existing symbols within the standard for the user.

## Technical Committee on Fire Safety and Emergency Symbols

**Brad Schiffer, Chair**  
Brad Schiffer/Taxis, Inc., FL [SE]

**Thomas F. Bresnahan,** BC Associates, IL [SE]  
Rep. American Society of Safety Engineers  
**Phillip A. Brown,** American Fire Sprinkler Association,  
Inc., TX [IM]  
**Randal G. Brown,** Randal Brown & Associates, Ltd.,  
Canada [SE]  
**David C. Cox,** Fire Safety Displays Company, MI [M]  
**S. Stephen Mathew,** Siemens Industry, Inc., NJ [M]  
Rep. National Electrical Manufacturers Association

**James M. Mundy, Jr.,** Asset Protection Associates, Ltd.,  
NY [M]  
Rep. Automatic Fire Alarm Association, Inc.  
**Edward P. Quinn, Jr.,** Selective Insurance, NJ [I]  
**Thomas R. Wood,** Boca Raton Fire Rescue Services,  
FL [E]

### Alternates

**David F. Johnson,** Randal Brown & Associates Ltd.,  
Canada [SE]  
(Alt. to R. G. Brown)  
**Dana C. Ploof,** Tyco/SimplexGrinnell, MA [M]  
(Alt. to J. M. Mundy, Jr.)

**Thomas G. Wellen,** American Fire Sprinkler Association,  
Inc., TX [IM]  
(Alt. to P. A. Brown)

**Jonathan Hart,** NFPA Staff Liaison

*This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.*

NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

**Committee Scope:** This Committee shall have primary responsibility for documents on fire safety and emergency symbols including those for building design plans, investigation diagrams, maps, and for public fire safety and emergency. It shall coordinate its work with NFPA technical committees and other groups dealing with subjects to which fire safety symbols apply.

## Contents

<b>Chapter 1 Administration</b> .....	<b>170- 5</b>	<b>Chapter 8 Symbols for Use in Electronic Fire and Smoke Detection and Notification System Drawings and Insurance Diagrams</b> .....	<b>170-30</b>
1.1 Scope .....	170- 5	8.1 Introduction .....	170-30
1.2 Purpose .....	170- 5	8.2 Symbols for Control Panels .....	170-30
1.3 Retroactivity .....	170- 5	8.3 Symbols for Fire Alarms, Detection, and Related Equipment — Signal Initiating Devices and Activation Switches .....	170-31
1.4 Equivalency .....	170- 5	8.4 Notification Appliances .....	170-34
1.5 Units .....	170- 5	8.5 Related Equipment .....	170-36
<b>Chapter 2 Referenced Publications</b> .....	<b>170- 5</b>	8.6 Symbols for Smoke/Pressurization Control .....	170-36
2.1 General .....	170- 5	<b>Chapter 9 Symbols for Use in Pre-Incident Planning Sketches</b> .....	<b>170-37</b>
2.2 NFPA Publications .....	170- 5	9.1 Introduction .....	170-37
2.3 Other Publications .....	170- 5	9.2 Access Features, Assessment Features, Ventilation Features, and Utility Shutoffs .....	170-37
2.4 References for Extracts in Mandatory Sections .....	170- 5	9.3 Detection/Extinguishing Equipment .....	170-38
<b>Chapter 3 Definitions</b> .....	<b>170- 6</b>	9.4 Water Flow Control Valves and Water Sources .....	170-38
3.1 General .....	170- 6	9.5 Equipment Rooms .....	170-39
3.2 NFPA Official Definitions .....	170- 6	9.6 Identification of Hazardous Materials .....	170-39
3.3 General Definitions .....	170- 6	<b>Chapter 10 Symbolology for Emergency Management Mapping</b> .....	<b>170-39</b>
<b>Chapter 4 Symbols for General Use</b> .....	<b>170- 6</b>	10.1 Damage Operational Symbols .....	170-39
4.1 Introduction .....	170- 6	10.2 Operations Symbolology .....	170-40
4.2 Symbols for General Use .....	170- 6	10.3 Incidents Symbolology .....	170-46
4.3 Class of Fire Symbols .....	170- 6	10.4 Natural Events Symbolology .....	170-52
<b>Chapter 5 Symbols for Use by the Fire Service</b> ....	<b>170-13</b>	10.5 Infrastructures Symbolology .....	170-55
5.1 Introduction .....	170-13	<b>Chapter 11 Emergency Evacuation Diagrams and Plans</b> .....	<b>170-63</b>
5.2 Symbols for Use by the Fire Service .....	170-13	11.1 Introduction .....	170-63
<b>Chapter 6 Symbols for Use in Architectural and Engineering Drawings and Insurance Diagrams</b> .....	<b>170-17</b>	11.2 Composition .....	170-63
6.1 Introduction .....	170-17	11.3 Orientation .....	170-64
6.2 Symbols for Site Features .....	170-17	11.4 Information Shown .....	170-64
6.3 Symbols for Building Construction .....	170-17	11.5 Construction .....	170-64
<b>Chapter 7 Symbols for Use in Water Supply, Extinguishing, and Sprinkler System Drawings and Insurance Diagrams</b> .....	<b>170-21</b>	<b>Annex A Explanatory Material</b> .....	<b>170-64</b>
7.1 Introduction .....	170-21	<b>Annex B Additional Explanatory Information on Chapters 1 Through 6</b> .....	<b>170-68</b>
7.2 Water Supply and Distribution Symbols ...	170-21	<b>Annex C Informational References</b> .....	<b>170-72</b>
7.3 Reserved .....	170-25	<b>Index</b> .....	<b>170-73</b>
7.4 Symbols Related to Means of Egress .....	170-25		
7.5 Indicating Appliances .....	170-25		
7.6 Symbols for Fire Extinguishing Systems ...	170-25		
7.7 Symbols for Portable Fire Extinguishers ...	170-28		
7.8 Symbols for Fire-Fighting Equipment. ....	170-29		
7.9 Miscellaneous Symbols .....	170-29		

# NFPA 170

## Standard for

### Fire Safety and Emergency Symbols

#### 2012 Edition

**IMPORTANT NOTE:** This NFPA document is made available for use subject to important notices and legal disclaimers. These notices and disclaimers appear in all publications containing this document and may be found under the heading “Important Notices and Disclaimers Concerning NFPA Documents.” They can also be obtained on request from NFPA or viewed at [www.nfpa.org/disclaimers](http://www.nfpa.org/disclaimers).

**NOTICE:** An asterisk (\*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.

Changes other than editorial are indicated by a vertical rule beside the paragraph, table, or figure in which the change occurred. These rules are included as an aid to the user in identifying changes from the previous edition. Where one or more complete paragraphs have been deleted, the deletion is indicated by a bullet (•) between the paragraphs that remain.

A reference in brackets [ ] following a section or paragraph indicates material that has been extracted from another NFPA document. As an aid to the user, the complete title and edition of the source documents for extracts in mandatory sections of the document are given in Chapter 2 and those for extracts in informational sections are given in Annex C. Extracted text may be edited for consistency and style and may include the revision of internal paragraph references and other references as appropriate. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

Information on referenced publications can be found in Chapter 2 and Annex C.

## Chapter 1 Administration

**1.1 Scope.** This standard presents symbols used for fire safety, emergency, and associated hazards.

**1.2 Purpose.** The purpose of this standard is to standardize the symbols used in representing fire safety, emergency, and associated hazards.

**1.3 Retroactivity.** The provisions of this standard reflect a consensus of what is necessary to provide an acceptable degree of protection from the hazards addressed in this standard at the time the standard was issued.

**1.3.1** Unless otherwise specified, the provisions of this standard shall not apply to facilities, equipment, structures, or installations that existed or were approved for construction or installation prior to the effective date of the standard. Where specified, the provisions of this standard shall be retroactive.

**1.3.2** In those cases where the authority having jurisdiction determines that the existing situation presents an unacceptable degree of risk, the authority having jurisdiction shall be permitted to apply retroactively any portions of this standard deemed appropriate.

**1.3.3** The retroactive requirements of this standard shall be permitted to be modified if their application clearly would be impractical in the judgment of the authority having jurisdiction, and only where it is clearly evident that a reasonable degree of safety is provided.

**1.4 Equivalency.** Nothing in this standard is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this standard.

**1.4.1** Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency.

**1.4.2** The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.

**1.5 Units.** Metric units of measurement used in this standard shall be in accordance with the International System of Units (SI). One unit (liter), outside of but recognized by SI, is commonly used in international fire protection. For conversion factors, see Table 1.5.

**Table 1.5 Metric Conversion Factors**

Name of Unit	Unit Symbol	Conversion Factor
Liter	L	1 gal = 3.785 L
Cubic decimeter	dm <sup>3</sup>	1 gal = 3.785 dm <sup>3</sup>
Pascal	Pa	1 psi = 6894.757 Pa
Meter	m	1 ft = 0.3048 m
Millimeter	mm	1 in. = 25.4 mm

## Chapter 2 Referenced Publications

**2.1 General.** The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

**2.2 NFPA Publications.** National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 101®, *Life Safety Code*®, 2012 edition.

NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*, 2012 edition.

**2.3 Other Publications.**

**2.3.1 ANSI Publications.** American National Standards Institute, Inc., 25 West 43rd Street, 4th Floor, New York, NY 10036.

ANSI A117.1, *Accessible and Usable Buildings and Facilities*, 2003.

ANSI Z535.1, *Safety Color Code*, 2002.

**2.3.2 NECA Publications.** National Electrical Contractors Association, 3 Bethesda Metro Center, Suite 1100, Bethesda, MD 20814.

NECA 100, *Symbols for Electrical Construction Drawings*, 1999.

**2.3.3 Other Publications.**

*Merriam-Webster's Collegiate Dictionary*, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

**2.4 References for Extracts in Mandatory Sections.**

NFPA 10, *Standard for Portable Fire Extinguishers*, 2010 edition.



## Chapter 3 Definitions

**3.1 General.** The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster's Collegiate Dictionary*, 11th edition, shall be the source for the ordinarily accepted meaning.

### 3.2 NFPA Official Definitions.

**3.2.1\* Approved.** Acceptable to the authority having jurisdiction.

**3.2.2\* Authority Having Jurisdiction (AHJ).** An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

**3.2.3 Labeled.** Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

**3.2.4\* Listed.** Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

**3.2.5 Shall.** Indicates a mandatory requirement.

**3.2.6 Should.** Indicates a recommendation or that which is advised but not required.

### 3.3 General Definitions.

**3.3.1 Pre-Incident Planning.** A written document resulting from the gathering of general and detailed information/data to be used by public emergency response agencies and private industry for determining the response to reasonable anticipated emergency incidents at a specific facility.

**3.3.2\* Referent.** An object or concept (message) represented by a symbol.

**3.3.3 Self-Luminous.** A type of sign that is self-energized with respect to luminosity and requires no external power source.

**3.3.4\* Supplementary Indicators.** Figures, numbers, subscripts, or letter abbreviations used to enhance the effectiveness of symbols.

**3.3.5\* Symbol.** A graphic representation of a referent.

## Chapter 4 Symbols for General Use

### 4.1 Introduction.

**4.1.1** This chapter presents general referents and symbols for fire prevention and visual alerting that shall be used for fire and related life safety emergencies.

#### 4.1.2 Purpose.

**4.1.2.1** This chapter shall provide uniform fire safety symbols to improve communication wherever signs and symbols are employed to provide fire safety information.

**4.1.2.2** This chapter provides uniformity in the selection of symbols that shall be designed to assist in locating exits, fire safety alerting equipment, and safe areas.

**4.1.2.3\*** The fundamental imagery for symbols, as well as their background color and shape, shall be designated in this chapter.

#### 4.1.3\* Symbol Presentation.

**4.1.3.1** The orientation for prohibition symbols shall not be altered from that shown in this chapter.

**4.1.3.2** The symbol background shape shall be as specified in Table 4.2.

**4.1.3.2.1\*** For prohibition symbols, a circle and diagonal slash (at 45 degrees from upper left to lower right) shall be used.


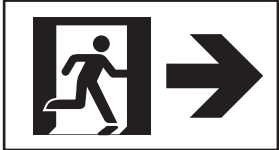

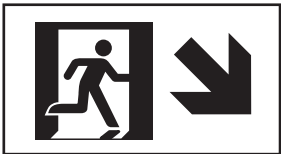
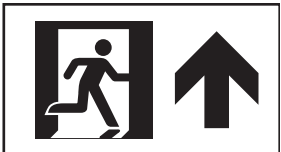


**4.1.3.3 Symbol Color.** The symbol color shall meet the requirements of ANSI Z535.1, *Safety Color Code*.

**4.1.3.4\*** Symbols shall be permitted to be used in combination with other symbols, either vertically or horizontally, on the same sign or on separate signs adjacent to each other.

**4.2\* Symbols for General Use.** The symbols for general use shall be as given in Table 4.2.

**4.3 Class of Fire Symbols.** The symbols for class of fire shall be as given in Figure 4.3(a) and Figure 4.3(b).

Table 4.2 Symbols for General Use

Symbol	Characteristics	Application	Example
<b>Emergency Exit</b> 	Square field Background green Door opening white Image in green	The identification and location of an emergency exit	The location of exit for use in a fire emergency
<b>Emergency Exit Use of Arrows — Rectangular Field</b> 	Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red	The identification and location of a route to an emergency exit	Progress to the right
	Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red	The identification and location of a route to an emergency exit	Progress up and to the right
	Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red	The identification and location of a route to an emergency exit	Progress down and to the right
	Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red	The identification and location of a route to an emergency exit	Progress forward
	Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red	The identification and location of a route to an emergency exit	Progress down
	Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red	The identification and location of a route to an emergency exit	Progress to the left

(continues)

Table 4.2 Continued

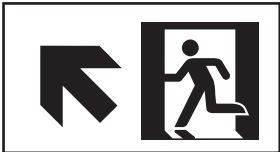
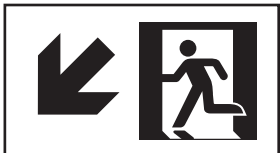
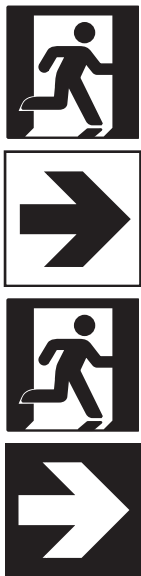





Symbol	Characteristics	Application	Example
	Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red	The identification and location of a route to an emergency exit	Progress up and to the left
	Painted version: Background color white Arrows red or black Backlit version: Doorway, arrows, and lettering in green or red	The identification and location of a route to an emergency exit	Progress down and to the left
<b>Emergency Exit Route (Combination of Two Symbols)</b> 	Square field Background green Door opening white Image in green For arrows: Square field Green arrow on white background or white arrow on green background	The identification and location of a route to be used in an emergency	The direction to a fire exit
<b>Accessible Emergency Exit (Combination of Two Symbols)</b> 	Square field Background green Door opening white Image in green International symbol of accessibility per ANSI A117.1, <i>Accessible and Usable Buildings and Facilities</i>	The identification of a route that leads to an emergency exit that is accessible to disabled users, as specified by ANSI A117.1, <i>Accessible and Usable Buildings and Facilities</i>	The location of a route toward a fire exit that is accessible to disabled users

Table 4.2 Continued

Symbol	Characteristics	Application	Example
<b>Accessible Emergency Exit Route</b> <b>(Combination of Three Symbols)</b> 	<p>Square field Background green Door opening white Image in green</p> <p>International symbol of accessibility per ANSI A117.1, <i>Accessible and Usable Buildings and Facilities</i></p> <p>For arrows: Square field Green arrow on white background or white arrow on green background</p>	The identification of a route that leads to an emergency exit that is accessible to disabled users	The location of the route toward a fire exit that is accessible to disabled users
<b>Not an Exit</b> 	<p>Square field Background white Door frame green Door opening white Image in black Red circle and diagonal slash</p>	The identification of doors that do NOT lead to an exit	The location of an interior door such as one leading to a closet, an interior courtyard, or a basement
<b>Use Stairs in Case of Fire</b> 	<p>Square field Red flame Black figure White background</p>	An instruction to the user to use stairs (downward egress) in case of fire	The identification that stairs are to be used in case of fire
<b>Use Stairs in Case of Fire</b> 	<p>Square field Red flame Black figure White background</p>	An instruction to the user to use stairs (upward egress) in case of fire	The identification that stairs are to be used in case of fire

(continues)

Table 4.2 *Continued*










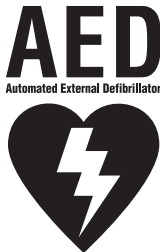


Symbol	Characteristics	Application	Example
<b>Do Not Use Elevator in Case of Fire</b> 	Rectangular field Red flame Black figures White background Red circle and slash	An instruction not to use elevators in case of fire	Posted near elevator call button
<b>No Open Flame — Flame</b> 	Circular field Red circle and slash Black image White background	The identification of areas in which open flame is prohibited	The identification of areas, such as combustible storage areas, gas stations, and hazardous areas
<b>No Open Flame — Lighted Match</b> 	Circular field Red circle and slash Black image White background	An instruction not to use lighted matches	Where posted, the use of matches is prohibited
<b>No Smoking</b> 	Circular field Red circle and slash Black image White background	The identification of areas in which smoking is prohibited	The identification of areas, such as those for flammable liquid storage, where smoking could lead to fire or explosion
<b>No Campfires</b> 	Circular field Red circle and slash Black image White background	The identification of areas where campfires are not permitted	The identification of areas, such as municipal parks, where campfires are not permitted

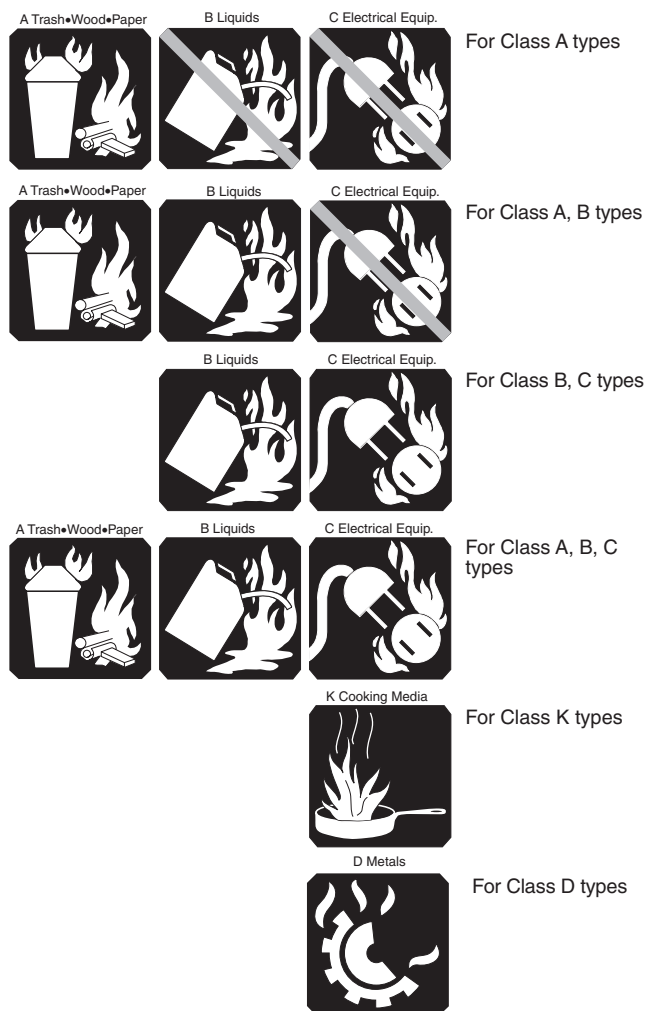
Table 4.2 *Continued*

Symbol	Characteristics	Application	Example
<b>Manual Station — Pull Station/Fire Alarm Box</b> 	Rectangular field Red background White flame White hand White box White horn White wave	An instruction to actuate an alarm-initiating device in a fire emergency	Posted above a manually activated initiating device
<b>No Cooking</b> 	Square field White background Red flame Black pot and steam Red circle and slash	An instruction not to cook food in an area	Posted inside a guest room in a hotel or a student room in a college dormitory
<b>Area of Refuge</b> 	Square field White background Red flame	The identification of an area of refuge	A designated area of refuge to be used in a fire emergency
<b>No Hanger</b> 	Red circle and slash Black image	To prohibit hanging clothes or other items from sprinklers	Where posted
<b>Automated External Defibrillator (AED)</b> 	Square field White background Red heart White bolt through the heart Black lettering	To identify the location of AEDs	Posted in airports and other places of assembly

(continues)

Table 4.2 Continued

Symbol	Characteristics	Application	Example
<div>Fire Extinguisher</div> 	Square field Red background White symbol	For everyday use in workplaces and public areas; supplementary text sign can be used to increase comprehension	Fire safety signage, manuals, and notices
<div>Fire Hose or Standpipe</div> 	Square field Red background White symbol	For everyday use in workplaces and public areas; supplementary text sign can be used to increase comprehension	Fire safety signage, manuals, and notices



Note: Recommended colors, per PMS (Pantone Matching System) include the following:

BLUE — 299  
RED — Warm Red

**FIGURE 4.3(a) Recommended Marking System. [10:Figure B.1.1]**

## Chapter 5 Symbols for Use by the Fire Service

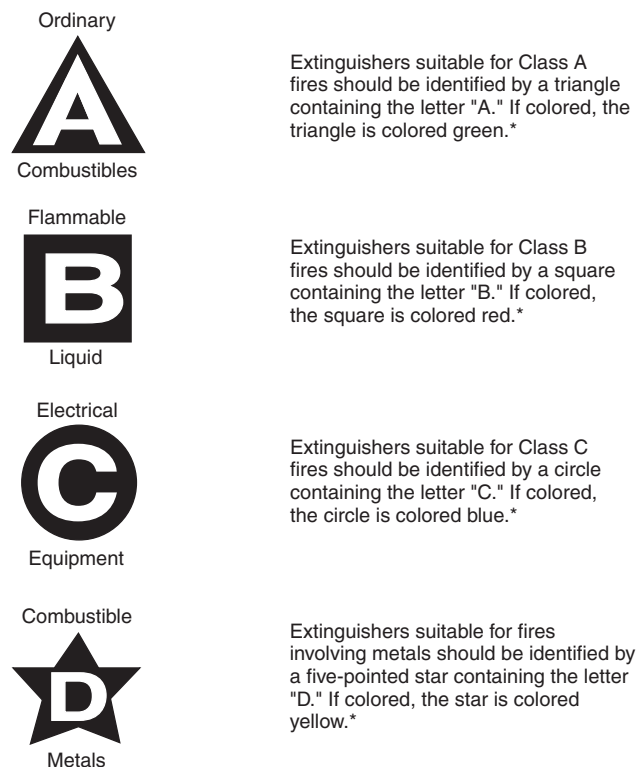
### 5.1 Introduction.

**5.1.1\*** This chapter presents standard referents and symbols that shall be used for visually alerting fire fighters and other emergency responders during fire and related emergencies.

**5.1.2\*** Fundamental shapes of symbols, as well as the background color and shape, shall be as designated in this chapter.

#### 5.1.3\* Symbol Presentation.

**5.1.3.1\* Symbol Shapes.** The shape of symbols shall be as illustrated in Section 5.2.



\* Recommended colors, per PMS (Pantone Matching System) include the following:

GREEN — Basic Green  
RED — 192 Red  
BLUE — Process Blue  
YELLOW — Basic Yellow

**FIGURE 4.3(b) Letter-Shaped Symbol Markings. [10:Figure B.2.2]**

### 5.1.3.2 Symbol Background.

**5.1.3.2.1** The symbol background shall be as specified in Table 5.2.

**5.1.3.2.2** The symbol background color shall be red, white, or blue as designated and shall meet the requirements of ANSI Z535.1, *Safety Color Code*, for safety red, white, or blue.

**5.1.3.3 Symbol Color.** The symbol color shall be safety white or blue and shall meet the requirements of ANSI Z535.1, *Safety Color Code*, for safety white or blue.

**5.1.3.4 Symbol Orientation.** Symbol orientation shall not be altered from that shown in this chapter.

**5.2\* Symbols for Use by the Fire Service.** The symbols for use by the fire service shall be as given in Table 5.2.



Table 5.2 Symbols for Use by the Fire Service

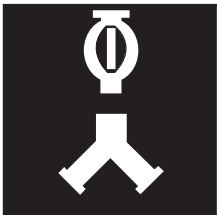
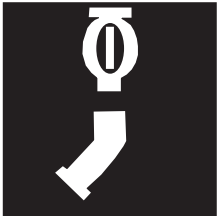
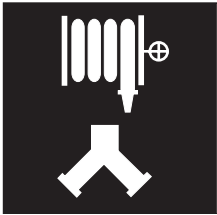




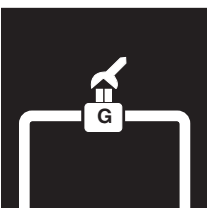
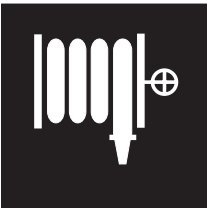
Symbol	Characteristics	Application	Examples
<b>Fire Department Automatic Sprinkler Connection — Siamese</b> 	Square field Red background White symbol	The identification and location of a fire department automatic sprinkler connection	The location of a single automatic sprinkler connections on buildings  The location of siamese freestanding automatic sprinkler connections
<b>Fire Department Automatic Sprinkler Connection — Single</b> 	Square field Red background White symbol	The identification and location of a fire department automatic sprinkler connection	The location of a single automatic sprinkler connection on buildings  The location of a single freestanding automatic sprinkler connection
<b>Fire Department Standpipe Connection</b> 	Square field Red background White symbol	The identification and location of a fire department standpipe connection	The location of standpipe connections on buildings and structures  The location of freestanding standpipe connections
<b>Fire Department Combined Automatic Sprinkler/Standpipe Connection</b> 	Square field Red background White symbol	The identification and location of a fire department combined automatic sprinkler/standpipe connection	The location of combined sprinkler/standpipe connections on buildings  The location of freestanding combined sprinkler/standpipe connections

Table 5.2 *Continued*

Symbol	Characteristics	Application	Examples
<b>Fire Hydrant (All Types)</b> 	Square field Red background White symbol	The identification and location of a fire hydrant	The location of fire hydrants, wall hydrants, underground hydrants, or other fire-fighting water supplies
<b>Automatic Sprinkler Control Valve</b> 	Square field Red background White symbol	The identification and location of an automatic sprinkler control valve	The location of control valves for automatic sprinkler systems  On doors of rooms containing control valves
<b>Electric Panel or Electric Shutoff</b> 	Square field Blue background White symbol	The identification and location of an electrical panel or other electric shutoff device	The location of electric panels or other electric control devices that can be located in basements or mechanical rooms
<b>Gas Shutoff Valve</b> 	Square field Red background White symbol Red letter G	The location of a gas shutoff valve	The location of gas shutoff valves  On doors of rooms containing gas shutoff valves
<b>Fire-Fighting Hose or Standpipe Outlet</b> 	Square field Red background White symbol	The location of a fire-fighting hose or a standpipe outlet	The location of interior fire-fighting hose stations and standpipe outlets in buildings and structures  The location on bridges or elevated highways

(continues)

Table 5.2 *Continued*








Symbol	Characteristics	Application	Examples
<b>Fire Extinguisher</b> 	Square field Red background White symbol	The location of a fire extinguisher	The location of fire extinguishers in buildings and exterior locations
<b>Directional Arrow</b> 	Square field Background green to correspond to accompanying sign White symbol	Direction to the location of fire-fighting equipment or utility; always used in conjunction with, and adjacent to, another symbol indicating the particular equipment or utility	
<b>Diagonal Directional Arrow</b> 	Square field Background green to correspond to accompanying sign White symbol	Direction to the location of fire-fighting equipment or utility; always used in conjunction with, and adjacent to, another symbol indicating the particular equipment or utility	
<b>Child Care Center</b> 	Square field Blue infant and hands White background	The identification and location of child care centers	On the door opening into child care centers  At a fire department command or access point indicating presence and location of child care centers
<b>Emergency Telephone</b> 	Red background White phone	The identification and location of fire service or emergency telephone system	
<b>No Fire Fighting</b> 	Octagonal field White background Black truck Red prohibition symbol	To be posted on, near, or on the approach to buildings where fire fighting is not to occur	Explosives bunkers, frangible buildings, or contaminated buildings

Table 5.2 Continued

Symbol	Characteristics	Application	Examples
<b>Self-Contained Breathing Apparatus (SCBA)</b> 	Square field White symbol Green background	To indicate the location of SCBA, breathing air connections, or refill location	For SCBA fill locations in high-rise buildings

## Chapter 6 Symbols for Use in Architectural and Engineering Drawings and Insurance Diagrams

### 6.1\* Introduction.

**6.1.1** This chapter presents symbols that shall be used in drawings and diagrams.

#### 6.1.2\* Symbol Presentation.

**6.1.2.1\* Symbol Shapes.** The shape of symbols shall be as illustrated in Sections 6.2 through 7.9.

**6.1.2.2 Screened Lines.** Screened lines in the chapter shall not be considered part of the symbol but shall be used to represent the piping, wiring, or mounting surface associated with the symbol.

**6.1.2.3 Symbol Scale.** All scales for symbols on any one drawing shall be the same relative size.

**6.1.2.4\* Symbol Orientation.** Symbols shall be oriented to the walls, piping, electrical lines, and so forth, to which they are attached.

### 6.2 Symbols for Site Features.

#### 6.2.1 Buildings.

**6.2.1.1** The exterior walls of buildings shall be outlined in single thickness lines if other than fire rated and double thickness lines if fire rated.

**6.2.1.2\*** The perimeter of canopies, loading docks, and other open-walled structures shall be shown by broken lines.

**6.2.2 Railroad Tracks.** Railroad tracks shall be shown by a single line with cross dashes, as shown in Figure 6.2.2.



FIGURE 6.2.2 Symbol for Railroad Tracks.

**6.2.3\* Streets.** Streets shall be shown.

**6.2.4\* Bodies of Water.** Rivers, lakes, and so forth, shall be outlined.

#### 6.2.5 Fences.

**6.2.5.1** Fences shall be shown by lines with x's evenly spaced.

**6.2.5.2\*** Gates shall be shown.

**6.2.6 Property Lines.** The notation given in Figure 6.2.6 shall indicate property lines.



FIGURE 6.2.6 Notation Indicating Property Lines.

**6.2.7 Fire Department Access.** The symbol for fire department access shall be as shown in Figure 6.2.7.



FIGURE 6.2.7 Symbol for Fire Department Access.

**6.2.8 Other Site Features.** For other fire protection site features, Section 7.2 shall be viewed.


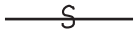













### 6.3 Symbols for Building Construction.

**6.3.1\* Types of Building Construction.** Types of construction shall be shown narratively.

**6.3.2\* Height.** Height shall be shown to indicate number of stories above ground, number of stories below ground, and height from grade to eaves.

**6.3.3\* Symbols for Walls and Parapets.** Symbols for walls and parapets shall be as given in Table 6.3.3.

Table 6.3.3 Symbols for Walls and Parapets

Symbol	Description
	Wall — basic shape
	Smoke barrier wall
	1/2-hour fire-rated wall
	1/2-hour fire-rated/smoke barrier wall
	3/4-hour fire-rated wall
	3/4-hour fire-rated/smoke barrier wall
	1-hour fire-rated wall
	1-hour fire-rated/smoke barrier wall
	2-hour fire-rated wall
	2-hour fire-rated/smoke barrier wall
	3-hour fire-rated wall
	3-hour fire-rated/smoke barrier wall
	4-hour fire-rated wall
	4-hour fire-rated/smoke barrier wall
	Parapet — One cross for each 150 mm (6 in.) parapet that extends above roof (Shown is plan view of symbol.)

**6.3.4 Symbols for Floor Openings, Wall Openings, Roof Openings, and Their Protection.** Symbols for floor openings, wall openings, roof openings, and their protection shall be as given in Table 6.3.4.

Table 6.3.4 Symbols for Floor Openings, Wall Openings, Roof Openings, and Their Protection and Life Safety Plans












Symbol	Description	Comments
	Opening in wall	
	Rated fire door in wall (less than 3 hours)	
	Fire door in wall (3-hour rated)	
	Elevator in combustible shaft	
	Elevator in noncombustible shaft	
	Open hoistway	
	Escalator	
	Stairs in combustible shaft	
	Stairs in fire-rated shaft	
	Stairs in open shaft	
	Skylight	

Table 6.3.4 Continued

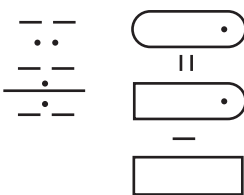


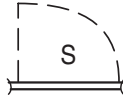

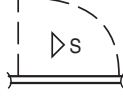

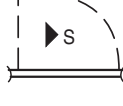

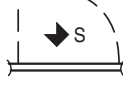

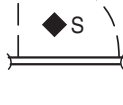

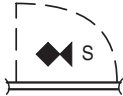







Symbol	Description	Comments
E: _ _	Egress component identifier	Specify egress component: EX# = Exit number HE = Horizontal exit EP = Exit passageway CP = Common path of travel PD = Public discharge RD = Room door ES = Escape
< _ _ >	Egress component capacity	Specify allowable number of persons through egress component (e.g., < 25 >)
<< _ _ >>	Governing component capacity	Specify maximum capacity of the egress path
_ _ > _ _	Travel distance	Left side: Distance to egress component Right side: Egress component identifier
	Occupancy capacity	Top: Specify capacity Middle: Specify area [square feet (square meters)] Bottom: Specify occupant load factor
	Fire door	
	Non-rated fire door	

Table 6.3.4 Continued

Symbol	Description	Comments
	Non-rated smoke-resistant fire door	
	20-minute fire-rated fire door	
	20-minute fire-rated, smoke-resistant fire door	
	1/2-hour fire-rated fire door	
	1/2-hour fire-rated, smoke-resistant fire door	
	3/4-hour fire-rated fire door	
	3/4-hour fire-rated, smoke-resistant fire door	
	1-hour fire-rated fire door	
	1-hour fire-rated, smoke-resistant fire door	
	1 1/2-hour fire-rated fire door	







(continues)

Table 6.3.4 *Continued*

Symbol	Description	Comments
	1½-hour fire-rated, smoke-resistant fire door	
	2-hour fire-rated fire door	
	2-hour fire-rated, smoke-resistant fire door	
	3-hour fire-rated fire door	
	3-hour fire-rated, smoke-resistant fire door	
	Exit	Wide, black, solid line
	Exit access	Wide, black, dashed line
	Exit discharge	Wide, black, short, dashed line




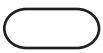





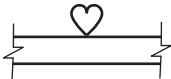
**6.3.5\* Special Symbols for Cross-Sections.** The symbols shown in Table 6.3.5 shall be used to indicate features of cross-sections. It is recognized that descriptive notes often are required.

Table 6.3.5 Special Symbols for Cross-Sections

Symbol	Description	Comments
	Fire-resistive floor or roof	
	Wood-joisted floor or roof	
	Other floors or roofs	Note construction
	Floor/ceiling or roof/ceiling assembly	Details indicated, as necessary
	Floor on ground	
	Truss roof	Note construction

**6.3.6 Miscellaneous Features.** A number of features related to fire protection that do not fall under 6.3.1 through 6.3.5 shall be as given in Table 6.3.6.

**Table 6.3.6 Miscellaneous Features**

Symbol	Description	Comments
	Boiler	
	Chimney	Describe height and construction
	Fire escape	
	Horizontal aboveground tank	Indicate type, dimensions, construction, capacity, pressurization, and content
	Vertical aboveground tank	Indicate type, dimensions, construction, capacity, pressurization, and content
	Belowground tank	Indicate type, dimensions, construction, capacity, pressurization, and content
	Class I, Division 1 or 0	Hatch patterns for electrically classified locations
	Class I, Division 1 or Zone 1	Hatch patterns for electrically classified locations
	Class I, Division 2 or Zone 2	Hatch patterns for electrically classified locations
	Designates the location of automated external defibrillators (AEDs) on plans	

## Chapter 7 Symbols for Use in Water Supply, Extinguishing, and Sprinkler System Drawings and Insurance Diagrams

### 7.1\* Introduction.

**7.1.1** This chapter presents symbols that shall be used in drawings and diagrams.

#### 7.1.2\* Symbol Presentation.

**7.1.2.1\* Symbol Shapes.** The shape of symbols shall be as illustrated in Sections 7.2 through 7.7.

**7.1.2.2 Screened Lines.** Screened lines in the chapter shall not be considered part of the symbol but shall be used to represent the piping, wiring, or mounting surface associated with the symbol.

**7.1.2.3 Symbol Scale.** All scales for symbols on any one drawing shall be the same relative size.

**7.1.2.4\* Symbol Orientation.** Symbols shall be oriented to the walls, piping, electrical lines, and so forth, to which they are attached.

**7.2\* Water Supply and Distribution Symbols.** Water supply and distribution symbols shall be as given in Table 7.2.



Table 7.2 Water Supply and Distribution Symbols



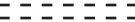












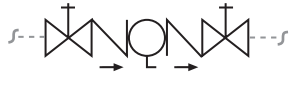




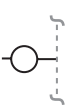




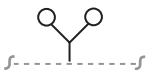





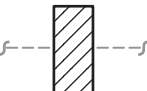
Symbol	Description	Comments
	Public water main	Indicate pipe size and material
	Private water main	Indicate pipe size and material
	Water main under building	Indicate pipe size and material
	Suction pipe	Indicate pipe size and material
	Thrust block	
	Riser	
	Valves (general)	Basic shape; indicate valve size
	Valve in pit	Indicate valve size
	Post-indicator valve	Indicate valve size
	Key-operated valve	Indicate valve size
	OS&Y valve (outside screw and yoke, rising stem)	Indicate valve size
	Indicating butterfly valve	Indicate valve size
	Nonindicating valve (nonrising-stem valve)	Indicate valve size

Table 7.2 Continued

Symbol	Description	Comments
	Check valve	Basic shape; indicate valve size, direction of flow
	Backflow preventer — double check type	Also referred to as a double check valve assembly
	Backflow preventer — reduced pressure zone (RPZ) type	
	Pressure-regulating valve	
	Pressure relief valve	
	Float valve	
	Meter	Indicate type
	Private hydrant, one hose outlet	Indicate size, type of thread, or connection
	Public hydrant, two hose outlets	Indicate size, type of thread, or connection
	Public hydrant, two hose outlets and pumper connection	Indicate size, type of thread, or connection
	Wall hydrant, two hose outlets	Indicate size, type of thread, or connection

(continues)

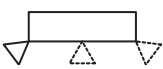


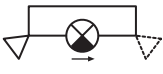





Table 7.2 *Continued*

Symbol	Description	Comments
	Private housed hydrant, two hose outlets	Indicate size, type of thread, or connection
	Siamese fire department connection	Specify type, size, and angle
	Freestanding siamese fire department connection	Sidewalk or pit type; specify size
	Single fire department connection	Specify type, size, thread, and angle
	Fire pump with driver	Specify driver type and rated capacity
	Freestanding test header	Freestanding; specify number and sizes of outlets
	Wall-mounted test header	Wall; specify number and sizes of outlets
	Screen/strainer	

**7.3 Reserved.**


**7.4 Symbols Related to Means of Egress.** Symbols related to means of egress shall be as given in Table 7.4.

**Table 7.4 Symbols Related to Means of Egress**

Symbol	Description	Comments
	Emergency light, battery-powered	Number of lamps on unit to be indicated; indicate whether light head(s) [lamp(s)] is remote from battery
	Illuminated exit sign, single face	Indicate direction of flow for the face
	Illuminated exit sign, double face	Indicate direction of flow for each face
	Combined battery-powered emergency light and illuminated exit sign	Number of lamps on unit to be indicated; indicate whether light head(s) [lamp(s)] is remote from battery; indicate direction of flow for the face
	Exit lighting	Exit lighting fixture, arrows, and exit face as indicated on drawings (mounting heights to be determined by job specifications) — from NECA 100, symbol 2.005
	Luminaire providing emergency illumination (filled in)	From NECA 100, symbol 2.300
	Directional sounder — exit marking audible appliance, wall mounted	Applied from NECA 100, symbol 9.109
	Directional sounder — exit marking audible appliance, ceiling mounted	Applied from NECA 100, symbol 9.110
	Directional exit indicating strip lighting appliance	Applied from NECA 100, symbol 2.002

**7.5 Indicating Appliances.** Symbols for indicating appliances shall be as given in Table 7.5.









**Table 7.5 Symbols for Indicating Appliances**

Symbol	Description	Comments
	Water motor alarm (water motor gong)	Shield optional

**7.6\* Symbols for Fire Extinguishing Systems.****7.6.1 Various Types of Fire Extinguishing Systems.**





**7.6.1.1 Water-Based Systems.** Symbols for water-based systems shall be as given in Table 7.6.1.1.

**Table 7.6.1.1 Symbols for Water-Based Systems**

Symbol	Description
	Wet charged system — automatically actuated
	Wet charged system — manually actuated
	Dry system — automatically actuated
	Dry system — manually actuated
	Foam system — automatically actuated
	Foam system — manually actuated
	Water mist extinguishing system — automatically actuated
	Water mist extinguishing system — manually actuated





**7.6.1.2 Dry Chemical Systems.** Symbols for dry chemical systems shall be as given in Table 7.6.1.2.

**Table 7.6.1.2 Symbols for Dry Chemical Systems**

Symbol	Description
	For liquid, gas, and electrical fires — automatically actuated
	For liquid, gas, and electrical fires — manually actuated
	For fires of all types (except metals) — automatically actuated
	For fires of all types (except metals) — manually actuated





**7.6.1.3 Systems Utilizing a Gaseous Medium.** Symbols for systems utilizing a gaseous medium shall be as given in Table 7.6.1.3.

**Table 7.6.1.3 Symbols for Systems Utilizing a Gaseous Medium**

Symbol	Description
	Carbon dioxide system — automatically actuated
	Carbon dioxide system — manually actuated
	Halon system or clean agent extinguishing system — automatically actuated
	Halon system or clean agent extinguishing system — manually actuated

**7.6.1.4 Supplementary Symbols.** Supplementary symbols shall be as given in Table 7.6.1.4.

**Table 7.6.1.4 Supplementary Symbols**

Symbol	Description
	Fully sprinklered space
	Partially sprinklered space
	Nonsprinklered space
	Water spray system




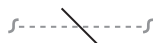
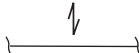
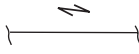

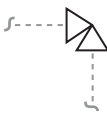



**7.6.2\* Symbols for Fire Sprinklers.** Symbols for fire sprinklers shall be as given in Table 7.6.2.

Table 7.6.2 Symbols for Fire Sprinklers


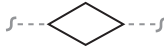
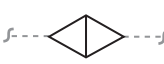
Symbol	Description	Comments
	Upright sprinkler	
	Pendent sprinkler	Note "DP" on drawing and/or in specifications where dry pendent sprinklers are employed
	Upright sprinkler; on sprig	
	Upright sprinkler on top of riser nipple	
	Upright sprinkler on top of riser nipple with sprig	
	Pendent sprinkler; on drop nipple	Note "DP" on drawing and/or in specifications where dry pendent sprinklers are employed
	Sprinkler, with guard	Upright sprinkler head shown
	Sidewall sprinkler	
	Outside sprinkler	Specify type, orifice size; for example, open sprinkler (window or cornice)
	Open sprinkler on branch line	
	Open sprinkler on branch line with sprig	
	Water spray nozzle	
	Window sprinklers	

**7.6.3\* Symbols for Piping, Valves, Control Devices, and Hangers.** Symbols for piping, valves, control devices, and hangers shall be as given in Table 7.6.3.

**Table 7.6.3 Symbols for Piping, Valves, Control Devices, and Hangers**









Symbol	Description	Comments
	Sprinkler piping and branch line	Indicate pipe size
	Pipe trace heater	See NECA 100, symbol 5.106
	Mechanical coupling	
	Pipe hanger	Diagonal stroke imposed on the pipe that the hanger supports
	Lateral brace	
	Longitudinal brace	
	Four-way brace	Only used to brace risers
	Angle valve (angle hose valve)	Indicate size, type, and other required data
	Check valve (general)	
	Alarm check valve	Specify size, direction of flow
	Dry pipe valve	Specify size

**Table 7.6.3 Continued**

Symbol	Description	Comments
	Dry pipe valve with quick opening device (accelerator or exhaustor)	Specify size and type
	Deluge valve	Specify size and type
	Preaction valve	Specify size and type









**7.7 Symbols for Portable Fire Extinguishers.** Symbols for portable fire extinguishers shall be as given in Table 7.7.

**Table 7.7 Symbols for Portable Fire Extinguishers**

Symbol	Description	Comments
	Portable fire extinguisher	Basic shape
	Water extinguisher	
	Foam extinguisher	
	Dry chemical extinguisher for liquid, gas, or electrical fires	BC type
	Dry chemical extinguisher for fires of all types (except metals)	ABC type
	CO <sub>2</sub> extinguisher	
	Halon or clean agent extinguisher	
	Extinguisher for metal fires	




**7.8 Symbols for Fire-Fighting Equipment.** Symbols for fire-fighting equipment shall be as given in Table 7.8.

**Table 7.8 Symbols for Fire-Fighting Equipment**







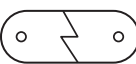
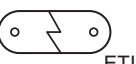





Symbol	Description	Comments
	Fire-fighting equipment	Basic shape
	CO <sub>2</sub> reel station	
	Dry chemical reel station	
	Foam reel station	
	Hose station, dry standpipe	
	Hose station, wet standpipe	
	Monitor nozzle, dry	Specify orifice size
	Monitor nozzle, charged	Specify orifice size

**7.9\* Miscellaneous Symbols.** Miscellaneous symbols shall be as given in Table 7.9.

**Table 7.9 Miscellaneous Symbols**

Symbol	Description	Comments
	Agent storage container	Specify type of agent and mounting
	Agent storage container — foam	
	Agent storage container — Halon	



**Table 7.9 Continued**

Symbol	Description	Comments
	Agent storage container — carbon dioxide	
	Agent storage container — clean agent	
	Agent storage container — dry chemical	
	Agent storage container — water mist	
	Agent storage container — wet chemical	
	Special spray nozzle	Specify type, orifice, size, other required data (shown here on pipe)
	Fusible link	Specify degrees
	Fusible link with electrothermal feature	Specify degrees
	Solenoid valve	
	End of line device — resistor	
	End of line device — relay	
	End of line device — capacitor	
	End of line device — diode	

(continues)



Table 7.9 *Continued*

Symbol	Description	Comments
 ATS	Transfer switch — automatic with handle	
 MTS	Transfer switch — manual with handle	

## Chapter 8 Symbols for Use in Electronic Fire and Smoke Detection and Notification System Drawings and Insurance Diagrams

### 8.1\* Introduction.

**8.1.1** This chapter presents symbols that shall be used in drawings and diagrams.

#### 8.1.2\* Symbol Presentation.

**8.1.2.1\* Symbol Shapes.** The shape of symbols shall be as illustrated in Sections 8.2 through 8.6.

**8.1.2.2 Screened Lines.** Screened lines in the chapter shall not be considered part of the symbol but shall be used to represent the piping, wiring, or mounting surface associated with the symbol.

**8.1.2.3 Symbol Scale.** All scales for symbols on any one drawing shall be the same relative size.

**8.1.2.4\* Symbol Orientation.** Symbols shall be oriented to the walls, piping, electrical lines, and so forth, to which they are attached.

**8.2 Symbols for Control Panels.** Symbols for control panels shall be as given in Table 8.2.

Table 8.2 Symbols for Control Units (Panels)





Symbol	Description
	Basic shape
	Fire alarm control panel
	Fire alarm control unit
	Fire alarm transponder n = transponder number

Table 8.2 *Continued*
















Symbol	Description
	Fire alarm annunciator
	LCD annunciator
	Notification circuit power booster panel n = unit number
	Fire alarm terminal cabinet
	Battery cabinet
	Voice evacuation control unit
	Remote voice evacuation microphone
	Graphic annunciator panel
	Uninterruptible power supply
	Power panel
	CRT
	Printer
	Emergency communications control unit
 <sub>xx</sub>	Fire suppression control panel xx denotes suppression type
 <sub>xx</sub>	Fire suppression control unit xx denotes suppression type

Table 8.2 Continued














Symbol	Description
<b>AMP</b>	Amplifier rack
<b>ARCM</b>	Area of refuge emergency communication system — master unit
<b>ARCR</b>	Area of refuge emergency communication system — remote unit
<b>ACU</b>	Autonomous control unit
<b>EVAC<sub>n</sub></b>	Remotely located evacuation amplifier cabiner
<b>ESR</b>	Elevator status/recall
<b>DACR</b>	Digital alarm communicator receiver
<b>DACT</b>	Digital alarm communicator transmitter
<b>FAC</b>	Fire alarm communicator
<b>HVA</b>	Control panel for heating, ventilation, exhaust, stairwell pressurization
<b>PP</b>	Purge panel
<b>PRE</b>	Pre-action system
<b>RP</b>	Relay panel
<b>SAP</b>	Sprinkler alarm panel
<b>WCU</b>	Wireless control unit

Table 8.2 Continued

Symbol	Description
<b>MFACU</b>	Master fire alarm control unit
<b>PPCU</b>	Protected premises control unit (local)
<b>DEFACU</b>	Dedicated function fire alarm control unit
<b>RSFACU</b>	Releasing service fire alarm control unit
<b>Fire Suppression/Releasing Service Control Unit Types:</b>	
<b>RSFACU</b> <sub>CO<sub>2</sub></sub>	Carbon dioxide
<b>RSFACU</b> <sub>DC</sub>	Dry chemical
<b>RSFACU</b> <sub>HL</sub>	Halon
<b>RSFACU</b> <sub>FO</sub>	Foam
<b>RSFACU</b> <sub>WC</sub>	Wet chemical
<b>RSFACU</b> <sub>CA</sub>	Clean agent
<b>RSFACU</b> <sub>WM</sub>	Water mist
<b>RSFACU</b> <sub>DL</sub>	Deluge fire sprinkler

**8.3\* Symbols for Fire Alarms, Detection, and Related Equipment — Signal Initiating Devices and Activation Switches.** Symbols for signal initiating devices and activation switches shall be as given in Table 8.3.

**Table 8.3 Symbols for Signal Initiating Devices and Activation Switches**

Symbol	Description
	Manual station — basic shape
	Manual station — pull station/fire alarm box
	Fire alarm master box
	Drill key
	Abort switch — basic shape
	Abort switch
	Manual releasing station
	Automatic detection and supervisory devices — basic shape
	Heat detector/sensor (thermal detection) orientation not to be changed
	Heat detector/sensor — XX = type
	Heat detector — line type
	Smoke detector/sensor — basic shape orientation not to be changed
	Smoke detector/sensor — XX = type

**Table 8.3 Continued**














Symbol	Description
	Smoke/heat detector/sensor combination
	Smoke detector/sensor — beam transmitter
	Smoke detector/sensor — beam receiver
	Smoke detector/sensor for duct
	Gas detector/sensor XX = gas type
	Flame detector XX = detection type
	Water detector
<b>Manual Station Types:</b>	
	Manual station — carbon dioxide
	Manual station — dry chemical
	Manual station — Halon
	Manual station — foam
	Manual station — wet chemical
	Manual station — clean agent

Table 8.3 Continued


























Symbol	Description
	Manual station — water mist
	Manual station — deluge fire sprinkler
	Manual station — preaction
<b>Abort Switch Types:</b>	
	Abort switch — carbon dioxide
	Abort switch — dry chemical
	Abort switch — Halon
	Abort switch — foam
	Abort switch — wet chemical
	Abort switch — clean agent
	Abort switch — water mist
	Abort switch — deluge fire sprinkler
	Abort switch — preaction
<b>Heat Detector/Sensor Types:</b>	
	Combination rate of rise/fixed temperature

Table 8.3 Continued

Symbol	Description
	Rate compensation
	Fixed temperature
	Rate of rise only
<b>Smoke Detector/Sensor Types:</b>	
	Air sampling
	Photoelectric
	Ionization
	Relay base
	Single station
	Sounder base
	In duct
<b>Gas Detector/Sensor Subscript Examples:</b>	
	Carbon monoxide
	Carbon dioxide

(continues)

Table 8.3 Continued



















Symbol	Description
	Hydrogen chloride
	Methane
<b>Flame Detector/Sensor Types:</b>	
	Ultraviolet
	Infrared
	Combination ultraviolet/infrared
	Visible radiation
	Flow detector/switch
	Pressure detector/switch
	Valve supervisory switch
	Valve with valve supervisory switch
	Level detector/switch
	Temperature supervisory switch
	High temperature switch

Table 8.3 Continued

Symbol	Description
	Low temperature switch
	Addressable input module
	Addressable output module
	Addressable input/output module; # denotes number of inputs and outputs
	Non-addressable output relay

**8.4 Notification Appliances.**












**8.4.1** Notification appliance subscripts shall be applied to symbols as required for clarification (*see Table 8.4.1*).

Table 8.4.1 Notification Appliance Subscripts









Subscript	Meaning
WP	Weatherproof
WG	Wire guard
H	High audible setting
L	Low audible setting
C	Ceiling mount
nW	Wattage setting ( <i>n</i> = speaker tap)
P	Pendent
SL	Signal light
RI	Remote indicator

**8.4.2 Notification Appliances.** Symbols for notification appliances shall be as given in Table 8.4.2.

**Table 8.4.2 Symbols for Notification Appliances**



Symbol	Description
	Audible appliance — basic shape
	Horn only
	Mini-horn
	Chime — electronic
	Speaker only, wall mount — denote wattage tap
	Speaker only, ceiling mount — denote wattage tap
	Bell — vibrating
	Bell — single stroke
	Bell — trouble
	Gong
	Chime

**Table 8.4.2 Continued**

Symbol	Description
	Visible only (strobe) — wall mount CD = candela rating/setting
	Visible only (strobe) — ceiling mount CD = candela rating/setting
	Rotating beacon
	Combination horn/visible CD = candela rating/setting
	Combination speaker/visible W = wattage CD = candela rating/setting
	Remote indicator
	Remote alarm indicating and test switch
	Ceiling mount indicator




**8.4.3 Emergency Communications Notification Appliances.** Symbols for emergency communication appliances shall be as given in Table 8.4.3.

**Table 8.4.3 Symbols for Emergency Communications Notification Appliances**

Symbol	Description
	Visible only (strobe) — wall mount CD = candela rating/setting
	Visible only (strobe) — ceiling mount CD = candela rating/setting

(continues)

Table 8.4.3 Continued

Symbol	Description
	Combination speaker/visible — wall mount CD = candela rating/setting, W = wattage
	Combination speaker/visible — ceiling mount CD = candela rating/setting, W = wattage
	Emergency textual visible appliance

**8.5 Related Equipment.** Symbols for related equipment shall be as given in Table 8.5.

Table 8.5 Symbols for Related Equipment














Symbol	Description
	Door holder
	Door closer
	Integrated smoke sensor and door closer
	End of line resistor
	Fire service or emergency phone station — basic shape
	Fire service or emergency phone station — jack
	Fire service or emergency phone station — handset
	Fire service or emergency phone station — accessible
	Sync adapter module (strobe synchronization)

Table 8.5 Continued

Symbol	Description
	Isolator module (Style 6 or 7 fault protection)
	Junction box
	Air sampling detector piping
	Watchman's tour station

**8.6 Symbols for Smoke/Pressurization Control.** Symbols for smoke/pressurization controls shall be as given in Table 8.6.

Table 8.6 Symbols for Smoke/Pressurization Controls







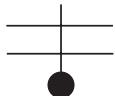
Symbol	Description	Comments
	Purge controls — manual control	
	Hand (manual)/off-automatic	
	Fans — general	Arrow indicates direction of flow
	Fans — duct	Arrow indicates direction of flow
	Fans — roof	Arrow indicates direction of flow
	Fans — wall	Arrow indicates direction of flow
	Dampers — fire	

Table 8.6 Continued

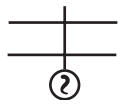
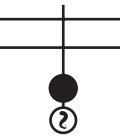
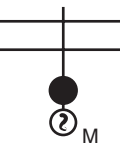
















Symbol	Description	Comments
	Dampers — smoke	
	Dampers — fire/smoke	
	Dampers — motorized fire/smoke	
	Dampers — barometric	
	Pressurized stairwell	Orient as required for base or head injection
	Ventilation openings	Orient as required for intake or exhaust

Table 9.2 Symbols for Access Features, Assessment Features, Ventilation Features, and Utility Shutoffs

Symbol	Description	Comments
	Access features, assessment features, ventilation features, and utility shutoffs	Basic shape
	Access feature — fire department access point	
	Access feature — fire department key box	
	Access feature — roof access	
	Assessment feature — fire alarm annunciator panel	
	Assessment feature — fire alarm reset panel	
	Assessment feature — fire alarm voice communication panel	
	Assessment feature — smoke control and pressurization panel	
	Assessment feature — sprinkler system water flow bell	
	Ventilation feature — skylight	
	Ventilation feature — smoke vent	
	Utility shutoff — electric	
	Utility shutoff — domestic water	

(continues)

## Chapter 9 Symbols for Use in Pre-Incident Planning Sketches

### 9.1 Introduction.





**9.1.1\*** This chapter presents symbols that shall be used in pre-incident planning sketches.

**9.1.2\* Symbol Shapes.** The symbol shapes shall be chosen for their ease of reproduction by either freehand drawing or with the use of templates.

**9.2\* Access Features, Assessment Features, Ventilation Features, and Utility Shutoffs.** Symbols for access features, assessment features, ventilation features, and utility shutoffs shall be as given in Table 9.2.



Table 9.2 *Continued*

Symbol	Description	Comments
	Utility shutoff — gas	
	Specific variations — LP-Gas shutoff	
	Specific variations — natural gas shutoff	
	Specific variations — compressed natural gas shutoff	

**9.3 Detection/Extinguishing Equipment.** Symbols for detection/ extinguishing equipment shall be as given in Table 9.3.

Table 9.3 Symbols for Detection/Extinguishing Equipment















Symbol	Description	Comments
	Detection/ extinguishing equipment	Basic shape
	Duct detector	
	Heat detector	
	Smoke detector	
	Flow switch (water)	
	Manual station — pull station/fire alarm box	
	Tamper switch	

Table 9.3 *Continued*

Symbol	Description	Comments
	Halon system	
	Dry chemical system	
	Carbon dioxide system	
	Wet chemical system	
	Foam system	
	Clean agent system	
	Beam smoke detector	

**9.4 Water Flow Control Valves and Water Sources.** Symbols for water flow control valves and water sources shall be as given in Table 9.4.

Table 9.4 Symbols for Water Flow Control Valves and Water Sources














Symbol	Description	Comments
	Water flow control valves and water sources	Basic shape
	Post-indicator valve	
	Riser valve	
	Sprinkler zone valve	









Table 9.4 *Continued*

Symbol	Description	Comments
	Sectional control valve	
	Hose cabinet or connection	
	Wall hydrant	
	Test header (fire pump)	
	Inspector's test connection	
	Fire hydrant	
	Fire department connection	
	Drafting site	
	Water tank	

**9.5 Equipment Rooms.** Symbols for equipment rooms shall be as given in Table 9.5.

**9.6\* Identification of Hazardous Materials.** NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*, shall be permitted to be used to identify the location of hazardous materials within a structure.

Table 9.5 Symbols for Equipment Rooms

Symbol	Description	Comments
	Equipment rooms	Basic shape
	Air-conditioning equipment room	AHUs = air-handling units
	Elevator equipment room	
	Emergency generator room	
	Fire pump room	
	Telephone equipment room	
	Boiler room	
	Electrical/transformer room	

## Chapter 10 Symbolgy for Emergency Management Mapping

**10.1 Damage Operational Symbols.** Table 10.1 shall be used to cross-reference the damage operational symbols with their definitions.

Table 10.1 Damage Operational Symbolology Reference

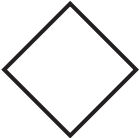
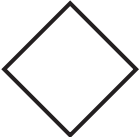
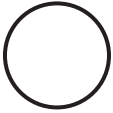
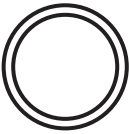

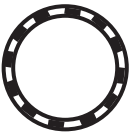



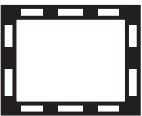
Symbol Types and Terms	Symbols	Definitions
<b>Incident</b> (No levels) (violet)		Not applicable
<b>Natural Event</b> (No levels) (black)		Not applicable
<b>Operation</b> (Level 1) (green)		Fully operational/open
<b>Operation</b> (Level 2) (blue)		Operational, but filled to capacity or otherwise closed
<b>Operation</b> (Level 3) (orange)		Operational, but partially damaged or partially incapacitated
<b>Operation</b> (Level 4) (red)		Destroyed or totally incapacitated

Table 10.1 Continued












Symbol Types and Terms	Symbols	Definitions
<b>Infrastructure</b> (Level 1) (green)		Fully operational/open
<b>Infrastructure</b> (Level 2) (blue)		Operational, but filled to capacity or otherwise closed
<b>Infrastructure</b> (Level 3) (orange)		Operational, but partially damaged or partially incapacitated
<b>Infrastructure</b> (Level 4) (red)		Destroyed or totally incapacitated

## 10.2 Operations Symbolology.

**10.2.1** Organizations, services, capabilities, or resources available during or implemented due to an emergency management situation.

**10.2.2** Table 10.2.2 shall be used to cross-reference the operations symbols with their definitions.

Table 10.2.2 Operations Symbolgy Reference

Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Operations Background Symbol</b> (Background)		!	The background fill shape for the Operations symbol, Level 1
<b>Operations Frame Symbol</b> (Frame)		#	The frame shape for the Operations symbol, Level 1
<b>Emergency Medical Operation</b> (Theme)		A	Urgent and unexpected medicinal treatment and/or transport during serious situations that require immediate action <sup>1</sup>
<b>Ambulance</b> (Emergency Medical Feature)		B	A vehicle for taking sick or wounded people to and from a hospital
<b>EMT Station Locations</b> (Emergency Medical Feature)		C	The locus of an emergency medical team
<b>Medical Evacuation Helicopter Station</b> (Emergency Medical Feature)		D	The locus of an emergency helicopter landing pad, utilized to transport severely injured persons
<b>Health Department Facility</b> (Emergency Medical Feature)		E	The locus of a facility operated by a public institution that is dedicated to promotion of health and prevention of disease at the community, county, state, or national level <sup>2</sup>
<b>Hospital</b> (Emergency Medical Feature)		F	The locus of an institution where the sick or injured are given medical or surgical care
<b>Hospital Ship</b> (Emergency Medical Feature)		G	The locus of a ship where the sick or injured are given medical or surgical care
<b>Medical Facilities Outpatient</b> (Emergency Medical Feature)		H	The locus of a facility providing medical treatment to patients whose sickness or injury does not require hospitalization
<b>Morgue</b> (Emergency Medical Feature)		I	The locus of a place where the bodies of persons found dead are kept until identified and claimed by relatives or released for burial <sup>3</sup>

(continues)

Table 10.2.2 *Continued*

















































































Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Pharmacies</b> (Emergency Medical Feature)	   	J	The locus of a place where medicines are compounded or dispensed <sup>3</sup>
<b>Triage</b> (Emergency Medical Feature)	   	K	The locus of a place where sorting and allocation of treatment to patients (especially victims of war or disaster) are performed according to a system of priorities designed to maximize the number of survivors <sup>3</sup>
<b>Emergency Operation</b> (Theme)	   	L	Those actions taken during the emergency period to protect life and property, care for the people affected, and temporarily restore essential community services <sup>4</sup>
<b>Emergency Collection/Evacuation Point</b> (Emergency Operation Feature)	   	M	A designated place where displaced persons or victims of war or disaster are assembled and/or evacuated from
<b>Emergency Incident Command Center</b> (Emergency Operation Feature)	   	N	The physical location from which an incident commander manages an incident <sup>5</sup>
<b>Emergency Operations Center</b> (Emergency Operation Feature)	   	O	The physical location where an organization comes together during an emergency to coordinate response and recovery actions and resources and make management decisions <sup>6</sup>
<b>Emergency Public Information Center</b> (Emergency Operation Feature)	   	P	No definition
<b>Emergency Public Service Center</b> (Emergency Operation Feature)	   	Q	No definition
<b>Emergency Shelters</b> (Emergency Operation Feature)	   	R	The locus of a designated emergency/relief shelter
<b>Emergency Staging Areas</b> (Emergency Operation Feature)	   	S	A designated place where emergency response forces, equipment, and supplies are assembled prior to engagement in operations

Table 10.2.2 *Continued*

Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Emergency Teams</b> (Emergency Operation Feature)	   	T	The locus of an emergency response team
<b>Emergency Water Distribution Center</b> (Emergency Operation Feature)	   	U	A place where potable water is distributed to displaced persons or victims of war or disaster
<b>Emergency Food Distribution Centers</b> (Emergency Operation Feature)	   	V	A place where food is distributed to displaced persons or victims of war or disaster
<b>Fire Suppression Operation</b> (Theme)	   	W	The extinguishing of a burning (and flaming) object by means of applying an agent, such as water <sup>7</sup>
<b>Fire Hydrant</b> (Fire Suppression Feature)	   	X	A discharge pipe with a valve and spout from which water can be drawn from a water main in sufficient volume and at sufficient pressure for fire-fighting purposes <sup>8</sup>
<b>Other Water Supply Location</b> (Fire Suppression Feature)	   	Y	Any source of water other than a fire hydrant that is sufficient for the purpose of fire fighting
<b>Fire Station</b> (Fire Suppression Feature)	   	Z	A facility housing fire-fighting equipment and/or personnel
<b>Law Enforcement Operation</b> (Theme)	   	a	Act of ensuring obedience to the laws <sup>9</sup>
<b>ATF</b> (Law Enforcement Feature)	   	b	A locus of U.S. Bureau of Alcohol, Tobacco, and Firearms facilities, equipment, or personnel
<b>Border Patrol</b> (Law Enforcement Feature)	   	c	A locus of U.S. Border Patrol facilities, equipment, or personnel

(continues)

Table 10.2.2 *Continued*















































Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Customs Service</b> (Law Enforcement Feature)	   	d	A locus of U.S. Customs Service facilities, equipment, or personnel
<b>DEA</b> (Law Enforcement Feature)	   	e	A locus of U.S. Drug Enforcement Administration facilities, equipment, or personnel
<b>DOJ</b> (Law Enforcement Feature)	   	f	A locus of U.S. Department of Justice facilities, equipment, or personnel
<b>FBI</b> (Law Enforcement Feature)	   	g	A locus of Federal Bureau of Investigation facilities, equipment, or personnel
<b>Police</b> (Law Enforcement Feature)	   	h	A locus of federal, state, or local police facilities, equipment, or personnel
<b>Prison</b> (Law Enforcement Feature)	   	i	A facility for the confinement of persons convicted of serious crimes <sup>3</sup>
<b>Secret Service</b> (Law Enforcement Feature)	   	j	A locus of U.S. Secret Service facilities, equipment, or personnel
<b>TSA</b> (Law Enforcement Feature)	   	k	A locus of U.S. Transportation Security Administration facilities, equipment, or personnel
<b>U.S. Coast Guard</b> (Law Enforcement Feature)	   	l	A locus of U.S. Coast Guard facilities, equipment, or personnel
<b>U.S. Marshals Service</b> (Law Enforcement Feature)	   	m	A locus of U.S. Marshals Service facilities, equipment, or personnel

Table 10.2.2 *Continued*

Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Sensor Operation</b> (Theme)		n	A device that receives and responds to a signal or stimulus <sup>9</sup>
<b>Biological Sensor</b> (Sensor Operation Feature)		o	A device designed to respond to the presence of one or more biological substances and to transmit a resulting impulse <sup>10</sup>
<b>Chemical Sensor</b> (Sensor Operation Feature)		p	A device designed to respond to the presence of one or more chemicals and to transmit a resulting impulse <sup>10</sup>
<b>Intrusion Sensor</b> (Sensor Operation Feature)		q	A device designed to respond to physical penetration of, or attempts to physically penetrate, a protected area or spatial volume and to transmit a resulting impulse <sup>10</sup>
<b>Nuclear Sensor</b> (Sensor Operation Feature)		r	A device designed to respond to one or more decay product(s) of one or more radioactive nuclides and to transmit a resulting impulse <sup>11</sup>
<b>Radiological Sensor</b> (Sensor Operation Feature)		s	A device designed to respond to one or more decay product(s) of one or more radioactive nuclides and to transmit a resulting impulse <sup>11</sup>

<sup>1</sup> Source: www.dictionary.com; combined definition of *emergency* and *medical*.<sup>2</sup> Source: Based on the APHA public health mission statement.<sup>3</sup> Source: Merriam-Webster Online.<sup>4</sup> Source: Adapted from San Diego State University Emergency Plan Glossary, <http://bfa.sdsu.edu/emergencyplan/glossary.htm>.<sup>5</sup> Source: Commonwealth of Virginia ICS, [www.vdftp.state.va.us/components.htm](http://www.vdftp.state.va.us/components.htm).<sup>6</sup> Source: EMS web site, [www.emsresponder.com](http://www.emsresponder.com).<sup>7</sup> Source: Adapted from [www.firewise.org](http://www.firewise.org) glossary of terms.<sup>8</sup> Source: Adapted from Merriam-Webster Online definition of *hydrant*.<sup>9</sup> Source: www.dictionary.com.<sup>10</sup> Source: Adapted from Merriam-Webster Online definition of *sensor*.<sup>11</sup> Source: Adapted from Merriam-Webster Online definition of *sensor* and knowledge of the process, detection, and measurement of radioactivity.



**10.3 Incidents Symbolology.**

**10.3.1** Table 10.3.2 shall be used to depict 8 themes and 42 features that symbolize a “cause of action” or a “source of disaster.”

**10.3.2** Table 10.3.2 shall be used to cross-reference the incidents symbols with their definitions.

**Table 10.3.2 Incidents Symbology Reference**


















Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Incidents Stage 01 Background Symbol</b> (Background)		!	The background fill shape for the Incidents symbol, Level 1
<b>Incidents Stage 01 Frame Symbol</b> (Frame)		#	The frame shape for the Incidents symbol, Level 1
<b>Civil Disturbance Incident</b> (Theme)		A	Human activities resulting in the disrupting of services or requiring varying levels of support, law enforcement, or attention
<b>Civil Demonstrations</b> (Civil Disturbance Feature)		B	A public display of group feelings toward a person or cause <sup>1</sup>
<b>Civil Displaced Population</b> (Civil Disturbance Feature)		C	Persons or groups of people who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, violations of human rights, or natural or human-made disasters <sup>2</sup>
<b>Civil Rioting</b> (Civil Disturbance Feature)		D	A public disturbance involving (1) an act or acts of violence by one or more persons part of an assemblage of three or more persons, which act or acts shall constitute a clear and present danger of, or shall result in, damage or injury to the property of any other person or to the person of any other individual, or (2) a threat or threats of the commission of an act or acts of violence by one or more persons part of an assemblage of three or more persons having, individually or collectively, the ability of immediate execution of such threat or threats, where the performance of the threatened act or acts of violence would constitute a clear and present danger of, or would result in, damage or injury to the property of any other person or to the person of any other individual <sup>3</sup>
<b>Criminal Activity Incident</b> (Theme)		E	An unlawful pursuit or action in which an individual participates <sup>4</sup>

Table 10.3.2 *Continued*

Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Bomb Threat</b> (Criminal Activity Feature)		F	A warning of the possible presence of a bomb or expression of the intention to detonate a bomb
<b>Bomb</b> (Criminal Activity Feature)		G	An explosive device fused to detonate under specific conditions <sup>5</sup>
<b>Bomb Explosion</b> (Criminal Activity Feature)		H	A violent outburst resulting from detonation of a chemical or nuclear explosive or from the loss of a high pressure vessel's integrity
<b>Looting</b> (Criminal Activity Feature)		I	Burglary committed within an affected area during an emergency <sup>6</sup>
<b>Poisoning</b> (Criminal Activity Feature)		J	Use of a poisonous substance to injure or kill <sup>1</sup>
<b>Shooting</b> (Criminal Activity Feature)		K	Use of a firearm to kill or injure or to damage property <sup>1</sup>
<b>Fire Incident</b> (Theme)		L	The destructive act of something burning, caused by electrical or technological malfunction, lightning, arson, human error, or human negligence
<b>Hot Spot</b> (Fire Incident Feature)		P	An area of intensified fire activity and increased heat or a particularly active part of a fire
<b>Non-Residential Fire</b> (Fire Incident Feature)		Q	A fire that originates at or affects a non-residential or commercial facility, resulting in partial damage or total destruction of the structure and/or bodily injury, smoke inhalation, or death
<b>Origin</b> (Fire Incident Feature)		R	Location of where the fire started <sup>7</sup>

(continues)

Table 10.3.2 *Continued*




















Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Residential Fire</b> (Fire Incident Feature)		S	A fire affecting a home or housing complex, resulting in partial or total destruction of the structure and/or bodily injury, smoke inhalation, or death
<b>School Fire</b> (Fire Incident Feature)		T	A fire that originates at or affects an educational facility, resulting in partial or total destruction of the structure and/or bodily injury, smoke inhalation, or death
<b>Smoke</b> (Fire Incident Feature)		U	The visible products of combustion rising above the fire <sup>8</sup>
<b>Special Needs Fire</b> (Fire Incident Feature)		V	A fire that affects special treatment facilities, such as nursing homes or assisted living centers, resulting in partial or total destruction of the structure and/or bodily injury, smoke inhalation, or death
<b>Wild Fire</b> (Fire Incident Feature)		W	An uncontrolled fire in a wooded area <sup>9</sup>
<b>Hazardous Incident</b> (Theme)		X	See footnote. <sup>10</sup>
<b>Chemical Agent</b> (Hazardous Incident Feature)		Y	A chemical substance that is intended for use in military operations to kill, resulting in psychological disorientation, serious injury, incapacitation, or death <sup>11</sup>
<b>Corrosive Material</b> (Hazardous Incident Feature)		Z	Uncontrolled or potentially dangerous presence of a liquid or solid that causes full thickness destruction of human skin at the site of contact within a specified period of time
<b>Dangerous When Wet</b> (Hazardous Incident Feature)		a	Uncontrolled or potentially dangerous presence of a material that, by contact with water, is liable to become spontaneously flammable or to give off flammable or toxic gas at a rate greater than 1 L/hr per kilogram of the material per hour (0.48 qt/hr/lb)
<b>Explosive</b> (Hazardous Incident Feature)		b	Uncontrolled or potentially dangerous presence of any substance or article, including a device that is designed to function by explosion (i.e., an extremely rapid release of gas and heat) or that, by chemical reaction within itself, is able to function in a similar manner even if not designed to function by explosion

Table 10.3.2 *Continued*

Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Flammable Gas</b> (Hazardous Incident Feature)		c	Uncontrolled or potentially dangerous presence of any material that is a gas at 20°C (68°F) or less and 101.3 kPa (14.7 psia) of pressure [a material that has a boiling point of 20°C (68°F) or less at 101.3 kPa (14.7 psia)], that is ignitable at 101.3 kPa (14.7 psia) when in a mixture of 13 percent or less by volume with air, or that has a flammable range at 101.3 kPa (14.7 psia) with air of at least 12 percent regardless of the lower limit
<b>Flammable Liquid</b> (Hazardous Incident Feature)		d	Uncontrolled or potentially dangerous presence of a liquid having a flash point of not more than 60.5°C (141°F)
<b>Flammable Solid</b> (Hazardous Incident Feature)		e	Uncontrolled or potentially dangerous presence of desensitized explosives that when dry are explosives of Class 1, which are wetted with sufficient water, alcohol, or plasticizer to suppress explosive properties
<b>Nonflammable Gas</b> (Hazardous Incident Feature)		f	Uncontrolled or potentially dangerous presence of any material (or mixture) that exerts in the packaging an absolute pressure of 280 kPa (40.6 psia) or greater at 20°C (68°F) and is not classified as a flammable gas
<b>Organic Peroxides</b> (Hazardous Incident Feature)		g	No definition
<b>Oxidizers</b> (Hazardous Incident Feature)		h	Uncontrolled or potentially dangerous presence of a material that can, generally by yielding oxygen, cause or enhance the combustion of other materials
<b>Radioactive Material</b> (Hazardous Incident Feature)		i	Uncontrolled or potentially dangerous presence of any material having a specific activity greater than 70 Bq/g (17 µCi/oz)
<b>Spontaneously Combustible</b> (Hazardous Incident Feature)		j	Uncontrolled or potentially dangerous presence of a liquid or solid that, even in small quantities and without an external ignition source, can ignite within five (5) minutes after coming in contact with air or a material that, when in contact with air and without an energy supply, is liable to self-heat
<b>Toxic Gas</b> (Hazardous Incident Feature)		k	Uncontrolled or potentially dangerous presence of a gas that presents a hazard to human health

(continues)

Table 10.3.2 *Continued*















Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Toxic and Infectious</b> (Hazardous Incident Feature)		l	Uncontrolled or potentially dangerous presence of a poisonous substance that is a specific product of the metabolic activities of a living organism and is usually very unstable and can easily be transferred between organisms
<b>Unexploded Ordnance</b> (Hazardous Incident Feature)		m	Uncontrolled or potentially dangerous presence of an unexploded weapon or ammunition
<b>Air Incident</b> (Theme)		n	An event involving aircraft resulting in damage, bodily injury, death, or the disruption of transportation service
<b>Air Accident</b> (Air Incident Feature)		o	A sudden, unexpected event involving aircraft resulting in fuselage damage, bodily injury, death, and/or the disruption of transportation service, prompting emergency landing procedures or uncontrolled impact with the ground
<b>Air Hijacking</b> (Air Incident Feature)		p	The unexpected, unlawful, and forceful seizure of control aboard an aircraft by an individual or group of individuals resulting in passenger and crew endangerment, injury or death, and/or the redirection of flight destination <sup>12</sup>
<b>Marine Incident</b> (Theme)		q	An event involving a boat or ship and resulting in damage, bodily injury, death, or the disruption of transportation service
<b>Marine Accident</b> (Marine Incident Feature)		r	A sudden, unexpected event involving a boat or ship and resulting in vessel submerging, damage, bodily injury, death, and/or the disruption of transportation service
<b>Marine Hijacking</b> (Marine Incident Feature)		s	The unexpected, unlawful, and forceful seizure of control aboard a boat or ship by an individual or group of individuals resulting in passenger and crew endangerment, injury or death, and/or the redirection of destination <sup>12</sup>
<b>Rail Incident</b> (Theme)		t	An event involving a train and resulting in damage, bodily injury, death, or the disruption of transportation service
<b>Rail Accident</b> (Rail Incident Feature)		u	A sudden, unexpected event involving a wheeled or tracked vehicle resulting in derailment, damage, bodily injury, death, and/or the disruption of transportation service

Table 10.3.2 *Continued*

Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Rail Hijacking</b> (Rail Incident Feature)		v	The unexpected, unlawful, and forceful seizure of control aboard a wheeled or tracked vehicle by an individual or group of individuals resulting in passenger and crew endangerment, injury or death, and/or the redirection of destination <sup>12</sup>
<b>Vehicle Incident</b> (Theme)		w	An event involving a wheeled or tracked vehicle and resulting in damage, bodily injury, death, or the disruption of transportation service
<b>Vehicle Accident</b> (Vehicle Incident Feature)		x	A sudden, unexpected event involving a vehicle and resulting in damage, bodily injury, death, and/or the disruption of transportation service
<b>Vehicle Hijacking</b> (Vehicle Incident Feature)		y	The unexpected, unlawful, and forceful seizure of control aboard a vehicle by an individual or group of individuals resulting in passenger and crew endangerment, injury or death, and/or the redirection of destination <sup>12</sup>

Notes:

<sup>1</sup> Source: Merriam-Webster Online Dictionary.<sup>2</sup> Source: United Nations *Guiding Principles on Internally Displaced Persons*, 1998.<sup>3</sup> Source: 18 USC Section 2102.<sup>4</sup> Source: www.dictionary.com; combined definitions of *criminal* and *activity*.<sup>5</sup> Source: International military definition.<sup>6</sup> Source: <http://peace-officers.com/glossary>.<sup>7</sup> Source: U.S. Department of Agriculture, Forest Service, [www.fs.fed.us](http://www.fs.fed.us).<sup>8</sup> Source: [www.firewise.org](http://www.firewise.org)<sup>9</sup> Source: [www.realdictionary.com](http://www.realdictionary.com).<sup>10</sup> All the proposed definitions for *hazardous incident* are from the Office of Hazardous Materials Safety, Hazmat Regulations and Interpretations.<sup>11</sup> Source: Adapted from NATO definition, [www.nato.int/docu/stanag/aap006/aap6.htm](http://www.nato.int/docu/stanag/aap006/aap6.htm).<sup>12</sup> Source: www.dictionary.com, definition of *hijack*.

**10.4 Natural Events Symbolology.**

**10.4.1** A natural event shall be a phenomenon found in or created by naturally occurring conditions.

**10.4.2** Table 10.4.2 shall be used to cross-reference the natural events symbols with their definitions.

**Table 10.4.2 Natural Events Symbolology Reference**










Symbol Types and Terms	Symbols	Keystroke	Definition
<b>Natural Events Stage 01 Background Symbol</b> (Background)		!	The background fill shape for the Natural Events symbol, Level 1
<b>Natural Events Stage 01 Frame Symbol</b> (Frame)		#	The frame shape for the Natural Events symbol, Level 1
<b>Geologic</b> (Theme)	Reserved		
<b>Aftershock</b> (Geologic Feature)		A	An earthquake that follows a larger earthquake and originates at or near the latter's focus <sup>1</sup>
<b>Avalanche</b> (Geologic Feature)		B	A large mass of snow, ice, soil, or rock, or mixtures of these materials, falling, sliding, or flowing very rapidly under the force of gravity <sup>1</sup>
<b>Earthquake Epicenter</b> (Geologic Feature)		C	The point on the earth's surface directly above the focus of an earthquake <sup>1</sup>
<b>Landslide</b> (Geologic Feature)		D	A general term for a wide variety of processes and landforms involving the down slope movement under the force of gravity of masses of soil and rock material <sup>1</sup>
<b>Subsidence</b> (Geologic Feature)		E	Sinking or downward settling of the Earth's surface <sup>1</sup>
<b>Volcanic Eruption</b> (Geologic Feature)		F	The ejection of volcanic materials (lava, pyroclasts, and volcanic gases) from a vent or fissure in the Earth's crust <sup>1</sup>
<b>Volcanic Threat</b> (Geologic Feature)		G	A vent or fissure in the Earth's crust where volcanic eruption is believed to be imminent <sup>2</sup>

Table 10.4.2 *Continued*

Symbol Types and Terms	Symbols	Keystroke	Definition
<b>Hydro-Meteorologic</b> (Theme)	Reserved		
<b>Drizzle</b> (Hydro-Meteorologic Feature)		H	Sometimes called <i>mist</i> ; very small, numerous, and uniformly dispersed water droplets that appear to float while following air currents and that, unlike fog droplets, fall to the ground
<b>Drought</b> (Hydro-Meteorologic Feature)		I	A period of abnormally dry weather sufficiently prolonged for the lack of water to cause a serious hydrologic imbalance across the affected area. Drought severity depends upon the degree of moisture deficiency, the duration, and (to a lesser extent) the size of the affected area. In general, the term should be reserved for periods of moisture deficiency that are relatively extensive in both space and time.
<b>Flood</b> (Hydro-Meteorologic Feature)		J	A relatively high stream flow that overtops the stream banks in any part of its course, covering land that is not normally under water <sup>1</sup> ; a condition that occurs when water overflows the natural or artificial confines of a stream or other body of water, or accumulates by drainage over low-lying areas
<b>Fog</b> (Hydro-Meteorologic Feature)		K	A visible aggregate of minute water droplets suspended in the atmosphere near the Earth's surface [According to international definition, fog reduces visibility to less than 1 km (5/8 mi). Fog differs from clouds only in that the base of the fog is at the Earth's surface, while clouds are above the surface.]
<b>Hail</b> (Hydro-Meteorologic Feature)		L	Precipitation in the form of circular or irregular-shaped lumps of ice <sup>3</sup>
<b>Inversion</b> (Hydro-Meteorologic Feature)		M	A departure from the standard decrease or increase with altitude of value of an atmosphere property; almost always used to mean temperature inversion
<b>Rain</b> (Hydro-Meteorologic Feature)		N	Precipitation in the form of liquid water drops that have diameters greater than 0.5 mm (0.2 in.)
<b>Sand Dust Storm</b> (Hydro-Meteorologic Feature)		O	A strong wind carrying sand through the air, the diameter of most of the particles ranging from 0.08 mm to 1 mm (0 to 0.04 in.); in contrast to a dust storm, sand particles mostly confined to the lowest 0.6 m (2 ft) and rarely rising more than 15.2 m (50 ft) above the ground
<b>Snow</b> (Hydro-Meteorologic Feature)		P	Precipitation composed of white or translucent ice crystals, chiefly of complex branched hexagonal form and often agglomerated into snowflakes

(continues)



Table 10.4.2 Continued

Symbol Types and Terms	Symbols	Keystroke	Definition
<b>Thunderstorm</b> (Hydro-Meteorologic Feature)		Q	A consequence of atmospheric instability that constitutes an overturning of layers in order to achieve a more stable atmosphere; generally produces lightning, thunder, strong gusts of wind, heavy rain, and sometimes hail
<b>Tornado</b> (Hydro-Meteorologic Feature)		R	A violently rotating column, or funnel, of air in contact with the ground and extending from the base of a thunderstorm <sup>3</sup>
<b>Tropical Cyclone</b> (Hydro-Meteorologic Feature)		S	The general term for a cyclone that originates over the tropical oceans
<b>Tsunami</b> (Hydro-Meteorologic Feature)		T	A great sea wave produced by an earthquake or volcanic eruption, characterized by high speed of propagation, long wavelength, long period, and low observable amplitude on the open ocean <sup>1</sup> ; can reach enormous dimensions and has sufficient energy to travel across entire oceans; no connection with tides, as can be inferred from the commonly used term <i>tidal wave</i>
<b>Infestation</b> (Theme)	Reserved		
<b>Bird Infestation</b> (Infestation Feature)		U	A harassing or troublesome invasion of birds <sup>4</sup>
<b>Insect Infestation</b> (Infestation Feature)		V	A harassing or troublesome invasion of insects
<b>Microbial Infestation</b> (Infestation Feature)		W	A harassing or troublesome invasion of microbes
<b>Reptile Infestation</b> (Infestation Feature)		X	A harassing or troublesome invasion of reptiles
<b>Rodent Infestation</b> (Infestation Feature)		Y	A harassing or troublesome invasion of rodents

Notes:

<sup>1</sup> Source: *Dictionary of Geological Terms*, 3rd edition.<sup>2</sup> Source: Logical extension of *volcanic eruption*.<sup>3</sup> Source: Adapted from National Weather Service glossary, [www.nws.noaa.gov/glossary.htm](http://www.nws.noaa.gov/glossary.htm).<sup>4</sup> Source: Derived from the definition of *infestation* in FactMonster.com dictionary.









































## 10.5 Infrastructures Symbolgy.

**10.5.1** Infrastructure shall be the basic facilities, services, and installations needed for the functioning of a community or society, such as transportation and communications systems,

water and power lines, and public institutions, including schools, post offices, and prisons.

**10.5.2** Table 10.5.2 shall be used to cross-reference the infrastructures symbols with their definitions.

**Table 10.5.2 Infrastructure Symbolgy Reference**

Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Infrastructures Background Symbol</b> (Background)	   	!	The background fill shape for the Infrastructures symbol, Level 1
<b>Infrastructures Frame Symbol</b> (Frame)	   	#	The frame shape for the Infrastructures symbol, Level 1
<b>Agriculture and Food Infrastructure</b> (Theme)	   	\$	Production and retail services of foodstuffs
<b>Agricultural Laboratory</b> (Agriculture and Food Feature)	   	%	Facilities used for scientific research in farming
<b>Animal Feedlot</b> (Agriculture and Food Feature)	   	&	Area designated for feeding livestock
<b>Commercial Food Distribution Center</b> (Agriculture and Food Feature)	   	(	Facility used for the disbursement of marketable foodstuffs
<b>Farm/Ranch</b> (Agriculture and Food Feature)	   	)	A piece of land on which crops or animals are raised
<b>Food Production Center</b> (Agriculture and Food Feature)	   	*	The locus where foodstuffs are produced
<b>Food Retail</b> (Agriculture and Food Feature)	   	+	Facility where foodstuffs are sold for a profit
<b>Grain Storage</b> (Agriculture and Food Feature)	   	,	Facility used for the housing of cereal seeds such as corn, wheat, or barley

(continues)

Table 10.5.2 *Continued*





























































































































Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Banking, Finance, and Insurance Infrastructure</b> (Theme)	   	–	The management of money and other assets and their protection <sup>1</sup>
<b>ATM</b> (Banking, Finance, and Insurance Feature)	   	.	An unattended machine commonly located at a bank's exterior that dispenses money when a personal coded card is inserted <sup>2</sup>
<b>Bank</b> (Banking, Finance, and Insurance Feature)	   	/	A business establishment in which money is kept for saving for commercial purposes or is invested, supplied for loans, or exchanged <sup>1</sup>
<b>Bullion Storage</b> (Banking, Finance, and Insurance Feature)	   	0	A facility used to deposit and warehouse gold or silver bars or ingots <sup>3</sup>
<b>Federal Reserve Bank</b> (Banking, Finance, and Insurance Feature)	   	1	One of twelve regional banks that monitor and act as depositories for banks in their region <sup>2</sup>
<b>Financial Exchange</b> (Banking, Finance, and Insurance Feature)	   	2	A marketplace in which shares, options, and futures on stocks, bonds, commodities, and indexes are traded <sup>4</sup>
<b>Financial Service Other</b> (Banking, Finance, and Insurance Feature)	   	3	A business establishment, other than a bank, for the provision of financial or monetary-related products and services; a location that deals with money management business
<b>Commercial Infrastructure</b> (Theme)	   	4	The locus of where a business enterprise is undertaken <sup>2</sup>
<b>Chemical Plant</b> (Commercial Infrastructure Feature)	   	5	An industrial site where chemical substances and/or compounds are produced <sup>2</sup>
<b>Firearm Manufacturer</b> (Commercial Infrastructure Feature)	   	6	A location where hand weapons of explosive force when shot are mass produced <sup>5</sup>
<b>Firearm Retailer</b> (Commercial Infrastructure Feature)	   	7	A location where hand weapons of explosive force when shot are sold <sup>6</sup>

Table 10.5.2 *Continued*

Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Hazardous Material Production</b> (Commercial Infrastructure Feature)	   	8	The locus of where hazardous chemicals and/or substances are produced and stored under regulated conditions
<b>Hazardous Material Storage</b> (Commercial Infrastructure Feature)	   	9	A storing location for a substance or combination of substances that, because of quantity, concentration, or physical, chemical, radiological, explosive, or infectious characteristics, poses a potential danger to humans and/or the environment <sup>7</sup>
<b>Industrial Site</b> (Commercial Infrastructure Feature)	   	:	The locus of an industrial facility or facilities used for the commercial production and selling of manufactured goods <sup>1</sup>
<b>Landfill</b> (Commercial Infrastructure Feature)	   	;	An area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile <sup>8</sup>
<b>Pharmaceutical Manufacturer</b> (Commercial Infrastructure Feature)	   	=	The location where medicinal drugs are mass produced <sup>9</sup>
<b>Superfund Site National Priorities List</b> (Commercial Infrastructure Feature)	   	?	A location in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency as a candidate for cleanup because it poses a risk to human health and/or the environment <sup>10</sup>
<b>Toxic Release Inventory</b> (Commercial Infrastructure Feature)	   	@	The location according to a publicly available database of chemical and other toxic waste releases <sup>10</sup>
<b>Educational Facilities Infrastructure</b> (Theme)	   	A	A building or collection of buildings or places in which knowledge is provided <sup>11</sup>
<b>College/University</b> (Educational Facilities Feature)	   	B	An institution of higher learning offering courses of studies leading to bachelor's, master's, or doctoral degrees <sup>12</sup>
<b>School</b> (Educational Facilities Feature)	   	C	A facility for the primary and secondary education of children <sup>13</sup>

(continues)

Table 10.5.2 *Continued*

Symbol Types and Terms	Symbols	Keystroke	Definitions
<b>Energy Facilities Infrastructure</b> (Theme)	   	D	A building or collection of buildings and/or places that generates and provides electrical power
<b>Generation Station</b> (Energy Facilities Feature)	   	E	A facility equipped with special equipment used for the production of heat or electricity <sup>14</sup>
<b>Natural Gas Facility</b> (Energy Facilities Feature)	   	F	A location equipped with special equipment used to generate natural gas power
<b>Nuclear Facility</b> (Energy Facilities Feature)	   	G	A location equipped with special equipment used to generate nuclear power
<b>Petroleum Facility</b> (Energy Facilities Feature)	   	H	A building or place that provides and distributes petroleum gas
<b>Propane Facility</b> (Energy Facilities Feature)	   	I	A building or place that provides and distributes propane gas
<b>Government Site Infrastructure</b> (Theme)	   	J	The locus of where executive, legislative, and/or judicial activities take place in the service of the government
<b>Military Infrastructure</b> (Theme)	   	K	Refers collectively to the four major branches of the United States' armed forces as associated with armed services as contrasted with civilians
<b>Military Armory</b> (Military Feature)	   	L	A military structure where arms and ammunition and other military equipment are manufactured and stored, and also where training is given in the use of arms <sup>2</sup>
<b>Military Base</b> (Military Feature)	   	M	The locus of where military personnel, weapons, and supplies are located and also where attacks and other operations are coordinated and launched