



# L-858 Unlighted Taxiway & Runway Signs FAA Style 4

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# Record of Changes

Page	Rev	Description	EC No.	Checked	Approved	Date
All	A	Released manual.		MS	WT	
As required	B	Added Size 1 double faced data. Updated Figures 5-1a through 51d. Added Figures 5-2a through 5-2d.		MS	WT	
3-1, 3-2, 3-3, 3-4	C	Added blank panel P/N to Tables 3-1 and 3-2. Changed P/N of tether assembly in Tables 3-1 and 3-2.		MS	WT	
4-3, 4-30	D	Expanded tether installation instructions, paragraph 4.7. Added spring nut components to Figure 5-8.		MS	WT	
4-3	E	Added spring nut installation instructions to paragraph 4.6.2, Step 3.		MS	WT	
iv 4-13 thru 4-20	F	Added Figures 5-3a through 5-4d to List of Figures. Added pages 4-13 through 4-20. Added Figures 5-3a through 5-4d.		MS	WT	
iv 4-21 thru 4-28	G	Added Figures 5-5a through 5-6d to List of Figures. Added Figures 7 and 8. Removed Figure 5-20 and 5-21. Added pages 4-21 through 4-26. Added Figures 5-5a through 5-6d.		MS	WT	
All	H	Reformatted manual. Deleted unnecessary figures: 5-1b through 5-6d, 5-7, and 5-8. Deleted Section 4.8, Legends and Symbols, and the Legend Sheet.	3197	MS	WT	12/17/97
10-14	I	Changed Tables 5, 7-10, and Figure 4 to correct dimensions.	00097	WT	VP	2/5/99
6, 9, 11, 12, 14, 20, 21, 24, 27, 30	J	Improved appearance of graphics for all Figures because of conversion problem in CMS.	00221	WT	GM	7/21/99
11, 14, 20 26-34	K	Changed single and double faced dimensions on Tables 8 and 11 from 130 in. to 120 in., added quantities to parts lists, added spare parts lists, and added stake-assembly graphic (Figure 6).	00432	BR	WT	3/28/00
All	L	Changed to new title page. Changed ADB to Siemens Airfield Solutions.	00696	BR	WT	5/16/01
20	M	Changed Figure 6, Stake Assembly.	00850	JY	WT	3/5/02
Title	N	Removed reference to ETL certified.	01111	JY	WT	7/21/03

# Table of Contents

Record of Changes .....	ii
Table of Contents .....	iii
Warranty .....	v
1. Safety .....	1
Safety Symbols .....	1
Qualified Personnel .....	2
Intended Use .....	2
Installation .....	3
Operation .....	3
Action in the Event of a System or Component Malfunction .....	4
Maintenance and Repair .....	4
2. Description .....	5
L-858 Unlighted Signs, FAA Style 4: Required Equipment .....	6
Specifications .....	6
Construction .....	7
Class .....	7
Style .....	7
Sign Classification .....	7
Modular Combination Lengths .....	7
Conditions for Continuous Outdoor Use .....	8
Dimensions .....	8
3. Installation .....	15
Introduction .....	15
Unpacking .....	15
Installation .....	15
General Guidelines .....	15
Overall Mounting Height .....	15
Sign Orientation .....	16
Sign Distance from Pavement Edge .....	16
Sign Installation on Concrete Pad .....	16
Stake Mounting .....	19
Optional Tethers .....	21
4. Maintenance .....	23
5. Parts .....	24
Using the Illustrated Parts List .....	24
Unlighted FAA Style 4 Sign Part Numbering System .....	24
L-858 Unlighted Taxiway and Runway Signs Parts List .....	25
Single-Faced Unlighted FAA Style 4 Sign Parts List .....	26
Single-Faced Sign Optional Parts .....	28
Single-Faced Sign Recommended Spare Parts .....	29
Double-Faced Unlighted FAA Style 4 Sign Parts List .....	30
Double-Faced Sign Optional Parts .....	33
Double-Faced Sign Recommended Spare Parts .....	33

## List of Figures

Figure 1.	L-858 Unlighted Taxiway and Runway Signs, FAA Style 4 (Single- and Double-Faced).....	6
Figure 2.	Single-Faced L-858 Unlighted Sign Dimensions (Size 1 and Size 2).....	9
Figure 3.	Single-Faced L-858 Unlighted Sign Dimensions (Size 3).....	11
Figure 4.	Double-Faced L-858 Unlighted Sign Dimensions (Size 1 and Size 2).....	12
Figure 5.	Double-Faced L-858 Unlighted Sign Dimensions (Size 3).....	14
Figure 6.	Stake Assembly.....	19
Figure 7.	Optional Tether.....	21
Figure 8.	Installing Optional Tether.....	22
Figure 9.	Unlighted FAA Style 4 Sign Part Numbers.....	25
Figure 10.	L-858 Single-Faced Sign, All Sizes and Modules.....	28
Figure 11.	Cross-Sectional View of L-858 Double-Faced Sign, All Sizes and Modules.....	32

## List of Tables

Table 1.	L-858 Unlighted Taxiway and Runway Signs, FAA Style 4.....	5
Table 2.	Required Equipment Supplied.....	6
Table 3.	Required Equipment Not Supplied.....	6
Table 4.	Sign Class.....	7
Table 5.	Sign Classifications.....	7
Table 6.	Modular Combination Lengths.....	7
Table 7.	Wind Loads.....	8
Table 8.	Single-Faced Sign Dimensions (Size 1).....	10
Table 9.	Single-Faced Sign Dimensions (Size 2).....	10
Table 10.	Single-Faced Sign Dimensions (Size 3).....	11
Table 11.	Double-Faced Sign Dimensions (Size 1).....	13
Table 12.	Double-Faced Sign Dimensions (Size 2).....	13
Table 13.	Double-Faced Sign Dimensions (Size 3).....	14
Table 14.	Overall Mounting Height.....	16
Table 15.	Recommended Sign Distance from Pavement Edge.....	16
Table 16.	L-858 Unlighted Sign (FAA Style 4) Maintenance.....	23

## Warranties

Products of Siemens Airfield Solutions manufacture are guaranteed against mechanical, electrical, and physical defects (excluding lamps) for a period of one year from the date of installation or a maximum of two years from the date of shipment and are guaranteed to be merchantable and fit for the ordinary purposes for which such products are made.

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This manual could contain technical inaccuracies or typographical errors. Siemens Airfield Solutions reserves the right to revise this manual from time to time in the contents thereof without obligation of Siemens Airfield Solutions to notify any person of such revision or change.

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# L-858 Unlighted Taxiway and Runway Signs

## FAA Style 4

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### 1. Safety

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This section contains general safety instructions for using your Siemens Airfield Solutions equipment. Some safety instructions may not apply to the equipment in this manual. Task- and equipment-specific warnings are included in other sections of this manual where appropriate. Note all warnings and follow all instructions carefully. Failure to do so may result in personal injury, death, or property damage.

To use this equipment safely,

- refer to the FAA Advisory Circular AC 150/5340-26, *Maintenance of Airport Visual Aids Facilities*, for instructions on safety precautions.
- observe all safety regulations. To avoid injuries, always remove power prior to making any wire connections and touching any parts. Refer to FAA Advisory Circular AC 150/5340-26.
- read and become familiar with the general safety instructions provided in this section of the manual before installing, operating, maintaining, or repairing this equipment.
- read and carefully follow the instructions given throughout this manual for performing specific tasks and working with specific equipment.
- store this manual within easy reach of personnel installing, operating, maintaining, or repairing this equipment.
- follow all applicable safety procedures required by your company, industry standards, and government or other regulatory agencies.
- obtain and read Material Safety Data Sheets (MSDS) for all materials used.

### Safety Symbols

Become familiar with the safety symbols presented in this section. These symbols will alert you to safety hazards and conditions that may result in personal injury, death, or property and equipment damage.



**WARNING:** Failure to observe this warning may result in personal injury, death, or equipment damage.



**WARNING:** Risk of electrical shock. Failure to observe this warning may result in personal injury, death, or equipment damage.

**Safety Symbols** (contd.)

**WARNING:** Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage.



**WARNING:** Wear safety goggles. Failure to observe may result in serious injury.



**CAUTION:** Failure to observe may result in equipment damage.

**Qualified Personnel**

The term *qualified personnel* is defined here as individuals who thoroughly understand the equipment and its safe operation, maintenance, and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations and have been trained to safely install, operate, maintain, and repair the equipment. It is the responsibility of the company operating this equipment to see that its personnel meet these requirements.

**Intended Use**

**WARNING:** Use of this equipment in ways other than described in this manual may result in personal injury, death, or property and equipment damage. Use this equipment only as described in this manual.

Siemens Airfield Solutions cannot be responsible for injuries or damages resulting from nonstandard, unintended applications of its equipment. This equipment is designed and intended only for the purpose described in this manual. Uses not described in this manual are considered unintended uses and may result in serious personal injury, death, or property damage. Unintended uses may result from taking the following actions:

- making changes to equipment that have not been recommended or described in this manual or using parts that are not genuine Siemens Airfield Solutions replacement parts
- failing to make sure that auxiliary equipment complies with approval agency requirements, local codes, and all applicable safety standards
- using materials or auxiliary equipment that are inappropriate or incompatible with your Siemens Airfield Solutions equipment
- allowing unqualified personnel to perform any task

## Installation

Read the installation section of all system component manuals before installing your equipment. A thorough understanding of system components and their requirements will help you install the system safely and efficiently.



**WARNING:** Failure to follow these safety procedures can result in personal injury or death.

- Allow only qualified personnel to install Siemens Airfield Solutions and auxiliary equipment. Use only approved equipment. Using unapproved equipment in an approved system may void agency approvals.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Follow all instructions for installing components and accessories.
- Install all electrical connections to local code.
- Use only electrical wire of sufficient gauge and insulation to handle the rated current demand. All wiring must meet local codes.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Protect components from damage, wear, and harsh environment conditions.
- Allow ample room for maintenance, panel accessibility, and cover removal.
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning.

## Operation

Only qualified personnel, physically capable of operating the equipment and with no impairments in their judgment or reaction times, should operate this equipment.

Read all system component manuals before operating this equipment. A thorough understanding of system components and their operation will help you operate the system safely and efficiently.



**Operation** *(contd.)*

- Before starting this equipment, check all safety interlocks, fire-detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks or locked-out electrical disconnects or pneumatic valves.
- Never operate equipment with a known malfunction.
- Do not attempt to operate or service electrical equipment if standing water is present.
- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.
- Never touch exposed electrical connections on equipment while the power is ON.

**Action in the Event of a System or Component Malfunction**

Do not operate a system that contains malfunctioning components. If a component malfunctions, turn the system OFF immediately.

- Disconnect and lock out electrical power.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component according to instructions provided in its manual.

**Maintenance and Repair**

Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks. Only persons who are properly trained and familiar with Siemens Airfield Solutions equipment are permitted to service this equipment.

- Always use safety devices when working on this equipment.
- Follow the recommended maintenance procedures in your equipment manuals.
- Do not service or adjust any equipment unless another person trained in first aid and CPR is present.
- Connect all disconnected equipment ground cables and wires after servicing equipment. Ground all conductive equipment.
- Use only approved Siemens Airfield Solutions replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.

**Maintenance and Repair***(contd.)*

- Check interlock systems periodically to ensure their effectiveness.
- Do not attempt to service electrical equipment if standing water is present. Use caution when servicing electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with electrical equipment.

**2. Description**

This section describes the L-858 unlighted taxiway and runway signs, FAA Style 4, referred to in Table 1.

Table 1. L-858 Unlighted Taxiway and Runway Signs, FAA Style 4

<b>Sign Type</b>	<b>Purpose</b>	<b>Legend Color</b>	<b>Background Color</b>
L-858Y	Taxiway, Direction, Destination, & Boundary	Black	Yellow
L-858R	Mandatory Sign	White	Red
L-858L	Runway or Taxiway Location	Yellow	Black

See Figure 1. The Siemens Airfield Solutions L-858 unlighted taxiway and runway signs, FAA Style 4, are used on airports

- to guide pilots of aircraft to destinations in accordance with FAA AC 150/5340-18C
- to identify holding positions, and intersecting runways and taxiways
- to prohibit entry into a particular area

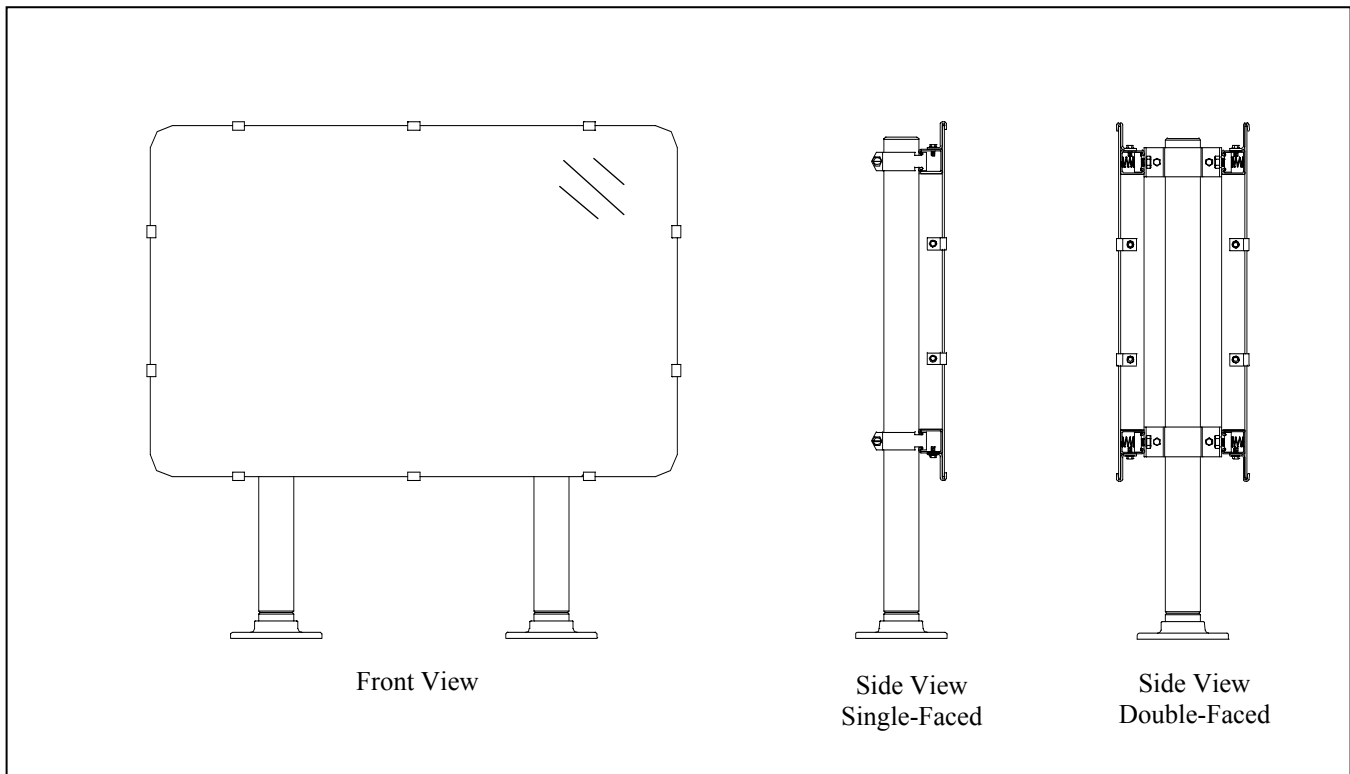


Figure 1. L-858 Unlighted Taxiway and Runway Signs, FAA Style 4 (Single- and Double-Faced)

**NOTE:** Figure 1 shows the single module, Size 1 and Size 2, two-legged L-858 unlighted sign. The single module, Size 3 sign has three legs.

**L-858 Unlighted Signs, FAA Style 4: Required Equipment**

Refer to Table 2 for required equipment that is supplied. Refer to Table 3 for required equipment that is not supplied.

Table 2. Required Equipment Supplied

Description	Quantity
L-858 Sign	1
Instruction manual	2 per order
Frangible legs per module	2-3
Mounting hardware (floor flange(s))	As required

Table 3. Required Equipment Not Supplied

Description	Quantity
Anchor bolts (two 1/2–13 bolts per taxiway end marker leg)	As required
Anti-seize compound/petroleum jelly	As required

**Specifications**

This subsection provides specifications for L-858 unlighted taxiway and runway signs, FAA Style 4.

### Construction

Structure is fabricated from aluminum sheet and steel extrusions. Mounting hardware is stainless steel.

### Class

Refer to Table 4 for sign class.

Table 4. Sign Class

Class	Operating Temperature Range (Celsius)	Operating Temperature Range (Fahrenheit)
2	-55 to +55 °C	-67 to +131 °F

### Style

Style 4 is unlighted.

### Sign Classification

Refer to Table 5 for sign classifications.

Table 5. Sign Classifications

Sign Size	Legend Panel Height in. (mm)	Legend Height in. (mm)	Maximum Overall Sign Length in. (mm)	Minimum Overall Sign Length in. (mm)	Overall Mounting Height in. (mm)
1	18 (460)	12 (300)	120 (1524)	30 (762)	24–30 (610–760)
2	24 (610)	15 (380)	145 (1829)	36 (914)	30–36 (760–910)
3	30 (760)	18 (460)	170 (2134)	42 (1067)	36–42 (910–1070)

### Modular Combination Lengths

Refer to Table 6 for modular combination lengths.

Table 6. Modular Combination Lengths

Sign Size	1 Module in. (mm)	2 Modules in. (mm)	3 Modules in. (mm)	4 Modules in. (mm)	Note
1	32.00 (812.8)	64 (1625.6)	96 (2438.4)	120 (3048)	A
2	38.00 (965.2)	76 (1930.4)	114 (2895.6)	145 (3683)	A
3	44.00 (1117.6)	88 (2235.2)	132 (3352.8)	170 (4318)	A

NOTE A: The length shown for 4 modules is the maximum length allowed per AC 150/5345-44F.

**Conditions for Continuous Outdoor Use**

The L-858 unlighted sign, FAA Style 4, is designed for continuous outdoor use under the conditions presented below for operating temperature range, wind, and rain.

***Operating Temperature Range***

-55 to +55 °C (-67° to +131 °F)

***Wind***

The L-858 unlighted sign is available in Mode 1 and Mode 2, FAA signs that withstand the wind loads described in Table 7.

Table 7. Wind Loads

<b>Sign Mode</b>	<b>Wind Loads</b>
Mode 1	100 mph (161 km/hr)
Mode 2	200 mph (322 km/hr)

***Rain***

The L-858 unlighted sign is designed for exposure to driving rains.

**Dimensions**

This subsection provides dimensions for single-faced and double-faced signs.

**Single-Faced Sign Dimensions**

This subsection describes the dimensions for the single-faced sign. The single-faced sign has three sizes: Size 1, Size 2, and Size 3.

Figure 2 shows the one-module, Size 1 and Size 2, single-faced sign dimensions. Figure 2 applies to all modules, Size 1 and Size 2. Refer to Tables 8 and 9 for the dimensions for all modules, Size 1 and Size 2.

**NOTE:** Single-faced Size 1 and Size 2 signs have two legs per module.

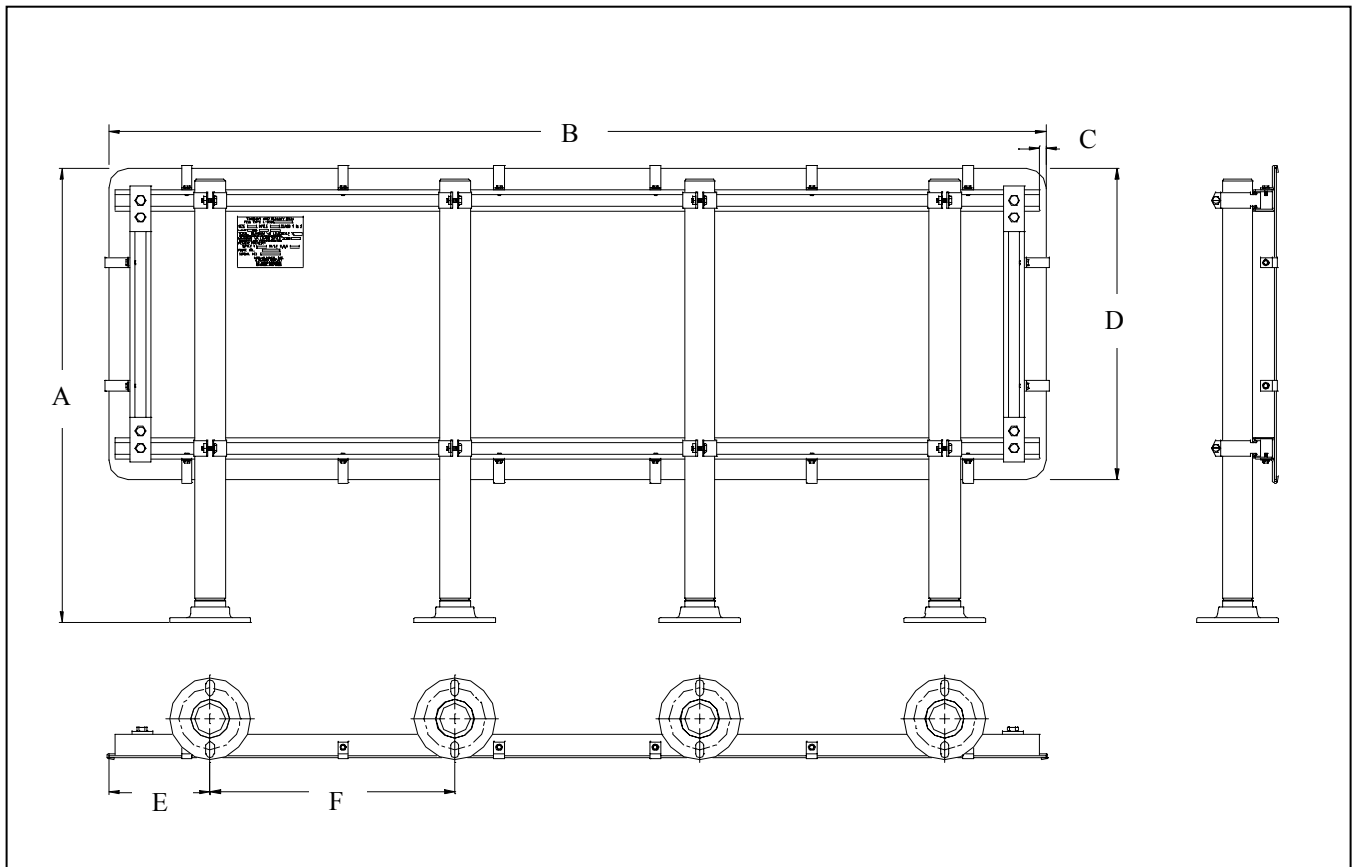


Figure 2. Single-Faced L-858 Unlighted Sign Dimensions (Size 1 and Size 2)

**Single-Faced Sign Dimensions (contd.)**

Table 8. Single-Faced Sign Dimensions (Size 1)

<b>Sign Size</b>	<b>A in. (mm)</b>	<b>B in. (mm)</b>	<b>C in. (mm)</b>	<b>D in. (mm)</b>	<b>E in. (mm)</b>	<b>F in. (mm)</b>
Size 1, 1-Module	30 (762)	32 (812.8)	0.50 (12.7)	18 (457.2)	8.24 (209.296)	15.51 (393.954)
Size 1, 2-Module	30 (762)	64 (1625.6)	0.50 (12.7)	18 (457.2)	8.73 (221.742)	15.51 (393.954)
Size 1, 3-Module	30 (762)	96 (2438.4)	0.50 (12.7)	18 (457.2)	9.22 (234.188)	15.51 (393.954)
Size 1, 4-Module	30 (762)	120 (3048)	0.50 (12.7)	18 (457.2)	5.75 (146.05)	15.51 (393.954)

Table 9. Single-Faced Sign Dimensions (Size 2)

<b>Sign Size</b>	<b>A in. (mm)</b>	<b>B in. (mm)</b>	<b>C in. (mm)</b>	<b>D in. (mm)</b>	<b>E in. (mm)</b>	<b>F in. (mm)</b>
Size 2, 1-Module	35 (889)	38 (965.2)	0.50 (12.7)	24 (609.6)	9.59 (243.586)	18.81 (477.774)
Size 2, 2-Module	35 (889)	76 (1930.4)	0.50 (12.7)	24 (609.6)	9.78 (248.412)	18.81 (477.774)
Size 2, 3-Module	35 (889)	114 (2895.6)	0.50 (12.7)	24 (609.6)	9.97 (253.238)	18.81 (477.774)
Size 2, 4-Module	35 (889)	145 (3683)	0.50 (12.7)	24 (609.6)	6.65 (168.91)	18.81 (477.774)

Figure 3 shows the one-module, Size 3 sign dimensions. Figure 3 applies to all modules, Size 3. Refer to Table 10 for the dimensions for all modules, Size 3.

**NOTE:** Single-faced Size 3 signs have three legs per module.

*Single-Faced Sign Dimensions (contd.)*

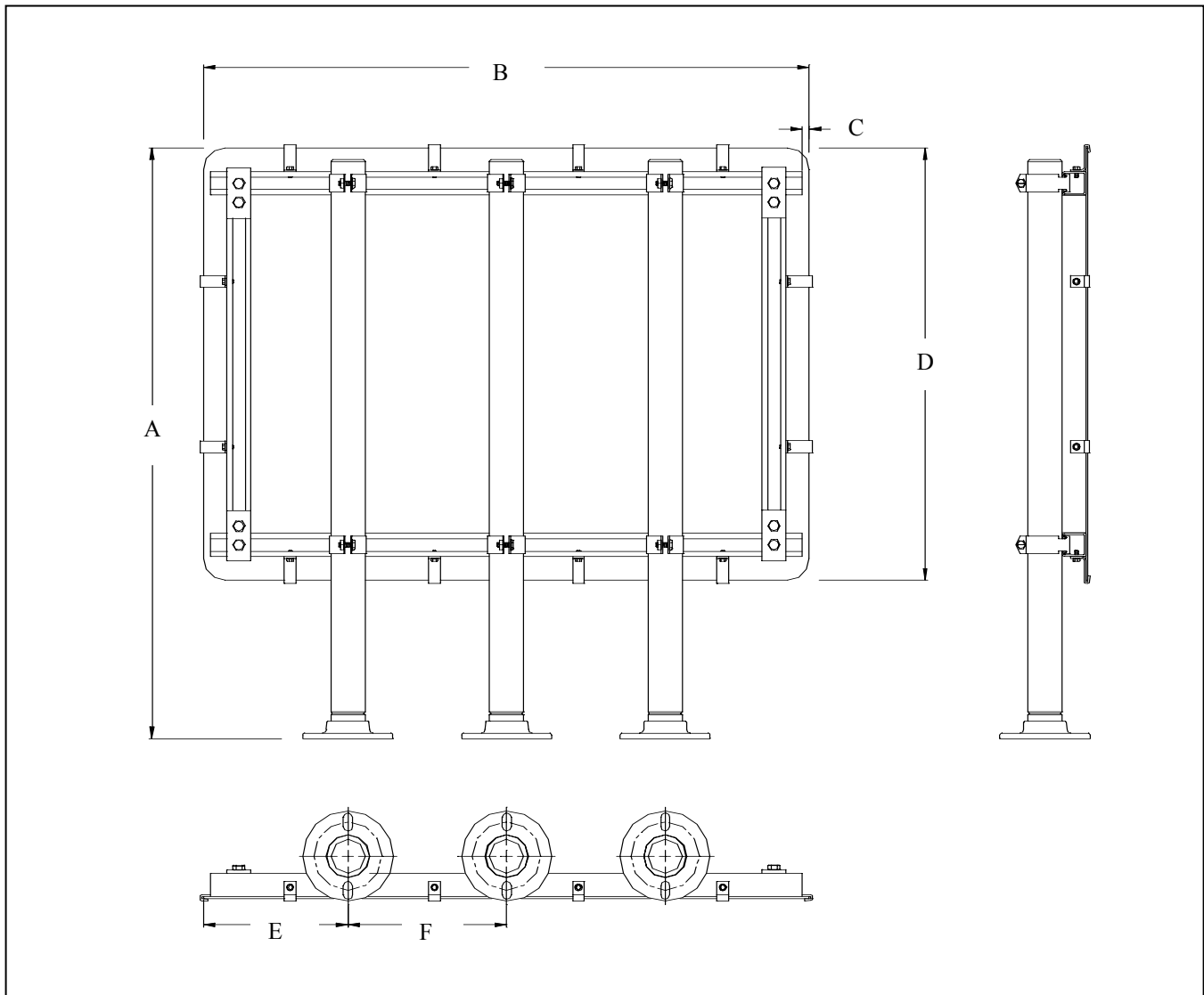


Figure 3. Single-Faced L-858 Unlighted Sign Dimensions (Size 3)

Table 10. Single-Faced Sign Dimensions (Size 3)

Sign Size	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)
Size 3, 1-Module	41 (104.14)	44 (1117.6)	0.50 (12.7)	30 (762)	11 (279.4)	11 (279.4)
Size 3, 2-Module	41 (104.14)	88 (2235.2)	0.50 (12.7)	30 (762)	16.50 (419.1)	11 (279.4)
Size 3, 3-Module	41 (104.14)	132 (3352.8)	0.50 (12.7)	30 (762)	10.25 (260.35)	13.94 (354.076)
Size 3, 4-Module	41 (104.14)	176 (4470.4)	0.50 (12.7)	30 (762)	10.09 (256.286)	13.62 (345.948)



**Double-Faced Sign Dimensions**

This subsection describes the dimensions for the double-faced sign. The double-faced sign has three sizes: Size 1, Size 2, and Size 3.

Figure 4 shows the one-module, Size 1 and Size 2, double-faced sign dimensions. Figure 4 applies to all modules, Size 1 and Size 2. Refer to Tables 11 and 12 for the dimensions for all modules, Size 1 and Size 2.

**NOTE:** Double-faced Size 1 and Size 2 signs have two legs per module.

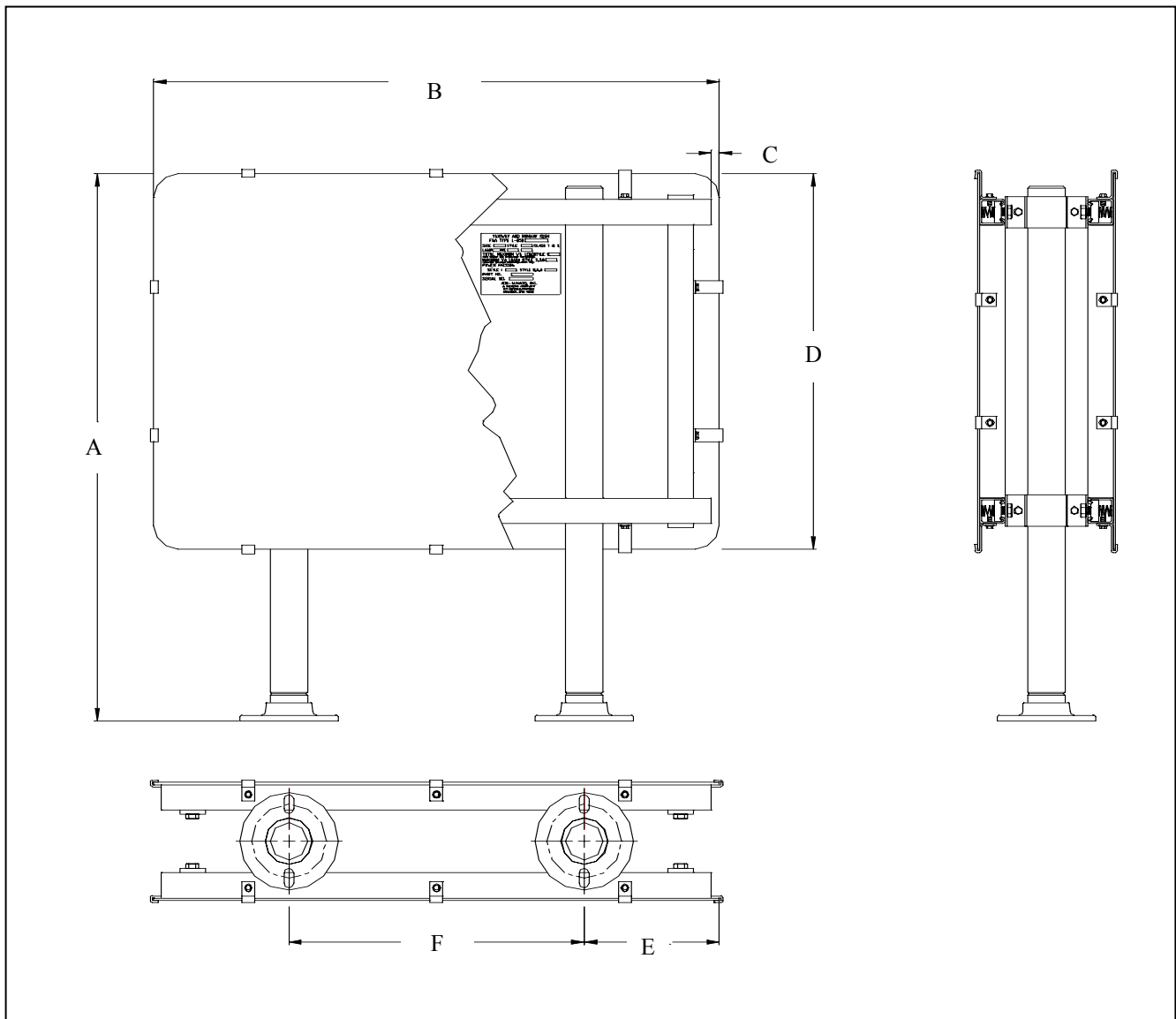


Figure 4. Double-Faced L-858 Unlighted Sign Dimensions (Size 1 and Size 2)

**Double-Faced Sign Dimensions (contd.)**

Table 11. Double-Faced Sign Dimensions (Size 1)

<b>Sign Size</b>	<b>A in. (mm)</b>	<b>B in. (mm)</b>	<b>C in. (mm)</b>	<b>D in. (mm)</b>	<b>E in. (mm)</b>	<b>F in. (mm)</b>
Size 1, 1-Module	30 (762)	32 (812.8)	0.50 (12.7)	18 (457.2)	8.24 (209.296)	15.51 (393.954)
Size 1, 2-Module	30 (762)	64 (1625.6)	0.50 (12.7)	18 (457.2)	8.73 (221.742)	15.51 (393.954)
Size 1, 3-Module	30 (762)	96 (2438.4)	0.50 (12.7)	18 (457.2)	9.22 (234.188)	15.51 (393.954)
Size 1, 4-Module	30 (762)	120 (3048)	0.50 (12.7)	18 (457.2)	5.75 (146.05)	15.51 (393.954)

Table 12. Double-Faced Sign Dimensions (Size 2)

<b>Sign Size</b>	<b>A in. (mm)</b>	<b>B in. (mm)</b>	<b>C in. (mm)</b>	<b>D in. (mm)</b>	<b>E in. (mm)</b>	<b>F in. (mm)</b>
Size 2, 1-Module	35 (889)	38 (965.2)	0.50 (12.7)	24 (609.6)	9.59 (243.586)	18.81 (477.774)
Size 2, 2-Module	35 (889)	76 (1930.4)	0.50 (12.7)	24 (609.6)	9.78 (248.412)	18.81 (477.774)
Size 2, 3-Module	35 (889)	114 (2895.6)	0.50 (12.7)	24 (609.6)	9.97 (253.238)	18.81 (477.774)
Size 2, 4-Module	35 (889)	145 (3683)	0.50 (12.7)	24 (609.6)	6.65 (168.91)	18.81 (477.774)

Figure 5 shows the one-module, Size 3, double-faced sign dimensions. Figure 5 applies to all modules, Size 3. Refer to Table 13 for the dimensions for all modules, Size 3.

**NOTE:** Double-faced Size 3 signs have three legs per module.

*Double-Faced Sign Dimensions (contd.)*

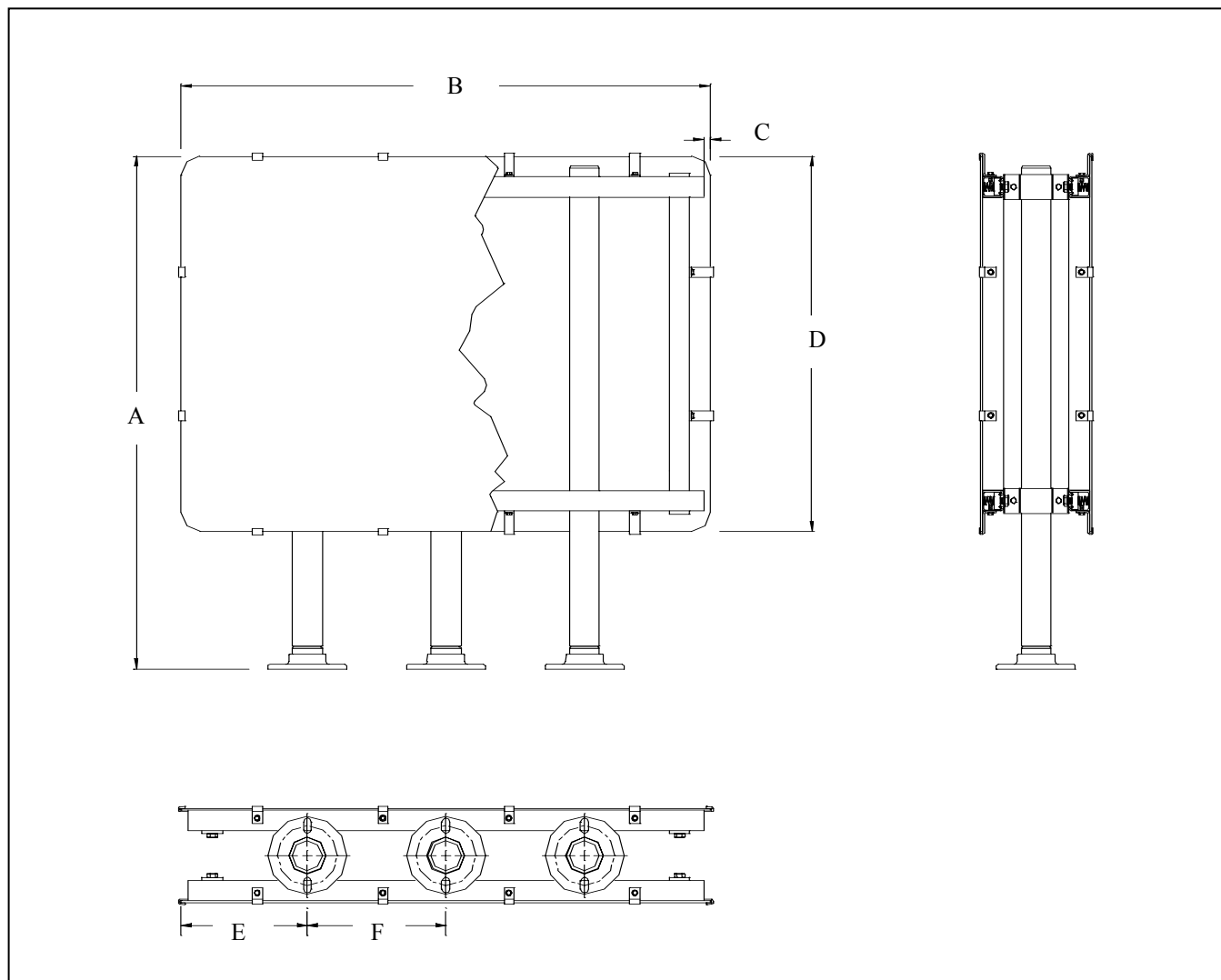


Figure 5. Double-Faced L-858 Unlighted Sign Dimensions (Size 3)

Table 13. Double-Faced Sign Dimensions (Size 3)

Sign Size	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)
Size 3, 1-Module	41 (104.14)	44 (117.6)	0.50 (12.7)	30 (762)	11 (279.4)	11 (279.4)
Size 3, 2-Module	41 (104.14)	88 (2235.2)	0.50 (12.7)	30 (762)	16.50 (419.1)	11 (279.4)
Size 3, 3-Module	41 (104.14)	132 (3352.8)	0.50 (12.7)	30 (762)	10.25 (260.35)	13.94 (354.076)
Size 3, 4-Module	41 (104.14)	176 (4470.4)	0.50 (12.7)	30 (762)	10.09 (256.286)	13.62 (345.948)

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### 3. Installation

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**WARNING:** Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.

#### Introduction

This section provides instructions for installing L-858, FAA Style 4, taxiway and runway signs. Refer to the airport project plans and specifications for the specific installation instructions and FAA AC 150/5340-18C.

#### Unpacking

The equipment is shipped ready for installation. Handle equipment very carefully to prevent component damage. Unpack the carton upon receipt and check the contents and their condition. Note any exterior damage to the carton that might lead to detection of equipment damage.

If you note any damage to any equipment, file a claim with the carrier immediately. The carrier may need to inspect the equipment.

#### Installation

This subsection provides installation instructions for L-858 unlighted taxiway and runway signs.

##### General Guidelines

When installing L-858 unlighted signs, FAA Style 4, follow the guidelines below.

- Mount the signs on a concrete slab, concrete pedestals, or angle iron stakes.
- Do not allow concrete edges or stakes to protrude above grade.

##### Overall Mounting Height

Install signs so that the overall height above the surrounding ground of the sign assembly, including mounting supports, does not exceed heights given in Table 14 and the clearances of aircraft wings as specified in AC 150/5340-18C. The sign must provide 12 inches (304.8 mm) of clearance between the top of the sign and any part of the most critical aircraft using, or expected to use, the airport when the aircraft's wheels are at the pavement edge.

**Overall Mounting Height** (*contd.*)

Table 14. Overall Mounting Height

<b>Sign Size</b>	<b>Overall Mounting Height in.</b>	<b>Overall Mounting Height mm</b>
1	24–30	610–762
2	30–36	760–910
3	36–42	910–1070

**Sign Orientation**

When orienting signs, follow the guidelines below.

- Orient the sign so that the face is perpendicular to the centerline of the taxiway or runway.
- For special situations where visibility would be improved, cant single-sided signs. Refer to FAA AC 150/5340-18C for the correct orientation.
- For signs identifying an instrument landing system (ILS) critical area, coordinate the location and orientation with the local FAA airway facilities personnel, and schedule installation with periodic ILS flight checks to ensure that signs do not cause interference with the ILS electronic signal.

**Sign Distance from Pavement Edge**

Refer to Table 15 for the distance of signs from the pavement edge. Refer to AC 150/5340-18C for more information on the location of different types of taxiway signs.

Table 15. Recommended Sign Distance from Pavement Edge

<b>Sign Size</b>	<b>Distance from Pavement ft</b>	<b>Distance from Pavement m</b>
1	10–20	3.05–6.1
2	25–35	7.62–10.67
3	35–60	10.67–18.29

**Sign Installation on Concrete Pad**

This subsection provides procedures for pouring a concrete pad and installing the sign onto the pad.

### ***Concrete Pouring***

To pour a concrete pad, perform the following procedure:

1. Determine the sign size and module.
2. Pour the concrete pad according to the following requirements:
  - a minimum of 30 inches (762 mm) wide, extending 14 inches (355.6 mm) beyond the ends of the supports
  - a minimum of 4 inches (101.6 mm) depth, extending below the frost line to prevent frost heave
  - reinforced to meet load requirements and/or crack control

### ***Single-Faced Sign Mounting***

**NOTE:** Signs are totally assembled at the factory and are ready for direct installation. The frangible legs are the only items you have to attach.

To mount the single-faced sign onto the concrete pad, perform the following procedure:

1. Before the concrete sets, install two 1/2–13 anchor bolts into the concrete pad. The bolts should be equally spaced on a 4.75-inch- (120.65-mm-) diameter bolt circle, 180 degrees apart for each foot. Bolts should be located perpendicular to the sign face.

**NOTE:** A customer-supplied setting fixture is recommended to hold the bolts in position while the concrete sets.

**NOTE:** Anchor bolts must be a minimum of 1.25 (31.75 mm) inches above the top surface of the concrete pad to attach the flange.

**NOTE:** Hilti quick bolts are recommended for installing the flanges after the concrete sets.

2. Install the flange on the bolts.
3. Lubricate the threads of the frangible leg with petroleum jelly or anti-seize compound and screw the legs into the floor flanges.
4. Attach the sign to frangible legs using pipe clamps (two clamps per leg), and tighten the clamp screws against the frangible legs so that the sign is level.

**NOTE:** The larger the sign, the more important for parts such as flanges to concrete and leg to flanges to be at a 90 degree angle.

**Single-Faced Sign Mounting (contd.)**

**CAUTION:** Be careful not to crush the frangible legs by overly tightening the clamp screws.

5. Install optional tether (if used) to the sign and anchor bolt. Refer to *Optional Tethers* in this section.

**Double-Faced Sign Mounting**

**NOTE:** Signs are totally assembled at the factory and are ready for direct installation. The frangible legs are the only items you have to attach.

To mount the double-faced sign onto the concrete pad, perform the following procedure:

1. Before the concrete sets, install two 1/2–13 anchor bolts into the concrete pad. The bolts should be equally spaced on a 4.75-inch- (120.65-mm-) diameter bolt circle, 180 degrees apart for each foot. Bolts should be located perpendicular to the sign face.

**NOTE:** A customer-supplied setting fixture is recommended to hold the bolts in position while the concrete sets.

**NOTE:** Anchor bolts must be a minimum of 1.25 inches (31.75 mm) above the top surface of the concrete pad to attach the flange.

**NOTE:** Hilti quick bolts are recommended for installing the flanges after the concrete sets.

2. Install the flange on the bolts.
3. Lubricate the threads of the frangible leg with petroleum jelly or anti-seize compound and screw the legs into the floor flanges.
4. Insert spring nuts into the channel found on the back of the panel.

**Double-Faced Sign Mounting** (contd.)

5. Attach the sign to frangible legs using pipe clamps (four clamps per leg and eight clamp angles per leg), and tighten the clamp screws against the frangible legs so that the sign is level.

**NOTE:** The larger the sign, the more important for parts such as flanges to concrete and leg to flanges to be at a 90 degree angle.



**CAUTION:** Be careful not to crush the frangible legs by overly tightening the clamp screws.

6. Install optional tether (if used) to the sign and anchor bolt. Refer to *Optional Tethers* in this section.

**Stake Mounting**

**NOTE:** Stake mounting is recommended for Size 1 signs only.

To install a stake (44B1092W), perform the following procedure:

1. See Figure 6. Install angle-iron stakes (2) in 6-inch- (152.4-mm-) diameter holes at a depth of 30 inches (762 mm).



**CAUTION:** Do not drive stakes. Driving stakes may damage the stake and cause sign misalignment. Refer to FAA specification AC 150/5340-24.

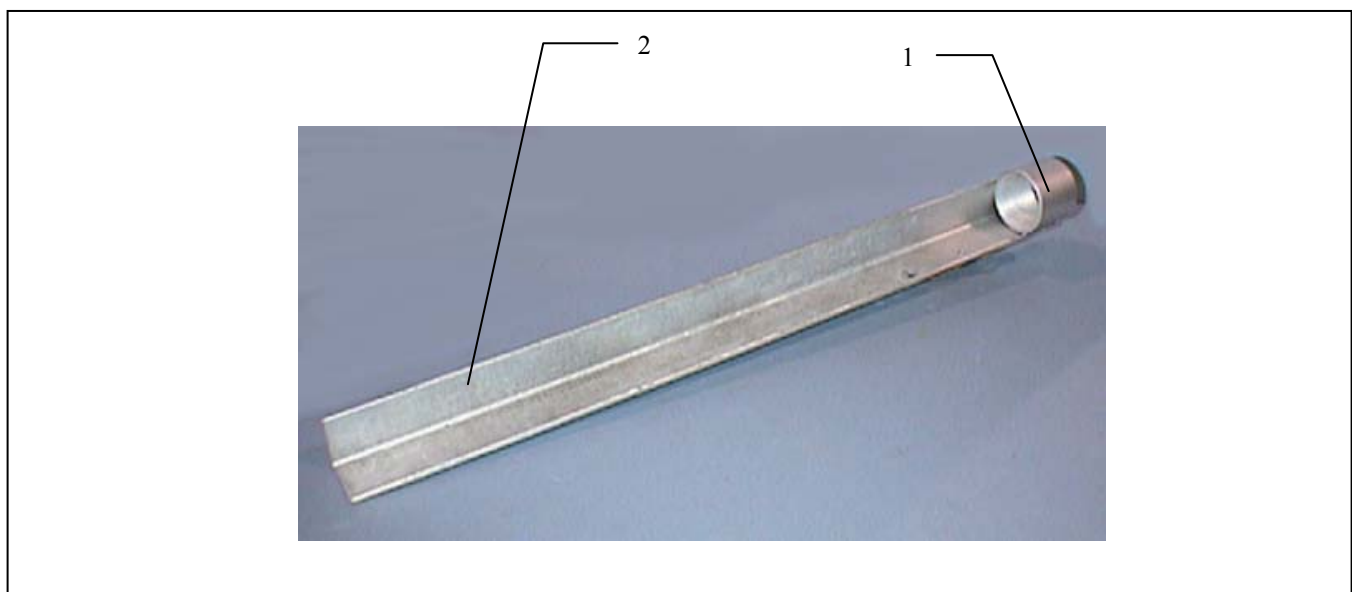


Figure 6. Stake Assembly

1. Threaded Hub
2. Stake



**Stake Mounting** *(contd.)*

2. Pour concrete in the holes (6 x 6 x 12 in., minimum) (152 x 152 x 305 mm) to create a concrete anchor for the stakes.
3. Backfill around the stake with compacted earth passing a 1-inch (25.4 mm) sieve.
4. Make sure the top of the threaded hub (2) that is attached to the stake is even or not more than 1/2 inch (12.7 mm) above the finished grade and the stake is within 1/2 degree of vertical.
5. Screw the frangible coupling into the hub. Mount the sign onto the coupling.

### Optional Tethers

See Figure 7. Install one tether (2) per sign or as specified in the airport plans and specifications. Install the tether at either end of the taxiway sign.

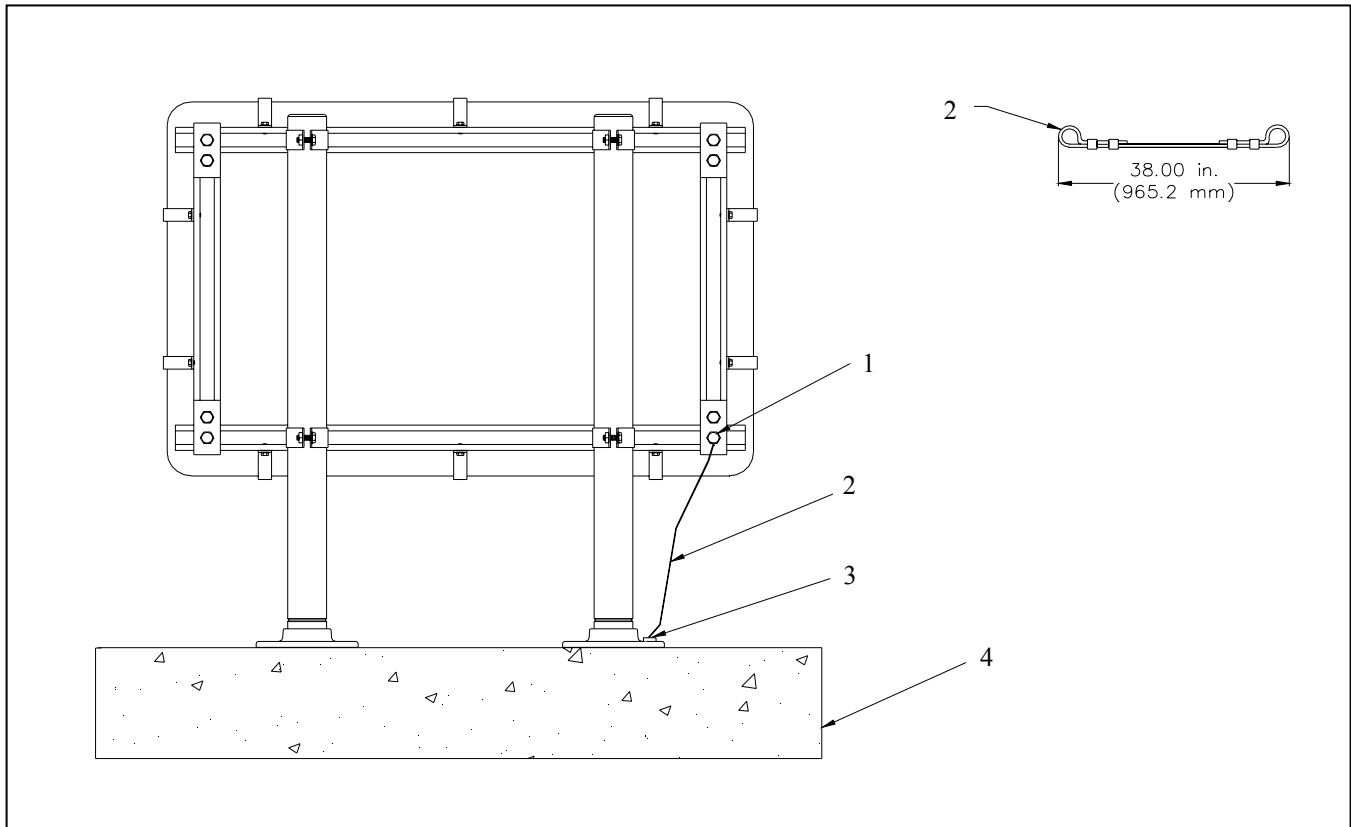


Figure 7. Optional Tether

1. Rail Connection Plate
2. Tether
3. Floor Flange Bolt
4. Concrete Pad

**Optional Tethers** (contd.)

**NOTE:** See Figure 8. The tether may be attached to the concrete pad by using either the mounting hardware used to fasten the floor flange to the pad or by using an independent anchor bolt or anchor stud. If an anchor is used, the anchor should be located at one end of the taxiway sign directly under the rail connector plate (2) found on the backside sign structure. The anchor should be a minimum of 1.5 inches long.

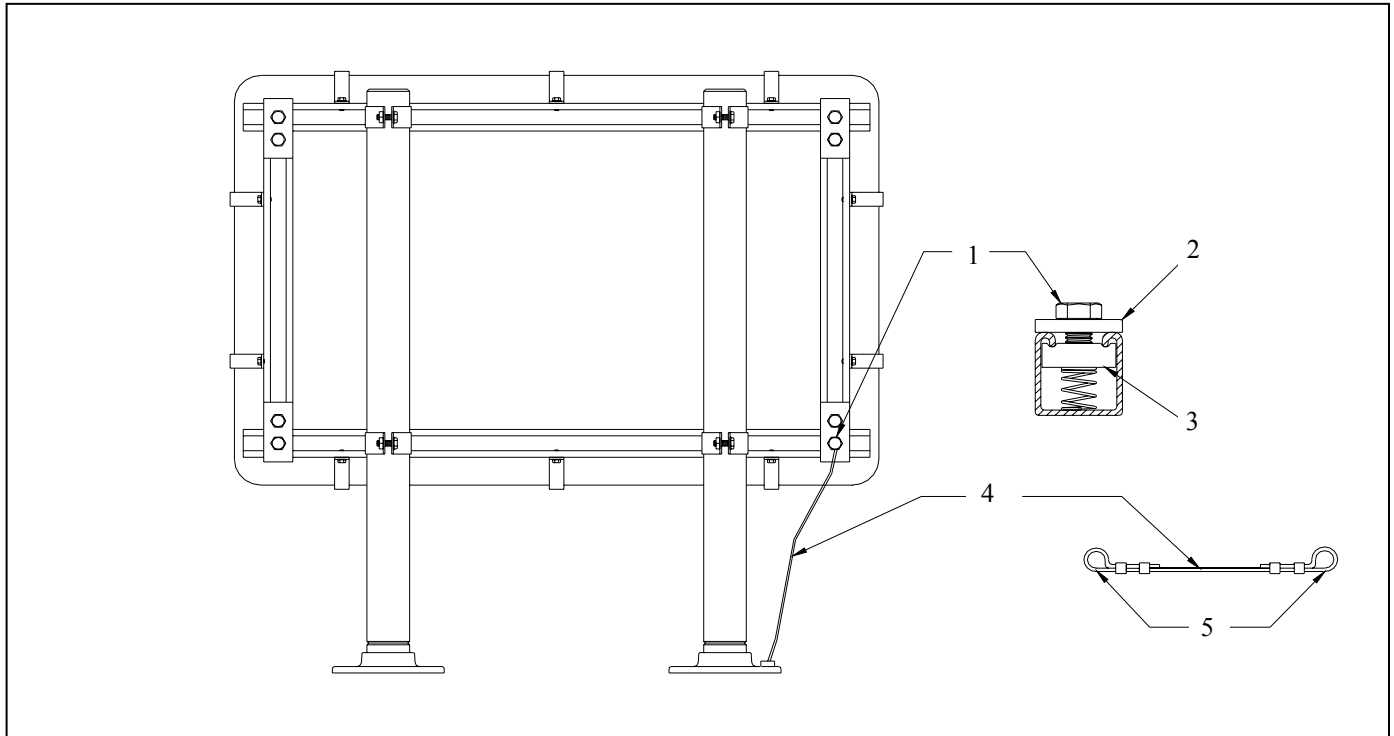


Figure 8. Installing Optional Tether

1. Hex Head Bolt
2. Rail Connection Plate
3. Clamp Nut
4. Tether
5. Tether Eyes

To install the tether to the taxiway sign, perform the following procedure:

1. See Figure 7. Attach the tether (2) to the concrete pad (4) by performing the following procedure:
  - a) Place a 1/2 in. flatwasher between the hex nut or under the head of the floor flange bolt (3).
  - b) See Figure 8. Insert the floor flange bolt through one of the tether eyes (5). Finger tighten the bolt against the floor flange.

**Optional Tethers** *(contd.)*

2. Attach the other end of the tether (4) to the sign by performing the following procedure:
  - a) Remove the lower 1/2–13 hex head bolt (1) used to secure the rail connection plate (2). The clamp nut (3) remains in place behind the plate when you remove the bolt.
  - b) Slide a 1/2 in. flatwasher over the end of the hex head bolt and then insert this bolt through the tether eye (5).
  - c) Reinstall the bolt into the clamp nut.
  - d) Tighten the bolts on the concrete pad and the sign to torque values recommended for the size and type bolts and nuts being used.

**4. Maintenance**

To keep signs operating efficiently, follow a preventive maintenance schedule. Refer to Table 16.

Table 16. L-858 Unlighted Sign (FAA Style 4) Maintenance

<b>Interval</b>	<b>Maintenance Task</b>	<b>Action</b>
Monthly	Check for dirty panels.	Clean with mild soap and water.
	Check for vegetation covering panel.	Remove vegetation.
Annually	Check for paint flaking off.	Repaint.

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## 5. Parts

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To order parts, call Siemens Airfield Solutions Customer Service or your local representative. Use this five-column parts list, and the accompanying illustration, to describe and locate parts correctly.

### Using the Illustrated Parts List

This subsection describes how to use the illustrated parts list covered later in this section. It does not provide the actual parts list.

The Item column numbers correspond to the numbers that identify parts in illustrations following each parts list. NS (not shown) indicates that a listed part is not illustrated.

The Description column gives the part name, as well as its dimensions and other characteristics when appropriate. Indentions show the relationships between assemblies, subassemblies, and parts.

The Part Number column gives the Siemens Airfield Solutions part number.

Item	Description	Part Number	Quantity	Note
S1	Assembly	XXXXXXXX	1	A
NS	Part	XXXXXXXX	1	
H1	Part or Assembly			
	Part/Assembly for option 1	XXXXXXXX	2	
	Part/Assembly for option 2	XXXXXXXX	2	
T1	Assembly	XXXXXXXX	1	
	• Part	XXXXXXXX	1	
	• Part	XXXXXXXX	2	
NOTE A				

The Quantity column contains the quantity required per unit, assembly, or subassembly. The code AR (As Required) is used if the part number is a bulk item ordered in quantities or if the quantity per assembly depends on the product version or model.

The Note column contains letters that refer to notes at the end of each parts list. Notes contain special ordering or product/part version information.

### Unlighted FAA Style 4 Sign Part Numbering System

Figure 9 shows how to determine the part number for a particular unlighted FAA Style 4 sign module.

**Unlighted FAA Style 4 Sign  
Part Numbering System**

(contd.)

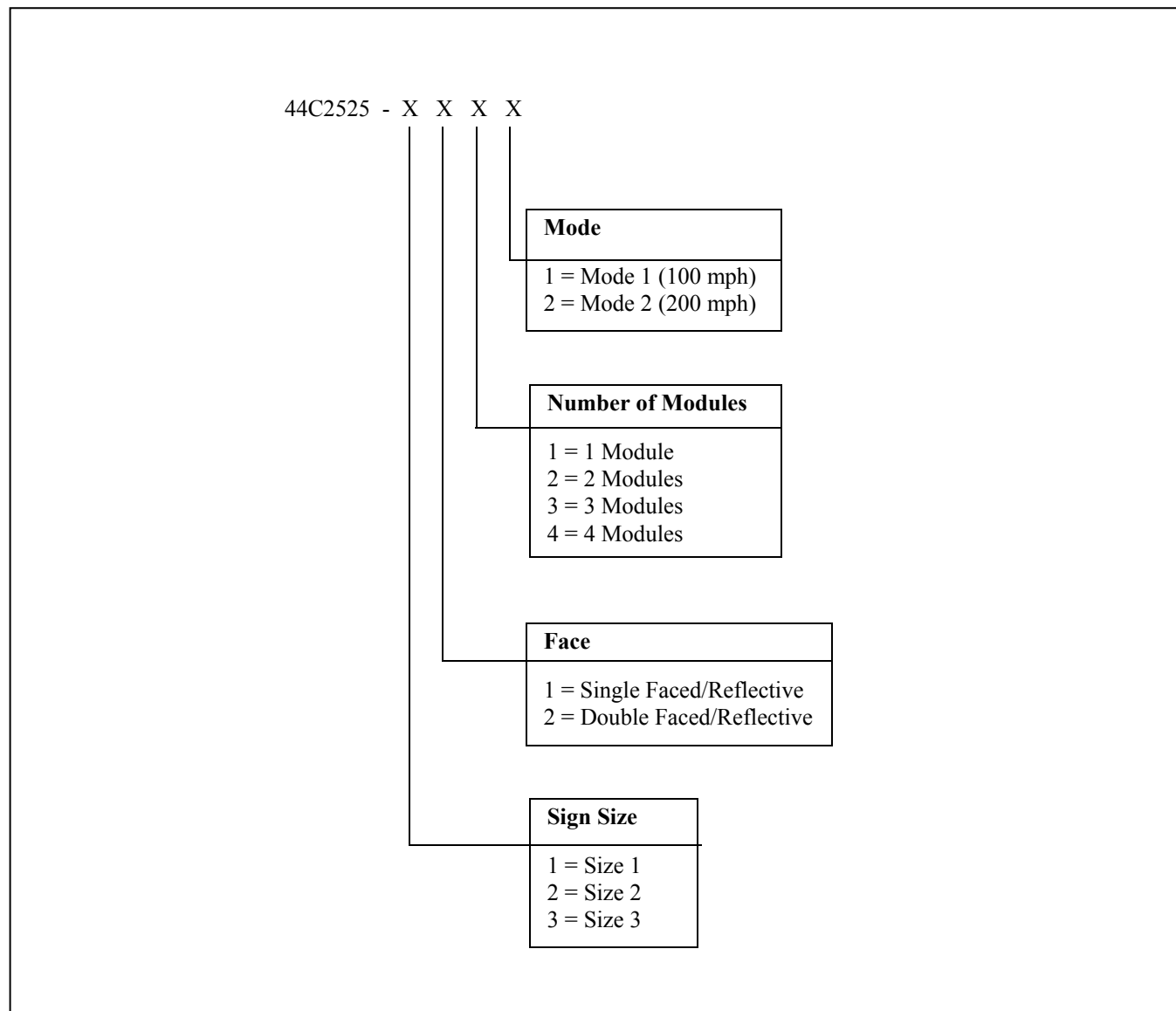


Figure 9. Unlighted FAA Style 4 Sign Part Numbers

## L-858 Unlighted Taxiway and Runway Sign Parts List

This subsection provides the parts list for L-858 unlighted taxiway and runway signs (single- and double-faced).

### Single-Faced Unlighted FAA Style 4 Sign Parts List

See Figure 10. Refer below for the single-faced unlighted FAA Style 4 sign parts list.

**NOTE:** Figure 10 shows a one module, Size 2 single-faced sign. Parts are similar for other sizes and modules.

Item	Description	Part Number	Quantity	Note
1	Hex bolt, 1/4–20 x 1/2	64A0173-8	See note.	A
2	Support rail Size 1/1 module Size 1/2 module Size 1/3 module Size 1/4 module  Size 2/1 module Size 2/2 module Size 2/3 module Size 2/4 module  Size 3/1 module Size 3/2 module Size 3/3 module Size 3/4 module	60B1469-4 60B1469-1 60B1469-7 60B1469-10  60B1469-5 60B1469-2 60B1469-8 60B1469-11  60B1469-6 60B1469-3 60B1469-9 60B1469-12	2	
3	Tie rail Size 1/1 through 4 modules Size 2/1 through 4 modules Size 3/1 through 4 modules	60B1571-1 60B1571-2 60B1571-3		
4	Legend panel mounting clip	60A1561	See note.	A
5	Frangible leg with leg cap, Mode 1 Size 1 Size 2 Size 3  Frangible leg with leg cap, Mode 2 Size 1 Size 2 Size 3	62B0578-4 62B0578-5 62B0578-6  62B0578-1 62B0578-2 62B0578-3	See note. See note. See note.	B C C D  E C C D

NOTE A: Quantity varies by size and modularity.

NOTE B: Withstands wind up to 100 mph.

NOTE C: 2 per module.

NOTE D: 3 per module.

NOTE E: Withstands wind up to 200 mph.

Continued on next page

## Single-Faced Unlighted FAA Style 4 Sign Parts List (contd.)

Item	Description	Part Number	Quantity	Note
6	Mounting flange			
	Size 1	62B0107-2	See note.	A
	Size 2	62B0107-2	See note.	A
	Size 3	62B0107-2	See note.	B
7	Pipe clamp with mounting bolt	77A0129	See note.	C
8	Legend panel assembly		1	
	Size 1/1 module	44B2549-4		
	Size 1/2 module	44B2549-1		D
	Size 1/3 module	44B2549-7		D
	Size 1/4 module	44B2549-X		D
	Size 2/1 module	44B2549-5		
	Size 2/2 module	44B2549-2		D
	Size 2/3 module	44B2549-8		D
	Size 2/4 module	44B2549-X		D
	Size 3/1 module	44B2549-6		
	Size 3/2 module	44B2549-3		D
	Size 3/3 module	44B2549-9		D
	Size 3/4 module	44B2549-X		D
	8	Blank panel assembly		1
Size 1/1 module		60B1564-14		
Size 1/2 module		60B1564-11		D
Size 1/3 module		60B1564-17		D
Size 1/4 module		Not applicable		
Size 2/1 module		60B1564-15		
Size 2/2 module		60B1564-12		D
Size 2/3 module		60B1564-18		D
Size 2/4 module		Not applicable		
Size 3/1 module		60B1564-16		
Size 3/2 module		60B1564-13		D
Size 3/3 module		60B1564-19		D
Size 3/4 module		Not applicable		
9		Hex head bolt, 1/2–13 x 1	64A0178-16	8
10	Rail connection plate (Size 1, Size 2, and Size 3)	60B1570	4	
11	Clamp nut, 1/2–13	65A0180-6	8	
NOTE A: 2 per module.				
NOTE B: 3 per module.				
NOTE C: 2 per leg.				
NOTE D: This part, when used in a 2-, 3-, or 4-module sign legend, may be comprised of several types of panels depending upon the message. Contact Siemens Airfield Solutions sales department before ordering a replacement panel.				



**Single-Faced Unlighted FAA Style 4 Sign Parts List (contd.)**

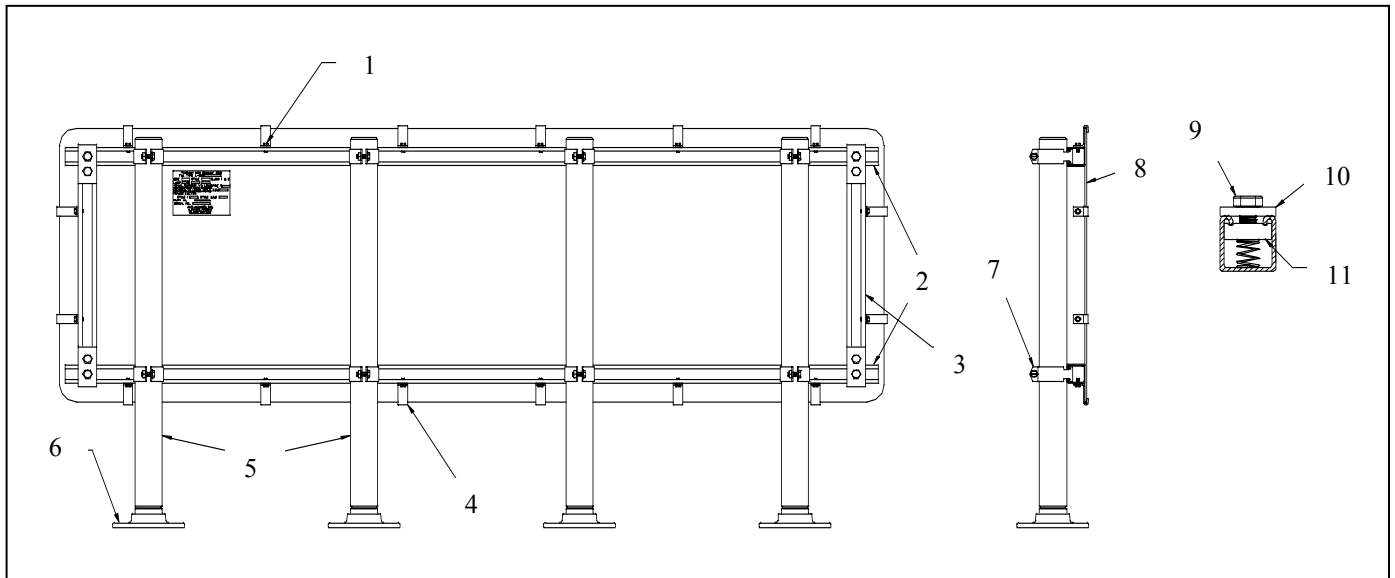


Figure 10. L-858 Single-Faced Sign, All Sizes and Modules

**Single-Faced Sign Optional Parts**

Refer below for the single-faced sign optional parts.

Item	Description	Part Number	Quantity	Note
NS	Tether assembly	94A0054-2	See note.	A
NS	Angle-iron stake assembly	44B1092W	See note.	A
NS	Black touch-up paint	95A0012	See note.	B
NOTE A: 1 per sign leg.				
NOTE B: 12 oz (0.355 liters) spray can.				
NS: Not Shown				

**Single-Faced Sign Recommended Spare Parts**

See Figure 10. Refer below for the single-faced sign recommended spare parts.

<b>Item</b>	<b>Description</b>	<b>Part Number</b>	<b>Quantity</b>	<b>Note</b>
4	Legend panel mounting clip	60A1561	See note.	A
5	Frangible leg with leg cap, Mode 1			
	Size 1	62B0578-4	See note.	B
	Size 2	62B0578-5	See note.	B
	Size 3	62B0578-6	See note.	C
	Frangible leg with leg cap, Mode 2			
	Size 1	62B0578-1	See note.	B
	Size 2	62B0578-2	See note.	B
	Size 3	62B0578-3	See note.	C
6	Mounting flange			
	Size 1	62B0107-2	See note.	B
	Size 2	62B0107-2	See note.	B
	Size 3	62B0107-2	See note.	C
7	Pipe clamp with mounting bolt	77A0129	See note.	D
9	Hex head bolt, ½-13 x 1	64A0178-16	8	
10	Rail connection plate (Size 1, Size 2, and Size 3)	60B1570	4	
11	Clamp nut, ½-13	65A0180-6	8	
NS	Tether assembly	94A0054-2	See note.	E
NOTE A: Quantity varies by size and modularity.				
NOTE B: 2 per module.				
NOTE C: 3 per module.				
NOTE D: 2 per leg.				
NOTE E: 1 per sign leg.				

**Double-Faced Unlighted FAA Style 4 Sign Parts List**

See Figure 11. Refer below for the double-faced unlighted FAA Style 4 sign parts list.

Item	Description	Part Number	Quantity	Note
1	Hex bolt, ¼–20 x ½	64A0173-8	See note.	A
2	Support rail		4	
	Size 1/1 module	60B1469-4		
	Size ½ module	60B1469-1		
	Size 1/3 module	60B1469-7		
	Size ¼ module	60B1469-10		
	Size 2/1 module	60B1469-5		
	Size 2/2 module	60B1469-2		
	Size 2/3 module	60B1469-8		
	Size 2/4 module	60B1469-11		
	Size 3/1 module	60B1469-6		
	Size 3/2 module	60B1469-3		
	Size 3/3 module	60B1469-9		
	Size ¾ module	60B1469-12		
3	Tie rail		4	
	Size 1/1 through 4 modules	60B1571-1		
	Size 2/1 through 4 modules	60B1571-2		
	Size 3/1 through 4 modules	60B1571-3		
4	Legend panel mounting clip	60A1561	See note.	A
5	Frangible leg with leg cap, Mode 1			B
	Size 1	62B0578-4	See note.	C
	Size 2	62B0578-5	See note.	C
	Size 3	62B0578-6	See note.	D
	Frangible Leg with leg cap, Mode 2			E
	Size 1	62B0578-1	See note.	C
	Size 2	62B0578-2	See note.	C
	Size 3	62B0578-3	See note.	D

NOTE A: Quantity varies by size and modularity.

NOTE B: Withstands wind up to 100 mph.

NOTE C: 2 per module.

NOTE D: 3 per module.

NOTE E: Withstands wind up to 200 mph.

Continued on next page

## Double-Faced Unlighted FAA Style 4 Sign Parts List (contd.)

Item	Description	Part Number	Quantity	Note
6	Mounting flange			
	Size 1	62B0107-2	See note.	A
	Size 2	62B0107-2	See note.	A
	Size 3	62B0107-2	See note.	B
7	Pipe clamp	60B1586	See note.	C
8	Legend panel assembly		2	
	Size 1/1 module	44B2549-4		
	Size 1/2 module	44B2549-1		D
	Size 1/3 module	44B2549-7		D
	Size 1/4 module	44B2549-X		D
	Size 2/1 module	44B2549-5		
	Size 2/2 module	44B2549-2		D
	Size 2/3 module	44B2549-8		D
	Size 2/4 module	44B2549-X		D
	Size 3/1 module	44B2549-6		
	Size 3/2 module	44B2549-3		D
	Size 3/3 module	44B2549-9		D
	Size 3/4 module	44B2549-X		D
	Blank panel assembly		2	
	Size 1/1 module	60B1564-14		
	Size 1/2 module	60B1564-11		D
	Size 1/3 module	60B1564-17		D
	Size 1/4 module	Not applicable		
	Size 2/1 module	60B1564-15		
	Size 2/2 module	60B1564-12		
Size 2/3 module	60B1564-18			
Size 2/4 module	Not applicable			
Size 3/1 module	60B1564-16			
Size 3/2 module	60B1564-13			
Size 3/3 module	60B1564-19			
Size 3/4 module	Not applicable			
9	Hex head bolt, 1/2-13 x 1	64A0178-16	See note.	E
NOTE A: 2 per module.				
NOTE B: 3 per module.				
NOTE C: 4 per leg.				
NOTE D: This part, when used in a 2, 3, or 4 module sign legend, may be comprised of several types of panels depending upon the message. Contact Siemens Airfield Solutions sales department before ordering a replacement panel.				
NOTE E: Quantity varies by size and modularity.				

**Double-Faced Unlighted FAA Style 4 Sign Parts List (contd.)**

Item	Description	Part Number	Quantity	Note
10	Rail connection plate (Size 1, Size 2, and Size 3)	60B1570	8	
11	Clamp nut, 1/2-13	65A0180-6	See note.	A
12	Lockwashers, 5/16, split	66A0026-26	See note.	A
13	Hex nut, 5/16-18	65A0015-26	See note.	A
14	Pipe clamp angle	60B1587	See note.	B
15	Hex head cap screws, 5/16-18 x 1	64A0076-24	See note.	C

NOTE A: Quantity varies by size and modularity.

NOTE B: 8 clamps per leg.

NOTE C: 4 screws per leg.

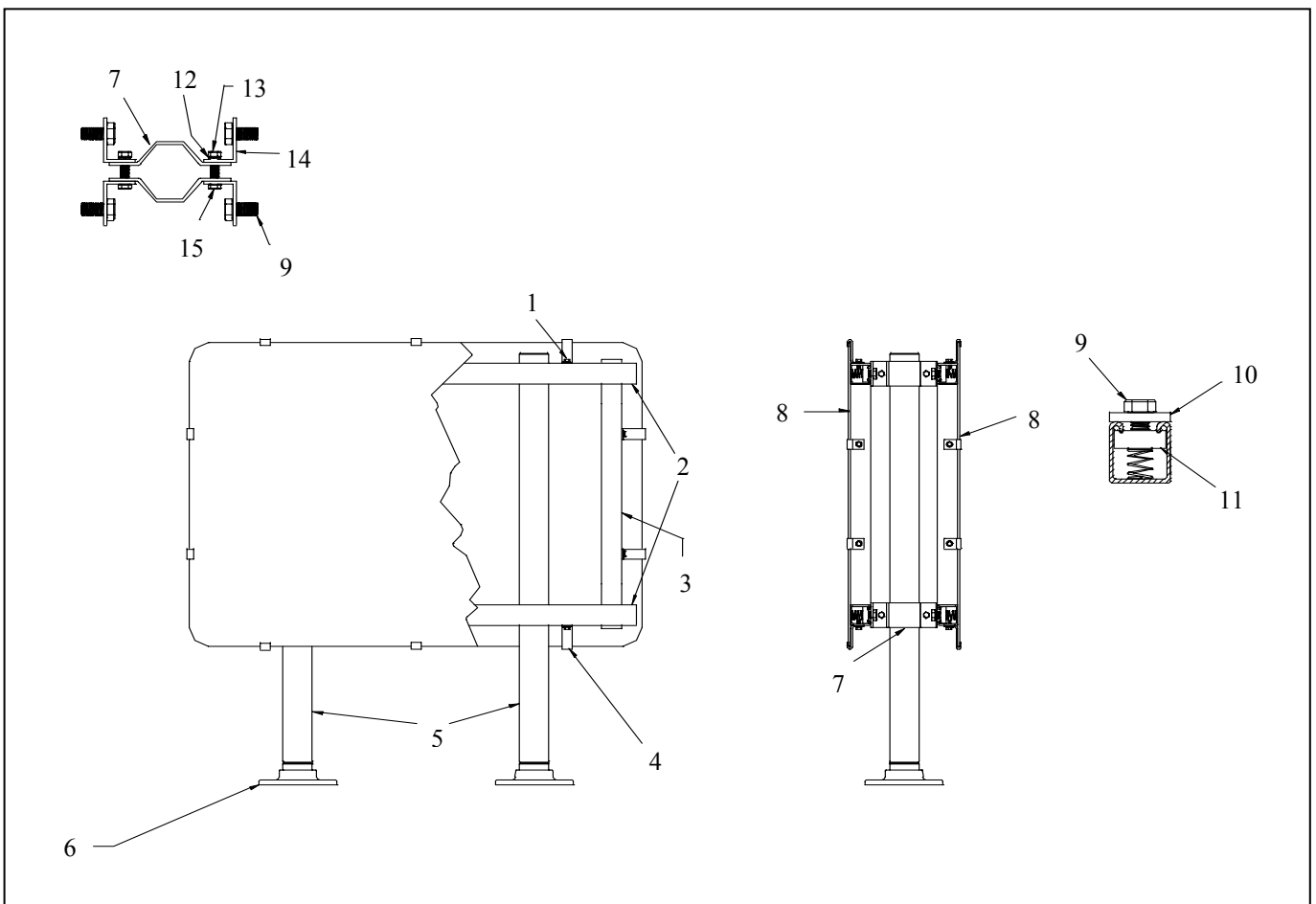


Figure 11. Cross-Sectional View of L-858 Double-Faced Sign, All Sizes and Modules

**Double-Faced Sign Optional Parts**

Refer below for the double-faced sign optional parts.

Item	Description	Part Number	Quantity	Note
NS	Tether assembly	94A0054-2	See note.	A
NS	Angle-iron stake	44B1092W	See note.	A
NS	Black touch-up paint	95A0012	See note.	B
NOTE A: 1 per sign leg.				
NOTE B: 12 oz (0.355 liters) spray can				
NS: Not Shown.				

**Double-Faced Sign Recommended Spare Parts**

See Figure 11. Refer below for the double-faced sign recommended spare parts.

Item	Description	Part Number	Quantity	Note	
1	Hex bolt, ¼–20 x ½	64A0173-8	See note.	A	
4	Legend panel mounting clip	60A1561	See note.	A	
5	Frangible leg with leg cap, Mode 1	Size 1	62B0578-4	See note.	B
		Size 2	62B0578-5	See note.	B
		Size 3	62B0578-6	See note.	C
5	Frangible Leg with leg cap, Mode 2	Size 1	62B0578-1	See note.	B
		Size 2	62B0578-2	See note.	B
		Size 3	62B0578-3	See note.	C
6	Mounting flange	Size 1	62B0107-2	See note.	B
		Size 2	62B0107-2	See note.	B
		Size 3	62B0107-2	See note.	C
7	Pipe clamp	60B1586	See note.	D	
9	Hex head bolt, ½–13 x 1	64A0178-16	See note.	A	
NOTE A: Quantity varies by size and modularity.					
NOTE B: 2 per module.					
NOTE C: 3 per module.					
NOTE D: 4 per leg.					

Continued on next page

**Double-Faced Sign Recommended Spare Parts** (contd.)

<b>Item</b>	<b>Description</b>	<b>Part Number</b>	<b>Quantity</b>	<b>Note</b>
11	Clamp nut, ½-13	65A0180-6	See note.	A
12	Lockwashers, 5/16, split	66A0026-26	See note.	A
13	Hex nut, 5/16-18	65A0015-26	See note.	A
14	Pipe clamp angle	60B1587	See note.	B
15	Hex head cap screws, 5/16-18 x 1	64A0076-24	See note.	C
NS	Tether assembly	94A0054-2	See note.	D
NOTE A: Quantity varies by size and modularity. NOTE B: 8 clamps per leg. NOTE C: 4 screws per leg. NOTE D: 1 per sign leg.				