

Illustrative Guide to Lighting and Marking of Agricultural Equipment on Highways

ANSI/ASAE S279.18



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Created by: The AEM Agricultural Equipment Council

AEM and its Agricultural Equipment Council developed the following illustrative guide to ANSI/ASAE S279.18 and the related standards for lighting and marking of:

- Agricultural tractors
- Self-propelled equipment
- Front-and-rear-mounted implements
- Towed implements
- Trailers

What is to follow provides pictorial representations to assist with understanding the ANSI/ASAE S279.18 standard. Included are illustrations for equipment width and length and guidance for equipment that obscures the lighting and marking of the tractor or the self-propelled machine to which it is attached.

AEM's *Illustrative Guide to Lighting and Marking of Agricultural Equipment on Highways* also includes lighting and marking guidance for equipment that obscures the lighting and marking of the tractor or the self-propelled machine to which it is attached. **This guidance document cannot cover all possible equipment types and configurations, so please consult the latest revision of ANSI/ASAE S279 and the related standards for specific agricultural equipment lighting and marking details.**

For details concerning the function and operation of the lighting and marking components, please refer to the body of the standard. *References: ANSI/ASAE S279.18, ANSI/ASAE S276.8, ASABE/ISO 20383:2017, SAE J588, SAE J2040, SAE J585, SAE J845, SAE J594_201002 and SAE J2261_201607.*

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LEGEND

-  **HL** **Headlamp**
-  **SL** **Stop Lamp Red**
-  **TL** **Tail Lamp Red**
-  **RR** **Red Retroreflective Material - 50 x 230 mm (2 x 9 in.)**
-  **ROF** **Red-Orange Fluorescent Material - 50 x 230 mm (2 x 9 in.)**
-  **FW/TS** **Flashing Warning/Turn Signal (Indicator) Lamp, Amber**
-  **YR** **Yellow Retroreflective Material - 50 x 230 mm (2 x 9 in.)**
-  **FE/TS** **Flashing Extremity Warning/Turn Signal (Indicator) Lamp, Amber**
-  **B** **Beacon, Rotating or Strobe**
-  **SIS** **Speed Identification Symbol**
-  **SMV** **Slow Moving Vehicle Emblem**

1. Arrangements shown are minimum requirements. Drawings are schematic only. Lamp shape can vary.
2. Yellow reflector on left front on equipment < 3.7 m (12 ft) wide required only for mounted or towed equipment extending more than 1.2 m (4 ft) to the left of center of the propelling machine. Reflector is not required on tractors & self-propelled equipment < 3.7 m (12 ft).
3. Front mounted equipment does not require headlamps or flashing warning/turn signal (indicator) lamps unless those on the propelling machine are obscured. Flashing extremity warning/turn signal (indicator) lamps and yellow reflectors are required for equipment > 3.7 m (12 ft) wide.
4. Front mounted equipment does not require rear facing red retroreflective material or fluorescent orange material for a distance of 1.2 m (4 ft) on either side of the propelling machine centerline. (i.e. SMV, tail lamps, and enhanced turn signal lamps are not required).
5. Red reflectors on the rear of equipment < 2 m (6.7 ft) wide may be 50 x 115 mm (2 x 4.5 in).
6. Red reflectors (per SAE J594_201002) may be incorporated into tail lamp lenses on the rear of equipment < 3.7 m (12 ft) wide.
7. Rear mounted or towed equipment does not require headlamps or flashing warning/turn signal (Indicator) lamps visible to the front. Flashing extremity warning/turn signal (indicator) lamps and yellow reflectors are required for equipment > 3.7 m (12 ft) wide.
8. Rearward facing work lamps or general service lamps must be turned off during highway travel. Forward facing work lamps or general service lamps may be turned on provided that they are aimed downward to provide illumination close to the equipment.
9. On equipment > 3.7 m (12 ft) wide, the extremity lamps may take the place of warning lamps. However, it is acceptable to have both extremity and warning lamps.
10. Red-orange fluorescent material on rear of equipment > 3.7 m (12 ft) wide can be in line with, above, or below red reflectors.
11. Red-orange fluorescent material and red reflectors positioned horizontally and in line (as shown) preferred. Angled or vertical orientation and/or not in line permissible.
12. Equipment configuration may necessitate additional red reflectors and/or red-orange fluorescent material to maintain the 1.8 m (6 ft) maximum spacing. Retroreflective red and fluorescent material on the SMV can be used to meet the spacing criteria.
13. Implements that obscure the SMV shall have one SMV emblem as described in ANSI/SAE S276.8. SMV should be positioned as near to the rear and centered or left of center as practicable.
14. Beacon(s) are optional, refer to ANSI/SAE S279.18 and SAE J845.
15. Agricultural tractors and self-propelled machines that travel >40 kph (25 mph) and <65 kph (40 mph) require at least one rear facing Speed Identification Symbol (SIS) as described in ASABE/ISO 20383:2017.
16. Turn indicators shall be provided. When a turn is signaled, the amber flashing warning lamp(s) opposite the direction of turn shall become steady burning. The amber flashing warning lamp(s) in the direction of turn shall increase in flashing rate. In addition, a rear facing red or amber lamp shall flash in the direction of turn and in unison with the amber flashing warning lamp(s). The additional lamp on the side opposite the turn may remain off, or on, or become brighter but shall not flash. If equipped with stop lamps, the additional rear facing red or amber turn indicators are not required regardless of speed (Refer to page 15).
17. Two rear facing stop lamps are required for tractors and self propelled machines traveling >40 kph (25 mph). If stop lamps are provided as additional lamps, see ANSI/SAE S279.18 for location requirements.

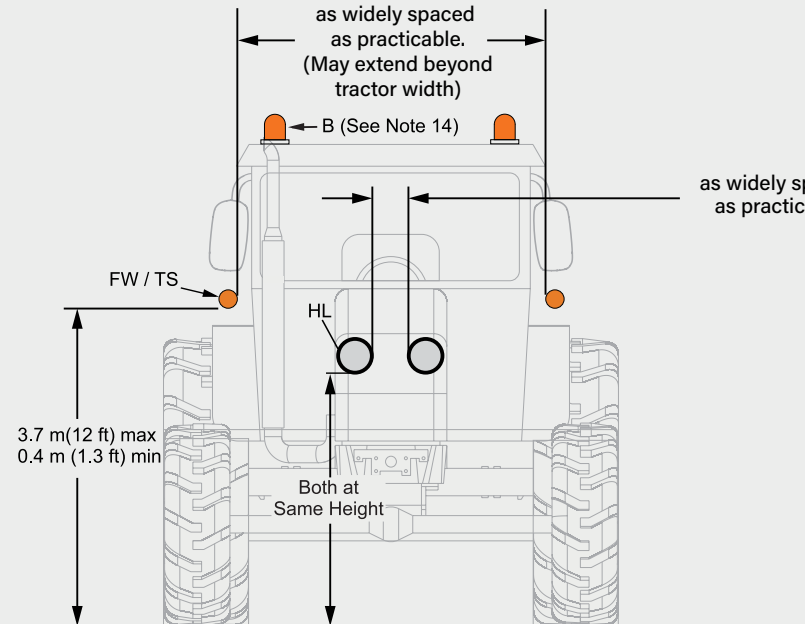
A-1

Tractor Front

Machine Width $\leq 3.7\text{m}$ (12 ft)

Symmetrically mounted
about center of machine
as widely spaced
as practicable.
(May extend beyond
tractor width)

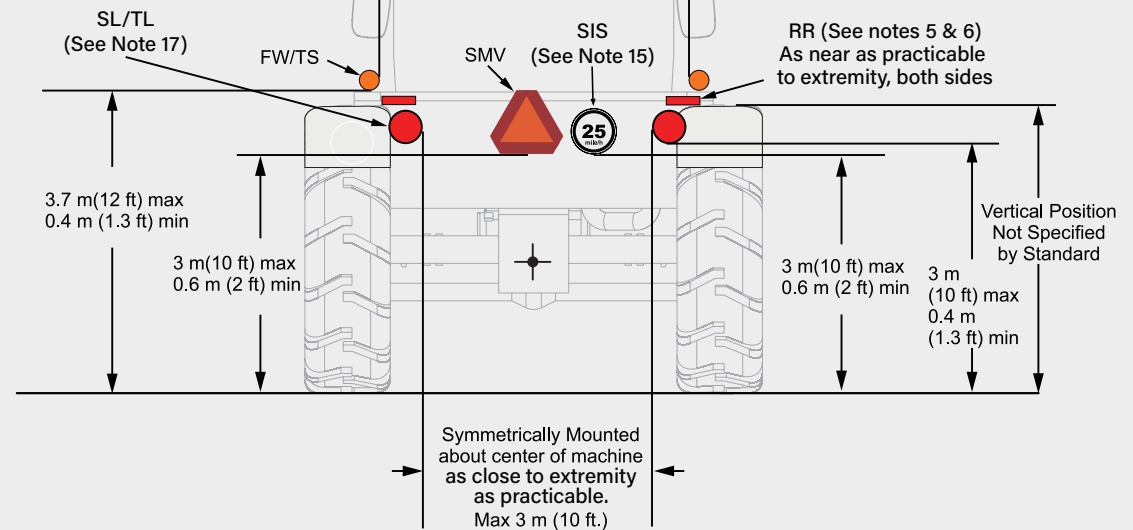
as widely spaced
as practicable.



Tractor Rear

Machine Width $\leq 3.7\text{m}$ (12 ft)

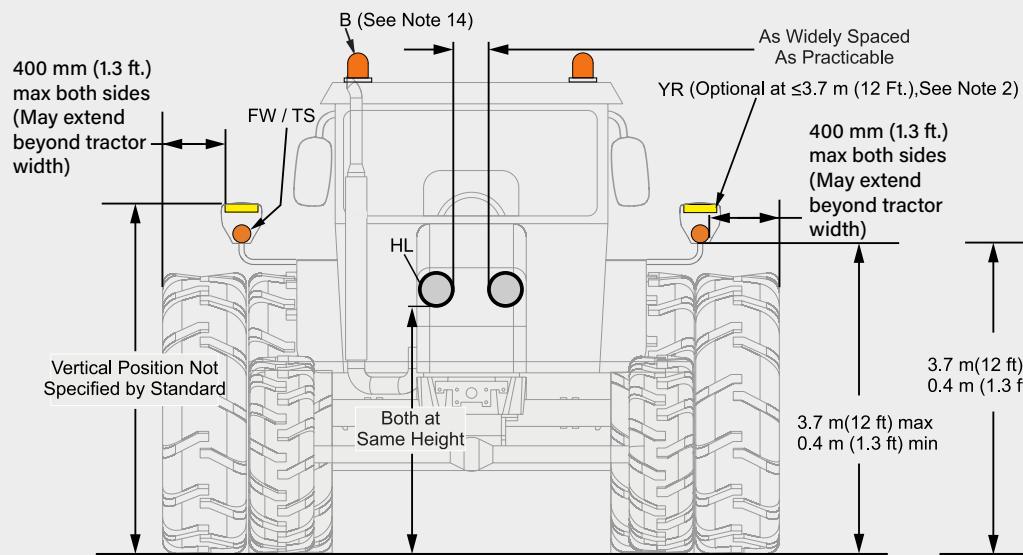
Symmetrically mounted
about center of machine
as widely spaced
as practicable.
(May extend beyond
tractor width)



A-2

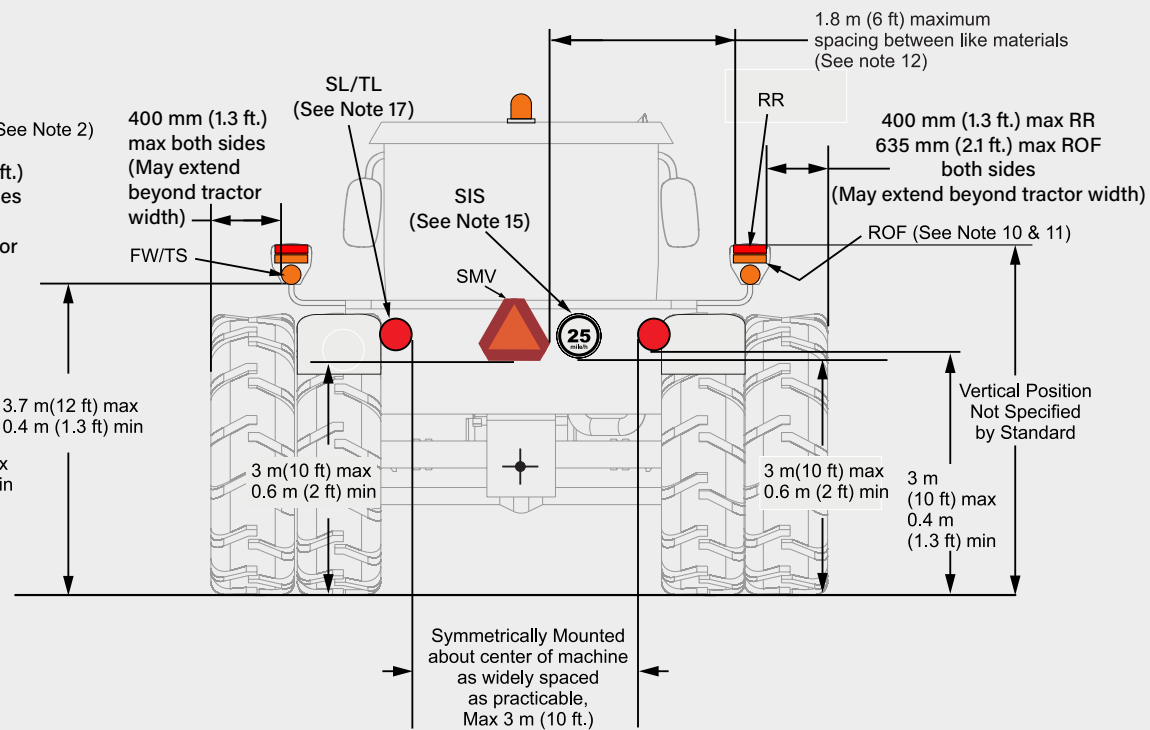
Tractor Front

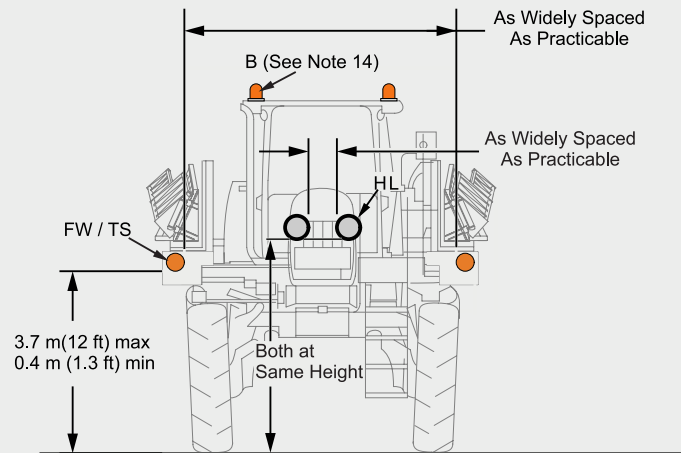
Machine Width > 3.7m (12 ft)



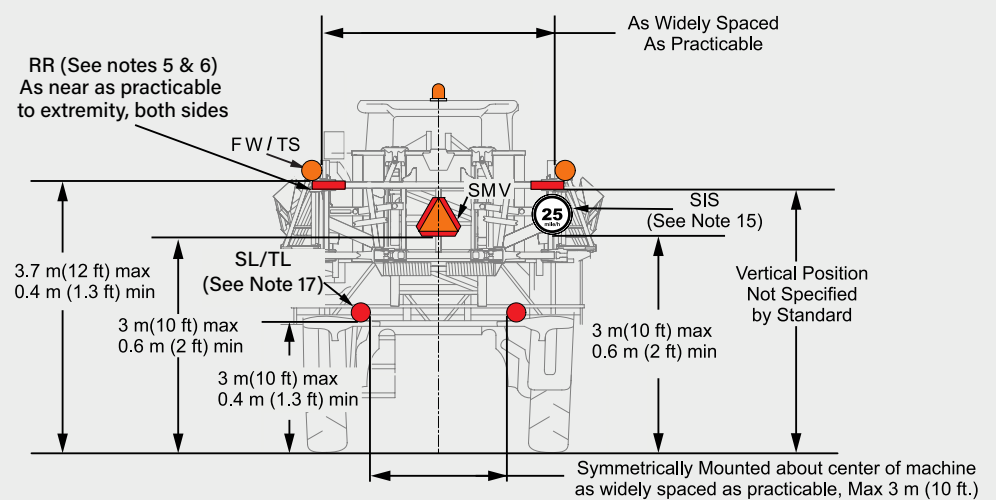
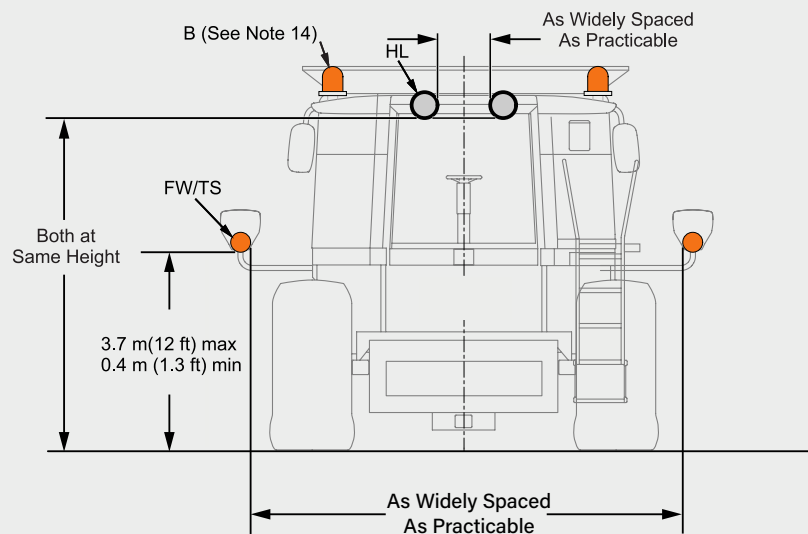
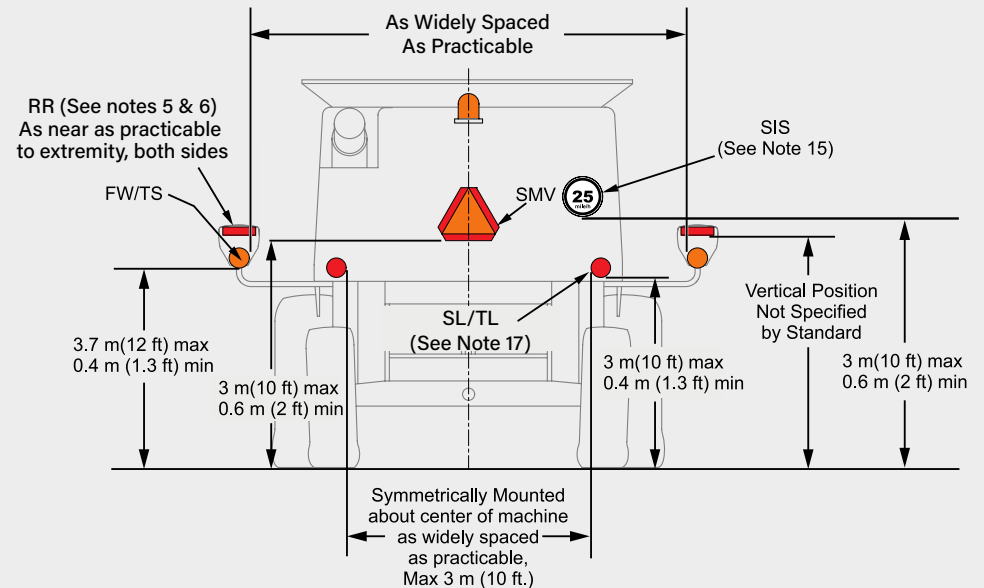
Tractor Rear

Machine Width > 3.7m (12 ft)



Machine Width $\leq 3.7\text{m}$ (12 ft)

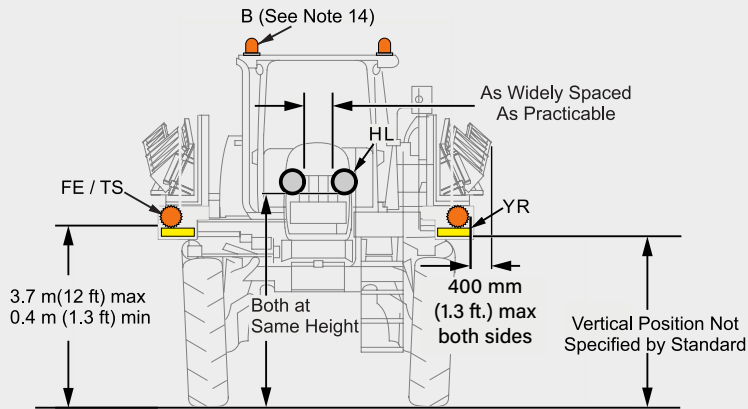
Machine Width $\leq 3.7\text{m}$ (12 ft)

Machine Width $\leq 3.7\text{m}$ (12 ft)Machine Width $\leq 3.7\text{m}$ (12 ft)

B-2

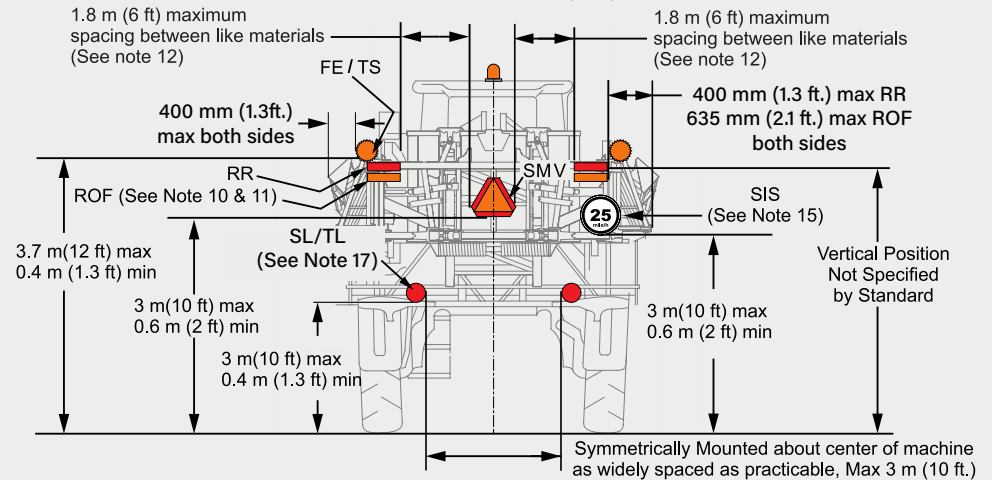
Sprayer Front

Machine Width > 3.7m (12 ft)



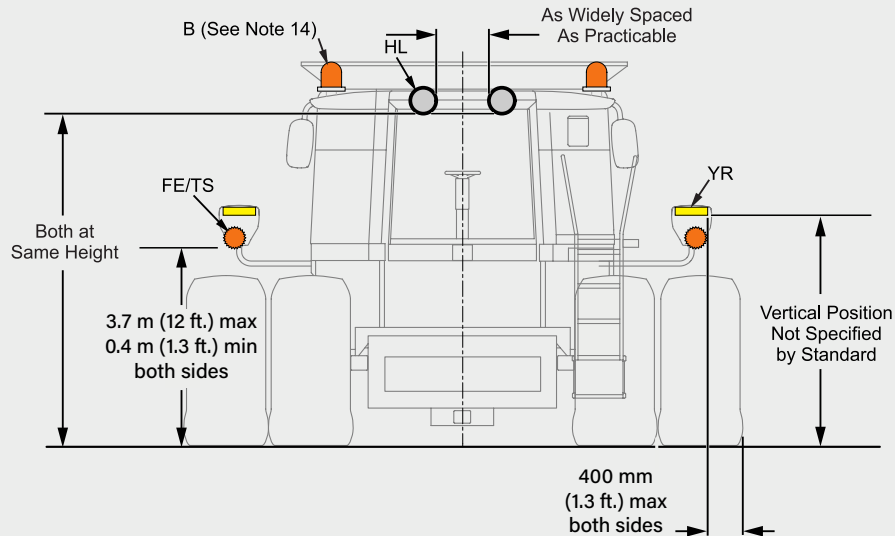
Sprayer Rear

Machine Width > 3.7m (12 ft)



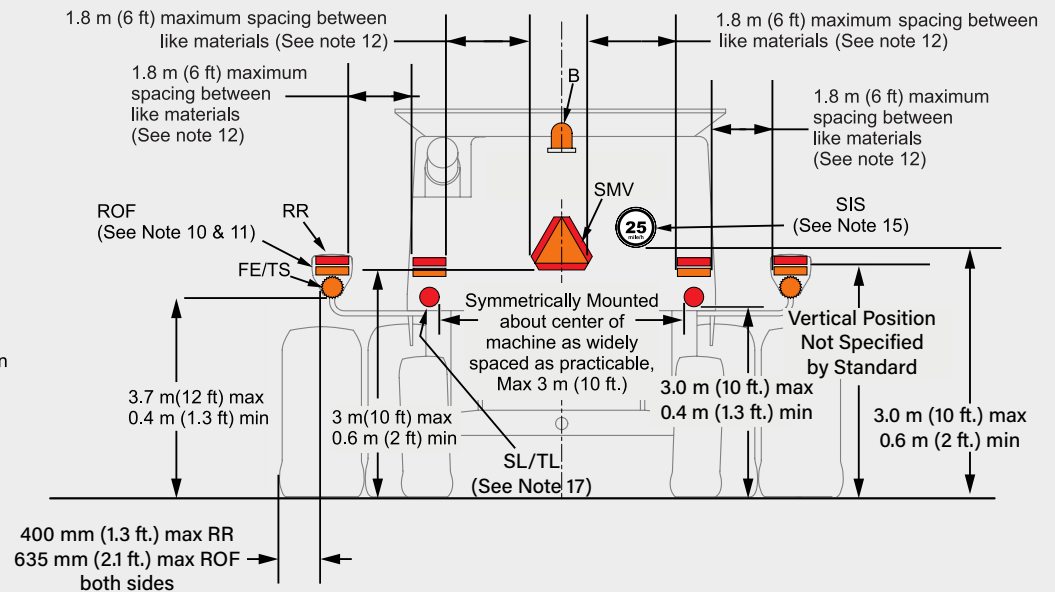
Combine Harvester Front

Machine Width > 3.7m (12 ft)



Combine Harvester Rear

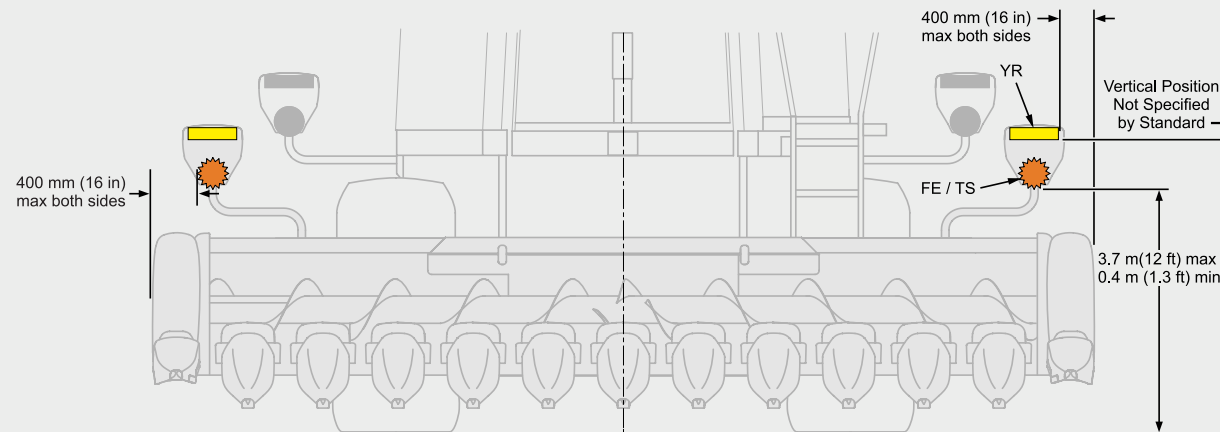
Machine Width > 3.7m (12 ft)



C

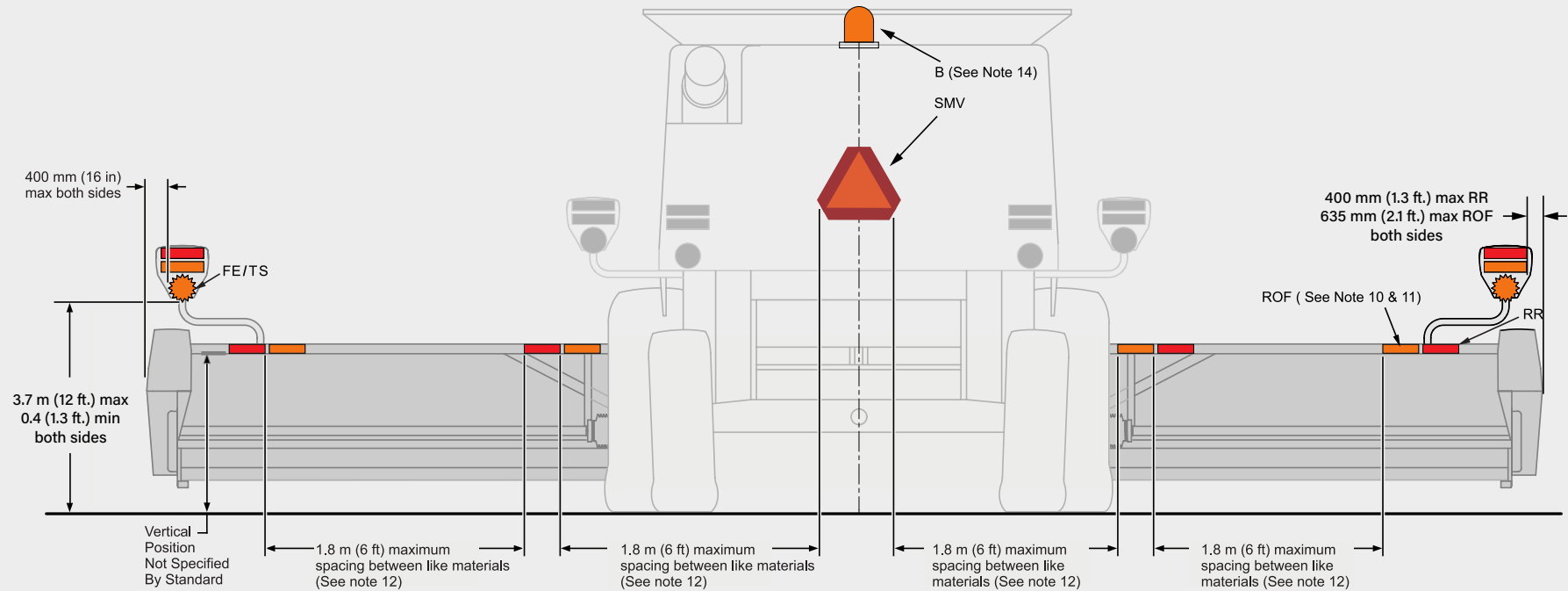
Front mounted Equipment Front View (Combine Harvester Example)

Machine width > 3.7 m (12 ft)

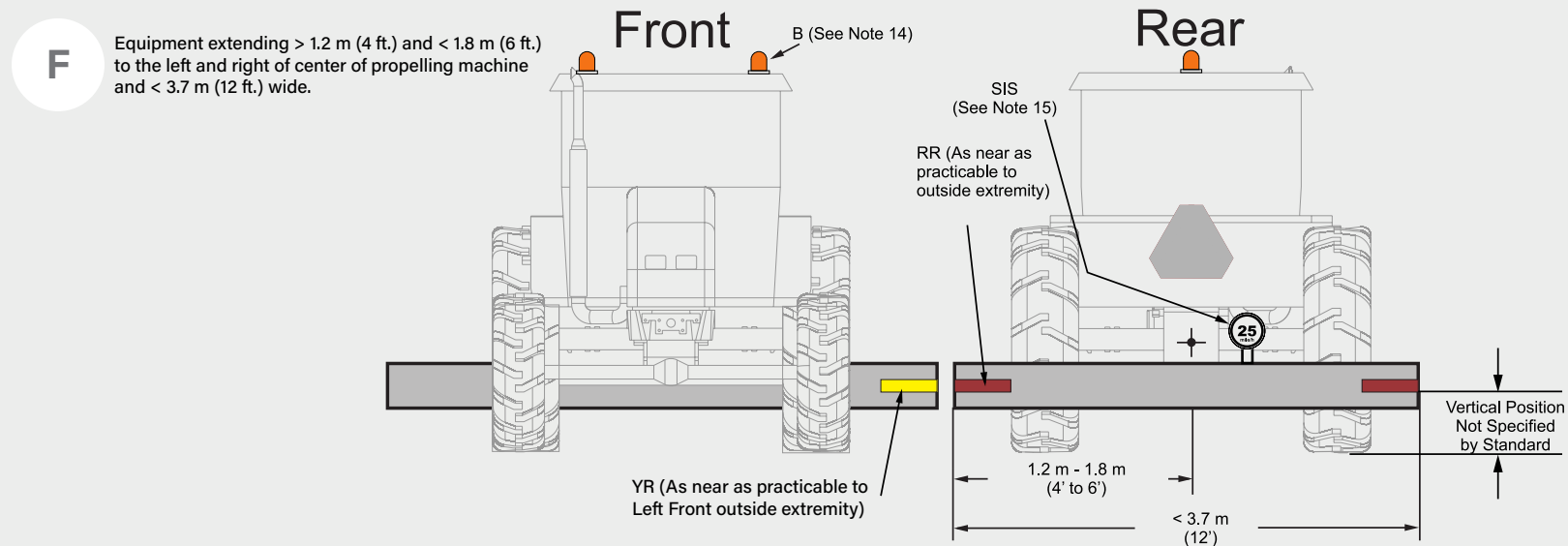
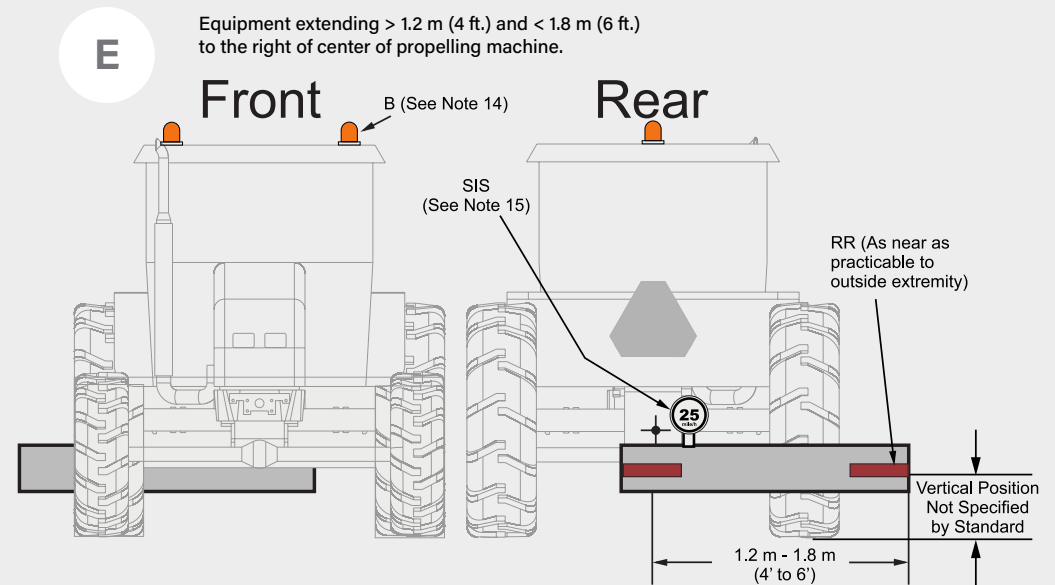
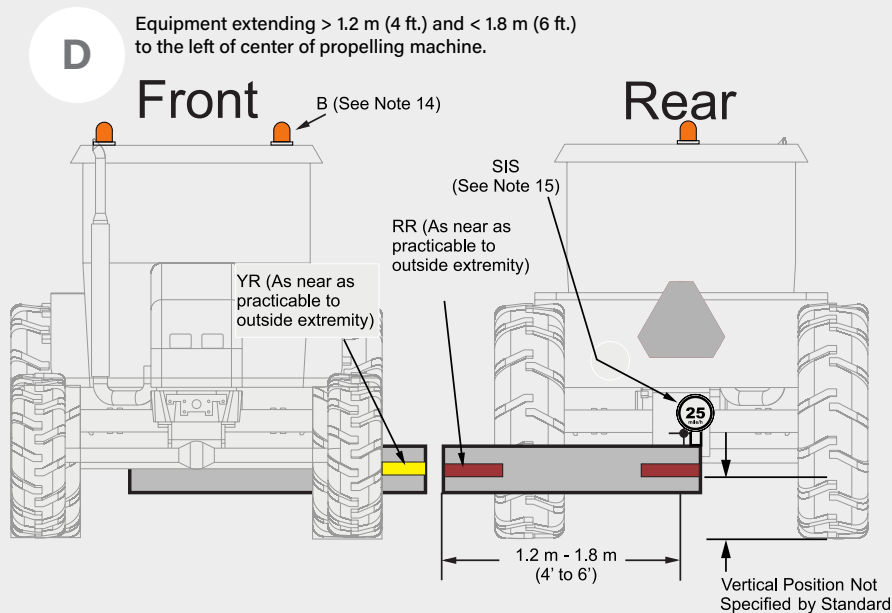


Front mounted Equipment Rear View (Combine Harvester Example)

Machine width > 3.7 m (12 ft)

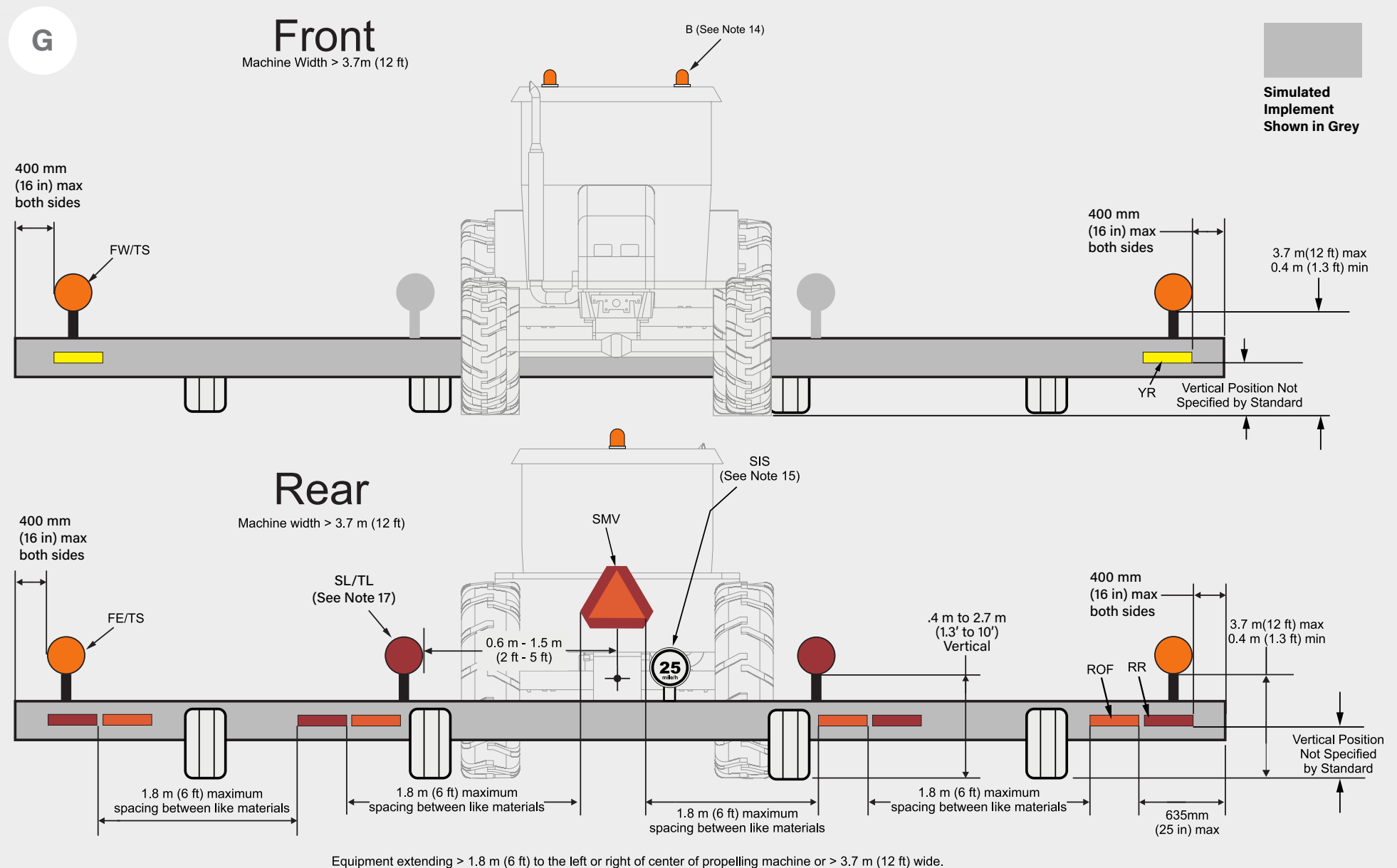


ANNEX B — Lighting and Marking of Agricultural Implements for Width



**Simulated
Implement
Shown in Grey**

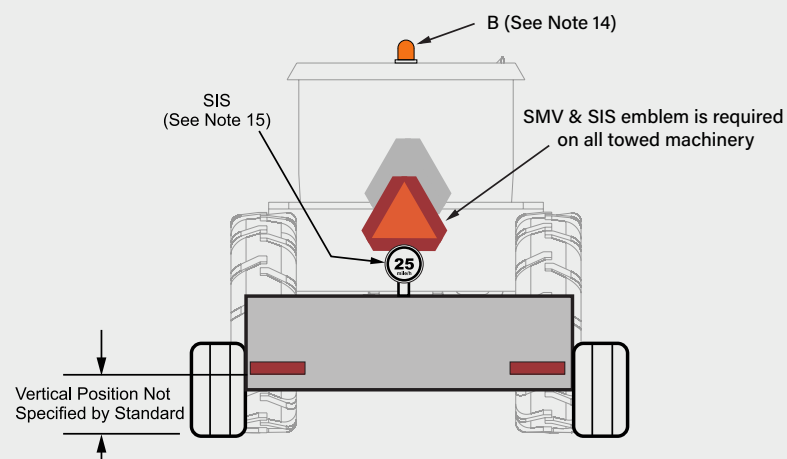
ANNEX B — Lighting and Marking of Agricultural Implements for Width



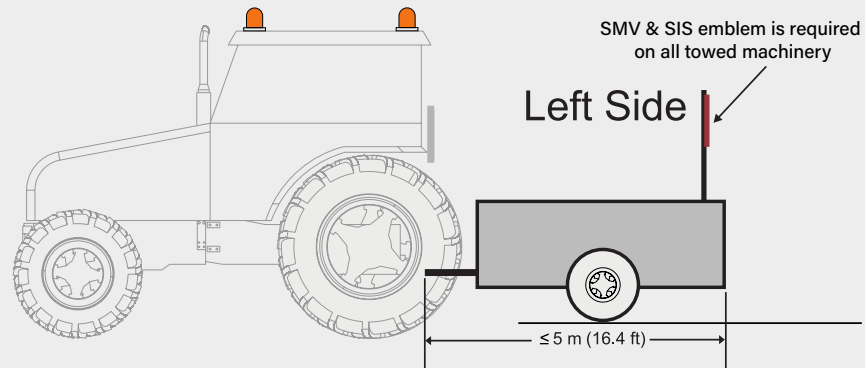
ANNEX B — Lighting and Marking of Agricultural Implements for Length

H

Rear



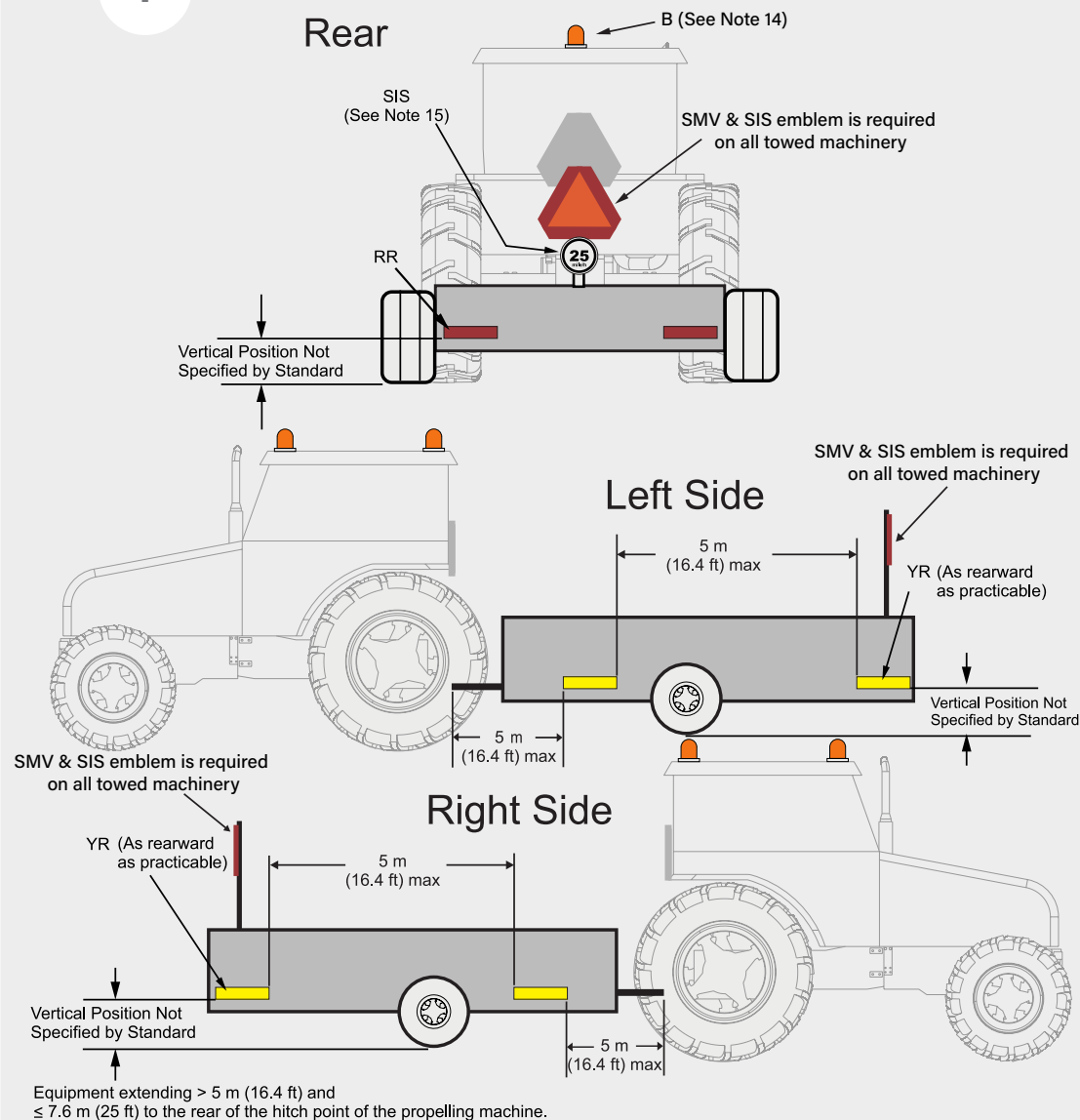
Left Side



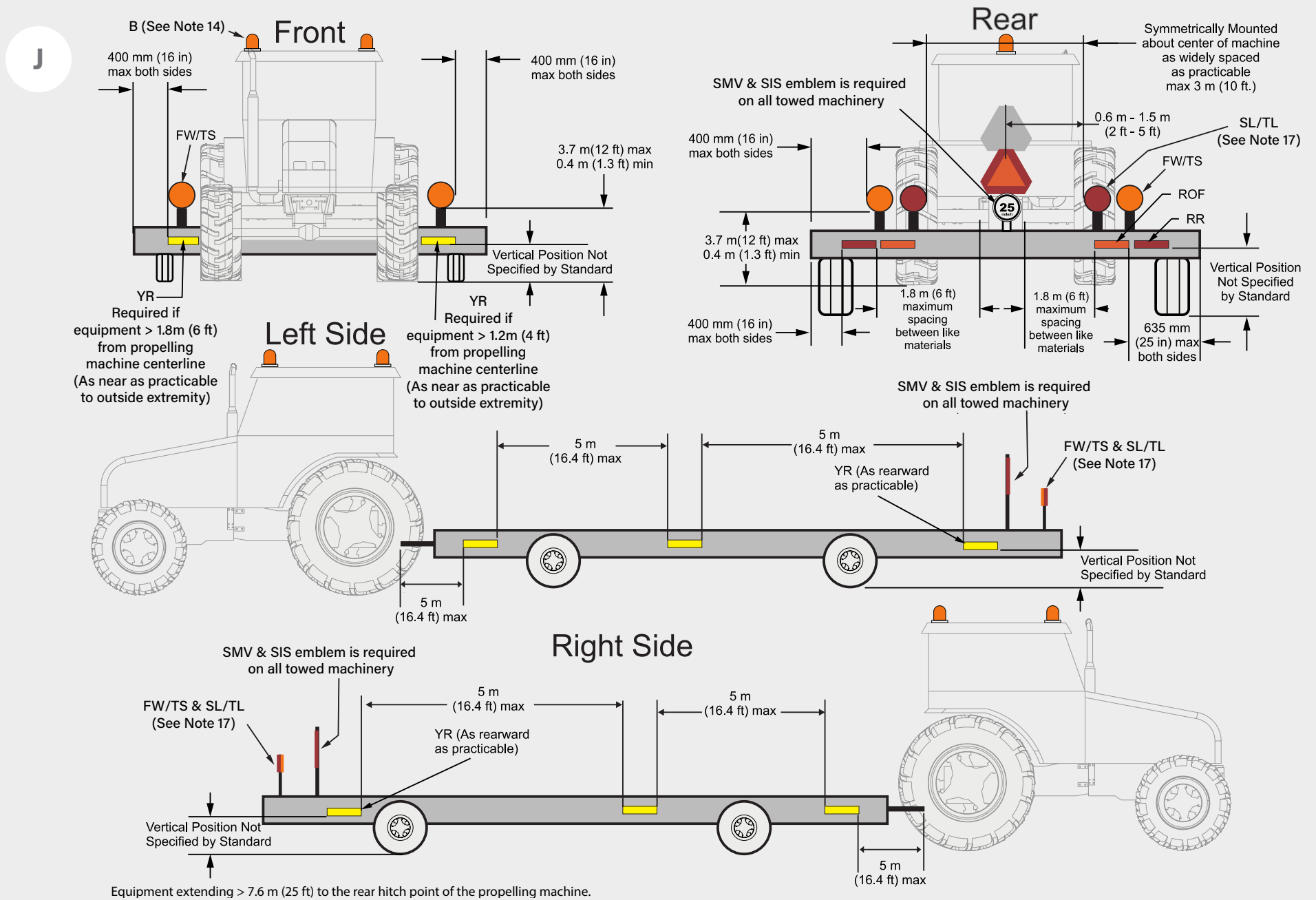
Equipment extending > 1.2 m (4 ft) & ≤ 5 m (16.4 ft.) to the rear of the hitch point (draw bar or draft arms) of the propelling machine.

I

Rear

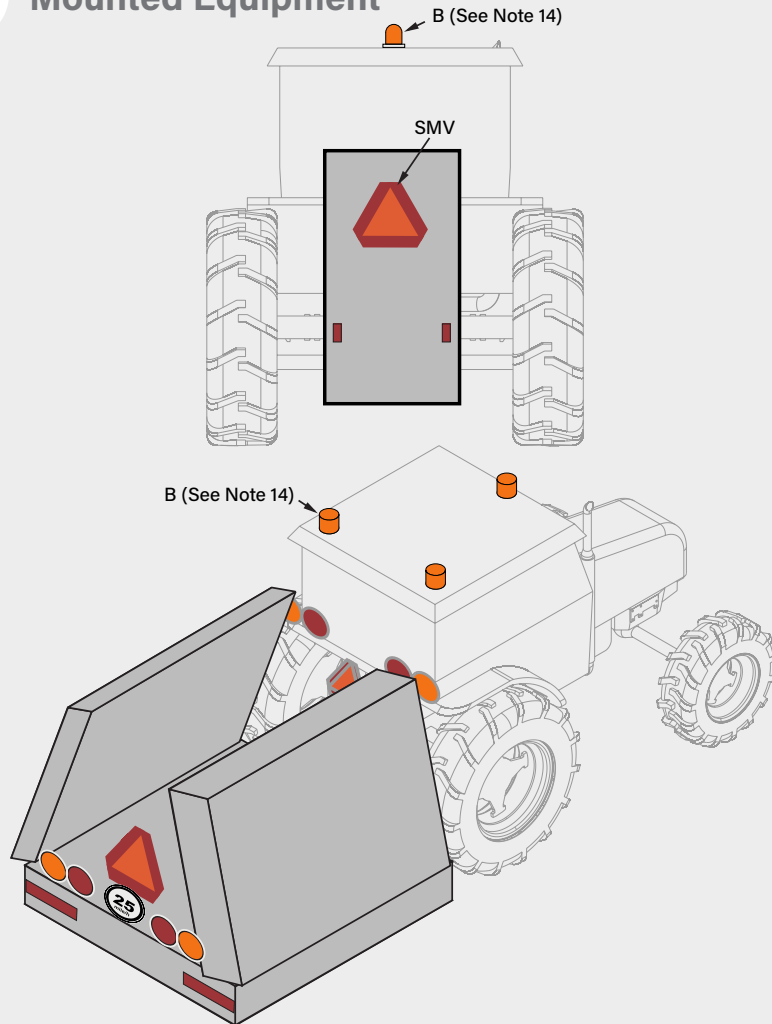


ANNEX B — Lighting and Marking of Agricultural Implements for Length



ANNEX B — Lighting and Marking for Agricultural Implements that Obscures the Lighting and SMV on the Propelling Machine

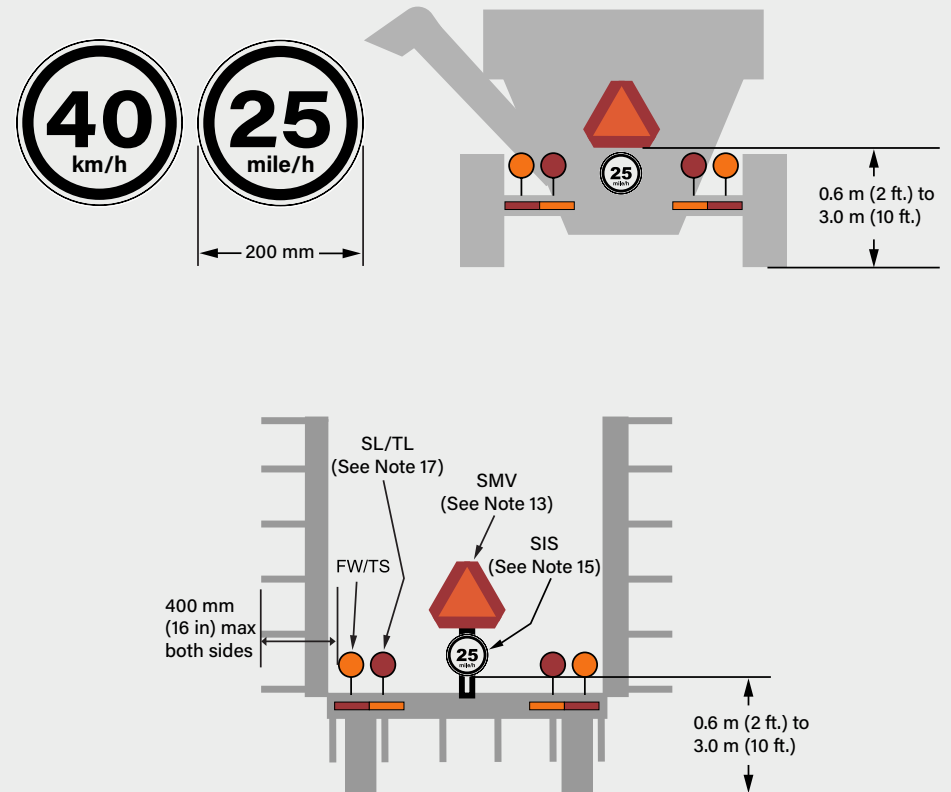
K Mounted Equipment



Equipment that obscures the effective illumination of any flashing warning/turn signal (indicator) lamp, flashing extremity warning/turn signal (indicator) lamp, tail lamp, or stop lamp on the propelling machine shall be fitted with lighting as appropriate to take the place of the lamp(s) obscured.

Equipment that will obscure any portion of the SMV emblem of the machine on which it is mounted when transported shall have its own SMV emblem.

L Towed Implements



All towed implements shall have one SMV emblem as described in ANSI/ASAE S276.8. SMV should be positioned as near to the rear and centered or left of center as practicable.

Equipment that obscures the effective illumination of any flashing warning/turn signal (indicator) lamp, flashing extremity warning/turn signal (indicator) lamp, tail lamp, or stop lamp on the propelling machine shall be fitted with lighting as appropriate to take the place of the lamp(s) obscured. In the case of stop lamps, this requirement only applies to implements with a design speed greater than 40 km/h (25 mile/h).

NOTE: For light and reflector dimensions refer to previous pages.

Explanatory Note on the Function of Turn Signals in Accordance with ANSI/SAE S279.18

4.1.5 Turn indicators shall be provided. When a turn is signaled, the amber flashing warning lamp(s) opposite the direction of turn shall become steady burning. The amber flashing warning lamp(s) in the direction of turn shall increase in flashing rate a minimum of 20 flashes per minute, but shall not exceed 125 flashes per minute. In addition, a rear facing red or amber lamp conforming to SAE J2261_201607 symmetrically mounted and positioned as widely spaced laterally as practicable but no greater than 1.5 m (5 ft) to the left and right of the machine center and between 0.4 and 3.7 m (1.3 and 12 ft) high shall flash in the direction of turn and in unison with the amber flashing warning lamp(s). The additional lamp on the side opposite the turn may remain off, or on, or become brighter but shall not flash. If equipped with stop lamps that conform to clause 4.1.6, the additional rear facing red or amber turn indicators are not required regardless of speed.

4.1.5 Explanatory Note

This clause speaks of two additional amber or red lamps that are visible to the rear of the tractor or self-propelled machine. The purpose of the additional amber or red lamps, sometimes referred to as 'enhanced turn indicators', is to provide additional notice to a following motorist that the agricultural equipment is preparing to turn. This is achieved by causing the illumination of a lamp, either amber or red, that is normally off to illuminate in the direction of the turn when a turn is signaled. This additional lamp is to flash in synchronization with the amber turn indicators that are described in the second sentence of this clause. When the turn is completed, the additional lamp must revert to the 'off' state. If the machine is equipped with stop lamps as described by clause 4.1.6, the enhanced turn indicator is not required. However, the stop lamp may, as an alternative to an additional amber lamp, serve as an enhanced turn indicator by flashing in synchronization with the amber turn indicator described in the second sentence.

About the Association of Equipment Manufacturers (AEM)

[AEM](#) is the North America-based international trade group representing off-road equipment manufacturers and suppliers with more than 1,000 companies and more than 200 product lines in the agriculture and construction-related industry sectors worldwide. The equipment manufacturing industry in the United States supports 2.3 million jobs and contributes roughly \$316 billion to the economy every year.

AEM's robust history began 125-plus years ago from a unique vantage point – its industry segments came together to create a fundamentally more powerful voice and advocate for the off-road equipment manufacturing industry.

AEM built on the successes and continued the legacy of its founding groups – the Construction Industry Manufacturers Association (CIMA) and the Equipment Manufacturers Institute (EMI). Both groups had a common goal – advocating for better roads that brought products to market faster, safer, and more efficiently.

For more than a century, AEM has provided a manufacturer forum for industry-wide action that transcends individual member company size, product line, or individual business concerns. Companies participating in AEM work together for the betterment of the industry and public needs, at the state, national, provincial, and international levels. In enabling growth together, AEM and its members build momentum for equipment manufacturers and the ag and construction markets they serve.