Table 3: Changes in 1993 MUTCD (vs. 1971 ANSI) that Lead to Potential Cost Decreases or Increases

1971 ANSI MUTCD	1993 Rev 3, Part VI MUTCD	Nature of Change (s)
6E-3 Flagmen The use of an orange vest, and/or an orange cap shall be required for flagmen. For nighttime . . . garments shall be reflectorized.	6E-3: High Visibility Clothing: 1. For daytime work, the flagger's vest, shirt, or jacket shall be orange, yellow, strong yellow green or flourescent versions of these colors. For nighttime work, . . . the garments shall be retroreflective: 1. Orange, yellow, white, silver, strong yellow-green, or a fluorescent version of one of these. 2. Shall be visible at a minimum distance of 1,000 feet. 3. Shall be designed to identify clearly the wearer as a person and be visible through the full range of body motions.	Mandatory provisions offer more flexibility-wider range of acceptable garments and colors. Clarification of visibility distance requirements. Millennium Edition no longer requires visibility through full range of body motions.
6E-2. Hand-Signaling Devices: Sign paddles should be at least 24 inches wide . . .	6E-4. Hand-Signaling Devices: The standard STOP/SLOW sign paddle shall be 18 inches square.	Sign change.
6E-5. Flagger Stations: . . . distance is related to approach speed and physical conditions at the site; however, 200 to 3000 feet is desirable.	6E-6. Flagger Stations: Table VI-1, Guidelines for length of longitudinal buffer space, may be used for locating flagger stations in advance of the work space. (Pg. 13: lengths start at 35 feet for 20MPH speed to 485 feet for 65 MPH))	Guidance provisions that offer more flexibility.

Table 3 (continued)

1971 ANSI MUTCD	1993 Rev 3, Part VI MUTCD	Nature of Change (s)
	Footnote to the guidelines in Table VI indicate that distances apply on wet and level pavements. Employers will have to purchase the AASHTO (1990) document (A Policy on Geometric Design of Highways and Streets, AASHTO) for recommended adjustments for the effect of grade on stopping and variation for trucks. Also, 6E-6 references the same AASHTO document (1990), Table III-2 for "distance may be increased for downgrades." The reference to the 1990 document is outdated. Employers may purchase AASHTO: A Policy on Geometric Design of Highways and Streets, 2001.Member Price: $80 or Non Member Price: $102	Contractors that perform work on steep downgrades most likely have referenced the document under projects covered by DOT regulations. OSHA should be able to include this information in the Federal Register or on the web.
Figure 6-12 depicts 14 commonly used regulatory signs. R4-7: international symbol with additional plaque that reads Keep Right (24"X18").	Figure VI-7a and VI-7b includes the 14 commonly used regulatory signs depicted in 1971 ANSI plus 7 additional signs: R3-1 (24"X24") International symbol: no right turn R3-2 " " " " no left turn R3-5 (30"X36") left curve only R3-6 (30"X36") International symbol: left lane bear left R3-7 (30"X30") Left lane must turn left R3-8 (30"X30") Multi-turn left lanes Two of the 14 signs depicted in ANSI 1971 were modified: R4-7: additional plaque (24"X18") is no longer required.	The additional signs allow greater flexibility.
R8-3 (24"X30") "No Parking" sign.	R8-3 (24"X24") Letter sign was revised to reflect the international symbol for no parking.	Sign change.

Table 3 (continued)

1971 ANSI MUTCD	1993 Rev 3, Part VI MUTCD	Nature of Change (s)
6B-8 Road (Street) Closed Sign The Road (Street) Closed sign shall be used where the roadway is closed to all traffic except contractors' equipment . . . and shall be accompanied by appropriate detour signing.	6-F.1.a(4): The "shall" provisions for Road (Street) Closed signs, etc., have been changed to "should."	Changed to non-mandatory
6B-10 Weight Limit Signs Weight restrictions must be consistent with State or local regulations . . .	6-F.1a.(6): Weight restrictions **should** be consistent with State or local regulations One weight limit sign (R12-5 (30"x36") was added for optional use.	Changed to non-mandatory
"Flagman 500 Ft" sign.	Sign changed to international symbol for flagger (48"x48")-this sign may be used in conjunction with other warning signs.	Changed to non-mandatory
"Road Work 1 Mile" sign.	This sign is omitted.	
"Road Narrows" W5-1: 30"x30"	Dimensions changed to 36"x36"	Sign change.
"Narrow Bridge" W5-2: 30"x30"	Dimensions changed to 36"x36"	Sign change.
"Right Lane Ends" W9-1: 30"x30"	Dimensions changed to 36"x36"	Sign change.
International symbol signs require descriptive plaques: (1) W6-1 with plaque: Divided Highway (24"x18") (2) W6-2 with plaque: Divided Highway Ends (24"x18") (3) W12-2 with plaque: Low Clearance (24"x18") (4) W8-5 with plaque: Slippery When Wet (24"x18")	International symbol signs no longer require descriptive plaques:	Greater flexibility. Reduction in requirements.

Table 3 (continued)

1971 ANSI MUTCD	1993 Rev 3, Part VI MUTCD	Nature of Change (s)
	6-F.1 b.(4): Other approach warning signs. Certain conditions require other advance warning signs, such as limited sight distance or because an obstruction may require a motorist to stop. There are no specified standards for such signs. The determination of the sign or signs to be used shall be based on an engineering study using the following sections as guidelines. As an alternative to a specific distance on these advance warning signs, the word AHEAD may be used. Blasting Zone Ahead: W22-1: Previously, "Blasting Zone 1000 ft" Turn off Two-way Radios and Cellular Telephones: W22-2: "and Cellular Telephones" was added.	Greater flexibility.

	New signs available for selection: Shoulder Drop Off: W8-9a Uneven Lanes: W8-11 No Center Strip: W8-12 Lane curves: W1-4bR; W1-4cR Bear right: W1-8 Signal ahead: W3-3 Right lane traffic merging: W4-1; W4-3 Lane narrows: W5-2a International symbol for "pavement ends": W8-3a Truck crossing: W8-6 Loose gravel: W8-7 Rough Road: W8-7 Shoulder Drop off: W8-9a Be Prepared to Stop: W20-7b	Greater flexibility.
	6F-2. Portable Changeable Message Signs (PCMS). . . . used most frequently on high-density, urban freeways, . . . or where highway alignment, traffic routing problems or other conditions require advance warning and information.	PCMS is most frequently on high-density, urban freeways. These situations are most likely to be covered by DOT regulations, and thus, not affected by the OSHA standard.

Table 3 (continued)

1971 ANSI MUTCD	1993 Rev 3, Part VI MUTCD	Nature of Change (s)
	6F-3. Arrow Displays. . . . intended to provide additional warning and directional information to assist in merging and controlling traffic through or around a temporary traffic control zone. Type A: appropriate for use on low-speed urban streets. Type B: for intermediate-speed facilities and for maintenance or mobile operations on high-speed roadways. Type C: used on high-speed, high volume traffic control projects. Arrow display panels shall be mounted on a vehicle, a trailer, or other suitable support. Arrow display shall not be used on a two-lane, two-way roadway for temporary one-lane operation. An arrow display shall not be used on a multilane roadway to laterally shift all lanes of traffic, because unnecessary lane changing may result.	The Arrow Displays is an optional means (non-mandatory) for employers to supplement other traffic control devices. It is popular because it can be highly mobile (mounted on a vehicle, trailer, etc.) and easily repositioned as the job progresses.

	6F-4. High-level warning device (flag tree). . . . most commonly used in urban high-density traffic situations to warn motorists of short-term operations. . . . may supplement other traffic control devices in temporary traffic control zones. . . . shall consist of: -minimum of two flags with or without a Type B, high intensity, flashing warning light. -distance from the road way to the bottom of the lens of the light and to the lowest point of the flay material shall be no less than 8 feet. -flags shall be 16 inches square or larger and shall be orange or fluorescent versions of orange in color.	The high level warning device, also referred to as the flag tree, is another option (non-mandatory) for employers to use in addition to other traffic control devices.

Table 3 (continued)

1971 ANSI MUTCD	1993 Rev 3, Part VI MUTCD	Nature of Change (s)
6C-3 Cone Design. These shall be a minimum of 18 inches in height.	6F-5 Channelizing Devices. 6F-5b Cones. . . . shall be a minimum of 18 inches-except when used on freeways and other high-speed highways they shall be 28 inches in height. Retroreflection of 28-inch or larger cones shall be provided by a white band 6 inches wide, no more than 3 to 4 inches from the top of the cone, and an additional 4-inch wide white band a minimum of 2 inches below the 6-inch band.	Projects on freeways and high-speed highways are likely to fall under DOT regulations, and thus, are unaffected by the OSHA standard.
6C-5 Vertical Panel Design. . . . shall consist of at least one panel 6 to 8 inches in width . . .	6F-5d Vertical Panels. . . . shall be 8 to 12 inches wide . . . Vertical panels used on expressways, freeways, and other high-speed roadways shall have a minimum of 270 square inches of retro reflective area facing traffic.	Projects on expressways, freeways and high-speed highways are likely to fall under DOT regulations, and thus, are unaffected by the OSHA standard.

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6C-4 Drum Design. Drums are normally metal drums, of 30 to 55 gallon capacity . . .	6F-5e Drums. Drums . . . shall be constructed of lightweight, flexible, and deformable materials and be a minimum of 36 inches in height; and have at least an 18 inch minimum width, regardless or orientation. Steel drums shall not be used.	Device change.
	6F-8 Other devices. New section added to reflect current technology. 1. 6F-8a. Impact Attenuators. 2. 6F-8b. Portable Barriers 3. 6F-8c. Temporary Traffic Signals. 4. 6F-8d. Rumble Strips. 5. 6F-8e. Screens. 6. 6F-8f. Opposing Traffic Lane Divider.	Offers greater flexibility. Impact Attenuators, portable barriers, etc. are new devices added to reflect common practices among highway construction and repair contractors.