National Committee on
Uniform Traffic Control Devices

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Item Number: 25B-TTC-01

NCUTCD PROPOSAL FOR CHANGES TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

COMMITTEE / TASK FORCE:	Temporary Traffic Control Technical Committee
ITEM NUMBER:	25B-TTC-01
TOPIC:	Blasting Zones
ORIGIN OF REQUEST:	TTC TF #9 - Typical Applications TF
AFFECTED SECTIONS OF MUTCD:	6G.11, 6H.25, 6P.01 Table 6G-1, Figure 6G-1, Figure 6P-2

DEVELOPMENT HISTORY:
Approved by TTC TC:.....06/11/2025
Approved by NCUTCD Council: .....

This is a proposed change to the MUTCD that has been developed by a technical committee, joint committee, or joint task force of the NCUTCD. The NCUTCD is distributing this to its sponsoring organizations for review and comment. Sponsor comments will be considered in revising the proposal prior to NCUTCD Council consideration. This proposal does not represent a revision of the MUTCD and does not constitute official MUTCD standards, guidance, options, or support. If approved by the NCUTCD Council, the recommended changes will be submitted to FHWA for consideration for inclusion in a future MUTCD revision. The MUTCD can be revised only through the federal rulemaking process.

SUMMARY:
Typical Application TA-2, Blasting Zones, depicts a blasting zone adjacent to the highway while traffic flow is maintained, with regulatory TURN OFF 2-WAY RADIO AND CELL PHONE (R22-2) signs in place. The need for the regulatory sign and Typical Application has been eliminated with blasting technology used today.

DISCUSSION:
The Blasting Zones Typical Application TA-2 has been in the MUTCD since the 1961 edition. TA-2 has remained unchanged since 2000, with the exception that in the 11th Edition MUTCD FHWA changed the TURN OFF 2-WAY RADIO AND CELL PHONE (R22-2) sign from a warning sign (orange background) to a regulatory sign (white background). In the NPA, FHWA explained that they took this action "because the sign is requiring an action and not warning about a hazard." However, most blasting operations now use modern blasting caps that are incapable of being prematurely detonated by Radiofrequency (RF) interference. If a blasting operation is still using older blasting caps where RF interference is a concern due to proximity to the travel space, then it is not reasonable to expect the R22-2 sign to eliminate risk of premature detonation.

TTC members met with the Institute of Makers of Explosives (IME) in January 2025 to discuss this TA-2. Below is a summary of the discussion:

- In decades past, blasting caps were electric devices that could be susceptible to premature detonation by RF interference. However, the only documented cases were from workers carrying RF devices within the immediate vicinity, not a passing motorist from hundreds of feet away.
- Most blasting contractors have switched to blasting caps that are incapable of being prematurely detonated (either "shock tube" devices that are immune to RF interference, or digital devices that fail-safe to off). However, there may still be some contractors that still use the older styles of blasting caps.
- Most passing motorists are likely using devices well below the RF danger thresholds. TA-2 was first developed at a time when first-generation cell phones emitted much greater RF levels than the current generation. However there remains a possibility that passing road users are using other, less common devices with larger RF radius.
- If a blasting operation was using older-style blasting caps and there was a possibility (however remote) of premature detonation due to RF interference from devices of passing road users, then it is unrealistic to expect the R22-2 sign to be successful in inducing all passing road users to turn off their devices. The "regulation" on the R22-2 sign is difficult at best for law enforcement to enforce. Therefore, in this scenario, the blasting contractor would need to shut down traffic in both directions.
- The BLASTING ZONE AHEAD (W22-1) sign should remain in the MUTCD, as there are situations where the blasting operation does not require traffic to be stopped, but there is still potential for drivers to get startled to be blast.
- IME recommended practices reference MUTCD standards, however they are also interested in updating their standards. They supported TTC Technical Committee's efforts to recommend MUTCD updates.

Therefore, this proposal:

- Eliminates the R22-2 sign in tables, text and figures from CHAPTER 6G. TTC ZONE REGULATORY SIGNS.
- Revises the requirements for when the BLASTING ZONE AHEAD (W22-1) and END BLASTING ZONE (W22-3) signs should be used.
- Requires the blaster in charge to assess whether traffic should be completely stopped in both directions during blasting, including if the blasting operation will be using detonators that are at risk of premature detonation due to RF interference from passing road users. IME standards are referenced in the support statement.
- Reduces the requirement for the END BLASTING ZONE sign from a standard to an option (consistent with MUTCD policies for the END ROAD WORK sign).

On June 4, 2025, the Institute of Makers of Explosives (IME) provided written concurrence with this proposal as written: "IME concurs with this proposal and the changes to the MUTCD therein." This was communicated by Joshua Hoffman, Ph.D., P.E., Sr. Director, Scientific and Regulatory Affairs, Institute of Makers of Explosives (IME).

RECOMMENDED MUTCD CHANGES:

The following present the proposed changes to the current MUTCD within the context of the current MUTCD language. Proposed additions to the MUTCD are shown in blue underline and proposed deletions from the MUTCD are shown in ~~red strikethrough~~. Changes previously approved by NCUTCD Council (but not yet adopted by FHWA) are shown in green double underline for additions and ~~green double strikethrough~~ for deletions. In some cases, background comments may be provided with the MUTCD text. These comments are indicated by [bracketed white text in shaded green]. Deletions made by a technical committee, joint committee, or task force after initial distribution to sponsoring organizations are shown in ~~highlighted red strikethrough and sans-serif text~~. Additions made by a technical committee, joint committee, or task force after initial distribution to sponsoring organizations are shown in underline blue and sans-serif text.

PART 6

TEMPORARY TRAFFIC CONTROL

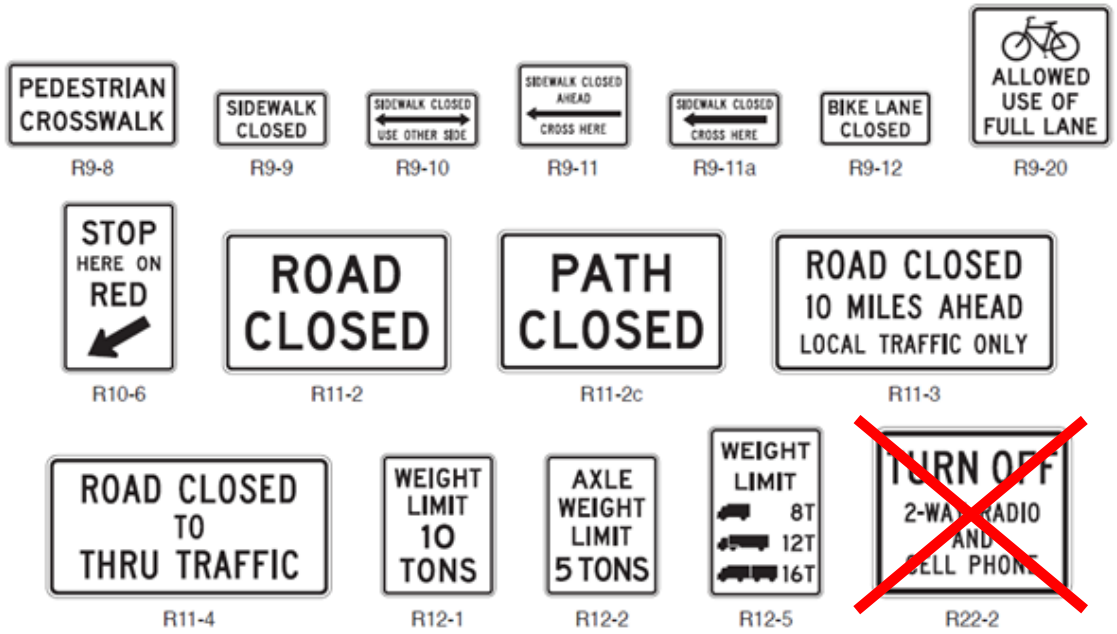
CHAPTER 6G. TTC ZONE REGULATORY SIGNS

Table 6G-1. Temporary Traffic Control Zone Regulatory Sign and Plaque Sizes

Sign or Plaque	Sign Designation	Section	Conventional Road	Freeway or Expressway	Minimum
~~Turn off 2-Way Radio and Cell Phone~~	~~R22-2~~	~~6G.11~~	~~42 x 36~~	~~42 x 36~~	~~—~~

[Only the sign changed by this ballot item is shown]

Figure 6G-1. Regulatory Signs and Plaques in Temporary Traffic Control Zones (Sheet 2 of 2)



~~Section 6G.11 TURN OFF 2-WAY RADIO AND CELL PHONE Sign (R22-2)~~

~~Standard:~~

~~01 The TURN OFF 2-WAY RADIO AND CELL PHONE (R22-2) sign (see Figure 6G-1) shall be used to require road users to turn off mobile radio transmitters and cellular telephones where blasting operations occur.~~

~~Support:~~

~~02 Section 6H.25 contains information about the full sequence of signs for blasting zones and the specific requirements for location of this regulatory sign.~~

CHAPTER 6H. TTC ZONE WARNING SIGNS

Section 6H.25 Signs for Blasting Areas

Standard:

00a The blaster-in-charge shall assess whether road users must be stopped in some or all directions of travel during the blasting operation, taking into account factors such as the anticipated blast radius and the potential for Radio-Frequency (RF) energy from electronic devices used by passing motorists to induce premature firing of the detonators (blasting caps).

Support:

~~01 Radio-Frequency (RF) energy can cause the premature firing of electric detonators (blasting caps) used in TTC zones.~~ Many modern blasting operations use detonators that are incapable of being prematurely set off by RF energy or are susceptible to premature firing only within a short radius around the detonator. The Institute of Makers of Explosives (IME) publishes safety guidance on RF interference and safe blasting procedures.

~~Standard:~~

~~02 Road users shall be warned where blasting operations occur. A sequence of signs shall be prominently displayed to warn all road users of blasting operations and to direct operators of mobile radio equipment, including cellular telephones, to turn off transmitters in a blasting area. These signs shall be covered or removed when there are no explosives in the area or the area is otherwise secured.~~

~~03 The BLASTING ZONE AHEAD (W22-1) sign (see Figure 6H-1) shall be used in advance of any TTC zone where explosives are being used. The TURN OFF 2-WAY RADIO AND CELL PHONE (R22-2) and END BLASTING ZONE (W22-3) signs shall be used in sequence with this sign.~~

~~04 The TURN OFF 2-WAY RADIO AND CELL PHONE (R22-2) sign (see Section 6G.11 and Figure 6G-1) shall follow the BLASTING ZONE AHEAD (W22-1) sign and shall be placed at least 1,000 feet before the beginning of the blasting zone.~~

~~05 The END BLASTING ZONE (W22-3) sign (see Figure 6H-1) shall be placed a minimum of 1,000 feet past the blasting zone.~~

Guidance:

05a The BLASTING ZONE AHEAD (W22-1) sign should be used in advance of any TTC zone where road users need advance warning of blasting operations that will be occurring while traffic is allowed to proceed on that road.

Standard:

05b The BLASTING ZONE AHEAD (W22-1) sign shall be covered or removed during times when no blasting operations are occurring.

Option:

06 The END BLASTING ZONE (W22-3) sign may be used downstream of the blasting zone area, placed either with, ~~or~~ preceding, or instead of the END ROAD WORK (G20-2) sign.

CHAPTER 6P. TYPICAL APPLICATIONS

Section 6P.01 Typical Applications

~~**Notes for Figure 6P-2—Typical Application 2**~~

~~**Blasting Zone**~~

~~**Standard:**~~

~~**1. Whenever blasting caps are used within 1,000 feet of a roadway, the signing shown shall be used.**~~

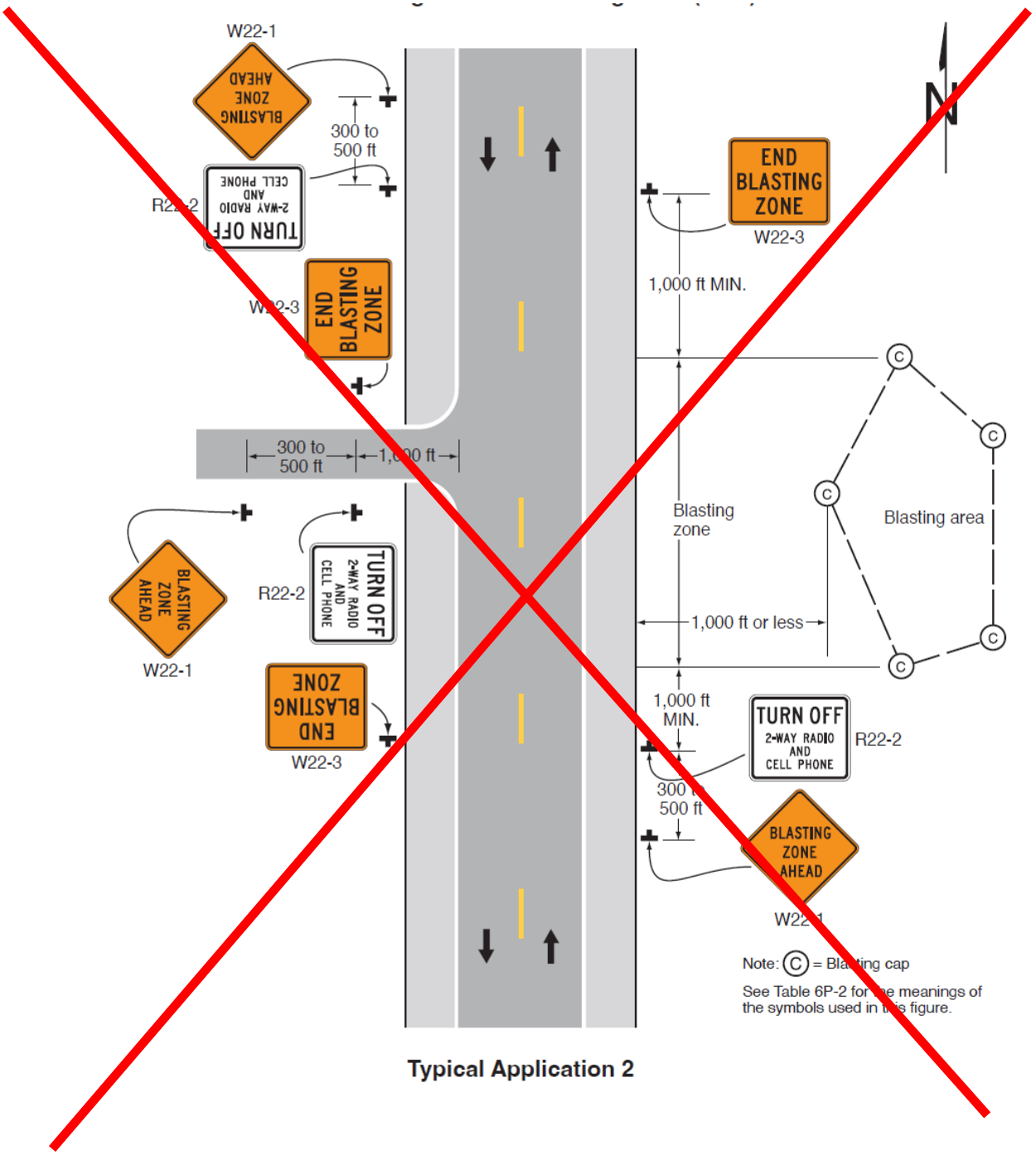
~~**2. The signs shall be covered or removed when there are no explosives in the area or the area is otherwise secure.**~~

~~**3. Whenever a side road intersects the roadway between the BLASTING ZONE AHEAD sign and the END BLASTING ZONE sign, or a side road is within 1,000 feet of any blasting cap, similar signing, as on the mainline, shall be installed on the side road.**~~

~~**4. Prior to blasting, the blaster in charge shall determine whether road users in the blasting zone will be endangered by the blasting operation. If there is danger, road users shall not be permitted to pass through the blasting zone during blasting operations.**~~

~~*Guidance:*~~

~~*5. On a divided highway, the signs should be mounted on both sides of the directional roadways.*~~



Typical Application 2

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