

## H10 Work Zone Considerations

### H10.1 Introduction

This section identifies the appropriate roadside design strategy during construction in the work zone environment.

For overall information on traffic accommodation strategies, refer to the current edition of the Department's *Traffic Accommodation in Work Zone Manual*.

### H10.2 Work Zones

Work zones are typically much more restrictive, in terms of space available for standard roadside designs, because of the need to create effective work areas immediately adjacent to the operating highway. However, in some cases, such as when twinning an existing highway, room may exist to provide standard roadside design treatments.

The designer should strive to accommodate standard roadside designs in work zone areas, where possible.

In work zones where this is not possible, designers should provide as much offset as possible to longitudinal traffic barriers and use effective end treatments to shield the ends of barrier systems.

In regard to the use of Precast F-Shape interlocking concrete barrier systems, please refer to the current version of *AT's Traffic Accommodation in Work Zone Manual*.

Lower profile concrete barriers may be adequate where the posted speed is 60 km/h or less.

If a continuous barrier is not necessary, consider providing other work zone traffic control devices. A Traffic Accommodation Strategy (TAS) shall be prepared by the Contractor

performing the work. The TAS should be based on specific features of the work zone and shall include sign layout drawings and installation/removal plans of various traffic control devices. Treatment of oversized vehicles and emergency vehicles should also be addressed in the TAS. If detours are contained in the TAS, the layout should be included in a detailed drawing complete with signage, tapers, and lane markings, and must meet the AT detour geometric design specifications.

To ensure a safe environment, provide a minimum buffer zone in advance of the work area to provide the required lane merge or lane shift a safe distance before the working area.

For a Precast F-Shape Barrier, provide a minimum buffer zone of 25 m whenever possible in advance of the work zone in accordance with AT standard drawings TCS-B-1.19B, 1.20B, 1.21B, or 1.27A. The Precast F-Shape Barrier shall meet the requirements of *NCHRP Report 350* for Test Level 3.

For an Interlocking Water Filled Barrier, provide a minimum buffer zone of 50 m whenever possible in advance of the work zone in accordance with AT standard drawings TCS-B-1.22A, 1.23B, 1.24B, 1.25B, or 1.26A. Due to previous experience, AT does not accept Water Filled Barriers as a barrier system on Alberta highways where the posted speed in the work zone exceeds 60 km/h; however, Contractors may use them to control traffic within or through their work zones. These barriers do not have to meet *NCHRP Report 350* compliance tests. The longer buffer zone for the interlocking Water Filled Barrier is necessary due to the larger design deflection.

If the end of the Precast F-shape barrier is within the Clear Zone, provide an appropriate temporary end treatment such as sand barrels for the applicable posted work zone speed. If the

concrete barrier terminates outside of the Clear Zone, no end treatment is required.

For the Precast F-Shape Barrier to function properly, the barrier must be interlocked and stretched to remove the slack in the system. The upstream end of the Precast F-Shape Barrier should be pinned or clamped to the roadway to ensure that the connection to the end treatment remains functional.

For long duration **bridge** construction projects, temporary barriers are required as follows:

- An Interlocking Water Filled System (1.83 m long x 1.06 m high) may be used as a barricade on bridge construction projects when both of the following conditions are met:
  - posted work zone speed is equal to or less than 60 km/h
  - the vertical drop from the roadway surface does not exceed 300 mm
- A Continuous Concrete Precast F-Shape Barriers should be used on **bridge** construction projects when either of the following conditions are met:
  - posted work zone speed is greater than 60 km/h
  - a vertical drop greater than or equal to 300 mm from the roadway surface exists.

## H10.3 References

The following documents were used during the development of this section:

Alberta Infrastructure and Transportation's *Traffic Accommodation in Work Zones*, Edmonton, AB, 2001

Alberta Infrastructure and Transportation's *Traffic Accommodation in Work Zones – Urban Areas*, Edmonton, AB, 2003