ENGINEERS CONSTRUCTION, INC.

Submittal Cover Sheet

Submittal Title:	**Traffic Control Plan & Temporary Pedestrian Access Route**
Project Name:	**Williston STP 5500 (17)**
Date:	**March 24, 2025**
ECI Submittal Reference Number:	**240265-08-Rev02**
Manufacturer / Supplier / Subcontractor:	**N/A**
Specification / Drawing References:	**641.02**
Submittal Prepared By:	**Nathan Lougee**

☑ This submittal is not a proposed substitution or deviation from the Contract Documents.

☐ This submission includes a proposed deviation from the Contract Documents as clearly identified in this submittal.

The undersigned attests that the undersigned has carefully examined this entire submission, and the requirements of the Contract Documents have been met.

By: Nathan Lougee

Nathan Lougee

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ECI Response to all VTRANS Comments Made in Williston STP 5500 (17) - TCP Rev.02 Submittal

Comment No.	VTRANS Comment/Question	Rejected Submittal Section/Figure	ECI Response
1	Contract Plans	Page 9 of 15	Revised as noted
2	This section should be expanded upon. Temporary Crosswalk?	Page 9 of 15	Additional information added regarding temporary crosswalks, pededstrian poles and referencing the correct TPAR sheets.
3	Per the Table with speeds 40 MPH and greater a Rectangular Rapid Flashing beacon and in-street pedestrians signs should be used in addition standard crossing pavement markings and pedestrian signs.	Page 11 of 15	Refer to page 44 of VAOT EFFECTIVENESS OF RECTANGULAR RAPID FLASHING BEACONS (RRFBs) IN SMALL AND RURAL COMMUNITIES item 1 - "Expand the range of roadway types that are considered for RRFB installation to include 3000 to 9000 AADT 2-lane roads with posted speeds of 35mph or less"
4	If/When one of these stops is going to be closed, will there be a temporary one installed in its place? If not/ or yes how will the word get out if ECI is coordinating with GMT (as mentioned on page 20 & 21) or is this coordination going to be a project team task where ECI would lean on the Agency's PIO to get the word out?	Page 11 of 15	ECI has and will continue to communicate with GMT for any adjustments to bus stop locations and public notification. ECI supports the Agency's PIO to get the word out as that may reduce calls the Agency receives from the public.
5	This location does not allow for allowable site distance for the speed on this roadway. This suggest area is not conducive for a ped crossing do to the crest of the hill.	Page 12 of 15	Location adjusted to STA 245+25 Meadowrun road at the top of the hill.
6	Should not be the Agency responsibility of recognition of need. This is ECI's plan and if there is a need then ECI should notify the Resident Engineer of the such.	Page 12 of 15	Noted and changed to; If required by the days construction activities
7	Will these be paved in all locations. Total paved width per lane 13'?	Page 12 of 15	Revised to maintain 11' lanes.
8	Safe for whom? Your original baseline CPM & revised CPM indicated concrete sidewalk installation during fall of 2026.	Page 12 of 15	Removed safe and replaced with; throughout the progression of the project.

9	and the Resident Engineer	Page 13 of 15	Added
10	(5)If adjustment is needed will there be a temporary Bus Stop? If so where will this be located? Additionally, ECI shall notify the Resident Engineer in addition to GMT so that the Resident Engineer can have the project team notify the Public in advance to the changes.	Page 13-14 of 15	Refer to comment 4 which discusses coordination with GMT and references coordinating with GMT on page 20 & 21
11	Assuming this will be provided to the Resident Engineer?	Page 15 of 15	Added Resident Engineer to eliminate assumptions.
12	Suggestion: This board may help closer to Route 2 to allow for traffic to stay on Rte 2 and seek alternate routes. Again just a suggestion.	Plan 3 of 21	Noted - PCMS will be adjusted as necessary based on conditions.
13	Suggestion either move this board closer to Mountain View & Old Stage road to help with alternate routes prior to entering the project site or request an additional board be installed!	Plan 4 of 21	Noted - PCMS will be adjusted as necessary based on conditions.
14	Downward pointing arrows to be black on Fluorescent Orange	Plan 5, 6-13 of 21	Noted that black on flourescent orange is required. The sign doesn't exist in the Roadmanager Program
15	Existing Speed Limit = 40 MPH	Plan 5-21 of 21	ECI acknowledges the posted speed limit on VT Route 2A is 40 MPH. Due to multiple roads being shown on the plan ECI left the area blank so it isn't assumed that all roads are 40 MPH
16	(2) - and include proper approach tapers	Plan 6-8 of 21	Added comment to original VTrans comment for tapers that are shown in the attached TA-10 as well.
17	Temporary concrete barrier ends exposed to traffic shall be protected (attenuated) or extended outside the clear zone.	Plan 9 of 21	Revised barrier w/ attenuator comment to match callout on Plans 10, 11, 12, 13, 15 and 16 of 21 to eliminate any confusion

18	(4) - It should be noted that the barrier itself shall not be placed along the merging taper. The lane shall first be closed using channelizing devices and pavement markings. Please refer to TA-5 for a similar set-up for a shoulder closure and TA -34 for a freeway lane closure. There is no good example in the MUTCD for conventional roadways with the use of concrete barriers. Reference TA-12 for the signalized lane closure on a two-lane road then add your concrete barrier behind the channelizing devices with the correct flare rate. (See 11th edition MUTCD Section 6M.02 Positive Protection and Temporary Traffic Barrier paragraph 07-09).	Plan 9 of 21	Noted
19	(9) - Typical Note - It should be noted that the barrier itself shall not be placed along the merging taper. The lane shall first be closed using channelizing devices and pavement markings. Please refer to TA-5 for a similar set-up for a shoulder closure and TA -34 for a freeway lane closure. There is no good example in the MUTCD for conventional roadways with the use of concrete barriers. Reference TA-12 for the signalized lane closure on a two-lane road then add your concrete barrier behind the channelizing devices with the correct flare rate. (See 11th edition MUTCD Section 6M.02 Positive Protection and Temporary Traffic Barrier paragraph 07-09).	Plan 10-13, 15-19 of 21	Noted
20	(9) - Typical note - Individual channelizing devices, tape, or rope used to connect individual devices and other discontinuous barriers and devices, pavement markings are not detectable by persons with visual disabilities and are incapable of providing detectable path guidance on temporary or realigned sidewalks or other pedestrian facilities. (11th edition MUTCD 6M.04, paragraph 1) When it is determined that a facility should be accessible to and detectable by pedestrians with visual disabilities, a continuously detectable edging shall be provided throughout the length of the facility such that it can be followed by pedestrians using long canes for guidance.	Plan 10-13, 15-19 of 21	Noted - ECI will install Item 621.2400 - TEMPORARY TRAFFIC BARRIER along the road side of the path to provide a continuous barrier.

21	(2) - Sidewalk closed sign to be installed on modified Type 3 Barricades that meets ADA requirements to block from pedestrian entrance. Regulatory and warning signs can not be installed on the same assembly	Plan 17-19 of 21	Type 3 Barricades added to block pedestrians - Please note pedestrians may use Sharon Drive and Gail Terrace.
22	This location does not allow for allowable sight distance for the speed on this roadway. This suggest area is not conducive for a ped crossing do to the crest of the hill.	Plan 17-19 of 21	ECI moved sign to Meadowrun Road at ±STA 245+25
23	Sidewalk Closed <---------- Cross Here	Plan 20 of 21	Changed sign

TRAFFIC CONTROL PLAN (TCP) &
TEMPORARY PEDESTRIAN ACCESS ROUTE(TPAR)

Williston STP 5500 (17)

Williston, VT

Prepared for

VERMONT
AGENCY OF TRANSPORTATION

By

Engineers Construction, Inc.

Rev:02

Prepared by: Nathan Lougee

Reviewed & Approved by: Mark Peloquin, PE

March 24, 2025

STATE OF VERMONT
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No.018.0007897
CIVIL
LICENSED
PROFESSIONAL ENGINEER

Table of Contents

1.0 General Information

- Purpose of this Traffic Control Plan:

Engineers Construction, Inc. (ECI) is presenting this Traffic Control Plan to give site-specific traffic control procedures for work zone traffic on the Vermont Agency of Transportation (VAOT) Williston STP 5500 (17) roadwork, utilities and drainage improvement project. During the work phase of the project, ECI will furnish, install, maintain, adjust, and remove all traffic control devices as necessary to give reasonable protection and advance warning to all traffic. In this plan, *traffic* refers to vehicles, pedestrians, bicyclists, and other users of the roadway.

This plan is intended to comply with all aspects of Traffic Control Requirements set forth by the Vermont Agency of Transportation Standard Drawings or the Project Plans, Work Zone Safety and Mobility Policy and Guidance (February 24, 2021), Appendix A, Manual on Uniform Traffic Control Devices for Streets and Highways 11th Edition (MUTCD), and AASHTO Roadside Design Guide (4th edition, 2011).

- Project Location:

Beginning in the Town of Williston on VT Route 2A (Essex Road) at station 244+15.00 extending north along VT Route 2A for a distance of 3570 ft (0.676 Miles) to station 279+85.00, 594.09 ft on Industrial Avenue from station 49+50.00 to station 55+44.05, and 554.00 ft of Mountain View Road from station 0+00.00 to 5+54.00.

- Scope of Work:

Work to be performed on this project includes:

- roadway widening of VT Route 2A, Industrial Avenue, and Mountain View Road
- drainage and stormwater improvements
- installation of new curb and sidewalk
- cold planning and re-paving, pavement markings and traffic signs

- installation of new traffic signal system at the intersection of VT Route 2 and Industial Avenue
- other highway-related items

- Roadway Description:

This portion of VT Route 2A within the Town of Williston runs from east to west in a residential zoning area. Currently, there are two travel lanes of traffic with a traffic signal at the intersection of US Route 2A, Mountain View Road and Industrial Avenue. Turn lanes currently exist coming off from Industrial Ave and Mountain View Road onto VT Route 2A in the westerly and easterly direction. Current speed limit along VT Route 2A is 40 MPH within the area of the project intersection. The speed limit along Industrial Avenue is 30 MPH and Mountain View Road is 40 MPH. There are pedestrian paths along the north side of VT Route 2A to the east of the intersection and along both sides of VT Route 2A to the west of the intersection within the project area. There is a sidewalk along the east side of Industrial Avenue and now pedestrian access along Mountain View Road within the project area. Currently no bike lanes exists on VT Route 2A, but there is a multi-use path along the north side of VT Route 2A. Currently there are four bus stops on the Green Mountain Transit Orange Line 10 route located along VT Route 2A. Two of the stops are located along the southbound route and two along the northbound route of VT Route 2A.

- Work Restrictions During Peak Hours

Per the contract, one-lane alternating traffic shall be limited such that the travelling public is not delayed more than 10 minutes per work zone on VT Route 2A and Industrial Avenue during off-peak hours. Mountain View Road may be detoured along North Williston Road, Williston Road (US Route 2), and Essex Road (VT Route 2A). All milling, paving, and utility work must be performed during daytime work. To maintain free-flowing two-way traffic ECI will utilize roadway widenings, traffic channelizing devices and temporary lane markings with signage to temporarily shift the road alignment for daytime work for many aspects of the project.

- Special events

The known special events that will overlap with construction is the Williston Fourth of July Parade on July 4th each year, Vermont Brewers Festival in July 2025, Champlain Valley Expo and Williston Film Festival in July 2025.

ECI understands that these event schedules are subject to change given potential future pandemics.

2.0 Work Zone

- Advance warning

All Project approach signs and PCMS will be in place and approved as shown on plan sheets 210 of the Green Construction Approach Signage Sheet 1 (Sheet 210 of 215), on the attached Traffic Control Plans sheets 1-8 of 21, and as shown per standards G-1 T-1, T-10, T-12, T-17, T-28, T-29, T-30, T-31, T-35, T-36,

T-40, T-44, T-45, T-70, T-133 and T-134. All signs can be installed outside of roadway on the shoulder by trucks with a high-intensity rotating, flashing, oscillating, or strobe lights.

- Vehicular Travel

The project is broken up into (7) primary Phases. Most Phases allow for continued 2-way traffic in similar patterns to the existing lane layout with a different alignment in each phase with the option to utilize flaggers for a lane closure as necessary. These layouts and alignments are detailed in the attached Traffic Control Phasing Plans. The detour layout is located in the attached Green International Affiliates Inc. Traffic Control Plan sheet 212 of 215. Temporary line striping will be placed to delineate each respective alignment as necessary.

- Pedestrians / Bicyclists

1. There is currently a shared use path along the west side of VT Route 2A where pedestrians and occasional bicyclists are anticipated. US Route 2A currently has no bike lanes on either sides of the road. Refer to Temporary Pedestrian Access Plan for pedestrian access locations shown on ECI plan sheets 22-25 of 25.

- Night Work

Night work will not be permitted on this Contract per Special Provision 4 and no night work as defined in Subsection 101.02

- Trucks Entering

All trucks entering/existing the project limits will do so, as much as practical, from existing side roads and driveways. Highway Flaggers will be used to help trucks merge into and out of the the active travel lanes when/where required. Flagger spacing will be minimized to the area of excavation, equipment and truck staging required to complete the work along with the minimum required channelizing device tapers.

- Roadway Detour – Mountain View Road

Mountain View Road will periocially be closed to westbound traffic for utility work, roadway construction, paving and line striping near the intersection with VT Route 2A. Refer to the attached Mountain View Road Detour Plan sheet 212 and 215. A Uniformed Law Enforcement Officer(s) (UTO) and/or Highway Flagger(s) may be used to direct road users at both ends of the road closure, as needed. The closure will include portable work zone signs, cones, drums, and road closed signs mounted on type III barricades. A UTO will be required on the signal end of the project. A UTO is the only entity that can override a traffic signal regulatory action.

- MUTCD Typical Applications (TAs)

The following TAs will be utilized throughout the project limits as required for each specific work activity. Refer to the attached Traffic Control Phasing Plans which contain tables identifying the planned TAs to be used for all major work activities in each Phase. If necessary, use Bicycles symbol (W11-1)

parent sign accompanied by an IN ROAD plaque (W16-1P) for areas where bicycle traffic is to occur and there are no other options for bicyclist but to travel in the roadway adjacent to vehicles

- Work beyond the shoulder (TA-1):

Beyond the Shoulder work for this project may be utilized for some widening and cleanup activities on the job along VT Route 2A. Refer to the attached TA-1 diagram for additional details.

- Work on shoulders (TA-3):

Shoulder work for this project will be utilized for most activities on the job along VT Route 2A as well as Industrial Avenue and Mountain View Drive. The shoulder closure will not have any encroachment on the travel lane. Refer to plan sheets 195-207 of the Green Internation Affiliates, Inc. Traffic Control Phasing Sheet Plans for details on the roadway width in areas of temporary widening. Refer to the attached TA-3 diagram for additional details.

- Shoulder Work with Minor Encroachment (TA-6):

Work that can be performed off the road shoulder, but requires minor encroachments, will be performed using this Typical Application. 11-ft wide lanes with two-way free flowing traffic will be maintained during most instances of this TA. Slight "shifts" of traffic will be required. All traffic shifts will be delineated with cones, barrels or barriers, as required by the specific work activity. Refer to the attached TA-6 diagram for additional details.

- Lane Closure on a Two-Lane Road Using Flaggers (TA-10):

Lane closures on this project will be contained to one lane on one side of the roadway during off-peak hours. All early warning temporary lane closure signs and channeling devices will be moved and set up before any work begins. Flagger stations will be located such that an errant vehicle has additional space to stop without entering the workspace. Lane closers will only be used as needed to complete the work within the a travel lane, and to provide additional protection of the workers. When work is complete in one area, the closure will be moved to the next designated work area to keep the work area length as short as practical. Refer to the attached TA-10 diagram for additional details.

- Closure at the side of an Intersection (TA-27):

All work within the active travel / turn lanes and within approximately 200 feet of the intersection stop-bars will be performed using TA-27. A Uniformed Law Enforcement Officer(s) (UTO) will be used to direct road users within the intersection. Highway Flaggers will also be utilized to hold traffic until the UTO is ready to release the lane. The intersection will always be controlled by the UTO. Refer to the attached TA-27 diagram for additional details. Refer to Note 6 on Sheet 209 of 215 of the Contract Plans.

- Sidewalk Detour or Diversion (TA-28):

When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility. Refer to the attached TA-28 diagram for additional details.

- Line Striping and Channelizing Devices

Line striping will be used to delineate main-line 2-way traffic flows after the roadway is widened and as alignments are shifted. Channelizing devices will be used to further delineate and/or separate active work zones from the travel lanes as required by any active TA and when/where drop-offs exist. Where longitudinal drop-offs exist, channelizing devices will be selected in accordance with Standard Detail Drawings T-35 and T-36. At a minimum, concrete barriers will be used where required by Standards T-35 and T-36. Additional utilization of barriers or other channelizing devices to increase worker safety and/or site security will be made at the discretion of the Project Superintendent. Concrete barrier side exposed to traffic to be delineated. Delineation color to match corresponding temporary pavement marking. Reflectors shall be mounted every 20 feet along the side of the barrier exposed to traffic, with yellow on the driver's left and white on the driver's right. Refer to State Standard Drawing G-1 for delineator-detail for use with temporary concrete barrier and T-12 for flare rates.

- Portable Changeable Message Signs (PCMS)

Portable Changeable Message Signs (PCMS) will be placed prior to work performed as shown in the attached Traffic Control Plan sheets 1-8 of 21. PCMS will be used throughout the duration of the project when there is active construction and will be updated as needed based on current work zone conditions. ECI will work with the Resident Engineer and other road projects in the area to determine the use and location of PCMS so not to overwhelm motorists with their ability to read and comprehend early warning messages. ECI will coordinate in advance with the Resident Engineer for approval to revise or turn off messages as necessary to convey the activities ahead.

- Highway Flaggers

Highway Flaggers will be utilized during the construction process to ensure the safety of pedestrians, motorists, bicyclists, and workers on or near the work zone. Flagging personnel will have received all the necessary training and shall be certified prior to performing work on the project. Highway Flaggers shall use MUTCD compliant high visibility apparel with a minimum of Class 2 during daytime work.

At the discretion of the Project Superintendent and Resident Engineer, Highway Flaggers may be placed at active construction site entrances where vehicles cannot enter/exit the work area without interfering with traffic coming from the opposite direction.

All Highway Flaggers will have a pre-identified supervisor and be equipped with two-way radio communication.

- Uniform Traffic Officers

At a minimum, a UTO will be utilized to control traffic at the VT Route 2A intersection with Industrial Avenue during planned signal system outages and to protect the traveling public and workers during construction operations taking place within or around the intersection under TA-27 operations. Refer to Note 6 on Sheet 209 of 215 of the contract plans.

- Temporary Traffic Signal System

ECI will setup and maintain a temporary traffic signal system at the intersection of US Route 2 and Industrial Avenue for certain phases of the project. This signal system will temporarily replace the existing system and will be modified throughout the project Phases to ensure the proper signal alignment and timings are maintained in each traffic Phase.

- Paved Travel Lanes

Any disturbed paved surfaces at pipe crossings open to traffic shall be temporarily paved or have compacted asphalt grindings applied at the end of work day.

- Emergency Vehicle Access through the Work Zone

ECI will always ensure access to all properties for emergency vehicles. Access to residential properties shall be coordinated with the owner. Coordinate major work on commercial or municipal access with the owner at least one week prior to starting the work.

During lanes closures, ECI and Highway Flaggers will accommodate emergency vehicles through the work zone. This effort will include identifying the emergency vehicle and adjusting traffic sequence or stopping all traffic to provide a clear path for the emergency vehicle(s) to pass.

- Seasonal (winter) Closure

All paved surfaces, shoulders, line striping, guardrails, signs and delineators will be in place, whether temporary or permanent, prior to any winter shutdown. Prior to a shutdown, ECI will collaborate with the Town of Williston and VTrans District 5, as they maintain this section of VT Route 2A to ensure all paved surfaces are left in an acceptable condition for snow removal / plowing and that any additional measures needed are addressed. In addition, all excavations will be backfilled and stabilized, and all materials and equipment will be removed from the work areas. Any construction signs not relevant at the time of winter shut-down will be covered or removed as not to create complacency with motorist during the closure. Sign covering shall not damage the retro-reflectivity of the sign face. Also, the sign cover shall not deteriorate for the duration that the sign is covered.

3.0 Traffic Phasing

Main-line travel routes will follow the Phasing Plans as generally depicted in Contract Plan Sheets 196 to 207. The attached Phasing Plans further identify specific work activities to take place within each Phase, and additional measures (i.e. TAs) to be implemented during each respective Phase. Line striping will be masked and re-painted as required for each respective Phase and will serve as the primary travel route delineation for the project. Below is a general summary of each of the Phasing plans with respect to traffic alignment, signal systems, and bicyclists and pedestrian management.

- **Phase 1 A/B (STA 50+00 to 55+10 LT/RT)**
    - VT Route 2A Traffic will follow existing traffic patterns and line striping. Existing lines will be re-painted as needed.
    - Industrial Avenue traffic will be squeezed and shifted to the south or north side of Industrial Avenue from STA 49+00 to STA 55+00. Cones will be utilized for alignment shifts during work on utilities and roadway widening.
    - Shoulders to be maintained for bicyclists.
    - Maintain the existing traffic signal system in place. Make minor adjustments to signal head locations facing Industrial Ave. traffic as required.
    - Refer to Contract Plans Phase 1/2 for pedestrian access during work on Industrial Avenue.

- **Phase 2A/B (STA 244+60 to 259+50 LT)**
    - VT Route 2A Traffic will be shifted east as shown on attached plans 9-10 of 21 or Phases 2A and 2B. Existing pavement markings may be removed/covered prior to the roadway alignment shift as necessary if cones cannot be utilized.
    - Industrial Avenue traffic will be shifted to the north side of Industrial Avenue against the new curb line from STA 200+00 to STA 209+00. Temporary lines will be painted if necessary prior to alignment shift.
    - The existing traffic signal system will remain on-line.
    - Shoulders to be maintained for bicyclists.
    - Refer to TPAR – Phase 2 Plans 19 of 21 for pedestrian access during Phase 2A/B. As shown a new pedestrian pole will be installed for the new pedestrian access along the east side of VT Route 2A. New temporary crosswalks will be added during this phase for access to the temporary path as well.

- **Phase 3 A/B (STA 247+00 to 257+00RT)**
    - A Mountain View Drive detour will be utilized in this phase as shown on the Green Detour Plan 1 sheets 212 – 215.
    - Traffic will be shifted north side of Mountain View Drive in Phase 3A as shown on TCP Sheet 16 of 21. Existing pavement markings will be removed/covered as necessary for the roadway alignment shift.
    - Traffic will be shifted north side of Mountain View Drive in Phase 3B as shown on TCP Sheet 17 of 21. Existing pavement markings will be removed/covered as necessary for the roadway alignment shift.
    - Industrial Avenue traffic alignment will adjust to match existing. Adjust as needed to suit any remaining shoulder and road widening work as needed.
    - Temporary traffic signal head arrangements to match existing travel lane alignments.
    - Shoulders to be maintained for bicyclists.
    - Refer to Intersection Construction Phasing Plans and TCP sheets 16-17 of 21 for pedestrian access during Phase 3A/B.

- **Phase 4 (STA 257+00 to 265+30RT)**
    - Traffic will be shifted west side of VT Route 2A in Phase 4 as shown on TCP Sheet 18 of 21. Channelizing devices will be used as necessary for the daytime roadway alignment shift.
    - VT Route 2A traffic will generally follow the existing alignment and pattern with flaggers to assist vehicles entering and exiting the jobsite. VT Route 2A will be reduced to one-lane with a TA-10 if necessary while installing the stormwater system. Most of the stormwater work in this widened area will be constructed under a TA-3 Work on Shoulders application.
    - Temporary traffic signal head arrangements to match the existing travel lane alignments.
    - Bicycles symbol (W11-1) parent sign accompanied by an IN ROAD plaque (W16-1P) when shoulder is under construction.
    - Refer to Intersection Construction Phasing Plans for pedestrian access during Phase 4.
- **Phase 5 (Sewer line for Hillside Drive; STA 265+30 to 267+10)**
    - During this phase the sewer line will be installed on Hillside Drive. Traffic will be reduced to one-lane on Hillside Drive during this phase with 3 flaggers as shown in the attached ECI generated Phase 5 Plan.
    - US Route 2A traffic will generally follow the existing alignment and pattern with flaggers to assist vehicles entering and exiting Hillside Drive. Temporary pavement markings will be maintained during this Phase traffic alignment shift. Route 2A will be reduced to one-lane with a TA-10 during the roadway crossing with the proposed sewer line.
    - Shoulders to be maintained for bicyclists on VT Route 2A.
    - Pedestrian access will be maintained on the shared use path during Phase 5.
- **Phase 6 (STA 267+10 to 271+80RT)**
    - During this phase a stormwater pond will be constructed near Bittersweet Circle along with the associated stormwater system as well as the remaining widening will be completed on the north end of the project.
    - VT Route 2A traffic will generally follow the existing alignment and pattern with flaggers to assist vehicles entering and exiting the jobsite. VT Route 2A will be reduced to one-lane with a TA-10 if necessary while installing the stormwater system. Most of the stormwater work in this widened area will be constructed under a TA-3 Work on Shoulders application.
    - Bicycles symbol (W11-1) parent sign accompanied by an IN ROAD plaque (W16-1P) when shoulder is under construction.
    - Pedestrian access will be maintained on the shared use path during Phase 6. Refer to TPAR plan for additional information.

- **Phase 7 (STA 271+80 to 279+35RT)**
    - During this phase the remaining widening will be completed on the north end of the project.
    - VT Route 2A traffic will generally follow the existing alignment and pattern with flaggers to assist vehicles entering and exiting the jobsite. VT Route 2A will be reduced to one-lane with a TA-10 if necessary while installing the stormwater system. Most of the stormwater work in this widened area will be constructed under a TA-3 Work on Shoulders application.
    - Bicycles symbol (W11-1) parent sign accompanied by an IN ROAD plaque (W16-1P) when shoulder is under construction.
    - Pedestrian access will be maintained on the shared use path during Phase 7. Refer to TPAR plan for additional information.

In general, all Phase changes will take place over a pre-planned 24-hour period. Typical Applications, as described above, will be utilized as needed to safely manage each respective Phase change.

4.0 Temporary Pedestrian Access Route (TPAR) Plan

Purpose of this TPAR Plan

Engineers Construction, Inc. (ECI) is presenting this TPAR plan to give site-specific pedestrian control procedures throughout the work zone on the Vermont Agency of Transportation (VAOT) Williston STP 5500 (17) roadwork, utilities and drainage improvement project. During all phases of the project, ECI will furnish, install, maintain, adjust, and remove all pedestrian control devices as necessary to give reasonable protection and advance warning to all pedestrians.

This plan is intended to comply with all aspects of Traffic Control Requirements set forth by the Vermont Agency of Transportation Standard Drawings or the Project Plans, Work Zone Safety and Mobility Guidance Document, Appendix A, Manual on Uniform Traffic Control Devices for Streets and Highways 11th Edition (MUTCD), and AASHTO Roadside Design Guide.

Existing Conditions

There are currently sidewalks and shared-use paths in the project area with pedestrian and bicycle traffic. Pedestrian traffic on VT Route 2A has been observed to be primarily along the VT Route 2A shared-use path. VT Route 2A also has four Green Mountain Transit (GMT) stops through the project area. ECI has coordinated with GMT and will continue to throughout the project for any adjustments to bus stops and public notice. Industrial Avenue currently has a sidewalk along the north side of the street within the project limits. Mountain View Road does not have pedestrian or bike access outside the existing roadway.

Work Plan

Pedestrian Path –

A delineated temporary pedestrian path will be maintained throughout construction along VT Route 2A and Industrial Avenue as shown in the attached TPAR Plans. The intent of this pedestrian path is to provide safe access from the project's start / end points along VT Route 2A to the existing bus stops near STA 251+25, STA 255+25, STA 260+50 LT and STA 271+70 RT. This path will be routed around the active work areas as needed and will be modified according to each primary Phase of the project.

Pedestrian Crossing –

Temporary crossings will be identified / signed near STA 245+25, STA 249+95(if necessary), STA 50+00, and STA 261+20 to allow access the existing and temporary sidewalks during each phasing of construction. A temporary pedestrian pole will be installed at the northeast corner of VT Route 2A and Mountain View Road to allow crossing to a temporary pedestrian path on the east side of VT Route 2A during multiple phases of construction.

Pedestrian Path Interface with Active Work Zones –

Where re-routing of pedestrians around active work areas is not practical, pedestrians will be safely escorted through the work zone by an ECI employee. If required by the days construction activities, a Highway Flagger will be assigned specifically to be an escort to pedestrians. In this case the Highway Flagger's sole responsibility will be to safely guide pedestrians through the active work zone.

Bicycle Travel Routes –

2-foot-wide shoulders with minimum 11-foot travel lane widths will be maintained through the project limits. This typical lane configuration should allow adequate space for bicyclists to safely pass through the project limits, traveling next to vehicular traffic. During flagging operations / alternating-traffic patterns, Highway Flaggers will be instructed to ensure adequate time is given to bicyclists passing through the work zone.

General Notes –

- All pedestrian / bicycle routes will be made up of gravel, pavement grindings and/or paved surfaces and will be maintained free from ruts, sand, and mud to prevent falls or crashes.
- Temporary pedestrian paths will be replaced with the permanent concrete sidewalks throughout the progression of the project.
- Line striping and/or channelizing devices will be used to further delineate and/or separate active work zones from the travel lanes as required. Additional utilization of barriers or other channelizing devices to increase pedestrian safety and/or site security will be made at the discretion of the Project Superintendent.

- At the discretion of the Project Superintendent and Resident Engineer, Highway Flaggers may be placed at active construction site entrances where vehicles cannot enter/exit the without interfering with pedestrian walkways.

Seasonal (winter) Closure –

Prior to an interim project shutdown, ECI will collaborate with the Town of Williston to ensure all pedestrian surfaces are left in an acceptable condition for snow removal / plowing and that any additional measures needed are addressed. In addition, all excavations will be backfilled and stabilized, and all materials and equipment will be removed from the work areas.

Construction Phasing

Refer to the attached TPAR Plans.

- ## Phase 1A
    - VT Route 2A Traffic will follow traffic alignment as outlined in the Traffic Control Plan.
    - Shoulders to be maintained for bicyclists.
    - Temporary pedestrian walkways will be constructed on the east side of VT Route 2A and the south side of Industrial Avenue as shown on TPAR plan sheet 17 of 21.
    - A temporary pedestrian signal pedestal will be installed on the northeast corner of the intersection of VT Route 2A and Mountain View Road.
    - Warning pedestrian crossing signs will be installed near STA 50+50 and STA 261+25 to allow access to the temporary pedestrian access routes. Both ends of the crossing area shall be ADA compliant and approaching routes are to be accessible, even when temporary.
    - Maintain the existing bus stop locations at STA 251+25 LT, STA 255+25 RT, STA 260+50 LT and STA 271+70 RT. Minor adjustments to be made to increase pedestrian protection from any work activities. ECI will coordinate with GMT if it is necessary to adjust a bus stop location with a temporary bus stop within 100 feet of the existing bus stop during some construction activities.

- ## Phase 1B
    - VT Route 2A Traffic will follow traffic alignment as outlined in the Traffic Control Plan.
    - Shoulders to be maintained for bicyclists.
    - Temporary pedestrian walkways will still be constructed on the east side of VT Route 2A if use is necessary as shown on TPAR plan sheet 18 of 21.
    - A temporary pedestrian signal pedestal will be installed on the northeast corner of the intersection of VT Route 2A and Mountain View Road. Pedestrian signals will be covered when not in use.
    - Warning pedestrian crossing signs will be installed near STA 50+50, STA 245+25(if necessary) and STA 261+25 to allow access to the temporary pedestrian access routes.

Both ends of the crossing area shall be ADA compliant and approaching routes are to be accessible, even when temporary.

- Maintain the existing bus stop locations at STA 251+25 LT, STA 255+25 RT, STA 260+50 LT and STA 271+70 RT. Minor adjustments to be made to increase pedestrian protection from any work activities. ECI will coordinate with GMT if it is necessary to adjust a bus stop location with a temporary bus stop within 100 feet of the existing bus stop during some construction activities.

- **Phase 2**
    - VT Route 2A Traffic will follow traffic alignment as outlined in the Traffic Control Plan.
    - Shoulders to be maintained for bicyclists.
    - Temporary pedestrian walkways will be constructed on the east side of VT Route 2A and the south side of Industrial Avenue as shown on TPAR plan sheet 19 of 21.
    - A temporary pedestrian signal pedestal will be installed on the northeast corner of the intersection of VT Route 2A and Mountain View Road. Pedestrian signals will be covered when not in use.
    - Warning pedestrian crossing signs will be installed near STA 50+50, STA 246+00(if necessary) and STA 261+25 to allow access to the temporary pedestrian access routes. Both ends of the crossing area shall be ADA compliant and approaching routes are to be accessible, even when temporary.
    - Maintain the existing bus stop locations at STA 251+25 LT, STA 255+25 RT, STA 260+50 LT and STA 271+70 RT. Minor adjustments to be made to increase pedestrian protection from any work activities. ECI will coordinate with GMT if it is necessary to adjust a bus stop location with a temporary bus stop within 100 feet of the existing bus stop during some construction activities.

- **Phase 3A**
    - VT Route 2A Traffic will follow traffic alignment as outlined in the Traffic Control Plan.
    - Shoulders to be maintained for bicyclists.
    - Temporary pedestrian walkways will be constructed on the west side of VT Route 2A south of the intersection as shown on TPAR plan sheet 20 of 21.
    - Warning pedestrian crossing signs will be installed near STA 246+00 to allow access to the temporary pedestrian access routes. Both ends of the crossing area shall be ADA compliant and approaching routes are to be accessible, even when temporary.
    - Maintain the existing bus stop locations at STA 251+25 LT, STA 255+25 RT, STA 260+50 LT and STA 271+70 RT. Minor adjustments to be made to increase pedestrian protection from any work activities. ECI will coordinate with GMT if it is necessary to adjust a bus stop location with a temporary bus stop within 100 feet of the existing bus stop during some construction activities.

- **Phase 3B, 4, 5, 6 & 7**
    - VT Route 2A Traffic will follow traffic alignment as outlined in the Traffic Control Plan.

- Shoulders to be maintained for bicyclists.
- Pedestrians will use the existing shared-use path and areas shown as new sidewalk.
- Maintain the existing bus stop locations at STA 251+25 LT, STA 255+25 RT, STA 260+50 LT and STA 271+70 RT. Minor adjustments to be made to increase pedestrian protection from any work activities. ECI will coordinate with GMT if it is necessary to adjust a bus stop location with a temporary bus stop within 100 feet of the existing bus stop during some construction activities.
- Utilize a hired flagger or ECI employee to escort pedestrians around the work at the intersection with Hillside Drive and Bittersweet Circle.

In general, all Phase changes will take place over a pre-planned 24-hour period. Notice will be given to the Resident Engineer as well as on both ends of pedestrian will be posted 3 days prior of Phase changes.

5.0 Key Personnel Contact Information

- Josh Hulett: Resident Engineer, Cell Phone - (802) 279-2794
- Chief Inspector, Bob Suckert Cell Phone – (802) 279-0217
- Andrew Piper: ECI Project Superintendent, Cell Phone - (802) 558-4462
- Eric Welcome: ECI Project Manager, Cell Phone - (802) 343-0480
- Matt Cyganiewicz: ECI Traffic Signal System Coordinator, Cell Phone – (802) 393-7620
- Ben Nelson: ECI Project Engineer, Cell Phone – (603) 8448-2946
- Williston Police Department, Non-emergency - (802) 878-6611
- Williston Fire Department, Non-emergency - (802) 878-5622
- Williston Public Works Department (Highway) - (802) 878-1239

6.0 Attachments

- TCP Overall Phasing Plan
- TCP Sheets 1-4 of 21 – Project PCMS/Approach Sign Locations
- TCP Sheet 5-8 of 21 – Intersection Phases
- TCP Sheet 9-10 of 21 – Phase 2A/B
- TCP Sheet 11-12 of 21 – Phase 3A/B
- TCP Sheet 13 of 21 – Phase 4
- TCP Sheet 14 of 21 – Phase 5
- TCP Sheet 15 of 21 – Phase 6
- TCP Sheet 16 of 21 – Phase 7
- TCP Sheet 17-21 of 21 – TPAR Phases
- MUTCD Typical TA-1, TA-3, TA-6, TA-10, TA-27, and TA-28
- MUTCD Figure 6C-1, Figure 6F-1, Table 6H-2, Table 6H-3, Table 6H-4

7.0 References

- 11th Edition Manual on Uniform Traffic Control Devices
- AASHTO Manual for Assessing Safety Hardware
- AASHTO Roadside Design Guide, 4th edition 2011 or current edition
- VAOT plans for Williston STP 5500(17) sheets 1-215 of 215.
- VAOT Standards G-1, T-1, T-2, T-10, T-12, T-17, T-24, T-28, T-29, T-30, T-31, T-35, and T-36.
- VAOT Effectiveness of Rectangular Rapid Flashing Beacons (RRFBs) in Small and Rural Communities, March 2023

Plan #: 1 of 21 1	**Location:** Williston, VT	**Title:** Williston STP 5500 (17)

Notes:

PCMS / APPROACH SIGNS

On-Site Contact:
Ben Nelson

Site Induction:	**Date Drawn:**
License #:	**Drawn By:** NRL

0 100 200 300 400ft
Scale 1:3431

ECI ENGINEERS CONSTRUCTION

Posted Speed: --	**Reduced Speed:** --	**Revision:** 02	**Signature:**

Date and Time of Project:
Start: 4/14/2025 - End: 10/16/2026

Plan #: 1	2 of 21	Location: Williston, VT	Title: Williston STP 5500 (17)

Notes:

PCMS / APPROACH SIGNS

On-Site Contact: Ben Nelson

Site Induction:

Date Drawn:

License #:

Drawn By: NRL

0 150 300 450 600ft

Scale 1:5022

ECI ENGINEERS CONSTRUCTION

Posted Speed:	Reduced Speed:	Revision:	Signature:	Date and Time of Project:
--	--	02		Start: 4/14/2025 - End: 10/16/2026

Plan #:	Location:	Title:
1 3 of 21	Williston, VT	Williston STP 5500 (17)

Notes:

PCMS / APPROACH SIGNS

Posted Speed:	Reduced Speed:	Revision:	Signature:
--	--	02	

On-Site Contact: Ben Nelson

Site Induction:

Date Drawn:

License #:

Drawn By: NRL

Date and Time of Project: Start: 4/14/2025 - End: 10/16/2026

0 50 100150200ft
Scale 1:2981

ECI ENGINEERS CONSTRUCTION

Plan #:	Location:	Title:
1 4 of 21	Williston, VT	Williston STP 5500 (17)

Notes:

PCMS / APPROACH SIGNS

Posted Speed:	Reduced Speed:	Revision:	Signature:
--	--	02	

On-Site Contact: Ben Nelson

Site Induction:	Date Drawn:
License #:	Drawn By: NRL

Date and Time of Project: Start: 4/14/2025 - End: 10/16/2026

0 50 100150200ft
Scale 1:2742

ECI ENGINEERS CONSTRUCTION

Plan #:	Location:	Title:
2 5 of 21	Williston, VT	RTE 2A/Ind. Ave/Mtn. View Dr.

Notes:

INTERSECTION PHASE 1

On-Site Contact: Ben Nelson

Site Induction:

Date Drawn:

License #:

Drawn By: NRL

0 100 200 300 400ft

Scale 1:4079

ECI ENGINEERS CONSTRUCTION

Posted Speed:	Reduced Speed:	Revision:	Signature:	Date and Time of Project:
--	--	02		Start: 4/14/2025 - End: 10/16/2026

Plan #:		Location:	Title:
3	6 of 21	Williston, VT	RTE 2A/Ind. Ave/Mtn. View Dr.

Notes:

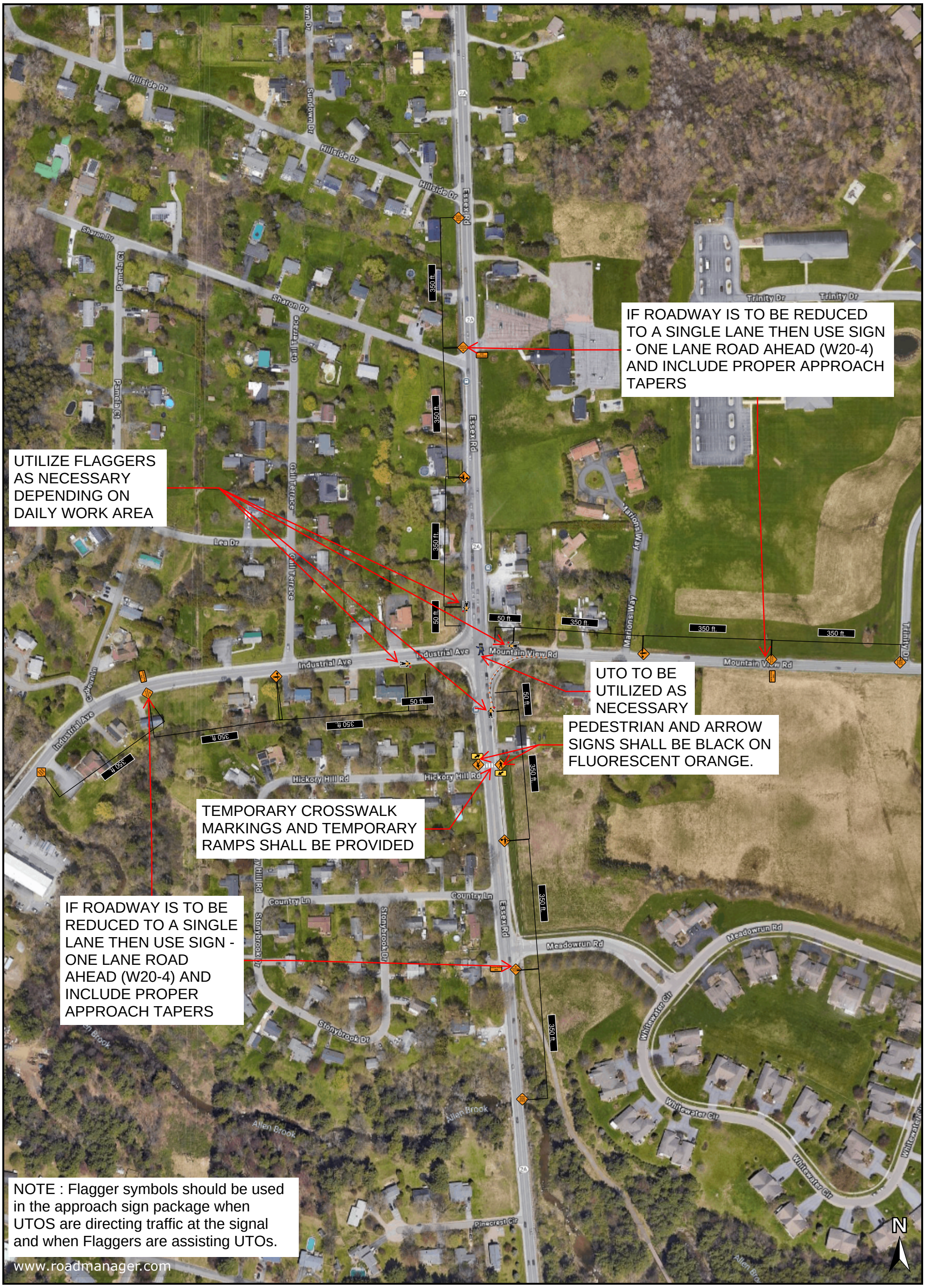
INTERSECTION PHASE 2

On-Site Contact:	
Ben Nelson	
Site Induction:	**Date Drawn:**
License #:	**Drawn By:** NRL

Posted Speed:	Reduced Speed:	Revision:	Signature:	Date and Time of Project:
--	--	02		Start: 4/14/2025 - End: 10/16/2026

0 100 200 300 400ft
Scale 1:4675

ECI ENGINEERS CONSTRUCTION



Plan #:		Location:	Title:
4	7 of 21	Williston, VT	RTE 2A/Ind. Ave/Mtn. View Dr.

Notes:				On-Site Contact:	
INTERSECTION PHASE 3				Ben Nelson	
				Site Induction:	Date Drawn:
				License #:	Drawn By: NRL
Posted Speed: --	Reduced Speed: --	Revision: 02	Signature:	Date and Time of Project: Start: 4/14/2025 - End: 10/16/2026	

0 100 200 300 400ft
Scale 1:4261

ECI ENGINEERS CONSTRUCTION

Plan #: 5 — 8 of 21	**Location:** Williston, VT		**Title:** RTE 2A/Ind. Ave/Mtn. View Dr.

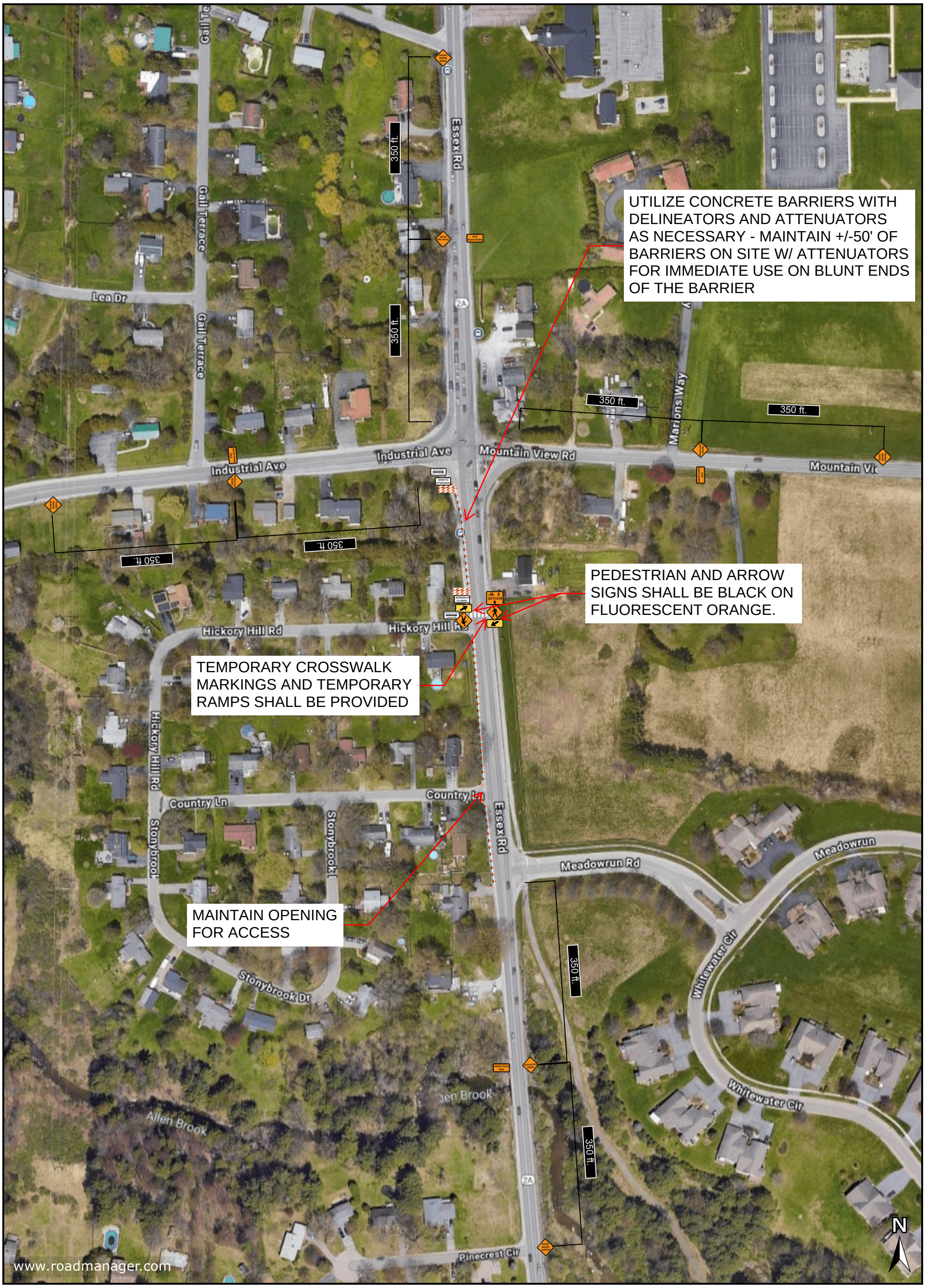
Notes:

INTERSECTION PHASE 4

On-Site Contact: Ben Nelson			
Site Induction:	**Date Drawn:**		
License #:	**Drawn By:** NRL		
Posted Speed: --	**Reduced Speed:** --	**Revision:** 02	**Signature:**
Date and Time of Project: Start: 4/14/2025 - End: 10/16/2026			

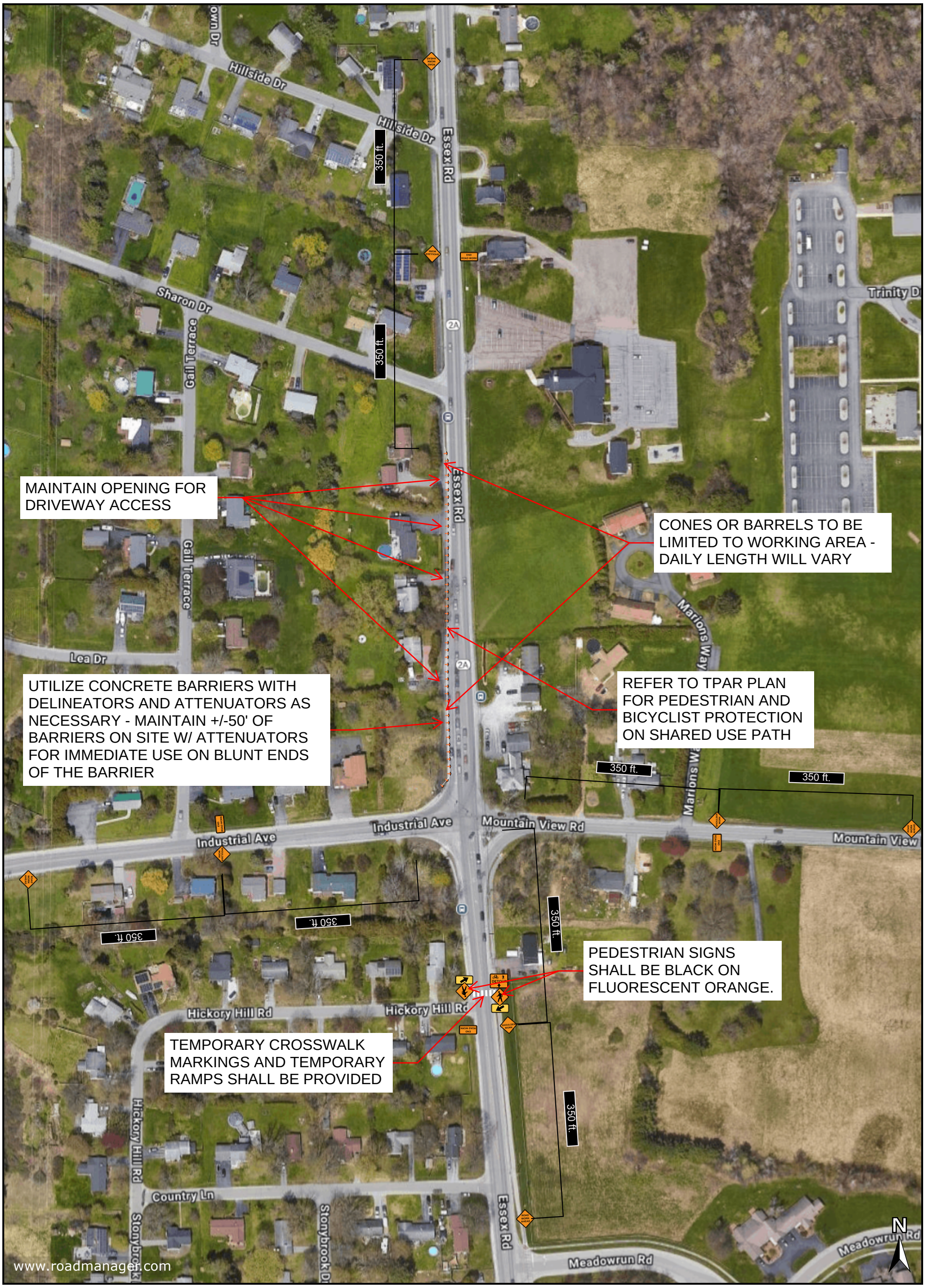
0 100 200 300 400ft
Scale 1:4806

ECI ENGINEERS CONSTRUCTION



Plan #: 6 9 of 21	**Location:** Williston, VT		**Title:** RTE 2A/Ind. Ave/Mtn. View Dr.

Notes: PHASE 2A			**On-Site Contact:** Ben Nelson	0 50 100 150 200ft Scale 1:3025
			Site Induction:	**Date Drawn:**
			License #:	**Drawn By:** NRL
Posted Speed: --	**Reduced Speed:** --	**Revision:** 02	**Signature:**	**Date and Time of Project:** Start: 4/14/2025 - End: 10/16/2026



Plan #: 7 10 of 21	Location: Williston, VT	Title: RTE 2A/Ind. Ave/Mtn. View Dr.

Notes:

PHASE 2B

On-Site Contact: Ben Nelson

Site Induction:

Date Drawn:

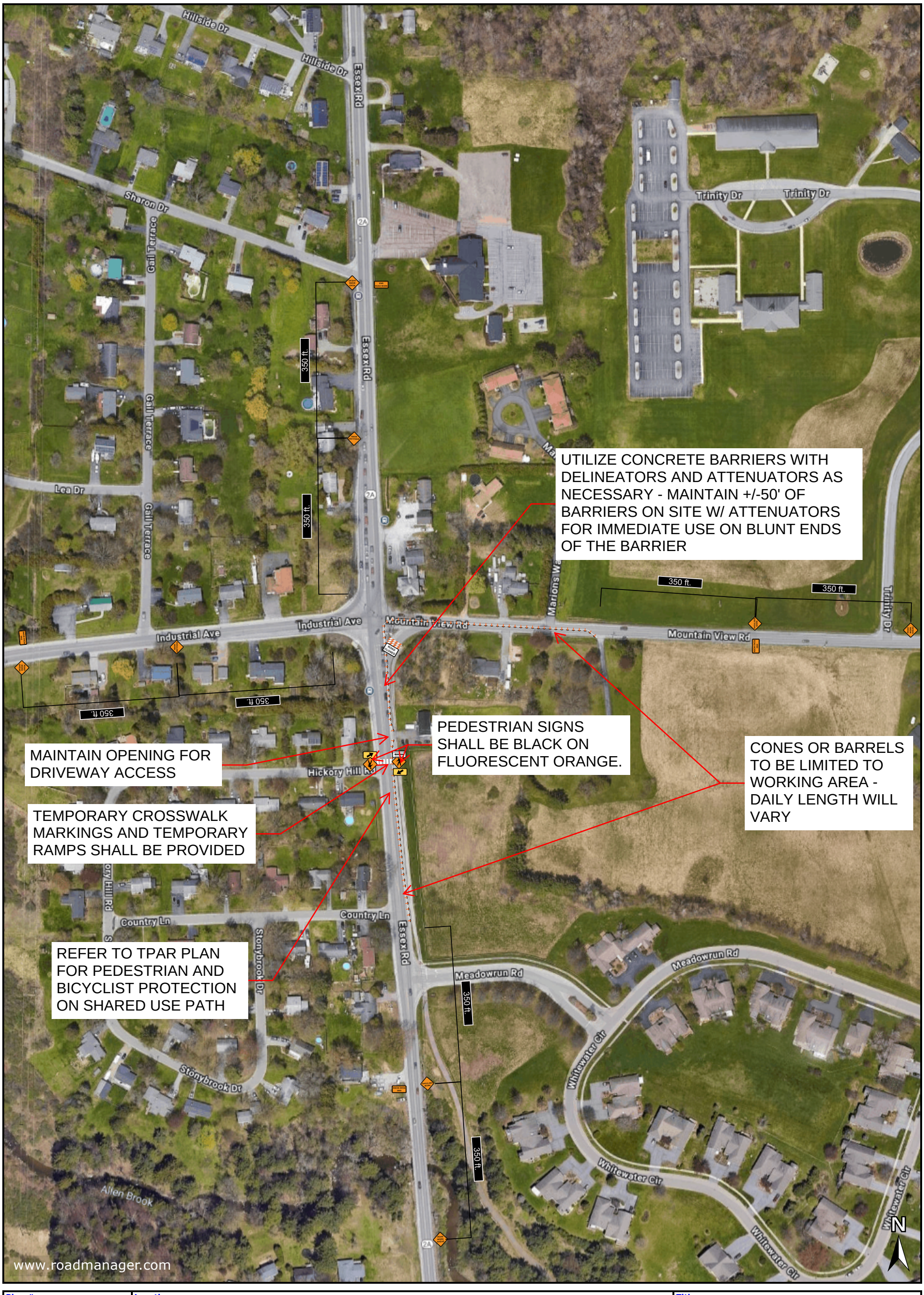
License #:

Drawn By: NRL

0 50 100150200ft
Scale 1:2843

ECI ENGINEERS CONSTRUCTION

Posted Speed:	Reduced Speed:	Revision:	Signature:	Date and Time of Project:
--	--	02		Start: 4/14/2025 - End: 10/16/2026



Plan #:	Location:	Title:
8 11 of 21	Williston, VT	RTE 2A/Ind. Ave/Mtn. View Dr.

Notes:

PHASE 3A

On-Site Contact: Ben Nelson

Site Induction:

Date Drawn:

License #:

Drawn By: NRL

0 100 200 300 400ft

Scale 1:3536

ECI ENGINEERS CONSTRUCTION

Posted Speed:	Reduced Speed:	Revision:	Signature:	Date and Time of Project:
--	--	02		Start: 4/14/2025 - End: 10/16/2026

Plan #: 9 12 of 21	Location: Williston, VT	Title: RTE 2A/Ind. Ave/Mtn. View Dr.

Notes:	On-Site Contact: Ben Nelson	
PHASE 3B	Site Induction:	Date Drawn:
	License #:	Drawn By: NRL

Posted Speed:	Reduced Speed:	Revision:	Signature:	Date and Time of Project:
--	--	02		Start: 4/14/2025 - End: 10/16/2026

0 100 200 300 400ft
Scale 1:3536

ECI ENGINEERS CONSTRUCTION

Plan #:	Location:	Title:
10 13 of 21	Williston, VT	RTE 2A/Ind. Ave/Mtn. View Dr.

Notes:

PHASE 4

On-Site Contact: Ben Nelson

Site Induction:

Date Drawn:

License #:

Drawn By: NRL

0 100 200 300 400ft

Scale 1:3532

ECI ENGINEERS CONSTRUCTION

Posted Speed:	Reduced Speed:	Revision:	Signature:	Date and Time of Project:
--	--	02		Start: 4/14/2025 - End: 10/16/2026

Plan #: 11 — 14 of 21	**Location:** Williston, VT	**Title:** Williston STP 5500 (17)

Notes:

PHASE 5

On-Site Contact: Ben Nelson

Site Induction:

Date Drawn:

License #:

Drawn By: NRL

0 50 100 150 200ft
Scale 1:3030

ECI ENGINEERS CONSTRUCTION

Posted Speed:	**Reduced Speed:**	**Revision:**	**Signature:**	**Date and Time of Project:**
--	--	02		Start: 4/14/2025 - End: 10/16/2026

Plan #:	Location:	Title:
12 15 of 21	Williston, VT	Williston STP 5500 (17)

Notes:

PHASE 6

On-Site Contact: Ben Nelson

Site Induction:	Date Drawn:
License #:	Drawn By: NRL

0 100 200 300 400ft

Scale 1:3637

ECI ENGINEERS CONSTRUCTION

Posted Speed:	Reduced Speed:	Revision:	Signature:	Date and Time of Project:
--	--	02		Start: 4/14/2025 - End: 10/16/2026

Plan #:	Location:	Title:
13 16 of 21	Williston, VT	Williston STP 5500 (17)

Notes:	On-Site Contact:		
PHASE 7	Ben Nelson		0 100 200 300 400ft Scale 1:4029
	Site Induction:	Date Drawn:	
	License #:	Drawn By: NRL	

Posted Speed:	Reduced Speed:	Revision:	Signature:	Date and Time of Project:
--	--	02		Start: 4/14/2025 - End: 10/16/2026

ECI ENGINEERS CONSTRUCTION

Plan #: 14 17 of 21	Location: Williston, VT	Title: RTE 2A/Ind. Ave/Mtn. View Dr.

Notes:

TPAR - PHASE 1A

On-Site Contact: Ben Nelson

Site Induction:

Date Drawn:

License #:

Drawn By: NRL

0 50 100 150 200ft

Scale 1:2276

ECI ENGINEERS CONSTRUCTION

Posted Speed:	Reduced Speed:	Revision:	Signature:	Date and Time of Project:
--	--	02		Start: 4/14/2025 - End: 10/16/2026

Plan #: 15 18 of 21	**Location:** Williston, VT	**Title:** RTE 2A/Ind. Ave/Mtn. View Dr.

Notes:

TPAR - PHASE 1B

On-Site Contact: Ben Nelson

Site Induction:	**Date Drawn:**
License #:	**Drawn By:** NRL

0 50 100 150 200ft

Scale 1:2329

ECI ENGINEERS CONSTRUCTION

Posted Speed:	**Reduced Speed:**	**Revision:**	**Signature:**	**Date and Time of Project:**
--	--	02		Start: 4/14/2025 - End: 10/16/2026

Plan #: 16 — 19 of 21	**Location:** Williston, VT	**Title:** RTE 2A/Ind. Ave/Mtn. View Dr.

Notes:

TPAR - PHASE 2

On-Site Contact: Ben Nelson

Site Induction:

Date Drawn:

License #:

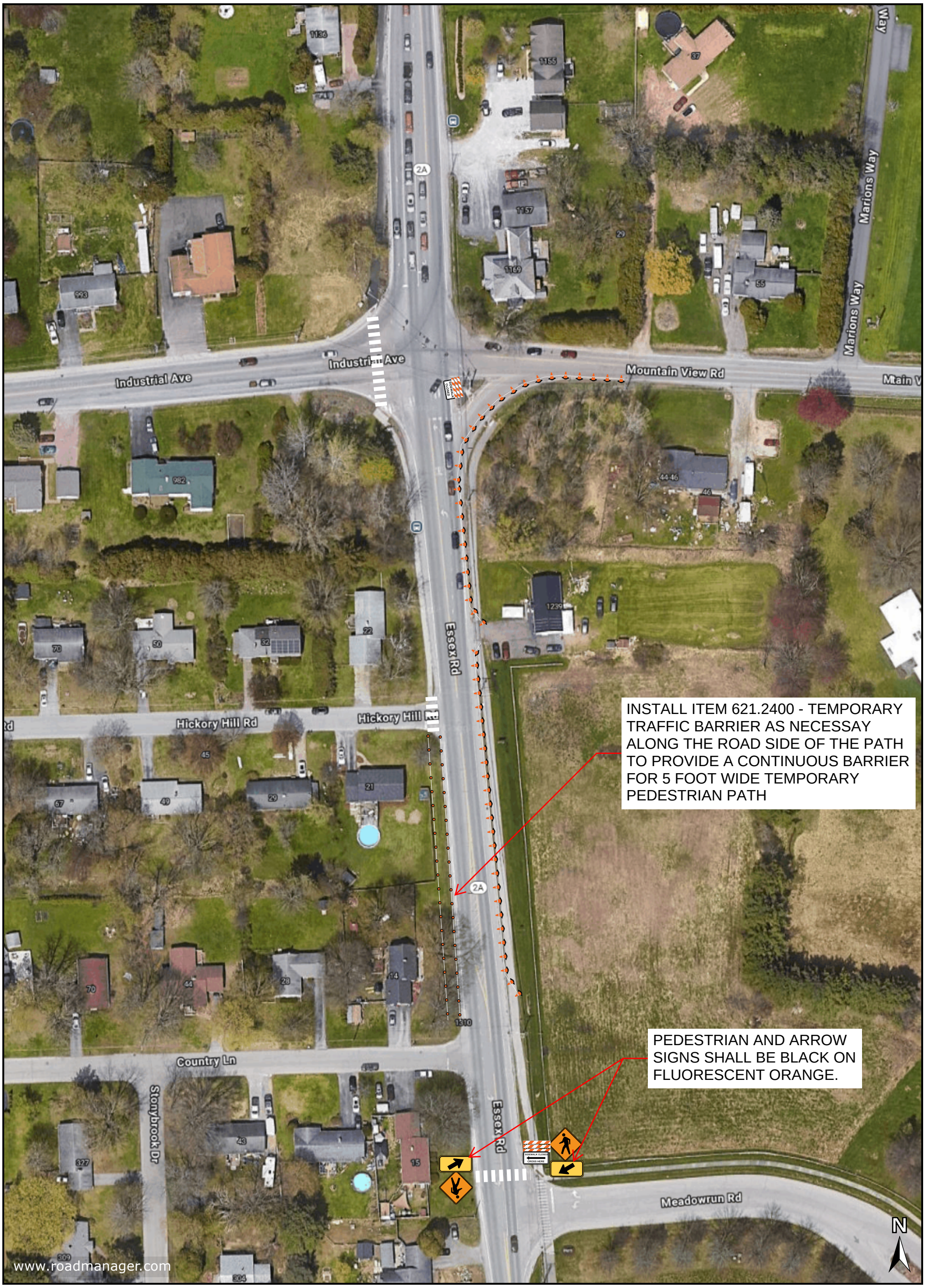
Drawn By: NRL

0 50 100 150 200ft

Scale 1:2261

ECI ENGINEERS CONSTRUCTION

Posted Speed:	**Reduced Speed:**	**Revision:**	**Signature:**	**Date and Time of Project:**
--	--	02		Start: 4/14/2025 - End: 10/16/2026



Plan #: 16 — 20 of 21	Location: Williston, VT	Title: RTE 2A/Ind. Ave/Mtn. View Dr.

Notes:	On-Site Contact: Ben Nelson	
TPAR - PHASE 3A	Site Induction:	Date Drawn:
	License #:	Drawn By: NRL

Posted Speed:	Reduced Speed:	Revision:	Signature:	Date and Time of Project:
--	--	02		Start: 4/14/2025 - End: 10/16/2026

0 25 50 75 100ft
Scale 1:1486

ECI ENGINEERS CONSTRUCTION

Plan #: 16 — 21 of 21	**Location:** Williston, VT	**Title:** RTE 2A/Ind. Ave/Mtn. View Dr.

Notes:

TPAR - PHASE 3B

Posted Speed: --	**Reduced Speed:** --	**Revision:** 02	**Signature:**

On-Site Contact: Ben Nelson

Site Induction:

Date Drawn:

License #:

Drawn By: NRL

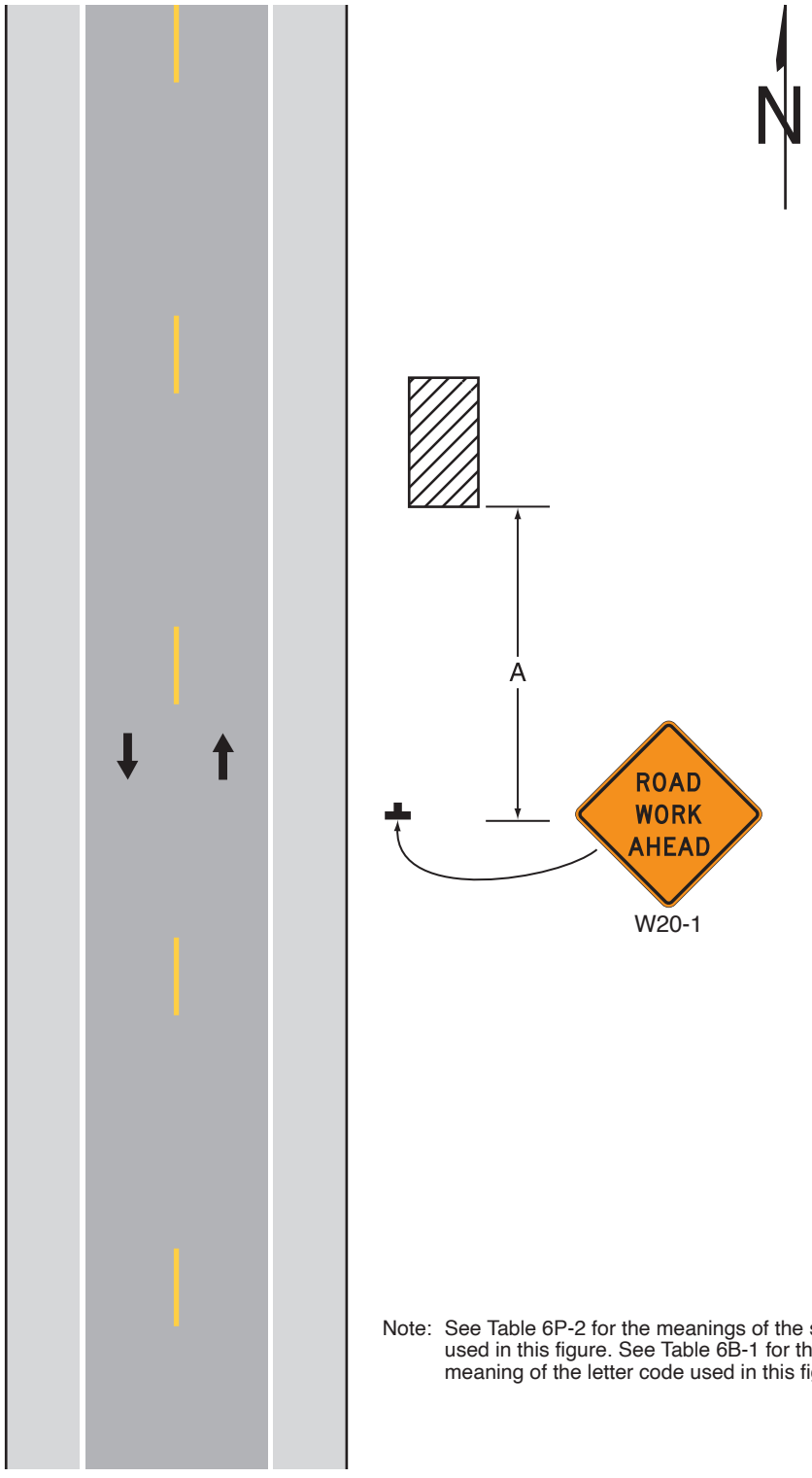
Date and Time of Project: Start: 4/14/2025 - End: 10/16/2026

0 25 50 75 100ft

Scale 1:1476

ECI ENGINEERS CONSTRUCTION

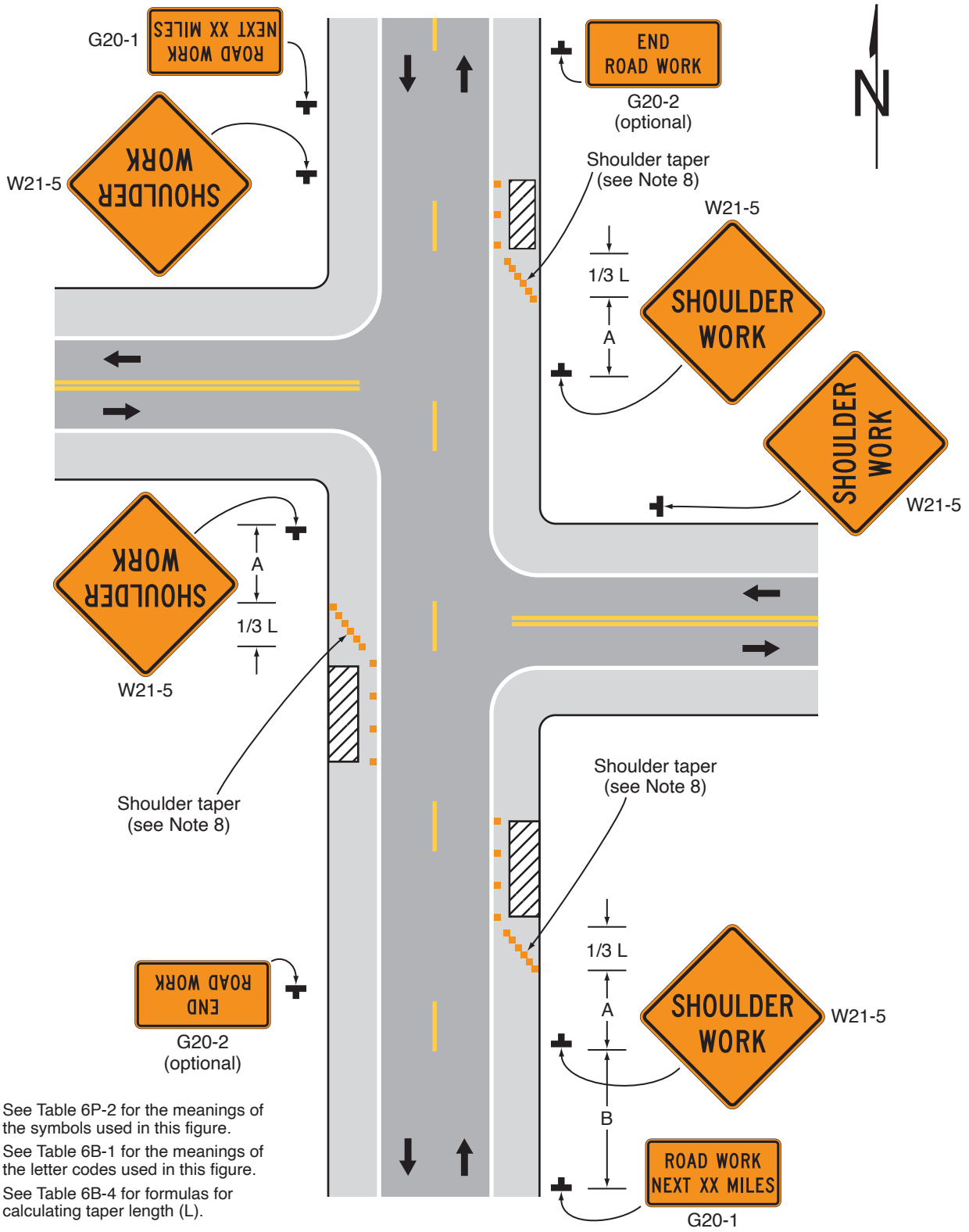
Figure 6P-1. Work Beyond the Shoulder (TA-1)



Note: See Table 6P-2 for the meanings of the symbols used in this figure. See Table 6B-1 for the meaning of the letter code used in this figure.

Typical Application 1

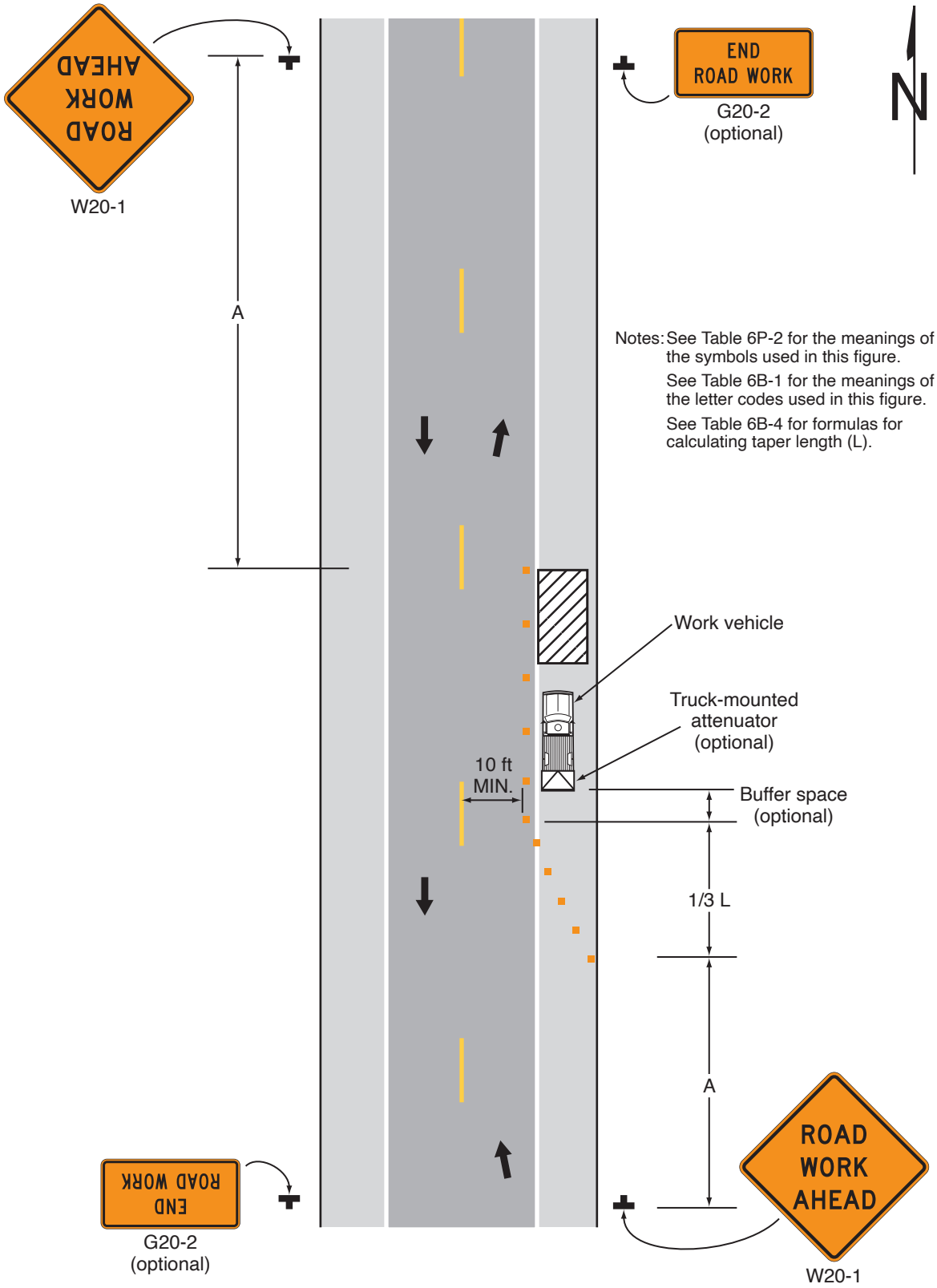
Figure 6P-3. Work on the Shoulders (TA-3)



Notes: See Table 6P-2 for the meanings of the symbols used in this figure.
See Table 6B-1 for the meanings of the letter codes used in this figure.
See Table 6B-4 for formulas for calculating taper length (L).

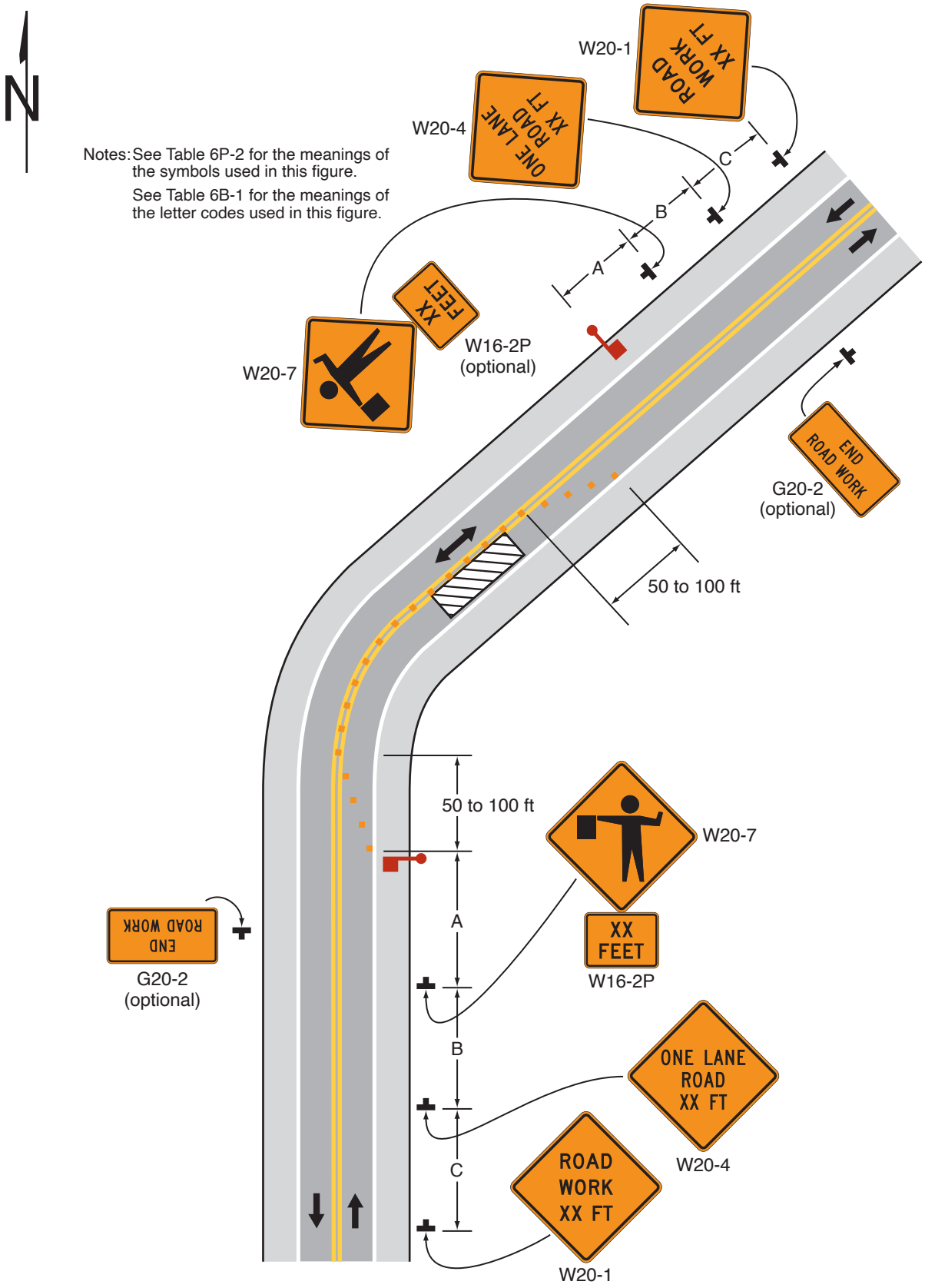
Typical Application 3

Figure 6P-6. Shoulder Work with Minor Encroachment (TA-6)



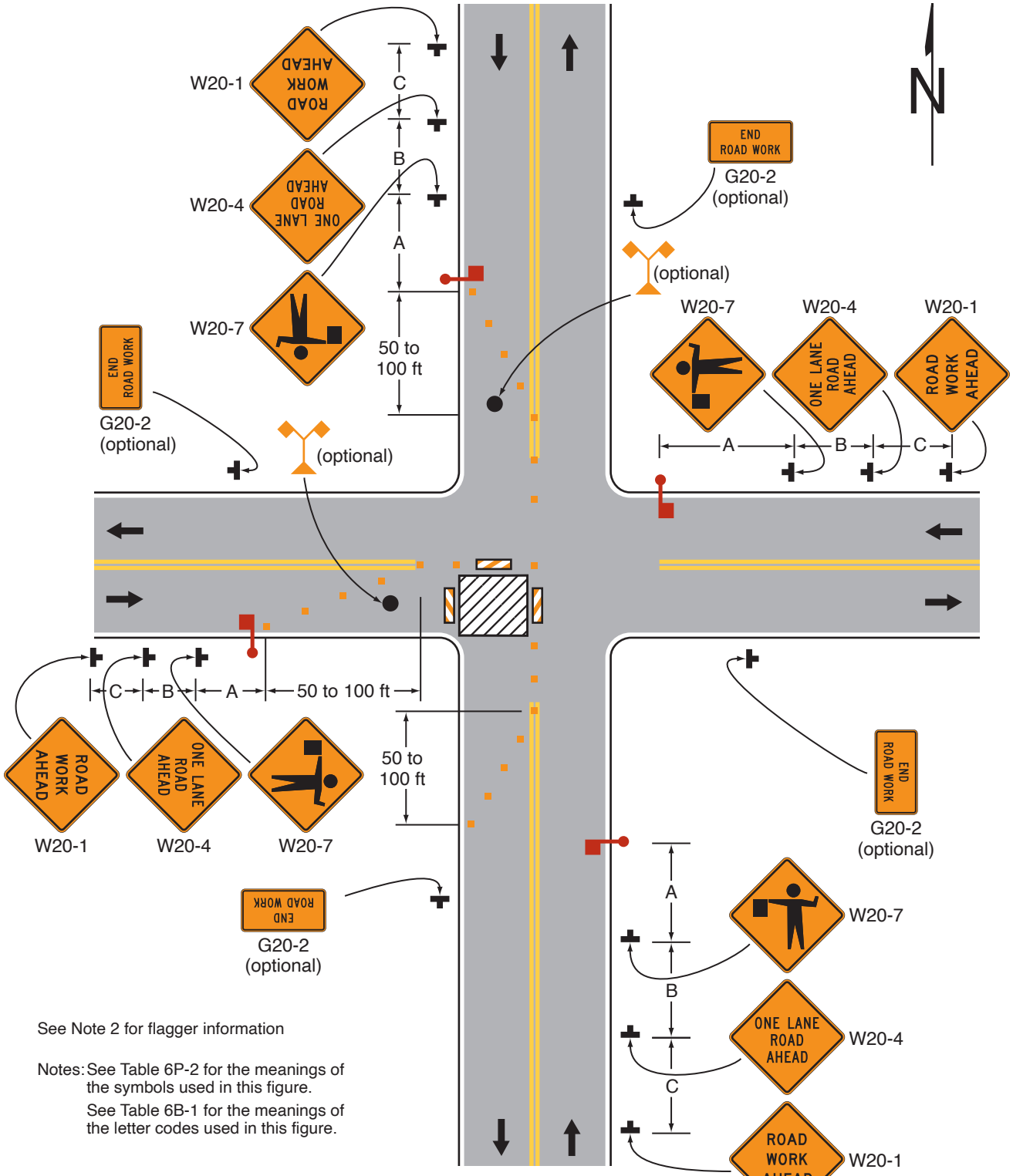
Typical Application 6

Figure 6P-10. Lane Closure on a Two-Lane Road Using Flaggers (TA-10)



Typical Application 10

Figure 6P-27. Closure at the Side of an Intersection (TA-27)



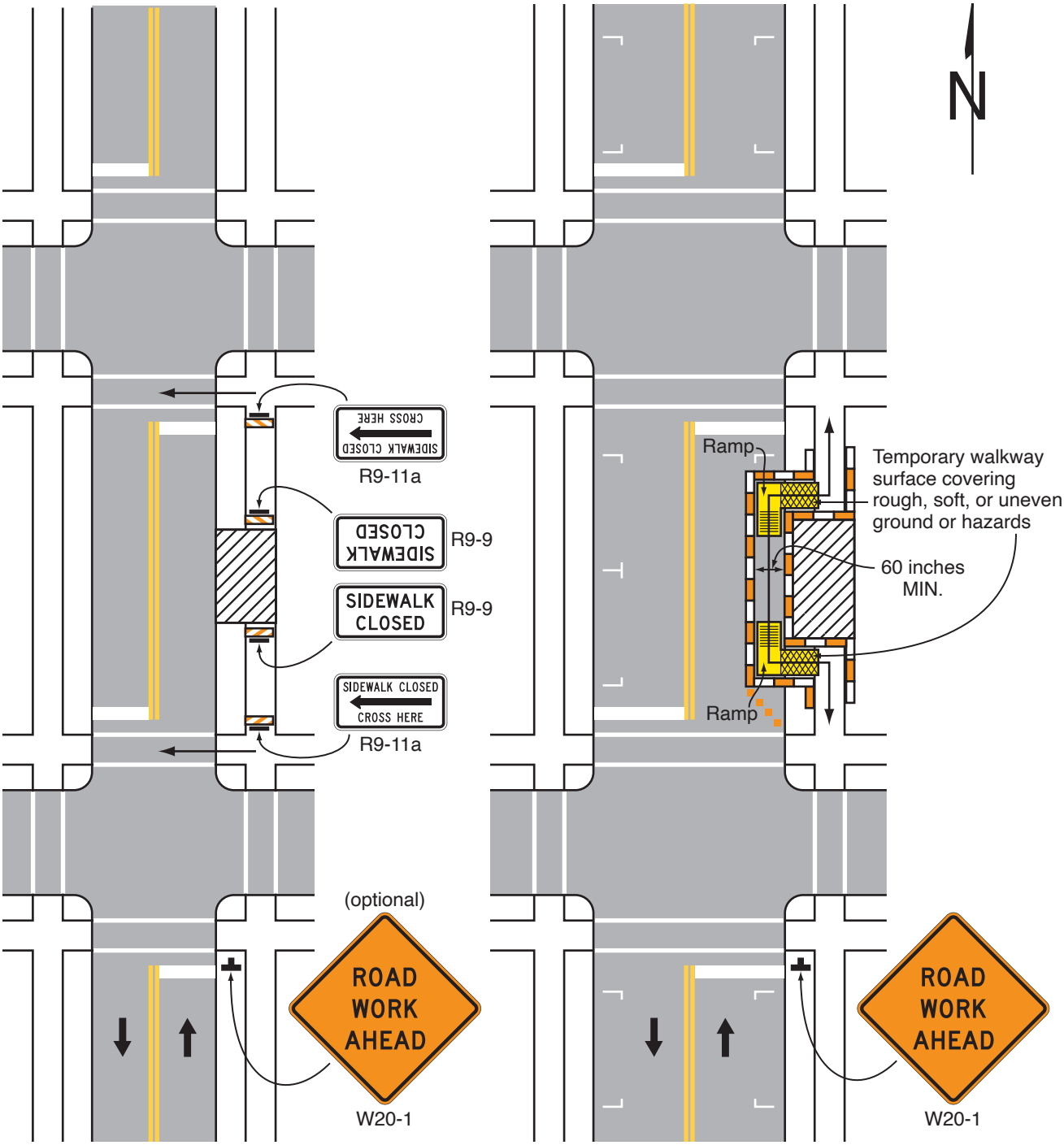
See Note 2 for flagger information

Notes: See Table 6P-2 for the meanings of the symbols used in this figure.

See Table 6B-1 for the meanings of the letter codes used in this figure.

Typical Application 27

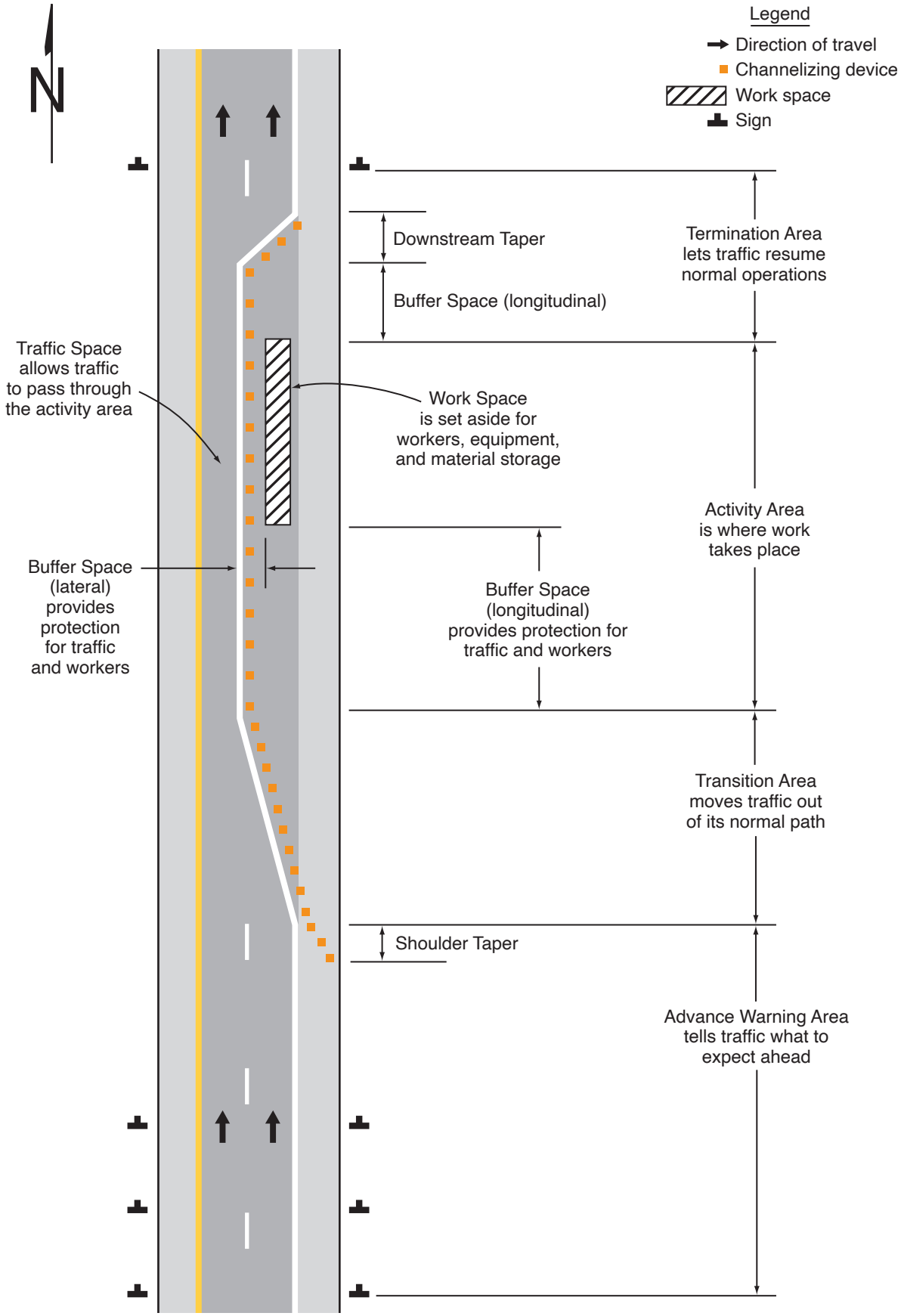
Figure 6P-28. Sidewalk Detour or Diversion (TA-28)



Typical Application 28

Note: SeeTable 6P-2 for the meanings of the symbols used in this figure.

Figure 6B-1. Component Parts of a Temporary Traffic Control Zone



Guidance:

15 *The width of a lateral buffer space should be determined by engineering judgment.*

Option:

16 When work occurs on a high-volume, highly-congested facility, a vehicle storage or staging space may be provided for incident response and emergency vehicles (for example, tow trucks and fire apparatus) so that these vehicles can respond quickly to road user incidents.

Table 6B-2. Stopping Sight Distance as a Function of Speed

Speed*	Distance
20 mph	115 feet
25 mph	155 feet
30 mph	200 feet
35 mph	250 feet
40 mph	305 feet
45 mph	360 feet
50 mph	425 feet
55 mph	495 feet
60 mph	570 feet
65 mph	645 feet
70 mph	730 feet
75 mph	820 feet

* Posted speed, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed

Section 6B.07 Termination Area

Support:

01 The termination area is the section of the highway where road users are returned to their normal driving path. The termination area extends from the downstream end of the work area to the last TTC device such as END ROAD WORK signs, if posted.

Option:

02 An END ROAD WORK sign, a Speed Limit sign, or other signs may be used to inform road users that they can resume normal operations.

03 A longitudinal buffer space may be used between the work space and the beginning of the downstream taper.

Section 6B.08 Tapers

Option:

01 Tapers may be used in both the transition and termination areas. Whenever tapers are to be used in close proximity to an interchange ramp, crossroads, curves, or other influencing factors, the length of the tapers may be adjusted.

Support:

02 Tapers are created by using a series of channelizing devices and/or pavement markings to move traffic out of or into the normal path. Types of tapers are shown in Figure 6B-2.

03 Longer tapers are not necessarily better than shorter tapers (particularly in urban areas with characteristics such as short block lengths or driveways) because extended tapers tend to encourage sluggish operation and to encourage drivers to delay lane changes unnecessarily. The test concerning adequate lengths of tapers involves observation of driver performance after TTC plans are put into effect.

Table 6B-3. Taper Length Criteria for Temporary Traffic Control Zones

Type of Taper	Taper Length
Merging Taper	at least L
Shifting Taper	at least 0.5 L
Shoulder Taper	at least 0.33 L
One-Lane, Two-Way Traffic Taper	50 feet minimum, 100 feet maximum
Downstream Taper	50 feet minimum, 100 feet maximum

Note: Use Table 6B-4 to calculate L

Guidance:

04 *The appropriate taper length (L) should be determined using the criteria shown in Tables 6B-3 and 6B-4.*

Table 6B-4. Formulas for Determining Taper Length

Speed (S)	Taper Length (L) in feet
40 mph or less	$L = \frac{WS^2}{60}$
45 mph or more	L = WS

Where: L = taper length in feet
W = width of offset in feet
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

Support:

05 A merging taper requires the longest distance because drivers are required to merge into common road space.

05 **The minimum height, measured vertically from the bottom of the sign to the top of the curb, or in the absence of curb, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way, of signs installed at the side of the road in business, commercial, or residential areas where parking or pedestrian movements are likely to occur, or where the view of the sign might be obstructed, shall be 7 feet (see Figure 6F-1).**

06 **The minimum height, measured vertically from the bottom of the sign to the sidewalk, of signs installed above sidewalks shall be 7 feet.**

07 **The bottom of a sign mounted on a barricade, or other portable support, shall be at least 1 foot above the traveled way.**

Option:

08 The height to the bottom of a secondary sign mounted below another sign may be 1 foot less than the height provided in Paragraphs 4 through 6 of this Section.

Guidance:

09 *Neither portable nor permanent sign supports should be located on sidewalks, bicycle facilities, or areas designated for pedestrians or bicyclists.*

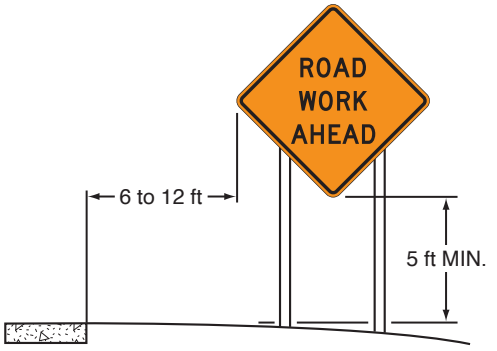
Standard:

10 **Signs shall be mounted and placed in accordance with Section 307 of the U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990.**

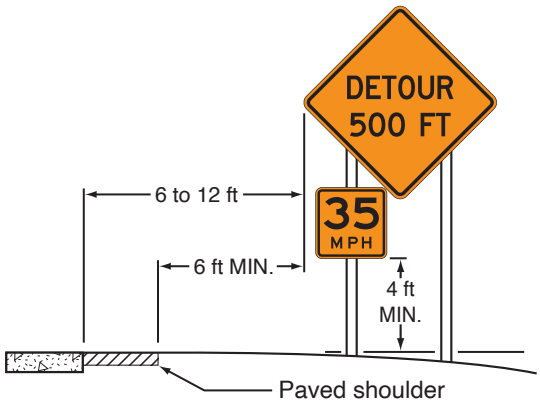
Guidance:

11 *Except as provided in Paragraph 12 of this Section, signs mounted on portable sign supports that do not meet the minimum mounting heights provided in Part 2 should not be used for a duration of more than 3 days.*

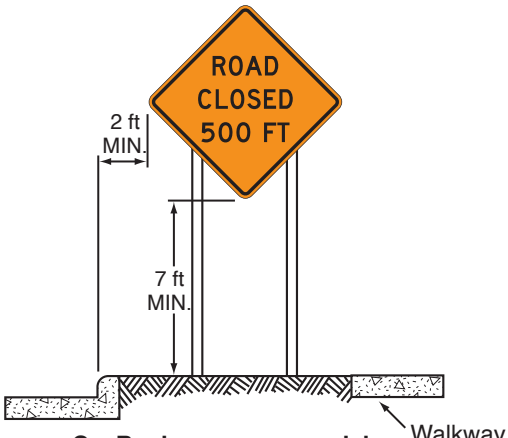
Figure 6F-1. Height and Lateral Location of Signs—Typical Installations



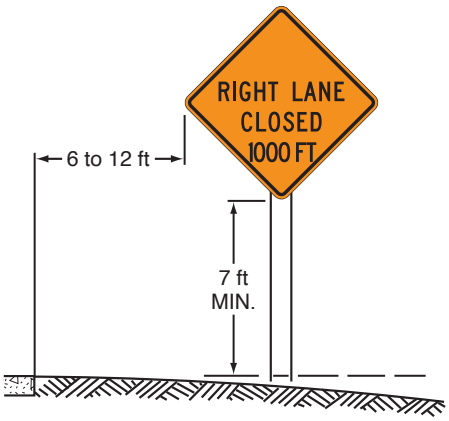
A – Rural area



B – Rural area with advisory speed plaque



C – Business, commercial, or residential area



D – Business, commercial, or residential area (without curb)

Table 6P-1. Index to Typical Applications (Sheet 2 of 2)

Typical Application Description	Typical Application Number
Work within the Traveled Way of a Freeway or Expressway (see Section 6N.13)	
Lane Shift on a Freeway	TA-36
Double Lane Closure on a Freeway	TA-37
Interior Lane Closure on a Freeway	TA-38
Median Crossover on a Freeway	TA-39
Median Crossover for an Entrance Ramp	TA-40
Median Crossover for an Exit Ramp	TA-41
Work in the Vicinity of an Exit Ramp	TA-42
Partial Exit Ramp Closure	TA-43
Work in the Vicinity of an Entrance Ramp	TA-44
Temporary Reversible Lane Using Movable Barriers	TA-45
Work in the Vicinity of a Grade Crossing (see Section 6N.17)	
Work in the Vicinity of a Grade Crossing	TA-46
Work in the Vicinity of Bicycle Lanes and Shared Use Paths (see Section 6N.04)	
Bicycle Lane Closure without a Detour	TA-47
Bicycle Lane Closure with an On-Road Detour	TA-48
Shared-Use Path Closure with a Diversion	TA-49
On-Road Detour for a Shared-Use Path	TA-50
Paved Shoulder Closure with a Bicycle Diversion onto a Temporary Path	TA-51
Work in the Traveled Way of Roundabouts	
Short-Term or Short-Duration Work in a Circular Intersection	TA-52
Flagging Operation on a Single-Lane Circular Intersection	TA-53
Inside Lane Closure on a Multi-Lane Circular Intersection	TA-54

Table 6P-2. Meaning of Symbols on Typical Application Diagrams


Arrow board


Arrow board support or trailer (shown facing down)


Changeable message sign or support trailer


Channelizing device


Crash cushion


Direction of temporary traffic detour


Direction of travel

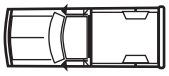

Flagger


High-level warning device (Flag tree)


Longitudinal channelizing device

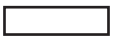

Luminaire


Pavement markings that should be removed for a long-term project


Shadow vehicle


Sign (shown facing left)


Surveyor


Temporary barrier

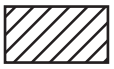

Temporary barrier with warning light

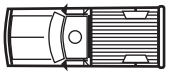

Traffic or pedestrian signal


Truck-mounted attenuator


Type 3 barricade


Warning light


Work space


Work vehicle