VERMONT

State of Vermont
Policy, Planning & Intermodal Development Division
Policy, Planning and Research Bureau
Development Review & Permitting Services Section
Barre City Place, 219 North Main Street [phone] 802-636-0037
Barre, VT 05641 [ttd] 800-253-0191
vtrans.vermont.gov

Agency of Transportation

May 8, 2020

Town of Dorset
Rob Gaiotti
PO Box 715
East Dorset, VT 05253

[Via E-Mail]

Subject: Dorset, US7, L.S. 106+85 ~ 111+85 LT & RT

Dear Mr. Gaiotti:

Your application for a permit to work within the State Highway right-of-way to construct a section of sidewalk at the southwest corner of US7 and Mad Tom Road, install a crosswalk and rectangular rapid flashing beacons (RRFBs) at L.S. 110+75, relocate pedestrian warning signs and modify the access at L.S.110+40 LT has been processed by this office and is enclosed.

Please contact the District Transportation Office #1 prior to starting work in the state highway right-of-way. The telephone number in Bennington is (802) 447-2790.

Sincerely,

E-SIGNED by Theresa Gilman
on 2020-05-08 18:40:43 GMT

Theresa Gilman
Permitting Services Supervisor
Permitting Services Section

Enclosures

cc: **[Via E-Mail]**

District Transportation Office #1
Nick Myran, MSK Engineering and Design, Inc

PERMIT ID# 43736

FOR AGENCY USE ONLY

Town: **Dorset**
Route: **US7**
Mile Marker: **2.02 - 2.12**
Log Station: **106+85 - 111+85 LT & RT**

VERMONT AGENCY OF TRANSPORTATION

State Highway Access and Work Permit

Applicant to Complete

Owner's/Applicant's Name, Address, E-mail & Phone No. Town of Dorset
PO Box 715, East Dorset, VT 05253, townmanager@gmail.com, (802) 362-4571

Co-Applicant's Name, Address, E-mail & Phone No. (if different from above) _____

The location of work (town, highway route, distance to nearest mile marker or intersection & which side)
Dorset, US Route 7, spanning intersection with Mad Tom Road and Squirrel Hollow

Description of work to be performed in the highway right-of-way (attach plan) Access Management on west side of US Rt 7. Crosswalk across Rt 7 at Mad Tom Road intersection with Rapid Flashing Rectangular Beacons, both sides. Sidewalk and curb at southwest corner of Rt 7 and Mad Tom intersection. See attached plan.

Property Deed Reference Book: NA Page: NA (only required for Permit Application for access)

Fee $ 0.00 (fees do not apply for residential or agricultural purposes)

Is a Zoning Permit required? Yes ☐ No ☑ - If Yes, #_____

Is a 30 VSA § 248 permit required? Yes ☐ No ☑ - If Yes, #_____

Is an Act 250 permit required? Yes ☐ No ☑ - If Yes, #_____

Other permit(s) required? Yes ☐ No ☑ - If Yes, name and # of each _____

Date applicant expects work to begin June 20 20

Owner/Applicant: Rob Gaiotti Position Title: Town Manager
(Print name above)

Sign in Shaded area:		Date:	5/31/20

Co-Applicant: _____ Position Title: _____
(Print name above)

Sign in Shaded area:		Date:	

INSTRUCTIONS: -Contact the Development Review and Permitting Services Section (802.828.2653) or your local area Transportation Maintenance District Office to determine your issuing authority. The issuing authority will determine what plans, fee and other documents are required to be submitted with your Vermont Statutes Annotated, Title 19, Section 1111, permit application request.
- Original signatures are required on an original Form. The Owner/Applicant and Co-Applicant (if applicable) declares under the pains and penalty of perjury that all information provided on this form and submitted attachments are to the best of their knowledge true and complete.

FEE: -See **Fee Schedule** for applicable administrative processing and application review fee.

PERMIT APPROVAL

This covers only the work described below: **Permission is granted to work within the state highway right-of-way to construct a section of sidewalk at the southwest corner of US7 and Mad Tom Road, install a crosswalk and rectangular rapid flashing beacons (RRFBs) at L.S. 110+75, relocate pedestrian warning signs and modify the access at L.S.110+40 LT. All work shall be in accordance with the attached plans, VTrans standard drawing and special conditions.**

The work is subject to the restrictions and conditions on the reverse page, plus the Special Conditions stated on the attached page(s).

Date work is to be completed **December 1, 2021** Date work accepted: _____

By E-SIGNED by Craig Keller on 2020-05-11 11:13:15 GMT
Authorized Representative for Secretary of Transportation

Issued Date **May 8, 2020**

By: _____
DTA or Designee

NOTICE: **This permit covers only the Vermont Agency of Transportation's jurisdiction over this highway under Vermont Statutes Annotated, Title 19, Section 1111.** It does not release the petitioner from the requirements of any other statutes, ordinances, rules or regulations. This permit addresses only access to, work within, and drainage affecting the state highway. It does not address other possible transportation issues, such as access to town highways, use of private roads, and use of railroad crossings. If relevant to the proposed development, such issues must be addressed separately.

No work shall be done under this permit until the owner/applicant has contacted the District Transportation Office at:

District #1, (802) 447-2790

RESTRICTIONS AND CONDITIONS

DEFINITIONS:

"Agency" means the Vermont Agency of Transportation (a/k/a VTrans).

"Engineer" means the authorized agent of the Secretary of Transportation.

"Owner/Applicant" means the party(s) to whom the permit is to be issued.

"Co-Applicant" means the party who performs the work, if other than Owner/Applicant or a secondary Owner/Applicant under a joint permit application.

"Permit Holder" means the party who currently owns the lands abutting the highway that are the subject of the permit.

GENERAL:

By accepting this permit, or doing any work hereunder, the Owner/Applicant agrees to comply with all of the restrictions and conditions and any imposed special conditions. If the Owner/Applicant is aggrieved by the restrictions and conditions or special conditions of the permit, they shall submit a written request for consideration to the Engineer within 30-days of permit issuance and prior to starting any work. No work will be authorized by the Agency, or performed under the permit, until the dispute is fully resolved.

Vermont Statutes Annotated, Title 30, Chapter 86 ("Dig Safe") requires notice to Dig Safe before starting excavation activities. The Permit Holder or his/her contractor must telephone Dig Safe at 811 at least 48 hours (excluding Saturdays, Sundays and legal holidays) before, but not more than 30 days before, starting excavation activities at any location. In addition, please note that the Agency and many municipalities <u>are not</u> members of Dig Safe and will need to have their utility facilities investigated with due diligence prior to starting excavation activities in or on the State Highway right-of-way.

The Permit Holder is to have a supervisory representative present any time work is being done in or on the State Highway right-of-way. A copy of this permit and Special Conditions must be in the possession of the individual performing this work for the Permit Holder.

Except with the specific, written permission of the District Transportation Administrator, all work in the State Highway right-of-way shall be performed during normal daylight hours and shall cease on Sunday, on all holidays (which shall include the day before and the day following), during or after severe storms, and between December 1 and April 15. These limitations will not apply for the purposes of maintenance, emergency repairs, or proper protections of the work which includes, but not limited to, the curing of concrete and the repairing and servicing of equipment.

The Owner/Applicant shall be responsible for all damages to persons or property resulting from any work done under this permit, even if the Applicant's Contractor performs the work. All references to the Owner/Applicant also pertain to the Co-Applicant.

The Owner/Applicant must comply with all federal and state statutes or regulations and all local ordinances controlling occupancy of public highways. In the event of a conflict, the more restrictive provision shall apply.

The Owner/Applicant must, in every case where there is a possibility of injury to persons or property from blasting, use a pre-approved Blasting Plan. All existing utility facilities shall be protected from damage or injury.

The Owner/Applicant shall erect and maintain barriers needed to protect the traveling public. The barriers shall be properly lighted at night and must be MUTCD (Manual on Uniform Traffic Control Devices) compliant.

All temporary and permanent traffic control measures and devices shall be MUTCD compliant.

The Owner/Applicant shall not do any work or place any structures or obstacles within the State Highway right-of-way, except as authorized by this permit.

The Owner/Applicant may pay the entire cost of the salary, subsistence and traveling expenses of any inspector appointed by the Engineer to supervise such work.

The Engineer may modify or revoke the permit at any time for safety-related reasons, without rendering the Agency or the State of Vermont liable in any way.

In addition to any other enforcement powers that may be provided for by the law, the Engineer may suspend this permit until compliance is obtained. If there is continued use or activity after suspension, the Engineer may physically close the work area and take corrective action to protect the safety of the highway users.

The Permit Holder shall be responsible to rebuild, repair, restore and make good all injuries or damage to any portion of the highway right-of-way that has been brought about by the execution of the permitted work, for a minimum period of eighteen (18) months after final inspection by the District.

Any approved variance from the permitted plans is to be recorded on "as-builts" with copies provided to both the Chief of Permitting Services and the District Transportation Administrator.

ACCESS:

This permit (if for access) does not become effective until the owner/applicant records in the office of the appropriate municipal clerk, the attached "Notice of Permit Action"

As development occurs on land abutting the highways, the Agency may revoke a permit for access and require the construction of other access improvements such as the combination of access points by adjoining owners.

Under Vermont Statutes Annotated, Title 19, Section 1111, no deed purporting to subdivide land abutting a state highway can be recorded unless all the abutting lots so created are in accordance with the standards of Section 1111.

The Permit Holder acknowledges and agrees that neither this permit nor any prior pattern of use creates an ownership interest or other form of right in a particular configuration or number of accesses to or through the highway right-of-way, and that the right of access consists merely of a right to reasonable access the general system of streets, and is not a right to the most convenient access or any specific configuration of access.

DRAINAGE:

The Owner/Applicant shall install catch basins and outlets as may be necessary, in the opinion of the Engineer, to preclude interference with the drainage of the state highway. Direct connections shall <u>not</u> be allowed without written approval.

UTILITY WORK; CUTTING AND TRIMMING TREES:

The Owner/Applicant shall obtain the written consent of the adjoining owners or occupants or, in the alternative, an order from the State Transportation Board in accordance with, Vermont Statutes Annotated, Title 30, Section 2506, regarding cutting of or injury to trees.

In general, all utilities shall be located adjacent to the State Highway right-of-way boundary line and shall be installed without damaging the highway or the highway right-of-way. No pole, push-brace, guy wire or other aboveground facilities shall be placed closer than 10 feet to the edge of traveled-way. If the proposed utility facilities are in conflict with the above, each location is subject to the approval of the Engineer.

Poles and appurtenances shall be located out of conflict with intersection sight distance, guardrail, ditches, signs, culverts, etc.

Where the cutting or trimming of trees is authorized by permit, all debris resulting from such cutting and trimming shall be removed from the State Highway right-of-way.

Open cut excavation for highway crossings is NOT the option of the Applicant, and may be utilized only where attempted jacking, drilling, or tunneling methods fail or are impractical. The Owner/Applicant shall obtain an appropriate modification of the highway permit from the Engineer before making an open cut.

JOINT PERMITS:

A joint permit application is required when more than one party will be involved with the construction, maintenance, and/or operation of the facility being constructed under this permit. Examples include, but are not limited to, joint ownership or occupancy of a utility pole line and construction of a municipal utility line by a contractor. Both utility companies, and in the second case, the municipality and the contractor, must be joint applicants.

SPECIAL CONDITIONS

This permit is granted subject to the restrictions and conditions on the back of the permit, with particular attention given to the Special Conditions listed below. This permit pertains only to the authority exercised by the Vermont Agency of Transportation (Agency) under Vermont Statutes Annotated, Title 19, Section 1111, and does not relieve the Permit Holder from the requirements of otherwise applicable statutes, rules, regulations or ordinances (*e.g.,* Act 250, zoning, etc.). The Permit Holder shall observe and comply with all Federal and State laws and local bylaws, ordinances, and regulations in any manner affecting the conduct of the work and the action or operation of those engaged in the work, including all orders or decrees as exist at present and those which may be enacted later by bodies or tribunals having jurisdiction or authority over the work, and the Permit Holder shall defend, indemnify, and save harmless the State and all its officers, agents, and employees against any claim or liability arising from or based on the violation of any such law, bylaws, ordinances, regulations, order, or decree, whether by the Permit Holder in person, by an employee of the Permit Holder, by a person or entity hired by the Permit Holder, or by a Subcontractor or supplier.

A preconstruction meeting to discuss work to be completed must be held prior to the Permit Holder's employees or contractor beginning work. The Permit Holder is required to notify the District Transportation Administrator five (5) working days in advance of such meeting.

The Permit Holder shall accomplish all work under this permit in accordance with VTrans Standard C-3B, T-45, project plan sheets C-101 (dated April 22, 2020) and C-501 (dated May 8, 2020); and, Appendix A, Guidance on Installation of Rectangular Rapid Flashing Beacons (RRFB's) of VTrans Pedestrian Crossing Guide with particular attention to Item C. Pedestrian Pushbuttons (copies attached). The Permit Holder shall ensure the pushbutton face shall be parallel with the crosswalk and the button must be reachable from an accessible surface. **Any revisions of the project plans shall be provided to VTrans for review and approval prior to construction.**

The Town of Dorset shall be responsible for all maintenance associated with the Rectangular Rapid Flashing Beacon (RRFB) signs, including but not limited to the signs, posts and costs associated with continued operation and maintenance of the power source; and, the maintenance of the sidewalk, including but not limited to snow and ice removal.

Please note that the Vermont Agency of Transportation is not a member of Dig Safe. The Permit Holder shall also contact Dan Ertel, State Signal Supervisor, at (802) 343-2188, if directed by the District Transportation Administrator at the time of the pre-construction meeting. Mr. Ertel will need to locate and mark all existing buried utility facilities owned by the Agency near the location of the proposed work.

Roadway shoulder areas must be maintained free of unnecessary obstructions, including parked vehicles, at all times while work is being performed under this permit.

All grading within the State Highway right-of-way associated with the proposed construction shall be subject to inspection and approval by the District Transportation Administrator or his or her staff. The Permit Holder shall be responsible for ensuring that all grading work in or on the State Highway right-of-way complies with applicable statutes, rules, regulations or ordinances.

In areas to be grass covered, the Permit Holder shall restore turf by preparing the area and applying the necessary topsoil, limestone, fertilizer, seed, and mulch, all to the satisfaction of the District Transportation Administrator. The Permit Holder shall be responsible for ensuring that all turf restoration work in or on the State Highway right-of-way is in compliance with applicable statutes, rules, regulations or ordinances.

All materials and construction practices shall be in accordance with the Vermont Agency of Transportation *2018 Standard Specifications for Construction*, with the latest amendments and all applicable Vermont Agency of Transportation Standard Drawings.

The placement, size, shape, and color of all pavement markings and signage must be in accordance with the most recent editions of the MUTCD (Manual on Uniform Traffic Control Devices) and Vermont standards. All new and existing pavement markings that become disturbed or overlaid with pavement shall be replaced by the Permit Holder with "in kind" (durable or paint) markings to the satisfaction of the District Transportation Administrator. The Permit Holder shall bear all costs associated with this work.

Upon completion of the work, the Permit Holder shall be responsible to schedule and hold a final inspection. The Permit Holder is required to notify the District Transportation Administrator five (5) working days in advance of such inspection.

The Permit Holder shall promptly and unconditionally pay for full repair and restoration of any and all damages to existing underground utility facilities (meaning any underground pipe, conduit, wire or cable, including appurtenances) that have been brought about by the execution of the permitted work. The Permit Holder also is required to pay for any costs to repair the highway following and resulting from any repairs to existing utilities occurring as a result of the work covered by this permit. Except with the specific, written permission of the Engineer, the Permit Holder or his or her contractor shall expose all underground facilities to verify their location and depth, at each location where the authorized boring or drilling work crosses a facility; and at reasonable intervals when closely paralleling a facility. Whenever possible, existing facilities should be crossed at a perpendicular angle. The Permit Holder shall be responsible for obtaining the modification of this permit, if necessary, for any additional survey work before initiating boring or drilling operations under the permit. The Agency will treat the Permit Holder's failure to fully, promptly, and conscientiously comply with all of conditions of this paragraph, including but not limited to the obligation to pay for repairs, as grounds for the Agency to refuse to grant any further requests by the Permit Holder for any other permits for subsurface work unless the Permit Holder furnishes irrevocable financial security, in a type and an amount deemed sufficient by the Agency in its sole discretion, prior to such future subsurface work.

Traffic Control

Two-way traffic shall be maintained at all times unless permission is granted from the District Transportation Administrator. Whenever two-way, one-lane controlled traffic is authorized to be maintained by the Applicant's Contractor, **the traveling public shall not be delayed more than 10 minutes.**

The Permit Holder shall verify the appropriate safety measures needed, prior to construction, so proper devices and/or personnel are available when and as needed. Traffic control devices, shall be in conformance with the MUTCD (Manual on Uniform Traffic Control Devices), Agency standards and any additional traffic control deemed necessary by the District Transportation Administrator. The Permit Holder's failure to utilize proper measures shall be considered sufficient grounds for the District Transportation Administrator to order cessation of the work immediately.

When traffic control becomes so complex that the traffic control cannot be accomplished using Agency standards, the Permit Holder must submit a traffic control plan to the Agency's Permitting Services office for Agency approval prior to beginning work.

The Permit Holder will perform construction in such a way as to minimize conflicts with normal highway traffic. When two-way traffic cannot be maintained, the Permit Holder shall provide a sign package that conforms to the MUTCD (Manual on Uniform Traffic Control Devices) or Agency standards, as well as trained Flaggers. The District Transportation Administrator may require a similar sign package with trained Flaggers whenever it is deemed necessary for the protection of the traveling public. In addition, the District Transportation Administrator may require the presence of Uniform Traffic Officers (UTOs); moreover, the presence of UTOs shall not excuse the Permit Holder from its obligation to provide the sign package and Flaggers.

The Permit Holder shall ensure that all workers exposed to the risks of moving highway traffic and/or construction equipment wear high-visibility safety apparel meeting the requirements of ISEA (International Safety Equipment Association) "American National Standards for High-Visibility Safety Apparel," and labeled as ANSI (American National Standards Institute) 107-2004, or latest revisions, for Performance Class 2 or 3 requirements. A competent person - one designated by the Permit Holder's Contractor to be responsible for worker safety within the activity area of the State highway right-of-way -shall select the appropriate class of garment. The Engineer may suspend this permit until compliance is obtained.

Insurance and Liability

Independence; Liability: The Permit Holder will act in an independent capacity and not as officers or employees of the State.

The Permit Holder shall defend the State and its officers and employees against all claims or suits arising in whole or in part from any act or omission of the Permit Holder or of any agent of the Permit Holder. The State shall notify the Permit Holder in the event of any such claim or suit, and the Permit Holder shall immediately retain counsel and otherwise provide a complete defense against the entire claim or suit.

After a final judgment or settlement, the Permit Holder may request recoupment of specific defense costs and may file suit in the Washington Superior Court requesting recoupment. The Permit Holder shall be entitled to recoup costs only upon a showing that such costs were entirely unrelated to the defense of any claim arising from an act or omission of the Permit Holder.

The Permit Holder shall indemnify the State and its officers and employees in the event that the State, its officers or employees become legally obligated to pay any damages or losses arising from any act or omission of the Permit Holder.

Insurance: Before beginning any work under this Permit the Permit Holder must provide certificates of insurance to show that the following minimum coverages are in effect. It is the responsibility of the Permit Holder to maintain current certificates of insurance on file with the State for the duration of work under the Permit. No warranty is made that the coverages and limits listed herein are adequate to cover and protect the interests of the Permit Holder for the Permit Holder's operations. These are solely minimums that have been established to protect the interests of the State.

Workers' Compensation: With respect to all operations performed under the Permit, the Permit Holder shall carry workers' compensation insurance in accordance with the laws of the State of Vermont.

General Liability and Property Damage: With respect to all operations performed under the Permit, the Permit Holder shall carry general liability insurance having all major divisions of coverage including, but not limited to:

Premises - Operations
Products and Completed Operations
Personal Injury Liability
Contractual Liability

The policy shall be on an occurrence form and limits shall not be less than:

$2,000,000 Per Occurrence
$2,000,000 General Aggregate
$2,000,000 Products/Completed Operations Aggregate
$ 50,000 Fire/Legal Liability

Permit Holder shall name the State of Vermont and its officers and employees as additional insureds for liability arising out of this Permit.

Automotive Liability: The Permit Holder shall carry automotive liability insurance covering all motor vehicles, including hired and non-owned coverage, used in connection with the Permit. Limits of coverage shall not be less than: $1,000,000 combined single limit.

Permit Holder shall name the State of Vermont and its officers and employees as additional insureds for liability arising out of this Permit.

Appendix A –

Guidance on Installation of Rectangular Rapid Flashing Beacons (RRFBs)

The FHWA has granted Interim Approval for the optional use of the RRFB as a warning beacon to supplement standard pedestrian crossing or school crossing signs at crosswalks across uncontrolled approaches. They shall not be used for other purposes or inconsistent with the FHWA guidance. Use of RRFBs should be strategic so that they don't become so commonplace that they are ineffective.

A. RRFB Location

In the guidance from FHWA on use of RRFBs, the following is included:

1. An RRFB shall only be installed to function as a Warning Beacon (see 2009 MUTCD Section 4L.03).
2. An RRFB shall only be used to supplement a W11-2 (Pedestrian) or S1-1 (School) crossing warning sign with a diagonal downward arrow (W16-7p) plaque, located at or immediately adjacent to a marked crosswalk.
3. An RRFB shall not be used for crosswalks across approaches controlled by YIELD signs, STOP signs, or traffic control signals. This prohibition is not applicable to a crosswalk across the approach to and/or egress from a roundabout.
4. In the event sight distance approaching the crosswalk at which RRFBs are used is less than deemed necessary by the engineer, an additional RRFB may be installed on that approach in advance of the crosswalk, as a Warning Beacon to supplement a W11-2 (Pedestrian) or S1-1 (School) crossing warning sign with an AHEAD: (W16-9p) plaque. This additional RRFB shall be supplemental to and not a replacement for RRFBs at the crosswalk itself.

Note: There always should be at least adequate stopping sight distance at an uncontrolled crosswalk. In some cases there are horizontal or vertical curves or other features that limit advance visibility of crosswalks. These conditions may warrant the use of advance RRFBs.

RRFBs are most appropriate when used at crosswalks with high volumes of school-aged or elderly pedestrians or at crosswalks that have a crash history that indicates that a higher degree of visibility would likely reduce crashes.

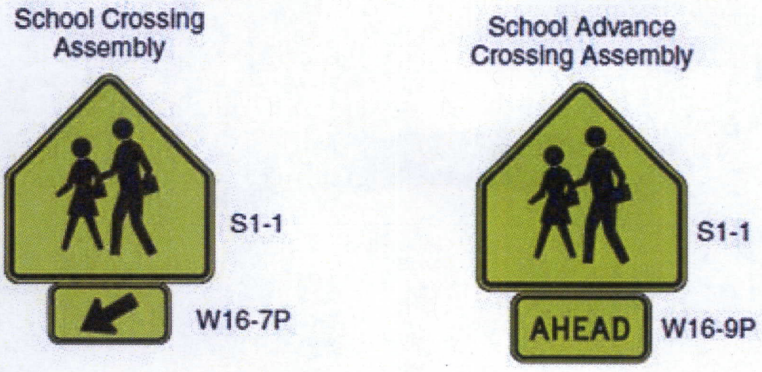
Where RRFBs are used, they shall be installed on both sides of the crosswalk with the ped or school signs and down arrows back to back on both sides (this type of installation is called "gate-posting.") The flashing beacons themselves shall face both directions on both ends of the crosswalk.

Figure 1 - Gate-posted RRFB installation at a school crosswalk

There is other specific information about the size of the beacon, flash rate, etc. that all can be found in the full 2008 FHWA Interim Approval memo. The beacons should be set to flash for at least the minimum clearance time for a pedestrian signal, which would be the curb to curb distance divided by 3.5 feet/second assumed walking speed.

B. RRFBs at School Crosswalks

Note that if the crosswalk has a school crossing assembly, the MUTCD requires that the School Crossing Assembly be preceded by the School Advance Crossing Assembly (there are a couple of exceptions – See Part 7 of the MUTCD for the details). All school-related signs are required to have a fluorescent yellow-green background.



A normal pedestrian crossing assembly is not required to have the advance assembly. Engineering judgement is required to determine if there are conditions that warrant the advance assembly for standard pedestrian crossings.

C. Pedestrian Pushbuttons

It is required that RRFBs be pedestrian actuated. While there is technology available for passive detection, such as pressure sensitive plates or video or radar detection, the most common activation will be using a standard pedestrian pushbutton. When a pushbutton is used, a pedestrian instruction sign (R10-25) shall be mounted adjacent to or integral with the pushbutton.

R10-25

There are accessibility considerations regarding the design and location of the pushbutton.

To be easily usable by all levels of ability, the button should be a minimum 2 inches in diameter and should require no greater than 5 pounds of force to activate.
Some, but not all, of the accessible pedestrian signal features may be used at RRFB locations. For example, it would be inappropriate to have a vibrotactile arrow or an audible walk interval message (rapid ticks or a speech walk message) since pedestrian signals are not present and a walk interval is never displayed to pedestrians. However, a pushbutton locator tone, a speech pushbutton information message, and an audible message when the RRFB is flashing would be appropriate and may be used at RRFB locations. If an audible message is used, it should repeat twice at the beginning of the flashing period, and it should be a speech message that says, "Yellow lights are flashing."

Another consideration of pedestrian pushbuttons is how easily it can be reached. For a side reach, the button face can be no more than 10 inches off the edge of the existing sidewalk, because any grass or other non-traversible material that is there would be considered an obstruction. The forward reach to a pushbutton shall have no obstructions. The height of the push button should be between 42 and 48 inches above the sidewalk. The excerpt below is from the US Access Board Public Rights of Way guidelines, which are considered to be the best practice for providing accessibility in the sidewalk environment. The MUTCD refers back to Access Board standards for pushbutton reach range.

R406 Reach Ranges

R406.1 General. Reach ranges shall comply with R406.

R406.2 Unobstructed Forward Reach. Where a forward reach is unobstructed, the high forward reach shall be 1220 mm (4.0 ft) maximum and the low forward reach shall be 380 mm (1.25 ft) minimum above the finish surface. Forward reach over an obstruction is not permitted.

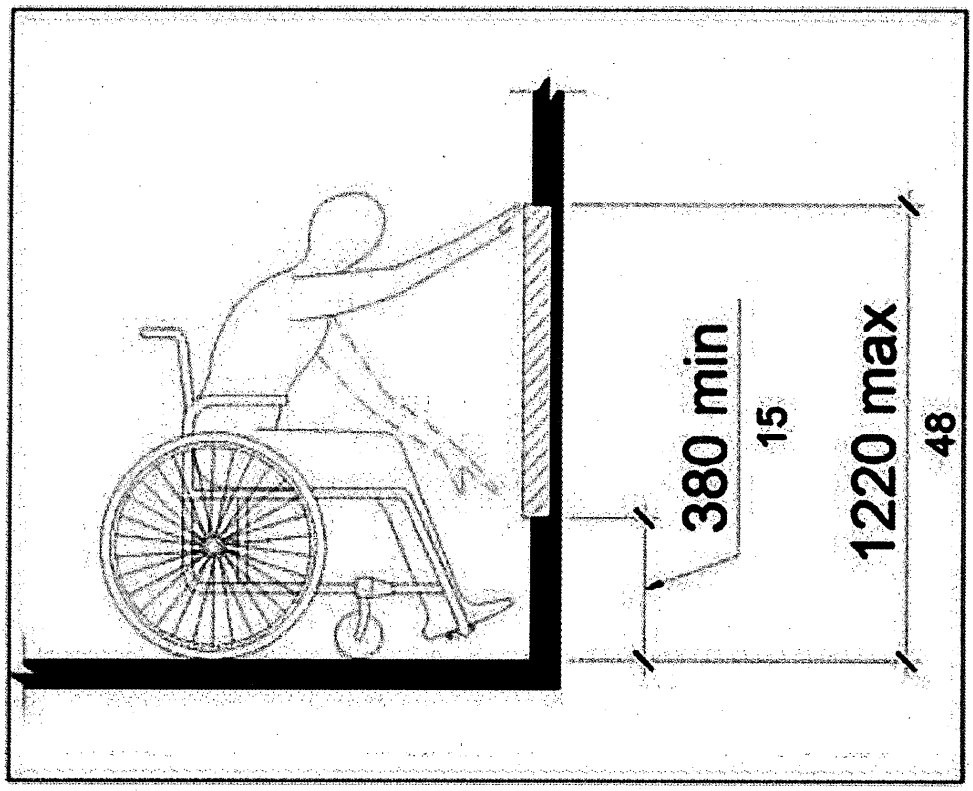


Figure 2 - Unobstructed Forward Reach

R406.3 Unobstructed Side Reach. Where a clear space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 1220 mm (4.0 ft) maximum and the low side reach shall be 380 mm (1.25 ft) minimum above the finish surface. An obstruction shall be permitted between the clear space and the element where the depth of the obstruction is 255 mm (10 in) maximum.

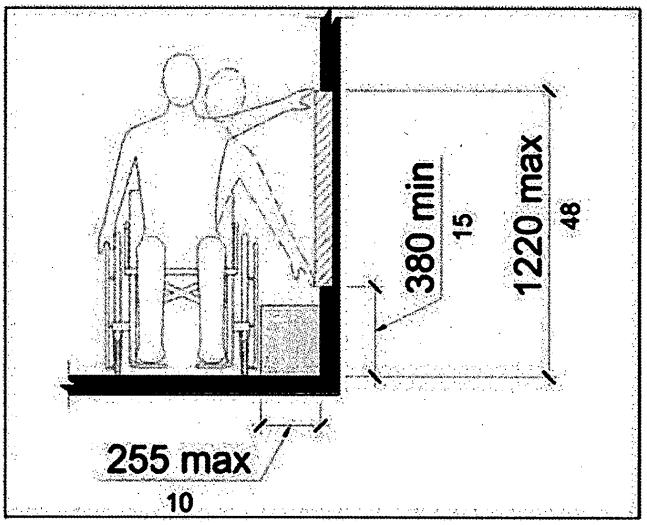


Figure 3 - Unobstructed Side Reach

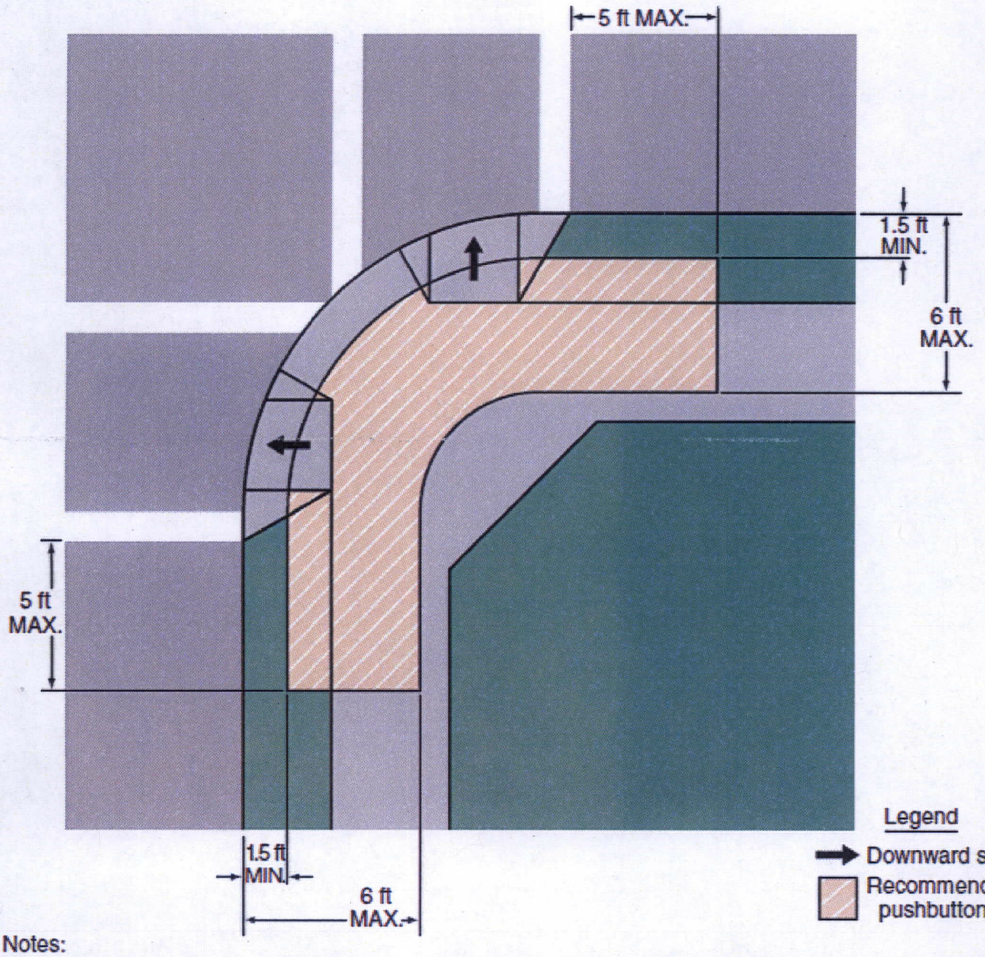
With either forward or side reach, the pushbutton must be accessed from a level, accessible surface. You should think about someone using a wheelchair and how they will be able to reach the button. They should not have to maneuver around obstacles or stop on steep slopes.

Figure 4 – Accessible surface for wheelchair users.

D. Pushbutton Location

Regarding the pushbutton location relative to the curb and crosswalk, there is guidance in the MUTCD for standard ped pushbuttons, as would be used for a pedestrian signal. The following diagram from the MUTCD summarizes the guidance.

Figure 4E-3. Pushbutton Location Area



Notes:

1. Where there are constraints that make it impractical to place the pedestrian pushbutton between 1.5 feet and 6 feet from the edge of the curb, shoulder, or pavement, it should not be further than 10 feet from the edge of curb, shoulder, or pavement.
2. Two pedestrian pushbuttons on a corner should be separated by 10 feet.
3. This figure is not drawn to scale.
4. Figure 4E-4 shows typical pushbutton locations.

Figure 5 – MUTCD Diagram on Pushbutton Location

The following photos illustrate the key concepts from the MUTCD illustration and the important accessibility consideration that the face of the pushbutton should be parallel with the crosswalk it is serving:

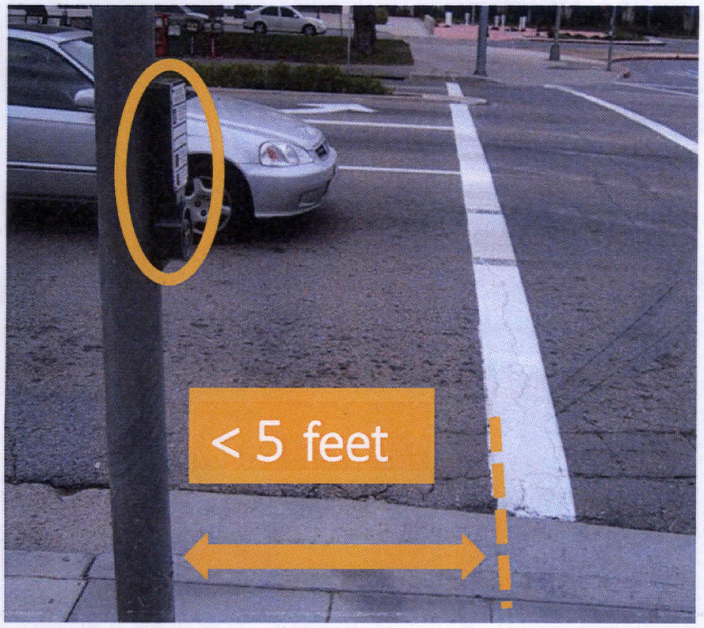


Figure 6 – Pushbutton location relative to the crosswalk – no more than 5 feet from the xwalk line and pushbutton face parallel to crosswalk served

The pushbutton should be located between 1.5 and 6 feet back from the curb face.

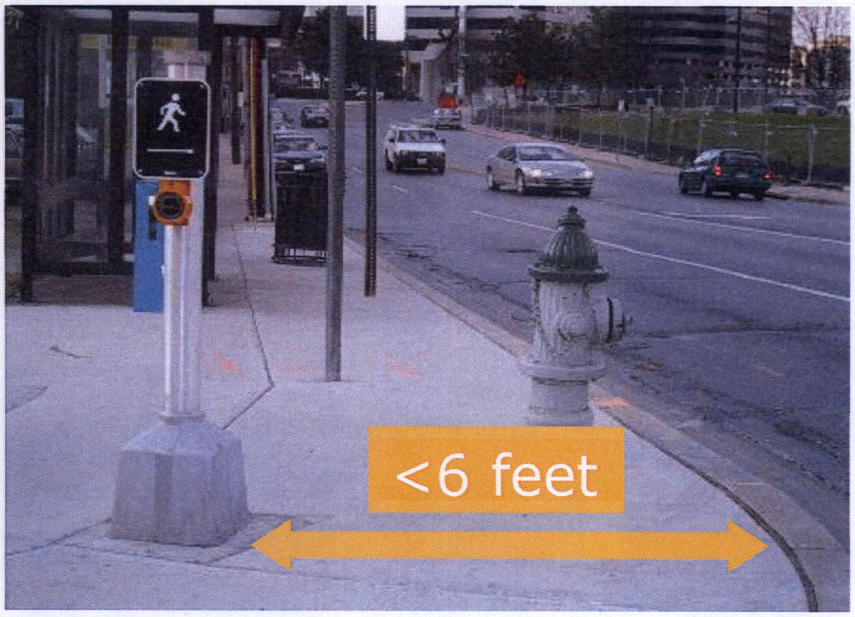
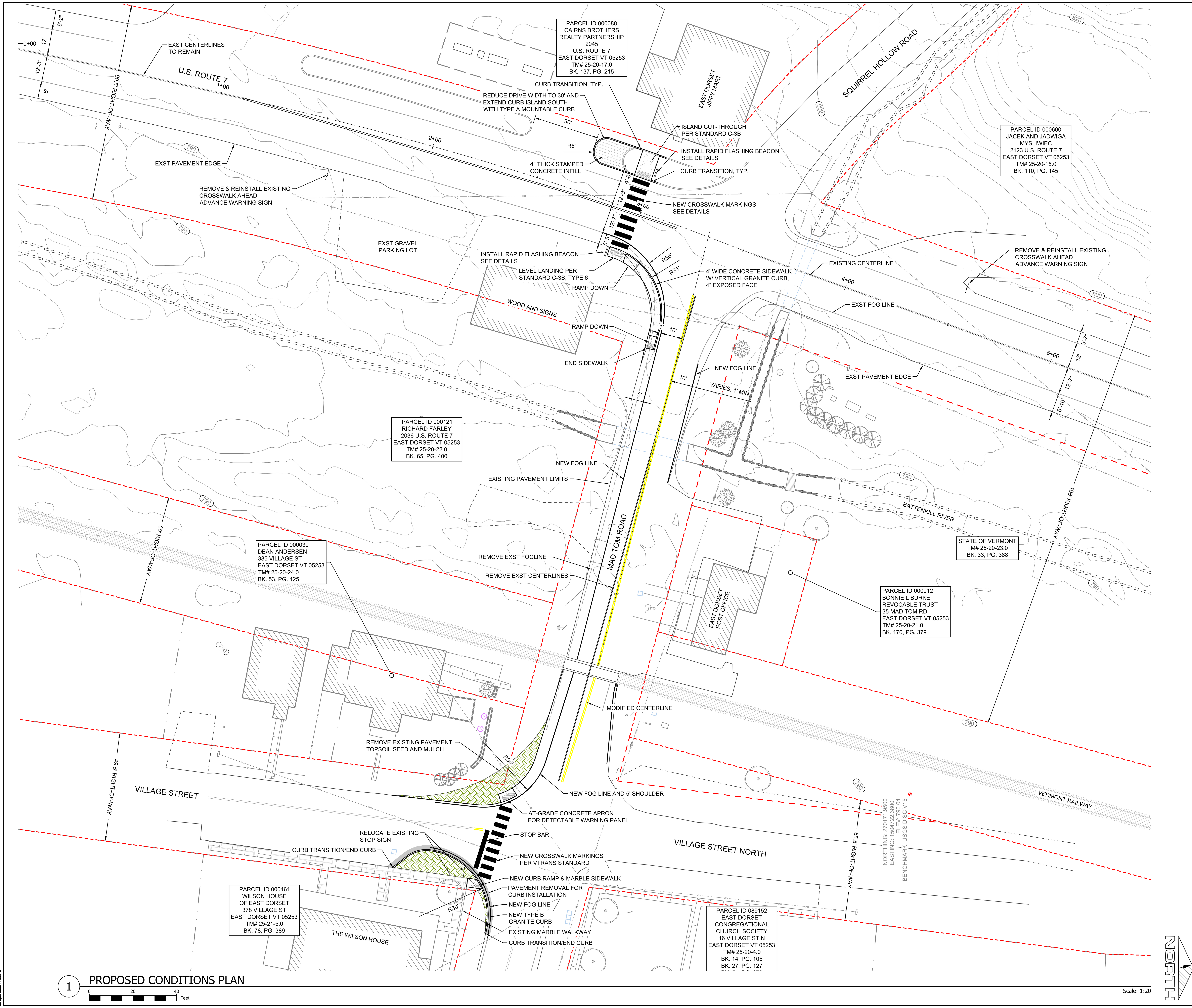


Figure 7 – Pushbutton relative to curb face

From a highway clear zone perspective (mitigation of roadside hazards), where there is curb present, objects should be no closer than 1.5 feet from the face of curb (this would apply to the supporting pole for the RRFB assemblies).

E. FHWA Approval Process

The entire Interim Approval memo from FHWA is included in this guidance. Note that in the guidance there is discussion about receiving either local or statewide approval for the use of RRFBs. VTrans received statewide approval in November 2011 that covers our own installations as well as those of municipalities. As part of that approval, VTrans agreed to maintain a list of all RRFB locations. Municipalities should notify VTrans of local installations so that the overall list can be updated and maintained.



1 PROPOSED CONDITIONS PLAN

MSK ENGINEERING AND DESIGN, INC.
P.O. BOX 139, 150 DEPOT STREET
BENNINGTON, VERMONT 05201
PH: (802) 447-1402 FAX: (802) 445-1291

REVISIONS

NO.	DATE	DESCRIPTION

TOWN OF DORSET
EAST DORSET VILLAGE PATH
EAST DORSET, VERMONT

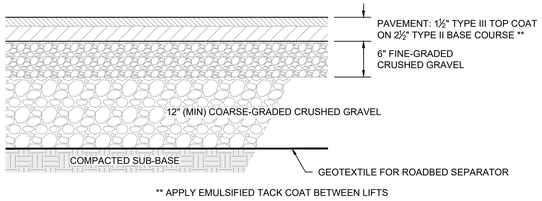
DRAWINGS THIS SHEET

PROPOSED CONDITIONS PLAN

NUMBER	DATE
1106-004	4/22/2020
DRAWN	CHECKED
MSK	NAM

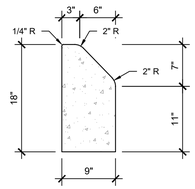
SHEET NUMBER

C101



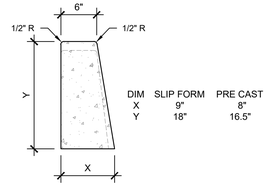
1 TYPICAL PAVEMENT CROSS-SECTION

STATE ROADWAYS — Scale: NTS



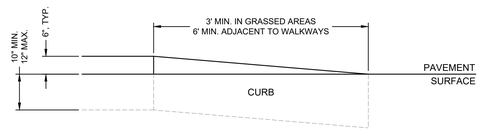
2 TYPICAL CURB

TYPE A CONCRETE — NTS



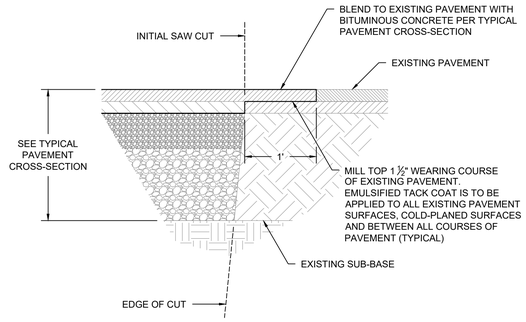
3 TYPICAL CURB

TYPE B CONCRETE — NTS



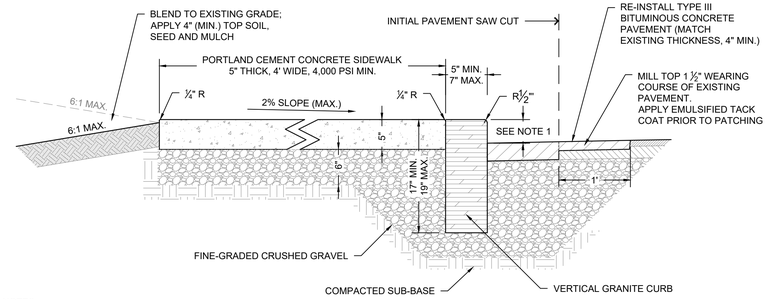
4 CURB - TAPERED END DETAIL

NTS



5 PAVEMENT REPAIR DETAIL

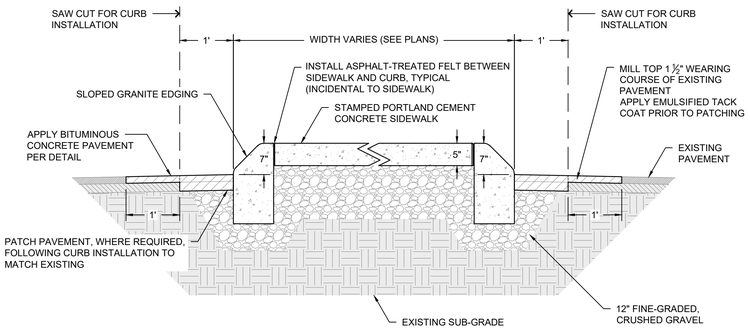
Scale: NTS



NOTES:
1. EXPOSED FACE SHALL BE 4 INCHES ON RT 30 AND 6 INCHES ON LOCAL ROADS.
2. CURBING TO BE PLACED PRIOR TO TOP SURFACE COURSE.
3. MORTAR JOINTS BETWEEN STONES PER VTRANS STANDARD.

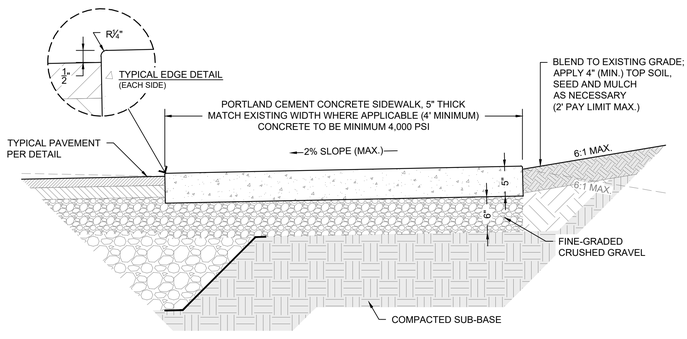
6 VERTICAL GRANITE CURB & WALK DETAIL

Scale: NTS



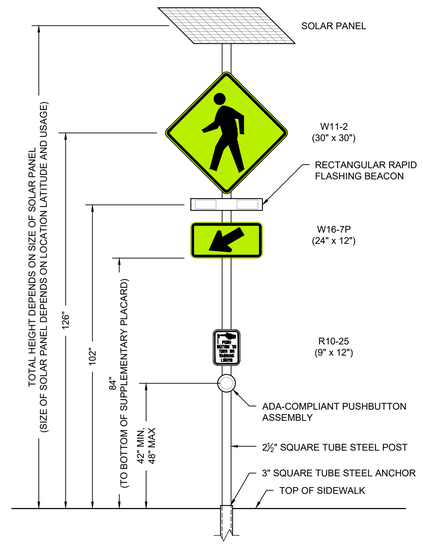
7 CURB EXTENSION DETAIL

CONCRETE END SECTION — Scale: NTS



8 TYPICAL CONCRETE WALKWAY DETAIL

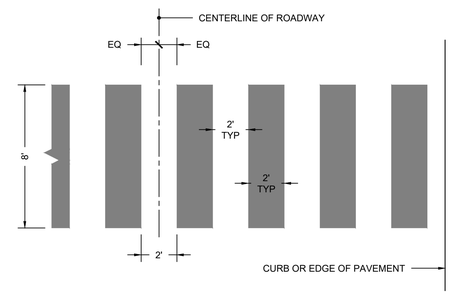
(ADJACENT TO DRIVES AND ROADWAYS) — Scale: NTS



NOTES
1. ALL W11-2 AND W16-7P WARNING SIGNS SHALL BE FLUORESCENT YELLOW-GREEN AND BACK-TO-BACK ON EACH ASSEMBLY.
2. SQUARE TUBE STEEL POST AND ANCHOR SHALL COMPLY WITH VERMONT AGENCY OF TRANSPORTATION (VTRANS) STANDARD DETAIL T-45.
3. ALL DIMENSIONS ARE FROM TOP OF ADJACENT SIDEWALK.
4. FACE OF PUSHBUTTON SHALL BE INSTALLED PARALLEL WITH THE CROSSWALK BEING SERVED.

9 RRFB/SIGN ASSEMBLY DETAIL

(PEDESTRIAN CROSSING) — Scale: NTS



GENERAL NOTES FOR CROSSWALK LAYOUT:

1. MARK LIGHT STRING LINE ON PAVEMENT ACROSS ROADWAY (CURB TO CURB)
2. ESTABLISH THE CENTERLINE OF ROADWAY (DOUBLE YELLOW OR LANE LINE)
3. APPLY BLOCKS PARALLEL TO THE CENTERLINE (DOUBLE YELLOW OR LANE LINE) (OFFSET BLOCKS VERTICALLY TO ACHIEVE SKEW AS REQUIRED)
4. ALWAYS BEGIN MEASURING FROM THE CENTERLINE OR LANE LINE RIGHT, WITH THE FLOW OF TRAFFIC
5. SPACING BETWEEN BLOCKS SHOULD REMAIN CONSISTENT, BUT MAY VARY (2' MAX.), DEPENDING ON OVERALL WIDTH OF ROADWAY. BLOCKS SHOULD BE SPACED TO AVOID VEHICULAR WHEEL PATHS, WHERE POSSIBLE.

10 TYPICAL BLOCK PATTERN CROSSWALK DETAIL

Scale: NTS

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REVISIONS

NO.	DATE	DESCRIPTION

TOWN OF DORSET
EAST DORSET VILLAGE PATH
EAST DORSET, VERMONT

DRAWINGS THIS SHEET
CONSTRUCTION DETAILS

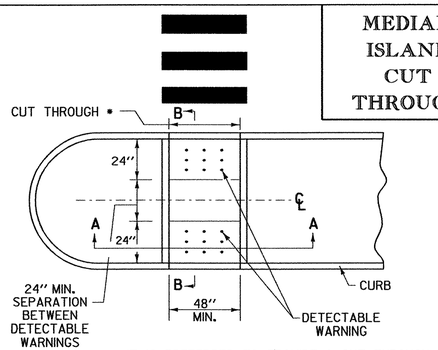
NUMBER	DATE
1106-004	5/8/2020
DRAWN	CHECKED
MSK	NM

SHEET NUMBER
C501

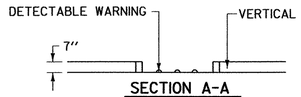
DRAFT

E:_DRAWING DATABASE\1106-004 EAST DORSET PATH\SHEETS\1106-004 E DORSET CODE DETAILS.DWG
08 May 2020 11:24:16

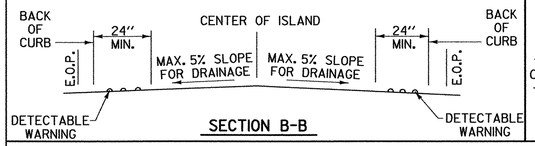
MEDIAN ISLAND CUT THROUGH



• IT IS PREFERRED TO PROVIDE A CUT THROUGH THAT IS THE SAME WIDTH AS THE APPROACHING CROSSWALK

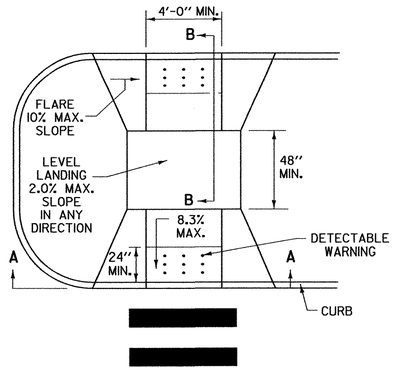


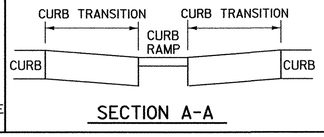
SECTION A-A



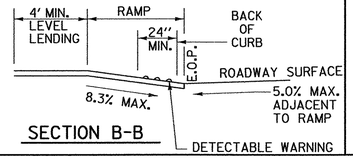
SECTION B-B

RAMPS AT WIDE MEDIAN ISLANDS



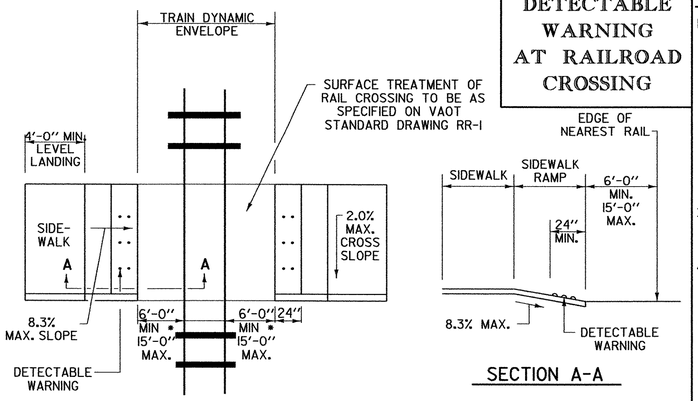


SECTION A-A



SECTION B-B

DETECTABLE WARNING AT RAILROAD CROSSING



• WHERE THIS DISTANCE CANNOT BE MET, A CLEARANCE DISTANCE BETWEEN THE TOE OF THE SIDEWALK RAMP AND THE FACE OF RAIL WILL BE UPON AGREEMENT BETWEEN THE REQUESTING PARTY AND THE RAILROAD. HOWEVER, THE DETECTABLE WARNING SHALL BE OUTSIDE THE EDGE OF THE DYNAMIC ENVELOPE.

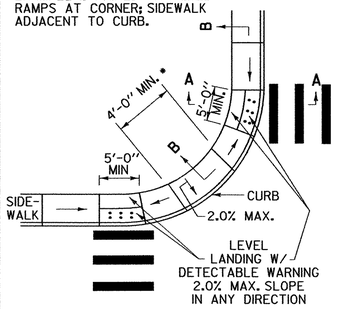
NOTE: WHERE A PEDESTRIAN GATE IS PROVIDED ACROSS THE SIDEWALK, THE NEAREST EDGE OF THE DETECTABLE WARNING SHALL BE A MINIMUM OF 2'-0" FROM THE FACE OF THE GATE ARM.

SECTION A-A

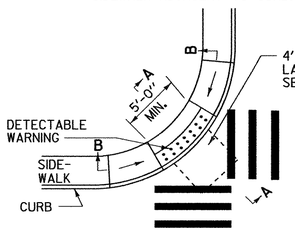
GENERAL NOTES:

1. THE DIMENSIONS AND GRADES SHOWN ON THIS STANDARD WILL BE ADHERED TO IN THE DESIGN AND THE CONSTRUCTION OF SIDEWALK RAMPS. WHERE SIDEWALKS RUN ADJACENT TO ROADWAYS ON STEEP (5% OR GREATER) GRADES, RAMP GRADES WILL BE AS FLAT AS POSSIBLE. (ON LOW SIDE OF DRIVES AND INTERSECTING SIDE STREETS, RAMPS SHALL SLOPE TOWARDS DRIVE OR SIDE STREET @ 2%)
2. NOMINAL RAMP DIMENSIONS AND GRADES:
   RAMP WIDTH - 4'-0" MINIMUM
   RAMP SLOPE - 8.3% MAXIMUM
   FLARE SLOPE - 10% MAXIMUM
   RAMP CROSS SLOPE - 2.0% MAXIMUM
3. A LEVEL LANDING (NO GREATER THAN 2.0% SLOPE IN ANY DIRECTION) SHALL BE PROVIDED AT THE TOP OF SIDEWALK RAMPS TO ALLOW FOR STOPPING AND MANEUVERING OF WHEELCHAIRS.
4. LEVEL LANDINGS (NO GREATER THAN 2.0% SLOPE IN ANY DIRECTION) AT THE BOTTOM OF PERPENDICULAR RAMPS SHALL BE WHOLLY CONTAINED WITHIN MARKED CROSSWALKS.
5. DUMMY JOINTS SHALL BE PROVIDED AT TRANSITIONS (GRADE CHANGES) AT TOPS AND BOTTOMS OF RAMPS AND FLARES.
6. VERTICAL DROP-OFF EDGES TO RAMPS WILL NOT BE BUILT UNLESS THE RAMP ABUTS AN AREA WHICH WILL NOT BE USED BY PEDESTRIANS.
7. NO VERTICAL "LIP" OR "CURB REVEAL" WILL BE PROVIDED WHERE THE RAMP ADJOINS THE ROADWAY.
8. AT MARKED CROSSWALKS, THE FULL WIDTH OF THE RAMP OR LANDING SHALL BE CONTAINED WITHIN THE PAVEMENT MARKINGS.
9. WHERE POSSIBLE, RAMP FLARES SHOULD BE LOCATED OUTSIDE THE DIRECT LINE OF TRAVEL MOST LIKELY TO BE FOLLOWED BY THE VISUALLY IMPAIRED.
10. SIGNS, POLES, PLANTERS, MAILBOXES, ETC. SHALL NOT BE LOCATED WHERE THEY WILL INTERFERE WITH THE USE OF SIDEWALK RAMPS.
11. WHERE POSSIBLE, SIDEWALK RAMPS SHOULD NOT BE LOCATED WHERE USERS MUST CROSS DROP INLET GRATES, MANHOLE COVERS OR OTHER ACCESS LIDS. IF THIS CANNOT BE AVOIDED THEN GRATE DESIGN AND PLACEMENT SHALL CONFORM TO ADA REQUIREMENTS.
12. CURB DRAINAGE SHOULD BE CONSTRUCTED SO AS TO PRECLUDE THE FLOW OF WATER PAST THE SIDEWALK RAMP.
13. WHEREVER FEASIBLE, TWO SIDEWALK RAMPS ARE RECOMMENDED IN PREFERENCE TO A SINGLE RAMP.
14. JOINTS WILL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT SIDEWALK SPECIFICATIONS, HOWEVER EXPANSION JOINTS WITHIN THE SIDEWALK RAMP AREA WILL BE AVOIDED WHEREVER POSSIBLE.
15. SIDEWALKS THAT ARE LESS THAN 5' WIDE REQUIRE 5' WIDE BY 5' LONG PASSING AREAS (NO GREATER THAN 2.0% CROSS SLOPE) AT INTERVALS NOT TO EXCEED 200 FEET.
16. E.O.P. = EDGE OF PAVEMENT
17. THE PUBLIC SIDEWALK CURB RAMP STANDARDS DEPICTED HERE MAY NOT BE APPROPRIATE FOR ALL LOCATIONS. FIELD CONDITIONS AT INDIVIDUAL LOCATIONS MAY REQUIRE SPECIFIC DESIGNS. DESIGNS MUST BE CONSISTENT WITH THE PROVISIONS OF THIS SHEET TO THE MAXIMUM EXTENT FEASIBLE ON ALTERATION PROJECTS AND WHEN STRUCTURALLY PRACTICABLE ON NEW CONSTRUCTION PROJECTS AS REQUIRED BY THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES.

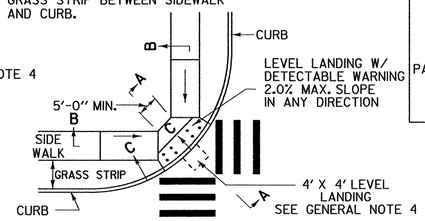
EXAMPLE 1: PAIRED PARALLEL RAMPS AT CORNER; SIDEWALK ADJACENT TO CURB.



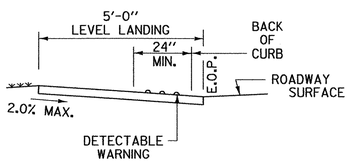
EXAMPLE 2: SINGLE RAMP ON CORNER RADIUS: SIDEWALK ADJACENT TO CURB.



EXAMPLE 3: SINGLE PARALLEL RAMP ON CORNER RADIUS; NARROW GRASS STRIP BETWEEN SIDEWALK AND CURB.

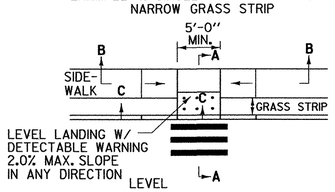


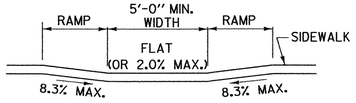
• WHERE A 4' MINIMUM SEPARATION BETWEEN RAMPS CANNOT BE ATTAINED, THE SIDEWALK SHOULD REMAIN AT THE SAME ELEVATION AS ADJOINING LEVEL LANDINGS.



SECTION A-A

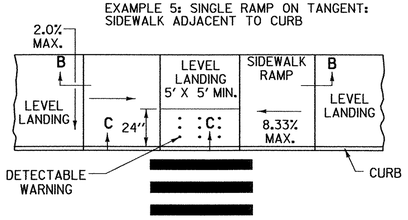
EXAMPLE 4: SINGLE RAMP ON TANGENT: NARROW GRASS STRIP

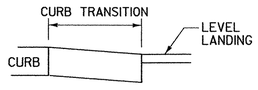




SECTION B-B

EXAMPLE 5: SINGLE RAMP ON TANGENT: SIDEWALK ADJACENT TO CURB

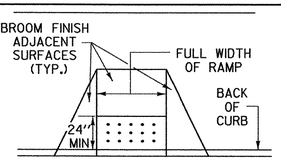




SECTION C-C

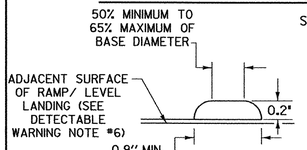
SIDEWALK RAMP TYPE 6

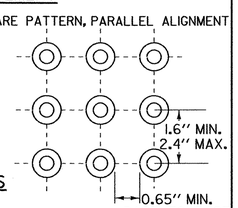
NARROW SIDEWALK PARALLEL RAMPS AND LEVEL LANDINGS WITHIN WALKWAY.



DETECTABLE WARNING DETAILS

DETECTABLE WARNING PLACEMENT





DETECTABLE WARNING DETAILS

DETECTABLE WARNING NOTES:

1. DETECTABLE WARNING SURFACES SHALL BE PAID FOR AS SPECIFIED IN THE CONTRACT.
2. CONCRETE ADJACENT TO ALL DETECTABLE WARNINGS SHALL HAVE A BROOM FINISH.
3. THE COLOR OF THE DETECTABLE WARNING SHALL PROVIDE A VISUAL CONTRAST TO THE SURROUNDING SURFACE AND SHALL BE AS SPECIFIED IN THE CONTRACT.
4. WHERE FEASIBLE, TRUNCATED DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF PEDESTRIAN TRAVEL.
5. WHERE A RAMP OR LEVEL LANDING MEETS A CURB RADIUS, ALIGN THE EDGE OF THE DETECTABLE WARNING AREA PARALLEL TO THE CURB TO THE MAXIMUM EXTENT FEASIBLE.
6. FOR SURFACE APPLIED TRUNCATED DOME PRODUCTS, A MAXIMUM 0.25" VERTICAL CHANGE IN ELEVATION IS ALLOWED. FOR CHANGES IN ELEVATION BETWEEN 0.25" AND 0.50", A BEVEL WITH A MAXIMUM 1:2 SLOPE IS REQUIRED. CHANGES IN ELEVATION GREATER THAN 0.50" MUST BE TREATED AS A RAMP- 8.3% MAXIMUM SLOPE.
7. IF ANY PORTION OF THE EDGE OF THE DETECTABLE WARNING CLOSEST TO THE CURB WILL BE GREATER THAN 5'-0" FROM THE BACK OF CURB, THEN THE PANEL(S) SHALL BE LOCATED ON THE LEVEL LANDING AS CLOSE TO PARALLEL TO THE CURB LINE AS POSSIBLE.

OTHER STANDARDS REQUIRED: C-2A, C-2B, C-3A, C-10 AND RR-I

REVISIONS AND CORRECTIONS

FEB. 2, 2004 - DATE OF ORIGINAL ISSUE
SEPT. 1, 2004 - MINOR REVISIONS TO COMPLY WITH ADAAG
MAR. 10, 2008 - MINOR REVISIONS TO COMPLY WITH ADA STANDARDS

APPROVED

LOCAL TRANSPORTATION FACILITIES PROGRAM MANAGER

DIRECTOR OF PROGRAM DEVELOPMENT

FEDERAL HIGHWAY ADMINISTRATION

SIDEWALK RAMPS AND MEDIAN ISLANDS

VERMONT AGENCY OF TRANSPORTATION

STANDARD C-3B

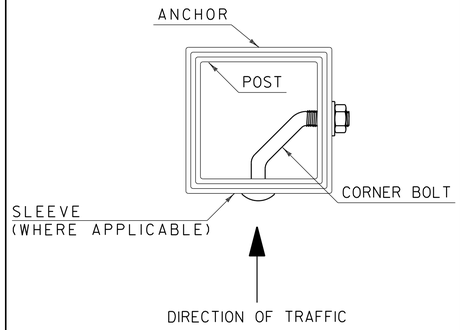
POST AND ANCHOR SELECTION CHART

POST SIZE (IN.)	POST THICKNESS (IN.)	POST WEIGHT (LBS/FT.)	POST GAGE	SECTION MODULUS (IN.³)	ONE POST SV	TWO POST SV	THREE POST SV	POSTS PERMITTED IN 8' PATH	ANCHOR SIZE (IN.)	ANCHOR GAGE	MINIMUM ANCHOR LENGTH
1.75	.083	1.88	14	0.222	45	90	135	TWO	2.00	12	30
2.00	.109	2.42	12	0.393	80	160	240	TWO	2.25	12	48
2.50	.109	3.35	12	0.673	137	274	411	ONE	3.00	7	48

NOTES:

1. ALL SIGN POSTS SHALL HAVE 7/16 INCH HOLES EVERY ONE INCH ON CENTER (ALL FOUR SIDES).
2. THE NUMBER OF SIGN POSTS PERMITTED WITHIN AN EIGHT FOOT PATH ASSUMES THAT THE SIGN ASSEMBLY IS NOT PROTECTED BY GUARDRAIL OR IS LOCATED WITHIN A GUARDRAIL'S DEFLECTION DISTANCE DETERMINED PER THE CURRENT "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) ROADSIDE DESIGN GUIDE. ADDITIONAL POSTS MAY BE INSTALLED USING SLIP BASES THAT MEET "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 OR THE AASHTO "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH). THE APPROPRIATE RESOURCE SHALL BE DETERMINED AS DESCRIBED IN THE MASH PUBLICATION.
3. TO USE THE SELECTION VALUE (SV) COLUMNS IN THE TABLE ABOVE, MULTIPLY A SIGN'S SURFACE AREA IN SQUARE FEET (H x L) BY THE SIGN'S HEIGHT IN FEET MEASURED FROM THE GROUND TO THE CENTROID OF THE SIGN ASSEMBLY (h). THIS RESULT MUST BE LESS THAN OR EQUAL TO THE CORRESPONDING SELECTION VALUE. NOTE THAT FOR SIGNS WITH MULTIPLE POSTS, THE LARGEST HEIGHT DIMENSION SHALL BE USED TO CALCULATE THE POST SELECTION VALUE.
4. THE DESIGN CRITERIA UTILIZED IN SIGN POST AND ANCHOR SELECTION IS AS FOLLOWS: WIND SPEED OF 70 MPH (10 YEAR MEAN RECURRENCE INTERVAL), WIND PRESSURE OF 19 PSF, STEEL MINIMUM YIELD OF 55,000 PSI, AND AN ALLOWABLE STRESS OF 1.4 (0.60 FY).

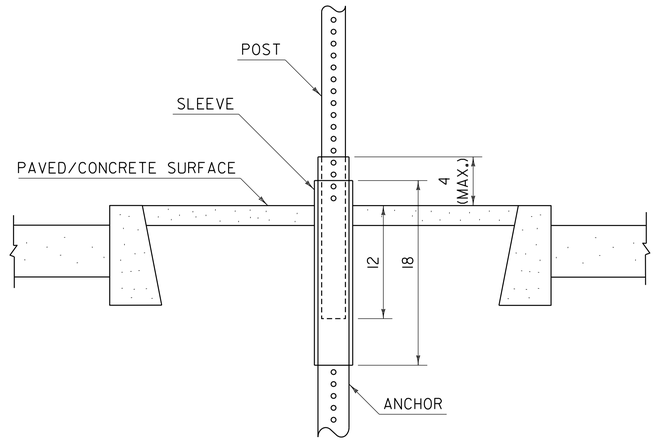
CORNER BOLT INSTALLATION DETAIL



NOTES:

1. CORNER BOLTS SHALL BE 5/16 INCH DIAMETER WITH 18 THREADS PER INCH AND DIMENSIONS SHALL BE DETERMINED BASED ON THE OUTERMOST DIMENSION OF THE SLEEVE, ANCHOR OR POST. THREAD EXPOSURE MUST EXCEED THE CORRESPONDING NUT WIDTH. THE CORNER BOLT AND CORRESPONDING HARDWARE SHALL BE ZINC PLATED, MEETING OR EXCEEDING THE REQUIREMENTS OF THE "AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) A307.

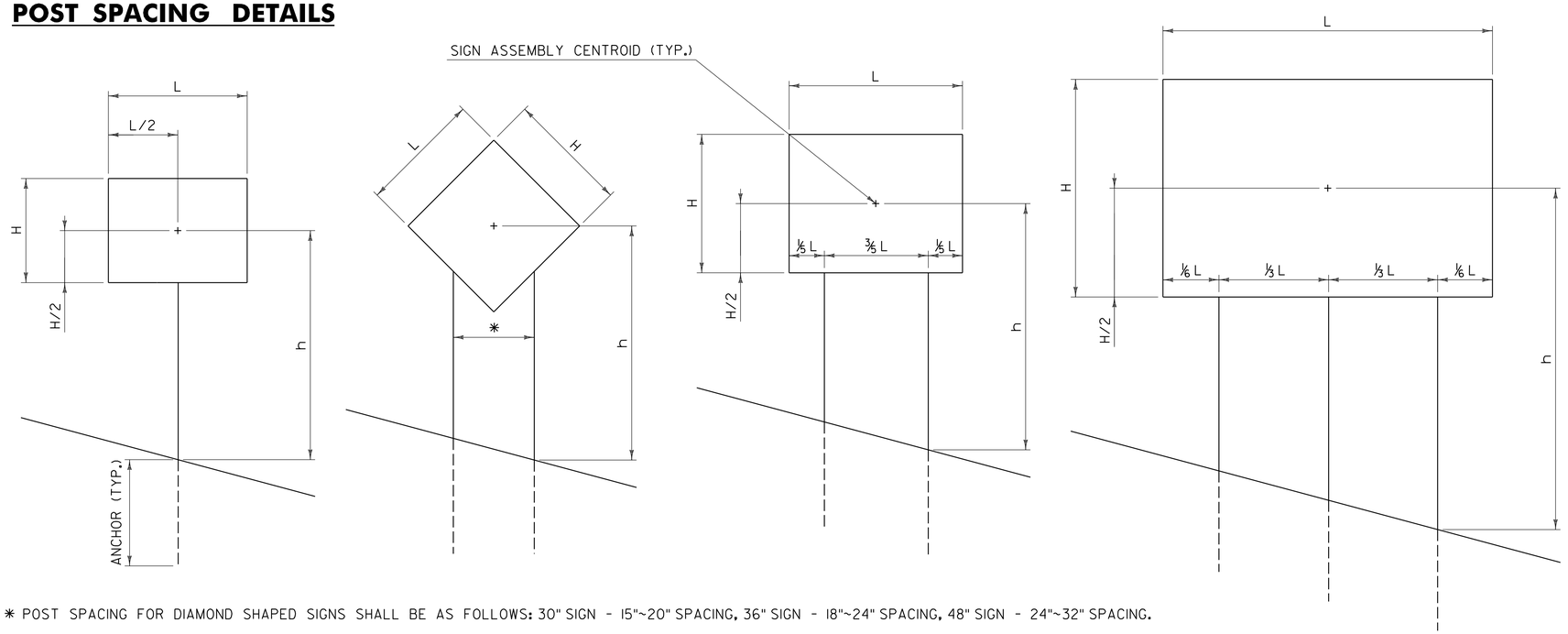
SLEEVE /ANCHOR INSTALLATION DETAIL



NOTES:

1. A SLEEVE SHALL BE INSTALLED FOR SIGN INSTALLATIONS IN CONCRETE OR PAVEMENT.
2. THE SLEEVE SHALL BE 18 INCHES MINIMUM IN LENGTH.
3. THREE INCH SLEEVES THAT DO NOT HAVE HOLES WILL REQUIRE THAT 7/16 INCH HOLES ARE DRILLED TO FACILITATE CONNECTIONS.
4. REFER TO CURRENT EDITION OF THE "VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION" FOR MATERIAL REQUIREMENTS.

POST SPACING DETAILS



* POST SPACING FOR DIAMOND SHAPED SIGNS SHALL BE AS FOLLOWS: 30" SIGN - 15"~20" SPACING, 36" SIGN - 18"~24" SPACING, 48" SIGN - 24"~32" SPACING.

GENERAL NOTES:

1. ALL SQUARE TUBE STEEL POSTS AND ANCHORS SHALL BE FORMED INTO A SIZE AND SHAPE IN SUCH A MANNER THAT NEITHER FLASH NOR WELD SHALL INTERFERE WITH THE TELESCOPING PROPERTIES, NOR DAMAGE THE GALVANIZING.
2. ANCHORS MAY BE DRIVEN OR SET INTO A DUG HOLE AND BACKFILLED. IF DRIVEN, A DRIVING CAP SHALL BE USED. THE DUG HOLE INSTALLATION METHOD SHALL BE UTILIZED IN AREAS WITH POOR SOIL CONDITIONS OR AS DIRECTED BY THE ENGINEER. BACKFILL SHALL BE COMPACTED AS DIRECTED BY THE ENGINEER.
3. THE TOPS OF SIGN POSTS SHALL BE AT OR NEAR THE TOP OF SIGN. THE POST SHALL NOT EXTEND ABOVE THE TOP OF SIGN.
4. SIGN POSTS SHALL BE INSTALLED A MINIMUM OF ONE FOOT BELOW GROUND, INSIDE THE ANCHOR. THE LENGTH OF ANCHOR EXPOSED ABOVE GROUND SHALL NOT EXCEED FOUR INCHES.
5. ALL DIMENSIONS SHOWN IN INCHES.

OTHER STDS. REQUIRED: **NONE**

REVISIONS AND CORRECTIONS

JAN. 2, 2013 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

FEDERAL HIGHWAY ADMINISTRATION

SQUARE TUBE SIGN POST AND ANCHOR

VERMONT AGENCY OF TRANSPORTATION

STANDARD

T-45