MN MUTCD Push Button Criteria

- 42 in. button height
- 10 ft. minimum button separation
- Adjacent to landing
- 1.5 ft. to 10 ft. from back of curb
- 5 ft. max offset from crosswalk edge
1. Verify that plan requirements can be met.

2. Notify the Engineer if any requirement(s) cannot be met.

3. Upon resolution, proceed with construction.

Coordination with concrete contractor required!

If the contractor constructs any pedestrian push button systems or pedestrian facilities which do not meet the criteria or the agreed upon resolution, the contractor will be responsible for correcting the deficiencies with no compensation paid for the corrective work.
GUIDELINES FOR LOCATING APS PUSH BUTTONS:

- THIS IS A GENERAL DETAIL INTENDED TO SHOW THE REQUIREMENTS OF APS PUSH BUTTON LOCATION. FOR PROJECT SPECIFIC DETAILS REGARDING PEDESTRIAN RAMP LAYOUT SEE THE PEDESTRIAN RAMP PLAN AND SIDEWALK DETAILS.
- BUTTONS SHALL BE WITHIN 5' OF THE OUTSIDE EDGE OF THE CROSSWALK.
- THE FACE OF THE BUTTON SHALL BE PARALLEL WITH THE CROSSWALK.
- A MIN. 4'x4' LANDING AREA SHALL BE PROVIDED ADJACENT TO EACH BUTTON.
- BUTTONS SHALL BE WITHIN 8' OF THE BACK OF CURB ON EDGE OF ROADWAY.
- BUTTONS SHALL BE AT LEAST 10' APART.

MN MUTCD Criteria

Construct concurrently with, or after, adjacent sidewalk

TYPICAL APS PEDESTRIAN PUSH BUTTON LOCATION

ACCESSIBLE PEDESTRIAN SIGNAL (APS) PEDESTRIAN PUSH BUTTON STATION

PEDESTRIAN PUSH BUTTON STATION

NOTES:

- PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK, FACE IN POST TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE POST.
- BOLTED THREADED INSERTS MUST BE INSERTED USING MANUFACTURER'S SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.
- BLIND THREADED INSERTS MUST BE ZINC PLATED STEEL WITH M Combine THREAT 25/32"-20 UNC THREADS INSERT SHALL BE SUITABLE FOR USE ON A MOUNTING SURFACE MILL. THICKNESS OF 25/32" BLIND THREADED INSERTS CAN BE FOUND ON THE APVCT QUALIFIED PRODUCTS LIST.
- MOUNTING BOLTS SHALL BE 1/4"-20 STAINLESS STEEL. APPLY BRUSH ON ANTI-SEIZE COMPOUND TO BOLTS PRIOR TO ASSEMBLY.
- APPLY A BEAD OF 790 SILICONE SEALANT ALONG THE TOP OF THE PUSH BUTTON UNIT WHERE IT COMES IN CONTACT WITH THE 4" POST.
- THE REFLECTIVE SHEETING SHALL BE WHITE AT INTERSECTION CORNERS AND SHALL BE YELLOW WHEN USED IN CENTER MEDIAN. SEE APVCT QUALIFIED PRODUCTS LIST.
**APS Push Button Station and Location**

**Typical APS Pedestrian Push Button Location**

This is a general detail intended to show the requirements of APS push button location. For project specific information regarding pedestrian ramp layout and push button locations, see the plan.

**Supplemental Guidance for Constructing Compliant APS Push Buttons**

1. The face of the button shall be parallel with the outside edge of crosswalk.
2. A minimum 4 ft x 4 ft landing area shall be provided adjacent to each button, with a 2 percent maximum slope in all directions.
3. Buttons shall be within 5 ft of the outside edge of the crosswalk.
4. Buttons shall be between 1.5 ft and 10 ft from the back of curb or edge of roadway, measured in the direction of travel. Standalone push button stations should be 4 ft minimum from the back of curb to avoid knockdowns.
5. Buttons shall be at least 10 ft apart.
6. Provide a maintenance access route (if any) wherever possible for show removal purposes. A bar requires a 6 ft minimum clearance between a push button and any obstacles, including buildings, V-curbs, electrical foundations, signal cabinets, or another push button.
7. Button should be 2 ft minimum from ramp grade break and back of walk.

**Notes:**

- Placement and orientation of the push button station is critical. Mount the button so that the face is perpendicular with the associated crosswalk, even in post to a tightened position before mounting accessible push button unit to the post.
- Orient access opening on the breakaway pedestal directly below the APS button.
- Push the push button station with leveling shoes in accordance with standard plate size.
- Blind threaded inserts (e.g., nuts) must be designed using manufacturers' specific installation tool. No other methods of installation are acceptable.
- Blind threaded inserts shall be zinc-plated steel with 1/4-20 UNC threads. Insert shall be suitable for use on a mounting surface made of concrete, metal, or other approved materials. Insert tightness can be found on the manufacturer's list for signals.
- A push-mounting bolts shall be 1/4-20 stainless steel. Apply brush on anti-seize compound to bolt prior to assembly.
- A head of 0.05 silicone sealant along the top of the push button station where it comes in contact with the post.
- Reflective sheathing shall be white at intersection corners and shall be yellow when used in pedestrian areas. See the manufacturer's list of qualified products list for approved reflective sheathing.
- Anti-seize compound must be used on all threaded bolts when installing pedestrian push button stations.

**Contractor Must Use Option 1 or 2 When The APS Push Button Is Shown at the Top of the Ramp.**

**Option 1**
- Concrete walk
- Concrete landing
- Non-walkable surface

**Option 2**
- Concrete walk
- Concrete landing
- Non-walkable surface

**Signal Control Points**

<table>
<thead>
<tr>
<th>SIGNAL NO.</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
</tr>
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<tbody>
<tr>
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<td>-</td>
<td>-</td>
<td>A</td>
</tr>
<tr>
<td>PS-2</td>
<td>-</td>
<td>-</td>
<td>C</td>
</tr>
</tbody>
</table>

A - Distance measured from the push button to the front of landing/top of ramp
B - Clear distance measured from the push button to the back of landing/edge of walk
C - Clear distance measured from the push button to the push button's edge of comes in the direction of travel
D - Clear distance from the push button to the back of landing measured in the opposite direction of travel
APS Push Button Station
APS Push Buttons on Signal Poles and Pedestals

PEDESTRIAN PEDESTAL POLE STATION TYPE 4A
NOT TO SCALE

PEDESTRIAN BUTTON POLE STATION (WITH OR WITHOUT POLE MOUNTING ADAPTOR)
NOT TO SCALE

NOTE: SEE THE SPECIAL PROVISIONS FOR ADDITIONAL MOUNTING INSTRUCTIONS AND REQUIREMENTS.

1. USE THE APS PUSH BUTTON POLE MOUNTING ADAPTOR.
   - WHEN THE SIGNAL POLE FOUNDATION IS TOO HIGH TO ALLOW THE APS PUSH BUTTON TO BE PLACED ON THE POLE AT THE PROPER HEIGHT,
   - WHEN THE 'FLAT' OF THE POLE ISN'T PARALLEL TO THE CROSSWALK,
   - TO REDUCE THE REACH DISTANCE FROM THE EDGE OF THE SIGNAL POLE FOUNDATION TO THE BUTTON.
APS Push Buttons on Signal Poles
APS Push Buttons on Signal Poles

1. Use the APS push button pole mont adaptor.
   - When the signal pole found to allow the APS push button on the pole at the proper height.
   - When the 'flat' of the pole is on the crosswalk.
   - To reduce the reach distance.
APS Push Buttons on Signal Poles
APS Push Buttons on Signal Poles
APS Push Buttons on Pedestals

**Top View**
- 5/8" x 15' Ground Rod
- 1/4" Nominal Bolt
- 2 1/4" Min. to 3 3/4" Max. Projection
- 2 1/4" Min. to 3 3/4" Max. Projection
- 1/4" Max.
- Sidewalk or Concrete Area
- Concrete Mix 3A32 or Equal

**Side Section**
- 5/8" x 15' Ground Rod
- 1/4" Nominal Bolt
- 2 1/4" Min. to 3 3/4" Max. Projection
- 1/4" Max.
- Sidewalk or Concrete Area
- Concrete Mix 3A32 or Equal

**Notes:**
- The upper part of the foundation shall be backfilled or compacted in a neat manner as directed by the engineer.
- All backfilling around the foundation must be in accordance with 24E-1.5.
- The entire dig of all conduit into the foundation shall be capped until cables are placed.
- All backfilling around the foundation must be in accordance with 24E-1.5.
- All excavations must be properly compacted in accordance with 24E-1.5.
- Anti-seize compound that meets 24E-1.5.20.1 SPEC. shall be applied with a brush to all threads.
- End bell fittings on conduit ends shall be insulated per SPEC. 2500.

1. A ground rod equally spaced on 12-3/4" bolt circle positioned such that the pedestal base access door is conveniently located on the side away from traffic of possibility.
2. Four (4) 1/4" x 2" ground rods, nuts, and washers per SPEC. 2500, (type A) or approved:
3. Rods shall be per SPEC. 2500, except that the dimensions of the washers shall be one of options shown on standard plate 322.
4. Rods shall be per SPEC. 2500, (type A) or approved:
5. Preformed joint filler between foundation and sidewalk or concrete area.
6. When in contact with rock, ground rods should be placed as specified in current national electrical code info.
APS Push Buttons on Pedestals

PEDESTRIAN PEDESTAL POLE STATION TYPE 4A

NOT TO SCALE
Saddle Adaptors on Pedestals
Signalized Intersection Plan Details

LEGEND

- Proposed signal pole
- Pedestrian push button station
- Truncated curb
- Pedestrian push button
- Control points at gutter flow line
- Bituminous treatment—see tabulations
- Curb height
- Length of area:
  - 4’ x 4’ min. dimensions and min. 2.5% slope in all directions

Indicates pedestrian ramp: slope shall be between 2.5% and 2.75%, maximum is the direction shown and cross slope shall not exceed 2.75%.

Indicates pedestrian ramp: slope shall be greater than 2.75% and less than 3%, in the direction shown and cross slope shall not exceed 2.75%.

Drainage flow arrow

TABULATED QUANTITIES

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>MEDIAN WALK</th>
<th>CONCRETE BARRIER</th>
<th>BITUMINOUS PAVEMENT</th>
<th>CONCRETE A RIDGE</th>
<th>TRUNCATED CORNERS</th>
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GENERAL NOTES:
- Provide a sawcut at the removal limit or the nearest joint of the concrete walk and concrete curb. All sawcuts shall be incidental.

- Landings shall be connected to existing sidewalks maintaining a 4% inside pedestrian access route with a cross slope not to exceed 2.75%, and a running slope that does not exceed 3%.

- All perpendicular ramps are 4’ x 4’ unless otherwise noted.

- Locate all new handrails outside of the path.

1. Sawcut, and install signal.
2. Sawcut median nose to make room for new crosswalk. Construct concrete nose—see standard plate, 7.25.
3. Construct concrete pavement to fill the area where the crosswalk concrete nose is to be removed. Non-compliant pavement thickness.
# APS Signals New for 2013

- **Signal Control Points**
- **PB8-2 and PB6-1**

## Signal Control Points

<table>
<thead>
<tr>
<th>POINT NO.</th>
<th>X</th>
<th>Y</th>
<th>DISTANCE TO FRONT OF LANDING (FT)</th>
<th>DISTANCE TO BACK OF LANDING (FT)</th>
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## Control Points

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Signalized Intersection Plan Details

- If staked dimension will not work consult the Engineer as per 1803.
Know the Proposed Ramp Design

6 ft from back of curb is often the ideal push button location

0"
Pushbutton is in the middle of the landing because the ramp isn’t directional.
Pedestrian Signal Systems

All new hand holes shall be placed outside the PAR Inclusive of ramps and landings.
APS Compliance Checklist

APS Compliance Checklists link to SharePoint and the Guidance is on ADA web site.

MnDOT ADA Compliance Checklist for APS

SP: [ ] City: [ ] Quadrant: [ ] District: [ ]
Intersection: [ ]

Construction Year: [ ]

1) Are push button stations placed and push button faces oriented in accordance with standards? [ ] □ Yes □ No
2) Is there a minimum 4’ x 4’ landing adjacent to each push button? [ ] □ Yes □ No
3) Distance from crosswalk edge to push button face (ft): [ ]
4) Distance from the push button to the back of curb: (measured in the direction of the pedestrian travel in ft): [ ]
5) Distance between push buttons (ft): [ ]
6) Push button height (inches): [ ]
7) Push button side reach (inches): [ ]
8) Is APS system fully compliant? [ ]
   □ Yes □ No
   If NO, check one of the following reasons why: Explain why the component(s) didn’t meet compliance (see ADA Compliance Checklist Guidance for additional directions and attach pages if needed): [ ]
   □ Topography [ ] □ Structure(s) [ ] □ Utilities [ ] □ Contractor [ ]
9) Has a 6’ maintenance access route (MAR) been maintained? [ ] □ Yes □ No
10) Are push buttons situated at least 2’ away from both the back of walk and ramp grade break? [ ] □ Yes □ No
11) Are all newly constructed hand-hole(s) located outside of pedestrian access route (PAR)? [ ] □ Yes □ No
12) Push button(s) placed according to the plan details? [ ] □ Yes □ No
   If no, please describe/explain:

Printed Name: ______________________ Date (mm/dd/yyyy): ______________________

I certify that the information entered on this form is accurate to the best of my knowledge and that the checklist standards and forms need to be entered electronically.

Submit to SharePoint Library
APS Compliance Checklist

1) Push buttons stations are properly placed and the push button faces are oriented properly.
2) There must be a 4’ x 4’ landing adjacent to the push button.
3) Distance from crosswalk edge to push button face:
4) Distance from the push buttons to the back of curb:

1.5’ to 10’ back of curb
Ideally 4-6’ back of curb
APS Compliance Checklist

5) Distance between the push buttons: _______
6) Push button height: _____
7) The push button needs an unobstructed side reach of 10” maximum.
Lessons Learned
Locating APS push buttons
Coordination with concrete contractor

Must have a level landing adjacent to push button
Coordination with concrete contractor

PB at grade break, no PAR
If two crosswalks meet...

- Offset to crosswalk is greater than 5 ft. or the distance between buttons will be less than 10 ft.

- Crosswalks intersects each other in roadway.
MnDOT’s 4 ft minimum setback

Pushbutton is too close to the roadway
Push button should be here for user consistency
Buttons at outside edge of crosswalks

Push buttons are improperly oriented
Button interferes with ramp
Button in middle of sidewalk
Button in middle of 10’ trail

- Does button location pass the eye test from both directions.
Pedestrian Signs installation

- Sign must be made with retro reflective sheeting.
- Verify Braille message plate is correct for button location.
Rework costs everybody

- Check curb cuts if it doesn’t look right consult the Engineer as per 1803.
10” horizontal offset exceeded
Questions?