



Mn/DOT ADA Training

Signal Certification Accessible Pedestrian Signals (APS)

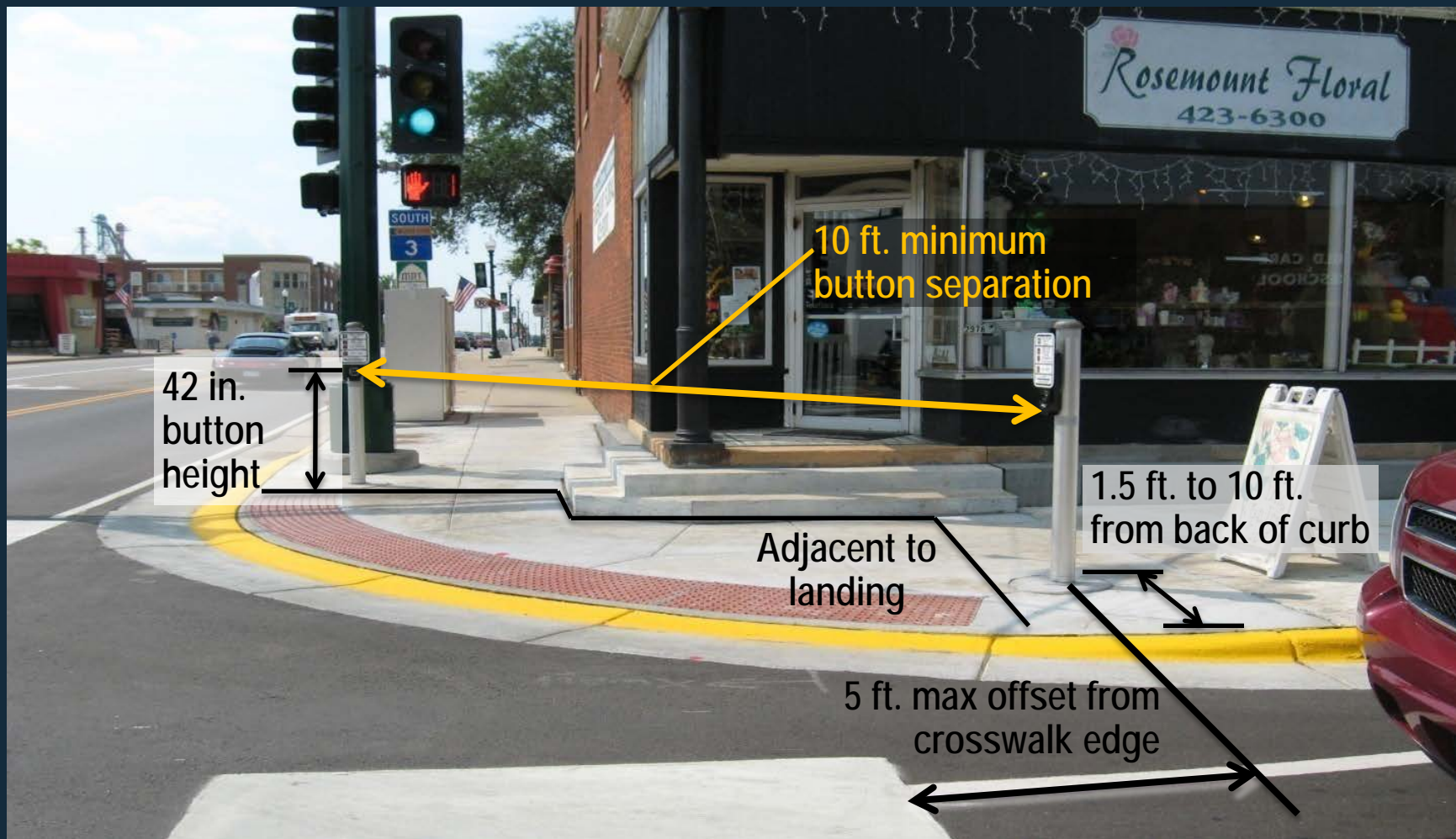
Todd Grugel, ADA Program Engineer

Your Destination...Our Priority



Locating APS Pushbuttons

ADA Compliance



Specification 1803 – ADA Requirements



- Lists the requirements the Contractor must meet in installing compliant APS and curb ramps
- Requires Contractor to confirm the spec will be met before proceeding with construction
- Coordination will be needed between electrical and flat-work contractors
- Non-compliant work will be redone at Contractor's expense
- Contractor will notify project staff if facilities cannot be constructed in a compliant manner

Push Button Station

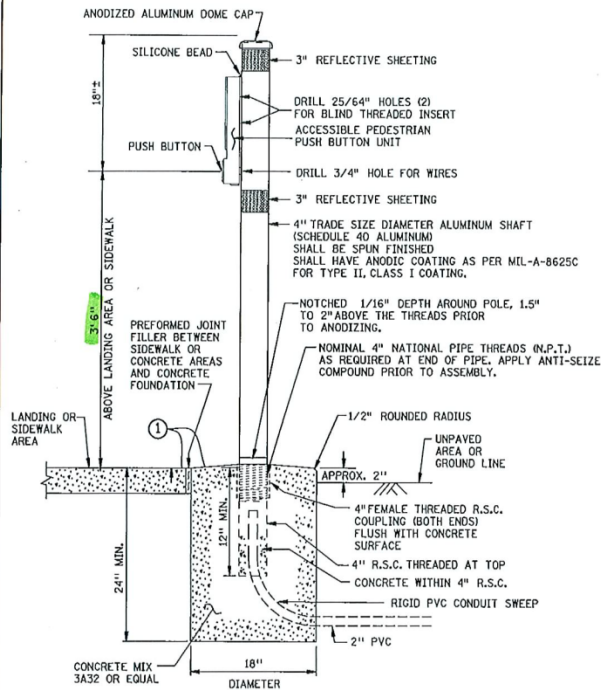


- Base must be cast in place to match the elevation of the surrounding sidewalk
- The face of the push button must line up with the crosswalk edge – To accomplish this screw the pole into the base tight and then mark the mounting location that will result in proper button face orientation
- Location requirements are listed in 1803
- Intersection detail will show push button location and new plans will provide horizontal coordinates for PB stations to be staked by a surveyor

Push Button Station



PEDESTRIAN PUSH BUTTON STATION



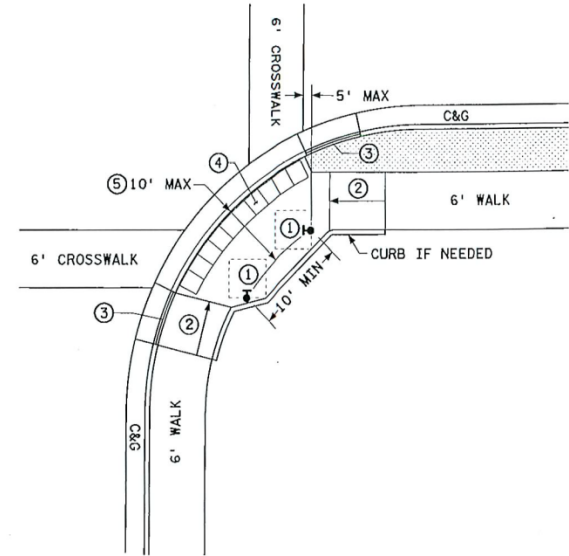
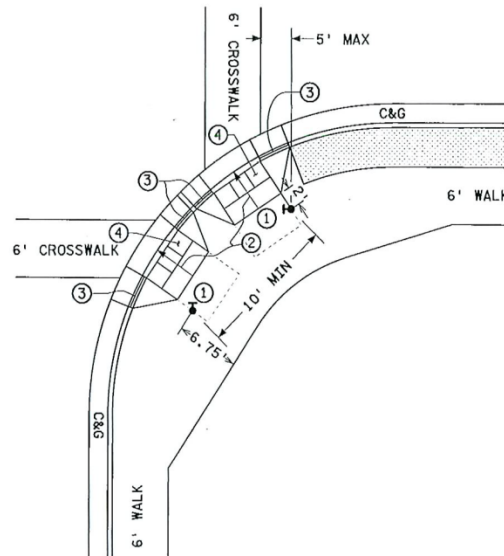
NOTES:

- PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN POST TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE POST.
- BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS 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 WALL THICKNESS OF .337". APPROVED BLIND THREADED INSERTS CAN BE FOUND ON THE MN/DOT 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 100% 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 MEDIANS. SEE MN/DOT SIGNING QUALIFIED PRODUCTS LIST (GPL) FOR APPROVED SIGN SHEETING.
- ANTI-SEIZE COMPOUND MUST BE USED ON THE MOUNTING BOLTS WHEN THE PEDESTRIAN SIGN IS MOUNTED.

① THE CONCRETE FOUNDATION SHALL BE CAST IN PLACE AND CONSTRUCTED FLUSH WITH THE SURROUNDING SIDEWALK.

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 CURB RAMP 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 10' OF THE BACK OF CURB OR EDGE OF ROADWAY.
- BUTTONS SHALL BE AT LEAST 10' APART.



- 4'X4' MINIMUM LANDING AREA ADJACENT TO PUSH BUTTON. (2% SLOPE MAX.)
- RAMP - SLOPE (5% PREFERRED 8% MAX).
- CURB TAPER SECTION AT 1:10 (10%) (HEIGHT OF CURB IS TAPERED TO 0").
- DETECTABLE WARNING SURFACE (TRUNCATED DOMES) - RADIUS SECTIONS WHERE SPECIFIED.
- DISTANCE FROM THE BACK OF CURB TO PUSH BUTTON STATION.

TYPICAL APS PEDESTRIAN PUSH BUTTON LOCATION

BY	DATE	REVISIONS

SYSTEM ID: 20219 T.E. 5306
METER ADDRESS: N. RAMP TH 10/FOLEY BLVD
MASTER ID: 21996 T.E.

ACCESSIBLE PEDESTRIAN SIGNAL (APS)
PEDESTRIAN PUSH BUTTON STATION
TYPICAL APS PUSH BUTTON LOCATION DETAIL

S.A.P. NO.	DRAWN BY: MOK	CKD BY: BTJ	DATE: 2/24/11
CERTIFIED BY: <i>Michael P. Selinsky</i>	L.T.C. NO. 19863	DATE: 2/24/11	
STATE PROJ. NO. 0215-63 (T.H. 10)	SHEET NO. 73 OF 83 SHEETS		



ANODIZED ALUMINUM DOME CAP

19"±

SILICONE BEAD

3" REFLECTIVE SHEETING

ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT W/SIGN

PUSH BUTTON

DRILL 25/64" HOLES (2) FOR BLIND THREADED INSERT

DRILL 3/4" HOLE FOR WIRES

3" REFLECTIVE SHEETING

4" TRADE SIZE DIAMETER ALUMINUM SHAFT (SCHEDULE 40 ALUMINUM - 48" LENGTH) SHALL BE SPIN FINISHED SHALL HAVE ANODE COATING AS PER MIL-A-8625C FOR TYPE II CLASS I COATING.

NOMINAL 4" NATIONAL PIPE THREAD (NPT) AS REQUIRED AT THE END OF THE PIPE.

APS PUSH BUTTON BASE (SEE MNDOT APPROVED/QUALIFIED PRODUCTS LIST)

1" RIGID PVC CONDUIT WITH END BELL (2" +/- 1/2" PROJECTION)

5/8" (UNC) X 7 1/2" +/- 1/4" STAINLESS STEEL ROD IN ACCORDANCE WITH MNDOT 3385.20 RODS SHALL HAVE CHAMFERED (ROUNDED) EDGE ON BOTH ENDS.

1/2" ROUNDED RADIUS

UNPAIRED AREA OR GROUND LINE

APPROX. 2"

DRILL 4 - 3/4" HOLES 6" DEEP INSTALL FOUR ANCHOR RODS USING TWO PART EPOXY FOUND ON THE MNDOT A.P.L. FOR SIGNALS

18" X 6" CONCRETE FORMING TUBE

12" MIN.

18" DIAMETER

CONCRETE MIX SA32 OR EQUAL

7"±

4.25"±

6" BOLT CIRCLE

ANCHOR RODS

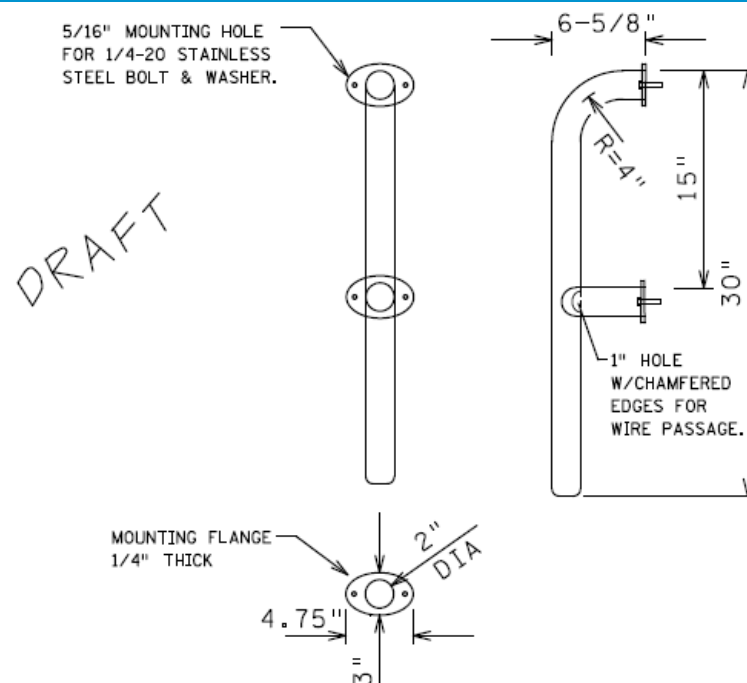
BREAKAWAY BASE

ANCHOR ROD PLACEMENT

1" RIGID PVC CONDUIT SWEEP

1" RIGID PVC CONDUIT

Push Button Station



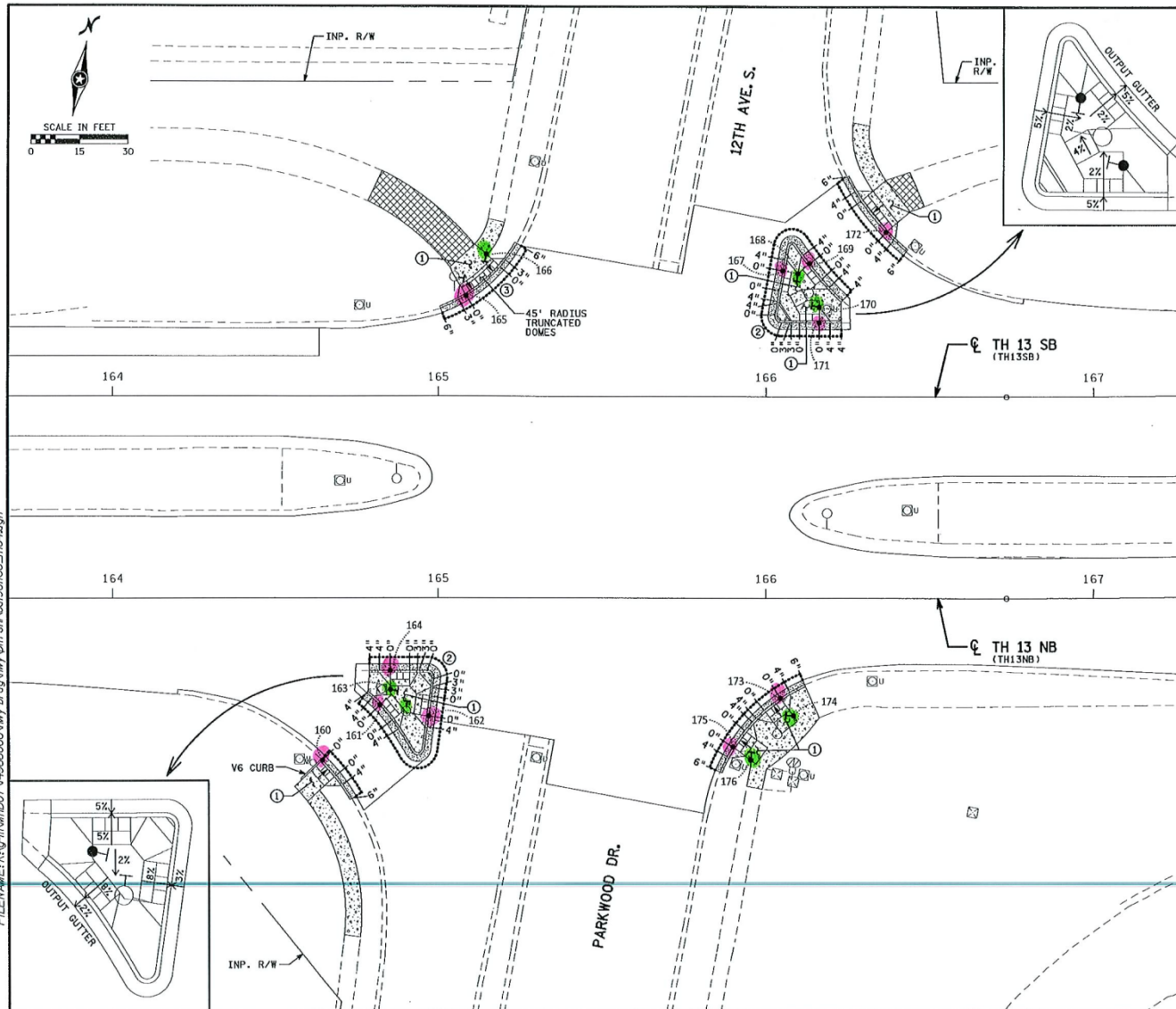
NOTE: THIS DETAIL WAS DRAWN ASSUMING 2" TUBING (2" O.D.). THE DETAIL SPECIFIES 1-1/2" PIPE (1-1/2 I.D. & 1.9" O.D.) SOME DIMENSIONS WILL NEED TO BE REVISED TO REFLECT THE PIPE DIMENSIONS. MN/DOT IS OPEN TO SUGGESTIONS TO SIMPLIFY FABRICATION.

- THIS BRACKET (30" LENGTH) ENABLES APS PUSH BUTTONS TO BE INSTALLED ON SIGNAL POLES (AT THE REQUIRED HEIGHT OF 42") WHERE THE CONCRETE FOUNDATION PROTRUDES UP TO 18" ABOVE THE CONCRETE LANDING.
- ATTACH THE BRACKET TO POLE USING 1/4-20 STAINLESS STEEL BOLT & WASHER. DRILL & TAP POLE FOR MOUNTING BOLTS.
- APPLY A BEAD OF 100% SILOCONE SEALANT AROUND THE MOUNTING FLANGES WHERE THEY CONTACT THE SIGNAL POLE.
- ATTACH THE APS PUSH BUTTON UNIT TO THE BRACKET USING 1/4-20 STAINLESS STEEL BOLTS AND BLIND THREADED INSERT (RIVET NUT). APPROVED BLIND THREADED INSERTS CAN BE ON THE MN/DOT QUALIFIED PRODUCTS LIST.
- ANTI-SEIZE COMPOUND THAT MEETS MIL-PRF-907E SPEC. SHALL BE APPLIED WITH A BRUSH TO ALL THREADS.
- GALVANIZE THE BRACKET AS PER SPEC. 3394 AFTER FABRICATION.
- 1-1/2" SCHEDULE 40 PIPE AS PER SPEC. 3362

DRAFT

- Horizontal coordinates will be provided for poles, pedestals, and PB stations
- If the staked location will not work (utilities, etc.) Contractor will work with MnDOT staff to determine an appropriate location
- Contractor is still responsible for verifying the proposed location meets the 1803 requirements

Push Button Station



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS -- THRU -- AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- CURB HEIGHT AT INDICATED LOCATION
- XXX • INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
- 6" CONCRETE WALK
- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWB340B) ON 6" AGGREGATE BASE CLASS 6
- ↓ INDICATES 4' LONG PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT

STAKING POINTS

POINT	POINT TYPE	X	Y	ELEV.
160	FACE OF CURB	515105.41	213586.01	----
161	FACE OF CURB	515119.60	213605.38	934.39
162	FACE OF CURB	515135.05	213604.84	934.38
163	PUSH BUTTON	515121.95	213610.52	----
164	FACE OF CURB	515120.92	213616.09	934.54
165	FACE OF CURB	515123.42	213730.40	----
166	PUSH BUTTON	515127.13	213743.70	----
167	FACE OF CURB	515216.96	213755.50	933.24
168	PUSH BUTTON	515221.64	213755.54	----
169	FACE OF CURB	515224.58	213759.08	933.08
170	PUSH BUTTON	515229.88	213745.80	----
171	FACE OF CURB	515230.70	213742.20	933.51
172	FACE OF CURB	515245.85	213772.50	----
173	FACE OF CURB	515239.54	213629.85	----
174	PUSH BUTTON	515244.46	213625.35	----
175	FACE OF CURB	515228.07	213612.88	----
176	PUSH BUTTON	515234.08	213610.00	----

ELEVATIONS GIVEN AT FACE OF CURB FOR PORK CHOP ISLANDS.

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 4" AGGREGATE BASE CLASS 6. ALL EXCAVATION, SUBGRADE PREPARATION, AGGREGATE BASE, COMMON BORROW, AND TOPSOIL BORROW SHALL BE INCIDENTAL.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
- ALL DISTURBED AREAS IN A CUT SECTION THAT ARE NOT OTHERWISE RESURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.
- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

- ① MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.
- ② CONCRETE APPROACH NOSE. SEE STANDARD PLATE 7113.
- ③ 3' LONG PEDESTRIAN RAMP.

DRAWN BY: SFH
CHECKED BY: SJS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: _____
PRINTED NAME: _____
DATE: _____
LIC. NO. _____

TKDA
ENGINEERING • ARCHITECTURE • PLANNING



TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT 12TH AVE. S./PARKWOOD DR.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 29 of 40 Sheets

4 OF 32

DATE: 12/31/2011 TIME: 1:02 PM
FILE NAME: K:\p\m\m\DOT\4668000\wy-bcd\m\p\in-st\od\90168_1r04.dgn

Push Buttons on Signal/Pedestal Poles



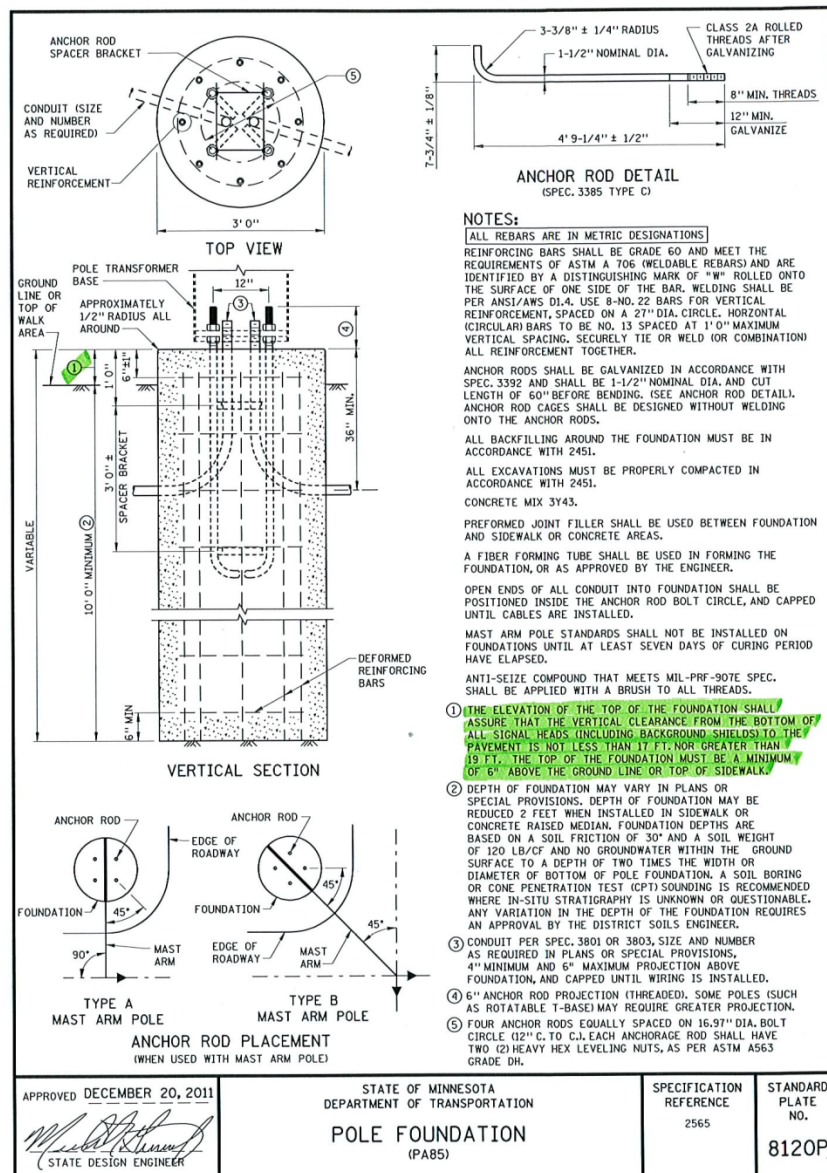
- When plans call for push buttons to be placed on signal and/or pedestal poles the elevation of the proposed adjacent sidewalk landing is critical – 42 Inch PB height
- Electrical contractor will need to work with the flat-work contractor to determine what the finish grade of the sidewalk will be
- If a push button will be mounted on a signal pole, the top of the foundation cannot be greater than 8 inches above the finish grade of the sidewalk, otherwise the button height will not be acceptable
- Must still be 17-19 feet from roadway surface to bottom of signal head – Pole Foundation Std Pl

Push Buttons on Signal/Pedestal Poles

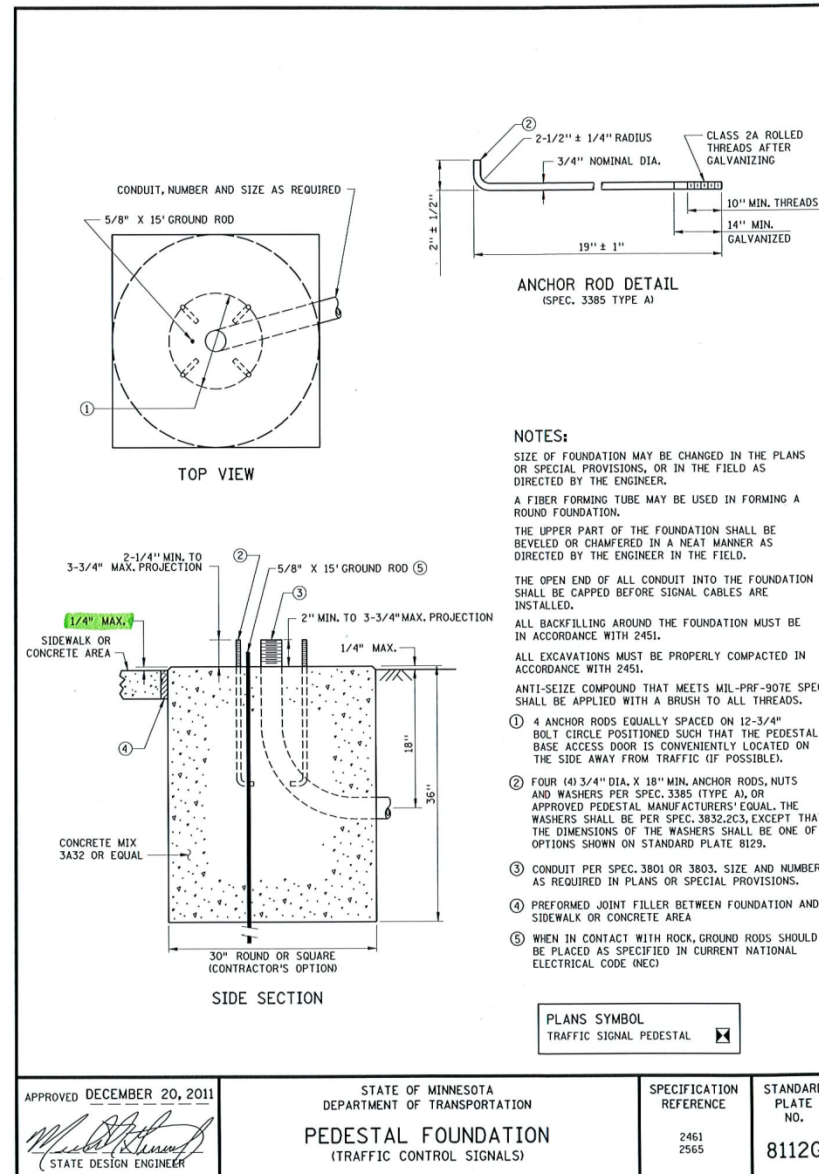


- If pole foundation is installed too high or in the wrong location, contractor must provide an extra PB station or remove and reinstall signal pole foundation
- When plans call for push buttons to be placed on pedestal pole, the contractor will need to know the finish grade of the sidewalk so that the pedestal base will be flush with the adjacent sidewalk

Push Buttons on Signal/Pedestal Poles




Push Buttons on Signal/Pedestal Poles



Compliance Checklist



- MnDOT inspectors will check final product to ensure compliance

 **MnDOT ADA Compliance Checklist for APS**

SP: ? City: District:

Intersection: ? Quadrant: ?

Construction Year: ?

Attach a photo of the completed quadrant by clicking here ->
[DO NOT use Safari on iPads to upload files]: (6MB max)

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): ?
Trunk Hwy Side Street

4) Distance from the push button to the back of curb: (measured in the direction of the pedestrian travel in ft) ?
Trunk Hwy Side Street

5) Distance between push buttons (ft): ?

6) Push button height (inches): ?
Trunk Hwy Side Street

7) Push button side reach (inches): ?
Trunk Hwy Side Street

8) Is APS system fully compliant? ?

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 ☐ MnDOT

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 buttons placed according to the plan details? ? ☐ Yes ☐ No

If NO, please 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 I fully understand the checklist standards and am qualified to carry out the inspection.

Pg 1

Locating APS Pushbuttons



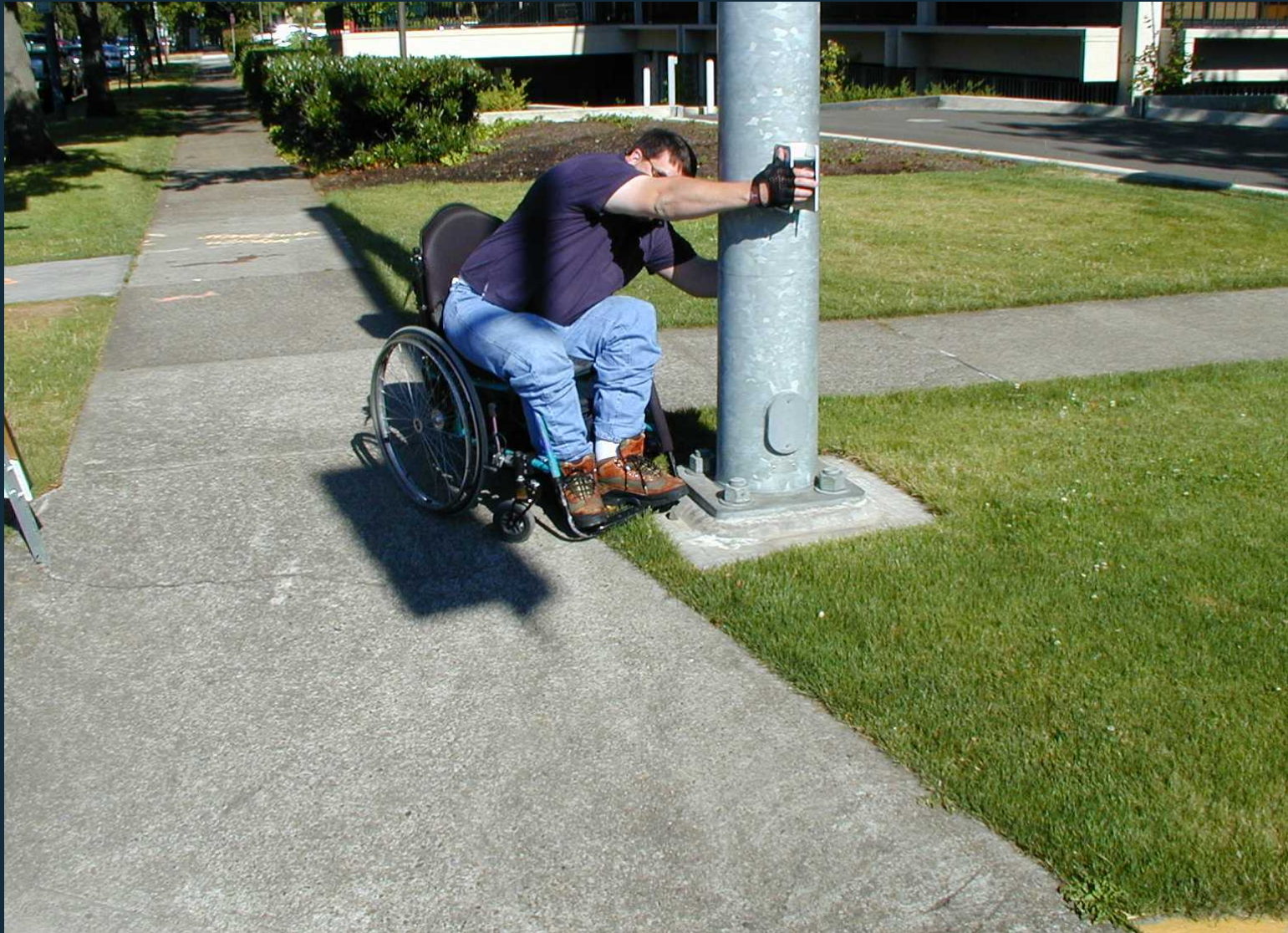
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Locating APS Pushbuttons



Must have a level landing

Locating APS Pushbuttons



Compliant Installs



Compliant Installs



Lessons Learned



Lessons Learned



Lessons Learned



Lessons Learned



Lessons Learned



Lessons Learned



Only 5 ft. of separation required in islands and medians

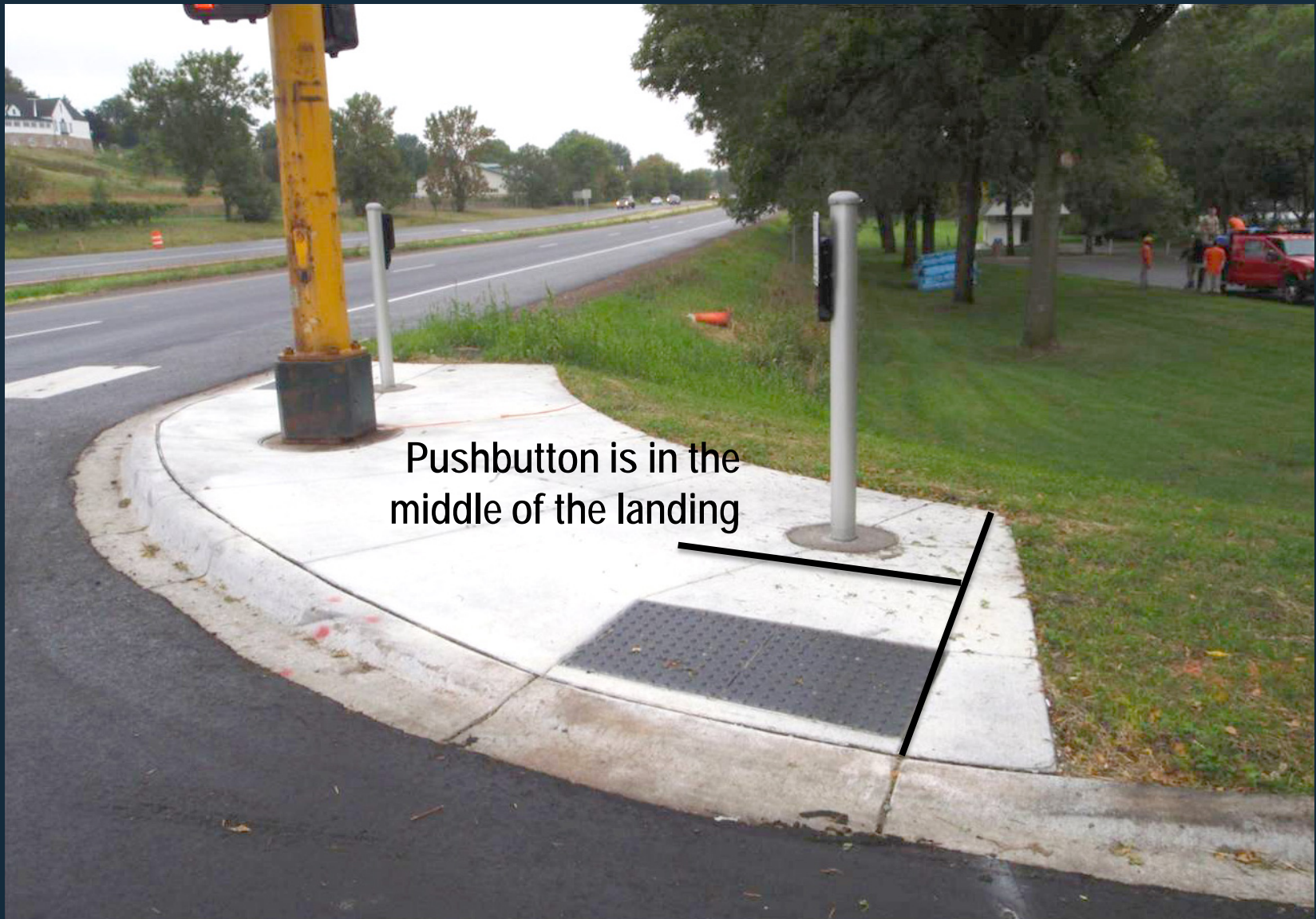
Lessons Learned



Lessons Learned



Lessons Learned



Signal Certification Accessible Pedestrian Signals (APS)

Questions?

Your Destination...Our Priority



[http://www.dot.state.mn.us/ada/
training.html](http://www.dot.state.mn.us/ada/training.html)

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