



CAMBRIDGE HISTORICAL COMMISSION

831 Massachusetts Avenue, 2nd Fl., Cambridge, Massachusetts 02139
Telephone: 617 349 4683 TTY: 617 349 6112
E-mail: histcomm@cambridgema.gov URL: www.cambridgema.gov/Historic

APPLICATION FOR CERTIFICATE

1. The undersigned hereby applies to the Cambridge Historical Commission for a Certificate of (check one box): Appropriateness, Nonapplicability, or Hardship, in accordance with Chapter 40C of the Massachusetts General Laws and/or Chapter 2.78 of the Municipal Code.

2. Address of property: , Cambridge, Massachusetts

3. Describe the proposed alteration(s), construction or demolition in the space provided below: (An additional page can be attached, if necessary).

The City of Cambridge is seeking to make modifications to Garden Street and Berkeley Street within the Old Cambridge Historic District, roughly between Chauncy Street and Mason Street. This work would be completed as part of the Garden Street Safety Improvement Project. This application pertains to flexible delineator posts, traffic signal equipment, and minor sidewalk work. We anticipate that a subsequent application to detail proposed changes to the Little Concord Avenue pedestrian plaza will be submitted in January/February 2023.


This Fall, the City proposes to install flexible delineator posts (white and/or yellow) along Garden Street, install a (gloss black) rectangular rapid flashing beacon (RRFB) assembly at the Waterhouse Street crosswalk across Garden Street, and to widen the concrete sidewalk along Berkeley Street near Garden Street into the grass planting strip to accommodate the conversion of part of a loading zone into a new accessible/disability parking space. Some minor curb adjustment work (raise sunken/misaligned/missing pieces) would also take place to accommodate this new accessible space. This new concrete sidewalk would be the length of the space (~20ft) and be contained to the existing planting strip.

I certify that the information contained herein is true and accurate to the best of my knowledge and belief. **The undersigned also attests that he/she has read the statements printed on the reverse.**

Name of Property Owner of Record:

Mailing Address:

Telephone/Fax: E-mail:

Signature of Property Owner of Record: 
(Required field; application will not be considered complete without property owner's signature)

Name of proponent, if not record owner:

Mailing Address:

Telephone/Fax: E-mail:

(for office use only):

Date Application Received: _____ Case Number: _____ Hearing Date: _____

Type of Certificate Issued: _____ Date Issued: _____



Garden Street Safety Improvement Project Historical Commission Review

November 3, 2022

Description of Proposed Changes – Case 4869

The City of Cambridge is seeking to make modifications to Garden Street and Berkeley Street within the Old Cambridge Historic District, roughly between Chauncy Street and Mason Street. This work would be completed as part of the Garden Street Safety Improvement Project, which itself extends from Huron Avenue to Mason Street.

Specifically, this Fall the City proposes to install a combination of flexible delineator posts (white and/or yellow) and pre-cast concrete curbing along Garden Street, install a (gloss black) rectangular rapid flashing beacon (RRFB) assembly at the Waterhouse Street crosswalk across Garden Street, and to widen the concrete sidewalk along Berkeley Street near Garden Street into the grass planting strip to accommodate the conversion of part of a loading zone into a new accessible/disability parking space. Some minor curb adjustment work (raise sunken/misaligned/missing pieces) would also take place to accommodate this new accessible space on Berkeley Street. This new concrete sidewalk would be the length of the space (~20ft) and be contained to the existing planting strip.

Seeking Certificate of Appropriateness

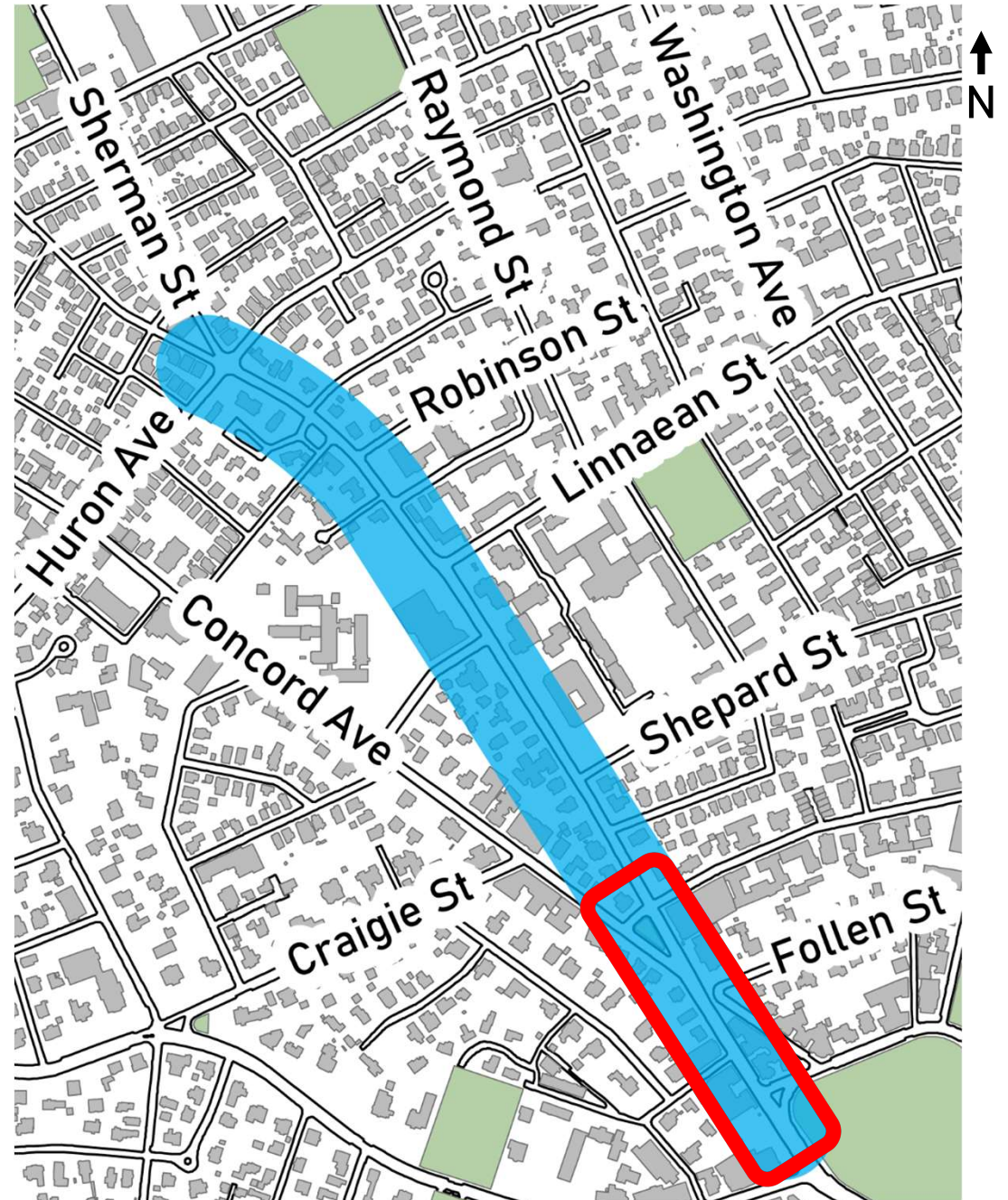
Project Area

Garden St Project Limits 

Huron Avenue to Mason Street

Old Cambridge Historic District 

Chauncy St to Mason St
(approximate, see plans)



Project Scope

This is a quick-build project which uses pavement markings, signs, traffic signals, and vertical elements to increase safety.

This project does the following on Garden Street:

- Adds separated bike lanes
 - In both directions between Huron Avenue and Mason Street*
- Converts part of the street to one-way eastbound
 - Between Huron Avenue and Concord Avenue, drivers will only travel toward Cambridge Common and Harvard Square
- Improves crosswalks
- Changes parking and loading

*Eastbound separated bike lane to Berkeley Street only



Image: Cambridge Street Separated Bike Lane (2017)

Cycling Safety Ordinance Overview

2019: City Council Passed the Cycling Safety Ordinance

- Requires construction of separated bike lanes when streets are being reconstructed as a part of the City's "Five-Year Plan for Streets and Sidewalks" and when they have been designated for "Greater Separation" in the Bicycle Network Vision

2020: City Council Passed Amendments to the Ordinance

- The amendments set ambitious requirements for the installation of approximately 25 miles of separated bike lanes within the next five to seven years.
- The location of these facilities is informed by both the Cambridge Bicycle Network Vision and specific requirements in the Ordinance.



Cycling Safety Ordinance Overview- Continued

In general, the amendments to the Ordinance require the installation of separated bike lanes on:

- All of Massachusetts Ave;
- Garden St, eastbound from Huron Ave to Berkeley St, and westbound from Mason St to Huron Ave;
- Broadway from Quincy St to Hampshire St;
- Cambridge St from Oak St to Second St;
- Hampshire St from Amory St to Broadway; and
- 11.6 miles of separated bike lanes in other locations within the Bicycle Network Vision

Learn more at
cambridgema.gov/cycling-safety-ordinance



What drives our street design?

We design for people of all ages and abilities.

This includes:

- People who may not have access to a car
- Safe and accessible facilities, including bike lanes, that can be used by a wide range of people

How we think about vehicle congestion and delay

- Moving people slowly is moving people safely
- We do not prioritize eliminating delay for people driving alone

Focus is on moving people and goods, not their vehicles

- Buses run less frequently than cars, but carry more people
- Cannot ignore access for trucks and local deliveries



Street Design - Enforcement - Education

Street Design

- A Safe System is a human-centered approach to street design, engineered to prevent errors as much as possible and lessen the impacts of errors when they do occur.
- Shifts away from individual blame
- Keep road users safe by designing for the most vulnerable (i.e. people not in cars)
- Crash prevention is more effective than crash mitigation

Enforcement and Education

- Enforcement and Education are supplemental to proper street design, not a replacement

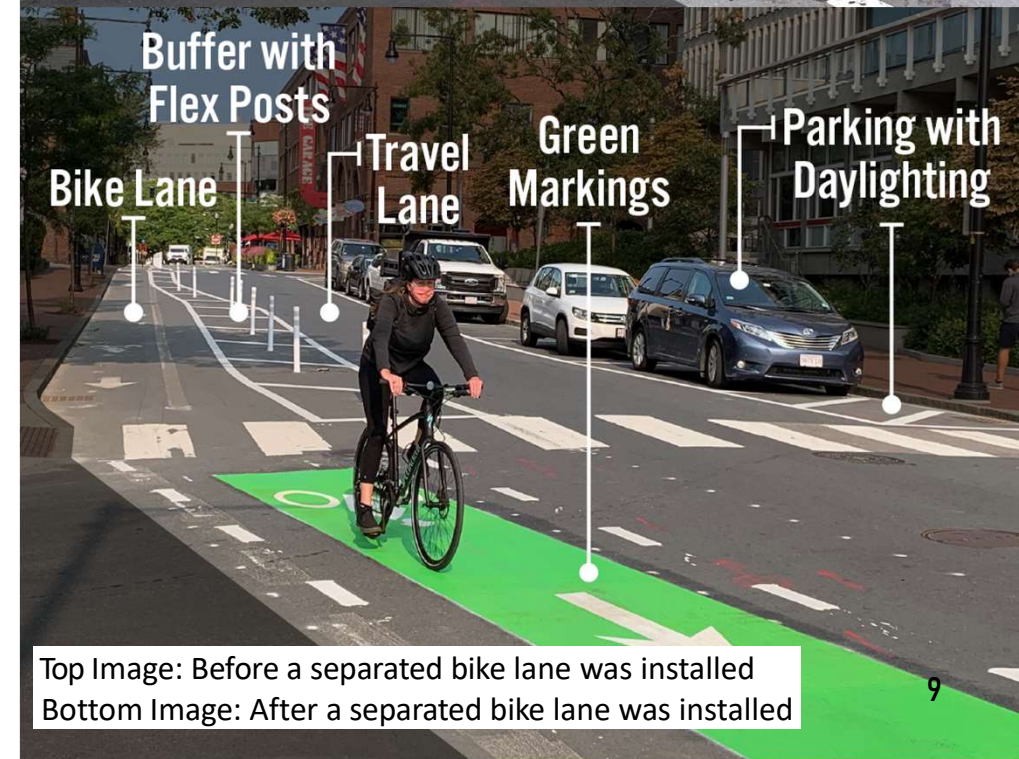
Example:

A momentary distraction can mean a driver doesn't see a cyclist or vice versa.

Providing separation between people in cars and people on bikes decreases the chance that a momentary distraction leads to a deadly crash.

Separated Bike Lane Benefits

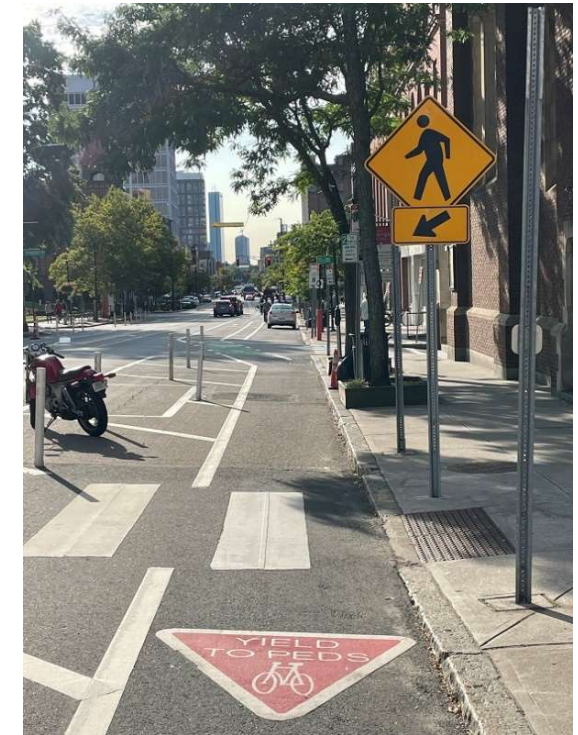
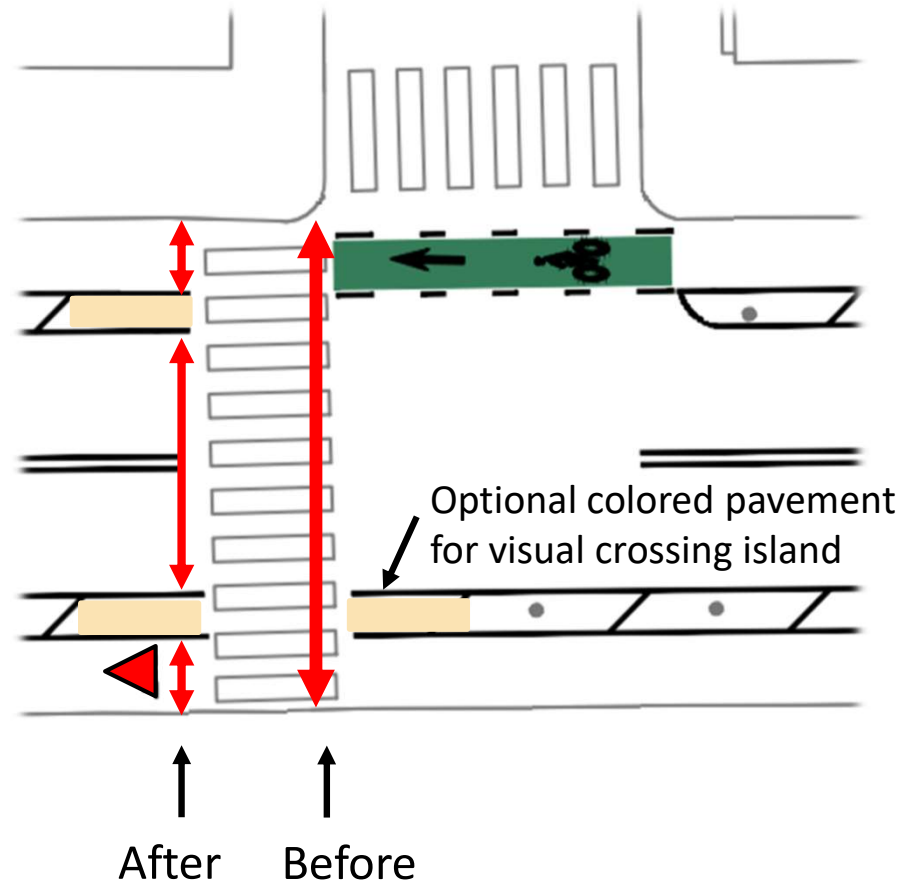
- Increases comfort and access for people of all ages and abilities
- Reduces crash and injury risk
- Eliminates threat of "dooring" from parked vehicles
- Reduces potential conflicts between vehicles and people biking
- Encourages slower traffic speeds by visually narrowing the roadway width



Separated Bike Lane Benefits - Pedestrian Safety

Separated bicycle lanes improve safety for people walking

- Shorter crossing distances
- Better sightlines
- Each potential conflict can be handled separately (i.e., cross bike lane, then vehicle lanes)
- Visually narrows the roadway for drivers, encouraging lower speeds and higher yielding rates



Previous Community Meetings

Community feedback included:

- Preference for one-way bike lanes on both sides instead of a two-way bike lane on one side
- Keep as much parking as possible
- Consider the needs of seniors
- Improve the crosswalks at Waterhouse Street (Sheraton) and at Shepard Street
- Make Garden Street a one-way to make space for parking
- Reduce cut through traffic
- Keep people on bikes off the sidewalks

Based on this feedback and more, we pursued the option which converted a portion of Garden Street to one-way.



Garden Street Layout – Key Aspects

One-way vehicle traffic

(Huron Avenue to Concord Avenue, eastbound)

- Reduces total traffic volumes
- Provides space for parking
- Reduces vehicle volumes on Garden Street west of Huron Avenue (aligns with goals in the Bicycle Network Vision Plan)

One-way separated bike lanes on both sides

- Predictable interactions at side streets and driveways
- Better access when biking to destinations on both sides of the street
- Straightforward operations and expectations at traffic signals and crosswalks

Parking and loading

- Retains more parking on Garden Street
- Parking changes sides to maximize the number of spaces
- Prioritizes parking where there is the most need
- Street cleaning parking restrictions are no longer needed

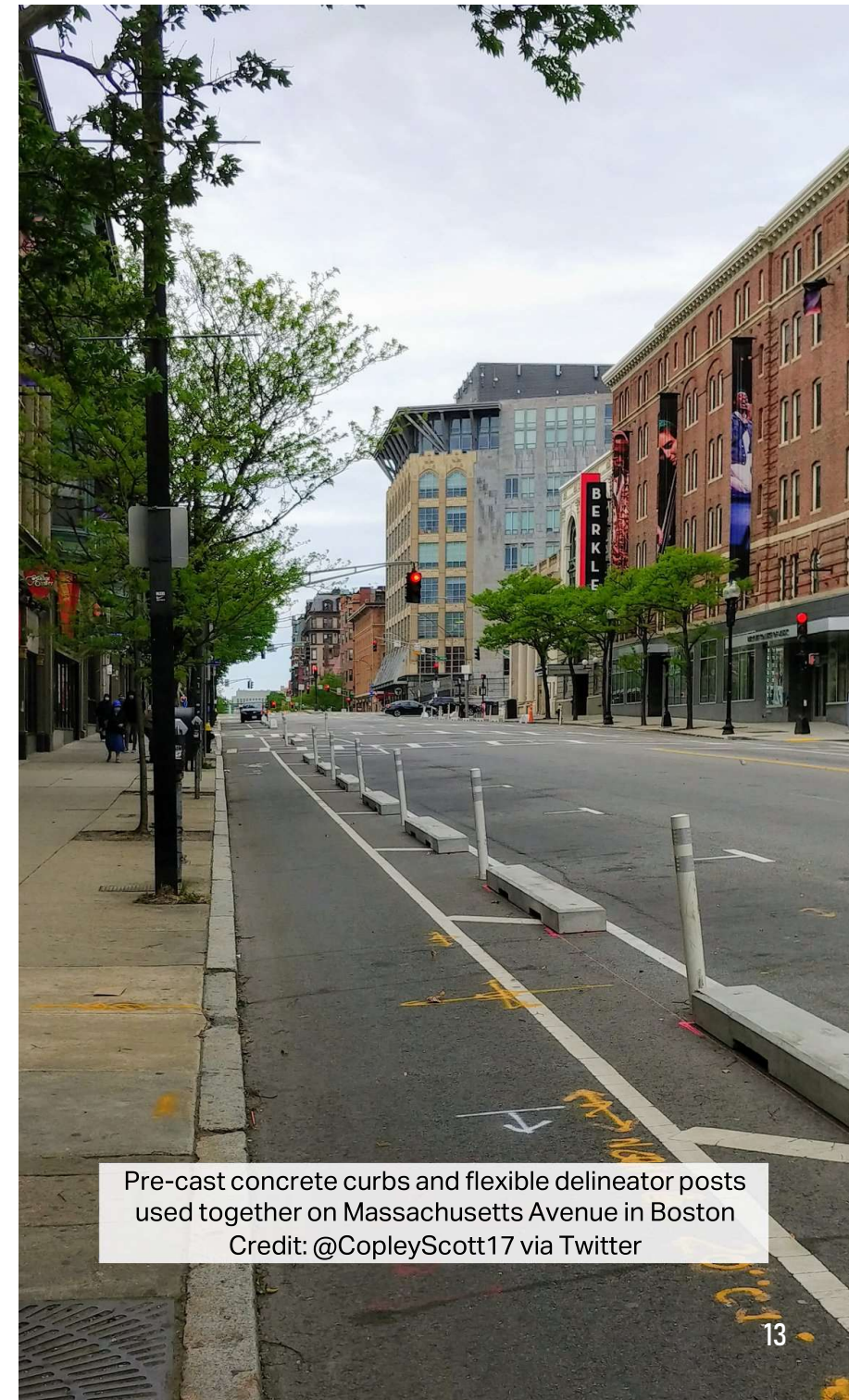
Types of Separation

Flexible Delineator Posts (flex posts)

- Height provides added visibility (nighttime, snow, etc.)
- Installed at driveways, side-streets, other key locations to control turns and reduce bike lane encroachment
- Provides clarity to road users
- Familiar product used throughout region and country
- Off-the-shelf, readily available

Pre-Cast Concrete Curbs

- Reduce visual clutter
- More durable material
- Stronger protection for people biking
- Use of City of Boston specification/design improves cost effectiveness, availability, and increases recognition across region



Pre-cast concrete curbs and flexible delineator posts used together on Massachusetts Avenue in Boston
Credit: @CopleyScott17 via Twitter

Proposed Separation

Within the Old Cambridge Historic District, we plan to use a combination of flex posts and pre-cast concrete curbs.

Engineering judgement and prior Historical Commission feedback regarding nearby Brattle Street leads to a design that:

- Minimizes the use of flex posts
- Locates flex posts at the beginning and end of each run of curbing for visibility
- Places curbing approximately every 20ft on-center: 10ft of curb, ~10ft of gap



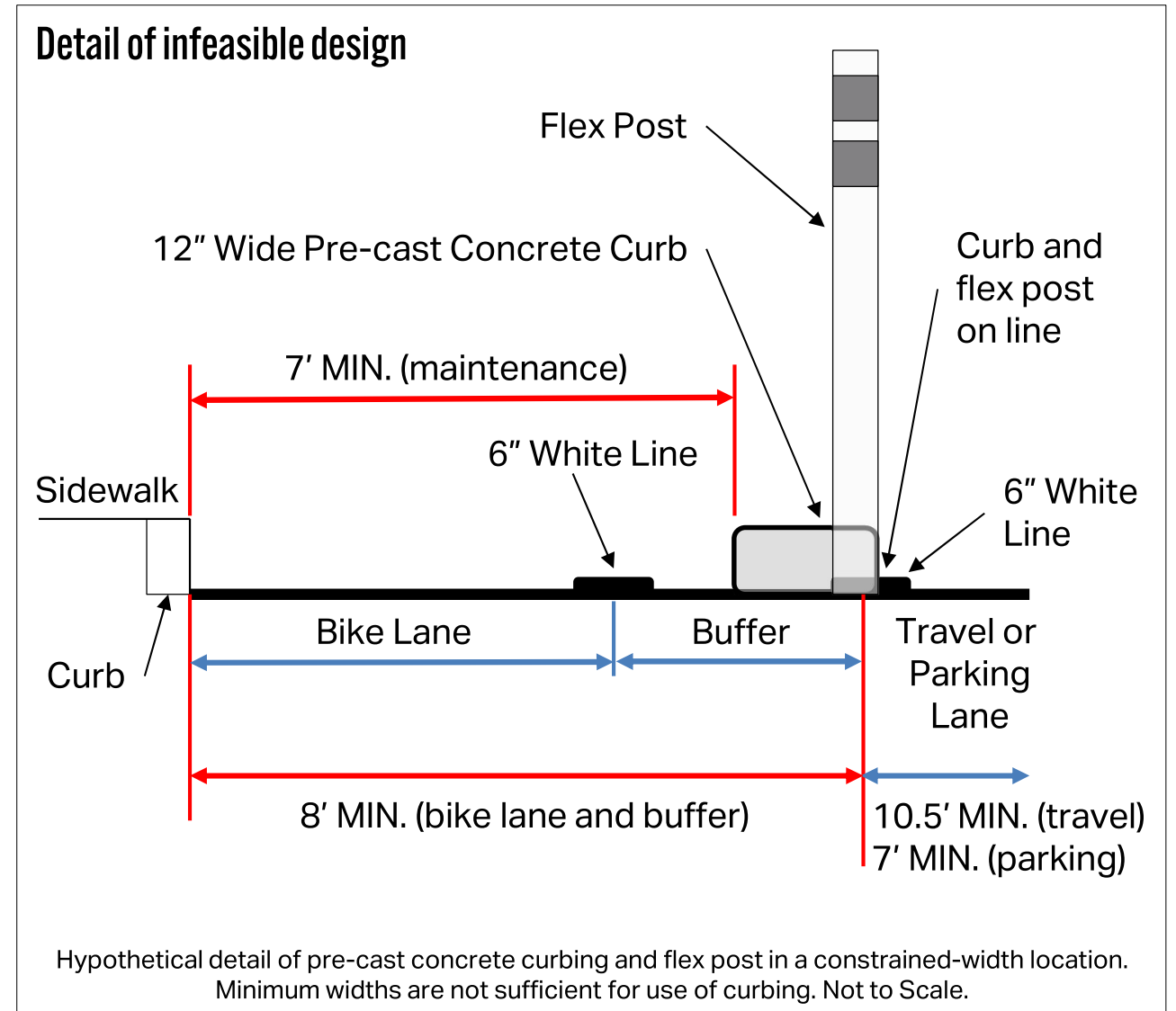
Rending of Brattle Street using a similar approach to flex post and barrier placement. Shows an older arrangement that had more flex posts than currently proposed.

Constrained-Width Section

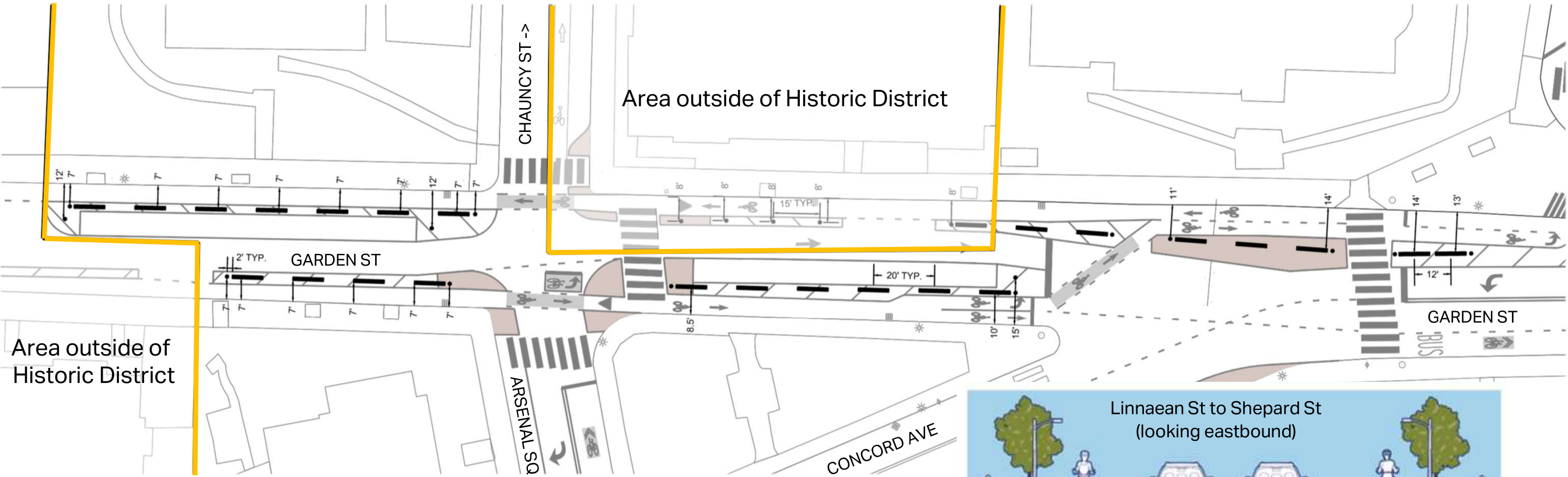
Between Concord Avenue and Waterhouse Street

Lane widths at minimums in this section. Space is too narrow for curbing.

- Outer edge of curb and flex post would need to be on the white edge line
- Challenging for drivers to see edge of driving area without visible white line
- Not enough clearance for trucks, buses, and service vehicles (plows, etc.)
- Difficult to park with pre-cast curb immediately adjacent to parking lane
- One poorly parked vehicle could block two-way travel
- Increased risk of curb being struck and dislodged



Flex Post and Curb Layout: Chauncy St to Concord Ave

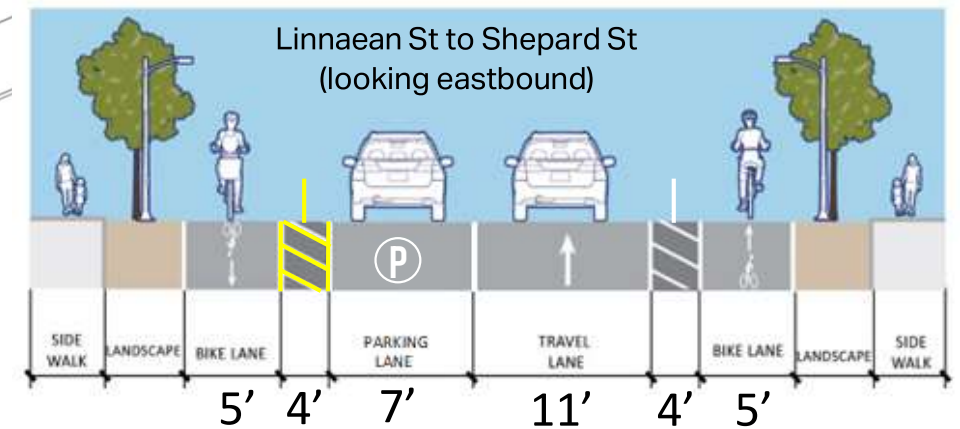


Area outside of Historic District

Area outside of Historic District

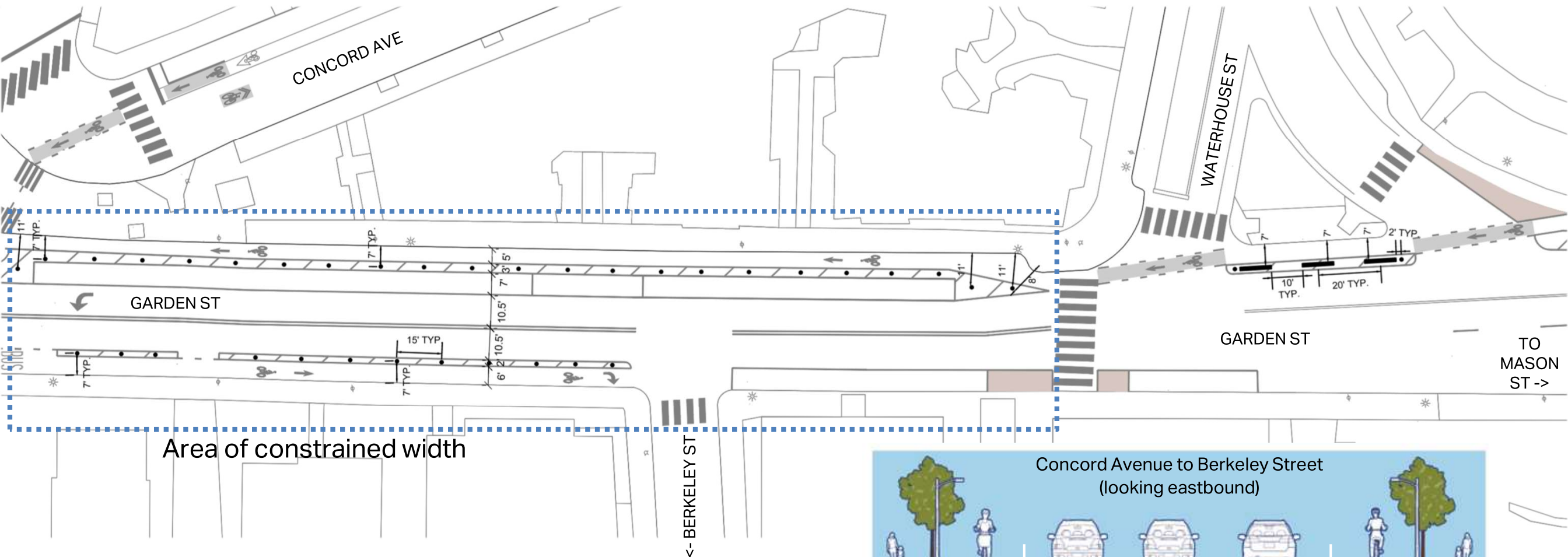
Key

- Pre-cast concrete curb
- Flex post

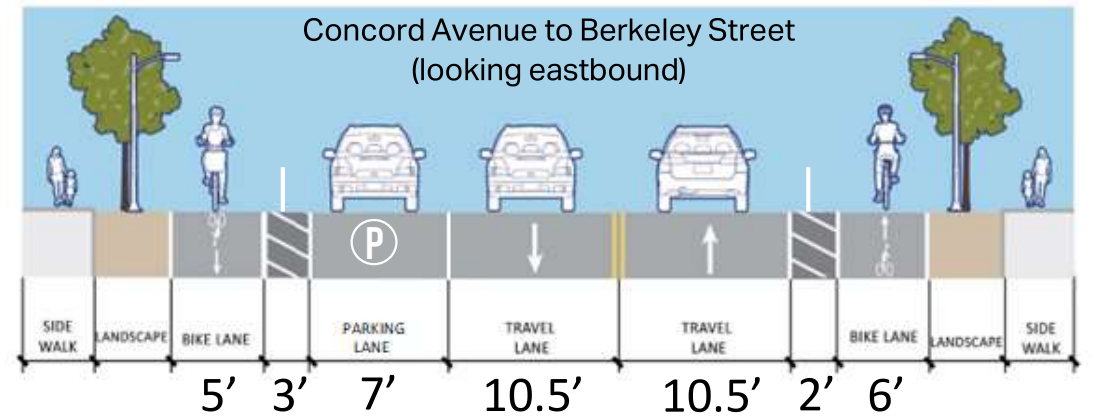


(parking is on the right side between Chauncy St and Concord Ave)

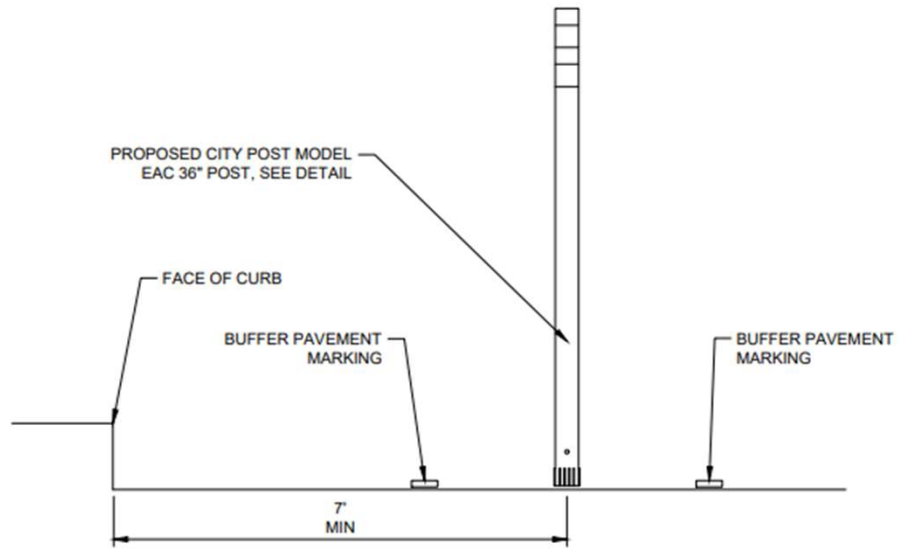
Flex Post and Curb Layout: Concord Ave to Berkeley St/Mason St



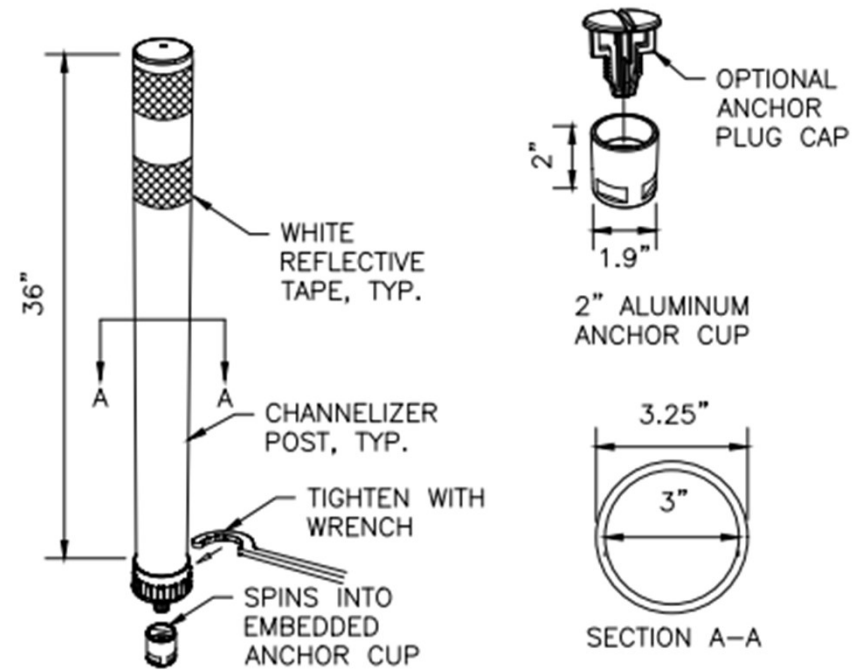
- Key
- Pre-cast concrete curb
 - Flex post



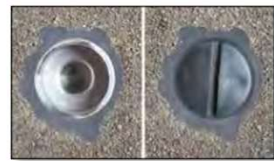
Flexible Delineator Post Detail



TYPICAL LATERAL DISTANCE OF FLEXPOST FROM CURB
(UNLESS OTHERWISE NOTED ON PLANS)
NOT TO SCALE



36" WHITE CORED
BASE FLEXPOST DETAIL
NOT TO SCALE

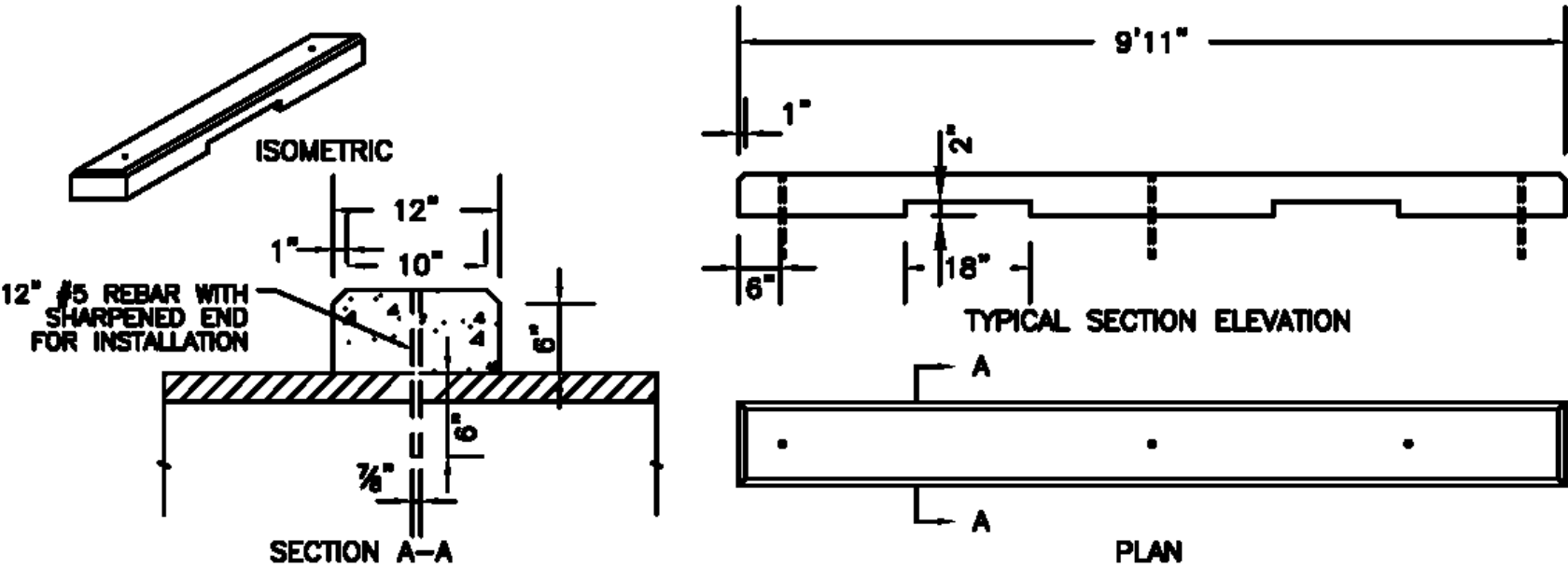


FLEXPOST NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DIMENSIONS, MATERIALS, AND ATTACHMENTS MAY VARY BETWEEN MANUFACTURERS.
3. COLOR OF POST SHALL MATCH COLOR OF APPLICABLE EDGE LINE.

CITY POST MODEL EAC 36" POST
NOT TO SCALE

Pre-cast Concrete Curbing Detail



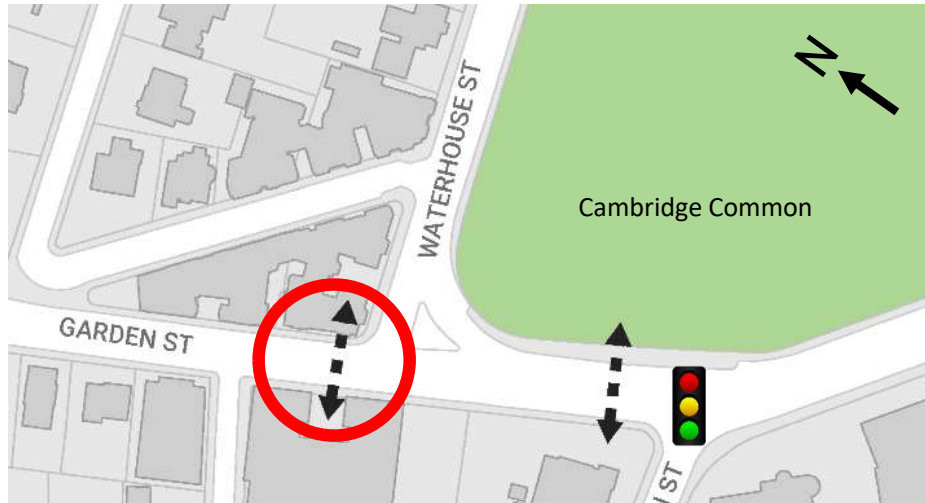
NOTES:

- 1. CONCRETE TO BE 5000 PSI, SULFATE RESISTANT WITH FIBER REINFORCEMENT.
- 2. UNITS TO BE SECURED USING #5 CORROSION RESISTANT REBAR HAND DRIVEN TO DEPTHS INDICATED.

**12" PRECAST CONCRETE CURBING FOR BICYCLE LANES
(NOT TO SCALE)**

Design based on City of Boston specifications

Proposed Traffic Signal Equipment



Rectangular Rapid Flashing Beacon (RRFB) to be installed at the crosswalk across Garden St at Waterhouse St

- Gloss black finish
- Matches others in City
- Detailed specs in application packet



Photo: Example of RRFB on Albany Street at Portland Street

Proposed Curbing and Sidewalk Modifications

Berkeley St at Garden St (looking south)



Proposed replacement and or realignment of curb to meet accessibility requirements

Proposed sidewalk widening for new accessible/disability parking space (approx. 20ft)

Proposed widening of concrete sidewalk along Berkeley St near Garden St into grass planting strip

- Accommodates conversion of part of loading zone into new accessible/disability parking space
- Minor curb adjustment work (raise sunken/ misaligned/ missing pieces)
- Concrete sidewalk would be the length of the space (~20ft) and be contained to the existing planting strip.
- Match existing materials



— CITY POST® —
EAC
 Embedded Anchor Cup

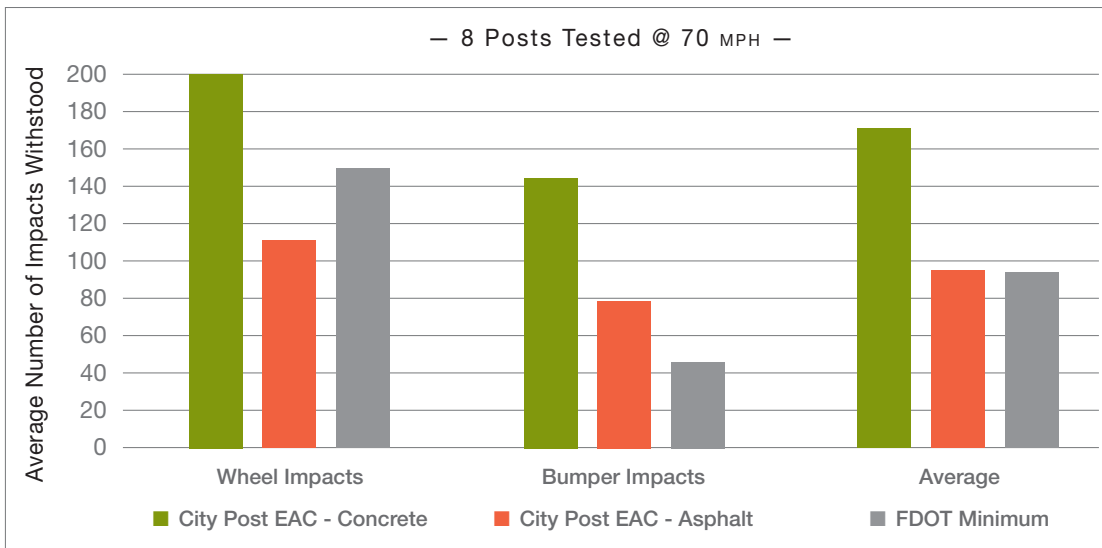
The City Post® Model EAC is the post that jumpstarted the ultra high performance / high durability market for flexible channelizers. Introduced in 2012, there was nothing on the market with the performance or versatility of this post, designed and built purposefully to be easily replaceable.

The City Post EAC provides the cleanest, most compact look and smallest footprint available today in the market with the largest target value. It looks great and is extremely durable.



The anchor cup allows for easy removal of the channelizer if needed. Anchor cups are mounted below the roadway grade and feature an optional removable cap. The caps keep debris out of the cup when posts are removed for winter plowing operations, or in areas where parades or festivals take place. This post is the ideal answer for installations where occasional removal is required or desirable.

The City Post EAC is a fully tested and certified channelizer. Testing was conducted at Texas A&M Transportation Institute at 70 MPH speeds to 200 Impacts. The results are shown below:



Certifications / Approvals

- EN 13422 Certified
- EN 12767 Certified
- MUTCD - compliant
- NCHRP 350 accepted
- FDOT DEV993 approved on Concrete
- MASH-16 - compliant

Important Features / Benefits

- Solid one-piece design for durability
- No pins or pin holes to focus stress leading to failure
- 360° visibility
- Smallest footprint on the market
- Diameter 3.25" for greater visibility
- Easy replacement of post once installed
- Always tested with a cap installed
- Dome Cap available for a more polished look



Applications for the City Post abound. We have yet to find a location where the City Post does not work, whether in high speed or low speed environments or while enduring light or heavy, crushing loads. The City Post continues to perform, time and time again.



	<p>www.pexco.com/traffic 877-335-4638 Intl +1-253-284-8000 hwysales@pexco.com</p>		<p>Scan to access <i>Pexco's Traffic Safety Channel</i> on YouTube</p>		<p>Click on CADdetails link on our website for specifications & technical drawings</p>
			<p>Davidson Traffic Control Products</p>		



217R Main St, North Reading, MA 01864
PH: (781) 246-5555, FAX: (781) 246-5554

June 8, 2021

Dana Benjamin
Traffic Engineer
City of Cambridge
344 Broadway
Cambridge, MA 02139

RE: Furnish and Install Rapid Rectangular Flashing Beacons File#9607

- Submittal Number: 1

Dear Ms. Benjamin,

Please see attached for the following material submittals for the above referenced project. Please respond with approvals or comments for each item. The orders for the material shall remain on hold pending your written approval.

ITEM #	Description	Manufacturer	Part #
-	RRFB Equipment	Various (see attached)	Various (see attached)
-	Pre-Cast Traffic Signal Foundation	Arrow Concrete	20"x20" Signal Post

Sincerely,

Nathan L. Berube

Nathan Berube
Pine Ridge Technologies, Inc.

Please note: Pine Ridge Technologies, Inc. (PRT) is not a designer nor engineer, nor does it employ or retain engineers, architects or design professionals on projects. Thus, this submittal is furnished without the input or assistance of any such design professionals. PRT's role is to furnish and install work in strict accordance with the owner's architect and/or engineer's design as established by the approval of this submittal. PRT will perform the work in strict reliance upon the owner's approval of this submittal.



Highway Tech Signal Equipment Sales, Inc

Traffic and Signal Equipment Submittal Checklist

H.T. Project Reference #11499 : Cambridge #9607 Solar Dual Sided RRFBs

Customer: Pine Ridge Technologies, Inc. PO #21600-001

Date: 6/8/2021

Rectangular Rapid
Flashing Beacons

Item 1 Rectangular Rapid Flashing Beacons Submittal

Total Qty	Unit	Item Description	Item 1
9	EA	Pelco 15' Aluminum Pedestal Pole with Square Frangable Base, Gloss Black Finish	9
10	EA	JSF Series AB-9400, Solar Powered, Dual Sided RRFB, 3"x7" LEDs, Gloss Black	10
20	EA	W11-2 Pedestrian Crossing Sign, 30"x30", Fluorescent Yellow-Green	20
10	EA	W16-7P Left Arrow Sign, 24" x 12", Fluorescent Yellow-Green	10
10	EA	W16-7P Right Arrow Sign, 24" x 12", Fluorescent Yellow-Green	10
10	EA	Campbell Guardian ADA compliant APS Push Button with 5"x7.75" R10-25 "Push Button to Turn on Warning Lights" Sign, Yellow Finish, Voice Message: "Yellow Lights are Flashing", "Wait"	10



Pedestal Poles

Pelco offers aluminum, iron, and plastic bases in various sizes as well as poles in aluminum and steel. Pelco's cast aluminum square base is FHWA certified and meets or exceeds AASHTO break-away requirements. Plastic replacement doors offer an economical way to deter vandalism.



1



2



3



1. Pedestal Pole, 4" Sch 40, Spun Alum No Threads

PB-5101 - Length - Coating

PNC=Process No Color
P__=Paint

2. Pedestal Pole, 4"- 8 NPT Sch 40, Spun Alum w/ Pelican ID

PB-5100 - 15' Length - Gloss Black Coating

PNC=Process No Color
P__=Paint

Pedestal Pole, 4"- 8 NPT Sch 80, Spun Alum

PB-5102 - Length - Coating

PNC=Process No Color
P__=Paint

Pedestal Pole, 4"- 8 NPT Sch 40, Steel

PB-5201 - Length - Coating

P__=Paint

Pedestal Pole, 4"- 8 NPT Sch 40, Galv Steel

PB-5200 - Length - GLV - Coating

Blank=Galvanized Only
P__=Paint over Galvanized

3. Pedestal Pole, Welded, 4"- 8 NPT w/ 5-1/2" Nipple Length, Steel

PB-5219 - Length - Coating

GLV=Galvanized
P__=Paint

Note: 1. Standard poles are typically sold in 1 foot increments. For other lengths contact sales.
2. See Reference Section for available paint colors.

Square Pedestal Bases Aluminum



Pelco offers aluminum, iron, and plastic bases in various sizes as well as poles in aluminum and steel. Pelco's PB-5334 and PB-5335 cast aluminum square bases are FHWA certified and meets or exceeds AASHTO break-away requirements. Plastic replacement doors offer an economical way to deter vandalism.

Square Base Assembly, Alum w/ Alum Door



PB-5334	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	Gloss Black
		Door		Set Screws in Collar		Grounding Lug		Coating		
		NL=No Logo Blank=Pelco Logo		1S=1 Hex Bolt 3S=3 Set Screws Blank=None		GL=Ground Lug Blank=None		PNC=Process No Color P__=Paint		

Square Base Assembly, Alum w/ Plastic Door

PB-5335	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	PNC
		Door		Set Screws in Collar		Grounding Lug		
		NL=No Logo Blank=Pelco Logo		1S=1 Hex Bolt 3S=3 Set Screws Blank=None		GL=Ground Lug Blank=None		

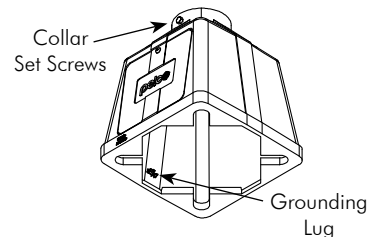
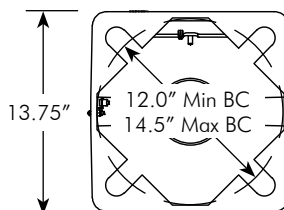
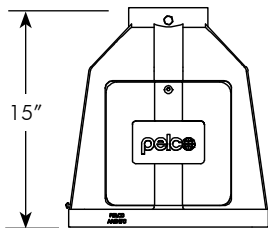
Square Base Assembly, Alum Heat Treated w/ Alum Door



PB-5336	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	<input type="checkbox"/>
		Door		Set Screws in Collar		Grounding Lug		Coating
		NL=No Logo Blank=Pelco Logo		1S=1 Hex Bolt 3S=3 Set Screws Blank=None		GL=Ground Lug Blank=None		PNC=Process No Color P__=Paint

Square Base Assembly, Alum Heat Treated w/ Plastic Door

PB-5337	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	PNC
		Door		Set Screws in Collar		Grounding Lug		
		NL=No Logo Blank=Pelco Logo		1S=1 Hex Bolt 3S=3 Set Screws Blank=None		GL=Ground Lug Blank=None		



- Note: 1. PB-5334 and PB-5335 aluminum square bases above are available with AASHTO certifications and FHWA approval. Please specify by adding the Certification Part No. C-1001 in addition to the base part number.
2. All assemblies are supplied standard with stainless fasteners.
3. See Reference Section for available paint colors.





AB-9407-40W

RRFB Rectangular Rapid Flashing Beacon



SELF-CONTAINED 40 WATT SOLAR ENGINE

	Solar Cell - Monocrystalline Silicon Rated Power (Pmp) 40 Watts Rated Voltage (Vmp) 18 VDC Rated Current (Imp) 2.2 A Certifications: CE and TUV certified
Solar Angle	44° (Standard)
Standard Battery Bank	2 x AGM 12V, 18 Ah - UL Recognized, field replaceable
Cold Weather Battery Bank Option	2 x AGM 12V, 16 Ah - UL Recognized, field replaceable
Solar Engine Housing Material	A5052 Sheet Aluminum (Enclosure) 6061-T6 Aluminum (Mount)
Solar Engine Dimensions	30.875" x 13.25" x 4.5" (78.4 x 33.7 x 11.5cm)*

POWER MANAGEMENT

Rated Usage	300 cycles per day, 25 second activation
Charged Capacity	Up to 30 days at rated usage
Automatic Light Control (ALC)	Various stages of brightness for different solar conditions and battery levels

SYSTEM PROTECTION

Low Voltage Disconnect	9.5 VDC
Over Current Protection	1.8 Amp PTC auto-reset fuse
Self Monitoring	Visual notification of sub-optimal operation

DUAL RRF LIGHT BAR

Standard Followed	ITE VTCSH-STD 2005
RRFB Housing Material	A5052 Sheet Aluminum (Lightbar) 6061-T6 Aluminum (Mount)
LED Size	3" x 7" (76.2 x 177.8mm)* x two per lightbar
Tell Tale LED Size	1" x 2" (25.5 x 51mm)*
Housing Dimensions	24" x 3.0625" x 3.75" (61cm x 7.75cm x 9.5cm)*
Std. LED Color Options	Amber or Red (custom colors available)
RRFB Mount	Universal Jaw Mount Telespar Jaw Mount Side Mount Bracket

COMMUNICATION

Band of Operation	ISM Band (902-928 MHz)
Compliance	FCC and IC Compliant
Range	Up to 0.5 miles (800 m) with line of sight
Network Addresses	16 unique addresses to avoid interference between multiple crosswalk locations
Compatibility	Can communicate with other AB units

SYSTEM OPTIONS

LED & Solar Engine Housing Colors	Yellow, Black or Green (custom colors available)
Mounting Options	Round Pole Collars: 2.5", 3.5", 5" and 6" Telespar Mount: 2" Square Wood Post Mount: 4" x 4", 6" x 6" Side Mount Bracket: 12", 18" and custom lengths available Custom Mounts Available



SYSTEM OVERVIEW

Compliance	FHWA MUTCD compliant
Standard (Std.) Operation	Pedestrian Activated via push button or JSFT remote transmitters
Flash Pattern Options	RRFB Pattern (WW + S) FHWA IA-21 Approved
Activation Duration	Variable from 5 seconds to 4 hours
Std. Operating Temperature	14°F to +165°F (-10°C to +74°C)
Cold Weather Upgrade Option	-40°F to +176°F (-40°C to +80°C)
System Voltage	12 VDC
Packaged Dimensions	36" x 18" x 18" @ 79LBS (91.4 x 45.7 x 45.7 @ 36KG)*

SIGNAL HEAD AND SOLAR ENGINE AVAILABLE WITH STANDARD COLOURS; YELLOW, BLACK, OR GREEN. CUSTOM COLOURS ARE ALWAYS AVAILABLE.



SALES

Toll-Free 1.800.990.2454
sales@jsftech.com

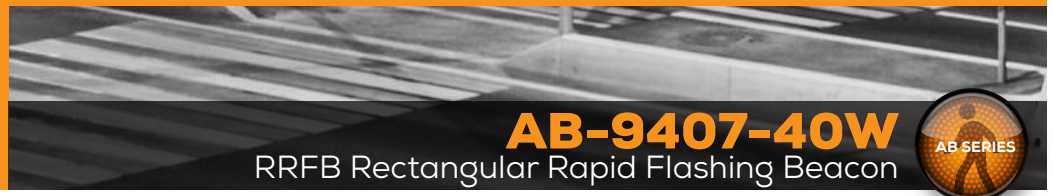
SUPPORT

Toll-Free 1.800.990.2454
support@jsftech.com

ADDRESS

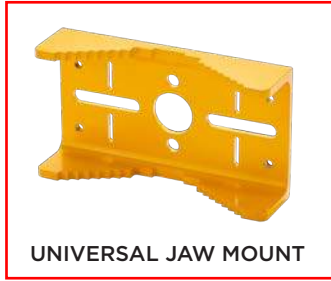
6582 Bryn Road,
Victoria, BC V8M 1X6

WARRANTY 5-year Limited Warranty for defects in workmanship and materials (excludes batteries and vandalism)



AB-9407-40W

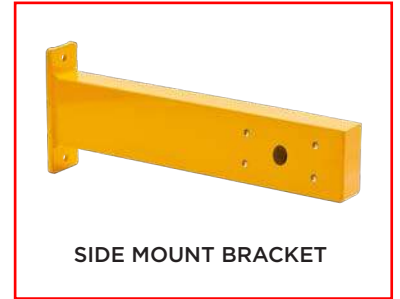
RRFB Rectangular Rapid Flashing Beacon



UNIVERSAL JAW MOUNT



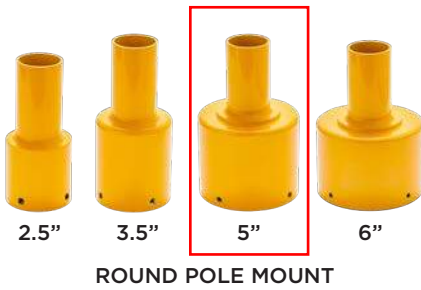
TELESPAR JAW MOUNT



SIDE MOUNT BRACKET

RRFB LIGHTBAR MOUNTING

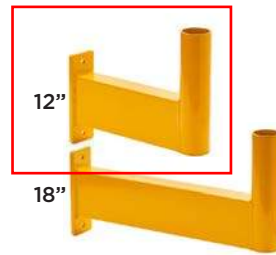
Color Black to be Supplied



ROUND POLE MOUNT



WOOD SADDLE MOUNT

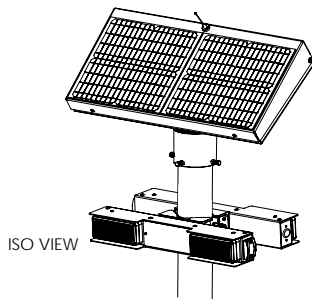


MOUNTING ARMS
(CUSTOM LENGTHS AVAILABLE)

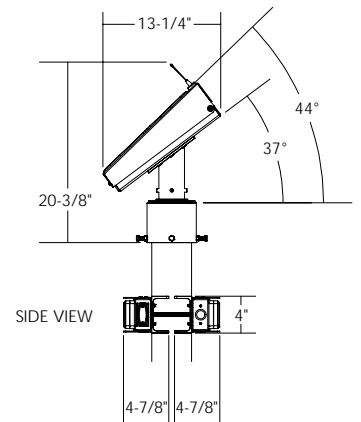
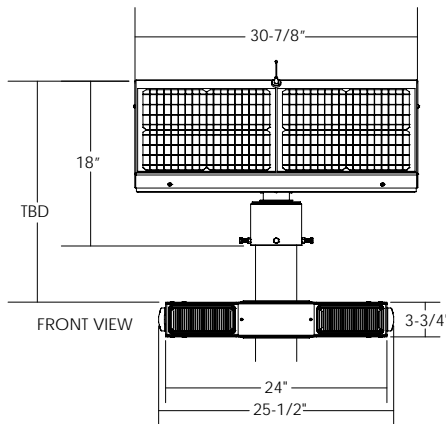


TELESPAR MOUNT

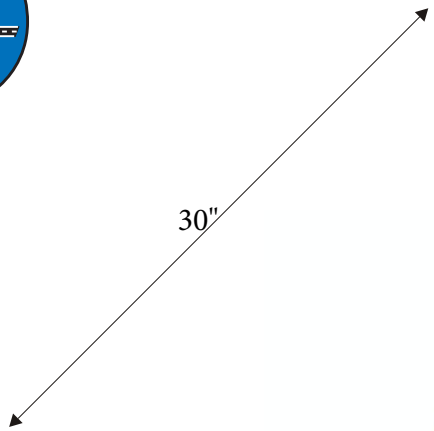
SOLAR ENGINE MOUNTING OPTIONS



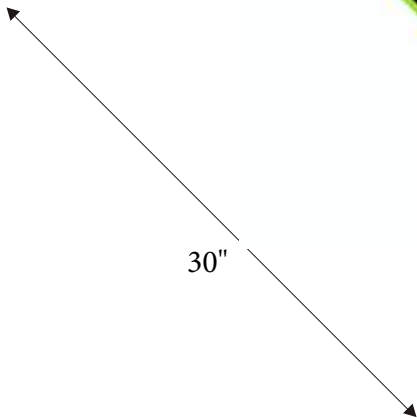
AB-9407-40W



SYSTEM DRAWINGS



30"



30"

30" x 30" W11-2

Pedestrian Crossing Sign

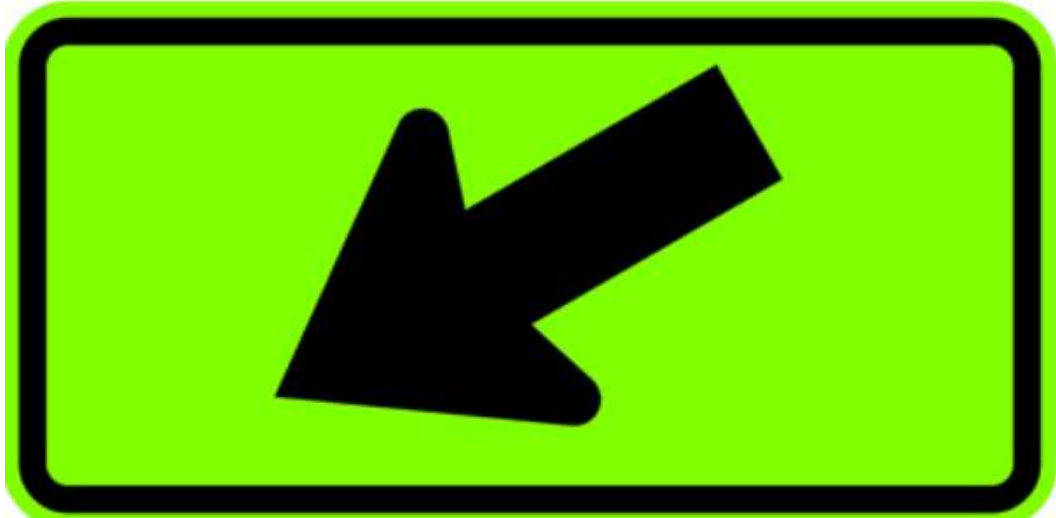
COLORS: SYMBOL - BLACK

BACKGROUND – Fluorescent Yellow/Green





24"



12"

24" x 12"

W16-7pL

LEFT DIAGONAL ARROW PLAQUE

24"



12"

24" x 12"

W16-7pR

RIGHT DIAGONAL ARROW PLAQUE

COLORS: SYMBOL— BLACK

BACKGROUND— Fluorescent Yellow - Green

2-126



INNOVATING A SAFER WORLD

Improving
Navigation
and Crossings,
Campbell
Company's
**ultramodern
APS technology**
delivers
**safety,
simplicity,
reliability
and
cost effectiveness.**



Color Yellow to be Supplied

- Complete APS solution
- Simple & flexible configuration
- No software to purchase
- Convert Pre-timed Intersection into fully actuated
- Independent station (4 wire)
- Ped count/ Call data



Highway Tech
Signal Equipment Sales, Inc.
(207) 375-8248



Pedestrians are finding it more challenging to cross safely at signalized intersections. The Guardian provides important cues to assist all pedestrians to cross the intersection safely by providing audible, tactile, and visual indications at the crosswalk. A locator tone tells a pedestrian that the crossing is equipped with APS and where it can be found. The acknowledgement tone and visual LED indication accompany a pedestrian call. An extended press provides specific intersection information and access to additional functions. The walk tone or message is accompanied by a vibro-tactile indication during the visual walk display. Optional clearance phase indications may provide additional information to the pedestrian where appropriate. Includes Ambient Gain Control (AGC).

KEY BENEFITS & FEATURES

- Independent Locations
- USB Interface
- Ped Count / Call data
- Data Collection
- 4-wire Interface
- Simple Menu Utility
- 1:1 Ped Display to AGPS
- Night Mode Volume
- Configuration Templates
- NEMA TS 2 Certified
- No devices in cabinet
- Sound Directionality
- Event Tracking Log
- Meets MUTCD Guidelines
- Simple & easy install
- Station Angle Adjust

Voice Message: "Yellow Lights are Flashing" Wait"

DESIGNED FOR THE AGENCY

- Designed for flexibility and ease of use.
- Each station can be configured at the factory or in the field. Software with GUI interfaces guide technicians through programming and configurations with "roll-over" help menus.
- Night mode volume controls with Quiet Signals Technology. Accommodate residential and evening business.
- Agencies can identify specific parameters for residential, retail, and industrial areas and save them as a configuration templates.
- Campbell's Simple Field Programmer (SFP) hand held configurator allows one button press configuration.
- Designed to also work properly with:
 - RRFBs, Solar Mid-Block crossings, Passive pedestrian detectors, Non-pedestrian actuated downtown core areas.

INSTALLATION

Ready to install, out of the box, a four conductor cable connects to the Signal Power Interface (SPI) in the pedestrian signal head. Aesthetically pleasing extension brackets and mounting hardware are available allowing stations to be mounted within accessibility guidelines.

CONFIGURATION	TYPE
Interface	Windows Utility
Audio File Update	USB
Data Format	CSV
Firmware Upgrade	USB

PARAMETER (SPI)	RATING
Input voltage	85 -135 VAC 220 VAC
Output voltage	12V DC
Connection	4 wire
Dimension	2.75" x 3.5" x 1.875"



PARAMETER	Color Yellow
BS Size	5 x 13.75 x 1.75"
BS Weight	7.0 lbs
400	5 X 9" Rectangle Insert
Power (rest)	1/3 watt @ 12 VDC
Current (rest)	25 mA @ 12 VDC
Max Power	8.4 W
Switch life	100 x 10 ⁶
Operational force	< 3lbf
Operating Temp	-40C to +85C
Max Volume	100dB @ 1m
AGC Range	Adjustable 0 – 5dB over ambient
Audio Output	Default plus 4 options
LED	3000 mcd, 160 degree viewing angle
Volume control	Fully adjustable, independent channels
Reporting	Pedestrian Usage, Event Logging, System Evaluation
Synchronicity	Beaconing, Group Walk
Night Mode	Volume, Recall, or complete configuration.
Selectable Options (options selected via lap top USB connection via a menu drive utility)	EP APS, Vib Pulse Call, Recall, Beaconing, Group Walk, Walk time out, Locator Tempo, EP Time, Vib Intensity
Sign Sizes	5 X 7.75", 5 X 9", 9 X 12", 9 X 15"
Warranty	3 year
TEST TYPE	COMPLIANCE
Functionality	MUTCD 4E, TAC
Transient Voltage Protection	
Mechanical Shock and Vibration	



Pedestrian Signs MUTCD Compliant



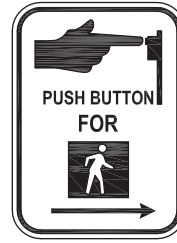
PUSH BUTTONS



SF-1085
06, 08, 09
R10-2A



SF-1013
03, 05, 06, 08, 09
R10-3
(Left Arrow)



SF-1014
03, 05, 06, 08, 09
R10-3
(Right Arrow)



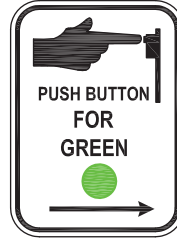
SF-1015
03, 05, 06, 08, 09
R10-3
(Double Arrow)



SF-1083
03, 04, 05,
06, 08, 09
R10-25



SF-1021
06, 08, 09
R10-4
(Left Arrow)



SF-1022
06, 08, 09
R10-4
(Right Arrow)



SF-1023
06, 08, 09
R10-4
(Double Arrow)



SF-1005
10,11,12
R10-3A
(Left Arrow)



SF-1006
10,11,12
R10-3A
(Right Arrow)



SF-1026
10,11,12
R10-4A
(Left Arrow)

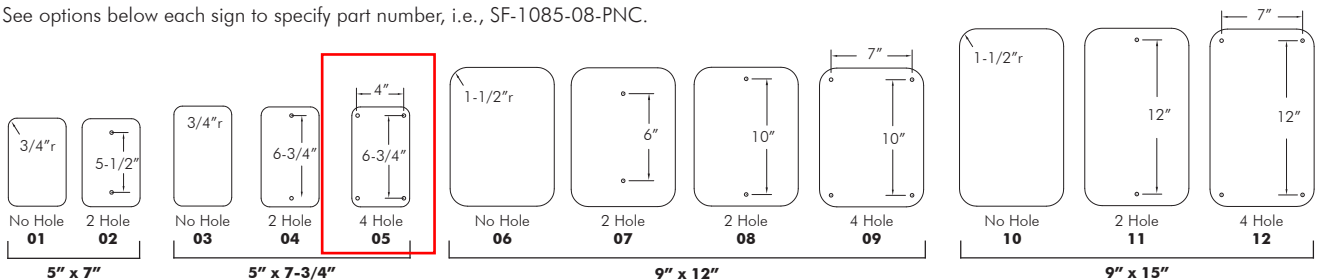


SF-1027
10,11,12
R10-4A
(Right Arrow)

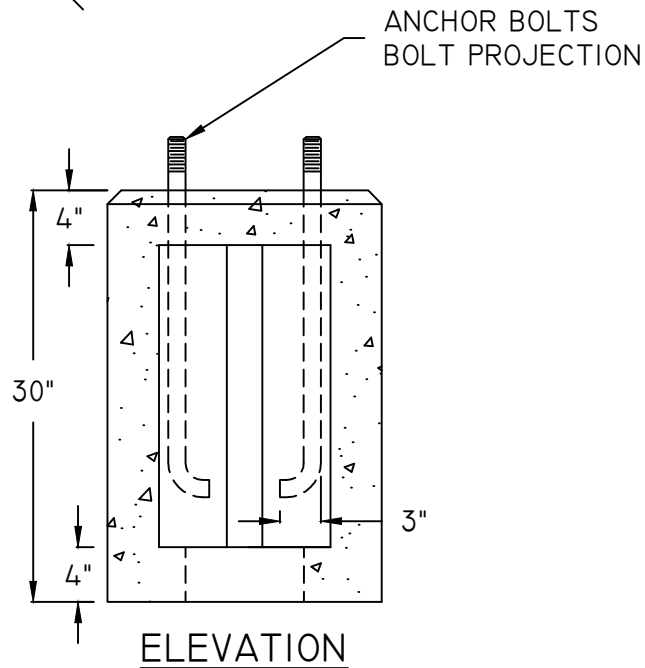
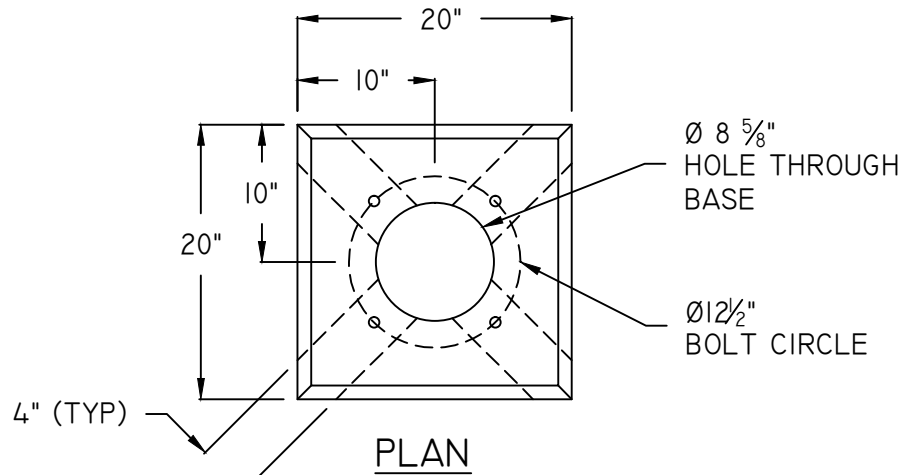
SF - - - PNC

Size &
MTG Holes

Note:
See options below each sign to specify part number, i.e., SF-1085-08-PNC.



Note: 1. Standard signs are .063" aluminum with the exception of 9" x 15" signs, which are 0.080" thick. See options available below each sign.
2. FHWA in the 2009 MUTCD has made numerous changes in both the R numbers and their related sign designs. Therefore, careful review of the current sign design and its R number should be made for every MUTCD compliant Pelco sign part number before ordering.



DESIGN NOTES:

1. CONCRETE - 5,000 PSI, 28 DAYS
2. REINFORCING STEEL CONFORMS TO LATEST ASTM A615 AND A82 OR A185 SPECS.

ANY MODIFICATIONS TO THIS DOCUMENT WITHOUT THE WRITTEN CONSENT OF ARROW CONCRETE PRODUCTS SHALL RENDER IT INVALID AND UNUSABLE.



20"x20"
SIGNAL POST

SP

SCALE: N.T.S.
DATE: 4/5/10
DRAWN: JPW
DWG # 10-16104

539 ORONOQUE ROAD
MILFORD, CONNECTICUT
(203) 301-5091

560 SALMON BROOK STREET
GRANBY, CT 06035
(860) 653-5063

21 VERGASON AVENUE
NORWICH, CONNECTICUT
(860) 889-2213