Contents

PV Stop Plus | Urban Solar

Solar lighting solution for unsheltered bus stops

Tolar Manufacturing Company

As North America's most reputable leader in the design and fabrication of award-winning street furniture, Tolar delivers uniquely designed, quality-built products on time and on budget.

This does not happen by accident and is the result of Tolar's investment in purpose driven designs, 30 years' experience in quality material sourcing and standardized fabrication processes.

Tolar is known among industry peers for its end-to-end quality control standards and requires the same performance from its Partners in solar lighting, digital displays, and intelligence software. Any interest in the following products and services should be processed through Tolar, with the primary contact below.
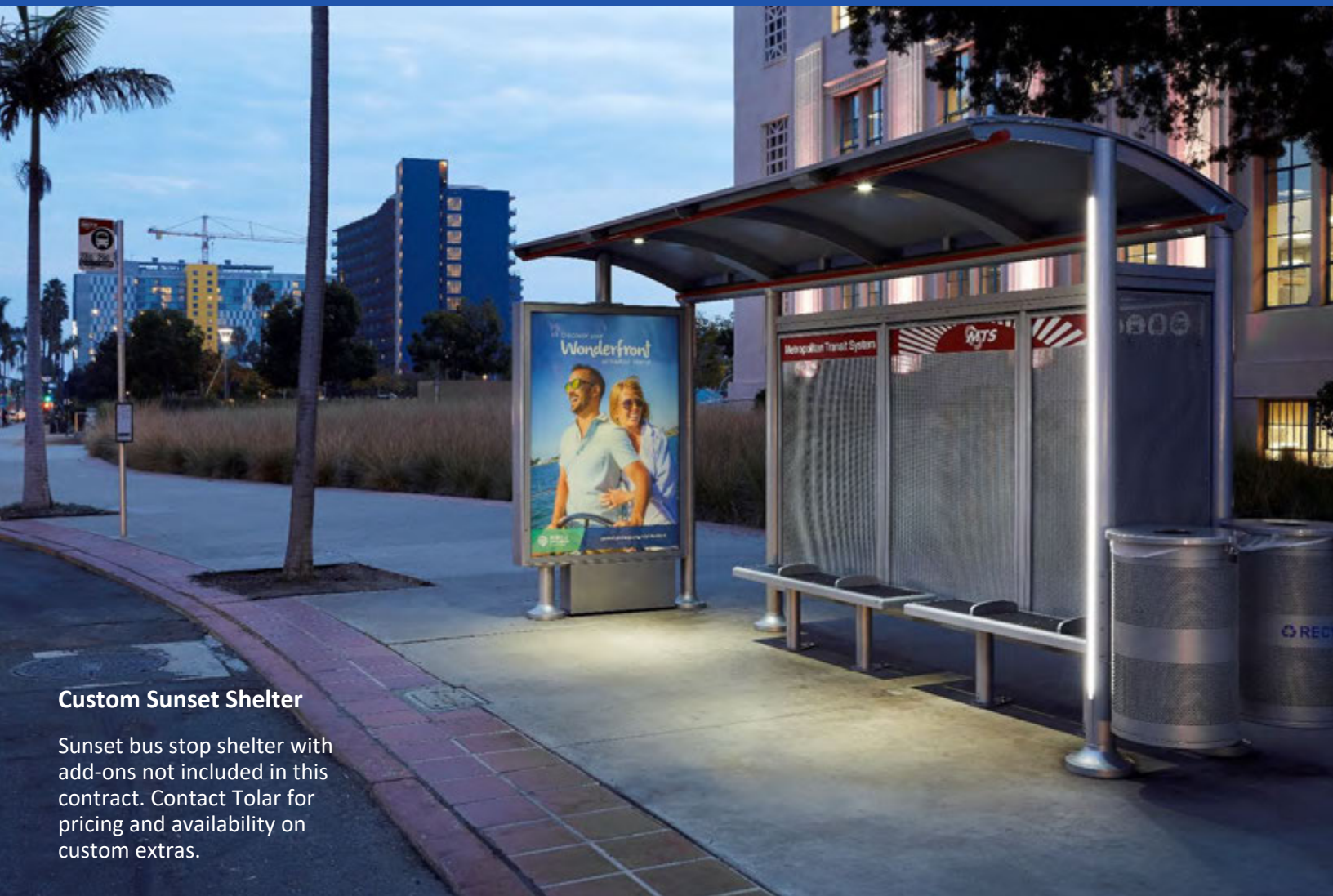
Patrick Merrick
Executive Vice-President
pmerrick@tolarmfg.com
Direct: (951) 547-8209
Office: (951) 808-0081

Custom Sunset Shelter

Sunset bus stop shelter with add-ons not included in this contract. Contact Tolar for pricing and availability on custom extras.

TOLAR

Sunset Bus Stop Shelter

The Sunset bus stop shelter offers 4.5" round aluminum columns and a highly vandal resistant design. It has been engineered with modular components for ease of replacement parts and is available in 8 ft., 12 ft., and 16 ft. lengths.

The Sunset features a cantilevered roof for optimal coverage and a minimal footprint, in either a sloped or arched roof profile. Choose from aluminum, acrylic, or polycarbonate roof glazing for a range of light translucency.

Wall glazing options include glass, perforated metal, or no glazing, and add-ons include a bench, bike rack, trash receptacle, advertising panel, map case, real-time displays and SmartLink remote monitoring.

Sunset Shelter Options

The Sunset shelter is available in two roof styles, three standard lengths, and with the add-ons listed below. All Sunset shelters and amenities are powder coated to the color of your choice.
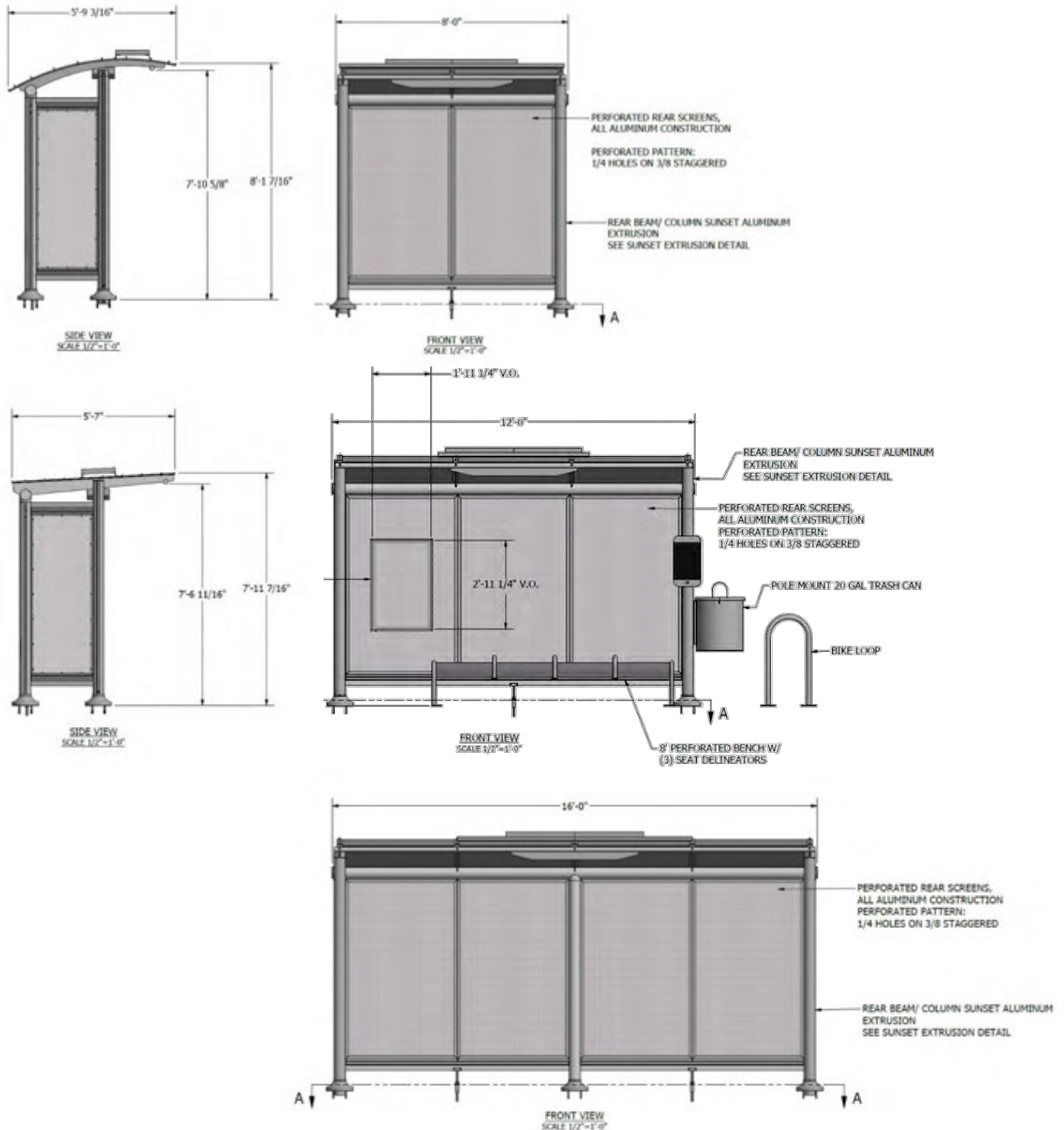
Arched Roof   Flat Sloped Roof

Available Configurations

Model	Size	Roof Style	Roof Material	Wall Glazing
Sunset	8 12 16	Arched Sloped	Aluminum Acrylic Polycarbonate	Perforated Metal Glass None

Optional Add-Ons	Page
RMS Solar Lighting System	24
Advertising Panel (solar powered or non-lit)	16
SmartLink Remote Management	31
13" E-Paper Display	26
23" E-Paper Display	27
LED Shelter Display	30
Bench	17
Trash Receptable	17
Map Case	17
Bike Rack	17

Sunset Shelter Options

The Sunset bus stop shelter is available in the two roof styles and three lengths shown below.

SIDE VIEW
SCALE 1/2"=1'-0"

FRONT VIEW
SCALE 1/2"=1'-0"

PERFORATED REAR SCREENS,
ALL ALUMINUM CONSTRUCTION

PERFORATED PATTERN:
1/4 HOLES ON 3/8 STAGGERED

REAR BEAM/ COLUMN SUNSET ALUMINUM
EXTRUSION
SEE SUNSET EXTRUSION DETAIL

SIDE VIEW
SCALE 1/2"=1'-0"

FRONT VIEW
SCALE 1/2"=1'-0"

REAR BEAM/ COLUMN SUNSET ALUMINUM
EXTRUSION
SEE SUNSET EXTRUSION DETAIL

PERFORATED REAR SCREENS,
ALL ALUMINUM CONSTRUCTION
PERFORATED PATTERN:
1/4 HOLES ON 3/8 STAGGERED

POLE MOUNT 20 GAL TRASH CAN

BIKE LOOP

8' PERFORATED BENCH W/
(3) SEAT DELINEATORS

FRONT VIEW
SCALE 1/2"=1'-0"

PERFORATED REAR SCREENS,
ALL ALUMINUM CONSTRUCTION
PERFORATED PATTERN:
1/4 HOLES ON 3/8 STAGGERED

REAR BEAM/ COLUMN SUNSET ALUMINUM
EXTRUSION
SEE SUNSET EXTRUSION DETAIL

Sunset Shelter with Arched Roof

Below is a custom Sunset shelter with an arched roof with acrylic roof glazing. MTD selected to have no wall glazing to reduce maintenance, and made possible by the mild weather in Goleta, CA.

Please contact Tolar for pricing and availability on custom extras not included in the MBTA / CALACT base contract.
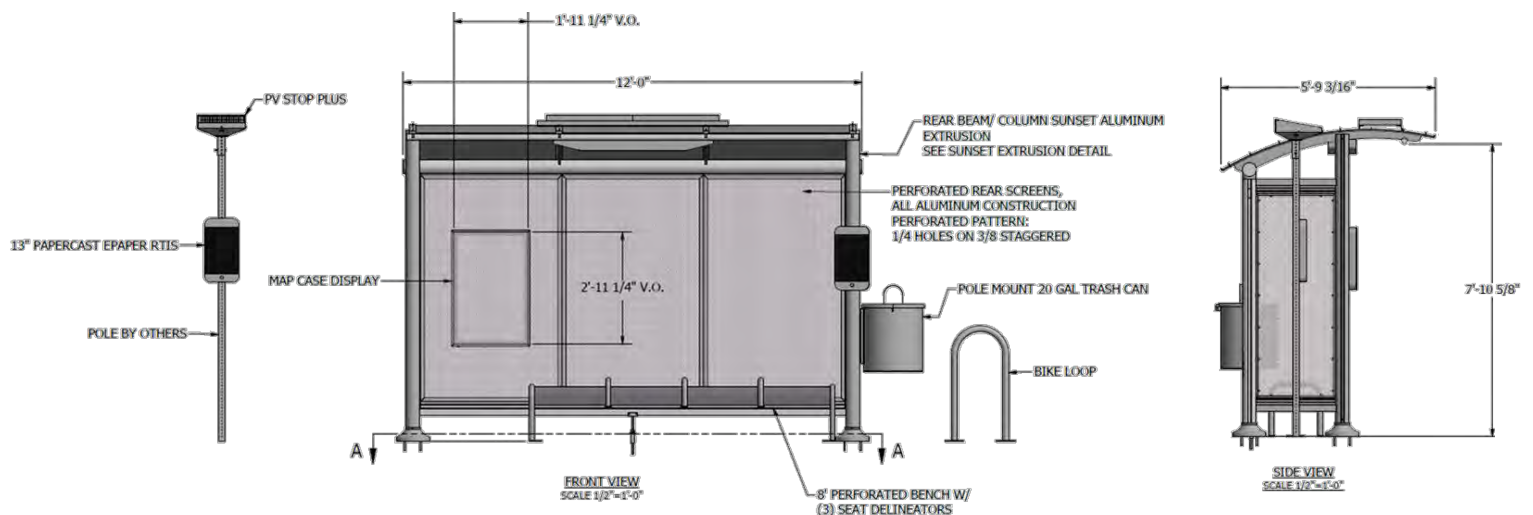
Sunset Shelter with Arched Roof

Above is the Sunset shelter with an arched roof, RMS solar lighting package, 13" e-paper real-time sign (LED is also available), map case, bench, trash receptacle, bike rack and PV Stop Plus.

The arched roof is slightly deeper than the sloped roof Sunset model but has the same roof glazing and wall glazing options. Aluminum roof glazing is recommended for optimal shade, and acrylic or polycarbonate is recommended for light translucency.

Sunset Shelter with Sloped Roof

Above is the Sunset shelter with a sloped roof, RMS solar lighting package, 13" e-paper real-time sign (LED is also available), map case, bench, trash receptacle, bike rack and PV Stop Plus.

For bus stops with high ridership, the PV Stop is a great solution for adding more illumination and signage without adding a second shelter. The PV Stop has a very small footprint and requires no trenching for power. All powered amenities can be managed by the SmartLink Management System to ensure all lighting and real-time displays are performing when needed.

Sierra Bus Stop Shelter

TOLAR
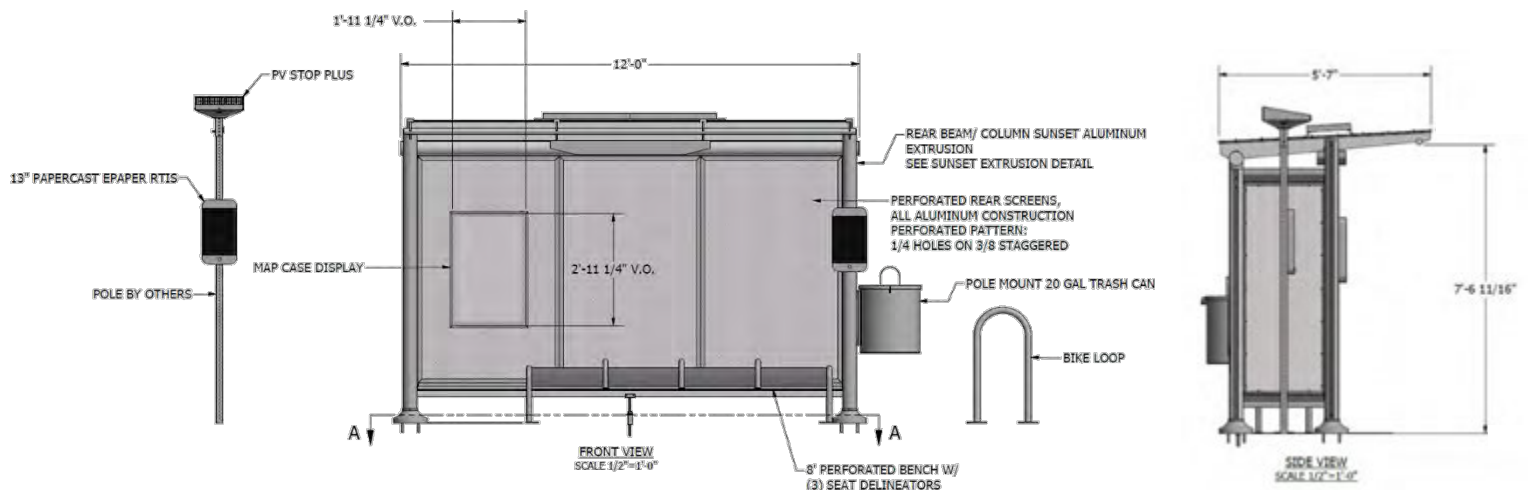
The Sunset bus stop shelter offers 3" round columns and a classic Sierra fascia. It has been engineered with modular components for ease of replacement parts, and is available in 9 ft., 13 ft., 17 ft., and 21 ft. lengths.

The Sierra features a cantilevered roof in a high peak, low peak, and dome profile with roof glazing options of aluminum, Girard tiles, or polycarbonate.

Wall glazing options include glass, perforated aluminum, or no glazing, and add-ons include a bench, bike rack, trash receptacle, advertising panel, map case, real-time displays, and SmartLink remote monitoring.

Sierra Shelter Options

The Sierra shelter is available in three roof styles, four lengths, and with the optional add-ons listed below. All Sierra shelters and amenities are powder coated to your color of choice.

High Peak Roof   Low Peak Roof   Dome Roof

Available Configurations

Model	Size	Roof Style	Roof Material	Wall Glazing
Sierra	9 13 17 21	High Peak Low Peak Dome	Aluminum Girard Tiles Polycarbonate	Perforated Metal Glass None

Optional Add-Ons	Page
RMS Solar Lighting System	24
Advertising Panel (solar powered or non-lit)	16
SmartLink Remote Management	31
13" E-Paper Display	26
23" E-Paper Display	27
LED Shelter Display	30
Bench	17
Trash Receptable	17
Map Case	17
Bike Rack	17

Sierra Shelter Options

The Sierra bus stop shelter is available in the three roof styles and four lengths shown below.
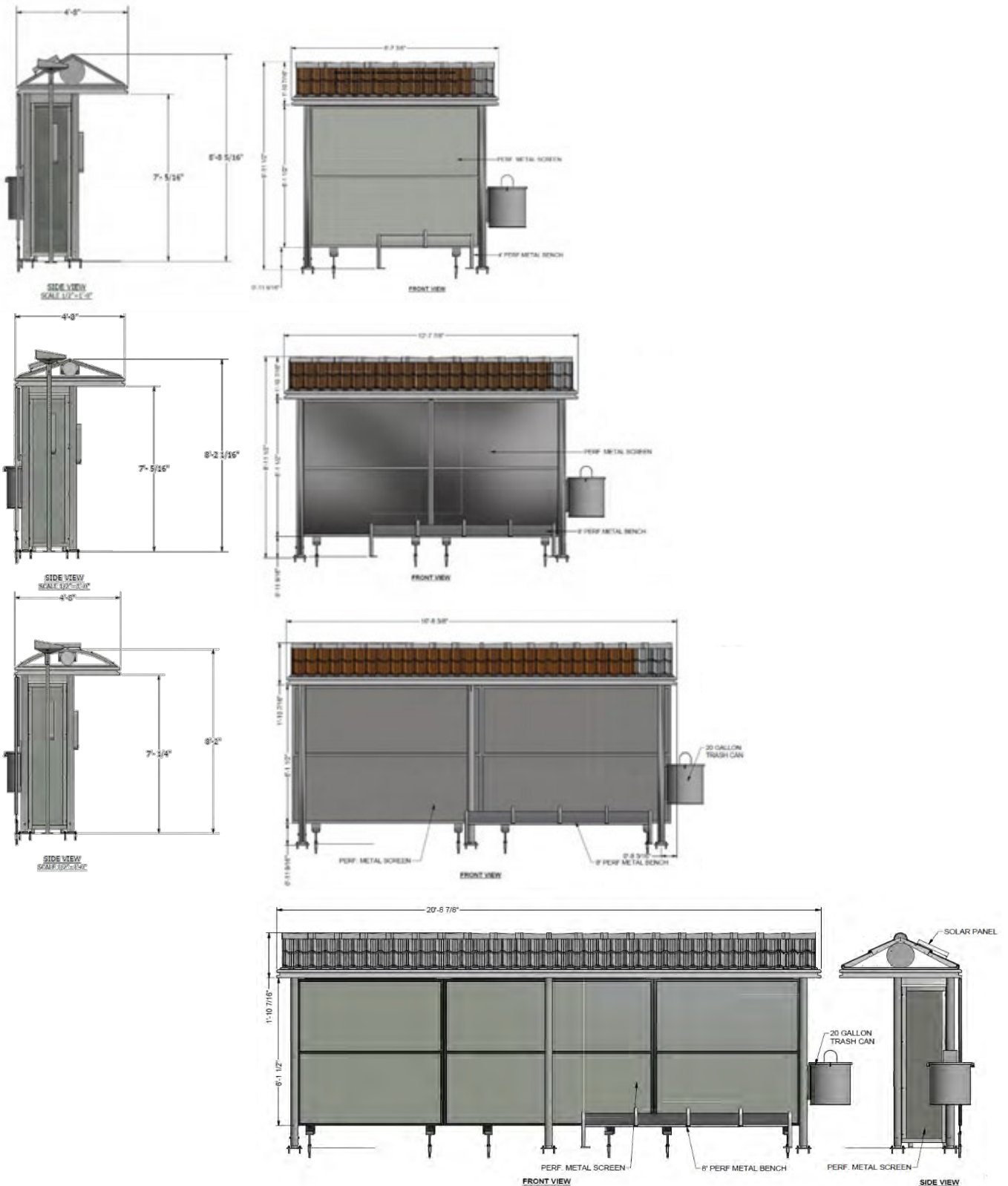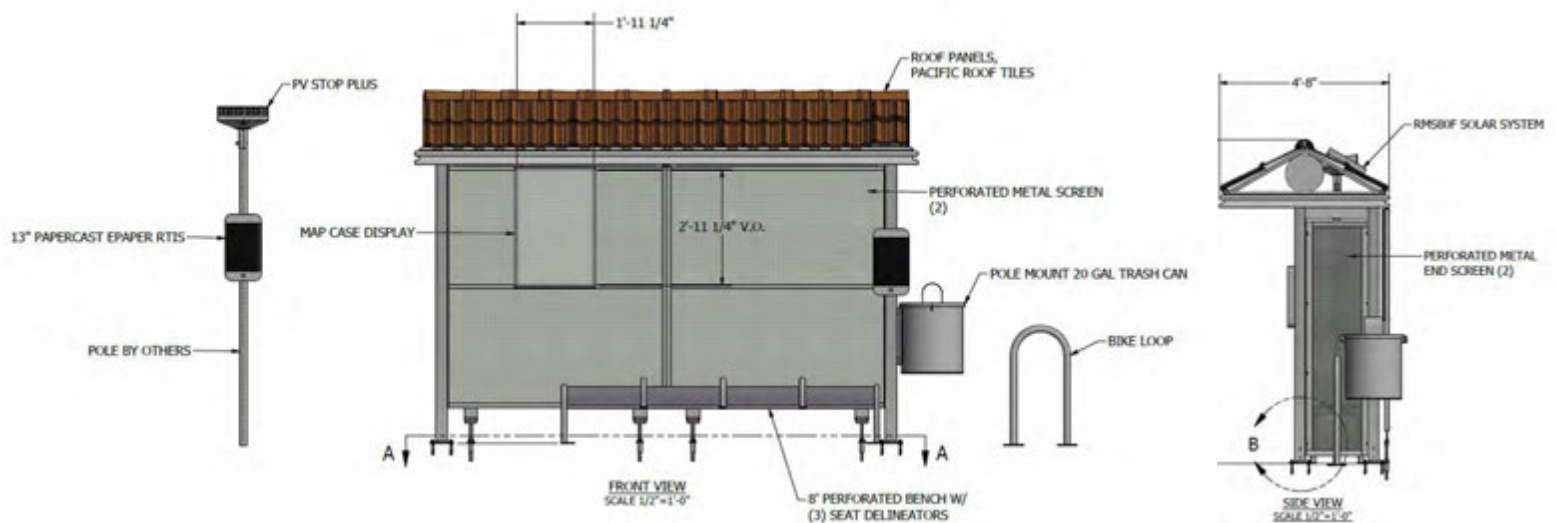
Sierra Shelter with High Peak Roof

Above is the Sierra shelter with a high peak roof with Girard tiles. Add-ons include an RMS solar lighting package, 13" e-paper real-time sign (LED is also available), map case, bench, trash receptacle, bike rack and PV Stop Plus.

All amenities can be powder coated to your color of choice for optimal branding. All solar packages and real-time displays can be remotely monitored and controlled with the SmartLink Management System.
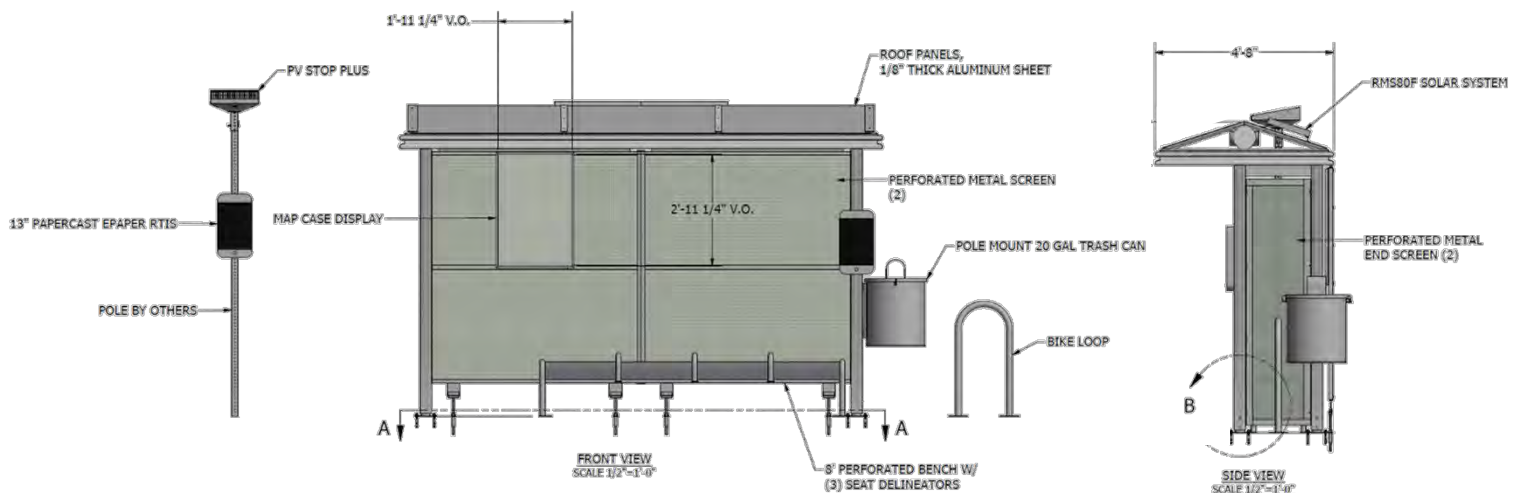
Sierra Shelter with Low Peak Roof

Above is the Sierra shelter with a low peak roof with powder coated aluminum roof glazing. Add-ons include an RMS solar lighting package, 13" e-paper real-time sign (LED is also available), map case, bench, trash receptacle, bike rack and PV Stop Plus.

All Sierra model shelters are delivered with fully assembled roofs for each of installation and have modular wall panels for easy replacement. Shown here are perforated metal wall panels, which are the most vandal resistant.

Sierra Shelter with Dome Roof

Above is the Sierra shelter with a dome roof with polycarbonate roof glazing. Add-ons include an RMS solar lighting package, 13" e-paper real-time sign (LED is also available), map case, bench, trash receptacle, bike rack and PV Stop Plus.

Acrylic and polycarbonate roof panels are available in different colors and allow for some light translucency, while still providing shade from the sun.
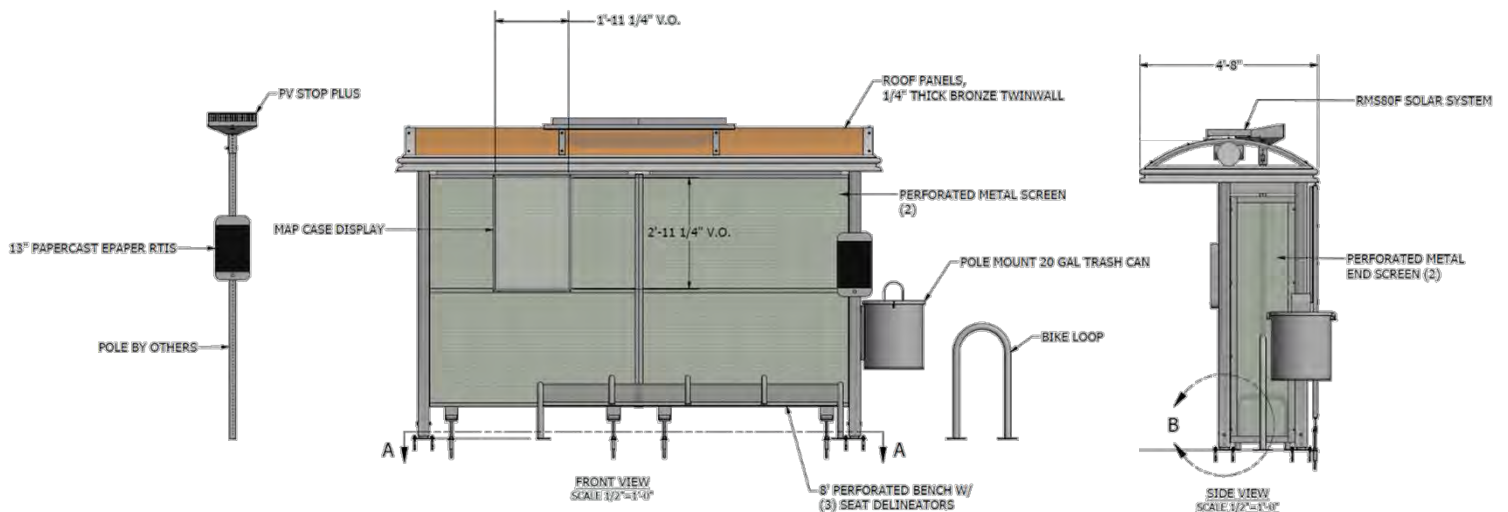
Advertising Panel

A two-sided 4 x 6 ft. advertising panel can be added to any bus stop shelter as a side wall. It can be illuminated with the RMS solar lighting package and monitored by the SmartLink Management System.

For added revenue streams, consider pairing the advertising panel with a 23" e-paper display to promote complementary marketing campaigns.
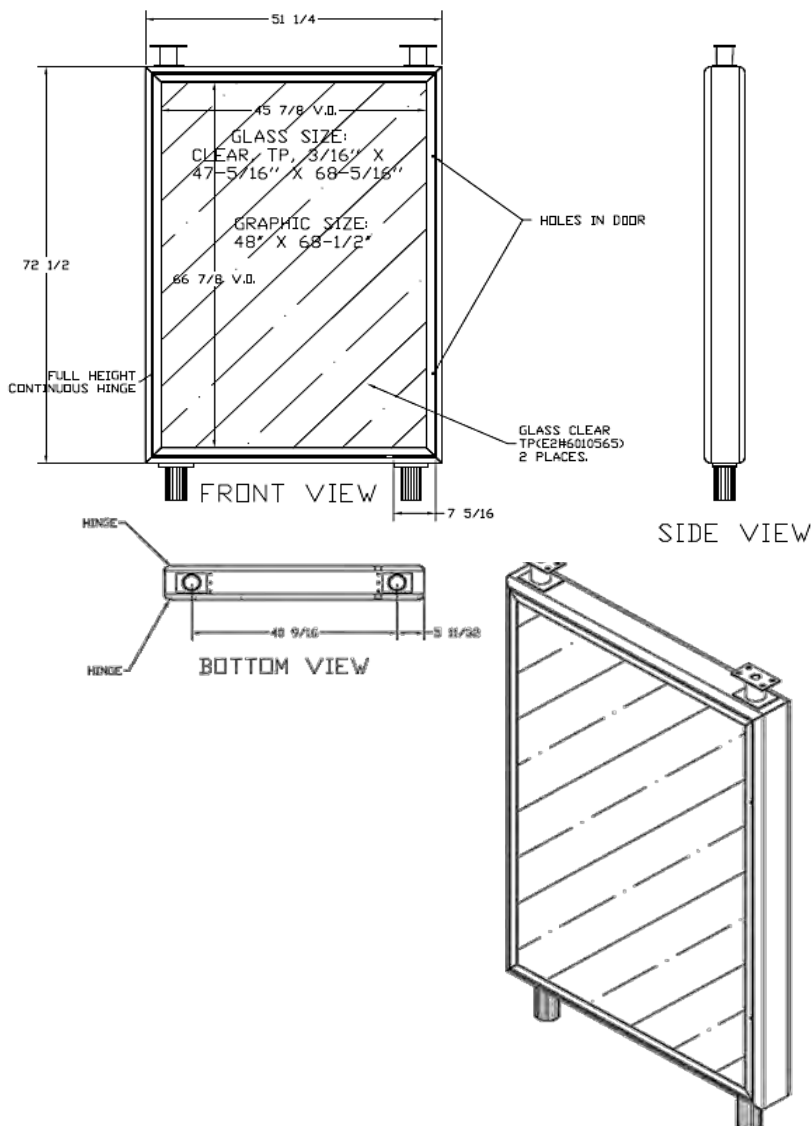
Additional Add-Ons

It's important to get the most value out of a limited bus stop footprint with functional shelter amenities. Below are the available add-ons for the Sunset and Sierra shelters, and all can be powder coated to match the shelter.
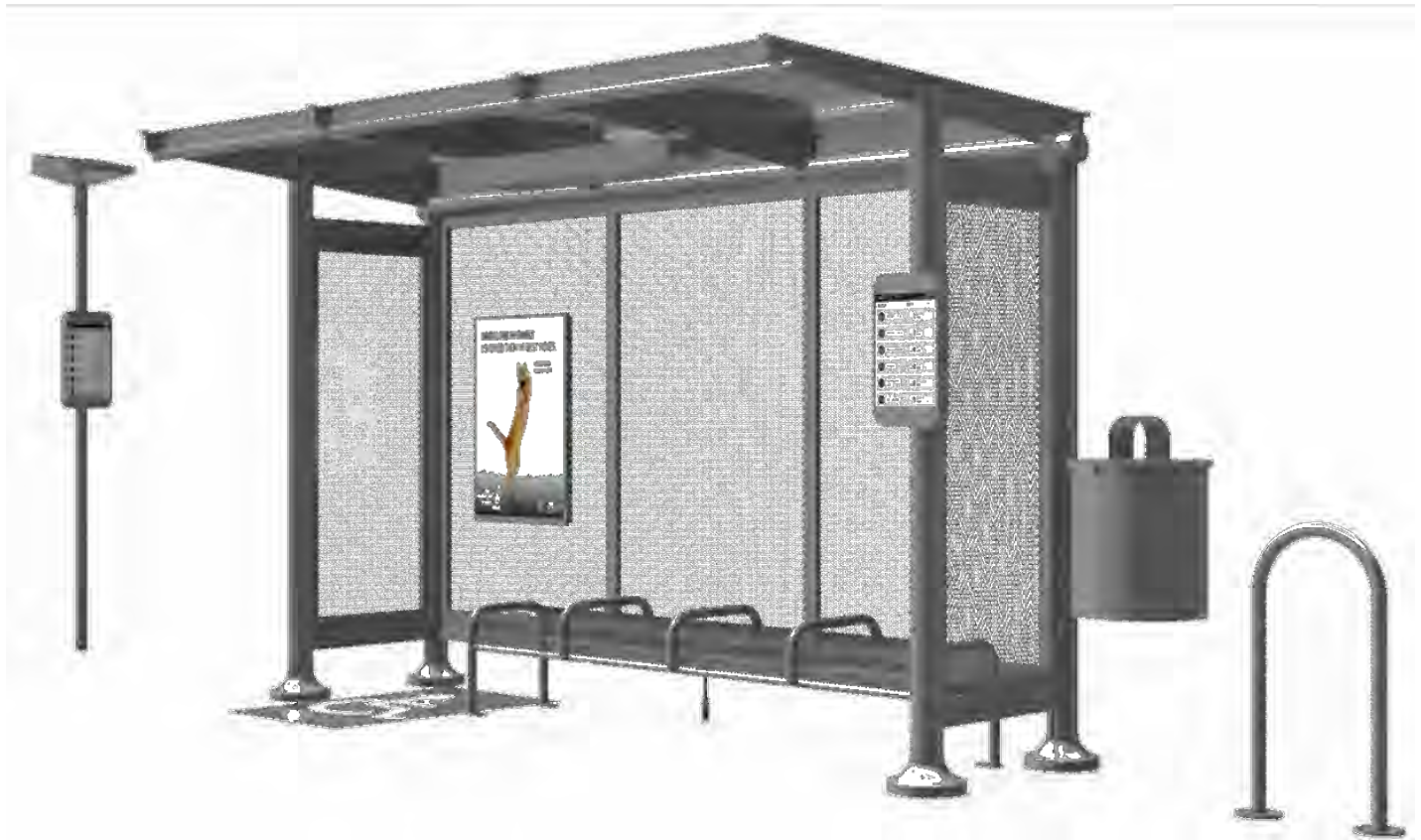
Bus Stop Shelter Add-Ons

Trash Receptable	Column mounted trash receptacle with perforated metal frame & locking lid
Bike Rack	Surface mounted hoop-style metal bike rack
Bench	ADA compliant perforated metal bench with curved seat dividers
Map Case	Wall mounted metal map case with clear acrylic cover
PV Stop	Adding a PV Stop near a shelter can provide additional lighting and real-time info
E-Paper Display	E-paper can display next departure information and marketing campaigns
LED Display (not shown)	LED can display next departure information and is mounted to the shelter side wall
Advertising Panel (not shown)	4 x 6 ft. aluminum advertising panel for shelter side wall (lit or unlit)

Sierra Shelter with Solar Powered Advertising Panel

Above is a 13 ft. long Sierra shelter with solar powered security lighting and illuminated advertising panel, perforated metal bench, perforated metal walls and custom decals.

Urban Solar manufactures solar power systems and LED lighting solutions for transit, parking lots, pathway, and general illumination applications.

With more than 75 years of design and manufacturing experience, Urban Solar delivers the highest level of solar powered LED illumination in an integrated, reliable, and customer focused design.

Urban Solar has developed more UL Listed and Buy America compliant solar packages for North American transit agencies than any other supplier.

Urban Solar has been partnered with Tolar Manufacturing for over 10 years and supplies all Tolar shelters with solar lighting packages.
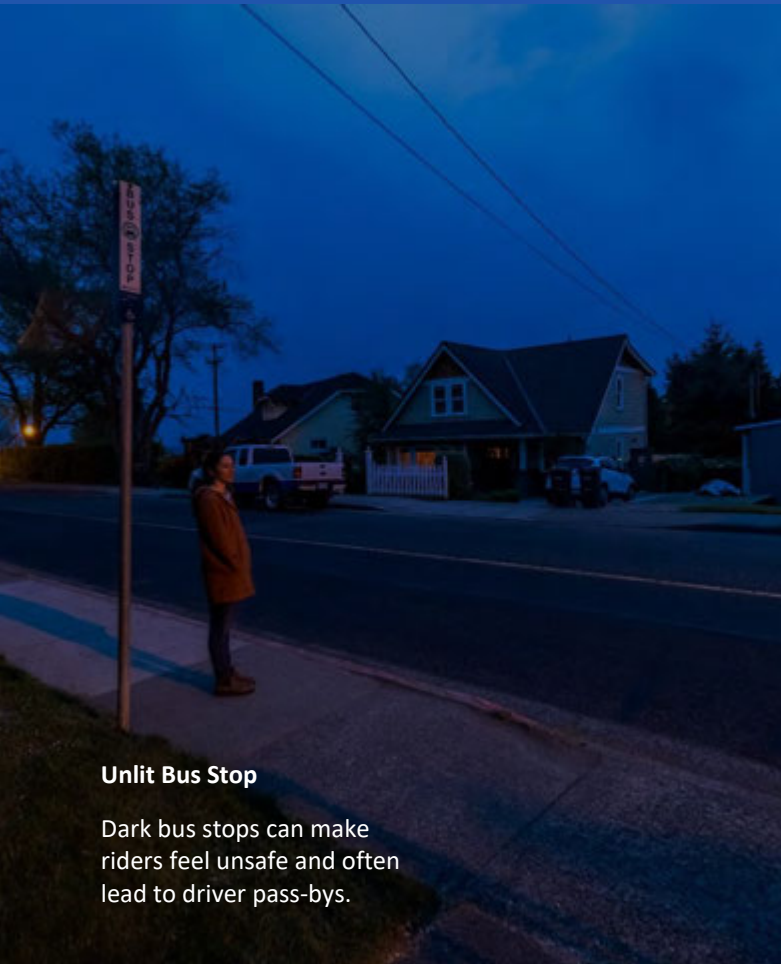
Unlit Bus Stop

Dark bus stops can make riders feel unsafe and often lead to driver pass-bys.

PV Stop Plus

The PV Stop Plus provides 5W of LED lighting from dusk to dawn.

PV Stop Collection

Urban Solar developed the PV Stop Collection to provide security lighting, real-time information displays, and seating at unsheltered bus stops. There are three PV Stop sizes, ranging from the most economical to the most powerful solar package performance.

The Urban Solar team will help determine which model is needed for your locations, based on annual solar exposure and the necessary power to run the security lighting and or a real-time display.

Model	LED	Real-Time Display Option
PV Stop Plus	5 W	13" E-Paper, LED Display
PV Stop Max	10-15 W	13" or 23" E-Paper, LED Display

PV Stop Plus

Urban Solar's PV Stop Plus provides enough solar power to power LED security lighting and a real-time display. SmartLink is recommended for managing the LED lighting and digital display remotely.

Features and Benefits

Reduces Rider Pass-Bys

Enhances Public Safety and Deters Crime

Mounts to Standard Transit Poles, No Special Footings

UL Listed and Buy America Compliant

Agency Branding Options, Custom Colors &Decals

10 Year Warranty

Specifications

20W Solar Panel

20Ah 12.8V Battery

5+ Days of Battery Autonomy

Up to three 5W LED Downlights

-4 - 140°F Operating Temperature

Dusk to Dawn Run-time or Specific Scheduling Options

Add-Ons

SmartLink Remote Management

EcoSeat

Bike Rack

Trash Receptable

Up to 3 luminaires to provide security lighting exactly where you need it (only center position shown)

PV Stop Max

Urban Solar's PV Stop Max provides enough solar power to power LED security lighting and a real-time display. SmartLink is recommended for managing the LED lighting and digital display remotely.
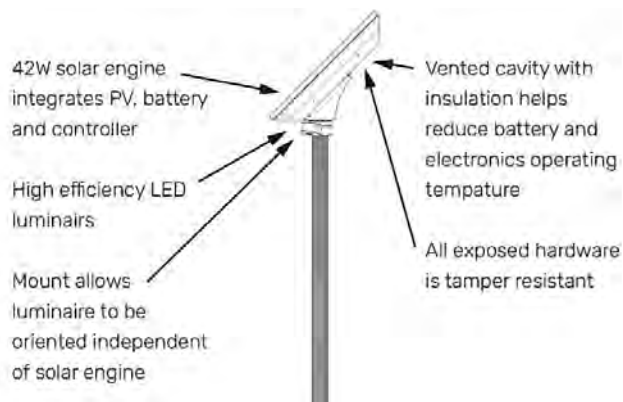
Features and Benefits

Reduces Rider Pass-Bys

Enhances Public Safety and Deters Crime

Mounts to Standard Transit Poles, No Special Footings

UL Listed and Buy America Compliant

Agency Branding Options, Custom Colors &Decals

10 Year Warranty

Specifications

42W, 70W Solar Panel

20Ah, 36Ah, or 40Ah 12.8V Battery

5+ Days of Battery Autonomy

Two 5W LED downlights

-4 - 140°F Operating Temperature

Dusk to Dawn Run-time or Specific Scheduling Options

Add-Ons

SmartLink Remote Management

EcoSeat

Bike Rack

Trash Receptable

42W solar engine integrates PV, battery and controller

High efficiency LED luminairs

Mount allows luminaire to be oriented independent of solar engine

Vented cavity with insulation helps reduce battery and electronics operating tempature

All exposed hardware is tamper resistant

PV Stop EcoSeat

The EcoSeat is manufactured by Tolar and provides a compact seating solution for unsheltered bus stops. The EcoSeat is ADA compliant and features a powder coated aluminum frame with HDPE slats.

PV Stop Max with EcoSeat and 23" E-Paper Display

To the left is the EcoSeat by Tolar with the PV Stop Max from Urban Solar and the 23" e-paper display by Papercast. The lighting and e-paper display are remotely monitored by SmartLink.

This combination of amenities is a great solution for a compact bus stop location without a shelter, and provides riders with seating, security lighting, and real-time departure information.

RMS Shelter Lighting System

Urban Solar's RMS Shelter System is a safe, powerful, and reliable solar powered LED lighting system designed specifically for the transit industry. It easily mounts to new or existing transit bus shelters, with various configurations for branding, and performance.

All solar components are housed in a self-contained aluminum enclosure mounted on the roof of any shelter. The LED fixtures are mounted inside the ceiling of the shelter with various fixture and mounting options available.

Features and Benefits	Specifications	Add-Ons
UL Listed & Buy America Compliant	30-40W Solar Panel	13" E-Paper Display
Easy Installation to New or Old Shelters	5-45 foot candle levels	23" E-Paper Display
Reduces Pass-Bys and Deters Crime	Dusk to Dawn Lighting with Dimming	LED Shelter Display
Custom Branding Available	5-10 Days Battery Autonomy	SmartLink Monitoring
Smart Remote Monitoring Controller	-40 to 176° F Operating Temp	Custom Branding

Austin, TX | RMS Lighting System

The world leader
in battery and solar
powered e-paper displays

PAPERCAST®

Papercast® offers innovative, versatile, and sustainable e-paper displays for sharing dynamic content with the public for indoor or outdoor use.

All displays are UL Listed, CE Certified, IP Rated and designed with tamper resistant hardware and modular replacement components.

Papercast displays are designed to show a wide range of visually striking graphical information, which is easily customized and updated by its Content Management System (CMS).

With customers in more than 45 countries and over 4,500 units installed, Papercast is unequivocally the most experienced supplier of e-paper displays,

While Papercast offers the largest range of e-paper display models, the 13" and 23" displays are available on the MBTA CALACT contract.

13"   23"

13" Outdoor E-paper Display

Ruggedized IP65 rated outdoor e-paper displays are supplied in an aluminium enclosure with toughened front glass, optimized for pole mount or to any other fixed surface. With wireless, battery and solar capabilities as standard, all models come with optional illumination, interactive functions and text-to-speech modules

13" E-Paper Display

The 13" e-paper display updates every minute to deliver real-time information and graphics such as maps or marketing campaigns. The 13" is easily mounted to existing transit poles or shelter columns and is shown to the left with the PV Stop Max and EcoSeat.

The Papercast Content Management System and SmartLink Management System provide 24/7 remote monitoring and alerts to help manage the display's health.

Operating Temperature	-4 – 158° F
Dimension (L x H x W)	11 x 20 x 2.5 in.
Weight	14.8 lbs.
Solar Package	PV Stop Plus, PV Stop Max, RMS Shelter System
Text-to-Speech Option	Push button or automatic
Color	RAL 9006 default, custom colors available
Mounting Installation	Any transit pole or shelter column

PRODUCT INFORMATION

23" Outdoor E-paper Display

Ruggedized IP65 rated outdoor e-paper displays are supplied in an aluminium enclosure with toughened front glass, optimized for pole mount or to any other fixed surface. With wireless, battery and solar capabilities as standard, all models come with optional illumination, interactive functions and text-to-speech modules

23" E-Paper Display

The 23" e-paper display updates every minute to deliver real-time information and graphics such as maps or marketing campaigns. The 23" is easily mounted to existing transit poles or shelter columns and is shown to the left with the PV Stop Max and EcoSeat.

The Papercast Content Management System and SmartLink Management System provide 24/7 remote monitoring and alerts to help manage the display's health.

Operating Temperature	-4 – 158° F
Dimension (L x H x W)	11 x 31.5 x 2.5 in.
Weight	25.7 lbs.
Solar Package	PV Stop Max, RMS Shelter System
Text-to-Speech	Push button or automatic
Color	RAL 9006 default, custom colors available
Mounting Installation	Front of transit pole or shelter column

WaySine designs and manufactures LED real-time displays for shelters and on-bus announcement systems. WaySine manufactures all components in beautiful Aiea Hawaii, which is its headquartered office.

WaySine's sole purpose is in the design, development, and manufacturing of solar powered public transit amenities for bus stops and shelters.

With deployments in over 40 agencies across both USA and Canada, WaySine devices are robust enough to withstand the most extreme conditions. Deployments in Quebec have seen extreme temperatures of below -40 degrees F and pole mounted installations in Florida and Texas have seen some of the most intense hurricane winds.

LED Pole Display

WaySine's LED pole display is an all-in-one solar powered system that mounts to the top of any transit pole. It includes front and rear solar panels, batteries, and integrated antenna. The compact solar package and display combination is easy to install and engineered for the harshest environments.

This display incudes built-in diagnostics to monitor power and temperature to provide early failure detection.

System Specifications

Dimensions (H x L x D)	10.9 x 26 x 7 in.
Weight	13 lbs.
Character Count	2-line, 24 characters
Operating Temperature	-40 – 158° F
Text-to-Speech	Motion activated or push-button
Lighting	Two 1W LEDs for down lighting
Mounting Installation	Top of transit pole
Communication	Cellular, 4G / LTE + GPS
Environmental Rating	IP65
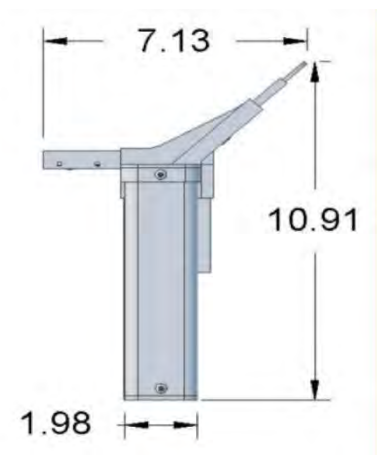
LED Shelter Display

WaySine's LED shelter display can be powered by solar or AC and mounts to the inside wall of a bus stop shelter. This display incudes built-in diagnostics to monitor power and temperature to provide early failure detection.

System Specifications

Dimensions (H x L x D)	10.35 x 25 x 3 in.
Weight	7 lbs.
Character Count	2-line, 24 characters
Operating Temperature	-40 – 158° F
Text-to-Speech	Push-button
Solar Package	RMS Shelter System
Mounting Installation	Inside bus stop shelter
Communication	Cellular, 4G / LTE + GPS
Environmental Rating	IP65
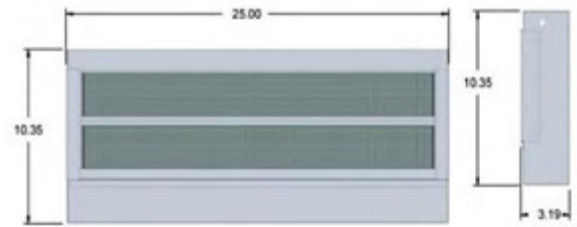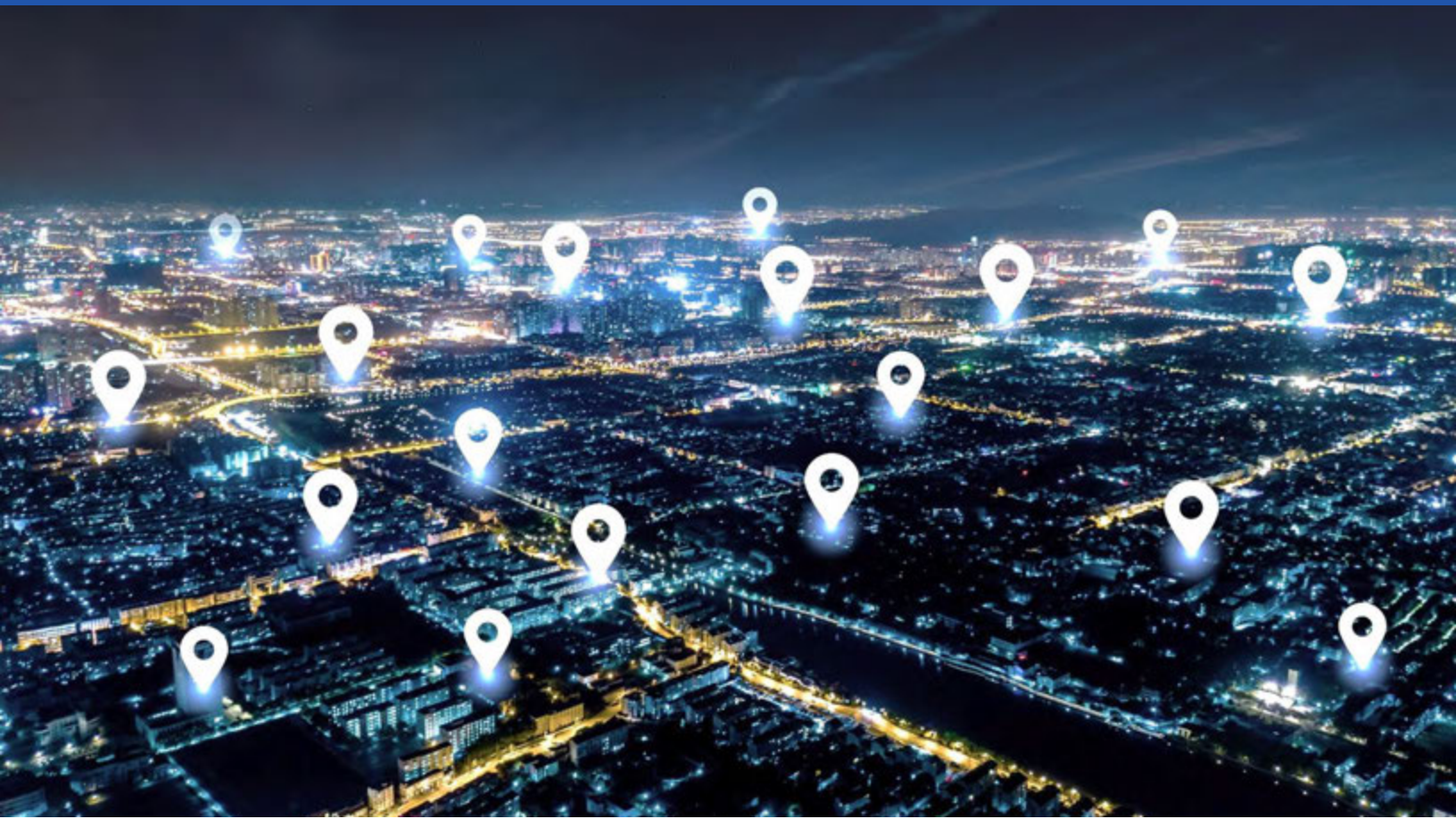
outdoorlink®

Founder and CEO, Dwight Jennings, created the SmartLink Remote Management System to help customers reduce operational waste and increase product uptime through remote management intelligence.

Through cellular-based monitoring and control, SmartLink offsets the need for in-person site visits and reduces the time and costs associated with maintaining powered assets. When outages occur, SmartLink sends real-time notifications so troubleshooting can begin remotely, and downtime is minimized.

With more than 85,000 SmartLink units installed in 24 countries, Outdoorlink has become the leader in Remote Device Management for the OOH Advertising, Commercial, and Public Transit industries.

Powered by OutdoorLink®

The SMS consists of a hardware controller and cloud-based operating system that communicates via an independent cellular connection to manage assets from any desktop of mobile device.

SmartLink is integrated into solar packages and digital real-time displays to change lighting profiles, manage battery health, and remotely reboot e-paper and LED displays when the lose connectivity.

KNOW THAT ASSETS ARE HEALTHY

Reduce the need for in-person site checks to know whether lights are on, or digital displays are running.

SmartLink provides 24/7 cloud-based Proof of Performance so Operations teams can reduce unnecessary travel and better use their time and labor costs elsewhere.

BE NOTIFIED WHEN THEY ARE NOT

Users receive email notifications when connected devices show low power, no power, power restore and much more.

Troubleshooting can begin immediately without requiring an in-person site visit, which resolves downtime faster and leads to optimized asset performance.

SmartLink Management Software

SmartLink controllers communicate through an independent cellular connection that allows for 24/7 remote monitoring and control.

- Open API for Systems Integration
- Flexible Scheduling Options per Each Relay
- Instantly Rule Out Power Issues
- Organize Assets from the Map View or List View

Alarm Notifications

Data Analytcs

Instant Reboot
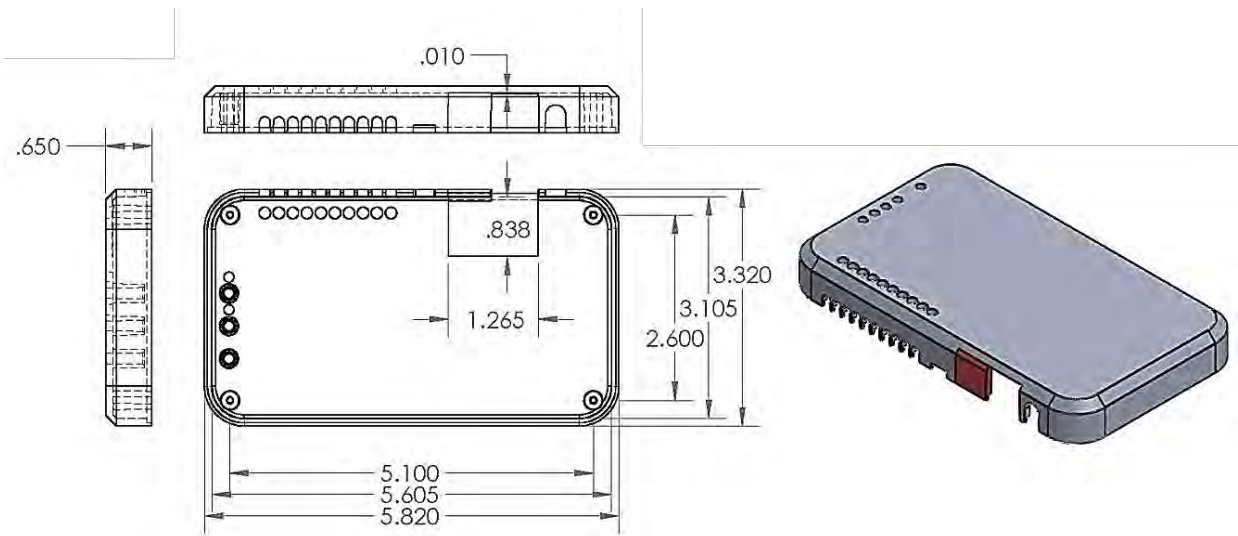
SL-2-DC Controller Specifications

Device Scheduling Options	Sunset to Sunrise, Always On, Specific Times
Device Management	Two DC Devices (i.e., LED lighting, solar battery, real-time display)
Control Features	Low voltage thresholds, dimming, rebooting, custom scheduling
Alarm Notifications	Loss of Power, Low Power, Power Restore, Offline
Communication	Cellular, 5G / LTE Cat-M1
Environmental Rating	IP65

Index

Below is a summary of the items available for purchase through the MBTA / CALACT 21-01 contract. Please contact Tolar with questions or to request a quote.

Patrick Merrick
Executive Vice-President
pmerrick@tolarmfg.com
Direct: (951) 547-8209
Office: (951) 808-0081