

# **Riverline Transit-to-Trail Signage**

Bicycle Wayfinding Sign System

Annotated DD March 11, 2022



#### **Cloud Gehshan** Design

400 Market Street, Suite 300 Philadelphia, PA 19106

215 829 9414 cloudgehshan.com



1	Basic Standards Logo, art, color, material and typography specifications
2	<b>Design Intent Documentation</b> Sign elevations, graphic layouts and construction details
3	<b>Performance Specifications</b> Sign performance, quality assurance and execution requirements
4	Appendix Associated details and documents for reference



#### **Table of Contents**

<b>1.</b> 00
<b>2.</b> 00
<b>3.</b> 00
<b>4.</b> 00

Client/Project Riverline Bicycle Wa	Transit-to-Tr yfinding Sign	ails Signage System	Project No. 21TSTC314001
Date	Revisions	Scale	Page Number
03.11.22		As Noted	0.1
© 2022 Cloud Gehshan			

© 2022 Cloud Gehshan

# Section 1 Basic Standards



Paint Matches	Number	Color	Specification – color to match	Fabrication Process
	P1	Purple	PMS 7680C	Satin Finish Matthews Acrylic Polyurethane Paint, topcoat with 290228Sp Super Satin Clear
Materials to Be Purchased	Number	Color	Specification – color to match	Fabrication Process
	M1	Printable Vinyl	3M High Intensity Prismatic Reflective Sheeting (3930DS White for Digital Printing)	Direct printed artwork using 3M-approved translue inks, topcoat with 290228Sp Super Satin Clear
			Note: For signs not in the right-of-way, client may elect to substitute with exterior-grade non- reflective printable vinyl for cost effectiveness.	



#### **Basic Standards**

#### **Graphic Standards**

#### **Color Schedule**

#### Paints

- All paint & printed vinyl finishes require final clear coat finish. If the Matthews Super Satin Clear is not available, substitute with an exterior-grade automotive polyurethane clearcoat, or a clear laminate.

All materials, clear coats and/or laminates should be warrantied to 10 years in exterior environments.

#### PPG Architectural Finishes, Inc.

888.774.7732 www.ppghpc.com

Matthews Paint Company 800.323.6593 www.matthewspaint.com

**3M Commercial Graphics Division** 800.328.3908 www.3M.com/us/graphicarts

## See section 4 appendix for material & paint information.

This drawing represents design intent only. All measurements and installation guidelines are approximate.

Sign fabricator will be responsible for:

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.
- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation.
- Obtaining any necessary engineering seals or permits.
- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

Client/Project	Project No.		
Riverline Ti Bicycle Way	21TSTC314001		
Date	Revisions	Scale	Page Number
03.11.22		As Noted	1.2

lucent

Logo and Logotype



A1 Logo/Artwork



### **Basic Standards**

#### **Graphic Standards**

#### Logo - Logotype

**Notes** Art is provided by client as electronic digital files unless otherwise noted.

This drawing represents design intent only. All measurements
and installation guidelines are approximate.

Sign fabricator will be responsible for:

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.
- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation.
- Obtaining any necessary engineering seals or permits.
- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

Client/Project Riverline Tr Bicycle Wayt	Project No. 21TSTC314001		
Date	Revisions	Scale	Page Number
03.11.22		As Noted	1.3

Arrows



**S1** Directional Arrow

Symbols





S3 Bike Repair





#### **Basic Standards**

#### **Graphic Standards**

#### Arrows & Symbols

#### Notes

The graphic element(s) shown on this page have been carefully created, sized and spaced.

Artwork for these element(s) will be provided to the fabricator as electronic, digital files.

FABRICATOR MUST USE ARTWORK SUPPLIED; NO SUBSTITUTE ARTWORK OR TYPESETTING WILL BE ACCEPTED.

This	drawing	represents	design	intent	only. All	measureme	ents
and	installati	on guidelin	ies are	approx	imate.		

Sign fabricator will be responsible for:

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.
- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation.
- Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

Client/Project	Project No.		
Riverline T Bicycle Way	21TSTC314001		
Date	Revisions	Scale	Page Number
03.11.22		As Noted	1.4



© 2022	Cloud Gehshan
--------	---------------

**F1 –** ClearviewHwy 2-B

# ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 1234567890 &!?,."

**F2 –** Gotham Rounded Book ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 1234567890 &!?,."

**F3** – Gotham Rounded Medium ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 1234567890 &!?,."

**F4 –** Gotham Rounded Bold

## ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 1234567890 &!?,."



### **Basic Standards**

#### **Graphic Standards**

#### Notes

No substitute typefaces will be accepted.

Refer to sign layout drawings for line spacing requirements

This drawing represents design intent only. All measurements and installation guidelines are approximate.

Sign fabricator will be responsible for:

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.
- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation.
- Obtaining any necessary engineering seals or permits.
- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

Client/Project Riverline Tr Bicycle Wayf	Project No. 21TSTC314001		
Date	Revisions	Scale	Page Number
03.11.22		As Noted	1.5

© 2022 Cloud Gehshan

**F5 –** GT Walsheim Regular ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 1234567890 &!?,."

**F6 –** GT Walsheim Bold

## ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 1234567890 &!?,."



### **Basic Standards**

#### **Graphic Standards**

#### Notes

No substitute typefaces will be accepted.

Refer to sign layout drawings for line spacing requirements

This drawing represents design intent only. All measurements
and installation guidelines are approximate.

Sign fabricator will be responsible for:

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.
- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation.
- Obtaining any necessary engineering seals or permits.
- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

<sup>Client/Project</sup> Riverline Transit-to-Trails Signage Bicycle Wayfinding Sign System			Project No. 21TSTC314001
Date	Revisions	Scale	Page Number
03.11.22		As Noted	1.6

# Section 2 Design Intent Documentation



## **Sign System Overview**



This drawing represents design intent only. All measurements and installation guidelines are approximate. Sign Fabricator will be responsible for: Client/Project

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.

- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation. - Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

**Riverline Transit-to-Trails Signage** 21TSTC314001 03.11.22 **Bicycle Wayfinding Sign System** © 2022 Cloud Gehshan

Project No.

Date

Revisions



	Design Intent Docum	entation
	1	
RAILS ANCO RRY TRAILS & DESTINATIONS Incode Creek Greenway Trail Permylvania Avenue 25 ml		
aware River Heritage Trail Penng'unia Averanu 5 mi enington Park Ranccaa Cresk Guy 1.5 mi rocas State Park Ranccaa Cresk Guy 3.2 mi bit ngav dicta hackada hachada		
Character and Attacking Intel		

Station connections sign 12" x 24" Up to four destinations, with mileage ST7a: bandit strap mount ST7b: U-channel post mount ST7d: wall/fence mount

Scale	Notes	Page Number
As Noted		2.2

## ST2 – Trail ID

### Sign layout and mounting height





This drawing represents design intent only. All measurements and installation guidelines are approximate. Sign Fabricator will be responsible for: |

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.

Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation.
 Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

Client/Project	Project No.	Date	Revisions
Riverline Transit-to-Trails Signage	21TSTC314001	03.11.22	
Bicycle Wayfinding Sign System			

© 2022 Cloud Gehshan



#### **Design Intent Documentation**

#### Notes:

Mounting types: (a): bandit strap, see page 2.8 (b): unistrut post mount, see page 2.9 (d): fence mount, see page 2.10

Painted to match P1 on back and returns





- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation. - Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication

© 2022 Cloud Gehshan

## ST<sub>5</sub> – Trailblaze Sign

## Sign layout and mounting height





This drawing represents design intent only. All measurements and installation guidelines are approximate. Sign Fabricator will be responsible for:

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.

Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation.
 Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

 Client/Project
 Project No.
 Date
 Revisions

 Riverline Transit-to-Trails Signage
 21TSTC314001
 03.11.22
 03.11.22

 Bicycle Wayfinding Sign System
 21
 21
 03.11.22

© 2022 Cloud Gehshan



#### **Design Intent Documentation**

#### Notes:

Mounting types: (a): bandit strap, see page 2.8 (b): unistrut post mount, see page 2.9 (d): fence mount, see page 2.10



## ST6 – Two-destination Directional Sign



This drawing represents design intent only. All measurements and installation guidelines are approximate. Sign Fabricator will be responsible for: | Ctient/Project

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.

Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation.
 Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

 Riverline Transit-to-Trails Signage
 21TSTC314001
 03.11.22

 Bicycle Wayfinding Sign System
 © 2022 Cloud Gehshan

Project No.



#### **Design Intent Documentation**

#### Notes:

Mounting types: (a): bandit strap, see page 2.8 (b): unistrut post mount, see page 2.9 (d): fence mount, see page 2.10





## ST7 – Station Connections Sign

### Sign layout and mounting height



This drawing represents design intent only. All measurements and installation guidelines are approximate. Sign Fabricator will be responsible for: | Client/Project

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.

Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation.
 Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

© 2022 Cloud Gehshan

**Riverline Transit-to-Trails Signage** 

**Bicycle Wayfinding Sign System** 

Project No.

21TSTC314001

Date

03.11.22



#### **Design Intent Documentation**

#### Notes:

Mounting types: (a): bandit strap, see page 2.8 (b): unistrut post mount, see page 2.9 (d): fence mount, see page 2.10



## **Typical Bandit Strap Mounting Details (a)**



scale: 1"=1'-0"

3 NTS

This drawing represents design intent only. All measurements and installation guidelines are approximate. Sign Fabricator will be responsible for: Client/Project

· Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.

- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation. - Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

© 2022 Cloud Gehshan

**Riverline Transit-to-Trails Signage** 

**Bicycle Wayfinding Sign System** 

Project No.

21TSTC314001

Date

03.11.22

Revisions



**Design Intent Documentation** 

Scale	Notes	Page Number
As Noted		2.8

## **Typical U-Channel Post Mount Details (b)**



- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

© 2022 Cloud Gehshan



Scale	Notes	Page Number
As Noted		2.9

## **Typical Fence Mount Details (d)**





2 Typical Fence Mount Section scale: 11/2"=1'-0"

This drawing represents design intent only. All measurements and installation guidelines are approximate. Sign Fabricator will be responsible for:

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.

Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation.
 Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

 Client/Project
 Project No.
 Date
 Revisions

 Riverline Transit-to-Trails Signage
 21TSTC314001
 03.11.22

 Bicycle Wayfinding Sign System
 21TSTC314001
 03.11.22

© 2022 Cloud Gehshan





# Section **3 Performance Specifications**



#### PART 1 – PERFORMANCE REOUIREMENTS

#### 1.01 Work Included

- Α Labor, materials, equipment and services necessary for the fabrication, delivery and installation of signage as described in the detail drawings.
- В Refer to the message schedule for a complete list of sign types and quantities.

Signs listed on message schedule should match those indicated on sign location plans. Contractor to notify owner of any discrepancies in sign quantities by doing take-offs before manufacturing signs.

**C** For all signs, all fasteners, support structures required for installation.

#### 1.02 Related Work

- Α General carpentry and painting requirements: all work to be done in a professional manner and to the highest trade standards.
- Use OSHA safety requirements if necessary for pedes-В trian or vehicular safety.

#### Requirements 1.03

Observe applicable codes, MUTCD guidelines, sign Α ordinances and zoning requirements.

#### B Shop Drawings

NOTE: All final shop drawings must have an engineering stamp from a state licensed engineer before being approved for fabrication.

- Submit one (1) set of shop drawings as outlined below. 1
- Include plans, elevations, sections and large scale 2 details of sign wording and lettering layout. Show anchorages and accessory items. Provide mounting templates.
- Show fabrication and installation details, including all 3 sign components such as extrusions, brackets, bracing, hardware, internal framing, foundations, etc.
- Provide engineering data to confirm viability of signs and supports, including structural stability of all signs. fasteners and foundation design.
- Structural details must be reviewed and stamped by a 5 state certified structural engineer, ensuring structural integrity and safety.

#### С Maintenance Data

- Submit each manufacturer's recommendations for maintenance of all items.
- The instructions shall cover cleaning, repair, repainting 2 and maintenance of signs, including data on cleaning

solutions or methods of application which should be avoided.

#### 1.04 Warranty

All warranties on fabricator's standard contract forms must be modified to match warranty criteria mentioned herewith. Any changes in warranty length or criteria must be negotiated prior to contract signing. Any discrepancies from fabricator's contract are superseded by this performance specification.

ALL PAINT FINISH WARRANTIES MUST BE ACCOMPANIED BY SIGNED WARRANTY AGREEMENTS WITH THE PAINT MANUFACTURER AND FINISHER.

- Warrant all products (including, but not limited to, Α materials, hardware and finishes) against any and all defects for a minimum period of 2 years from date of installation.
- В Correct any and all defects in material and/or workmanship which may appear during the warranty period by restoring defective work to the standard of the contract documents at no cost to the owner and to the owner's satisfaction.
- С Vinyl shall be warranted for five years against delamination from substrate.
- Correct any and all paint finish defects which may D appear during the warranty period by restoring defective work to the standard of the contract documents at no cost to the owner and to the owner's satisfaction.

#### PAINT FINISHES SHALL BE WARRANTED AS FOLLOWING:

- 1 All Matthews paint products must be clear coated with MPC super Satin Clear Kit, a two-component 1.24 ready to spray VOC compliant, acrylic polyurethane clear, which was developed to provide extended performance under the toughest conditions. See the MPC194 specifications on page 5.2. Fabricator to provide extended warranty from Matthews to client on completion of project.
- 2 PPG Coraflon fluoropolymer solvent-based paint - 10 years for gloss retention as measured in accordance with ASTM D523 using 60 degree readings. 10 years for color retention as measured by ASTM D2244 Section 6.3 using Hunter LAB Color difference.
- **E** Additional corrections shall include, but not be limited to, the following:
  - 1 Bubbling, crazing, chalking, rusting or other disintegration of the sign face or of the messages or of the edge finish of the sign inserts or panel.

- 2 Corrosion developing beneath paint surfaces of the support systems (except when it is the result of obvious vandalism or other external damage to the paint surfaces).
- 3 Corrosion of the fastenings.
- 4 The signs not remaining true and plumb on their supports.
- 5 Fading of the colors when matched against a sample of the original color and material.
- 6 Discoloration of metal finishes.

#### Alternate Fabrication 1.05

The drawings show design intent only. The fabricator is Α responsible for fabrication and overall level of quality. Any changes in design, materials, fabrication techniques or details necessary to the successful completion of this project should be communicated to owner in a timely fashion.

Further development and engineering of designer's details (for fabrication and installation) is expected and should be shown in the shop drawings.

- The designer recognizes that manufacturers may have В shop fabrication techniques that differ from details shown. Suggested changes in fabrication that do not alter the design intent nor reduce the quality will be considered by the designer provided they are submitted in sketch form as soon as possible prior to shop drawing preparation.
- **C** Any value engineering changes during fabrication shall be discussed with owner and the associated groups.



#### **Performance Specifications**

<sup>Client/Project</sup> Riverline Transit-to-Trails Signage Bicycle Wayfinding Sign System			Project No. 21TSTC314001
Date	Revisions	Scale	Page Number
03.11.22		As Noted	5.1

© 2022 Cloud Gehshar

#### PART 1 - PERFORMANCE REQUIREMENTS (continued)

#### 2.01 Quality Assurance

- Materials used for this project shall be new and not reconditioned or re-purposed.
- В Use only personnel thoroughly skilled and experienced with the products and method for fabrication and installation of signage specified.
- The owner shall reserve the right to reject any shop С drawings, samples or other submittals, as well as any finished product or installation, that cannot meet the standard of quality established. Any such decision will be considered final and not subject to recourse.
- D The intent of the contract documents is to provide everything necessary for a complete contract. In the event of conflict or omission, the fabricator shall consult the owner for resolution.
- **E** Materials and hardware not specified, but necessary to the complete functioning of the sign, shall conform to the quality level established.
- Use design templates, following exact font, letterspac-F ing, size, symbol and artwork specifications. Contact the designer and/or client for layout clarification.

#### 2.02 Preferred material suppliers

Vendors and products listed in section 1 are specified for this project. These products have either been tested on prior projects and have delivered proven results, or have properties unique to this project. Any suggested substitutions must have documentation demonstrating the same level of quality and warranty **prior** to bidding. Bids are subject to disqualification if unauthorized substitutions are used.

#### 2.03 FABRICATION

- Report any discrepancies between drawings, specifi-Α cations and owner requirements and request direction from owner before proceeding.
- **Verify measurements** in field as required for work В fabricated to fit job conditions. Before starting work, examine adjoining work on which work of this section is in any way dependent for perfect workmanship and fit
- Make work in ample time not to delay job progress and С deliver to job at such time as required for proper coordination. Fabricate work true to line and detail with clean, sharply defined profiles. Finish surfaces smooth unless otherwise specified.
- D Do cutting, punching, drilling and tapping required for attachment or other work coming in contact with signage work where indicated.

- **E Changeability:** fabricate signs in such a manner that each of the major mounting components may be removed and replaced with similar components by maintenance personnel, but not by unauthorized personnel.
- F **Construction:** fabricate all joints, corners, miters, etc., with work accurately machined, filed and fitted, rigidly framed together at joints and contact points. Carefully match all work to provide a perfect continuity of lines and design, with metal in contact having hairline joints. Make joints of such character and assembly to be strong and as rigid as adjoining sections. Make exposed joints where joint is least conspicuous. Corners shall be square as indicated. All edges shall be finished and free of saw marks.

Allow for expansion and contraction of materials from temperature changes, especially when two materials with different coefficients of expansion are used together.

Detail signs to minimize deflection from snow, ice, water or their own weight.

**G Engineering:** the system shall be engineered to eliminate buckling of any members, failure at any points, distortions or other damage.

The system shall be engineered to be rigid with minimum deflection and rotation under stress and shall be able to withstand movement, shear and torsional loads.

Exposed areas of signs shall not oil can. Signs shall be designed as structurally self-supporting units. The suspension systems and substructure shall be designed by the sign manufacturer to perform in accordance with the contract documents.

н **Connections and accessories:** weights of connections and accessories shall be adequate to sustain and withstand stresses and strains to which they will be normally subjected.

#### Sign panels - general

- Surface finish: provide surface finishes that are free 1 from lines, mottling, ridges, variations in color, orange peel, bubbles, pinholes, mottling, crazing, grit and coarse particles. This applies to all methods of fabrication and finishing. Use clear coatings for durability, surface protection, appearance and maintenance.
- Note: all colors, are to match references exactly.-2 Washed out or weak colors will not be accepted.

#### Anchors and fastenings

- Mechanical 1
  - a Provide anchors and fasteners required to secure work in place.
  - b Surface finish: do not expose fastenings on surface of sign panels unless specifically noted otherwise. Do not deform, distort or discolor sign face surfaces by attachment of concealed fastenings.
  - c Corrosion resistance: all fastenings shall be noncorrosive and resistant to oxidation or other corrosive action, of the same composition completely through their cross sections, particularly when used below grade. Use highest quality stainless steel hardware and fasteners.
  - d Anchors, inserts or fasteners shall be compatible with sign materials, shall not result in galvanic action or chemical interaction of adhesives and shall have demonstrable and sufficient strength for intended use.
  - e Steel anchors and fastenings for exterior use shall be galvanized in accordance with ASTM A153.
  - Stability: fabricate and install signs with fastenings to withstand all actions imposed by use; 30 psf wind perpendicular to surfaces, water, ice, snow loads and similar forces.
  - g Anchor bolts in concrete shall be cast in place. Manufacturer shall furnish instructions for the setting of anchors and bearing plates. Manufacturer shall ascertain that the items are properly set during the process of the work.
  - h Color: secure work with fastenings of same color and finish as the components they secure where they are exposed to view, unless noted otherwise.
  - Security: All exposed fasteners must be vandal i resistant and have vandal-proof "spanner" type slots to be removed only with a special driver head.



#### **Performance Specifications**

<sup>Client/Project</sup> Riverline Transit-to-Trails Signage Bicycle Wayfinding Sign System			Project No. 21TSTC314001
Date	Revisions	Scale	Page Number
03.11.22		As Noted	5.2

© 2022 Cloud Gehshar

#### K Messages

The fabricator is responsible for the message layout of all directional message panels. Fabricator must produce scale drawings of message layouts for review prior to fabrication. Layout spacing and letter heights to be based on typical layout guideline drawing pages.

- Layout: layouts are shown on the drawings. All mes-1 sages including braille shall be flush left, unless noted otherwise. Correct line breaks are indicated in the "Message" column of the schedule and should be followed exactly. Braille line breaks shall match those of the raised copy. Any problems in message layout shall be brought to the attention of the owner for solution.
- Fabrication: execute all signs such that letter forms 2 are true and clean. Letter forms with rounded corners, or chipped, nicked, cut or ragged edges, will not be accepted. This applies to all methods of fabrication and copy application.
- Copy: message copy on detail drawings is for layout 3 purposes only. Actual copy is listed in the "Message" column of the schedule. Certain copy may be provided later by the owner.
- Capitalization: directions for upper and lower case are found in the "Message" column of the schedule must be followed exactly.
- Single or double faces: all signs that are double sided 5 will be noted as such in the drawings and message schedule. For double sided signs, the message will be indicated as "Side A" and "Side B" or "Side C" and "Side D".

#### 3.01 Installation

A Install sign units and components with concealed fasteners, unless otherwise shown. Refer to detail drawings for general method. Verify each surface in filed to determine specific, appropriate hardware.

Drawings in this package may not indicate any belowground or in-wall structural tie-ins or connections that may be necessary to assure stable and secure installation of signs. Sign fabricator is responsible for determining where such connections are necessary and for coordinating with related trades to make them.

В Locations: refer to drawings for approximate locations. The owner must be present for field placement of signs. Manufacturer and owner to confirm that sign locations and sight lines are free from all visual obstruction (i.e. signs, lights, doors overhangs, sprinklers, etc.) Locations must comply with relevant Life and Safety codes mandated by the state, federal, and local regulatory commissions. Any discrepancies or apparent deviations from drawing locations because of different site conditions shall be brought to the attention of the owner and designer for solution.

It shall be the responsibility of the Contractor to determine the location of underground structures and utilities by the use of test pit excavation prior to excavation operations.

Test pits shall be of the size, depth and location as approved by the Engineer. Each pit shall be tampbackfilled.

Test pit excavation will be measured on the basis of the volume of material actually removed from within the limits specified. Tamped backfill will not be measured but shall be included in the price bid for test pit excavation.

Price provided shall include all excavation, tamped backfill, labor, tools, equipment and incidentals necessary to complete the installation of each sign.

C For ground-mounted signs, provide whatever replacement concrete, pavers, bricks, etc. are necessary to match adjacent surfaces exactly. Seams should be parallel or perpendicular to sign face and be symmetrical around post(s).

- D For aluminum/steel components direct buried into concrete or soil, provide appropriate Teflon coating; or 5 mils of bitumen paint; or 2 mils of lacquer. This process will reduce the risk of corrosion from chemical reactions with the concrete mixture or soil.
- **E** Note that signage experiences heavy public use. Strong environmental conditions such as weather and vandalism may be routine problems. Signs must be securely mounted. Contractor is responsible for suggesting alternative fabrication or installation methods if required to prevent theft or vandalism.
- F Install signs to be level, plumb and at the proper height. Cooperate with other trades for installation of sign units.
- G Clean and polish, remove excess adhesive.

#### 3.02 Cleanup

Upon completion of the installation, remove all waste. Α dirt, wrappings and excess materials, tools and equipment, and carefully and thoroughly clean all surfaces to the satisfaction of the owner.

#### 3.03 Property Damage

Α Protect all adjacent surfaces from damage and pay the cost of repairing any damage to the property caused by delivery or installation of materials. In all cases, match existing surfaces.



#### **Performance Specifications**

<sup>Client/Project</sup> Riverline Transit-to-Trails Signage Bicycle Wayfinding Sign System			Project No. 21TSTC314001
Date 03.11.22	Revisions	scale As Noted	Page Number 5.3
0 4			· · · · · · · · · · · · · · · · · · ·

© 2022 Cloud Gehsha

# Section 4 Appendix





## MPC194

#### Super Satin Clear Kit

# 290 228SP

This Super Satin Clear Kit is a two-component, 1.24 ready-to-spray VOC compliant, acrylic polyurethane clear, which was developed to provide extended performance under the toughest conditions.

Super Satin Clear is formulated with an excellent UV screening package that ensures protection of the color and substrate underneath or as a stand-alone clear coat.

Super Satin Clear is designed for topcoat applications to protect color coated substrate components, vinyl graphics or to highlight architectural metals, while providing extreme durability and protection.

Features: E	Benefits:
<ul> <li>Exceptional Gloss Retention</li> <li>Outstanding Protection</li> <li>Extended Life Cycle</li> <li>Easy Application</li> <li>Low VOC</li> <li>Four Times Better Peformance Than Standard Clear Coats</li> <li>Dirt-Shedding Surface</li> </ul>	Durable, Uniform, Like-New Appearance Excellent Resistance to Chalking, Weathering, Marring and Abrasion Superior UV Resistance Lengthens Application Life and Reduces Maintenance Costs
Compatible Surfaces:	
<b>290 228SP Super Satin Clear can be applied ove</b> All MAP®, SVOC, MAP-LVS, MAP-LVG 74 777SP Tie Bond 74 793SP Spray Bond	r:
Required Products:	
283 920SP Super Satin Catalyst	
2.8 VOC Reducers	3.5 VOC Reducers
6370SP Exempt Cool Temperature, 60 - 75°F (10	6 - 24°C) 6300SP Cool Temperature, 60 - 75°F (16 - 24°C)
6371SP Exempt Warm Temperature, 70 - 85°F (2	21 - 29°C) 6301SP Warm Temperature, 70 - 85°F (21 - 29°C)

6372SP Exempt Hot Temperature, 80°F (27°C) & above

6302SP Hot Temperature, 80°F (27°C) & above

#### Conventional Reducers can be used but will not be compliant in most heavily regulated areas.

Product Information Effective 02/12



# 290 228SP

**Directions for Use** 

Surface Preparation:		Substrate should l clearcoat applicati	oe prepared accordin	ng to product instru	actions prior to
Mix Ratio:	Π	Kit Mix Ratios (by	volume). Using this er	ntire kit at one time is	s recommended.
		Clear	Cataly	rst	Appropriate 2.8 or 3.5 VOC Reducer
		16.2 parts	1 par	t	3 parts
		Pot life is 4 hours at	: 77°F (25°C)		
Reducers:		E MAD D - 1	(2.81/00)		
		6370SD Ex	icers (2.8 VUC):	1ro 60 75°E (16 2	(°C)
	⊕Ľ	6371SP Ex	empt Coor Temperati	ture 70 $85^{\circ}$ F (10 - 2)	4 C) 29°C)
		6372SP Ex	empt Hot Temperatu	re 80°F (27°C) & ah	ove
		Low VOC MAP Re	educers (3.5 VOO:	ic, 00 I (2/ 0) & ab	
		6300SP Co	ool Temperature, 60 -	75°F (16 - 24°C)	
		6301SP W	arm Temperature, 70	- 85°F (21 - 29°C)	
		6302SP H	ot Temperature 80°F (	(27°C) & above	
Spray Set Up:	AB	Air Pressure:	Conventional: HVLP: Pot Pressure:	40 - 50 psi at the g 10 psi at the cap 15 - 18 psi	gun
		Gun Set Up:	Siphon Feed: HVLP: Pressure Pot:	1.4 mm 0.055 flu 1.4 mm 0.055 flu 1.2 mm 0.046 flu	id tip id tip id tip
Application:		Apply:	1 full we Flash 5 -	t coat 10 minutes between	coats
		Recommended Wet Film Thickne	Follow w ess: 5.1 - 7.5	mils	coat
		Recommended	15.00		
		Contient All 2 -	ess: 1.5 - 2.2	mils	cantly at temporatures
		below 6 condition durabili	0°F or 16°C. Never sp ons or loss of gloss, poo ty and improper curin	or a subject freshly or water and chemica g will occur.	painted coatings to these l resistance, decreased
Drying Times:					
		Dry Times at 77°F	(25°C)		
		Dry to Touch:		1 - 2 h	ours
		Dry to Handle:		10 - 12	hours
		Light to Kacoati		4 hour	

Page 2 MPC194

This drawing represents design intent only. All measurements and installation guidelines are approximate. Sign Fabricator will be responsible for: | Clie

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.

Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation.
 Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

 Client/Project
 Project No.
 Date
 Revisions

 Riverline Transit-to-Trails Signage
 21TSTC314001
 03.11.22
 03.11.22

 Bicycle Wayfinding Sign System
 © 2022 Cloud Gehshan
 03.11.22
 03.11.22



### Appendix

#### Notes:

No substitutions will be permitted.



# 290 228SP

#### Super Satin Clear Kit

Important:

The contents of this package may have to be blended with other components before the product can be used. Before opening the packages, be sure you understand the warning messages on the labels of all components, since the mixture will have the hazards of all its parts. Improper spray technique may result in a hazardous condition. Follow spray equipment manufacturer's instructions to prevent personal injury or fire. Follow directions for respirator use. Wear eye and skin protection. Observe all applicable precautions.

#### See Material Safety Data Sheet and Labels for additional safety information and handling instructions.

EMERGENCY MEDICAL OR SPILL CONTROL INFORMATION - US (412) 434-4515; CANADA (514) 645-1320; MEXICO 01-800-00-21-400

Materials described are designed for application by professional, trained personnel using proper equipment and are not intended for sale to the general public. Products mentioned may be hazardous and should only be used according to directions, while observing precautions and warning statements listed on label. Statements and methods described are based upon the best information and practices known to Matthews Paint. Procedures for applications mentioned are suggestions only and are not to be construed as representations or warranties as to performance, results, or fitness for any intended use, nor does Matthews Paint warrant freedom from patent infringement in the use of any formula or process set forth herein. If you require technical assistance, please call us toll-free 800-323-6593.

#### Directions for Use

Equipment Cleaning:

Technical Data:

Clean up equipment promptly with 45 340SP Cleanz-It or an all-purpose cleanup solvent. Do not leave mixed material in equipment.

#### Exempt Reducers VOC Information 290 228SP Super Satin Clear 1.29 283 920SP Catalyst 0.95 6370SP, 6371SP, 6372SP Exempt Reducers 0.00 Ready to Spray (16.2 : 1 : 3) 1.24 Low VOC Reducers VOC Information 290 228SP Super Satin Clear 2.11 (with 6301SP) 283 920SP Catalyst 0.95 6300SP, 6301SP or 6302SP Reducer 6300 = 6.32 VOC 6301 = 6.35 VOC 6302 = 6.41 VOC Ready to Spray (16.2 : 1 : 3) 3.17 With Conventional Reducers 45280 = 2.95 VOC 45290 = 2.95 VOC 6379 = 2.89 VOC 6396 = 2.93 VOC Performance Characteristics Volume solids (RTS) 29.50% Weight solids (RTS) 10.70 lbs. Theoretical Coverage (1.0 mil @ 100% transfer efficiency) 512.5 sq.ft./RTS gal. Application Conditions 60°F (16°C) minimum 100°F (38°C) maximum Relative Humidity 85% maximum 5° above dew point Gloss 30 units w/60° meter Below 100°F (27°C) Flash Point (Tag closed cup)



The World's Finest Coating For Architectural Signage

760 Pittsburgh Drive Delaware, OH 43015 Toll Free: 800-323-6593 Toll Free FAX: 800-947-0377

Page 3 MPC194

- Obtaining any necessary engineering seals or permits.

© 2012 Matthews Paint www.MatthewsPaint.com

Part No. MPC194 03/12

This drawing represents design intent only. All measurements and installation guidelines are approximate. Sign Fabricator will be responsible for:	Client/Project
- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.	Riverline Transit-to-Transit-to-Tra
- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation.	Disusta Wasfindin a Cim

Riverline Transit-to-Trails Signage21TSTC31400103.11.22Bicycle Wayfinding Sign System03.11.22

Project No.

Date

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

© 2022 Cloud Gehshan



### Appendix

#### Notes:

No substitutions will be permitted.





September 12, 2014

Mr. Matt Cavalier, SEGD Designer Cloud Gehshan Associates 400 Market Street Suite 300 Philadelphia, PA 19106

#### Dear Matt:

Thanks for your inquiry about project warranties for Matthews brand paint products. Hopefully this letter will provide sufficient guidelines for you to work effectively with clients and fabricators to develop and manage warranty expectations on major projects.

First and foremost, it is our policy to issue project-specific, written warranties only to fabricator(s) who apply our coatings. Application is inherently part of the quality and durability of any coating; we warrant our coatings when they are properly mixed and applied. Shop factors such as application temperature, humidity, catalyst freshness, mixing accuracy, film thickness, and recoat times can all impact proper cross-linking and durability of the cured coating. We try to minimize application related risks by assessing whether fabricator(s) are qualified and knowledgable.

There are a number factors which affect the duration and terms of a project warranty.

First is the inherent durability of the chosen coating system. The following table illustrates several basic product factors to consider. Choosing factors furthest to the right, and in combination maximizes system durability and warrantability.

	Good	Be	Best	
Product line	N/SOA MAP-LV			P-LV
Sheen	Flat	Satin	Semigloss Gloss	
Clearcoat	No Clear	N/SOA Clear	VOC/MAP-LV Clear Super Satin C	
Pigments/Color	Organic p	igments	Inorganic pigments	

Second is the environment in which signs will be installed. Sunnier and hotter climates will degrade coatings more quickly. Southern exposures receive the most sun, followed by eastern, western, and northern. Simply put, longer and more intense UV exposure leads to more rapid degradation; a normal process. Caustic or moisture-laden environments also accelerate degradation, such as coastal, high humidity, and areas near salted roadways. In more rigorous cases, primer and/or clearcoat selection are key project considerations.

Other factors include sign design for rounded (not sharp) edges, water run-off, thermal expansion/contraction, difficult-to-coat areas, and substrate choice.

Finally, we cannot and do not warrant systems using non-Matthews coatings in combination with our coatings (e.g. a different primer), for obvious reasons.

Given all these considerations, you can understand why we take warranties seriously. Ultimately, our warranties are intended to cover users against defective paint product. Beyond that, we try to match the coating to the need and environment, and establish realistic expectations for service life. As a general rule, warranty range for non-clearcoated systems would be 3-6 years, depending on product, color, and exposure. We have seen systems last much longer, but we do not warrant longer. Clearcoats extend life 15-20% for like resin (i.e. clearcoat product same line as the color), and more for a superior clearcoat resin. For clearcoated systems, warranty range would be 4-7 years, depending on color and exposure. Warranty range for Super Satin Clear would be 8-10 years.

The stated warranty windows are offered for general understanding, but we reserve sole authority to determine the duration and terms of any project warranty; even to not warrant. Regardless of warranty offer, we will always stand by and replace product found to be defective, as packaged from our factory.

If you have a specific project warranty request, please contact Randall Crabtree or me, or have your fabricator contact their local MPC sales rep. We will work with involved parties to gather appropriate information such as product line, substrate, primer, color, installation environment(s), etc.. and determine an appropriate warranty package to offer given the specifics.

I hope this explanation helps you work with clients more effectively. If you have questions, please do not hesitate to contact me at 847-370-0651.

Best Regards.

Brandmeie

John P. Brandmeier Director, Business and Operations

brandmeier@ppg.com

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.

- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation. - Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

Client/Project Project No **Riverline Transit-to-Trails Signage** 21TSTC314001 03.11.22 **Bicycle Wayfinding Sign System** 



### Appendix

#### Notes:

No substitutions will be permitted. Fabricator must demonstrate proof of warrantee compliance.

Scale As Noted





#### **Traffic Safety and Security Division**

## **3M<sup>™</sup> High Intensity Prismatic Digital Sheeting 3930DS (White)**

#### Product Bulletin 3930DS February 2016

#### Description

3M<sup>™</sup> High Intensity Prismatic Digital Sheeting 3930DS (White) is a microprismatic retroreflective sheeting designed to optimize UV ink jet digital imaging of traffic control signs that are exposed vertically in service. UVIJ and TT printing are the only imaging methods that can be used with High Intensity Prismatic Digital Sheeting. Screen printing or solvent printing are not suitable methods and are not covered by this 3M warranty. When laminated with 3M<sup>™</sup> ElectroCut<sup>™</sup> Film 1170C Clear and applied to properly prepared sign substrates High Intensity Prismatic Digital Sheeting provides long-term retroreflectivity and durability. Digital sheeting is not suitable for a sign application without 1170C Clear overlaminate film.

#### **Photometrics**

#### Daytime Color (x, y, Y)

The chromaticity coordinates and total luminance factor of the retroreflective Digital sheeting, when laminated with 3M ElectroCut Film 1170C Clear, conform to Table A.

Table A - Daytime Color Specification Limits<sup>1</sup>

Color	×	v	x	Y	x	v	x	у	Daytime Luminance Lim (Y%)		inance Limit 6)
		,				,			Min.	Max.	
White	0.303	0.300	0.368	0.366	0.340	0.393	0.274	0.329	27		

<sup>1</sup>The four pairs of chromaticity coordinates determine the acceptable color in terms of the CIE 1931 Colorimetric System.

2

3M<sup>™</sup> High Intensity Prismatic Digital Sheeting 3930DS (White)

February 2016

#### Color Test - Ordinary Colored Sheeting

Conformance to standard chromaticity (x, y) and luminance factor (Y %) requirements shall be determined by instrumental method in accordance with ASTM E 1164 on sheeting applied to smooth aluminum test panels cut from Alloy 6061-T6 or 5052-H38. The values shall be determined on a HunterLab ColorFlex 45/0spectrophotometer. Computations shall be done for CIE Illuminant D65 and the 2° standard observer<sup>2</sup>.

#### Coefficients of Retroreflection (R<sub>A</sub>)

When laminated with 3M<sup>™</sup> ElectroCut<sup>™</sup> Film 1170C Clear, the values in Table B are minimum coefficients of retroreflection expressed in candelas per lux per square meter (cd/lux/m<sup>2</sup>) for unprinted areas.

#### **Test for Coefficients of Retroreflection**

Conformance to coefficient of retroreflection requirements shall be determined by instrumental method in accordance with ASTM E-810 "Test Method for Coefficient of Retroreflection of Retroreflective Digital Sheeting", and per E-810 the values of 0° and 90° rotation are averaged to determine the R<sub>A</sub> in Table B. Coefficient of Petroreflection P. fo 

аріе в	- Minimum	Coefficient o	Retroreti	ection RA TO	or new sne	eting (co	a/iux/m-)

	Observation Angle <sup>3</sup>		
	0.2°	0.5°	
-4° Entrance Angle <sup>4</sup>	360	150	
30° Entrance Angle <sup>4</sup>	170	72	

#### **Entrance Angularity Performance in Regard to Orientation**

High Intensity Prismatic Digital Sheeting is designed to be an effective wide angle reflective sheeting regardless of its orientation on the substrate or ultimate orientation of the sign after installation. However, because the efficiency of light return from cube corner reflectors is not equal at all application orientations, especially with increasing entrance angles, it is possible to get the widest entrance angle light return when the sheeting is oriented in a particular manner. When high entrance angle (>50°) performance is required for given signs (e.g. Keep Right Symbols), it can be obtained easily by specifying the application orientation of the completed signs. In these situations the completed sign should have the sheeting positioned at the 0° orientation (downweb direction perpendicular to the road). When the flat side of the diamond (direction of diamond chain links) is vertical in the completed sign, sheeting is said to be at a 0° orientation. When the "primary groove line" (or, flat side of the diamond shape) is horizontal in the completed sign, the sheeting is said to be at a 90° orientation. (Figure 1)

#### Figure 1 - Primary Groove Line



Unless the sign location and/or position calls for extra-wide entrance angularity performance or a specific installation direction is required by customer specification, signs and applied copy (letters, arrows, borders and shields) can be fabricated and installed using the application orientation that most efficiently utilizes the reflective sheeting.

<sup>2</sup> The instrumentally determined color values of retroreflective sheeting can vary significantly depending on the make and model of colorimetric spectrophotometer as well as the color and retroreflective optics of the sheeting (David M. Burns and Timothy J. Donahue, Measurement Issues in the Color Specification of Fluorescent Retroreflective Materials for High Visibility Traffic Signing and Personal Safety Applications, Proceedings of SPIE: Fourth Oxford Conference on Spectroscopy, 4826, pp. 39-49, 2003). For the purposes of this document, the HunterLab ColorFlex 45/0 spectrophotometer shall be the referee instrument.

<sup>3</sup> Observation Angle – The angle between the illumination axis and the observation axis.

<sup>4</sup> Entrance Angle – The angle from the illumination axis to the retroreflector axis. The retroreflector axis is an axis perpendicular to the retroreflective surface.

This drawing represents design intent only. All measurements and installation guidelines are approximate. Sign Fabricator will be responsible for

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.
- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation. - Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

Client/Project Project No **Riverline Transit-to-Trails Signage** 21TSTC314001 03.11.22 **Bicycle Wayfinding Sign System** 

© 2022 Cloud Gehshan

![](_page_26_Picture_37.jpeg)

#### Appendix

#### Notes:

3M<sup>™</sup> High Intensity Prismatic Digital Sheeting 3930DS (White) with digital printing

Notes As Noted

![](_page_26_Picture_45.jpeg)

Note: For multi-panel signs it is recommended that all background panels be sheeted such that the sheeting direction is the same for all panels.

#### **Fabrication Lines**

The manufacture of prismatic sheeting results in lines being present in the product. In High Intensity Prismatic Digital Sheeting these lines are slightly thicker than the seal pattern legs. Fabrication lines are noticeable in shop light but are not observable on the road either in daylight or at night under typical use conditions (Figure 2).

Figure 2 - Fabrication Lines

![](_page_27_Figure_7.jpeg)

#### Adhesive

High Intensity sheeting has a pressure sensitive adhesive that is recommended for application at temperatures of 65°F (18°C) or higher.

#### **Digital Printing Process**

Prior to printing regulated traffic sign images on High Intensity Prismatic Digital Sheeting 3930DS, the printing file must use only spot color swatches defined with the 3M™ naming convention. These files may then be printed using only 3M<sup>™</sup> Piezo Inkjet Series 8900UV Ink with an EFI H1625-RS printer.

#### **Overlamination Process**

High Intensity Prismatic Digital Sheeting 3930DS must be laminated with 3M™ ElectroCut Film 1170C Clear with a pneumatically adjusted, heated top roll laminator. The laminator roll must be a minimum of 48 inches in width. Due to high variations in the available laminator market, individual equipment and applications should be evaluated by the customer for suitability and to identify optimal settings. Always follow manufacturer's instructions and safety recommendations. Optimal settings will eliminate defects such as bubbling, silvering, curling and optics damage. Recommended settings vary by make and model. See examples below.

#### Table C

Make/Model	AGL/64T	AGL/Patriot
Nip Roll Temperature (°F)	155	155
Nip Roll Pressure (PSI)	65	20
Laminate Unwind Roll Pressure (PSI)	20	50
Laminate Liner Wind Up Roll Pressure (PSI)	5	50
Speed (ft/min)	2	3

3M<sup>™</sup> High Intensity Prismatic Digital Sheeting 3930DS (White)

#### Sign Fabrication Methods

#### Application

Λ

High Intensity Prismatic Digital Sheeting 3930DS incorporates a pressure sensitive adhesive and should be applied to the sign substrate at temperature of 65°F/18°C or higher by any of the following methods:

Mechanical squeeze roll applicator - refer to 3M Information Folder (IF) 1.4. Application to extrusions that are edge wrapped requires sufficient softening of the sheeting. This can be accomplished by directing additional heat to the "next to last" edge roller. This practice will increase productivity and minimize cracking.

Hand squeeze roll applicator - refer to 3M IF 1.6.

Application of High Intensity Prismatic Digital Sheeting 3930DS (White) for complete signs or backgrounds must be done with a roll laminator, either mechanical or hand driven.

#### Hand Application

Hand application is recommended for legend and copy only. Refer to 3M Information Folder 1.5 for more details. Hand applications will show some visual irregularities, which are objectionable to aesthetically critical customers. These are more noticeable on darker colors. To obtain a close-up uniform appearance, a roll laminator must be used. All direct applied copy and border MUST be cut at all metal joints and squeegeed at the joints.

#### Splices

High Intensity Prismatic Digital Sheeting 3930DS must be butt spliced when more than one piece of sheeting is used on one piece of substrate. The sheeting pieces should not touch each other. This is to prevent buckling as the sheeting expands in extreme temperature and humidity exposure.

#### **Double Faced Signs**

The sheeting on the bottom side of a double faced sign can be damaged if rolled through a squeeze roll applicator with an unprotected steel bottom roller. The use of a semi-soft flat sheet between the steel roller and the applied sign face will provide protection from damage. A material such as a rubber mat, tag board or cardboard is recommended.

#### Substrates

For traffic sign use, substrates found to be most reliable and durable are properly prepared aluminum sheets and extrusions. Users are urged to carefully evaluate all other substrates for adhesion and sign durability. Other substrates that may be satisfactory for proper application of sheeting will have the following characteristics: Clean

- Smooth
- Flat
- Riaid
- Dimensionally stable
- Weather resistant
- Non-porous
- High surface energy (passes water break test)

Refer to Information Folder 1.7 for surface preparation recommendations. Substrates with low surface energy may require additional preparation such as flame treatment, mechanical abrasion or use of adhesion promoters prior to sheeting application. Guide sign extrusions may be edge wrapped. Flat panels or unwrapped extrusions are to be carefully trimmed so that sheeting from adjacent panels does not touch on assembled signs. High Intensity Prismatic Digital Sheeting 3930DS is designed primarily for applications to flat substrates. Any use that requires a radius of curvature of less than five inches should also be supported by rivets or bolts. Plastic substrates are not recommended where cold shock performance is required. Sign failures caused by the substrate or improper surface preparation are not the responsibility of 3M.

This drawing represents design intent only. All measurements and installation guidelines are approximate. Sign Fabricator will be responsible for

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.
- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation. - Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

Client/Project Project No **Riverline Transit-to-Trails Signage** 21TSTC314001 03.11.22 **Bicycle Wayfinding Sign System** 

© 2022 Cloud Gehshan

![](_page_27_Picture_47.jpeg)

February 2016

Scale As Noted Appendix

#### Notes:

3M<sup>™</sup> High Intensity Prismatic Digital Sheeting 3930DS (White) with digital printing

Notes

![](_page_27_Picture_63.jpeg)

#### Applying Cut-Out Copy

3M<sup>™</sup> High Intensity Prismatic Digital Sheeting 3930DS (White) may be processed into traffic signs by applying cutout copy as described below. 3M assumes no responsibility for failure of sign face legends or backgrounds that have been processed with materials other than the matched component imaging materials listed in Table D.

Table D – Matched Component Materials compatible with High Intensity Prismatic Digital Sheeting 3930DS

Matched Components				
ElectroCut™ Film	1170C Clear			
Digital Imaging	8900UV			
Slipsheet	SCW 568			
Prespacing Tape	SCPS-2			
Premasking Tape	SCPM-3			
Transfer Tape	TPM-5			

#### Applied Cut-Out Copy

High Intensity cut letters may be applied to High Intensity Prismatic Digital Sheetig 3930DS to create a sign legend. Direct applied copy must be cut at all panel seams and carefully trimmed back so that sheeting from adjacent panels do not touch each other on assembled signs. Refer to Information Folder 1.10 for more information.

#### Storage and Packaging

High Intensity Prismatic Digital Sheeting 3930DS (White) should be stored in a cool, dry area, preferably at 65-75°F (18-24°C) and 30-50% relative humidity and should be applied within one year of purchase. Rolls should be stored horizontally in the shipping carton. Partially used rolls should be returned to the shipping carton or suspended horizontally from a rod or pipe through the core. Unprocessed sheets should be stored flat. Finished signs and applied blanks should be stored on edge.

Avoid banding, crating, or stacking signs. Package for shipment in accordance with commercially accepted standards to prevent movement and chafing. Store sign packages indoors on edges.

Panels or finished signs must remain dry during shipment and storage. If packaged signs become wet, unpack immediately and allow signs to dry. Refer to Information Folder 1.11 for instructions on packing for storage and shipment.

#### Installation

Nylon washers are required when twist style fasteners are used to mount the sign.

#### Cleaning

Signs that require cleaning should be flushed with water, and then washed with a detergent solution and soft bristle brush or sponge. Avoid pressure that may damage the sign face. Flush with water following washing. Do not use solvents to clean signs. Refer to 3M Information Folder 1.10 for more information.

#### Health and Safety Information

Read all health hazard, precautionary, and first aid statements found in the Safety Data Sheets (SDS) for important health, safety and environmental information. To obtain SDS sheets for 3M products, go to 3M.com/SDS, or by mail, or in case of an emergency, call 1-800-364-3577.

3M<sup>™</sup> High Intensity Prismatic Digital Sheeting 3930DS (White)

#### Warranty Information

#### Warranty Coverage Overview

The durability of 3M<sup>™</sup> High Intensity Prismatic Digital Sheeting 3930DS (White) and finished signs will depend upon substrate selection and preparation, compliance with recommended application procedures, geographic area, exposure conditions, and maintenance. Maximum durability of 3930DS (White) sheeting can be expected in applications subject to vertical exposure on stationary objects when processed and applied to properly prepared aluminum according to 3M recommendations provided in Information Folder 1.7 on Sign Substrate Surface Preparation. The user must determine the suitability of any nonmetallic sign backing for its intended use. Sign failures caused by the substrate or improper surface preparation are not the responsibility of 3M. Applications to unprimed, excessively rough or non-weather-resistant surfaces, or exposure to severe or unusual conditions can shorten the performance of such applications. Signs in mountainous areas that are covered by snow for prolonged periods may also have reduced durability. Atmospheric conditions in certain geographic areas may result in reduced durability.

Periodic sign inspection and regular sign replacement are strongly recommended in order for agencies to establish their own effective service life expectation.

#### **3M Basic Product Warranty**

3M High Intensity Prismatic Digital Sheeting 3930DS ("Product") is warranted ("Basic Warranty") to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this product bulletin. If the Product is proven not to have met the Basic Product Warranty on its shipment date, then a buyer's exclusive remedy, and 3M's sole obligation, at 3M's option, will be refund or replacement of the Product.

#### 3M MCS<sup>™</sup> Warranty, MCS Warranty for Traffic, and Limited Remedy

For the MCS Warranty, MCS Warranty for Traffic, and limited remedies applicable to the Product, refer to the 3M<sup>™</sup> Digitally-Imaged Sign Warranty Bulletin.

#### Limitations of Liability

3M WILL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO A BUYER FOR DIRECT (other than the applicable Limited Remedy previously stated), SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS) IN ANY WAY RELATED TO A PRODUCT OR THIS PRODUCT BULLETIN, REGARDLESS OF THE LEGAL OR EQUITABLE THEORY ON WHICH SUCH DAMAGES ARE SOUGHT.

#### Additional Limitations

See the 3M<sup>™</sup> Digitally-Imaged Sign Warranty Bulletin for terms, additional limitations of your warranty, if any, and limitations of liability.

#### Other Product Information

Always confirm that you have the most current version of the applicable Product Bulletin, Information Folder or other product information from the 3M Website at http://www.mmm.com/tss.

IF 1.4 Instructions for Interstate Squeeze Roll Applicator IF 1.5 Hand Application Instructions IF 1.6 Hand Squeeze Roll Applicator IF 1.7 Sign Base Surface Preparation IF 1.10 Cutting, Premasking, and Prespacing IF 1.11 Sign Maintenance Management PB 1170 ElectroCut<sup>™</sup> Film Series

This drawing represents design intent only. All measurements and installation guidelines are approximate. Sign Fabricator will be responsible for - Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.

- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation.
- Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

**Riverline Transit-to-Trails Signage Bicycle Wayfinding Sign System** 

© 2022 Cloud Gehshan

Project No evisions 21TSTC314001 03.11.22

![](_page_28_Picture_43.jpeg)

February 2016

## Appendix

#### Notes:

3M<sup>™</sup> High Intensity Prismatic Digital Sheeting 3930DS (White) with digital printing

Scale	Notes	Page Number
As Noted		4.7

For Information or Assistance Call: 1-800-553-1380 In Canada Call: 1-800-265-1840

Internet: www.3M.com/roadwaysafety

3M, ElectroCut and MCS are trademarks of 3M. Used under license in Canada. ColorFlex is a registered trademark of Hunter Associates Laboratory, Inc.

3M assumes no responsibility for any injury, loss or damage arising out of the use of a product that is not of our manufacture. Where reference is made in literature to a commercially available product, made by another manufacturer, it shall be the user's responsibility to ascertain the precautionary measures for its use outlined by the manufacturer.

#### Important Notice

All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, or conditions express or implied. Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct, special or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for his/her intended use, and user assumes all risk and liability whatsoever in connection therewith. Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

![](_page_29_Picture_6.jpeg)

**Traffic Safety and Security Division** 3M Center, Building 0225-04-N-14 St. Paul, MN 55144-1000 USA

Phone 1-800-553-1380 Web 3M.com/roadwaysafety Please recycle. Printed in USA © 3M 2016. All rights reserved. Electronic Only

This drawing represents design intent only. All measurements and installation guidelines are approximate. Sign Fabricator will be responsible for:

- Verifying all dimensions, structures, and existing conditions in the field prior to execution of shop drawings.

- Notifying and coordinating the appropriate groups of any potential issues or obstructions that will affect the design intent prior to installation. - Obtaining any necessary engineering seals or permits.

- Verifying compliance with ADA and local sign codes with the appropriate groups for final approval prior to fabrication.

Client/Project Project No. **Riverline Transit-to-Trails Signage** 21TSTC314001 03.11.22 **Bicycle Wayfinding Sign System** 

Date

© 2022 Cloud Gehshan

![](_page_29_Picture_16.jpeg)

### Appendix

#### Notes:

3M<sup>™</sup> High Intensity Prismatic Digital Sheeting 3930DS (White) with digital printing

![](_page_29_Picture_20.jpeg)

![](_page_29_Picture_22.jpeg)