CITY OF SPOKANE: WAYFINDING
PHASE 1 - IMPLEMENTATION
DOWNTOWN / UNIVERSITY DISTRICT / MEDICAL DISTRICT

DESIGN INTENT DRAWINGS

MAY 17, 2019
Revised: July 12, 2019
Client: Downtown Spokane Partnership, City of Spokane and Visit Spokane

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VOLUME 2:
Documentation Drawings
This wayfinding and gateway signage project is a collaborative effort between Spokane County, the City of Spokane, Downtown Spokane Partnership, Visit Spokane, Washington Department of Transportation, and the Spokane Regional Transportation Council. Businesses, residents, and visitors to this regional area share a transportation network that would greatly benefit from a comprehensive wayfinding system, including signage and gateway features.

This plan will establish the policies, design criteria, graphic standards and site location plan for a multi-destination wayfinding system. The policy and criteria development will serve to establish hierarchies of gateways, destinations, routes, and modes. Graphic standards and sign location guidelines are an additional component of the plan, which will provide guidance to expansion and implement signage and gateway features. This Plan represents the final phase in the process prior to procurement of sign creation and placement.

Cities, towns and communities of all sizes and aspirations understand that the reality of today’s economy and the high level of competition for the public’s attention demand a clear and distinctive identity. Wayfinding programs promote a region’s identity, making it easier for visitors to find their way and enhance the visitor’s experience. Through this wayfinding project the City of Spokane understands that communicating a consistent identity and message across a variety of design elements and technologies is a key factor in reaching cultural, economic and marketing goals.

Numerous plans and studies developed for the community have referenced the need for a wayfinding system. In addition, the business community, visitor sites, and cultural organizations have all expressed a need for wayfinding that can both help travelers navigate efficiently to destinations and amenities (such as parking), as well as increase site visibility and help attract new visitors.
SECTION 1 | Sign System Standards
Clearview Highway

ABCDEFGHijklmnopqrstuvwxyz

types.

Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.

2. Welds: All welds shall be ground smooth, paint all seams.

3. Hardware: All exposed hardware shall be tamper proof fasteners.

4. All exposed edges painted to match adjacent face.

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication.

Amongst the several mechanical Arts that have engaged my attention, there is no one which I have pursued with so much steadiness and pleasure, as that of Letter Founding.

The Clearview typeface is the required message font for vehicular sign types.

All type shall be set exactly as specified. Substitutions will only be accepted, at the DESIGNER'S discretion, where they match the specified typeface in every detail. The FABRICATOR should be aware that different versions of typesetting equipment may not satisfactorily match specified typefaces and in such instances will not be acceptable.

Sometimes the Foot mark is mistaken for an apostrophe and an inch mark is mistaken for quotations. Below are examples of correct and incorrect apostrophe's for each typeface.

The Clearview typeface is the required message font for vehicular sign types.

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**LETTER-SPACING**

Inconsistencies in Letter Spacing

**TYPEFACE 1**

Spokane

**TYPEFACE 2**

SPOKANE

**TYPEFACE 3**

Spokane

**IMPORTANT:** Individual spacing of each letter needs to be evaluated. See Examples Above.

Kern all Copy so that each character is optically centered between the center of each of the surrounding characters.

**SIGN TEXT STANDARDS**

**COPY HEIGHT**

When measuring copy height, measure only the height of the Capital letters to determine your overall copy height (shown in illustration below as “X”).

Some of the other letters have an extended height beyond the average height of the letters.

![COPY HEIGHT Example](image)

**LINE SPACING**

When measuring line spacing, always measure from the baseline of the topmost text line to the baseline of the text line below (shown as “X”).

![LINE SPACING Example](image)

**SPECIFICATIONS**

Individual spacing of each letter needs to be evaluated. All copy shall be kerned so that each character is optically centered between the center of each of the surrounding characters.

**NOTES**

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2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.
**SPECIFICATIONS**

All artwork pictured on this page will be provided to the sign fabricator by the designer and/or client. This artwork must be used for all sign applications in this provided documentation. Do NOT substitute with any other artwork!

---

**GRAPHIC ELEMENTS**

- Utilized in District ID signage
  - Spokane
  - University District
  - Medical District
  - Downtown District

- Utilized in Vehicular signage
  - Spokane
  - University District
  - Downtown District

**SYMBOLS**

- Custom Pictographs

**ARROWS**

- Utilized in Vehicular Directional signage

---

**USE of Arrows**

When multiple directions are required on a sign, the following directional hierarchy shall take precedent. See Example below. Reference Message Schedule for individual Messages.

- Straight Arrow
- Left Arrow
- Right Arrow

---

**NOTES**

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**USE of Arrows**

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- Straight Arrow
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- Right Arrow

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**SPECIFICATIONS**

The FABRICATOR must submit three (3) identical sets of each color specified for approval prior to any painting. Sample paint swatches must be produced on .040" aluminum sheet, approximately 3" x 6", including primer and free of defects. Sample material swatches should be the same approximate size. Samples MUST have project and color specifications attached to back side.

The colors must look exactly the same every time they are used so that people associate them with the Spokane Washington Wayfinding Program. All media, vinyl, paint, and inks must be produced so that the colors match as specified on this page.

### V1 - Vinyl

<table>
<thead>
<tr>
<th>NAME</th>
<th>SPECIFICATION</th>
<th>APPLICABLE</th>
<th>PROCESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>3M Schotical Diamond Vinyl Color: 180C-10 White</td>
<td>Standard for System (typ.)</td>
<td>Surface applied according to 3M manufacture specifications.</td>
</tr>
</tbody>
</table>

+ MUST comply with MUTCD section Table 2A-3 – Minimum maintained retroreflectivity levels. Approved process: Durst RHO 161 TS printer. Sherine Industries: (604) 513-1887.

**NOTES**

| A.5 |

---

**V1 - Vinyl**

<table>
<thead>
<tr>
<th>NAME</th>
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<tbody>
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<td>Surface applied according to 3M manufacture specifications.</td>
</tr>
</tbody>
</table>

---

**SHEET TITLE:**

1. **Wayfinding and Signage System**
2. **SPOKANE, WA**
## Paints

<table>
<thead>
<tr>
<th>P. Paints</th>
<th>Name</th>
<th>Specification</th>
<th>Applicable</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>White</td>
<td>To match Matthews Paint MP11437</td>
<td>Standard for System (typ.)</td>
<td>Surface applied, exterior sign paint and protective top coat: MATTHEWS Acrylic Polyurethane with Anti-Graffiti Clear Coat finish.</td>
</tr>
<tr>
<td>P2</td>
<td>Green</td>
<td>To match Pantone® 5174 C</td>
<td>Standard for System (typ.)</td>
<td>Surface applied, exterior sign paint and protective top coat: MATTHEWS Acrylic Polyurethane with Anti-Graffiti Clear Coat finish.</td>
</tr>
<tr>
<td>P3</td>
<td>Citycode - Green</td>
<td>To match Pantone® 302 C</td>
<td>Standard for System (typ.)</td>
<td>Surface applied, exterior sign paint and protective top coat: MATTHEWS Acrylic Polyurethane with Anti-Graffiti Clear Coat finish.</td>
</tr>
<tr>
<td>P4</td>
<td>University Orange</td>
<td>To match Pantone® 181 C</td>
<td>Standard for System (typ.)</td>
<td>Surface applied, exterior sign paint and protective top coat: MATTHEWS Acrylic Polyurethane with Anti-Graffiti Clear Coat finish.</td>
</tr>
<tr>
<td>P5</td>
<td>Downtown Purple 2</td>
<td>To match Pantone® 2817 C</td>
<td>Standard for System (typ.)</td>
<td>Surface applied, exterior sign paint and protective top coat: MATTHEWS Acrylic Polyurethane with Anti-Graffiti Clear Coat finish.</td>
</tr>
<tr>
<td>P6</td>
<td>Medical - Blue</td>
<td>To match Pantone® 5437 C</td>
<td>Standard for System (typ.)</td>
<td>Surface applied, exterior sign paint and protective top coat: MATTHEWS Acrylic Polyurethane with Anti-Graffiti Clear Coat finish.</td>
</tr>
<tr>
<td>P7</td>
<td>Grey 1</td>
<td>To match Pantone® 438 C</td>
<td>Standard for System (typ.)</td>
<td>Surface applied, exterior sign paint and protective top coat: MATTHEWS Acrylic Polyurethane with Anti-Graffiti Clear Coat finish.</td>
</tr>
<tr>
<td>P8</td>
<td>Parking Blue</td>
<td>To match Pantone® 288 C</td>
<td>Standard for System (typ.)</td>
<td>Surface applied, exterior sign paint and protective top coat: MATTHEWS Acrylic Polyurethane with Anti-Graffiti Clear Coat finish.</td>
</tr>
<tr>
<td>P9</td>
<td>UPO - Aqua 2</td>
<td>To match Pantone® 1794 C</td>
<td>Standard for System (typ.)</td>
<td>Surface applied, exterior sign paint and protective top coat: MATTHEWS Acrylic Polyurethane with Anti-Graffiti Clear Coat finish.</td>
</tr>
<tr>
<td>P12</td>
<td>Black Box</td>
<td>To match Pantone® 437 C</td>
<td>Standard for System (typ.)</td>
<td>Surface applied, exterior sign paint and protective top coat: MATTHEWS Acrylic Polyurethane with Anti-Graffiti Clear Coat finish.</td>
</tr>
<tr>
<td>P13</td>
<td>Black</td>
<td>To match PPG Duraren Black U4055/7</td>
<td>Standard for System (typ.)</td>
<td>Surface applied, exterior Grade Panelcoating and protective top coat: Anti-Graffiti Clear Coat finish.</td>
</tr>
</tbody>
</table>

## Materials

<table>
<thead>
<tr>
<th>M. Materials</th>
<th>Name</th>
<th>Specification</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>Concrete</td>
<td>Formed concrete cap/base</td>
<td>Formed rock cap on the concrete. Match carried downtown concrete planters in Riverfront Park.</td>
</tr>
<tr>
<td>M2</td>
<td>Direct Embed</td>
<td>Baked External Process</td>
<td>Baked External process exterior grade paints.</td>
</tr>
<tr>
<td>M3</td>
<td>Brushed Aluminum</td>
<td>Brushed Aluminum</td>
<td>Clear anodizing over natural Aluminum finish.</td>
</tr>
</tbody>
</table>

## Notes

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication.
2. All work shall be ground smooth, paint all areas.
3. Hardware: All exposed hardware shall be barrier proof fasteners.
4. All exposed edges painted to match adjacent face.

## Specifications

The FABRICATOR must submit three (3) identical sets of each color specified for approval prior to any painting. Sample paint swatches must be produced on .080” aluminum sheet, approximately 3” x 6”, including primer and free of defects. Sample material swatches should be the same approximate size. Samples MUST have project and color specifications attached to back side.

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**4" VEHICULAR SIGN TERMINOLOGIES**

**Sign Types: VDIR.1-3**

### COMMUNITY
- City Hall
- Spokane Co Courthouse
- Downtown Library
- East Central Comm Ctr
- East Side Library
- Hillyard Library
- Indian Trail Library
- N Spokane Library
- Northeast Comm Center
- Shadle Library
- South Hill Library
- South Perry Farmers Mkt
- West Central Comm Center
- YMCA
- YWCA

### MUSEUMS / CULTURAL
- Performing Arts Center
- Bing Crosby Theater
- Bing Crosby Crosbyana Rm
- Cathedral of St. John
- Corbin Art Center
- Davenport Historic Hotel
- Jundt Art Museum
- M Woldson Theater
- Mobius Kids Museum
- Mobius Science Ctr
- Museum Arts & Culture
- Spokane Civic Theatre

### DISTRICTS
- Browne’s Addition
- Convention Ctr District
- Davenport District
- Downtown
- East Sprague
- Flour Mill/ North Bank
- Garland District
- Hillyard
- Kendall Yards
- Lincoln Heights
- Medical District
- South Perry
- University District

### PARKS/RECREATION
- Bowl & Pitcher
- Creek at Qualchan GC
- Down River Golf
- Down River Disc Golf
- Esmeralda Golf
- Finch Arboretum
- High Bridge Park
- Hillyard Skate Park
- Indian Canyon Golf
- Manito Park
- Palisades Park
- Riverfront Park
- Riverside State Park
- Spokane River Falls
- Upriver Dam

---

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2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
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---

**SPECIFICATIONS**

**SPOKANE, WA**  
Wayfinding and Signage System

**120 North Church Street**  
Suite 208
West Chester, PA 19380

**T 484.266.0648**  
www.merjedesign.com

---

**ENVIRONMENTS & EXPERIENCES**

**MAJOR ATTRACTIONS**
- Albi Stadium
- Convention Center
- River Park Square
- Spokane Arena
- Spokane Polo Fields

**EDUCATION**
- Eastern Washington U
- Gonzaga University
- Gonzaga Athletic Ctr
- Spokane Comm College
- Spokane Falls Comm College
- Washington State Univ

---

**EDUCATION DISTRICTS**
- Browne’s Addition
- Convention Ctr District
- Davenport District
- Downtown
- East Sprague
- Flour Mill/ North Bank
- Garland District
- Hillyard
- Kendall Yards
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- Riverside State Park
- Spokane River Falls
- Upriver Dam

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**COMMUNITY PARKING**
- Parkade Garage
- Park West Garage
- River Park Sq Garage

---

**TRANSIT**
- Spokane Int’l Airport
- Amtrak & Greyhound

---

**PENDING FINAL REVIEW**
Pending Final Review
### Vehicular Sign Terminologies

**Sign Types: VDIR.4-6**

<table>
<thead>
<tr>
<th>DISTRICTS</th>
<th>PARKS / RECREATION</th>
<th>PARKS / RECREATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Browne’s Addition</td>
<td>Bowl &amp; Pitcher</td>
<td>Spokane River Falls</td>
</tr>
<tr>
<td>Davenport District</td>
<td>Creek at Qualchan Golf</td>
<td>Upriver Dam</td>
</tr>
<tr>
<td>Downtown</td>
<td>Down River Golf</td>
<td>Palisades Park</td>
</tr>
<tr>
<td>East Sprague</td>
<td>Down River Disc Golf</td>
<td></td>
</tr>
<tr>
<td>Flour Mill/ North Bank</td>
<td>Esmeralda Golf</td>
<td></td>
</tr>
<tr>
<td>Garland District</td>
<td>Finch Arboretum</td>
<td></td>
</tr>
<tr>
<td>Hillyard</td>
<td>High Bridge Park</td>
<td></td>
</tr>
<tr>
<td>Kendall Yards</td>
<td>Hillyard Skate Park</td>
<td></td>
</tr>
<tr>
<td>Lincoln Heights</td>
<td>Indian Canyon Golf</td>
<td></td>
</tr>
<tr>
<td>Medical District</td>
<td>Manito Park</td>
<td></td>
</tr>
<tr>
<td>South Perry</td>
<td>Riverside State Park</td>
<td></td>
</tr>
<tr>
<td>University District</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convention Center District</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.
5. 6'-0” Vehicular Panel Width
6. Space for Arrow
7. Indian Canyon Golf
8. Finch Arboretum
9. High Bridge Park
10. Hillyard Skate Park
11. Indian Canyon Golf
12. Manito Park
13. Riverside State Park

**ENVIRONMENTS & EXPERIENCES**

PENDING FINAL REVIEW

**SPOKANE, WA**

Wayfinding and Signage System

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2. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions drawn.
3. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and signed/sealed by a Wash. State structural engineer. All copy shall be proofread and approved by client and legal requirements checked by legal department.

**DATE:** 02/25/2015

**SIGN BY:** LH/GS

**IDAD M1:**

**PROJECT NO.:**

**SHEET TITLE:**

**CLIENT / PROJECT:**

**PROJECT #:**

**SHEET #:** A.10
Pedestrian Terminologies

Sign Types: PED.1

Visitor Information
- Visitor Center
- Information Kiosk

Government
- City Hall
- Downtown Library

Museums/Cultural
- Bing Crosby Theatre
- INB Performing Arts Center
- Interplayers Theatre
- Martin Woldson Theatre
- Mobius Science Center
- Mobius Kids Museum

Parks & Recreation
- Centennial Trail
- Fish Lake Trail
- Riverfront Park
- Ice Palace

Public Parking
- Parkade Garage
- Park West Garage
- River Park Square Garage

Education
- Eastern Washington University
- Washington State University
- Gonzaga University

Major Attractions
- Convention Center
- Davenport Historic Hotel
- Knitting Factory
- Steam Plant Square
- Spokane River Falls
- River Park Square

Transportation
- Amtrak & Greyhound

Specifications

- Spokane, WA Wayfinding and Signage System
- 120 North Church Street, Suite 208
- West Chester, PA 19380
- T 484.266.0648
- www.merjedesign.com

Environments & Experiences

- Eastern Washington University
- Washington State University
- Gonzaga University

Pedestrian Terminologies & Abbreviations

- Spokane, Washington – Wayfinding Program
- Pedestrian Terminologies | December 10, 2014

- Convention Center
- Davenport Historic Hotel
- Knitting Factory
- Steam Plant Square
- Spokane River Falls
- River Park Square

- Eastern Washington University
- Washington State University
- Gonzaga University

Transportation
- Amtrak & Greyhound

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Placement Guidelines
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication.

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---

**FIGURE 1 - Lateral Clearance Guidelines**

Within some of the Downtown areas in Spokane, Washington, urban conditions and narrow sidewalks may cause deviation from the standards articulated in the previous figures. Conditions may include less lateral clearance for the 2'-0" or 5'-0" preferred distance from edge of sign panel to curb, or placement at 2'-0" or 5'-0" would create an obstacle (i.e. post positioned in middle of the side walk) or create situations of non-compliance to ADA clearances.

In these cases guidelines must be consistent with MUTCD Section 2A.19 options for urban areas.

Suggested recommendations for relocation of signs if placement is in conflict with guidelines.

**OPTION 1:** Position the sign at a minimum of 2'-0" or 5'-0" (face of curb to edge of sign panel) as required.

**OPTION 2:** If the sign can be moved, without disrupting routing or sequencing, then it should be repositioned to achieve the 2'-0" or 5'-0" min.

If 2'-0" is not physically possible, then the following options should be allowed:

**OPTION 3:** The sign set back should be position at 1'-6". If that is not possible then...

**OPTION 4:** Utilize a minimum 1'-0", in accordance with MUTCD, only as a final option.

---

**Measurements and Distances shown are guidelines only prevailing local and state codes shall supersede information presented.**
FIGURE 2 - Lateral Clearance Guidelines

Within some of the Downtown areas in Spokane County, Washington, urban conditions and narrow sidewalks may cause deviation from the standards articulated in the previous figures. Conditions may include less lateral clearance for the 2'-0" or 5'-0" preferred distance from edge of sign panel to curb, or placement at 2'-0" or 5'-0" would create an obstacle (e.g. post positioned in middle of the sidewalk) or create situations of non-compliance to ADA clearances.

In these cases guidelines must be consistent with MUTCD Section 2A.19 options for urban areas.

Suggested recommendations for relocation of signs if placement is in conflict with guidelines.

OPTION 1: Position the sign at a minimum of 2'-0" or 5'-0" (face of curb to edge of sign panel) as required.

OPTION 2: If the sign can be moved, without disrupting routing or sequencing, then it should be repositioned to achieve the 2'-0" or 5'-0" min.

If 2'-0" is not physically possible, then the following options should be allowed:

OPTION 3: The sign set back should be position at 1'-6". If that is not possible then...

OPTION 4: Utilize a minimum 1'-0", in accordance with MUTCD, only as a final option.

NOTE:

All locations shall be installed within the City ROW. If during the initial survey it is determined any part of the sign (pole or panel) extends outside of the City’s Right of Way vertical plane and into private property, the installer must notify the city prior to fabrication/installation.

Reference View: Example - 5 foot Furnishing Zone / City Right of Way

SCALE: Not To Scale

Note: Top View of VDIR.1-3 shown as example.

Figure 2

Not to Scale
Menu of Sign Types
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

NOTES:
01/12/2015
02/25/2015
07/09/2015
08/31/2015

These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and signed/sealed by a Wash. State structural engineer. All copy shall be proofread and approved by client and legal requirements checked by legal department.
**Vehicular Signage**

**Vehicle Directional Signs:** Vehicular directional direct visitors to destinations within the cities. Signs can have 1-3 messages, and can hold either text and/or a graphic pictograph. The side panels will have the name of the city in which you are located.

For signs typically used on roadways per MUTCD section 2D.50 both background and copy are retro-reflective. Sign posts are break-away. “Left-Mounted” versions are available for placement on opposite sides (left of street). (Ref: C.5)

---

**Vehicular Signage - Overview**

<table>
<thead>
<tr>
<th>Sign Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VEHICULAR DIRECTIONAL SIGNS:</td>
<td>Vehicular directional direct visitors to destinations within the cities. Signs can have 1-3 messages, and can hold either text and/or a graphic pictograph. The side panels will have the name of the city in which you are located. For signs typically used on roadways per MUTCD section 2D.50 both background and copy are retro-reflective. Sign posts are break-away. “Left-Mounted” versions are available for placement on opposite sides (left of street). (Ref: C.5)</td>
</tr>
</tbody>
</table>
Specifications

Spokane, WA
Wayfinding and Signage System
120 North Church Street
Suite 208
West Chester, PA 19380
T 484.266.0648
www.merjedesign.com

Environments & Experiences

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

Notes:

01/12/2015
02/25/2015
07/09/2015
08/31/2015

These drawings are meant for Design Intent Only and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and construction. A shop drawing or shop detail approved in this office shall be executed only by a Wash. State structural engineer. All copy shall be proofread and approved by client and legal requirements checked by legal department.

Vehicular Signage

Overview

Menu of Sign Types

Vehicular Directional

Trailblazer signs are used to give simple direction to destinations including:

Visitor Information
Riverfront - Spokane Falls
Parking

Designs include pictograph and/or text.
PARKING DIRECTIONALS:
Parking Directional Signs can direct multiple parking areas or to specific locations by name.

Pedestrian Signage

PEDESTRIAN DIRECTIONALS:
These sign type provides direction to up to 8 destinations.

These signs can direct to typical destinations and attractions as well as paring garages and lots, and adjacent districts.

INTERPRETIVE PANELS:
Interpretive panels can tell a story about Downtown Spokane’s history, music scene, or sustainable programs being initiated in the Downtown. They can be located in parks and at key gathering points.

PEDESTRIAN KIOSKS:
Located at key gathering points, kiosks provide even broader information and are substantial, offering directions and maps.

These can be single- or double-sided, internally illuminated or static, have architectural bases and can utilize solar power.

---

**SPECIFICATIONS**

**MENU OF SIGN TYPES**

**Parking Signage**

- PARKING DIRECTIONALS:
  Parking Directional Signs can direct multiple parking areas or to specific locations by name.

**Pedestrian Signage**

- PEDESTRIAN DIRECTIONALS:
  These sign type provides direction to up to 8 destinations.
  These signs can direct to typical destinations and attractions as well as paring garages and lots, and adjacent districts.

- INTERPRETIVE PANELS:
  Interpretive panels can tell a story about Downtown Spokane’s history, music scene, or sustainable programs being initiated in the Downtown. They can be located in parks and at key gathering points.

- PEDESTRIAN KIOSKS:
  Located at key gathering points, kiosks provide even broader information and are substantial, offering directions and maps.

  These can be single- or double-sided, internally illuminated or static, have architectural bases and can utilize solar power.

---

**NOTES:**

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

---

**Environments & Experiences**

120 North Church Street
Suite 208
West Chester, PA 19380
T 484.266.0648
www.merjedesign.com

---

**Parking / Pedestrian Signage Overview**

- PARK.1 Parking Trailblazer
- PED.1 Pedestrian Directional
- INTERP.1 Interpretive Sign
- KIOSK.1 Pedestrian Kiosk
- KIOSK.2 Pedestrian Kiosk
- PARKADE Garage
- Visitor Information
- Riverpark Square Garage
- Spokane Downtown
- MEDICAL DISTRICT
- UNIVERSITY DISTRICT
- Monroe St. Bridge

---

**Date:** 02/25/2015

**Sheet Title:** Parking / Pedestrian Signage Overview

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**C.4**
**SPECIFICATIONS**

**SPOKANE, WA**

Wayfinding and Signage System

120 North Church Street
Suite 208
West Chester, PA 19380

T 484.266.0648
www.merjedesign.com

**ENVIRONMENTS & EXPERIENCES**

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.

2. Welds: All welds shall be ground smooth, paint all seams.

3. Hardware: All exposed hardware shall be tamper proof fasteners.

4. All exposed edges painted to match adjacent face.

**NOTE:**

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**MENU OF SIGN TYPES**

**Vehicular Signage Left**

"Left-Mounted" versions are available for placement on opposite sides (left) of roadway. When positioned on the left side of the roadway. Panels are adjusted to mount aligned to the right edge of the post.

Sign types will be designated with an L for Left in the programming message schedule.

- **VDIR.1L** Vehicular Directional
- **VDIR.2L** Vehicular Directional
- **VDIR.3L** Vehicular Directional
- **PARK.1L** Parking Trailblazer
- **PARK.2L** Parking Trailblazer

*Urban Conditions* 2'-0" Min. *1'-0" Min. where Lateral Clearance Limited

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**Vehicular Signage Left Side Configuration**

- **Spokane Arena**
- **Eastern Washington University**
- **Gonzaga**
- **VA Medical Center**
- **PARK.1L** Parking Trailblazer
- **PARK.2L** Parking Trailblazer

---

**Notes:**

- Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
- Welds: All welds shall be ground smooth, paint all seams.
- Hardware: All exposed hardware shall be tamper proof fasteners.
- All exposed edges painted to match adjacent face.
The Color Designator Chart is found in the Graphic Standards section. The Specification Notation is found on the same page as the drawings.
1. POST
MATERIAL: Aluminum
SIZE: Square 5" x 5" x 0.25" thick wall
FABRICATION PROCESS: Extruded
EDGES: Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Powdercoating, with clear Antigraffiti topcoat.

2. SIGN PANEL - REFLECTIVE FRONT
MATERIAL: Aluminum sheet
SIZE: Custom as Shown x 0.018" Thick
FABRICATION PROCESS: Router Cut
EDGES: Smooth - Rounded Corners
COLOR: custom, as noted
GRAPHIC BACKGROUND AND COPY PROCESS: 3M custom inks print direct to 3930 with 3M approved D/Graffitivinyl Over-laminate. (See Color Sheet for all color and material specifications)
SURFACE PROCESS: Paint all exposed surfaces with Mathews Acrylic Polyurethane, with clear Antigraffiti top coat.
FASTENERS: Press-pier & 3M requirements. Mechanically bolt - SS Bolt Assembly to windbeam as structurally required. Ref. F.1 for details

3. WINDBEAM
MATERIAL: Aluminum Windbeam Extrusion, Z Bar Shape - WSDOT Standard
FABRICATION PROCESS: Extruded
EDGES: Square, Smooth
COLOR: custom, as noted
SURFACE PROCESS: Paint all exposed surfaces with Mathews Acrylic Polyurethane, with clear satin finish.
FASTENERS: SS bolt assembly through sign post.

5. BREAKAWAY FOOTER
FOOTER: The Transpo® AS5 Break-Safe system.

NOTE: Fabricator shall verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.
NOTES
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication.

2. Welds: All welds shall be ground smooth, paint all seams.

3. Hardware: All exposed hardware shall be tamper proof fasteners.

4. All exposed edges painted to match adjacent face.

8. WINDBEAM
MATERIAL: Aluminum Windbeam Extrusion, T Bar Shape - WSDOT Standard
FABRICATION PROCESS: Extruded
EDGES: Square, Smooth
COLOR: custom, as noted
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
FASTENER: SS bolt assembly through sign post.

9. POLE STRAP ATTACHMENT
PRODUCT: Band-It Band, or approved equal.
MATERIAL: Type 201 SS - Color match existing poles. Black or Stainless
SIZE: 3/4 inch
FINISH: Stainless steel
FASTENER: Ultra-Lok® Free End clamps
NOTE: Sign Contractor to coordinate the removal or movement of interfering existing signs on poles, with the city.

E.7
Graphic Layouts

Layout Examples: DIST.1.2
SCALE: 3/4" = 1'-0"

1. Front View: DIST.1.2
SCALE: 1/2" = 1'-0"

2. Side View: DIST.1.2
SCALE: 1/2" = 1'-0"

3. Back View: DIST.1.2
SCALE: 1/2" = 1'-0"

8. WINDBEAM
MATERIAL: Aluminum Windbeam Extrusion, T Bar Shape - WSDOT Standard
FABRICATION PROCESS: Extruded
EDGES: Square, Smooth
COLOR: custom, as noted
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
FASTENER: SS bolt assembly through sign post.

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NOTES
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MATERIAL: Aluminum Windbeam Extrusion, T Bar Shape - WSDOT Standard
FABRICATION PROCESS: Extruded
EDGES: Square, Smooth
COLOR: custom, as noted
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
FASTENER: SS bolt assembly through sign post.

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PRODUCT: Band-It Band, or approved equal.
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SCALE: 1/2" = 1'-0"
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SPECIFICATIONS

1. POST
MATERIAL: Aluminum
SIZE: Square 5" x 5" x .25" thick wall
FABRICATION PROCESS: Extruded
EDGES: Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Powdercoating, with clear Anti-graffiti top coat.

2. SIGN PANEL - REFLECTIVE FRONT
MATERIAL: Aluminum sheet
SIZE: Custom as shown x 1/8" Thk.
FABRICATION PROCESS: Router Cut
EDGES: Smooth - Rounded Corners
COLOR: Custom, as noted
GRAPHIC BACKGROUND AND COPY PROCESS: 3M custom inks print direct to 3000 with 3M approved Anti-Graffiti Vinyl Over-laminate. (See Color Sheet for all color and material specifications)
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Anti-graffiti top coat.
FASTENER: Press-roll per 3M requirements. Mechanically nut - SS Bolt Assembly to Windbeam as structurally required. Ref. F.1 for details

6. WINDBEAM
MATERIAL: Aluminum Windbeam Extrusion, Z Bar Shape - WSDOT Standard
FABRICATION PROCESS: Extruded
EDGES: Square, Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
FASTENER: SS bolt assembly through sign post.

5.1. BREAKAWAY FOOTER
FOOTER: The Transpo® AS5 Break-Safe system.

---

1. Post
MATERIAL: Aluminum
SIZE: Square 5" x 5" x .25" thick wall
FABRICATION PROCESS: Extruded
EDGES: Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Powdercoating, with clear Anti-graffiti top coat.

2. Sign Panel - Reflective Front
MATERIAL: Aluminum sheet
SIZE: Custom as shown x 1/8" Thk.
FABRICATION PROCESS: Router Cut
EDGES: Smooth - Rounded Corners
COLOR: Custom, as noted
GRAPHIC BACKGROUND AND COPY PROCESS: 3M custom inks print direct to 3000 with 3M approved Anti-Graffiti Vinyl Over-laminate. (See Color Sheet for all color and material specifications)
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Anti-graffiti top coat.
FASTENER: Press-roll per 3M requirements. Mechanically nut - SS Bolt Assembly to Windbeam as structurally required. Ref. F.1 for details

8. Windbeam
MATERIAL: Aluminum Windbeam Extrusion, Z Bar Shape - WSDOT Standard
FABRICATION PROCESS: Extruded
EDGES: Square, Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
FASTENER: SS bolt assembly through sign post.

5.1. Breakaway Footer
FOOTER: The Transpo® AS5 Break-Safe system.
2. SIGN PANEL - REFLECTIVE FRONT
MATERIAL: Aluminum sheet
SIZE: Custom as shown x 1/8" Thk.
FABRICATION PROCESS: Router Cut
EDGES: Smooth - Rounded Corners
COLOR: custom, as noted
GRAPHIC BACKGROUND AND COPY PROCESS:
3M custom link print direct to 3M30 with 3M approved UV/Graffiti Vinyl Over-laminates.
(Spec Color Sheet for all color and material specifications)
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Anti- graffiti top coat.
FASTENER: Press roll per 3M requirements. Mechanically tension - SS Bolt Assembly to Permabanner Bracket as structurally required. Ref. F.2 for details

3. SIGN PANEL - REFLECTIVE FRONT
MATERIAL: Aluminum Bracket Extrusion, FABRICATION PROCESS: Extruded
EDGES: Square, Smooth
COLOR: custom, as noted
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coated satin finish.
FASTENER: Mech Fasten to sign panel. SS strap mounted to light pole. Ref. F.2 for details

9. POLE STRAP ATTACHMENT
PRODUCT: Band-It Band, or approved equal
MATERIAL: Type 201 SS - Color match existing poles. Black or Stainless
SIZE: 3/4 inch
FINISH: Stainless steel
FASTENER: Ultra-Lok® Free End clamps
NOTE: Sign Contractor to coordinate the removal or movement of interfering existing signs on poles, with the city.

NOTES
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

ENVIRONMENTS & EXPERIENCES
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1. POST
MATERIAL: Aluminum
SIZE: Square 5" x 5" x 3/4" thick wall
FABRICATION PROCESS: Extruded
EDGES: Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Powdercoating, with clear AntiGraffiti top coat.

2. SIGN PANEL - REFLECTIVE FRONT
MATERIAL: Aluminum sheet
SIZE: Custom as shown x 1/8" thick
FABRICATION PROCESS: Router Cut
EDGES: Smooth - Rounded Corners
COLOR: Custom, as noted
GRAPHIC BACKGROUND AND COPY PROCESS: 3M custom inks print direct to 3930 with 3M approved AntiGraffiti Overlaminate. (See Color Sheet for all color and material specifications)
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear AntiGraffiti top coat. FASTENER: Press-roll per 3M requirements. Mechanically hot - SS Bolt Assembly to windbeam as structurally required. Ref. F.1 for details

3. WINDBEAM
MATERIAL: Aluminum Windbeam Extrusion, Z Bar Shape - WSDOT Standard
FABRICATION PROCESS: Extruded
EDGES: Square, Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish. FASTENER: SS bolt assembly through sign post.

4. BREAKAWAY FOOTER
FOOTER: The Transpo® ASS Break-Safe system.

NOTES
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.
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NOTES
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5. Breakaway Footer - The Transpo® AS5 Break-Safe system.

Environmental & Experiences
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Specifications
1. POST
   MATERIAL: Aluminum
   SIZE: Square 5" x 5" x .25" thick wall
   FABRICATION PROCESS: Extruded
   EDGES: Smooth
   COLOR: Custom, as noted
   SURFACE PROCESS: Powdercoating, with clear Antigraffiti top coat.
   2. SIGN PANEL - REFLECTIVE FRONT
   MATERIAL: Aluminum sheet
   SIZE: Custom as Shown x 1/8" Thk.
   FABRICATION PROCESS: Router Cut
   EDGES: Smooth - Rounded Corners
   COLOR: Custom, as noted
   GRAPHIC BACKGROUND AND COPY PROCESS: 3M custom ink print direct to 3930 with 3M approved UV/Graffiti Vinyl Over-laminate. (See Color Sheet for all color and material specifications)
   SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Antigraffiti top coat.
   FASTENER: Press-roll per 3M requirements. Mechanically fasten - SS Bolt Assembly to windbeam as structurally required. Ref. F.1 for details

6. Vehicular Directional
   VA Medical Center
   Spokane
   Arena
   Spokane
   DOWNTOWN
   Spokane
   UNIVERSITY DISTRICT
   Spokane
   MEDICAL DISTRICT
   Spokane
   University District
   Downtown
1. POST
MATERIAL: Aluminum
SIZE: Square 5" x 5" x .25" thick wall
FABRICATION PROCESS: Extruded
EDGES: Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Powdercoating, with clear Antigraffiti top coat.

2. SIGN PANEL - REFLECTIVE FRONT
MATERIAL: Aluminum sheet
SIZE: Custom as Shown x 1/8" Thk.
FABRICATION PROCESS: Router Cut
EDGES: Smooth - Rounded Corners
COLOR: Custom, as noted
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SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Antigraffiti top coat.
FASTENER: Press-roll per 3M requirements. Mechanically fasten - SS Bolt Assembly to windbeam as structurally required. Ref. F.1 for details

6. WINDBEAM
MATERIAL: Aluminum Windbeam Extrusion, Z Bar Shape - WSDOT Standard
FABRICATION PROCESS: Extruded
EDGES: Square, Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
FASTENER: SS bolt assembly through sign post.

5.1. BREAKAWAY FOOTER
FOOTER: The Transpo® AS5 Break-Safe system.

NOTES
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Wind loads. All winds shall be ground smooth, paint all seams.
3. Hardware. All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.
5. Wind loads. All winds shall be ground smooth, paint all seams.
6. Hardware. All exposed hardware shall be tamper proof fasteners.
1. POST
MATERIAL: Aluminum
SIZE: Square 5" x 5" x .25" thick wall
FABRICATION PROCESS: Extruded
EDGES: Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Powdercoating, with clear Antigraffiti top coat.

2. SIGN PANEL - REFLECTIVE FRONT
MATERIAL: Aluminum sheet
SIZE: Custom as Shown x 1/8" Thk.
FABRICATION PROCESS: Router Cut
EDGES: Smooth - Rounded Corners
COLOR: Custom, as noted
GRAPHIC BACKGROUND AND COPY PROCESS: 3M customs inks print direct to 3930 with 3M approved UV/Graffiti Vinyl Over-laminate. (See Color Sheet for all color and material specifications)
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Antigraffiti top coat.
FASTENER: Press-roll per 3M requirements.
Mechanically hot - SS Bolt Assembly to windbeam as structurally required. Ref. F.1 for details

8. WINDBEAM
MATERIAL: Aluminum Windbeam Extrusion, Z Bar Shape - WSDOT Standard
FABRICATION PROCESS: Extruded
EDGES: Square, Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
FASTENER: SS bolt assembly through sign post.

5.1. BREAKAWAY FOOTER
FOOTER: The Transpo® AS5 Break-Safe system.

NOTES
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication.
2. Windshield: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

ENVIROMENTS & EXPERIENCES
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication or application by fabricator. Sub structural engineers, all costs shall be reviewed and approved by client and legal requirements checked by legal department.

SIGN TYPE: VDIR.4
FUNCTION: Vehicular Directional
1. POST
MATERIAL: Aluminum
SIZE: Square 5” x 5” x 0.25” thick wall
FABRICATION PROCESS: Extruded
EDGES: Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Powdercoating, with clear Antigraffiti top coat.

2. SIGN PANEL - REFLECTIVE FRONT
MATERIAL: Aluminum sheet
SIZE: Custom as Shown x 1/8” Thk.
FABRICATION PROCESS: Router Cut
EDGES: Smooth - Rounded Corners
COLOR: custom, as noted
GRAPHIC BACKGROUND AND COPY PROCESS: 3M custom ink print direct to 3930 with 3M approved UV/Graffiti Vinyl Over-laminate. (See Color Sheet for all color and material specifications)
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Antigraffiti top coat.
FASTENER: Press-roll per 3M requirements. Mechanically hot - SS Bolt Assembly to windbeam as structurally required. Ref. F.1 for details

3. WINDBEAM
MATERIAL: Aluminum Windbeam Extrusion, Z Bar Shape - WSDOT Standard
FABRICATION PROCESS: Extruded
EDGES: Square, Smooth
COLOR: custom, as noted
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear satin finish.
FASTENER: SS bolt assembly through sign post.

4. BREAKAWAY FOOTER
FOOTER: The Transpo® AS5 Break-Safe system.
1. **POST**
   - **MATERIAL:** Aluminum
   - **SIZE:** Square 5" x 5" x .25" thick wall
   - **FABRICATION PROCESS:** Extruded
   - **EDGES:** Smooth
   - **COLOR:** Custom, as noted
   - **SURFACE PROCESS:** Powdercoating, with clear Antigraffiti top coat.

2. **SIGN PANEL - REFLECTIVE FRONT**
   - **MATERIAL:** Aluminum sheet
   - **SIZE:** Custom as Shown x 1/8" Thk.
   - **FABRICATION PROCESS:** Router Cut
   - **EDGES:** Square, Smooth
   - **COLOR:** Custom, as noted
   - **GRAPHIC BACKGROUND AND COPY PROCESS:** 3M custom inks print direct to 3930 with 3M approved UV/Graffiti Vinyl Over laminate. (See Color Sheet for all color and material specifications)
   - **SURFACE PROCESS:** Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Antigraffiti top coat.
   - **FASTENER:** Press-roll per 3M requirements. Mechanically button - SS Nut Assembly to windbeam as structurally required. Ref. F.1 for details

3. **WINDBEAM**
   - **MATERIAL:** Aluminum Windbeam Extrusion, Z Bar Shape - WSDOT Standard
   - **FABRICATION PROCESS:** Extruded
   - **EDGES:** Square, Smooth
   - **COLOR:** Custom, as noted
   - **SURFACE PROCESS:** Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
   - **FASTENER:** SS bolt assembly through sign post.

4. **BREAKAWAY FOOTER**
   - **FOOTER:** The Transpo® AS5 Break-Safe system

5. **NOTES**
   1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Additional drawings will be provided as required.
   2. Welds: All welds shall be ground smooth, paint all seams.
   3. Hardware: All exposed hardware shall be tamper proof fasteners.
   4. All exposed edges painted to match adjacent face.
   5. All copy shall be proofread and approved by client and legal requirements checked by legal department.
1. **POST**
   - **MATERIAL:** Aluminum
   - **SIZE:** Square 3.5" x 3.5" x .25" thick wall
   - **FABRICATION PROCESS:** Extruded
   - **EDGES:** Smooth
   - **COLOR:** Custom, as noted
   - **SURFACE PROCESS:** Powdercoating, with clear Anti-graffiti top coat.

2. **SIGN PANEL - REFLECTIVE FRONT**
   - **MATERIAL:** Aluminum sheet
   - **SIZE:** Custom as shown x 1/8" Thk.
   - **FABRICATION PROCESS:** Router Cut
   - **EDGES:** Smooth - Rounded Corners
   - **COLOR:** Custom, as noted
   - **GRAPHIC BACKGROUND AND COPY PROCESS:** 3M custom ink print direct to 3930 with 3M approved UV/Graffiti Vinyl Over-laminate. (See Color Sheet for all color and material specifications)
   - **SURFACE PROCESS:** Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Anti-graffiti top coat.
   - **FASTENER:** Press-roll per 3M requirements. Mechanically bolted through post as structurally required. Ref. F.1 for details

50. **BREAKAWAY FOOTER**
   - **FOOTER:** The Transpo® AS4 Break-Safe system.

**NOTES**

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation prior to fabrication. Fabricator must obtain approval from the designer or client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.
5. All copy shall be proofread and approved by client and legal requirements checked by legal department.

**SPOKANE, WA**
Wayfinding and Signage System

1. POST MATERIAL: Aluminum
   SIZE: Square 3.5" x 3.5" x .25" thick wall
   FABRICATION PROCESS: Extruded
   EDGES: Smooth
   COLOR: Custom, as noted
   SURFACE PROCESS: Powdercoating, with clear Anti-graffiti top coat.

2. SIGN PANEL - REFLECTIVE FRONT
   MATERIAL: Aluminum sheet
   SIZE: Custom as shown x 1/8" Thk.
   FABRICATION PROCESS: Router Cut
   EDGES: Smooth - Rounded Corners
   COLOR: Custom, as noted
   GRAPHIC BACKGROUND AND COPY PROCESS: 3M custom ink print direct to 3930 with 3M approved UV/Graffiti Vinyl Over-laminate. (See Color Sheet for all color and material specifications)
   SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Anti-graffiti top coat.
   FASTENER: Press-roll per 3M requirements. Mechanically bolted through post as structurally required. Ref. F.1 for details

50. BREAKAWAY FOOTER
FOOTER: The Transpo® AS4 Break-Safe system.
2. SIGN PANEL - REFLECTIVE FRONT
MATERIAL: Aluminum sheet
SIZE: Custom as shown x 1/8” Thk.
FABRICATION PROCESS: Router Cut
EDGE: Smooth - Rounded Corners
COLOR: Custom, as noted
GRAPHIC BACKGROUND AND COPY PROCESS:
3M custom ink print direct to 3930 with
3M approved UV/Graffiti Vinyl Over-laminate.
(See Color Sheet for all color and material
specifications)
SURFACE PROCESS: Paint all exposed surfaces
with Matthews Acrylic Polyurethane, with clear
Adverglass top coat.
FASTENER: Press-roll per 3M requirements.
Mechanically fasten - SS Bolt Assembly to
Post mount as structurally required. Ref. F.2 for
details.

8. POST MOUNT BRACKET
MATERIAL: Aluminum
FABRICATION PROCESS: Extruded Profile w/
Drilled Thru-Holes for Panel Fastener(s)
+ routed thru-holes for pass-thru of steel Band-
It Strap(s) per sign panel
SURFACE PROCESS: Paint all exposed surfaces
with Matthews Acrylic Polyurethane, with clear
coat satin finish.
COLOR: As noted

9. POLE STRAP ATTACHMENT
PRODUCT: Band-It Band, or approved equal.
MATERIAL: Type 201 SS
SIZE: 3/4 inch
FINISH: Stainless steel
COLOR: Factory Finish is to match color of
existing pole. S.S. or Black
FASTENER: Ultra-Lok® Free End clamps
NOTE: Sign Contractor to coordinate with the
City the removal or movement of interfering
existing signs on poles, with the city.

NOTES:
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

D.12
1. Post
MATERIAL: Aluminum
SIZE: 3.5" x 3.5" x .25" thick wall
FABRICATION PROCESS: Extruded
EDGES: Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Powdercoating, with clear Antigraffiti top coat.

2. Sign Panel - Reflective Front
MATERIAL: Aluminum sheet
SIZE: Custom as shown x 1/8" thick
FABRICATION PROCESS: Router Cut
EDGES: Smooth - Rounded Corners
COLOR: Custom, as noted
GRAPHIC BACKGROUND AND COPY PROCESS: 3M custom ink print direct to 3930 with 3M approved UV/Graffiti Vinyl Over-laminate.
(Spec Color Sheet for all color and material specifications)
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Antigraffiti top coat.
FASTENER: Press-roll per 3M requirements. Mechanically bent through post as structurally required. Ref. F.1 for details

50. Breakaway Footer
FOOTER: The Transpo® AS4 Break-Safe System
**NOTES**

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.

2. Welds: All welds shall be ground smooth, paint all seams.

3. Hardware: All exposed hardware shall be tamper proof fasteners.

4. All exposed edges painted to match adjacent face.

**Environments & Experiences**

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**Sign Type VDIR.8.2**

**Trailblazer**

**SUBCONSULTANT**

**CONVENTION CENTER**

**VIEWING AREA**

**VISITOR INFORMATION**

**Riverfront Park**

**Layout Examples: VDIR.8.2**

**SCALE: 3/4" = 1'-0"**

**Front View: VDIR.8.2**

**SCALE: 1/2" = 1'-0"**

**Side View: VDIR.8.2**

**SCALE: 1/2" = 1'-0"**

**Back View: VDIR.8.2**

**SCALE: 1/2" = 1'-0"**
1. POST
MATERIAL: Aluminum
SIZE: Square 3.5" x 3.5" x .25" thick wall
FABRICATION PROCESS: Extruded
EDGE: Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Powdercoating, with clear Anti-graffiti top coat.

2. SIGN PANEL - REFLECTIVE FRONT
MATERIAL: Aluminum sheet
SIZE: Custom as shown x 1/8" thick.
FABRICATION PROCESS: Router Cut
EDGE: Smooth - Rounded Corners
COLOR: Custom, as noted
GRAPHIC BACKGROUND AND COPY PROCESS: 3M custom inks print direct to 3930 with 3M approved Hi-Graffiti vinyl over-laminate.
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Anti-graffiti top coat.
FASTENER: Per 3M requirements: Mechanically bolted through post as structurally required. Ref. F.1 for details

50. BREAKAWAY FOOTER
FOOTER: The Transpo® AS4 Break-Safe system.

NOTES
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

1. POST
MATERIAL: Aluminum
SIZE: Square 3.5" x 3.5" x .25" thick wall
FABRICATION PROCESS: Extruded
EDGE: Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Powdercoating, with clear Anti-graffiti top coat.

2. SIGN PANEL - REFLECTIVE FRONT
MATERIAL: Aluminum sheet
SIZE: Custom as shown x 1/8" thick.
FABRICATION PROCESS: Router Cut
EDGE: Smooth - Rounded Corners
COLOR: Custom, as noted
GRAPHIC BACKGROUND AND COPY PROCESS: 3M custom inks print direct to 3930 with 3M approved Hi-Graffiti vinyl over-laminate.
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Anti-graffiti top coat.
FASTENER: Per 3M requirements: Mechanically bolted through post as structurally required. Ref. F.1 for details

50. BREAKAWAY FOOTER
FOOTER: The Transpo® AS4 Break-Safe system.

NOTES
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

1. POST
MATERIAL: Aluminum
SIZE: Square 3.5" x 3.5" x .25" thick wall
FABRICATION PROCESS: Extruded
EDGE: Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Powdercoating, with clear Anti-graffiti top coat.

2. SIGN PANEL - REFLECTIVE FRONT
MATERIAL: Aluminum sheet
SIZE: Custom as shown x 1/8" thick.
FABRICATION PROCESS: Router Cut
EDGE: Smooth - Rounded Corners
COLOR: Custom, as noted
GRAPHIC BACKGROUND AND COPY PROCESS: 3M custom inks print direct to 3930 with 3M approved Hi-Graffiti vinyl over-laminate.
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Anti-graffiti top coat.
FASTENER: Per 3M requirements: Mechanically bolted through post as structurally required. Ref. F.1 for details

50. BREAKAWAY FOOTER
FOOTER: The Transpo® AS4 Break-Safe system.

NOTES
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.

2. Welds: All welds shall be ground smooth, paint all seams.

3. Hardware: All exposed hardware shall be tamper proof fasteners.

4. All exposed edges painted to match adjacent face.

5. All exposed surfaces shall be painted to match adjacent face.

6. Post Mount Bracket
   MATERIAL: Aluminum
   FABRICATION PROCESS: Extruded Profile w/ Drilled Thru-Holes for Panel Fastener(s) + routed thru-holes for pass-thru of steel Band-It Strap(s). Min. QTY 3 per sign panel
   SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Anti-reflective top coat.
   FASTENER: Press-roll per 3M requirements. Mechanically fasten - SS Bolt Assembly to Post mount as structurally required. Refer F.2 for details.

7. Pole Strap Attachment
   PRODUCT: Band-It Band, or approved equal.
   MATERIAL: Type 201 SS
   SIZE: 3/4 inch
   FINISH: Stainless steel
   COLOR: Factory Finish is to match color of existing pole. S.S. or Black
   FASTENER: Ultra-Lok® Free End clamps

NOTE: Sign Contractor to coordinate with the City the removal or movement of interfering existing signs on poles, with the City.

NOTES:
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

ENVIROS & EXPERIENCES
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SPECIFICATIONS
SIGN TYPE: VDIR.9.2
FUNCTION: Trailblazer

2. SIGN PANEL - REFLECTIVE FRONT
   MATERIAL: Aluminum sheet
   SIZE: Custom as Shown = 1/8" Thick
   FABRICATION PROCESS: Router Cut
   EDGES: Smooth - Rounded Corners
   COLOR: custom, as noted
   GRAPHIC BACKGROUND AND COPY PROCESS:
   3M custom ink print direct to 3M sheet with 3M approved UV/Graffiti Vinyl Over-laminates. (See Color Sheet for all color and material specifications)
   SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear Anti-reflective top coat.
   FASTENER: Press-roll per 3M requirements. Mechanically fasten - SS Bolt Assembly to Post mount as structurally required. Refer F.2 for details.

3. POLE STRAP ATTACHMENT
   PRODUCT: Band-It Band, or approved equal.
   MATERIAL: Type 201 SS
   SIZE: 3/4 inch
   FINISH: Stainless steel
   COLOR: Factory Finish is to match color of existing pole. S.S. or Black
   FASTENER: Ultra-Lok® Free End clamps
   NOTE: Sign Contractor to coordinate with the City the removal or movement of interfering existing signs on poles, with the City.

REFERENCES
D.16

PROJECT NO.
120 North Church Street
Suite 238
West Chester, PA 19380
T. 484.266.0648
www.merjedesign.com
**1. POST**

- **MATERIAL:** Aluminum
- **SIZE:** Square 5" x 5" x .25" thick wall
- **FABRICATION PROCESS:** Extruded
- **EDGE:** Smooth
- **COLOR:** Custom, as noted
- **SURFACE PROCESS:** Powdercoating, with clear AntiGraffiti top coat.

**2. SIGN PANEL - REFLECTIVE FRONT**

- **MATERIAL:** Aluminum sheet
- **SIZE:** Custom as shown x 1/8" Thk.
- **FABRICATION PROCESS:** Router Cut
- **EDGE:** Smooth - Rounded Corners
- **COLOR:** Custom, as noted
- **GRAPHIC BACKGROUND AND COPY PROCESS:** 3M custom inks print direct to 3930 with 3M approved UV/Graffiti Vinyl Ove-laminate. (See Color Sheet for all color and material specifications)
- **SURFACE PROCESS:** Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear AntiGraffiti top coat.
- **FASTENER:** Press-roll per 3M requirements. Mechanically hot - SS Bolt Assembly to windbeam as structurally required. Ref. F.1 for details.

**3. WINDBEAM**

- **MATERIAL:** Aluminum Windbeam Extrusion, Z Bar Shape - WSDOT Standard
- **FABRICATION PROCESS:** Extruded
- **EDGES:** Square, Smooth
- **COLOR:** Custom, as noted
- **SURFACE PROCESS:** Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
- **FASTENER:** SS bolt assembly through sign post.

**5. BREAKAWAY FOOTER**

- **FOOTER:** The Transpo® AGS Break-Safe system.

**NOTES**

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. All welds shall be ground smooth, paint all seams.
3. All exposed edges painted to match adjacent face.
4. All exposed edges painted to match adjacent face.

**SPECIFICATIONS**

**SIGN TYPE:** PARK.1  
**FUNCTION:** Parking Directional
1. POST
MATERIAL: Aluminum
SIZE: Square 5" x 5" x .25" thick wall
FABRICATION PROCESS: Extruded
EDGES: Smooth
COLOR: Custom, as noted
SURFACE PROCESS: Powdercoating, with clear AntiGraffiti top coat.

2. SIGN PANEL - REFLECTIVE FRONT
MATERIAL: Aluminum sheet
SIZE: Custom as Shown x 1/8" Thik.
FABRICATION PROCESS: Router Cut
EDGES: Smooth - Rounded Corners
COLOR: custom, as noted
GRAPHIC BACKGROUND AND COPY PROCESS: 3M custom inks print direct to 3930 with 3M approved UV/Graffiti vinyl Over-laminate. (See Color Sheet for all color and material specifications)
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear AntiGraffiti top coat.
FASTENERS: Press-roll per 3M requirements. Mechanically nutted - SS Bolt Assembly to windbeam as structurally required. Ref. F.1 for details

3. WINDBEAM
MATERIAL: Aluminum Windbeam Extrusion, Z Bar Shape - WSDOT Standard
FABRICATION PROCESS: Extruded
EDGES: Square, Smooth
COLOR: custom, as noted
SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
FASTENERS: SS bolt assembly through sign post.

4. BREAKAWAY FOOTER
FOOTER: The Transpo® ASS Break-Safe system.

NOTES
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

SPECIFICATIONS
SIGN TYPE: PARK.2
FUNCTION: Parking Directional

1. Front View: PARK.2
SCALE: 1/2" = 1'-0"

2. Side View: PARK.2
SCALE: 1/2" = 1'-0"

3. Back View: PARK.2
SCALE: 1/2" = 1'-0"
1. **POST**
   - MATERIAL: Aluminum
   - SIZE: Square 4” x 4” x 0.25” thick wall
   - FABRICATION PROCESS: Extruded
   - EDGES: Smooth
   - COLOR: Custom, as noted
   - SURFACE PROCESS: Powdercoating with clear Antigraffiti top coat.

2. **SIGN PANEL**
   - MATERIAL: Aluminum sheet
   - PRODUCT NAME: Direct Embed
   - PROCESS: Digital Print - Baked Enamel Process
   - WARRANTY PERIOD: Ten (10) years from product ship date.
   - MATERIAL THICKNESS: 1/4” thick
   - FINISH: Textured Matte Finish
   - SIDES: Double

3. **DECORATIVE ARM BRACKET**
   - PRODUCT: LUMICA CF44 (modified)
   - MATERIAL: Aluminum
   - FABRICATION PROCESS: Cast/Welded
   - EDGES: Smooth
   - COLOR: Custom, as noted
   - SURFACE PROCESS: Powdercoating
   - FASTENER: Mechanically fastened to Post with SS Bolt Assembly - Qty (2) 1/2"-3" U channel Mounting clips. Mechanically fastened Sign Panel with SS Bolt Assembly. Ref. F.11 for Details.
   - Ref. F.11 for Details.
   - Contact: JC WRIGHT Lighting
     Clint Shulenbarger
     413 E. 3RD AVE
     SPOKANE, WA 99202
     Tel: 509.535.0098

5. **BREAKAWAY FOOTER**
   - FOOTER: The Transpo® AS4 Break-Safe system.

**NOTES**
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.
5. CLIENT / PROJECT: Wayfinding and Signage System
6. ENVIRONMENTS & EXPERIENCES: These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details need to be scrutinized to the letter to ensure they are proceeding with fabrication or any modifications required. Materials, structural engineers, all copy shall be proofread and approved by legal and legal requirements checked by legal department.
1. **5X5 I-BEAM POST**
   - MATERIAL: Aluminum Square (6061T6) 5" x 5" x .312" center wall
   - FABRICATION PROCESS: Extruded
   - EDGES: Smooth
   - COLOR: Custom, as noted
   - SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
   - FASTENER: Mechanical fastened to 3/4" U-Channel.
   - FOOTER: Direct Bury.

2. **5X5 I-BEAM POST**
   - MATERIAL: Aluminum Square (6061T6) 5" x 5" x .625" center wall
   - FABRICATION PROCESS: Extruded
   - EDGES: Smooth
   - COLOR: Custom, as noted
   - SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
   - FASTENER: Mechanical fastened to 3/4" U-Channel.
   - FOOTER: Direct Bury.

3. **5X5 I-BEAM POST**
   - MATERIAL: Aluminum Square (6061T6) 5" x 5" x .312" center wall
   - FABRICATION PROCESS: Extruded
   - EDGES: Smooth
   - COLOR: Custom, as noted
   - SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
   - FASTENER: Mechanical fastened to 3/4" U-Channel.
   - FOOTER: Direct Bury.

4. **5X5 I-BEAM POST**
   - MATERIAL: Aluminum Square (6061T6) 5" x 5" x .312" center wall
   - FABRICATION PROCESS: Extruded
   - EDGES: Smooth
   - COLOR: Custom, as noted
   - SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
   - FASTENER: Mechanical fastened to 3/4" U-Channel.
   - FOOTER: Direct Bury.

5. **5X5 I-BEAM POST**
   - MATERIAL: Aluminum Square (6061T6) 5" x 5" x .312" center wall
   - FABRICATION PROCESS: Extruded
   - EDGES: Smooth
   - COLOR: Custom, as noted
   - SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
   - FASTENER: Mechanical fastened to 3/4" U-Channel.
   - FOOTER: Direct Bury.

6. **COLOR BAR**
   - MATERIAL: 4 1/2" x 2" Aluminum U-Channel, capped at top & bottom.
   - FABRICATION PROCESS: Extruded
   - EDGES: Smooth
   - COLOR: Custom, as noted
   - SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
   - FASTENER: Mechanically fastened to Square post, U-Channel Mechanically fastened to Square post.

7. **SIGN CABINET - ILLUMINATED**
   - MATERIAL: Fabricated 1/8" thick Aluminum Sheet, extruded aluminum internal framing.
   - FABRICATION PROCESS: Formed, Router-cut
   - EDGES: Square
   - COLOR: Custom, as noted
   - SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
   - FASTENER: Weld and mechanically fastened to internal post.

8. **SIGN CABINET - ILLUMINATED**
   - MATERIAL: Fabricated 1/8" thick Aluminum Sheet, extruded aluminum internal framing.
   - FABRICATION PROCESS: Formed, Router-cut
   - EDGES: Square
   - COLOR: Custom, as noted
   - SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
   - FASTENER: Weld and mechanically fastened to internal post.

9. **SIGN CABINET - ILLUMINATED**
   - MATERIAL: Fabricated 1/8" thick Aluminum Sheet, extruded aluminum internal framing.
   - FABRICATION PROCESS: Formed, Router-cut
   - EDGES: Square
   - COLOR: Custom, as noted
   - SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
   - FASTENER: Weld and mechanically fastened to internal post.

10. **SIGN CABINET - ILLUMINATED**
    - MATERIAL: Fabricated 1/8" thick Aluminum Sheet, extruded aluminum internal framing.
    - FABRICATION PROCESS: Formed, Router-cut
    - EDGES: Square
    - COLOR: Custom, as noted
    - SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
    - FASTENER: Weld and mechanically fastened to internal post.

11. **CONCRETE BASE**
    - MATERIAL: Formed concrete base. Perimeter rock units to match current downtown standards.
    - FABRICATION PROCESS: Formed concrete base
    - EDGES: Square
    - SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
    - FASTENER: Mechanical fastened to Square post.

12. **SIGN CABINET - ILLUMINATED**
    - MATERIAL: Fabricated 1/8" thick Aluminum Sheet, extruded aluminum internal framing.
    - FABRICATION PROCESS: Formed, Router-cut
    - EDGES: Square
    - COLOR: Custom, as noted
    - SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
    - FASTENER: Weld and mechanically fastened to internal post.

13. **SIGN CABINET - ILLUMINATED**
    - MATERIAL: Fabricated 1/8" thick Aluminum Sheet, extruded aluminum internal framing.
    - FABRICATION PROCESS: Formed, Router-cut
    - EDGES: Square
    - COLOR: Custom, as noted
    - SURFACE PROCESS: Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
    - FASTENER: Weld and mechanically fastened to internal post.

**NOTES**

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
   - All copy shall be proofread and approved by client and legal requirements checked by legal department.

2. welded. All welded joints shall be ground smooth, paint all areas.
3. hardware. All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent facades.

**ENVIRONMENTS & EXPERIENCES**

- **Downtown**
  - All exposed edges painted to match adjacent facades.
  - All welds shall be ground smooth, paint all areas.
  - All exposed edges painted to match adjacent facades.

**PROJECT**

**SIGN TYPE**

- **KIOSK.1**

**FUNCTION**

- **Pedestrian Kiosk**

**SIGN TYPE:** KIOSK.1

**FUNCTION:** Pedestrian Kiosk
1. **KIOSK.2**
   - **MATERIAL:** Aluminum Square (6061T6) 5" x 5" x .312" center wall
   - **FABRICATION PROCESS:** Extruded
   - **EDGES:** Smooth
   - **COLOR:** Custom, as noted
   - **SURFACE PROCESS:** Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
   - **FOOTER:** Direct Bury

5. **DECORATIVE SIDE PANEL**
   - **MATERIAL:** 1/4" thick Aluminum sheet
   - **FABRICATION PROCESS:** Router Cut
   - **EDGES:** Smooth
   - **COLOR:** Custom, as noted
   - **SURFACE PROCESS:** Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
   - **GRAPHICS (Messages, Symbols, Arrows):** 3M Scotchmat Electrocut Graphic Vinyl Film, with printed graphics.
   - **FASTENER:** Plug welded to U-Channel color bar.

10. **MAP / INFO PANEL**
    - **PRODUCT NAME:** Direct Embed
    - **PROCESS:** 1/8" Aluminum with Baked Enamel Process
    - **WARRANTY PERIOD:** Ten (10) years from product ship date.
    - **MATERIAL THICKNESS:** 1/4" thick
    - **FINISH:** Textured Matte Finish
    - **FASTENER:** Embedded concrete anchor bolt, removable.

6. **COLOR BAR**
   - **MATERIAL:** 4 1/2" x 2" Aluminum U-Channel, capped at top & bottom.
   - **FABRICATION PROCESS:** Extruded
   - **EDGES:** Smooth
   - **COLOR:** Custom, as noted
   - **SURFACE PROCESS:** Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.
   - **FASTENER:** Mechanically fastened to Square post.

**NOTES**
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.
5. All copy shall be proofread and approved by client and legal requirements checked by legal department.

**SPECIFICATIONS**

---

**Graphic Layout: KIOSK.2**

**SCALE:** 3/4" = 1'-0"

1. **Front View: KIOSK.2**
   - **SCALE:** 1/2" = 1'-0"

2. **Side View: KIOSK.2**
   - **SCALE:** 1/2" = 1'-0"

3. **Back View: KIOSK.2**
   - **SCALE:** 1/2" = 1'-0"

4. **Side View: KIOSK.2**
   - **SCALE:** 1/2" = 1'-0"

5. **Information**
   - **SCALE:** 3/4" = 1'-0"

6. **ALT: Interpretive Panel on Back**
   - **SCALE:** 1/2" = 1'-0"

---

**5X5 I-Beam POST**

**MATERIAL:** Aluminum Square (6061T6) 5" x 5" x .312" center wall

**FABRICATION PROCESS:** Extruded

**EDGES:** Smooth

**COLOR:** Custom, as noted

**SURFACE PROCESS:** Paint all exposed surfaces with Matthews Acrylic Polyurethane, with clear coat satin finish.

**FOOTER:** Direct Bury

**CONCRETE BASE**

**MATERIAL:** Formed concrete base. Permeon rock stain to match current downtown standards.

**FABRICATION PROCESS:** Formed concrete base

**CONCRETE CAP / BASE FASTENER:** Mortar

**FOOTER:** Direct Bury. See page F.12 for details.

---

**ENVIRONMENTS & EXPERIENCES**

These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job.

Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and signed/sealed by a Wash. State structural engineer. All copy shall be proofread and approved by client and legal department.
10. MAP / INFO PANEL
PRODUCT NAME: Direct Embed
PROCESS: 1/4” Aluminum with Baked Enamel Process
WARRANTY PERIOD: Ten (10) years from product ship date.
MATERIAL THICKNESS: 1/4” thick
FINISH: Textured Matte Finish
FASTENER: Embedded concrete anchor bolt, removable.

11. CONCRETE BASE
MATERIAL: Formed concrete base. Permeon rock stain to match current downtown standards.
FABRICATION PROCESS: Formed concrete base
CONCRETE CAP / BASE FASTENER: Mortar
FOOTER: Direct Bury. See page F.12 for details.

NOTES
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.
5. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
6. Welds: All welds shall be ground smooth, paint all seams.
7. Hardware: All exposed hardware shall be tamper proof fasteners.
8. All exposed edges painted to match adjacent face.
9. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
10. Welds: All welds shall be ground smooth, paint all seams.
11. Hardware: All exposed hardware shall be tamper proof fasteners.
12. All exposed edges painted to match adjacent face.
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and signed/sealed by a Wash. State structural engineer. All copy shall be proofread and approved by client and legal requirements checked by legal department.

**Specification 1:**
- Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
- Welds: All welds shall be ground smooth, paint all seams.
- Hardware: All exposed hardware shall be tamper proof fasteners.
- All exposed edges painted to match adjacent face.

**NOTES:**
- 01/12/2015
- 02/25/2015
- 07/09/2015
- 08/31/2015

**Graphic Layouts:**
- **VDIR.1:**
- **VDIR.2:**
- **VDIR.3:**

**Scale:** 3/4” = 1’-0”
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and installation of any work. Final structural engineer’s stamp and seal must be included on all copies submitted for client and legal requirements.

NOTES:
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the designer and/or client for all details.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and construction. All copy shall be proofread and approved by client and legal requirements checked by legal department.

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGN PANEL LAYOUTS: VDIR.7a, 8a, 9a, 10a</td>
</tr>
</tbody>
</table>

NOTES:
- Messages shown are NOT actual messages. Provided for illustrative purposes only.
- Refer to message schedule for actual sign messages.
- Panel layouts for ALL sign locations shall be included in shop drawings for review by designer and client.

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

**E.3**

**Graphic Layouts:**
- VDIR.7.1-7.2
  - SCALE: 1" = 1'-0"

**Specs:**
- Layout Drawings
- VDIR.7.1-7.2
- SCALE: 1" = 1'-0"
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and signed/sealed by a Wash. State structural engineer. All copy shall be proofread and approved by client and legal requirements checked by legal department.

ENVIROMENTS & EXPERIENCES
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

NOTES:
• Messages shown are NOT actual messages. Provided for illustrative purposes only.
• Refer to message schedule for actual sign messages.
• Panel layouts for ALL sign locations shall be included in shop drawings for review by designer and client.
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variances from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and presentation to a shop. All structural engineer. All copy shall be proofread and approved by client and legal requirements checked by legal department.
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and erection of the work. Final structural engineer's engineered plans shall be considered final. All copy shall be proofread and approved by client and legal requirements checked by legal department.

E.6
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and signed/sealed by a Wash. State structural engineer. All copy shall be proofread and approved by client and legal requirements checked by legal department.

SPOKANE, WA
Wayfinding and Signage System
120 North Church Street
Suite 208
West Chester, PA 19380
T 484.266.0648
www.merjedesign.com

Layout Drawings
DIST.1.1-DIST.2.1
01/12/2015
2

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be grinded smooth and painted all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

NOTES:
- Messages shown are NOT actual messages. Provided for illustrative purposes only.
- Refer to message schedule for actual sign messages.
- Panel layouts for ALL sign locations shall be included in shop drawings for review by designer and client.
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and installation by a local, state or federal structural engineer. All copy shall be proofread and approved by client and legal requirements checked by legal department.

NOTES:
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E N V I R O N M E N T S & E X P E R I E N C E S
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SPECIFICATIONS
SPOKANE, WA
Wayfinding and Signage System

1. Section View: Vehicular
   SCALE: 3" = 1'-0"

2. Section View: Vehicular Trailblazer
   SCALE: 3" = 1'-0"

3. Section View: Vehicular Trailblazer
   SCALE: 3" = 1'-0"

4. Section View: Vehicular
   SCALE: 3" = 1'-0"
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**Construction Details**

### Existing Pole Mount

**Section View: Vehicular - Existing Pole Mount**

**SCALE:** 3" = 1'-0"

1. **Windbeam**
   - SS 3/4" Band-It strap system
   - Color Match Existing Pole.

2. **Existing Light/Traffic Signal**
   - Sign Panel - 1/8" Aluminum Sheet
   - Chemical Weld to T-bar and Mech Fasten as required
   - Mech Fasten - SS Bolt Assembly
   - Washer / Anti Vibration - Lock Nut

3. **Figure: Existing Pole Mount**
   - SCALE: N/A
   - .125" Aluminum Panel
   - Barrel Nut & Bolts
   - Secure Panel
   - Inside Extrusion
   - Perma-Banner
   - Pole Mount
   - Extrusion
   - Rubber Bumpers

4. **Section: Existing Pole Mount**
   - SCALE: N/A

---

**NOTES:**

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

---

**SPECIFICATIONS**

**Construction Details**

**Existing Pole Mount**

**Figure:** Existing Pole Mount

- **SCALE:** N/A

- .125" Aluminum Panel
- Barrel Nut & Bolts
- Secure Panel
- Inside Extrusion
- Perma-Banner
- Pole Mount
- Extrusion
- Rubber Bumpers

---

**EXISTING POST**

**SS 3/4" Band-It strap system**

- Color Match Existing Pole.

**Chemical Weld to T-bar and Mech Fasten as required**

- Mech Fasten - SS Bolt Assembly
- Washer / Anti Vibration - Lock Nut

---

**SS 3/4" Band-It strap system**

- Color Match Existing Pole.

**Mounting Bracket Assembly**

---

**Windbeam**

- SS 3/4" Band-It strap system
- Color Match Existing Pole.
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LH/GS
02/25/2015

SPECIFICATIONS
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Wayfinding and Signage System
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www.merjedesign.com

1. Fabricator to verify mounting conditions and provide a detail drawing for each mounting situation prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.

2. Welds: All welds shall be ground smooth, paint all seams.

3. Hardware: All exposed hardware shall be tamper proof fasteners.

4. All exposed edges painted to match adjacent face.

NOTES:

1) Soil is average with maximum allowable soil pressure of 3,000 pounds per square foot. Soil unit weight of 125pcf and friction angle of 30 degrees (assumed).

2) Concrete strength at 28 days F’c=4,000 psi. Reinforcement shall be ASTM 36 FY=60,000 psi.

3) Follow the 2008 WSDOT Design Standards for material and construction information for the sign post bases and foundations not otherwise specified on these contract drawings.

4) For sign post sizes refer to the design intent drawing sheets.

The FABRICATOR shall be familiar with all site conditions and shall be responsible for all underground utility checks.

The FABRICATOR shall be familiar with all basement/vault locations by obtaining plans from the local municipality Department of Public Works.

Where a basement/vault interferes with a proposed location, the sign shall be relocated to a location deemed appropriate by the municipalities Department of Public Works.

Where relocation is not an option the FABRICATOR will develop the appropriate mounting solution. The solution shall meet all engineering criteria established by the standard footings (i.e. windloads).

FINAL DESIGNS AND SHOP DRAWINGS SHALL BE SUPPLIED BY THE FABRICATOR FOR EACH OF THE BREAK-AWAY POLES IDENTIFIED AND A WASHINGTON REGISTERED PROFESSIONAL ENGINEER IS REQUIRED TO SIGN AND SEAL THE SUBMITTAL OF SHOP DRAWINGS.

NOTE:

1) Soil is average with maximum allowable soil pressure of 3,000 pounds per square foot. Soil unit weight of 125pcf and friction angle of 30 degrees (assumed).

2) Concrete strength at 28 days F’c=4,000 psi. Reinforcement shall be ASTM 36 FY=60,000 psi.

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NOTE:

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2) Concrete strength at 28 days F’c=4,000 psi. Reinforcement shall be ASTM 36 FY=60,000 psi.

3) Follow the 2008 WSDOT Design Standards for material and construction information for the sign post bases and foundations not otherwise specified on these contract drawings.

4) For sign post sizes refer to the design intent drawing sheets.

The FABRICATOR shall be familiar with all site conditions and shall be responsible for all underground utility checks.

The FABRICATOR shall be familiar with all basement/vault locations by obtaining plans from the local municipality Department of Public Works.

Where a basement/vault interferes with a proposed location, the sign shall be relocated to a location deemed appropriate by the municipalities Department of Public Works.

Where relocation is not an option the FABRICATOR will develop the appropriate mounting solution. The solution shall meet all engineering criteria established by the standard footings (i.e. windloads).

FINAL DESIGNS AND SHOP DRAWINGS SHALL BE SUPPLIED BY THE FABRICATOR FOR EACH OF THE BREAK-AWAY POLES IDENTIFIED AND A WASHINGTON REGISTERED PROFESSIONAL ENGINEER IS REQUIRED TO SIGN AND SEAL THE SUBMITTAL OF SHOP DRAWINGS.

NOTE:

1) Soil is average with maximum allowable soil pressure of 3,000 pounds per square foot. Soil unit weight of 125pcf and friction angle of 30 degrees (assumed).

2) Concrete strength at 28 days F’c=4,000 psi. Reinforcement shall be ASTM 36 FY=60,000 psi.

3) Follow the 2008 WSDOT Design Standards for material and construction information for the sign post bases and foundations not otherwise specified on these contract drawings.

4) For sign post sizes refer to the design intent drawing sheets.

The FABRICATOR shall be familiar with all site conditions and shall be responsible for all underground utility checks.

The FABRICATOR shall be familiar with all basement/vault locations by obtaining plans from the local municipality Department of Public Works.

Where a basement/vault interferes with a proposed location, the sign shall be relocated to a location deemed appropriate by the municipalities Department of Public Works.

Where relocation is not an option the FABRICATOR will develop the appropriate mounting solution. The solution shall meet all engineering criteria established by the standard footings (i.e. windloads).

FINAL DESIGNS AND SHOP DRAWINGS SHALL BE SUPPLIED BY THE FABRICATOR FOR EACH OF THE BREAK-AWAY POLES IDENTIFIED AND A WASHINGTON REGISTERED PROFESSIONAL ENGINEER IS REQUIRED TO SIGN AND SEAL THE SUBMITTAL OF SHOP DRAWINGS.

NOTE:

1) Soil is average with maximum allowable soil pressure of 3,000 pounds per square foot. Soil unit weight of 125pcf and friction angle of 30 degrees (assumed).

2) Concrete strength at 28 days F’c=4,000 psi. Reinforcement shall be ASTM 36 FY=60,000 psi.

3) Follow the 2008 WSDOT Design Standards for material and construction information for the sign post bases and foundations not otherwise specified on these contract drawings.

4) For sign post sizes refer to the design intent drawing sheets.

The FABRICATOR shall be familiar with all site conditions and shall be responsible for all underground utility checks.

The FABRICATOR shall be familiar with all basement/vault locations by obtaining plans from the local municipality Department of Public Works.

Where a basement/vault interferes with a proposed location, the sign shall be relocated to a location deemed appropriate by the municipalities Department of Public Works.

Where relocation is not an option the FABRICATOR will develop the appropriate mounting solution. The solution shall meet all engineering criteria established by the standard footings (i.e. windloads).

FINAL DESIGNS AND SHOP DRAWINGS SHALL BE SUPPLIED BY THE FABRICATOR FOR EACH OF THE BREAK-AWAY POLES IDENTIFIED AND A WASHINGTON REGISTERED PROFESSIONAL ENGINEER IS REQUIRED TO SIGN AND SEAL THE SUBMITTAL OF SHOP DRAWINGS.

NOTE:

1) Soil is average with maximum allowable soil pressure of 3,000 pounds per square foot. Soil unit weight of 125pcf and friction angle of 30 degrees (assumed).

2) Concrete strength at 28 days F’c=4,000 psi. Reinforcement shall be ASTM 36 FY=60,000 psi.

3) Follow the 2008 WSDOT Design Standards for material and construction information for the sign post bases and foundations not otherwise specified on these contract drawings.

4) For sign post sizes refer to the design intent drawing sheets.
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LH/GS
02/25/2015

**SPECIFICATIONS**

The FABRICATOR shall be familiar with all site conditions and shall be responsible for all underground utility checks.

The FABRICATOR shall be familiar with all basement/vault locations by obtaining plans from the local municipality Department of Public Works.

Where a basement/vault interfaces with a proposed location, the sign shall be relocated to a location deemed appropriate by the municipalities Department of Public Works.

Where relocation is not an option the FABRICATOR will develop the appropriate mounting solution.

The solution shall meet all engineering criteria as established by the standard footings (i.e. windloads).

**FINAL DESIGNS AND SHOP DRAWINGS SHALL BE SUPPLIED BY THE FABRICATOR FOR EACH OF THE BREAK-AWAY POLES IDENTIFIED AND A WASHINGTON REGISTERED PROFESSIONAL ENGINEER IS REQUIRED TO SIGN AND SEAL THE SUBMITTAL OF SHOP DRAWINGS.**

**NOTE:**

1. Soil is average with maximum allowable soil pressure of 3,000 pounds per square foot. Soil unit weight of 125pcf and friction angle of 30 degrees (assumed).
2. CONCRETE STRENGTH AT 28 DAYS F’C=4,000 PSI. REINFORCEMENT SHALL BE ASTM 36 40,000 PSI.
3. FOLLOW 2008 WSDOT DESIGN STANDARDS FOR MATERIAL AND CONSTRUCTION INFORMATION FOR THE SIGN POST BASES AND FOUNDATIONS NOT OTHERWISE SPECIFIED IN THESE CONTRACT DRAWINGS.
4. FOR SIGN POST SIZES REFER TO THE DESIGN INTENT DRAWING SHEETS.

**NOTES:**

1. Fabricator must verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

**ENVIROMENTS & EXPERIENCES**

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.

2. Hardware: All exposed hardware shall be tamper proof fasteners.
3. All exposed edges painted to match adjacent face.

**GENERAL NOTES:**

1. Complete assembly includes Item 1-5, then 6, Anchors sold separately.
2. Transpo BreakSafe AI4
3. For Sign Post Sizes Refer to the Design Intent Drawing Sheets.
Foundation concept requiring geotechnical analysis, design certification & WSDOT approval.

NOTES:
1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the A Wash. State structural engineer. All copy shall proceed with fabrication and signed/sealed by a Washington Registered Professional Engineer is required to sign and seal the foundation concept requiring geotechnical analysis, design certification & WSDOT approval.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

SPECIFICATIONS
The FABRICATOR shall be familiar with all site conditions and shall be responsible for all underground utility checks.

The FABRICATOR shall be familiar with all basement/vault locations by obtaining plans from the local municipality Department of Public Works.

Where a basement/vault interferes with a proposed location. The sign shall be relocated to a location deemed appropriate by the municipalities Department of Public Works.

Where relocation is not an option the FABRICATOR will develop the appropriate mounting solution.

The solution shall meet all engineering criteria as established by the standard footings (i.e. windloads).

FINAL DESIGNS AND SHOP DRAWINGS SHALL BE SUPPLIED BY THE FABRICATOR FOR EACH OF THE BREAK-AWAY POLES IDENTIFIED AND A WASHINGTON REGISTERED PROFESSIONAL ENGINEER IS REQUIRED TO SIGN AND SEAL THE SUBMITTAL OF SHOP DRAWINGS.

NOTE:
1) SOIL IS AVERAGE WITH MAXIMUM ALLOWABLE SOIL PRESSURE OF 3,000 POUNDS PER SQUARE FOOT. SOIL UNIT WEIGHT OF 125 PCF AND FRICTION ANGLE OF 30 DEGREES (ASSUMED).
2) CONCRETE STRENGTH AT 28 DAYS 60,000 PSI, 4,000 psi. REINFORCEMENT SHALL BE ASTM 36 80,000 PSI.
3) FOLLOW 2008 WSDOT DESIGN STANDARDS FOR MATERIAL AND CONSTRUCTION INFORMATION FOR THE SIGN POST BASES AND FOUNDATIONS NOT OTHERWISE SPECIFIED IN THESE CONTRACT DRAWINGS.
4) FOR SIGN POST SIZES REFER TO THE DESIGN INTENT SHEET DRAWINGS.

NOTES:
1. Foundation Details:
   - Rebar: Sizes and spacing may be subject to geotechnical analysis, design certification & WSDOT approval.
   - Concrete: Mix design and strength required for all dimensions and conditions of the job. Contractor must be familiar with the site and conditions of the job.
   - Soil: Geotechnical analysis required for all conditions and dimensions of the job. Contractor must be familiar with the site and conditions of the job.

2. Fasteners: All exposed fasteners shall be tamper proof or joint business.
3. Paint: All exposed edges painted to match adjacent face.

ENVIORNMENTS & EXPERIENCES
120 North Church Street
Suite 208
West Chester, PA 19380
T 644.205.6646
www.merjedesign.com
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and sent to this office for approval before fabrication.

All copy shall be proofread and approved by client and legal requirements checked by legal department.

NOTE:
1) Soil is average with maximum allowable soil pressure of 3,000 pounds per square foot. Soil unit weight of 125 PCF and friction angle of 30 degrees (assumed).
2) Concrete strength at 28 days F’C=4,000 PSI. Reinforcement shall be ASTM 36 FY60,000 PSI.
3) Follow 2008 WSDOT design standards for material and construction information for the sign post bases and foundations not otherwise specified in these contract drawings.
4) For sign post sizes refer to the design intent drawing sheets.

Specifications

The FABRICATOR shall be familiar with all site conditions and shall be responsible for all underground utility checks.

The FABRICATOR shall be familiar with all basement/vault locations by obtaining plans from the local municipality Department of Public Works.

Where a basement/vault interferes with a proposed location. The sign shall be relocated to a location deemed appropriate by the municipalities Department of Public Works.

Where relocation is not an option the FABRICATOR will develop the appropriate mounting solution. The solution will meet all engineering criteria as established by the standard footings (i.e. windloads).

Final designs and shop drawings shall be supplied by the fabricator for each of the break-away poles identified and a Washington registered professional engineer is required to sign and seal the submittal of shop drawings.

NOTE:
1. Fabricator must verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

Footnotes:
1. Soils is average with maximum allowable soil pressure of 3,000 pounds per square foot. Soil unit weight of 125 PCF and friction angle of 30 degrees (assumed).
2. Concrete strength at 28 days F’C=4,000 PSI. Reinforcement shall be ASTM 36 FY60,000 PSI.
3. Follow 2008 WSDOT design standards for material and construction information for the sign post bases and foundations not otherwise specified in these contract drawings.
4. For sign post sizes refer to the design intent drawing sheets.
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and representation to the owner. Shop drawings and details must be checked with this office for accuracy and completeness and must be stamped by a Washington State structural engineer. All copy shall be proofread and approved by client and legal requirements checked by legal department.

**Notes:**
1. Contractor to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Contractor must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

**Environments & Experiences**

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.

2. Welds: All welds shall be ground smooth, paint all seams.

3. Hardware: All exposed hardware shall be tamper proof fasteners.

4. All exposed edges painted to match adjacent face.
These drawings are meant for design purposes only and are not for construction. Contractor shall verify the mounting conditions and provide a detail drawing for each sign post. Fabricator must obtain approval from the engineer prior to proceeding with fabrication and signed/sealed by a Wash. State structural engineer. All copy shall be proofread and approved by client and legal requirements checked by legal department.

**Foundation concept requiring geotechnical analysis, design certification & WSDOT approval.**
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to this office for approval prior to proceeding with fabrication and installation. A copy shall be provided and approved by a Washington State licensed structural engineer.

ENVIRONMENTS & EXPERIENCES

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, painted all seams.
3. Hardware: All exposed hardware shall be tamper-proof fasteners.
4. All exposed edges painted to match adjacent face.

NOTES:

01/12/2015
02/25/2015
07/09/2015
08/31/2015

SPECIFICATIONS
SPOKANE, WA
Wayfinding and Signage System
120 North Church Street
Suite 208
West Chester, PA 19380
T 484.266.0648
www.merjedesign.com

CONSTRUCTION DETAILS

KIOSK.1

- Side Panel - 1/4" Aluminum Sheet
- Mech. Fasten - SS Countersunk Screw - Spot Weld Nut - 4 per assembly
- I Beam Post - 5" x 5" x .312" Aluminum
- Mech Fasten Sign Assembly Sign Panel/2-bar/Cutout Panel - as required
- Sign Box Assembly - 1/4" Sign Panel - Internal bracing as required
- Hinged Lockable Cabinet Assembly - SS Frame - Duratrans artwork in-between 2 sheets of 1/8" acrylic, and 3M Diffuser Film 3735-60 White on back-side, which is internal to sign cabinet.

- LED Light Tubes - as required to prevent glare and hotspots
- Base - Precast Concrete Reinforce Bars Evenly Spaced
- Embedded Concrete Anchor Soft Removable
- Cont. Weld I beam to 1/2" alum. baseplate typ.
- Baseplate - 1/2" Thick Aluminum

- Side Panel 4 1/4" x 2" Aluminum U Channel - Capped Top and Bottom Plug Weld Side Panel - as required
- Base - Precast Concrete Reinforce Bars Evenly Spaced
- Embedded Concrete Anchor Soft Removable

- Section View: KIOSK.1- Double Sided
- SCALE: 3" = 1'0"

- Baseplate - 1/2" Thick Aluminum
- Hinged Lockable Cabinet Assembly - SS Frame - Duratrans artwork in-between 2 sheets of 1/8" acrylic, and 3M Diffuser Film 3735-60 White on back-side, which is internal to sign cabinet.

- LED Light Tubes - as required to prevent glare and hotspots
- Base - Precast Concrete Reinforce Bars Evenly Spaced
- Embedded Concrete Anchor Soft Removable
- Cont. Weld I beam to 1/2" alum. baseplate typ.
- Baseplate - 1/2" Thick Aluminum

- Section View: KIOSK.1- Double Sided
- SCALE: 3" = 1'0"
2 batteries and pre-wired Control Board with Lighting Controller.

Duratrans artwork in-between 2 sheets of 1/8" thick acrylic, and 3M Diffuser Film 3735-60 White on back-side, which is internal to sign cabinet.

LED Tube Lights as required to provide even lighting both sides.

Hinged cabinet both sides; for easy accessibility.

Solar Panel
2'-6"L x 2'-3"W x 2'H

As required to power LEDs
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. This office must be notified of any variations from the dimensions and conditions shown on this drawing. Any changes and details shall be submitted to this office for approval prior to proceeding with fabrication and representation to a Mech. Site conditions and finish dimensions and conditions shown on this drawing. All work shall be done to the specifications of the project.钢筋

**SPECIFICATIONS**

**Construction Details**

**Sign Type:**

**Ped.1**

**Reference F.12**

**for LUMICA CF44 Decorative Bracket**

**Details (Existing Spokane Light Pole)**

**Contact:**

JC WRIGHT Lighting
Clint Shulenbarger
413 E. 3RD AVE
SPOKANE, WA 99202

**Tel** 509.535.0098

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**Notes:**

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the designer or client for placement prior to fabrication.
2. Welds: All welds shall be ground smooth, paint all seams.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent faces.

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**Construction Details**

**KIOSK.1**

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**Specifications**

**Environments & Experiences**

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the designer or client for placement prior to fabrication.
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**Construction Details**

**Sign Type:** P1C

**Construction Details**

**Reference F.11 for PED.1 Mounting Bracket Modified LUMICA CF44**

**Contact:**

JC WRIGHT Lighting
Clint Shulenbarger
413 E. 3RD AVE
SPOKANE, WA 99202

Tel 509.535.0098

**City of Spokane**

**CBD Lighting Project**

**TRANSITIONAL SERIES**

**UNIVERSAL ELEMENTS**

Pedestrian Lighting

**City of Spokane**

**CBD Lighting Project**

**TRANSITIONAL SERIES**

**LUMICA CF44 DECORATIVE ARM**

**DECORATIVE FINIAL HAPCO F0001**

**24" FLOWER ARM (BOTH SIDES)**

**POLE MOUNTED GFCI RECEPTACLE WITH WATERPROOF IN-USE DIE CAST ALUMINUM COVER, COLOR TO MATCH POLE**

**6" STRAIGHT FLUTED ALUMINUM, WALL ALLOY 6063-T. 0.250 WALL THICKNESS. HAPCO HOC18F5-5PO**

**CAST ALLUMINUM TWO PIECE DECORATIVE BASE COVER ALLOY 319 WITH DOOR AND STAINLESS STEEL SCREWS AND STAINLESS STEEL INSERTS. HAPCO HOMewood 14" DIA.**

**NOTE:**

1. Fabricator to verify the mounting conditions and provide a detail drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the designer and client before proceeding.
2. Welds: All welds shall be ground smooth, paint all areas.
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**Spokane Light Standard**

**Spokane Light Standard**

**Notes:**

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**SPECIFICATIONS**

**8G8D**

**Valve-Regulated, Gelled-Electrolyte Battery**

- **Nominal Voltage (V):** 12V
- **Capacity at C/100:** 265Ah
- **Capacity at C/20:** 225Ah
- **Capacity at C/5:** 188Ah
- **Weight:** 166 lbs. (75 kg)
- **Plate Alloy:** Lead Calcium
- **Posts:** Forged Terminals & Bushings
- **Container/Cover:** Polypropylene
- **Operating Temperature Range:** -70°F (-60°C) - 140°F (60°C)
- **Charge Voltage @ 77°F (25°C):**
  - Charge / Absorption / Equalize: 2.30 - 2.43 VPC
  - Float / Standby: 2.23 - 2.26 VPC
- **Height:** 9.89 (251 mm)
- **Width:** 11.00 (279 mm)
- **Length:** 21.03 (534 mm)

**Gel Cycle Life vs Depth of Discharge at +25°C (77°F)**

Based on BCI 2-hour Capacity

**DIMENSIONS**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Inches (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>21.03 (534 mm)</td>
</tr>
<tr>
<td>Width</td>
<td>11.00 (279 mm)</td>
</tr>
<tr>
<td>Height</td>
<td>9.89 (251 mm)</td>
</tr>
</tbody>
</table>

**NOTES:**

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**SPECIFICATIONS**

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- **Capacity at C/100:** 265Ah
- **Capacity at C/20:** 225Ah
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- **Container/Cover:** Polypropylene

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- Charge / Absorption / Equalize: 2.30 - 2.43 VPC
- Float / Standby: 2.23 - 2.26 VPC

**Operational Temperature Range:**
- -70°F (-60°C) - 140°F (60°C)

**GEL CYCLE LIFE VS DEPTH OF DISCHARGE AT +25°C (77°F):**

Based on BCI 2-hour Capacity

**DISTRIBUTED BY:**

MK Battery

1631 South Sinclair Street ● Anaheim, California 92806

Toll Free: 800-372-9253 ● Fax: 714-937-0818 ● E-mail: sales@mkbattery.com

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SM-255PC8 60 cell-series
Polycrystalline PV Module

240 ~ 255 Watt

New story creator, S-Energy

As the first company for PV industry in Korea, S-Energy has always been marking its name in every milestone of Korean PV History. Since 1992, as the first company for PV industry in Korea, S-Energy has always been New story creator, S-Energy

Qualifications & Certifications
ISO 9001, ISO 14001, OHSAS 18001, PV Cycle

Mechanical Characteristics
Solar cell Polycrystalline Silicon x 150mm x 150mm x 3mm
No. of cells 60 cells x 10 module
Dimensions 1550mm x 1550mm x 60mm
Weight 20 kg (44.09 lbs)
Front glass 3.2mm high-transmission low iron temperamental glass
Frame Anodized aluminium frame frame
Electrical: black color / rail type
Support cables RHH-1, HARR-(black) / Cable length 1000mm
Accessories M6/M8 connector

Warranty
Product warranty 10 years limited product warranty
Performance warranty 1st year minimum peak power output : 0.97%
2nd year to 25th year peak power output / max annual power decline 0.7% 25 years peak power output: 96.2%

Temperature Characteristics
Temperature coefficient of I sc -0.429% /℃
Temperature coefficient of V oc -0.312% /℃
Temperature coefficient of P max 0.052% /℃
Operating module temperature -40 oC to + 85 oC

Packaging Configuration

Remarks:

These drawings are meant for DESIGN and provisional use only. These designs are captured for mock-up and final final design shall be submitted for client review approval prior to proceeding with fabrication and representation on site. Final mock-up designs may vary from the final final designs and conditions shown on this drawing. Final design and details shall be submitted to the client for review approval prior to proceeding with fabrication and representation on site. Final mock-up designs may vary from the final final designs and conditions shown on this drawing. Final design and details shall be submitted to the client for review approval prior to proceeding with fabrication and representation.
3M® Premium Protective Overlay Film Series 1160 is designed as a high performance protective transparent overlay for use on signs made from 3M Traffic Safety and Security Division sheetings, films, and images. Series 1160 has been specifically developed for use over signs made from 3M™ Diamond Grade™ and High Intensity Prismatic Sheeting, and 3M’s system of matched components, and is recommended for use with these materials. Many types of defacement from vandalism can be cleaned from this film to substantially restore performance and appearance of the overlayed sign. Two configurations are available:

1160b: with premask
1160A: without premask

Important: A complete understanding of these instructions is recommended before sheeting application.

Properties

A. Color and Transparency

Series 1160 is a clear, colorless film. Application of Series 1160 to a sign fabricated using 3M’s matched component systems will preserve the initial and retained minimum retroreflectance specified for the sheeting used to fabricate the sign.

B. Film

Series 1160 is a high performance fluoropolymer film that provides a barrier and resists staining from common graffiti including paints, permanent marker ink, lipstick, eggs and stickers and allows for easier clean-up.

C. Adhesive and Liner

Series 1160 utilizes a clear, transparent, and pressure sensitive adhesive and has an easily removable white paper liner.

D. Premask

To aid film handling, Series 1160 is provided with a white paper premask which is easily peeled away from the film after application. After removing the premask, reroll the sign through the laminator to ensure good adhesion.

Application

A. Use Conditions Before Overlaying Film

1. Air and substrate temperatures should be above 60°F (16°C).
2. Signs must be clean and screen printed inks completely dry.

B. Equipment

1. Mechanical squegee roll applicator – See Information Folder 1.4.

C. Premasked Film (1160)

1. Remove the premask AFTER film application to sign by lifting edge of premask with fingernail or knife and pulling premask back over itself at a very sharp angle using a steady, even tension.

D. Trimming

1. Creating film splices to overlay a sign is not recommended.
2. The overhanging portion of the film on the TOP EDGE of the sign may be folded over smoothly and adhered to the back edge of the sign to minimize any water or dirt intrusion along the top edge of the sign. The backside of the sign must be properly cleaned before film is applied.
3. DO NOT apply any inks, films, or sheetings in the form of copy or images over 1160 film since this film is designed to repel adhesion of such markings.
4. Splices

1. Creating film splices to overlay a sign is not recommended.

F. Additional Processing

1. Mechanical squeeze roll applicator – See Information Folder 1.4.
2. Signs must be clean and screen printed inks completely dry.
3. Air and substrate temperatures should be above 60°F (16°C).
4. Frequently referred to as the ‘Visqueen’ or ‘Visqueen-Lite.’ Refer to folder for application instructions and precautions.

W A R N I N G

1. Do not allow premask to be exposed to moisture. Premask must be removed before storage or shipment.
2. Use a sharp cutting blade to trim film along edges. It may be helpful to grasp the edge of the unsupported overhanging film to create tension on that portion of the film while trimming.
3. DO NOT apply any inks, films, or sheetings in the form of copy or images over 1160 film since this film is designed to repel adhesion of such markings.
4. Use extra care when handling this film since it is not supported with a premask.

APPLICATION

1. Remove the premask AFTER film application to sign by lifting edge of premask with fingernail or knife and pulling premask back over itself at a very sharp angle using a steady, even tension.

NOTE: Application of 1160A Film is best accomplished using a mechanical squegee roll applicator. Use extra care when handling this film since it is not supported with a premask.

SERIES 1160:

- Replaces PB 1160 November 2011
- December 2013

End of Application Notes

3M Protective Overlaminate

Series 1160

NOTES:

1. Fabricator to verify the mounting conditions and provide a detailed drawing for each mounting situation, prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication. Fabricator must obtain approval from the Designer or Client for placement prior to fabrication.
2. Wind: All signs shall be secured against wind, all signs shall be properly secured against wind.
3. Hardware: All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

E N V I R O N M E N T S & E X P E R I E N C E S

Wayfinding and Signage System

120 North Church Street
Suite 208
West Chester, PA 19380
T 484.266.0648
W www.merjedesign.com

DATE
02/25/2015

CLIENT / PROJECT
LH/GS

SPECIFICATIONS

G.3
3M Basic Product Warranty and Limited Remedy

3M™ Premium Protective Overlay Film Series 1160 ("Product") is warranted 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 Warranty on its shipment date, then a buyer's exclusive remedy, and 3M's sole obligation, at 3M's option, will be refunded or replacement of the sheeting. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, THE 3M WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, RIGHTS OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND THOSE ARISING OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF

A cleaner such as 3M Citrus Cleaner can be effective for removal of common types of defacement such as from permanent marking pens, eggs, and stickers. A solvent such as isopropyl alcohol (IPA), or a 50/50 blend of IPA and xylene can be effective in removing paints and lacquers. Commercially available cleaners can also be highly effective. Although Series 1160 is resistant to strong solvents, prolonged exposure to solvents can result in permanent sign damage. A pressure sensitive tape such as SCPM-3 from 3M also may be effective in removing certain paints and stickers. Simply roll or squeegee the tape firmly over the defaced area and carefully lift away the tape with the defacement from the overlay. Small amounts of residual defacement may require cleaning solutions as stated above to remove small areas that the tape method did not remove adequately. The sign needs to be completely dry for this method to be effective. 4. Always use soft cloths. Do NOT use abrasive brushes, scouring pads or implements to scrape defacement from sign as these will likely damage the sign permanently.

FOR INFORMATION OR ASSISTANCE CALL: 1-800-553-1380

IN CANADA CALL: 1-800-265-1840

Internet: www.3M.com/roadwaysafety

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 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 the inability to use the product. Before using, user shall determine the suitability of the product for his 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.

3M is a trademark of 3M. Used under license in Canada.
High Intensity Prismatic Reflective Sheeting Series 3930

Product Bulletin 3930

January 2013

Replaces PB 3930 dated January 2012

Description
3M® High Intensity Prismatic Reflective Sheeting Series 3930 is a non-metalized microprismatic lens reflective sheeting designed for production of reflective durable traffic control signs, work zone devices and delineators that are exposed vertically in service. Applied to properly prepared sign substrates, 3M high intensity prismatic sheathing provides long-term reflectivity and durability. Series 3930 sheathing is available in the following colors:

- White
- Yellow
- Red
- Orange
- Blue
- Green
- Brown

Color – TT Series

- White – thermal transfer (TT) printable
- Yellow – TT printable

Color Product Code
White 3930
Yellow 3911
Red 3932
Orange 3934
Blue 3935
Green 3937
Brown 3919

Color – TT Series

- White – thermal transfer (TT) printable
- Yellow – TT printable

Photometrics

Daytime Color (x,y,Y)
The chromaticity coordinates and total luminance factor of the retroreflective sheathing conform to Table A.

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 sheathing applied to smooth aluminum test panels cut from Alloy 6061-T6 or 5052-H10. The values shall be determined on a HunterLab ColorFlex 45/0 spectrophotometer. Computations shall be done for CIE Illuminant D65 and the 2º standard observer.

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

Table A: Daytime color specification limits

<table>
<thead>
<tr>
<th>Color</th>
<th>White</th>
<th>Yellow</th>
<th>Red</th>
<th>Orange</th>
<th>Blue</th>
<th>Green</th>
<th>Brown</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td>0.303</td>
<td>0.386</td>
<td>0.666</td>
<td>0.340</td>
<td>0.393</td>
<td>0.274</td>
<td>0.292</td>
</tr>
<tr>
<td>y</td>
<td>0.300</td>
<td>0.557</td>
<td>0.422</td>
<td>0.479</td>
<td>0.520</td>
<td>0.438</td>
<td>0.472</td>
</tr>
<tr>
<td>Y</td>
<td>0.565</td>
<td>0.629</td>
<td>0.281</td>
<td>0.565</td>
<td>0.346</td>
<td>0.274</td>
<td>0.329</td>
</tr>
<tr>
<td>Min.</td>
<td>17</td>
<td>22</td>
<td>14</td>
<td>5</td>
<td>9</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Max.</td>
<td>45</td>
<td>50</td>
<td>15</td>
<td>45</td>
<td>15</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

Daytime Luminance Limit

<table>
<thead>
<tr>
<th>Color</th>
<th>White</th>
<th>Yellow</th>
<th>Red</th>
<th>Orange</th>
<th>Blue</th>
<th>Green</th>
<th>Brown</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>0.244</td>
<td>0.284</td>
<td>0.346</td>
<td>0.274</td>
<td>0.292</td>
<td>0.274</td>
<td>0.292</td>
</tr>
<tr>
<td>Min.</td>
<td>10</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>10</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Max.</td>
<td>30</td>
<td>30</td>
<td>15</td>
<td>30</td>
<td>15</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

Table B: Minimum Coefficient of Rerereflection R_p for new sheathing (cd/lux/m^2)

<table>
<thead>
<tr>
<th>Entrance Angle</th>
<th>Observation Angle</th>
<th>R_p</th>
</tr>
</thead>
<tbody>
<tr>
<td>2º</td>
<td>0.2º</td>
<td>0.3º</td>
</tr>
<tr>
<td>5º</td>
<td>0.2º</td>
<td>0.3º</td>
</tr>
<tr>
<td>10º</td>
<td>0.2º</td>
<td>0.3º</td>
</tr>
</tbody>
</table>

Adhesive

Series 3930 sheathing has a pressure-sensitive adhesive that is recommended for application at temperatures of 65°F (18°C) or higher.

Adhesive and Film Properties

Standard Test Panels

Unless otherwise specified herein, sheeting shall be applied to test panels and conditioned in accordance with ASTM D4956 and test methods and conditions shall conform to ASTM D4956.

Properties

The following properties shall conform to the requirements in ASTM D4956:

1. Adhesion
2. Outdoor weathering
   - retained coefficient of retroreflection
   - colorfastness

E N V I R O N M E N T S & E X P E R I E N C E S

SPECIFICATIONS

- White
- Yellow
- Red
- Orange
- Blue
- Green
- Brown

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The following properties shall conform to the requirements in ASTM D4956:

1. Adhesion
2. Outdoor weathering
   - retained coefficient of retroreflection
   - colorfastness

Figure 1 – Fabrication Lines

NOTES:
1. Fabricator to verify the mounting conditions and provide a detailed drawing for each mounting situation. Prior to fabrication, fabricator shall obtain approval from the client and the fabrication accordance.
2. White: All white shall be smooth, uniform, free from bends, cracks, and other defects.
3. Hardened: All exposed hardeners shall be hardened and painted black.
4. All exposed edges painted to match adjacent surfaces.

G.5
3. Shrinkage
4. Flexibility
5. Liner removal
6. Impact resistance
7. Night time color

In addition, Series 3930 sheeting will conform to the following properties.

1. Gloss
2. Optical Stability
3. Splice
4. Flexibility
5. Liner removal
6. Impact resistance
7. Night time color

2. Optical Stability
Test Method – Test in accordance with ASTM D5233 using a 60° glossmeter.
Requirement – Rating not less than 50.

2. Splice
Application of Series 3930 sheeting 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 Series 3930 sheeting for complete signs or backgrounds must be done with a roller 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 roller laminator must be used.

All direct applied copy and border MUST be cut at all metal joints and squiggle at the joints.

Imaging
High intensity prismatic sheeting may be processed into traffic signs by any of the imaging methods described below. 3M assumes no responsibility for failure of sign face legends or backgrounds that have been processed with non-3M process colors or matched component imaging materials other than those listed below.

Screen Processing
Series 3930 sheeting may be screen processed into traffic signs before or after mounting on a sign substrate, using 3M Process Colors Series 2200, Series 3900 and Series 880N process colors can be screened at 60-100°F (16-38ºC) at relative humidity of 20-50%. A PE 157 screen mesh with a fill pass is recommended. Refer to Information Folder 1.8 for details. No clear coating is required and is not recommended. Use of other process colors series is not recommended. Care should be taken to avoid flexing high intensity prismatic sheeting before or after screening to eliminate the possibility of cracking from improper handling techniques.

Thermal Transfer Printing
High intensity prismatic TT series sheeting may be imaged with 3M™ Thermal Transfer Ribbon Series TTR2300 in conjunction with the Matan SprinG3 or Matan Spot4 thermal transfer printers. For regulated traffic signs, Series TTR2300 Spot Traffic Colors are to be used applied using these printers and must be covered with 3M™ ElectroCut™ Film 1170. Refer to Product Bulletin TTR2300 for more information.

3M™ ElectroCut™ Film Series 1170 may be used to provide transparent colored background copy for traffic control signs on high intensity prismatic sheeting. Refer to Product Bulletin 1170 for fabrication procedures.

Application Cut-Out Copy
High intensity prismatic cut letters may be applied to Series 3930 sheeting background to create a sign legend. Such cut-out copy may be directly applied to the background sheeting, or may be applied in a demountable form. Direct applied copy must be cut at all panel seams and carefully trimmed back so that sheeting from adjacent panels does not touch on assembled signs. High intensity prismatic sheeting 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.

Additional Imaging Options for Work Zone Signs
Vinyl Graphic Films
Scotchcal™ Vinyl Series 3650, Series 7720 and Series 7725 may be used to provide copy for traffic control signs on high intensity prismatic sheeting (typically orange, white or yellow sheeting) for use in construction work zones. Refer to Scotchcal™ product literature for more information.

Latex Inkjet Printing
Series 3930 sheeting to be used in work zone signs may be imaged with HP 789 series black latex ink in conjunction with the HP Designjet L25500 Printer, or with 792 series black latex ink in conjunction with the HP Designjet L26500 Printer. Refer to Information Folder 3.4 for more information.

Note: With the exception of 3M branded products, 3M does not represent that any printer or printer accessory recommended in 3M literature meets customer requirements, any federal, state or local regulations or any applicable safety standards. Such determination is the responsibility of the printer owner.

Cutting
Series 3930 sheeting may be cut into letters and shapes of at least 3 inches in height and stroke widths of at least 1/2 inch. Smaller sizes are not recommended. Sealing cut edges of Series 3930 sheeting is not required.

Plotter Cutting
Programmable knife cut (electronic cutting)
1. Flat bed plotters can either die cut or kiss cut and offer the most consistent reliable performance.
2. Friction Fed plotter. Kiss cut only. Success has been achieved using plotters that have 600 grams of down force and a 60º cutting blade. Additional drive wheels may need to be added to improve tracking. An alternative procedure is to cut sheeting from the liner side. Blade force and knife depth must be set to score but not cut through the topfilm. Break apart individual copy or apply premask to retain spacing.

NOTES:
1. Fabricator to verify the mounting conditions and provide a detailed drawing for each mounting situation prior to fabrication. Fabricator must obtain approval from the Engineer prior to mounting.
2. All work shall be smooth, paint all colors.
3. Hardware All exposed hardware shall be tamper proof fasteners.
4. All exposed edges painted to match adjacent face.

Additional Splice Information
- 45º cut to achieve the best ability to align splices.
- Liner removal is recommended when splicing.
- Care should be taken to align the splices when splicing.
- Splice may be cut with a straight or bevel edge.

Additionally, Series 3930 is designed for use with 3M Information Folder 1.8 for details. No clear coating is required and is not recommended.
Storage and Packaging
Series 3930 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.

Screen processed signs must be protected with SCW 568 slipsheet paper. Place the glossy side of the slipsheet against the sign face and pad the face with closed cell packaging foam. Double faced signs must have the glossy side of the slipsheet against each face of the sign.

Unmounted screened faces must be stored flat and interleaved with SCW 568 slipsheet, glossy side against the sign face.

Avoid banding, creasing, 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.

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, then washed with a detergent solution and soft bristle brush or sponge. Avoid pressure washing. Soot containing materials should be removed using a soft brush or sponge. Pad pressure and ease it down onto the sheets being cut will significantly reduce damage. Maximum stack height for cutting Series 3930 is 1 ½ inch or 50 sheets. Details on cutting can be found in Information Folder 1.10.

Health and Safety Information
Read all health hazard, precautionary and first aid statements found in the Material Safety Data Sheet and/ or product label of any materials prior to handling or use.

General Performance Considerations
The durability of high intensity prismatic Series 3930 sheeting and finished signs using 3M Matched Component materials will depend upon substrate selection and preparation, compliance with recommended application procedures, geographic area, exposure conditions, and maintenance. Maximum durability of Series 3930 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. The user must determine the suitability of any non-porous backing for its intended use. Sign failures caused by the substrate or improper surface preparation are not covered under the warranty 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. 3M process colors and ElectroCut Film, when used according to 3M recommendations, are generally expected to provide performance comparable to colored reflective sheeting. Custom colors, certain lighter colors, heavily toned colors or blends containing yellow or gold may 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 sign owners to establish their own effective service life expectation, beyond the warranty period. 3M has tested HP Designjet Printers and black and white inks: L25500 printer/series 780 black ink, and L26500 printer/series 792 black ink; and when applied within parameters defined in IF 3.4 the resulting sign performance is considered to be commensurate with typically expected sign life. However, this imaging system is not appropriate as part of the 3M Matched Component system noted in the General Warranty Terms.

3M Basic Product Warranty and Limited Remedy

3M High Intensity Prismatic Reflective Sheeting Series 3930 ("Product") is warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications included in this Product Bulletin. If Series 3930 Sheetings is proven not to have met the Basic Warranty on its shipment date, then a buyer’s exclusive remedy, and 3M’s sole obligation, at 3M’s option, will be to replace or replace the sheeting.

General Warranty Terms:
1. 3M makes the Additional Warranty (as defined below) to any to any traffic control and guidance sign in the United States and Canada (“Sign”) made with 3M High Intensity Prismatic Reflective Sheeting Series 3930 (”Product”) and the Matched Component materials listed in Table E. Any Additional Warranty is contingent on all components involved in that Additional Warranty being new, applied, installed, and used only as 3M recommends in its Product Bulletins and Other Product Information.

2. The Basic Warranty and any applicable Additional Warranty are collectively referred to as the “3M Warranty.” EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, THE 3M WARRANTY IS MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSES, OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND THOSE ARISING FROM A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. A BUYER IS RESPONSIBLE FOR DETERMINING IF A PRODUCT IS SUITABLE FOR ITS PARTICULAR PURPOSE AND APPLICABLE LAWS.

3. A “Sign” is defined to meet the 3M Warranty must be the result of the Product and the matched component materials’ design or manufacturing defects. 3M has no obligation under the 3M Warranty if a sign failure is caused by: improper fabrication, handling, maintenance or installation; non-vertical applications where the Sign face is more than +/- 10% from vertical; use of any material or product not made by 3M or not included in Table E; use of application equipment not recommended by 3M; failure of sign substrate; loss of adhesion due to incompatible or improperly prepared substrate; exposure to chemicals, abrasion and other mechanical damage; snow burial or any other sign burial; collisions, vandalism or malicious mischief.

4. 3M reserves the right to determine the method of replacement, and any replacement Product will have the remainder of the original Product’s unexpired 3M Warranty. Claims made under this warranty will be honored only if:
   - The Sign was dated upon completion of fabrication (“Fabrication Date”) using a permanent method (sticker, permanent marker or crayon, metal stamp, etc.)
   - 3M is notified of a 3M Warranty claim during any applicable Warranty Period and the owner or fabricator provides the information reasonably required by 3M to verify if a 3M Warranty is applicable.

Additional Warranty and Limited Remedy
1. The Additional Warranty for a Sign made with the Product is that the Sign will: (a) remain effective for its intended use when viewed from a moving vehicle under normal day and night driving conditions by a driver with a normal vision, and (b) after cleaning will meet the minimum values for coefficient of retroreflection stated in Table C for Table C’s applicable Warranty Period measured from the Sign’s Fabrication Date.

Table C

<table>
<thead>
<tr>
<th>Warranty Period</th>
<th>Minimum Percentage ‰ Retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-7 Years</td>
<td>80%</td>
</tr>
<tr>
<td>8-10 Years</td>
<td>70%</td>
</tr>
<tr>
<td>11+ Years</td>
<td>60%</td>
</tr>
</tbody>
</table>

2. If any Sign made with the Product is proven not to have met the Additional Warranty, then 3M’s sole remedy, at 3M’s option, will be to replace or replace the sign.

3. If a sign’s View Factor is less than 0.5 at the Fabrication Date, then 3M will, at its expense, restore the Sign’s surface to its original effectiveness, or

   a. if this occurs within seven years after the Fabrication Date, then 3M will, at its expense, restore the Sign’s surface to its original effectiveness, or

   b. if this occurs during the remainder of the Additional Warranty Period, then 3M will furnish only the necessary 3M sheeting Product and matched component materials’ quantity to restore the Sign’s surface to its original effectiveness.
Additional Warranty & Limited Remedy for 3934 Orange Product

1. The Additional Warranty for a Sign made with 3934 orange sheeting (Orange Product) is that the Sign will: (a) remain effective for its intended use when viewed from a moving vehicle under normal day and night driving conditions by a driver with normal vision; (b) after cleaning, will retain the coefficient of retroreflection stated in Table D for three years measured from Fabrication Date; and (c) after cleaning, the Product will maintain daytime lumiance equal to or greater than the minimums specified in Table A. If any Sign made with the Product is proven not to be covered with any of the Matched Component Materials. 

Table D

| Warranty Period | Orange 80 |

| Minimum R, |

If any Sign made with the Product is proven not to have met the Additional Warranty, then a buyer’s exclusive remedy, and 3M’s sole obligation, at 3M’s option, is that 3M will provide pro-rated replacement of the 3M materials.

Limitation of Liability

3M WILL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO A BUYER FOR DIRECT (other than the applicable Limited Remedy stated above), 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.

Other Product Information

Always confirm that you have the most current version of the applicable Product Bulletin, Information Folder or Other Product Information.

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 1.8 Process Color Application Instructions
IF 1.10 Cutting, Premasking, and Prespacing
IF 1.11 Sign Maintenance Management
PB 880F Process Color 880F
PB 880N Process Color 880N
PB 1170 ElectroCut™ Film
PB TTR2300 Thermal Transfer Ribbons Series TTR2300
PB 1160 Protective Overlay Film 1160
Ink Jet Imaging with HP Designjet L25500
IF 3.4 Printer and HP 789 Series latex Inks

For 3934 Orange sheeting Product (cd/lux/m²) minimums specified in Table A.

A luminance equal to or greater than the retroreflection stated in Table D for three years intended use when viewed from a moving vehicle under normal day and night driving conditions by a driver with normal vision; and (c) after cleaning, the Product will maintain daytime lumiance equal to or greater than the minimums specified in Table A. If any Sign made with the Product is proven not to be covered with any of the Matched Component Materials.

Specifications

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 Notices

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.

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PROJECT EXECUTIVE SUMMARY

1. PROJECT INFORMATION

Project Type: City of Spokane Wayfinding
PHASE 1 - Implementation
Downtown / University DISTRICT / Medical DISTRICT

Project Location: Spokane Washington

Owner: Downtown Spokane Partnership, City of Spokane and Visit Spokane

Owner’s Project Mgr.: City of Spokane

Designer: MERJE
120 N. Church St, Suite 208
West Chester, PA 19380

Engineer: STANTIC
621 West Mallon Avenue, Suite 309
Spokane, Washington 99201

Contract Doc. Date: 07/12/2019

2. WORK AND SCHEDULE

The work consist of Fabrication and Installation of custom Vehicular, Parking and Pedestrian signs, including maps and kiosks in a urban setting.

Work Sequence: The sequence and timeframes shall be conducted as follows from award of contract and Notice to proceed. (* Tasks run simultaneously)

Award of Contract
Notice To Proceed (NTP) provided by OWNER
To Be Determined
Kick-Off Meeting
To Be Determined
Shop Drawings
1 Week
Samples
3 weeks*
Field Mark-Outs
4 weeks*
Fabrication and Installation
To Be Determined
Project Substantial Completion
To Be Determined

3. COST ASSOCIATED WITH THIS PROJECT BID

The BIDDER shall include, but is not limited to, all of the following costs in their bid, either as a line item or within the general costs of their Lump Sum Bid.

All Fabrication, Electrical and Installation Costs
Prototype Signs (Fabricated and Installed) (see Bid Sheet for Sign Type)
Sample Sign Components (see Bid Sheet for list)
Shop Drawings, Color & Material Samples
Engineering (Structural, Civil and Electrical)
Traffic Control Plans
Utility Clearances
Permits & Fees
Other Reimbursables

1. SUMMARY OF KEY SPECIFICATIONS

NOTE: This summary is being provided to the Bidder as a courtesy to highlight and make them aware of specific requirements of the project. Providing this Executive Summary does not relieve the Bidder of their responsibility to read and understand the totality of the drawings, specifications and requirements as outlined in this complete document. By submitting a bid, the bidder acknowledges they have thoroughly reviewed all Design Intent Drawings, Technical Specifications and Contract requirements and that all necessary project cost are included in their bid, including fabrication, installation, material specifications, performance requirements, prototypes, samples, coordination and warranties as outlined herein.

1.1 GENERAL CONDITIONS (see Section - 00550 for additional details)

A. Use of Drawings. The DESIGN INTENT DRAWINGS, specifications and files are meant for DESIGN INTENT ONLY and are not for construction. CONTRACTOR shall verify and be responsible for all final drawings, dimensions and conditions of the job, including proper orientation of graphic layouts, panel shapes, brackets and mounting methods. (see Section 00550 - GENERAL CONDITIONS for more details)

B. Shop Drawings. CONTRACTOR shall produce all necessary, shop drawings, indicating all materials, processes, specifications, fabrication details, and installation methods shall be submitted to The OWNER or their representative/agent for approval prior to proceeding with fabrication and installation

C. Sign Copy and Graphic Layouts. All sign panel copy and graphic layouts, shall be proofread and approved by the OWNER prior to production. CONTRACTOR shall be responsible for replacing all signs, sign panels or other elements that did not receive an approval signature from the OWNER prior to fabrication.

D. Basis for Design. The CONTRACTOR shall maintain the basis of design as presented in the provided DESIGN INTENT DRAWINGS and shall remain responsible for the development of the final means and methods necessary to build structurally sound and approved signs and the related installation of the proposed signs.

E. Limits of DESIGNER. It is understood by the CONTRACTOR and the OWNER that the DESIGNER is not a licensed ENGINEER or Architect, and that responsibility for the interpretation of design intent drawings and engineering of all work performed under this contract to yield an effective, structurally sound and safe product is the responsibility of the OWNER’S CONTRACTOR and/or licensed STRUCTURAL ENGINEER

F. Structural Engineering: Provide all necessary structural engineering calculations and signed and sealed drawings for proposed signs, structures (existing and new) and other elements as necessary to perform the work and provide a structurally sound and safe product. CONTRACTOR shall have all drawings signed and sealed by a registered Structural ENGINEER, licensed in the state the project is being installed.

G. Traffic Control Plans. Prior to the start of the project the CONTRACTOR shall provide Traffic Control Plans and strategy based on the OWNER’S requirements. For work located in the public right-of-way the CONTRACTOR shall follow all State Department of Transportation, County or Municipal government regulations, permits and ordinances.

1.2 POST & PANEL / PYLON SIGNS

(see Sections 10436 and 10437 for additional details)

A. Delivery, Handling And Storage

1. Delivery and Handling, Ship and deliver post, panels and all other sign components in the appropriate protective covering and crating to fully protect all sign components and surfaces against damage.

Remove all protective covering, as required per product manufacturer instructions, in order to maintain warranties.

2. Deflects. All delivered sign components shall be delivered free of any defect, including, but not limited to scratches, chips, cracking, dents, peeling, bubbling, adhesive glue / tape marks, marker writings, undesirable film coatings or other visual distractions or defects.

B. Warranty

1. Contractors Warranty Period: Contractor shall provide a warranty of 3 years from date of Substantial Completion, for all workmanship associated with the fabrication and installation of the sign system.

2. Product and Manufacturer Warranties. CONTRACTOR shall pass on to the OWNER and honor all associated third-party product warranties. Including but not limited to:
   a. Paint Warranty: Minimum 7 years
   b. Reflective Vinyl / Custom Color Warranty: Minimum 8 yrs
   c. Non-Reflective Vinyl Warranty: Minimum 10 years

C. Paint: Use polyurethane paints or equivalent approved.

Clear Coat: Apply a compatible protective UV / Anti-Graffiti Clearcoat in a manner specified, sprayed or painted. Contractor shall verify all product warranties and compatibility with applied to surfaces.

D. Reflective Sheeting and Custom Color Application Process

1. 3M Certified Fabricator: Reflective Vinyl Printing shall be performed by a current accredited 3M Certified Fabricator or 3M Certified Digital Fabricator

2. Single Vinyl Product and Manufacturer: All vinyl sheeting, inks and overlays shall maintain the same manufacturer and required specifications. Mixing products, processes or materials from different manufacturers is not permitted.

3. Use 3M 3930 High Intensity Reflective Sheeting or approved equal as well as all conditions for MUTCD requirements for City Wayfinding Signage (MUTCD Section 2D.50)

4. Imaging Custom Colors (3M). Custom colors shall be applied to high intensity prismatic sheething by the following imaging methods describe below or approved equal:
   a. 3M Series 3930 Sheeting and Color Application shall be covered with 3M ElectoCut Film 1170 Clear UV/ Anti-Graffiti overlaminate. Refer to Product Bulletin for 3M 1170 for fabrication procedures and specifications.
   b. Preferred Printer. 3M Series 3933 sheating may be imaged by the Durst RHO 161 TS printer.
   c. Preferred Vendor: Sherrine Industries: (604) 513-1887.

E. Fabrication: Bracket And Panel Assembly
Brackets / Panel Configuration. Contractor shall be responsible for confirming, coordinating and verifying all sign panels, messages, graphic layouts, panel orientation, margins, shape, brackets, panel edges, and mounting hole positions with the proposed bracket design, configuration and assembly method, as it relates to the orientation and positioning on a new or existing pole to which it is installed on.

Pedestrian Sign Panels: This includes single and double-sided panels that may require a singular orientation and specific margin clearance, on either side of the panel, in order to work properly with the assembly to the bracket, pole (existing or new) and positioning of the panel in the correct direction, when placed in the field.

Contractor shall be responsible for replacement of all panels that are incorrect due to the Contractor’s failure to notify the DESIGNER and OWNER prior to the commencement of any step of the panel or bracket fabrication process.

F. Breakaway Post
As indicated on drawings, CONTRACTOR shall provide breakaway posts assembly for the sign types and locations indicated in the documentation drawings. Final designs and shop drawings shall be supplied by the CONTRACTOR for each of the poles identified. A State Licensed Professional Structural Engineer shall sign and seal the submittal of shop drawings. The breakaway post shall meet or exceed the following criteria:
1. Most Current policy on Geometric Design of Highway and Streets
3. Most Current AASHO Roadside Design Guide

G. Existing Poles
Prior to submitting a bid the CONTRACTOR shall become familiar with all existing pole types utilized on the project and include all necessary costs for coordination, different mounting methods and materials required for the project.

See 10436 / Section 1.3 PERFORMANCE REQUIREMENTS and Section 3.1 [C] INSTALLATION for Structural Engineering requirements associated with existing structures, including poles.

H. Installation: Underground Vaults/Basements
Prior to bidding, to the greatest extent practical the CONTRACTOR shall make themselves familiar with all underground basement/vault locations that may interfere with a potential sign location footer, by obtaining plans and historical records from the OWNER. Bidders project lump sum cost shall be inclusive of all fees associated with unique footer designs that may be required as part of this work.

I. Installation: Call Utilities Before Digging
Prior to any digging the contractor shall contact all required utility company’s. Including, but not limited to Water, Gas, Electric, Fiber-Optics, Cable, Telephone, etc.). It is the responsibility of the Contractor to coordinate all calls, utility checks and footer production so that it will not delay the installation of the sign program.

J. Installation: Concrete and Surface Replacement
CONTRACTOR shall replace all surfaces with like materials. All new surfaces adjacent to and within 25'-0" so of post, including the entire excavated area shall be returned to the same condition and quality, including, materials, finish and grading that was present prior to excavation.

When pouring a underground footer within a area that contains a surface brick or specialty pavers. The pattern of bricks / pavers shall be removed, stored and replaced in the exact same positioning in the order they were removed.

When locating a footer within a single larger pavement block adjacent to at least 2 expansion joints, the entire block of pavement shall be removed and replaced with the same materials and finish of adjacent sidewalk areas - up to 25 sq ft. (6’ x 0’ x 5’ - 0’)

K. Existing Poles
Prior to submitting a bid the CONTRACTOR shall become familiar with all existing pole types utilized on the project and include all necessary costs for coordination, different mounting methods and materials required for the project.

L. Field Surveys Prior to Beginning Work
Contractors representatives will be present at all field surveys and site markings prior to installation. See Section 10436 and 10437 for CONTRACTORS staff responsibilities.

M. Check / Stop / Ask (Obvious Errors)
CONTRACTOR shall, when at all practical, confirm sign messages in the field prior to final installation.

1. CONTRACTOR shall notify the DESIGNER and OWNER of any obvious incorrect message, spelling, arrow direction, pictogram and any other graphic elements OR any condition in the environment (new or previously identified) that reduces the sign(s) effectiveness, visibility or creates a situation where the sign is presenting incorrect information or creates a hazard (regardless of its safety factor or simple common sense).

2. Failure to notify the OWNER and DESIGNER of any obvious error or faulty condition prior to installation will result in the CONTRACTOR replacing the sign or rectifying the condition in the environment, at no additional cost to the OWNER or DESIGNER.

N. Traffic Control
Develop general Maintenance and Protection of Traffic plans for vehicular and pedestrian traffic in accordance with the current MUTCD, State DOT and Municipal requirements. Details for traffic control device must conform to the standard State DOT details.

The contractor shall apply for all permits required by the OWNER and municipality for the purposes of traffic control. The cost for all permits and coordination shall be included within the Lump Sum Bid Proposal; this includes but is not limited to equipment, manpower, police presence or any other devices or personnel required for traffic control.

O. Removal Of Existing Signs (if Requested as part of the Bid)
The contractor shall remove all existing wayfinding, directional and trailblazer signs as indicated in the Comments section of the project Message Schedule. This work shall be sequenced and coordinated with the installation of the new sign program.

Removal of existing signs shall be included in the CONTRACTORS, Lump Sum Project Cost.

1. CONTRACTOR shall confirm with the OWNER prior to submitting their bid, the full scope of work related to removal, including footer removal, post removal and disposal.

P. Attic Stock (if Requested as part of the Bid)
Contractor shall supply attic stock components of posts, sign panels, brackets and other components as requested and as outlined on the Bid Form.

END OF EXECUTIVE SUMMARY
NOTE: These General Conditions and Specifications are specific to signage programs. In cases where the OWNER has provided additional or duplicate General Conditions, Specifications or Requests as part of their bidding process or contract with the CONTRACTOR, the OWNER’s requirements shall take precedence.

1. DEFINITIONS.

Addendum: Written change to the bid documents issued by the OWNER before award of a contract. More than one such change is referred to as "addenda."

Affirmative Action Plan: The plan submitted by each Bidder with its Bid in the form required by the Bid Documents as to the proposed method of compliance with the affirmative action goals of the OWNER set forth in the Bid Documents.

Application for Payment: CONTRACTOR’S written request for payment of amounts due for completed portions of the Work and, if the Contract so provides, for materials delivered and suitably stored on or off the OWNER’s premises pending their incorporation into the Work. Each Application for Payment must be approved by the OWNER’S REPRESENTATIVE and the DESIGNER.

Award: The issuance of a Contract by the OWNER to the successful Bidder.

Bid: A complete and properly signed written proposal of the Bidder, submitted on the Bid Proposal Form (supplemented by additional information as appropriate) included in the Bid Documents, to furnish, deliver and install the necessary materials and to perform the Work in accordance with the Contract Documents.

Bidder: An individual, firm, partnership or corporation qualified to submit a Bid for the Contract Work.

Bonds: The Bond given as Bid Security, if any, the Performance Bond and Labor and Material man’s Bond, or any other bond required by the Contract Documents.

Change Order: A written order to the CONTRACTOR, after the Contract is executed, authorizing a change in Contract Price, the Contract Time, or other provisions of the Contract Documents. Change Orders are not valid unless signed by the OWNER Authorized Representative.

Contract: The Contract Documents that form the agreement between the two OWNER and CONTRACTOR.

Contract Documents: May include the following:

Invitation to Bid: The written notice inviting each potential subcontractor to submit their proposal.

Instructions to Bidders: The bidder’s guide that includes rules, regulations, and guidelines for submitting a bid.

Design Intent Drawings: Drawings provided by the DESIGNER, which are for bidding only and not for shop use of construction/installation.

Design Standards: The standards and guidelines that the CONTRACTOR shall follow in the construction of the Work.

Design Intent Drawings: Drawings provided by Found Design, LLC. Drawings are for bidding only and not for shop use of construction/installation.

Designer: Found Design LLC (d.b.a. MERJE) and their sub-consultants.

Engineer: The term “ENGINEER” used throughout the Contract Documents is deemed to mean any design professional engaged by the OWNER to carry out the design and documentation of the Work. The term “ENGINEER” may refer not only to a licensed ENGINEER, but also to an architect, planner or other non-licensed design professional.

Final Payment: The Application for Payment made for the last payment under the Contract, including retention. The Final Application for Payment must be approved by the OWNER and DESIGNER before payment will be made.

Issuer: The successful Bidder that has been awarded the Contract.

Lump Sum: The price which the Contract states is the total amount.

Owner Representative: The person or organization retained by the OWNER to monitor and administer construction for the OWNER and/or to take any actions necessary for the proper execution and completion of the Work. The OWNER must pay to the CONTRACTOR as full compensation for performance of the Work as fully and correctly set forth and described in the Drawings and Specifications, or which are customarily performed, as if fully and correctly set forth and described in the Drawings and Specifications at no additional expense or delay to The OWNER. Verification of Dimensions and Existing Work. Before commencing work, The CONTRACTOR shall take field measurements and verify field conditions and shall carefully compare such field measurements and

Notice to Proceed: Written notice from the OWNER to the CONTRACTOR to proceed with the Work.

Notice of Award: Written notice to the successful Bidder that the OWNER is awarding the Contract to that Bidder.

Notice to Proceed: Written notice from the OWNER to the CONTRACTOR to proceed with the Work.

Owner: The entity entering into the Contract with the CONTRACTOR.

Owner Representative: The person or organization retained by the OWNER to monitor and administer construction for the OWNER, and to facilitate communications of project participants, but not to act as the OWNER’s agent.

Subcontractor: Any person, firm or corporation, other than the employees of the CONTRACTOR, who contracts with the CONTRACTOR to furnish labor or materials under the Contract.

SUMMARY:

1. NOTE: These General Conditions and Specifications are specific to signage programs. In cases where the OWNER has provided additional or duplicate General Conditions, Specifications or Requests as part of their bidding process or contract with the CONTRACTOR, the OWNER’s requirements shall take precedence.

2. CONTRACT INTERPRETATION.

2.1 Documents. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work. The Contract Documents are complimentary, and what is required by one shall be as binding as if required by all. The CONTRACTOR shall perform in accordance with the Contract Documents and with all requirements reasonably inferable from the Contract Documents as being necessary to produce the intended results. In case of conflict, the most expensive combination of quality and quantity shall govern.

2.2 Referents. Material and workmanship specified by the number, symbol, or title of a referenced standard shall comply with the latest edition or revision thereof and amendments and supplements thereto in effect on the date of the Invitation to Bid except where a particular issue is indicated. Municipal and utility standards shall govern except in case of conflict with the Specifications. In case of a conflict between the Specifications and the referenced standard, the more stringent provision shall govern.

2.3 Ambiguities in Contract. The CONTRACTOR shall refer any perceived ambiguity, inconsistency, or discrepancy in the Contract Documents to The OWNER for clarification. Absent such clarification, the more stringent requirement in any case shall apply.

2.4 Differences Between. The most recent revision of Drawings shall control over older revisions. In the event of discrepancy between any drawings and the figure written thereon, the figures shall govern over scaled dimensions.

2.5 Omissions and Mis-Descriptions. Before submitting its Bid to The OWNER, the CONTRACTOR shall carefully study and compare all Drawings, Specifications and other Contract Documents; shall verify all figures on the Drawings before laying out the Work. The Bidder (and the CONTRACTOR) shall promptly notify The OWNER of all errors, inconsistencies, or omissions it may discover, and obtain specific instructions in writing before proceeding with the Work. The CONTRACTOR shall be liable to The OWNER for all costs and damages resulting from errors in construction which could have been avoided by such examination and notification, and shall correct at its own expense and without extension of Contract Time, all work improperly constructed in accordance with the DESIGNER and at no specific instructions in writing. Omission from the Drawings or Specifications or the mis-description of details of Work which are manifestly necessary to carry out the intent of the Drawings and Specifications, or which are customarily performed, shall not relieve the CONTRACTOR from performing such omitted or mis-described Work (no matter how extensive) and it shall be performed as if it fully and correctly set forth and described in the Drawings and Specifications at no additional expense or delay to The OWNER.

2.6 Verification of Dimensions and Existing Work. Before commencing work, The CONTRACTOR shall take field measurements and verify field conditions and shall carefully compare such field measurements and
conditions and other information known to the CONTRACTOR with the Contract Documents. Errors, inconsistencies or omissions discovered shall be reported to the DESIGNER and THE OWNER REPRESENTATIVE at once.

2.7 Familiarity with Site. By submitting a Bid, the contractor is confirming they are familiar with all site conditions and project requirements related to the fabrication, installation, coordination and permitting associated with this project.

2.8 Duty to Notify of Defects in Other Work. If any part of the CONTRACTOR’S Work depends upon the work of another CONTRACTOR or on existing conditions or structures in the building, the CONTRACTOR shall, before beginning that portion of the Work, report to the DESIGNER and OWNER’S REPRESENTATIVE any defects or deficiencies in the work upon which its Work depends that might affect the CONTRACTOR’S Work. If the CONTRACTOR proceeds with the Work without giving any such notice, the CONTRACTOR shall be deemed to have accepted the work of the other CONTRACTOR or the existing conditions as being adequate for its purposes, and shall not be entitled to an increase in Contract Price or Contract Time for correcting any resulting defects or deficiencies in its Work.

2.9 CONTRACTOR’S Responsibilities For Execution of the Work.

A. Compliance with Contract Documents. The CONTRACTOR shall perform the Work in strict accordance with the Contract Documents. The CONTRACTOR shall not depart from the scope of the Work or the manner in which the Work is described in the Contract Documents without written authorization from THE OWNER. The CONTRACTOR shall not be relieved of responsibility for deviations from the Contract Documents by the DESIGNER’s approval of shop drawings or other submittals.

B. Standard of Quality. The CONTRACTOR shall perform all Work in accordance with first-class construction practices, in a good and workmanlike manner, and free from defects. The CONTRACTOR shall use in the Work only materials that are new, in a good and workmanlike manner, and free from manufacturing or other defect or deficiency.

C. Compliance with Laws, Codes and Regulations. The CONTRACTOR shall, at all times, comply strictly with all applicable codes, regulations, statutes, laws, ordinances, regulations or rules of any governmental authority having jurisdiction over the Work or the location within which the Work takes place (collectively, “Laws”) and shall obtain all approvals necessary in connection with the Work. Without limitation, the CONTRACTOR shall comply with all applicable building construction, use or occupancy, payment of SUBCONTRACTORS and materials men, payment of employee wages or related taxes, health and safety Laws, environmental Laws, and applicable rules of the National Board of Fire Underwriters or any other body now or hereafter constituted to exercise similar jurisdiction.

2.10 TAXES. Except as otherwise provided in the Contract Documents, the CONTRACTOR shall pay all applicable taxes arising from or relating to the Work, at no further cost to THE OWNER.

2.11 DEFECTIVE WORK OR MATERIALS.

A. Workmanship or materials not conforming to the requirements of the Contract Documents are hereby deemed to be rejected, whether in place or not, and regardless of whether such materials have been expressly rejected by the DESIGNER. The CONTRACTOR shall remove all such rejected materials or Work shall be immediately removed from the Work Site, and promptly replaced at the CONTRACTOR’S sole expense, and without any extension of Contract Time.

B. If THE OWNER issues a written direction to the CONTRACTOR to correct non-conforming or defective Work, and the CONTRACTOR does not comply with the direction within ten (10) days. THE OWNER may, without further notice to the CONTRACTOR correct the deficiencies itself or through others and charge the cost of doing so to the CONTRACTOR (or deduct it from further payments to the CONTRACTOR).

C. If the CONTRACTOR fails promptly to correct Work that is not in accordance with the Contract Documents, THE OWNER has the right to correct the Work in any manner it determines to be necessary and to invoice THE CONTRACTOR for the cost thereof. If the Work is not corrected to THE OWNER’s satisfaction, THE OWNER may, without further notice to the CONTRACTOR, correct the Work at the CONTRACTOR’S sole expense without extension of Contract Time.

D. The CONTRACTOR shall pay for THE OWNER’s costs of correcting Work in a manner acceptable to THE OWNER. The CONTRACTOR shall not be entitled to a reduction in Contract Price or Contract Time for correcting any resulting defects or deficiencies in its Work.

2.12 Required Tests and Inspections.

A. The Work may be subject to inspection and testing by THE OWNER REPRESENTATIVE and the DESIGNER at reasonable times. Such inspection and testing is for the sole benefit of THE OWNER and shall not relieve the CONTRACTOR of responsibility for performing the Work in accordance with the Contract Documents. Each such specifically provided to the contrary in the Contract Documents, no testing or inspection shall be construed as constituting or implying acceptance.

B. Any Work done without proper inspection or testing as required by the Contract Documents is subject to rejection. If such Work should be discovered or found to be non-conforming or defective after it has been accepted or approved at any time, THE OWNER may, at any time during the Warranty Period, require the CONTRACTOR to remove the non-conforming or defective Work and to replace it. THE OWNER may immediately order the CONTRACTOR to stop the Work or portions of the Work until the non-conforming Work has been corrected. The CONTRACTOR shall not be entitled to an increase in Contract Price or an extension of Contract Time as a result of any such stop work order. Any delay caused to completion of the Work by such an order shall be treated as a delay caused by the CONTRACTOR’S breach.

2.13 Means and Methods. The CONTRACTOR is solely responsible for the means and methods of construction, work, workmanship or installation of the Work. THE OWNER represents that the CONTRACTOR or other subcontractors shall not depart from the scope of the Work as defined in the Contract Documents without written authorization from THE OWNER. The contracting parties shall not add to, subtract from or modify the Work unless written authorization is obtained from THE OWNER.

2.14 Unauthorized Work. Any work which is not in accordance with the Contract Documents is unauthorized. Any work the CONTRACTOR performs which is beyond that required or authorized by the Contract Documents shall be likewise considered unauthorized and THE OWNER shall not be obligated to pay therefor or under a theory of quantum meruit, unjust enrichment or otherwise. THE OWNER may, but need not, order that any unauthorized Work be removed from the Work Site at the CONTRACTOR’S sole expense and without extension of Contract Time.

2.15 Storage of Materials. Materials delivered to the Work Site for use in the Work may be stored only in areas designated by THE OWNER.

2.16 Equipment and Services. Unless provided to the contrary elsewhere in the Contract Documents, the CONTRACTOR shall provide all legal services, legal representation, liability insurance, and all other services required to complete its Work, all tools, scaffolding, hoists, cranes or other equipment and incidental materials needed for the completion of the Work. If weather protection (including heating) or additional ventilation is required to protect workers, the Work, or the boundaries within which Work is taking place, the CONTRACTOR shall provide it.

2.17 SUBCONTRACTOR Warranties. All warranties and guarantees of SUBCONTRACTORS, including suppliers and manufacturers, with respect to any portion of the Work shall be obtained by the CONTRACTOR for the benefit of and in the name of THE OWNER and, to the extent possible, shall be directly enforceable by THE OWNER. If such warranties are not directly enforceable by THE OWNER the CONTRACTOR shall fully cooperate with THE OWNER in enforcing the warranties. The CONTRACTOR shall use its best efforts to obtain from all manufacturers and suppliers guarantees and warranties upon the best terms and longest periods available. THE OWNER shall cause its SUBCONTRACTORS to include such guarantees and warranties in their contracts and purchase orders. The CONTRACTOR shall not depart from the scope of the Work as defined in the Contract Documents, or change the specifications and other information known to the CONTRACTOR with the Contract Documents to include any such warranties or guarantees. To the extent that any such warranty or guaranty would be voided by reason of the CONTRACTOR’s negligence or breach in incorporating material or equipment into the Work, the CONTRACTOR shall be responsible for correcting such defect and shall be responsible pursuant to the guarantee obligations set forth herein.

2.18 Hazardous Materials.

A. THE CONTRACTOR shall not bring onto the Work Site or use in the Work any hazardous or toxic materials, such as asbestos, asbestos products, or polychlorinated biphenyl (PCBs). If the CONTRACTOR discovers that any materials or processes specified in the Contract Documents, including the use of hazardous or toxic materials, it shall inform the DESIGNER and THE OWNER REPRESENTATIVE immediately.

B. If the CONTRACTOR encounters materials on the Work Site which the CONTRACTOR believes to be toxic or hazardous, which have not been placed on the Work Site by the CONTRACTOR, which have not been approved or otherwise authorized by THE OWNER, which are not specified in the Contract Documents or at law.

C. The CONTRACTOR shall not spill or release oil, solvents, or other chemical substances onto the Work Site. If such releases do occur, the CONTRACTOR shall promptly notify THE OWNER and THE OWNER REPRESENTATIVE, and shall be responsible for removing and cleaning up the spilled or released substances in a legally proper manner.
2.19 CLEAN-UP. The CONTRACTOR shall keep the Work and the entire Work Sites clean, safe, and reasonably free from trash or debris at all times. The CONTRACTOR shall arrange for the removal and legal disposal of all rubbish, packing materials, scrap, rubble, and other waste material from the Work Sites. Flammable materials and chemicals or other hazardous substances will be removed from the Work Sites at the end of each day, or when they are no longer needed at the Work Sites, whichever comes first. As soon as practicable after Final Completion, the CONTRACTOR shall remove all of its project offices, equipment, tools, temporary fences, barriers, scaffolding, and other material from the Work Sites, and leave the Work Sites brown clean and free of all construction-related debris or trash.

2.20 RECORD DRAWINGS. The CONTRACTOR and each SUBCONTRACTOR shall keep on file at the Work Site one complete copy of the Drawings and Specifications, in good order and marked currently to record all changes, revisions and additions made during the construction, whether pursuant to field order or otherwise, and the location and detail of Work installed on a field run basis, as well as a complete set of approved shop drawings and Change Orders (“collectively, the Record Drawings”). The Record Drawings shall be made available for review by The OWNER and DESIGNER at all times. One (1) complete set of the Record Drawings shall be delivered to The OWNER after Final Completion of the Work, and as a condition precedent to Final Payment.

2.21 USE OF PREMISES
A. General: The general locations of the signs and the layout of the overall project area are shown on the Sign Location Plans. The CONTRACTOR shall perform the work, either exclusively or in conjunction with others performing construction as part of this project or other projects and shall coordinate all staging and work activity areas necessary to complete the tasks associated with this work.

B. Access to sign locations may be limited; CONTRACTOR shall obtain the OWNER’S approval of proposed routes of access sequences and safety requirements. CONTRACTOR shall also coordinate with necessary OWNER representatives, departments and local/state authorities to ensure access is permitted and safe.

C. Make all other arrangements for storage, unless coordinated with the OWNER and their departments representatives.

2.22 WORK UNDER OTHER CONTRACTS
A. Separate Contract: Owner may have a separate contract for performance of certain construction operations at Project Site. All work related or unrelated to this project, shall be coordinated by the CONTRACTOR as required to complete the Contract.

B. Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

2.23 REGULATIONS. CONTRACTOR shall be familiar with and utilize materials and process, so that the signs meet all requirements of the MUTCD and all subsequent revisions (May 2012), the 2010 ADA Standards for Accessible Design and all other required Federal, State and Local codes related to the fabrication and installation of this project, inclusive of industry standards, specific project requirements and all site conditions.

3. DESIGN INTENT DRAWINGS and SHOP DRAWINGS
3.1 Drawings Provided By DESIGNER. The DESIGNER shall provide Adobe Illustrator files / DESIGN INTENT DRAWINGS associated with the PROJECT as a courtesy to the CONTRACTOR.

3.2 Use of Drawings. The DESIGN INTENT DRAWINGS, specifications and files are meant for DESIGN INTENT ONLY and are not for construction. CONTRACTOR shall have all drawings signed by the CONTRACTOR and/or licensed STRUCTURAL ENGINEER structurally sound and safe product is the responsibility of the OWNER’S Engineering of all work performed under this contract to yield an effective, structurally sound and safe product is the responsibility of the OWNER’S CONTRACTOR and/or licensed STRUCTURAL ENGINEER.

3.3 Basis for Design. The CONTRACTOR shall maintain the basis of design as presented in the provided DESIGN INTENT DRAWINGS and shall remain responsible for the development of the final means and methods necessary to build structurally sound and approved signs and the related installation of the proposed signs.

3.7 Limits of DESIGNER. It is understood by the CONTRACTOR and the OWNER that the DESIGNER is not an Architect, and that responsibility for the interpretation of design intent drawings and engineering of all work performed under this contract to yield an effective, structurally sound and safe product is the responsibility of the OWNER’S CONTRACTOR and/or licensed STRUCTURAL ENGINEER.

3.8 Structural Engineering. CONTRACTOR shall have all drawings signed and sealed by a registered Structural ENGINEER, licensed in the state the project is being installed.

4. SUBMITTALS
4.1 Requirement of Prompt Submittal. The CONTRACTOR shall submit to the DESIGNER for review shop drawings, product data, samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work, The OWNER activities or the work of separate CONTRACTORS.

4.2 Work to Conform with Submittals. The CONTRACTOR shall perform no Work requiring submittal and review of shop drawings or other submittals until the submittals have been approved by the OWNER, DESIGNER and/or ENGINEER as required. Work shall be performed in accordance with approved submittals.

4.3 CONTRACTOR’S Representation. By submitting shop drawings or other submittals, the CONTRACTOR represents that it has determined and verified all materials, processes, products, means / methods, field measurements and field construction criteria related thereto, and has checked and coordinated the information contained in the submittals with the requirements of the WORK and the CONTRACT Documents, including all Warranties and Engineering requirements.

5. CHANGES/CHANGE ORDERS
5.1 Right to Make Changes. The OWNER may, without invalidating the Contract, and without prior notice to the surety, order changes in the Work, including additions, deletions or modifications. Any such change may be made Only by written Change Order executed by The OWNER’s Authorized Representative. Neither the Contract Time nor Contract Sum may be changed except by such a Change Order. The DESIGNER is NOT authorized to execute Change Orders or to bind the OWNER to any change to the CONTRACT.

5.2 Entitlement to Contract Adjustment. The CONTRACTOR is entitled to an adjustment to the Contract Time or the Contract Price if it has complied with the notice and documentation provisions of this Article and it:
A. The OWNER issues any directive which changes the work so that the cost of performing the Work or the time within which the Work can be completed is materially affected.
B. the site or as-built conditions differ materially from those which the CONTRACTOR knew, or which it should have discovered as a result of its pre-construction site and document investigation, and the difference will materially increase the cost or time of performance;
6. SUBCONTRACTORS.

6.1 CONTRACTOR Responsible for SUBCONTRACTOR Work. The CONTRACTOR shall retain SUBCONTRACTORS to perform portions of the Work. However, the CONTRACTOR shall be fully responsible for Work performed by SUBCONTRACTORS, as if it had been performed by the CONTRACTOR itself.

6.2 Contract Requirements Apply. All SUBCONTRACTORS must agree that they have the same duties and obligations to the CONTRACTOR as the CONTRACTOR has to the OWNER under this Contract.

6.3 No Third-Party Rights. The SUBCONTRACTORS shall have no rights against The OWNER, other than a third-party beneficiary theory or otherwise.

6.4 Insurance. The CONTRACTOR shall require all SUBCONTRACTORS to obtain and maintain throughout the duration of the Work, insurance of the types and limits stated in paragraph 11.1 of the General Conditions. No SUBCONTRACTOR will be permitted to perform any Work until the CONTRACTOR has provided The OWNER, and any additional insured’s, with evidence that the SUBCONTRACTOR has obtained the required insurance.

7. PROJECT SECURITY AND SAFETY REQUIREMENTS.

7.1 Continued Occupancy of OWNER. The CONTRACTOR shall be responsible for the protection and security of those portions of the Work Site that have been turned over to it for construction and for the protection and security of all materials, supplies and construction equipment, whether on or off the Work Site. The CONTRACTOR acknowledges that the Work Site, or areas of the building within which the Work is being done, may be occupied by The OWNER or other members of the public, and agrees to take all reasonable security measures to protect the people and property on the Work Site from injury and damage, and to exclude from areas under construction persons who are not authorized to be in those areas. The CONTRACTOR shall comply with The OWNER’s directions concerning areas within which it must confine its activities so as to avoid injury to persons and interference with operations.

7.2 Safety. The CONTRACTOR shall provide and maintain all safety devices or measures required by any applicable laws, regulations, ordinances, rules, by The OWNER’s insurers, or reasonably required by Project or overheads, whether calculated by the Eichleay formula or otherwise, and all costs attributed to lost profits, opportunity costs, other business Dangers, or similar costs. Such costs shall not be recoverable, regardless of the cause of the delay or disruption.

7.3 Duty to Continue Work. If the CONTRACTOR and The OWNER do not agree that any adjustment sought by the CONTRACTOR is justified, or if the parties fail to agree upon the appropriate amount of the adjustment in Contract Time or Contract Price, the CONTRACTOR shall nevertheless proceed with the Work, and shall promptly make a written claim.

7.4 Waiver of Right to Adjustment. If the CONTRACTOR fails to notify The OWNER in accordance with Paragraph 5.3, of any action or event which it claims materially affects the cost of completing the Work or the time within which it can be completed, the CONTRACTOR shall be deemed to have waived its right to any adjustment in the Contract Price or Contract Time as a result of the action or event in question. In such a case, the CONTRACTOR shall not be deemed to have waived any claim additional time or compensation under theories of quantum meruit or unjust enrichment or negligence.

8. DUTY TO COORDINATE WITH OTHER CONTRACTORS ON SITE

8.1 Duty Not to Interfere. The CONTRACTOR shall not unreasonably impede, hinder or delay the work on any other CONTRACTOR which The OWNER or others may have performed work on the Work Site. The CONTRACTOR shall cooperate with any CONTRACTOR who will be performing work that may connect, complement, interfere with or otherwise be dependent upon the CONTRACTOR’S Work, and shall resolve any disputes or problems with such other CONTRACTOR.
B. REPRESENTATIVE an itemized Payment. At least ten (10) days before the date established for each via properly completed, documented and approved Applications for Documents, and for which the CONTRACTOR has sought payments Progress Payments. The OWNER shall make payments to the for Payment. shall be used as a basis for reviewing the CONTRACTOR’S Applications for Completion of the Work. The OWNER shall accept the Work. This will constitute Final Completion of the Work. The CONTRACTOR shall submit its Final Application for Payment within ten (10) days of Final Completion. The Final Application for Payment must conform to the requirements for applications for progress payment and must include satisfactory evidence that all SUBCONTRACTORS and suppliers have been paid all amounts due to them for labor or materials provided for the Work and must include a written certification from the CONTRACTORS that all of the Work has been completed in accordance with the Contract and applicable requirements.

9.8 The OWNER’s Right to Withdraw Payments. The OWNER may withhold payment for any Work claimed to have been performed by the CONTRACTOR if the Application for Payment states, or The OWNER reasonably determines that:

A. any Work for which payment is sought is defective or non-conforming and such defects or non-conformance have not been remedied;
B. the CONTRACTOR has not promptly paid all amounts due to laborers, materialmen and SUBCONTRACTORS;
C. any of the CONTRACTOR’S laborers, Subcontractors or materialmen has filed a mechanic’s lien against the Project, and the CONTRACTOR has not caused such lien to be discharged; or
D. the OWNER reasonably determines that the CONTRACTOR will be unable to complete the Work for the balance of the Contract Sum and the CONTRACTOR fails to provide reasonable assurances that it has the financial resources to complete the Work; or
E. the CONTRACTOR is otherwise in default under its Contract.

9.9 Liquidated Damages. The OWNER shall charge a liquidated damages penalty against the CONTRACTOR for work not completed within the 90% substantial completion timeframe and/or the agreed upon final project deadline.

A. The amount of the liquidated damages penalty shall be according to the OWNER / CONTRACTOR Contract. If the OWNER’S Contract language is silent on liquidated damages or the amount of the penalty, the penalty shall be based on the following values:

Total Contract $1 - $499,999 Penalty $ 500 per day
Total Contract $500,000 - $749,999 Penalty $ 750 per day
Total Contract $750,000 - $999,999 Penalty $ 1,000 per day
Total Contract $1,000,000 or more Penalty $ 1,500 per day

10. PREVAILING WAGE REQUIREMENTS.

10.1 Applicable Law. The CONTRACTOR shall conform with the OWNER if this Contract is subject to the provisions, duties, obligations, remedies and penalties of the Prevailing Wage Act, which is incorporated herein as a reference when required.

10.2 Wage Predetermination. In compliance with the Prevailing Wage Act, the Prevailing Minimum Wage Predetermination may be included in the Contracts General Requirements provided by the OWNER, and is a part hereof, as approved by the Secretary of Labor and Industry.

10.3 No Strike; No Lockout. By executing the Contract, CONTRACTOR warrants and represents that the collective bargaining agreements between the CONTRACTOR and any union, which will perform under the Contract, include a no-strike, no-lockout clause.

11. INSURANCE.

11.1 OWNER Insurance Requirements. CONTRACTOR shall furnish evidence to the OWNER that with respect to the operations he performs, he carries a comprehensive general liability insurance policy (including, but not limited to, blanket contractual liability, completed operations/products liability, contractor’s pollution, pollution, collapse and underground hazard coverage) providing a limit of not less than two million dollars ($2,000,000) for all damages arising out of bodily injury or death in any one (1) occurrence, and providing for a limit of not less than two million dollars ($2,000,000) for damages to or destruction of property, including the loss of the use thereof, in any one occurrence; two million dollars ($2,000,000) aggregate limit shall apply to bodily injury, personal injury and death, and to property damage.

CONTRACTOR shall also furnish evidence to the OWNER that with respect to the operations he performs, he carries an Umbrella Liability Policy with a limit of one million dollars ($1,000,000) with a self-insured retention or deductable to not exceed ten thousand dollars ($10,000).

All policies of insurance, including Umbrella Coverage, must be endorsed to include as additional named insured each of the following: - The OWNER - State Department of Transportation - DESIGNER

12. INDEMNIFICATION.

12.1 Indemnity. To the full extent permitted by law, the CONTRACTOR shall indemnify, defend and hold harmless The OWNER, its Representatives, Agents, DESIGNERS and the State Department of Transportation from and against any and all losses, costs (including litigation costs and counsel fees), claims, suits, actions, damages, liability and expenses, including, but not limited to, those in connection with loss of life, bodily and personal injury or damage to property occasioned wholly or in part by the CONTRACTOR’S breach or other act or omission or the act or omission of the CONTRACTOR’S agents, SUBCONTRACTORS, employees, or servants pursuant to this Contract. This indemnity shall apply whether or...
not the CONTRACTOR or party for whom it is responsible was negligent, and whether or not The OWNER, its Representative and the State Department of Transportation, or any of their respective members, officers, employees, agents, DESIGNERS, consultants and representatives were negligent.

12.2 Survival and Non-Exclusivity of Indemnity. This indemnity shall survive termination of the Contract, Final Acceptance of the Work and final payment under the Contract. This indemnity is in addition to any other rights or remedies which The OWNER, its Representative, and the State Department of Transportation, and its representatives may have under the law or under the Contract. In the event of any claim or demand made against any party which is entitling the indemnified party under here, the OWNER may in its sole discretion, retain or apply any monies due to the CONTRACTOR under the Contract for the purpose of resolving such claims.

12.3 DESIGNERS Limits of Liability. The liability of the DESIGNER shall be limited to the total fee paid to the DESIGNER by the OWNER.

13. BONDS.

13.1 Time Due and Form. Within five (5) days after The OWNER gives Notice of Award of the Contract to the CONTRACTOR, and prior to or concurrently with execution of the Contract, the CONTRACTOR shall provide to The OWNER surety bonds satisfactory to The OWNER in the amounts and for the purposes stated in the Agreement. The Bonds shall be executed by a responsible surety company or companies approved by The OWNER. Bonds shall be on the form included in the Bid Documents. The CONTRACTOR shall pay all Bond premiums, costs, and incidents. No payment will be made to the CONTRACTOR and Notice Processed will not be issued, until the Bonds have been approved by The OWNER.

13.2 Requisite Signatures on Bonds. Both the CONTRACTOR and the surety shall sign each Bond and the signature of the authorized agent of the surety shall be notarized.

14. TERMINATION.

14.1 For Default

A. Grounds. The OWNER may terminate the Contract for default if the CONTRACTOR fails materially to perform any of its duties or obligations under the Contract properly and in a timely fashion, or if the CONTRACTOR files a voluntary petition in bankruptcy under any chapter of the Bankruptcy Code, has an involuntary petition filed against it, makes a general assignment for the benefit of its creditors, or has a receiver appointed.

B. Notice, Cure Period and Effective Date. The OWNER shall give the CONTRACTOR ten (10) days’ written notice of intent to terminate or default. During those ten days, the CONTRACTOR shall have the opportunity to cure the default. However, unless the default is not cured to the satisfaction of The OWNER within the ten days and The OWNER so notifies the CONTRACTOR in writing, the Contract shall be deemed terminated without further notice and effective immediately. The CONTRACTOR hereby agrees that, in the event of termination for default, title to all Work in progress on the Work Site shall pass to The OWNER.

C. Further Payment to CONTRACTOR. The OWNER shall have no obligation to pay the CONTRACTOR for any Work done or materials supplied after the effective date of termination. No further payments on the Contract shall be made after termination until the Work has been completed by The OWNER and then only if the total cost of completing the Work, and all consequential damages, was less than the remaining balance of the Contract Price at the time of termination.

D. Assignment of Orders and Supply Contracts. The OWNER may, at its sole option, assume supply contracts or orders the CONTRACTOR placed before termination. The CONTRACTOR shall have the obligation to identify to The OWNER all such orders and supply contracts so that The OWNER may exercise its option.

E. The OWNER’s Right to Complete The Work. If the CONTRACTOR is terminated for default, The OWNER shall have the right to complete the Work by whatever means and methods it deems advisable.

F. CONTRACTOR’S Liability. The Contract shall be liable for all costs The OWNER incurs in completing the Work after a default termination, to the extent that those costs are in excess of the Contract Price, as well as for any other damages allowable under this Contract or at law.

G. Conversion to Termination for Convenience. If it is determined that The OWNER’s termination of this Contract for default was wrongful, then the termination shall be deemed to have been a termination for convenience, and the CONTRACTOR’S rights and remedies shall be limited and governed by the provisions dealing with terminations for convenience.

14.2 For Convenience. The OWNER may, upon ten (10) days’ written notice, terminate this Contract for its convenience, and without declaring any default by the CONTRACTOR. In the event of such a termination, the CONTRACTOR shall cease Work. The CONTRACTOR’s sole and exclusive remedy in cases of termination for convenience is payment for the Work completed up to the time of termination and for all unavoidable costs of canceling or terminating open orders or supply contracts. The CONTRACTOR shall include in all Subcontracts for the Work a provision substantially similar to this Paragraph, authorizing termination for convenience and limiting the SUBCONTRACTORS’ rights and remedies as provided herein.

15. MISCELLANEOUS.

15.1 Independent CONTRACTOR. The CONTRACTOR shall perform all Work under this Contract as an independent CONTRACTOR and not an agent or employee of the OWNER.

15.2 The OWNER As Sole Contract Privy. The CONTRACTOR is not in privity with, and shall have no claim against, the City for any costs it incurs or claims to have incurred in connection with the Work or the CONTRACT, but shall look solely to The OWNER for payment of such costs.

15.3 Contractor’s License. The CONTRACTOR represents that it has obtained and maintained in force whatever licenses are required by applicable state or local laws for CONTRACTOR’S performing the type of work to be done pursuant to the Contract.

15.4 Assignment. This Contract may not be assigned or transferred without the prior written consent of The OWNER. Any assignment of proceeds of this Contract shall be subject to all proper set-offs and contractually permitted withholdings in favor of The OWNER.

15.5 Governing Law/Waiver of Jury Trial. This Contract shall be governed by and construed in accordance with the laws of the State of the sign project installation, without regard to its conflict of laws principles. The parties expressly waive their right to trial by jury and agree that all disputes relating to the Contract or its breach shall be decided by a judge sitting without jury.

15.6 Choice of Venue. All disputes arising from or in connection with this Contract shall be decided in the Court of Common Pleas of The OWNER.
1. PART 1 - GENERAL

1.1 Summary

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
1. Construction Schedule.
2. Submittals Schedule.
3. Daily construction reports.
4. Material location reports.
5. Field condition reports.
6. Special reports.
7. Construction photographs.

1.2 Definitions

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
B. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
C. Predecessor activity is an activity that must be completed before a given activity can be started.
D. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
E. Critical Path: The longest continuous chain of activities through the network schedule that establishes the minimum overall Project duration and contains no float.
F. Event: The starting or ending point of an activity.
G. Float: The measure of leeway in starting and completing an activity.
1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expired Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
H. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
I. Milestone: A key or critical point in time for reference or measurement.
J. Diagram: A graphic diagram of a schedule, showing activities and activity relationships.

1.3 Submittals

A. Submittals Schedule: Submit 5 copies of schedule. Arrange the following information in a tabular format:
1. Scheduled date for first submittal.
2. Submittal category (action or informational).
3. Name of subcontractor.
4. Description of the Work covered.
5. Scheduled date for Administrators final release or approval.
B. Preliminary Construction Schedule: Submit 5 printed copies; one a single sheet of reproducible media, and one a print.
C. Contractor’s Construction Schedule: Submit 5 printed copies of initial schedule. Schedule shall be large enough to show entire schedule for entire construction period.
D. Construction Photographs: Submit Digital photographs of each site location prior to excavation/mounting, upon completion of excavation and upon installation of sign.
E. File Name: Sign Location
F. Folder Organization: By Sign Location Plan Number / Date
G. Daily Construction Reports: Submit five copies at weekly intervals.
H. Material Location Reports: Submit five copies at weekly intervals.
I. Field Condition Reports: Submit five copies at time of discovery of differing conditions.
J. Special Reports: Submit five copies at time of unusual event.

1.4 Quality Assurance

A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 1 Section 01010 Summary
B. Preconstruction Meeting: Review methods and procedures related to the Preliminary Construction Schedule and Contractor’s Construction Schedule, including, but not limited to, the following:
1. Discuss constraints, including phasing and milestones
2. Review schedule for work of Owner’s separate contracts.
3. Review time required for review of submittals and resubmittals and approvals.
4. Review requirements for utility checks.
5. Review time required for completion and startup procedures.
6. Review and finalize list of construction activities to be included in schedule.
7. Review submittal requirements and procedures.

1.5 Coordination

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
B. Coordinate Contractor’s Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

2. PART 2 - PRODUCTS

2.1 Submittals Schedule

A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor’s Schedule.
2. Initial Submittal: Submit concurrently with preliminary bar chart schedule. Include submittals required during the first 20 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead-time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor’s Construction Schedule.

2.2 Contractor's Construction Schedule

A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Final Completion.
1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
B. Activities
1. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 30 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
3. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Designer’s and Owner’s Representative administrative procedures necessary for certification of Substantial Completion.
C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
2. Work under More Than One Contract: Include a separate activity for each contract.
3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 1 Section “Summary.” Delivery dates indicated stipulate the earliest possible delivery date.
5. Work Restrictions: Show the effect of the following items on the schedule:
   a. Coordination with existing construction.
   b. Uninterrupted services.
   c. Use of premises restrictions.
   d. Seasonal variations.
   e. Environmental control.
6. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
   a. Subcontract awards.
   b. Submittals.
   c. Mockups.
   d. Fabrication.
   e. Deliveries.
   f. Installation.
   g. Curing.
D. Milestones: Include milestones indicated in the Contract Documents in schedule.
E. Cost Correlation: At the head of schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of the Work performed as of dates used for preparation of payment requests.

F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

G. Bar-Chart Schedule: Submit preliminary horizontal bar-chart-type construction schedule within seven days of date established for the Notice to Proceed.

H. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 30 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.3 Reports

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
   1. List of subcontractors at Project site.
   2. List of separate contractors at Project site.
   3. Approximate count of personnel at Project site.
   4. High and low temperatures and general weather conditions.
   5. Accidents.
   6. Meetings and significant decisions.
   7. Unusual events (refer to special reports).
   8. Stoppages, delays, shortages, and losses.
   9. Meter readings and similar recordings.
   10. Emergency procedures.
   11. Orders and requests of authorities having jurisdiction.
   12. Change Orders received and implemented.
   13. Construction Change Directives received.
   14. Services connected and disconnected.
   15. Substantial Completions authorized.

B. Material Location Reports: At weekly intervals, prepare a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.

C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare a detailed report. Submit with a request for information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.4 Special Reports

A. General: Submit special reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

3. PART 3 - EXECUTION

3.1 Contractor's Construction Schedule

A. Contractor's Construction Schedule Updating: At bi-weekly intervals, update schedule to reflect actual construction progress and activities. Issue schedule 3 days before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.

3. As the Work progresses, indicate Actual Completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Administrator, Designer, Owner's Representative and other parties identified by Contractor with a need-to-know schedule responsibility.

3.2 Construction Photographs

A. Photographer: Contractors photographer.

B. Photography: Digital Files / Color / See Submittals for Naming

C. Preconstruction Photographs: Before starting construction, take necessary photographs of Project site and surrounding properties from different vantage points to show site conditions.

1. Use a white board to indicate location number.
2. Show existing conditions adjacent to location / property.

D. Construction Progress: On a weekly basis take a minimum of 2 photos of each sign location under construction, those that have been installed and minimum of 10 photos of in-shop production of signs and materials. Photographer shall select vantage points to best show status of construction progress since last photographs were taken.

E. Final Completion Construction Photographs: Take 2 color photographs after date of Substantial Completion of each sign location for submission as Project Record Documents.

F. Photographs related to Third Party Work: CONTRACTOR shall also include photographs of surrounding area or issues that may require third party maintenance or correction. Including tree/shrub trimming, clean-up or additional surface work.

G. Project Team Access: CONTRACTOR shall establish a accessible server site to store all project photography, available to entire project team.

END OF SECTION 01320 - CONSTRUCTION PROGRESS DOCUMENTATION
PART 1 - GENERAL

1.1 Summary
A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.
B. Related Sections include the following:
- Division 1 Section "Construction Progress Documentation"

1.2 Definitions
A. Action Submittals: Written and graphic information that requires Administrators, Designer's and Owner's Representative's responsive action.
B. Informational Submittals: Written information that does not require Designer and Owner's Representative's approval. Submittals may be rejected for not complying with requirements.

1.3 Submittal Procedures
A. General: Digital files of design intent drawings will be provided by Designer for Contractor's use in preparing submittals. See General Conditions.
B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that requires sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
C. Submittals Schedule: Comply with requirements in "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Designer's receipt of submittal.
1. Initial Review: Allow 10 days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Construction Manager will advise Contractor when a submittal is being processed must be delayed for coordination.
2. If intermediate submittal is necessary, process it in same course of construction activity. Sample sets may be used to site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
E. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by Designer and Construction Manager.
3. Include the following information on label for processing and recording action taken:
   a. Project name.
   b. Date.
   c. Name and address of Designer and Owner's Representative.
   d. Name and address of Contractor.
   e. Name and address of subcontractor.
   f. Name and address of supplier.
   g. Name of manufacturer.
   h. Unique identifier, including revision number.
   i. Drawing number and other detail references, as appropriate.
   j. Other necessary identification.
F. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form.
H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, and authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
I. Use for Construction: Use only final submittals with mark indicating action taken by Designer and Owner's Representative in connection with construction.

2. PART 2 - PRODUCTS
2.1 Action Submittals
A. General: Prepare and submit Action Submittals required by Individual Specification Sections.
1. Number of Copies: Submit three copies of each submittal, unless otherwise indicated.
B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
   a. Manufacturer's written recommendations.
   b. Manufacturer's product specifications.
   c. Manufacturer's installation instructions.
   d. Manufacturer's catalog cuts.
C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Include the following information, as applicable:
   a. Dimensions.
   b. Identification of products.
   c. Fabrication and installation drawings.
   d. Roughing-in and setting diagrams.
   e. Shopwork manufacturing instructions.
   f. Templates and patterns.
   g. Schedules.
   h. Design calculations.
   i. Notation of coordination requirements.
   j. Notation of dimensions established by field measurement.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 11 x 17 inches but no larger than 30 by 40 inches.
3. Number of Copies: Submit copies of each submittal, as follows:
   a. Initial Submittal: Submit one correctable, reproducible print.
   b. Final Submittal: Submit 2 final prints to OWNER and 1 final print for DESIGNER.
D. Samples: Prepare physical units of materials or products, including the following:
1. Samples for Approval: Submit color samples consisting of units or sections of units showing the full range of colors, textures, and patterns available.
2. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Designer's sample where so indicated. Attach label on unexposed side that includes the following:
   a. Generic description of Sample.
   b. Product name or name of manufacturer.
   c. Sample source.
3. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
   a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least three sets of paired units that show approximate limits of the variations.
   b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
4. Number of Samples for Initial Selection: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Designer through Owner's Representative, will return submittal with options selected.
5. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
6. Samples for Verification
   a. Examples of all graphic image process, including materials, methods, colors and finishes, for maps, imagery, letters, numbers and other graphic devices.
   b. Full size section of all graphic image processes, including materials, methods, colors and finishes.
E. Product Schedule or List: Prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form.
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F. Contractor’s Construction Schedule: Comply with requirements in “Construction Progress Documentation” for Owner’s Representative

G. Submittals Schedule: Comply with requirements in “Construction Progress Documentation.”

H. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
   1. Name, address, and telephone number of entity performing subcontract or supplying products.
   2. Number and title of related Specification Section(s) covered by subcontract.
   3. Drawing number and detail references, as appropriate, covered by subcontract.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.
   1. Number of Copies: two copies of each submittal, unless otherwise indicated.
   2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
   3. Test and Inspection Reports: Comply with requirements in Division 1 Section “Quality Requirements.”

B. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of designers and owners, and other information specified.

C. Product Certificates: Prepare written statements on manufacturer’s letterhead certifying that product complies with requirements.

D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

E. Installer Certificates: Prepare written statements on manufacturer’s letterhead certifying that installer complies with requirements and, where required, is authorized for this specific Project.

F. Manufacturer Certificates: Prepare written statements on manufacturer’s letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.

G. Material Certificates: Prepare written statements on manufacturer’s letterhead certifying that material complies with requirements.

H. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency’s standard form, indicating and interpreting test results of material for compliance with requirements.

I. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment.

J. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

K. Manufacturer’s Instructions: Prepare written or published information that documents manufacturer’s recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following:
   1. Preparation of substrates.
   2. Required substrate tolerances.
   3. Sequence of installation or erection.
   4. Required installation tolerances.
   5. Required adjustments.
   6. Recommendations for cleaning and protection.

L. Manufacturer’s Field Reports: Prepare written information documenting factory-authorized service representative’s tests and inspections. Include the following, as applicable:
   1. Name, address, and telephone number of factory-authorized service representative making report.
   2. Statement on condition of substrates and their acceptability for installation of product.
   3. Statement that products at Project site comply with requirements.
   4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
   5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
   6. Statement whether conditions, products, and installation will affect warranty.

M. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

3. PART 3 - EXECUTION

3.1 Contractor’s Review

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Designer and Construction Manager.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor’s approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

C. Existing Site Conditions. Contractor is responsible for confirming and correlating all dimensions at the job site for information which pertains to the fabrication process and coordination of work with other trades related to the project submissions and implementation.

3.2 Designer’s And Construction Manager’s Action

A. General: Designer and Owner’s Representative will not review submittals that do not bear Contractor’s approval stamp and will return them without action.

B. Action Submittals: Designer and Owner’s Representative will review each submittal, make marks to indicate corrections or modifications required, and return it. Designer and Construction Manager will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

C. Informational Submittals: Designer and Owner’s Representative will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Designer and Construction Manager will forward each submittal to appropriate party.

D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

E. Designer’s Review: Designer’s review is conducted for the limited purpose of checking conformance with information given and the design concept expressed in the Design Intent Drawings as part of the Contract Documents. Review of submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of materials or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents.

Designer’s review shall not constitute approval of safety precautions, structural requirements or of any construction means, methods, materials, techniques, sequence or procedures.

Designer’s approval of a specific item shall not indicate approval of an assembly of which item is a component.

Designer’s review of Samples is only for visual characteristics unless otherwise indicated. Designer’s approval of Contractor’s submittals shall not relieve the Contractor of responsibility for deviation from requirements of Contract Documents nor for errors or omissions in shop drawings.

No Change to Contract Sum or Contract Time is authorized by Designer’s approval unless so stated in a separate modification to the contract and approved by the OWNER.

Contractor is responsible for confirming and correlating all dimensions at the job site for information which pertains to the fabrication process and coordination of work with other trades.

END OF SECTION 01330 - SUBMITTAL PROCEDURES
PART 1 - GENERAL

1.1 Summary
A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
1. Record Drawings.
2. Record Specifications.
3. Record Product Data.

1.2 Submittals
A. Record Drawings: Comply with the following:
1. Submit 1 set of marked-up Record Prints.
2. Submit 1 set of corrected Record Prints.
3. Record Specifications: Submit one copy of Project's
B. Specifications, including addenda and contract modifications.
C. Record Product Data: Submit one copy of each Product Data submittal.
   1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.1 Record Drawings.
A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
B. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
   a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
   b. Accurately record information in an understandable drawing technique.
   c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
2. Content: Types of items requiring marking include, but are not limited to, the following:
   a. Dimensional changes to Drawings.
   b. Revisions to details shown on Drawings.
   c. Depths of foundations.
   d. Locations and depths of underground utilities.
   e. Changes made by Change Order or Construction Change Directive.
   f. Changes made following Designer’s written orders.
   g. Details not on the original Contract Drawings.
   h. Field records for variable and concealed conditions.
   i. Record information on the Work that is shown only schematically.
   j. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.

2.2 Record Specifications
A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
   a. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2.3 Record Product Data
A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
   1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
   2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
   3. Note related Change Orders, Record Drawings, and Product Data where applicable.

2.4 Miscellaneous Record Submittals
A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

3. PART 3 - EXECUTION

3.1 Recording And Maintenance
A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Designer's and Owner's Representative reference during normal working hours.

END OF SECTION 01781 - PROJECT RECORD DOCUMENTS
PART 1 - GENERAL

1.1 Summary
A. This Section includes the protection and trimming of trees that interfere with, or are affected by, execution of the Work or completed work, whether the work is temporary or new construction.
B. CONTRACTOR shall be responsible for trimming, in an professional and appropriate technique (see below; 1.3 Quality Assurance) all trees that interfere with the sign structure or site lines associated with the maximum legibility of the sign panel and its associated messages, logos and/or graphics.

1.2 Submittals
A. Product Data: For each type of product indicated.
B. Certification: From a qualified arborist that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.
C. Maintenance Recommendations: From a qualified arborist for care and protection of trees affected by construction during and after completing the Work.

1.3 Quality Assurance
A. Tree Service Qualifications: An experienced tree service firm that has successfully completed tree protection and trimming work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site on a full-time basis during execution of the Work.
B. Arborist Qualifications: An arborist certified by the International Society of Arboriculture or licensed in the jurisdiction where Project is located.

PART 2 - PRODUCTS

2.1 Materials for Protection of Trees
A. Chain Link Fence or other fencing type approved by the OWNER.

PART 3 - EXECUTION

3.1 Preparation
A. Temporary Fencing: Install temporary fencing located as indicated or outside the drip line of trees to protect remaining vegetation from construction damage.
1. Install fence according to manufacturer's written instructions.
B. Protect tree root systems from damage due to noxious materials caused by runoff or spillage while mixing, placing, or storing construction materials. Protect root systems from flooding, eroding, or excessive wetting caused by dewatering operations.
C. Do not store construction materials, debris, or excavated material within the drip line of remaining trees. Do not permit vehicles or foot traffic within the drip line; prevent soil compaction over root systems.
D. Do not allow fires under or adjacent to remaining trees or other plants.

3.2 Excavation
A. Install shoring or other protective support systems to minimize sloping or bunching of excavations.
B. Do not excavate within drip line of trees, unless otherwise indicated.
C. Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks and comb soil to expose roots.
1. Relocate roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and relocate them without breaking. If encountered immediately adjacent to location of new construction and relocation is not practical, cut roots approximately 3 inches back from new construction.
2. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition.

3.3 Tree Repair And Replacement
A. Prompty repair trees damaged by construction operations within 24 hours. Treat damaged trunks, limbs, and roots according to written instructions of the qualified arborist.
B. Remove and replace dead and damaged trees that the qualified arborist determines to be incapable of restoring to a normal growth pattern.
1. Provide new trees of 6-inch caliper size and of a species selected by Designer when trees more than 6 inches in caliper size, measured 12 inches above grade, are required to be replaced.

3.4 DISPOSAL OF WASTE MATERIALS
A. Burning is not permitted.
B. Disposal: Remove excess excavated material, displaced trees, and excess chips from Owner's property.

END OF SECTION 02231 - TREE PROTECTION & TRIMMING
1. PART 1 - GENERAL
1.1 Summary
A. This Section specifies cast-in-place concrete, including formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes.

1.2 Definitions
A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

1.3 Submittals
A. Product Data: For each type of manufactured material and product indicated.
B. Design Mixes: For each concrete mix. Include alternate mixes designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
C. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 318, “Details and Detailing of Concrete Reinforcement.” Include material, grade, bar schedules, slump spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.
D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailed fabrication, assembly, and support of formwork. Design and engineering of formwork are Contractor’s responsibility.
E. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:
F. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:
   1. Cementitious materials and aggregates.
   2. Form materials and form-release agents.
   3. Steel reinforcement and reinforcement accessories.
   4. Admixtures.
   5. Curing materials.
   7. Adhesives.
   8. Minutes of preinstallation conference.

1.4 Quality Assurance
A. Installer Qualifications: An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance. 

B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for formwork and shoring and reshoring installations that are similar to those indicated for this Project in material, design, and extent.

2. PART 2 - PRODUCTS
2.1 Form-Facing Materials
A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
B. Plywood, metal, or other approved panel materials.
C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
D. Concrete Materials
A. Portland Cement: ASTM C 150, Type I.
B. Normal-Weight Aggregate: ASTM C 33, uniformly graded, and as follows:
   2. Combined Aggregate Gradation: Well graded from coarsest to finest with not more than 18 percent and not less than 8 percent retained on an individual sieve, except that less than 8 percent may be retained on coarsest sieve and on No. 50 sieve, and less than 8 percent may be retained on sieves finer than No. 50.
C. Water: Potable and complying with ASTM C 94.

2.2 Steel Reinforcement
A. Steel Reinforcement Bars: ASTM A 615/A 615M, Grade 60, as required by structural engineer.
B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Manufacture bar supports according to CRSI’s “Manual of Standard Practice” from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:
   1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected or CRSI Class 2 stainless-steel bar supports.

2.3 Reinforcement Accessories
A. Adhesive: ASTM C 1059, Type II, non-redispersible, acrylic resin, capable of humid curing and bonding to damp surfaces, of emulsion or styrene butadiene.
B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic resin, capable of humid curing and bonding to damp surfaces, of emulsion or styrene butadiene.
C. Water-Reducing Admixture: ASTM C 494, Type A.
D. Corrosion-Inhibiting Admixture: Commercially formulated, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.

2.4 Admixtures
A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.
C. Water-Reducing Admixture: ASTM C 494, Type A.

2.5 Curing Materials
A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
B. Absorptive Cover: AA5HT0 M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.
C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
D. Water: Potable.

2.6 Related Materials
A. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
B. Epoxy-Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class and grade to suit requirements, and as follows:
   1. Type II, non-load bearing, for bonding freshly mixed concrete to hardened concrete.
2.8 Concrete Mixes
A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:
1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.
B. Use qualified independent testing agency for preparing and reporting proposed mix designs for the laboratory trial mix basis.
C. Footings and Foundation Walls: Proportion normal-weight concrete mix as follows:

2.9 Fabricating Reinforcement
A. Fabricate steel reinforcement according to CRSI’s “Manual of Standard Practice.”

2.10 Concrete Mixing
A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94, and furnish batch ticket information.
1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

3. PART 3 - EXECUTION
3.1 Formwork
A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.
B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
1. Class A, 1/8 inch.
2. Class B, 1/4 inch.
3. Class C, 1/2 inch.
D. Construct forms tight enough to prevent loss of concrete mortar.
E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1:1 horizontal to 1:1 vertical. Key formed inserts for forming keyways, reglets, recesses, and the like, for easy removal.
F. Do not use rust-stained steel form-faciacting material.
G. Set edge forms, bulkheads, and intermediate screw strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screw strips; use strike-off templates or compacting-type screeds.
H. Do not chamfer corners or edges of concrete.
I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
K. Re-tighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
L. Coat contact surfaces of forms with form-release agent, according to manufacturer’s written instructions, before placing reinforcement.

3.2 Embedded Items
A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
1. Install anchor bolts, accurately located, to elevations required.

3.3 Removing And Reusing Forms
A. General: Formwork, for sides of beams, walls, columns, and similar parts of the Work, that does not support weight of concrete may be removed after cumulative curing at not less than 50 deg F for 24 hours after placing concrete provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.
B. Clean and repair surfaces of forms to be reused in the Work. Split, fray, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by OWNER.

3.4 Steel Reinforcement
A. General: Comply with CRSI’s “Manual of Standard Practice” for placing reinforcement.
B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.
C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld reinforcing bars.
D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

3.5 Joints
A. General: Construct joints true to line with faces perpendicular to surface planes of concrete.
B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

3.6 Concrete Placement
A. When locating a footer within a single larger pavement block, adjacent to at least 2 expansion joints, the entire block of pavement shall be removed and replaced with the same materials and finish of adjacent sidewalk areas - up to a 25 sq ft. (6" - 0" x 5" - 0")

H. When pouring a underground footer within a area that contains a surface brick or specialty pavers, The pattern of bricks / pavers shall be removed, stored and replaced in the exact same positioning in the order they were removed.

3.7 Miscellaneous Concrete Items
A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete Work.
3.8 Concrete Protection And Curing
   A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with recommendations in ACI 305R for hot-weather protection during curing.
   B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer’s written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
   C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing by one or a combination of the following methods:
   D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces, by one or a combination of the following methods:

3.9 Concrete Surface Repairs
   A. Defective Concrete: CONTRACTOR shall repair and patch any existing defective areas that surround the footer up to 50 sq. ft. Remove and replace concrete that cannot be repaired and patched to OWNER’S approval.
   B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
   C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
   D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
   E. Perform structural repairs of concrete, subject to OWNER’S approval, using epoxy adhesive and patching mortar.
   F. Repair materials and installation not specified above may be used, subject to Architect’s approval.
   G. All stained or colored concrete shall match adjacent stained or colored concrete areas.
   H. All replaced surface areas shall be replaced with matching like materials, including bricks, pavers, stone, stamped concrete, or other materials.

3.10 Field Quality Control
   A. Testing Agency: Engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement according to requirements specified in this Article.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
C. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
D. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

END OF SECTION 03300 - CAST-IN-PLACE CONCRETE
1. PART 1 - GENERAL

1.1 SUMMARY
A. This Section includes the following:
1. Non Iuminated, Single-Sheet-Type Post and Panel Signs
2. Dimensional Letters
3. Related Sign Types include, Gateways, Directional Signs, Kiosks and Single-Panel Signs Mounted to Structures.

1.2 RELATED PROJECT CONDITIONS, PROCEDURES AND WORK REQUIREMENTS
A. Executive Summary
B. Section 00500: General Conditions
C. Section 01320: Construction Progress Documentation
D. Section 01330: Submittal Procedures
E. Section 01781: Project Record Documents
F. Section 02231: Tree Protection & Trimming
G. Section 03050: Cast-In-Place Concrete
H. Section 10437: Pylon Signs, Electric, Message Brds & Channel Ltrs.
I. Section 01730: Removals, Cutting and Patching
J. Section 09999: Decorative Metals Coatings / Dye Sublimation

1.3 PERFORMANCE REQUIREMENTS
A. Structural Performance: Provide post and panel signs capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated, determined according to ASCE 7, “Minimum Design Loads for Buildings and Other Structures”:
   1. Wind Loads: Determine loads based on a uniform pressure of 90mph or the required windloads based on the project location, which ever is greater, acting in any direction.
   2. Thermal Movements: Provide post and panel signs that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, peeling / loss of adhesion of vinyl, overstressing (range) in ambient and surface temperatures by preventing buckling, opening of joints, peeling / loss of adhesion of vinyl, overstressing (range) in ambient and surface temperatures by preventing buckling, opening of joints, peeling / loss of adhesion of vinyl, overstressing (range) in ambient and surface temperatures by preventing buckling, opening of joints, peeling / loss of adhesion of vinyl, overstressing (range) in ambient and surface temperatures by preventing buckling, opening of joints, peeling / loss of adhesion of vinyl, overstressing (range) in ambient and surface temperatures by preventing buckling, opening of joints, peeling / loss of adhesion of vinyl, overstressing (range) in ambient and surface temperatures by 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1.6 DELIVERY, HANDLING AND STORAGE

A. Delivery and Handling. Ship and deliver post, panels and all other sign components in the appropriate protective covering and crating to fully protect all sign components and surfaces against damage.
1. Remove all protective covering, as required per product manufacterer instructions, in order to maintain warranties.
B. Delivery. All delivered sign components shall be delivered free of any defect, including, but not limited to scratches, chips, cracking, dents, peeling, bubbling, adhesive glue / tape marks, marker writings, undesirable film coatings or other visual distractions or defects.
1. Contractor shall be responsible for full replacement of all sign components that are delivered on site or to the location dam-aged, at no cost to the OWNER.
2. Contractor shall be responsible for full replacement of all sign components that are delivered on site or to the location defective, causing the product warranty to become null or void, at no cost to the OWNER.
C. Storage. The CONTRACTOR shall follow all third party, manufacturer and/or product storage instructions, procedures and requirements for all sign components. Include protection methods, protective materials, protective material removal (including instructions and timeframes), sequencing of events, environmental conditions for storage, overall storage requirements, stacking of products/materials and any other requirements.
1. Any failure by the CONTRACTOR to follow the storage requirements that cause for loss or void of warranty, product effectiveness or performance, will require complete and total replacement of all effected materials and products at no cost to the OWNER. This includes, but is not limited to, posts, panels, vinyl sheeting, paint, brackets or any other sign component.

1.7 COORDINATION

A. Coordinate installation of anchorages for post and panel signs. Furnish setting drawings, templates, and directions for installing anchorages and other items that are to be embedded in concrete. Deliver such items to Project site in time for installation.
B. Coordinate delivery time so signs can be installed within 24 hours of receipt at Project site.

1.8 WARRANTY

A. Contractors Warranty Period: Contractor shall provide a warranty of 3 years from date of Substantial Completion, for all workmanship associated with the fabrication and installation of the sign system this includes, but is not limited to the following:
1. the posts, panels, footers, sign faces, materials, mounting methods and fasteners shall be free of defects, including, but not limited to: scaling, peeling, fading, warping, vinyl shrinking, adhesion, welds, structural integrity, corrosion or mechanical fastener failure.
B. Product and Manufacturers Warranties. CONTRACTOR shall pass on to the OWNER and honor all associated third-party product warranties, including, but not limited to vinyl sheeting (reflective and non-reflective), inks, vinyl overlays, paint, coatings and hardware.
1. All paints, clearcoats, reflective vinyls and non-reflective vinyls shall be free of defects, including, but not limited to: scaling, peeling, fading, warping, vinyl shrinking, adhesion or any other type of failure for the following time periods;

a. Paint Warranty: Minimum 7 years
b. Reflective Vinyl/Custom Color Warranty: Minimum 8 yrs.
c. Non-Reflective Vinyl Warranty: Minimum 10 years

C. Warranty Period Commencement: Warranty period begins for each individual unit, upon the date the OWNER provides a written acceptance of a singular unit or group of units.

PART 2 - PRODUCTS

2.1 MATERIALS AND APPLICATION PROCESSES

A. Aluminum Sheet and Plate: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of alloy 5050-H11.
B. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of alloy 6063-T5.
C. Paints: Material Preparation and Paint Performance
1. Sign components shall be per-drilled in proper locations prior to any pre-treatment process.
2. It is important for the metal surface to be free of oil, dust, and moisture to ensure a good chemical bond with the primer.
3. Pre-treatment: All surfaces shall be cleaned, primed, and pre-treated as required by manufacturers guidelines prior to finishing.
4. Masking and spraying. All masking shall be executed with pre-letter spaced vinyl legends, assembled on sign panel or wall prior to spraying. No hand-cut masks shall be used.
5. Clear Coat: Apply a fully compatible protective UV / Anti-Graffiti Clearcoat to all painted, printed, and vinyl surfaces. Contractor shall verify all clear coat product warranties and compatibility of the clear coat applied to the products.
6. Finished work shall be crisp, accurate, visibly free from flow lines, streaks, bleeding, blisters, cracking, peeling or other imperfections in the dry-film state, without overspray, or rounded corners.

D. Print: Processes and Paint Type
1. Paint Type: All paints utilized on the project shall be designed and formulated specifically for the signage industry and for exterior use.
2. Processes
a. CONTRACTOR shall follow paint manufacturers instructions, sequencing and procedural requirements to insure full product performance and warranties are maintained at the highest level possible for all Primers, Topcoats, Clearcoats, Cleaners and Additives.

b. this includes but is not limited to metal surface preparation, priming of surfaces, spray gun PSI, panel positioning during spraying/drying, adequate coverage, environmental conditions such as temperature and humidity, recommended dry times for subsequent coats and for proceeding to next step in fabrication process, second additional coat procedures, applying clear coats, cleaning final product and storage during fabrication and shipping.
3. Manufactures and Colors: Per DESIGN INTENT DRAWINGS or approved equal.

4. Paint Type / Acrylic Polyurethane, Baked Enamel, Powder Coat and Specialty / Custom Coatings.
   a. Per the DESIGN INTENT DRAWINGS, apply paint specified to the sign components indicated
   b. Use only a paint formulated specifically for exterior signage. Apply exactly by the manufacturers instructions, sequencing and procedural requirements
   c. Include required quantity and types of compatible top coat and clearcoats per manufacturers recommendations.
   d. For Acrylic Polyurethane, utilize a matte enamel finish
   e. For Baked Enamel Finish: AA-C12C24R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below).

Apply baked enamel complying with paint manufacturer’s written instructions for cleaning, conversion coating, and painting.

Organic Coating: Thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603 except with a minimum dry film thickness of 1.5 mils, medium gloss.

E. Non-Reflective Vinyl and Graphics:
1. Single Vinyl Product: All vinyl sheeting, inks and overlays shall maintain the same manufacturer and required specifications. Mixing products, processes or materials from different manufacturers, that voids warranties is not permitted.
2. Color Application: Color of vinyl material is to be integral to the material and not surface applied unless specifically noted.
3. Translucent Graphics. Use 3M Scotchcal translucent film or approved equal

F. Reflective Sheeting
1. 3M Certified Fabricator: Reflective Vinyl Printing shall be performed by a current accredited 3M Certified Fabricator or 3M Certified Digital Fabricator, which includes an annual onsite audit of manufacturing facilities, ensuring correct materials and processes are being used. Certification shall guarantee that the product will be covered by 3M MCS Traffic Warranty.
2. Single Vinyl Product and Manufacturer: All vinyl sheeting, inks and overlays shall maintain the same manufacturer and required specifications. Mixing products, processes or materials from different manufacturers, shall void warranties and is not permitted.
3. Reflective Sheeting. 3M 3930 High Intensity Reflective Sheeting or approved equal that meets MUTCD requirements for Community Wayfinding Signage (MUTCD Section 2D.50).

4. Color Application. Color background and characters shall be printed with approved compatible and fully warranty inks directly to reflective vinyl surface. Inks used in the screen printing and digital printing process must be designed for use on highway signs and recommended by the sheeting manufacturers. Inks used must be warranted to be effective for a period of time commensurate with the warranted life of the reflective sheeting.

5. Sheeting & Substrate Application. Series 3930 sheeting incorporates a pressure sensitive adhesive and shall be applied to the sign substrate at temperature of 95°F/35°C or higher by any of the following methods:
   a. Mechanical squeeze roll applicator – refer to 3M Information Folder (IF) 1.4 for specifications.
   b. Hand squeeze roll applicator – refer to 3M IF 1.6 for specifications.

6. Splices: Series 3930 sheeting 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 sheet expands in extreme temperature and humidity exposure.

7. Seam Placement. Seams are not preferred. When practical, all seams should run horizontal and be located along horizontal visual graphics where the seams will be as inconspicuous as possible.
   a. If the height of a sign panel is greater than 48 inches, the 3M 3930 material should be oriented vertically with stripes at 0 degrees, to avoid the seaming of material.

8. Material Substrate. Aluminum sheets and extrusions prepared to high intensity prismatic sheeting by the following imaging and Background shall be retro-reflective. Plastic substrates are NOT acceptable.

9. Legend / Message and Background: When a white message appears on a dark background, the background shall be printed the intended color (inks directly applied to reflective sheeting) and the copy, rule lines and arrows shall “knockout” of the background. 3M Reflective, MUTCD, Section 2D.50, both Message and Background shall be retro-reflective.

10. Imaging Custom Colors (3M). Custom colors shall be applied to high intensity prismatic sheeting following the following imaging methods describe below or approved equal:
    a. Thermal Transfer Printing: 3M Series 3930 sheeting may be imaged with 3M Thermal Transfer Ribbon Series TTR2300 in conjunction with the Matan SprinG3 or Matan Thermal transfer printers.
    b. 3M Series 3930 Sheeting and Color Application shall be covered with 3M ElectroCut Film 1170 Clear UV/Anti-Graffiti overlaminate. Refer to Product Bulletin for 3M 1170 for fabrication procedures and specifications.
    c. Preferred Printer: 3M Series 3930 sheeting may be imaged by the Durst RHO 161 TS printer.
    d. Preferred Vendor: Sherline Industries: (604) 513-1887.

11. Imaging Standard Manufacturer Colors (3M). Per 3M guidelines, Standard manufacturer colors may be applied to high intensity prismatic sheeting by the following imaging methods describe below or approved equal:
    a. Vinyl Graphic Films: Scotchtape Vinyl Series 7720 and Series 7725 may be used to provide copy for traffic control signs on high intensity prismatic sheeting. Both materials then must be covered with 3M ElectroCut Film 1170 Clear UV/Anti-Graffiti overlaminate. Refer to Scotchtape product literature for more information.
    b. Screen Processing: Series 3930 sheeting may be screen processed into traffic signs before or after mounting on a sign substrate, using 3M Process Colors Series 8801 or Series 880N. Refer to 3M IF 1.8 for more details.
    c. Both, 3M ElectroCut Films and Screen Processing Inks shall be covered with 3M ElectroCut Film 1170 Clear UV/Anti-Graffiti overlaminate. Refer to Product Bulletin 1170 for fabrication procedures.

12. Warranty Reflective Sheeting Custom and Standard Colors: All color application methods utilizing 3M Series 3930 Hi-Intensity Prismatic and Series 4060 DG3, Diamond Grade reflective sheeting as the base layer, shall be warranted as outlined below and shall not excessively fade, discolor, crack, craze, peel, blister, bubble, tear or lose reflectivity such that the signs become visually unsuitable for their intended purpose.
   a. All print colors must be warranted to retain the minimum reflectance values based on the above tables:
      - 3M Hi-Intensity Prismatic
        - ASTM Level IV: 1-7 years – 80%, 8-10 years – 70%
      - 3M Super High Efficiency Full Cube Prismatic
        - ASTM Level IV: 1-7 years – 80%, 8-10 years – 70%

G. Custom High Pressure Laminate Graphic Panels

1. Description: Custom High Pressure Laminates (CHPL) material composed of required layers of phenolic resin impregnated brown kraft filter paper to produce specified thicknesses surfaced by a layers of melamine overlay, graphics imaged on saturation grade paper with UV resistant pigment based process color inks, and with optically clear UV overlay that will resist no less that 99% of all sunlight and UV rays, as well as provides a graffiti resistant surface that allows for removal with standard cleaners.

2. Process: For purposes of this specification, layers of material described A.1 are to be assembled, and heat / pressure consolidated at approximately 1200 PSI at temperatures exceeding 275°F. This process shall be followed with 3M Materials according to the manufacturer's prescribed time frames. All manufacturing processes of printing, pressing, machining, finishing and crating to be accomplished within a single manufacturing facility to ensure consistent quality control and providing standard product delivery times of three weeks.

3. Artwork: The graphic material and images are to be supplied by and under the supervision of the Designer or Owner. To include graphic source materials incorporated into digital graphic production artwork files in manufacturer's required file formats. All graphics must be assembled by computer designers familiar with and experienced in the process of digital printing and submitting production artwork files that meet the artwork requirements of the manufacturer.

4. Acceptable Manufacturer: iZone Imaging, 5256 Charter Oak Dr., Suite 100, Temple, NY 76502. Tel: 888-494-9663, Email: info@izoneimaging.com, Web: http://www.izoneimaging.com - or Approved Equal Vendor


2.2 ACCESSORIES

A. Fasteners: Use concealed, fasteners fabricated from metals that are noncorrosive to sign material and mounting surface. Where fasteners are exposed, use tamper resistant fasteners.

B. Anchors and Inserts: Use stainless steel-hot or cold-galvanized anchors and inserts. Use torque-controlled expansion bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete.

C. Concrete for Postholes: Comply with requirements “Cast-in-Place Concrete” for normal weight, air-entrained, poured in place ready-mix CLASS B concrete with a minimum 28-day compressive strength of 4000 psi, unless otherwise indicated.

D. Stainless Straps: When utilizing stainless steel straps to install a sign panel on a existing or new post, the mounting strap color shall match the post color.
   1. Straps shall be threaded through bracket slots or attached per manufacturer hardware specifications and instructions.
   2. Straps shall not be drilled through or pierced by screws, rivets, or other mounting hardware.

2.3 FABRICATION: GENERAL

A. General: Provide post and panel signs of configurations indicated.
   1. Welded Connections: Comply with AWS standards for recommended practices in shop welding. Provide welds behind finished surfaces without distortion or discoloration of exposed side. Clean exposed welded surfaces of welding flux and dress exposed and contact surfaces. Chemical welding is not an acceptable substitute.
   2. Mill joints to tight, hairline fit. Form joints exposed to weather to exclude water penetration.
   3. Between sections of signs in the shop to greatest extent possible. Disassemble signs only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation, in location not exposed to view after final assembly.
   4. Conceal fasteners if possible; otherwise, locate fasteners where they will be inconspicuous.
   5. All exposed fasteners shall be tamper-resistant.
   6. Single ground mounted signs shall meet criteria as specified in State DOT standard index relative to aluminum materials and structural supports for signs.
2.4 FABRICATION: BRACKET AND PANEL ASSEMBLY

A. Brackets / Panel Configuration. Contractor shall be responsible for confirming, coordinating and verifying all sign panels, messages, graphic layouts, panel orientation, margins, shape, brackets, panel edges, and mounting hole positions with the proposed bracket design, configuration and assembly method, as it relates to the orientation and positioning on a new or existing pole to which it is installed on.

1. Pedestrian Sign Panels: This includes single and double-sided panels that may require a singular orientation and specific margin clearance, on either side of the panel, in order to work properly with the assembly to the bracket, pole (existing or new) and positioning of the panel in the correct direction, when placed in the field.

2. Contractor shall be responsible for replacement of all panels that are incorrect due to the Contractor’s failure to notify the DESIGNER and OWNER prior to the commencement of any step of the panel or bracket fabrication process.

2.5 POSTS

A. General: Fabricate posts to lengths required for mounting method indicated.

1. Baseplate Method: Provide posts with baseplates, flanges, or other fittings, welded to bottom of posts. Drill holes in baseplate for anchor bolt connection.

2. Provide cover plate over breakaway assembly as indicated on drawings and based on break-away products requirements and warranties.

3. Aluminum Posts: Per STRUCTURAL ENGINEER requirements, CONTRACTOR shall provide extruded-aluminum tubing of the required thickness. Provide stop blocks in slots to hold panels in edges, and mounting hole positions with the proposed bracket design, configuration and assembly method, as it relates to the orientation and positioning indicated; grind, fill, and dress welds to produce smooth, flush, distortion-free surfaces with one another in the relationship indicated.

4. Increase metal thickness or reinforce with concealed stiffeners or backing materials as needed to produce surfaces without distortion, buckles, warp," etc.

5. Panel Material: Material and thickness as indicated on design intent drawings.

6. Most Current policy on Geometric Design of Highway and Streets


8. Most Current AASHTO Roadside Design Guide

E. Existing Poles: Prior to submitting a bid the CONTRACTOR shall become familiar with all existing pole types utilized on the project and include all necessary costs for coordination, different mounting methods and materials required for the project.

1. CONTRACTOR shall reference the Sign Locations Plans and Site Photo References provided.

2. In the case where photos of the individual sites are not provided or available, the CONTRACTOR shall visit the project site or use other means to verify each sign location and the different poles that are required.

3. Show all existing pole types and required mounting methods in shop drawings.

4. See 10436 / Section 1.3 PERFORMANCE REQUIREMENTS for Structural Engineering requirements associated with existing structures, including poles.

2.6 SIGN PANELS

A. General: Provide smooth sign panel surfaces constructed to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch measured diagonally from corner to corner.

1. Coordinate dimensions and attachment methods to produce panel assemblies with closely fitted joints. Align edges and surfaces with one another in the relationship indicated.

2. Increase metal thickness or reinforce with concealed stiffeners or backing materials as needed to produce surfaces without distortion, buckles, warp, or other surface deformations.

3. Continuously weld joints and seams, unless other methods are indicated; grind, fill, and dress welds to produce smooth, flush, exposed surfaces with welds invisible after final finishing.

4. All roadway break-away panels and posts shall conform to the State DOT standards and all municipal regulations.


C. Custom Cast Parts: Any die used to create a custom sign part, including, post caps, finials, extrusions, brackets, or other components, will become the property of The Owner. The fabricator will supply the following:

1. 1 die will remain with The Owner.

2. 1 die will remain with the fabricator for use on future projects with the owner.

D. Breakaway Post: As indicated on drawings, CONTRACTOR shall provide breakaway posts assembly for the sign types and locations indicated in the documentation drawings. Final designs and shop drawings shall be supplied by the CONTRACTOR for each of the poles identified. A State Licensed Professional Structural Engineer shall sign and seal the submittal of shop drawings. The breakaway post shall meet or exceed the following criteria:

1. Most Current policy on Geometric Design of Highway and Streets


3. Most Current AASHTO Roadside Design Guide

2.7 GRAPHICS: VINYL AND SCREEN PRINTING

A. Reflective Vinyl Graphics: See PART 2. PRODUCTS

B. Non-Reflective Graphics: See PART 2. PRODUCTS

C. Screen-printed Graphics: See PART 2. PRODUCTS

2.8 ALUMINUM FINISHES

A. Comply with NAAIMFS® Metal Finishes Manual for Architectural and Metal Products® for recommendations for applying and designating finishes.

B. Finish designations prefixed by AA comply with the system established by the Aluminum Association.

C. Baked-Enamel Finish: AA-C1224AR1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below).

D. Apply baked enamel complying with paint manufacturer’s written instructions for cleaning, conversion coating, and painting.

1. Organic Coating: Thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603 except with a minimum dry film thickness of 1.5 mils, medium gloss.

2. Color: As indicated on drawings.

3. PART 3 - EXECUTION

3.1 INSTALLATION

A. Excavation: In firm, undisturbed or compacted soil, drill or (using a post-hole digger) hand-excavate holes for posts to diameters and spacing indicated.

1. Excavate hole depths as required by structural engineer.

2. Set anchor bolts, mounting sleeves and other embedded items required by the CONTRACTOR. Use templates furnished by suppliers of items to be attached.

B. Underground Vaults/Basements: Prior to bidding, to the greatest extent practical the CONTRACTOR shall make themselves familiar with all underground basement/vault locations that may interfere with a potential sign location footer, by obtaining plans and historical records from the OWNER. Bidders project lump sum cost shall be inclusive of all fees associated with unique footer designs that may be required as part of this work.

1. Where a basement/vault interferes with a proposed location, the sign shall be relocated to a location deemed appropriate by the OWNER and the DESIGNER at no extra cost to the OWNER.

2. Where relocation is not an option the CONTRACTOR will develop the appropriate mounting solution. The solution shall meet all engineering criteria as established by the standard footings (i.e. windloads).

C. When installing a sign on an existing structure, the Contractor shall inspect, investigate, research, analyze and confirm the structural integrity of the proposed structure to which the sign shall be mounted to.

1. Contractor’s structural engineer shall provide all necessary calculations and drawings necessary to sign and seal the required shop drawings that confirms the integrity of the existing structure as well as the attachment of the sign.
2. Existing Structures may include, but are not limited to utility poles, lamp posts, buildings, canopies, awnings, bridges, or existing sign structures.

D. Install signs level, plumb, and at height indicated in the contract documents, with surfaces free from distortion or other defects in appearance. All signs installed shall conform to State DOT's and MUTCD for offsets and standard heights.

E. Prior to any digging the contractor shall contact all required utility companies. Including, but not limited to Water, Gas, Electric, Fiber-Optics, Cable, Telephone, etc.). It is the responsibility of the Contractor to coordinate all calls, utility checks and footer production so that it will not delay the installation of the sign program.

F. Installer shall coordinate sequencing, excavation, delivery, installation and clean-up with all related or unrelated construction projects tat may effect their work, including: buildings, street paving, roadwork or utility projects.

G. Installer shall coordinate all excavation, delivery, installation and clean-up with adjacent businesses and property owners.

H. CONTRACTOR shall replace all surfaces with like materials. All new surfaces adjacent to and within 5'-0” sq ft of post, including the entire excavated area shall be returned to the same condition and quality, including, materials, finish and grading that was present prior to excavation.

When pouring a underground footer within a area that contains a surface brick or specialty pavers. The pattern of bricks / pavers shall be removed, stored and replaced in the exact same positioning in the order they were removed.

I. When locating a footer within a single larger pavement block adjacent to at least 2 expansion joints, the entire block of pavement shall be removed and replaced with the same materials and finish of adjacent sidewalk areas - up to a 25 sq ft. (5' - 0” x 5' - 0”)

J. Lateral Offsets: Per MUTCD, State and Municipal requirements.

K. Contractors representatives will be present at all field surveys and site markings prior to installation, responsibilities will include:

1. Measuring and marking out (spray paint) final sign location number and placement
2. Recording measurements of sign placement from nearest intersection or fixed structure.
3. Recording any field conditions that may alter or revise design intent or placement of sign.
4. Record special field conditions, including custom pavers, colored concrete or other surface treatments that will require treatments.
5. Record all message, sign type and location revisions, additions or subtractions that effect the production or installation of the sign program. This information shall be forwarded to the Owner and Designer for review and approval.

L. Check / Stop / Ask (Obvious Errors): CONTRACTOR shall, when at all practical, confirm a sign message in the field prior to installation.

1. CONTRACTOR shall notify the DESIGNER and OWNER of any obvious incorrect message, spelling, arrow direction, pictogram and any other graphic elements OR any condition in the environment (new or previously identified) that reduces the sign's effectiveness, visibility or creates a situation where the sign is presenting incorrect information or creates a hazard (regardless of its safety factor or simple common sense).

2. Failure to notify the OWNER and DESIGNER of any obvious error or faulty condition prior to installation will result in the CONTRACTOR replacing the sign or rectifying the condition in the environment, at no additional cost to the OWNER or DESIGNER.

3. Delays in the project caused by the non-installation of a sign (error / omission) shall be reviewed by the OWNER and the OWNER shall determine if additional time may be added to the end-date of substantial completion.

3.2 CLEANING
A. At completion of installation, clean soiled surfaces of sign units according to manufacturer's written instructions. This shall be included within the lump sum cost of the project.

B. CONTRACTOR shall provide the OWNER with instructions, processes and a list of materials for the proper and correct cleaning of signs. Information provided shall not void any project warranties.

3.3 TRAFFIC CONTROL
A. Develop general Maintenance and Protection of Traffic plans for vehicular and pedestrian traffic in accordance with the current MUTCD, State DOT and Municipal requirements. Details for traffic control device must conform to the standard State DOT details.

B. The contractor shall apply for all permits required by the OWNER and municipality for the purposes of traffic control. The cost for all permits and coordination shall be included within the Lump Sum Bid Proposal; this includes but is not limited to equipment, manpower, police presence or any other devices or personnel required for traffic control.

3.4 REMOVAL OF EXISTING SIGNS
A. The contractor shall remove all existing wayfinding, directional and trailblazer signs as indicated in the Comments section of the project Message Schedule. This work shall be sequenced and coordinated with the installation of the new sign program.

B. Removal of existing signs shall be included in the CONTRACTORS, Lump Sum Project Cost.

1. CONTRACTOR shall confirm with the OWNER prior to submitting their bid, the full scope of work related to removal, including footer removal, post removal and disposal.

C. Removal shall be completed prior to the installation of the new sign component.

1. Removal of existing signs shall be scheduled and coordinated to minimize the time between the removal and installation of the new sign program.

2. Removal of the signs shall include all sign components to the below grade connection to the footer.

D. CONTRACTOR shall coordinate the proper location, site or recycling center with the OWNER for the disposal of the signs.

3.5 ATTIC STOCK
A. Contractor shall supply attic stock components of posts, sign panels, brackets and other components as requested and as outlined on the BID Form.

B. If requested by the owner, contractor may provide storage space for attic stock. The cost of this will be a negotiated fee between the OWNER and the contractor on a annual, per square footage basis.

1. Attic Stock shall be stored by the CONTRACTOR in appropriate protective covering and crating to fully protect all sign components and surfaces against damage, and defect, including, but not limited to scratches, peeling, bubbling, adhesive tapes, marker writing, etc.

1. Contractor shall be responsible for full replacement of all attic stock that is damaged during the period of time it is stored, assembled or delivered to the site.

END OF SECTION 10436 - POST & PANEL SIGNS AND DIMENSIONAL LETTERS
1. GENERAL

1.1 SUMMARY
A. This Section includes the following:
1. Pylon / Monolith Sign (Illuminated and Non-Illuminated)
2. Electronic Message Boards (LED Display)
3. Channel Letters & Logos (Illuminated and Non-Illuminated)

1.2 RELATED SIGN TYPES
A. Related sign types include, Gateways, Directional Signs, Kiosks, and Sign-Box Type Signs Mounted to Structures.

1.3 RELATED PROJECT CONDTIONS, PROCEDURES AND WORK REQUIREMENTS
A. Executive Summary
B. Section 00500: General Conditions
C. Section 01320: Construction Progress Documentation
D. Section 01330: Submittal Procedures
E. Section 01781: Project Record Documents
F. Section 02231: Tree Protection & Trimming
G. Section 03050: Cast-In-Place Concrete
I. Section 01730: Removals, Cutting and Patching
J. Section 09999: Decorative Metals Coatings / Dye Sublimation

1.4 PERFORMANCE REQUIREMENTS
A. Structural Performance: Provide post and panel signs capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated, determined according to ASCE 7. “Minimum Design Loads for Buildings and Other Structures”:
1. Wind Loads: Determine loads based on a uniform pressure of 90mph or the required windloads based on the project location, which ever is greater, acting in any direction.
2. Thermal Movements: Provide post and panel signs that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, peeling / loss of adhesion of vinyl, overstressing of components, failure of connections, and other detrimental effects.
   - Temperature Change (Range): 120 deg F ambient; 180 deg F, whichever is greater.
B. Thermal Movements: Provide post and panel signs that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, peeling / loss of adhesion of vinyl, overstressing of components, failure of connections, and other detrimental effects.
   - Temperature Change (Range): 120 deg F ambient; 180 deg F, whichever is greater.
C. Structural Engineering: Provide all necessary structural engineering calculations and signed and sealed drawings for proposed signs, structures (existing and new) and other elements as necessary to perform the work and provide a structurally sound and safe product.
   1. CONTRACTOR shall also review and confirm the structural integrity of all existing structures a sign may be installed on.
   2. When a deficiency is discovered in an existing structure, the CONTRACTOR and their ENGINEER shall provide a discovery report to the OWNER and indicate any corrections, remediation or additional structural components that shall be necessary, in order to install the sign properly and to required Federal, State and Local codes.

1.5 SUBMITTALS
A. Product Data: For each type of product indicated include construction details, material descriptions, processes, dimensions of individual components, graphic layouts, elevations, profiles and finishes. Include manufacturer’s written instructions for installing, maintaining and cleaning surfaces.
B. Shop Drawings: Show fabrication, installation details and graphic layouts for post and panels signs.
   1. NOTE: The DESIGNER shall provide Adobe Illustrator files / DESIGN INTENT DRAWINGS associated with the PROJECT as a courtesy to the CONTRACTOR.
   2. NOTE: The DESIGN INTENT DRAWINGS, specifications and files are meant for DESIGN INTENT ONLY and are not for construction. CONTRACTOR shall verify and be responsible for all final drawings, dimensions and conditions of the job, including proper orientation of graphic layouts, panel shapes, brackets and mounting methods.
   3. Include plans, elevations, and at least 3/4-in. scale sections of typical members and other components and construction details. Show anchors, reinforcement, accessories, layout, and installation details.
   4. Include message list, with details of wording and lettering layout, at least half size. Include full-size details of graphics.
   5. Provide Graphic layouts for each sign location and its associated message. Minimum scale: 1” = 1’ – 0”
   6. Fabricator shall provide a Structural Engineer Seal (State Licensed) for all shop drawings indicating fasteners, construction, installation, footers or other structural components.
   7. For Dimensional Letters, Channel Letters / Logos, provide full size paper templates for review and approval in the field by the OWNER and DESIGNER.
   8. Wiring Diagrams: Include all diagrams required for power, signal, digital, wireless routing and control wiring of externally illuminated signs.
C. Samples for Verification: Provide 3 sets of each type of product indicated, of size below:
   1. Aluminum Post: For each form, finish, and color, on 6-inch-long sections of extrusions. All custom extrusion die shall be approved prior to fabrication.
   2. Aluminum Sheet: Squares of each sheet thickness, at least 4 inches by 4 inches.
   3. Paint Swatches: For each painted color, provide a 4” by 4” inch aluminum sheet. Clearly indicate on the back the color specification, date and submittal number.
   4. Reflective Vinyl Sheet: minimum 8” by 10” for each color required.

2. Examples of all graphic image process, including materials, methods, colors and finishes, for maps, patterns, imagery, letters, numbers and other graphic devices.
3. Dimensional Characters: Full-size representative samples of each dimensional character type required, showing style, color, and material finish and method of attachment to sign background.
4. Full Size Prototype Sign(s) and Sign Components: Full size Prototype sign(s) and select Sign Components may be requested as part of the submittal process.
   a. The full size prototype sign may be constructed / installed in place.
   b. The prototype sign(s) and requested sign components shall be fabricated of all materials, process, colors and finishes as outlined in the design intent drawing.
   c. The installed prototype sign may ultimately be used as a component of the system.
   d. The OWNER shall provide exact location and messages for the prototype sign(s).
   e. A line item shall be included on the Bid FORM for the quantity of and type of prototype sign(s) and Sign components required for the submittal process.
D. All cost associated with sample submittals, including mobilization, product data, shop drawings, mock-ups, samples and other submittals shall be included within the Lump Sum Bid Proposal.
E. Fabrication and Installation of requested proto-types shall be included in the CONTRACTORS overall project schedule.
F. No additional time will be granted by the OWNER to the CONTRACTOR for the prototype fabrication / installation time or for time lost due to non-conforming materials, colors or other component associated with the completed prototype.

1.6 QUALITY ASSURANCE
A. Installer Qualifications: An authorized, and professionally trained representative of sign manufacture for installation and maintenance of units required for this Project.
B. Contractor shall be capable of providing replacement message panels within 10 working days of receipt of order.
C. Source Limitations: Provide all signs as a single source manufacturer, unless incorporation of unique products is called for. Do not use sub-contractors to fabricate signage.
D. Product Options: Drawings indicate size, profiles, and dimensional requirements of post and panel signs and are based on the specific type indicated.
   1. Do not modify intended aesthetic effects, as judged solely by the DESIGNER except with DESIGNER’S approval. If modifications are proposed, submit comprehensive explanatory data to DESIGNER for review.
   2. CONTRACTORS suggested modifications and/or products shall not increase the cost or schedule of project.
1. Warranty Period Commencement: Warranty period begins for each individual unit, upon the date the OWNER provides a written acceptance of a singular unit or group of units.

2. PRODUCTS

2.1 MATERIALS AND APPLICATION PROCESSES

A. Aluminum Sheet and Plate: ASTM B 209 / ASTM B 209M, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of alloy 6061-T6.

B. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of alloy 6061-T6.

C. Paints: Material Preparation and Paint Performance

1. Sign components shall be pre-drilled in proper locations prior to any pre-treatment process.

2. It is important for the metal surface to be free of oil, dust, and moisture to ensure a good chemical bond with the primer.

3. Pre-treatment: All surfaces shall be cleaned, primed, and pre-treated as required by manufacturers guidelines prior to finishing.

4. Masking and spraying: All masking shall be executed with pre-treatment process.

5. Clear Coat: Apply a fully compatible protective UV / Anti-Graffiti Clearcoat to all painted, printed, and vinyl surfaces. Contractor shall verify all clear coat product warranties and compatibility of the clear coat products to the applied surfaces.

6. Finished work shall be crisp, accurate, visibly free from flow lines, streaks, bleeding, blisters, cracking, peeling or other imperfections in the dry-film state, without overspray, or rounded corners.

7. Screened Messages: Execute all silkscreen printing in such a manner that all edges and corners of finished letterforms are true and clean. Letterforms, color areas, graphics, or lines with rounded corners, edge buildup or bleeding, saw-tooth, etc. will not be accepted.

D. Paint: Processes and Paint Type

1. Paint Type: All paints utilized on the project shall be designed and formulated specifically for the signage industry and for exterior use.

2. Processes

   a. CONTRACTOR shall follow paint manufacturers instructions, sequencing and procedural requirements to insure full product performance and warranties are maintained at the highest level possible for all Primers, Topcoats, Clearcoats, Cleaners, and Additives.
G. Non-Reflective Vinyl and Graphics:

1. Single Vinyl Product: All vinyl sheeting, inks and overlays shall maintain the same manufacturer and required specifications. Mixing products, processes or materials from different manufacturers, that voids warranties is not permitted.

2. Color Application: Color of vinyl material is to be integral to the material and not surface applied unless specifically noted.

3. Translucent Graphics. Use 3M Scotchtape translucent film or approved equal

H. Reflective Sheetings:

1. Single Vinyl Product and Manufacturer: All vinyl sheeting, inks and overlays shall maintain the same manufacturer and required specifications. Mixing products, processes or materials from different manufacturers is not permitted.

2. Reflective Sheetings. 3M 3930 High Intensity Reflective Sheetings or approved equal that meets MUTCD requirements for Community Wayfinding Signage (MUTCD Section 2D.50).

3. Color Application. Color background and characters shall be printed with approved compatible and fully warranty inks directly to reflective vinyl surface. Inks used in the screen printing and digital processing must be designed for use on highway signs and recommended by the sheeting manufacturer. Inks used must be warranted to be effective for a period of time commensurate with the warranted life of the reflective sheeting.

4. Sheetings & Substrate Application. Series 3930 sheeting incorporates a pressure sensitive adhesive and shall be applied to the sign substrate at temperature of 65°F/18°C or higher by any of the following methods:
   a. Mechanical squeeze roll applicator – refer to 3M Information Folder (IF) 1.4 for specifications.
   b. Hand squeeze roll applicator – refer to 3M IF 1.6 for specifications.

5. Splices: Series 3930 sheeting 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 sheet expands in extreme temperature and humidity exposure.

6. Seam Placement. Seams are not preferred. When practical, all seams should run horizontal and be located along horizontal frames. All manufacturing processes of printing, pressing, machining, finishing and crating to be accomplished within a period of eight (8) years and shall not excessively fade, discolor, crack, crazes, peel, blister, bubble, tear or lose reflectivity such that the signs become visually unsuitable for their intended purpose.

J. Custom High Pressure Laminate Graphic Panels

1. Description: Custom High Pressure Laminates (CHPL) material composed of required layers of phenolic resin impregnated brown kraft paper to produce specified thicknesses, surfaced by a layers of melamine overlay, graphics imaged on saturation grade paper with UV resistant pigment background process color inks, and with an optically clear UV overlay that will resist no less that 99% of all sunlight and UV rays, as well as provides a graffiti resistant surface that allows for removal with standard cleaners.

2. Process: For purposes of this specification, layers of material described A.1 are to be assembled, and heat / pressure processed at approximately 1200 PSI at temperatures exceeding 275° Fahrenheit at manufacturer’s prescribed time frames. All manufacturing processes of printing, pressing, machining, finishing and crating to be accomplished within a single stand alone manufacturing facility to ensure consistent quality control and providing standard product delivery times of three weeks.

3. Artwork: The graphic material and images are to be supplied by and under the supervision of the Designer or Owner. To include mechanicals, text, photographs, transparencies, film and other graphic source materials incorporated into digital graphic production artwork files in manufacturer’s required file formats. All graphics must be assembled by computer designer familiar with and experienced in the process of digital printing and submitting production artwork files that meet the artwork requirements of the manufacturer.

4. Acceptable Manufacturer. iZone Imaging, 2526 Charter Oak Dr., Suite 100, Temple, TX 76502. Tel: 888.464.9663, Email: info@izoneimaging.com, Web: http://www.izoneimaging.com

K. Dye-Sublimated Printed Graphic Panels (see Section 09999: Decorative Metal Coatings / Dye-Sublimation Process.)

2.2 ACCESSORIES

A. Fasteners: Use concealed, fasteners fabricated from metals that are noncorrosive to sign material and mounting surface. Where fasteners are exposed, use tamper resistant fasteners.

B. Anchors and Inserts: Use stainless-steel or hot-dip galvanized anchors and inserts. Use torque-controlled expansion bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete.

C. Concrete for Postholes: Comply with requirements “Cast-In-Place Concrete” for normal-weight, air-entrained, poured in place, ready-mix CLASSE B concrete with a minimum 28-day compressive strength of 4000 psi, unless otherwise indicated.

D. Raceways: Paint raceway structures to match color of building structure, so that the raceways shall be as inconspicuous as possible.

2.3 FABRICATION: GENERAL

A. General: Provide signs, message boards and channel letters of configurations indicated.

1. Welded Connections: Comply with AWS standards for recommended practices in shop welding. Provide welds behind finished surfaces without distortion or discoloration of exposed sides. Clean exposed welded surfaces of welding flux and dress exposed and contact surfaces. Chemical welding is not an acceptable substitute.

2. Mill joints to tight, hairline fit. Form joints exposed to weather to exclude water penetration.

3. Peaassemble signs in the shop to greatest extent possible. Disassemble signs only as necessary for shipping and handling limitations. Cleary mark units for reassembly and installation, in location not exposed to view after final assembly.

4. Conceal fasteners if possible; otherwise, locate fasteners where they will be inconspicuous.

5. Single ground mounted signs shall meet criteria as specified in State DOT standard index relative to aluminum materials and structural supports for signs.

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2.4 STRUCTURES (Includes Sign Framework and Raceways)
A. Base: Provide pylons signs with integral base consisting of channels, angles, plates, or other fittings. Drill holes in members for anchor-bolt connection.
1. Provide anchor bolts of size required for connecting base to concrete foundations.
B. Internal Frames: Manufacturer's standard internal aluminum or steel framing system, designed to withstand wind pressure indicated. Provide welded construction using mitered joints. Cut, drill, and tap units to receive hardware, bolts, and similar items.
1. Hot-dip galvanize steel framing system after fabrication to comply with ASTM A 123A / 123M.
C. External Frames: Manufacturer's standard external aluminum or steel framing system designed to withstand design wind pressure indicated and for direct attachment of sign message panels. Provide welded construction using mitered joints. Cut, drill, and tap units to receive hardware, bolts, and similar items.
1. Frame Finish: Match finish of panels.
2. Corner Condition: Square corners, unless otherwise indicated on DESIGN INTENT DRAWING.

2.5 SIGN PANEL / FACES
A. General: Provide smooth sign panel surfaces constructed to remain flat under installed conditions within a tolerance of plus or minus 1/16" measured diagonally from corner to corner.
1. Coordinate dimensions and attachment methods to produce message panels with closely fitting joints. Align edges and surfaces with one another in the relationship indicated.
2. Increase metal thickness or reinforce with concealed stiffeners or backing materials as needed to produce surfaces without distortion, buckle, warp, or other surface deformations.
3. Continuously weld joints and seams, unless other methods are indicated; grind, fill, and dress welds to produce smooth, flush, distortion-free surfaces with one another in the relationship indicated.
4. All roadside break-away panels and posts shall conform to the State DOT standards and all municipal regulations.
B. Sign Face / Aluminum Panels: Produce smooth sign panel surfaces, constructed to remain flat under installed conditions within a tolerance of plus or minus 1/16" (1.5 mm) measured diagonally from corner to corner.
1. Panel Material: 0.125"-inch (3.2-mm) thick aluminum sheet
2. Panel Finish: Manufacturer’s standard semi gloss finish with UV inhibitors.
3. Provide clips welded to back of panels for installation without visible fasteners.
C. Sign Face / Channel Letters: Material, thickness, color and finish as indicated in DESIGN INTENT DRAWINGS.
D. Illuminated Units (Signs and Channel Letters): Make provisions for servicing and for concealed connection to electric service. Coordinate electrical characteristics with those of the power supply provided.

2.6 GRAPHICS
A. Reflective Vinyl Graphics: See PART 2 PRODUCTS
B. Non-Reflective Graphics: See PART 2 PRODUCTS
C. Screen-printed Graphics: See PART 2 PRODUCTS
D. Surface-Applied Dimensional Characters: Cut copy characters from solid material of thickness indicated. Produce precisely cut characters with square-cut, smooth edges. Apply to exposed face of sign panel with concealed fasteners.
1. Material: As indicated on Design Intent Drawings.
2. See Section 10436: Post & Panel Signs and Dimensional Letters.
E. Fabricated Channel Letters / Logos: Finish and/or paint materials as indicated in DESIGN INTENT DRAWINGS.

2.7 ALUMINUM FINISHES
A. Comply with NAAMM’s “Metal Finishes Manual for Architectural and Metal Products” for recommendations for applying and designating finishes.
B. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
C. Class I, Clear Anodic Finish: AA-M12C22A41 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.
1. Color: Match Architect's sample
E. Baked-Enamel Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Apply baked enamel complying with paint manufacturer’s written instructions for cleaning, conversion coating, and painting.
1. Organic Coating: Thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603 except with a minimum dry film thickness of 1.5 microns (0.064 mm), medium gloss.
F. High-Performance Organic Coating Finish (Fluoropolymer Two-Coat System): AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: conversion coating: Organic Coating: Manufacturer’s standard two-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer’s written instructions and AAMA 2603.
1. Readability Angle: 160 degrees horizontal x 90 degrees vertical
F. High-Performance Organic Coating Finish (Fluoropolymer Three-Coat System): AA-C12C41R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: conversion coating: Organic Coating: Manufacturer’s standard three-coat, thermocured system consisting of specially formulated inhibitive primer, fluoropolymer color topcoat, and fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer’s written instructions and AAMA 2605.
1. Color and Gloss: As selected by DESIGNER

H. ELECTRONIC MESSAGE BOARD / FULL COLOR AND MONOCHROME LED SIGNS
1. Daktronics Series: Galaxy GS8 15.85 MM or approved equal.
2. CONTRACTOR shall reference Daktronics Product Manuals and Specifications for most current requirements.

2. 15.85 MM TECHNICAL SPECIFICATIONS
a. Character Height: 4.4” (7 pixel font)
b. Line Spacing: 15.85 mm (0.62”)
c. Pixel Configuration: Monochrome: 1 red or 1 amber / RGB1: 1 red, 1 green, 1 blue
d. Maximum Brightness: Monochrome red: 4,500 nits / Monochrome amber: 6,000 nits / RGB: 12,000 nits
e. Monochrome Color Capability: 4,096 shades of red or amber
f. Full Color Capability: RGB: 281 trillion colors
3. OPTIMAL VIEWING ANGLE: 140 degrees horizontal x 70 degrees vertical
g. Readability Angle: 160 degrees horizontal x 90 degrees vertical / Min Viewing Distance: 37”

3. PRODUCT FEATURES
a. All sealed components
b. Quick connects
c. Mounting clips
d. High-contrast louvers
f. Redundant module signal
3. GENERAL SPECIFICATIONS
a. Estimated LED Lifetime: min 100,000+ hours
b. Contrast Enhancement: Non-reflective black louvers and module face grooves disperse light
c. Message Capability: Text, graphics, logos, basic animation, video clips, multiple font styles, and sizes
d. Control Software: Venus® Control Suite
3. Installation
a. Power: 120, 120/240 VAC Single Phase
b. Display Dimming: 64 levels (Automatic, scheduled or manual control)
c. Communication Options: Ethernet Fiber Optic, Ethernet Bridge Radio, Remote Cellular, Ethernet CAT5
3. OPERATING TEMPERATURE: -40°F / 122°F with 99% RH
4. CONSISTENCY OF MATERIALS
a. Comply with NAAMM’s “Metal Finishes Manual for Architectural and Metal Products” for recommendations for applying and designating finishes.
b. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
c. Class I, Clear Anodic Finish: AA-M12C22A41 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.
1. Color: Match Architect's sample
4. CONTRACTOR shall reference Daktronics Product Manuals and Specifications for most current requirements.
3. EXECUTION

3.1 INSTALLATION

A. Excavation: In firm, undisturbed or compacted soil, drift or by use of a post-hole digger hand-excavate holes for posts to diameters and spacing indicated.

1. Excavate hole depths as required by structural engineer.

2. Set anchor bolts, mounting sleeves and other embedded items required for installation. Use templates furnished by suppliers of items to be attached.

B. When installing a sign on an existing structure, the Contractor shall investigate, research, analyze and confirm structural integrity of the proposed structure.

1. Contractor's structural engineer shall provide all necessary calculations and drawings necessary to sign and seat the required shop drawings. Existing Structures may include, but are not limited to utility poles, lamp posts, buildings, canopies, awnings, bridges, or existing sign structures.

C. Install signs level, plumb, and at height indicated in the contract documents, with surfaces free from distortion or other defects in appearance. All signs installed shall conform to State DOT's and MUTCD for offsets and standard heights.

D. Prior to any digging the contractor shall contact all required utility companies. Including, but not limited to Water, Gas, Electric, Fiber-Optics, Cable, Telephone, etc.). It is the responsibility of the Contractor to coordinate all calls, utility checks and footer post-hole digger) hand-excavate holes for posts to diameters and spacing indicated.

E. Installer shall coordinate sequencing, excavation, delivery, installation and clean-up with adjacent businesses and property owners.

F. Installer shall coordinate all excavation, delivery, installation and clean-up with adjacent businesses and property owners.

G. CONTRACTOR shall replace all surfaces with like materials. All new surfaces adjacent to and within 10’ footprint, including the entire excavated area shall be returned to the same condition and quality, including, materials, finish and grading that was present prior to excavation.

H. When locating a footer within a single pavement block (max. 5’-0” x 5’-0”), adjacent to at least 2 expansion joints, the entire block of pavement shall be removed and replaced with the same materials, excavated area shall be returned to the same condition and quality, including, materials, finish and grading that was present prior to excavation.

I. Lateral Offsets: Per MUTCD, State and Municipal requirements.

J. Contractors representatives will be present at all field surveys and site markings prior to installation, responsibilities will include:

1. Measuring and marking out (spray paint) final sign location number and placement

2. Recording measurements of sign placement from nearest intersection or fixed structure.

3. Recording any field conditions that may alter or revise design intent or placement of sign.

4. Record special field conditions, including custom pavers, colored concretes or other surface treatments that will require treatments.

5. Record all message, sign type and location revisions, additions or subtractions that effect the production or installation of the sign program. This information shall be forwarded to the Owner and Designer for review and approval.

K. Check / Stop / Ask (Obvious Errors): CONTRACTOR shall, when at all practical, confirm a sign message in the field prior to installation.

1. CONTRACTOR shall notify the DESIGNER and OWNER of any obvious incorrect message, spelling, arrow direction, pictogram and any other graphic elements OR any condition in the environment (new or previously identified) that reduces the sign(s) effectiveness, visibility or creates a situation where the sign is presenting incorrect information or creates a hazard (regardless of its safety factor or simple common sense).

a. Conditions in the environment include, but are not limited to any element, new or previously identified that may block the visibility of the sign, its overall effectiveness or not meet standard codes or municipal requirements, including ADA. Elements include, trees or tree branches blocking the sign, existing signs (newly installed or previously identified), or any other physical objects (hanging plants, banners, awnings, parking meters, trash cans, etc.)

2. Failure to notify the OWNER and DESIGNER of any obvious error or fault condition prior to installation will result in the CONTRACTOR replacing the sign or rectifying the condition in the environment, at no additional cost to the OWNER or DESIGNER.

3. Delays in the project caused by the non-installation of a sign (error / omission) shall be reviewed by the OWNER and the OWNER shall determine if additional time may be added to the end-date of substantial completion.

3.2 CLEANING

A. At completion of installation, clean soiled surfaces of sign units according to manufacturer’s written instructions. This shall be included within the lump sum cost of the project.

B. CONTRACTOR shall provide the OWNER with instructions, processes and a list of materials for the proper and correct cleaning of signs. Information provided shall not void any project warranties.

3.3 TRAFFIC CONTROL

A. Develop general Maintenance and Protection of Traffic plans for vehicular and pedestrian traffic in accordance with the current MUTCD, State DOT and Municipal requirements. Details for traffic control device must conform to the standard State DOT details.

B. The contractor shall apply for all permits required by the OWNER and municipality for the purposes of traffic control. The cost for all permits and coordination shall be included within the Lump Sum Bid Proposal; this includes but is not limited to equipment, manpower, police presence or any other devices or personnel required for traffic control.

3.4 REMOVAL OF EXISTING SIGNS

A. The contractor shall remove all existing wayfinding, directional and trailblazer signs as indicated in the Comments section of the project Message Schedule. This work shall be sequenced and coordinated with the installation of the new sign program.

B. Removal of existing signs shall be included in the CONTRACTORS, Lump Sum Project Cost.

1. CONTRACTOR shall confirm with the OWNER prior to submitting their bid. If removing the entire footer is included in the project scope of work.

C. Removal shall be completed prior to the installation of the new sign component.

1. Removal of existing signs shall be scheduled and coordinated to minimize the time between the removal and installation of the new sign program.

2. Removal of the signs shall include all sign components to the below grade connection to the footer.

D. CONTRACTOR shall coordinate the proper location, site or recycling center with the OWNER for the disposal of the signs.

3.5 ATTIC STOCK

A. Contractor shall supply attic stock components of posts, sign panels, brackets and other components as requested and as outlined on the Bid Form.

B. If requested by the owner, contractor may provide storage space for attic stock. The cost of this will be a negotiated fee between the city and the contractor on, per square footage basis.

END OF SECTION 10437 - PYLON SIGNS
1. PART 1   GENERAL

1.1 Related Project Conditions, Procedures and Work Requirements

A. Section 00550: General Conditions
B. Section 01320: Construction Progress Documentation
C. Section 01781: Project Record Documents
D. Section 10436: Post & Panel Signs and Dimensional Letters
E. Section 10437: Pylon Signs, Electric, Message Birds & Channel Ltrs.
F. Section 03050: Cast-In-Place Concrete

1.2 PROJECT CONDITIONS

A. Removal of Existing Signs: See Sections 10436 and 10437
B. Existing Conditions: Do not disturb existing structures, construction, materials or equipment unless required by the CONTRACT.
   1. Do not cut, drill or remove structural members such as joists, beams or columns supporting construction that is to remain, unless expressly required by the CONTRACT DOCUMENTS.
C. Existing Paint: Assume existing painted surfaces to contain lead based paints. Take precautions as required to prevent spread of lead containing particles and dust.
D. Items to Remain the Property of the OWNER: The following items shall remain the property of the State and shall be stored at the site where directed:
   1. To be determined by the OWNER and provided to contractor at pre-construction meeting or prior to installation at a specific sign location.

2. PART 2   PRODUCTS

2.1 MATERIALS

A. CONTRACTOR shall replace all surfaces with like materials. All new surfaces adjacent to and within 10' feet of post, including the entire excavated area shall be returned to the same condition and quality, including, materials, finish and grading that was present prior to excavation.
B. When locating a footer within a single pavement block (max. 5'-0" x 5'-0"), adjacent to at least 2 expansion joints, the entire block of pavement shall be removed and replaced with the same materials and finish of adjacent sidewalk areas.

3. PART 3   EXECUTION

3.1 EXAMINATION

A. Prior to cutting, drilling or removal, investigate both sides of the surface involved. Determine the exact location of structural members.
B. If unforeseen obstructions are encountered, take precautions necessary to prevent damage and obtain instructions from the Owner's Representative before proceeding with the Work.

3.2 PREPARATION

A. Prepare existing surfaces properly to receive and, where required, bond with the Work.

3.3 REMOVALS, CUTTING, AND ALTERING

A. In addition to the items indicated to be removed on the Drawings, remove existing construction superseded by the Work except items such as pipes, conduits, recessed boxes, and ducts which are built into existing construction that is to remain. Cut off and conceal such items at face of remaining construction. Provide cover plates on recessed boxes.
B. Remove and alter existing construction as required to install and connect the Work to adjacent construction in an approved manner.
C. Cut and alter existing materials as required to perform the Work. Limit cutting to the smallest amount necessary. Core drill round holes and saw cut other openings where possible.
D. Perform cutting, drilling, and removals in a manner which will prevent damage to construction which is to remain.
E. Perform removal of items to remain the property of the State with such care as necessary to prevent damage to these items.

3.4 PATCHING

A. Patch existing construction and finishes defaced, damaged, or left incomplete due to alterations and removals. Patching, except as otherwise indicated, shall be limited to the areas which have been cut or altered. Finish patched surfaces to match existing adjacent surfaces as closely as practicable.
B. Perform patching around items penetrating existing construction in a manner that will maintain the water and fire resistive capability of the existing construction.
C. Paint patched areas and cover plates to match existing adjacent surfaces using same type of paint. Painting, except as otherwise indicated, shall be limited to the areas which have been patched.
D. Where surfaces exposed by removals are to remain as exposed surfaces, paint such areas to match existing adjacent surfaces as closely as practicable using same type of paint.

3.5 REINSTALLATION

A. Where reinstallation of removed items is indicated, reinstall them to a condition equal to or better than their condition before removal.

END OF SECTION 01730 - REMOVALS, CUTTING AND PATCHING
1.  GENERAL

1.1  SECTION INCLUDES
A.  Permanent imaging thermally-embedded in flat surfaces and dimensional objects for the following applications:
1.  Signage and streetscape components.

1.2  RELATED SECTIONS
A.  Section 00550: General Conditions
B.  Section 01100: Summary
C.  Section 01320: Construction Progress Documentation
D.  Section 01330: Submittal Procedures
E.  Section 01781: Project Record Documents
F.  Section 10436: Post & Panel Signs and Dimensional Letters
G.  Section 10437: Pylon Signs, Electric Message Boards & Channel Letters

1.3  SYSTEM DESCRIPTION
A.  Process: The process embeds a high resolution image deep into and throughout a super durable powder coated layer. The image is embedded inside the powder and flows seamlessly over edges and corners. It is not a film or a laminate. There are no visible corners and no delamination. The process shall be capable of coating and decorating both flat surfaces and dimensional objects.
1.  Product substrates selected shall be able to withstand the 350 degree F (177 degree C) temperature of the powder coating oven. This includes and is not limited to aluminum, steel, glass, MDF, ceramic and high temperature plastics.
B.  Characteristics: Coating shall be super durable polyurethane powder coated finish that is resistant to abrasion, humidity and corrosion. It shall be anti-graffiti, scratch resistant and non-combustible. The coating process shall be applicable for both interior and exterior applications. Coating shall withstand high traffic and extreme weather.
1.  Available characteristics include anti-skid, antimicrobial, post-formable and super texture.
C.  Capability: Embed process capability shall allow parts from the size 6 inches (150 mm) square representing production and attachment to adjacent surfaces.
2.  Product submittals shall select a button to 24 feet (7315 mm) in length. Includes dimensional objects, flat and embossed sheets, extruded profiles, and folded panels.

1.4  SUBMITTALS
A.  Submit under provisions of Section 01330.
B.  Product Data: Manufacturer's data sheets on each product to be used.
C.  Shop Drawings: For all fabrications, including details of construction and attachment to adjacent surfaces.
D.  Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns OR as indicated in Section 10436 and 10437.
E.  Sustainability Submittals:
   2. Coating Process documentation of polyurethanes powders emitting zero or near zero volatile organic compounds (no VOC's).

1.5  QUALITY ASSURANCE
A.  Manufacturer Qualifications: Minimum 3 years experience manufacturing similar products. Manufacturer shall have capability to provide a "delegated design" responsibility including prototypes, value engineering and budget analysis.
B.  Quality Assurance Process: The following services shall be provided by the manufacturer to deliver the specified product for installation.
   1. Project Management: Management of the design facilitation, review, prototype and implementation process.
   2. Value Engineering: Reviewing possible cost saving approaches for single or multiple production pieces.
   3. Prototype Development: Creating a full design element or portion of the element that reflects the final production piece.
   4. Production/Fabrication: Creation of the final production piece.
   5. Coating and Embedding: The powder coating and embedded decoration of the final production piece.
   6. Installation and Service: Installation of the final production piece as well the maintenance of the final piece after installation.
C.  Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
   1. Finish areas designated by Designer.
   2. Do not proceed with remaining work until workmanship is approved by DESIGNER and the OWNER.
   3. Re-work mock-up area as required to produce acceptable work.

1.6  DELIVERY AND HANDLING
A.  Deliver products in appropriate protective covering and crating to fully protect all materials, surfaces and components against damage.
B.  All delivered materials shall be delivered free of any defect, including, but not limited to cracks, scratches, peeling, bubbling, adhesive tapes, marker writing, etc.
1.  Contractor shall be responsible for full replacement of materials that is delivered damaged.

1.7  PROJECT CONDITIONS
A.  Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.8  SEQUENCING
A.  Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.9  WARRANTY
A.  Manufacturer's Warranty: Provide manufacturer's standard warranty for up to 10 years depending on location, substrate, environment and amount of direct sunlight.

2.  PRODUCTS

2.1  MANUFACTURERS
A.  Acceptable Manufacturer: Direct Embed Coating Systems; 6 Morris St., Patterson, NJ 07501. ABD. Tel: (954) 925-0410. Email: info@directembedcoating.com. Web: http://www.directembedcoating.com.
B.  Requests for substitutions will be considered in accordance with provisions Section 05550: General Conditions

2.2  COATING SYSTEM
A.  Powder Coating with Embedded Image using DECI5 Equipment: As manufactured by Direct Embed Coating Systems. Coating shall be resistant to abrasion, humidity and corrosion; anti-graffiti, scratch resistant, non-combustible, super-durable (UV resistant), and TGIC free (non-toxic). Suitable for both interior and exterior applications. Coating shall withstand high traffic and extreme weather.
   1. Substrate Material: As indicated in the Drawings.
   2. Image Source: As indicated on the Drawings.
   3. Color: As indicated on the Drawings.

3.  EXECUTION

3.1  EXAMINATION
A.  Do not begin installation until substrates have been properly prepared.
B.  If substrate preparation is the responsibility of another installer, notify DESIGNER and OWNER of unsatisfactory preparation before proceeding.

3.2  PREPARATION
A.  Clean surfaces thoroughly prior to installation. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3  INSTALLATION
A.  Install in accordance with manufacturer's instructions and in proper relationship to adjacent surfaces.

3.4  PROTECTION
A.  Protect installed products until acceptance of the project by the OWNER or the OWNER'S REPRESENTATIVE.
B.  Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 09999 - DECORATIVE METAL COATINGS / DYE SUBLIMATED PRINTED GRAPHICS