Western Michigan University
Campus Wayfinding - Signage Bid Set

WMU Project number LR10443
December 12, 2016
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**This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.**

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**Client/Project Project No.**<br>Western Michigan University<br>14WMU249001<br>Signage Bid Document<br>12.12.16

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<th>Date</th>
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<td>12.12.16</td>
<td>As noted</td>
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</table>
Section 1  **Basic Standards**
1.2

Logos for signage

**Western Michigan University**

1. Selected wordmark for signage
   - Typeface: The Sans bold

2. Two-line wordmark for signage
   - Typeface: The Sans bold

---

**Western Michigan University**

13. Two-line wordmark for signage
   - Typeface: The Sans bold

---

**Western Michigan University**

14. Two-line wordmark for signage
   - Typeface: The Sans bold

---

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**Western Michigan University**

Signage Bid Document

Date: 12.12.16

As noted

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### Basic Standards

#### Fonts

- **F1** Clearview 3-W
  - For vehicular signs on roads 30 mph or greater
  
  ABCDEFGHIJKLMNOPQRSTUVWXYZ
  abcdefghijklmnopqrstuvwxyz
  1234567890 &!?."'

- **F2** The Sans Semibold Plain
  - For on-campus vehicular signs, pedestrian signs, and building identification signs
  
  ABCDEFGHIJKLMNOPQRSTUVWXYZ
  abcdefghijklmnopqrstuvwxyz
  1234567890 &!?."'

- **F3** The Sans Bold Plain
  - For gateway signs and venue identification
  
  ABCDEFGHIJKLMNOPQRSTUVWXYZ
  abcdefghijklmnopqrstuvwxyz
  1234567890 &!?."'

### Typefaces

- F1 - Clearview 3-W
- F2 - The Sans Semibold Plain
- F3 - The Sans Bold Plain

#### Notes

- No substitute typefaces will be accepted.

Adobe Illustrator character formatting:

- Adjusting kerning/tracking

  - Kerning control: set all to optical
  - Tracking control: set as specified in layout
### Fonts

#### Typefaces

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<tr>
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<th>Notes</th>
<th>Fonts Available from</th>
</tr>
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<td>F1 - Clearview 3-W</td>
<td></td>
<td>Adobe Systems Inc. (<a href="http://www.adobe.com/type">www.adobe.com/type</a>)</td>
</tr>
<tr>
<td>F2 - The Sans Semibold Plain</td>
<td></td>
<td>My Fonts (<a href="http://www.myfonts.com">www.myfonts.com</a>)</td>
</tr>
<tr>
<td>F3 - The Sans Bold Plain</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Notes

No substitute typefaces will be accepted. Typefaces are available from: Adobe Systems Inc. (www.adobe.com/type) My Fonts (www.myfonts.com)

Adobe Illustrator character formatting

- Adjusting kerning/tracking

- kerning control set all to optical
- tracking control set as specified in layout

---

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**ABCDEF GH IJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 1234567890 &!?.”**

**The Sans Plain**

For Plaza and Recognition signs

**ABCDEF GH IJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 1234567890 &!?.”**

**The Sans Plain Italic**

For Plaza and Recognition signs
As noted

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**Artwork**

- **A1** WMU “W”
- **A2** Parking
- **A3** Accessible symbol
- **A4** Historic Campus Icon
- **A5** Arrows
- **A6** Traffic circle - right exit
- **A7** Traffic circle - left exit
### Materials

#### Materials Standards

**Aluminum**
- Oversized aluminum sheeting may be supplied by:
  - Pierce Aluminum Co Inc
    - 995 Mearns Rd, Warminster, PA 18974
    - 215-444-0884

**Concrete**
- Stonecast Products, Inc.
  - Patrick Hoctor, Estimator/Project Manager
    - 262-253-6600

**Glass**
- Sheet glass supplied by:
  - Viracon, Inc.
    - Architectural Glass Fabrication
    - 800-533-2080

- Curved glass elements supplied by:
  - Bent Glass Design, Inc.
    - 215-441-9101

<table>
<thead>
<tr>
<th>Materials</th>
<th>Number</th>
<th>Color</th>
<th>Specification</th>
<th>Fabrication Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>M1</td>
<td>Aluminum</td>
<td>Aluminum sheet painted with satin finish. Sand blasted aluminum finish and corofoin clear coat</td>
<td></td>
</tr>
<tr>
<td>White 3930</td>
<td>M2</td>
<td>White 3930</td>
<td>Retro-reflective vinyl lettering applied to surface 3M High intensity prismatic sheeting</td>
<td></td>
</tr>
<tr>
<td>Pantone 355C</td>
<td>M3</td>
<td>Pantone 355C</td>
<td>Retro-reflective vinyl applied to surface 3M High intensity prismatic sheeting</td>
<td></td>
</tr>
<tr>
<td>As specified in notes</td>
<td>M4</td>
<td>Direct print to retro-reflective vinyl</td>
<td>CMYK exterior grade direct print to 3M high intensity prismatic sheeting</td>
<td></td>
</tr>
<tr>
<td>Custom WMU color</td>
<td>M5</td>
<td>Precast concrete</td>
<td>Stonecast concrete</td>
<td></td>
</tr>
<tr>
<td>Varies</td>
<td>M6</td>
<td>Direct print to vinyl and wrapped around 1/8&quot; thick aluminum panel</td>
<td>CMYK exterior grade direct print</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>M7</td>
<td>Push-through acrylic letter, illuminated</td>
<td>Router cut to shape</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>M8</td>
<td>Corian dimensional letter</td>
<td>Router cut to shape</td>
<td></td>
</tr>
<tr>
<td>Aluminum</td>
<td>M9</td>
<td>1/4&quot; thick wall extruded square aluminum tube - painted</td>
<td>Aluminum extrusion</td>
<td></td>
</tr>
<tr>
<td>Brick</td>
<td>M10</td>
<td>WMU Brick pattern (to be specified by client</td>
<td>Masonry</td>
<td></td>
</tr>
<tr>
<td>Glass or 3form</td>
<td>M11</td>
<td>Glass: Starfire Glass with 65% white PVB interlayer</td>
<td>TBD during prototyping phase</td>
<td></td>
</tr>
<tr>
<td>WMU Gold</td>
<td>M12</td>
<td>3M Translucent Graphic film</td>
<td>3M Scotchcal film applied to surface</td>
<td></td>
</tr>
<tr>
<td>Matte White</td>
<td>M13</td>
<td>Avery A9002-0</td>
<td>Applied vinyl</td>
<td></td>
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</tbody>
</table>

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- Refer to sign location plan and message schedule for sign types and locations.
### Paints

<table>
<thead>
<tr>
<th>Paint Colors</th>
<th>Number</th>
<th>Color</th>
<th>Specification - color to match</th>
<th>Fabrication Process</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>P1</td>
<td>Dark Brown - Panel</td>
<td>MP88706</td>
<td>Matthews Acrylic Polyurethane Paint, Satin Finish</td>
</tr>
<tr>
<td></td>
<td>P2</td>
<td>Light Brown - Post</td>
<td>MP20156</td>
<td>Matthews Acrylic Polyurethane Paint, Satin Finish</td>
</tr>
<tr>
<td></td>
<td>P3</td>
<td>Warm Silver - Band</td>
<td>MP20088 Grey Metallic P4</td>
<td>Matthews Acrylic Polyurethane Paint, Satin Finish</td>
</tr>
<tr>
<td></td>
<td>P4</td>
<td>White</td>
<td>MP32071 White Wonder</td>
<td>Matthews Acrylic Polyurethane Paint, Satin Finish</td>
</tr>
<tr>
<td></td>
<td>P5</td>
<td>Yellow</td>
<td>Pantone 124C</td>
<td>Matthews Acrylic Polyurethane Paint, Satin Finish</td>
</tr>
</tbody>
</table>

All painted components to be clear coated with Matthews 290-228SP Super Satin Clear Kit.

PPG Coraflon paint products are specified for exterior signage and display hardware and related elements. No substitutions permitted.

Gloss finish of paint specified is to be 60 degrees or 29.8 on a 60 degree glossimeter. Refer to performance requirements for exact specifications.

**PPG Architectural Coatings**
1-800-774-4342

**Matthews Paint**
1-800-323-6593

**Spraylat Corp.**
1-800-767-2335

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Section 2  **Design Intent Drawings: Gateways**
Observe that this drawing represents design intent only. The fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.

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<td>Western Michigan University</td>
<td>42WMU249001</td>
<td></td>
<td>12.12.16</td>
<td></td>
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</tbody>
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This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.
Western Michigan University

This drawing represents design intent only. Fabri cate will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.

Notes:
Sign face is to be single sheet with no seams or grommets.
Fabricator is responsible for waterproofing and water drainage details to avoid electrical problems or degradation.

As noted

Brick to match brick at existing gateway signs
Push through acrylic illuminated lettering
Power to be fed in through and concealed by brick wall.
Kingscott to locate maintenance access, power supply and water evacuation.

Brick to match brick at existing gateway signs
Illuminated light box sits on top of concrete cap.
See construction details in Kingscott drawings.

see grading and base detail on page 2.12 and in Kingscott drawings

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Western Michigan University

Signage Bid Document

12.12.16
14WMU249001

As noted

DRAWINGS
Note:
See Kingscott drawings for lighting, attachment and access panel details.

GW2 elevation - back view
scale: 1/4" = 1'-0"

Side view - GW 2
scale: 1/4" = 1'-0"

GW2 elevation - back view
scale: 1/4" = 1'-0"

Access panel

Access panel

GW1 elevation - back view
scale: 1/4" = 1'-0"

Side view - GW 2
scale: 1/4" = 1'-0"

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2.11

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Oliver Gateway - Plan views

GW 1 & GW 2 - Plan view

Note: Gateway arc and orientation to be determined by Kingscott. See Appendix I for details.
Oliver Gateway - Landscape/base detail

Gently sloping landscape meets existing grade and retaining wall

Gently sloping landscape meets existing grade

See additional landscape details in Kingscott drawings

Groundfill as needed
Stacked boulder retaining wall

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This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.

1. Fabricated .080 aluminum channel letters, see page 2.14 for details
2. Frameless glass panels, attachments and engineering by Kingscott.
   See Kingscott drawings for details.
3. Letter is face-mounted to glass, mechanically fastened from inside.
4. Low voltage wire connects to rheostat to allow light intensity adjustments.
   Connect to a remote transformer placed in an accessible area, VIF.
5. Center round extruded post houses wiring to base. Wrapped with reflective covering to prevent shadowing in box.
6. 1” wide insect screen

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Date: 12.12.16

Scale: As noted
This drawing represents design intent only. Fabicator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.

1. Fabricated .080 aluminum channel letters, painted
2. 1/2” thick router-cut lexan/acrylic with diffuser film applied to the back side. routed 1/4” lip is received by aluminum channel and secured at top and bottom by tamper-resistant, countersunk fasteners. Top and bottom edges of acrylic painted to match aluminum channel
3. White LED module mounted to back of letter
4. Tamper-resistant, countersunk fasteners
5. Internal aluminum angle framing
6. Low voltage wire to remote transformer
7. Letter is mechanically fastened through glass to aluminum plate. Plate is secured to internal structure.
8. 3M Translucent graphic film applied to surface.
9. 1” wide insect screen

Notes:
Fabricator is responsible for waterproofing and water drainage details to avoid electrical problems or degradation.
Minimum 15-year warranty on LEDs is required.
Retrofit gateways

**Notes:**
Due to variations in existing structures, all retrofit signs require thorough field survey by the fabricator. Templates may be required to ensure accurate fit.

Fabricator is responsible for the removal of Bronze Medallion and lettering. Visible holes must be patched and filled with ground brick shavings to match existing brick.

Existing floodlights to remain. Contractor to repair/replace existing landscape planting damaged by construction work.

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This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.
Western Michigan University

Notes:
- Sign face is to be single sheet with no seams or seams.
- Fabricator is responsible for waterproofing and water drainage details to avoid electrical problems or degradation.
- Fabricator to design maintenance access to sign boxes.
- Due to variations in existing structures, all retrofit signs require thorough field survey by the fabricator. Templates may be required to ensure accurate fit.
- For additional construction details, see Kingscott drawings.

Power is fed from the backside through the signface.

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**Western Michigan University**

**East Campus**

---

**Notes:**
- Sign face is to be single sheet with no seams or grommets.
- Fabricator is responsible for waterproofing and water drainage details to avoid electrical problems or degradation.
- Fabricator to design maintenance access to sign boxes.
- Due to variations in existing structures, all retrofit signs require thorough field survey by the fabricator. Templates may be required to ensure accurate fit.

---

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---

**Scale:** 3/8” = 1'-0"
THIS DRAWING REPRESENTS DESIGN INTENT ONLY. 
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CONDITIONS IN FIELD PRIOR TO SHOP DRAWINGS. 
REFER TO SIGN LOCATION PLAN AND MESSAGE 
SCHEDULE FOR SIGN TYPES AND LOCATIONS. 

Notes: 
Sign face is to be single sheet with no seams 
or grommets.

Fabricator is responsible for waterproofing 
and water drainage details to avoid electrical 
problems or degradation.

Fabricator to design maintenance access to 
sign boxes.

Due to variations in existing structures, all 
retrofit signs require thorough field survey by 
the fabricator. Templates may be required to 
ensure accurate fit.

For additional construction details, see 
Kingscott drawings.

Power is fed from the backside 
through the sign face.

2.22

Client/Project Project No.
Date Revisions Scale
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Western Michigan University

Western Michigan University
East Campus

Elevation – Retrofit – GW05 - Oliver and Oakland Dr

Plan view 
scale: 3/8" = 1'-0"

Side view 
scale: 3/8" = 1'-0"
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Notes:
- Fabricator is responsible for waterproofing and water drainage details to avoid electrical problems or degradation.
- Minimum 15-year warranty on LEDs is required.
**Typical section detail - Push-through acrylic lettering**

- **Threaded stud** is fillet welded to the interior side of cabinet, nut secures acrylic to aluminum.
- 1/8" thick aluminum plate; mechanically fastened to internal structure.
- 1" thick router-cut acrylic with routed-out flange and white diffuser film applied to back side.
- DLC Luminous is mechanically fastened to aluminum mounting plate.
- DLC Luminous LED Light Panel connected to approved 60 watt, 12 volt DC exterior rated power supply. Reference page 5.4 for LED and power supply details.
- Provide details for dimming capabilities. Power supply with a 10 year warranty is recommended. Fabricator to provide details for review prior to installation.
- Low voltage wire to remote transformer.

Scale: 3" = 1'-0"
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Aluminum medallion to be sized to completely cover the existing brick "ring." Due to variations in existing structures, all retrofit signs require thorough field survey by the fabricator. Templates may be required to ensure accurate fit.

This section detail – Push-through acrylic lettering scale: 3" = 1'-0"

Typical section detail – Illuminated channel letter see detail page 2.25

Power is fed to primary sign below

Threaded studs are welded to the back and secured to existing structure with epoxy or silicone adhesive.

Caulking along seams may be necessary, to be determined by fabricator.

Notes:

Aluminum medallion to be sized to completely cover the existing brick "ring."

Due to variations in existing structures, all retrofit signs require thorough field survey by the fabricator. Templates may be required to ensure accurate fit.

Medallion detail

Elevation – Gateway medallion, typical

Scale: 1 1/2" = 1'-0"
Howard and Stadium Dr (Miller Entrance) - in situ

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Western Michigan University

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</table>

© 2016 Cloud Gehshan Associates
ST 30 - Venue ID - Double-faced

Miller Auditorium
The PHANTOM of the OPERA
Call for tickets
800-228-9858

DRAWINGS

Notes:
See Appendix I for additional construction details

Fabricator to ensure that the screens have sufficient ventilation. Fans may need to be installed to ensure the correct ventilation.

Fabricator to determine best location of power switch and electrical connection.

Fabricator to specify how components will be accessed and serviced.

Fabricator must isolate dissimilar materials.
All associated hardware must be stainless steel.

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Medallion detail, typical
scale: 1" = 1'-0"

Medallion is welded to sign panel
Medallion is 1/4" aluminum ring and letter, cut to shape and painted, then welded to 1/4" aluminum plate
Back piece is aluminum spacer; back of spacer is flush with back of sign panel

Middle of medallion is centered on bottom of sign panel

Sign panel (thickness varies)

Typical Section view - Medallion
scale: 1" = 1'-0"

Digital content layout TBD

The Sans Bold Plain
Optical Kerning
Tracking: 35

Call for tickets
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Notice of Project
Western Michigan University
Project No. 40WMU/249001

Date
12.12.16

Scale
As noted

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GW06 sign located at the base of the hill
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Gateway signs

Western Michigan University
Parkview Campus

GW6 elevation
scale: 3/8"=1'-0"

1'-6"

1'-10 1/2"
1'-11 1/2"
12'-5 1/2"
5'-8 3/4"
3/8"
8 1/4"
8 1/2"
6"
1'-0"
1'-0"
4 1/2"
1'-0"
1'-0"
1'-6"
1'-10 1/2"
17'-11 1/4"
17'-10 3/4"

Illuminated light box sits on top of concrete cap. Detailing to match Oliver gateway, see Kingscott drawings for details.

Push-through acrylic illuminated lettering. Power to be fed in through and concealed by brick wall. Kingscott to locate maintenance access, power supply and water evacuation.

Detailing to match Oliver gateway, see Kingscott drawings for details.

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Section 3 Design Intent Drawings: Sign System
3.2

**Sign system overview - vehicular**

**Western Michigan University**

**ST 01**
Vehicular trailblazer

**ST 02**
Tertiary gateway

**ST 03**
Vehic Directional Large
6" letter

**ST 04**
Vehic Directional Medium
6" letter

**ST 05**
Vehic Directional X-small
6" letter

**ST 09**
Vehic Directional Small
6" letter

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**REFER TO SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR SIGN TYPES AND LOCATIONS.**

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14WMU249001

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Date: 12.12.16

Scale: As noted

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This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.
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Type size guide for campus roads

Vehicular Sign Size Guide
- 6" type size
- 4" type size
- 3" type size

Map Key
- Visitor Parking

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Western Michigan University
Signage Bid Document

Date 12.12.16
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Typical Vehicular sign details

1. 1/4" aluminum sign face welded to cuff
2. Extruded aluminum tube upright - 5" x 5" (typical) x 1/4" wall
3. Extruded aluminum tube cuff - 5 1/2" x 5 1/2" x 1/4" wall plug welded to sign face
4. Extruded aluminum tube cuff - 6" x 6" x 1/4" wall mechanically fastened to upright tube
5. Transpo B525 breakaway device
6. Mechanical fastener

Plan Section
scale: 1 1/2" = 1'-0"

Rear perspective
scale: 1" = 1'-0"
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See typical breakaway installation detail page 3.45
See typical sign construction detail page 3.9

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ST 03 Off-campus Vehicular directional - Large

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Miller Auditorium
Lawson Arena
Gilmore Theatre

ST 04 Off-campus Vehicular directional - Medium

1. Elevation ST04 Vehicular directional - Medium - 6" letter
   Scale: 1/2"=1'-0"

2. Plan view ST04
   Scale: 1/2"=1'-0"

3. Side view ST04
   Scale: 1/2"=1'-0"

See typical W band layout page 3.8
See typical sign construction detail page 3.9
See typical breakaway installation detail page 3.45

THIS DRAWING REPRESENTS DESIGN INTENT ONLY. FABRICATOR WILL BE RESPONSIBLE TO VERIFY ALL CONDITIONS IN FIELD PRIOR TO SHOP DRAWINGS. REFER TO SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR SIGN TYPES AND LOCATIONS.
ST 05 Off-campus Vehicular directional - Small

---

Plan view ST05
scale: 1/2"=1'-0"

1. BTR Park I College of Eng.
Soccer Cmplx

See typical W band layout page 3.8
See typical sign construction detail page 3.9
See typical breakaway installation detail page 3.45

Elevation ST05 Vehicular directional - Xsmall - 6" letter
scale: 1/2"=1'-0"

Side view ST05
scale: 1/2"=1'-0"

---

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ST 06 On-campus Vehicular directional - Large

3.14

Plan view ST06
scale: 1/2"=1'-0"

Visitor Parking

Fetzer Center
Miller Aud. P

Admissions

See typical W band layout page 3.8

See typical sign construction detail page 3.9

See typical breakaway installation detail page 3.45

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Date
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Scale
As noted

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ST 07 and ST 08 - Ring Road Blazes

Plan view ST07 - Historic Campus version
scale: 1"=1'-0"

Plan view ST08
scale: 1/2"=1'-0"

Layout ST07 - Historic Campus version
scale: 1"=1'-0"

Layout ST07 - Ring Road version
scale: 1"=1'-0"

Elevation ST07 Ring Road Blaze - Small
scale: 1/2"=1'-0"

Side view ST07
scale: 1/2"=1'-0"

Elevation ST08 Ring Road Blaze - Large
scale: 1/2"=1'-0"

Side view ST08
scale: 1/2"=1'-0"

Existing post
Aluminum U channel welded to back of sign face
Stainless strap through bracket

The Sans Semibold Plain
Optical Kerning
Tracking: 100

2" 1 5/8" 1 5/8" 1" 6 1/8" 5 3/8" 6 5/8" 5 3/4" 2 3/8" 6 1/8"

Ø 1'-5 5/8" Ø 1'-3 1/2"

color to match PMS 464
color to match P5
color to match PMS 464
color to match P5

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Western Michigan University
Project No. 14WW024001
Signage Bid Document

Date 12.12.16
Revisions
Scale As noted

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Asylum Lake
BTR Park I
BTR Park II

See typical W band layout page 3.8
See typical sign construction detail page 3.9
See typical breakaway installation detail page 3.47

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1/4" 5" 6" 6'-5 3/8" 6'-10 5/8" 7 1/8" 13'-10 3/8"

1/4" 5" 6" 6'-5 3/8" 6'-10 5/8" 7 1/8" 13'-10 3/8"

Elevation ST09 Vehicular directional - Small - 6" letter

Plan view ST09
Scale: 1/2"=1'-0"

Side view ST09
Scale: 1/2"=1'-0"
This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.
ST 11 On-campus Vehicular directional with digital screen

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Notes:
- Fabricator to ensure that the screens have sufficient ventilation. Fans may need to be installed to ensure the correct ventilation.
- Fabricator to determine best location of power switch and electrical connection.
- Fabricator to specify how components will be accessed and serviced.

See typical breakaway installation detail page 3.45
This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.

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Western Michigan University

Signage Bid Document

Date: 12.12.16

Scale: As noted
Bernhard Center Lot 44

Meters enforced
Mon–Thurs 7am–8pm, Fri 7am–4pm
Students must pay meters
WMU Permit required
No parking
Unattended vehicles will be towed

See typical parking band layout page 3.8

Henry Hall Lot 68

Meters enforced
Mon–Thurs 7am–4pm, Fri 7am–4pm
Students must pay meters
WMU Permit required
No parking
Unattended vehicles will be towed

Alternate layout ST14A & 14B

Removeable panel layouts

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REFER TO SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR SIGN TYPES AND LOCATIONS.
ST 14B Parking Regulatory

THIS DRAWING REPRESENTS DESIGN INTENT ONLY. FABRICATOR WILL BE RESPONSIBLE TO VERIFY ALL CONDITIONS IN FIELD PRIOR TO SHOP DRAWINGS. REFER TO SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR SIGN TYPES AND LOCATIONS.

Any WMU Permit is Valid
Visitors park at meters

Fieldhouse & Rec Center
Lot 13

The Sans Semibold Plain
Optical Kerning

Threaded stud inserted into threaded holes with tamper-proof nut, fabricator to provide details for review

1/4" thick removable, painted aluminum panel with applied message

Fillet-weld threaded stud into back side of aluminum panel

1/4" thick painted aluminum sign panel (backer)

See typical parking band layout page 3.8

See typical sign construction detail page 3.9

See typical breakaway installation detail page 3.45

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ST 16 Parking Regulatory

**Lot 1**
- Permit only
- Any WMU Permit
- Visitors park at meters
- No parking on game days
- Unauthorized vehicles will be towed

**Montague House visitors or AAUP Permit only**
- Unauthorized vehicles will be towed

**Permit required**
- All permits are valid
- Additional parking in Lot P1 at meters
- Do not park in area business lots

**F2**
- Permit only
- At all times
- No parking on game days
- Unauthorized vehicles will be towed

**F1**
- Permit in designated areas only
- At all times

**W**
- Permit only
- Mon–Thurs 7am–8pm
- Fri 7am–4pm
- Visitors park at meters
- No parking during band practice Mon–Fri 3pm–6pm
- Unauthorized vehicles will be towed

This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.

See typical parking band layout page 3.8

See typical sign construction detail page 3.9

See typical breakaway installation detail page 3.45

Western Michigan University

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<th>Date</th>
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Western Ave

Plan view ST20
scale: 1/2"=1'-0"

Elevation ST20 Street Identification
scale: 1/2"=1'-0"

ST 20 Street Identification

Side view ST20
scale: 1/2"=1'-0"
3.25

Client/Project: Project No.
Date: Revisions: Scale:

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Permit Required
Visitors park on L1
W,V Permit park on L2 & L3

Auditorium Parking
Lot 48

ST 17A Parking Garage ID

Plan view
scale: 1/2" = 1'-0"

Section view
scale: 1" = 1'-0"

Access panel is located on sign side

Notes:

Fabricator to ensure that the screens have sufficient ventilation. Fans may need to be installed to ensure the correct ventilation.

Fabricator to determine best location of power switch and electrical connection.

Fabricator to specify how components will be accessed and serviced.

Fabricator must isolate dissimilar materials. All associated hardware must be stainless steel.

Threaded stud is fillet welded to the interior side of cabinet, nut secures acrylic to aluminum

1/8" thick aluminum plate with welded stud attachment, mechanically fastened to internal structure

1" thick router-cut acrylic with routed-out flange and white diffuser film applied to back side.

DLC Lumisheet is mechanically fastened to aluminum mounting plate

DLC Lumisheet LED Light Panel connected to approved 60 watt, 12 volt DC exterior rated power supply. Reference page 5.4 for LED and power supply details. Provide details for dimming capabilities. Power supply with a 10 year warranty is recommended, fabricator to provide details for review prior to installation.

Low voltage wire to remote transformer

Router-cut, push through acrylic disc with Vivid Green/Pantone 355C 3M translucent film applied

1/4" thick aluminum perforated panel, 1/8" Holes on 3/16" Centers, Staggered Pattern, is welded to aluminum side panels

Notes:

Fabricator to ensure that the screens have sufficient ventilation. Fans may need to be installed to ensure the correct ventilation.

Fabricator to determine best location of power switch and electrical connection.

Fabricator to specify how components will be accessed and serviced.

Fabricator must isolate dissimilar materials. All associated hardware must be stainless steel.

THIS DRAWING REPRESENTS DESIGN INTENT ONLY. FABRICATOR WILL BE RESPONSIBLE TO VERIFY ALL CONDITIONS IN FIELD PRIOR TO SHOP DRAWINGS. REFER TO SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR SIGN TYPES AND LOCATIONS.
**ST 17B Parking Garage ID**

**Plan view**

1. The Sans Semibold Plain Optical Kerning Tracking: 20
2. Mega Sign Inc. Premier Outdoor LED Sign 10 mm
3. See medallion detail page 2.32

**Elevation – ST 17B Parking Garage ID - double-faced**

1. Threaded stud is fillet welded to the interior side of cabinet, nut secures acrylic to aluminum
2. 1/8” thick aluminum plate with welded stud attachment, mechanically fastened to internal structure
3. 1” thick router-cut acrylic with routed-out flange and white diffuser film applied to back side.
4. DLC Lumisheet is mechanically fastened to aluminum mounting plate
5. DLC Lumisheet LED Light Panel connected to approved 60 watt, 12 volt DC exterior rated power supply Reference page 5.4 for LED and power supply details. Provide details for dimming capabilities. Power supply with a 10 year warranty is recommended, fabricator to provide details for review prior to installation.
6. Low voltage wire to remote transformer
7. Router-cut, push through acrylic disc with Vivid Green/Pantone 155C 3M translucent film applied
8. 1/4” thick aluminum perforated panel, 1/8” Holes on 3/16” Centers, Staggered Pattern, is welded to aluminum side panels

**Section view**

Access panel is located on side.

**Side view**

- 3/4” thick router-cut acrylic with routed-out flange and white diffuser film applied to back side.
- DLC Lumisheet is mechanically fastened to aluminum mounting plate
- Low voltage wire to remote transformer
- Router-cut, push through acrylic disc with Vivid Green/Pantone 155C 3M translucent film applied
- 1/4” thick aluminum perforated panel, 1/8” Holes on 3/16” Centers, Staggered Pattern, is welded to aluminum side panels

---

**DRAWINGS**

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**Mega Sign Inc. Premier Outdoor LED Sign 10 mm**

**Optical Kerning**

**Tracking: 20**

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**DRAWINGS**

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**Western Michigan University**

**Signage Bid Document**

Project No: 42WMU249001

Date: 12.12.16

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1/4" thick aluminum "frame" panel, routed out to receive 1/8" map panel. Z-clips anchored to the back of the panel.

Map is vinyl-wrapped 1/8" thick panel set in behind sign "frame" panel. Map and directory provided as artwork by WMU Office of University Relations.

1/4" thick aluminum panel attached to frame.

Side enclosures are welded to internal structure.

Top of sign is mechanically fastened to secure sign panels.

Note:
- Fabricator must isolate dissimilar materials.
- All associated hardware must be stainless steel.
- Provide (2) 3/4" conduits for future power & data. Stub through sign base/footing.

Plan view - double-faced
scale: 1" = 1'-0"

Elevation – ST 26 Free standing Building Directory
scale: 1" = 1'-0"

Side view - ST26B
double-faced
scale: 1" = 1'-0"

Side view - ST26A
single-faced
scale: 1" = 1'-0"

See typical medallion detail page 2.32.
1/4" thick aluminum "frame" panel routed out to receive 1/8" map panel. Z-clips anchored to back of panel.
2. Internal structure is 3/4" square extruded steel pole with 1 1/2" square extruded cross-bars.
3. 1/8" thick aluminum sheet welded to internal structure with holes to accept z-clips.
4. Map is vinyl wrapped 1/8" thick panel set in behind sign "frame" panel. Map and directory provided as artwork by WMU Office of University Relations.
5. 1/4" thick aluminum panel attached to frame.
6. Side enclosures are welded to internal structure.
7. Top of sign is mechanically fastened to secure sign panels.
8. Medallion is welded to sign panel.
9. 2' 5" x 3 1/2" weld plate.
10. Reinforced concrete footer; to be engineered by fabricator.

Note: Fabricator must isolate dissimilar materials. All associated hardware must be stainless steel. Provide (2) 3/4" conduits for future power & data. Stab through sign base/flooring.

Detail: Map panel

scale: 1"=1'-0"
1/4" thick aluminum panel with z-clips anchored to the back of the panel.

Internal structure is 3" square extruded steel pole with 1 1/2" square extruded cross-bars.

1/8" thick aluminum sheet, welded to internal structure, with holes to accept z-clips.

Map is vinyl wrapped 1/8" thick panel set in behind sign "frames" panel. Map and directory provided as artwork by WMU Office of University Relations.

1" x 3 x 1/2" thick weld plate.

Side enclosures are welded to internal structure.

1" rod weldment in precast concrete.

Below grade 1" x 9 x 3/4" thick mounting plate.

Reinforced concrete footer, to be engineered by fabricator.

1/4" thick aluminum "frames" panel, routed out to receive 1/8" map panel.

Top of sign is mechanically fastened to secure sign panels.

Medallion is welded to sign panel.

Note: Fabricator must isolate dissimilar materials. All associated hardware must be stainless steel. Provide (2) 3/8" conduits for future power & data. Stub through sign base/footing.
ST 27 Pedestrian Directional with map

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Note: Map and directory provided as artwork by WMU Office of University Relations.
ST 27 Pedestrian Directional with map

Plan view - Pedestrian directional pad - corner condition

Plan view - Pedestrian directional pad - single path condition

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1. 1/8" thick aluminum sign panel mechanically fastened to cuff
2. 2" square aluminum sign post
3. 2 1/4" square aluminum extruded sign cuff. See page 3.9 for typical detail.

**ST 29 - Pedestrian Directional**

### Layout

- Friedmann Hall
- Brown Hall
- Sprau Tower
- RCVA
- Dunbar Hall
- Seibert Admin (Admissions)
- West Michigan Parking

### Materials

- **Silkscreen messages**
  - The Sans Semibold Plain
  - Optical Kerning
  - Tracking: 20

### Dimensions

- **1"**
- **1 1/8"**
- **1 1/4"**
- **3/4"**
- **5/8"**
- **1 1/2"**
- **1"**
- **1/8"**
- **4 1/8"**
- **6 1/4"**
- **1 3/4"**
- **2"**
- **2 1/4"**
- **3"**
- **4"**
- **4 1/8"**
- **6 1/4"**
- **2"**
- **2 1/4"**

### Notes

- Direct bury. See page 3.46
This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.

Western Michigan University
Signage Bid Document

ST 31 - X-Large Building ID

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<tr>
<td>1</td>
<td>Precast concrete with 1” rod weldment</td>
</tr>
<tr>
<td>2</td>
<td>Steel sign frame</td>
</tr>
<tr>
<td>3</td>
<td>Aluminum side panels welded to frame</td>
</tr>
<tr>
<td>4</td>
<td>Below grade mounting plate</td>
</tr>
<tr>
<td>5</td>
<td>Reinforced concrete footer, to be engineered by fabricator</td>
</tr>
<tr>
<td>6</td>
<td>1/2” thick Corian dimensional letters, mechanically fastened</td>
</tr>
<tr>
<td>7</td>
<td>5” x 5” weld plate attaches to frame and base</td>
</tr>
</tbody>
</table>

Note:
- Fabricator must isolate dissimilar materials.
- All associated hardware must be stainless steel.
- Install mow strip around sign bases with river rock & metal edging around sign at lawn areas.
ST 32 Large Building ID

Plan view
scale: 1/2" = 1'-0"

Note: Install mow strip around sign bases with river rock & metal edging around sign at lawn areas.

Elevation – Front and Back view – ST 32 Building ID - Large
scale: 1/2" = 1'-0"

Side view
scale: 1/2" = 1'-0"

Gilmore Theatre Complex

The Sans Semibold Plain
Optical Kerning
Tracking: 25

See typical medallion detail page 2.32

Note: Install mow strip around sign bases with river rock & metal edging around sign at lawn areas.

This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.
ST 33 Large Building ID with LED screen

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Notes:
Fabricator to ensure that the screens have sufficient ventilation. Fans may need to be installed to ensure the correct ventilation.
Fabricator to determine best location of power switch and electrical connection.
Fabricator to specify how components will be accessed and serviced.
Fabricator must isolate dissimilar materials. All associated hardware must be stainless steel.
Install move strip around sign bases with river rock & metal edging around sign at lawn areas.

1. 1/8” thick aluminum panel attached to frame
2. Steel sign frame
3. Aluminum side panels welded to frame
4. Below grade mounting plate
5. Reinforced concrete footer, to be engineered by fabricator
6. Daktronics Galaxy G66 15.85 MM Outdoor LED sign, double-sided
7. Precast concrete with 1” rod weldment
8. 5” x 5” weld plate attaches to frame and base
9. 1” thick router-cut acrylic with routed-out flange and white diffuser film applied to back side.

Access panel is located on sign side

See typical medallion detail page 2.32
This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.

1. Elevation – front and back view – ST 34 Building ID - Medium
   Scale: 1" = 1'-0"

2. Plan view
   Scale: 1" = 1'-0"

3. Side view
   Scale: 1" = 1'-0"

4. Section view, typical
   Scale: 1" = 1'-0"

ST 34 Medium Building ID

Bernhard Center

1/8" thick aluminum panel attached to frame
Steel sign frame
Aluminum side panels welded to frame
8" x 8" x 3/4" thick below grade mounting plate
Reinforced concrete footer, to be engineered by fabricator
Precast concrete with 1" rod weldment
6" x 3" x 1/2" thick weld plate attaches to frame and base

Note:
Fabricator must isolate dissimilar materials.
All associated hardware must be stainless steel.
Install mow strip around sign bases with river rock & metal edging around sign at lawn areas.

See typical medallion detail page 2.32
Silkscreen messages
The Sans Semibold Plain
Optical Kerning
Tracking: 25

Note:
Fabricator must isolate dissimilar materials.
All associated hardware must be stainless steel.
Install mow strip around sign bases with river rock & metal edging around sign at lawn areas.

THIS DRAWING REPRESENTS DESIGN INTENT ONLY. FABRICATOR WILL BE RESPONSIBLE TO VERIFY ALL CONDITIONS IN FIELD PRIOR TO SHOP DRAWINGS. REFER TO SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR SIGN TYPES AND LOCATIONS.
This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.

Elevation - Front and Back view – ST 35 Building ID

Silkscreen messages
The Sans Semibold Plain
Optical Kerning
Tracking: 25

See typical medallion detail page 2.32

Elevation – Front and Back view – ST 36 Building ID - X-Small

Silkscreen messages
The Sans Semibold Plain
Optical Kerning
Tracking: 25

See typical medallion detail page 2.32

Note: Install mow strip around sign bases with river rock & metal edging around sign at lawn areas.
ST 40 Vinyl Building ID and ST 41 Building-mounted ID

Office of Sustainability

1. Elevation – ST 41 Large Building-mounted ID
   scale: 1/2" = 1'-0"

   - 1/2" thick Corian dimensional letters, mechanically fastened
   - The Sans Semibold Plain
   - Optical Kerning
   - Tracking: 35

   Aluminum studs welded to back of letter. Set into wall with epoxy or silicone adhesive

2. Side view – ST 41
   scale: 1/2" = 1'-0"

   - ST 40 Vinyl Building ID and ST 41 Building-mounted ID

3. Elevation – ST 40 Vinyl Building Identification
   scale: 1/2" = 1'-0"

   - Lettering is white applied vinyl on existing glass
   - The Sans Semibold Plain
   - Optical Kerning
   - Tracking: 20

   5'-1" 2'-0"

   Waldo Library

THIS DRAWING REPRESENTS DESIGN INTENT ONLY. FABRICATOR WILL BE RESPONSIBLE TO VERIFY ALL CONDITIONS IN FIELD PRIOR TO SHOP DRAWINGS. REFER TO SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR SIGN TYPES AND LOCATIONS.
The Gathering Tree Fountain
This sculpture highlights The University Seal, now in its fifth incarnation. The WMU seal was designed by the late John Kemper, a WMU professor emeritus of art, when the institution became a university in 1957.

The five stars symbolize WMU's five original schools: Applied Arts (Engineering and Applied Sciences), Business, Education, Liberal Arts and Sciences, and Graduate Studies.

The tree symbolizes WMU's continuing growth. Its roots acknowledge the institution's firm planting when created by the Michigan Legislature in 1903.

The stone arch signifies a gateway to knowledge as well as solid growth, but the missing keystone indicates that WMU's growth is incomplete, as there is much more to accomplish and discover.

The pyramid, which also may indicate the building of knowledge, features a flame at its apex to signify enlightenment—WMU's true purpose.

Dedicated April 2015

ST 42 Recognition sign

Scale: 1 1/2"=1'-0"

3/8" thick Aluminum frame, routed to accept interpretive panel
3/16" thick HPL insert panel
1/2" 1/2" aluminum extruded upright tube
Direct burial. See details page 3.43
Dotted red line represents routed area. (Minimum 1/8" lip on all sides)
Plug-weld of supports
Location of left piece weld
Edge of sign post
Stainless steel machine screws countersunk with tamper resistant heads
3/8" thick aluminum plate welded to display post

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This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings.

Refer to sign location plan and message schedule for sign types and locations.

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Western Michigan University

ST 43 Recognition sign - wall-mounted

Interpretive graphic layout TBD
Provided as artwork

1. 3/8" thick aluminum frame, routed out to accept graphic panel
2. 1/4" thick aluminum back panel with z-clips anchored to face
3. 3/16" thick HPL insert panel
4. Aluminum studs welded to back sign panel. Set into wall with epoxy or silicone adhesive.
**ST 45 & ST 46 Plaza signs**

**Sanford Plaza**

*In recognition of a generous gift from Todd A. Sanford and Amy S. Sanford*

**Board of Trustees Fountain**

*This fountain was made possible by a generous gift from Elden W. Butzbaugh, Jr. BA 1961, MBA 1964 and Judith Wise Butzbaugh BS 1962*

*Dedicated September 24, 1994*

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**THIS DRAWING REPRESENTS DESIGN INTENT ONLY. FABRICATOR WILL BE RESPONSIBLE TO VERIFY ALL CONDITIONS IN FIELD PRIOR TO SHOP DRAWINGS. REFER TO SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR SIGN TYPES AND LOCATIONS.**

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1. **Elevation – ST 45 Donor recognition plaque - small**
   - Scale: 1 1/2" = 1'-0"
   - Direct bury. see page 3.46

2. **Layout – ST 45 Donor recognition plaque - small**
   - Scale: 3" = 1'-0"
   - Painted aluminum panel with silkscreened messaging

3. **Side view**
   - Scale: 1 1/2" = 1'-0"

4. **Elevation – ST 46 Donor recognition plaque - medium**
   - Direct bury. see page 3.46

5. **Layout – ST 46 Donor recognition plaque - medium**
   - Scale: 3" = 1'-0"

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As noted

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**Typical Section Detail - Concrete Footer**

- **Scale:** 1/8" = 1'-0"

**Components:**
- Transpo BS25 breakaway system
- Aluminum extruded tube upright
- Coupling
- Anchor
- Poured concrete footer (6" above grade—distance below grade to be determined by fabricator)
- #3 rebar cage
- GRADE
- Breakaway footer detail
THIS DRAWING REPRESENTS DESIGN INTENT ONLY. FABRICATOR WILL BE RESPONSIBLE TO VERIFY ALL CONDITIONS IN FIELD PRIOR TO SHOP DRAWINGS. REFER TO SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR SIGN TYPES AND LOCATIONS.

Typical match plate installation detail

1. Extruded alum tube upright (varies from Ø 2" to Ø 5")
2. Through bolts
3. 3/8" alum baseplate welded to upright
4. Leveling washers
5. 3/8" alum matchplate welded to anchor tube
6. Extruded alum anchor tube
7. Poured concrete footer (fabricator to engineer footer size)
8. Anchor tube penetrates beneath footer into earth to allow drainage
9. Install mow strip around sign bases with river rock and metal edging around sign at lawn areas
10. Cut hole in base and matchplates for water drainage

scale: 3" = 1'-0"
Section 4 Performance Specifications
PART 1 – PERFORMANCE REQUIREMENTS

1.01 Work Included
A. Labor, materials, equipment and services necessary for the fabrication, delivery and installation of signage as described in the detail drawings.
B. Refer to the message schedule for a complete list of sign types and quantities.
C. Signage is located at Western Michigan University in Kalamazoo, Michigan.
D. For all signs, all fasteners, support structures required for installation.

1.02 Related Work
A. General requirements: all work to be done in a professional manner and to the highest trade standards.
B. Use OSHA safety requirements if necessary for pedestrian or vehicular safety.

1.03 Regulatory Requirements
A. Observe applicable codes, sign ordinances and ADA guidelines for handicapped and fire/life safety signage.
B. For Electrical Work
1. National Electrical Code
4. OSHA
5. Applicable Federal, State and Local Codes
6. Underwriters Laboratory Inc. (UL)

1.04 Reference Standards
Refer to current editions of the following:
A. ASTM B221—Aluminum-alloy extruded bars, rods, wire, shapes and tubes.
B. ASTM D822—Light and water exposure apparatus (carbon-arc type) for testing paint, varnish, lacquer and related products.
C. ASTM A276—Stainless Steel - alloy extruded bars, rods, wire, shapes and tubes.
D. ASTM E84—Surface burning characteristics of building materials.
E. FS L-P.391—Plastic sheet, rods and tubing, rigid, cast, materials.
F. FS L-P.387—Plastic sheet, laminated, thermosetting.
G. ASTM C 880—Stone, granite flexural strength testing
H. ASTM C 1354—Stone, granite anchorage testing
I. PEI—Porcelain Enamel Institute.
J. UL 943—Fluorescent lamp ballasts.
K. ASTM A36—Structural Steel
L. ASTM A123—Zinc (Hot Galvanized) coatings on products fabricated from rodded, pressed and forged steel shapes, plates and bars.
M. TM-B355—QQ-B-653 (Fed Spec)—Brass, Muntz 280
N. PS-1—Construction and industrial plywood.
O. CDA—Copper Development Association, Inc.
P. AWI—Comply with applicable requirements of "Architectural Woodwork Quality Standards" published by the Architectural Woodwork Institute.
Q. ASTM-WK09687—New Standard Practice for the Determination of Luminance under Monochromatic LED Illumination
R. ASTM C 143-74—Concrete slump test.
S. ASTM D 933-98—Standard Guide for Preparation of Aluminum Surfaces for Structural Adhesives Bonding (Phosphoric Acid Anodizing)

2.05 Submittals
A. Bid submittal requirements
1. All of the following bid submittals must be provided to be considered a qualified bid.
   a. All proprietary contractual paperwork provided by the client filled out accurately, including all requested bonding and insurance information.
   b. Submit completed spreadsheet (file provided) with all requested line item prices. Ensure that all row and column totals add up properly. Use the provided format, do not use a different spreadsheet format.
   c. Submit a projected project schedule. Schedule will show major milestones such as sample submittals, fabrication, and installation. The payment schedule will be tied to reaching these milestones.
   d. Provide engineering data to confirm viability of signs in the message schedule. Show anchorages and accessory items. Provide mounting templates.
   e. Show fabrication and installation details, including all sign components such as extrusions, brackets, bracing, hardware, internal framing, foundations, etc.
   f. Submit three (3) sets of shop drawings as outlined below.
   g. Submit Gantt style schedule with all pertinent dates and milestones for the project.
   h. Include subcontract delivery dates, fabrication and installation dates.
   i. Allow several weeks in schedule for review and revision time for all submittals.
   j. Revise schedule regularly as project details dictate.

B. Shop Drawings
NOTE: All final shop drawings must have an engineering stamp from a state licensed engineer before being approved for fabrication.
1. Submit three (3) sets of shop drawings as outlined below:
   a. Include plans, elevations, sections and large scale details of sign wording and lettering layout for each sign in the message schedule. Show anchorages and accessory items. Provide mounting templates.
   b. Show fabrication and installation details, including all sign components such as extrusions, brackets, bracing, hardware, internal framing, foundations, etc.
   c. Provide engineering data to confirm viability of signs and supports, including structural stability of all signs, fasteners and foundation design.
   d. Structural details must be reviewed and stamped by a state certified structural engineer, ensuring structural integrity and safety.
   e. For illuminated sign units: shop drawings shall also include the following:
      a. Fixture type.
      b. Fixture and lamp/ballast voltage.
      c. Fixture and lamp wattage.
      d. Complete photometric data.
      e. Wiring diagrams, including connection to building power supply.
      f. UL registration number (fabricator MUST be UL approved).

C. Schedule
1. The total percentage of subcontracted work on this project is not to exceed 25% including installation.
2. Fabricator must submit credentials for any subcontractor selected to execute any portion of this contract. This must be submitted with proposal or bid. Demonstrate subcontractors qualifications for doing specified work.

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PART 1 - PERFORMANCE REQUIREMENTS (continued)

F Samples
1. Submit three sets of each sample as required.
2. Owner reserves the right to reject any samples that do not satisfy the construction, finish or color requirements. Submit additional samples as required to obtain final approval.
3. Samples shall be labeled on the back, designating item number, name of manufacturer, sign type and location.
4. Samples should represent extreme variations in color and texture that might occur during fabrication.
5. Samples are required for the following products:
   - Paints
   - M4 - Direct print to retro-reflective vinyl
   - M5 - Precoat coro-tec
   - M6 - Full size print of vinyl map graphic
   - My - Acrylic letter with M3g applied to back
   - M1 - Glass
   - M12 - 3M Translucent Graphic film
6. An installable prototype is recommended for the following sign types:
   - Sign Type 10 - Vehicular Directional - Small
   - Sign Type 15 - Parking Regulatory
   - Sign Type 27 - Pedestrian Directional w/ map
   - Sign Type 32 - Building ID - Large
   - Sign Type 34 - Building ID - Medium
7. Prior to final shop drawing submission, fabricator shall provide a scaled partial mock-up to test the glass tower element for the tall center component of the gateways (GW y-102). Mock-up to detail the glass laminate opacity and recommended light fixture illumination and wash of the glass. Mock-up to include two (2) glass spacy options for review. Client and design team will provide final approval on materials based on mock-up review.

G Maintenance Data
1. Submit two (2) copies of each manufacturer's recommendations for maintenance of all items.
2. The instructions shall cover cleaning, repair, repainting and maintenance of signs, including data on cleaning solutions or methods of application which should be avoided.

1.06 Delivery OF ATTIC STOCK (if any)
A. For any attic stock ordered, package separately or in like groups labeled as to contents. Include installation hardware, adhesives and installation instructions; include a reasonable array of alternate adhesives, fasteners or materials to be able to respond effectively to varying field conditions.

1.07 Protection
A. Store and protect assemblies from injury at the shop, in transit to the job and until erected in place, complete, inspected and accepted.
B. Packaging should not be taped to sign surface. Bubble wrap should be removed upon delivery to prevent damage to sign surfaces.
C. Take special precautions to prevent pilferage both prior to and after installation. Be prepared to provide replacements for any material so removed from the site.

1.08 Inspection
A. Materials, colors and fabricated or partially fabricated items shall be available for inspection at the factory or elsewhere, by the owner or designer during the process of manufacture and until final delivery, installation and acceptance, to determine whether or not there is compliance with the requirements of these specifications.
B. Approval prior to the time of final acceptance shall not preclude rejection of delivered items which do not satisfy these specifications.

1.09 Reordering
A. All items specified herein shall be available to the owner in additional quantities for a period of 10 years after completion of all work called for in this specification.

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

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

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

D. Correct any and all paint finish defects which may appear during the warranty period by restoring defective work to the standard of the contract documents at no cost to the owner and to the owner's satisfaction.

PAINT FINISHES SHALL BE WARRANTED AS FOLLOWING:
1. All Matthews paint products must be clear coated with MIP super Satin Clear Kit, a two-component 1.24 ready to spray VOC compliant, acrylic polyurethane clear, which was developed to provide extended performance under the toughest conditions. See the MPC194 specifications on page 5.2. Fabricator to provide extended warranty from Matthews to client on completion of project.
2. PPG Corallan fluoropolymer solvent-based paint - 10 years for glass retention as measured in accordance with ASTM D213 using 60 degree readings. 10 years for color retention as measured by ASTM D2244, Section 6.3 using Hunter Lab Color difference.

E. Additional corrections shall include, but not be limited to, the following:
   - Bubbling, crazing, chalking, rusting or other disintegration of the sign face or of the messages or of the edge finish of the sign inserts or panel.
   - Corrosion developing beneath paint surfaces of the support systems (except when it is the result of obvious vandalism or other external damage to the paint surfaces).
   - Corrosion of the fastenings.
   - The signs not remaining true and plumb on their supports or walls.
   - Fading of the colors when matched against a sample of the original color and material.
   - Discoloration of metal finishes.
   - Uneven illumination; dark or hot spots.

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

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

THIS DRAWING REPRESENTS DESIGN INTENT ONLY. FABRICATOR WILL BE RESPONSIBLE TO VERIFY ALL CONDITIONS IN FIELD PRIOR TO SHOP DRAWINGS. REFER TO SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR SIGN TYPES AND LOCATIONS.

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Western Michigan University
Signage Bid Document

Sheet: 4.3

4.3 PERFORMANCE SPECIFICATIONS
PART 2 – QUALITY ASSURANCE

2.01 Quality Assurance
A Materials used for this project shall be new and not reconditioned or re-purposed.
B Use only personnel thoroughly skilled and experienced with the products and method for fabrication and installation of signage specified.
C The owner shall reserve the right to reject any shop drawings, samples or other submittals, as well as any finished product or installation, that cannot meet the standard of quality established. Any such decision will be considered final and not subject to recourse.
D The intent of the contract documents is to provide everything necessary for a complete contract. In the event of conflict or omission, the fabricator shall consult the owner for resolution.
E Materials and hardware not specified, but necessary to the complete functioning of the sign, shall conform to the quality level established.

2.02 Preferred material suppliers
A Products listed below are specified for this project. These products have either been tested on prior projects and have delivered proven results, or have properties unique to this project. Any suggested substitutions must have documentation demonstrating the same level of quality and warranty prior to bidding. Bids are subject to disqualification if unauthorized substitutions are used.
B As listed under specific headings, see drawings for manufacturers of specified materials.

2.03 Sign Types
A Factory silkscreen or mask and spray:
1 On aluminum
B Vinyl graphics (letters or other die-cut shapes):
1 On aluminum
C Aluminum structures:
1 Extrusions, as noted.
2 Aluminum sheet or plate, rolled as necessary.
3 Aluminum hardware.

2.04 Design Requirements
The contractor shall be responsible for the message layout of all directional message panels. Fabricator must produce scale drawings of message layouts for review prior to fabrication. Layout spacing and letter heights to be based on typical layout guideline drawing pages. Any discrepancies or unusual layout issues should be brought to the attention of the designer.

A Type specifications
1 Typefaces: the following typefaces as manufactured by Adobe Systems are used (NO substitutions will be accepted):
   F1 Clearview Hwy 3-w
   F2 The Sans Sembold Plain
   F3 The Sans Bold Plain
2 Size: all letter heights specified are based on the height of a capital letter.
3 Alignment: When setting type or installing cut letters, ensure that letters are perfectly straight and even, with no characters set crooked or “popping up.”
4 Spacing
   a See drawings for samples of letterspacing programs.
   b The proper letter and word spacing is of extreme importance to the desired look of the signs.
   c Drawings were prepared in Adobe Illustrator Cs6, Version 14, with a specified kerning/letterspacing/tracking option for all upper/lower case/italic letters. The general kerning should be set at optical.
5 Conception
   a Contractor is responsible for visual corrections to the typesetting that might be necessary. Any problems in spacing or copy fitting should be brought to the attention of the designer for solution.
6 Visual justification
   1 Display type may align mechanically but not optically. When flushing copy message left, a visual adjustment shall be made compensating for those letter forms that must be extended into the left hand margin to appear flush. For example, S and O must extend beyond the left margin slightly.
7 Arrow sizes
   2 Arrows on all signs shall use the arrow files which will be provided by the owner to the successful bidder. Arrow size will be dimensioned by height as shown in the drawings.

D Artwork
1 The contractor shall be provided electronic AI CS6 files with project artwork and templates. The final output quality of artwork for finished signage shall be the responsibility of the contractor. The owner’s representative reserves the right to reject artwork if it fails to meet the standard of quality established.

2.05 Materials
A Aluminum extrusions: for mounting plates and structural frames shall conform to ASTM B-221, Alloy 6063-T6. Shapes, sizes and weights of members shall be as required for structural stability. All connections of aluminum members shall be heli-arc welded, continuous fillets, ground smooth on all exposed faces, unless specifically detailed otherwise. Aluminum finishes shall be hereinafter specified.
B Aluminum sheet and plate: Type 5052-H-32 alloy aluminum, thickness as indicated. For painted finish, faces shall be etched to give an even satin finish and remove oxidation, then conversion coated to improve paint adhesion and inhibit corrosion. Surface shall be bilt-sanded for a smooth finish, edges filed and ground then immersed in hot alkaline cleaner to remove contamination. For anodized finish, prepare for finish AA-M12-C22-A31. Coating to protect aluminum by uniformly penetrating, filling and sealing surface pores. Coating should provide an invisible barrier to weathering, airborne contaminants, graffiti, industrial air pollution, mildew and salt air. Coating should not yellow, peel or flake. Coating should be guaranteed a minimum of seven years. Sign panels shall be pre-drilled in proper locations before any priming, painting or coating processes.
Aluminum should have consistency of color and finish throughout the project.

C Hangers, brackets and accessories: shall be of the type and size indicated. Where such items are not specifically called for, provide hangers, brackets and accessories as required for the proper execution of the work, as approved by the owner.
PART 2 – QUALITY ASSURANCE

D Finishes for aluminum
All finishes to protect aluminum by uniformly penetrat-
ing, filling, and sealing surface pores. Coating should provide an invisible barrier to weathering, airborne con-
taminants, graffiti, industrial air pollution, mildew, and salt air. Coating should not yellow, peel or flake. Coating should be guaranteed a minimum of seven years. Sign panels shall be pre-drilled in proper locations before any priming, painting or coating processes.

Aluminum should have consistency of color and finish throughout the project.

Aluminum components must be finished in one of the following paint types:

1. Acrylic Polyurethane - Matthews Paint
   Ultraviolet inhibited aliphatic isocyanate acrylic system engineered for extreme color and gloss retention. Degree of gloss is specified in design drawings. One coat 76-734 and 76-735 metal pre-treat at .25 mls DFT or one coat 76-795 spray bond at .15 to .25 mls DFT and one coat Matthews Acrylic Polyurethane 2 mils DFT. As a final step, spray one coat of satin clear Matthews Acrylic Polyurethane 2 mils DFT for a protective top coat.

2. Fluoropolymer - Solvent based - Coraflon ADS - PPG
   Two component fluoropolymer finish with 100% FEVE (fluoropolymer) resin and an aliphatic isocy-
   anate curing agent. Degree of gloss is specified in design drawings. Solvent clean bare aluminum per
   SSSP SP-1. ADS wash primer ADS225/AD5226 @ .03-.05 Mil DFT.

   For components with textured finishes:
   Use single coat of Matthews Acrylic Polyurethane
   (black) with Matthews 28712/SP suede additive for texture. Apply Coraflon topcoat in color specified.

   Paint touch-up process - Coraflon
   1. Do not touch up scratches using paintbrush.
   2. Prep area by sanding with a very fine grit sand
      paper. Mix Coraflon products on site immediately
      before spraying. Spray all locations with scratches
      in one batch. Mix Component A - Coraflon ADS
      and Component B - Coraflon ADS5B (curing agent)
      Spray. Expected pot-life for this product is four
      hours. Apply paint using a PREVAL Spray Gun -
      available at: www.prevalspraygun.com
      3. Spray in an even motion, feathering the edge of
         the spray perimeter
      4. Protect message panels, adjacent areas and
         ground beneath signs from overspray.

   3. Grip-gard® BC basecoat solid, metallic and pearl
      colors - Akzo Nobel
      1. Grip-Gard BC Basecoat is designed specifically to
         meet the color, application and quality demands of
         the Sign and Exhibit Manufacturer. With extremely
         fast tape times and a tremendous range of solid,
         metallic and pearl colors, Grip-Gard BC Basecoat is
         ideal for fast production, particularly on multi-color
         signs. Grip-Gard BC Basecoat must be used in con-
         junction with Grip-Gard BC Clearcoat in order to pro-
         vide protection from the environment.

   All products that are to be sanded: you may have to
   initial sand, but final sanding with #80 to #1200 grit
   paper dry or #800 to #1200 grit wet is recom-
   mended.

   Get-on-wet products: please follow recommendation
   for product in use by consulting the relevant Technical
   Data Sheet.

   Please reference the grip-gard® BC basecoat solid,
   metallic and pearl colors technical data sheet top-
   coats.

   4. Anodizing
      Phosphoric acid anodizing is a chemical and electric
      treatment to aluminum to produce a hard, transparent
      surface that is integral with the base aluminum.
      Aluminum shall be properly cleaned and pretreated
      prior to anodizing process.

   E Pressure sensitive legends

   1 Use “Scotchcal” brand film manufactured by 3M.
   Thickness: .001 inch minimum, .006 inch maximum. Material shall consist of transparent plastic
   having a smooth, flat outer surface embed-
   ded with spherical lens elements. Material shall be
   capable to being processed with compatible screen
   printing inks and clear coats as recommended by the
   sheeting manufacturer. The sheeting shall be pre-
   coated by a treated paper liner that shall be easily
   removable without soaking in water or other solvents.

   2 Use “Scotchcal” brand reflective sheeting manufac-
      tured by 3M. Thickness: .0065 inch minimum, .0095
      inch maximum. Material shall consist of transparent
      plastic having a smooth, flat outer surface embed-
      ded with spherical lens elements. Material shall be
      capable to being processed with compatible screen
      printing inks and clear coats as recommended by the
      sheeting manufacturer. The sheeting shall be pre-
      coated by a treated paper liner that shall be easily
      removable without soaking in water or other solvents.

   3 Shall be guaranteed against delamination for a period of
      5 years.

   F Silkscreen ink
   Formulate epoxy silkscreen inks specifically for surfaces
   on which they will be used. Add catalytic or bonding
   agents as necessary to maximize adherence and vandal
   resistance.

   G Direct Substrate Printed Media

   1 Process: “Direct Substrate Printers” shall provide high-quality, full color images directly onto a vari-
      ety of flat substrates. Substrate examples include
      (but are not limited to) Acrylic, PVC, Polycarbonate,
      Aluminum, Stainless Steel, Wood, etc.

   2 Printer Characteristics: printer to have CMYK, CL
      and W print heads (minimum) with UV curable inks
      and UV LED Lamp to cure ink while printing. Minimum
      reproduction print quality up to 1440 dpi. Flatbed
      printing size for substrates up to (and including) 48”
      x 96”. Printer to accept substrates up to 2” thick.

   3 Capabilities: Printer to have white ink capabilities
      to create under-coat/primer on dark substrates and
      opaque under-coat/primer on clear substrates. Clear
      ink to provide protective over-coating and variable
      sheen finishes including full-surface glossy printing.
      Printer to have mask pattern capability to effectively
      curb visible banding. Printer to have variable drop
      function to produce smooth and natural gradations.

   4 Formulate epoxy silkscreen inks specifically for surfaces
      and printing inks prescribed by each project. The
      printing inks shall be processed with compatible screen
      printing inks and clear coats as recommended by the
      sheeting manufacturer. The sheeting shall be pre-
      coated by a treated paper liner that shall be easily
      removable without soaking in water or other solvents.

   **Importance of this section: This section contains in-
   dividually processed inks and texts that are not
   available to the printer. Non-compliance with this
   section will result in a project that does not meet
   the specifications.**
PART 2 – QUALITY ASSURANCE (continued)

H Concrete
1 All concrete footers are to be poured in place.
2 All concrete footers are to be poured from thoroughly mixed and agitated concrete in order prevent unreasonable voids in the finished casting.
3 Concrete to meet specified “PSI Test” for strength: 3,500 psi minimum.
4 Concrete to meet specified “Slump test” before pouring footing.
5 All footings to extend past the frost line.
6 Any footers or posts for signs will be placed in wet concrete and allowed to fully cure in place before any signage is attached to mounted to it in any way.
7 Finish: All exposed faces of concrete shall receive a finish to match existing, adjacent surfaces.

I Construction Adhesives
1 Acrylic and light aluminum panels - VHB tape
   Very high bond acrylic tape for bonding metals and plastics. VHB can be used on both finished and unfinished surfaces.
   Prepare surface by removing grease, loose contaminants and oxidized spots using an isopropyl alcohol wipe down no more than fifteen minutes prior to adhesion.

2 Heavy gauge aluminum sheets and components - Lord 201 Acrylic adhesive
   Two-part acrylic structural adhesive for bonding metal and plastics. Series 201 can bond both finished and unfinished surfaces.
   Two-part acrylic structural adhesive should only be used in addition to mechanical fasteners.

   Prepare surface by removing grease, loose contaminants and oxidized spots.
   Apply by spraying rolling or brushing on a single surface to produce bond lines 5-10 mils thick and both surfaces to produce 25-50 mils thick.
   Use Lord spec charts to determine correct accelerator process.

J Adhesive tape
Closed-cell foam type with adhesive surfaces on both faces. Thicknesses and widths of tapes shall be as required to safely secure signs to various wall finishes, but in no case shall be less than 1/16 inch thick and 1/2 inch wide.
Adhesive tape shall be equal to Norton Sealant Tape No. 1001 Series.

K Liquid adhesive: Silicone Silastic 732 RTV adhesive/sealant as manufactured by Dow Corning.

L Extruded polycarbonate sheet: Polished on both surfaces. Notched load impact strength of 12 to 16 ft-lbs, per inch per ASTM D-256 Elongation % of —100 per ASTM D-638 Modulus of elasticity (psi) of 345,000, per ASTM D-638 Heat deflection temperature of 270°F @ 264 psi, per ASTM D-648

M Acrylic: cast acrylic sheet, in thicknesses and colors specified. Flame polish exposed edges. Exposed edges must be free of saw marks.

N LED lighting:
1 High efficiency, long life series parallel lighting system
2 Sign housings and frame shall be fully sealed against light leakage.

O Other lighting sources
1 Provide all specific call-outs on shop drawings for lamp type, necessary transformers or ballasts and all necessary electrical drawings for service installation.
2 Locate all transformers on shop drawings. All necessary electrical hardware must be hidden.

P ADA-compliant photopolymer: Sign face: polyamide resin; carrier: polyester, .011 inch thick; photomechanical, monolithic, tactile plaque sign construction. To comply with conflicting ADA regulations and requirements indicated for materials, thickness, finish colors designs, shapes, sizes and details of construction. Sign copy to be in relief 1/32 inch minimum from plaque first surface by manufacturer’s photomechanical stratification processes. Precisely formed, crisp, uniformly opaque and chip-resistant graphics to comply with relevant ADA regulations and the requirements indicated for size, style, spacing, content, position, finishes and colors.

Q Extruded polycarbonate sheet: Polished on both surfaces. Notched load impact strength of 12 to 16 ft-lbs, per inch per ASTM D-256 Elongation % of —100 per ASTM D-638 Modulus of elasticity (psi) of 345,000, per ASTM D-638 Heat deflection temperature of 270°F @ 264 psi, per ASTM D-648

R Acrylic: cast acrylic sheet, in thicknesses and colors specified. Flame polish exposed edges. Exposed edges must be free of saw marks.

S Lexan film: General Electric Lexan Velvet Surface, matte surface 5 mils or .010 inch thick.

2.06 FABRICATION

A Report any discrepancies between drawings, specifications and owner requirements and request direction from owner before proceeding.

B Verify measurements in field as required for work fabricated to fit job conditions. Before starting work, examine adjoining work on which work of this section is in any way dependent for perfect workmanship and fit.

C Make work in ample time not to delay job progress and deliver to job at such time as required for proper coordination, fabricate work true to line and detail with clean, sharply defined profiles. Finish surfaces smooth unless otherwise specified.

D Do cutting, punching, drilling and tapping required for attachment or other work coming in contact with signage work where indicated.

E Changeability: fabricate signs in such a manner that each of the major mounting components may be removed and replaced with similar components by maintenance personnel, but not by unauthorized personnel.

F Construction: fabricate all joints, corners, miters, etc., with work accurately machined, filed and fitted, rigidly framed together at joints and contact points. Carefully match all work to provide a perfect continuity of lines and design, with metal in contact having hairline joints. Make joints of such character and assembly to be strong and as rigid as adjoining sections. Make exposed joints where joint is least conspicuous. Corners and sharp edges shall be slightly eased. All edges shall be finished and free of saw marks.

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

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

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

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

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

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

I Sign panels - general
1 Surface finish: provide surface finishes that are free from lines, motting, ridges, variations in color, orange peel, bubbles, pinholes, motting, crazing, grit and coarse particles. This applies to all methods of fabrication and finishing. Use clear coatings for durability, surface protection, appearance and maintenance.

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12.12.16
PART 2 – QUALITY ASSURANCE

2 Material: sign panel material is stated in the schedules under “Notes” and/or on drawings.

3 Opacity: except for internally illuminated signs, all signs shall have opaque background and opaque graphics.

Note: all colors, especially in the acrylic signs, are to be clear and match references exactly.—Washed out or weak colors will not be accepted.

1 Anchors and fastenings

a Provide anchors and fasteners required to secure work in place.

b Surface finish: do not expose fastenings on surface of sign panels unless specifically noted otherwise. Do not deform, distort or discolor sign face surfaces by attachment of concealed fastenings.

c Corrosion resistance: all fastenings shall be non-corrosive and resistant to oxidation or other corrosive action, of the same composition completely through their cross sections, particularly when used below grade. Use highest quality stainless steel hardware and fasteners.

d Anchors, inserts or fasteners shall be compatible with sign materials, shall not result in galvanic action or chemical interaction of adhesives and shall have demonstrable and sufficient strength for intended use.

e Steel anchors and fastenings for exterior use shall be galvanized in accordance with ASTM A53.

f Stability: fabricate and install signs with fastenings to withstand all actions imposed by use; 30 psf wind perpendicular to surfaces, water, ice, snow loads and similar forces.

g Anchor bolts in concrete shall be cast in place. Manufacturer shall furnish instructions for the setting of anchors and bearing plates. Manufacturer shall ascertain that the items are properly set during the process of the work.

h Color: secure work with fastenings of same color and finish as the components they secure where they are exposed to view, unless noted otherwise.

i Security: All exposed fasteners must be vandal resistant and have vandal-proof “spanner” type slots to be removed only with a special driver head.

K Messages

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

L Surface-applied messages

1 Reflectivity and specular gloss

a Non-reflectorized message: 60 degree specular in accordance with ASTM D532.

b Thickness: as indicated in specifications herein.

c Color and color fastness

2 Exposed surfaces and finishes shall show no discernible color change or chalking when exposed for 1,000 hours in an Atlas Twin Arc Weathermaster Model HCL5K, or equivalent, when tested in accordance with ASTM D822.

3 Interletter spacing: follow examples in drawings. Show sample interletter and interword spacing in sample submissions as specified.

4 Layout: positions for all messages, symbols, arrows, lines, etc., for all signs are clearly indicated on the drawings and shall be complied with.

5 Artwork: contractor shall be responsible for all final reproduction artwork for all messages, symbols, arrows and restroom floor plan drawings.

6 Fabrication:

a Screened messages: execute all silkscreen printing in such a manner that all edges and corners of finished letter forms are true and clean. Letterforms, color areas and lines with rounded corners, edge buildup or bleeding, sawtoothing, etc., will not be accepted. Execute all silkscreening from typesetter's reproduction of the copy specified. Typesetter's reproductions shall be no smaller than 75% of the actual size specified. All above work is included in this contract. Hand cut screens will not be acceptable.

b Die-cut messages: die-cut, pre-spaced, pre-aligned messages (numbers, words, phrases and arrows) from .06 mil flexible film coated with continuous adhesive pressure sensitive backing to meet characteristics specified for surface-applied messages. Execute die-cutting in such a manner that all edges and corners of finished letter forms are true and clean. Letter forms with round positive or negative corners, nicked, cut or ragged edges, etc., will not be acceptable.

M Illuminated signs

1 All means of internal illumination for signs shall be positioned in accordance with the copy layout to provide even light distribution to the copy.

2 Fabricator must apply diffuser materials as necessary to eliminate hot spots created by the illumination (especially with LED signs).

3 All exterior fixtures and those in wet-damp locations shall be fitted with seals and gaskets to form a weatherproof, watertight assembly and shall be of rust resistant construction and finish.

4 LED illumination:

a Provide all step-down transformers and connection devices necessary for electrician to connect to service.

b Hide any external connections or J-boxes within the structure of the sign.

6 Provide emergency shut-off switches on exterior of sign, per UL regulations.

7 Provide photo-cell device hidden near the sign face to automatically switch the sign on and off.

8 Encase all electrical wiring in flexible metal conduit or metal raceways. Hide raceways from view. Tie into BAS where applicable.

This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings.

Refer to sign location plan and message schedule for sign types and locations.
PART 3 – EXECUTION

PERFORMANCE SPECIFICATIONS

4.8

3.01 Inspection
A Examine the substrates and conditions under which
the signs are to be installed and notify the owner in
writing of conditions detrimental to the proper and
timely completion of the work. Do not proceed with
the work until unsatisfactory conditions have been
corrected.
B An Electrical permit will need to be acquired from the
State of Michigan.

3.02 Installation
A Install sign units and components with concealed fas-
teners, unless otherwise shown. Refer to detail drawings
for general method. Verify each surface in filed to deter-
mine specific, appropriate hardware.
Drawings in this package may not indicate any below-
ground or in-wall structural tie-ins or connections that
may be necessary to assure stable and secure installa-
tion of signs. Sign fabricator is responsible for deter-
mining where such connections are necessary and for
coordinating with related trades to make them.
B Locations: refer to drawings for approximate locations.
Any discrepancies or apparent deviations from drawing
locations because of different site conditions shall be
brought to the attention of the owner for solution. The
owner must be present for field placement of sign.
It shall be the responsibility of the Contractor to
determine the location of underground structures and
utilities by the use of test pit excavation prior to exca-
vation operations.
Test pits shall be of the size, depth and location as
approved by the Engineer. Each pit shall be tamp-
backfilled.
Test pit excavation will be measured on the basis of the
volume of material actually removed from within
the limits specified. Tamped backfill will not be mea-
sured but shall be included in the price bid for test pit
excavation.
Price provided shall include all excavation, tamped
backfill, labor, tools, equipment and incidentals neces-
sary to complete the installation of each sign.

C For ground-mounted signs, provide whatever replace-
ment concrete, pavers, bricks, etc. are necessary to
match adjacent surfaces exactly. Seams should be par-
allel or perpendicular to sign face and be symmetrical
around post(s).
D Note that this institution experiences heavy public use.
Challenging environmental conditions such as inclement
weather, theft and vandalism will be routine problems.
Signs must be securely mounted. Contractor is respon-
sible for suggesting alternative fabrication or installation
methods if required to prevent theft or vandalism.
E Install signs to be level, plumb and at the proper height.
Cooperate with other trades for installation of sign units.
F Clean and polish, remove excess adhesive.
G Fixture installation
1 Install lighting fixtures with seals and gaskets.
Conceal all wiring in or within the construction.
2 Lamp installation
a Do not install lamps for permanent use until oper-
ating voltage is verified and established.
b Install lamps in accordance with lamp and fixture
manufacturer’s instructions.
3 Ballast installation
a Install ballasts at factory unless specifically
indicated otherwise. Mount on rubber grommets
or sound isolating details to reduce noise transmis-
sion.

3.03 Cleanup
A Periodically (at least daily) and upon completion of
the installation, remove all waste, dirt, wrappings
and excess materials, tools and equipment, and care-
fully and thoroughly clean all surfaces to the satisfac-
tion of the owner.

3.04 Property Damage
A Protect all adjacent surfaces from damage and pay the
cost of repairing any damage to the property caused
by delivery or installation of materials. In all cases,
match existing surfaces.
Section 6  Appendix I

Product specifications
The LumiSheet is designed to emit a bright, even output of light across the entire surface of the panel. Unlike traditional light panels, which have the light source mounted on the exterior of the LGP (Light Guide Plate), LumiSheet integrates high brightness LEDs and heat sink into our exclusive 3D V-cutting LGP which makes it possible to produce “frameless”, rectangular or special shaped LED light panels for various application needs.

- AVAILABLE IN CUSTOM SIZES & SHAPES
- CAN BE USED IN "FRAMELESS" DESIGNS
- 3D V-CUTTING TECHNOLOGY
- HIGH BRIGHTNESS (3000 - 10,000 LUX)
- INTEGRATED HEAT SINK TECHNOLOGY TO MAXIMIZE LED LIFESPAN (70,000 HOURS)
- LOW POWER CONSUMPTION (50% LESS THAN FLUORESCENT)
- ENERGY SAVING AND MAINTENANCE FREE
- SUPERIOR CONSISTENT LIGHT QUALITY
- ADVANCED 3-YEAR WARRANTY

**Features**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Electrical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>12 VDC</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>4.0 Watts/ft (Standard)</td>
</tr>
<tr>
<td>Wire Size</td>
<td>20 AWG 2 wire</td>
</tr>
<tr>
<td>Wiring</td>
<td>Each panel must have direct connection to power supply. Do not wire panels in series</td>
</tr>
<tr>
<td>Connector</td>
<td>2.1/5.5mm barrel plug, Standard 5' (1500mm), Optional 10' (3000mm)</td>
</tr>
<tr>
<td>Certification</td>
<td>UL / cUL (E346146) listed, UL/cUL (E362079) recognized components for signage</td>
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</tbody>
</table>

**Physical**

<table>
<thead>
<tr>
<th>Color Temperature</th>
<th>3000K</th>
<th>3500K</th>
<th>4000K</th>
<th>5000K</th>
<th>6000K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting</td>
<td>Wall mounted with screws, U-channel, or mirror clips</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-30 °C to +40 °C (104 °F)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td>Dry location only</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness</td>
<td>5/16&quot; (8mm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum Size</td>
<td>2&quot;W x 2&quot;L (50mm x 50mm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Size</td>
<td>56&quot;W x 118&quot;L (1499mm x 2997mm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>1.95 lbs /sq. ft. (9.54 kg/sq. M)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Order Information**

<table>
<thead>
<tr>
<th>Series #</th>
<th>Length x Width (inch/mm)*</th>
<th>Color Temp</th>
<th>Illuminated Face</th>
<th>Cable Length</th>
<th>LED Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>LLP 12</td>
<td>8mm 12V</td>
<td>CS</td>
<td>Single Face*</td>
<td>WL15</td>
<td>L1</td>
</tr>
<tr>
<td>LLP 12</td>
<td>8mm 12V</td>
<td>SFI</td>
<td>Double Face</td>
<td>WL30</td>
<td>L2</td>
</tr>
<tr>
<td>LLP 12</td>
<td>8mm 12V</td>
<td>DFI</td>
<td>Single Face*</td>
<td>L1</td>
<td>S1</td>
</tr>
<tr>
<td>LLP 12</td>
<td>8mm 12V</td>
<td>S1</td>
<td>Double Face</td>
<td>S1</td>
<td>S2</td>
</tr>
<tr>
<td>LLP 12</td>
<td>8mm 12V</td>
<td>S4</td>
<td>All 4 edges</td>
<td>S1</td>
<td>S4</td>
</tr>
</tbody>
</table>

*Acrylic and other manufacturing components and methods may contribute to an expansion or contraction of sizes based on environmental or tooling factors. Please allow a minimum of ± 1/8" (3.175mm) to compensate for any changes in the outside dimensions of this product.

*DLC strives to maintain tight control over specification factors. However specifications are subject to change on rare occasion and may not be reflected in the catalogue.

**Features**

- AVAILABLE IN CUSTOM SIZES & SHAPES
- CAN BE USED IN "FRAMELESS" DESIGNS
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**Typical Power Cord Exits**

**Standard 1**
- Power cord exits from short side (edge) corner (standard)

**Standard 2**
- Power cord exits from the middle of each long side for Lumisheet longer than 6 ft

**Option 1**
- Power cord exits from the back side of Lumisheet

**Option 2**
- Recessed (notched) power cord exits

---

**LumiSheet - Surface Mounting Options**

**Option 1:** Screw mounting with pre-drilled holes

**Option 2:** Mounting with Standoffs

**Option 3:** Mounting with 2 clips

---

**DLC Luminisheet**

**Luminisheet (Specifications by Size)**

<table>
<thead>
<tr>
<th>Size (inch)</th>
<th>Size (mm)</th>
<th>LED Strip</th>
<th>*Average Surface Brightness (Lx)</th>
<th>Power Consumption (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 x 6</td>
<td>150 x 150</td>
<td>1 side</td>
<td>6,000</td>
<td>2.0</td>
</tr>
<tr>
<td>12 x 12</td>
<td>300 x 300</td>
<td>1 side</td>
<td>3,000</td>
<td>4.0</td>
</tr>
<tr>
<td>24 x 24</td>
<td>600 x 600</td>
<td>2 sides</td>
<td>2,000</td>
<td>15.0</td>
</tr>
<tr>
<td>36 x 36</td>
<td>900 x 900</td>
<td>2 sides</td>
<td>2,500</td>
<td>15.0</td>
</tr>
<tr>
<td>48 x 48</td>
<td>1200 x 1200</td>
<td>2 sides</td>
<td>2,200</td>
<td>10.0</td>
</tr>
<tr>
<td>48 x 96</td>
<td>1200 x 2400</td>
<td>2 sides</td>
<td>2,200</td>
<td>60.0</td>
</tr>
<tr>
<td>Ø 6</td>
<td>Ø 152</td>
<td>all around</td>
<td>19,000</td>
<td>5.8</td>
</tr>
<tr>
<td>Ø 12</td>
<td>Ø 300</td>
<td>all around</td>
<td>11,000</td>
<td>11.2</td>
</tr>
<tr>
<td>Ø 24</td>
<td>Ø 600</td>
<td>all around</td>
<td>5,400</td>
<td>24.0</td>
</tr>
<tr>
<td>Ø 36</td>
<td>Ø 900</td>
<td>all around</td>
<td>4,500</td>
<td>36.0</td>
</tr>
<tr>
<td>Ø 48</td>
<td>Ø 1200</td>
<td>all around</td>
<td>3,500</td>
<td>48.0</td>
</tr>
</tbody>
</table>

*Brightness data was measured Jan, 2015.*

---

**Typical Surface Brightness Measure**

- 24” x 48” LumiSheet with 5300K LEDs lit along 2 long edges (5300K)
- 24” x 12” panel with 5300K LEDs lit along 2 edges (5300K)
- 48” x 19” LumiSheet with 5300K LEDs lit along 2 long edges (5300K)
- 4600 Lux
- 4560 Lux
- 3200 Lux
- 3500 Lux
- 2640 Lux
- 2035 Lux

*Brightness readings are for reference only. Actual reading may differ for different LEDs, LGPs or even different meters.*

---

**LumiSheet (Specifications by Size)**

<table>
<thead>
<tr>
<th>Size (inch)</th>
<th>Size (mm)</th>
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<th>*Average Surface Brightness (Lx)</th>
<th>Power Consumption (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 x 6</td>
<td>150 x 150</td>
<td>1 side</td>
<td>6,000</td>
<td>2.0</td>
</tr>
<tr>
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<td>300 x 300</td>
<td>1 side</td>
<td>3,000</td>
<td>4.0</td>
</tr>
<tr>
<td>24 x 24</td>
<td>600 x 600</td>
<td>2 sides</td>
<td>2,000</td>
<td>15.0</td>
</tr>
<tr>
<td>36 x 36</td>
<td>900 x 900</td>
<td>2 sides</td>
<td>2,500</td>
<td>15.0</td>
</tr>
<tr>
<td>48 x 48</td>
<td>1200 x 1200</td>
<td>2 sides</td>
<td>2,200</td>
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<td>48 x 96</td>
<td>1200 x 2400</td>
<td>2 sides</td>
<td>2,200</td>
<td>60.0</td>
</tr>
<tr>
<td>Ø 6</td>
<td>Ø 152</td>
<td>all around</td>
<td>19,000</td>
<td>5.8</td>
</tr>
<tr>
<td>Ø 12</td>
<td>Ø 300</td>
<td>all around</td>
<td>11,000</td>
<td>11.2</td>
</tr>
<tr>
<td>Ø 24</td>
<td>Ø 600</td>
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<td>5,400</td>
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</tr>
<tr>
<td>Ø 36</td>
<td>Ø 900</td>
<td>all around</td>
<td>4,500</td>
<td>36.0</td>
</tr>
<tr>
<td>Ø 48</td>
<td>Ø 1200</td>
<td>all around</td>
<td>3,500</td>
<td>48.0</td>
</tr>
</tbody>
</table>

*Brightness data was measured Jan, 2015.*

---

**LumiSheet - Surface Mounting Options (Mounting accessories are sold separately)**

**Option 1:** Screw mounting with pre-drilled holes

**Option 2:** Mounting with Standoffs

**Option 3:** Mounting with 2 clips

---

*Holes can be drilled at factory according to drawings supplied.*
### Display Specification

<table>
<thead>
<tr>
<th>Series</th>
<th>Mega HD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>P1677Real</td>
</tr>
<tr>
<td>Color</td>
<td>Full Color</td>
</tr>
<tr>
<td>Pixel Matrix</td>
<td>140 x 140</td>
</tr>
<tr>
<td>Resolution</td>
<td>16mm</td>
</tr>
<tr>
<td>Cabinet Dimension</td>
<td>7ft 6in x 7ft 6in</td>
</tr>
<tr>
<td>Display Dimension</td>
<td>7ft 4in x 7ft 4in</td>
</tr>
<tr>
<td>Total Weight (lbs)</td>
<td>506</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Front Module Access</td>
</tr>
<tr>
<td>Minimum Character Height</td>
<td>4.4 inch</td>
</tr>
<tr>
<td>Maximum Character Height</td>
<td>87.19 inch</td>
</tr>
</tbody>
</table>

### LED / Pixel Specification

- **LED Pixel Pitch:** 16mm
- **Brightness:** 13,000 NITS
- **Viewing Angle:** 160H/120V
- **LEDs Per Pixel:** 1R, 1G, 1B
- **AC Power Required:**
  - Regular Operating Watts: 1355
  - Total Boot Up Watts: 4516
  - Regular Operating Amps: 11.3
  - Boot Up Amps: 37.6
  - AC Power Required: 120

### Term of Purchase

- **FOB:** Los Angeles
- **Warranty:** 5 Year Parts Warranty
- **Deposit:** 50% Deposit
- **Balance Due:** 50% Prior to Shipment
- **Delivery:** < 4 Weeks

### Accessories / Communication

- **Digital Temperature Probe:** Included
- **Auto Dimming Sensor:** Included
- **Wireless Communication:** Normal Range

### Electrical Requirements (per face)

- **Regular Operating Watts:** 1355
- **Total Boot Up Watts:** 4516
- **Regular Operating Amps:** 11.3
- **Boot Up Amps:** 37.6
- **AC Power Required:** 120

### Quotation

- **Quotation Number:** 150-0711-2
- **Prepared For:**
- **Prepared By:** Daniel
- **Quote Valid:**
- **Quotation Date:** 7/11/2016
- **Project Name:**
- **Project No.:** 42WMU249001
- **Prepared For:**
- **Prepared By:** Daniel
- **Quote Valid:**
- **Quotation Date:** 7/31/2016

### Quotation Summary

- **Includes Free Custom Graphics Package:**
  - 36 Custom Designed Static Graphics (3 per month for 1 year)

### Quotation Details

- **Digital Temperature Probe Included**
- **Auto Dimming Sensor Included**
- **Wireless Communication Normal Range**

**Note:**
- ST30 & ST33 Use the Daktronics Galaxy model.
- All other signs with a digital LED screen use the Mega Sign Premier model.
- For additional information, contact:
  - **Mega Sign, Inc.**
  - Dan Soriano
daniel@megasigninc.com
  - 213.222.4194
- **Daktronics**
  - Ryan Stratton
  ryan.stratton@daktronics.com
  586.850.2113

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In this age of technology, digital LED signs are becoming more and more paramount to the success of business advertising. With our MEGA LED DISPLAY, you have the ability to display sharp text, images, and videos to engage and capture the attention of onlookers. Designed and engineered in our California facilities, you can expect the highest quality out of the MEGA LED DISPLAY: weatherproof structure, aluminum body, energy efficiency, conformal coated power supplies, and only the top quality LEDS for vibrant colors and extended lifeline.

**Model# P1677REAL**

- **Pixel Matrix**: 140 x 140 px
- **Module Matrix**: 7 x 7
- **Frame Size**: 7ft 6in x 7ft 6in
- **Power**: Ground Lug Connection
- **Data Input**: Output to Slave
- **Computer Network**: Optional
- **Wire or Wireless**: Optional
- **Temperature Sensor**: Optional
- **Front**: 7.5" x 7.5"
- **Top**: 10.5" x 7.5"
- **Back**: 21.0" x 7.5"
- **Frame Material**: Aluminum
- **Frame Size**: 7ft 6in x 7ft 6in

*Picture may be different than actual product! This is a reference guide only!*

**Title**: Electrical

**Model**: 1355 Max Watts - 11.1 Amps at 120 Volts

**Date**: 7 / 11 / 2016

**Drawn by**: Philip K.
As noted, THIS DRAWING REPRESENTS DESIGN INTENT ONLY. FABRICATOR WILL BE RESPONSIBLE TO VERIFY ALL CONDITIONS IN FIELD PRIOR TO SHOP DRAWINGS.

REFER TO SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR SIGN TYPES AND LOCATIONS.

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Western Michigan University
Signage Bid Document

12.12.16 14WMU249001

**Designed and Built in the USA**

Our experienced fabricators, designers, and management team take great pride in delivering quality in every display we build in our 65,000 square foot factory in Commerce, CA.

**Built to Last**

With oversized rain hoods on vents, built in surge suppression, EMI filters, front & rear waterproof LED modules and data connectors, LINE-X coating, solid state control systems, waterproof plugs, and DELTA power supplies that are 40% more heat tolerant, your sign is going to look and perform just like the day you bought it for years to come.

**Five Year Parts and Factory Labor Warranty**

We stand behind everything we build. That's why we offer an industry-leading 5-year parts + factory labor warranty with an optional on-site labor warranty.

**Tons of Customizations**

Need something tiny and simple? Big and robust? We've got you covered. MEGA offers a huge array of display sizes, shapes and resolutions to perfectly match your needs.

**Price Match Guarantee**

We offer a price match guarantee. One of our competitors quoted you a better price? Send it to us and we'll match it.

*The price match guarantee is limited to products manufactured in the United States that are UL / MET certified. The product must be comparable in size, pitch, brightness, and cabinet material with a 5 year manufacturer’s warranty. MEGA SIGN Inc. does not price match any products that are manufactured outside of the United States, constructed with a steel cabinet, refurbished or used, quoted with discounts, rebates, incentives, promotions, or 3rd party marketplace prices. The price match guarantee is only valid for pre-production quotes. If these conditions are not met, MEGA reserves the right to waive the price match guarantee.*

**Toll Free Support - for Life**

We take care of our customers, and we’ll never leave you hanging out to dry. When you buy a MEGA LED product, you’re automatically entitled to support for the entire life of that sign. For free.

**Built to Last**

With oversized rain hoods on vents, built in surge suppression, EMI filters, front & rear waterproof LED modules and data connectors, LINE-X coating, solid state control systems, waterproof plugs, and DELTA power supplies that are 40% more heat tolerant, your sign is going to look and perform just like the day you bought it for years to come.

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INTRODUCTION TO PREMIER

Bright, bold, and built to last, PREMIER commands attention—which means more visitors and more customers.

OUR PRODUCTS

**Versa LED DISPLAY**

Communicate to your prospects as they pass by with VERSA, our scrolling indoor / outdoor display that’s easy to work with, built to last and priced just right.

- Thin & Lightweight
- Low Energy Consumption
- Indoor / Outdoor
- 1 year Warranty

**Premier LED DISPLAY**

Our premium outdoor display, crafted with the perfect blend of rugged durability, unparalleled flexibility and visual precision.

- High Definition
- Capable of Supporting Any-size
- Outdoor
- 5 year Warranty

**SMD LED DISPLAY**

Our ultra high-resolution indoor display, designed and built with one goal in mind—to make your organization or event shine.

- Ultra High Resolution
- Live Streaming Video
- Indoor / Outdoor
- 3 year Warranty

THIS DRAWING REPRESENTS DESIGN INTENT ONLY. FABRICATOR WILL BE RESPONSIBLE TO VERIFY ALL CONDITIONS IN FIELD PRIOR TO SHOP DRAWINGS. REFER TO SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR SIGN TYPES AND LOCATIONS.
SPECIAL FEATURES — THE MEGA DIFFERENCE

You can’t build a quality LED sign without quality components. Let us show you how our attention to detail translates to the real world and helps bring you more business.

- High Quality LEDs
  We use better LED chips which means MEGA LED signs degrade slower than usual for long lasting brightness, consume less power for more efficiency, and have a wide viewing angle for longer read times.

- High Contrast Modules
  Our modules faces are made from the highest quality polycarbonate, and are meant to resist warping, cracking and fading in even the harshest weather conditions with a dark matte black finish that creates a better contrast for sharper images.

- NEW EXCLUSIVE MEGA TECHNOLOGY -
  - Fully Encapsulated in Silicone
    Our modules are IP67 rated in the front and IP55 rated in the back for complete protection from dust, water, and humidity.

- NEW EXCLUSIVE MEGA TECHNOLOGY -
  - Water Proof IP 65 Connectors
    Water proof data and power connectors to increase connectivity and reliability even in the wettest conditions.

- NEW EXCLUSIVE MEGA TECHNOLOGY -
  - Upgradable Modules
    With Premier you’ll never be stuck wishing you would have gone with a higher resolution. Whatever pixel pitch you choose now, you can always upgrade later. Just purchase the new panels, pop off the old ones, and you’re good to go.

- NEW EXCLUSIVE MEGA TECHNOLOGY -
  - Fully Encapsulated in Silicone
    Our modules are IP67 rated in the front and IP55 rated in the back for complete protection from dust, water, and humidity.

- Quick Release Modules
  Four Quick release 90° turns with an allen key to replace our modules, that’s it.

- All Aluminum Cabinet
  Aluminum is lighter than iron cabinets, and it resists corrosion much better too—keeping your signs safe and sound through the years.

- Line-X Coating
  We’re not done yet — LINE-X coatings seal in our signs to keep all the weather outside, where it belongs.

- Conformal Coated Power Supplies
  Conformal coating extends the life of our power supplies, keeping our signs lit longer than our competitors. Rated for high heat tolerance up to 140°.

- Oversized Rain Hoods
  With 12” tall oversized rain hoods, rain water doesn’t stand a chance to penetrate our cabinets even in strong winds.

- Surge Suppression & EMI Filters
  Built in surge suppressors will protect all the sensitive electronic components while EMI filters will reduce any potential electromagnetic noise for a trouble-free display.

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VIEWING DISTANCE
The distance between pixels is called pitch. Our higher resolution signs use PHYSICAL PITCH resolution measurements, meaning the pixels on the display are an accurate representation of the pixels in your original source image. However our 20mm pitch uses even array 4 LED distribution to produce 10mm virtual pixels.

The end result is a display with high pixel density, with text, videos and animations with incredibly vivid color depth and brightness. Pixel pitch is very important for how well your sign performs—check below for the ideal pitch for each viewing distance.

MODULE COMPARISON
Here’s a more detailed guide to help you pick the best PREMIER display for your needs:

<table>
<thead>
<tr>
<th>Pixel Composition</th>
<th>Brightness</th>
<th>Letter Size</th>
<th>Best Use</th>
<th>Minimum Viewing Distance</th>
<th>Optional Viewing Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Red, 1 Green, 1 Blue</td>
<td>&gt; 9,006 NITS</td>
<td>4.5&quot; Minimum</td>
<td>All Type of Contents</td>
<td>25 + feet</td>
<td>100 +</td>
</tr>
<tr>
<td>1 Red, 1 Green, 1 Blue</td>
<td>&gt; 13,106 NITS</td>
<td>5&quot; Minimum</td>
<td>Pictures, Animation, Video</td>
<td>50 + feet</td>
<td>120 +</td>
</tr>
</tbody>
</table>

SOFTWARE — COMMAND CENTER OF YOUR SIGN
LED sign software is extremely important, which is why we designed ours to make your life as simple as possible. Now, anyone can program an LED sign without spending hours on the phone with tech support.

- XM Player Express (for VERSA, PREMIER, SMD)
Create eye-popping text, animations, graphics and videos for your sign in just a few (simple) steps. The software is built to be easy and fun to use, so you can get back to your business ASAP.

- Nova Star Cloud (for PREMIER, SMD)
- Total Control: Program and display new content from anywhere. Set up in-depth scheduling based on times, days, and even regions across your whole fleet of LEDs.
- 24/7 Monitoring: System diagnostics, computer status and sign functionality are all monitored around the clock—and available at your fingertips.
- Rich Multimedia Support: Video, audio, flash, Office documents, weather forecasts, countdowns, streaming media, websites...you get it. The possibilities are almost limitless.
- Quad layered Security: Nova Cloud locks down your data tighter than Fort Knox using file fingerprints, HTTPS/FTL/SSL encryption, terminal registration and lockdown, and DVI encryption.
- It’s Just Easy: Nova Cloud makes it insanely simple for you to get started right away without getting bogged down in cumbersome computer programs. Stop wasting time and start advertising!

Premier LED screen
UNDER THE HOOD

Ready to dive in and see what makes a MEGA LED display?

- **Solid State Control System**
  - Rocksolid performance and top-notch stability.

- **LED Module**
  - Top of the line LEDs means vivid colors, maximum brightness and durability.

- **Aluminum Cabinet**
  - Lightweight and long-lasting, corrosion- and heat-resistant to boot.

- **Confined Control Power Supplies**
  - Shielded from condensation and breakdowns, lasts longer than the other guys.

- **Oversized Rain Hoods**
  - 12” cooling fan covers prevent wind-driven rain from entering the cabinet.

- **Grounding Lug**
  - IP67 rated power plug and data plug.

- **Signal Out to Slave Unit**
  - IP67 rated data plug.

- **Temperature & Auto Dimming Sensor (Optional)**
  - Reads and displays outdoor temperature with auto-dimming capabilities.

- **Continuous Aluminum Mounting Angle**
  - 1/4” thick aluminum angle for easy installation.

- **Exhaust Fans**
  - Thermally controlled, keeps your sign cool and breezy in the heat of summer.

- **IP67 Rated Wi-Fi Plug**
  - Communication port to keep your sign connected at all times.

- **Temperature / Auto Dimming Probe**
  - IP67 rated data plug.

- **Oversized Rain Hoods**
  - 12” cooling fan covers prevent wind-driven rain from entering the cabinet.

- **Product Safety Testing & Certification**
  - Met Lab Certified - Compliant with UL Specifications (UL 48, UL 8750, UL 1433, CSA - C22.2 NO.2017)

- **Process Flow of MEGA LED Frame**

**Western Michigan University**

**Signage Bid Document**

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MEGA OPTIONAL FEATURES

- Manage in your LED Display

Communication Options
- With many choices for communication we have the right option to suit your needs.
  - Wi-Fi Up 1000ft
  - 3G Cellular Network
  - Cat-5 Ethernet Network
  - Fiber Optics

Auto Dimming Feature
- With auto dimming capabilities your sign will dim automatically at night reducing power draw to save you money.

Temperature Sensor
- High quality temperature sensor for displaying accurate readings on your display.

Remote Diagnostic Capabilities
- Remote diagnostic capabilities let you know everything about your displays at anytime and anywhere by continuously monitoring your signs health through the web and iOS or Android smartphone applications.

Nova Cloud-Based Software
- Powerful Nova Cloud software provides centralized content publishing, remote monitoring, remote settings, playlist logging, multi-media support and multi-layered security for peace of mind.

INCREASE YOUR BUSINESS STRENGTH

What are the secrets to growing your business? Developing the right strategy in the right market at the right time.

What the Small Business Administration Says about Electronic Message Centers (LED Signs)

Electronic Message Centers are an investment in your business and provide the best and most cost-effective forms of paid advertising.

"With an electronic message display, the owners typically see an increase in business of 15% to 150%. Using the smaller number, consider the following example."

A small business generating $1,000 a day in revenue adds an electronic message center. The business soon increases by 15%, adding another $150 per day in total revenue. That translates into an additional $3,975 a week in revenue, or $204,600.00 per year.

TRUSTED BY BRANDS EVERYWHERE

From NASA to Toyota, MEGA’s LED signs are shining bright all across the country. We’re extremely proud of our diverse group of clientele—here are just a few of the wonderful companies we’ve had the privilege to work with.

MegaSignInc.com
Note: ST30 & ST33 Use the Daktronics Galaxy model.

All other signs with a digital LED screen use the Mega Sign Premier model.

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586.850.2113

---

**Galaxy GS6 LED Screen**

The GS6 is the best full-feature, high-quality Galaxy series yet. This product provides users a display that runs outstanding graphics and animations using the best contrast in the industry. The 15.85 mm pixel pitch is the tightest resolution 16 mm LED display in the industry.

### 15.85 MM TECHNICAL SPECIFICATIONS

**Character Height:**
4.4" (7 pixel font)

**Line Spacing:**
15.85 mm (0.62")

**Pixel Configuration:**
- Monochrome: 1 red or 1 amber
- RGB: 1 red, 1 green, 1 blue

**Maximum Brightness:**
- Monochrome red: 4,500 nits
- Monochrome amber: 6,000 nits
- RGB: 12,000 nits

**Monochrome Color Capability:**
4,096 shades of red or amber

**Full Color Capability:**
- RGB: 281 trillion colors

**Optimal Viewing Angle:**
- 160 degrees horizontal x 90 degrees vertical

**Readable Viewing Angle:**
- 160 degrees horizontal x 90 degrees vertical

**Min Viewing Distance:**
- 37'

### PRODUCT FEATURES

- All sealed components
- Quick connects
- Mounting clips
- High-contrast louvers
- Redundant module signal
- Large sections for fast installation
- Front ventilation on displays less than seven feet tall
- No spreader beam required for displays greater than seven feet tall
- Same module size and cabinet size for all pixel pitches
- Single-step module removal
- Shallow cabinet depth
- Narrow cabinet borders

### MODEL NUMBER GUIDE

<table>
<thead>
<tr>
<th>GS6</th>
<th>100</th>
<th>250</th>
<th>15.85</th>
<th>RGB</th>
<th>SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-face</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two-view</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GS6 SERIES SPECIFICATIONS

**Estimated LED Lifetime:**
- 100,000+ hours

**Contrast Enhancement:**
- Non-reflective black louvers and module face grooves disperse light

**Message Capability:**
- Text, graphics, logos, basic animation, video clips, multiple font styles, and sizes

**Control Software:**
- Venus Control Suite

**Power:**
- 120, 120/240 VAC Single Phase

**Display Dimming:**
- 64 levels [Automatic, scheduled or manual control]

**Communication Options:**
- Ethernet Fiber Optic, Ethernet Bridge Radio, Remote Cellular, Ethernet CAT5

**Operating Temperature:**
- -40°F to 120°F with 99% RH non-condensing

**Compliance Information:**
- UL and cUL Listed, UL-Energy Verified, FCC compliance

**Warranty Coverage:**
- 5 years

**Galaxy Product Support:**
- Parts support for 10 years

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**Display Configurations**

- Single-face (SF)
- Two-view (2V)

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**APPENDIX**

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Western Michigan University
Signage Bid Document
12.12.16

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Phone 888.325.7446, 605.692.0200, Fax 605.692.0381
www.daktronics.com, email commercial@daktronics.com

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GALAXY® GS6 15.85 MM

<table>
<thead>
<tr>
<th>Legend</th>
<th>Cabinet Dimensions (mm)</th>
<th>Cabinet Dimensions (in.)</th>
<th>Cabinet Square Foot (Square Meters)</th>
<th>Active Area Square Foot (Square Meters)</th>
<th>Cabinet Weight (Kilograms)</th>
<th>Character Weight (Kilograms)</th>
<th>Character Height (Inch)</th>
<th>Maximum Watt/Dim (VA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20x50</td>
<td>191.5 x 225 x 5.5&quot;</td>
<td>7.5 x 8.8 x 0.2&quot;</td>
<td>46.4 (1.8)</td>
<td>37.7 (1.5)</td>
<td>62 (2.7)</td>
<td>199 (8.9)</td>
<td>7/90</td>
<td>225 (9.2)</td>
</tr>
<tr>
<td>20x70</td>
<td>229.5 x 250 x 5.5&quot;</td>
<td>9.1 x 9.8 x 0.2&quot;</td>
<td>60.0 (2.4)</td>
<td>50.0 (1.9)</td>
<td>80 (3.5)</td>
<td>229 (10.3)</td>
<td>7/110</td>
<td>285 (11.5)</td>
</tr>
<tr>
<td>20x70</td>
<td>229.5 x 250 x 5.5&quot;</td>
<td>9.1 x 9.8 x 0.2&quot;</td>
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<td>229 (10.3)</td>
<td>7/110</td>
<td>285 (11.5)</td>
</tr>
<tr>
<td>20x90</td>
<td>267.5 x 300 x 5.5&quot;</td>
<td>10.6 x 10.8 x 0.2&quot;</td>
<td>78.9 (3.1)</td>
<td>68.0 (2.8)</td>
<td>100 (4.2)</td>
<td>252 (11.3)</td>
<td>7/130</td>
<td>340 (13.5)</td>
</tr>
<tr>
<td>20x120</td>
<td>333.5 x 400 x 5.5&quot;</td>
<td>13.2 x 13.8 x 0.2&quot;</td>
<td>137.0 (5.3)</td>
<td>116.0 (4.5)</td>
<td>175 (7.2)</td>
<td>314 (14.1)</td>
<td>7/180</td>
<td>515 (19.9)</td>
</tr>
<tr>
<td>20x180</td>
<td>500.0 x 600 x 5.5&quot;</td>
<td>19.6 x 23.8 x 0.2&quot;</td>
<td>254.0 (9.9)</td>
<td>212.0 (8.4)</td>
<td>350 (15.2)</td>
<td>530 (23.5)</td>
<td>7/240</td>
<td>920 (35.9)</td>
</tr>
<tr>
<td>20x240</td>
<td>799.5 x 800 x 5.5&quot;</td>
<td>31.7 x 31.8 x 0.2&quot;</td>
<td>427.7 (16.8)</td>
<td>353.8 (13.8)</td>
<td>550 (24.4)</td>
<td>815 (35.9)</td>
<td>7/360</td>
<td>1615 (63.9)</td>
</tr>
</tbody>
</table>

**Columns**

<table>
<thead>
<tr>
<th>Legend</th>
<th>Cabinet Dimensions (mm)</th>
<th>Cabinet Dimensions (in.)</th>
<th>Cabinet Square Foot (Square Meters)</th>
<th>Active Area Square Foot (Square Meters)</th>
<th>Cabinet Weight (Kilograms)</th>
<th>Character Weight (Kilograms)</th>
<th>Character Height (Inch)</th>
<th>Maximum Watt/Dim (VA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20x25</td>
<td>191.5 x 225 x 5.5&quot;</td>
<td>7.5 x 8.8 x 0.2&quot;</td>
<td>46.4 (1.8)</td>
<td>37.7 (1.5)</td>
<td>62 (2.7)</td>
<td>199 (8.9)</td>
<td>7/90</td>
<td>225 (9.2)</td>
</tr>
<tr>
<td>20x50</td>
<td>229.5 x 250 x 5.5&quot;</td>
<td>9.1 x 9.8 x 0.2&quot;</td>
<td>60.0 (2.4)</td>
<td>50.0 (1.9)</td>
<td>80 (3.5)</td>
<td>229 (10.3)</td>
<td>7/110</td>
<td>285 (11.5)</td>
</tr>
<tr>
<td>20x70</td>
<td>229.5 x 250 x 5.5&quot;</td>
<td>9.1 x 9.8 x 0.2&quot;</td>
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<tr>
<td>20x90</td>
<td>267.5 x 300 x 5.5&quot;</td>
<td>10.6 x 10.8 x 0.2&quot;</td>
<td>78.9 (3.1)</td>
<td>68.0 (2.8)</td>
<td>100 (4.2)</td>
<td>252 (11.3)</td>
<td>7/130</td>
<td>340 (13.5)</td>
</tr>
<tr>
<td>20x120</td>
<td>333.5 x 400 x 5.5&quot;</td>
<td>13.2 x 13.8 x 0.2&quot;</td>
<td>137.0 (5.3)</td>
<td>116.0 (4.5)</td>
<td>175 (7.2)</td>
<td>314 (14.1)</td>
<td>7/180</td>
<td>515 (19.9)</td>
</tr>
<tr>
<td>20x180</td>
<td>500.0 x 600 x 5.5&quot;</td>
<td>19.6 x 23.8 x 0.2&quot;</td>
<td>254.0 (9.9)</td>
<td>212.0 (8.4)</td>
<td>350 (15.2)</td>
<td>530 (23.5)</td>
<td>7/240</td>
<td>920 (35.9)</td>
</tr>
<tr>
<td>20x240</td>
<td>799.5 x 800 x 5.5&quot;</td>
<td>31.7 x 31.8 x 0.2&quot;</td>
<td>427.7 (16.8)</td>
<td>353.8 (13.8)</td>
<td>550 (24.4)</td>
<td>815 (35.9)</td>
<td>7/360</td>
<td>1615 (63.9)</td>
</tr>
</tbody>
</table>

**Ventilated Cabinet**

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Galaxy GS6 LED Screen

**Pixels High (AAA)** | **Pixels Wide (BBB)** | **Pixel Spacing (CC)**
---|---|---
40 | 100 | 18.81mm
24 | 60 | 26.42mm

**Top View**

- **Light Sensor (Do not block)**
- **Exhaust Area**
- **Active Area Height**
- **Interface Area**

**Front View**

- **Light Sensor (Do not block)**
- **Exhaust Area**
- **Active Area Width**
- **Interface Area**

**Right View**

- **See Structural Note #4 and Install Note #6**

**Install Notes**

1. To preserve the structural integrity of the display cabinet, the 90° angle between the cabinet and the lift eyes must be maintained - using a spreader beam is suggested. All eyebolts must be used when lifting.
2. Lift eyes to assist with display installation. Lift eyes may not be used for permanent installation. Lift eyes may be removed.
3. Mechanical and signal connections occur external to the display.
4. The clip angle for mounting. Clip angles can be adjusted vertically 1\(-\frac{3}{16}\)" as needed during installation. Clip angles can be welded or bolted to stringer.
5. Daktronics is not responsible for the mounting hardware or the integrity of the mounting structure.
6. Daktronics is not responsible for the main electrical disconnect. See Power Ratings above.
7. See Dwg-03097583 for signal & mtg details

**Submitter Approval**

- **Company:**
- **Signed:**
- **Title:**
- **Approved:**
- **Approved as noted:**
- **Approved as noted & resubmit:**

**Date:**

Galaxy GS6 LED Screen

**Features:**

- **Power Ratings:**
  - **Technology:**
  - **Color:**
  - **Watts:**
  - **Line 1 Amps:**
  - **Line 2 Amps:**
  - **Domestic:**
    - 120/240VAC 1PH 60Hz (3 wires + GND)
  - **International:**
    - 240VAC 1PH 50Hz (2 wires + GND)
    - 240VAC 1PH 60Hz (3 wires + GND)

**Ventilation Requirements**

1. The display relies on ventilation to function properly. Intakes, located at the front of the display, must be able to draw in air at a temperature no greater than 120°F.
2. In order to ensure ambient temperature airflow is maintained, no portion of the ventilation openings along the front of the display may be covered or obstructed in any way.

**Design Notes**

- Structural Rating:
  - **Design Pressure:**
    - **P**: 100 PSF (ASD)
  - Standards/Code:
    - IBC 2009/ASCE7-05
    - IBC 2012/ASCE7-10
  - All clip angles must be used to mount the display.
- Power Rating per single face: For sizing electrical service, max req'd shown.
  - **Technology:**
    - **Color:**
      - Red
      - Amber
      - RGB
  - **Max kW:**
    - 340
    - 511
  - **Max VA:**
    - 2.84
    - 4.26
  - **Line 1:**
    - 120/240VAC 1PH 60Hz (3 wires + GND)
    - Domestic
    - 240VAC 1PH 50Hz (2 wires + GND)
    - International
    - Special Order

**Dimensions**

- **Feet and Inches (Millimeters):**
  - **Overall Size:**
    - 2' 6-15/16" (786mm)
    - 5' 5-3/8" (1661mm)
  - **Active Area Size:**
    - 2' 15/16" (634mm)
    - 5' 2-3/8" (1585mm)
  - **Overall Height:**
    - 5' 2-3/8" (1585mm)
  - **Active Area Height:**
    - 6-1/8" (156mm)
    - 9-1/8" (231mm)

**Painted Satisfaction**

**Semi-Gloss Black**

**Structural Note #3**

- The display must be grounded to comply with all applicable codes and standards.

**Installation Note #4**

- The display must be installed in accordance with all applicable codes and standards.

**Copyright**

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INTRODUCING THE NEW VENUS® CONTROL SUITE

Operators at any level can access this software any time, anywhere, on any device.

It’s easy to focus on just the hardware when you sell an LED sign. But sharing the software’s selling points further convinces your customers to buy. The control solution we offer combines functionality with a great user experience that is innovative and yet easy to use.

Even before Installation, Customers Begin Content Creation

As soon as we create your customers’ accounts, they can access the software and start creating content. Using the free, professionally curated content that comes with the display will speed up and enhance their ad campaigns.

Your Customers Want More?

We tailor Venus Control Suite for your customers’ needs. To do this we have different packages available to choose from. All of the features explained are part of the Prime software package, which comes with each display purchase. If your customers are interested in more, they can upgrade to the Pro package, which adds features such as:

External Data Feeds
Full real-time information, such as weather forecasts, news, headlines, and sports scores from any Internet provided data source and display it on your LED message center.

Reporting (proof of play)
Access reports showing what was played on your display, how many times, and when. Compare the report to your sales numbers and promote product lift.

For more details on packages, talk to your local sales representative.

Free Video Tutorials

Daktronics provides your customers with a set of free tutorials. They’re a great way to learn the software or to use as a refresher course. Each video tutorial demonstrates how to perform a specific task in the software. Learn how to configure displays, create memorable presentations, schedule playlists, and more. Find the complete set of tutorials at daktronics.com/venuslearning

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REPORTING (PROOF OF PLAY)
Access reports showing what was played on your display, how many times, and when. Compare the report to your sales numbers and promote product lift.

For more details on packages, talk to your local sales representative.

Importable File Types

Video file types: .avi, .mpg, .mp4, .mov
Image file types: .png, .jpeg, .gif, .jpg, .tif, .tiff, .psd
Data feed types: Time, Temp, RSS*, Atom*, .XML*
*Only on data capable displays.

Supported Mobile Browsers

- iOS Safari®
- Android® Chrome®

Supported Desktop Browsers

- Microsoft® Internet Explorer® v11 and newer
- Microsoft® Edge
- Google® Chrome®
- Mozilla Firefox®

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External Data Feeds
Pull in real-time information, such as weather forecasts, news, headlines, and sports scores from any Internet provided data source and display it on your LED message center.

Reporting (proof of play)
Access reports showing what was played on your display, how many times, and when. Compare the report to your sales numbers and promote product lift.

For more details on packages, talk to your local sales representative.
The Galaxy® GS6 displays need an Internet connection to reach out to the cloud based Venus control system for content and schedule updates. Daktronics offers several Ethernet-based communication options that can be added to a customer's local area network for Internet access.

**COMMUNICATION OPTIONS**

**COMMUNICATION OPTIONS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Maximum Distance</th>
<th>Reliability</th>
<th>Noise Immunity</th>
<th>Data Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHERNET FIBER OPTIC</td>
<td>Provides a wireless connection to Local Area Network on site. Use when fiber Ethernet cannot be pulled and the distance from the Ethernet network router to the display is less than 250 ft (76.2 m). This option requires direct CAT5, fiber-optic signal converters and 62.5µm multimode fiber-optic cables.</td>
<td>250 ft</td>
<td>Good</td>
<td>Good</td>
<td>Best</td>
</tr>
<tr>
<td>ETHERNET BRIDGE RADIO</td>
<td>Provides a wireless connection to Local Area Network on site. Use when fiber Ethernet cannot be pulled and the distance from the Ethernet network router to the display is less than 250 ft (76.2 m). This option requires direct CAT5 wire.</td>
<td>250 ft</td>
<td>Good</td>
<td>Good</td>
<td>Best</td>
</tr>
<tr>
<td>ETHERNET SWITCH</td>
<td>Use when multiple displays are on a single Ethernet connection from the above options. Displays must be within 25 ft. This requires each display to have different IP addresses.</td>
<td>25 ft</td>
<td>Good</td>
<td>Good</td>
<td>Best</td>
</tr>
<tr>
<td>REMOTE CELLULAR</td>
<td>Provides an Internet connection without a Local Network. Avoid customer’s network by having the display connect directly via cellular. Use when there is not a Local Area Network or Internet connection available on site. Note: Each display must be located in a reliable cellular signal area. This connection does require a cellular service.</td>
<td>Unlimited</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
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</table>
### Galaxy GS6 LED Screen

#### Galaxy GS6 Features

- **High Resolution**: A true 13.85 millimeter pixel spacing allows more pixels per module resulting in higher resolution.

- **All Sealed Components**: Modules, power supplies, controller, power term panel, fan, and all connections fully sealed.

- **Quick Connections**: Offer plug-and-play capability. Along with an external junction box for easy power connection.

- **Single-Step Module Removal**: A single turn of the wrench removes the multi-point attached module.

- **Mounting Clips**: Slotted clip angles and multiple locations allows flexibility in mounting.

- **Signal Redundancy**: Image data is sent to individual LED modules from multiple directions. If a signal path fails, the module continues to operate from the additional signal.

- **Front Ventilation**: The installer doesn’t need to deal with special ventilation requirements. It’s built in with displays up to 7 feet tall.

- **Improved, Clean Cabinet Appearance**: Narrow cabinet borders. Shallow 5-inch cabinet depth on displays up to 7 feet tall.

- **Series Technical Specifications**:
  - Estimated LED Lifetime: 100,000+ hours
  - Contrast Enhancement: Non-reflective black louvers and module face grooves disperse light
  - Message Capability: Text, graphics, logos, basic animation, video clips, data integration, multiple font styles, and sizes
  - Control Software: Venus® Control Suite
  - Power: 120, 120/240 VAC single phase
  - Display Drawing: Ad levels (automatic, scheduled or manual control)
  - Communication Options: Ethernet Fiber Optic, Ethernet Bridge Radio, Remote Cellular, Ethernet CAT5
  - Operating Temperature: -40°F to 120°F with 99% RH non-condensing
  - Compliance Information: UL and cUL Listed, UL-Energy Verified, FCC compliance
  - Warranty Coverage: 5 Years
  - Product Support: Parts support for 10 years, see page 6 for details

#### Galaxy GS6 Product Design

- **Feature Set**
  - All sealed components
  - Quick connect
  - Mounting clips
  - High contrast louvers
  - Redundant module signal
  - Large sections for fast installation

- **Signal Redundancy**
  - Image data is sent to individual LED modules from multiple directions. If a signal path fails, the module continues to operate from the additional signal.

- **Front Ventilation**
  - The installer doesn’t need to deal with special ventilation requirements. It’s built in with displays up to 7 feet tall.

- **All Sealed Components**
  - Modules, power supplies, controller, power term panel, fan, and all connections fully sealed.

- **Quick Connections**
  - Offer plug-and-play capability. Along with an external junction box for easy power connection.

- **Single-Step Module Removal**
  - A single turn of the wrench removes the multi-point attached module.

- **Mounting Clips**
  - Slotted clip angles and multiple locations allows flexibility in mounting.

- **Higher Resolution**
  - A true 13.85 millimeter pixel spacing allows more pixels per module resulting in higher resolution.

This drawing represents design intent only. Fabricator will be responsible to verify all conditions in field prior to shop drawings. Refer to sign location plan and message schedule for sign types and locations.
Campus Wayfinding - New Place Names ("Nomenclature")

- Campus Names
- Ring Roads
- Street Names
- Visitor Parking
- Main Pedestrian Pathways
- Landmarks