INTRODUCTION

PURPOSE OF THIS MANUAL
NYU Langone Health is currently undergoing an ambitious Campus Transformation Initiative to reshape the campus. As part of this initiative, the Real Estate Development and Facilities (RED&F) department has taken measures to improve an individual's journey to the facilities and ease navigation through its interior.

This Standards Manual further develops and documents the policy, strategy and design standards of the NYU Langone Health Wayfinding and Communications Master Plan. The purpose of the Manual is to provide graphic and technical specifications for the integrated wayfinding and communications system to be consistently implemented throughout the hospital’s facilities. Expected language, design, and placement of the system’s components is imperative to building a trusted and reliable wayfinding and communications system. Both the Master Plan and Standards Manual documents should be referenced by relevant consultants and staff members when implementing the system.

This Manual is a living, working document which will evolve and be adapted to the environmental branding and wayfinding communication needs of NYU Langone Health. In conjunction with the Manual, RED+F will be the arbiter of any future revisions, variations, and interpretations on project-specific customization of the signage.

SCOPE OF THIS MANUAL
The integrated system outlined in the Manual includes signage, digital tools, printed communications, and human interactions to improve navigation. It also outlines the framework for the development of the Centralized Database, a single, reliable and dedicated information source that is the foundation of the entire system, and which will enable the integrated system to grow and change, as needed, in real time.

CHAPTER 1
This chapter outlines overarching graphic standards that extend to all printed and digital communications, as well as signage, for reference by all users of the Manual.

CHAPTER 2
This chapter reflects the Wayfinding Strategy developed for the Master Plan. It provides an overview of the overall integrated system including the sign type family, digital components, and communications materials. Guidelines for programming sign types are also outlined, for reference by all users of the Manual.

CHAPTERS 3-4
Construction intent documentation for all custom exterior and interior sign types are detailed in Chapters 3 and 4 for bidding purposes. Layouts for exterior signage related to the NYU Langone Health, Main Campus, Main Lobby Entrance located at 550 First Avenue have been included as guidelines for all similar signage at other facilities, for reference by all design consultants.

CHAPTER 5
Construction intent documentation for all modular system sign types have been detailed in this chapter for bidding purposes. This chapter includes the majority of the necessary sign types for all facilities. Relevant pages should be pulled for all future projects by RED&F and/or design consultants. Additional sign types required for unique conditions should be based upon the aesthetic outlined in the Manual.

CHAPTER 6
Construction intent documentation for all donor sign types have been detailed in this chapter, as well as guidelines for specifying sign types based upon tiered gift values. This chapter should be referenced by Development, RED&F, and all design consultants.

CHAPTER 7
Hardware recommendations for all digital sign types are detailed in this chapter. Graphic guidelines for digital displays have also been outlined in this chapter, for reference by RED&F, IT, and all design consultants.

CHAPTER 8
This chapter provides detailed guidelines on visitor and patient wayfinding communications. Site plans and the user interface are outlined per page type for the wayfinding website and infonode touchscreen. Design layouts for printed directions are also provided in this chapter. The family of NYU Langone Health maps and their printed formats are detailed. Also included are guidelines for creating a consistent “welcome experience” across facilities for reference by Communications, the Print Shop, RED&F, IT, and all design consultants.

CHAPTER 9
This chapter outlines the maintenance processes, solution framework, and system requirements and recommendations for the Centralized Database, for reference by IT, RED&F, and specifically the Wayfinding Administrator.

APPENDIX
Specific documentation including technical specifications for signage bidding purposes, hardware specifications (cut sheets) for digital sign types, and the IT Project Charter for developing the Centralize Database have been included as reference tools.

DVD CONTENTS
Necessary digital files to implement the integrated system have been included on a supplementary DVD.
ACKNOWLEDGEMENTS

The team would like to thank the large number of people who have contributed to the creation of this manual, including:

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NBBJ

Citizen Research & Design
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<td>VHB</td>
<td>Very High Bond</td>
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8.1.2 Graphic Guidelines Per Page Types
8.1.7 Graphic Guidelines for Printed Directions
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8.2 Infodnode Touchscreen Interface
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- 8.4.1 Welcome Experience Overview
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- 9.1.2 Maintenance Process Goals
- 9.1.3 What Triggers a Change

#### 9.2 Solution Framework
- 9.2.1 Tasks to Complete
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- 9.3.1 Requirements & Recommendations
- 9.3.2 Detailed Proposed Functionality
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- Digital Screen Animations
- Touchscreen PSDs
- Website PSDs
- Map Artwork Files
- Navigational Guide InDesign
- Hardware Cutsheets
- Infornorm Sign Type Paper Insert Templates
CHAPTER 1
DESIGN STANDARDS

1.1 Color and Material Finishes
1.2 Typography
1.3 Symbols
1.4 Logos
1.5 Standard Proportions and Character Spacing
## NYU Langone Health Standard Wayfinding and Communications Color Palette

<table>
<thead>
<tr>
<th>Color Match</th>
<th>Paint Details</th>
<th>Pantone</th>
<th>CMYK (Main Campus Map) (Pocket Guide)</th>
<th>Hexadecimal (RGB)</th>
<th>CMYK (Main Campus Map) (Pylon)</th>
<th>Hexadecimal (RGB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYULMC Purple</td>
<td>To match PMS 2597</td>
<td>2597</td>
<td>C78 M94 Y0 K0</td>
<td>56068C</td>
<td>R92 G9 B135</td>
<td></td>
</tr>
<tr>
<td>NYULMC Gray</td>
<td>To match PMS Cool Gray 10</td>
<td>Cool Gray 10</td>
<td>n/a</td>
<td>63666A</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Pathway Blue</td>
<td>Benjamin Moore Classic Colors 776 “Santa Monica Blue”</td>
<td>n/a</td>
<td>C70 M9 Y0 K53</td>
<td>44789D</td>
<td>R73 G135 B166</td>
<td></td>
</tr>
<tr>
<td>Pathway Green</td>
<td>Benjamin Moore Color Preview 2036-20 776 “Irish Moss”</td>
<td>n/a</td>
<td>C79 M0 Y89 K22</td>
<td>5BA563</td>
<td>R72 G169 B102</td>
<td></td>
</tr>
<tr>
<td>Pathway Yellow</td>
<td>Sherwin Williams 6664 “Marigold”</td>
<td>n/a</td>
<td>C0 M48 Y90 K10</td>
<td>F9A01B</td>
<td>R235 G148 B27</td>
<td></td>
</tr>
<tr>
<td>Standard Neutral</td>
<td>Benjamin Moore Classic Colors 1616 “Stormy Sky”</td>
<td>n/a</td>
<td>C17 M24 Y25 K49</td>
<td>FCFAED</td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>

### COLOR STANDARDS

The colors specified must be the same every time they are used so that people associate them with the brand Wayfinding and Communications System. All signage, print, and digital media that are a part of the system must be produced so that the colors match those specified on this page.
### Paint

<table>
<thead>
<tr>
<th>CODE</th>
<th>TO MATCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>(Variable Pathway Colors) Blue: Benjamin Moore Classic Colors 776 “Santa Monica Blue” Green: Benjamin Moore Color Preview 2036-20 “Irish Moss” Yellow: Sherwin Williams 6664 “Marigold”</td>
</tr>
<tr>
<td>F2</td>
<td>Standard Neutral: Benjamin Moore Classic Colors 1616 “Stormy Sky”</td>
</tr>
<tr>
<td>F3</td>
<td>Black: Benjamin Moore Classic Colors Interior / Exterior Ready Mix Black</td>
</tr>
<tr>
<td>F4</td>
<td>White: Benjamin Moore Classic Colors Interior Ready Mix Decorators White</td>
</tr>
<tr>
<td>F5</td>
<td>NYULMC Purple: Pantone 2597</td>
</tr>
<tr>
<td>F6</td>
<td>NYULMC Gray: Pantone Cool Gray 10</td>
</tr>
<tr>
<td>F7</td>
<td>Medium Gray: Benjamin Moore Classic Colors 1607 “Englewood Cliffs”</td>
</tr>
<tr>
<td>F8</td>
<td>Light Gray: Benjamin Moore Classic Colors 1614 “Delray Gray”</td>
</tr>
<tr>
<td>F9</td>
<td>Regulatory Red: Akzo Nobel Color Map 407D4</td>
</tr>
<tr>
<td>F10</td>
<td>Regulatory Green: Akzo Nobel Color Map 450D6</td>
</tr>
<tr>
<td>F11</td>
<td>Lithochrome Tint TBD (High-Contrast)</td>
</tr>
<tr>
<td>F12</td>
<td>Lithochrome Tint TBD (Low-Contrast)</td>
</tr>
<tr>
<td>F15</td>
<td>Metallic NYULMC Purple: Akzo Nobel Color Map 346F6</td>
</tr>
<tr>
<td>F16</td>
<td>Metallic NYULMC Gray: Akzo Nobel Color Map 358E4</td>
</tr>
<tr>
<td>F17</td>
<td>Metallic Light Gray: Akzo Nobel Color Map 359C2</td>
</tr>
<tr>
<td>F18</td>
<td>Metallic Medium Gray: Akzo Nobel Color Map 359F3</td>
</tr>
<tr>
<td>F20</td>
<td>Regulatory Yellow: Benjamin Moore 2021-30 “Sunshine”</td>
</tr>
<tr>
<td>F21</td>
<td>Red: PMS 201</td>
</tr>
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</table>

### Materials

<table>
<thead>
<tr>
<th>CODE</th>
<th>MATERIAL / FINISH</th>
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</thead>
<tbody>
<tr>
<td>F30</td>
<td>Infonorm® Non-Glare Acrylic Glass</td>
</tr>
<tr>
<td>F31</td>
<td>Clear Anodized Aluminum w/ No. 4 Horizontal Brushed Finish</td>
</tr>
<tr>
<td>F32</td>
<td>Stainless Steel w/ No. 4 Horizontal Grain Finish</td>
</tr>
<tr>
<td>F33</td>
<td>Peralight® Item No. 81-1026 Photoluminescent Matte White Rigid PVC Sheet</td>
</tr>
<tr>
<td>F34</td>
<td>Translucent White Acrylic</td>
</tr>
<tr>
<td>F35</td>
<td>Frosted Clear Acrylic: Evonik Cryo LLC Acrylite White (Item No. WM31SC); Back-ptd.: F4</td>
</tr>
<tr>
<td>F37</td>
<td>Graphic Panel: Alto Powder-Coated Aluminum Panel w/ UV and Graffiti resistant surface, as manufactured by Systeme Huntington Inc. <a href="http://www.systemeinc.com">www.systemeinc.com</a></td>
</tr>
<tr>
<td>F38</td>
<td>Lightjet digital print laminated second-surface to clear non-glare acrylic</td>
</tr>
<tr>
<td>F40a</td>
<td>Small Format Paper Insert: Mowhawk Superfine, Smooth Finish 100# Text White w/ CMYK digital output</td>
</tr>
<tr>
<td>F40b</td>
<td>Large Format Paper Insert: Q799JA HP Premium Instant-Dry Gloss Photo Paper w/ CMYK digital output and single-sided lamination, background of 20% PMS Warm Gray 1</td>
</tr>
<tr>
<td>F41</td>
<td>Clear Matte PVC</td>
</tr>
<tr>
<td>F42</td>
<td>Stainless Steel w/ Non-Directional Fine Grain Finish</td>
</tr>
<tr>
<td>F43</td>
<td>Soft Silicone Rubber</td>
</tr>
<tr>
<td>F44</td>
<td>Inter-Lam: Clear Non-glare Acrylic with laminated digital print sandwiched</td>
</tr>
<tr>
<td>F45</td>
<td>Photopolymer on Aluminum Sheet</td>
</tr>
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</table>

### Vinyl

<table>
<thead>
<tr>
<th>CODE</th>
<th>TO MATCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>F53</td>
<td>Black: 3M Scotchcal Opaque Vinyl 7725-22 “Matte Black”</td>
</tr>
<tr>
<td>F54</td>
<td>White: 3M Scotchcal Opaque Vinyl 7725-20 “Matte White”</td>
</tr>
<tr>
<td>F55</td>
<td>NYULMC Purple: Oracal Translucent Vinyl 8800-040 “Violet”</td>
</tr>
<tr>
<td>F56</td>
<td>NYULMC Gray: 3M Scotchcal Opaque Vinyl 7725-41 “Dark Gray”</td>
</tr>
<tr>
<td>F60</td>
<td>Etched: 3M Scotchcal Translucent Vinyl 7725SE-314 “Dusted Crystal”</td>
</tr>
<tr>
<td>F61</td>
<td>Blue: Scotchcal Opaque Vinyl Series 7725 Custom color to match Benjamin Moore Classic Colors 776 “Santa Monica Blue”</td>
</tr>
<tr>
<td>F62</td>
<td>Green: Scotchcal Opaque Vinyl Series 7725 Custom color to match Benjamin Moore Color Preview 2036-20 776 “Irish Moss”</td>
</tr>
<tr>
<td>F63</td>
<td>Yellow: Scotchcal Opaque Vinyl Series 7725 Custom color to match Sherwin Williams 6664 “Marigold”</td>
</tr>
<tr>
<td>F64</td>
<td>Silver: 3M Scotchcal Opaque Vinyl 7725-120 “Satin Aluminum”</td>
</tr>
<tr>
<td>F65</td>
<td>Photoluminescent Vinyl: Photoluminescent Allureglow USA PV-40 Vinyl</td>
</tr>
</tbody>
</table>
Digital Communications Colors

<table>
<thead>
<tr>
<th>COLOR</th>
<th>HEXADECIMAL (RGB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYULMC Purple</td>
<td>56068C</td>
</tr>
<tr>
<td>NYULMC Gray</td>
<td>63666A</td>
</tr>
<tr>
<td>Blue</td>
<td>44789D</td>
</tr>
<tr>
<td>Green</td>
<td>5BA563</td>
</tr>
<tr>
<td>Yellow</td>
<td>F9A01B</td>
</tr>
<tr>
<td>Standard Neutral</td>
<td>FCFAED</td>
</tr>
<tr>
<td>Gray 1</td>
<td>D9DADC</td>
</tr>
<tr>
<td>Gray 2</td>
<td>CBCCCE</td>
</tr>
<tr>
<td>Gray 3</td>
<td>89898A</td>
</tr>
<tr>
<td>Gray 4</td>
<td>646568</td>
</tr>
<tr>
<td>Gray 5</td>
<td>1A1818</td>
</tr>
</tbody>
</table>

**NOTES**
The colors specified must be the same every time they are used so that people associate them with the brand Wayfinding and Communications System. All digital media that is a part of the system must be produced so that the colors match those specified on this page.
## Printed Communications Colors

<table>
<thead>
<tr>
<th>COLOR MATCH</th>
<th>PANTONE</th>
<th>CMYK MAIN CAMPUS MAP (POCKET GUIDE)</th>
<th>RGB MAIN CAMPUS MAP (PYLONS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYULMC Purple</td>
<td>Pantone 2597</td>
<td>C78 M94 Y0 K0</td>
<td>R92 G9 B135</td>
</tr>
<tr>
<td>NYULMC Gray</td>
<td>Pantone Cool Gray 10</td>
<td>C40 M30 Y20 K66</td>
<td>n/a</td>
</tr>
<tr>
<td>Pathway Blue</td>
<td>n/a</td>
<td>C70 M9 Y0 K53</td>
<td>R73 G135 B166</td>
</tr>
<tr>
<td>Pathway Green</td>
<td>n/a</td>
<td>C79 M0 Y89 K22</td>
<td>R72 G169 B102</td>
</tr>
<tr>
<td>Pathway Yellow</td>
<td>n/a</td>
<td>C0 M48 Y90 K10</td>
<td>R235 G148 B27</td>
</tr>
<tr>
<td>Light Blue (River)</td>
<td>n/a</td>
<td>C17 M0 Y0 K2</td>
<td>R217 G234 B245</td>
</tr>
<tr>
<td>Light Green (Park)</td>
<td>n/a</td>
<td>C15 M0 Y3 K1</td>
<td>R214 G232 B204</td>
</tr>
<tr>
<td>Beige (Building)</td>
<td>n/a</td>
<td>C10 M9 Y13 K3</td>
<td>R211 G206 B197</td>
</tr>
<tr>
<td>Light Gray (Block)</td>
<td>n/a</td>
<td>C3 M2 Y2 K2</td>
<td>R241 G241 B241</td>
</tr>
</tbody>
</table>

**NOTES**

The colors specified must be the same every time they are used so that people associate them with the brand Wayfinding and Communications System. All printed communications that are a part of the system must be produced so that the colors match those specified on this page.
ABCDEF GH IJKLM NOPQRST UVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

T1 - Adobe Systems Utopia Standard Regular / Optical

Patient
+25 Letter Spacing / Optical
For Type Sizes 1” and Greater

Patient
+10 Letter Spacing / Optical
For Type Sizes 5/16” - 1”

PATIENT
+50 Letter Spacing / Optical
For Donor Signs Set in All Caps

Patient
0 Letter Spacing / Optical
For Type Sizes Less Than 5/16”

NOTES
Kerning, letter spacing, and word spacing of all typography is to match the examples in this Standards Manual, which was produced in Adobe Illustrator CS6, Version 16.0.4.

Kerning should be set to “Optical” and letter spacing should be set to the numeric value(s) noted at left. Sign contractors and other users shall compare their resulting kerning/tracking with the examples provided and adjust accordingly.

Sign contractors and/or other users are responsible for purchasing specified typefaces.
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

T2 - Adobe Systems Utopia Standard Italic / Optical

Patient

+20 Letter Spacing / Optical
For Type Sizes 1" and Greater

+10 Letter Spacing / Optical
For Type Sizes 5/16" - 1"

Patient

0 Letter Spacing / Optical
For Type Sizes Less Than 5/16"

NOTES
Kerning, letter spacing, and word spacing of all typography is to match the examples in this Standards Manual, which was produced in Adobe Illustrator CS6, Version 16.0.4.
Kerning should be set to “Optical” and letter spacing should be set to the numeric value(s) noted at left. Sign contractors and other users shall compare their resulting kerning/tracking with the examples provided and adjust accordingly.
Sign contractors and/or other users are responsible for purchasing specified typefaces.
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

T3 - Adobe Systems Univers 55 Roman / Optical

Patient

+0 Letter Spacing / Optical
For All Conditions
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

T4 - Adobe Systems Univers 55 Oblique / Optical

Patient

+0 Letter Spacing / Optical
For All Conditions

NOTES
Kerning, letter spacing, and word spacing of all typography is to match the examples in this Standards Manual, which was produced in Adobe Illustrator CS6, Version 16.0.4.

Kerning should be set to “Optical” and letter spacing should be set to the numeric value(s) noted at left. Sign contractors and other users shall compare their resulting kerning/tracking with the examples provided and adjust accordingly.

Sign contractors and/or other users are responsible for purchasing specified typefaces.
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefgijklmnopqrstuvwxyz
1234567890

T5 - Adobe Systems Univers 65 Bold / Optical

Patient
+0 Letter Spacing / Optical
For Type Sizes Less Than 1"

PATIENT
+30 Letter Spacing / Optical
For Type Sizes 1" and Greater

NOTES
Kerning, letter spacing, and word spacing of all typography is to match the examples in this Standards Manual, which was produced in Adobe Illustrator CS6, Version 16.0.4.
Kerning should be set to "Optical" and letter spacing should be set to the numeric value(s) noted at left. Sign contractors and other users shall compare their resulting kerning/tracking with the examples provided and adjust accordingly.
Sign contractors and/or other users are responsible for purchasing specified typefaces.
АБВГДЕЁЖЗЙКЛМНОПРСТУФХЦЩЬЫЪЯ
абвгдeёжзйклмнopстуфхцшщъыъя
1234567890

Пациент

+0 Letter Spacing / Optical
For All Conditions
TYPOGRAPHY

T7 - Univers LT Cyrillic 55 Oblique / Optical

NOTES
Kerning, letter spacing, and word spacing of all typography is to match the examples in this Standards Manual, which was produced in Adobe Illustrator CS6, Version 16.0.4.

Kerning should be set to “Optical” and letter spacing should be set to the numeric value(s) noted at left. Sign contractors and other users shall compare their resulting kerning/tracking with the examples provided and adjust accordingly.

Sign contractors and/or other users are responsible for purchasing specified typefaces.

Patient

Пациент
NOTES
Kerning, letter spacing, and word spacing of all typography is to match the examples in this Standards Manual, which was produced in Adobe Illustrator CS6, Version 16.0.4.
Kerning should be set to “Optical” and letter spacing should be set to the numeric value(s) noted at left. Sign contractors and other users shall compare their resulting kerning/tracking with the examples provided and adjust accordingly.
Sign contractors and/or other users are responsible for purchasing specified typefaces.

T8 - Univers LT Cyrillic 65 Bold / Optical

Пациент

+0 Letter Spacing / Optical
For All Conditions
主要院區地圖

T9 - MHei HK Medium / Optical
+50 Letter Spacing
For All Conditions

NOTES
Kerning, letter spacing, and word spacing of all typography is to match the examples in this Standards Manual, which was produced in Adobe Illustrator CS6, Version 16.0.4.
Kerning should be set to "Optical" and letter spacing should be set to the numeric value(s) noted at left. Sign contractors and other users shall compare their resulting kerning/tracking with the examples provided and adjust accordingly.
Sign contractors and/or other users are responsible for purchasing specified typefaces.

NYU LANGONE HEALTH
Wayfinding and Communications Standards Manual
Patient

+10 Letter Spacing / Optical
For All Conditions
Map of the campus head}

**T11 - Adobe Hebrew Regular / Optical**
+25 Letter Spacing

---

**NOTES**

Kerning, letter spacing, and word spacing of all typography is to match the examples in this Standards Manual, which was produced in Adobe Illustrator CS6, Version 16.0.4.

Kerning should be set to “Optical” and letter spacing should be set to the numeric value(s) noted at left. Sign contractors and other users shall compare their resulting kerning/tracking with the examples provided and adjust accordingly.

Sign contractors and/or other users are responsible for purchasing specified typefaces.
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

T12 - Adobe Systems Univers 45 Light / Optical

Patient

+0 Letter Spacing / Optical
For All Conditions
Patient

+0 Letter Spacing / Optical
For All Conditions

T13 - Adobe Systems Univers 57 Condensed / Optical

NOTES
Kerning, letter spacing, and word spacing of all typography is to match the examples in this Standards Manual, which was produced in Adobe Illustrator CS6, Version 16.0.4.
Kerning should be set to “Optical” and letter spacing should be set to the numeric value(s) noted at left. Sign contractors and other users shall compare their resulting kerning/tracking with the examples provided and adjust accordingly.
Sign contractors and/or other users are responsible for purchasing specified typefaces.
Patient

+0 Letter Spacing / Optical
For All Conditions
NYU LANGONE HEALTH
Wayfinding and Communications
Standards Manual

TYPOGRAPHY
T15 - MUNA REGULAR

NOTES
Kerning, letter spacing, and word spacing of all typography is to match the examples in this Standards Manual, which was produced in Adobe Illustrator CS6, Version 16.0.4.

Kerning should be set to “Optical” and letter spacing should be set to the numeric value(s) noted at left. Sign contractors and other users shall compare their resulting kerning/tracking with the examples provided and adjust accordingly.

Sign contractors and/or other users are responsible for purchasing specified typefaces.

اللغة العربية

T15 - Muna Regular / Optical
+25 Letter Spacing
NYU Langone Health
Wayfinding and Communications Standards Manual

SYMBOLS

NOTES
For digital applications use symbols on sheet 1.3.5.
Vector artwork files for all symbols are located on the Standards Manual DVD included with this Manual.
No Smoking
No Food or Drink
No Cellphones

No Open Flames

Fire Extinguisher

Arrow

Chevron

Left Bent Arrow

Right Bent Arrow

Left U-Turn Arrow

Right U-Turn Arrow

Star

SYMBOLS

AMENITIES

NOTES

Vector artwork files for all symbols are located on the Standards Manual DVD included with this Manual.
This symbol set is derived from the Hablamos Juntos tested set of symbols and has been specifically linked to referent destinations within NYU Langone Health. The symbols should only be used for the destinations listed here.

Vector artwork files for all symbols are located on the Standards Manual DVD included with this Manual.
NOTES
This symbol set should be used to identify laboratory hazards and warnings. The symbols must be used in the color specified to be compliant with Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5th Edition, National Fire Protection Association 45, 2012, and the New York City Fire Code, 2008. See Sheet 5.1.3 for layout specifications.

Vector artwork files for all symbols are located on the Standards Manual DVD included with this Manual.
<table>
<thead>
<tr>
<th>SYMBOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>RED+F SYMBOLS</td>
</tr>
</tbody>
</table>

**NOTES**
Vector artwork files for all symbols are located on the Standards Manual DVD included with this Manual.

**DESIGN IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION.**
COORDINATE WITH RED+F FOR UPDATED SYMBOL DESIGN.
This symbol set should be used for digital applications only.
Vector artwork files for all symbols are located on the Standards Manual DVD included with this Manual.
NYU Langone Health and Hassenfeld

NYU Langone Health and Hassenfeld Entity Name
The relationships between the symbols and typography must always be consistent in proportion. These layouts specify the requirements at varying sizes. Specific dimensions are identified for each sign type in the subsequent chapters.
The relationships between the Logo and adjacent destination typography are adjusted as required per architectural conditions. Specific dimensions are identified for each sign type in subsequent chapters.
NOTES
All room numbers should be obtained from RED+F prior to developing sign location plans and sign message schedule.
Room numbers will be provided with building prefix, floor number, and room number.
Sign layouts should be formatted so that a word space is inserted between the prefix, floor number, and room number. Where a series of room numbers are included on a sign, an en dash (–) should be used to separate the numbers.
CHAPTER 2
WAYFINDING & COMMUNICATIONS
OVERVIEW AND PROGRAMMING

2.1 Sign Type Overview
2.2 Visitor and Patient Communications Overview
2.3 Centralized Database Overview
2.4 Programming Guidelines
2.5 Sample Programming Documents
Exterior identification and regulatory sign types should be programmed consistently throughout NYU Langone Health facilities. These sign types should be used according to zoning requirements outlined by the City of New York. For hierarchy guidelines, see Chapter 3.

NYU LANGONE HEALTH
Sign Type BB1
Building Identification at Canopy

Ambulatory Care Center
Sign Type BB2
Building Identification at Canopy

Main Lobby Entrance
Sign Type CC1
Entrance Identification

550 First Avenue

Tobacco Free Campus

600 First Avenue

FDR Drive

1200 FDR Drive

NYU Langone Health Logo
Exterior identification and regulatory sign types should be programmed consistently throughout NYU Langone Health facilities. These sign types should be used according to zoning requirements outlined by the City of New York. For hierarchy guidelines, see Chapter 3.
Exterior vehicular and orientation sign types should be programmed as applicable per NYU Langone Health facility. These sign types should be used according to zoning requirements outlined by the City of New York. For hierarchy guidelines, see Chapter 3.
Exterior vehicular and orientation sign types should be programmed as applicable per NYU Langone Health facility. These sign types should be used according to zoning requirements outlined by the City of New York. For hierarchy guidelines, see Chapter 3.
Interior custom identification sign types should be programmed at NYU Langone Health facilities or new construction as applicable. All identification sign type finishes should be coordinated with the facility’s architectural finishes.

**SIGN TYPE OVERVIEW:** INTERIOR CUSTOM IDENTIFICATION

Interior custom identification sign types should be programmed at NYU Langone Health facilities or new construction as applicable. All identification sign type finishes should be coordinated with the facility’s architectural finishes.

**TISCH HOSPITAL**

- Pediatrics
- Pediatric Critical Care
- Neonatal Critical Care

**Sign Type C1**

Area Identification Panel
Interior custom identification sign types should be programmed at NYU Langone Health facilities or new construction as applicable. All identification sign type finishes should be coordinated with the facility’s architectural finishes.

**Sign Type B8**
Entrance Identification

**Sign Type B9**
Entrance Identification

**Sign Type B10, B11**
Vinyl Text

**Sign Type B12**
Trash Can Identification
Interior pathway custom sign types should be programmed throughout the NYU Langone Health’s Main Campus. These sign types are required to be used for locations on the Main Campus corridors designated as wayfinding pathways (i.e. Green Pathway, Blue Pathway, Yellow Pathway) and finishes should correspond to the pathway indicated. These sign types are not exclusive to the Main Campus and can also be programmed at other facilities which require higher finishes along a main public corridor. If programmed at such “non-pathway” corridors, F2 (Standard Neutral) should be used in place of the pathway color.
Interior pathway custom sign types should be programmed throughout the NYU Langone Health’s Main Campus. These sign types are required to be used for locations on the Main Campus corridors designated as wayfinding pathways (i.e. Green Pathway, Blue Pathway, Yellow Pathway) and finishes should correspond to the pathway indicated. These sign types are not exclusive to the Main Campus and can also be programmed at other facilities which require higher finishes along a main public corridor. If programmed at such “non-pathway” corridors, F2 (Standard Neutral) should be used in place of the pathway color.
SIGN TYPE OVERVIEW: INTERIOR CUSTOM INFONODE

The infonode consists of two wayfinding sign types, a touchscreen kiosk and orientation sign. The touchscreen kiosk (S1) provides custom directions in multiple languages. The orientation sign (S2 or S3) features a facility map or facility directory and also serves as a distribution point for the NYU Langone Health pocket guide, available in multiple languages. The infonode is to be programmed at all points of entry as applicable.
SIGN TYPE OVERVIEW: INTERIOR MODULAR IDENTIFICATION AND DIRECTIONAL

Interior Modular sign types are the predominant signage standard for all NYU Langone Health facilities. Modular identification and directional overhead signs are to be programmed at locations throughout NYU Langone Health facilities as applicable. These sign types, however, are not to be used for locations on Main Campus corridors designated as wayfinding pathways (i.e. Green Pathway, Blue Pathway, Yellow Pathway).

Sign Type E3a
Overhead Identification

Sign Type E3b
Overhead Identification

Sign Type E7a
Wall Mounted Identification

Sign Type E7b
Wall Mounted Identification

Sign Type E6
Double Overhead Directional

Sign Type E9a
Ceiling Mounted Small Overhead

Sign Type E9b
Wall Mounted Small Overhead

Clinical Integration Station

Physical Therapy Treatment

Clinical Integration Station

Physical Therapy Treatment

↑ Rheumatology/Infusion and Seligman Center

↑ Women's Treatment

↑ Rheumatology/Infusion and Seligman Center

↑ Women's Treatment

↑ Rheumatology/Infusion and Seligman Center

↑ Total Joint Replacement

↑ Non-Invasive Cardiology

↑ Non-Invasive Cardiology

14-23

14-23

14

14

Sign Type E4a
Large Ceiling Mounted Flag w/ Symbol

Sign Type E4b
Large Wall Mounted Flag w/ Symbol

Sign Type E4c
Large Ceiling Mounted Flag w/ Numbers or Letters

Sign Type E4d
Large Wall Mounted Flag w/ Numbers or Letters
SIGN TYPE OVERVIEW: INTERIOR MODULAR ADA ROOM SIGNS

Interior Modular ADA sign types are the predominant signage standard for all NYU Langone Health facilities. ADA signs are to be programmed at locations throughout the hospital as applicable. When ADA sign types are required to be used for locations on Main Campus corridors designated as wayfinding pathways (i.e. Green Pathway, Blue Pathway, Yellow Pathway) finishes should correspond to the pathway indicated.
SIGN TYPE OVERVIEW: INTERIOR MODULAR ADA ROOM SIGNS

Interior Modular ADA sign types are the predominant signage standard for all NYU Langone Health facilities. ADA signs are to be programmed at locations throughout the hospital as applicable. When ADA sign types are required to be used for locations on Main Campus corridors designated as wayfinding pathways (i.e. Green Pathway, Blue Pathway, Yellow Pathway) finishes should correspond to the pathway indicated.

**Sign Type H1a**
Patient Room Identification (Single Occupancy Room)

**Sign Type H2a**
Patient Room Identification (Multiple Occupancy Room, Bed 1)

**Sign Type H2b**
Patient Room Identification (Multiple Occupancy Room, Bed 2)

**Sign Type H3a**
Non-Tactile Patient Bed Identification (Single Occupancy Room)

**Sign Type H3b**
Non-Tactile Patient Bed Identification (Multiple Occupancy Room)

**Sign Type H4**
Office Identification

**Sign Type H4a**
Office Identification w/ Single Insert and Slider

**Sign Type H5**
Office Identification w/ Triple Insert

**Sign Type H6a**
Large Conference Room Identification

**Sign Type H6b**
Large Conference Room Identification w/ Slider

**Sign Type H7**
Multi-Purpose Room Identification

**Sign Type H8**
Single Insert
SIGN TYPE OVERVIEW: INTERIOR MODULAR ADA ROOM SIGNS

Interior Modular ADA sign types are the predominant signage standard for all NYU Langone Health facilities. ADA signs are to be programmed at locations throughout the hospital as applicable. When ADA sign types are required to be used for locations on Main Campus corridors designated as wayfinding pathways (i.e. Green Pathway, Blue Pathway, Yellow Pathway) finishes should correspond to the pathway indicated.
SIGN TYPE OVERVIEW: INTERIOR MODULAR DIRECTORY AND DIRECTIONAL

Interior Modular sign types are the predominant signage standard for all NYU Langone Health facilities. Directory and directional signs are to be programmed at locations throughout the hospital facilities as applicable. When these directory or directional types are required to be used for locations on Main Campus corridors designated as wayfinding pathways (i.e. Green Pathway, Blue Pathway, Yellow Pathway) finishes should correspond to the pathway indicated.
Interior Modular sign types are the predominant signage standard for all NYU Langone Health facilities. Regulatory sign types are to be programmed at locations throughout the hospital facilities as applicable. When regulatory sign types are required to be used for locations on Main Campus corridors designated as wayfinding pathways (i.e. Green Pathway, Blue Pathway, Yellow Pathway) finishes should correspond to the pathway indicated.

**Sign Type T1b**
Elevator Egress

**Sign Type T1b (Alternate Layout)**
Elevator Egress

**Sign Type T2a**
Elevator Identification and Egress

**Sign Type T2a (Alternate Layout)**
Elevator Identification and Egress

**Sign Type T3a**
Elevator Jamb Identification

**Sign Type T4a**
Elevator Cab Identification

---

**Sign Type T5a**
Sabbath Elevator Identification

**Sign Type T5b**
Sabbath Elevator

**Sign Type U1b**
Non-Tactile Stair Identification (Occupancy Side Door)

**Sign Type U2a**
Tactile Stair Identification (Stair Side Wall)

**Sign Type U2b**
Non-Tactile Stair Identification (Stair Side Door)

**Sign Type U3**
Tactile Exit Identification (Occupancy Side Wall)

**Sign Type U4**
No Exit

**Sign Type U6**
Egress Directional

---

SIGN TYPE OVERVIEW: INTERIOR MODULAR REGULATORY
Interior Modular sign types are the predominant signage standard for all NYU Langone Health facilities. Regulatory sign types are to be programmed at locations throughout the hospital facilities as applicable.

**OCCUPANCY**

By more than 350 persons is dangerous and unlawful

**LABORATORY**

Caution: Hazardous Materials

**OXYGEN STORAGE**

Caution: Hazardous Materials

**RESTRICTED AREA**

Do not enter. Authorized personnel only

**ELEVATOR MACHINE ROOM**

Restricted access. O.R. attire required. Authorized personnel only

**FIRE EXTINGUISHER**

Fire extinguisher cabinet sign (Alternate Layout)

**FIRE HOSE**

Fire hose cabinet sign (Alternate Layout)

**Sign Type U7**

Fire Extinguisher

Overhead Sign (Alternate Layout)

**Sign Type U7**

Fire Hose

Overhead Sign

**Sign Type U8**

Fire Extinguisher Cabinet Sign

**Sign Type U8**

Fire Hose Cabinet Sign (Alternate Layout)

**Sign Type W1**

Occupancy

**Sign Type W1**

Large Regulatory

**Sign Type W2**

Small Regulatory

**Sign Type W3**

Door Band Regulatory

**Sign Type W4**

Laboratory Door Band Regulatory (Alternate Layout Option 1)

**Sign Type W4**

Laboratory Door Band Regulatory (Alternate Layout Option 2)

**Sign Type W4**

Laboratory Door Band Regulatory (Alternate Layout Option 3)

**Sign Type W5**

Elevator Machine Room Identification

**Sign Type W6**

Accessible Restroom Directional

**Sign Type W7**

Push/Pull Identification

**Sign Type W8**

Interior Vision Barrier (Brand)
Interior Modular sign types are the predominant signage standard for all NYU Langone Health facilities. Regulatory sign types are to be programmed at locations throughout the hospital facilities as applicable.

**Our Patient-Care Commitment**

Sign Type W9
Interior Vision Barrier

Sign Type W9a
Interior Vision Barrier (Enhanced Visibility)

Sign Type W9b
Interior Vision Barrier (Maximum Visibility)

Sign Type W10
Door Caution Stripe

Sign Type W11
Push/Pull Identification

Sign Type W12
Safety Haven Decals

Sign Type W12
Safety Haven Decals (Alternate Color Option)

Sign Type W13
Floodgate Sign

Sign Type X1a
Regulatory Display System (34" x 17" Insert, w/ Header Text)

Sign Type X1b
Regulatory Display System (34" x 17" Insert, No Header Text)

Sign Type X3a
Regulatory Display System (11" x 17" Insert w/ Header Text)

Sign Type X3b
Regulatory Display System (11" x 17" Insert, No Header Text)

Sign Type X4
Information Display System (8 1/2" x 11" Quick Click Insert)

Sign Type X5
Information Display System (11" x 17" Quick Click Insert)

Sign Type X6
Miscellaneous Display System (8.5" x 11" Flip Frame)

Sign Type X7
Miscellaneous Display System (11" x 17" Flip Frame)

**Patients’ Bill of Rights**
Interior Soft Sign Types are used in any area that would typically need Modular ADA Signs, but require a soft/flexible material. This typically occurs in mental health facilities.
Donor Recognition Sign Types are to be programmed only as required by NYU Langone Health. These sign types are intended to be programmed in conjunction with identification sign types (Chapter 4 and 5). Finishes are to be determined on a project basis and should be coordinated with the architectural finishes and identification sign types.

**SIGN TYPE OVERVIEW: DONOR RECOGNITION**

Donor Recognition Sign Types

- **Sign Type ZZ1**
  - Exterior Donor Recognition Letters

- **Sign Type Z7**
  - Large Dedication Panel

- **Sign Type Z7a**
  - Large Dedication Panel (Alternate Layout)

- **Sign Type Z8**
  - Small Dedication Panel

**Interior Donor Recognition Letters**

- **Sign Type Z1, Z2, Z3, Z4, Z5, Z6**
SIGN TYPE OVERVIEW: DIGITAL

Digital sign types should be programmed throughout NYU Langone Health’s Main Campus. When these sign types are required to be used for locations on the Main Campus corridors designated as wayfinding, pathways (i.e. Green Pathway, Blue Pathway, Yellow Pathway), colors should correspond to the pathway indicated. Digital sign types provide easily updatable wayfinding information and can display information translated in multiple languages. All content for digital sign types is managed by the Centralized Database.

§ Floor 1 Destinations
- Patient Admitting
- Gift Shop
- Tisch Cafe
- Meditation Room
- Restrooms

SIGN TYPE OVERVIEW
Digital Sign Types

Sign Type Y1
Touchscreen Display

TH 1401 to TH 1437
Patient Rooms

Sign Type Y3
Panoramic Elevator Display

12
Neurosurgical Unit
Patient Rooms
Neurosurgical ICU

Sign Type Y4
Small Elevator Display

Sign Type Y5
Meeting Room Manager Display

Design IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION. COORDINATE WITH RED+F FOR UPDATED SIGN TYPE DESIGN.
VISITOR AND PATIENT COMMUNICATIONS OVERVIEW: MAPS AND WELCOME EXPERIENCE

Visitor and patient communications provide wayfinding information beyond signage. Printed maps provide a reliable and consistent image of the NYU Langone Health and its facilities. For complete details and specifications for map types and usages, and welcome experience components, see Chapter 8. The NYU Langone welcome experience should be programmed at all entrances as applicable.
Visitor and patient communications provide wayfinding information beyond signage. Both the Infonode Touchscreen Kiosk and the Wayfinding Website allow users to access and print custom directions in their preferred language.
The Centralized Database is the "brain" for all wayfinding information. The system provides management of all wayfinding signage and projects. The system also drives the content featured on all wayfinding elements.
The Centralized Database is the "brain" for all wayfinding information. The system’s administration is operated and maintained by RED+F, specifically the Wayfinding Manager. Other NYU Langone Health constituents may be subscribers to the system, providing notifications of changes that affect wayfinding information as well as having the ability to access needed wayfinding content.

DESIGN IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION. COORDINATE WITH RED+F FOR UPDATED SIGN TYPE DESIGN.
PROGRAMMING GUIDELINES: SIGN LOCATIONS

Although unique architectural conditions may compromise the ideal sign locations, programming should consider the following:

The Medical Center Stakeholders should be consulted for the function and needs of the signs for their facilities.

Visibility should be studied, especially for overhead sign types, where architectural elements may create viewing obstacles.

If deemed appropriate, multiple sign panels with the same installation height may be installed side by side with 3” space between panels.

Over-signing should be avoided so as not to overwhelm patients and visitors and to alleviate visual clutter.

Custom Interior Sign Types (Chapter 4) have been designed for use in high traffic public corridors. Consideration should be given to the nature of the location when determining the use of Custom Sign Types. Material and Paint Finishes should be coordinated with the Medical Center and their consultants.
Custom Interior Sign Types (Chapter 4) should be used at the Main Campus on the first floor corridors designated as wayfinding pathways (i.e. Green Pathway, Blue Pathway, Yellow Pathway). These sign types are intended to reinforce the wayfinding strategy at the Main Campus.

Modular Interior Sign Types (Chapter 5) should be used throughout the Main Campus. These sign types are used for room identification, regulatory information, and upper level wayfinding. All modular signs programmed to be located on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway) should correspond to the Pathway paint finish. For all other locations at the Main Campus, F2 (Standard Neutral) should be specified.
All sign designs and example messaging indicated in the Standards Manual have been developed to meet the following Code requirements. The sign designer and/or sign programmer is responsible for meeting all applicable codes when implementing the sign system for each unique building requirement.

As of the printing of this version of the Standards Manual, the codes to be referenced include:

- 2008 NYC Construction Code
- 2010 ADA Standards for Accessible Design: Chapter 7
- New York City Fire Code
- New York City Local Law 26
- Biosafety in Microbiological and Biomedical Laboratories (BMBL)
  5th Edition

The following programming requirements are to be located per code and as specified by the NYU Langone Health.

### PROGRAMMING GUIDELINES: REGULATORY

<table>
<thead>
<tr>
<th>Sign Type</th>
<th>Description</th>
<th>Required Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1a</td>
<td>Regulatory Display System (34” x 17” Insert, with Header Text)</td>
<td>Header text to read “Patients’ Bill of Rights”, “Parents’ Bill of Rights”, “It’s the Law”, “Patients’ Rights”, “Breastfeeding Mothers’ Bill of Rights”, or “Charity Care” to match insert content. Insert content to be standard NYU Langone Health Patients’ Bill of Rights, Parents’ Bill of Rights, EMTALA, Patients’ Rights, Breastfeeding Mothers’ Bill of Rights, or Charity Care in multiple languages as required.</td>
</tr>
<tr>
<td>X1b</td>
<td>Regulatory Display System (34” x 17” Insert, with Header Text)</td>
<td>Header text to be blank. Insert content to be public announcements.</td>
</tr>
<tr>
<td>X3a</td>
<td>Regulatory Display System (11” x 17” Insert, with Header Text)</td>
<td>Header text to read “Mission”, “Flu Season”, “Accessibility”, or “Privacy Practices” to match insert content. Insert content to be standard NYU Langone Health Mission Statement, Flu season, Accessibility Statement, or Notice of Privacy Practices design in multiple languages as required.</td>
</tr>
<tr>
<td>X3b</td>
<td>Regulatory Display System (11” x 17” Insert, with Header Text)</td>
<td>Header text to be blank. Insert content to be public announcements.</td>
</tr>
</tbody>
</table>
NOTES
This sample location plan illustrates where signs should be installed. Each Sign Designator identifies a Sign Type, Level, and Sign Number which corresponds to the Message Schedule.
### MESSAGE SCHEDULE

**NYU_LA-050 NYU Langone Medical Center Center for Musculoskeletal Care**  
**NOT FOR CONSTRUCTION**

<table>
<thead>
<tr>
<th>Sign Number</th>
<th>Message</th>
<th>Description</th>
<th>Drawing No.</th>
<th>Notes</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Addendum #1 - 12/1/2011</strong></td>
<td><strong>NEW POST BID</strong></td>
<td></td>
<td></td>
<td>28</td>
<td>393</td>
</tr>
<tr>
<td>X3b-L4-169</td>
<td>Accessibility (nondiscrimination/accessibility insert)</td>
<td>Regulatory Display System (11&quot;x17&quot; Insert w/ Header Text)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J1-L4-170</td>
<td>Mechanical Room</td>
<td>Tactile Room Number and Name Identification</td>
<td>4418A [braille]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E3a-L4-171</td>
<td>Sports Medicine Center</td>
<td>Overhead Identification</td>
<td>On hold pending client confirmation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J2-L4-172</td>
<td>4417A [braille]</td>
<td>Tactile Room Number Identification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T2a-L4-173</td>
<td>[symbol] Elevator E Authorized Personnel only</td>
<td>Elevator Identification and Egress</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Floor 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[egress map] IN FIRE EMERGENCY DO NOT USE ELEVATOR USE EXIT STAIRS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T2a-L4-175</td>
<td>[symbol] Elevator Identification and Egress</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Floor 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[egress map] IN FIRE EMERGENCY DO NOT USE ELEVATOR</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES**

This sample Message Schedule corresponds to the Sign Location Plan on page 2.5.1. Each sign can be identified by the Sign Type, Level, and Sign Number. The message provided will be used by the sign fabricator to create each sign layout.

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NYU LANGONE HEALTH  
Wayfinding and Communications Standards Manual

SAMPLE PROGRAMMING DOCUMENTS  
MESSAGE SCHEDULE - TYPICAL FACILITY

2.5.2
NOTES
This sample location plan illustrates diagrammatically where signs should be installed throughout the Main Campus Pathway. Each Sign Designator identifies a Sign Type, Level, and Sign Number which corresponds to the Message Schedule.
## Message Schedule

**NYU LA-036 NYU Langone Medical Center Main Campus Pathways Signage**

**NOT FOR CONSTRUCTION**

<table>
<thead>
<tr>
<th>Sign Number</th>
<th>Message</th>
<th>Description</th>
<th>Drawing No.</th>
<th>Notes</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary - 11/7/2011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>77</td>
</tr>
<tr>
<td>S1-L1-100a</td>
<td>[touchscreen kiosk]</td>
<td>Touch Screen Kiosk</td>
<td></td>
<td></td>
<td>77</td>
</tr>
<tr>
<td>S2-L1-100c</td>
<td>[Orientation Map]</td>
<td>Map Pylon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y1-L1-100b</td>
<td>[interactive touch screen]</td>
<td>Touch Screen Display</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1-L1-101</td>
<td>You are entering the Blue Pathway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[elevator symbol] Tisch Elevators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kimmel Elevators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pediatric Elevators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1-L1-102</td>
<td>You are entering the Blue Pathway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[arrow up] [elevator symbol] Tisch Elevators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kimmel Elevators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pediatric Elevators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N1-L1-102a</td>
<td>[arrow up] Floor 1 Destinations Gift Shop Patient Resource Center Cafeteria Meditation Room Restrooms</td>
<td>Directional Display</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y2-L1-102a</td>
<td>You are on the Blue Pathway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[arrow up] Main Lobby Entrance Exit to First Avenue Green and Yellow Pathways</td>
<td>Overhead Directional - Fascia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mounted - single sided</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M4-L1-103</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S1-L1-104a</td>
<td>[touchscreen kiosk]</td>
<td>Touch Screen Kiosk</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sample Programming Documents**

**Message Schedule**

This sample Message Schedule corresponds to the Sign Location Plan on page 2.5.3. Each sign can be identified by the Sign Type, Level, and Sign Number. The message provided will be used by the Sign Fabricator to create each sign layout.

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NYU LANGONE HEALTH
Wayfinding and Communications Standards Manual

SAMPLE PROGRAMMING DOCUMENTS
Message Schedule

2.5.4
CHAPTER 3
EXTERIOR SIGNAGE

3.0 Exterior Requirements Overview
3.AA Sign Type AA: Skyview Logo
3.BB Sign Type BB: Building Identification at Canopy
3.CC Sign Type CC: Entrance Identification
3.DD Sign Type DD: Address Identification
3.EE Sign Type EE: Brand Identification
3.JJ Sign Type JJ: Loading Dock Identification
3.KK Sign Type KK: Parking Identification
3.MM Sign Type MM: Existing Sign Re-Clad
3.NN Sign Type NN: Pylon Identification
3.PP Sign Type PP: Pedestrian Orientation
3.RR Sign Type RR: Large Loading Dock Bay ID
3.TT Sign Type TT: Exterior Grade Plaque Sign
3.VV Sign Type VV: Vision Barrier
Whether approaching by vehicle or foot, individuals need to be reassured that they have arrived at an NYU Langone Health facility. This confirmation is achieved through consistent application of the approved information hierarchy (see NYU Langone Health Wayfinding and Communications Master Plan, Chapter 3: Wayfinding and Communications Strategy).

In addition to consistency of message, the application of a unified aesthetic is critical to providing an easily recognizable cue for individuals to confirm their arrival.

Each NYU Langone Health facility will require several types of signage at any given entrance. The enterprise identity, building name and address, donor recognition, and directional signage must all co-exist at the entrance. While not every sign type will be used at every entrance, it is important to consider the placement of information such that it conforms with a consistent hierarchy across all facilities.

All exterior signage is subject to total square footage allowances as determined by city zoning permits and/or variances.

<table>
<thead>
<tr>
<th>Information Hierarchy</th>
<th>Multi-Entrance Facility Requirements</th>
<th>Single-Entrance Facility Requirements</th>
<th>Sign Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DISTANCE VIEW</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Skyview Logo*</td>
<td>NYU Langone Health Logo located at the top of primary buildings of seven (7) stories or more (95' A.F.F. minimum mounting height).</td>
<td>NYU Langone Health Logo located at the top of primary buildings of seven (7) stories or more (95' A.F.F. minimum mounting height).</td>
<td>AA</td>
</tr>
<tr>
<td>2. Building Identification</td>
<td>Name of building located at canopy level or higher and made up of dimensional letters ranging in size from 12&quot;–27&quot;. Typography should be all caps when on top of a canopy, and upper and lower case for all other conditions. Material finishes should be consistent with architectural finishes while also allowing sufficient contrast for visibility.</td>
<td>Name of building located at canopy level or higher and made up of dimensional letters in upper and lower case typography and ranging in size from 12&quot;–22&quot;. Material finishes should be consistent with architectural finishes while also allowing sufficient contrast for visibility.</td>
<td>BB</td>
</tr>
<tr>
<td>3. Building Donor Recognition</td>
<td>Full name of building donor located adjacent to Building Identification in all caps typography and ranging in size from 7&quot;–20&quot;.</td>
<td>Full name of building donor located adjacent to Building Identification in all caps typography and ranging in size from 10&quot;–20&quot;.</td>
<td>ZZ1</td>
</tr>
<tr>
<td>4. Vehicular Pylon</td>
<td>Oriented perpendicular to the path of travel and legible from a vehicular approach. Pylon must convey the Brand Logo, building name, entrance name, and entrance address.</td>
<td>Oriented perpendicular to the path of travel and legible from a vehicular approach. Pylon must convey the logo, building name, entrance name, and entrance address.</td>
<td>MM NN</td>
</tr>
<tr>
<td><strong>PEDESTRIAN VIEW</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Entrance Identification</td>
<td>Name of specific entrance (i.e. &quot;Main Lobby Entrance&quot;) located above the entry doors and visible from a pedestrian approach.</td>
<td>Name of facility (i.e. &quot;Ambulatory Care Center&quot;) located above the entry doors and visible from a pedestrian approach.</td>
<td>CC</td>
</tr>
<tr>
<td>6. Building Address</td>
<td>Address number and full street name located above entrance doors but secondary to the entrance name. At this location, the text &quot;Tobacco Free Campus&quot; and the no smoking symbol should be included.</td>
<td>Address number and full street name located adjacent to entrance doors but secondary to the entrance name. At this location, the text &quot;Tobacco Free Campus&quot; and the no smoking symbol should be included.</td>
<td>DD</td>
</tr>
<tr>
<td>7. Street view Brand Identification</td>
<td>NYU Langone Health Logo located and scaled to be visible from a pedestrian approach.</td>
<td>NYU Langone Health Logo located and scaled to be visible from a pedestrian approach.</td>
<td>EE</td>
</tr>
<tr>
<td>8. Site-to-Site Orientation*</td>
<td>Map showing location of all enterprise facilities within the boundaries of Park Avenue to the East River and from 43rd Street to 14th Street. Map may be either a pedestrian scale pylon or a building mounted map case.</td>
<td>Map showing location of all enterprise facilities within the boundaries of Park Avenue to the East River and from 43rd Street to 14th Street. Map may be either a pedestrian scale pylon or a building mounted map case.</td>
<td>PP</td>
</tr>
</tbody>
</table>

* Optional
### EXTERIOR REQUIREMENTS

#### SKYVIEW LOGO

**NOTES**
A skyview identification consisting of the approved NYU Langone Health logo should be located at the top of primary buildings where a zoning variance has been achieved to increase the amount of permitted signage. The scale should be determined by the mounting height. The fabrication method and installation location should be carefully coordinated with the architecture to provide adequate mounting methods that are concealed to the maximum extent possible.

**REFERENCE PAGES**
1.4.1 Logos

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<table>
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<tr>
<td>450'-0&quot; – 500'-0&quot;</td>
<td>8'-0&quot; – 9'-0&quot;</td>
</tr>
</tbody>
</table>

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1. **Installation Elevation - Sign Type AA (Diagrammatic)**
   
   1/32" = 1'-0"
NOTES

In order to achieve maximum contrast and legibility the One (1) Color version of the logo should be used for all exterior applications.

In order to ensure mounting and power details are concealed to the maximum extent possible for new construction, coordination with the building architects should begin as early as possible in the architectural documentation process.

REFERENCE PAGES
1.1.2 Signage Finishes
1.4.1 Logos

DESIGN IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION. COORDINATE WITH RED+F FOR UPDATED SIGN TYPE DESIGN.
A Section - Non-Illuminated Signs

1 1/2" = 1'-0"

- **Logo**
  6' TH Fabricated ptd. aluminum logo; mtd. to existing brick building facade w/ threaded rods

- **Rod**
  Stainless steel threaded rod; drill and tap into existing brick facade w/ epoxy as required

- **Existing brick facade**

B Section - Internally Illuminated Signs

1 1/2" = 1'-0"

- **Logo**
  6' TH fabricated ptd. aluminum channel logo w/ 3M Light Enhancement Film applied to all interior surfaces; mtd. to existing brick facade w/ threaded rods

- **Face-illuminated Logo**
  6' TH fabricated ptd. aluminum channel logo w/ 3M Light Enhancement Film applied to all interior surfaces; mtd. to existing brick facade w/ threaded rods

- **Logo Face**
  1/4" TH clear acrylic face w/ first-surface applied 3M Dual-Color Film, second-surface applied 3M Scotchcal Translucent Film custom color, and 3M Diffuser Film backer; bonded to logo returns

- **Illumination**
  White LED Lighting on clear acrylic backer panel; bonded to clear acrylic sign face

- **Raceway**
  5' TH Fabricated ptd. aluminum enclosure to house power supply and conduit as required

- **Power**
  Wiring to power supply w/ watertight coupling. Coordinate with building power supply

- **Existing brick facade**

---

**NOTES**

- Sign contractor to verify all existing conditions to assess mounting, power, and fabrication requirements.
- Provide separation of dissimilar metals where required.
- Provide concealed access for maintenance of LED lighting.

**REFERENCE PAGES**

10.1.1 Signage Technical Specifications

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Wayfinding and Communications Standards Manual

SIGN TYPE AA1
SKYVIEW LOGO
NOTES
This illustration is specifically for Sign Type BB at the Main Lobby Entrance of the Main Campus. It should serve as a guideline for similar signage at other Building Entrances.

Canopy finishes should be considered when developing Sign Type BB to ensure that adequate contrast is achieved. Sign Type finishes should be 50–75% darker or lighter than the dominant background finish color. In the example shown, the letter finish selected was a metallic gray one shade darker than the canopy material.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.4.1 Logos
**Face**
1/16" TH ptd. aluminum face and back; bonded to acrylic letterform

**Side-Lit Letter**
3" TH fabricated translucent white acrylic letterform w/ internal LED lighting; mtd. to existing canopy w/ fully concealed mechanical fasteners

**Light Panel**
White LED Light Panel with GE Tetra Mini Max LED modules; mechanically fastened to inside of acrylic letterform

**Power**
Wiring to power supply w/ watertight coupling. Verify access to existing power in canopy

**Raceway**
3" ptd. aluminum tube to house wiring

**Mounting post**
Ptd. aluminum posts. Verify all field conditions

**Baseplate**
Continuous ptd. aluminum baseplate; anchor to existing canopy. Verify all field conditions

**Existing canopy**

**Section**
1 1/2" = 1'-0"

**NOTES**
Sign Contractor to verify all existing conditions to assess feasibility of using existing sign hardware and power feeds for new sign installation.

New penetrations into existing canopy structure to be minimized to the extent possible. All penetrations into canopy to be properly sealed.

Provide separation between dissimilar metals where required.

**REFERENCE PAGES**
10.1.1 Signage Technical Specifications
Ambulatory

1 Elevation - Sign Type BB2
1/2” = 1'-0"

Letters
Sign contractor to adjust distance from letters to bracket, as required, to ensure top of letters align, typical.

2 Detail Elevation - Sign Type BB2
1 1/2” = 1'-0"

Letter Face
Finish color to be slightly darker than canopy
Raceway
Color to match canopy

3 Detail Elevation - Sign Type BB2
1 1/2” = 1'-0"

Letter Face and Front Return
Finish color to be slightly darker than canopy
Translucent Return
Finish: F34
Solid Return
Finish: F4
Letter Back
Finish color to be slightly darker than canopy
Raceway/Posts/ Mounting Bracket
Finish to match canopy

4 Side View
1 1/2” = 1'-0"

NOTES
This illustration is specifically for Sign Type BB at off-site facilities. It should serve as a guideline for similar signage at other Building Entrances. Canopy finishes should be considered when developing Sign Type BB to ensure that adequate contrast is achieved. Sign Type finishes should be 50–75% darker or lighter than the dominant background finish color. In the example shown, the letter finish selected was a metallic gray one shade darker than the canopy material.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.4.1 Logos
SIGN TYPE BB2
BUILDING IDENTIFICATION AT CANOPY-OFF-SITE FACILITIES

NOTES
Sign Contractor to verify all existing conditions to assess feasibility of using existing sign hardware and power feeds for new sign installation.

New penetrations into existing canopy structure to be minimized to the extent possible. All penetrations into canopy to be properly sealed.

Provide separation between dissimilar metals where required.

REFERENCE PAGES
10.1.1 Signage Technical Specifications
NOTES
This illustration is specifically for Sign Type CC at the Main Lobby Entrance of the Main Campus. It should serve as a guideline for similar signage at other Building Entrances.

Entrance names are only required at buildings where multiple entrances occur. Where a single entrance occurs, the facility name should be identified above the entrance doors.

NYU Langone Purple should be used wherever possible on the exterior of the building to act as a non-verbal cue that links all facilities to NYU Langone Health.
SIGN TYPE CC1
ENTRANCE IDENTIFICATION-
MAIN LOBBY

NOTES
Sign panels to replace existing panels should be
fabricated with like materials, and installed in
accordance with the existing structural require-
ments, matching all existing seams.
Sign contractor to verify all existing conditions.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications
This illustration is specifically for Sign Type DD and EE at the Main Lobby Entrance of the Main Campus. It should serve as a guideline for similar signage at other Building Entrances.

The logo should be highly visible at a pedestrian level at all building entrances. In order to increase the presence of the brand, the logo should be all purple whenever possible.

The address, comprised of the street number and fully spelled out street name, should be clearly identified at all building entrances.

A vision barrier (Sign Type VV) should be incorporated when required by code.
**NOTES**

Fully concealed mechanical fasteners are preferred, sign contractor to verify conditions in field to confirm if feasible for letter mounting.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications
NOTES
Sign Type DD2 is to be used to identify a building address when overhead space is not available.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications
SIGN TYPE DD2 (ALTERNATE)
STREET VIEW ADDRESS IDENTIFICATION

NOTES
Sign Type DD2 Alternate is to be used to identify a building name and address when overhead space is not available.

When architectural conditions limit the length of message, adjust the Street Name and Building Identification capital letter height. Street Address Number height must remain 4" in order to meet the appropriate codes.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
10.1.1  Signage Technical Specifications

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SIGN TYPE DD2
Elevation and Details

240
East 38th Street
Ambulatory Care Center
South Terrace Entrance

3"  11/2"

Tobacco Free Campus

8 1/8"

1/4" = 1'-0"

Vinyl
Reverse reading die-cut vinyl graphics applied to second-surface of existing glass
Finish: F60 (Alternate F54)
CAUTION
WHEN ALARM BELL SOUNDS
OIL TANK FILLED TO CAPACITY
DO NOT OVERFILL
NO SMOKING
WITHIN 15 FEET

NO. 2 OIL  /  CAPACITY XXX

FDR Drive
1200

SIGN TYPE DD3
ENTRANCE IDENTIFICATION

NOTES
Sign Type DD3 is to be used to identify a building name and address at loading docks or other similar back-of-house entrances to a building.
Number height must remain 4" in order to meet the appropriate codes.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications

SIGN TYPE DD3
ENTRANCE IDENTIFICATION

NOTES
Sign Type DD3 is to be used to identify a building name and address at loading docks or other similar back-of-house entrances to a building.
Number height must remain 4" in order to meet the appropriate codes.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications
Panel
Logo: F5
Text: T1, F3

Panel
1/8" TH stainless steel panel w/ etched and filled letters/symbols; mtd. to existing exterior surface w/ epoxy adhesive as required

Note: Sign Fabricator to ensure epoxy adhesive can bond to Duranar paint finish, typ.

SIGN TYPE DD3
ENTRANCE IDENTIFICATION

NOTES
Sign Type DD3 is to be used to identify a building name and address at loading docks or other similar back-of-house entrances to a building.
Number height must remain 4" in order to meet the appropriate codes.

REFERENCE PAGES
1.1.2    Signage Finishes
1.2.1–15  Typography Specifications
10.1.1  Signage Technical Specifications
**Elevation**

1/2" = 1'-0"

**Plan Detail**

3" = 1'-0"

**Cut Through**

One (1) Color Logo: F15

**Side Panel**

1/8" TH ptd. aluminum panel; mtd. flush to existing canopy structure w/ fully concealed mechanical fasteners

Finish to Match Existing

**Logo Panel**

1/8" TH ptd. aluminum panel w/ cut through logo; mtd. flush to existing canopy structure w/ fully concealed mechanical fasteners

Finish to Match Existing

**Panel**

1/8" TH ptd. aluminum panel w/ etched and paint-filled text; mtd. flush to existing canopy structure w/ fully concealed mechanical fasteners

**NOTES**

Sign panels to replace existing panels should be fabricated with like materials and installed in accordance with the existing structural requirements, matching all existing seams.

Sign contractor to verify all existing conditions.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.4.1 Logos
10.1.1 Signage Technical Specifications
SIGN TYPE JJ1
SMALL LOADING DOCK BAY ID

NOTES
Sign Type JJ1 is used to identify individual bays within a loading dock.
Sign Contractor to verify all existing conditions for correct placement and mount type prior to installation.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications

Elevation and Details

SIGN TYPE JJ1
Elevation and Details

1 Elevation
1" = 1'-0"

2 Elevation (Alt Layout)
1" = 1'-0"

3 Elevation
1" = 1'-0"

Panel Number: T5
Text: T5

1/8" TH ptd.
aluminum panel w/ etched and paint-filled text
NOTES
This illustration is specifically for Sign Type KK1 at the Main Lobby Entrance Parking Garage of the Main Campus. It should serve as a guideline for similar signage at other parking garage entrances.

Parking garage entrances should include the parking symbol, directional arrows (as required), parking identification and the brand identification.

Where illumination is not achievable due to site constraints or zoning restrictions, substitute with silkscreen graphics in like colors.
NYU LANGONE HEALTH
Wayfinding and Communications
Standards Manual

SIGN TYPE KK1
PYLON PARKING IDENTIFICATION

NOTES
Pylon to replace existing signage, coordinate installation with all existing conditions.
Internally illuminated pylon requires power supply.
Where illumination is not achievable due to site constraints or zoning restrictions, substitute with silkscreen graphics in like colors.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols
1.4.1 Logos

Elevation
3/8" = 1'-0"

Side View
3/8" = 1'-0"
**Side Panels**
1/8” TH ptd. aluminum break-form panel; mtd. to steel tube frame w/ fully concealed mechanical fasteners

**Steel Tube Frame**
2”x2”x1/8” +/- welded and braced steel tubes forming internal structure; anchored to sub-grade steel base plate and gusset

**Illumination**
LED edge lit clear panel; mtd. to push thru symbol and face panel w/ fully concealed mechanical fasteners

**Push thru Symbol**
3/8” TH routed translucent white acrylic symbol; mtd. to face panel and LED panel w/ fully concealed mechanical fasteners

**Note:** Face of letter is 1/8” proud of face panel

**Face Panels**
1/8” TH ptd. aluminum panel w/ precision cut openings for push thru symbols; mtd. to steel tube frame w/ fully concealed mechanical fasteners

**Steel Tube Frame**
2”x2”x1/8” +/- welded and braced steel tubes forming internal structure; anchored to sub-grade steel base plate and gusset

**Illumination**
LED edge lit clear panel; mtd. to push thru letter and face panel w/ fully concealed mechanical fasteners

**Push thru Halo Letters**
3/8” TH routed translucent white acrylic letters w/ 1/16” TH ptd. aluminum face; mtd. to face panel and LED panel w/ fully concealed mechanical fasteners

**Note:** Face of letter is 1/8” proud of face panel

**Face Panels**
1/8” TH ptd. aluminum panel w/ precision cut openings for push thru letters; mtd. to steel tube frame w/ fully concealed mechanical fasteners

**NOTES**
Provide separation between dissimilar metals, where required.
All exposed fasteners to be painted to match adjacent surfaces.
Top panel of sign construction to be pitched to ensure run-off.

**REFERENCE PAGES**
10.1.1 Signage Technical Specifications
Side Panels
1/8" TH ptd. aluminum break-formed panel; mtd. to steel tube frame w/ fully concealed mechanical fasteners

Steel Tube Frame
2"x2"x1/8" +/- welded and braced steel tubes forming internal structure; anchored to sub-grade steel base plate and gusset

Push thru Halo Letters
3/8" TH routed translucent white acrylic letters w/ 1/16" TH ptd. aluminum face; mtd. to face panel and LED panel w/ fully concealed mechanical fasteners
Note: Face of letter is 1/8" proud of face panel

Illumination
LED edge lit clear panel; mtd. to push thru symbol and face panel w/ fully concealed mechanical fasteners

Face Panels
1/8" TH ptd. aluminum break-formed panel w/ precision cut openings for push thru symbols; mtd. to steel tube frame w/ fully concealed mechanical fasteners

** Coordinate installation for replacement of existing parking pylon w/ the specific requirements of the existing foundations.

For all new installation conditions, the illustrated footer applies.

Base Plate
Steel base plate w/ welded steel gusset anchored to reinforced concrete footer w/ galvanized steel threaded rod anchor

Footer
Reinforced concrete footer as required

NOTES
The fabricator shall assess all site conditions and shall be responsible for all underground utility checks.
The fabricator is responsible for proper engineering of all footer details appropriate to the installation location.
When locating a footer within a single pavement block adjacent to at least two (2) expansion joints, the entire block of pavement shall be removed and replaced with the same materials and finish of adjacent sidewalk areas.
Provide separation between dissimilar metals, where required.
All exposed fasteners to be painted to match adjacent surfaces.

REFERENCE PAGES
10.1.1 Signage Technical Specifications
NOTES
This illustration is specifically for Sign Type KK2 at the Main Lobby Entrance Parking Garage of the Main Campus. It should serve as a guideline for similar signage at other Parking Garage Entrances.

Parking garage entrances should include the NYU Langone Logo, facility address, as well as any regulatory information required. Building mounted signs do not require internal illumination if there is adequate external illumination.

REFERENCE PAGES
1.1.2 Signage Finishes
1.3.1 Symbols
1.4.1 Logos
NOTES
All Parking Garage Entrances should be identified with the appropriate building address, highly visible "Parking" message, and corresponding symbols. All regulatory messages to be coordinated with the specific garage requirements.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbols
NOTES
Existing structures may be re-purposed to be used for signage. This ventilation cover at the Main Campus will be resurfaced with new sign panels.
Main Campus

Main Lobby Entrance
530-550 First Avenue

Tisch Hospital
NYU School of Medicine
Schwartz Health Care Center

NOTES
Existing pylon structure is part of a ventilation shaft.
Fabricator to verify all field conditions for appropriate panel mounting methods. Any existing parts that are utilized should be refinished to ensure seamless integration of new parts.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.4.1 Logos
SIGN TYPE MM1
EXISTING PYLON RE-CLAD

NOTES
Existing pylon structure is part of a ventilation shaft.
Fabricator to verify all field conditions for appropriate panel mounting methods. Any existing parts that are utilized should be refinished to ensure seamless integration of new parts.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.4.1 Logos
SIGN TYPE NN1
LARGE PYLON IDENTIFICATION

NOTES
This sign type is used for primary arrival direction and identification information where high vehicular visibility is needed.

Pylon heights can be adjusted to respond to site lines at specific locations.
NOTES
Where illumination is not achievable due to site constraints or zoning restrictions, substitute with silkscreen graphics in like colors.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbols
1.4.1 Logos

SIGN TYPE NN1
LARGE PYLON IDENTIFICATION

DESIGN IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION. COORDINATE WITH RED+F FOR UPDATED SIGN TYPE DESIGN.
Plan Section

Push thru Logo
1/2" TH routed translucent white acrylic symbol; mtd. to face panel and LED panel w/ fully concealed mechanical fasteners

Note: Face of logo is 1/8" proud of face panel

Illumination
LED edge lit clear panel; mtd. steel tube frame and side panels w/ fully concealed mechanical fasteners

Side Panels
1/2" TH translucent white acrylic; mtd. to steel tube frame and LED panel w/ fully concealed mechanical fasteners

Steel Tube Frame
2"x2"x1/8" +/- welded and braced steel tubes forming internal structure; anchored to sub-grade steel base plate and gusset

Wrapped Face Panels
1/4" TH ptd. aluminum panel w/ precision cut openings for push thru logo; mtd. to steel tube frame w/ fully concealed mechanical fasteners

Notes
Provide separation between dissimilar metals, where required.
All exposed fasteners to be painted to match adjacent surfaces.
Top panel of sign construction to be pitched to ensure run-off.

Reference Pages
10.1.1 Signage Technical Specifications
**NYU Langone Health**
Wayfinding and Communications Standards Manual

**SIGN TYPE NN**
PYLON IDENTIFICATION

**NOTES**
- Provide separation between dissimilar metals, where required.
- All exposed fasteners to be painted to match adjacent surfaces.
- Top panel of sign construction to be pitched to ensure run-off.

**REFERENCE PAGES**
- 10.1.1 Signage Technical Specifications

---

**Wrapped Face Panels**

1/4" TH ptd. aluminum break-formed panel w/ precision cut openings for push thru letters; mtd. to steel tube frame w/ fully concealed mechanical fasteners.

**Push thru Halo Letters**

1/2" TH routed translucent white acrylic letters w/ 1/16" ptd. aluminum face; mtd. to face panel and LED panel w/ fully concealed mechanical fasteners. Note: Face of letter is 3/16" proud of face panel.

**Illumination**

LED edge lit clear panel; mtd. to steel tube frame and side panels w/ fully concealed mechanical fasteners.

**Steel Tube Frame**

2"x2"x1/8" +/- welded and braced steel tubes forming internal structure; anchored to sub-grade steel base plate and gusset.

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### Steel Tube Frame
2"x2"x1/8" +/- welded and braced steel tubes forming internal structure; anchored to sub-grade steel base plate and gusset

### Wrapped Face Panels
1/4" TH ptd. aluminum panel w/ precision cut openings for push thru letters; mtd. to steel tube frame w/ fully concealed mechanical fasteners

### Base Plate
Steel base plate w/ welded steel gusset anchored to reinforced concrete footer w/ galvanized steel threaded rod anchor

### Footer
Reinforced concrete footer as required

### NOTES
The fabricator shall assess all site conditions and shall be responsible for all underground utility checks.
The fabricator is responsible for proper engineering of all footer details appropriate to the installation location.
When locating a footer within a single pavement block adjacent to at least two (2) expansion joints, the entire block of pavement shall be removed and replaced with the same materials and finish of adjacent sidewalk areas.
Provide separation between dissimilar metals, where required.
All exposed fasteners to be painted to match adjacent surfaces.

### REFERENCE PAGES
10.1.1 Signage Technical Specifications
NOTES

This sign type is used for primary identification at facilities other than at the Main Campus.
Pylon heights can be adjusted to respond to site lines at specific locations.
NYU LANGONE HEALTH
Wayfinding and Communications Standards Manual

SIGN TYPE NN2
SMALL PYLON IDENTIFICATION

NOTES
Where illumination is not achievable due to site constraints or zoning restrictions, substitute with silkscreen graphics in like colors.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.4.1 Logos
SIGN TYPE NN3
LANDSCAPE PYLON IDENTIFICATION

NOTES
This sign type is used for primary identification at facilities other than at the Main Campus where a horizontal element is appropriate. Pylon heights can be adjusted to respond to sitelines at specific locations.

Ambulatory Care Center
240 East 38th Street
NOTES
Where illumination is not achievable due to site constraints or zoning restrictions, substitute with silkscreen graphics in like colors.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.4.1 Logos
SIGN TYPE PP1
FREESTANDING MAP KIOSK

NOTES
This sign type is used to provide orientation at NYU Langone facilities where exterior site conditions allow.

At the Main Campus, the Orientation Map provides an overall view of facilities in Manhattan on one side, and a detail view of the immediate Main Campus neighborhood and entrances on the second side.

When the Orientation Map is used at a facility other than the Main Campus, the neighborhood map is optional and dependent on the specific needs of that facility.
SIGN TYPE PP1
FREESTANDING MAP KIOSK

NOTES
When the Orientation Map is used at a facility other than the Main Campus, the neighborhood map is optional and dependent on the specific needs of that facility.

If a neighborhood map is not in use, the second side may be replaced with an additional Manhattan Map.

If the pylon is oriented such that the second side is not accessible, the panel should be replaced with a painted aluminum panel, Finish F17.

REFERENCE PAGES
1.1.2 Signage Finishes
1.4.1 Logos
DVD NYU Langone Main Campus Map Artwork
NYU LANGONE HEALTH  
Wayfinding and Communications Standards Manual

SIGN TYPE PP1  
FREESTANDING MAP KIOSK

NOTES
- Provide separation between dissimilar metals, where required.
- All exposed fasteners to be painted to match adjacent surfaces.
- Top panel of sign construction to be pitched to ensure run-off.
- The fabricator shall assess all site conditions and shall be responsible for all underground utility checks.
- The fabricator is responsible for proper engineering of all footer details appropriate to the installation location.
- When locating a footer within a single pavement block adjacent to at least two (2) expansion joints, the entire block of pavement shall be removed and replaced with the same materials and finish of adjacent sidewalk areas.

REFERENCE PAGES
- 10.1.1 Signage Technical Specifications
SIGN TYPE RR1
LARGE LOADING DOCK BAY ID

NOTES
Sign Type RR1 is used for directional information within a loading dock.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbols
10.1.1 Signage Technical Specifications
SIGN TYPE TT1
EXTERIOR GRADE TACTILE SIGN

NOTES
This is an example of a sign type modified for use in exterior conditions that require ADA compliant signage by code.

REFERENCE PAGES
1.1.2   Signage Finishes
1.2.1–15 Typography Specifications
10.1.1  Signage Technical Specifications

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**Panel Top**
Text: T3, F3

**Panel**
1/4" TH etched zinc panel w/ integral raised braille and integral raised/silkscreened letters; mtd. to existing exterior surface w/ threaded studs and epoxy adhesive as required

**Panel Bottom**
Text: T1, F4

**Rule:** F8

**NOTES**
Provide separation between dissimilar metals, where required.

Building names, such as "Tisch Hospital", should be used only when Sign Type TT1 is programmed at the Main Campus. For all other facilities, the portion of the panel should remain blank.

**REFERENCE PAGES**
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications
SIGN TYPE TT1 (ALTERNATE COLOR)
EXTERIOR GRADE TACTILE SIGN (STAIRCASE IDENTIFICATION)

NOTES
This is an example of a sign type modified for use in exterior conditions that require ADA compliant signage by code.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications

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NYU LANGONE HEALTH
Wayfinding and Communications Standards Manual

SIGN TYPE TT1 (ALTERNATE COLOR)
Installation Elevation

Installation Elevation
1/4" = 1'-0"

Panel
Background: F2

Rule: F4

Elevation
3" = 1'-0"
SIGN TYPE TT1 (ALTERNATE COLOR)
Exterior Grade Tactile Sign
(Staircase Identification)

NOTES
Provide separation between dissimilar metals, where required.
Building names, such as “Tisch Hospital”, should be used only when Sign Type TT1 is programmed at the Main Campus. For all other facilities, the portion of the panel should remain blank.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications

Panel
1/8” TH ptd. etched zinc panel w/ integral raised braille and integral raised/ silkscreened letters; mtd. to louver installation panel w/ threaded studs and epoxy adhesive as required

NOTE: Sign Contractor to coordinate w/ existing conditions and to confirm if an alternate clamp-to-louver method is achievable for installation.
Decontamination
Authorized Personnel Only

1 1/2" = 1'-0"

Panel Top
Background: F4
Rule: F8
Panel Bottom
Background: F2

Decontamination
Authorized Personnel Only

1 1/2" = 1'-0"

Panel Top
Text: T1, F3
Panel Bottom
Text: T1, F4

Panel
1/4" TH ptd. aluminum panel w/ silkscreen text; mtd. to existing exterior surface w/ threaded studs, 1/8" nylon spacers, and epoxy adhesive as required

Panel
1/4" TH ptd. aluminum panel w/ silkscreen text; mtd. to existing exterior surface w/ fully concealed VHB adhesive

Typical Installation Elevation
1/4" = 1'-0"

Elevation
1 1/2" = 1'-0"

Elevation
1 1/2" = 1'-0"

Section - Stud Mounted
3" = 1'-0"

Section - Adhesive Mounted
3" = 1'-0"

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Wayfinding and Communications Standards Manual

SIGN TYPE TT2
EXTERIOR GRADE
ROOM IDENTIFICATION

NOTES
This is an example of room identification signage modified for use in exterior conditions that are not required to be ADA compliant.
Provide separation between dissimilar metals, where required.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
10.1.1 Signage Technical Specifications

3.TT.5
Elevations and Details
Decontamination
When Overhead Yellow Light is Flashing
DO NOT ENTER

---

Typical Installation Elevation
1/4" = 1'-0"

Elevation - Sign Type TT4
3" = 1'-0"

Panel
1/4" TH ptd. aluminum panel w/ silkscreen text; mtd. to existing exterior surface w/ threaded studs, 1/8" nylon spacers, and epoxy adhesive

Section - Stud Mounted
3" = 1'-0"

---

NOTES

This is an example of regulatory information signage for use in exterior conditions that are not required to be ADA compliant.

Provide separation between dissimilar metals, where required.

REFERENCE PAGES

1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
10.1.1 Signage Technical Specifications
This is an example of regulatory information signage for use specifically at exterior conditions at egress doors that are required to be identified by code.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications
EXIT DOOR
DO NOT BLOCK

Panel
Text: T14, F3

1/8" TH stainless steel panel w/ etched and filled letters; mtd. to louver installation panel w/ threaded studs and epoxy adhesive as required

NOTE: Sign Contractor to coordinate w/ existing conditions and to confirm if an alternate clamp-to-louver method is achievable for installation

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications

SIGN TYPE TT5
EXTERIOR GRADE
REGULATORY (FIRE DOOR)

NOTES
Provide separation between dissimilar metals, where required.
NO. 2 OIL / CAPACITY 25,000 GALLONS
CAUTION
WHEN ALARM BELL SOUNDS
OIL TANK FILLED TO CAPACITY
DO NOT OVERFILL

Panel
Background: F42
Symbol
Inside: F3
Circle: F9
Text: T14, F9

Text: T14, F3
Text: T14, F9

Installation Elevation
1/4" = 1'-0"

Installation Elevation (Alt)
1/4" = 1'-0"

Elevation
1 1/2" = 1'-0"
SIGN TYPE TT6
EXTERIOR GRADE REGULATORY

NOTES
This is an example of regulatory information signage for use specifically at exterior conditions at fill pumps and other similar items that are required to be identified by code.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbols
10.1.1 Signage Technical Specifications
SIGN TYPE TT7
EXTERIOR GRADE REGULATORY
(STANDPIPES)

NOTES
This is an example of regulatory information signage for use specifically at exterior conditions to identify standpipe connections.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications
**SIGN TYPE TT7**

**EXTERIOR GRADE REGULATORY**

(STANDPIPES)

**NOTES**

This is an example of regulatory information signage for use specifically at exterior conditions to identify standpipe connections.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications
**SIGN TYPE TT8**

**LOADING DOCK CLEARANCE**

**NOTES**

This is an example of regulatory information signage for use specifically at vehicular entrances that need to have clearance heights posted.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications
SIGN TYPE TT8
LOADING DOCK CLEARANCE

NOTES
This is an example of regulatory information signage for use specifically at vehicular entrances that need to have clearance heights posted.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications
SIGN TYPE TT9
ENTRANCE ASSISTANCE

NOTES
This is an example of regulatory information signage for use specifically at vehicular entrances that need to have address and emergency contact information posted.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications
SIGN TYPE TT9
ENTRANCE ASSISTANCE

NOTES
Provide separation between dissimilar metals, where required.
Materials to be coordinated with architectural condition.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications
NOTES
Transparent glass doors and fixed adjacent transparent glass sidelights should be marked in two (2) areas on the glass surface. One such area shall be located at least 30' A.F.F. as illustrated in this section.
Glass doors and sidelights that have horizontal separation bars, muntin bars or equivalent at least 1 1/2" in vertical dimension that extend across the total width of the glazed area and are located at least 40", but not more than 50" above the bottom of the door or sidelight, are exempt from this requirement.
Fixed adjacent transparent glass sidelights which are supported by opaque sill and wall construction of at least 18" above the ground are exempt from these requirements.

REFERENCE PAGES
1.1.2   Signage Finishes
1.4.1  Logos
10.1.1 Signage Technical Specifications
Transparent glass doors and fixed adjacent transparent glass sidelights should be marked in two (2) areas on the glass surface. One such area shall be located at least 30" A.F.F. as illustrated in this section.

Glass doors and sidelights that have horizontal separation bars, muntin bars or equivalent at least 1 1/2" in vertical dimension that extend across the total width of the glazed area and are located at least 40", but not more than 50" above the bottom of the door or sidelight, are exempt from this requirement.

Fixed adjacent transparent glass sidelights which are supported by opaque sill and wall construction of at least 18" above the ground are exempt from this requirements.

REFERENCE PAGES
1.1.2 Signage Finishes
10.1.1 Signage Technical Specifications
Tobacco-Free Campus

1. Elevation - Sign Type VV3
   FULL SIZE

Panel
Background: F32

Tobacco-Free Campus

2. Detail Elevation - Sign Type VV3
   FULL SIZE

Panel
Text: T5, F3
Symbol: F3

NOTES
This is an example of regulatory information signage for use in exterior conditions.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbols
10.1.1 Signage Technical Specifications
CHAPTER 4
INTERIOR SIGNAGE:
CUSTOM SIGN TYPES

4.A  Sign Type A: Brand Identification

4.B  Sign Type B: Area Identification Letters

4.C  Sign Type C: Area Identification Panel

4.D  Sign Type D: Overhead Identification

4.M  Sign Type M: Overhead Directional

4.N  Sign Type N: Freestanding or Wall Mounted Directional

4.P  Sign Type P: Custom Elevator Identification

4.S  Sign Type S: Information Node
NOTES
This sign type is used to identify NYU Langone Health facilities at interior locations. Specific locations and architectural conditions should be considered when specifying the size and material finishes.

RED+F will make final determination of the brand identification size (within each range) and material finishes in order to ensure it complements the architectural design.

REFERENCE PAGES
1.4.1 Logos
NOTES
When paired with the name of a building or department, the cap height of “NYU Langone” should match the cap height of the Sign Type B. RED+F will make final determination of the brand identification size (within each range), relationships between the Logo and adjacent destination typography, and material finishes in order to ensure it complements the architectural design.
1 Example Installation Elevation - at Reception Desks
1/4" = 1'-0"

2 Detail Elevation
1 1/2" = 1'-0"

Sign Type B
See Section 4.B

NOTES
The NYULH Brand should always be displayed at reception walls. Always mount center of the health behind the desk.
RED+F will make final determination of the brand identification size (within each range) and material finishes in order to ensure it complements the architectural design.

SIGN TYPE A
BRAND IDENTIFICATION
NOTES: See Dimension Specifications Chart for further details

Section: Pin Mount
6" = 1'-0"

NOTE: Adhesive mount may only be used on surfaces where pin mounts are not achievable.

Section: Adhesive Mount
6" = 1'-0"

Section: Transparent Surface
6" = 1'-0"

<table>
<thead>
<tr>
<th>Sign Type</th>
<th>Cap Height</th>
<th>Profile (wall mounted)</th>
<th>Profile (desk mounted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>9 5/8&quot; - 13&quot;</td>
<td>1&quot;</td>
<td>N/A</td>
</tr>
<tr>
<td>A2</td>
<td>5 5/8&quot; - 9 1/2&quot;</td>
<td>3/4&quot;</td>
<td>1/16&quot;</td>
</tr>
<tr>
<td>A3</td>
<td>2 5/8&quot; - 5 1/2&quot;</td>
<td>1/2&quot;</td>
<td>1/16&quot;</td>
</tr>
<tr>
<td>A4</td>
<td>Up to 2 1/2&quot;</td>
<td>3/8&quot;</td>
<td>1/16&quot;</td>
</tr>
</tbody>
</table>

Metal Finish
See Section Detail Notes

Sign may be either painted finish or natural material as noted. Specific locations and architectural conditions should be considered when specifying the size and material finishes. RED+F will make final determination of the brand identification size (within each range) and material finishes in order to ensure it complements the architectural design.

Interior applications should use a one (1) color logo with metal finish to match architectural finishes.

REFERENCE PAGES
1.1.2 Signage Finishes
1.4.1 Logos
10.1.1 Signage Technical Specifications
**NOTES**

Specific locations and architectural conditions should be considered when specifying the size and material finishes. RED+F will make final determination of the enterprise identification size (within each range) and material finishes in order to ensure it complements the architectural design.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.4.1 Logos
10.1.1 Signage Technical Specifications

---

**SIGN TYPE A**

**BRAND IDENTIFICATION**

**NOTES**

Specific locations and architectural conditions should be considered when specifying the size and material finishes. RED+F will make final determination of the enterprise identification size (within each range) and material finishes in order to ensure it complements the architectural design.
NOTES
Use this detail sheet when logo is to be silk-screened or die-cut vinyl.
Silkscreen should be on first-surface of opaque substrates or second-surface of clear substrates, as required by specific project parameters.
RED+F will make final determination of the brand identification size (within each range) and material finishes in order to ensure it complements the architectural design.

REFERENCE PAGES
1.1.2 Signage Finishes
1.4.1 Logos
10.1.1 Signage Technical Specifications
This sign type is used for all instances of individual letterforms applied to existing surfaces at interior locations.

There are four (4) sign types that cover a range of sizes. The exact size and sign type should be coordinated with architectural conditions.

RED+F will make final determination of identification size (within each range) and material finishes in order to ensure it complements the architectural design.

REFERENCE PAGES
1.2.1–15 Typography Specifications

<table>
<thead>
<tr>
<th>Sign Type</th>
<th>Cap Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>9 5/8” – 13”</td>
</tr>
<tr>
<td>B2</td>
<td>5 5/8” – 9 1/2”</td>
</tr>
<tr>
<td>B3</td>
<td>2 5/8” – 5 1/2”</td>
</tr>
<tr>
<td>B4</td>
<td>Up to 2 1/2”</td>
</tr>
</tbody>
</table>

Dimension Specifications
Typical Size Relationship

1/4" = 1'-0"

Example Installation Elevation - With Department Name

SIGN TYPE B
ENTITY / AREA IDENTIFICATION LETTERS

NOTES
When paired with the logo, the Sign Type B cap height should match the cap height of "NYU Langone."
RED+F will make final determination of identification size (within each range) and material finishes in order to ensure it complements the architectural design.
**NOTES**

The fabrication material and size of Sign Type B should be selected from the options detailed in this section and coordinated with the building architecture.

RED+F will make final determination of identification size (within each range) and material finishes in order to ensure it complements the architectural design.

**REFERENCE PAGES**

1.1.2 Signage Finishes
10.1.1 Signage Technical Specifications
Identifica

Elevation - Sign Type B1, B2, B3, B4

NTS

1.1.2 Signage Finishes
10.1.1 Signage Technical Specifications

SIGN TYPE B
ENTITY / AREA IDENTIFICATION LETTERS

NOTES
The fabrication material and size of Sign Type B should be selected from the options detailed in this section and coordinated with the building architecture.

RED+F will make final determination of identification size (within each range) and material finishes in order to ensure it complements the architectural design.

REFERENCE PAGES
1.1.2 Signage Finishes
10.1.1 Signage Technical Specifications

Dimension Specifications
No Scale

Note: For carved letterform depths, consult with stone carver to specify carving depth that is appropriate for actual letter size, placement, and stone type.

<table>
<thead>
<tr>
<th>Sign Type</th>
<th>Cap Height</th>
<th>Carved / Sandblasted Depth</th>
<th>Etched Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>9 5/8” - 13”</td>
<td>3/8”</td>
<td>1/32”</td>
</tr>
<tr>
<td>B2</td>
<td>5 5/8” - 9 1/2”</td>
<td>3/8”</td>
<td>1/32”</td>
</tr>
<tr>
<td>B3</td>
<td>2 5/8” - 5 1/2”</td>
<td>1/4”</td>
<td>1/32”</td>
</tr>
<tr>
<td>B4</td>
<td>Up to 2 1/2”</td>
<td>1/8”</td>
<td>1/32”</td>
</tr>
</tbody>
</table>

Carved Letterforms
Stone Surfaces
U-cut carved letters w/ Lithochrome tint infill; color based on stone type TBD through sampling

Sandblasted Letterforms
Stone Surfaces
Sandblasted letters w/ Lithochrome tint infill; color based on stone type TBD through sampling

Etched Letterforms
Metal Surfaces
Chemically deep-etched letters w/ ptd. infill

Glass Surfaces
Etched letters w/ ptd. infill
NOTES

Use this detail sheet when letters are to be silkscreened or die-cut vinyl on existing surfaces in situ.

Silkscreen should be on first-surface of opaque substrates or second-surface of clear substrates, as required by specific project parameters.

RED+F will make final determination of identification size (within each range) and material finishes in order to ensure it complements the architectural design.

REFERENCE PAGES

1.1.2 Signage Finishes
10.1.1 Signage Technical Specifications
NOTES

Tisch Hospital provides an example of Sign Type B1 located within an elevator lobby. The sign is scaled to be clearly visible to patients and visitors as they exit the elevator.

This is an example elevation. Exact size, placement, and material finishes of sign should be coordinated with specific architectural conditions.

REFERENCE PAGES

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
The Patient Resource Center, located at the Main Campus, provides an example of Sign Type B4 identifying the entrance of a major public amenity. This is an example elevation. Exact size, placement, and material finishes of sign should be coordinated with specific architectural conditions.

### Reference Pages
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
This is an example elevation. Exact size, placement, and material finishes of sign should be coordinated with specific architectural conditions.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Example Installation Elevation

1/2" = 1'-0"

NOTES
This is an example elevation. Exact size, placement, and material finishes of sign should be coordinated with specific architectural conditions.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1-15  Typography Specifications
NOTES
Tisch Cafe is an example of Sign Type B8 which was specifically developed to identify Cafes within the Main Campus. Typography, graphic treatment, size, placement, and material finish of sign should be coordinated with specific architectural conditions.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications

SIGN TYPE B8
FOOD SERVICE IDENTIFICATION
Tisch Cafe is an example of Sign Type B8 which was specifically developed to identify Cafes within the Main Campus. Typography, graphic treatment, size, placement, and material finish of sign should be coordinated with specific architectural conditions.

**REFERENCE PAGES**
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Tisch Cafe is an example of Sign Type B9 which was specifically developed to identify Cafes within the Main Campus. Typography, graphic treatment, size, placement, and material finish of sign should be coordinated with specific architectural conditions.

**REFERENCE PAGES**
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications

**SIGN TYPE B9**
**FOOD SERVICE IDENTIFICATION**

Dimensional Letters
- Finish: F31
- Water-jet cut clear anodized aluminum letters w/ No. 4 Horizontal Grain finish and sandblasted returns; mtd. to existing wall w/ threaded studs and 1/8" nylon spacers
SIGN TYPE B10
CAFE GRAPHICS

NOTES
Tisch Cafe contains examples of Sign Type B10 graphics to identify areas within a cafeteria space.

Typography, graphic treatment, size, placement, and material finish of sign should be coordinated with specific architectural conditions.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications

TEXT
Die-cut vinyl graphics on existing wall T12, F1

1 Installation Elevation
1/4" = 1'-0"

2 Detail Elevation
3" = 1'-0"
NOTES
Tisch Cafe contains examples of Sign Type B11 graphics to identify areas within a cafeteria space.

Typography, graphic treatment, size, placement, and material finish of sign should be coordinated with specific architectural conditions.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications

SIGN TYPE B11
CAFE GRAPHICS (VERTICAL)

Text
Die-cut vinyl graphics on existing column enclosure
T12, F1
NOTES
Tisch Cafe contains examples of Sign Type B12 graphics to identify types of trash cans. Typography, graphic treatment, size, placement, and material finish of sign should be coordinated with specific architectural conditions.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
SIGN TYPE B12
TRASH CAN IDENTIFICATION

NOTES
Tisch Cafe contains examples of Sign Type B12 graphics to identify types of trash cans. Typography, graphic treatment, size, placement, and material finish of sign should be coordinated with specific architectural conditions.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
NOTES
This sign type was developed for use in the Tisch Hospital Elevator lobbies to identify up to four (4) departments per floor. The panels are standardized and removable so as to move from one floor to another when departments are relocated.
NOTES
Sign contractor to provide four (4) removable panels per floor, plus additional attic stock of ten (10) blank panels for future use.

REFERENCE PAGES
1.1.2 Signage Finishes
Typical Removable Panel
Background: F35
Text: T1, F3
Metal Trim: F31

1. Detail Elevation
   1 1/2" = 1'-0"

Pediatric Critical Care

2. Detail Elevation
   1 1/2" = 1'-0"

Rheumatology/Infusion and Seligman Center
NOTES
All layouts build up from the bottom line. For single line messages, the bottom line should be used.

REFERENCE PAGES
1.1.2   Signage Finishes
1.2.1–15  Typography Specifications
**Top Panel**
1/4” TH back-painted frosted acrylic w/ 1/16” angle trim bonded to bottom edge; mtd. to backer panel with continuous length Z-Clips. Face to be flush w/ surrounding walls and panels.

**Typical Removable Panel**
1/4” TH back-painted frosted acrylic w/ first-surface silkscreened graphics and 1/16” angle trim bonded to bottom edge; mtd. to backer panel with continuous length Z-Clips. Face to be flush with surrounding walls and panels.

**Build-out Panel**
3/4” TH +/- ptd. plywood panel; mechanically fastened to existing GWB
Color: F4

**Bottom Panel**
1/4” TH back-painted frosted acrylic; mtd. to backer panel with Z-Clips. Face to be flush with surrounding walls and panels.

---

**NOTES**
Sign contractor to verify field conditions to coordinate dimensions and placement of sign within existing wall pocket.

**REFERENCE PAGES**
10.1.1 Signage Technical Specifications
NOTES
Sign Type D should be used to identify public amenities located on designated wayfinding pathways. These signs provide clear overhead identification and support the directional wayfinding signs by confirming arrival at a destination.

Sign Type D is always mounted perpendicular to the path of travel.
SIGN TYPE D1
LARGE OVERHEAD IDENTIFICATION

NOTES
Double sided sign mounted to the ceiling perpendicular to the path of travel. Can include Symbol and Destination Name or Destination Name only. Mounting heights may vary based on ceiling conditions, however a consistent datum line for all overhead sign types should be observed within a single corridor.
SIGN TYPE D1
LARGE OVERHEAD IDENTIFICATION

NOTES
Sign Type D has color variations depending on Pathway designation.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbols

SIGN TYPE D1
Elevation

1 Plan View
1 1/2" = 1'-0"

2 Elevation (Side A/B)
1 1/2" = 1'-0"

3 Side Elevation
1 1/2" = 1'-0"

4 Elevation (Side A/B)
1 1/2" = 1'-0"
### Interior Box Construction
Ptd. aluminum angle and tube frame construction, welded and braced as required; anchored to mounting post w/ fully concealed mechanical fasteners

### Trim
1/8" TH aluminum

### Face Panel
1/2" TH back-painted frosted acrylic w/ flat polish edges; mtd. to interior box construction w/ fully concealed mechanical fasteners

### Vertical Section - Suspended
3" = 1'-0"

### Vertical Section - Flush
3" = 1'-0"

### Horizontal Section
3" = 1'-0"

### Mounting Post
1" TH aluminum tube; anchored to ceiling w/ fully concealed mechanical fasteners

### Back-Up Frame
1/8" TH aluminum angle on two (2) horizontal sides of panel

### Face Panel
1/2" TH back-painted frosted acrylic w/ flat polish edges; mtd. to interior box construction w/ fully concealed mechanical fasteners

### Back-Up Frame
1/8" TH aluminum angle on two (2) horizontal sides of panel

### Interior Box Construction
Ptd. aluminum angle and tube frame construction, welded and braced as required; anchored to mounting post w/ fully concealed mechanical fasteners

### Sign contractor to verify field conditions to coordinate installation into existing surfaces.

### Provide separation between dissimilar materials, where required.

### REFERENCES
10.1.1 Signage Technical Specifications
NOTES
Double sided sign mounted perpendicular to the path of travel, on either the ceiling or wall, to identify a destination when a Symbol without text is suitable.
Mounting heights may vary based on ceiling conditions, however a consistent datum line for all overhead signs should be observed within a single corridor.
NOTES
Sign Type D has color variations depending on Pathway designation.

REFERENCE PAGES
1.1.2 Signage Finishes
1.3.1 Symbols
**A. Vertical Section - Ceiling Mounted**

- **Mounting Post**: 1" TH aluminum tube; anchored to ceiling w/ fully concealed mechanical fasteners

- **Existing Ceiling**

- **Back-Up Frame**: 1/8" TH aluminum angle on two (2) horizontal sides of panel

- **Face Panel**: 1/2" TH back-painted frosted acrylic w/ flat polish edges; mtd. to interior box construction w/ fully concealed mechanical fasteners

- **Interior Box Construction**: Ptd. aluminum angle and tube frame construction, welded and braced as required; anchored to mounting post w/ fully concealed mechanical fasteners

**B. Horizontal Section - Ceiling Mounted**

- **Interior Box Construction**: Ptd. aluminum angle and tube frame construction, welded and braced as required; anchored to mounting post w/ fully concealed mechanical fasteners

- **Trim**: 1/8" TH aluminum

- **Face Panel**: 1/2" TH back-painted frosted acrylic w/ flat polish edges; mtd. to interior box construction w/ fully concealed mechanical fasteners

**C. Horizontal Section - Flag Mounted**

- **Existing Wall**

- **Mounting Bracket**: 1/8" TH aluminum channel; anchored to existing wall w/ fully concealed mechanical fasteners

- **Face Panel**: 1/2" TH back-painted frosted acrylic w/ flat polish edges; mtd. to interior box construction w/ fully concealed mechanical fasteners

- **Interior Box Construction**: Ptd. aluminum angle and tube frame construction, welded and braced as required; anchored to mounting bracket w/ fully concealed mechanical fasteners

**NOTES**

Sign contractor to verify field conditions to coordinate installation into existing surfaces.

Provide separation between dissimilar materials, where required.

**REFERENCE PAGES**

10.1.1 Signage Technical Specifications
**Sign Type M1**
Portal Identification

**Sign Type M2**
Large Overhead - suspended / double sided

**Sign Type M3**
Small Overhead - suspended / double sided

**Sign Type M4**
Fascia Mounted - single sided

**NOTES**
Sign Type M is used for overhead identification of designated wayfinding pathways and directional information to elevators, pathway connections, and departure routes.
NOTES
This sign type was developed for use in the Main Entrance Lobby at the Main Campus to identify designated wayfinding pathways.
Sign Type to display Pathway Identification and Elevator Identification only.
You are entering the Tisch Elevators Kimmel Elevators Hassenfeld Elevators

9'-6" V.I.F
27'-8 15/16"

1/4" = 1'-0"

Installation Elevation @ Blue Pathway

You are entering the Blue Pathway

Tisch Elevators
Kimmel Elevators
Hassenfeld Elevators

NOTES
This sign type was developed for use in the Main Entrance Lobby at the Main Campus to identify designated wayfinding pathways.

Sign Type to display Pathway Identification and Elevator Identification only.
NOTES
This sign type was developed for use in the Main Entrance Lobby at the Main Campus to identify designated wayfinding pathways.
Sign Type to display Pathway Identification and Elevator Identification only.
SIGN TYPE M1
PORTAL OVERHEAD

NOTES
Sign Type M has color variations depending on Pathway designation.
Sign contractor to verify all existing conditions to assess feasibility of removing existing wood transom panels and replacing with specified acrylic material.
Final panel seam locations to be coordinated with existing architectural conditions and aligned where required.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols

SIGN TYPE M1
PORTAL OVERHEAD

NOTES
Sign Type M has color variations depending on Pathway designation.
Sign contractor to verify all existing conditions to assess feasibility of removing existing wood transom panels and replacing with specified acrylic material.
Final panel seam locations to be coordinated with existing architectural conditions and aligned where required.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols

SIGN TYPE M1
PORTAL OVERHEAD

NOTES
Sign Type M has color variations depending on Pathway designation.
Sign contractor to verify all existing conditions to assess feasibility of removing existing wood transom panels and replacing with specified acrylic material.
Final panel seam locations to be coordinated with existing architectural conditions and aligned where required.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols

SIGN TYPE M1
PORTAL OVERHEAD

NOTES
Sign Type M has color variations depending on Pathway designation.
Sign contractor to verify all existing conditions to assess feasibility of removing existing wood transom panels and replacing with specified acrylic material.
Final panel seam locations to be coordinated with existing architectural conditions and aligned where required.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols

SIGN TYPE M1
PORTAL OVERHEAD

NOTES
Sign Type M has color variations depending on Pathway designation.
Sign contractor to verify all existing conditions to assess feasibility of removing existing wood transom panels and replacing with specified acrylic material.
Final panel seam locations to be coordinated with existing architectural conditions and aligned where required.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols

SIGN TYPE M1
PORTAL OVERHEAD

NOTES
Sign Type M has color variations depending on Pathway designation.
Sign contractor to verify all existing conditions to assess feasibility of removing existing wood transom panels and replacing with specified acrylic material.
Final panel seam locations to be coordinated with existing architectural conditions and aligned where required.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols

SIGN TYPE M1
PORTAL OVERHEAD

NOTES
Sign Type M has color variations depending on Pathway designation.
Sign contractor to verify all existing conditions to assess feasibility of removing existing wood transom panels and replacing with specified acrylic material.
Final panel seam locations to be coordinated with existing architectural conditions and aligned where required.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols
Ceiling mounted double sided sign used to convey pathway, elevator direction, and departure route.

Mounting heights may vary based on ceiling conditions, however a consistent datum line for all overhead signs should be observed within a single corridor.

Sign Type to display Pathway Identification and Elevator Identification only.

**SIGN TYPE M2**
LARGE SUSPENDED / DOUBLE SIDED

**NOTES**

Typical Installation Elevations

1. Plan View
   \[
   \frac{1}{4}" = 1'-0"
   \]

2. Installation Elevation - Flush
   \[
   \frac{1}{4}" = 1'-0"
   \]

3. Installation Elevation - Suspended
   \[
   \frac{1}{4}" = 1'-0"
   \]
You are on the
Blue Pathway

Tisch Elevators

NOTES
Sign Type M has color variations depending on Pathway designation.
The name of the Pathway should always be depicted in its corresponding color (Blue, Green, Yellow) regardless of the sign location.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbols
Main Lobby Entrance  
Exit to First Avenue  
Green and Yellow Pathways

Medical Sciences Elevators  
Smilow Elevators
**Horizontal Section**

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

**Typical Panel Join**

- 90° Butt-join panels

**Signage Technical Specifications**

**Interior Box Construction**

- Ptd. aluminum angle and tube frame construction, welded and braced as required; anchored to mounting post w/ fully concealed mechanical fasteners

**Face Panel**

- 1/2" TH back-painted frosted acrylic w/ flat polish edges; mtd. to interior box construction w/ fully concealed mechanical fasteners

**Trim**

- 1/8" TH aluminum

**Existing Ceiling**

**Mounting Post**

- 1" TH aluminum tube; anchored to ceiling w/ fully concealed mechanical fasteners

**Back-Up Frame**

- 1/8" TH aluminum angle on two (2) horizontal sides of panels

**Face Panel**

- 1/2" TH back-painted frosted acrylic w/ flat polish edges; mtd. to interior box construction w/ fully concealed mechanical fasteners

**Interior Box Construction**

- Ptd. aluminum angle and tube frame construction, welded and braced as required; anchored to mounting post w/ fully concealed mechanical fasteners

**Mounting Post**

- 1" TH aluminum tube; anchored to ceiling w/ fully concealed mechanical fasteners

**Back-Up Frame**

- 1/8" TH aluminum angle on two (2) horizontal sides of panel

**Face Panel**

- 1/2" TH back-painted frosted acrylic w/ flat polish edges; mtd. to interior box construction w/ fully concealed mechanical fasteners

**Interior Box Construction**

- Ptd. aluminum angle and tube frame construction, welded and braced as required; anchored to mounting post w/ fully concealed mechanical fasteners

**Back-Up Frame**

- 1/8" TH aluminum angle on two (2) horizontal sides of panel

**NOTES**

- Sign contractor to verify field conditions to coordinate installation into existing surfaces.
- Provide separation between dissimilar materials, where required.
**NOTES**

Ceiling mounted double sided sign used to convey pathway, elevator direction, and departure route.

Mounting heights may vary based on ceiling conditions, however a consistent datum line for all overhead signs should be observed within a single corridor.

Sign Type to display Pathway Identification and Elevator Identification only.

**SIGN TYPE M3**

**SMALL SUSPENDED / DOUBLE SIDED**

1. **Plan View**
   
   \[
   \frac{1}{4}" = 1'-0"
   \]

2. **Installation Elevation - Flush**
   
   \[
   \frac{1}{4}" = 1'-0"
   \]

3. **Installation Elevation - Suspended**
   
   \[
   \frac{1}{4}" = 1'-0"
   \]
You are on the Green Pathway

→ 🍃 Schwartz West Elevators
← 🍃 Schwartz East Elevators

NOTES
Sign Type M has color variations depending on Pathway designation.
The name of the Pathway should always be depicted in its corresponding color (Blue, Green, Yellow) regardless of the sign location.

REFERENCE PAGES
1.1.2 Signage Finishes
NOTES

This sign type is used when a customized panel dimension is required to coordinate flush mounted signage with existing architectural conditions.

Sign Type to display Pathway Identification and Elevator Identification only.

SIGN TYPE M4
FASCIA MOUNTED / SINGLE SIDED
NOTES

Sign Type M has color variations depending on Pathway designation.

This sign type is used when a customized panel dimension is required to coordinate flush mounted signage with existing architectural conditions.

Height of sign panel to be fixed as shown. Length of sign panel is adjustable based on architectural requirements.

The name of the Pathway should always be depicted in its corresponding color (Blue, Green, Yellow) regardless of the sign location.

REFERENCE PAGES

1.1.2 Signage Finishes
10.1.1 Signage Technical Specifications
NOTES
Fascia mounted single sided sign used to convey pathway, elevator direction, and departure route. Sign Type to display Pathway Identification and Elevator Identification only.
You are on the Green Pathway

→ Schwartz West Elevators
← Schwartz East Elevators

Sign Type M5
Small Fascia Mounted / Single Sided

**NOTES**
- Sign Type M has color variations depending on Pathway designation.
- The name of the Pathway should always be depicted in its corresponding color (Blue, Green, Yellow) regardless of the sign location.

**REFERENCE PAGES**
- 1.1.2 Signage Finishes
- 10.1.1 Signage Technical Specifications
NOTES
Sign Type N is used for ground and wall mounted conditions along a primary wayfinding corridor. Information conveyed by this sign type includes Pathway identification, directional information to elevators, departure routes, and directions to first floor amenities.
Permanent/static designations to include NYU Langone Logo, Pathway Identification, and Elevator Identification only.
You are on the Blue Pathway

Tisch Elevators

Admission Services / Servicios de admisión
Dining Services / Servicios de comidas
Gift Shop / Tienda de artículos para regalo
Restrooms / Baños

You are on the Blue Pathway

Kimmel Elevators
Hassenfeld Elevators
Main Lobby Entrance
Exit to First Avenue
Green and Yellow Pathways

Plan View
1/2” = 1'-0”

Installation Elevation - Side A
1/2” = 1'-0”

Installation Elevation - Side B
1/2” = 1'-0”

Notes
Freestanding double sided enclosure with static copy and digital touch screen on Side A and static copy only on Side B, when needed.

Used to convey pathway, elevator direction, first floor amenity direction.
You are entering the Blue Pathway

↑ Tisch Elevators

Digital Screen
see Chapter 7

Header Panel: wood to match architectural finishes

Face Panel: F35

Back-Up Frame: F31

Face Panel: F35

Top Panel: F1

Back-Up Frame: F31

Side Panel: F1

Base Panel: wood to match architectural finishes

Base: to match architectural finishes

Base: to match architectural finishes

REFERENCE PAGES
1.1.2 Signage Finishes
7.2.1 Digital Directional Display Hardware Recommendations
7.2.2 Digital Directional Display Graphic Guidelines

 signage finishes depending on Pathway designation.
Coordinate all dimensions with placement of digital equipment behind panel.
You are entering the Blue Pathway

Tisch Elevators
Kimmel Elevators
Hassenfeld Elevators

Header Panel wood to match architectural finishes
Trim: F31
Silkscreened Logo: F5
Face Panel: F35
Etched and Filled Header
Text: T2 / F3
Pathway: T1 / F1
Back-Up Frame: F31

Silkscreen Listing
Arrow: F3
Symbol: F4 on F1
Text: T1 / F3

Coordinate window size with active area of digital screen to ensure no inactive areas are visible
Etched and Filled Rule: F1

Coordinate all dimensions with placement of digital equipment behind panel.
The name of the Pathway should always be depicted in its corresponding color (Blue, Green, Yellow) regardless of the sign location.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbols
1.4.1 Logos
7.2.1 Digital Directional Display Hardware Recommendations
7.2.2 Digital Directional Display Graphic Guidelines

SIGN TYPE N1
DIGITAL PYLON
NOTES
Sign Type N has color variations depending on Pathway designation.

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Wayfinding and Communications Standards Manual

SIGN TYPE N1
Detail Elevation
Blue Pathway

You are on the
Kimmel Elevators
Hassenfeld Elevators
Main Lobby Entrance
Exit to First Avenue
Green and Yellow Pathways

3'-10 1/4" +/-
3'-10 1/2" +/-

You are on the Blue Pathway

NYU Langone Health

Sign Type N1
Digital Pylon

NOTES
Sign Type N has color variations depending on Pathway designation.
Coordinate all dimensions with placement of digital equipment behind panel.
The name of the Pathway should always be depicted in its corresponding color (Blue, Green, Yellow) regardless of the sign location.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbol Specifications
1.4.1 Logos

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NYU Langone Health
Wayfinding and Communications Standards Manual
Interior Box Construction

Side Panel
1/16" TH ptld aluminum finishing panel, mtd to interior box construction w/ counter-sunk tamper-proof hardware. Panel is removable for access to digital screen.

Top Panel
Perforated ptld aluminum top panel for ventilation

Face Panel
1/16" TH back painted frosted acrylic w/ flat polish edges, mtd to aluminum frame w/ fully concealed VHB adhesive

Back-Up Frame
1/16" TH aluminum angle frame on two (2) vertical sides of face panel

Video Mount
As required for digital screen, mtd to interior structure w/ fully concealed mechanical fasteners

Digital Screen
As specified in Chapter 7, secured to video mount per product specifications.

Computer
As specified in Chapter 7, secured to interior box construction per product specifications.

Support Posts
Steel tube support posts, welded to steel base plate and anchored to interior box construction with fully concealed mechanical fasteners

Base Plate
Galvanized steel base plate w/ welded steel posts; bolted to concrete foundation

Note: If sub-floor installation of base plate is not achievable prior to finished floor installation, then sign contractor to saw cut into sub-floor for anchored support pole installation and provide escutcheon plate as specified in Detail D/4.N.6.

Support Post
Steel tube support post, welded to steel base plate and anchored to interior box construction with fully concealed mechanical fasteners

Pylon Base
Escutcheon plate abutting all sides of pylon base to match architectural finishes; flush-mounted to existing finished floor w/ counter-sunk tamper-proof mechanical fasteners

Face Panel
1/16" TH back painted frosted acrylic w/ flat polish edges, mtd to aluminum frame w/ fully concealed VHB adhesive

Digital Screen
As specified in Chapter 7, secured to video mount per product specifications.

Computer
As specified in Chapter 7, secured to interior box construction per product specifications.

Support Post
Steel tube support post, welded to steel base plate and anchored to interior box construction with fully concealed mechanical fasteners

Base Plate
Galvanized steel base plate w/ welded steel posts; bolted to concrete foundation

Note: If sub-floor installation of base plate is not achievable prior to finished floor installation, then sign contractor to saw cut into sub-floor for anchored support pole installation and provide escutcheon plate as specified in Detail D/4.N.6.

SIGN TYPE N1
DIRECTIONAL PYLON

NOTES
Sign contractor to verify all existing conditions for access to power and data feeds. All connections to power and data feeds to be fully concealed

Coordinate all dimensions with actual requirements of selected digital components. Pylon construction to incorporate front or side access for monitor and computer maintenance.

Provide separation between dissimilar materials, where required

All exposed hardware to be tamper-proof and painted to match adjacent materials.

REFERENCE PAGES
72.2 Digital Directional Display Hardware Recommendations
72.2 Digital Directional Display Graphic Guidelines
10.1.1 Signage Technical Specifications

SIGN TYPE N1
Sections
4.N.6
**SIGN TYPE N2**

**STATIC WALL MOUNT**

**NOTES**

Wall mounted single sided glass panel with static copy.

Used to convey Pathway and Elevator Direction when digital directions are not needed.

---

1. **Installation Elevation Typ. Wall**
   
   1/2" = 1'-0"
   
   ➔ Tisch South Elevators
   Floors 1, 2 and 8-18
   
   ➔ Tisch North Elevators
   Floors G, 1 and 3-7

2. **Side View**
   
   1/2" = 1'-0"
   
   ➔ Tisch South Elevators
   Floors 1, 2 and 8-18
   
   ➔ Tisch North Elevators
   Floors G, 1 and 3-7

3. **Installation Elevation Typ. Column**
   
   1/2" = 1'-0"
Tisch South Elevators
Floors 1, 2 and 8–18

Tisch North Elevators
Floors G, 1 and 3–7

Face Panel: F35
Back-Up Frame: F31
Shim: F1
Existing wall

Silkscreen Listing
Arrow: F3
Symbol: F4 on F1
Text: T1 / F3
Rule: F8

Etched and Filled Rule: F1

NOTES
Sign Type N has color variations depending on Pathway designation.
The name of the Pathway should always be depicted in its corresponding color (Blue, Green, Yellow) regardless of the sign location.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
1.3.1  Symbols

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**Section A**

Shim
1/2" TH ptd. acrylic shim routed to receive Z-Clips; mtd. to wall with fully concealed mechanical fasteners

Face Panel
1/2" TH back-painted frosted acrylic w/ flat polish edges; mtd. to Shim with continuous length Z-Clips.

Back-Up Frame
1/8" TH aluminum angle frame on two (2) vertical sides of face panel

**Section B**

Shim
1/2" TH ptd. acrylic shim routed to receive Z-Clips; mtd. to wall with fully concealed mechanical fasteners

Face Panel
1/2" TH back-painted frosted acrylic w/ flat polish edges; mtd. to Shim with continuous length Z-Clips.

**NOTES**

Provide separation between dissimilar materials, where required.

**REFERENCE PAGES**

10.1.1 Signage Technical Specifications
Admission Services / Servicios de admisión
Dining Services / Servicios de comidas
Gift Shop / Tienda de artículos para regalo
Restrooms / Baños

You are on the
Green Pathway

Installation Elevation (Typical)
1/2" = 1'-0"

Installation Elevation Integrated w/ Architecture
1/2" = 1'-0"

Plan View
1/2" = 1'-0"

SIGN TYPE N3
DIGITAL WALL MOUNT

NOTES
Wall mounted enclosure with static copy and digital touch screen.
Used to convey pathway, elevator direction, first floor amenity direction.

SIGN TYPE N3
DIGITAL WALL MOUNT

DESIGN IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION.
COORDINATE WITH RED+F FOR UPDATED SIGN TYPE DESIGN.
You are on the Green Pathway

Face Panel: 35
Back-Up Frame: F31
Wall Inset: Coordinate placement and depth with Digital Screen requirements

3” preferred
4” maximum
5/8”

3'-10 1/4” +/-

NOTES
Sign Type N has color variations depending on Pathway designation.
Coordinate all dimensions with placement of digital equipment behind panel.

REFERENCE PAGES
1.1.2 Signage Finishes
7.2.1 Digital Directional Display Hardware Recommendations
7.2.2 Digital Directional Display Graphic Guidelines

SIGN TYPE N3 DIGITAL WALL MOUNT

DESIGN IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION.
COORDINATE WITH RED+F FOR UPDATED SIGN TYPE DESIGN.
**Green Pathway**

**You are on the**

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

**Detail Elevation**

**Digital Screen**

see Chapter 7

**3'-10" +/-**

**3'-10 1/4" +/-**

**3'-10 1/2" +/-**

**3'-10 3/16" +/-**

**3'-10 1/8" +/-**

**3'-10 1/6" +/-**

**3'-10 1/4" +/-**

**3'-10 3/16" +/-**

**3'-10 1/8" +/-**

**3'-10 1/6" +/-**

**3'-10 1/4" +/-**

**3'-10 3/16" +/-**

**3'-10 1/8" +/-**

**3'-10 1/6" +/-**

**3'-10 1/4" +/-**

**3'-10 3/16" +/-**

**3'-10 1/8" +/-**

**3'-10 1/6" +/-**

**3'-10 1/4" +/-**

**3'-10 3/16" +/-**

**3'-10 1/8" +/-**

**3'-10 1/6" +/-**

**3'-10 1/4" +/-**

**3'-10 3/16" +/-**

**3'-10 1/8" +/-**

**3'-10 1/6" +/-**

**3'-10 1/4" +/-**

**3'-10 3/16" +/-**

**3'-10 1/8" +/-**

**3'-10 1/6" +/-**

**3'-10 1/4" +/-**

**3'-10 3/16" +/-**

**3'-10 1/8" +/-**

**3'-10 1/6" +/-**

**3'-10 1/4" +/-**

**3'-10 3/16" +/-**

**4'-11" +/-**

**4'-10 1/2" +/-**

**4'-10 3/16" +/-**

**4'-10 1/8" +/-**

**4'-10 1/16" +/-**

**4'-10 1/32" +/-**

**4'-10 1/64" +/-**

**Silkscreened Logo**

NYU Langone Health: F5

**Face Panel:** F35

**Etched and Filled Header**

Text: T2 / F3

Pathway: T1 / F1

**Back-Up Frame:** F31

**Coordinating window size**

with active area of digital screen to ensure no inactive areas are visible

**Trim:** F31

**Etched and Filled Rule:** F1

**REFERENCE PAGES**

1.1.2 Signage Finishes

1.2.1-15 Typography Specifications

1.3.1 Symbol Specifications

1.4.1 Logos

7.2.1 Digital Directional Display Hardware Recommendations

7.2.2 Digital Directional Display Graphic Guidelines

**NOTES**

Sign Type N has color variations depending on Pathway designation.

Coordinate all dimensions with placement of digital equipment behind panel.

**DESIGN IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION.**

**COORDINATE WITH RED+F FOR UPDATED SIGN TYPE DESIGN.**
Plan Section

A

Section

1" = 1'-0"

Back-Up Frame
1/8" TH aluminum angle frame on two (2) vertical sides of face panel, mtd. to interior box construction w/ fully concealed mechanical fasteners. Panel is removable for access to monitor cabinet

Face Panel
1/2" TH back-painted frosted acrylic w/ flat polish edges; mtd. to aluminum frame w/ fully concealed VHB adhesive

Interior Box Construction
Ptd. aluminum angle construction, welded and braced as required; mtd. to existing wall w/ fully concealed mechanical fasteners

Top Panel
Ptd. aluminum top panel perforated for ventilation

Face Panel
1/2" TH back-painted frosted acrylic w/ flat polish edges; mtd. to aluminum frame w/ fully concealed VHB adhesive

Interior Box Construction
Ptd. aluminum angle construction, welded and braced as required; mtd. to existing wall w/ fully concealed mechanical fasteners

Video Mount
As required for digital screen; mtd. to interior structure w/ fully concealed mechanical fasteners

Digital Screen
As specified in Chapter 7, secured to video mount per product specifications.

Computer
As specified in Chapter 7, secured to interior box construction per product specifications.

Wall Inset
Blocking as required

Video Mount
As required for digital screen; mtd. to wall w/ fully concealed mechanical fasteners

Digital Screen
As specified in Chapter 7, secured to video mount per product specifications.

Computer
As specified in Chapter 7, secured interior box construction per product specifications.

Bottom Panel
Ptd. aluminum panel perforated for ventilation

Existing Architectural Base

REFERENCE PAGES
7.2.1 Digital Directional Display Hardware Recommendations
7.2.2 Digital Directional Display Graphic Guidelines
10.11 Signage Technical Specifications

NOTES
Sign contractor to verify all existing conditions for access to power and data feeds. All connections to power and data feeds to be fully concealed
Coordinate all dimensions with actual requirements of selected digital components
Pylon construction to incorporate front access for monitor and computer maintenance
Provide separation between dissimilar materials, where required

DESIGN IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION. COORDINATE WITH RED+F FOR UPDATED SIGN TYPE DESIGN.
NOTES

Sign Type P should be used for identifying elevator banks located on a corridor that is designated as a wayfinding pathway. Sign Type P should be programmed along the wayfinding pathway as well as at the pathways vertical exit points (upper floors). These signs provide clear identification to support the wayfinding directional signs and confirm arrival at elevators.

Sign Type P is always surrounding or directly adjacent to elevator call buttons.
Installation Elevation @ Tisch Floor 1 and 2
3/16" = 1'-0"

Installation Elevation @ Tisch Upper Floors
3/16" = 1'-0"

Sign Type P1
Custom Elevator Identification
At Tisch Hospital

Notes
This sign type's specifications were developed for use in the Tisch elevator lobby at the Main Campus to identify the elevators on the Blue Pathway.

Sign Type P1 panel size will vary depending on architectural conditions. Final panel seams to be coordinated with architectural conditions.
Access to Floors 1, 2 and 8-17

Tisch Elevators
Floor 1

Etched and Filled Graphics
Symbol: F4 / F1
Elevator Access: T1, F3
Elevator Identification: T1, F1
Level Identification: T2, F3

Directory Cover Strip: F1

Inset Changeable Directory
Digitally printed paper insert (F40) behind removable clear acrylic face to match F30

Elevator Call Button Reveal
Water-jet cut elevator call button reveal; size and placement to be coordinated with architectural detail

Etched and Filled Rule: F1

Elevation @ Tisch Elevators
1" = 1'-0"
NOTES
Egress map artwork should be provided by the sign fabricator and follow the guidelines set in Chapter 5.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
5.T.7 Elevator Egress Map Artwork

SIGN TYPE P1
CUSTOM ELEVATOR IDENTIFICATION
AT TISCH HOSPITAL

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SIGN TYPE P1
DETAIL ELEVATION

Elevation 1
3" = 1'-0"

Elevation 2
3" = 1'-0"

IN FIRE EMERGENCY
DO NOT USE ELEVATORS
USE EXIT STAIRS

ELEVATOR BANK
TISCH HOSPITAL

Silkscreened Egress Artwork:
See Sheet 5.T.5
Regulatory Text:
T1, F3

Egress Map

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SIGN TYPE P1
DETAIL ELEVATION

Elevation 1
3" = 1'-0"

Elevation 2
3" = 1'-0"

IN FIRE EMERGENCY
DO NOT USE ELEVATORS
USE EXIT STAIRS

ELEVATOR BANK
TISCH HOSPITAL

Silkscreened Egress Artwork:
See Sheet 5.T.5
Regulatory Text:
T1, F3

Egress Map
**Section - Tisch Floor 1**

3" = 1'-0"

---

**Face Panel**
1/2" TH back-painted frosted acrylic w/ first-surface silkscreened and etch fill graphics; mtd. to Back-up Panel w/ epoxy. Face to be flush with surrounding walls and panels.

**Back-up Panel**
3/4" TH routed acrylic panel; mtd. to stainless steel plate anchor w/ epoxy.

**Flush mounted acrylic directory** with removable face and paper insert.

Removable metal strip to conceal directory window hardware; mtd. with rare earth magnets.

**Elevator Call Button beyond, by others:**
Face Panel to be water-jet cut to reveal elevator call button; size and placement to be coordinated with architectural requirements.

**Build-out Panel**
3/4" TH +/- ptd. plywood panel; mechanically fastened to existing plywood panel.

Stainless steel plate; mtd. to plywood panel w/ stone anchor bolt, as required.

1/8" silicone joint to match stone joint silicone fill.

---

**NOTES**
Sign contractor to verify field conditions to coordinate dimensions and placement of sign within existing wall pocket.

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**REFERENCE PAGES**
10.1.1 Signage Technical Specifications

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**SIGN TYPE P1**
CUSTOM ELEVATOR IDENTIFICATION AT TISCH HOSPITAL
Face Panel
1/2” TH back-painted frosted acrylic w/ first-surface silkscreened and etch fill graphics; mtd. to back-up panel w/ epoxy. Face to be flush with surrounding walls and panels

Back-up Panel
1/8” TH aluminum panel; mtd to existing wall with welded studs and epoxy adhesive as required

Removable metal strip to conceal directory window hardware; mtd. with rare earth magnets

Flush mounted acrylic directory with removable face and paper insert

NOTES
Sign contractor to verify field conditions to coordinate dimensions and placement of sign within existing wall pocket.

REFERENCE PAGES
10.1.1 Signage Technical Specifications
Example Installation Elevation @ Schwartz West Floor 1
3/16” = 1'-0"

Example Installation Elevation @ Medical Sciences Floor 1
3/16” = 1'-0"

NOTES
Design in progress.
Sign Type P3 panel sizes and mounting specifications will vary depending on architectural conditions. The conditions of elevator banks along the Green and Yellow Pathways will vary from that of the Tisch elevators. Final panel seams to be coordinated with architectural conditions. Sign contractor to verify all existing conditions to assess feasibility of mounting details.
SIGN TYPE S
INFORMATION NODE

NOTES
Sign Type S consists of physical elements that make up an information node. They may be configured in any combination that is suitable for their specific location. (i.e. Pylon alone, Pylon + Kiosk, Pylon + two (2) Kiosks, etc.)
NOTES
Freestanding enclosure with touchscreen and receipt printer for access and printing of custom wayfinding directions. Kiosk is ideally located adjacent to Sign Type S2 or S3.
NOTES
Coordinate all dimensions with digital equipment requirements.

REFERENCE PAGES
1.1.2 Signage Finishes
7.1.1 Touchscreen Display and Printer
Recommendations
NOTES
Coordinate all dimensions with digital equipment requirements.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
7.2.1 Digital Directional Display Hardware Recommendations
7.2.2 Digital Directional Display Graphic Guidelines
**Bezel Panel**
1/2” TH back-painted frosted acrylic w/ flat polish edges and routed to receive rear mounted digital screen; mtd. to Kiosk top with counter sunk tamper-proof hardware.

**Sign Type Y1 Digital Screen**
See Chapter 7
Mtd. to Bezel Panel, as required

**Sign Type Y1 Printer**
See Chapter 7
Mtd. to Kiosk door, as required

**Face Panel**
1/2” TH wood panel to match architectural finishes; mtd. to aluminum frame w/ fully concealed VHB adhesive

**Interior Box Construction**
Ptd. aluminum angle and tube frame construction, welded and braced as required; anchored to base plate w/ fully concealed mechanical fasteners

**Sign Type Y1 Computer**
See Chapter 7

**Base Plate**
Galvanized steel base plate w/ welded steel posts; drill and tap through finish floor

Access to power / data conduit, by others

**NOTES**
Kiosk construction to incorporate front access for monitor maintenance.
Kiosk construction to incorporate hinged door, front access for printer maintenance.
Provide separation between dissimilar materials, where required.
Sign contractor to verify all existing conditions, including power and data feed locations.

**REFERENCE PAGES**
7.2.1 Digital Directional Display Hardware Recommendations
7.2.2 Digital Directional Display Graphic Guidelines
10.1.1 Signage Technical Specifications
NYU Langone Health
Wayfinding and Communications
Standards Manual

SIGN TYPE S2
MAP PYLON

NOTES
Freestanding double sided enclosure with map graphic panel and brochure holder. Map panel area is removable and specific map content may be tailored to suit the pylon location.
**Welcome to the Main Campus**

**Elevation**

- Header Panel: wood to match architectural finishes
- Face Panel: F35
- Back-Up Frame: F31
- Base Panel: wood to match architectural finishes
- Base: to match architectural finishes

**Side View**

- Top Panel: F1 or F5
- Back-Up Frame: F31
- Side Panel: F1 or F5
- Brochure Holder: F31
- Base: to match architectural finishes

**NOTES**

When Sign Type S2 is located within a Main Campus Pathway use finish F1 for Side and Top Panels.

When Sign Type S2 is located within the Main Campus Main Lobby or at other facilities, use F5 for Side and Top Panels.

**REFERENCE PAGES**

- 1.1.2 Signage Finishes
- 8.3.10–11 Main Campus Map Formats
Welcome to the Main Campus

Header Panel wood to match architectural finishes
Silkscreened Logo: F5
Face Panel: F35
Etched and Filled Header Text: T2 / F3
Pathway: T1 / F1
Back-Up Frame: F31
Trim: F31
Map Panel: F38

NOTES
If this sign type is incorporated into other off-site facilities, “Main Campus” to be replaced by relevant Building Name.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.4.1 Logos
8.3.10–11 Main Campus Map Formats
**Plan Section**

1" = 1'-0"

**Face Panel**
1/2" TH back-painted frosted acrylic w/ flat polish edges; mtd. to aluminum frame w/ fully concealed VHB adhesive

**Interior Box Construction**
Ptd. aluminum angle and tube frame construction, welded and braced as required w/ integral sleeves to receive support posts; anchored to support posts w/ fully concealed mechanical fasteners

**Map Panel**
1/4" TH non-glare clear acrylic panel with second-surface applied LightJet digital photographic print; laminated to back-up panel

**Back-Up Panel**
1/2" TH acrylic panel; mtd. to interior box construction with fully concealed mechanical fasteners

**Brochure Holder**
1/4" TH five (5) sided fabricated aluminum box with eight (8) brochure compartments mtd. to face panel with fully concealed mechanical fasteners

**Support Post**
Steel tube support post; welded to steel base plate and anchored to interior box construction with fully concealed mechanical fasteners

**Base Plate**
Galvanized steel base plate w/ welded steel posts; bolted to concrete foundation

**Note:** If sub-floor installation of base plate is not achievable prior to finished floor installation, then sign contractor to saw cut into sub floor for anchored support pole installation and provide escutcheon plate as specified in Detail D/4.S.9.

**Escutcheon**
Escutcheon plate abutting all sides of pylon base to match architectural finishes; flush-mounted to existing finished floor w/ counter-sunk tamper-proof mechanical fasteners

**REFERENCE PAGES**
10.1.1 Signage Technical Specifications
Main Campus
Welcome to the
Blue Pathway
Tisch Elevators
Green Pathway
Silverstein Elevators
Schwartz West Elevators
Schwartz East Elevators
Yellow Pathway
Medical Science Elevators
Smilow Elevators

NOTES
Freestanding double sided enclosure with directional information.
Welcome to the Main Campus

← Blue Pathway
- Tisch Elevators
- Kimmel Elevators
- Hassenfeld Elevators

→ Green Pathway
- Silverstein Elevators
- Schwartz West Elevators
- Schwartz East Elevators

→ Yellow Pathway
- Medical Science Elevators
- Smilow Elevators

Header Panel: wood to match architectural finishes
Face Panel: F35
Back-Up Frame: F31
Side Panel: F5
Top Panel: F5
Back-Up Frame: F31
Side Panel: F5
Base: to match architectural finishes
Base Panel: wood to match architectural finishes

3/4" = 1'-0"
Welcome to the Main Campus

→ Blue Pathway
- Tisch Elevators
- Kimmel Elevators
- Hassenfeld Elevators

→ Green Pathway
- Silverstein Elevators
- Schwartz West Elevators
- Schwartz East Elevators

→ Yellow Pathway
- Medical Science Elevators
Your Navigational Guide to NYU Langone Medical Center

Main Campus

Welcome to the

Blue Pathway

34th Street
33rd Street
First Avenue
FDR Dr
ive
Murphy
Conference
Room
Farkas
Auditorium
Berman
Lecture Hall
Main
Lobby
Gallery
Smilow
Meeting
Rooms
Coles
Student
Center
Smilow
Elevators
Silverstein
Elevators
Schwartz
East
Elevators
Schwartz
West
Elevators
Tisch
North
Elevators
Tisch
South
Elevators
Main Lobby Entrance
Emergency Entrance
Schwartz Entrance

Green Pathway

30th Street
East River
Smilow Cafe
Argo Tea
Outpatient Lab
Pharmacy
Medical Science Elevators

Yellow Pathway

To Train
33rd St & Park Ave

Parking
Meditation Room
PERELMAN EMERGENCY CENTER
Skirball Elevators
Patient Admitting
Gift Shop
Tisch Cafe
Tisch
Cafe
ALUMNI HALL
COLES
SMILOW RESEARCH CENTER
SCHWARTZ HEALTH CARE CENTER
MEDICAL SCIENCE BUILDING
SKIRBALL INSTITUTE
TISCH HOSPITAL
UNDER CONSTRUCTION
UNDER CONSTRUCTION

1 Plan View
1/2” = 1’-0”

2 Installation Elevation
1/2” = 1’-0”

6’ MIN
2’-9 1/4”

4’
2’-2 1/2”

3 Side View
1/2” = 1’-0”

Welcome to the
Main Campus

NOTES
Wall mounted map graphic panel and brochure holder. Map panel area is removable and specific map content may be tailored to suit the sign location.
NOTES
When Sign Type S3 is located within a Main Campus Pathway use finish F1 for Shim, Etched Filled Rule, and Etched Bottom Text.
When Sign Type S2 is located within the Main Campus Main Lobby or at other facilities, use F5 for Shim, Etched Filled Rule, and Etched Bottom Text.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.4.1 Logos
8.310–11 Main Campus Map Formats
Face Panel
1/2" TH back-painted frosted acrylic w/ flat polish edges, routed to receive map panel; mtd. to Shim with continuous length Z-Clips.

Shim
1/2" TH ptd. acrylic shim routed to receive Z-Clips; mtd. to wall with fully concealed mechanical fasteners.

Map Panel
3/16" TH non-glare clear acrylic lens over removable 3/8" TH acrylic w/ first-surface applied LightJet digital photographic print; mtd flush with face panel with fully concealed magnetic strip.

Brochure Holder
1/4" TH five (5) sided fabricated aluminum box with six (6) brochure compartments mtd. to face panel with fully concealed mechanical fasteners.

Back-Up Frame
1/8" TH aluminum angle frame on two (2) vertical sides of face panel.

NOTES
Provide separation between dissimilar materials, where required.

REFERENCE PAGES
10.1.1 Signage Technical Specifications
CHAPTER 5
INTERIOR SIGNAGE:
MODULAR SYSTEM SIGN TYPES

5.0 Modular Overview
5.1 Typical Paper Insert Layouts
5.E Sign Type E: Overhead Identification
5.F Sign Type F: Public Area Identification
5.G Sign Type G: Laboratory Identification
5.H Sign Type H: Public Room Identification
5.J Sign Type J: Non-Public Room Identification
5.K Sign Type K: Amenity/Treatment Identification
5.Q Sign Type Q: Elevator Identification w/ Directory
5.R Sign Type R: Directional/Directory Sign
5.T Sign Type T: Elevator Regulatory
5.U Sign Type U: Stair Identification
5.V Sign Type V: Maximum Occupancy
5.W Sign Type W: Regulatory Identification
5.X Sign Type X: Regulatory Display
INFONORM® OVERVIEW

Infonorm® is the modular sign system specified by NYU Langone Health. This system is designed to provide multiple combinations for the constantly evolving needs of the NYU Langone Health.

Three main components make up every Infonorm® sign, the Base Profile, the Cover Profile, and the End Caps. These components all fall into a simple grid. In addition, Infonorm® provides standard insert sizes, including 8 1/2" x 11", 8 1/2" x 5 1/2", and 11" x 17".

The following chapter specifies how these components combine to create a unified approach for the NYU Langone Health Sign System.
INFONORM® OVERVIEW

The Infonorm® Grid determines the width and height measurement for each sign. Infonorm® utilizes the Metric System, however, where possible the US Customary equivalent has been identified.

The standard grid is 52 1/2 mm (2 1/16" +/-) by 21 mm (13/16" +/-) up to 2100 mm (82 5/8" +/-) by 2100 mm (82 5/8" +/-).

When required, US standard paper inserts should be specified. These sign types will not adhere to the horizontal grid, however, where possible, signs should stay within the grid, allowing for ease of ordering and consistent design.
SYSTEM OVERVIEW

The Infonorm® sign system within this chapter has been developed to accommodate as many scenarios as possible, however, if a new sign is required, the existing proportions should be used to develop additional signs.

The room identification signs are offered in two widths, 157.50 mm (6 7/16") and 212.90 mm (8 1/2"). Each of these widths has a series of varying heights, designed to accommodate a range of message types (i.e. temporary insert, tactile room numbers, non-tactile message) and lengths. Additional elements such as insert panels or in session sliders are then added to the sign panels to accommodate the user’s need.

This diagram outlines the panel options and elements available within the current system that may be used to create new signs.
The three simple components that make up all Infonorm® signs are the Base Profile, Cover Profile, and End Caps.

The Base Profile is an extruded aluminum plate with tracks which hold the Cover Profile. Standard extrusion sizes are available up to the grid height 168 mm (6 5/8" +/-). Sign types with heights greater than 168 mm will require multiple Base Profiles.

The Cover Profile is an extruded aluminum face plate with guides that slide into the Base Profile tracks. Standard extrusion sizes are available up to the grid height 168 mm (6 5/8" +/-).

Two special Cover Profiles are required. Thin Cover Profiles will be required for the signs requiring heights exceeding 168 mm. In these instances, multiple Thin Cover Profiles will be required. These slimmer profiles accommodate a thin mil full height panel for messaging. These same Thin Cover Profiles are used in instances requiring photopolymer or tactile copy. In addition, Cover Profile 001 should be used in instances where two non-insert panels meet.

The End Caps are an extruded aluminum which attach to the Base Profile tracks to secure the Cover Profile. Sign Types in this Manual use three (3) different End Caps, TE, E10H or Quick Click. Please see the specific sign drawing sheets for details.
INFONORM® SPECIFICATIONS

The selected Infonorm® TE Picture Frame End Caps specify the visible portion of the End Cap. In addition, there are two types of locking systems NYU Langone Health designs will require.

The Frame Profile with Tamper-Resistant Spring Lock will be used in all instances where permanent messages are displayed. These include tactile room numbers, room identification names, etc. In addition, inserts larger than 20” x 20” will require the Frame Profile. In order to access the Tamper-Resistant Spring Lock Frame Profiles, a Security Key Tool is required to compress the lock and release the end cap. Coordinate with RED+F for access to this Security Key Tool.

The Quick Click Profile and Insert will be used in semi-permanent insert requirements. These types include identification signs, regulatory signs, etc.

![Diagram of Thin Frame Profile (TE)](image1)

![Diagram of Thick Frame Profile (E10H)](image2)

![Diagram of Quick Click Profile](image3)
INFONORM® SPECIFICATIONS

The mounting conditions for the signs will vary from site to site and location to location. This will require a variety of mounting components. Wherever possible, all Infonorm® signs should be mounted to existing walls with fully concealed mechanical fasteners, to facilitate future relocation by NYU Langone Health. When panel size or weight requires, signs can be mounted with z-clips.

If the sign is to be mounted to glass, it should be done so with fully concealed VHB adhesive and a back-up panel or vinyl should be used.

For workstation or partial height wall conditions where mechanical fasteners are not achievable, the sign can be mounted with either VHB adhesive.

![Diagram showing mounting options for Infonorm signs]

- **Typical Mechanical Fastener**
- **Z-Clip**
- **Glass Condition**
- **Workstation Wall Condition**
NOTES
These room identification and occupant identification inserts can be used for sign types with insert size 8 1/2" x 2 1/2". Both layouts build up from the bottom line. For single line messages, the bottom line should be used, where double line messages are required, both lines may be used.

Layout 1 provides two equal height lines for room name identification.

Layout 2 provides two different height lines for occupant title or department and occupant name.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

Sign contractor to use standard Typeface T1, Utopia Std, for installed inserts. Alternate typeface T10, Times New Roman, to be used by NYU Langone Health Staff for post-installation insert updates when standard typeface is not available.

REFERENCES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
NOTES

These room identification and occupant identification inserts can be used for sign types with insert size 6 5/16" x 2 1/2". All layouts build up from the bottom line. For single line messages, the bottom line should be used, where double line messages are required, both lines may be used.

Layout 1 provides two equal height lines for room name identification.

Layout 2 provides smaller size height lines for long room name identification.

Layout 3 provides three different height lines for occupant title, department and occupant name.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

Sign contractor to use standard typeface T1, Utopia Std, for installed inserts. Alternate typeface T10, Times New Roman, to be used by NYU Langone Health Staff for post-installation insert updates when standard typeface is not available.
NOTES
These occupant identification inserts can be used for sign types with insert size 6 5/16" x 2 1/2". All layouts build up from the bottom line. For single line messages, the bottom line should be used, where double line messages are required, both lines may be used.

Layout 4 provides two different height lines for occupant title or department and occupant name for a single occupant.

Layout 5 provides two different height lines for occupant title or department and occupant name for double occupancy.

Layout 6 provides two different height lines for occupant title or department and occupant name for triple occupancy.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

Sign contractor to use standard typeface T1, Utopia Std, for installed inserts. Alternate typeface T10, Times New Roman, to be used by NYU Langone Health Staff for post-installation insert updates when standard typeface is not available.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications

PAPER INSERT LAYOUTS
SMALL IDENTIFICATION SIGN TYPES
HAZARDS AND WARNINGS

TOXINS IN USE – AUTHORIZED PERSONNEL ONLY

Special Procedures or Information:

Put on lab coat or gown immediately upon entering the Lab

FOR VISITORS AND PERSONNEL NOT ASSIGNED TO THIS AREA

Contact Information:

FOR ENTRY OR ADVICE:

IN EMERGENCY:

NOTES

This laboratory insert can be used for sign types with insert size 8 1/2” x 11”. The symbols and symbol description colors will vary according to their identification of hazard. Hazards, Warnings, Special Procedures and Contact Information should be provided by NYU Langone Health.

Sign contractor to provide template artwork for inserts, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.4 Symbols
2.4.3 Regulatory Requirements

PAPER INSERT LAYOUTS
LABORATORY HAZARDS AND WARNINGS

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NYU LANGONE HEALTH
Wayfinding and Communications Standards Manual
NOTES
These departmental directional and directory inserts should be used for sign types with insert size 11" x 8 1/2".

The layouts provided offer options for directional messages and destination listings. Select the layout based upon length of destination names and number of destinations required. The longer the names the smaller the letter height, the shorter the listing, the larger the letter height, etc.

Sign contractor to provide template artwork for inserts, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbols
NOTES
These departmental directional and directory inserts should be used for sign types with insert size 11” x 8 1/2”.

The layouts provided offer options for directional messages and destination listings. Select the layout based upon length of destination names and number of destinations required. The longer the names the smaller the letter height, the shorter the listing, the larger the letter height, etc.

Sign contractor to provide template artwork for inserts, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols
NOTES
This directional insert can be used for sign types with insert size 11" x 17". This layout can be used in a flexible manner, providing content for destinations with or without symbols and departments with or without room numbers.

When Amenity/Department Symbols are required for directional inserts, to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

Sign contractor to provide template artwork for inserts, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1-3 Symbols
NOTES
This directional insert can be used for sign types with insert size 11" x 17". This layout can be used in a flexible manner, providing content for destinations with or without symbols and departments with or without room numbers.

When Amenity/Department Symbols are required for directional inserts, to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

Sign contractor to provide template artwork for inserts, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1-3 Symbols
NOTES

This directional insert can be used for sign types with insert size 17" x 20". This layout details the layout guidelines for directional messaging that requires department names/titles, occupant names, and room numbers.

Sign contractor to provide template artwork for inserts, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols
Coordinators
Jane Hubbard LAB 7
Jessica Treisman LAB 8–9

Principal Investigators
Holder Knaut LAB 15
Ruth Lehmann LAB 10–13
Jeremy Nance LAB 17
Mamta Tahiliani LAB 4

administration
Ruth Lehmann, Director SK 4 14A
Jeremy Paul, Executive Director
SK 4 14C

Detail Elevation - 17" x 20" Directional
3" = 1'-0"

NOTES
This directional insert can be used for sign types with insert size 17" x 20". This layout details the layout guidelines for directional messaging that requires department names/titles, occupant names, and room numbers.

Sign contractor to provide template artwork for inserts, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbols
### NOTES

This directional insert can be used for sign types with insert size 17” x 20”. This layout details the guidelines for directional messaging. The flexibility offered here allows for messages with or without symbols and with or without room numbers.

When Amenity/Department Symbols are required for directional inserts, to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

Sign contractor to provide template artwork for inserts, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

### REFERENCE PAGES

1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1-3 Symbols

---

**PAPER INSERT LAYOUTS**

**17” X 20” DIRECTIONAL**

<table>
<thead>
<tr>
<th>Insert: F40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destinations / Names: T1</td>
</tr>
<tr>
<td>Amenity/Department Symbols: CMYK to match F2</td>
</tr>
<tr>
<td>Rule: 1/16”</td>
</tr>
<tr>
<td>Room Numbers: T3</td>
</tr>
<tr>
<td>Frame Edge</td>
</tr>
</tbody>
</table>

---

**Detail Elevation - 17” x 20” Directional**

3” = 1’-0”

---

<table>
<thead>
<tr>
<th>Insert Edge</th>
</tr>
</thead>
</table>
NOTES

This directional insert can be used for sign types with insert size 17” x 20”. This layout details the guidelines for directional messaging. The flexibility offered here allows for messages with or without symbols and with or without room numbers.

Sign contractor to provide template artwork for inserts, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols
PAPER INSERT LAYOUTS
17" X 20" DIRECTIONAL

NOTES
This directional insert can be used for sign types with insert size 17" x 20". This layout details the guidelines for directional messaging. The flexibility offered here allows for messages with or without symbols and with or without room numbers.

Sign contractor to provide template artwork for inserts, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols
**SIGN TYPE E**

**OVERHEAD IDENTIFICATION**

**NOTES**

Modular E Sign Types should be used to identify and direct to spaces, destinations, and bed numbers. These sign types provide clear overhead identification where confusion may occur.

---

**Clinical Integration Station**

Sign Type E3a  
Overhead Identification

**Rheumatology/Infusion and Seligman Center**

Sign Type E3a (Alternate Layout)  
Overhead Directional

**Physical Therapy Treatment**

Sign Type E3b  
Overhead Identification

**Women’s Treatment**

Sign Type E3b (Alternate Layout)  
Overhead Directional

---

**Sign Type E4a**

Large Ceiling Mounted Flag w/ Symbol

**Sign Type E4b**

Large Wall Mounted Flag w/ Symbol

**Sign Type E4c**

Large Ceiling Mounted Flag w/ Numbers or Letters

**Sign Type E4d**

Large Wall Mounted Flag w/ Numbers or Letters

---

**Sign Type E5a**

Small Ceiling Mounted Flag

**Sign Type E5b**

Small Wall Mounted Flag
NOTES
Modular E Sign Types should be used to identify and direct to spaces, destinations, and bed numbers. These sign types provide clear overhead identification where confusion may occur.
SIGN TYPE E
OVERHEAD IDENTIFICATION

NOTES
Sign Types E3, E4 and E5 should be mounted to the ceiling. Wherever possible, these sign types should be mounted flush to the ceiling. Where ceiling heights are too high to accommodate ceiling mounts, the flag mounted option should be specified. See sheet 1/5.E.4 for further details.
NOTES

Sign Type E6 should be mounted to the ceiling. Wherever possible, these sign types should be mounted flush to the ceiling.

Sign Type E7 should be mounted to existing soffits or walls. When mounted to a soffit, the bottom of the sign should be aligned with the soffit edge.
Clinical Integration Station

1. Elevation - Sign Type E3
   1 1/2" = 1'-0"

2. Side Elevation
   1 1/2" = 1'-0"

3. Side Elevation (Alternate)
   1 1/2" = 1'-0"

SIGN TYPE E3
OVERHEAD IDENTIFICATION

NOTES
Sign Type E3 is an overhead identification or directional sign. This sign type should be used in instances over desks or when the distance to destination warrants a large identification. A directional layout may be necessary for some instances, as shown on Sheet 5.E.6.

When message lengths allow, use the larger 2 1/2" for identification and directional messages, as shown on Sheet 5.E.7.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All layouts build up from the bottom line. For single line messages, the bottom line should be used. For single line directional messages, the directional arrow should be center aligned to the bottom line.

Sign Type E3a should only be programmed when message length requires 2” cap height. RED+F preference is Sign Type E3b where message allows.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1-15  Typography Specifications
1.3.1  Symbols
Chapter 2  Programming Guidelines
SIGN TYPE E3B
OVERHEAD IDENTIFICATION

NOTES
All layouts build up from the bottom line. For single line messages, the bottom line should be used. For single line directional messages, the directional arrow should be center aligned to the bottom line.

REFERENCE PAGES
1.2.1-15 Typography Specifications
1.3.1 Symbols
Chapter 2 Programming Guidelines
NOTES
Sign Type E3 should be suspended from the ceiling according to the following notes:

In locations where low ceiling heights occur, the sign should be mounted flush to the ceiling, as shown in Section A/5.E.8.

In locations where high ceilings occur, the sign should be mounted with the use of rods, as shown in Section B/5.E.9.

In locations where drop ceilings occur, the sign should be mounted with the use of a 1/16" stainless steel cable, as shown in Section C/5.E.9. Where a high drop ceiling occurs, the cable should be concealed with a tube in order to provide a consistent aesthetic.

Sign contractor should coordinate ceiling-mounted details with architectural conditions; mounting details should be modified as required.

REFERENCE PAGES
1.1.2 Signage Finishes
NOTES
Sign Type E3 should be suspended from the ceiling according to the following notes:
In locations where low ceiling heights occur, the sign should be mounted flush to the ceiling, as shown in Section A/5.E.8.
In locations where high ceilings occur, the sign should be mounted with the use of rods, as shown in Section B/5.E.9.
In locations where drop ceilings occur, the sign should be mounted with the use of a 1/16” stainless steel cable, as shown in Section C/5.E.9.
Where a high drop ceiling occurs, the cable should be concealed with a tube in order to provide a consistent aesthetic.
Sign contractor should coordinate ceiling-mounted details with architectural conditions; mounting details should be modified as required.

REFERENCE PAGES
1.1.2 Signage Finishes
SIGN TYPE E4
LARGE FLAG

NOTES
Sign Type E4 should be used to identify amenities and a series of numbers/letters. This sign type provides clear overhead identification where confusion may occur. Symbols should coincide with the ADA compliant sign installed adjacent to the amenity door.

When Sign Type E4 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.3.1 Symbols
Chapter 2 Programming Guidelines

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SIGN TYPE E4
Elevations

1. Elevation - Sign Types E4a, E4b (Side A)
   3’ = 1'-0"  

2. Side Elevation - Sign Type E4a
   3’ = 1'-0"

3. Elevation - Sign Types E4a, E4b (Side B)
   3’ = 1'-0"

4. Plan View - Sign Type E4b
   3’ = 1'-0"
SIGN TYPE E4
LARGE FLAG

NOTES
Sign Type E4 should be used to identify amenities and a series of numbers/letters. This sign type provides clear overhead identification where confusion may occur. Symbols should coincide with the ADA compliant sign installed adjacent to the amenity door.

REFERENCE PAGES
1.1.2 Signage Finishes
1.3.1 Symbols
Chapter 2 Programming Guidelines
**SIGN TYPE E4**

**Elevations**

**NOTES**
Sign Type E4 should be used to identify amenities and a series of numbers/letters. This sign type provides clear overhead identification where confusion may occur. Numbers/letters should coincide with the ADA compliant sign installed adjacent to the door.

**REFERENCE PAGES**
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE E4
LARGE FLAG

NOTES
Sign Type E4 should be used to identify amenities and a series of numbers/letters. This sign type provides clear overhead identification where confusion may occur. Numbers/letters should coincide with the ADA compliant sign installed adjacent to the door.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE E4
LARGE FLAG

NOTES
Sign Type E4 should be suspended from the ceiling. Wherever possible, sign should be mounted flush with the ceiling.
Where ceiling heights are too high to accommodate ceiling mounts, the flag mounted option should be specified.

REFERENCE PAGES
1.1.2 Signage Finishes
NOTES
Sign Type E5 can be used to identify beds, bays, and rooms that occur in a sequence and/or are partitioned with curtains only. This sign type provides clear overhead identification where confusion may occur.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
Chapter 2  Programming Guidelines

SIGN TYPE E5
SMALL FLAG

Panel
Background: F2

Panel
Returns: F2

Ptd.
countersunk mechanical fasteners
(Finish: F2)

Ptd.
countersunk
mechanical fasteners
(Finish: F2)

Side Elevation - Sign Type E5a
3" = 1'-0"

Plan View - Sign Type E5b
3" = 1'-0"
SIGN TYPE E5

SMALL FLAG

NOTES
Sign Type E5 can be used to identify beds, bays, and rooms that occur in a sequence and/or are partitioned with curtains only. This sign type provides clear overhead identification where confusion may occur.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
Rheumatology/Infusion and Seligman Center

Elevation - Sign Type E6

1" = 1'-0"

Side Elevation

1½" = 1'-0"

Side Elevation (Alternate)

1½" = 1'-0"

SIGN TYPE E6
DOUBLE OVERHEAD DIRECTIONAL

NOTES
Sign Type E6 is an overhead directional. This sign type should be used in instances when large wayfinding elements are necessary due either to length of corridor, height of ceiling, etc.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols
Chapter 2 Programming Guidelines
1. **Detail Elevation - Sign Type E6**

   1 1/2" = 1'-0"

   Graphic Panel
   Text: T1, F3
   Symbol: F3

2. **Detail Elevation - Sign Type E6**

   1 1/2" = 1'-0"

   Graphic Panel
   Text: T1, F3
   Symbol: F3

**NOTES**

All layouts build up from the bottom line. For single line messages, the bottom line should be used.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1 Symbols
Chapter 2 Programming Guidelines
Clinical Integration Station

1 Elevation - Sign Type E7
\[1\ 1/2'' = 1'-0''\]

2 Side Elevation
\[1\ 1/2'' = 1'-0''\]

SIGN TYPE E7
WALL MOUNTED IDENTIFICATION

NOTES
Sign Type E7 is an overhead identification or directional sign intended to be mounted to an existing wall or soffit. This sign type should be used when large wayfinding elements are necessary due either to length of corridor, height of ceiling, etc.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE E7
WALL MOUNTED IDENTIFICATION

NOTES
Sign Type E7 should be mounted to an existing soffit or wall with fully concealed mechanical fasteners. When mounted to a soffit, the bottom of the sign should align with the soffit edge.

REFERENCE PAGES
1.1.2 Signage Finishes
SIGN TYPE E8
SAFETY HAVEN FLAG

NOTES
Sign Type E8 is an overhead identification sign intended to be mounted to an existing wall or soffit, perpendicular to the path of travel. This sign type should be used to identify the location of safety equipment.

REFERENCE PAGES
1.1.2 Signage Finishes
1.3.1 Symbols
Chapter 2 Programming Guidelines

Elevation - Sign Type E8 (Side A)

3" = 1'-0"

42000 mm
16'5"

14.00 mm
0'55"

Panel
Returns: F4

Ptd. countersunk mechanical fasteners
Finish: F4

Graphic Panel
Background: F4
Symbol: F2

Elevation - Sign Types E8 (Side B)

3" = 1'-0"

168.00 mm
6'6"

3400.00 mm
13'1"

Ptd. countersunk mechanical fasteners
Finish: F4

Panel
Returns: F4

(Side A)

(Side B)

3" = 1'-0"

Plan View - Sign Type E8

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SIGN TYPE E8
Elevation

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SIM.

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SIGN TYPE E8
SAFETY HAVEN FLAG

NOTES
Sign Type E8 is an overhead identification sign intended to be mounted to an existing wall or soffit, perpendicular to the path of travel. This sign type should be used to identify the location of safety equipment.

REFERENCE PAGES
1.1.2 Signage Finishes
1.3.1 Symbols
Chapter 2 Programming Guidelines

Elevation - Sign Type E8 (Side A)

3" = 1'-0"

42000 mm
16'5"

14.00 mm
0'55"

Panel
Returns: F4

Ptd. countersunk mechanical fasteners
Finish: F4

Graphic Panel
Background: F4
Symbol: F2

Elevation - Sign Types E8 (Side B)

3" = 1'-0"

168.00 mm
6'6"

3400.00 mm
13'1"

Ptd. countersunk mechanical fasteners
Finish: F4

Panel
Returns: F4

(Side A)

(Side B)

3" = 1'-0"

Plan View - Sign Type E8

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SIGN TYPE E8
Elevation

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SIGN TYPE E8
SAFETY HAVEN FLAG

NOTES
Sign Type E8 is an overhead identification sign intended to be mounted to an existing wall or soffit, perpendicular to the path of travel. This sign type should be used to identify the location of safety equipment.

REFERENCE PAGES
1.1.2 Signage Finishes
1.3.1 Symbols
Chapter 2 Programming Guidelines

Elevation - Sign Type E8 (Side A)

3" = 1'-0"

42000 mm
16'5"

14.00 mm
0'55"

Panel
Returns: F4

Ptd. countersunk mechanical fasteners
Finish: F4

Graphic Panel
Background: F4
Symbol: F2

Elevation - Sign Types E8 (Side B)

3" = 1'-0"

168.00 mm
6'6"

3400.00 mm
13'1"

Ptd. countersunk mechanical fasteners
Finish: F4

Panel
Returns: F4

(Side A)

(Side B)

3" = 1'-0"

Plan View - Sign Type E8

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SIGN TYPE E8
Elevation

5.E.14

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SIGN TYPE E8
SAFETY HAVEN FLAG
(ALTERNATE COLOR)

NOTES
Sign Type E8 is an overhead identification sign intended to be mounted to an existing wall or soffit, perpendicular to the path of travel. This sign type should be used to identify the location of safety equipment.

REFERENCE PAGES
1.1.2 Signage Finishes
1.3.1 Symbols
Chapter 2 Programming Guidelines

Elevation - Sign Type E8 (Side A)
3” = 1'-0"

Elevation - Sign Types E8 (Side B)
3” = 1'-0"

Side Elevation - Sign Type E8
3” = 1'-0"

Plan View - Sign Type E8
3” = 1'-0"

Graphic Panel
Background: F4
Symbol: F1

Panel
Returns: F4

Ptd. countersunk mechanical fasteners
Finish: F4
NOTE:
Symbols should align toward the corridor with the larger margin toward the wall.

REFERENCE PAGES
1.1.2 Signage Finishes
1.3.1 Symbols
Chapter 2 Programming Guidelines
Non-Invasive Cardiology

1  Elevation - Sign Type E9 (Side A)
   1 1/2" = 1'-0"

2  Elevation - Sign Type E9 (Side B)
   1 1/2" = 1'-0"

3  Side Elevation
   1 1/2" = 1'-0"

SIGN TYPE E9A
CEILING MOUNTED SMALL OVERHEAD

NOTES
Sign Type E9 is an overhead identification or directional sign with reduced width. This sign type should be used in instances over desks or when the distance to destination warrants an overhead identification, but the architecture cannot accommodate a larger sign.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
1. **Detail Elevation - Sign Type E9 (Side A)**

   1 1/2” = 1’-0”

2. **Detail Elevation - Sign Type E9 (Side B)**

   1 1/2” = 1’-0”

---

**SIGN TYPE E9A**

**CEILING MOUNTED SMALL OVERHEAD**

**NOTES**

All layouts build up from the bottom line. For single line messages, the bottom line should be used.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbols
Chapter 2 Programming Guidelines
Sign Type E9 is an overhead identification or directional sign, with a reduced width, intended to be mounted to an existing wall or soffit. This sign type should be used when large wayfinding elements are necessary due either to length of corridor, height of ceiling, etc., but the architecture can’t accommodate a larger sign.

Reference Pages:
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
1 Detail Elevation - Sign Type E9 (Side A)

1 1/2" = 1'-0"
Sign Type F1
Public Area Identification (with Symbol)

Sign Type F1 (Alternate Layout)
Public Area Identification (without Symbol)

Sign Type F2
Public Area Identification w/ Insert (with Symbol)

Sign Type F2 (Alternate Layout)
Public Area Identification w/ Insert (without Symbol)

Sign Type F2.s
Soft Public Area Identification

NOTES
F Sign Types should be used to identify departments, large public areas and units. Wherever possible, a symbol should be used.
**SIGN TYPE F**

**PUBLIC AREA IDENTIFICATION**

**NOTES**

F Sign Types should be mounted along a consistent height with the tactile portion bottom aligned at a height of 4'-6". This will ensure that all signs are ADA compliant.
SIGN TYPE F1
PUBLIC AREA IDENTIFICATION

NOTES
Sign Type F1 is an area identification sign type intended for public areas that require tactile identification.

For areas requiring additional information, such as regulatory, hours of operation, etc., a Sign Type X4 can be mounted below the F1 Tactile Panel or on the adjacent door.

When Sign Type F1 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programing Guidelines
SIGN TYPE F1
PUBLIC AREA IDENTIFICATION
(W/ SYMBOL)

NOTES
All layouts for the Top Panel build up from the bottom line. For single line messages, the bottom line should be used and the symbol should shift down to maintain the detailed distance from the text. For double line messages, the symbol should also shift down to maintain the detailed distance from the text.

When Sign Type F1 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines
NOTES
All layouts for the Top Panel build up from the bottom line. For single line messages, the bottom line should be used.
When Sign Type F1 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by the NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.0.4–6 Infonorm® Specifications
NOTES
Sign Type F2 is an area identification sign type intended for public areas that require tactile identification and additional information, such as regulatory, hours of operation, etc.

When Sign Type F2 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines
SIGN TYPE F2
PUBLIC AREA IDENTIFICATION
W/ INSERT (WITH SYMBOL)

NOTES
All layouts for the Top Panel build up from the bottom line. For single line messages, the bottom line should be used and the symbol should shift down to maintain the detailed distance from the text. For double line messages, the symbol should also shift down to maintain the detailed distance from the text.

When Sign Type F2 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines
NOTES
All layouts for the Top Panel build up from the bottom line. For single line messages, the bottom line should be used.

When Sign Type F2 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE F2
PUBLIC AREA IDENTIFICATION
W/ INSERT

NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications

Infonorm® Profile 001
Shim
1/16" TH aluminum shim inset 1/4" from all sides; mtd. to wall w/ fully concealed mechanical fasteners

NOTE: Mtd. to wall w/ fully concealed VHB adhesive for all glass mtd. and workstation conditions

Infonorm® MA1000 Frame (Flip Frame)
.22" TH reinforced magnetic flip frame for inserts w/ non-glare acrylic glass lens and L-channel handle

Back-up Panel (as required)
1/16" TH ptd. acrylic back-up panel required for all glass mtd. conditions; mtd. to existing glass wall w/ fully concealed VHB adhesive

NOTE: Vinyl may be used in lieu of back-up panel. Vinyl to be cut to size of sign panel; mtd. to second surface glass

Finish: F2

NOTE: Vinyl may be used in lieu of back-up panel. Vinyl to be cut to size of sign panel; mtd. to second surface glass

Finish: F56
FAMILY WAITING ROOM

HC 11 21

NOTES
Sign Type F2.s is used in any public area that would typically need Sign Type F1, but requires a soft/flexible material. This typically occurs within mental health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE F2.S
SOFT PUBLIC AREA IDENTIFICATION

NOTES
Layouts for this panel build up from the bottom line. For single line messages, the bottom line should be used.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE G
LABORATORY IDENTIFICATION

NOTES
G Sign Types are laboratory identification types intended for flexible messaging.

The inserts provided may contain regulatory information, occupant identification, scheduling, personalized patient information, etc.
**SIGN TYPE G**

**LABORATORY IDENTIFICATION**

**NOTES**

G Sign Types should be mounted along a consistent height with the tactile portion bottom aligned at a height of 4'-6". This will ensure that all signs are ADA compliant.
Anatomy Laboratory

MS 12 01

*NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®

Infonorm® Magnetic Quick Click Frame

Insert F40

Tactile Panel
Text: T3, F4

Infonorm® Magnetic Quick Click Frame

NOTES
Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

When Sign Type G1a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

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SIGN TYPE G1A
TACTILE LABORATORY IDENTIFICATION W/ QUICK CLICK INSERT

SIGN TYPE G1A
Non-Tactile Laboratory Identification
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
HAZARDS AND WARNINGS

TOXINS IN USE – AUTHORIZED PERSONNEL ONLY

Special Procedures or Information:
Put on lab coat or gown immediately upon entering the Lab

FOR VISITORS AND PERSONNEL
NOT ASSIGNED TO THIS AREA

Contact Information
FOR ENTRY OR ADVICE:
IN EMERGENCY:

Elevation - Sign Type G2

3" = 1'-0"

SIGN TYPE G2
TACTILE LABORATORY IDENTIFICATION W/ QUICK CLICK INSERT

NOTES
Sign Type G2 should be used for laboratory identification within research facilities. The architectural number should be identified in a tactile manner. The Top Tactile Panel provides space for the Laboratory Identification and the Insert provides space for regulatory information.

When Sign Type G2 is Programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

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SIGN TYPE G2
Tactile Laboratory Identification

Elevation - Sign Type G2

3" = 1'-0"
SIGN TYPE G2
TACTILE LABORATORY IDENTIFICATION
W/ QUICK CLICK INSERT

NOTES
All layouts for the Top Panel build up from the bottom line. For single line messages, the bottom line should be used.

When Sign Type G2 is Programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

Top Tactile Panel
Tactile Text/Number: T3, F3

Bottom Tactile Panel
Text: T3, F4

Infonorm® Magnetic Quick Click Frame

*NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®

TRIESMAN LABORATORY

SK 12 14

8 1/2" x 11"
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
NOTES

H Sign Types are room identification types intended for flexible messaging. The inserts provided may contain regulatory information, occupant identification, scheduling, personalized patient information, etc.
NOTES

H Sign Types are room identification types intended for flexible messaging.

The inserts provided may contain regulatory information, occupant identification, scheduling, personalized patient information, etc.
NOTES
H1 Sign Types should be mounted along a consistent height with the tactile portion bottom aligned at a height of 4'-6". This will ensure that all signs are ADA compliant.
Sign Type H3 should be installed at the most accessible area adjacent to the patient bed.
NOTES

Sign Type H1a is to be used for in-patient room identification. This sign type should be used for patient rooms with one bed. The bed or room number should be identified as tactile with an 8 1/2" x 11" insert for isolation and other notifications.

When Sign Type H1a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES

Sign Type H1a is to be used for in-patient room identification. This sign type should be used for patient rooms with one bed. The bed or room number should be identified as tactile with an 8 1/2" x 11" insert for isolation and other notifications.

When Sign Type H1a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

Tactile Panel
Architectural Number: T3, F4

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®
SIGN TYPE H1A
PATIENT ROOM IDENTIFICATION

NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications
NOTES
Sign Type H1a.s is used in any area that would typically need Sign Type H1a, but requires a soft/flexible material. This typically occurs within mental health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

SIGN TYPE H1A.S
SOFT PATIENT ROOM IDENTIFICATION
(SINGLE OCCUPANCY ROOM)
NOTES
Sign Type H2a is to be used for in-patient room identification. The bed or room number should be identified as tactile with an 8 1/2" X 11" insert for isolation and other notifications.
Where the tactile bed or room number differs from the architectural number then a non-tactile architectural number should be located at the bottom right hand corner of this module. The non-tactile number should only be included if this occurs.
This sign type should only be used for patient rooms with two beds. In this instance, Sign Type H2a should be used in conjunction with Sign Type H2b. See Installation 2/5.H.3 for further details.
When Sign Type H2a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2/4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
Sign Type H2a is to be used for in-patient room identification. The bed or room number should be identified as tactile with an 8 1/2" X 11" insert for isolation and other notifications.

Where the tactile bed or room number differs from the architectural number then a non-tactile architectural number should be located at the bottom right hand corner of this module. The non-tactile number should only be included if this occurs.

This sign type should only be used for patient rooms with two beds. In this instance, Sign Type H2a should be used in conjunction with Sign Type H2b. See Installation 2/5.H.3 for further details.

When Sign Type H2a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE H2A
PATIENT ROOM IDENTIFICATION
(MULTIPLE OCCUPANCY ROOM, BED 1)

NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications
Sign Type H2a.s is used in any area that would typically need Sign Type H2a, but requires a soft/flexible material. This typically occurs within mental health facilities. This sign type should only be used for patient rooms with two beds.

**Reference Pages**
- 1.1.2 Signage Finishes
- 1.2.1–15 Typography Specifications
- Chapter 2 Programming Guidelines
NOTES
Sign Type H2b is to be used for in-patient room identification. The bed or room number should be identified as tactile with an 8 1/2” X 11” insert for isolation and other notifications. Where the tactile bed or room number differs from the architectural number then a non-tactile architectural number should be located at the bottom right hand corner of this module. The non-tactile number should only be included if this occurs.

This sign type should only be used for patient rooms with two beds. In this instance, Sign Type H2b should be used in conjunction with Sign Type H2a. See Installation 2/5.H.3 for further details.

When Sign Type H2b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
Sign Type H2b is to be used for in-patient room identification. The bed or room number should be identified as tactile with an 8 1/2" x 11" insert for isolation and other notifications.

Where the tactile bed or room number differs from the architectural number then a non-tactile architectural number should be located at the bottom right hand corner of this module. The non-tactile number should only be included if this occurs.

This sign type should only be used for patient rooms with two beds. In this instance, Sign Type H2b should be used in conjunction with Sign Type H2a. See Installation 2/5.H.3 for further details.

When Sign Type H2b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE H2B
PATIENT ROOM IDENTIFICATION
(MULTIPLE OCCUPANCY ROOM, BED 2)

NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, whenever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.0.4–6 Infonorm® Specifications
NOTES
Sign Type H2b.s is used in any area that would typically need Sign Type H2b, but requires a soft/flexible material. This typically occurs within mental health facilities. This sign type should only be used for patient rooms with two beds.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
Sign Type H3a is to be used for over bed in-patient bed identification, where required. The bed or room number should be identified with a letter sized insert for isolation and treatment notifications.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
Sign Type H3a is to be used for over bed in-patient bed identification, where required. The bed or room number should be identified with a letter sized insert for isolation and treatment notifications.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.0.4–6  Infonorm® Specifications

SIGN TYPE H3A
NON-TACTILE PATIENT BED IDENTIFICATION (SINGLE OCCUPANCY)

Tactile Panel
1/32” TH ptd. photopolymer face w/ integral raised braille and integral raised silkscreened letters/numbers; mtd. to Thin Cover Profile w/ fully concealed VHB adhesive

Infonorm® Spring Lock
Infonorm® Thin Cover Profile
Infonorm® Base Profile
Mtd. to Shim w/ fully concealed mechanical fasteners

Infonorm® MA1000 Frame (Flip Frame)
.22” TH reinforced magnetic flip frame for inserts w/ non-glare acrylic glass lens and L-channel handle

Shim
1/16” TH aluminum shim inset 1/4” from all sides; mtd. to wall w/ fully concealed mechanical fasteners

NOTE: Mtd. to wall w/ fully concealed VHB adhesive for all glass mtd. and workstation conditions

Back-up Panel (as required)
1/16” TH ptd. acrylic back-up panel required for all glass mtd. conditions; mtd. to existing glass wall w/ fully concealed VHB adhesive

Finish: F2

NOTE: Vinyl may be used in lieu of back-up panel. Vinyl to be cut to size of sign panel; mtd. to second surface glass

Finish: F56
NOTES
Sign Type H3a.s is used in any area that would typically need Sign Type H3a, but requires a soft/flexible material. This typically occurs within mental health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

SIGN TYPE H3A.S
SOFT NON-TACTILE PATIENT BED IDENTIFICATION (SINGLE OCCUPANCY)

Panel
Background: F2, F43

Panel
Text: T3, F4

Existing wall

VHB Tape
Inset from edges of panel by 1/4" on all sides

Panel

6" = 1'-0"

6" = 1'-0"
NOTES
Sign Type H3b is to be used for in-patient room identification. The bed or room number should be identified as tactile with an 8 1/2" X 11" insert for isolation and other notifications.
Where the tactile bed or room number differs from the architectural number then a non-tactile architectural number should be located at the bottom right hand corner of this module. The non-tactile number should only be included if this occurs.
This sign type should only be used for patient rooms with two beds. See Installation 3/5.H.3 for further details.
When Sign Type H3b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES

Sign Type H3b is to be used for in-patient room identification. The bed or room number should be identified as tactile with an 8 1/2” X 11” insert for isolation and other notifications.

Where the tactile bed or room number differs from the architectural number, then a non-tactile architectural number should be located at the bottom right hand corner of this module. The non-tactile number should only be included if this occurs.

This sign type should only be used for patient rooms with two beds. See Installation 3/5.H.3 for further details.

When Sign Type H3b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

SIGN TYPE H3B
Non-Tactile Patient Bed Identification
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
NOTES
Sign Type H3b.s is used in any area that would typically need Sign Type H3b, but requires a soft/flexible material. This typically occurs within mental health facilities. This sign type should only be used for patient rooms with two beds.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
Sign Type H4 is to be used for office or flexible room identification. The architectural room number should be identified in a tactile manner with the insert providing space for occupant or room identification.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

When Sign Type H4 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
NOTES
Sign Type H4.s is used in any area that would typically need Sign Type H4, but requires a soft/flexible material. This typically occurs within mental health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES

Sign Type H4a is to be used for office or flexible room identification. The architectural room number should be identified in a tactile manner with the insert providing space for occupant or room identification.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

When Sign Type H4a is Programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES

1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES

All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES

1.1.2  Signage Finishes
5.0.4–6  Infonorm® Specifications
NOTES

Sign Type H5 is to be used for office suite identification. The architectural room number should be identified in a tactile manner with the insert providing space for multiple occupant identification.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

When Sign Type H5 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES

1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
Chapter 2 Programming Guidelines

Tactile Panel
Background/Braille: F2

Tactile Panel
Text: T3, F4

Inserts
Front Panel: F30

Inserts
F40

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
NOTES

Sign Type H5a is to be used for office suite identification. The architectural room number should be identified in a tactile manner with the insert providing space for multiple occupant identification.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

When Sign Type H5a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications
NOTES
Sign Type H6a is to be used for flexible identification. The architectural room number should be identified in a tactile manner with the top insert providing space for occupant or room identification and the bottom insert providing space for scheduling or regulatory information.

When Sign Type H6a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
**SIGN TYPE H6A**  
**LARGE CONFERENCE ROOM IDENTIFICATION**  

**NOTES**  
When Sign Type H6a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

**REFERENCE PAGES**  
1.1.2 Signage Finishes  
1.2.1–15 Typography Specifications  
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
NOTES
Sign Type H6b is to be used for flexible identification. The architectural room number should be identified in a tactile manner with the top insert providing space for occupant or room identification and the bottom insert providing space for scheduling or regulatory information.

When Sign Type H6b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE H6B
LARGE CONFERENCE ROOM IDENTIFICATION W/ SLIDER

NOTES
When Sign Type H6b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
Conference Room
HC 10 22

NOTES
Sign Type H6.s is used in any area that would typically need Sign Type H6, but requires a soft/flexible material. This typically occurs within mental health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines

SIGN TYPE H6.S
SOFT LARGE CONFERENCE ROOM IDENTIFICATION

Elevation - Sign Type H6.s
6” = 1'-0"

Detail Elevation - Sign Type H6.s
6” = 1'-0"

Section - Sign Type H6.s
6” = 1'-0"
NOTES

Sign Type H7 is to be used for flexible identification. The architectural room number should be identified in a tactile manner with the top insert providing space for occupant or room identification and the bottom insert providing space for scheduling or regulatory information.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

When Sign Type H7 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications
NOTES
Sign Type H8 is to be used for workstation identification that does not require a tactile room number.
Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.
Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
SIGN TYPE J
NON-PUBLIC ROOM IDENTIFICATION

NOTES
J Sign Types are room identification types intended for permanent messaging. These are required by code to ensure proper identification of mechanical, electrical, etc. type rooms.
J Sign Types should be mounted along a consistent height with the tactile panel bottom aligned at a height of 4'-6". This will ensure that all signs are ADA compliant.

When an architectural element (i.e. door) or piece of equipment does not allow for the sign panel to be installed adjacent to the door, install the sign on the door, as shown in drawing 2/5.J.2.
NOTES
Sign Type J1 is to be used when the room name is required by code or requested by NYU Langone Health to be permanent.

All layouts for the Top Panel build up from the bottom line. For single line messages, the bottom line should be used.

When Sign Type J1 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

SIGN TYPE J1
TACTILE ROOM NUMBER AND NAME IDENTIFICATION

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm*
NOTES
All layouts for the Top Panel build up from the bottom line. For single line messages, the bottom line should be used.

Use this alternate layout for long room names that require smaller text height.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines

Tactile Room Number and Name Identification

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®
NOTES

All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES

1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
SIGN TYPE J2
TACTILE ROOM NUMBER IDENTIFICATION

NOTES
Sign Type J2 is to be used when only the room number identification is required, storage rooms, rooms within rooms, open spaces, desks, workstations, etc.

When Sign Type J2 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications

SIGN TYPE J2
TACTILE ROOM NUMBER
IDENTIFICATION

Infonorm® Thin Cover Profile

Infonorm® Base Profile
Mtd. to shim w/ fully concealed mechanical fasteners

Infonorm® Spring Lock

Shim
1/16" TH aluminum shim inset 1/4" from all sides; mtd. to wall w/ fully concealed mechanical fasteners

NOTE: Mtd. to wall w/ fully concealed VHB adhesive for all glass mtd. and workstation conditions

Back-up Panel (as required)
1/16" TH ptd. acrylic back-up panel required for all glass mtd. conditions; mtd. to existing glass wall w/ fully concealed VHB adhesive
Finish: F2

NOTE: Vinyl may be used in lieu of back-up panel. Vinyl to be cut to size of sign panel; mtd. to second surface glass
Finish: F56
Sign Type K1a
Large Amenity Identification

Sign Type K1a.s
Soft Large Amenity Identification

Sign Type K1b
Large Amenity Identification w/ Slider

Sign Type K2a
Medium Treatment Room Identification

Sign Type K2b
Medium Treatment Room Identification w/ Slider

Sign Type K3a
Medium Treatment Room Identification w/ Insert

Sign Type K3b
Medium Treatment Room Identification w/ Insert and Slider

Sign Type K4a
Small Treatment Room Identification

Sign Type K4b
Small Treatment Room Identification w/ Slider

Sign Type K5a
Small Treatment Room Identification w/ Insert

Sign Type K5b
Medium Treatment Room Identification w/ Insert and Slider

Sign Type K6a
Medium Treatment Room Identification w/ Insert

Sign Type K6b
Medium Treatment Room Identification w/ Insert and Slider

NOTES
K Sign Types are room identification types intended for amenities, restrooms, exam or treatment rooms.
NOTES

K Sign Types should be mounted along a consistent height with the tactile panel bottom aligned at a height of 4’-6”. This will ensure that all signs are ADA compliant.
Sign Type K1a should be used for all restrooms and locker rooms. Symbols should correspond to tactile messages and architectural room numbers should be displayed in the lower right. When Sign Type K1a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines
**SIGN TYPE K1A**

**LARGE AMENITY IDENTIFICATION**

**NOTES**

The symbol used for the Top Panel must correspond to the message provided on the Tactile Panel.

When Sign Type K1a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines

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**Detail Elevation - Sign Type K1a**

6" = 1'-0"
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.0.4–6  Infonorm® Specifications

Infonorm® Profile 001
Infonorm® Spring Lock
Tactile Panel
1/32” TH ptd. photopolymer face w/ integral raised braille and integral raised silkscreened letters/numbers; mtd. to Thin Cover Profile w/ fully concealed VHB adhesive

Infonorm® Base Profile
Mtd. to shim w/ fully concealed mechanical fasteners

Back-up Panel (as required)
1/16” TH ptd. acrylic back-up panel required for all glass mtd. conditions; mtd. to existing glass wall w/ fully concealed VHB adhesive

Finish: F2

NOTE: Vinyl may be used in lieu of back-up panel. Vinyl to be cut to size of sign panel; mtd. to second surface glass

Finish: F56
Elevation - Sign Type K1a.s

6” = 1'-0”

NOTES
Sign Type K1a.s is used in any area that would typically need Sign Type K1a, but requires a soft/flexible material. This typically occurs within mental health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines
Layouts for this panel build up from the bottom line. For single line messages, the bottom line should be used.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines
Notes
Sign Type K1b should be used for shower rooms only that require In Session Sliders. Symbols should correspond to tactile messages and architectural room numbers should be displayed in the lower right.

When Sign Type K1b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

Reference Pages
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
1.3.1–3  Symbols
Chapter 2  Programming Guidelines
SIGN TYPE K1b
LARGE AMENITY IDENTIFICATION W/ SLIDER

NOTES
When Sign Type K1b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
1.3.1–3  Symbols
Chapter 2  Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
NOTES
Sign Type K2a should be used for treatment, exams, etc.

When Sign Type K2a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE K2A
MEDIUM TREATMENT ROOM IDENTIFICATION

NOTES
When Sign Type K2a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
NOTES
Sign Type K2b should be used for treatment, exams, etc., that require In Session sliders.
When Sign Type K2b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines

SIGN TYPE K2B
MEDIUM TREATMENT ROOM IDENTIFICATION W/ SLIDER

Tactile Panel
Background/Braille: F2

Top Panel
Background/Braille: F4

Elevation - Sign Type K2b
3" = 1'-0"
SIGN TYPE K2B
MEDIUM TREATMENT ROOM
IDENTIFICATION W/ SLIDER

NOTES
When Sign Type K2b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
1.3.1–3  Symbols
Chapter 2  Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
NOTES
Sign Type K3a should be used in similar situations as Sign Type K2a. The insert provided allows for flexible messaging, when required.
When Sign Type K3a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

SIGN TYPE K3A
MEDIUM TREATMENT ROOM IDENTIFICATION W/ INSERT

Elevation - Sign Type K3a
3" = 1'-0"
**SIGN TYPE K3A**

**MEDIUM TREATMENT ROOM IDENTIFICATION W/ INSERT**

**NOTES**

- Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.
- Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.
- When Sign Type K3a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

**REFERENCE PAGES**

- 1.1.2 Signage Finishes
- 1.2.1–15 Typography Specifications
- Chapter 2 Programming Guidelines

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**Dr. James Heath**

**Social Work**

**PROCEDURE**

**4**

**KM 13 02**

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**Detail Elevation - Sign Type K3a**

*NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®*
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.0.4–6 Infonorm® Specifications

SIGN TYPE K3A
MEDIUM TREATMENT ROOM
IDENTIFICATION W/ INSERT

Infonorm® Insert (Frame)
Infonorm® Quick Click Frame; mtd. to Back Panel w/ fully concealed VHB adhesive

Infonorm® Insert (Front Panel)
Non-glare acrylic glass lens

Infonorm® Insert (Back Panel)
Mtd. to Infonorm® Quick Click Frame w/ fully concealed VHB adhesive

Infonorm® Thin Cover Profile

Tactile Panel
1/32" TH ptd. photopolymer face w/ integral raised braille and integral raised silkscreened letters/numbers; mtd. to Thin Cover Profile w/ fully concealed VHB adhesive

Infonorm® Base Profile
Mtd. to shim w/ fully concealed mechanical fasteners

Infonorm® Profile 001

Shim
1/16" TH aluminum shim inset 1/4" from all sides; mtd. to wall w/ fully concealed mechanical fasteners

NOTE: Mtd. to wall w/ fully concealed VHB adhesive for all glass mtd. and workstation conditions

Infonorm® Spring Lock

Back-up Panel (as required)
1/16" TH ptd. acrylic back-up panel required for all glass mtd. conditions; mtd. to existing glass wall w/ fully concealed VHB adhesive Finish: F2

NOTE: Vinyl may be used in lieu of back-up panel. Vinyl to be cut to size of sign panel; mtd. to second surface glass Finish: F56
Sign Type K3b should be used in similar situations as Sign Type K2b. The insert provided allows for flexible messaging, when required.

When Sign Type K3b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE K3B
MEDIUM TREATMENT ROOM IDENTIFICATION W/ INSERT AND SLIDER

NOTES
Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

When Sign Type K3b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
NOTES
Sign Type K4a should be used for treatment, exams, etc. in instances where the length of message allows and/or mounting conditions require. When Sign Type K4a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

SIGN TYPE K4A
Small Treatment Room Identification

1 Elevation - Sign Type K4a
3" = 1'-0"
SIGN TYPE K4A
SMALL TREATMENT ROOM
IDENTIFICATION

NOTES
When Sign Type K4a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

Tactile Panel
Tactile Text: T3, F4

Top Panel
Tactile Text/Number: T3, F3

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®

Detail Elevation - Sign Type K4a

EXAM
4

KM 14 10

15750 mm * (6.20’)

1/4”

12300 mm * (48”)

12000 mm (47.2”)

6150 mm * (24”)

6000 mm (23.6”)

1/4”

1/4”

5/8”

3/8”

5/8”

3/8”

3/8”

3/8”
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications

SIGN TYPE K4A
SMALL TREATMENT ROOM ID

Tactile Panel
1/32” TH ptd. photopolymer face w/ integral raised braille and integral raised silkscreened letters/numbers; mtd. to Thin Cover Profile w/ fully concealed VHB adhesive

Infonorm® Thin Cover Profile

Shim
1/16” TH aluminum shim inset 1/4” from all sides; mtd. to wall w/ fully concealed mechanical fasteners

NOTE: Mtd. to wall w/ fully concealed VHB adhesive for all glass mtd. and workstation conditions

Infonorm® Profile 001

Infonorm® Spring Lock

Infonorm® Base Profile
Mtd. to shim w/ fully concealed mechanical fasteners

Back-up Panel (as required)
1/16” TH ptd. acrylic back-up panel required for all glass mtd. conditions; mtd. to existing glass wall w/ fully concealed VHB adhesive

Finish: F2

NOTE: Vinyl may be used in lieu of back-up panel. Vinyl to be cut to size of sign panel; mtd. to second surface glass

Finish: F56
NOTES
Sign Type K4b should be used for treatment, exams, etc. in instances where the length of message allows and/or mounting conditions require, and require an In Session slider.

When Sign Type K4b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
When Sign Type K4b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing
walls with fully concealed mechanical fasteners,
wherever possible, to facilitate future relocation
by NYU Langone Health. All signs to incorporate
concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications
NOTES
Sign Type K5a should be used in similar situations as Sign Type K4a. The insert provided allows for flexible messaging, when required.

When Sign Type K5a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE K5A
SMALL TREATMENT ROOM IDENTIFICATION W/ INSERT

NOTES
Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

When Sign Type K5a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
Sign Type K5b should be used in similar situations as Sign Type K4b. The insert provided allows for flexible messaging, when required. When Sign Type K5b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

NOTE

1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines
**SIGN TYPE K5B**

**SMALL TREATMENT ROOM ID W/ INSERT AND SLIDER**

**NOTES**

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

When Sign Type K5b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

**REFERENCE PAGES**

1.1.2 Signage Finishes

1.2.1–15 Typography Specifications

Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
TREATMENT #3
KM 16 22

NOTES
Sign Type K6a should be used for treatment, exams, etc. that require additional information such as regulatory information or other notifications.

When Sign Type K6a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®

SIGN TYPE K6A
MEDIUM TREATMENT ROOM IDENTIFICATION W/ INSERT

NOTES
When Sign Type K6a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE K6A
MEDIUM TREATMENT ROOM ID W/ INSERT

NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
NOTES
Sign Type K6a should be used for treatment, exams, etc. that require additional information such as regulatory information or other notifications and an In Session slider.
When Sign Type K6a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
**SIGN TYPE K6B**

Medium Treatment ID w/ Insert and Slider

**NOTES**

When Sign Type K6b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

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**Detail Elevation - Sign Type K6b**

6” = 1'-0"

*NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®*
**SIGN TYPE K6B**

**MEDIUM TREATMENT ROOM ID W/ INSERT AND SLIDER**

**NOTES**

All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

**REFERENCE PAGES**

1.1.2  Signage Finishes
5.04-6  Infonorm® Specifications
SIGN TYPE Q
ELEVATOR IDENTIFICATION W/DIRECTORY

NOTES
Q Sign Types should be used to identify elevators and the floors they access. These should be used in conjunction with Sign Type T1 (see joint installation elevation on Sheet 5.Q.2).
The selection of Sign Types Q1a, Q1b, or Q1c should be determined based upon number of floors and destinations in the building.
**SIGN TYPE Q**

**ELEVATOR IDENTIFICATION W/ DIRECTORY**

**NOTES**

Q Sign Types should be used to identify elevators and the floors they access. These should be used in conjunction with Sign Type T1 (see joint installation elevation on Sheet 5.T.2).

Installation conditions at elevator banks will vary with each site. Consistency will be achieved through the use of one (1) Q1 type per elevator bank mounted to the wall at 5'-0" to the center of the overall panel.
Schwartz West Elevators
Access to Floors G-2, 9-15
Floor 12

Directory

15 Executive Offices
14 Nuclear Cardiology Suite
   Interventional Cardiology Suite
13 Blechman Cardiac and Vascular Center
   Education Resource Center
12 Epilepsy Center
11 Cardiology Unit
10 Psychiatric Service of Tisch Hospital
9 Smilow Cardiac Prevention and Rehabilitation Center
2 Faculty Practice Radiology
   Outpatient Surgical Suite
   Minimally Invasive Urology
   Co-operative Care
1 Blood Donor Center
   Diabetes Education
   Outpatient Labs
   Cashier
   Pharmacy
G MRI
   Gamma Knife
   Laser Suite

Elevation - Sign Type Q1a
1 1/2" = 1'-0"

SIGN TYPE Q1A
ELEVATOR IDENTIFICATION
W/ LARGE DIRECTORY

NOTES
Sign Type Q1a is to be used at all elevator banks on the Main Campus Upper Floors and at all other facilities.
When Sign Type Q1a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1-3 Symbols
Chapter 2 Programming Guidelines
**SIGN TYPE Q1A**

**ELEVATOR IDENTIFICATION W/ LARGE DIRECTORY**

**NOTES**

All layouts for the Top Panel build up from the bottom line. When elevator access is not indicated, the Elevator Identification and Symbol should shift down to maintain the detailed distance from the Location Identification. When Sign Type Q1a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

**REFERENCE PAGES**

1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
1.3.1–3  Symbols
Chapter 2 Programming Guidelines
NOTES

When Sign Type Q is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES

1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
SIGN TYPE Q1B
ELEVATOR IDENTIFICATION W/ MEDIUM DIRECTORY

NOTES
Sign Type Q1b is to be used at all elevator banks on the Main Campus Upper Floors and at all other facilities.
When Sign Type Q1b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines

SIGN TYPE Q1B
Elevator Identification w/ Medium Directory

1 Elevation - Sign Type Q1b
1 1/2" = 1'-0"
**SIGN TYPE Q1B**

**ELEVATOR IDENTIFICATION w/ MEDIUM DIRECTORY**

**NOTES**

All layouts for the Top Panel build up from the bottom line. When elevator access is not indicated, the Elevator Identification and Symbol should shift down to maintain the detailed distance from the Location Identification.

When Sign Type Q1b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

**REFERENCE PAGES**

1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
1.3.1–3  Symbols
Chapter 2 Programming Guidelines
Low Rise Elevators
Access to Floors G–7
Floor 7

Directory

7 Executive Offices
6 Nuclear Cardiology Suite
   Interventional Cardiology Suite
5 Blechman Cardiac and Vascular Center
   Education Resource Center
4 Epilepsy Center
3 Cardiology Unit
2 Psychiatric Service of Tisch Hospital
G Smilow Cardiac Prevention and Rehabilitation Center

NOTES
Sign Type Q1c is to be used at all elevator banks on the Main Campus Upper Floors and at all other facilities.

When Sign Type Q1c is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines
Low Rise Elevators
Access to Floors G–7

Floor 7

NOTES
All layouts for the Top Panel build up from the bottom line. When elevator access is not indicated, the Elevator Identification and Symbol should shift down to maintain the detailed distance from the Location Identification.

When Sign Type Q1c is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines
Floor 4
Developmental Genetics

↑ Coordinators
Jane Hubbard  LAB 7
Jessica Treisman  LAB 8–9

Principal Investigators
Holder Knaut  LAB 15
Ruth Lehmann  LAB 10–13
Jeremy Nance  LAB 17
Mamta Tahiliani  LAB 4

→ Administration
Ruth Lehmann, Director  SK 4 14A
Jeremy Paul, Executive Director  SK 4 14C

Sign Type R1a
Large Directional w/ Header

Floor 9
Physician Offices

↑ Coordinators
Jane Hubbard  LAB 7
Jessica Treisman  LAB 8–9

Principal Investigators
Holder Knaut  LAB 15
Ruth Lehmann  LAB 10–13
Jeremy Nance  LAB 17
Mamta Tahiliani  LAB 4

→ Administration
Ruth Lehmann, Director  SK 4 14A
Jeremy Paul, Executive Director  SK 4 14C

Sign Type R2
Large Directional

↑ Restroom

→ Seminar Rooms
TH-9300 to TH-9355
Seminar Rooms
TH-9400 to TH-9475

Sign Type R3
Medium Directional

↑ Exit to Elevator Lobby

Sign Type R6
Small Directional

↑ Exit to Elevator Lobby

Sign Type R6.s
Soft Small Directional

NOTES
R Sign Types should be used for directional messaging.

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NYU LANGONE HEALTH
Wayfinding and Communications Standards Manual

SIGN TYPE R
DIRECTIONAL/DIRECTORY SIGN

Developmental Genetics
SIGN TYPE R
DIRECTIONAL/DIRECTORY SIGN

NOTES
R Sign Types should be installed with the horizontal band at a consistent height, wherever possible. R1, R2, R3, R4 and R6 should be mounted at 5'-0" aligned with the bottom of the permanent panel. Sign Type R5 should be mounted at 4'-6" aligned with the bottom of the tactile panel.
SIGN TYPE R1A
LARGE DIRECTIONAL W/ HEADER

NOTES
Sign Type R1a is to be used near elevators or entrances where departments or occupants are identified.

The alternate layout should be used only for the NYU School of Medicine, as shown.

All layouts for the Top Panel build up from the bottom line. For single line messages, the bottom line should be used.

When Sign Type R1a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
Chapter 2  Programming Guidelines
SIGN TYPE R1a
LARGE DIRECTIONAL W/ HEADER

Top Panel
Floor Identification: T1, F3
Department Identification: T1, F3

Insert
F40

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®

NOTES
Sign Type R1a is to be used near elevators or entrances where departments or occupants are identified.

All layouts for the Top Panel build up from the bottom line. For single line messages, the bottom line should be used.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

When Sign Type R1a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
Sign Type R1a Alternate Layout should be used only for the NYU School of Medicine, as shown.
Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.
Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.
When Sign Type R1a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

SIGN TYPE R1A
LARGE DIRECTIONAL W/ HEADER
(ALTERNATE LAYOUT)
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.0.4–6 Infonorm® Specifications
SIGN TYPE R1B
LARGE DIRECTIONAL W/ HEADER (OFF-SITE)

NOTES
Sign Type R1b is to be used at facilities not at the Main Campus, and near elevators or entrances where departments or occupants are identified.

When Sign Type R1b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.4.1 Logos
Chapter 2 Programming Guidelines
NOTES
Sign Type R1b is to be used near elevators or entrances where departments or occupants are identified.
Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.
Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.
When Sign Type R1b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.4.1 Logos
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications
**SIGN TYPE R2**

**LARGE DIRECTIONAL**

**NOTES**

Sign Type R2 should be used for directional messages that require a large insert.

When Sign Type R2 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

**REFERENCE PAGES**

1.1.2 Signage Finishes

Chapter 2 Programming Guidelines
NOTES
Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

When Sign Type R2 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
**SIGN TYPE R3**

**MEDIUM DIRECTIONAL**

**NOTES**

Sign Type R3 should be used for directional messages that require a medium insert.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

When Sign Type R3 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

**REFERENCE PAGES**

1.1.2 Signage Finishes

Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
Center for Musculoskeletal Care

→ Rusk Center for Physical and Occupational Therapy

Panel
Background: F4

Insert
Front Panel: F30

SIGN TYPE R4
SMALL DIRECTIONAL W/ LOGO IDENTIFICATION (OFF-SITE)

NOTES
Sign Type R4 should be use for directional messages at facilities not at the Main Campus. This sign type is recommended for shared spaces and floors that require the Brand Logo.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.4.1 Logos
Chapter 2 Programming Guidelines
NOTES
All layouts for the Top Panel build up from the bottom line. For single line messages, the bottom line should be used. For the NYU Langone Health Logo, the dimensions shown should always be maintained.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.4.1 Logos
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications
SIGN TYPE R5
SMALL DIRECTIONAL W/ LOGO IDENTIFICATION (TACTILE, OFF-SITE)

NOTES
Sign Type R5 should be used for department entrances at facilities not at the Main Campus. This sign type is recommended for shared spaces and floors that require the brand Logo and tactile information.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
1.4.1  Logos
Chapter 2  Programming Guidelines
### SIGN TYPE R5

**SMALL DIRECTIONAL W/ LOGO IDENTIFICATION (TACTILE, OFF-SITE)**

**NOTES**

All layouts for the Top Panel build up from the bottom line. For single line messages, the bottom line should be used. For the NYU Langone Health Logo, the dimensions shown should always be maintained.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

**REFERENCE PAGES**

1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
1.4.1  Logos
Chapter 2  Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
NOTES
Sign Type R6 should be used for directional messages that require a small insert.

Sign contractor to provide template artwork for inserts in Typeface T1, Utopia Std., and Alternate Typeface, T10, Times New Roman, typical. Electronic format to be determined by client.

Sign contractor to provide complete set of inserts installed with all sign types. Where messages are not provided, blank paper inserts to be installed.

When Sign Type R6 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
Chapter 2 Programming Guidelines
NOTES

All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES

1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications
SIGN TYPE R6.S
SOFT SMALL DIRECTIONAL

NOTES
Sign Type R6.s is used in any area that would typically need Sign Type R6, but requires a soft/flexible material. This typically occurs within mental health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE R6.S
SOFT SMALL DIRECTIONAL

NOTES
Sign Type R6.S is used in any area that would typically need Sign Type R6, but requires a soft/flexible material. This typically occurs within mental health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines
Sign Type T1b
Elevator Egress

Sign Type T1b (Alternate Layout)
Elevator Egress

Sign Type T2a
Elevator Identification and Egress

Sign Type T2a (Alternate Layout)
Elevator Identification and Egress

Sign Type T3a
Elevator Jamb Identification

Sign Type T4a
Elevator Cab Identification

Sign Type T5a
Sabbath Elevator Identification

Sign Type T5b
Sabbath Elevator Identification

Schwartz West Elevators
Access to Floors G-2, 9-15
Floor 12

Schwartz West Elevators
Access to Floors G-2, 9-15
Floor 12

IN FIRE EMERGENCY,
DO NOT USE ELEVATORS.
USE EXIT STAIRS.

NOTES

T Sign Types should be used to identify elevators and the means of egress.
IN FIRE EMERGENCY, DO NOT USE ELEVATORS.
USE EXIT STAIRS.

Sabbath Elevator
This elevator stops on every floor on Jewish holidays and the Sabbath.

Installation Elevation - Sign Type T1, T2 (Typical and VIF)
1/4" = 1'-0"

Installation Elevation - Sign Type T3a, T4a, T5a (Typical and VIF)
1/4" = 1'-0"

SIGN TYPE T
ELEVATOR REGULATORY

NOTES
T Sign Types should be used to identify elevators and the means of egress. These should be used in conjunction with Sign Type Q1 (see installation elevation on Sheet 5.Q.2).

Installation conditions at elevator banks will vary with each site. Consistency will be achieved through the use of one (1) T1 or T2 type per elevator bank mounted to the wall horizontally aligned and 3" above the call button.
IN FIRE EMERGENCY, DO NOT USE ELEVATORS. USE EXIT STAIRS.

**ELEVATOR EGRESS**

- **Panel**
  - Background: F4

- **Panel Artwork**
  - See Sheet 5.T.5

- **Regulatory Text**
  - T1, F3

---

**NOTES**

- Sign Type T1b is to be used at elevator banks that require the Elevator Bank letter designation, and the egress artwork is horizontal.
- When Sign Type T1b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

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**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
IN FIRE EMERGENCY, DO NOT USE ELEVATORS.
USE EXIT STAIRS.

ELEVATOR BANK
AA

SCHWARTZ HEALTHCARE CENTER

Elevation - Sign Type T1b (Alternate Layout)

1 1/2" = 1'-0"
472.50 mm *
(1'-6.60")

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®

Detail Elevation - Sign Type T1b (Alternate Layout)

3" = 1'-0"

Panel Artwork: See Sheet 5.T.5
Regulatory Text: T1, F3

NOTES
Sign Type T1b is to be used at elevator banks that require the Elevator Bank letter designation and the egress artwork is vertical.

When Sign Type T1b is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
Elevator Egress Map

NOTES
Egress artwork should be provided by the sign fabricator. The artwork should be produced on a 1/2” grid with line weights and colors to follow the specified finishes.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
**SIGN TYPE T2A**

**ELEVATOR IDENTIFICATION AND EGRESS**

**NOTES**

Sign Type T2a is to be used at all elevator banks where a directory is not required. These may include leased spaces and service elevators.

When Sign Type T2a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

**REFERENCE PAGES**

1.1.2  Signage Finishes
1.2.1-15  Typography Specifications
1.3.1-3  Symbols

Chapter 2 Programming Guidelines
IN FIRE EMERGENCY, DO NOT USE ELEVATORS. USE EXIT STAIRS.

Service Elevators
Access to Floors G-20

Floor 12
SCHWARTZ HEALTHCARE CENTER

*NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm*

**SIGN TYPE T2A**
ELEVATOR IDENTIFICATION AND EGRESS

NOTES
This layout for Sign Type T2a should be used at locations when the egress artwork is horizontal. When Sign Type T2a is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines

SIGN TYPE T2A
Elevator Identification and Egress

1 Detail Elevation - Sign Type T2a

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Wayfinding and Communications Standards Manual

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NYU LANGONE HEALTH
Wayfinding and Communications Standards Manual
Service Elevators
Access to Floors G-20

Floor 12

**NOTES**
- Dimensions indicate panel cut dimensions confirmed by Infonorm.

**Top Panel**
- Symbol: F2
- Elevator Identification: T1, F2
- Access Identification: T1, F3
- Location Identification: T1, F3
- Access, Floor, Building, and Regulatory Text: T1, F3
- Artwork: See Sheet 5.T.5

**SIGN TYPE T2A**
ELEVATOR IDENTIFICATION AND EGRESS

**REFERENCE PAGES**
- 1.1.2 Signage Finishes
- 1.2.1–15 Typography Specifications
- 1.3.1–3 Symbols
- Chapter 2 Programming Guidelines
**SIGN TYPE T3A**

**ELEVATOR JAMB IDENTIFICATION**

**NOTES**
Sign Type T3a is to be used to identify levels at elevator jambs.

**REFERENCE PAGES**
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1-3 Symbols
Chapter 2 Programming Guidelines

---

1. **Elevation - Sign Type T3a**
   - Panel Background/Braille: F32
   - Elevation: 3’ = 1'-0"

2. **Detail Elevation - Sign Type T3a**
   - Panel Symbol/Number: T13, F3
   - Detail Elevation: 6" = 1'-0"

3. **Detail Elevation - Sign Type T3a**
   - Panel Number: T13, F3
   - Detail Elevation: 6" = 1'-0"
NOTES
Signs to be mounted to elevator jamb with fully concealed VHB adhesive.

REFERENCE PAGES
1.1.2   Signage Finishes

SIGN TYPE T3A
ELEVATOR JAMB IDENTIFICATION

Existing elevator jamb

Tactile Panel
1/16" TH stamped stainless steel panel with eased corners, raised braille, raised and tipped letters/numbers; mtd. to shim w/ fully concealed silicone.

Shim
1/16" TH acrylic shim inset 1/4" from all sides; mtd. to elevator jamb w/ fully concealed VHB adhesive
NOTE
Sign Type T4a is to be used to identify individual elevator cabs and elevator bank at elevator jambs.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
Sign Type T4a is to be used to identify individual elevator cabs and elevator bank at elevator jambs. Overall width of panel to be determined by length of elevator bank letters.

REFERENCE PAGES
1.1.2   Signage Finishes
1.2.1–15  Typography Specifications
Chapter 2  Programming Guidelines
NOTES
Sign Type T4a is to be used to identify individual elevator cabs and elevator bank at elevator jambs.

REFERENCE PAGES
1.1.2  Signage Finishes
This elevator stops on every floor on Jewish holidays and the Sabbath.

NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®
Sign Type T5a is to be used to identify Sabbath elevator cabs, where horizontal mounting space is limited. See T5B for alternate size.

### SIGN TYPE T5A
### SABBATH ELEVATOR IDENTIFICATION

**NOTES**
Sign Type T5a is to be used to identify Sabbath elevator cabs, where horizontal mounting space is limited. See T5B for alternate size.

**REFERENCE PAGES**
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines

---

**Existing wall**

**Face Panel**
1/8" TH non-glare clear acrylic panel w/ chamfered edges

**Digital Print**
Digital print on CMYK Output, sandwiched between two pieces of acrylic w/ opticlear adhesive

**Back Panel**
.060” TH clear acrylic panel w/ ptd. face only (F4); mtd. to wall with fully concealed VHB adhesive
Sabbath Elevator Identification

Sign Type T5b is to be used to identify Sabbath elevator cabs. This sign should be used where horizontal conditions allow. See Sign Type T5a for alternate layout.

NOTES

Reference Pages:
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

*NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm*
SIGN TYPE T5B
SABBATH ELEVATOR IDENTIFICATION

NOTES
Sign Type T5b is to be used to identify Sabbath elevator cabs. This sign should be used where horizontal conditions allow. See Sign Type T5a for alternate layout.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1-15  Typography Specifications
Chapter 2  Programming Guidelines
Sign Type U1b
Non-Tactile Stair Identification (Occupancy Side Door)

Sign Type U2a
Tactile Stair Identification (Stair Side Wall)

Sign Type U2b
Non-Tactile Stair Identification (Stair Side Door)

Sign Type U3
Tactile Exit Identification (Occupancy Side Wall)

Sign Type U4
No Exit

Sign Type U6
Egress Directional

Sign Type U7
Fire Extinguisher Overhead Sign

Sign Type U7
Fire Hose Overhead Sign (Alternate Layout)

Sign Type U8
Fire Extinguisher Cabinet Sign

Sign Type U8
Hose Cabinet Sign (Alternate Layout)
SIGN TYPE U
STAIR IDENTIFICATION
NOTES
U Sign Types should be mounted to height as indicated. This will ensure that all signs are ADA compliant.
Stairs offer many varying conditions. The installation elevations provided are intended as a guide only.
Tactile Stair and Egress Identification Signs (U2a, U3) should be installed adjacent to doors. Non-Tactile Stair Identification Signs (U1b, U2b) should be installed on doors.
SIGN TYPE U1B
NON-TACTILE STAIR IDENTIFICATION (OCCUPANCY SIDE DOOR)

NOTES
Sign Type U1b should be used to identify stairs on the occupancy side of the stair. When a stair is determined to be a means of emergency egress, the stair shall be identified as an “Exit Stair”. All other stairs will be identified simply as “Stair”.

Sign Type U1b should always be programmed in conjunction with Sign Type U3 when the stair is a means of emergency egress. See Sheet 5.U.2 for installation requirements.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
Chapter 2  Programming Guidelines
SIGN TYPE U1b
NON-TACTILE STAIR IDENTIFICATION
(OCCUPANCY SIDE DOOR)

NOTES
All layouts for the Middle Panel build up from the bottom line. For single line messages, the bottom line should be used.

Building names, such as "Tisch Hospital", should be used only when Sign Type U1b is programmed at the Main Campus. For all other facilities, the portion of the Top Panel building name should remain blank. When used, building name layouts should build up from the bottom line. For single line messages, the bottom line should be used.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Stair Identification signs to be mounted to existing doors with fully concealed VHB adhesive. No penetration should occur to fire-rated doors and walls.

REFERENCE PAGES
1.1.2 Signage Finishes
5.0.4–6 Infonorm® Specifications

SIGN TYPE U1B
NON-TACTILE STAIR IDENTIFICATION (OCCUPANCY SIDE DOOR)

Existing wall

Align

Infonorm® Thin Cover Profile

Infonorm® Base Profile
Mtd. to Shim w/ fully concealed VHB adhesive

Thin Panel
Thin Panel w/ silkscreened letters/numbers; mtd. to Thin Cover Profile w/ fully concealed VHB adhesive

Infonorm® Profile 001

Back-up Panel (as required)
1/16” TH ptd. acrylic back-up panel required for all glass mtd. conditions; mtd. to existing glass wall w/ fully concealed VHB adhesive
Finish: F2

NOTE: Vinyl may be used in lieu of back-up panel. Vinyl to be cut to size of sign panel; mtd. to second surface glass
Finish: F56

Shim
1/16” TH aluminum shim inset 1/4” from all sides; mtd. to wall w/ fully concealed VHB adhesive

Infonorm® Spring Lock
TISCH HOSPITAL
FLOORS: G-18
NO ROOF ACCESS
NO RE-ENTRY, NEAREST RE-ENTRY ON THE 14TH AND 17TH FLOORS

EXIT STAIR C
FLOOR 16

FLOORS: G-18
NO ROOF ACCESS
EXIT DOWN TO FLOOR G

SIGN TYPE U2A
TACTILE STAIR IDENTIFICATION (STAIR SIDE WALL)

NOTES
Sign Type U2a should be used to identify stairs within the stairwell.
Sign Type U2a should always be programmed in conjunction with Sign Type U2b. See Sheet 5.U.2 for installation requirements.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines

Elevation - Sign Type U2a
3" = 1'-0"
SIGN TYPE U2A
TACTILE STAIR IDENTIFICATION
(STAIR SIDE WALL)

NOTES
Sign Type U2a should be used to identify stairs within the stairwell.
Building names, such as “Tisch Hospital”, should be used only when Sign Type U2a is programmed at the Main Campus. For all other facilities, the portion of the Middle Panel should remain blank.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Stair Identification signs to be mounted to existing wall with fully concealed VHB adhesive. No penetration should occur to fire-rated doors and walls.

REFERENCE PAGES
1.1.2 Signage Finishes
5.0.4–6 Infonorm® Specifications

SIGN TYPE U2A
TACTILE STAIR IDENTIFICATION
(STAIR SIDE WALL)

NOTES
All Stair Identification signs to be mounted to existing wall with fully concealed VHB adhesive. No penetration should occur to fire-rated doors and walls.

REFERENCE PAGES
1.1.2 Signage Finishes
5.0.4–6 Infonorm® Specifications
SIGN TYPE U2B
NON-TACTILE STAIR IDENTIFICATION
(STAIR SIDE DOOR)

NOTES
Sign Type U2b should be used to identify stairs within the stairwell.
Sign Type U2b should always be programmed in conjunction with Sign Type U2a. See Sheet 5.U.2 for installation requirements.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines
**NOTES**

Sign Type U2b should be used to identify stairs within the stairwell.

Building names, such as "Tisch Hospital", should be used only when Sign Type U2b is programmed at the Main Campus. For all other facilities, the portion of the Top Panel should remain blank.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Stair Identification signs to be mounted to existing doors with fully concealed VHB adhesive. No penetration should occur to fire-rated doors and walls.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04-6 Infonorm® Specifications
**NOTES**

Sign Type U3 is required to identify emergency means of egress. Wherever a door is identified as an emergency exit, this sign will be required adjacent to the exit door.

When Sign Type U3 is programmed to be located at the Main Campus on a first floor corridor designated as a wayfinding pathway (i.e. Green Pathway, Blue Pathway, Yellow Pathway), then all finishes specified as F2 should be replaced with F1. See Section 2.4.2 for further details.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
SIGN TYPE U4
NO EXIT

NOTES
Sign Type U4 should be used to identify doors along egress routes that are not exits.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications
SIGN TYPE U6
EGRESS DIRECTIONAL

NOTES
Sign Type U6 should be used to direct to emergency exits, along egress routes.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
1.3.1  Symbols
Chapter 2 Programming Guidelines
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications
SIGN TYPE U7
FIRE EXTINGUISHER/HOSE OVERHEAD SIGN

NOTES
Sign Type U7 should be used to identify fire extinguishers and fire hoses.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
1.3.1  Symbols
Chapter 2  Programming Guidelines

SIGN TYPE U7
FIRE EXTINGUISHER/HOSE OVERHEAD SIGN

NOTES
- Cabinet sign not required for cabinet with window
- Panel Background: F65
  Symbol and Text: F9
SIGN TYPE U7
FIRE EXTINGUISHER/HOSE OVERHEAD SIGN

NOTES
Sign Type U7 should be used to identify fire extinguishers and fire hoses.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbols
Chapter 2 Programming Guidelines

Panel
Text: T14, F9
Symbol: F9

Panel
Text: T14, F9
Symbol: F9

Panel
Sign mounted to wall with keyhole slot and hex washer head screw and anchors. Screw tightened fully after sign is attached with hex key

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SIGN TYPE U7
Fire Extinguisher/Hose Overhead Sign

5.U.19
**SIGN TYPE U8**
FIRE EXTINGUISHER/HOSE CABINET SIGN

**NOTES**
Sign Type U8 should be used to identify fire extinguishers and fire hoses.

**REFERENCE PAGES**
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1 Symbols
Chapter 2 Programming Guidelines
SIGN TYPE U8
FIRE EXTINGUISHER/HOSE CABINET SIGN

NOTES
Sign Type U8 should be used to identify fire extinguishers and fire hoses.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
1.3.1  Symbols
Chapter 2  Programming Guidelines
SIGN TYPE V
MAXIMUM OCCUPANCY

NOTES
V Sign Types should be used for regulatory messaging.
Installation Elevation - Sign Type V1 (Typical and VIF)

NOTES

V Sign Types should be installed 5'-0" from the base of the sign.
OCCUPANCY
BY MORE THAN
350 PERSONS
IS DANGEROUS
AND UNLAWFUL

Certificated of Operation
No. XXXXXXX
Commissioner,
Department of Buildings,
City of New York

SIGN TYPE V1
MAXIMUM OCCUPANCY

NOTES
Sign Type V1 should be used to identify the
maximum occupancy of a room or space and
must be located near the entrance of the room.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
Chapter 2  Programming Guidelines
OCCUPANCY
BY MORE THAN
350 PERSONS
IS DANGEROUS
AND UNLAWFUL

Certified of Operation
No. XXXXXXX
Commissioner
Department of Buildings
City of New York

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®
NOTES

All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES

1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
SIGN TYPE W
REGULATORY IDENTIFICATION

NOTES
W Sign Types should be used for regulatory messaging.
**SIGN TYPE W**

**REGULATORY IDENTIFICATION**

**NOTES**

W Sign Types should be used for regulatory messaging.

---

**LABORATORY**

*CAUTION: HAZARDOUS MATERIALS*

- No Smoking
- No Food Or Drink

**OXYGEN STORAGE**

*CAUTION: HAZARDOUS MATERIALS*

- No Smoking
- No Open Flames

**RESTRICTED AREA**

*SECURITY ACCESS*

- Do Not Enter
- Authorized Personnel Only

**CONSTRUCTION ZONE**

*HARDHATS/BOOTS REQUIRED*

- No Smoking
- No Open Flames

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**ELEVATOR**

**MACHINE ROOM**

**Sign Type W5**

Elevator Machine Room Identification

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**Sign Type W6**

Accessible Restroom Directional

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**Sign Type W7**

Push/Pull Identification
**NOTES**

W Sign Types should be used for regulatory messaging.
1. Installation Elevation - Sign Types W1, W2 (Typical and VIF)
   1/4" = 1'-0"

2. Installation Elevation - Sign Types W3 (Typical and VIF)
   1/4" = 1'-0"

3. Installation Elevation - Sign Types W4 (Typical and VIF)
   1/4" = 1'-0"

4. Installation Elevation - Sign Types W5 (Typical and VIF)
   1/4" = 1'-0"

**NOTES**

W Sign Types should be installed according to the elevations shown.

Sign Types W1 and W2 should be installed at 5'-0" from the center of the panel.

Sign Type W3 and W4 should be located in the center of the door they are mounted on horizontally and 5'-0" on center vertically.

Sign Type W5 should be installed 5'-0" to the base of the top line and centered on the door it is mounted on horizontally.
SIGN TYPE W1
LARGE REGULATORY

NOTES
Sign Type W1 should be used where necessary to restrict access or warn patients/visitors within NYU Langone Health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
Restricted Access

O.R. Attire Required

NOTES
Sign Type W1 should be used where necessary to restrict access or warn patients/visitors within NYU Langone Health facilities.

All layouts for the Panel build up from the bottom line. For single line messages, the bottom line should be used.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines

Panel
Text: T1, F3
Text (Alternate Color Options): F4

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®
SIGN TYPE W1
LARGE REGULATORY

NOTES
Sign Type W1 should be used where necessary to restrict access or warn patients/visitors within NYU Langone Health facilities. All layouts for the Panel build up from the bottom line. For single line messages, the bottom line should be used.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®

Panel
Text: T5, F4
Symbol: F4

Detail Elevation - Sign Type W1 (Alt Layout)
6" = 1'-0"
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
Shoes or Sneakers are Required for Playing Ping-Pong

NOTES
Sign Type W1.s should be used in any instance that would typically need Sign Type W1, but requires a soft/flexible material. This typically occurs within mental health facilities.

All layouts for the Panel build up from the bottom line. For single line messages, the bottom line should be used.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
Authorized Personnel Only
Card Access Only
Please scan your I.D. Card for access to this area.

1. Elevation - Sign Type W2
   3" = 1'-0"

2. Elevation - Sign Type W2 (Alternate Layout)
   3" = 1'-0"

3. Elevation - Sign Type W2 (Alternate Color Option 1)
   3" = 1'-0"

4. Elevation - Sign Type W2 (Alternate Color Option 2)
   3" = 1'-0"

*NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm*
**NOTES**

All layouts for the Panel build up from the bottom line. For single line messages, the bottom line should be used.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®

5. Detail Elevation - Sign Type W2

6" = 1'-0"
Card Access Only

Please scan your I.D. Card for access to this area.

*NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®

Panel
Text: T1, F3
Text (Alternate Color Options): F4

5.8" = 1'-0"

Detail Elevation - Sign Type W2 (Alternate Layout)

NOTES
All layouts for the Panel build up from the bottom line. For single line messages, the bottom line should be used.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
Sign Type W2

Small Regulatory

Notes
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

Reference Pages
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
**Do Not Enter**

**Authorized Personnel Only**

---

1. **Elevation - Sign Type W3**

   3" = 1'-0"

---

2. **Detail Elevation - Sign Type W3**

   3" = 1'-0"

---

3. **Detail Elevation - Sign Type W3**

   3" = 1'-0"

---

**NOTES**

Sign Type W3 should be used where necessary to restrict access or warn patients/visitors within NYU Langone Health facilities.

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**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
1.3.1-3 Symbols
Chapter 2 Programming Guidelines
NOTES
Sign Type W3 should be mounted to existing doors where necessary.

REFERENCE PAGES
1.1.2 Signage Finishes
SIGN TYPE W3.S
SOFT DOOR BAND REGULATORY

NOTES
Sign Type W3.s is used in any instance that would typically need Sign Type W3, but requires a soft/flexible material. This typically occurs within mental health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines
**LABORATORY**

**CAUTION: HAZARDOUS MATERIALS**

No Smoking
No Food Or Drink

**SIGN TYPE W4**

**LABORATORY DOOR BAND REGULATORY**

**NOTES**

Sign Type W4 should be used where necessary to restrict access or warn patients/visitors within NYU Langone Health facilities.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®
No Smoking
No Open Flames

OXYGEN STORAGE
CAUTION: HAZARDOUS MATERIALS

Top Panel
Background: F9

Bottom Panel
Background: F4

Elevation - Sign Type W4 (Alternate Layout 1)

SIGN TYPE W4
OXYGEN STORAGE DOOR BAND
REGULATORY (ALT LAYOUT OPTION)

NOTES
Sign Type W4 should be used where necessary to restrict access or warn patients/visitors within NYU Langone Health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®
RESTRICTED AREA
SECURITY ACCESS

Do Not Enter
Authorized Personnel Only

1. Elevation - Sign Type W4 (Alternate Layout 2)
   3' = 1'-0"

2. Detail Elevation - Sign Type W4 (Alternate Layout 2)
   3" = 1'-0"

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®

NOTES
Sign Type W4 should be used where necessary to restrict access or warn patients/visitors within NYU Langone Health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines
RESTRICTED AREA
SECURITY ACCESS

No Smoking
No Open Flames

1 Elevation - Sign Type W4 (Alternate Layout 3)
3" = 1'-0"

2 Detail Elevation - Sign Type W4 (Alternate Layout 3)
3" = 1'-0"

Top Panel
Background: F20

Bottom Panel
Background: F4

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®

REFERENCES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
1.3.1–3 Symbols
Chapter 2 Programming Guidelines

NOTES
Sign Type W4 should be used where necessary to restrict access or warn patients/visitors within NYU Langone Health facilities.
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications

SIGN TYPE W4
LABORATORY DOOR BAND REGULATORY

Existing wall

Infonorm® Thin Cover Profile

Thin Panel
Thin Panel w/ silkscreened letters/numbers; mtd. to Thin Cover Profile w/ fully concealed VHB adhesive

Infonorm® Base Profile
Mtd. to Shim w/ fully concealed mechanical fasteners

Infonorm® Profile 001

Infonorm® Cover Profile
Infonorm® Cover Profile w/ silkscreened letters/numbers

Infonorm® Spring Lock

Shim
1/16" TH aluminum shim inset 1/4" from all sides; mtd. to wall w/ fully concealed mechanical fasteners

NOTE: Mtd. to wall w/ fully concealed VHB adhesive for all glass mtd. conditions

Back-up Panel (as required)
1/16" TH ptd. acrylic back-up panel required for all glass mtd. conditions; mtd. to existing glass wall w/ fully concealed VHB adhesive

Finish: F2

NOTE: Vinyl may be used in lieu of back-up panel. Vinyl to be cut to size of sign panel; mtd. to second surface glass

Finish: F56
1 Elevation - Sign Type W5

3" = 1'-0"

**ELEVATOR MACHINE ROOM**

**NOTES**

Sign Type W5 should be used to identify Elevator Machine Rooms. These signs are required by the City of New York and should be used with a Sign Type J1 mounted adjacent to the door.

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines

**SIGN TYPE W5**

**ELEVATOR MACHINE ROOM IDENTIFICATION**

**Letterforms**

Finish: F53
Die-cut vinyl; applied to door surface

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NYU LANGONE HEALTH
Wayfinding and Communications
Standards Manual
Nearest accessible restroom located at room HJ 11 05

NOTES
Sign Type W6 should be used to direct patients/visitors to accessible restrooms. This sign should be used in conjunction with Sign Type K1a.

REFERENCE PAGES
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
1.3.1  Symbols
Chapter 2  Programming Guidelines
Nearest accessible restroom located at room HJ 11 05

*NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®

Panel
Text: T1, F3
Symbol: F2

Detail Elevation - Sign Type W6
6" = 1'-0"
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
SIGN TYPE W7
PUSH/PULL IDENTIFICATION

NOTES
Sign Type W7 should be programmed where door hardware does not indicate Push/Pull designation. Sign location and color to be coordinated with door architectural conditions.
When Sign Type W7 is located on transparent doors, vinyl graphics to align so no visible adhesive is visible.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
10.1.1 Signage Technical Specifications
Chapter 2 Programming Guidelines

Vinyl
Die-cut vinyl graphics applied to first-surface of doors
Transparent Doors: F64
Opaque Doors/Door Frames: F56

Vinyl
Die-cut vinyl graphics applied to first-surface of doors
Transparent Doors: F64
Opaque Doors/Door Frames: F56
**NOTES**

Transparent glass doors and fixed adjacent transparent glass sidelights should be marked in two (2) areas on the glass surface. One such area shall be located at least 30” A.F.F. as illustrated in this section.

Glass doors and sidelights that have horizontal separation bars, muntin bars or equivalent at least 1 1/2” in vertical dimension that extend across the total width of the glazed area and are located at least 40”, but not more than 50” above the bottom of the door or sidelight, are exempt from this requirement.

Fixed adjacent transparent glass sidelights which are supported by opaque sill and wall construction of at least 18” above the ground are exempt from this requirements.
NOTES

Transparent glass doors and fixed adjacent transparent glass sidelights should be marked in two (2) areas on the glass surface. One such area shall be located at least 30” A.F.F. as illustrated in this section.

Glass doors and sidelights that have horizontal separation bars, muntin bars or equivalent at least 1 1/2” in vertical dimension that extend across the total width of the glazed area and are located at least 40”, but not more than 50” above the bottom of the door or sidelight, are exempt from this requirement.

Fixed adjacent transparent glass sidelights which are supported by opaque sill and wall construction of at least 18” above the ground are exempt from this requirement.

REFERENCE PAGES

1.1.2 Signage Finishes
1.4.1 Logos
10.1.1 Signage Technical Specifications

SIGN TYPE W9A, W9B
INTERIOR VISION BARRIER

Vinyl
Die-cut vinyl graphics applied to second-surface of existing glass
Finish: F54
1. **Sign Type W10 (Door Side 1)**
   - Vinyl digitally printed graphics on vinyl, applied to first surface of door
   - Finish: F3

2. **Sign Type W10 (Door Side 2)**
   - Vinyl
   - Text: T5, F20, F4

3. **Detail Elevation - Sign Type W10**
   - Vinyl

**NOTES**
- Sign Type W10 should be mounted to existing doors where applicable.

**REFERENCE PAGES**
- 1.1.2 Signage Finishes
- 1.4.1 Logos
- 10.1.1 Signage Technical Specifications
NOTES
Sign Type W11 should be mounted to existing doors where applicable.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
10.1.1 Signage Technical Specifications
Chapter 2 Programming Guidelines
Beware of Door

- **Sign Type W11**
  - Door Safety Sign
  - Vinyl
  - Text: T3, F3
  - Symbol: F3

**NOTES**
Sign Type W10 should be mounted to existing doors where applicable.

**REFERENCE PAGES**
1.1.2  Signage Finishes
1.2.1–15  Typography Specifications
10.1.1  Signage Technical Specifications
Chapter 2  Programming Guidelines
SIGN TYPE W12
SAFETY HAVEN DECALS

NOTES
Sign Type W12 should be used to identify safety haven locations along a corridor.

REFERENCE PAGES
1.1.2 Signage Finishes
1.3.1 Symbols
Chapter 2 Programming Guidelines
SIGN TYPE W12
SAFETY HAVEN DECALS
(ALTERNATE COLOR)

NOTES
Sign Type W12 should be used to identify safety havens locations along a corridor.

REFERENCE PAGES
1.1.2 Signage Finishes
1.3.1 Symbols
Chapter 2 Programming Guidelines
SIGN TYPE W13
FLOODGATE SIGN

NOTES
Sign Type W13 should be used to identify floodgate doors.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
**Existing wall**

**Panel**
1/16” TH Photoluminescent matte white rigid PVC sheet w/ silkscreen knocked out graphics; mtd. to Shim w/ fully concealed VHB adhesive

**Shim**
1/16” TH aluminum shim inset 1/4” from all sides; mtd. to wall w/ fully concealed mechanical fasteners

**NOTE:** Mtd. to wall w/ fully concealed VHB adhesive for all glass mtd. and workstation conditions

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**Section - Sign Type W13**

Full Size
Our Patient-Care Commitment

Sign Type X
Regulatory Display System Header

Patients’ Bill of Rights

Sign Type X1a
Regulatory Display System (34” x 17” Insert w/ Header Text)

Patients’ Bill of Rights

Sign Type X1a.s
Soft Regulatory Display System

Sign Type X1b
Regulatory Display System (34” x 17” Insert, No Header Text)

NOTES

X Sign Types provide inserts for regulatory messaging. Some of these sign types will be required by law while others will be recommended by NYU Langone Health.
SIGN TYPE X
REGULATORY DISPLAY

NOTES
X Sign Types provide inserts for regulatory messaging. Some of these sign types will be required by law while others will be recommended by NYU Langone Health.

Mission

Sign Type X3a
Regulatory Display System
(11” x 17” Insert w/ Header Text)

Sign Type X3b
Regulatory Display System
(11” x 17” Insert, No Header Text)

Sign Type X4
Information Display System
(8 1/2” x 11” Quick Click Insert)

Sign Type X4.s
Soft Information Sign

Sign Type X5
Information Display System
(11” x 17” Quick Click Insert)

Sign Type X6
Miscellaneous Display System
(8.5” x 11” Flip Frame)

Sign Type X7
Miscellaneous Display System
(11” x 17” Flip Frame)

Secure Area
Please do not provide access in or out to anyone without hospital I.D.
Refer all patients and visitors to the staff at the desk via intercom.
X Sign Types should be installed according to the visibility requirements of the American Disabilities Act and all other relevant codes. These signs should be mounted at consistent heights in optimal locations.

Regulatory inserts should be installed within a single line as shown in elevation 1/5.X.2. If architectural conditions require signs be stacked, use elevation 2/5.X.2.

When organizing the regulatory inserts within a space, EMTALA (X1a) should always be first, followed by Patients’ Bill of Rights (X1a) or Patients’ Rights (X1a), and/or Parents’ Bill of Rights (X1a), Mothers’ Bill of Rights (X1a), and Charity Care (X1b). All other X3 sign types should follow.

Final quantities and locations should be coordinated and confirmed by RED+F and Chief Regulatory Officer at NYU Langone Health.
Our Patient-Care Commitment

SIGN TYPE X
REGULATORY DISPLAY SYSTEM HEADER

NOTES
Sign Type X provides a friendly welcoming experience for the regulatory display system.
Sign Type X should be installed at entrances or waiting areas in conjunction with required series of Sign Type X1a, X1b, X3a, etc.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
Chapter 2 Programming Guidelines
2.4.3 Regulatory Requirements
Sign Type X1a allows for EMTALA and Patient’s Bill of Rights to be displayed in a manner consistent with the rest of NYU Langone Health signage.

RED+F to provide complete set of regulatory inserts to be installed by Sign Contractor.

**NOTES**

* NOTE: Dimensions indicate panel cut dimensions confirmed by Infonorm®

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
2.4.3 Regulatory Requirements
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications
SIGN TYPE X1A.S.
SOFT REGULATORY DISPLAY SYSTEM

NOTES
Sign Type X1a.s is used in any area that would typically need sign type X1a, but requires a soft/flexible material. This typically occurs at mental health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
2.4.3 Regulatory Requirements
Patients’ Bill

As a patient in a hospital in New York State, you have the right, consistent with law, to:

1. Understand and use these rights. If for any reason you do not understand or you need help, the hospital MUST provide assistance, including an interpreter.
2. Receive treatment without discrimination as to race, color, religion, sex, national origin, disability, sexual orientation, source of payment, or age.
3. Receive considerate and respectful care in a clean and safe environment free of unnecessary restraints.
4. Receive emergency care if you need it.
5. Be informed of the name and position of the doctor who will be in charge of your care in the hospital.
6. Know the names, positions and functions of any hospital staff involved in your care and refuse their treatment, examination or observation.
7. A no smoking room.
8. Receive complete information about your diagnosis, treatment, and prognosis.

Panel
Patient Bill of Rights
Text: T1, F4
Header Text: T5, F4
Text: T3, F4

Panel
VHB Tape
Inset from edges of panel by 1/4” on all sides

Existing wall

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
2.4.3 Regulatory Requirements

SIGN TYPE X1A.S.
SOFT REGULATORY DISPLAY SYSTEM

NOTES
Sign Type X1a.s allows for EMTALA and Patient’s Bill of Rights to be displayed in a manner consistent with the rest of the NYU Langone Health signage.
SIGN TYPE X1B
REGULATORY DISPLAY SYSTEM
(34" X 17" INSERT, NO HEADER TEXT)

NOTES
Sign Type X1b allows for the large NYU Langone Health regulatory notices to be displayed in a manner consistent with the rest of NYU Langone Health signage.

RED+F to provide complete set of regulatory inserts to be installed by Sign Contractor.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
2.4.3 Regulatory Requirements
Sign Type X3a allows for the NYU Langone Health Mission and Accessibility notice to be displayed in a manner consistent with the rest of the NYU Langone Health signage.

RED+F to provide complete set of regulatory inserts to be installed by Sign Contractor.

Reference Pages:
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
2.4.3 Regulatory Requirements
SIGN TYPE X3B
REGULATORY DISPLAY SYSTEM
(11"x17" INSERT, NO HEADER TEXT)

NOTES
Sign Type X3b allows for the NYU Langone Health regulatory notices to be displayed in a manner consistent with the rest of the NYU Langone Health signage.

Sign Type X3b should be programmed when the sign will be located adjacent to Sign Types X1a, X1b, and/or X3a.

RED+F to provide complete set of regulatory inserts to be installed by Sign Contractor.

REFERENCE PAGES
1.1.2 Signage Finishes
Chapter 2 Programming Guidelines
2.4.3 Regulatory Requirements
NOTES
Sign Type X4 allows for a variety of information to be displayed in a manner consistent with the rest of the NYU Langone Health signage. Wherever additional information needs to be displayed to patients, visitors, staff, etc., this sign type should be used.
Sign contractor to provide complete set of inserts installed with all sign types. Final message and layout to be coordinated with NYU Langone Health. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2  Signage Finishes
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.04–6 Infonorm® Specifications
Secure Area

Please do not provide access in or out to anyone without hospital I.D.

Refer all patients and visitors to the staff at the desk via intercom.

NOTES

Sign Type X4.s is used in any area that would typically need Sign Type X4, but requires soft/flexible material. This typically occurs in mental health facilities.

REFERENCE PAGES

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
Secure Area

Please do not provide access in or out to anyone without hospital I.D.

Refer all patients and visitors to the staff at the desk via intercom.

SIGN TYPE X4.S
SOFT INFORMATION SIGN

NOTES
Sign Type X4.s is used in any area that would typically need Sign Type X4, but requires soft/flexible material. This typically occurs in mental health facilities.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Chapter 2 Programming Guidelines
SIGN TYPE X5
INFORMATION DISPLAY SYSTEM
(11" x 17" QUICK CLICK INSERT)

NOTES
Sign Type X5 allows for a variety of information to be displayed in a manner consistent with the rest of the NYU Langone Health signage. Wherever additional information needs to be displayed to patients, visitors, staff, etc., this sign type should be used.

Sign contractor to provide complete set of inserts installed with all sign types. Final message and layout to be coordinated with NYU Langone Health. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
Chapter 2 Programming Guidelines
2.4.3 Regulatory Requirements
NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2 Signage Finishes
5.0.4–6 Infonorm® Specifications
SIGN TYPE X6
MISCELLANEOUS DISPLAY SYSTEM
(8 1/2” X 11” FLIP FRAME)

NOTES
Sign Type X6 allows for a variety of information to be displayed in a manner consistent with the rest of the NYU Langone Health signage. Wherever additional information needs to be displayed to patients, visitors, staff, etc., this sign type should be used.

Sign contractor to provide complete set of inserts installed with all sign types. Final message and layout to be coordinated with NYU Langone Health. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
Chapter 2 Programming Guidelines
2.4.3 Regulatory Requirements
SIGN TYPE X6
MISCELLANEOUS DISPLAY SYSTEM
(8 1/2" X 11" FLIP FRAME)

NOTES
Sign Type X6 allows for a variety of information to be displayed in a manner consistent with the rest of the NYU Langone Health signage. Wherever additional information needs to be displayed to patients, visitors, staff, etc., this sign type should be used.

Sign contractor to provide complete set of inserts installed with all sign types. Final message and layout to be coordinated with NYU Langone Health. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
Chapter 2 Programming Guidelines
2.4.3 Regulatory Requirements
Align

Infonorm® MA1000 Frame (Flip Frame)
.22" TH reinforced magnetic flip frame for inserts w/ non-glare acrylic glass lens and L-channel handle

Shim
1/16" TH aluminum shim inset 1/4" from all sides; mtd. to wall w/ fully concealed mechanical fasteners

NOTE: Mtd. to wall w/ fully concealed VHB adhesive for all glass mtd. and workstation conditions

Back-up Panel (as required)
1/16" TH ptd. acrylic back-up panel required for all glass mtd. conditions; mtd. to existing glass wall w/ fully concealed VHB adhesive
Finish: F2

NOTE: Vinyl may be used in lieu of back-up panel. Vinyl to be cut to size of sign panel; mtd. to second surface glass
Finish: F56

NOTES
All Infonorm® signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health. All signs to incorporate concealed accessible fasteners.

REFERENCE PAGES
1.1.2  Signage Finishes
5.04–6  Infonorm® Specifications
SIGN TYPE X7
MISCELLANEOUS DISPLAY SYSTEM
(11" X 17" FLIP FRAME)

NOTES
Sign Type X7 allows for a variety of information to be displayed in a manner consistent with the rest of the NYU Langone Health signage. Wherever additional information needs to be displayed to patients, visitors, staff, etc., this sign type should be used.

Sign contractor to provide complete set of inserts installed with all sign types. Final message and layout to be coordinated with NYU Langone Health. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
Chapter 2 Programming Guidelines
2.4.3 Regulatory Requirements
SIGN TYPE X7
MISCELLANEOUS DISPLAY SYSTEM
(11" X 17" FLIP FRAME)

NOTES
Sign Type X7 allows for a variety of information to be displayed in a manner consistent with the rest of the NYU Langone Health signage. Wherever additional information needs to be displayed to patients, visitors, staff, etc., this sign type should be used.

Sign contractor to provide complete set of inserts installed with all sign types. Final message and layout to be coordinated with NYU Langone Health. Where messages are not provided, blank paper inserts to be installed.

REFERENCE PAGES
1.1.2 Signage Finishes
Chapter 2 Programming Guidelines
2.4.3 Regulatory Requirements
**SIGN TYPE X7**

**MISCELLANEOUS DISPLAY SYSTEM** (11" X 17" FLIP FRAME)

**NOTES**

Sign Type X7 allows for a variety of information to be displayed in a manner consistent with the rest of the NYU Langone Health signage. Wherever additional information needs to be displayed to patients, visitors, staff, etc., this sign type should be used.

Sign contractor to provide complete set of inserts installed with all sign types. Final message and layout to be coordinated with NYU Langone Health. Where messages are not provided, blank paper inserts to be installed.

**REFERENCE PAGES**

- 1.1.2  Signage Finishes
- Chapter 2  Programming Guidelines
- 2.4.3  Regulatory Requirements
CHAPTER 6
DONOR RECOGNITION SIGNAGE

6.Z.1 Donor Tier Overview
6.Z.9 Sign Type ZZ1-Z4: Donor Recognition Letters
6.Z.15 Sign Type Z7-Z8: Dedication Panel
There are five (5) tiers of donor recognition that relate to each building or designated interior spaces at NYU Langone Health. The associated gift value for these opportunities is dependent on the particular location. Contributing factors include whether it is new construction, the overall square footage of the building, visibility, and usage of space.

Determination of donor recognition letter size is dependent on gift value, architectural design, and zoning and building code requirements.

<table>
<thead>
<tr>
<th>Donor Tier</th>
<th>Recognition Location</th>
<th>Gift Value and Corresponding Letter Size</th>
<th>Sign Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Exterior</td>
<td>15” to 20” high Building Mounted Letters</td>
<td>ZZ1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10” to 15” high Building Mounted Letters</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>7” to 10” high Building Mounted Letters</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interior</td>
<td>9” to 10” high letters in first floor lobby</td>
<td>Z1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7” to 8” high letters in first floor lobby</td>
<td>Z2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5” to 6” high letters in first floor lobby</td>
<td>Z3</td>
</tr>
<tr>
<td>2</td>
<td>Interior</td>
<td>3” to 5” high letters in corresponding floor lobby</td>
<td>Z3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3” to 5” high letters in corresponding floor lobby</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3” to 5” high letters in corresponding floor lobby</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Interior</td>
<td>1 1/2” to 3” high letters in corresponding floor lobby OR 8.75” X 3.375” Dedication Panel located adjacent to code-required department entrance identification panel</td>
<td>Z3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 1/2” to 3” high letters in corresponding floor lobby OR 8.75” X 3.375” Dedication Panel located adjacent to code-required department entrance identification panel</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 1/2” to 3” high letters in corresponding floor lobby OR 8.75” X 3.375” Dedication Panel located adjacent to code-required department entrance identification panel</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Interior</td>
<td>1” to 2” high letters at room entrance OR 8.75” X 3.375” Dedication Panel located adjacent to code-required room identification panel</td>
<td>Z4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1” to 2” high letters at room entrance OR 8.75” X 3.375” Dedication Panel located adjacent to code-required room identification panel</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1” to 2” high letters at room entrance OR 8.75” X 3.375” Dedication Panel located adjacent to code-required room identification panel</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Interior</td>
<td>6.5” X 3.375” Dedication Panel located adjacent to code-required room identification panel</td>
<td>Z7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.5” X 3.375” Dedication Panel located adjacent to code-required room identification panel</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.5” X 3.375” Dedication Panel located adjacent to code-required room identification panel</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE**

1. The NYU Langone name and logo shall be the most prominent sign on the building and in the main lobby. It shall be typically located above the building donor name.
2. Building donor to be recognized in one (1) exterior and one (1) interior location only.
3. All other donors to be recognized in one (1) interior location only.
4. Length of donor name not to exceed 30X capital letter height.
5. RED+F will make the final determination of the letter size (within each range) in order to ensure it compliments the architectural design.
6. NYU Langone Office of Communications Standards dictate that the use of the word “The” before building names is not allowed.
7. Donors of named spaces will be recognized by having their full name at their destination; Donor names will not be referenced in directional information, including building and elevator directories.
8. Elevators will be referred to by building name. In cases where a building is named, only the last name of the donor will be used in elevator references.
DONOR NOMENCLATURE STANDARDS

NYU Langone Office of Communications Standards dictate that the use of the word “The” before building names is not allowed.
NYU Langone Office of Communications Standards dictate that the symbol “&” may NOT be used in place of the word “and”.
The alternate typography shown here may only be used when the maximum line length or the architectural condition preclude the use of the preferred typography.
The donor name should always appear in upper case letters.

Preferred Typography

1. JOHN AND JANE DONORNAME

Alternate Typography

2. JONATHAN AND JEANNET DONORNAME
This sign type is used for all instances of individual letterforms applied to existing surfaces at interior locations.

There are four interior (4) Sign Types and one (1) exterior Sign Type, with each covering a range of sizes. The exact size and sign type should be coordinated with the corresponding identification signage. See Page 6.Z.6.

RED+F will make the final determination of the letter size (within each range) in order to ensure it compliments the architectural design.

### Reference Pages

1.2.1-15  Typography Specifications

### Dimension Specifications

<table>
<thead>
<tr>
<th>Sign Type</th>
<th>Cap Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZZ1 (Exterior)</td>
<td>7&quot; - 20&quot;</td>
</tr>
<tr>
<td>Z1</td>
<td>9 5/8&quot; - 13&quot;</td>
</tr>
<tr>
<td>Z2</td>
<td>5 5/8&quot; - 9 1/2&quot;</td>
</tr>
<tr>
<td>Z3</td>
<td>2 5/8&quot; - 5 1/2&quot;</td>
</tr>
<tr>
<td>Z4</td>
<td>Up to 2 1/2&quot;</td>
</tr>
</tbody>
</table>

---

**Sign Type Z1**

DONOR

**Sign Type Z2**

DONOR

**Sign Type Z3**

DONOR

**Sign Type Z4**

DONOR
DONOR

Elevation - Sign Type Z1, Z2, Z3, Z4

1. Elevation - Sign Type Z1, Z2, Z3, Z4

NTS

2. Dimension Specifications

No Scale

Sign Type | Cap Height | Profile*
--- | --- | ---
Z1 | 9 5/8” – 13” | 1/2”
Z2 | 5 5/8” – 9 1/2” | 3/8”
Z3 | 2 5/8” – 5 1/2” | 1/4”
Z4 | Up to 2 1/2” | 3/16”

NOTE: See Dimension Specifications Chart for further details

Finish
See Section Detail Notes

NOTE: See Dimension Specifications Chart for further details

Finish
See Section Detail Notes

NOTES

The fabrication material and size of Sign Type Z should be selected from the options detailed in this section and coordinated with the building architecture.

RED+F will make final determination of identification size (within each range) and material finishes in order to ensure it complements the architectural design.

* When Sign Type Z is adjacent to Sign Type B, match Sign Type B profile, regardless of cap height.

REFERENCE PAGES

1.1.2 Signage Finishes
10.1.1 Signage Technical Specifications

SIGN TYPE Z1-Z4
INTERIOR DONOR RECOGNITION LETTERS

Dimensional Letterforms
Finish: F31
Water-jet cut clear anodized aluminum letters w/ No. 4 horizontal grain finish and sandblasted returns; mtd to existing wall w/ threaded studs and 1/8" nylon spacers

Finish: F32
Water-jet cut stainless steel letters w/ No. 4 Horizontal Grain finish and sandblasted returns; mtd. to existing wall w/ threaded studs and 1/8" nylon spacers

Dimensional Letterforms
Aluminum or Stainless Steel
See A/6.Z.4; mtd. to existing wall surface with fully concealed black VHB adhesive cut to center of letters

Dimensional Letterforms
See B/4.Z.4

Back-Up Letterforms - Single pane glass
1/16” TH water-jet cut reverse-reading metal letters to match first-surface applied Dimensional Letters; mtd. to second-surface of glass w/ fully concealed black VHB adhesive cut to contour of letters

Back-Up Letterforms (Alternate)
Reverse-reading electronically cut vinyl letters (Finish: F56); applied to second-surface of glass

Dimensional Letterforms
Aluminum or Stainless Steel
See A/6.Z.4; mtd. to existing wall surface with fully concealed black VHB adhesive cut to center of letters

REFERENCE PAGES

1.1.2 Signage Finishes
10.1.1 Signage Technical Specifications

SIGN TYPE Z1-Z4
Dimensional Letterform Details
NOTE: See Dimension Specifications Chart for further details

Elevation - Sign Type Z1, Z2, Z3, Z4

1 1/2” = 1'-0"

Finish
Paint-fill: F3
Lithochrome: TBD

NOTE: See Dimension Specifications Chart for further details

Dimension Specifications
No Scale

Note: For carved letterform depths, consult with stone carver to specify carving depth that is appropriate for actual letter size, placement, and stone type.

<table>
<thead>
<tr>
<th>Sign Type</th>
<th>Cap Height</th>
<th>Carved / Sandblasted Depth</th>
<th>Etched Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z1</td>
<td>9 5/8” – 13”</td>
<td>3/8”</td>
<td>1/32”</td>
</tr>
<tr>
<td>Z2</td>
<td>5 5/8” – 9 1/2”</td>
<td>3/8”</td>
<td>1/32”</td>
</tr>
<tr>
<td>Z3</td>
<td>2 5/8” – 5 1/2”</td>
<td>1/4”</td>
<td>1/32”</td>
</tr>
<tr>
<td>Z4</td>
<td>Up to 2 1/2”</td>
<td>1/8”</td>
<td>1/32”</td>
</tr>
</tbody>
</table>

Notes:
The fabrication material and size of Sign Type Z should be selected from the options detailed in this section and coordinated with the building architecture.
RED+F will make final determination of identification size (within each range) and material finishes in order to ensure it complements the architectural design.

Reference Pages
1.1.2 Signage Finishes
10.1.1 Signage Technical Specifications
NOTES
When paired with Sign Type B, the Sign Type Z cap height should follow the relationship shown here.

Round calculation results to the nearest 1/8”. Always use an upper case letterform “N” to obtain measurement.

The donor name should always appear in all upper case, above the upper and lower case Sign Type B identification text.

Typography Relationship 1 is to be used when the primary function of the sign is to identify arrival at a destination.

Typography Relationship 2 is to be used when the primary function of the sign is to recognize the donor and it is supplemental to a separate destination arrival identification sign.

Typography Relationship 3 is to be used in Kimmel Pavilion.

The Single Word Relationship should be used when a donor name is a single word. The identification text should be incorporated into the Sign Type Z in all upper case.

REFERENCE PAGES
4.A Sign Type A
4.B Sign Type B

DONOR STANDARDS
TYPOGRAPHY RELATIONSHIPS

Typography Relationship 1 - Place Identification Sign

Typography Relationship 2 - Donor Information Sign

Typography Relationship 3 - Place Identification Sign
NOTES
When paired with Sign Type B, the Sign Type Z cap height should follow the relationship shown here.
Round calculation results to the nearest 1/8". Always use an upper case letterform "N" to obtain measurement.
The donor name should always appear in all upper case, above the upper and lower case Sign Type B identification text.
Typography Relationship 1 is to be used when the primary function of the sign is to identify arrival at a destination.
Typography Relationship 2 is to be used when the primary function of the sign is to recognize the donor and it is supplemental to a separate destination arrival identification sign.
Typography Relationship 3 is to be used in Kimmel Pavilion.
The Single Word Relationship should be used when a donor name is a single word. The identification text should be incorporated into the Sign Type Z in all upper case.

REFERENCE PAGES
4.A Sign Type A
4.B Sign Type B
NOTES
The preferred alignment for donor signage is centered. However, the alternate alignment is allowed for panel signs and when architectural conditions require left justified copy.

REFERENCE PAGES
4.B Sign Type B
**Sign Type ZZ1**

**Exterior Donor Recognition Letters**

**Notes**

This is an example of exterior recognition of a building donor with alternate text alignment. Installation locations should be coordinated with architectural conditions.

Material finishes, fabrication, and installation methods should consider the architecture and what is suitable for these conditions. Letter thicknesses may vary as required for mounting height and materials and methods.

**Reference Pages**

1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
10.1.1 Signage Technical Specifications

**Example Installation Elevation**

1/8" = 1'-0"

**Section - Solid Surface**

6" = 1'-0"

**Detail Elevation - Sign Type ZZ1**

3/8" = 1'-0"
NOTES

This is an example of interior donor recognition of a department donor using Typography Relationship 1.

Installation locations should be coordinated with architectural conditions.

Material finishes, fabrication, and installation methods should consider the architecture and what is suitable for these conditions.

REFERENCE PAGES

1.1.2   Signage Finishes
1.2.1–15  Typography Specifications
NOTES

The upper floors at Tisch Hospital, located at the Main Campus, provide an example of Sign Type Z with Typography Relationship 2. The donor signage is supplemental information, as the primary wayfinding device is Sign Type C1.

REFERENCE PAGES

1.1.2   Signage Finishes
1.2.1–15  Typography Specifications

SIGN TYPE Z3
INTERIOR DONOR RECOGNITION LETTERS

Dimensional Letterforms: T1, F31

Example Installation Elevation

1/4" = 1'-0"

Detail Elevation

1 1/2" = 1'-0"

LAURENCE D.
AND LORI WEIDER FINK
Pediatric Intensive Care Unit

SIGN TYPE Z3
Example Installation Elevation
The lobby of Tisch Hospital, located at the Main Campus, provides an example of an interior recognition of a building donor. When a donor name is a single word, the identification text becomes upper case.
The upper floors at Tisch Hospital, located at the Main Campus, provide an example of Sign Type Z4.

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1-15 Typography Specifications
The upper floors at Kimmel Pavilion, located at the Main Campus, provide an example of Sign Type Z4.
**SIGN TYPE Z7**

**LARGE DEDICATION PANEL**

**NOTES**

Large Identification Panels relate to 8 1/2" W Modular Sign Types. (See Chapter 5).
1. Elevation - Sign Type Z7
   3" = 1'-0"

2. Detail Elevation - Sign Type Z7
   3" = 1'-0"

3. Alternate Layout - Sign Type Z7a
   3" = 1'-0"

Sign Type F1
See Chapter 5

Panel: F31

Text: T1,F7

NOTES
Large dedication panels relate to 8 1/2" W Modular Sign Types. (See Chapter 5).

REFERENCE PAGES
1.1.2 Signage Finishes
1.2.1–15 Typography Specifications

NYU LANGONE HEALTH
Wayfinding and Communications Standards Manual

SIGN TYPE Z7
LARGE DEDICATION PANEL

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Section - Typical Donor Panel

Full Size

Back-Up Panel
1/16" TH ptd. acrylic back-up panel required for all glass mtd. conditions; mtd. to second-surface of glass w/ fully concealed black VHB adhesive

Back-Up Vinyl (Alternate)
Die-cut vinyl back-up required for all glass mtd. conditions; mtd. to second-surface of glass. Finish F56

Panel
1/4" TH anodized aluminum panel with etched and paint fill letters; mtd. to shim w/ fully concealed mechanical fasteners

Shim
1/16" TH aluminum shim inset 1/4" from all sides; mtd. to wall w/ fully concealed mechanical fasteners

NOTE: Mtd. to wall w/ fully concealed VHB adhesive for all glass mtd. conditions

Existing wall

NOTES
All signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health.

REFERENCE PAGES
10.1.1 Signage Technical Specifications
Installation Elevation (Typical and VIF)

1/2" = 1'-0"

Sign Type Z8
Sign Type H4
See Chapter 5

NOTES
Small Panels must relate to 6 1/2" W Modular Sign Types. (See Chapter 5).

REFERENCE PAGES

SIGN TYPE Z8
SMALL DEDICATION PANEL

NYU LANGONE HEALTH
Wayfinding and Communications Standards Manual

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6 Z.18
**SIGN TYPE Z8**

**SMALL DEDICATION PANEL**

**NOTES**

Small Panels must relate to 6 1/2" W Modular Sign Types. (See Chapter 5)

**REFERENCE PAGES**

1.1.2 Signage Finishes
1.2.1–15 Typography Specifications
Panel
1/4” TH anodized aluminum panel w/ etched and paint fill letters; mtd. to shim w/ fully concealed mechanical fasteners

Shim
1/16” TH aluminum shim inset 1/4” from all sides; mtd. to wall w/ fully concealed mechanical fasteners

NOTE: Mtd. to wall w/ fully concealed VHB adhesive for all glass mtd. conditions

Back-Up Panel
1/16” TH ptd. acrylic back-up panel required for all glass mtd. conditions; mtd. to second-surface of glass w/ fully concealed black VHB adhesive

Back-Up Vinyl (Alternate)
Die-cut vinyl back-up required for all glass mtd. conditions; mtd. to second-surface of glass. Finish F56

Existing wall

NOTES
All signs to be mounted to existing walls with fully concealed mechanical fasteners, wherever possible, to facilitate future relocation by NYU Langone Health.

REFERENCE PAGES
10.1.1 Signage Technical Specifications

SIGN TYPE Z8
SMALL DEDICATION PANEL

A Section - Typical Donor Panel
Full Size
CHAPTER 7
DIGITAL SIGN TYPES

71 Sign Type Y1: Infonode Touchscreen Display and Printer
72 Sign Type Y2: Digital Directional Display
73 Sign Type Y3-Y4: Elevator Display
74 Sign Type Y5: Meeting Room Manager Display
**SIGN TYPE Y1**

TOUCHSCREEN DISPLAY AND PRINTER HARDWARE RECOMMENDATIONS

NOTES

Elo's 1723L 17" LED Desktop Touchmonitor can easily mount within the kiosk. The touchscreen is designed to handle the rigors of public use.

**DISPLAY SPECIFICATION**

Resolution: 1280 x 1024
Dimensions: 15.42"w x 14.2"h x 8.24"d

**PRINTER**

The Zebra KR403 printer is one of the most compact kiosk printer models on the market. This printer can accommodate printing symbols and glyphs and can accept 4" diameter paper rolls. The width of the kiosk allows for the 4" diameter roll which is 327' of paper per roll.

**COMPUTER**

The Dell Optiplex 9020 USFF offers up to 32 GB of memory and also has a minimal footprint making it easy to mount inside the kiosk.

**REFERENCE PAGES**

4.S.2-5 Sign Type S1 Touchscreen Kiosk
10.5 Wayfinding Kiosk & Pylon Content Management Guide

Specifications are located on Standards Manual DVD.

Filenames:
- Touchscreen: ELO_1723L_DS_17011AES00057.pdf
- Computer: OptiPlex-9020-micro-spec.pdf
- Receipt Printer: Zebraw_KR403_Data-Sheet.pdf
**Digital Display Elevation Typ.**
1 1/2" = 1'-0"

**Computer**

**ELO 4201L 42" Interactive Digital Signage Touch Display**

**NOTES**
The ELO 4201L Interactive Digital Signage Touch Display offers fast and sensitive response similar to mobile devices. The slim profile allows for optimal space within the pylon.

**DISPLAY SPECIFICATIONS**
- Resolution: 1920 x 1080
- Dimensions: 39.2"w x 23.1"h x 3.2"d

**COMPUTER**
The Cisco 4600 Series offers 2 GB of memory and also has a minimal footprint making it easy to mount inside the pylon.

**REFERENCE PAGES**
4.N.2 Sign Type N1: Directional Pylon
4.N.10 Sign Type N3: Large Wall Mounted Digital Directional
10.5 Wayfinding Kiosk & Pylon Content Management Guide

Specifications are located on the Standards Manual DVD.

Filenames:
- Digital Directional: ELO_4201L_Data-Sheet.pdf
- Computer: Cisco_4600_data_sheet_c78-701255.pdf
NOTES
The digital display pulls content dynamically from a centralized database system. The screen scrolls continuously through three (3) languages while English stays constant. A user can touch one of the language buttons for the display to instantaneously display their language.

DISPLAY SPECIFICATIONS
Resolution: 1920 x 1080
Display Area: 36.63” x 20.59” (930.24 x 523.25 mm)

REFERENCE PAGES
4.N.2 Sign Type N1: Directional Pylon
4.N.10 Sign Type N3: Large Wall Mounted Digital Directional
10.5 Wayfinding Kiosk & Pylon Content Management Guide

Graphic templates are located on Standards Manual DVD.

Filenames:
N1_DigitalDirectional.ai;
N1_DigitalDirectional_AnimatedPrototype.mov
SIGN TYPE Y2
DIGITAL DIRECTIONAL DISPLAY
GRAPHIC GUIDELINES

NOTES
The digital display pulls content dynamically from a centralized database system. The screen scrolls continuously through three (3) languages while English stays constant. A user can touch one of the language buttons for the display to instantly display their language.

DISPLAY SPECIFICATIONS
Resolution: 1920 x 1080
Display Area: 36.63" x 20.59" (930.24 x 523.25 mm)

REFERENCE PAGES
4.N.2 Sign Type N1: Directional Pylon
4.N.10 Sign Type N3: Large Wall Mounted Digital Directional
10.5 Wayfinding Kiosk & Pylon Content Management Guide

Graphic templates are located on Standards Manual DVD.
Filenames:
N1_DigitalDirectional.ai;
N1_DigitalDirectional_AnimatedPrototype.mov
The digital display pulls content dynamically from a centralized database system. The screen scrolls continuously through three (3) languages while English stays constant. A user can touch one of the language buttons for the display to instantaneously display their language.

DISPLAY SPECIFICATIONS
Resolution: 1920 x 1080
Display Area: 36.63” x 20.59”
(930.24 x 523.25 mm)

REFERENCE PAGES
4.N.2 Sign Type N1: Directional Pylon
4.N.10 Sign Type N3: Large Wall Mounted Digital Directional
10.5 Wayfinding Kiosk & Pylon Content Management Guide

Graphic templates are located on Standards Manual DVD.
Filenames:
N1_DigitalDirectional.ai;
N1_DigitalDirectional_AnimatedPrototype.mov
The digital display pulls content dynamically from a centralized database system. The screen scrolls continuously through three (3) languages while English stays constant. A user can touch one of the language buttons for the display to instantaneously display their language.

DISPLAY SPECIFICATIONS
Resolution: 1920 x 1080
Display Area: 36.63” x 20.59” (930.24 x 523.25 mm)

REFERENCE PAGES
4.N.2 Sign Type N1: Directional Pylon
4.N.10 Sign Type N3: Large Wall Mounted Digital Directional

Wayfinding Kiosk & Pylon Content Management Guide

Graphic templates are located on Standards Manual DVD.

Filenames:
N1_DigitalDirectional.ai;
N1_DigitalDirectional_AnimatedPrototype.mov
**Installation Elevation - Sign Type Y3 (Typical)**

1/2" = 1'

**Digital Display – Emotive Panorama 38”**

**NOTES**

The following are recommendations based on the technology available at time of manual completion. Final specifications to be determined by client and fabricator.

All new construction public elevators are to be equipped with a digital display. The display will feature floor directory information on the left portion for wayfinding purposes. The right portion is reserved for Communications content. Content is to be coordinated with the OTIS and VISIX system.

**DISPLAY SPECIFICATIONS**

The E-Motive Panorama 38” display is a stretch LCD monitor. The wide viewing angles this model affords is optimal for the elevator cab.

- Display: 968x280x62 mm
- Aspect Ratio: 16:4.2
- Native Resolution: 1920 x 502
TH 1401 to TH 1437
Patient Rooms

TH 1401 to TH 1437
Patient Rooms

Respect Patients’ Privacy — Please don’t discuss patient care in public

1 Panoramic Elevator Display - 1920 x 502 px
Not to scale
NOTES
The following are recommendations based on the technology available at time of manual completion. Final specifications to be determined by client and fabricator.

All public elevators are to be equipped with a digital display. Existing cabs and cab construction that cannot accommodate sign type Y3 will be fitted with sign type Y4. The display mounted on the left side will feature floor directory information for wayfinding purposes. The display mounted on the right side will feature Communications content. Content is to be pulled from the VISIX system.

Feasibility of a hi-res 15” screen is still being vetted by the elevator vendors and NYULMC’s technology integrator. Therefore, we are specifying both digital screens under consideration.

DISPLAY A SPECIFICATIONS
13th Floor Media’s 15” e Series LCD Display is a high res monitor. Dimensions: 1390°W x 1275°H x 350°D

DISPLAY B SPECIFICATIONS
Otis Luxury PI is a 15” monitor commonly used with Otis elevator cab construction. Dimensions: 3576 mm x 292 mm

REFERENCE PAGES
10.1.2 Hardware Specifications
Specifications are located on Standard Manual DVD.
FileNames:
Display A: Otis Elevator Spec.pdf
Display B: HiRes Elevator Spec.pdf
Neurosurgical Unit
Patient Rooms
Neurosurgical ICU

T1/Blue
(color dependent on pathway)
Type: 474/579px
Left Justified

T1/Grey 5
Type Size A: 92/121px
Maximum 3 lines
Left Justified

Alternative Type Size B: 65/84px
(not depicted here)
Maximum 4 lines

NOTES
Departments located on each floor are listed along side the floor number and scroll with the number as the elevator moves between floors.

TYPOGRAPHIC HIERARCHY
The floor number is the largest typographic component and color coded to match the appropriate pathway.

DISPLAY SPECIFICATIONS
Aspect Ratio: 4:3
Resolution: 1024 x 768

ANIMATION GUIDELINES
The typographic messaging will scroll up or down depending on the movement of the elevator. The scroll is slow enough for the visitor to view destinations on each floor.

REFERENCE PAGES
Graphic template is located on Standards Manual DVD.
Filename: Y4_ElevatorDisplay.ai
Installation Elevation - Sign Type Y5 (Typical)

1/2" = 1'-0"

Display Casing

1 1/2" = 1'-0"

Digital Display A - Meeting Minder 12.1"

Digital Display B - Meeting Minder 15"

Notes

The digital display lives above the Room ID. The following are recommendations based on the technology available at time of manual completion. Final specifications to be determined by client and fabricator.

The meeting room manager digital display will be located at all public conference rooms. The display will feature location based content regarding the scheduled events in the conference room.

Display A Specifications

The Meeting Minder 1200i - 12.1" LCD display is recommended for minimal intrusion on walls. It is to be mounted in portrait orientation.

Dimensions: 11.81w x 8.66h x 1.02d inches

Display B Specifications

The Meeting Minder 15" LCD display may be preferred at locations that can accommodate a larger screen as it offers POE (power over ethernet).

Dimensions: 14.63w x 14.37h x 3.3d inches

Reference Pages

Specifications are located on Standards Manual DVD.

Filename: Displays: Visix_MeetingMinder.pdf

Has not been implemented at time of standards manual production. Coordinate with RED+F for updated design.
**LECTURE**

**Progress Against Tuberculosis: An Ancient and Contemporary Killer**

*Joe D. Ernst*

**UP NEXT  4:30 – 5:15**

**LECTURE**

**Know Your Options: Preserving Fertility Before and After Cancer Diagnosis and Treatment**
Lecture
Progress Against Tuberculosis: An Ancient and Contemporary Killer
Joe D. Ernst

Lecture
Know Your Options: Preserving Fertility Before and After Cancer Diagnosis and Treatment

Screen Mode: In Use

Screen Mode: Open

The digital display pulls content dynamically from a centralized database system. The content is refreshed frequently giving users up to date room information.

Reference Pages
CHAPTER 8
VISITOR COMMUNICATIONS

8.1 Wayfinding Website Component
8.2 Infonode Touchscreen Interface
8.3 Maps
8.4 Welcome Experience Guidelines
NOTES
Located within nyulmc.org, the Find Your Way wayfinding website section features the type of content currently available in the Directions & Parking section. Additionally, it offers more robust wayfinding information and new maps.

HAS NOT BEEN IMPLEMENTED AT TIME OF STANDARDS MANUAL PRODUCTION.
COORDINATE WITH RED+F FOR UPDATED DESIGN.
WAYFINDING WEBSITE
LANDING PAGE GRAPHIC GUIDELINES

NOTES
The Find Your Way wayfinding website section features visitor information and generates directions using Google Maps API and interior directions using the centralized wayfinding information. All content published to the site is to be stored and managed in the Centralized Database.

CONTENT HIERARCHY
The top navigation and language preference are top level functions available for the user. The dynamic area below the nav pulls a location specific map with a controlled dashboard which overlays the map. Insert fields allow users to enter their locations and see their route being mapped instantaneously.

TYPOGRAPHIC GUIDELINES
All content below the navigation is set in Univers. The Find Your Way header and tab navigation is set in Goudy Old Style, following the typographic guidelines of the NYULMC website.

TRANSLATIONS
All website information is to be available in one (1) primary language: English; and three (3) translated languages: Chinese, Russian, and Spanish.

MOBILE MEDIA
The Find Your Way wayfinding website section is to be redesigned and optimized for use on mobile devices.

REFERENCE PAGES
9.3.1-3 Centralized Database
Graphic guidelines can be found on the Standards Manual DVD.
Filename: Website_GraphicGuidelines.psd

HAS NOT BEEN IMPLEMENTED AT TIME OF STANDARDS MANUAL PRODUCTION. COORDINATE WITH RED+F FOR UPDATED DESIGN.
WAYFINDING WEBSITE
DIRECTIONS GRAPHIC GUIDELINES

NOTES
Customized directions are displayed in the sidebar. The transit directions are pulled dynamically from Google API. Directions within the facility are pulled dynamically from the Centralized Database. The “View Campus Map” button opens a new tab or window displaying a map with the users route outlined.

TYPOGRAPHIC GUIDELINES
The direction set follows specific typographic hierarchy. Descriptive instructions such as “walk east” are set in Utopia. Destination names within the direction sentence are set in Univers 65 Bold. Custom location pins are designed to reinforce the NYULMC identity.

REFERENCE PAGES
9.3.1-3 Centralized Database
Graphic guidelines can be found on the Standards Manual DVD.
Filename: Website_GraphicGuidelines.psd

HAS NOT BEEN IMPLEMENTED AT TIME OF STANDARDS MANUAL PRODUCTION. COORDINATE WITH RED+F FOR UPDATED DESIGN.
The Parking page allows users to access information while locating parking destinations on the fly. As users select or rollover the written content or parking icons a pullout tag with a clickable link appears; this link takes users to a pre-populated Directions page.

REFERENCE PAGES
Graphic guidelines can be found on the Standards Manual DVD.
Filename: Website_GraphicGuidelines.psd

HAS NOT BEEN IMPLEMENTED AT TIME OF STANDARDS MANUAL PRODUCTION.
COORDINATE WITH RED+F FOR UPDATED DESIGN.
Custom Maps are static images.

The Wayfinding Website features custom downloadable maps.

Graphic guidelines can be found on the Standards Manual DVD.

Filename: Website_GraphicGuidelines.psd

HAS NOT BEEN IMPLEMENTED AT TIME OF STANDARDS MANUAL PRODUCTION. COORDINATE WITH RED+F FOR UPDATED DESIGN.
Active and rollover states are depicted by a purple color tint.
Your Directions to
Main Campus at
NYU Langone Medical Center

From  
269 Prospect Place
Brooklyn, NY 11238

End  
550 First Avenue
Schwartz Health Care Center
Suite 620
New York, NY 10016

Stuart G. Marcus M.D.
212-263-7301

Your Transit Directions to
NYU Langone Medical Center

1. Walk to 4th Avenue, take ➙ subway towards Manhattan
2. At Atlantic Avenue take ➙ subway towards Bronx
3. At Brooklyn Bridge take ➙ subway towards Bronx
4. Exit subway at 33rd Street
5. Walk east on 33rd Street towards First Avenue
6. Arrive at NYU Langone Main Campus, Main Lobby Entrance (550 First Avenue)

Your Directions from the Main Lobby Entrance to
Stuart G. Marcus M.D., Suite 620 at Schwartz Health Care Center

7. Enter Main Campus at the Main Lobby Entrance
8. Follow signs for the Green Pathway
9. Follow signs for the Schwartz East Elevators
10. Take Schwartz East Elevators to Floor 6
11. Upon arrival, follow signs for Suite 620
12. Arrive at Suite 620

The direction set follows specific typographic hierarchy. Descriptive instructions such as "walk east" are set in Utopia. Destination names within the direction sentence are set in Univers 65 Bold.

REFERENCES
Graphic Templates are located on the Standards Manual DVD.
File: NYULMC_Website_directionpage.indd

NOTES
The printed directions are pulled dynamically from Google API and the Centralized Database. Custom maps displaying the user’s routes are displayed adjacent to the direction sets. The address and contact information for the final destination such as a doctor’s office, patient room number, etc., is displayed in the upper third of the page.

WAYFINDING WEBSITE
GRAPHIC GUIDELINES FOR PRINTED DIRECTIONS 8.5” × 11”

HAS NOT BEEN IMPLEMENTED AT TIME OF STANDARDS MANUAL PRODUCTION.
COORDINATE WITH RED+F FOR UPDATED DESIGN.

Printed Direction Set, English
Not to Scale

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NYU LANGONE HEALTH
Wayfinding and Communications
Standards Manual

NYULMC_Website_directionpage.indd
Main Campus at NYU Langone Medical Center

Please follow these directions to the Main Campus at NYU Langone Medical Center:

1. Walk to 4th Avenue, take the #2 line Manhattan direction.
2. In Atlantic Avenue, take the #4 line Bronx direction.
3. In Brooklyn Bridge, take the #4 line Bronx direction.
4. At 33rd Street, take the #1 line.
5. At 33rd Street, go to First Avenue.
6. Arrive at NYU Langone Main Campus, Main Lobby Entrance (550 First Avenue).

Please follow these directions to Stuart G. Marcus M.D., Suite 620 at Schwartz Health Care Center.

7. From Main Lobby Entrance, enter Main Campus.
8. Follow the Green Pathway.
10. Take the Schwartz East Elevators to Floor 6.
11. After arrival, follow Suite 620 Sign.
NOTES
The adjacent diagram represents a snapshot of where the Find Your Way wayfinding website section connects to other NYULMC websites. Any department site currently featuring links to maps or directions of any kind, should be replaced with and redirected to Find Your Way such as, The Department of Dermatology and The Department of Pathology. All destination pages within the NYULMC site will link to the wayfinding website and pre-populate a direction set to that specific destination.
The touchscreen user interface is designed to allow users to search, browse, or input a specific destination. This basic interaction only requires one-to-two interactions to reach the custom generated direction sets.

**NOTES**

**REFERENCE PAGES**

4.S.2-5 Sign Type S1: Touchscreen Kiosk

7.1.1 Sign Type Y1: Touchscreen Display and Printer
The Infonode touchscreen features a browsable and searchable destination database. Visitors can generate unique direction sets based on their destination. All content is stored and managed in the Kiosk Admin Tool.

**TYPOGRAPHIC GUIDELINES**

All content is set in Univers 45 Light and 65 Bold with the exception of the ‘You are in’ messaging which is set in Utopia Italic.

**TRANSLATIONS**

All infonode information is to be available in one (1) primary language: English; and three (3) translated languages: Chinese, Russian, and Spanish.

**REFERENCE PAGES**

4.5.2-5 Sign Type S1: Touchscreen Kiosk
7.1.1 Sign Type Y1: Touchscreen Display and Printer

Graphic guidelines are located on the Standard Manuals DVD.

Filename: TouchscreenInterface_160119.psd
The dynamic search allows users to enter department names, doctors name, and even nicknames for departments.

REFERENCE PAGES
10.5 Wayfinding Kiosk & Pylon Content Management Guide

Graphic guidelines are located on the Standard Manuals DVD.
TouchscreenInterface_160119.psd
Physician Directory

Type your physician’s name here

A
- Addrizzo-Harris, Doreen MD
- Adelman, Mark MD
- Amoroso, Nancy MD
- Applebaum, Robert MD
- Axelrod, Felicia MD

B
- Bailey, Sean MD
- Balsam, Leora MD
- Bangaru, Babu. MD

Physician Directory dynamically pulls up once user touches search box

Map Image 20% Opacity

Infonode Touchscreen Interface

Direction Page

Graphic Guidelines

Notes
If the user selects a category (i.e. Physician Directory), the directory opens with the option to type the physician’s name or scroll through the list of physicians.

Reference Pages
4.S.2-5 Sign Type S1: Touchscreen Kiosk
7.1.1 Sign Type Y1: Touchscreen Display and Printer

Graphic guidelines are located on the Standard Manuals DVD.
Filename: TouchscreenInterface_160119.psd
Upon choosing a destination, the infonode automatically displays the user’s route to his or her final destination from the location of the infonode. The user is prompted to print or email the directions.

**Graphic guidelines** are located on the Standard Manuals DVD
Filename: TouchscreenInterface_160119.psd
Touch here for directions

Find your way to doctors, departments and amenities
Your Directions to
Post Surgical Care Center at
Schwartz Health Care Center

1. You are at the Main Lobby
2. Follow signs for the Green Pathway
3. Follow signs for the Schwartz East Elevators
4. Take the Schwartz East Elevators to the 6th Floor
5. Upon arrival, follow signs for Suite 640
6. Arrive at Post Surgical Care Center, Suite 640

Directions are available at all infonode kiosks. These directions are printed on 4”-wide receipt printer paper.

NYULangone Health
Wayfinding and Communications Standards Manual

INFONODE TOUCHSCREEN KIOSK
GRAPHIC GUIDELINES FOR PRINTED DIRECTIONS (RECEIPT PRINTER)

NOTES
Printed directions are available at all infonode kiosks. These directions are printed on 4”-wide receipt printer paper.

CONTENT HIERARCHY
Destination is listed first and is always to be preceded by “Your directions to.” The NYULangone logo will always rest bottom justified to the direction list. Each numbered direction is to be separated by a hairline rule except the first direction, which is to hang from a 2pt rule. The barcode description will always hang from a hairline rule and be the last item of the direction set. Margins to appear as noted.

TRANSLATIONS
Directions are to be available in one (1) primary language: English; and three (3) translated languages: Chinese, Russian, and Spanish. Translated languages to be reinforced by English which will succeed the translation in each numbered direction step.

REFERENCE PAGES
4.S.2-5 Sign Type S1: Touchscreen Kiosk
7.1.1 Sign Type Y1: Touchscreen Display and Printer
Graphic Templates are located on the Standards Manual DVD.
File: NYULMC_Infonode_directionreceipt.indd

Not to Scale
NYU Langone Medical Center Map
Not to Scale

NYU Langone Main Campus Map
Not to Scale

1. NYU Langone Medical Center Map
2. NYU Langone Main Campus Map

MAPS
MAP PRINCIPLES

NOTES
All maps to share overarching color and typographic standards. All maps to have accompanying directory. All maps will include geographical context and local transit information.

NYU LANGONE HEALTH MAP
Manhattan facilities; include locations from 39th Street to 15th Street from East River to Park Avenue

NYU LANGONE MAIN CAMPUS MAP
Include only Floor 1 destinations; highlight primary public entrances only

MAP ARTWORK IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION. COORDINATE WITH RED+F FOR UPDATED DESIGN.
Our Guest Services Team is available to assist you for your comfort and convenience. We provide:

- Reliable and accurate information
- Connections to hospital and community resources
- Directions and guidance on how to navigate through the hospital
- Car service and other transportation (valet parking, garage options, public transportation)
- Hotel and restaurant reservations
- Notary services
- Personal shopping needs
- Information about theater, art, music, movie theaters, sightseeing and special city events
- Information about other services and shops available around the Medical Center

Ask Us!

Please visit us at the Tisch Hospital Information Desk or contact us directly:

For general information and guidance please call 646-501-0789.
For reservations and bookings please call 212-263-2092 or email us at hospitality@nyumc.org.

Our Mission
To Serve. To Teach. To Discover.
We are committed to making world-class contributions that place service to human health at the center of an academic culture devoted to excellence in research, patient care, and education.

Frequently Called Numbers

If you have a medical emergency, please call 911
Main Number 212-263-7300
Radiology Reports 212-263-3769
Interpreting and Translation Services 212-263-3760
Guest Services 212-263-2092
Security 212-263-5038

Our Achievements

Named one of the Top 15 best hospitals and best medical schools in the country, by US News & World Report.
Ranked number one for overall patient safety and quality among leading academic medical centers by the University HealthSystem Consortium (UHC).

All of NYU Langone’s hospitals are designated Magnet® sites for quality patient care, nursing excellence, and innovations in professional nursing practice, an honor achieved by fewer than 7 percent of all hospitals in the United States.

Designations as of July 2015
To Serve. To Teach. To Discover. We are committed to making our achievements.

Our Mission:

- East River
- Robert Moses Playground
- St Vartan’s Park
- Bellevue South Park
- Stuyvesant Square
- Gramercy Park
- Union Square
- Madison Square Park
- Asser Levy Rec. Center
- 34th Street
- 23rd Street
- 36 St
- 39 St
- 40 St
- 41 St
- 37 St
- 35 St
- 30 St
- 29 St
- 25 St
- 28 St
- 26 St
- 24 St
- 22 St
- 20 St
- 18 St
- 16 St
- 21 St
- 19 St
- 17 St
- 15 St
- 42nd Street
- FDR Drive
- E 42nd Street
- E 41st Street
- E 37th Street
- E 34th Street
- E 32nd Street
- Main Campus

NYU Langone Medical Center

- Main Campus: 18, 530-550 First Avenue
- Tisch Hospital
- 145 East 32nd Street, 14
- 317 East 34th Street, 7
- 345 East 37th Street, 4
- Alexandria Center for Life Science, 19
- 450 E 29th Street
- Ambulatory Care Center, 3
- 240 E 38th Street
- Bellevue Hospital Center, 20
- 482 First Avenue
- Center for Biomedical Imaging / NYU Fertility Center, 5
- 660 First Avenue
- Center for Musculoskeletal Care, 1
- 331 E 38th Street
- Comprehensive Epilepsy Center, 6
- 225 E 34th Street
- Diabetic Foot and Ankle Center / HJD Ambulatory Clinics, 21
- 318-324 E 33rd Street
- Fink Children’s Ambulatory Care Center / Hassenauf Children’s Center, 9
- 160 E 32nd Street
- Heart Rhythm Center, 6
- 403 E 34th Street
- HJD Rutherford Place
- Offices, 23
- 303 Second Avenue
- Hospital for Joint Diseases, 24
- 301 E 117th Street
- Initiative for Women with Disabilities, 22
- 354 Second Avenue
- Office of Student Admission and Financial Aid, 12
- 577 First Avenue
- One Park Avenue, 13
- Outpatient Surgery Center, 2
- 330 E 38th Street
- Plastic Surgery / Institute of Reconstructive Plastic Surgery, 11
- 301-307 E 33rd Street
- Perlmutter Cancer Center, 9
- 160 E 34th Street
- Perlmutter Center for Women’s Imaging, 10
- 221 Lexington Avenue
- Smidow Comprehensive Prostate Cancer Center, 16
- 126 E 31st Street
- Translational Research Building, 17
- 227 E 30th Street
- Perelman Emergency Center / KIDS Pediatric Emergency

Ask Us!
Your Navigational Guide to NYU Langone Medical Center

NYU LANGONE POCKET MAP
GRAPHIC GUIDELINES

NOTES

- PANEL 4: Content to be NYU Langone Health Neighborhood map
- PANEL 5: Content to be map directory
- PANEL 6 / COVER: Content to be NYU Langone Health Navigational Guide title, NYU Langone Health logo, and a photograph representing the Main Campus.

REFERENCE

Graphic template is located on the Standards Manual DVD.

File:
- 15_0825_PocketGuide_V3.1_ENG.indd
- 15_0825_PocketGuide_V3.1_CHI.indd
- 15_0825_PocketGuide_V3.1_ESP.indd
- 15_0825_PocketGuide_V3.1_RUS.indd

MAP ARTWORK IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION. COORDINATE WITH RED+F FOR UPDATED DESIGN.

NYU LANGONE POCKET MAP
Graphic Guidelines

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NYU LANGONE HEALTH
Wayfinding and Communications Standards Manual

8.3.4
Welcome to NYU Langone’s new wayfinding system. The colored pathways, named elevators and interactive signs are designed to help patients, visitors and staff find their way around the medical center campus. The system is being introduced in phases over the months and years ahead. Please bear with us as we work to improve your NYU Langone experience!
Welcome to NYU Langone's new wayfinding system.

The colored pathways, named elevators, are designed to help patients, visitors, and staff find their way around the medical center campus. The NYU Langone experience!

NOTES
There are several map artwork files, each features subtle differences due to their application and output format.

NYU LANGONE POCKET MAP
11" × 13" SIDE B NYU Langone Navigational Guide
5.5" × 8.5" Map Pad

WALL-MOUNTED MAP
Printed map to be inserted into mounted frame. Map insert to be 2' -4 3/8" × 2' -9 5/8" NYU Langone pocket maps to be available in English, Chinese, Russian, and Spanish at all information nodes.

INFORMATION NODE MAP PYLON
Printed map to be inserted into pylon frame. Map insert to be 2'-9" × 3'-3 3/16" NYU Langone pocket maps to be available in English, Chinese, Russian, and Spanish at all information nodes.

REFERENCE
4.S.6-9  Sign Type S2: Map Pylon
4.S.13-15  Sign Type S3: Wall Mounted Map
NYU Langone Pocket Map
Not to Scale

Orientation Map Kiosk
1/2" = 1'-0"

1. NYU Langone Pocket Map
2. Orientation Map Kiosk

NYU Langone Health Map
Map Formats

NOTES
There are several map artwork files, each features subtle differences due to their application and output format.

NYU Langone POCKET MAP
SIDE A, Panel 4 and 5, NYU Langone Navigation Guide.

ORIENTATION MAP KIOSK
2'-10" x 3'-8" fabricated map panel.

REFERENCE
3.PP.1-3 Sign Type PP1:
Orientation Map Kiosk

MAP ARTWORK IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION.
COORDINATE WITH RED+F FOR UPDATED DESIGN.

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Each NYU Langone Health facility is to have a common “welcome experience.” Points of entry are to be equipped with the following items:

- NYU Langone Welcome Desk: widths will vary, height to be a maximum of 42”
- Uniformed “Welcome Team” staff and security
- Welcome Desk to be equipped with staff tools: Map Pad, Computer for connection to wayfinding website, Color Printer
- Infonode: components are facility map or directory and touchscreen kiosk

REFERENCE PAGES

4.S.2-5 Sign Type S1: Touchscreen Kiosk
4.S.6-9 Sign Type S2: Map Pylon
4.S.10-12 Sign Type S2a: Static Directional Pylon
4.S.13-15 Sign Type S3: Wall Mounted Map
7.1.1 Sign Type Y1: Touchscreen Display and Printer
8.1.6 Wayfinding Website
8.310 NYU Langone Main Campus Map Formats
CHAPTER 9
SYSTEM ADMINISTRATION AND MAINTENANCE

9.1 Maintenance Processes
9.2 Solution Framework
9.3 Centralized Database
Maintenance Process Definition

To successfully manage all of the elements of the wayfinding and communications system as defined within the Standards Manual, it is critical to implement a set of maintenance guidelines in tandem with the system launch. This chapter describes the maintenance goals, processes and recommendations for deploying a centralized database to manage the content and assets of the wayfinding and communications system. Following these recommendations, along with the the Wayfinding Kiosk and Pylon Content Management Guide found within the Appendix, into future phases will ensure that the wayfinding and communications system remains accurate and helpful to visitors for years to come.

In our interviews with NYULH staff, we have found that there are few system-wide standards for maintaining or updating wayfinding nomenclature, signage, and maps. In order to develop a strategy that NYULH can use to keep this system up to date, we must address the people, processes, and tools involved in the wayfinding and communications system maintenance.
MAINTENANCE PROCESSES

GOALS

With a coordinated set of processes and tools the wayfinding information and assets can be managed in an organized and methodical way.

In designing these processes, some guiding principles were followed:

1. Eliminate casual checks and balances.
   
   To ensure the integrity of wayfinding information, approval and feedback mechanisms must be built into NYU Langone Health day to day operations to confirm that each change made affecting wayfinding is accurate, timely and in concert with all affected components. Systematic workflows will replace ad hoc interactions.

2. Reduce repetitive manual data entry.
   
   NYULH's goal is to manage all wayfinding information in a centralized system wherein a change is authored once and propagated to each relevant component via defined processes and tools. A more methodical approach will minimize errant information and drive more coordinated updates.

3. Clarify existing roles and define new roles as needed.
   
   From the current state of shared responsibilities, a workflow-based model can be defined in which each role is associated with a specific set of wayfinding responsibilities. Existing roles can be leveraged to address wayfinding responsibilities and any new roles required can be defined as needed for effective system management. The Wayfinding Manager plays a critical, central role within these maintenance strategies.

4. Define operations and required training.
   
   New processes and tools cannot be effective without a comprehensive training program for those who will utilize them. Knowledge of the system, its components and its maintenance must be communicated to relevant NYULH constituents and become part of their culture and day to day activities.
### MAINTENANCE PROCESSES

#### WHAT TRIGGERS A CHANGE?

There are five types of projects that drive most changes to the wayfinding and communications system:

1. **New Construction and Associated Backfill**
   - **NYULH example:** Kimmel Pavilion and Rusk Institute relocations
   - **Definition:** Large scale coordinated efforts, often longer than one year in duration. Occupancy may be phased. Often triggers associated projects such as temporary reroutes/closures.
   - **Examples of wayfinding changes:** Replacement building or destination identification signs, changes to static and digital directional signs, changes to the website, touchscreen kiosks, maps and phone scripts. Translation services will also be required.
   - **Challenges:** These projects often require phased messaging and coordination, communication with third parties such as architects and general contractors, and reacting to changes in construction schedules.

2. **Major Moves and Redevelopment**
   - **NYULH example:** One Park: moving new groups into facility
   - **Definition:** Large scale coordinated efforts, often about a year in duration. Occupancy may be phased. Often triggers associated projects such as temporary reroutes/closures. May be in support of new program additions or relocations.
   - **Examples of wayfinding changes:** Replacement building or destination identification signs, changes to static and digital directional signs, changes to the website, touchscreen kiosks, maps and phone scripts. Translation services will also be required.
   - **Challenges:** These projects often require phased messaging and coordination, communication with third parties such as architects and general contractors, and reacting to changes in construction schedules.

3. **Building and Destination Name Changes**
   - **NYULH example:** Joan H. Tisch Center for Women’s Health
   - **Definition:** A building or destination changes its name, due to a donor or a change in focus.
   - **Examples of wayfinding changes:** Replacement building or destination identification signs, and if applicable in regards to wayfinding nomenclature, changes to static and digital directional signs, changes to the website, touchscreen kiosks, maps and phone scripts. Translation services will also be required.
   - **Challenges:** Consistent naming is a critical success factor for the wayfinding system. It must be determined if the change to the existing destination name will affect wayfinding nomenclature. This is turn may trigger changes to all or some wayfinding components. Staff must be educated about name changes.

4. **Minor Moves and Ad Hoc Sign Requests**
   - **NYULH example:** Tisch 9 Pediatrics updated signage
   - **Definition:** Smaller scale moves/additions/relocations and associated backfill or sign replacement.
   - **Examples of wayfinding changes:** Wayfinding signage is not always affected but there may be replacement identification signs, changes to static and digital directional signs, changes to the website, touchscreen kiosks, maps and phone scripts. Translation services will also be required.
   - **Challenges:** While their individual impact may be small, this is the largest category of changes and is often the primary source of degradation to a wayfinding system. Small moves often do not have the lead time or governance associated with larger projects, so being able to respond quickly is important.

5. **Temporary Re-routes and Closures**
   - **NYULH example:** Emergency Department temporary signage
   - **Definition:** Interior or exterior construction that necessitates a re-route of traffic.
   - **Examples of wayfinding changes:** Temporary signage to move traffic to new route, changes to the website, touchscreen kiosks, maps and phone scripts. Translation services will also be required.
   - **Challenges:** Assessing the impact and duration of the re-routing will help to determine the changes needed to wayfinding information. Informing staff about temporary changes is critical, since they may not be reflected in permanent wayfinding tools.
For each of the five major categories of wayfinding changes described in 9.1.3, solutions and processes need to be defined. The Wayfinding Manager (WM) will manage the project, and work with the project team to implement solutions. The Centralized Database (CD) will support those activities.

The WM learns of new capital projects from colleagues in Project Planning, Development and Design. Active projects are managed by Construction Management and the WM is informed about wayfinding requirements and upcoming milestones of these projects.

Projects of this scale may be divided into phased sub-projects. The institution oversees architecture and construction firms to execute these projects and wayfinding and signage needs are often outsourced.

The WM will collaborate with architect or designer responsible for the project by:

- supplying the Standards Manual drawings and guidelines and nomenclature standards to the firm for sign programming.
- approving sign packages.
- following project milestones and delivering the sign package to vendor when ready.
- supervising vendor through to successful completion.
- publishing the wayfinding changes to the website and infonodes via the CD.

For each pending and active capital construction project that affects wayfinding, the WM opens and tracks the project in the CD to:

- add/modify wayfinding information (buildings/departments/destinations) so that they may be published on the website and infonodes.
- at project end, import new project’s signage inventory to CD.

The WM also collaborates with Communications, IT, Patient-Centered Care and Security to advise and communicate wayfinding changes.

These projects may utilize third-party architects and signage may either be in their scope or under the institution’s domain. The WM is informed about these projects from colleagues in Project Planning, Development and Design and Construction Management.

In the event that NYULH is responsible for signage, the WM coordinates with the RED&F manager of the project and with the client organization(s) that are involved in the move or renovation. The WM:

- meets with the client organization(s) to review any nomenclature or messaging needs.
- opens and tracks the project in the CD and provides initial sign programming and draft budgets to the RED&F project manager.
- follows project milestones and delivers final sign packages to vendor when ready.
- supervises vendor through to successful completion.
- publishes the wayfinding changes to the website and infonodes via the CD.

The WM also collaborates with Communications and other departments to advise and communicate wayfinding changes.

The WM may learn about building and destination name changes from the Development Office (for donor names) or from the department itself. The WM reviews the wayfinding nomenclature guidelines to determine whether or how the donor name may be used within the wayfinding system and opens and tracks the project in the CD to:

- identify all signs that have the "old" wayfinding name.
- create a sign package that has all replaced, updated, and new signs to implement the name change.
- delivers the sign package to the vendor and supervises vendor through to successful completion.
- publishes the wayfinding changes to the website and infonodes via the CD.

The WM also collaborates with Communications to convey the change to all printed wayfinding materials.

While the WM receives signage requests from across the institution, most will be generated through the signage request system recommended in this document. Staff members access the web-based form through the intranet and submit all required information including charge-back authorization.

The WM reviews the request, meets with client organization if needed, and opens and tracks the project in the CD to make/publish the wayfinding changes, program the sign package, and deliver to vendor for fabrication and installation. To increase efficiency, ad hoc requests may be aggregated and processed on regular schedule, such as monthly or quarterly.

The WM is informed about these projects from colleagues in Project Planning, Development and Design and Construction Management. Some temporary signage projects may be programmed by the WM and printed in the in-house sign shop. Others may be outsourced to a vendor.

The WM reviews the request, meets with the project manager, and opens and tracks the project in the CD to make/publish the wayfinding changes, program the sign package, and deliver to print shop or vendor for fabrication and installation.
In order to fulfill the processes outlined in the Solution Framework, the following recommendations should be considered:

1. Deploy a sign request system.
   To help the Wayfinding Manager (WM) track and fulfill signage requests, it would be helpful to create a sign request system, similar to the work order request system currently in use by RED&F. The system could be as sophisticated as a web-based ordering tool that walks the user through a series of required fields in order to describe the sign request, the source of funding, and additional details. Or, it could be as simple as a downloadable form to be filled out and emailed to the WM. Whatever the scale, a systematic procedure for requesting wayfinding and communications changes would make the process more efficient and would improve the level of service to internal clients. Once the system is in place, it will be important to educate the staff about its use.

2. Pre-qualify sign fabricators.
   To widen the pool of fabricators available to bid and complete signage projects, two (2) vendors will be pre-qualified for interior and exterior signage needs within a set fee scope. Each qualified fabricator will be able to produce interior, exterior, and donor signage as documented in this manual. With per-unit pricing in hand from a number of vetted vendors, internal project budgets can be tallied efficiently. These ongoing contracts will aid in the efficiency of implementing ad hoc signage requests.

3. Continue to centralize and promote the role of the Wayfinding Manager and subsequent wayfinding staff.
   If there are standing meetings to review the status of capital and construction projects, it is advised that the WM be in attendance. It is recommended that the WM meets with Development and other parties outside RED&F to explain relevant aspects of the Standards Manual and processes for addressing wayfinding needs.

The major tasks of the WM include:
- Identifying facilities changes, both temporary and permanent, that will affect the wayfinding system.
- Meeting with project managers and design teams to understand capital improvement projects and relaying the importance of accurately modifying the wayfinding system to respond to relevant projects.
- Managing and implementing all wayfinding signage and content changes with the aid of the Centralized Database — from notice of the change, through sign packages and punchlist reports, and assessing the impact of overlapping projects.
- Coordinating with Print Shop and fabricators to produce signs and overseeing installation.
- Maintaining the approved wayfinding names for all destinations and communicating any changes to other departments.
- Analyzing usage and usability of the wayfinding system with the aid of reports from the Centralized Database with an eye toward improvements and enhancements to the system.
- Monitoring the wayfinding website, info nodes and digital signage to ensure consistent, accurate and helpful information across all platforms.
From the Centralized Database (CD), wayfinding information will be published to the public-facing system elements such as the wayfinding website, onsite digital displays, as described in chapters 7 and 8. As content is updated in this one data repository, the Wayfinding Manager (WM) can publish the updated content to the website and digital displays. In addition, wayfinding content will need to be updated on maps and other visitor and patient communications.

In order to manage the wayfinding content effectively, the following recommendations should be considered:

1. Create methods to keep communication tools up to date.
   While all of the wayfinding information will be centralized in the CD, some communication tools such as maps and guides (described in section 8.3) are not directly output from the system. It is important to create processes to coordinate the design, update, and printing of these pieces so that they reflect the most accurate wayfinding information. For example, when it is time for RED&F to update the map, the WM can print a report of all wayfinding changes that have been made since the last printing and check that all relevant changes are reflected in the updated map.

2. Complete the initial nomenclature approval process.
   It is critical to begin implementation with a final, official list of all public destinations and facilities. This process is currently underway but must be completed prior to the upcoming series of implementation projects. As names are finalized, it is important to capture name and date of approval so that this information can be captured and referred to in the CD.

2. Relentlessly monitor the wayfinding nomenclature across all outlets.
   To keep the wayfinding and communications system as effective as possible, it is important to maintain its integrity through the consistent use of the wayfinding language, especially destination names. The WM must encourage adherence to the approved nomenclature, as maintained in the CD.

3. Manage nicknames for destinations.
   A helpful feature of the website and infonode touchscreen interface is that people can search by a variety of names to find the destination they are looking for. For example, a user can type “MRI” and the listings for “Radiology” will be displayed. It is critical to manage the nicknames for destinations so that searches can yield relevant results. By monitoring usage reports from these tools, the WM can uncover additional nicknames to input into the CD.
As demonstrated in the previous sections, the Centralized Database is the engine that will keep the wayfinding information up to date.

The high-level requirements of the Centralized Database are:

1. To manage the wayfinding and communications system data and its inter-relationships in one centralized repository. This includes approved wayfinding names of all destinations and buildings, all public elevator landmarks and their associated destinations, parking options, all wayfinding signage including locations and messages, interior direction sets and much more.

2. To manage all wayfinding changes as projects. All changes to the system are defined as projects with launch/deployment dates that may overlap with other projects.

3. To manage all wayfinding signage and workflows to modify or expand the system. When a change is made to system data, all signs affected by that change may be found, updated and collected into sign packages to be transmitted to a vendor for fabrication and installation.

4. To update the wayfinding website, infonode touchscreens, and digital displays. When wayfinding changes have been implemented, the changes may be published to these public-facing tools.

5. To generate reports for analysis of the wayfinding and communications system. Usage and usability of the wayfinding website and infonode touchscreens can be monitored by generating reports. Other reports such as, system changes by date range or project sign cost reports, may be developed as needed.
### CENTRALIZED DATABASE

**DETAILED PROPOSED FUNCTIONALITY**

**CENTRALIZED DATABASE**: desired functionality to be explored and approved by the Wayfinding Technology Advisory Board

<table>
<thead>
<tr>
<th>PROJECTS: Most of the updates and changes to the wayfinding system are done within the context of a project. Examples: department move or name change.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DESTINATIONS &amp; WAYFINDING</strong></td>
</tr>
<tr>
<td><strong>SIGN LOCATION PLANS</strong></td>
</tr>
<tr>
<td><strong>SIGN PACKAGES</strong></td>
</tr>
</tbody>
</table>

**SIGNAGE**: Sometimes, the user needs to work on signage outside the context of a real project. Examples: budgeting, managing sign types.

| **ALL SIGNS** | The user can search and sort signs in the system in this complete inventory of all signs, their messages, and their locations to come up with preliminary budgets for future projects or to confirm a message or location of a given sign. |
| **SIGN TYPES & ASSETS** | The sign types as described in this manual are tracked in this section, along with graphical assets that are used in the system such as symbols and arrows. |

**REPORTS**: The user accesses this section to analyze the metrics of the system and to generate reports.

| **USAGE REPORTS** | Here, the user generates reports to track how many people are using the website and infonodes, if additional infonodes may be necessary, and what searches yield zero results so that new destinations or nicknames can be added. |
| **SYSTEM REPORTS** | Infonode status reports (to confirm that infonodes are up and running) may be accessed here. |
| **NAMING MATRIX** | Here the user can generate a naming matrix, or list of all destinations within the system (or subset such as a building) and their location. |

**ADMIN**: Several administrative functions must be addressed in the system design.

| **INFONODE SETTINGS** | Settings that affect the infonode, such as how long the current screen is displayed before the attract mode returns are managed here. |
| **USERS** | Users (of the centralized database) and their access privileges are managed in this section. |
| **ALERTS** | The user manages system alerts, such as who is notified by email when the paper supply is low or when the digital directional pylon is not responding. |

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**CENTRALIZED DATABASE IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION. REFER TO WAYFINDING KIOSK AND PYLON CONTENT MANAGEMENT GUIDE.**
Planon Facilities Management software is currently being implemented for space management and move management at NYULH and is under consideration for broader adoption in the institution. As the leading candidate to fulfill the needs of the Centralized Database defined above, either extensions to the current implementation or the adoption of additional module(s) should be considered. Discussions with IT, Space Management isn’t this within RED&F, and RED&F have furthered this line of investigation.

In addition, two other systems currently in use at NYULH will be used to display wayfinding information and need to interface with PlanOn:

• Netsimply Meeting Room Manager, currently being used to manage conference room events.

• VISIX Digital Signage Software, currently being used to drive the Refresh & Refurbish digital signage content and is currently in testing to deliver the Meeting Room Manager content to digital displays. VISIX may be the appropriate channel to deliver all the onsite digital wayfinding information: infonode touchscreens, digital directional displays, meeting room displays and elevator displays.

WORKPLAN

As the diagram to the right shows, the Centralized Database is the center of the wayfinding system and drives the other wayfinding technology elements: the wayfinding website, Infonode Touchscreens, MeetingRoom Manager digital signage, elevator displays, and the digital directional pylons. Together all these components are known as the Wayfinding Technology Suite.

A project charter has been prepared that defines the project to implement the Wayfinding Technology Suite and has been reviewed by IT and RED&F.

Because this project crosses departmental lines, the charter proposes creating an advisory board to collaborate toward a successful launch of technology suite. Potential board members include Matt Lisowski, Mike Mainiero, Eric Goldman, Fred Alvarez, Josef Asteinza, Alex Lee, Paul Schwabacher, Bruce Baulch, Sandro Sherrod, and representatives from HB Communications and TwoTwelve.

This advisory board will be responsible for:

1. Identifying functionality for the initial release of the Centralized Database. (Proposed functionality is described on 9.3.2.)

2. Determining a timeline for deployment of the Wayfinding Technology Suite. For example, the board may draft a phased roll-out schedule beginning with the CD, website and elements that are used on the Pathways, such as digital directional pylons and elevator displays. The initial roll-out must include the CD and must be deployed in tandem with the Pathway activation for optimum user experience and efficient maintenance.

3. Identifying the application development and/or integration efforts for the first phase of implementation.

4. Developing a maintenance plan to support the wayfinding technology suite (such as hardware, network and software service agreements.)
APPENDIX

TECHNICAL SPECIFICATIONS

10.1 Signage Technical Specifications
10.2 Hardware Technical Specifications
10.3 Centralized Database Charter
10.4 Code Reference (excerpts)
10.5 Wayfinding Kiosk and Pylon Content Management Guide

DESIGN IN PROGRESS AT TIME OF STANDARDS MANUAL PRODUCTION. COORDINATE WITH RED+F FOR UPDATED SIGN TYPE DESIGN.
101 Signage Technical Specifications
NYU LANGONE HEALTH
STANDARDS MANUAL V.3

[INSERT PROJECT NAME] Specifications
July 2017
1 GENERAL REQUIREMENTS

1.1 DEFINITIONS

For the purpose of this document the following definitions shall apply:

A Owner shall mean NYU Langone Health, 339 East 28th Street, New York, New York, 10016

B Design Consultant shall mean Two Twelve, 236 W. 27th Street, Suite 802, New York, NY 10010

C Architect shall mean: [INSERT NAME HERE]

D General Contractor shall mean: [INSERT NAME HERE]

E Sign Contractor shall mean the individual, firm or corporation executing the contract and performing the work under the terms of these Construction Documents.

F Construction Documents shall mean all construction intent drawings, message schedules, location plans, specifications and other items comprising the contract.

G Sign shall mean any sign, graphic work to be applied to an architectural component, or other element described or specified in the Contract Documents.

H Graphic Components shall mean all typography, illustrations, line drawings, maps, charts, etc. forming part of a sign.

I Artwork shall mean scalable electronic vector artwork in Adobe Illustrator or Adobe InDesign format for any specific graphic components of individual signs, symbols, logotypes, line drawings, etc. to be used in the production of signs by the Sign Contractor.

J Character shall mean any visual element of a sign, including letters, numerals, punctuation marks, symbols, etc.

K Color fill shall mean any paint, ink, dye, varnish or other coating material used to fill engraved, etched, or incised characters.

L Paint shall mean any paint, ink, dye, varnish, or other coating material.

M Adhesive shall mean any liquid, aerosol, sheet, tape or foam tape adhesive or solvent bonding system.
1.2 SIGN CONTRACTOR QUALIFICATIONS

A. Sign Contractor shall provide references of at least ten (10) clients who have used their services to the satisfaction of the Client and Design Consultant.

B. Sign Contractor shall provide evidence of successfully completing manufacture and installation of five (5) projects of similar scope to the bid within the preceding five (5) years.

C. Sign Contractor must be able to demonstrate that they are in compliance with all workers safety and environmental regulations at their location of manufacture.

D. Installation to be performed by union installers.

1.3 SPECIAL QUALIFICATIONS

A. This project requires a professional engineer who is legally qualified to practice in jurisdiction of New York City, and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

1.4 SUB CONTRACTORS

A. Sign Contractor to coordinate, fabricate, and install the full scope of work as defined in the Contract Documents without reliance or the use of subcontractors of any type. If the Sign Contractor requires the support of outside contractors to implement fabrication methods noted in Contract Documents, they must provide the following information with Bid Submission:
   a. Name and contact information of subcontractor(s)
   b. Description of work to be performed
   c. Summary of projects that they have worked on with the specified contractor(s)

1.5 BID SUBMISSIONS

A. Bids must reflect the entire Scope of Work outlined in the enclosed documents and are to be itemized as unit cost line items for the fabrication/installation of individual signs by sign type. Additionally, general conditions such as project management, engineering, preparation of submittals, bonds, taxes, and other miscellaneous costs should be itemized as separate cost line items in the bid response.

B. Where quantities of signs change during the course of the project, the Contractor shall provide a credit or charge an additional cost identical with the unit price quoted on the accepted bid.

C. Sign Contractor to furnish a schedule indicating the number of weeks required from signing of a Contract to the commencement of installation, and the number of weeks required for
completing the installation process. If necessary, separate information can be given for different groups of signs. Final installation is to be completed by [INSERT DATE HERE] unless otherwise specified by Client.

D Should a Bidder find discrepancies in, or omissions from, the contract documents, or be in doubt as to their meaning, he shall notify the Owner at once. If it should be found necessary, a written addendum shall be sent to each Bidder. Neither the Owner nor the Design Consultant will be responsible for oral instructions.

E It shall be assumed that the Sign Contractor has inspected the site and is aware of all site and operational conditions affecting the fabrication and installation of the work. No extra charges shall be claimed or allowed due to a failure of the Sign Contractor from making such inspections.

F Extent of Sign Program requirements are shown on, and shall be in accordance with, the Construction Intent Drawings and related materials (Contract Documents) submitted by the Design Consultant/Client. These include all labor, materials, equipment and services necessary to complete the signage as outlined within those documents.

G Bids to be submitted no later than date indicated in bid request form supplied by General Contractor / Client, in order to be considered for this project. Any delays to the submission may disqualify bidder from the bid review process, at Owners discretion.

H Sign Contractor shall be responsible for ensuring that there are no pricing or tabulation errors in submitted bids and shall not make any claims for extra payment as a consequence of any such errors.

I Bid Sample Prototype: Submit one (1) sample prototype Sign Type J1 from Standards Manual Version 3.0, with bid submittals. Fabricate the prototype without assistance from the project team. The sample will be used to evaluate the bidders ability to read and comprehend the contract documents and to represent the quality control capabilities of the Sign Contractor’s company. [ADJUST AS NEEDED PER PROJECT]

1.6 TEMPORARY SIGNAGE

A Sign Contractor to provide line item costs to fabricate and install temporary signage for any sign locations requested by Owner (TCO or other) prior to final installation. Signs to be fabricated as full color digital outputs trimmed and mounted to 1/4” white foamcore or direct print to white foamcore. Fabrication and installation of temporary signage to be completed by: [INSERT DATE HERE]

1.7 FUTURE PRICING GUARANTEES

A Furnish cost information for future purchases, guaranteed for 2 years from contract award, for all sign types listed in the pricing schedule. Information shall include costs for items ordered individually as well as minimum order requirements in order to obtain price breaks.
1.8 SUMMARY OF WORK

A  Sign Contractor shall furnish at own cost all labor, tools, materials, expendable equipment, and transportation services required to perform and complete the work in the best possible and most expeditious manner, and in accordance with Contract Documents.

B  Sign Contractor shall employ only competent foremen and experienced craftsmen and installers, and shall discharge immediately, whenever required to do so by Owner, any person considered by Owner as incompetent or disposed to be disorderly; and shall not employ said person again on the project.

C  Sign Contractor shall agree to pay all claims for labor performed and materials furnished in completing the contract.

D  Should Sign Contractor find discrepancies in, or omissions from, Contract Documents, they should at once notify Owner in writing, who in turn, will issue instructions in the form of a written bulletin. Neither Owner nor Design Consultant will be responsible for verbal instructions.

E  Failure to request clarification of inadequacy, omission or conflict will not relieve the Sign Contractor of responsibility for performing work in accordance with requirements of the Contract Documents.

F  Where possible, fabrication and assembly shall be conducted in the Sign Contractor's shop with the various parts or assemblies ready for installation at the site. If any work cannot be shop assembled, notify the Design Consultant and Owner and arrange a trial fit at the shop to insure proper and efficient assembly on job site.

G  Fabrication and installation of all work is to be in accordance with the provisions of the Contract Documents, in workman-like manner and in keeping with industry standards.

1.9 FORMS OF SIGN PROGRAM

A  Exterior Forms of Sign Program requirements may include:
   • Fabricated, painted aluminum pylon w/ internally illuminated push thru letters and internally illuminated returns
   • Fabricated, painted aluminum pylon w/ silkscreened letters
   • Fabricated, painted aluminum pylon w/ removable digitally printed vinyl wrapped map panel and silkscreened graphics
   • Painted aluminum panel w/ silkscreened letters
   • Fabricated aluminum and acrylic internally illuminated letters
   • Fabricated aluminum building mounted letters and logos
   • Water-jet cut aluminum letters and logos
   • Painted zinc panel w/ integral raised/silkscreened letters and integral raised braille

B  Interior Forms of Sign Program requirements may include:
• Fabricated, wood and frosted acrylic pylon w/ engraved, paint-filled letters, silkscreened letters, and embedded touchscreen monitor
• Fabricated, wood and frosted acrylic pylon w/ engraved, paint-filled letters, silkscreened letters, and embedded insert holder
• Frosted acrylic panel w/ etched/paint-filled letters and silkscreened letters and embedded insert holder
• Suspended, fabricated painted aluminum box construction; applied acrylic panels w/ etched/paint-filled letters, and silkscreened letters
• Fabricated wood and acrylic kiosk with embedded touchscreen and receipt printer
• Water-jet cut stainless steel letters
• Water-jet cut aluminum letters
• Deep-etched letters
• U-cut carved letters (existing stone wall)
• Sandblasted letters (existing stone wall)
• In-Situ silkscreen on existing glass surface
• Acrylic panel w/ engraved, paint-filled letters
• Metal panel w/ etched, paint-filled letters
• Painted aluminum panels w/ silkscreened letters
• Infonorm® Modular Sign System
• Painted photopolymer w/ integral raised/silkscreen letters and integral raised braille
• Compression molded photoluminescent PVC w/ integral raised/silkscreened letters and integral raised braille
• Adhesive backed, opaque white vinyl with digitally printed graphic
• Magnetic sheet with digitally printed graphics
• Die-cut vinyl
• Soft rubber tactile signs
• Stamped and painted stainless steel signs

1.10 COORDINATION REQUIREMENTS

A Extent of Sign Program requirements may require coordination with architectural conditions including masonry, structural steel, metals, doors, windows, and glass. Owner and/or Architect will make available any project-related documentation for review by Sign Contractor.

1.11 QUALITY ASSURANCE AND PERFORMANCE REQUIREMENTS

A All constructional, engineering and anchoring details indicated on the Design Consultant’s drawings are meant as suggestions for design intent only. The Sign Contractor shall take full responsibility for the correct and safe engineering of all sign types and the way in which they
are supported and anchored, and shall submit in the shop drawings any alternative details which are necessary to result in a satisfactory and safe final product. The Sign Contractor shall indemnify and hold harmless the Design Consultant against any claim resulting from failure of, or damage caused by, the installed signs.

B Comply will all current codes and requirements of all relevant regulatory agencies, as referenced below. Where so required, tests shall be made and certificates of conformance shall be secured at the expense of the Sign Contractor.

Comply with the following codes, as required per the specification of project code consultant:

- 2008 NYC Construction Code
- 2010 ADA Standards for Accessible Design: Chapter 7
- National Fire Protection Association 101, 2009
- New York City Fire Code
- New York City Local Law 26
- Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5th Edition

C All materials shall be of highest quality, and shall be carefully fabricated in accordance with Contract Documents. Sign Contractor shall ensure that all materials used are inert and that galvanic reactions do not occur between any materials used, and between Sign materials and Architectural mounting surfaces.

D UL Compliance: Provide lighting fixtures and electrical components that are UL-labeled and listed.

E Product Data: Provide manufacturer’s technical data and installation instructions for each type of sign required.

1.12 DELIVERY STORAGE AND HANDLING

A Clearly label the contents of all packages.

B Deliver, store and handle all packages to protect them from any kind of damage, and to protect the installed work and materials of all other trades. Inspect all components for evidence of damage at site before installation. Damaged materials shall not be incorporated into the work and shall be removed from the site immediately.

C The Sign Contractor shall replace at his own expense all work judged damaged or defective before Substantial Completion by Design Consultant or Owner.

1.13 MAINTENANCE MANUAL

A Before Substantial Completion, provide the Owner with two (2) copies, of clearly written instructions for proper maintenance of all work including electrical systems. Instructions shall address periodic cleaning, service access, painting, color specifications, re-lamping, replacement procedures, etc. Provide detailed troubleshooting and “what to check” lists for all customized electrical or mechanical systems.
1.14 OWNERSHIP OF MATERIALS
A All artwork prepared by the Sign Contractor for the production of the work under this contract shall be the property of the Owner, and shall be delivered to the Owner upon request.

1.15 WARRANTY
A General: The following warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Sign Contractor under requirements of the Contract Documents.

B Sign warranty: Submit a written warranty, guaranteed for two (2) years from time of fabrication, and signed by manufacturer, agreeing to repair or replace items, at unit cost price, that fail during the specified warranty period. Failures include, but are not limited to, the following:
- Coating degradation
- Chalking
- Fading
- Structural failure
- De-lamination of applied graphics
- De-lamination or degradation of applied anti-graffiti coatings

C Defects or faulty materials found during the warranty period will be identified to Sign Contractor by Owner. Such defective materials are to be repaired and/or replaced at Sign Contractors own expense, together with any damage to furnishings, fixtures, finishes, or other equipment that may be damaged as a result of these effects.

D If Sign Contractor shall fail to repair, replace, rebuild, or restore defective or damaged work promptly after receiving notice, Owner shall have the right to have the work completed by others in the same manner as provided for in the completion of a defaulted contract, and to deduct the cost thereof from the amount so deposited hereunder. The balance, if any, shall be returned to Sign Contractor without interest. If the amount so deposited is insufficient to cover the cost of such work, Sign Contractor shall be liable to pay such deficiency on demand by Owner.

E Owner certificate setting forth the fair and reasonable cost of repairing, replacing, rebuilding, or restoring any damaged or defective work when performed by one other than Sign Contractor and this cost shall be binding and conclusive as to the amount thereof upon Sign Contractor.

1.16 RETAINAGE
A Owner shall withhold a 10% retainage from payment schedule until full completion of Sign Program implementation as defined per Scope of Work requirements of Contract Documents, and completion of Punch list response by Sign Contractor to satisfaction of Design Consultant/Owner.
1.17 PROJECT CLOSE OUT

A Sign Contractor shall turn over to Owner all operating and maintenance data, warranties, and bonds, spare parts, and maintenance materials as applicable.

B Prepare and submit to Owner two (2) certified copies of each page of all schedules stating that installation is complete and correct prior to requesting approval of Substantial Completion.
2 MATERIALS AND CONSTRUCTION

2.1 ACRYLIC SHEET

A. Clear Acrylic: Shall be premium quality as manufactured by Rohm and Haas (Plexiglass), DuPont (Lucite), American Cyanamid or approved equal.

B. Frosted Acrylic: Shall be premium quality such as manufactured by Acrylite, Evonik Cyro (Acrylite FF-P99, Acrylite White WM31 SC), or approved equal.

C. Non-glare acrylic: For modular sign type insert windows, acrylic sheet shall be Infoglass non-glare as manufactured by Infonorm® sign systems, or approved equal.

D. Acrylic Fabrication

The edges of acrylic sheet components shall be smooth and free of saw marks, chips, cracks or other blemishes and shall be square to the face. All visible edges are to be hand or machine polished unless specified otherwise. Flame polishing shall not be permitted. Where acrylic sheet is 'glazed' or contained in a frame it shall be cut to allow for expansion and contraction.

Laminated sheets and welded joints shall be free of gaps and bubbles and shall be continuously sealed and clear.

Use special care in the fabrication and installation of acrylic sheets to prevent scratching, staining or other imperfections.

When there is no possibility of danger from other work to be performed, remove all protective coverings on acrylic sheet and remove any scratches using an approved acrylic polish.

Remove all internal and external dust and other dirt and treat all surfaces with an anti-static polish on completion.

Provide Owner with complete cleaning instructions recommended by acrylic manufacturer for safe cleaning of acrylic sheets.

2.2 ALUMINUM

Aluminum extrusions shall be ASTM B221, 6063 alloy, shop primed. Extrusions shall be of best quality with no die lines or other imperfections.

Aluminum sheet and plate shall be ASTM B209, 5052 or 6061 alloy, shop primed. Sheet and plate shall be of best architectural quality; stretcher leveled and visually flat.

Aluminum Castings: ASTM B 26, of alloy and temper recommended by aluminum producer and finisher for casting process used and for use and finish indicated.

Anodized Aluminum: Provide Mill 5005 alloy (anodized quality) aluminum with brushed and clear anodic finish: AAMA 611, AA-M12C22A41, Class 1, 0.018 mm or thicker.
2.3 PHOTOLUMINESCENT COMPRESION MOLDED PVC

Photoluminescent matte white rigid PVC sheet of premium quality such as manufactured by Permalight®, (Item No. 81-1026), or approved equal, shall be compression molded to achieve integral raised letters and integral raised braille to assure compliance with the ADA Standards for Accessible Design: Chapter 7 and New York City Local Law 26.

2.4 PHOTOPOLYMER


Process to factory specifications to be approved methods, equipment, and fabrication techniques. Use only computer generated, professional grade film. Vellum film is not acceptable. Matthews automotive grade acrylic polyurethane, or approved equal, finishes to be used. Lacquer-based finishes are not acceptable.

2.5 STAINLESS STEEL

Provide stainless steel plate / sheet, Type 316 or 316L, complying with the requirements of ASTM 240. The finish of all Stainless Steel is to be No. 4 Horizontal Grain, except where specifically noted.

2.6 STRUCTURAL STEEL

Provide structural steel plate, sheet, strip, and tube complying with requirements of ASTM A 500 and ASTM A 36 for thickness, size, and shape. Provide supports free from pitting, scale, sand holes, and/or other defects. Hand tool and buff borders and produce the standard finish as specified.

2.7 VINYL

Non-reflective film: Provide opaque, non-reflective vinyl film with repositionable adhesive backing. Adhesive shall be positionable and pressure activated. Minimum application temperature to be 40° F (4° C). Maximum application temperature to be 100° F (38° C). When applied in accordance with manufacturers recommended procedures, the film is to have an exterior exposure life of 7 years.

Properties

- Thickness: .003” - .004”
- Tensile strength: 5 lbs./in. at 73° F
- Dimensional stability: 1/64”
- Temperature Range: -40° F to +200° F
- Resistance: no effect at -73° F and 40° F
- Adhesion to etched aluminum: 7.0 lbs/in.
Vinyl Film: Provide opaque or translucent non-reflective vinyl film as specified in the Contract Documents, 0.0035 inch minimum thickness, with pressure sensitive backing, suitable for exterior as well as interior applications.

2.8 ZINC

Provide zinc alloy plate in thickness specified in Contract Documents. Zinc must be able to accept a chemical etching process for fabrication of raised numbers and letters with corresponding Grade II braille on metal background, to conform to 2010 ADA Standards for Accessible Design, Chapter 7, as referenced in Section 1.9.

Painted finish shall comply with the following performance requirements:

1) Weatherability: When tested in accordance with ASTM G 53, after 500 hours in a Weatherometer (equivalent to approximately 3 years exterior exposure):

   (a) Gloss retention not less than 88.0 determined in accordance with ASTM D 523 at a 60 degree angle.

   (b) Color shall not change more than 1.68 units determined in accordance with ASTM D 2244 and measured with a Hunter Colorimeter, Model D25.

2) Durability: Sign finish shall not effect after repeated use of cleaners including graffiti removers.

2.9 FASTENERS AND HARDWARE

All exposed screws shall be countersunk, unless otherwise noted.

Non-ferrous metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance and to prevent staining of surrounding surfaces. Use toothed steel or lead expansion-bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

2.10 ADHESIVES

Adhesives required in fabrication and installation shall be compatible with the materials to be laminated or adhered.

Adhesives shall be used in accordance with the recommendations of the manufacturer of the adhesives and the material to be laminated or adhered.

Surfaces on which adhesives are to be applied shall be smooth, clean and free of dust, dirt, grease, fingerprints or other foreign matter.

Adhesives shall be guaranteed not to deteriorate, discolor, delaminate or fail in adhesion for any reason including exposure to heat, sunlight, weathering or other environmental conditions.
Adhesives shall not change the color of, or in any way deteriorate, the materials to which they are being applied.

Visible joints shall be even and free from air bubbles and other defects.

Adhesive foam mounting tapes for permanent installation shall be premium quality double-coated acrylic foam tape such as manufactured by 3M (VHB Tape) or approved equal. Urethane foam tapes will not be allowed.

Unless otherwise indicated, when used for permanent installation, adhesive foam mounting tape shall be 1/2" wide and 1/16" thick. Coverage shall be at least one continuous strip of tape at four inch intervals. No tape shall be closer than 1/4" from the edge of any component.

Silicone adhesives shall be clear, ready-to-use, high performance, premium quality materials, such as manufactured by General Electric (GE 1200), or approved equal.

Epoxy adhesives shall be two-component, thermal-setting, premium quality materials such as manufactured by Devcon (Two-Ton Epoxy), or approved equal.

### 2.11 PAINT, INK AND VARNISHES

All colors shall be exactly reproduced as specified and shall match submitted samples.

Paint Manufacturer: To match Contract Documents

All paint shall be applied using a high pressure spray in dust-free conditions and shall be allowed to dry or cure properly before being moved.

Painted surfaces and other applied finishes shall have a smooth, even finish and be free of imperfections, marks, scratches, embedded dirt, wave patterns or other irregularities.

Paint required in fabrication, including paint for lettering, screened copy, subsurface copy, etc. shall be compatible with the materials to which it is applied and shall be guaranteed not to cause discoloration, deterioration or de-lamination for any reason, including exposure to heat, sunlight, weathering or other environmental conditions.

Paints shall be precisely identified on the shop drawings and submitted samples.

Prime coats or other surface pre-treatments, where recommended by the manufacturer of the paint, shall be included in the work.

### 2.12 FINISHES

Colors and Surface Textures: For exposed sign material that requires selection of materials with integral or applied colors, surface textures or other characteristics related to appearance, provide color matches indicated, or if not indicated, as selected by the Designer.

Metal: Comply with NAAMM “Metal Finishes Manual” for finish designations and applications recommendations. All finishes are to be measured by Sign Contractor with a Glossimeter to
assure reasonable compliance with the 2010 ADA Standards for Accessible Design, Chapter 7.

Stainless Steel: No. 4 Horizontal Grain with sandblasted returns and clear-coat sealer

Aluminum: Anodized brushed aluminum with sandblasted returns and clear-coat sealer

Glass: Low-iron glass with sandblasted returns and clear-coat sealer

Paint: Satin

2.13 SILK SCREEN

Silk screening shall be highest quality, with sharp lines, no sawtooths, pinholes or uneven ink coverage. Screens shall be photographically reproduced.

Background ink shall be process inks as recommended by manufacturer of substrate employed. Ink application through screens: 1 flood pass and 1 print pass. Images: uniform color and ink thickness; free from squeegee marks and lines.

Dry in adequate racks with 2 in. spacing for ample air flow and forced air drying and curing. Package signs only after they have dried completely per ink manufacturer's time allowances.

2.14 DIMENSIONAL LETTERS AND NUMBERS

Letters and Numbers to be water-jet cut. Comply with requirements indicated in Contract Documents for finish, style, and size.

Finish to be Clear Anodized Aluminum, with Brushed Finish, Stainless Steel with No. 4 Horizontal Grain Finish and sandblasted returns, or painted as indicated in Contract Documents.

2.15 ETCHED COPY

Acid etching process for fabrication of raised lettering on metal background to be Zinc Plate.

Acid etching process for fabrication of incised lettering / graphics on metal or glass background as specified in Contract Documents.

2.16 ENGRAVED COPY

Machine-engraved letters, numbers, symbols, and other graphic elements into sign panel on the face indicated in Contract Documents to produce precisely formed copy, incised to uniform depth. Use high speed cutters mechanically linked to a master template in a process capable of producing characters of style indicated with sharply formed edges.

Face-Engraved Acrylic: Fill engraved copy with epoxy enamel. Apply opaque background color coating to back face of acrylic sheet. Engrave copy to produce a minimum depth of 1/32".
2.17 PIN MOUNTS

Pin mounts shall be fabricated from threaded studs permanently fixed to the component to be mounted. All studs shall be square to the face of the component.

Epoxied or welded studs shall be fabricated with no distortion or discoloration of the face of the component or any other exposed surfaces.

Holes drilled into plastic or wood cut component shall be fabricated with no distortion or other visible effect on face or other exposed surfaces.

There shall be a minimum of four studs on plaques, two studs on individual typographic characters and one stud on punctuation marks.

Silicone adhesive shall be used to install pin mounts in walls or other supporting surfaces. Receiving hole shall be of sufficient size to allow positioning, and shall have clean edges and neat appearance.

Support components with foam tape or other mechanical means that does not damage surrounding surfaces, until permanent adhesives are set.

2.18 ATTACHMENTS

Wall Mounted Panel Signs: Attach panel signs to wall surfaces using the methods indicated below and as specified by manufacturer:

Vinyl-Tape Mounting: Use double-sided foam tape, of thickness indicated, to mount signs to smooth, nonporous surfaces. Do not use this method for vinyl-covered or rough surfaces.

Silicone-Adhesive Mounting: Use liquid silicone adhesive recommended by the sign manufacturer to attach sign units to irregular, porous, or vinyl-covered surfaces. Use double-sided vinyl tape where recommended by the sign manufacturer to hold the sign in place until the adhesive has fully cured.

Mechanical and Shim Plate Mounting: Provide concealed aluminum shim plates 1/16" thick, with pre-drilled and countersunk holes, at locations indicated and where other mounting methods are not practicable. Attach the plate with fasteners and anchors suitable for secure attachment to the substrate. Attach panel sign units to the plate using the method specified above.

Bracket-Mounted Units: Provide the manufacturer’s standard brackets, fittings, and hardware as appropriate for mounting signs that project at right angles from walls and ceilings. Attach brackets and fittings securely to walls or ceilings with concealed fasteners and anchoring devices to comply with manufacturer’s directions.

Dimensional Letters, Numbers, and Panels: Mount letters, numbers, and panels using standard fastening methods recommended by the manufacturer, or custom methods as indicated, for letterform or panel type mounting, wall construction, and conditions of exposure indicated. Provide heavy paper template to establish letter spacing and to locate holes for fasteners.
Flush Mounting: Mount letters with backs in contact with the wall surface.

Projected Mounting: Mount letter at the indicated projection distance from the wall surface.

Direct Applications: Provide silk-screened or frisket painted signs over coated panels with clear, non-yellowing protective coating. The manufacturer has the option of selecting either process indicated above.
3 GRAPHICS/DRAWINGS

3.1 GENERAL REQUIREMENTS

A Drawings are for concept only. Sign Contractor shall be responsible for providing a product which meets the requirements of both the specifications and the drawings, and which works effectively, efficiently and safely.

B Written dimensions on the Drawings shall take precedence over scaled dimensions. Sign Contractor shall be responsible for all dimensioning and must notify Design Consultant of any discrepancies, to await clarification, prior to proceeding.

C Failure to request clarification of any inadequacy, omission or conflict will not relieve the Contractor of responsibility.

3.2 LAYOUT AND TYPOGRAPHY

A Type or patterns to be generated directly using a computer driven plotter or cutter such as those systems manufactured by Gerber Scientific Products, Inc., or approved equal. In such an event, typefaces must match specified cuts exactly. The Contractor should be aware that in many instances Gerber versions of faces may not satisfactorily match specified faces and in such instances will not be allowed.

B The typefaces for all signs are to be Adobe Systems Utopia Std and Adobe Systems Univers as specified in the Contract Documents. Sign Contractor is responsible for purchasing specified typefaces.

C The layout of the copy on the drawings and the wording indicated in the message schedule is based on scale calculations within given and estimated areas. Should any conflict arise in the final copy layout, notify the Designer before proceeding. In no event shall size, number of lines of copy or specified letter, word and/or line spacing be modified to get copy to fit.

D Contractor to prepare and provide sign and type layouts to comply with the requirements indicated in the Construction Intent documents for content, graphic elements, symbols, type/number style, sizing, letter spacing, positioning, finishes, and colors.

E The manufacturer's name, trade name or trademark shall not appear on any visible surface of any of the work. If an Underwriter's Laboratory or any other label is required to be affixed to a sign, it shall be placed in an inconspicuous location.

3.3 BRAILLE

A Provide all Grade 2 Braille translations, as required to conform to American National Standards ICC/ANSI A117.1, 2003, as referenced in Section 1.9.

B Braille shall be Grade 2 and Braille dots shall have a domed or rounded shape complying with dimensions required by 703.3.1 of the ADA Standards for Accessible Design.
3.4 ARTWORK

A The Construction Documents include specifications for all graphic components (i.e. type, symbols, maps, diagrams, etc.). Sign Contractor to create and supply all Artwork and mechanicals necessary to complete the work, except where noted in Contract Documents.

B Certain of the Construction Documents contain non-reproducible quality copies of reproducible art held by the Design Consultant. The Sign Contractor must apply to the Design Consultant for any reproducible quality Artwork that may exist before commencing fabrication. Under no circumstances should non-reproducible copies of anything in the Contract Documents be used as reproducible Artwork. Where camera-ready Artwork is to be provided by the Design Consultant, it must be used.

C For code-required maps on emergency egress signage, Design Consultant will provide one (1) sample map to indicate style; Sign Contractor shall be responsible for creating final map artwork for all signs.
4 IMPLEMENTATION

4.1 GENERAL REQUIREMENTS

A Submit a detailed production and installation schedule for all sign types including dates for submission and approval of all required samples, shop drawings and other submissions required under this contract. Schedule to allow for adequate review and possible re-submittals without jeopardizing the project schedule.

B Submit manufacturer's printed product technical data, specifications and installation instructions for all materials and for each item to be supplied or incorporated into the work.

C All submissions shall be reviewed and received final approved by Design Consultant, in addition to stamped engineering drawings, where required prior to fabrication of project sign requirements.

D Sign Contractor is responsible for verifying all field conditions and dimensions prior to preparation of shop drawings to ensure proper fit of work. Should Sign Contractor find any discrepancies they shall notify the Design Consultant at once, to await clarification, prior to proceeding.

E All submittals will be reviewed and stamped with Design Consultant’s review stamp. Submissions to include appropriate space for review stamp and comments.

F Include drawing index with shop drawing submissions.

4.2 SUBMISSIONS: SHOP DRAWINGS

A Three (3) sets of all shop drawings for approval prior to fabrication or installation, as follows:

1. one (1) set to Design Consultant
2. one (1) set to General Contractor
3. one (1) set to Owner

B Drawings shall be prepared at an architectural scale sufficient to read all details. Show proposed details of fabrication and installation of all components. These shall include plans, location elevations for each unique sign location, large-scale details of construction, anchorages and accessory items.

1. Installation elevations at a minimum of 1/2" = 1'-0"
2. Sign elevations at a minimum of 1" = 1'-0"
3. Section Details at a minimum of 6" = 1'-0" or 3" = 1'-0" for oversized signs

C Provide as separate detail drawing, all elements that are specific to the production of Partial Prototypes to confirm partial prototype requirements. See Section 4.5 below.

D Sign Contractor shall provide a licensed engineer’s details to provide suitable materials, gauges, footings, anchors, materials compatibility, structural integrity, etc., as required for
proper and secure mounting or installation and in accordance with all local sign codes. Show all anchorages and accessory items.

E Shop Drawing should demonstrate coordination with field verified conditions. Confer with Design Consultant regarding any critical items before shop drawings are started, and advise the Design Consultant of any significant discrepancies in field measurements or operational difficulties.

F All Sign Requirements that are specified to be installed perpendicular to an architectural surface, and that extend out over any pedestrian area is to be engineered, manufactured and installed/hung to meet or exceed the performance criteria specified by General Contractor/Owner; to conform with profiles indicated and to other requirements of Contract Documents; to satisfy the requirements of authority having jurisdiction; and to provide structurally sound assemblies capable of withstanding minimum specified performance criteria without failure.

G All variations from the Contract Documents shall be shown on the shop drawings and shall be clearly identified as such by the Sign Contractor. All proposed variations shall equal or surpass the requirements of the originally specified items with regard to appearance, finish, material qualities, size, etc.

4.3 SUBMISSIONS: GRAPHIC LAYOUTS

A Submit full size hard copy laser prints of typical layouts of graphic components and messages for each layout grid of each unique sign type (i.e. for each sign type, include one (1) typical full size layout for a single line message, one (1) typical full size layout for a two-line message, one (1) typical full size layout for a three line message, etc.).

Full size layouts and/or artwork will be reviewed by Owner or Design Consultant for letter, word and line spacing, as well as overall size, sharpness, alignment, accuracy of letterform, and copy composition.

B Submit fabrication-ready artwork of each unique sign location, as outlined in the Message Schedule, showing all components and messages. Label each layout with its location number. Indicate all color breaks. All graphic layouts to be drawn at half- or quarter-scale. Oversized signs that are further reduced must be drawn to an architectural scale large enough to review all components.

C One (1) full-size backline set of letter and word spacing templates of all dimensional letters and numbers. All such templates must accurately and clearly show, with easily readable lines (pencil outlines are not acceptable unless the body of the character is shaded), all elements and their intended spacing.

D Copy shown on any drawings and templates is intended as a guideline for layout and type size only. Refer to the Message Schedule for exact wording.

4.4 SUBMISSIONS: SAMPLES

A Two (2) sets of 6” x 6” samples for each type of material/color/finish specified. Color match samples to be prepared on actual sign material substrates. Owner/Design Consultant’s review of samples will be for color and texture only. Compliance with all other requirements is
the exclusive responsibility of the Sign Contractor. One (1) set of samples will be kept by the Owner/Design Consultant as a record to match against completed installation.

### 4.5 SUBMISSIONS: PROTOTYPE

**A** Prototypes to be prepared pending final approval of shop drawings, graphic layouts, and samples noted above.

**B** Owner/Design Consultant reserves the right to adjust final details, sizes, colors, materials and finishes to be incorporated in the production of the final signs.

**C** After inspection and approval all samples must be delivered to the Design Consultant and will become his property. In no event shall any samples, whether approved or not, be permanently installed as part of the finished work.

**D** One (1) sample of the following sign types, in its entirety, shall be fabricated for review, testing, and approval by Owner/Design Consultant, before manufacture of any of the final signs of any type.

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**E** Due to the overall size of some project sign types, prototypes for the following sign types should be fabricated as partial sections.

Refer to the contract documents for additional requirements. Prior to fabrication, Sign Contractor is to submit clarification drawings to Owner/Design Consultant for review and approval, detailing all elements to be included in each unique partial section prototype. Prototypes to clearly demonstrate all materials, finishes, fasteners, structure, illumination, mounting methods, detailing, etc. that are part of that sign type.

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4.6 FABRICATION

A All submissions shall be reviewed and have received final approval by Design Consultant / Architect and Owner, in addition to stamped engineering drawings where required, prior to fabrication of project sign requirements.

B Field measure all conditions prior to fabrication.

C All work shall be constructed as complete systems, including all stiffeners, fasteners, welding, sealants, jointing, miscellaneous pieces and material thicknesses, etc.

D Work shall be performed by competent workmen and shall be of the best quality, free from defects impairing strength, durability and appearance. All items shall be made of new materials.

E Connections, angles, shapes and details are for intent only and are to be sized, reinforced and detailed as required for their particular application. Details not shown are to be at least equal in quality to those detailed.

F Methods of fabrication, joining, finishing and installation of all components and work shall be according to the manufacturer's instructions for the use of any products, materials, fittings and equipment used in their construction.

G All details of construction are to be engineered with appropriate strength materials and finished to withstand the potential rigors of their installed locations.

H Installed work shall be accurately reproduced from the artwork. Characters with rounded positive or negative corners, nicked, cut or ragged edges, etc., will not be accepted.

I All work shall be uniform in detail design and finish.

4.7 INSPECTION

A Provide access to the Design Consultant to inspect all work in progress at the site of fabrication or installation.

B Inspection and approval of all fabricated and assembled work shall take place prior to delivery to the site and installation.

4.8 INSTALLATION

A General: Locate sign units and accessories where indicated, using mounting methods of the type described and in compliance with the manufacturer's instructions. For signs installed at exterior locations, include all elements recommended by manufacturers and good practice to insure weatherproofing for internal and external parts and materials.
B  Install the work in a well organized and timely manner. Whenever possible, the work shall be installed as one continuous activity. The installation process shall be coordinated to accommodate the needs of both the Owner and Designer.

C  Inform Owner/Design Consultant, at least two weeks in advance, of any intended installation and arrange, at the Owner’s convenience to have all patterns in place, and initial signs of each type ready for installation and approval by the Owner on site before proceeding with the rest of the installation. It is important that such approval processes be organized efficiently so that approvals can take place in a timely manner.

D  Sign locations detailed in Contract Documents are estimated. Sign Contractor shall be responsible for confirming all locations in field based on direction in Contract Documents. Where variances occur from Documents or conditions are not as anticipated, Sign Contractor to notify Design Consultant/Owner immediately, and await direction prior to proceeding.

E  Follow recommendations and instructions for installation as provided by component manufacturers. Notify the Design Consultant in writing if such installation will not provide permanent, rigid installation within site conditions.

F  No installation procedures or materials shall be used that will in any way change the visual quality or in any manner have an adverse effect on adjacent materials and surfaces.

G  Protect all adjacent surfaces from damage during installation. Restore or replace any damaged surfaces to original condition and appearance.

H  Install all signs at the locations and heights specified in the Contract Documents. All signs shall be installed level, plumb, and perpendicular to the surface upon which they are mounted, unless otherwise specified.

I  Coordinate all scheduling and installation procedures with the Owner, General Contractor, Design Consultant, and others to avoid delays or additional costs.

J  Where appropriate, notify Owner/Design Consultant in writing of any visual or physical conflicts, to await clarification, prior to proceeding.

K  All work shall be provided with suitable protective coverings during shipment and installation. Remove and replace protective coating for inspection when requested. Final removal of protective coatings shall take place only when there is no danger of damage from further work, and all protective coatings shall be removed simultaneously from similarly finished items to prevent uneven oxidation or discoloration.

4.9  CLEANING AND PROTECTION

A  Remove packing and construction materials from the site. Leave premises broom clean and ready for work under other contracts or ready for use. Vacuum any carpets and spot clean where necessary.

B  At completion of the installation, clean soiled sign surfaces in accordance with the manufacturer’s instructions. Protect units from damage until acceptance by the Owner.
4.10 PUNCH-LIST

A Final punch-list will be conducted by Owner/Design Consultant.
Dispersive Signal Touch Technology

Technology Profile

An Innovative Large-format Touch Technology from 3M

Dispersive Signal Technology, specifically developed for interactive digital signage applications, sets new large-format touch standards for fast, accurate repeatable touch response. In addition, Dispersive Signal Technology’s operation is unaffected by contaminants, static objects or other touches on the touch screen. Other key characteristics of this patented technology are exceptional optics, ease of integration, and input flexibility.

Key Technology Characteristics

- Fast, accurate and repeatable touch response
- Operation unaffected by surface damage, including Scratches
- Input flexibility, accepting touch from finger, pencil, credit card, fingernail, or almost any type of stylus
- Operates with static objects or other touches on the screen
- Exceptional optical characteristics
- Scalable for sizes above 32” diameter

How Dispersive Signal Technology Works

Dispersive Signal Technology determines a “touch point” by measuring the mechanical energy (bending waves) within a substrate created by a finger or stylus touching the surface of the glass. Bending waves differ from surface waves in that they traverse through the thickness of the panel rather than the surface of the material, which provides several important advantages including enhanced palm rejection and superior scratch resistance. When the touch implement impacts the screen, bending waves are induced that radiate away from the touch location. As the wave travels outwards, the signal spreads out over time due to the phenomena of dispersion (explained below). Piezoelectric sensors positioned in the corners on the backside of the glass convert this smeared mechanical impulse into an electrical signal. The distance from each sensor determines the extent to which the signal is dispersed. Namely, the further away the “touch point” is from the sensor, the more the signal is smeared, as shown in the figure below:
Dispersion Explained

Dispersion is the phenomenon that the velocity of a bending wave propagating through solid material is dependent upon that wave’s frequency. An impulse caused by a touch contact generates a number of bending waves within the substrate, all at different frequencies. Because of “dispersion”, these bending waves propagate out to the edges of the glass at different speeds rather than in a unified wave front. The piezo sensors at the corners sense the high frequency waves first and the lower frequency waves second, so what the sensors ultimately receive is a wave formation that doesn’t resemble original pulse. This “smearing effect” is compounded by the reflections off the internal surfaces of the glass substrate. The net result is a seemingly chaotic mass of waves all interfering with one another throughout the substrate.

3M Dispersive Signal Technology is able to interpret the source of these chaotic series of waves with its proprietary algorithms that can anticipate the “dispersion” effect and interpret the precise touch location. These algorithms, the result of an extensive 3M development effort, are the key to providing a highly accurate and sensitive solution. No other touch technology works quite this way.

Graphic Representation of Bending Wave Effect on Glass Substrate

The Difference is “Through” the Substrate

Where other large-format touch technologies distribute an optical field, infrared beams, or acoustic waves across the front surface of the touch screen and rely on a touch to interrupt the field, Dispersive Signal Technology waits passively for a signal created by a touch contact. This fundamentally different approach means that contaminants, such as dirt, grease, and solids, can accumulate on the surface and around the edge of the screen without a significant effect on the performance of the DST touch screen. Furthermore, surface damage such as scratches or a gouge in the touch screen, will generally not affect touch performance.

Fast, Accurate, Repeatable Touch

A defining strength of Dispersive Signal Technology (DST) is the intricate, proprietary algorithms used to calculate the touch point. Due to the sophisticated and optimized dedicated controller that continuously process the touch point, DST offers the fastest and most accurate touch response among large-format touch technologies. In addition, the DST touch screen is so reliable at calculating touch points that “repeatable accurate” touch (continuous, repeated touch registering in the same location) is a key feature of this technology, offering greater than 99% touch location accuracy.
Once these signals are properly filtered and digitized, various signal processing techniques are used to determine the touch location. Most importantly, the dispersion is corrected for by mapping between the temporal and spatial domains using prior knowledge such as the bending wave profile, glass dispersion effects, and other substrate characteristics. Once in the spatial domain, an accurate touch location is calculated using geometric intersections. To ensure that the calculated touch location is a viable solution, the alternative problem is solved and the touch impulse is reconstructed.
Technology Profile: Dispersive Signal Touch Technology

Operates with Static Objects

Dispersive Signal Technology (DST) operates with static objects on the glass surface. So, even when the user rests their other hand on the touch screen, or other users are touching the screen, or when inanimate objects such as cups, cans or keys are left on the touch screen, DST continues to respond to the user's intended touch and ignores the presence of these other objects. This unique touch capability helps avoid inadvertent touches and overcome permanent surface damage.

Exceptional Optics and Contaminant Resistance

Since the substrate is pure chemically-strengthened glass with no coatings, ridge reflectors, or optoelectronic components, Dispersive Signal Technology provides exceptional optical clarity and light transmission, and can be sealed to prevent contaminants from penetrating the display enclosure, protecting the LCD electronics and other internal components.

Input Flexibility

Since Dispersive Signal Technology measures the mechanical energy created by a touch contact, nearly any object – finger, prosthetic device, credit card – can be used to activate the touch screen.

The Innovation Continues

Dispersive Signal Technology from 3M offers large-format touch applications the unique combination of fast-accurate-repeatable touch, input flexibility, exceptional optical characteristics, and operation unaffected surface contaminants. Because of these fundamentally different touch characteristics, the opportunities for large-format touch applications will further expand to use large-format touch screen technology.
Read and understand all safety information contained in this document before using this product.
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The information provided in this document is intended as a guide only. For the latest detailed engineering specifications, please contact your 3M Touch Systems, Inc. Application Engineer. 3M Touch Systems, Inc. is committed to continually improving product designs. As a result, product specifications may be subject to change without notification.

"RoHS compliant 2005/95/EC" means that the product or part does not contain any of the following substances in excess of the following maximum concentration values in any homogeneous material, unless the substance is in an application that is exempt under RoHS: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. This information represents 3M’s knowledge and belief, which may be based in whole or in part on information provided by third party suppliers to 3M.

NOTICE: Given the variety of factors that can affect the use and performance of a 3M Touch Systems, Inc. product (the “Product”), including that solid state equipment has operation characteristics different from electromechanical equipment, some of which factors are uniquely within User’s knowledge and control, it is essential that User evaluate the 3M Touch Systems, Inc. Product and software to determine whether it is suitable for User’s particular purpose and suitable for User’s method of application. 3M Touch Systems, Inc. statements, engineering/technical information, and recommendations are provided for User’s convenience, but their accuracy or completeness is not warranted. 3M Touch Systems, Inc. products and software are not specifically designed for use in medical devices as defined by United States federal law. 3M Touch Systems, Inc. products and software should not be used in such applications without 3M Touch Systems, Inc. express written consent. User should contact its sales representative if User’s opportunity involves a medical device application.

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About This Manual

Congratulations on the purchase of your 3M™ MicroTouch™ Dispersive Signal Technology (DST) sensor and welcome to the world of 3M Touch Systems — a world where using a computer is as simple as touching the sensor.

The 3M™ MicroTouch™ DST2270DX sensor incorporates advanced design and production techniques that result in high quality sensors. The DST sensor’s low profile design provides ease-of-installation for most displays. The DST sensor’s durability, reliability, contaminant resistance, excellent light transmission, finger or stylus input, and superior optical clarity, make it an ideal choice for large-sensor interactive displays.

3M Touch Systems is committed to being a premier supplier in touch systems throughout the world. As a 3M Touch Systems customer, you are aware that we have strong internal programs that meet or exceed environmental regulations of our customers and the regions in which we conduct business.

What You Need to Know

This manual describes how to complete the following tasks:

- Disassemble your display (if necessary)
- Mount the sensor to the display
- Install the controller

3M Touch Systems Support Services

3M Touch Systems provides extensive support services through our website and technical support organization. Visit the 3M Touch Systems website at http://www.3Mtouch.com/, where you can download MT 7 Software and drivers, obtain regularly updated technical documentation on 3M Touch Systems products, and learn more about our company.
Whenever you contact Technical Support, please provide the following information:

- Touch display size, part number and serial number
- Current driver version
- Operating system used
- Information on additional peripherals

Technical Support is available Monday through Friday 8:30 a.m. to 5:30 p.m. with limited call back service after 5:30 p.m. until 8:00 p.m. US Eastern Standard Time – 9 a.m. to 5 p.m. throughout Europe.

You can contact 3M Touch Systems Technical Support (US only -- Eastern Standard Time) by calling the hot line, sending email or a fax.

- Technical Support Hot Line: 978-659-9200
- Technical Support Fax: 978-659-9400
- Toll Free: 1-866-407-6666 (Option 3)
- Email: US-TS-techsupport@mmm.com

Contact 3M Touch Systems

Contact information for all offices can be found on our website at:
http://www.3Mtouch.com/
CHAPTER 1

Getting Started

The 3M™ MicroTouch™ DST2270DX system is one of the most intuitive interfaces available for large-format interactive displays. The rugged design of the DST2270DX sensor is ideal for interactive digital signage, point-of-information applications and allows for fast, accurate, reliable touch performance that is virtually unaffected by contaminants, scratches, or static objects on the screen. To begin installing your DST2270DX sensor, take a few minutes to review this chapter. It is your roadmap to a successful installation.

Pay close attention to the information contained in the Important Safety Information section below. 3M Touch Systems recommends that only qualified display technicians install the sensor.

- Disassembling a display can be a dangerous procedure. Be sure to follow all manufacturers' recommendations for assembly and disassembly of your flat sensor display.
- Make sure you have the necessary equipment before starting the installation. Refer to Supplies and Tools Needed for the Installation later in this chapter.
- Set up a clean, comfortable, and spacious working area. Having sufficient room to work makes the installation easier.
- Test your display to ensure good working condition before you install the sensor.
- Identify the different components to install and review the summary of the installation procedure. It is important to know how all the pieces eventually fit together before disassembling your system.

Note: If any points within this guide are unclear to you, or further clarification is necessary, please contact your 3M Touch Systems applications engineer.

If you decide to install the sensor, take the following precautions:

- Follow each procedure carefully, work with the system powered off and unplugged, and observe all safety information.
- Protect your investment. The sensor is a glass product. You must handle it with care.
Note: Consult the display manufacturer to find out whether the original warranty will be affected if you install the sensor. Also, determine who will recertify the display. Recertification will be necessary to comply with safety and FCC or EMC regulations.

Important Safety Information

Read, understand, and follow all safety information before using this product. Follow all instructions marked on the product and described in this document. Pay close attention to the following installation warnings and safety precautions.

Intended Use

The 3M™ MicroTouch™ DST2270DX Integration Guide is intended to instruct and guide you in the integration of a DST sensor into an existing large format flat sensor display. This manual provides specific instructions for a large format display. These sensors are intended for indoor use only and are not designed for use in hazardous locations.

Explanation of Signal Word Consequences

⚠️ **DANGER**: Indicates a potentially hazardous situation, which, if not avoided, will result in death or serious injury and/or property damage.

⚠️ **WARNING**: Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury and/or property damage.

⚠️ **CAUTION**: Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury and/or property damage.

⚠️ **NOTICE**: Indicates a potentially hazardous situation, which, if not avoided, may result in property damage.

⚠️ **DANGER**

To avoid the risk of fire and/or explosion which will result in serious injury or death:

- Do not install or use this product in a hazardous location.

⚠️ **WARNING**

To reduce the risk of fire and/or explosion which could result in serious injury or property damage:

- Do not use this product in any outdoor environment unless NEMA standards (or other similar standards such as IP rating) are followed

To reduce the risk of hazardous voltage which could result in serious injury or death:

- Do not use a damaged power supply.
- Do not use a power cord that is frayed or otherwise damaged.
- You must be a qualified technician with experience in assembling and disassembling different types of displays. You must know the specifics of your
WARNING

display and have access to its documentation. There may be hazardous voltages present in the display. If you do not understand display electronics, you may injure yourself, damage the sensor, or damage the controller.

- Disconnect the power to the display before installation
- Do not service the display.
- Do not use non-conforming replacement parts.
- Do not expose the display to rain or other sources of water, steam, or moisture.

CAUTION

To reduce the risk of glass breakage which may result in minor or moderate injury:

- Handle the sensors with care to avoid breaking the glass. Be aware of cracked or broken sensors with sharp edges.
- Do not drop the display as it may cause glass parts to break.
- Do not try to pry the sensor off the LCD if you need to remove the sensor for servicing. You may break the glass and injure yourself or others.

To reduce the risk of lacerations from glass breakage which could result in minor or moderate injury:

- Do not use display if sensor is damaged or broken.
- Team lift the large sensor with at least two people. Handle and place the sensor using care and protective gloves.

To reduce the risk of the potentially hazardous situations associated with the use of isopropyl alcohol which may result in minor or moderate injury or property damage:

- Follow all instructions and recommendations in the alcohol manufacturer's Material Safety Data Sheet and product label.

To reduce the risks associated with improper disposal, which if not avoided may result in minor or moderate injury from ground water contamination:

- Dispose of components in accordance with federal, state and local regulations.

To reduce the risk of potentially hazardous situations associated with the handling of large sheets of glass which may result in minor or moderate injury or property damage:

- Be sure to exercise extreme caution in handling the edges of the sensor with the copper tape applied. The edge of the tape is very sharp.

To reduce the risk of possible environmental contamination which may result in minor or moderate injury:

- Dispose of the display in accordance with federal, state and local regulations.

Sensor Care and Cleaning

The sensor requires very little maintenance. 3M Touch Systems recommends that you periodically clean the glass sensor surface.
CAUTION

To reduce the risk of the potentially hazardous situations associated with the use of isopropyl alcohol which may result in minor or moderate injury or property damage:
Follow all instructions and recommendations in the alcohol manufacturer's Material Safety Data Sheet and product label.

Typically, an isopropyl alcohol and water solution ratio of 50:50 is the best cleaning agent for your sensor. You can also use straight isopropyl alcohol. Be sure to follow solvent manufacturer's precautions and directions for use when using any solvents.

- It is important to avoid using any caustic chemicals on the sensor.
- Always dampen the cloth and then clean the sensor. Be sure to spray the cleaning liquid onto the cloth, not the sensor, so that drips do not seep inside the display or stain the bezel.
- Apply the cleaner with a soft, lint-free cloth. Avoid using gritty cloths.
- Always handle the sensor with care. Do not pull on or stress flex tail.

Important Notes for Video Displays

- Plug power cord into appropriate power source.
- Plug power cord into a grounded receptacle.
- When unplugging power supply cord, pull on the plug not the cord.
- Do not connect or disconnect this product during an electrical storm.
- Install the display in a well-ventilated area. Always maintain adequate ventilation to protect the display from overheating and to ensure reliable and continued operation.
- Do not expose the display to direct sunlight or heat. Passive heat may cause damage to the case and other parts.
- Do not install the display in areas where extreme vibrations may be generated. For example, nearby manufacturing equipment may produce strong vibrations. The vibrations may cause the display to exhibit picture discoloration or poor video quality.
- Ensure that metal enclosures or bezels do not contact the sensor.
- To avoid ergonomic concerns:
  Do not install the display in a manner or location with awkward accessibility. Extended use may result in muscle, tendon, or fixed posture strains. It is recommended you take periodic breaks from continuous use.
Supplies and Tools Needed for the Installation

Before starting the installation procedure, check that you have all items listed below.

**Supplies Needed**
- Safety glasses
- Small containers for holding loose parts (paper cups)
- Electrical tape (or black acetate tape)
- A clean soft cloth and cleaner for the display and sensor
- Replacement screws for mounting a flat panel to a bezel or chassis
- Ring lugs or crimps
- Nylon spacers and washers
- Gloves for handling glass
- ESD strap
- Clean, anti-static pad
- ESD Foam blocks and pad
- Felt-tip marker pen
- Cable tie-wraps
- ROHS compliant solder
- Bezel sealing gasket -- 3M 4508
- Display mounting tape -- 3M 5962 & 5925 (already installed)
- 5 mil thick polyimide tape such as Kapton® tape
- Copper tape

**Tools Needed**
- Flat-blade screwdriver with insulated handle
- Plastic burnisher
- Phillips-head screwdriver
- Power drill
- Wire stripper
- Compressed air (optional)
- Razor knife or single-edge razor blade
- Soldering iron
- Center punch
- Variety of drill, tap, and spade bits
- Crimping tool
- Dremel® tool or nibbler

Preparing Your Work Space

**Comfortable Work Area**
Select a comfortable work area with adequate space and lighting. Make sure that the area is free of clutter and/or objects that could scratch the sensor and flat panel display. 3M Touch Systems recommends an area of at least 25 square feet. You need this space to handle components safely and to set major components aside during the installation.

**ESD Workbench**
A certified ESD workbench is recommended when working with electronics assemblies.

**Protective Material**
Place anti-static protective material on the work surface. A padded surface protects equipment from scratches during installation. Foam blocks can be used to support the component side of the sensor and make for easier handling of the sensor panel.
Small Containers
Have several small containers (such as paper cups) available to hold screws, washers, and other small components once you remove them.

Foam Pad
A foam pad is useful for holding the display while attaching the sensor. The pad makes the sensor easier to rotate for fastening screws, taping, etc.

Identifying the Components

The following components are needed for a successful integration:

- A 3M™ MicroTouch™ DST2270DX sensor and mated controller
- A serial (7319630) or USB cable (7319420)
- Molex 3-pin power connector crimp housing (22-01-3037) and three terminals (08-50-0114)

**Note:** The DST sensor works exclusively with a mated DX123 controller for optimal performance. Be sure to match the serial number on the sensor with the serial number on the controller throughout the integration process.

Save the invoice, shipping container, and all packing material in case you need to transport the equipment any time in the future.

Testing the Display Video

Whether you are installing the sensor on a new or older display, you should make sure that the display is in good working condition and the video output is functioning properly. Your initial test should verify that the video functions properly before you install the sensor. You can also compare your results with the results you get after you complete the installation.

If the display is functioning properly, turn off your system, disconnect power plugs, and disconnect all cables from the display. You are ready to disassemble the display and install the sensor.
CHAPTER 2

Sensor Design Considerations

You can install a 3M™ MicroTouch™ DST2270DX sensor on most large displays. Although each particular display may have some unique integration considerations, the basic installation process consists of the following steps:

- Test that the display’s video works properly
- Disassemble the display (if necessary)
- Mount the sensor to the front of the display
- Install the controller (internally)
- Reassemble the display
- Connect the display and sensor to your computer system
Before You Begin

Before you begin the installation, please review the following design considerations. An overview of the entire installation process will help to ensure a successful installation.

- Perform a bench test of all hardware to ensure functionality before you start.
- When installing the sensor, be careful not to route the sensor flex tail and power wires near the backlight inverter or power supply of the LCD.
- Ensure that nothing contacts the sensor – it should be mechanically decoupled by the recommended foams.
- Before installing the sensor, be sure to account for the space needed by the sensor and its flex tail.
- The bezel may need to be modified to accommodate the sealing gasket and sensor. When trimming the bezel, make sure that the mechanical integrity of the display is not compromised.
- The sensor flex tail is designed to be flexible, and it may be creased once in a single direction, in multiple locations along the tail. It should then be secured in place with a light adhesive tape. Avoid angular creases (45°) to the flex tail directly in the area of the tail bond and tape strain relief.
- If it is necessary to remove the sensor from the display after it has been attached, do not pry it off. Carefully follow the instructions given.

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- Be sure to follow the solvent manufacturer's precautions and directions for use when using any solvents. Follow the manufacturer’s directions for suitable chemicals for your display.
- When reassembling the sensor and bezel, be sure not to tighten any one corner more than the other corners. Pressure should be evenly distributed across the sensor.

Mechanical Considerations

Flex Tail Routing

To minimize the risk of electromagnetic interference, never run the sensor flex tail near or over the display backlight inverter or power supply. The noise generated by an inverter covers a broad spectrum and can contain frequencies close to the signal frequency.

The sensor flex tail is not a handle. Never pick your sensor up by the flex tail. It is an electrical connection and is not designed for high stress.
Do not place constant stress on the flex tail during handling or integration. Do not expose the flex tail to mechanical stresses because of the integration design. Provide adequate slack to ensure there is no straining on the flex tail. Avoid lateral pulls that may overstress the outermost electrical contacts on the glass.

The sensor flex tail is designed to be flexible, and it may be creased once in a single direction, in multiple locations along the flex tail and then secured in position with a light adhesive tape. Avoid angular creases (45°) to the flex tail directly in the area of the bond and tape strain relief.

The sensor flex tail should not move freely after assembly. Apply tape or another light adhesive to secure the flex tail in a manner that does not apply stress to the flex tail.

Apply tape or other insulating material to exposed sharp edges to protect the flex tail. Route the flex tail away from sharp edges whenever possible. If this cannot be avoided, secure the tail so it does not move.

**Sealing Gasket to Bezel**

Proper gasketing is critical to any successful sensor integration. All displays, regardless of environment, will be exposed to dust, dirt, spills, and grime and should be sealed with gaskets. Gasketing is relatively simple and straightforward.

3M Touch Systems strongly recommends that you use single-sided 3M vinyl foam tape 4508 for the full-perimeter bezel sealing gasket. This product has been tested and qualified for this application. 3M 4508 is a durable, flexible closed cell vinyl tape that can help seal out dust, light and moisture when placed under 30% compression. This vinyl tape offers excellent aging characteristics and will remain flexible when exposed to elevated temperatures and UV light. It is essential that the user evaluate any alternative gasket product to determine whether it is suitable for their particular purpose and method of application.

Single-sided tapes, adhered to the bezel, make for easy sealing of the sensor. Simply align and adhere the tape to the bezel edge. Gaskets should contact the sensor perimeter to ensure a good seal without interfering with the viewing area.

**Note:** The compression must be evenly distributed to the glass surface. Be aware of and follow material manufacturer’s recommended compression specifications.
Mounting Tape to the Display

The 3M™ MicroTouch™ DST2270DX sensor comes with 3M 5962 and 5925 VHB™ acrylic foam mounting tape already applied to the surface that attaches to your display. This 0.2 inch (5.08 mm) wide mounting foam tape was selected for its mechanical and thermal properties to help ensure your sensor integration is successful.

Together, the mounting tape and the bezel-sealing gasket serve to mechanically decouple the sensor from potential interference.

This mounting tape intentionally stops about an inch from the piezos to keep from interfering with the electrical components on the corners.

Note: For ease of maintenance, put a border of Kapton® tape (or a similar strength polyimide tape) around the perimeter of the LCD. Then adhere the 3M VHB mounting tape to the Kapton tape. The Kapton tape will enable you to easily remove the VHB tape if the need arises.

Strips of thin, foam tape (VHB 5962 and VHB 5925) with adhesive on both sides are already attached to the sensor. Use these strips to attach the sensor to the display metal frame. The sensor must be mounted such that the spacing between the sensor and display does not vary due to compression or expansion from touch forces or temperature changes. Failure to mount the sensor in this fashion may result in reduced functionality.
**Note:** If for any reason you need to replace these mounting tapes, you must use 3M brand VHB 5962 and VHB 5925 tapes. These tapes are an integral part of the DST system and were chosen for their mechanical and thermal properties and will ensure optimal performance.

It is essential that the user evaluate this product to determine whether it is suitable for their particular purpose and method of application.

### Grounding Considerations

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For additional EMI shielding, 3M Touch Systems has applied a conductive adhesive copper tape to three sides of the sensor. This 1/2 inch wide tape is available from 3M as part number 2800221, cross-reference Chomerics part number CCH-36-101-0050. On narrow border sensors, the tape is 13/32 inch wide (p/n 36232).

The copper tape overlaps the flex tail Kapton strain relief. It also overlaps at the sensor corners as shown below:
Be sure to ground the front of the sensor to the chassis with additional strips of copper tape as shown below. 3M Touch Systems recommends at least 2 grounding strips to a side (6 in total) to provide redundant links. Do not put copper tape all around the edges of the sensor.

![Copper Tape](image)

**Touch System Location**

Keep in mind the optics of the sensor. Remember that different sources of light such as outdoor (natural sunlight) and indoor (incandescent or fluorescent) can cause different effects when viewing the sensor.

Remember that lighting changes over the course of a day and depends on weather. Consider the brightness of an area and how it will affect readability of the computer display.

Consider using high brightness displays for better readability in bright ambient light conditions. Remember that sunlight comes in at different angles throughout the year. What might not be a problem in the summer could be an issue in winter.

The display is a sensitive electronic device. Do not install the display in areas where extreme vibrations may be generated. For example, nearby manufacturing equipment may produce strong vibrations. The vibrations may cause the display to exhibit picture discoloration or poor video quality.

Electromagnetic interference can cause problems with any electrical device. Be aware of devices that generate electrical fields, such as radio transmitters, pager transmitters, and security tag deactivators, and plan your installation accordingly.

**Designing Software Applications**

With any touch application, the software design can be crucial to the usability of the final product. Clear icons, bright contrasting colors, large buttons, button placement, and simple layouts will contribute greatly to the success of your installation.
Parallax, the effect of a target object appearing in different positions when looked at from different angles, is a common problem in many computer applications. The combination of the sensor in front of the display and differing heights of users can cause parallax. When designing your touch system software application, use the following guidelines to help reduce the effects of parallax.

- Design large buttons to facilitate touch. Remember that a fingertip is much larger than a cursor.

- Design larger active border areas for buttons. For example, if the button graphic is 1 inch x 1 inch, the active touch area behind it could be 2 inches x 2 inches. Be careful to allow sufficient space between buttons also.

- Keep buttons away from the edges and corners of the sensor. If this is impossible, make sure the active touch areas extend to the outer edges of the viewing area.

- Place buttons horizontally whenever possible. One size does not fit all! Consider the varying heights of users and thus viewing angles when designing the application.

- Make sure there is adequate space between buttons so touches do not overlap.

- Turn off the cursor. Users may inadvertently try to drag the cursor to the correct location on the sensor, emulating moving a mouse, instead of touching the button directly.

- Design your applications to work with a single touch to activate rather than a double-touch.
CHAPTER 3

Installing a 3M™ MicroTouch™ DST2270DX Sensor

This chapter describes how to install a 3M™ MicroTouch™ DST2270DX sensor to a display. You can install a DST sensor on many different manufacturers’ displays.

- The information in this chapter pertains to most displays.
- This chapter does not provide detailed instructions for any specific display.
- The procedures are only intended as guidelines and will vary depending on the display manufacturer.

**Note:** Given the variety of factors that can affect the use and performance of any product, some of which are uniquely within the user’s knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is suitable for a particular purpose and suitable for the user’s intended application.

Handling the Sensor

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| To reduce the risk of glass breakage which may result in minor or moderate injury: |
| - Handle the sensors with care to avoid breaking the glass. Be aware of cracked or broken sensors with sharp edges. |
| - Do not drop the display as it may cause glass parts to break |

Do not try to pry the sensor off the LCD if you need to remove the sensor for servicing. You may break the glass and injure yourself or others.
Care should be taken when handling any glass product. Because the large size of this sensor makes it awkward, we recommend that two people handle the sensor.

Wear vinyl (or nitrile) gloves to help eliminate fingerprints and keep the glass cleaner.

Pick up the glass by the sides rather than the corners to avoid flexing within the glass or damage to the electrical components.

Make sure to wear an ESD strap to prevent electrostatic discharge to electrical components on the sensor.

Use ESD foam blocks to support the sensor when laying it down on the active component side.

When cleaning the glass, be careful near the corner components – these are active electrical elements. Do not drag the cleaning cloth over them. Do not spray cleaner directly onto the sensor. Spray the cloth first, then wipe.
Installation Considerations

Before beginning the installation, a few design considerations should be reviewed. Planning will help to ensure a successful installation.

**Note:** The DST sensor works exclusively with a mated DX123 controller for optimal performance. Be sure to match the serial number on the sensor with the serial number on the controller throughout the integration process.

- Perform a bench test of the hardware to ensure functionality before you start.
- Before installing the sensor, be sure to account for the space needed by the sensor and its flex tail.
- When installing the sensor, be careful not to route the sensor flex tail and power wires near the backlight inverter or power supply of the LCD.
- Ensure that nothing comes in contact with the sensor – it should be mechanically decoupled from the display frame and bezel by the recommended foams.
- The bezel may need to be modified to accommodate the sealing gasket and sensor. When trimming the bezel, make sure that the mechanical integrity of the display is not compromised.
- If it is necessary to remove the sensor from the display after it has been attached, do not pry it off. Carefully follow the instructions given in *Removing the Sensor*.
- Be sure to follow solvent manufacturer's precautions and directions for use when using any solvents. Follow manufacturer’s directions for suitable chemicals for your display.
- Ensure that the integration design does not subject the flex tail bond area to pinch points and/or mechanical stresses.
- Because the sensor traces are electrically active, they should not come in contact with any conductive materials. Avoid contact with metal brackets, conductive bezel paint, etc.
- The sensor flex tail is designed to be flexible, and it may be creased *once in a single direction*, in multiple locations along the flex tail and then secured in place with a light adhesive tape.
- When reassembling the sensor and bezel, do not over-tighten any one corner. Do not over compress the sealing gaskets. 3M recommends 30% compression. Pressure should be evenly distributed across the sensor.
- Make sure there are no obstructions in contact with the sensor; check ribs, fins, and standoffs.
Disassembling the Display

The process of disassembling the display is slightly different depending on the model of display; however, the components within the display housing are equivalent.

⚠️ **DANGER**

To reduce the risk of fire and/or explosion which could result in serious injury or death:
- Do not install or use this product in a hazardous location.

⚠️ **WARNING**

To reduce the risk of hazardous voltage which could result in serious injury or death:
- Do not use a damaged power supply.
- Do not use a power cord that is frayed or otherwise damaged.
- You must be a qualified technician with experience in assembling and disassembling different types of displays. You must know the specifics of your display and have access to its documentation. There may be hazardous voltages present in the display. If you do not understand display electronics, you may injure yourself, damage the sensor, or damage the controller.
- Disconnect the power to the display before installation
- Do not service the display.
- Do not use non-conforming replacement parts.
- Do not expose the display to rain or other sources of water, steam, or moisture.

To reduce the risk of fire and/or explosion which could result in serious injury or property damage:
- Do not use this product in any outdoor environment unless NEMA standards (or similar standards such as IP rating) are followed.

⚠️ **CAUTION**

To reduce the risks associated with improper disposal, which if not avoided may result in minor or moderate injury from ground water contamination:
- Dispose of components in accordance with federal, state and local regulations.

To reduce the risk of the potentially hazardous situations associated with the use of isopropyl alcohol which may result in minor or moderate injury or property damage:
- Follow all instructions and recommendations in the alcohol manufacturer's Material Safety Data Sheet and product label.

To reduce the risk of possible environmental contamination which may result in minor or moderate injury:
- Dispose of the display in accordance with federal, state and local regulations.

To reduce the risk of lacerations from glass breakage which could result in minor or moderate injury:
- Do not use display if sensor is damaged or broken
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Do not try to pry the sensor off the LCD if you need to remove the sensor for servicing. You may break the glass and injure yourself or others.

### Disconnecting the Power and Removing the Stand

Most displays consist of a large flat panel supported by a stand. Before the display casing can be disassembled, the power must be disconnected and the stand removed.

1. Gently place the display face down on a foam pad or other scratch resistant surface so that the rear of the display and stand are accessible.
2. Disconnect the power and video cables attached to the rear of the display housing.
3. Remove the screws securing the stand to the display. Be sure to label these for re-assembly.
4. Remove the stand and set aside.

### Removing the Display Housing

1. Place the display face down on a clean, anti-static pad. Remove the screws that secure the rear housing to the display, being sure to label them and set them aside.
   
   **Note:** The way in which the rear housing is attached to the display varies from model to model. Display manufacturers may use screws, quick-release latches, clips, or release buttons.

2. Lift off the rear housing to expose the display chassis. Remove any screws holding optional accessories (such as speakers or control buttons).
3. Remove the screws that secure the chassis to the front bezel. Carefully lift the chassis off the front bezel and set the bezel aside.

### Fitting the Sensor

The sealing gasket 3M 4508 (0.125 inches (3.2 mm)) and mounting tape 3M 5925 (0.025 inches (0.64 mm)) and 3M 5962 (0.062 inches (1.55 mm)) add approximately 0.212 inch (5.39 mm) and the sensor adds approximately 0.086 inches (2.2 mm) to the thickness of the display assembly. You will need to make sure there is at least 0.261 to 0.298 inches (6.63 to 7.59 mm) of space to reassemble the display once the gasket, tape, and sensor are fully integrated.
Checking for Adequate Space
1. Inspect the inside of the rear display cover.
2. Note the clearance between the inside surface of the rear cover and the rear of the LCD or chassis. You may be able to look through the vents and openings in the cover to check the available space.
3. You must be able to move the LCD or chassis about 0.261 to 0.298 inches (6.63 to 7.59 mm) into the rear of the housing. If there is not enough space, you may not be able to reassemble the display once the sensor is installed. You can trim some plastic sections from inside the housing making sure you do not compromise the mechanical integrity of the display.

Modifying the Bezel
You now need to determine if the sealing gasket and sensor fit into the bezel.

**Note:** When trimming the bezel, make sure you do not compromise the mechanical integrity of the display.
1. Place the bezel face down on an anti-static pad. Be sure the top of the bezel is positioned closest to you.
2. Place the sensor face down against the inside of the bezel opening. Be sure to orient the sensor so the flex tail exits from the top of the bezel.
3. Align and center the viewing area of the sensor. Make sure the limits of the viewing area do not extend into the bezel opening.
4. Note which ribs and fins of the bezel are in direct contact with the sensor. Pay particular attention to the corner areas and the area where the flex tail exits from the sensor. If necessary, trim the ribs and fins on the bezel that are in direct contact with the sensor or the sensor flex tail.
5. Carefully cut out a notch in each rib and cut back each fin that contacts the sensor.
   - Make sure you remove only enough material to facilitate the installation of the sealing gasket and sensor.
   - Make sure you clean any excess material or shavings from the cutout area.
   - Make sure you preserve the structural integrity in the rest of the rib area.

Mounting the Sensor to the Display

**Note:** For ease of maintenance, put a border of Kapton® tape (or a similar strength polyimide tape) around the perimeter of the display. Then adhere the 3M VHB mounting tape to the Kapton tape. The Kapton tape will allow you to easily remove the VHB tape if the need arises.

When handling the 3M™ MicroTouch™ DST2270DX sensor and associated electronics, make sure you wear an ESD strap to prevent electrostatic discharge to electrical components on the sensor.

Strips of thin, foam tape (VHB 5962 and VHB 5925) with adhesive on both sides are already attached to the sensor. Use these strips to attach the sensor to the display metal frame. The sensor must be mounted such that the spacing between the sensor and the display does not vary due to compression or expansion from touch forces or temperature changes. Failure to mount the sensor in this fashion may result in reduced functionality.

**Note:** If for any reason you need to replace these mounting tapes, you must use 3M brand VHB 5962 and VHB 5925 tapes. These tapes are an integral part of the DST system and were chosen for their mechanical and thermal properties and will ensure optimal performance.

It is essential that the user evaluate this product to determine whether it is suitable for their particular purpose and method of application.
In addition to improving fundamental DST properties, the foam tape serves the following purposes:

- Holds the sensor in place on the display
- Cushions the LCD and glass surfaces
- Prevents dust and other contaminants from getting in between the LCD and sensor surfaces

**Practice Positioning the Sensor**

The correct positioning of the sensor is extremely important. You should practice positioning the sensor on the display until you are comfortable with how the sensor should be aligned with the horizontal and vertical center of the display face.

1. Place the display face-up on the foam pad, being careful of the components attached to the rear of the display.
2. Hold the sensor so the flex tail exits from the top. If you are unsure of the correct positioning, contact your customer service representative to request a detailed drawing.
3. The sensor flex tail is designed to be flexible, and it may be creased *once in a single direction*, in multiple locations along the flex tail. Do not pull tightly on the tail.
4. Place the sensor onto the display and ensure that the sensor is straight and the viewing area centered on the LCD.

**Sensor Cleaning**

Ensure the sensor is clean of debris and fingerprints on both sides before completing the mounting process.

**CAUTION**

To reduce the risk of the potentially hazardous situations associated with the use of isopropyl alcohol which may result in minor or moderate injury or property damage:

Follow all instructions and recommendations in the alcohol manufacturer's Material Safety Data Sheet and product label.

Use an isopropyl alcohol and water solution ratio of 50:50 to clean your sensor. You may also use straight isopropyl alcohol.

It is important to avoid using any caustic chemicals on the sensor.

Always dampen the cloth and then clean the sensor.

Apply the cleaner with a soft, lint-free cloth. Avoid using gritty cloths.

**Attaching the Sensor to the Display**

Once you feel comfortable with the alignment and positioning of the sensor, you are ready to permanently attach the sensor to the LCD.
1. Prep the display by placing a border of Kapton® tape or similar around the perimeter of it.
2. Place the sensor on foam blocks and be sure that it is clean and dry.
3. Already attached to the sensor are strips of foam VHB tape. Pull off about 2 inches of the release liner from the end of each strip and fold at a 90 degree angle.

4. You are now ready to attach the sensor to the display. It is recommended that at least two people complete this step. Hold the sensor so the flex tail exits from the top, turn the sensor over and place it on the display.
5. Holding the sensor firmly in place, slowly pull out the remainder of the release liner. Repeat this with all four sides.

6. Press firmly down around the perimeter of the sensor to ensure that it is fully attached to the display.
Once the sensor is fully attached to the display secure the flex tail in place with a light adhesive tape.

Inspect the Mounted Sensor

After you mount the sensor to the display, inspect your results carefully and check that the sensor is installed properly.

1. Set the display in its standard upright position.
2. Look at the front of the display, and ensure the sensor flex tail exits from the top.
3. Check for proper alignment. Make sure the sensor is not off-center or crooked. If the sensor is not correctly aligned with the LCD panel, you must remove and remount the sensor before you can continue with the installation.
4. Look for dirt or lint trapped between the display and the sensor, as these particles will be visible later.

If any part of the inspection fails, you must remove and remount the sensor.

Once you are satisfied with the alignment, you may cover the corners lightly (no pressure) with cloth tape to keep out dust and dirt.
Removing the Sensor

**CAUTION**

To reduce the risk of glass breakage which may result in minor or moderate injury:
Do not try to pry the sensor off the LCD if you need to remove the sensor for servicing. You may break the glass and injure yourself or others.

If you need to remove the sensor, use a razor knife or a single-edge razor blade to carefully cut through the mounting tape.

- Start at the top of the sensor and work down the sides.
- Be careful not to scratch the display or the sensor.
- Be sure to support the sensor as it comes away from the display.
- Be sure not to knock off components as you approach the corners

Use isopropyl alcohol to remove the foam tape and adhesive residue from the back of the sensor. Be careful not to damage any silver printing or components. Be sure to follow solvent manufacturer's precautions and directions for use when using any solvents. Follow manufacturer’s directions for suitable chemicals for your display.

Repeat the procedure for properly attaching the sensor to the display.

Adding a Sealing Gasket to the Bezel

1. Place the bezel face down on an anti-static pad.
2. Cut strips of the closed cell, compressible foam sealing gasket tape (3M 4508) to fit the inside edges of the bezel opening to form a full perimeter seal. To ensure tight fitting sealing joints, the gasket tape should be cut using a razor knife or single-edge razor blade.

3. Remove the backing material from the tape. Adhere a strip of gasket tape to each inside edge of the bezel opening. Align one edge of the gasket to the edge of the bezel opening. If the gasket overlaps the bezel edge, it will be visible from the front of the display. If the gasket is spaced away from the bezel edge, you will create a gap that can collect dust, liquids, etc.
4. Pay close attention to the bottom edge joints. Butt the gasket tape edges to create a tight fitting joint.
Adding Spacers to the Bezel

You may need to insert nylon spacers and washers over each bezel post to accommodate the additional space of the sealing gasket and sensor. The spacers provide safety clearance for the sensor and prevent the bezel from contacting the sensor. **Do not omit these spacers and washers and do not apply undue pressure to the installation.**

You need to determine the correct amount of space to add to the bezel. At a minimum, you must add enough space to adjust for the thickness of the sensor, the mounting tape on the back of the sensor and the gasket seal.

The sealing gasket 3M 4508 (0.125 inches (3.2 mm)) and mounting tape 3M 5925 (0.025 inches (0.64 mm)) and 3M 5962 (0.062 inches (1.55 mm)) add approximately 0.212 inch (5.39 mm) and the sensor adds approximately 0.086 inches (2.2 mm) to the thickness of the display assembly. You will need to make sure there is at least 0.298 inches (7.59 mm) space to reassemble the display once the gasket, tape, and sensor are fully integrated.

Following is an example of adding spacers to the bezel to accommodate the extra space created by the sensor.

1. Insert a temporary post, such as a cable tie-wrap or toothpick, in each bezel hole.
2. Place a nylon spacer over each temporary post. The size of this spacer will compensate for the thickness added by the sealing gasket, mounting tape, and sensor. If the size of your spacer is different, you may need to provide additional spacing and support.
3. Align the screw holes (or tabs) over the temporary post. Each display hole/tab must rest on top of the spacer and washer above the bezel screw hole.
4. Adjust the display so that it is centered in the bezel and remove the temporary posts.
5. Select a replacement screw for the factory-installed bezel screws. 3M Touch Systems recommends that you replace the factory screws with longer screws to accommodate the sealing gasket and sensor thickness and prevent the glass from breaking by forcing too-short screws to work.

The replacement screws should be the same type and size as the factory screws, but longer. The size depends on the amount of space you added between the bezel and display.
6. Install the replacement screws as follows:
   a. Thread the screws into the holes that connect the display to the bezel.
   b. Work diagonally from one corner to the opposite corner.
   c. Do not over-tighten any one side or corner. Pressure should be evenly distributed across the sensor. Follow the display manufacturer’s specifications for maximum torque.
   d. You must be able to complete at least three full turns of the screw into the original threads.
   e. If you install the screws correctly, the screws should be seated properly and be a little tighter than finger tight. A close fit will prevent liquids and/or particles from damaging the internal electronics, however, the screws should not be so tight that they add stress to the display or the sensor. If the bezel starts to warp when you tighten the screws, stop and loosen the screws.

**Inspect the Attached Display and Bezel**

Once you attach the display and the bezel, inspect your results as follows:

- Check the front of the assembly for proper alignment and adjust if necessary.
- Check that each bezel screw is seated properly and a little tighter than finger tight. The screws should not be so tight that they add stress to the display. If the bezel is warped, loosen the screws.

**Note:** If the screws are too tight, you may damage the sensor, damage the display, or bore right through the bezel.

- Adjust the spacers or screws to get a secure attachment to the bezel without squeezing too tightly. Make sure the bezel ribs and fins do not contact the sensor at any point. If necessary, remove the bezel and trim the ribs and fins. For more information, refer to *Fitting the Sensor* earlier in this chapter.

**Reconnecting the Bezel and Chassis**

1. Reconnect all wires, cables, and switches.
2. Lay the sensor flex tail along the outside area of the chassis.
   a. Avoid contact with internal electronics that can affect the sensor performance.
   Do not route the sensor flex tail near the backlight inverter or power supply of the LCD.
CHAPTER 4
Installing the Controller

This chapter describes how to install the controller for use with 3M™ MicroTouch™ DST sensor. For complete information, refer to the DX123 Controller Reference Guide (P/N TSD-33532).

Note: The DST sensor works exclusively with a mated DX123 controller for optimal performance. Be sure to match the serial number on the sensor with the serial number on the controller throughout the integration process.

This chapter assumes you have already disassembled the display and mounted the sensor to the front of the LCD. For information on completing these procedures, refer to Chapters 2 & 3.

After you integrate the sensor, return to this chapter for the following information:

• Mounting the controller
• Supplying power to the controller
• Connecting the controller to the computer

Disassembling the Chassis

Note: When handling the 3M™ MicroTouch™ DST2270DX sensor and associated electronics, make sure you wear an ESD strap to prevent electrostatic discharge to electrical components on the sensor.

1. Remove the screws securing the display’s control panel cover to the chassis. Be sure to save and label these screws for reassembly.

2. Take a moment to inspect the display’s internal hardware before you disconnect any wires.
   a. Note where each wire is attached and how each wire is routed.
   b. Label each wire. Labeling the wires makes reassembling easier.
c. Most display manufacturers connect the major components with detachable cables that have keyed connectors and labels. In addition, cables are of such lengths that they usually connect to only one place. However, not all displays have easy and intuitive cable connections. When in doubt, make notes of all connection points.

3. If you need to remove the video board, remove the metal shield protecting the video board being sure to label and set aside all screws.

4. Remove the main video board as follows:
   a. Disconnect all cables connecting the main video board to the display.
   b. Disconnect any cables connecting the main board to the bezel. For example, you may need to disconnect the following cables:
      - Power switch cable
      - Control panel cables
      - Microphone cable

Once the chassis has been disassembled, you can mount the controller and connect it to a sufficient power source following the instructions below for powering the controller.

**Mounting the Controller**

The controller is designed for internal mounting only. Choose a convenient spot away from high-voltage, high power cables and electronics. Use 4-40 metal screws to mount the controller using the two diagonal mounting holes in the board. The controller should be mounted in line with the sensor flex tail exit point to minimize tail flexing. The controller should be mounted internally behind or on the side of the display on stand offs to allow room for the sensor flex tail connector.

Care must also be taken when attaching the controller board internally, as the board can short out if it is not attached properly. Additional space will also be needed between the controller board and the metal shield to prevent shorting of the board.

The DX123 controller measures 2.66 in (67.6 mm) x 3.75 in (95.3 mm) total profile over the connectors. Each controller board is 3.5 in (89 mm) by 2.54 in (64 mm) by 0.3 in (8 mm). These controllers are intended for internal installation only. Allow additional clearance for the mating connectors. The total height profile is 0.40 inches from the thru-hole pins on the trace side of the board to the top of the highest component on the opposite side. The DX123 has an 8-pin sensor connector (J101), a 5-pin USB connector (J103), an 8-pin serial connector (J104), and a 3-pin power connector (J107) for input power.
Avoid awkward electrical connections by ensuring that the flex tail and controller are aligned such that the tail remains straight (90°), not pulled or twisted in an odd angle from the sensor.

**Recommendation for Flex Tail Connection**

If necessary, to make the sensor flex tail reach to the controller location, you can extend the length of the tail with a one-to-one, non-shielded, flat ribbon flex tail extender. The connector must be compatible with the connector manufacturer, i.e., Amp should connect to Amp. Be sure to use tin compatible contact pins.
EMI Considerations

The DX123 controller meets FCC and EU emissions Class A standards. If Class B is required, the controller must be mounted behind a metal cover with just the sensor flex tail exiting to the display (no shield is required on the flex tail). This metal cover can be part of the housing for the display. Some displays have an internal metal cover and a plastic outer housing and some use a metal cover as the outer rear cover. Mounting the controller inside either metal cover should be sufficient to meet Class B.

Handling and ESD Protection

**Note:** When handling the 3M™ MicroTouch™ DST2270 sensor and associated electronics make sure you wear an ESD strap to prevent electrostatic discharge to electrical components on the sensor.

When mounting the sensor and controller, use normal precautions for handling electrostatic sensitive devices. The DX123 controller has internal protection to ±20 kV for ESD air discharges to the sensor (not to the controller directly) that may occur during normal operation of the sensor. Refer to Appendix A for more detailed specifications.

Establishing the Data Connection

The DX123 controller can operate in either USB or serial mode – no need for different controllers. You cannot operate in both modes at the same time. If you try to connect both USB and serial cables, the controller will default to USB mode only.

**USB Connection**

In USB mode, the controller uses a 3M Touch Systems USB communication cable (P/N 7319420) PC 99 compatible or equivalent interconnect. One end of this cable plugs into the USB connector (J103) on the DX123 controller. The other end has a Type-A connector, and plugs into a USB port on your PC.

When creating a custom cable, use the Molex 51004-0500 mating connector. The following table describes the interconnections of the 3M Touch Systems USB cable.

**USB Cable for DX123 Controllers**

<table>
<thead>
<tr>
<th><strong>PC Side (USB Type A)</strong></th>
<th><strong>Wire Color</strong></th>
<th><strong>Controller Side (5-Pin Molex)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pin</strong></td>
<td><strong>USB Assigned</strong></td>
<td><strong>Color</strong></td>
</tr>
<tr>
<td>1</td>
<td>+5Vdc (VBUS)</td>
<td>Red</td>
</tr>
<tr>
<td>2</td>
<td>Data (DN)</td>
<td>Gray</td>
</tr>
<tr>
<td>3</td>
<td>Data (DP)</td>
<td>Green</td>
</tr>
<tr>
<td>4</td>
<td>0V</td>
<td>Black</td>
</tr>
<tr>
<td>5</td>
<td>Cable Shield Shell</td>
<td>Charcoal Gray</td>
</tr>
</tbody>
</table>
Serial Connection

For serial mode, the DX123 controller uses and 3M Touch Systems RS-232 plug and play cable (P/N 7319630) or an equivalent interconnect.

One end of this cable plugs into the RS-232 connector (J104) on the DX123 controller. The other end, which has a 9-pin D connector, plugs directly into a serial COM port on your PC. The 9-pin D connector also has an input in the connector body for an external 5V power supply. The following table describes the interconnections for the 3M Touch Systems RS-232 cable.

<table>
<thead>
<tr>
<th>Serial Cable for DX123 Controllers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PC Side (9-Pin D)</strong></td>
</tr>
<tr>
<td>Pin</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>Sleeve</td>
</tr>
<tr>
<td>Pin</td>
</tr>
</tbody>
</table>

Supplying Power to the Controller

The DX123 controller must be self-powered by a separate 5 VDC or 12 VDC power input. The USB 5 V bus power is only used for the USB pull up and to establish USB communications. The controller consumes 90 mA at 5 VDC or 12 VDC; 100 mA max, ±10% regulation, with a maximum ripple and noise of 50 mV peak-to-peak.

**Note:** You need only to supply either 5V or 12V -- whichever is most convenient that will provide sufficient power for you as the integrator. Refer to the following section for information on locating power for your controller.

You supply power to the DX123 controller using the 3-pin power connector J107 (Molex 22-05-3031). Use a mating 3-pin connector (Molex 22-01-3037 and Pins 08-50-0114), pin 1 is 5 VDC, pin 2 is the GND return, and pin 3 is 12 VDC.
CAUTION

To avoid possible damage to the controller, you must provide a path for electrostatic discharge. The controller mounting hole nearest the sensor connector should be used to connect to chassis safety ground and must be attached by the shortest possible route to a good earth return (chassis) in all applications.

The controller must be properly grounded through the mounting holes. Note that there are 5 possible mounting holes on the DST board – at least two must be used.

Locating Power for the Controller

To power your controller, you need to tap a power source within the display. It is helpful to locate this power source before beginning the controller installation. A multi-meter or the display schematic can be used to locate an appropriate power source on the display's main board.

The power source must meet the following requirements:

- Minimum current supplied: 120 mA
- Maximum voltage drop allowed: 100 mV
- 50 mV peak to peak voltage ripple

To determine the display’s voltage drop at the power source conduct the following test:

1. Measure voltage across the power source contacts
2. Connect the sensor to the controller, and the controller to the power source.
3. Power up the display and allow it to warm up for at least 10 minutes.
4. Measure voltage across the power source again.
5. A separate standalone power supply can also be added for the controller.

Note: The difference in voltages before and after the wires are connected cannot exceed 100 mV. If this voltage drop is exceeded, a different tap point location must be found.

Completing Controller Mounting

Note: The method and location selected in mounting a controller internally is dependent on the mechanical design and assembly of the display being integrated. There may be several alternatives to integrating the controller. The following illustrates one mounting method that may work for some display products.

In order to mount the controller board to the housing, two mounting holes must be drilled. The mounting holes are dimensioned in the controller layout drawing below.
3M™ MicroTouch™ DX123 Controller Mounting Hole Dimensions

**Important Note:** Ensure that the two controller mounting holes are connected to the chassis ground of the display. *Ensure the star washers do not overlap the mounting hole rings.*

1. We recommend you mount the controller board to the housing using metal screws in the mounting holes nearest the sensor connection and the mounting hole nearest the controller connection.

2. Insert a metal thru-hole spacer between the controller board and the metal chassis as shown in the following diagram. These spacers will prevent the pins and/or traces on board from shorting to the chassis. Make sure the spacer diameter is less than the screw head diameter.

**Adding Spacers to the Controller Mounting**
1. Plug the sensor flex tail into the controller board, making sure that the pins are oriented in the correct direction.
2. Connect the USB or serial connector. You can also use an extension cable to run from the controller board to the display chassis bulkhead USB or serial connector.
3. Connect the 3-pin +5 VDC or 12 VDC power supply to the power connector.
4. Check the controller operation by powering up the unit. LED D203 should be on to indicate the device has power. LED D500 should toggle when touched (on one touch, off the next.)

With the video and controller boards properly mounted, all cables connected, and excess wiring cable-tied, the metal shield can be attached.

**Sensor Flex Tail Connector**

The standard 12-inch sensor flex tail has an 8-pin single row locking female connector that plugs into the controller. The calibration process sorts out left/right and up/down if the sensor is not used in the standard orientation.

If necessary, to make the sensor flex tail reach to the controller location, you can extend the length of the tail with a one-to-one, non-shielded, flat ribbon flex tail extender. The connector must be compatible with the connector manufacturer, i.e., Amp should connect to Amp. Be sure to use tin compatible contact pins.

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lower right channel 3</td>
</tr>
<tr>
<td>2</td>
<td>Upper right channel 2</td>
</tr>
<tr>
<td>3</td>
<td>Sensor voltage (+5V) power supply</td>
</tr>
<tr>
<td>4</td>
<td>Reserved for future use</td>
</tr>
<tr>
<td>5</td>
<td>A GND, 0 VDC</td>
</tr>
<tr>
<td>6</td>
<td>Sensor voltage (+5V) power supply</td>
</tr>
<tr>
<td>7</td>
<td>Upper left channel 0</td>
</tr>
<tr>
<td>8</td>
<td>Lower left channel 1</td>
</tr>
</tbody>
</table>

As mentioned earlier, it may be necessary to make changes to the metal shield and the rear display housing to accommodate the sensor flex tail. Usually it is necessary to make a hole in the shield and the housing so that the sensor flex tail can be routed through, however some models may have an existing opening that can be used.
With a sufficient opening, the sensor flex tail can be fed through the housing and the metal shield reattached.

**Note:** If a hole is drilled in the metal shield to accommodate the sensor flex tail, be sure to fold back the edges or install a grommet so that the flex tail does not fray on the sharp edges. Ensure that no metal filings fall into the electronic circuits.

**Note:** When routing the sensor flex tail through the metal shield and rear display cover, be careful to avoid the inverter and other high noise sources.

**Modifying the Display (USB or Serial)**

1. Select a location on the rear of the display’s cover for the sensor connections. Note that a serial or USB bulkhead connector and harness may also be used. You need to be able to thread the cable from outside the display in through the opening.
2. Use a center punch to place a dimple at the selected location.
3. Drill a hole using a 3/4-inch spade bit as shown below. Be sure to keep metal filings away from the electronic PCBs.
Remounting the Display Cover
1. Check the display mounting for proper adjustment. Make sure all ground wires are properly attached.
2. Check for video and power cables that originate inside the display. If these cables exist, be sure to thread them through the appropriate opening in the display cover.
3. Remount the cover to the chassis assembly.
4. Attach the screws put aside during disassembly or use new longer screws as required.

Installing the Cable Grommet
You will also need a grommet to place around the controller cable. The grommet seals the opening between the cable and the display cover.

Attach the grommet around the controller cable. Carefully insert the grommet into the mounting hole using a blunt tool.

Reassembling the Display and Cover
Once you drill the holes in the display cover for the sensor flex tail and controller, you are ready to reassemble the display.
1. Check the display mounting for proper adjustment. Make sure all wires are properly attached.

Check for video and power cables that originate inside the display. If these cables exist, be sure to thread them through the appropriate opening in the display cover. These will be reconnected through the stand.

**Note:** When routing the sensor flex tail through the metal shield and rear display cover, be careful to avoid the inverter and other high noise sources.

2. Align the display cover for reattachment to the chassis and thread the sensor flex tail through the hole.

3. Remount the cover to the chassis assembly and attach the housing screws you removed when you disassembled the display or use new longer screws as required.

**Note:** Do not tighten the screws beyond the “just tight” position. Nylon threads strip easily.

---

**Turning On Your System**

Before you turn on your custom system, ensure that all cables are connected properly and that the controller is properly mounted. Be sure to tighten all cable connector screws.

To start up your system

1. Turn on your display and computer.
2. Adjust the contrast and brightness to suit your personal preference and working environment.
3. If necessary, adjust the horizontal and vertical position controls on the display to center the image on the sensor.

---

**Status Light (LED) Diagnostics**

The DX123 controller provides two light emitting diodes (LEDs) D203 and D500 on the component side of the board to indicate the status of the sensor unit.

Normal LED operation:
- D500 indicates touch activity. If the controller senses touch activity the LED will toggle from on to off or off to on. Each touch will cause the LED to toggle.
- D203 indicates an active state when on. The LED will blink once during enumeration and then remain on. When the controller is in standby/suspend mode, the LED will be off.

**Wake on Touch (USB Only)**

If the controller is powered from a source inside the system that will not be shut down by power management, the DX123 controller will wake up the system from standby mode when touched.
Installing Software

3M™ MicroTouch™ Software includes the touch driver and control panel that enables your sensor to work with your computer. When you install this software, the correct driver for your system will automatically load. 3M Touch Systems currently supports touch drivers for most Microsoft® Windows® and Linux® operating systems.

These drivers, as well as relevant technical documentation and legacy drivers, can be found on the corporate website at www.3Mtouch.com. After the software is installed, restart your computer to load and activate the touch driver.

**Note:** After you connect your touch display and install software, you must calibrate the sensor.

When using the DX123 controller in USB mode, the controller is HID compliant and can be used without a driver on most Microsoft® Windows® operating systems. However, you must obtain the HID calibration utility from the 3M Touch Systems website to ensure proper operation.

Refer to the *3M™ MicroTouch™ MT 7 Software User Guide* (TSD-25695) for additional information.
1739L 17” LCD Rear-Mount Touchmonitor

High quality panel and choice of touch technology combined in a compact form factor

Elo’s 1739L 17” LCD rear-mount touchmonitor delivers a cost-effective touch solution for OEM’s and systems integrators, and complements Elo’s expanding family of touch solutions for applications in the retail self-service and gaming/amusement markets. This compact touchmonitor is “designed for touch” from the ground up, with Elo’s proven expertise and reliability built in, and not added as an afterthought by altering an existing monitor. The 1739L features a brilliant wide viewing angle panel to instantly grab and hold the users’ attention, whether they are checking out retail goods with a self-service kiosk or playing games in a casino or arcade. Because the enclosure is controlled by Elo’s specifications and tooling, Elo’s rear-mount monitors have a long-lasting product cycle—important for continuity through all phases of project rollouts and when servicing. It also features a unique, injection-molded minibezel with virtually invisible watertight seal, making it ideal for the rigors of public use.

Narrow borders, multiple mounting options, and a dual serial/USB touch interface add to the versatility of the 1739L. Worldwide agency approvals, as set forth on the back side of this datasheet, cover the entire monitor that is designed, built and supported by Elo, a true single source supplier.

Features

- Long lasting product cycle-enclosure controlled by Elo specifications
- 800:1 contrast ratio, and 300-nit brightness (LCD panel)
- High quality panel with 160° x 160° viewing angle
- Future generation panels phased-in without external changes
- Integrated precision minibezel with watertight 0.5 mm seal
- IntelliTouch Surface Wave, SecureTouch vandal-resistant Surface Wave, Surface Capacitive or CarrollTouch Infrared touch technology with dual serial/USB touch interface
- Mounting options including rear-mount and VESA mount
- Optional front mount and rack mount bezels
- Multilingual on-screen display (OSD)
- Worldwide agency approvals
- 3-D electronic design files available
- Fully RoHS compliant
1739L 17" LCD Rear-Mount Touchmonitor Specifications

**Case/Bezel Color**  
Steel/black

**Display**  
Size: 17.0" diagonal  
Type: Active matrix TFT LCD  
Aspect ratio: 5 x 4

**Useful Screen Area**  
Horizontal: 13.3" (338 mm); Vertical: 10.6" (270 mm)

**Monitor Dimensions**  
Width: 14.5" (368 mm)  
Height: 12.0" (306 mm)  
Depth: 1.9" (49 mm)

**Optimal (native) Resolution**  
1280 x 1024

**Colors**  
16.7 million

**Brightness**  
LCD panel: 300 cd/m² (typical); with AccuTouch: 246 cd/m² (typical); with CarrollTouch: 276 cd/m² (typical); with IntelliTouch: 276 cd/m² (typical); with SecureTouch: 273 cd/m² (typical); with Surface Capacitive: 255 cd/m² (typical)

**Response Time**  
7.2 msec (typical)

**Viewing Angle**  
Horizontal (left/right): ±80° or 160° total  
Vertical (up/down): ±80° or 160° total

**Contrast Ratio**  
800:1 typical

**Input Video Format**  
RGB analog only

**Input Sync Format**  
Separate horizontal and vertical sync, composite sync and sync-on-green

**Input Video Signal Connector**  
Mini D-Sub 15-Pin VGA type

**Input Frequency**  
Horizontal: 31.5-80.0 kHz; Vertical: 56.3-75 Hz

**Power supply**  
External DC—optional power brick (sold separately)  
Input voltage—DC: +12VDC ±5% at 2.5 A max.  
Input power connector specification (on monitor)—Type: DC Barrel Jack; Barrel inner diameter: 6.4 mm (±0.3 mm); Pin outer diameter: 2.0 mm (+0.0 -0.1 mm); Barrel depth: 8.8 mm (±0.3 mm)  
Power connector (on power brick)—Type: DC Barrel Plug; Barrel outer diameter: 5.5 mm (±0.1 mm); Pin inner diameter: 2.1 mm (±0.1 mm); Barrel length: 9.5 mm (±0.5 mm)

**Power consumption (typical)**  
30W

**Power Dissipation**  
Monitor only: 30 W typical, 36 W max.  
Monitor and power brick: 33 W typical, 40 W max.

**Temperature**  
Operating: 0°C to 40°C; Storage: -20°C to 60°C

**Humidity (noncondensing)**  
Operating: 20%-80%; Storage: 10%-90%

**Weight (approx.)**  
Actual: 8.8 lb (4.0 kg); Shipping: 11.5 lb (5.2 kg)

**Warranty**  
Monitor: 3 years  
Backlight lamp life: typical 50,000 hours to half brightness  
MTBF: 50,000 hours demonstrated

**Agency Approvals**  
UL, cUL, SEMKO, CB, CE/FCC/VCCI/C-Tick (Class B)  
On-screen display (OSD): Digital OSD or optional remote OSD with 1.8 m cable

**User’s Controls**  
Optional remote OSD: Auto/Sel, up, down, menu  
OSD buttons: menu, left, right, select, power  
OSD: contrast, brightness, H/V position, RGB (color temp), clock, phase, recall, language (English, German, Spanish, Japanese, French)  
OSD disable/enable: power, OSD menu

**Mounting Options**  
75 mm or 100 mm VESA mount  
Rear mount includes standard mounting brackets  
Front mount with optional bezel (see Accessories for details)  
Rack mount with optional bracket (see Accessories for details)

**Other Features**  
Fully RoHS compliant; patent pending bezel seal; patented touch technology

**Other Supported Resolutions**  
See www.elotouch.com for additional supported resolutions

To find out more about our extensive range of Elo touch solutions, go to www.elotouch.com, or call the office nearest you.

**North America**  
Elo TouchSystems  
800-ELO-TOUCH  
Tel 1-650-361-4800  
Fax 1-650-361-4722  
301 Constitution Drive  
Menlo Park, CA 94025-1110  
customerservice@elotouch.com

**Europe**  
Europe  
Tel +32 (0)16 35 21 00  
Fax +32 (0)16 35 21 01  
elosales@elotouch.com

**Asia-Pacific**  
Asia-Pacific  
Tel +81 (45) 478-2161  
Fax +81 (45) 478-2180  
www.tps.co.jp

**Latin America**  
Latin America  
Tel 786-923-0251  
Fax 305-931-0124  
www.elotouch.com.ar

Tyco Electronics Corporation and its Affiliates in the TE Touch Solutions business unit of the TE Connectivity Ltd. family of companies (collectively “TE”) reserves the right to change or update, without notice, any information contained herein; to change, without notice, the design, construction, materials, processing or specifications of any product; and to discontinue or limit production or distribution of any products.

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4200L 42” Interactive Digital Signage Touch Display

The 4200L Interactive Digital Signage (IDS) display combines precision Elo touch screen technology with a professional-grade, large format LCD panel. The 4200L offers System Integrators, Value-Added Resellers and Software Developers a high-performance touch solution for interactive digital displays in high traffic consumer environments.

The 42-inch 4200L is part of a new family of touch displays which bring interactivity to digital signage. The Elo TouchSystems 4200L features a seamless, zero-bezel design for an elegant appearance and the innovative Acoustic Pulse Recognition (APR) touch technology for a responsive touch experience. The display is housed in a highly durable steel chassis for a long-life of reliable and durable performance in almost any public-access location. Elo Zero-bezel APR technology recognizes touch on virtually the entire display surface, offering a full-screen interface for navigation regardless of how the display is touched—finger, prosthetic, stylus, card or pen—resulting in an efficient display canvas for almost any commercial application.

Optional high performance computer modules are well-suited for running interactive media and are available with a choice of two processing models: ECM1 with the Intel Celeron Dual-Core 2.2GHz and ECM2 with the Intel Core 2 Duo 3.0GHz. The computer modules are field-installable, easily sliding into a dedicated bay behind the touch display and locking into place with two thumbscrews. These modules make the 4200L a reliable platform that is interoperable with content management servers and support optimal partitioning of locally cached and network stored content.

Benefits
- Professional-grade hardware provides improved durability withstands rigors of public use over “consumer-type” TV displays
- Advertising and content effectiveness measured in real-time with interactive feedback
- Edge-to-edge glass design facilitates easy care and cleaning, plus dust and liquid resistance
- Power and display control functions can be locked out to prevent tampering
- Built-in speakers provide audio expansion capabilities
- Reliable and resilient APR technology delivers an exceptional touch experience
- Landscape and portrait orientations allow flexible configurations to suit a variety of design layouts
## 4200L 42” Interactive Digital Signage Touch Display

<table>
<thead>
<tr>
<th>Model</th>
<th>4200L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Useful screen area</td>
<td>Horizontal: 36.6” (930 mm); Vertical: 20.6” (523 mm)</td>
</tr>
<tr>
<td>Monitor dimensions</td>
<td>Width: 40.2” (1020 mm); Depth: 5.2” (132 mm); Height: 24.1” (613 mm)</td>
</tr>
<tr>
<td>(without stand)</td>
<td></td>
</tr>
<tr>
<td>Touch technology</td>
<td>Zero-bezel Acoustic Pulse Recognition (APR)</td>
</tr>
<tr>
<td>Speakers</td>
<td>A pair of 10 W stereo speakers facing down (in landscape mode)</td>
</tr>
<tr>
<td>Audio input connector</td>
<td>3.5 mm TRS jack</td>
</tr>
<tr>
<td>Audio input signal range</td>
<td>1 Vrms max stereo signal (standard PC line out)</td>
</tr>
<tr>
<td>Headphone output connector</td>
<td>3.5 mm TRS jack</td>
</tr>
<tr>
<td>Headphone output signal (for 1kHz signal)</td>
<td>Delivers 90 mW of power into a 32 ohm stereo load</td>
</tr>
<tr>
<td>LCD technology</td>
<td>Active matrix TFT LCD</td>
</tr>
<tr>
<td>Diagonal size</td>
<td>42”</td>
</tr>
<tr>
<td>Aspect ratio</td>
<td>16:9</td>
</tr>
<tr>
<td>On-screen display (OSD)</td>
<td>Controls: menu, up, down, select; settings: brightness, contrast, clock, phase, auto-adjust, H-position, V-position; maintain aspect ratio, sharpness, color temperature, OSD timeout, OSD language, mounting, OSD H-position, OSD V-position, volume, mute, recall defaults, video source, audio source; Languages: English, French, Italian, German, Spanish, Simplified Chinese, Traditional Chinese, Japanese; Lockouts: OSD, power; accessible through switches on the rear, or through the standard Elo OSD control box.</td>
</tr>
<tr>
<td>Stand options</td>
<td>Optional stand available, order Part Number E448725</td>
</tr>
<tr>
<td>Mounting options</td>
<td>VESA MIS-F, 600 x 400, Y, 6, 90</td>
</tr>
<tr>
<td>Native (optional) resolution</td>
<td>1920 x 1080</td>
</tr>
<tr>
<td>Other supported resolutions</td>
<td>640 x 480 at 60 Hz; 720 x 480 at 60 Hz; 720 x 576 50 Hz; 800 x 600 at 56, 60 Hz; 1024 x 768 at 60 Hz; 1280 x 720 at 50, 60 Hz; 1280 x 960 at 60 Hz; 1280 x 1024 at 60 Hz; 1360 x 768 at 60 Hz; 1366 x 768 at 60 Hz; 1440 x 900 at 60 Hz; 1680 x 1050 at 60 Hz; 1920 x 1080 at 50, 60 Hz</td>
</tr>
<tr>
<td>Colors</td>
<td>16.7 million</td>
</tr>
<tr>
<td>Brightness (typical)</td>
<td>LCD panel: 700 nits; with APR: 600 nits</td>
</tr>
<tr>
<td>Response time (Tr + Tf) total (typical)</td>
<td>6.5 msec</td>
</tr>
<tr>
<td>Viewing angle (typical)</td>
<td>Horizontal: ±89° or 178° total; Vertical: ±89° or 178° total</td>
</tr>
<tr>
<td>Contrast ratio (typical)</td>
<td>3500:1</td>
</tr>
<tr>
<td>Input video format</td>
<td>Analog VGA, HDMI 1.3</td>
</tr>
<tr>
<td>Input video signal connector</td>
<td>Female DE-15 for Analog VGA; HDMI Type A receptacle for HDMI</td>
</tr>
<tr>
<td>Input frequency</td>
<td>Horizontal: 32-80 kHz; Vertical: 47-61 Hz</td>
</tr>
<tr>
<td>Power supply</td>
<td>Internal AC</td>
</tr>
<tr>
<td>Input voltage</td>
<td>100-240 VAC, 50/60 Hz</td>
</tr>
<tr>
<td>Power connector</td>
<td>IEC 60320 C14</td>
</tr>
<tr>
<td>Power consumption (typical)</td>
<td>Monitor only: ON, max. audio, 100 V/60 Hz: 230 W; SLEEP, 100 V/60 Hz: 12.5 W; OFF, 100 V/60 Hz: 11.5 W</td>
</tr>
<tr>
<td>Temperature</td>
<td>Operating: 0°C to 40°C (32°F to 104°F); Storage: -20°C to 50°C (-4°F to 122°F)</td>
</tr>
<tr>
<td>Humidity (non-condensing)</td>
<td>Operating: 20-80%; Storage: 10-90%</td>
</tr>
<tr>
<td>Weight</td>
<td>Actual: w/o Computer Module: 74.7 lb (33.9 kg); with Computer Module: 80.5 lb (36.5 kg)</td>
</tr>
<tr>
<td>Shipping</td>
<td>99.7 lb (45.2 kg) (Computer Module shipped separately)</td>
</tr>
<tr>
<td>Shipping box dimensions</td>
<td>Width: 47.0” (1194 mm); Depth: 12.0” (305 mm); Height: 31.0” (788 mm)</td>
</tr>
<tr>
<td>Warranty</td>
<td>3 years</td>
</tr>
<tr>
<td>Backlight lamp life (typical)</td>
<td>50,000 hours to half-brightness</td>
</tr>
<tr>
<td>MTBF</td>
<td>50,000 hours demonstrated</td>
</tr>
<tr>
<td>Agency approvals</td>
<td>Argentina S-mark; Australia C-Tick; Canada cUL; China CCC; Mexico NOM; Russia &amp; CIS GOST; United States UL; Elo declarations; Europe CE; Canada IC; Japan VCC; United States FCC</td>
</tr>
</tbody>
</table>

To find out more about Elo’s extensive range of touch solutions, go to www.elotouch.com, or call the office nearest you.
fit PC 2 - do without wasting

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fit-PC2i Specifications

Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU</strong></td>
<td>Intel Atom Z550 2GHz / Z530 1.6GHz / Z510 1.1GHz</td>
</tr>
<tr>
<td><strong>Chipset</strong></td>
<td>Intel US15W SCH</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>1GB / 2GB DDR2-533 on-board</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>Internal bay for 2.5” SATA HDD miniSD socket</td>
</tr>
<tr>
<td><strong>Display &amp; Graphics</strong></td>
<td>Intel GMA500 graphics acceleration</td>
</tr>
<tr>
<td></td>
<td>Full hardware video acceleration of H.264, MPEG2, VC1, and WMV9</td>
</tr>
<tr>
<td></td>
<td>DVI Digital output up to 1920 x 1200 through HDMI connector</td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>Line-out, line-in, mic</td>
</tr>
<tr>
<td></td>
<td>5.1 Channels S/PDIF</td>
</tr>
<tr>
<td></td>
<td>(based on Realtek ALC662)</td>
</tr>
</tbody>
</table>
### Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewable Size Image</td>
<td>15&quot;</td>
</tr>
<tr>
<td>Active Display Area (mm)</td>
<td>304.1(H)x228.1(V)</td>
</tr>
<tr>
<td>Pixel Pitch (mm)</td>
<td>0.297(H)x0.297(V)</td>
</tr>
<tr>
<td>Number of Pixels</td>
<td>1024x768</td>
</tr>
<tr>
<td>Contrast Ratio</td>
<td>400:1 (typ.)</td>
</tr>
<tr>
<td>Display Color</td>
<td>16.2M (6bit+FRC)</td>
</tr>
<tr>
<td>Brightness (cd/m²)</td>
<td>250 (typ.)</td>
</tr>
<tr>
<td>Viewing Angle (CR &gt;= 10)</td>
<td>-70<del>70(H), -60</del>65(V)</td>
</tr>
<tr>
<td>Response Time</td>
<td>16ms</td>
</tr>
<tr>
<td>Synchronization Range Horizontal/Vertical</td>
<td>31.5<del>60.0KHz/60</del>75Hz</td>
</tr>
<tr>
<td>Recommended Resolution</td>
<td>1024x768@60Hz/75Hz</td>
</tr>
<tr>
<td>Signal Connector</td>
<td>15 pin D-Sub</td>
</tr>
<tr>
<td>Power Source</td>
<td>AC 100~240V, Universal, 10%</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>25W typical, normal operation</td>
</tr>
<tr>
<td>Power Management</td>
<td>VESA DPMS Compliant</td>
</tr>
<tr>
<td>Plug &amp; Play</td>
<td>VESA DDC 1/2B</td>
</tr>
<tr>
<td>Optional Video Input</td>
<td>S-Video, Composite</td>
</tr>
<tr>
<td>Optional DVI Input</td>
<td>Yes</td>
</tr>
<tr>
<td>Optional Touch Screen</td>
<td>Resistive, Capacitive, SA, W, IR</td>
</tr>
</tbody>
</table>

### Remarks

@series = VGA Input only

### Mechanical Drawing

13th Floor Media  
13601 Preston Rd. Ste 412  
Dallas, TX 75240  
PH: 214-966-0084
The Luxury PI stands out above all other elevator displays by being the most flexible position indicator available. The Luxury PI allows the representation of much more than just elevator position. The Luxury PI is a multi-functional unit designed to display both custom graphics, such as advertisements or building information, and text-based information, such as time and temperature displays.

The Luxury PI software is used to design displays for use with an Luxury PI display. The Luxury PI software allows you to design, organize and implement the information for your displays in a simple, intuitive way and then allows you to update your remote Luxury PI displays whenever necessary. The software also allows you to customize your displays with special features, such as composite video, scrolling data, and stock ticker information. The software is so flexible that you can even determine where each of the display elements appear on the screen.

There is no on-going monthly charge by Otis for this service. Once the units are installed, the kind of graphics displayed and the frequency with which they are changed are entirely up to the building owner. Otis will be glad to help design the first set of graphics for your Luxury PI, but never has to be involved in the process again. With your Luxury PI, your building can have the most unique screen style displays on the market today.

If you would like more information about the Luxury PI, give us a call and our sales staff will be glad to help you.
15" OTIS LUXURY PI SERIES

The Otis Luxury PI is the most flexible position indicator available. With the Luxury layout software, you can customize your own position indicator by selecting background colors and textures, fonts, and arrow styles. This system is so flexible you can even determine where the display elements appear on the screen. In addition to design flexibility, the Otis Luxury PI can display floor, priority, and time-based messages.

TYPICAL APPLICATIONS:
- Car-op panel
- Transom car
- Hall

FEATURES:
- Passing chime output
- Live video option
- Self testing
- Low profile
- Luxury Designer software
- Luxury Transfer software
15" LUXURY PI

The Otis Luxury PI is the most flexible position indicator available. With the Luxury layout software, you can customize your own position indicator by selecting background colors and textures, fonts, and arrow styles. This system is so flexible you can even determine where the display elements appear on the screen. In addition to design flexibility, the Otis Luxury PI can display floor, priority, and time-based messages.

Features:
- Car-op panel
- Transom car
- Hall
- Passing chime output
- Live video option
- Self testing
- Low profile
- Luxury designer software
- Luxury transfer software

Typical Applications
- Car-op panel
- Transom car
- Hall

Series:
- "L" = MAIN
- "V" = VIDEO
- "A" = AUXILIARY PANEL LINK

Driver Options:
Use OEMS-X only if 411 System is using the EMS option

To Order: OX150-AXX

Typical Applications:
- Car-op panel
- Transom car
- Hall

Features:
- Passing chime output
- Live video option
- Self testing
- Low profile
- Luxury designer software
- Luxury transfer software
15" LUXURY PI

The Otis Luxury PI is the most flexible position indicator available. With the Luxury layout software, you can customize your own position indicator by selecting background colors and textures, fonts, and arrow styles. This system is so flexible you can even determine where the display elements appear on the screen. In addition to design flexibility, the Otis Luxury PI can display floor, priority, and time-based messages.

Typical Applications
- Car-op panel
- Transom car
- Hall

Features:
- Passing chime output
- Live video option
- Self testing
- Low profile
- Luxury designer software
- Luxury transfer software

UNIT IS 3.50" DEEP.
REMOTE : 3.125" DEPTH  AUXILIARY: 3.125" DEEP.
Additional space is required for wiring.

TO ORDER: OX150-BXX
SERIES:
"L" = MAIN
"V" = VIDEO
"A" = AUXILIARY PANEL LINK

 INTERFACE:
"O" = OCDL
"E" = OEMS

TYPE:
"M" = MAIN
"R" = REMOTE

DRIVER OPTIONS:
USE OEMS-X ONLY IF 411 SYSTEM IS USING THE EMS OPTION
OELD TFT

(BACK VIEW)

* - ITEMS INSTALLED ON VIDEO VERSION ONLY

BNC COMPOSITE VIDEO INPUT*

VIDEO INPUT SELECTION*

TWISTED PAIR COMPOSITE VIDEO INPUT*

VIDEO GAIN*

PASSING CHIME PORT

US PORT

USB EXT CABLE CONNECTOR

AUXILIARY USB PORT

MICRO COMM INPUT

ADDRESS ROTARY SWITCHES

DIP SWITCH

MESSAGE MODULE PORT

AUDIO INPUT*

8-OHM AUDIO OUTPUT*

AUDIO VOLUME CONTROL*

OEMS DATA OR LIVE DATA

RS485 GRAPHICS DATA CONNECTOR

CABLE FOR AUX. DISPLAY CONNECTION

AUX. DISPLAY CONNECTOR

C.E. SUPPLIED 3-FOOT CABLE

110/220 VAC POWER INPUT

105/220 VAC POWER INPUT

POWER INPUT

C.E. ELECTRONICS INC.
2107 Industrial Drive
Bryan, Ohio 43506
(419) 636-6705

DATE DRAWN:
APPROVED BY:
C.E. ELECTRONICS, INC.
2107 Industrial Drive
Bryan, Ohio 43506
(419) 636-6705

BOARD NUMBER:

DRAWN BY:

REQUESTED BY:

PRODUCT DWG. NO.

REV:

LAST DATE REVISED:

03/31/10

OEM DATA OR LIVE DATA

SELF TEST

AUDIO OUTPUT

TOTAL BLK

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

DEFAULT SETTINGS

ROTARY SWITCH S2

ROTARY SWITCH S3

ARM CODE VERSION

DISPLAY CODE VER

OS VERSION

ETX MODULE

BRACKET NO.

DIP SWITCH DETAIL

ARM CODE VERSION _____________

DISPLAY CODE VER _____________

OS VERSION _____________

ETX MODULE _____________

BRACKET NO. _____________

SELF-TEST

AUDIO OUTPUT

TOTAL BLK

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

DEFAULT SETTINGS

ROTARY SWITCH S2 _____________

ROTARY SWITCH S3 _____________
NORMAL RUN MODE

DIP SWITCH SETTINGS

DIP Switch 1 - Test Mode
Off = Normal Run Mode
On = Test Mode. The display will cycle up and down through all programmed floors (Front Side Only).

DIP Switch 2 - Audio Output
Off = Audio Software Controlled
On = Audio Enabled

DIP Switch 4, 3 - RS485 Configuration Link Baud Rate (Must match Transfer Program)

<table>
<thead>
<tr>
<th>DS4</th>
<th>DS3</th>
<th>BAUD RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>9600 (Default)</td>
</tr>
<tr>
<td>OFF</td>
<td>ON</td>
<td>19200</td>
</tr>
<tr>
<td>ON</td>
<td>OFF</td>
<td>38400</td>
</tr>
<tr>
<td>ON</td>
<td>ON</td>
<td>57600</td>
</tr>
</tbody>
</table>

DIP Switch 6, 5 - Watchdog Period (Length of time PIC waits for response from Elite display before resetting the display)

<table>
<thead>
<tr>
<th>DS6</th>
<th>DS5</th>
<th>Wait Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>One Minute</td>
</tr>
<tr>
<td>OFF</td>
<td>ON</td>
<td>Two Minutes</td>
</tr>
<tr>
<td>ON</td>
<td>OFF</td>
<td>Three Minutes (Default)</td>
</tr>
<tr>
<td>ON</td>
<td>ON</td>
<td>Never Reset Display</td>
</tr>
</tbody>
</table>

DIP Switch 7 - Converter Board Display Mode (does not affect TFT screen)
Off = Scan Slot Data Displayed
On = ASCII Data Displayed

NOTE: Left Cube Dot = Priority Message Present
Right Cube Dot = Door Strobe Active

DIP Switch 8 - Single/Multi-Car
Off = Single Car
On = Multi-Car

ROTARY SWITCH SETTINGS

Rotary Switch S2 - Used for USB transfers. Default setting is 0.

Rotary Switch S3 - Unit Address
This switch sets the address of the Elite PI unit. The default is address 1, which is switch setting 0.

NOTE: This address must match the Transfer program setting.

<table>
<thead>
<tr>
<th>S3</th>
<th>Unit Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
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<td>3</td>
<td>4</td>
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<td>6</td>
<td>7</td>
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<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

VIDEO TEST MODE

Video test mode uses a combination of DIP switch and rotary switch settings. Please write down the initial setting of the S2 and S3 rotary switches before starting this process.

Entering Video Test Mode
Set DIP switch 1 to OFF, then set S2 and S3 to position F. Next, set DIP switch 1 to ON. The Live Video Adjustment menu will appear on the screen with Brightness highlighted.

Choosing Item to Adjust
The highlighted item is the current selection. To choose a different item to adjust, set S2 as shown below:

<table>
<thead>
<tr>
<th>S2 Adjustment</th>
<th>S2 Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Video Standard</td>
</tr>
<tr>
<td>A</td>
<td>Vertical Stretch</td>
</tr>
<tr>
<td>9</td>
<td>Default</td>
</tr>
<tr>
<td>8</td>
<td>Original</td>
</tr>
</tbody>
</table>

Making Adjustments
Highlight the item to change and turn S3 for the best display quality.

Default and Original Settings
Default will reset the display to the factory default settings, and Original will cancel any changes made and restore the values stored before entering Video Test mode. Highlight the item to use, turn S3 in either direction, and wait five seconds. The display will reset to the default or previous settings.

Exiting Video Test Mode
To save the new video settings and exit Video Test, set DIP switch 1 to OFF. Reset S2 and S3 to the values recorded before starting the process.

Video Gain
S5 and S4 control the video gain. Use a shunt to short the pins of the switches as shown in the table below (OFF = No Shunt, ON = Shunt):

<table>
<thead>
<tr>
<th>S5</th>
<th>S4</th>
<th>VIDEO GAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>No Gain (Default)</td>
</tr>
<tr>
<td>OFF</td>
<td>ON</td>
<td>Lowest Gain</td>
</tr>
<tr>
<td>ON</td>
<td>OFF</td>
<td>Highest Gain</td>
</tr>
</tbody>
</table>

Adjusting Audio Volume
If audio is needed, connect an 8-ohm speaker to J1 on the converter board. Set the volume by adjusting Volume pot R2 (3/4-turn pot). Adjust the pot clockwise to increase the volume.

CABLE NOTES:
1) Connections should be made using shielded, twisted-pair wires. We recommend using Consolidated 24-gauge, 3-pair shielded cable, part no. CL-5756 or equivalent.
2) Only one wire of the twisted pair is used for signal common.
3) The audio input cable should be a shielded, twisted pair cable.
4) BNC composite video cable - 75-ohm RG6 recommended.
5) Twisted pair video cable - Unshielded twisted-pair wire recommended.
Zebra® TTP 2000
Kiosk Receipt Printer

Technical Manual
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About This Manual

Updating

This manual will be updated as, from time to time, printer functions and features may be added or amended. You will always find the most recent edition on our web site at www.zebra.com.

If you require functions not found in this manual edition, please contact Technical Support for your region or the Zebra partner the printer was purchased from.
Contacts

Technical Support via the Internet is available 24 hours per day, 365 days per year.

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E-mail address: emb@zebra.com

Subject line: Emaillist
Self Service Knowledge Base: www.zebra.com/knowledgebase
Online Case Registration: www.zebra.com/techrequest

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<th>Regional Headquarters</th>
<th>The Americas</th>
<th>Europe, Middle East, and Africa</th>
<th>Asia Pacific and India</th>
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<tr>
<th>Technical Support</th>
<th>For questions on the operation of Zebra equipment and software, please call your distributor. For additional assistance, contact us. Please have your model and serial numbers available.</th>
<th>For back-to-base service and repair.</th>
<th>For Zebra product training courses.</th>
<th>For product literature and distributor and dealer information.</th>
<th>For printers, parts, media, and ribbon, please call your distributor or contact us.</th>
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<td>T: +1 877 ASK ZEBRA (275 9327) F: +1 847 913 2578 Hardware: <a href="mailto:ts1@zebra.com">ts1@zebra.com</a> Software: <a href="mailto:ts3@zebra.com">ts3@zebra.com</a> Kiosk printers: T: +1 866 322 5202 E: <a href="mailto:kiosksupport@zebra.com">kiosksupport@zebra.com</a></td>
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<th>Repair Service Department</th>
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<td>T: +1 877 ASK ZEBRA (275 9327) F: +1 847 821 1797 E: <a href="mailto:repair@zebra.com">repair@zebra.com</a> To request a repair in the U.S., go to <a href="http://www.zebra.com/repair">www.zebra.com/repair</a>.</td>
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<td>T: +44 (0) 1628 556037 F: +44 (0) 1628 556005 E: <a href="mailto:mseurope@zebra.com">mseurope@zebra.com</a></td>
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</tr>
</tbody>
</table>

Key:
T: Telephone
F: Facsimile
E: E-mail
The TTP 2000 series are kiosk printers for 58 to 82.5 mm paper using direct thermal printing. All models feature an integrated guillotine cutter, control board, and a looping presenter with a built-in retract-and-retain function. The print speed is up to 150 mm per second and the presenting speed 300 mm per second to ensure high throughput.

The print head can easily be opened to give the operator access to the paper path and print head for maintenance purposes.

**Figure 1 • Principle of Operation**
The communication interface of the control board differs between the versions of TTP 2000:

<table>
<thead>
<tr>
<th>Interface</th>
<th>TTP 2010</th>
<th>TTP 2020</th>
<th>TTP 2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial</td>
<td>Parallel</td>
<td>USB</td>
<td></td>
</tr>
</tbody>
</table>

A printer driver for Microsoft Windows™ is available, and the USB and Parallel version of the printer is compatible with the Plug and Play standard.

The printer’s control command language makes it easier to print directly from the kiosk software without using a driver.
Looping Presenter

The TTP 2000 series printers feature a looping presenter mechanism with a built-in retract-and-retain function. The following illustrations provide an overview of the functionality of the various stages of printer operation.

• It handles documents of various lengths by storing the printed paper in a loop.

• It holds the printout until fully printed and cut before presenting the completed printout to the customer.

• A portion of the printout is presented. When the customer takes the receipt, the printer detects the motion of the paper and issues the rest of the receipt.

• The retract-and-retain function can retract uncollected printouts and drop them in a wastebasket inside the kiosk. Retracts are reported to the driver so any remaining data for that printout can be deleted.
Controls

Figure 3 • Rear View

The Feed button and indicators are duplicated on both sides of the printer so that they are easily accessible regardless of how the printer is installed.

Feed Button

The blue Feed button has several functions:

- Press and release will feed, cut, and present a complete page.
- Any data in the print buffer will be printed. If the buffer is empty the page will be blank. In black-mark mode, the page will be synchronized with the black-mark.
- On printer with firmware 3.83 and higher, press and hold Feed for three seconds while turning on the power, or press and hold Feed just after closing the print head, will print a self-test printout.
- On printers with old firmware, lower than version 3.83, press and hold Feed while turning on the printer or press and hold Feed just after closing the print head, to print a self-test printout (See Making a Self-Test Printout on page 26).
- Press and hold Feed while closing the print head and the printer will enter top of form sensor calibration mode (see Black Mark Calibration Process on page 103).
Power Indicator

When the green power indicator is illuminated, a 24V supply is connected to the printer.

Status Indicator

The orange status indicator has several functions:

- **ON constantly** — the printer is operational
- **Flash, flash, pause, flash, flash** — is the warning-code for paper low. The warning-code is reset automatically when the condition causing it is removed. This behavior can be enabled by setting parameter 52 (Warning Level) to 001.
- **Flashes rapidly** — indicates error. Press and hold the Feed button and the number of flashes will reflect the status-code.

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Presenter jam, paper cannot be ejected / retracted</td>
</tr>
<tr>
<td>2</td>
<td>Cutter cannot return to home position</td>
</tr>
<tr>
<td>3</td>
<td>Out of paper</td>
</tr>
<tr>
<td>4</td>
<td>Print Head lifted</td>
</tr>
<tr>
<td>5</td>
<td>Paper feed error (under head)</td>
</tr>
<tr>
<td>6</td>
<td>Temp error, print head is above 60°C</td>
</tr>
<tr>
<td>7</td>
<td>Paper jam during present</td>
</tr>
<tr>
<td>8</td>
<td>Paper jam during retract</td>
</tr>
<tr>
<td>10</td>
<td>Black mark not found (on media load)</td>
</tr>
<tr>
<td>11</td>
<td>Black mark calibration error</td>
</tr>
<tr>
<td>Fast flashes</td>
<td>Checksum error at firmware loading</td>
</tr>
<tr>
<td>Steady light</td>
<td>Wrong firmware type</td>
</tr>
</tbody>
</table>

Status codes are reset when:

- the conditions causing them are removed
- the printer is power cycled (turned off/on)
- the print head is lifted and then lowered to clear a paper jam.
Installing a Paper Guide

The TTP 2000 printers require a paper guide for proper operation. This paper guide allows the printer to be configured for use with 58, 60, 80, or 82.5 mm width media. The printer senses which paper guide is fitted and adjusts to it automatically. The TTP 2000 printers are delivered without paper guide fitted.

1. Select the paper guide you want to install.

   **Note** • Evaluation kits contain all sizes of paper guide that are available. For regular volume deliveries, the appropriate guide must be ordered separately. The printer will not operate properly without a guide.

2. Open the print head by pushing green print head lock plate towards the rear of the printer and lifting up the print head, see Figure 22, *Opening the Print head*, on page 32.

3. Loosen the screw on the backplate of the printer. Insert the T-shaped tab of the printer guide into the T-hole and fasten the screw.

4. Close the print head.
Installation Considerations

The TTP 2000 printer is designed to be installed in an enclosure such as a self-service kiosk.

**Caution** • NEVER use screws that go into the printer more than 4 mm! Longer screws will damage the electronics inside.

Orientation

The TTP 2000 can be installed horizontally or vertically. Vertical installation is suitable for narrow kiosk designs. The printer can be programmed to present the receipt from either of the two output paths, retract and standard. The standard output becomes the retract, and the retract output feeds the printout to the customer.

The printer can be installed in different orientations. Set parameter n57 to the appropriate setting and the printer adapts to its new orientation. Refer to **System on page 96** for more information.

**Figure 5 • Orientation Options for Installation**

![Orientation Options for Installation](image)

**Note** • In vertical mode the printer does not loop the paper but stores it hanging down, then cuts and ejects vertically when the printout is ready.
Quick-Fit Hubs

The printer attaches to the kiosk using two screws or slides into place using the optional quick-fit hubs.

**Caution** • NEVER use screws that go into the printer more than 4 mm! This will damage the electronics inside.
Using a Zebra Roll Holder

Roll holders for the TTP 2000 series printers can accommodate 58, 60, 80, or 82.5 mm width media.

Zebra roll holders offer a number of paper roll positions including behind and below the printer, ensuring quick and easy installation in a wide range of self-service kiosks. One example is the Wall Mount roll holder shown below with the quick-fit hub kit which allows you to easily attach or remove the printer from the roll holder. See Chapter 10 for more detailed information on Zebra roll holders available for the TTP 2000 series printers.
Design Your Own Mounting

The illustration below gives an example of a printer-mounting shelf. See Figure 33, Printer Dimensions (Measurements), on page 125, and the 3D solid models and outline drawings for CAD that are available on http://www.zebra.com.

Figure 8 • Example of a Simple Shelf For Fastening a Standard Printer Using Quick-fit Hubs and a Leaf Spring Retainer (Order No. 01473-000)

Additional space is required for paper loading and paper jam removal. Consider mounting the printer on a movable platform so that the printer can be maintained outside the printer enclosure.

**Note** • The paper entry angle must be set properly to avoid paper jams in the presenter. Refer to Paper on page 121 for the specification.

**Caution** • NEVER use screws that go into the printer more than 4 mm! This will damage the electronics inside.
Electrostatic Discharges and Earth Currents

Preventing ESD and earth currents from affecting the printer operation requires proper connection of the printer chassis to protective earth through a mounting platform or through a separate earth conductor.

Ambient Light

There is an optical sensor 20 mm behind the paper exit at the front of the printer.

To ensure proper printer operation, design the printer enclosure so that it prevents direct sunlight or light from indoor lamps from reaching the sensor through the paper exit.
Installing a Paper-Low Sensor (Optional)

A paper-low sensor alerts the system when a certain length of paper remains on the roll. The purpose of this sensor is to get an early alert so that you can replace the paper roll in time in remotely located kiosks.

All paper roll holders supplied by Zebra can be equipped with paper-low sensors. Mount the paper-low sensor to the roll holder and connect the cable to the paper-low connector at the back of the printer.

![Diagram of Paper-low Sensor Connection](image1)

![Diagram of Location of Paper-low Connector](image2)
Connecting to the Computer

**Caution** • Using a non-approved cable with the printer may void the FCC and other EMC approvals of the printer.

**Figure 11 • Location of interface connector**

Connecting the TTP 2010

Connect the printer to the serial port of the computer using Zebra serial cable, Part Number 10825-000. This cable is configured to work properly with our serial printers.

**Figure 12 • Serial Interface Cable 10825-000**

Connecting the TTP 2020

Connect the printer to the parallel port of the computer using Zebra parallel cables, Part Number 01366-000 or 01366-090. These cables are configured to work properly with our parallel printers.
Connecting to the Computer

**Note** • The printer end of the cable should have an IEEE-1284 type C, 36-pole mini Centronics, with clip latches, see *Parallel, TTP 2020* on page 111 for pin assignment.

**Figure 13 • IEEE-1284 Cable with Type A and Type C Connectors**

**Connecting the TTP 2030**

Connect the printer to the USB port of the computer. A suitable cable is available from Zebra, Part Number 105850-028.

**Figure 14 • USB Cable with Type A and Type B Connectors**
Connecting the Power

Use the appropriate Zebra power supply (see Figure 41 on page 132 and Figure 42 on page 132 for illustration and part number).

1. **Caution** • Connecting the printer to an incorrect voltage can result in electric shock and damage to the printer.

   On power supplies with line voltage selector, make sure it is set to your local line voltage.

2. **Caution** • Never hot connect the 24V cable. This will cause damage to the printer electronics or the power supply.

   Connect the cable from the power supply to the power connector on the back of the printer.

3. Connect the power cable to the line outlet.

4. Turn **ON** the power.

**Table 1 • Current Consumption**

<table>
<thead>
<tr>
<th>Mode</th>
<th>58-60 mm paper width</th>
<th>80 – 82.5 mm paper width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idle</td>
<td>150 mA</td>
<td>150 mA</td>
</tr>
<tr>
<td>Standard text printing</td>
<td>2 A average</td>
<td>3 A average</td>
</tr>
<tr>
<td>All black printing</td>
<td>6 A</td>
<td>8.5 A</td>
</tr>
</tbody>
</table>
Making a Self-Test Printout

A Self-Test Printout provides a printout showing information specific to the printer, including:

- Firmware version
- Control board (PCA) revision
- Paper width
- Serial number
- Installed fonts and logotypes
- Parameter settings
- Barcode support

To make a Self-Test Printout:

1. Enter Self-Test Mode using one of the following methods:

<table>
<thead>
<tr>
<th>If...</th>
<th>Then...</th>
</tr>
</thead>
<tbody>
<tr>
<td>the printer has firmware version 3.83 or higher</td>
<td>Press and hold the Feed button for 3 seconds.</td>
</tr>
</tbody>
</table>
| the printer has firmware lower than version 3.83   | a. Press and hold the Feed button just after closing the print head.  
|                                             | b. See Figure 16. Press and hold the Feed button (1) while turning on the power (2) to the printer.  
|                                             | c. Hold down the Feed button until printing starts. Each successive time the Feed button is pressed will produce an additional Self-Test printout until Self-Test Mode is exited.  
|                                             | d. Exit Self-Test Mode by power cycling the printer (turning the power off then on again). If the power switch is not easily accessible, open and close the print head. |
Figure 16 • Locate the Feed Button and On/Off Switch

Self-test

1. Locate the Feed Button and On/Off Switch.
2. Press the Feed Button to initiate the self-test.
Customizing the Self-Test Printout

The self test printout starts with a text line and a Zebra logotype. This logotype is a printout of the logotype stored in position 0. To customize self-test printouts, delete all logotypes and store a custom logotype in position 0. Refer to Logotypes on page 74 for more information.

Figure 17 • Logotype No. 0 is printed on the self test printout.

Installing a Printer Driver

Installing a Paper Roll

1. Turn the new paper roll as shown in Figure 18. The paper should be inserted into the printer with the temperature-sensitive side up.

   **Figure 18 • Paper Roll Orientation**

   ![Paper Roll Orientation Diagram]

   - Temperature-sensitive coating

2. Tear off a full turn of the paper from the new paper roll.

   **Caution** • This is important since the outer end of the paper is usually fixed to the roll with glue or other adhesive substance that might cause a paper jam or print head damage.

   **Figure 19 • Tear Off a Full Turn from the New Paper Roll**

   ![Tear Off a Full Turn Diagram]

   - Glue or similar substance

3. Make sure the printer is turned ON.
4. Cut the paper at a suitable angle. See Figure 20.

**Figure 20 • Suitable Paper Edge for Auto Load**

![Suitable Paper Edge for Auto Load](image)

**Important** The paper sensor for 58 mm and 60 mm paper is at the same side as the interface connector, while the sensor for 80 mm and 82.5 mm paper is on the power connector side. If the paper is cut in a direction opposite to that as shown in the figure above, the sensor will not detect the paper.

5. Insert the paper through the paper entry opening at the back of the printer.

   The printer will now feed, cut and eject a printout, and then automatically go on-line.

**Figure 21 • Insert the New Paper**
Clearing Paper Jams

Should a paper jam occur, follow the procedure below:

1. Open the print head by pressing the green release lever toward the rear of the printer.
2. Lift the print head.

3. Remove all jammed paper and make sure the paper path is clear before closing the print head.
There are two ways of generating a printout with the TTP 2000 printer: using the KPL Control Language or using a printer driver.

| **KPL Control Language** | When operating in this mode, you have direct control over what the printer does using KPL command sequences. The printer has two operation modes you can choose from. In variable page mode, the printer can act as a simple word processor, printing text that it receives. It can also print some types of barcodes and basic graphics in this mode. The selection of fonts and barcode types that are available are limited to what is stored in the flash PROM and the firmware of the printer. In this mode, information is printed in the same sequence as it is received. In fixed page mode, you can place rotated text, barcodes, images, and ruled lines. This mode provides more flexibility than variable page mode, but is limited by available printer memory. Printout elements can be specified in any order. You instruct the printer when your layout is complete, and it is all printed at once. Selection of the mode is controlled by the setting of parameter n36. (Refer to Document Mode on page 89 for more information about parameter n36) Use the Zebra Toolbox (available from zebra.com) to easily build text oriented designs. |
| **Printer Driver** | All TTP 2000 printers can print documents through a driver. When a Windows driver is used, you can use any Windows program to design the ticket with text, graphics, barcodes or whatever you want to print and in any orientation. When using a driver, printout is not limited by printer memory. The Windows driver issues all the necessary commands. By setting up printing preferences in the driver you select how the printer should cut and present the printout. |
Figure 24 • Printout Styles

Text can be printed in any orientation, font, and size.

Graphics can be rotated, color images converted to gray scale, etc.

Bar codes can be added.

Lines can be added.
How the Commands are Described

Mnemonic

Is the popular command name that should be easy to remember.

Hex

Give the command in hex representation

Decimal

Give the command in decimal representation

Values

n1, n2, etc. represent values that you specify to control how the command behaves. These are different for each command and are explained in the text that follows each command description.

Examples

Command examples are formatted in Courier and typed in the same way as used in the Zebra Toolbox:

\(<\text{ESC}>\&P<1><19>\)

Where \(<\text{ESC}>\) means the escape character 27 (hexadecimal 1B). Numbers between less-than and greater-than characters, for example \(<1><19>\), means 1 and 19 decimal. When the numbers indicate a hex value, a leading h and then a space is placed before the hex value (\(<h\ 1><h\ 13>\).

Example • \(<65>\), \(<h\ 41>\) and A are three different ways of expressing the character A.
Two-Byte Character Definitions

Some commands and parameters are used with a two-byte value definition because the internal structure of the printer's firmware limits access to values greater than 255.

To represent values greater than 255 in this two-byte format, divide the value by 256. The whole number (quotient) is the value of the leading byte and the remainder (modulo) is the value of the trailing byte.

**Example** • To represent 731 in two-byte notation, divide 731 by 256.

\[
731 \div 256 = 2 \text{ with a remainder of } 219 \quad (2 \times 256 + 219 = 731)
\]

Therefore, the two-byte representation of 731 is `<2><219>`.
## Summary of Control Codes & Escape Sequences

**Table 2 • Control Codes and Escape Sequences in Alphabetical Order**

<table>
<thead>
<tr>
<th>Command</th>
<th>Hex</th>
<th>Decimal</th>
<th>Function</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESC #</td>
<td>1B 23</td>
<td>27 35</td>
<td>Calibrate TOF Sensor</td>
<td>page 39</td>
</tr>
<tr>
<td>ESC Z</td>
<td>1B 5A</td>
<td>27 90</td>
<td>Go to next Top of Form</td>
<td>page 39</td>
</tr>
<tr>
<td>ESC o n1</td>
<td>1B 6F n1</td>
<td>27 111 n1</td>
<td>Text and logotype orientation</td>
<td>page 40</td>
</tr>
<tr>
<td>ESC N n1</td>
<td>1B 4E n1</td>
<td>27 78 n1</td>
<td>Align Text</td>
<td>page 40</td>
</tr>
<tr>
<td>BS</td>
<td>08</td>
<td>8</td>
<td>Backspace</td>
<td>page 44</td>
</tr>
<tr>
<td>CAN</td>
<td>18</td>
<td>24</td>
<td>Cancel</td>
<td>page 44</td>
</tr>
<tr>
<td>CR</td>
<td>0D</td>
<td>13</td>
<td>Carriage return</td>
<td>page 44</td>
</tr>
<tr>
<td>EM n</td>
<td>19 n1</td>
<td>25 n1</td>
<td>Enforced Clear Presenter</td>
<td>page 57</td>
</tr>
<tr>
<td>ENQ</td>
<td>05</td>
<td>5</td>
<td>Clear Presenter</td>
<td>page 58</td>
</tr>
<tr>
<td>ESC ACK n1</td>
<td>1B 06 n1</td>
<td>27 6 n1</td>
<td>Acknowledge Marker</td>
<td>page 70</td>
</tr>
<tr>
<td>ESC</td>
<td>1B 7C n1…nx</td>
<td>27 124 n1…nx</td>
<td>Barcode print</td>
<td>page 49</td>
</tr>
<tr>
<td>ESC ! n1</td>
<td>1B 21 n1</td>
<td>27 33 n1</td>
<td>Select Font</td>
<td>page 41</td>
</tr>
<tr>
<td>ESC &amp; 0</td>
<td>1B 26 00</td>
<td>27 38 0</td>
<td>Load Font</td>
<td>page 60</td>
</tr>
<tr>
<td>ESC &amp; 1</td>
<td>1B 26 01</td>
<td>27 38 1</td>
<td>Load Logotype</td>
<td>page 59</td>
</tr>
<tr>
<td>ESC &amp; 4</td>
<td>1B 26 04</td>
<td>27 38 4</td>
<td>Store current Parameter Values</td>
<td>page 59</td>
</tr>
<tr>
<td>ESC &amp; C</td>
<td>1B 26 43</td>
<td>27 38 67</td>
<td>Erase all Fonts</td>
<td>page 60</td>
</tr>
<tr>
<td>ESC &amp; D</td>
<td>1B 26 44</td>
<td>27 38 68</td>
<td>Erase Fonts 4 to 7</td>
<td>page 60</td>
</tr>
<tr>
<td>ESC &amp; F</td>
<td>1B 26 46</td>
<td>27 38 70</td>
<td>Recall Parameter Profile</td>
<td>page 60</td>
</tr>
<tr>
<td>ESC &amp; L</td>
<td>1B 26 4C</td>
<td>27 38 76</td>
<td>Erase all Logotypes</td>
<td>page 59</td>
</tr>
<tr>
<td>ESC &amp; P n1…n2</td>
<td>1B 26 50 n1…n2</td>
<td>27 38 80 n1…n2</td>
<td>Set Parameter Value</td>
<td>page 61</td>
</tr>
<tr>
<td>ESC ?</td>
<td>1B 3F</td>
<td>27 63</td>
<td>Reset (full)</td>
<td>page 59</td>
</tr>
<tr>
<td>ESC @</td>
<td>1B 40</td>
<td>27 64</td>
<td>Reset (initialize)</td>
<td>page 59</td>
</tr>
<tr>
<td>ESC b n1…n5</td>
<td>1B 62 n1…n5</td>
<td>27 98 n1…n5</td>
<td>Print Bitmap at XY-position</td>
<td>page 51</td>
</tr>
<tr>
<td>ESC B n1</td>
<td>1B 42 n1</td>
<td>27 66 n1</td>
<td>Bold</td>
<td>page 41</td>
</tr>
<tr>
<td>ESC B C</td>
<td>1B 42 43 n1</td>
<td>27 66 67 n1</td>
<td>Barcode Clear</td>
<td>page 49</td>
</tr>
<tr>
<td>ESC BS</td>
<td>1B 42 53 n1…n11</td>
<td>27 66 83 n1…n11</td>
<td>Barcode field Specify</td>
<td>page 44</td>
</tr>
<tr>
<td>ESC BW</td>
<td>1B 42 57 n1</td>
<td>27 66 87 n1</td>
<td>Barcode Write</td>
<td>page 48</td>
</tr>
<tr>
<td>ESC d n1</td>
<td>1B 64 n1</td>
<td>27 100 n1</td>
<td>Make n Linefeeds</td>
<td>page 45</td>
</tr>
<tr>
<td>ESC ENQ 1</td>
<td>1B 05 01</td>
<td>27 5 1</td>
<td>Status Enquiry</td>
<td>page 62</td>
</tr>
<tr>
<td>ESC ENQ 2</td>
<td>1B 05 02</td>
<td>27 5 2</td>
<td>Paper-near-end Enquiry</td>
<td>page 63</td>
</tr>
<tr>
<td>ESC ENQ 4</td>
<td>1B 05 04</td>
<td>27 5 4</td>
<td>Fonts and Logotype Enquiry</td>
<td>page 64</td>
</tr>
<tr>
<td>ESC ENQ 5</td>
<td>1B 05 05</td>
<td>27 5 5</td>
<td>Sensor Enquiry</td>
<td>page 65</td>
</tr>
</tbody>
</table>
## Table 2 • Control Codes and Escape Sequences in Alphabetical Order

<table>
<thead>
<tr>
<th>Command</th>
<th>Hex</th>
<th>Decimal</th>
<th>Function</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESC ENQ 6</td>
<td>1B 05 06</td>
<td>27 5 6</td>
<td>Status Report</td>
<td>page 66</td>
</tr>
<tr>
<td>ESC ENQ 7</td>
<td>1B 05 07</td>
<td>27 5 7</td>
<td>Firmware-version Enquiry</td>
<td>page 67</td>
</tr>
<tr>
<td>ESC ENQ 9</td>
<td>1B 05 09</td>
<td>27 5 9</td>
<td>Serial-number Enquiry</td>
<td>page 67</td>
</tr>
<tr>
<td>ESC ENQ 10</td>
<td>1B 05 0A</td>
<td>27 5 10</td>
<td>Control board revision Enquiry</td>
<td>page 67</td>
</tr>
<tr>
<td>ESC ENQ 11</td>
<td>1B 05 0B</td>
<td>27 5 11</td>
<td>Head temperature Enquiry</td>
<td>page 67</td>
</tr>
<tr>
<td>ESC ENQ 12</td>
<td>1B 05 0C</td>
<td>27 5 12</td>
<td>Bootware version Enquiry</td>
<td>page 68</td>
</tr>
<tr>
<td>ESC ENQ c</td>
<td>1B 05 63</td>
<td>27 5 99</td>
<td>Device ID Enquiry</td>
<td>page 68</td>
</tr>
<tr>
<td>ESC ENQ E</td>
<td>1B 05 45</td>
<td>27 5 69</td>
<td>Read extended status</td>
<td>page 69</td>
</tr>
<tr>
<td>ESC ENQ P n1</td>
<td>1B 05 50 n1</td>
<td>27 5 80 n1</td>
<td>Parameter-setting data Enquiry</td>
<td>page 69</td>
</tr>
<tr>
<td>ESC f n</td>
<td>1B 66 n1</td>
<td>27 102 n1</td>
<td>Presenter loop ON/OFF/max length</td>
<td>page 58</td>
</tr>
<tr>
<td>ESC FF n</td>
<td>1B 0C n1</td>
<td>27 12 n1</td>
<td>Eject (run presenter)</td>
<td>page 57</td>
</tr>
<tr>
<td>ESC g n1...n5</td>
<td>1B 67 n1...n5</td>
<td>27 103 n1...n5</td>
<td>Print Logotype</td>
<td>page 53</td>
</tr>
<tr>
<td>ESC h n1</td>
<td>1B 68 n1</td>
<td>27 104 n1</td>
<td>Text Height</td>
<td>page 42</td>
</tr>
<tr>
<td>ESC i n1</td>
<td>1B 69 n1</td>
<td>27 105 n1</td>
<td>Italics</td>
<td>page 42</td>
</tr>
<tr>
<td>ESC j n1</td>
<td>1B 6A n1</td>
<td>27 106 n1</td>
<td>Paper Reverse</td>
<td>page 55</td>
</tr>
<tr>
<td>ESC J n1</td>
<td>1B 4A n1</td>
<td>27 74 n1</td>
<td>Paper Advance</td>
<td>page 54</td>
</tr>
<tr>
<td>ESC L n1</td>
<td>1B 4C n1</td>
<td>27 76 n1</td>
<td>Print Logotype at Current Position</td>
<td>page 53</td>
</tr>
<tr>
<td>ESC NUL</td>
<td>1B 00</td>
<td>27 0</td>
<td>Load Firmware</td>
<td>page 61</td>
</tr>
<tr>
<td>ESC p</td>
<td>1B 70</td>
<td>27 112</td>
<td>Print</td>
<td>page 54</td>
</tr>
<tr>
<td>ESC P n1</td>
<td>1B 50 n1</td>
<td>27 80 n1</td>
<td>Print Self-test Printout</td>
<td>page 54</td>
</tr>
<tr>
<td>ESC Q n1 n2</td>
<td>1B 51 n1...n2</td>
<td>27 81 n1...n2</td>
<td>Quick Advance</td>
<td>page 55</td>
</tr>
<tr>
<td>ESC r n1...n9</td>
<td>1B 72 n1...n9</td>
<td>27 114 n1...n9</td>
<td>Print Ruler Line</td>
<td>page 52</td>
</tr>
<tr>
<td>ESC RS</td>
<td>1B 1E</td>
<td>27 30</td>
<td>Cut only, no Eject</td>
<td>page 56</td>
</tr>
<tr>
<td>ESC s n1</td>
<td>1B 73 n1</td>
<td>27 115 n1</td>
<td>Send dot-line, 203 dpi</td>
<td>page 51</td>
</tr>
<tr>
<td>ESC t n1...n5</td>
<td>1B 74 n1...n5</td>
<td>27 116 n1...n5</td>
<td>Print Text at XY</td>
<td>page 43</td>
</tr>
<tr>
<td>ESC T n1</td>
<td>1B 54 n1</td>
<td>27 84 n1</td>
<td>Reversed/Inversed Text</td>
<td>page 42</td>
</tr>
<tr>
<td>ESC u n1</td>
<td>1B 75 n1</td>
<td>27 117 n1</td>
<td>Underline</td>
<td>page 42</td>
</tr>
<tr>
<td>ESC w n1</td>
<td>1B 77 n1</td>
<td>27 119 n1</td>
<td>Text Width</td>
<td>page 43</td>
</tr>
<tr>
<td>FF</td>
<td>0C</td>
<td>12</td>
<td>Form Feed</td>
<td>page 45</td>
</tr>
<tr>
<td>HT</td>
<td>09</td>
<td>9</td>
<td>Horizontal Tabulation</td>
<td>page 45</td>
</tr>
<tr>
<td>LF</td>
<td>0A</td>
<td>10</td>
<td>Linefeed</td>
<td>page 44</td>
</tr>
<tr>
<td>RS</td>
<td>1E</td>
<td>30</td>
<td>Cut and Eject</td>
<td>page 56</td>
</tr>
<tr>
<td>US</td>
<td>1F</td>
<td>031</td>
<td>Partial cut</td>
<td>page 57</td>
</tr>
</tbody>
</table>

**Note** • In all responses from the printer the most significant byte (MSB) is transmitted first
Software Command Syntax

The commands in this section are grouped according to what they do, and these groups are sorted in a theoretical usage sequence. It starts with commands for specifying the printed page — through text-and-graphics commands — to cut-and-present commands. System and status commands are presented at the end.

Black Mark (Top-of-Form) Commands

See also Aligning Preprint and Thermal Print on page 101.

<table>
<thead>
<tr>
<th>ESC #</th>
<th>Hex</th>
<th>Calibrate TOF Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B 23</td>
<td>27 35</td>
<td></td>
</tr>
</tbody>
</table>

When the printer is not in black mark mode, the calibration measures the out of paper level (parameter 58) and the whiteness of the paper.

In black mark mode it also determines if it should trigger on black marks or holes, then measures the contrast of the mark and distance between marks, then sets parameters n37 -n40, n51, n57 bit 3, and n58 to suitable values for the analyzed ticket.

To make the calibration permanent, send <ESC>&<4>, store parameter values.

**Note** • If black mark calibrations fails, the printer will indicate error code 11 by blinking 11 times when you hold the Feed button pressed, and by answering NAK 11 to the status enquiry.

<table>
<thead>
<tr>
<th>ESC Z</th>
<th>Hex</th>
<th>Go to Next Top of Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B 5A</td>
<td>27 90</td>
<td></td>
</tr>
</tbody>
</table>

In black mark mode, an ESC Z starts looking for a black mark at the current position and continues to search for the page length (as defined by n37 and n38) plus the mark height (as defined by n39) plus 10 mm. If no black mark is found, bit 3 in byte one in the ENQ 6 response is set to 1 and the printer will report NAK 10 on the next ENQ 1 or ENQ E query.

When black mark mode is disabled, ESC Z will perform a form feed.
Text Commands

Text received by the printer is printed with the currently selected font and font attributes. Text exceeding the page width is wrapped with the line spacing selected.

ESC o n1

<table>
<thead>
<tr>
<th>Text and Logotype Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B 6F n1 hex</td>
</tr>
<tr>
<td>27 113 n1 decimal</td>
</tr>
</tbody>
</table>

Changes the orientation of text and logotypes.

<table>
<thead>
<tr>
<th>n1</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Gives portrait orientation</td>
</tr>
<tr>
<td>1</td>
<td>Gives landscape orientation</td>
</tr>
<tr>
<td>2</td>
<td>Gives upside down portrait orientation</td>
</tr>
<tr>
<td>3</td>
<td>Gives upside down landscape orientation</td>
</tr>
</tbody>
</table>

Portrait and landscape or upside down portrait and upside down landscape can be mixed on the same printout. There are two cursors, one for portrait and one for landscape. The cursor always starts at the top left corner of the document. Looking at the paper when it exits the printer, the portrait cursor is at the top left corner of the printout, moving to the right as text is typed, while the landscape cursor is at the top right corner, moving downwards.

Note • The upside-down orientations (n1 = 2 and n1 = 3) were introduced in firmware version 3.27g. They can only be used with Fixed Document mode.

ESC N n1

<table>
<thead>
<tr>
<th>Align Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B 4E n1</td>
</tr>
<tr>
<td>27 78 n1</td>
</tr>
</tbody>
</table>

Changes the alignment of text and logotypes printed with ESC L on the current line; on subsequent lines, it defaults back to Left align. The alignment can be changed multiple times per text line.

<table>
<thead>
<tr>
<th>n1</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Left</td>
</tr>
<tr>
<td>1</td>
<td>Center</td>
</tr>
<tr>
<td>2</td>
<td>Right</td>
</tr>
</tbody>
</table>
This command selects one of the printer’s eight installed fonts. The font design depends on which fonts have been loaded into the printer’s flash PROM. Make a test printout to see which fonts are available in your printer.

<table>
<thead>
<tr>
<th>n1</th>
<th>Font</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Normal font (font 0)</td>
</tr>
<tr>
<td>1</td>
<td>Font 1</td>
</tr>
<tr>
<td>2</td>
<td>Font 2</td>
</tr>
<tr>
<td>3</td>
<td>Font 3</td>
</tr>
<tr>
<td>4</td>
<td>Font 4</td>
</tr>
<tr>
<td>5</td>
<td>Font 5</td>
</tr>
<tr>
<td>6</td>
<td>Font 6</td>
</tr>
<tr>
<td>7</td>
<td>Font 7</td>
</tr>
</tbody>
</table>

**Note •** For information on loading fonts, see *Font Loading on page 71.*

This command performs the same function as setting parameter n14, Font Selection. Refer to *Font Selection on page 86* for more information.

If a line of text is too long to be printed due to the font, position, print width, or any other factor, the text line will be automatically wrapped. If the wrapping occurs, any alignment command is canceled. Different fonts can be used on the same line.

Selecting an empty font location will set bit 4 of byte 1 in the ENQ 6 response to 1. The printer will also return a NAK 12 on the next ENQ 1 enquiry. This NAK 12 is a one-time error that will clear after read.

**Note •** If more than 379 characters are sent to the printer before an LF, the text buffer is printed automatically. Each font or text style change consumes two bytes in this buffer. The text is formatted based on the formatting commands as they were received.

Bold command works best with normal character width. With higher widths, the effect of bold becomes less pronounced. The Bold command can be applied to single characters, words, or text lines.

Bold remains in effect until deactivated or until the printer is reset.

<table>
<thead>
<tr>
<th>n1</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Turns OFF bold (Normal)</td>
</tr>
<tr>
<td>1</td>
<td>Turns ON <strong>bold</strong></td>
</tr>
</tbody>
</table>
The Italics command works best with normal character width and height. At other values, the output can become pixelated. The Italics command can be applied to single characters, words, or text lines.

Italics remains in effect until deactivated or until the printer is reset.

<table>
<thead>
<tr>
<th>n1</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Turns OFF Italics (Normal)</td>
</tr>
<tr>
<td>1</td>
<td>Turns ON Italics</td>
</tr>
</tbody>
</table>

Selects normal black text on a white background or reversed white text on a black background. This command remains in effect until deactivated or until the printer is reset. Single characters, words, or complete text can be reversed.

<table>
<thead>
<tr>
<th>n1</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Gives normal print, black on white</td>
</tr>
<tr>
<td>1</td>
<td>Gives reversed print, white on black</td>
</tr>
</tbody>
</table>

Note • Reverse text and underline invert the print data. This means that the order in which the commands are issued affect the printout if the text overlaps, such as in the case of italics.

Characters, single words, or complete text lines can be underlined.

<table>
<thead>
<tr>
<th>n1</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Turns OFF underline</td>
</tr>
<tr>
<td>1...7</td>
<td>Turns ON a 1–7 pixel thick underline</td>
</tr>
</tbody>
</table>

This command scales the height of the text printed by a factor of up to 16x. The valid range of values is 0 to 15.

<table>
<thead>
<tr>
<th>n1</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Resets the character height to the base character height</td>
</tr>
<tr>
<td>1...15</td>
<td>Increases the character height to 2...16 times the base character height</td>
</tr>
</tbody>
</table>

In combination with variable character width (ESC\w\n1), give highly legible characters depending on the font to which the command has been applied.

Different heights can be mixed on the same print line.
This command scales the width of the text printed by a factor of up to 8x. The valid range of values is 0 to 7.

<table>
<thead>
<tr>
<th>n1</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Resets the character width to the base character width</td>
</tr>
<tr>
<td>1...7</td>
<td>Increases the character width to 2...8 times the base character width.</td>
</tr>
</tbody>
</table>

In combination with variable character height (\(<ESC>w<n1>\)), give highly legible characters depending on the font to which the command has been applied.

Different widths can be mixed on the same print line.

**Important** • Use of the multiple width function when printing barcodes is not recommended as the text data may become illegible.

---

**ESC t n1...n5 data**

Prints a text string at the specified XY position. The string is formatted based on the current active formatting attributes except for alignment.

<table>
<thead>
<tr>
<th>n1n2</th>
<th>Two byte definition of the X print position (in pixels).</th>
</tr>
</thead>
<tbody>
<tr>
<td>n3n4</td>
<td>Two byte definition of the Y print position (in pixels).</td>
</tr>
<tr>
<td>n5</td>
<td>The number of characters in the string. To avoid having to count characters you can set n5 to 00h (null) and then terminate the text string with null.</td>
</tr>
<tr>
<td>data</td>
<td>The text string. If text string length is specified with n5, the length must be exactly the number of characters specified, otherwise the printer will stop, waiting for more characters. Data that extends off the edge of the printable area will not be wrapped to the next line.</td>
</tr>
</tbody>
</table>

After the data has been printed, the cursor will return to the position it had before the print text.

**Note** • The Y coordinate will be ignored if the printer is in variable document mode (n36=1).

**Note** • <ESC>t clears the text buffer each time it is used, destroying any unprinted text on the same line. Commands will not be cleared.
**BS**

Moves the print-position one step to the left. Backspace can be used to combine characters. For instance to print a Ø, send text commands Ø BS / to the printer, and the slash will overprint the O.

The print position can only be moved one step to the left. Multiple backspaces in succession are ignored.

**CAN**

Cancels text and attributes sent before the <CAN> command on the same line.

Commands are not cancelled.

**CR**

By default, carriage return is ignored.

Parameter n33 (CR/LF Behavior) can be changed so the printer interprets <CR> as follows:

- Interpret it as <CR>, returning the print position to beginning of line without line feed.
- Interpret <CR> as <CR><LF>, inserting line space as specified by the line spacing setting (see parameter n13), and returning the print position to beginning of the line.

See **CR/LF Behavior on page 88**.

**LF**

Linefeed is interpreted as <CR><LF> by default. This inserts line spacing as specified by the line spacing setting (see parameter n13), and returns the print position to beginning of the line. <LF> also converts text from the text buffer to pixel lines and stores them in the line buffer, ready to be printed.

By changing the default settings, you can:

- Interpret <LF> as Linefeed. This inserts line space as specified by the line spacing setting (see parameter n13), without returning the print position to the beginning of the line.
- Ignore <LF>.

See **CR/LF Behavior on page 88**.
### Make n Linefeeds

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ESC d n1</strong></td>
<td>EXECutes the number of linefeeds as defined by variable n1. The length of each line feed is determined by the default value for selected font or the line spacing setting specified by n13, whichever is greater (refer to parameter <em>Line Spacing</em> on page 86). If an <code>&lt;LF&gt;</code> has not yet been sent to convert the text buffer to the line buffer, the lines printed by <code>&lt;ESC&gt;d</code> are copies of that line. Following this, the print position is returned to the beginning of the line.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
</table>

### Form Feed

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FF</strong></td>
<td>Prints data from the text buffer and feeds the paper to the top of the next page. In fixed document length mode (n36 = 0) this command prints data in the text buffer and feeds the paper to the top of next page. In variable document length modem, <code>&lt;FF&gt;</code> advances to the minimum page length as specified by n37 and n38. If the printout already is longer than the minimum page length, <code>&lt;FF&gt;</code> does not feed any additional paper. In black-mark mode, the <code>&lt;FF&gt;</code> command looks for a black mark, see <code>&lt;ESC&gt;Z</code>. If Auto Cut (n34) is set to 1 (see <em>Auto Cut after FF</em> on page 88), <code>&lt;FF&gt;</code> effects form-feed, cut, and eject.</td>
</tr>
</tbody>
</table>

**Note**: Use *Parameters n37 and n38 — Page Length Minimum* on page 104 to define page length.

### Horizontal Tabulation

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HT</strong></td>
<td>Shifts the current print position to the next Tab position. Set tab positions with parameters n15 to n30. Refer to <em>Tab Stop</em> on page 87.</td>
</tr>
</tbody>
</table>
Barcode Commands

TTP 2000 can print EAN 8, EAN 13, UPC, 2-of-5 Interleaved, ISBN, Code39, Code128, and EAN128 barcodes with its standard firmware. A special firmware is available where some of the 1D barcodes are replaced with the PDF 417 2D barcodes. See Firmware on page 116, and Barcode print (PDF 417) on page 49.

Figure 25 • Samples of Barcodes

Example • This example will print an EAN barcode with height = 10 mm, 15 mm in from the left margin.

```<ESC>BS<0><0><h 48><0><0>
<00><0><h 40><0><2><2>
<ESC>BW<00>733104000099<00>
<LF><RS>```
Bar codes can only be printed in portrait mode unless Fixed Document Mode is selected. See Parameter n36 — Document Mode on page 104.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>n1</td>
<td>Specifies the bar code field number. The valid range is 0 – 15. Bar code fields may be specified in any order.</td>
</tr>
<tr>
<td>n2n3</td>
<td>Specifies the X coordinate of the bar code field origin (n2 is the higher order byte and n3 the low order byte). n2 and n3 are one byte numbers. Refer to Two-Byte Character Definitions on page 36 for more information about two byte values. Values that place the barcode outside the printable area may cause the barcode to be partially printed and be unreadable.</td>
</tr>
<tr>
<td>n4n5</td>
<td>Specifies the Y coordinate of the bar code field origin (n4 is the high order byte and n5 is the low order byte). n4 and n5 are one byte numbers. Refer to Two-Byte Character Definitions on page 36 for more information about two byte values. Values that place the barcode outside the printable area may cause the barcode to be partially printed and be unreadable.</td>
</tr>
<tr>
<td>n6</td>
<td>Must be specified but is not used.</td>
</tr>
<tr>
<td>n7n8</td>
<td>Specifies the height of the bars in pixels (n7 is the high order byte and n8 is the low order byte).</td>
</tr>
<tr>
<td>n9</td>
<td>Specifies the type of bar code. The following types are supported.</td>
</tr>
<tr>
<td></td>
<td>n9 = 0</td>
</tr>
<tr>
<td></td>
<td>n9 = 1</td>
</tr>
<tr>
<td>b9 = 2</td>
<td>2/5 Interleaved (even number of characters must be sent)</td>
</tr>
<tr>
<td>n9 = 3</td>
<td>ISBN</td>
</tr>
<tr>
<td>n9 = 4</td>
<td>Code128</td>
</tr>
<tr>
<td>n9 = 6</td>
<td>Code39</td>
</tr>
<tr>
<td>n10</td>
<td>Specifies the thickness of the narrow bar 0=1 pixel, 1=2 pixel, and so on.</td>
</tr>
<tr>
<td>n11</td>
<td>Specifies the wide-bar-to-narrow-bar ratio. Only used in Code 39 and 2-of-5 interleaved where different ratios are allowed</td>
</tr>
</tbody>
</table>

This command reserves an information field as a bar code field. The command also identifies the type, number of digits, and the configuration of bars to be placed in the bar code field.
Code 128 / EAN128

The following codes select function codes in Code 128:

<table>
<thead>
<tr>
<th>Name</th>
<th>Dec</th>
<th>Hex</th>
</tr>
</thead>
<tbody>
<tr>
<td>FNC1</td>
<td>193</td>
<td>C1h</td>
</tr>
<tr>
<td>FNC2</td>
<td>194</td>
<td>C2h</td>
</tr>
<tr>
<td>FNC3</td>
<td>195</td>
<td>C3h</td>
</tr>
<tr>
<td>FNC4</td>
<td>196</td>
<td>C4h</td>
</tr>
</tbody>
</table>

Starting the data string with FNC1 generates an EAN128 code.

**Note** • By default, the printer will print barcodes with human readable characters. To avoid this behavior, load the font 1x1.swf to the PROM and select that font with <ESC>!<n1> before you specify the barcode. After the <ESC>BW command, you can return to the normal font. This font is available in the Toolbox application.

---

**Escape Barcode Write (ESC BW n1 n2...nx NUL)**

<table>
<thead>
<tr>
<th>Dec</th>
<th>Hex</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B</td>
<td>42</td>
</tr>
<tr>
<td>027</td>
<td>86</td>
</tr>
</tbody>
</table>

**Barcode Write**

Writes data to the bar code field reserved by the ESC BS command.

- **n1** Specifies the barcode field number. The valid range is 0 - 15. This number must be the same number used to specify the field using the <ESC>BS command. Fields can be specified in any order but other values than 0 to 15 are ignored.

- **n2 . . . nx** Specifies bar code data bytes. Up to 80 bytes may be specified. To create a bar code add-on, insert a space character and then the data for the add-on. Two of five characters are allowed of the add-on.

- **NUL** must be placed at the end of the bar code data.

Any invalid bar code character terminates the command, and print <Invalid barcode> on the printout.

**Example** • This example will print one barcode with height = 10 mm and located 15 mm to the right:

```
<ESC>BS<0><0><h 48><0><0>
<00><0><h 40><0><2><02>
<ESC>BW<00>733104000099<00>
<LF><RS>
```
### Barcode Clear

Cleans the bar code field reserved by command `<ESC>`BS.

<table>
<thead>
<tr>
<th>n</th>
<th>Specifies which bar code field to clear. The range is 0 to 15. The fields may be cleared in any order.</th>
</tr>
</thead>
</table>

### Barcode print (PDF 417)

This command positions and prints a PDF 417 2D barcode.

#### Note

- PDF 417 requires special firmware in the printer. See Firmware on page 116.

<table>
<thead>
<tr>
<th>n1</th>
<th>Specifies the type of bar code. The following types are supported:</th>
</tr>
</thead>
<tbody>
<tr>
<td>n1 = 5</td>
<td>PDF417</td>
</tr>
</tbody>
</table>

| n2n3 | Specifies the X-coordinate of the bar code field origin. n2 is the most significant byte (MSB). n3 is the least significant byte (LSB). |

| n4n5 | Specifies the Y-coordinate of the bar code field origin. The Y-coordinate is discarded in variable document mode. n4 is the most significant byte (MSB). n5 is the least significant byte (LSB). |

| n6 | Rows of barcode data. The valid range is 0 for automatic row calculation or 3-90 to specify the number of rows. |

| n7 | Columns of barcode data. The valid range is 0 for automatic column calculation or 1-30 to specify the number of columns. |

| n8 | Specifies the error correction level for the PDF417 barcode. The valid range is 0 for automatic calculation or 1-9 to specify an error level (ErrorLevel 0 to ErrorLevel 8, respectively). |

| n9 | Specifies in pixels the height of each row of the barcode. |

| n10 | Specifies the scaling factor of the barcode |

| n11n12 | Specifies the length of the data to follow. Both n11 and n12 are specified as 0. The data field (n13...nx) is terminated by a null. If n11 and n12 are non-zero, they specify the length of the n13...nx data that follows. The valid range for this parameter is 0 (which species the null terminated behavior) and 1 to 2710. Even when using the null terminated behavior, you cannot specify more than 2710 bytes (not including the terminating null). |

| n13...nx | Byte data to be encoded. Data must be null-terminated if n11 and n12 are 0 or must be the length specified by n11 and n12 otherwise. |
Example • To print Zebra as a PDF 417 barcode, send the following to the printer:

\<ESC\><124><005><000><000><000><000><000><000><000><003><003><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000><000>:Zebra

This example will print a barcode that looks like this:
Graphics Commands

**Print Bitmap at XY-position**

Prints a black & white (1-bit color depth) Windows bitmap (BMP-file) at the specified X-Y position. The bitmap must be a complete uncompressed Windows bitmap where the data starts with BM. The maximum bitmap size is limited to the free RAM printed on the self-test printout.

<table>
<thead>
<tr>
<th>n1</th>
<th>Always 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>n2n3</td>
<td>Two byte definition of the X print position (in pixels).</td>
</tr>
<tr>
<td>n4n5</td>
<td>Two byte definition of the Y print position (in pixels).</td>
</tr>
<tr>
<td>data</td>
<td>Bitmap data.</td>
</tr>
</tbody>
</table>

After the bitmap has been printed, the cursor will return to the X-position that it had before the bitmap command was issued.

Selecting horizontal mode (with <ESC>o<0>) prints the image in portrait orientation, while selecting the vertical mode (with <ESC>o<1>) prints the image in landscape orientation.

**Note** • The Y print-position and horizontal/vertical orientation only works if Fixed Document Mode is set. See Parameter n36 — Document Mode on page 104.

**Send dot-line, 203 dpi**

Sends one line of dot data. This command is used to build images, one dot line at a time by the printer driver and should not be combined with text commands.

<table>
<thead>
<tr>
<th>n1</th>
<th>Determines the number of bytes. Range: 1-255.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;data&gt;</td>
<td>1 – x bytes, where x is the paper width in bytes. The paper width is set by parameter n48. If n48 is set to 0 (automatic width), 58 mm and 60 mm printers will use 54 bytes, while 80 mm and 82.5 mm printers use 72 bytes. The maximum width setting is 80 bytes. If you specify more bytes in n1 than the paper width of the printer, the additional bytes are discarded. If you specify less bytes in n1 than the paper width of the printer, the printer will fill the remaining portion of the dot line with blank pixels.</td>
</tr>
</tbody>
</table>

**Caution** • Always send the number of bytes that you specify with n1.

If you transmit more data than the number of bytes specified by n1, the rest of the bytes will be interpreted as text or commands. This can cause numerous problems in the printer as graphics data can contain any hex value.
Prints a ruler line across the paper.

A ruler line is normally used to divide the printout into logical parts to make it easier to read. A ruler line is actually an area defined by a start X-Y position and a stop X-Y position. This area is filled with black or a checkered pattern.

| \( n1n2 \) | Two byte definition of the X print position to start the ruler line (in pixels) |
| \( n3n4 \) | Two byte definition of the Y print position to start the ruler line (in pixels) |
| \( n5n6 \) | Two byte definition of the X print position to stop the ruler line (in pixels). This value must be larger than the X start position. |
| \( n7n9 \) | Two byte definition of the Y print position to stop the ruler line (in pixels). This value may be larger than the Y start position. |
| \( n9 \) | Specifies the fill pattern. The valid range is 0 to 3. 0 is black and 1-3 are various checkered patterns. Values out of range are interpreted as 0. |

**Note** • The Y print-position and horizontal/vertical orientation only works if Fixed Document Mode is set. See *Parameter n36 — Document Mode* on page 104.
Prints a customized logotype stored in the flash PROM. See also *Logotypes on page 74*.

<table>
<thead>
<tr>
<th>n1</th>
<th>One-byte logotype identification number. The valid range is 0 to 15.</th>
</tr>
</thead>
<tbody>
<tr>
<td>n2n3</td>
<td>Two byte definition of the X print position to place the upper left corner of the logotype (in pixels). If the logotype extends outside the printable area, it will be clipped.</td>
</tr>
<tr>
<td>n4n5</td>
<td>Two byte definition of the Y print position to place the upper left corner of the logotype (in pixels). If the logotype extends outside the printable area, it will be clipped.</td>
</tr>
</tbody>
</table>

**Note** • The Y print position and horizontal/vertical orientation only works if Fixed Document Mode is set. Refer to *Document Mode on page 89* for more information.

**Note** • For information about logotype loading, refer to *ESC & I on page 59*.

Prints a customized logotype stored in the flash PROM at the position of the cursor. The bottom edge of the logotype is positioned at the baseline of the text on the line. If the logotype is taller than the text, the line spacing is increased as necessary.

| n1       | One-byte logotype identification number. The valid range is 0 to 15. |

**Note** • When using **ESC L**, the logotype is added to the text buffer, so a text printing command such as LF or FF must be used to generate the printout.
Print Commands

ESC p

This command makes the printer print the contents of the line buffer.

Text is converted to image data in the line buffer when an \texttt{<LF>} is received. If the line buffer is empty when \texttt{<ESC>p} is received, nothing is printed.

\texttt{Text to be printed}\\texttt{<LF>}\texttt{<ESC>p} prints "Text to be printed" on the paper.

Printout occurs automatically at:

<table>
<thead>
<tr>
<th>Cut</th>
<th>\texttt{&lt;RS&gt;} and \texttt{&lt;ESC&gt;&lt;RS&gt;}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form feed</td>
<td>\texttt{&lt;FF&gt;}</td>
</tr>
<tr>
<td>Clear presenter</td>
<td>\texttt{&lt;ENQ&gt;}</td>
</tr>
<tr>
<td>Run presenter</td>
<td>\texttt{&lt;ESC&gt;&lt;FF&gt;&lt;n1&gt;}</td>
</tr>
<tr>
<td>Text or line buffer full</td>
<td></td>
</tr>
<tr>
<td>When the FF button is pressed</td>
<td></td>
</tr>
</tbody>
</table>

ESC P n1

This command makes the printer generate a self-test page based on the current parameter settings and print that page. The parameter values printed are the ones currently being used. They can differ from Power-ON default values if for example a printout has been made by a driver before \texttt{<ESC>P} is sent to the printer.

For more information, refer to \textit{Making a Self-Test Printout} on page 26.

n1 = 0 Gives standard self-test printout.

n1 = 1 Gives a character set printout using the font selected by parameter n14.

ESC J n1

The value n1 represents the number of dot lines the paper is to be transported forward. The valid range is 1 to 255.

A dot line is 0.125 mm, and 255 dot lines equal approximately 32 mm.

\textbf{Important} • Using paper feeding command (\texttt{<ESC>J}, \texttt{<ESC>j}, and \texttt{<ESC>Q}) when operating in fixed page mode (n36 = 0) causes the fixed page to be printed and then the feed operation occurs. To create white space without generating a printout of the fixed page, use \texttt{<LF>}.
The value \( n_1 \) represents the number of dot lines the paper is to be transported backwards. The valid range is 0 to 255.

A dot line is 0.125 mm, and 255 dot lines equal approximately 32 mm.

**Caution** • NEVER reverse more than 7 mm (\( n_1 = 56 \)) at top of page! The platen can lose grip on the media, which can fall out of the printer.

**Important** • Using paper feeding command (\(<\text{ESC}>J, <\text{ESC}>j, \text{ and } <\text{ESC}>Q\)) when operating in fixed page mode (\( n_{36} = 0 \)) causes the fixed page to be printed and then the feed operation occurs. To create white space without generating a printout of the fixed page, use \(<\text{LF}>.\)

The value \( n_1 \ n_2 \) represents high byte and low byte of the number of dot lines the paper is to be transported forward. Minimum value is 1, and maximum value is 32767.

A dot line is 0.125 mm, and 32767 dot lines equal approximately 4.1 m.

**Important** • Using paper feeding command (\(<\text{ESC}>J, <\text{ESC}>j, \text{ and } <\text{ESC}>Q\)) when operating in fixed page mode (\( n_{36} = 0 \)) causes the fixed page to be printed and then the feed operation occurs. To create white space without generating a printout of the fixed page, use \(<\text{LF}>.\)
Cut And Present Commands

**Important** • The printer does not receive data while cut and present commands are executed.

The paper is cut and ejected through the presenter module. The <RS> command automatically gives the eject length of 50 mm in addition to the amount specified by parameter n47.

If the printout length is less than the minimum page length (75 mm or the value specified by n37 and n38, whichever is greater), paper is fed until the minimum printout length is reached before execution of any cut command.

**Note** • The cut position is 9 mm after the print line. This makes the last 72 dot lines of the previous page end up on the beginning of the next page. To have the printer position the cut after these dot lines, set parameter n49 = 1 (Advance before cut to automatic distance calculation). The auto advance function also adds an additional 16 dot lines (2 mm) of feed due to the width of the cutter blade.

If you prefer to set n49 to 0 (off), you can use a paper advance command to perform the same task:

```<ESC>J<88><RS>```

This will position the cut 16 dot lines (2 mm) after the end of the print data.

**Important** • The printer does not receive data while cut and present commands are executed.

The paper is cut and ejected through the presenter module. The <RS> command automatically gives the eject length of 50 mm in addition to the amount specified by parameter n47.

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**Important** • The printer does not receive data while cut and present commands are executed.

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**Note** • The cut position is 9 mm after the print line. This makes the last 72 dot lines of the previous page end up on the beginning of the next page. To have the printer position the cut after these dot lines, set parameter n49 = 1 (Advance before cut to automatic distance calculation). The auto advance function also adds an additional 16 dot lines (2 mm) of feed due to the width of the cutter blade.

If you prefer to set n49 to 0 (off), you can use a paper advance command to perform the same task:

```<ESC>J<88><RS>```

This will position the cut 16 dot lines (2 mm) after the end of the print data.
Prints a dotted line, a pair of scissors, and partially cuts the paper from both edges towards the center to make it easier to tear off the paper. This command causes all data in the image buffer to be printed and generates the printout of a fixed page when \( n_{36} = 0 \).

The length of the partial cut can be set with parameter \( n_{60} \). Refer to Partial Cut Length on page 97 for more information.

\[ \text{ESC} \text{ FF} \ n \]

<ESC><FF><n> ejects the document through the presenter module. Variable \( n \) represents the eject-length in millimeters. The setting of parameter \( n_{47} \) is always added to the value of \( n \).

The valid range for \( n \) is 1 to 127. The range 128-255 is reserved for future use.

Place this command after a cut command (\(<\text{ESC}>\text{RS}>\)) to partially eject the printout to the customer. Set the eject length so that the customer sees that the printout comes out of the kiosk wall. The pull detector gives motorized eject of the rest of the printout when the customer begins to pull the paper.

\[ \text{EM} \ n \]

Note • The cut and eject command \(<\text{RS}>\), automatically ejects 50 mm in addition to the amount stored in parameter \( n_{47} \).

\[ \text{EM}<0 \]

\[ \text{EM}<100 \]

\(<\text{EM}><0>\quad \text{Ejects the presented page} \]

\(<\text{EM}><100>\quad \text{Retracts the presented page} \]
ENQ clears the paper path of the presenter of printouts. This command completely ejects a document that has not been removed during the print/cut/eject operation. Parameter n45 controls the behavior of this command (refer to Presenter Mode on page 92 for more information). If n45 is 0 - 99 or 201 - 255, this command causes a full eject of the media. If n45 is 100 - 199, it causes a full retraction of the media. For example, to eject a document not removed during the previous print/cut/eject operation. Parameter No. 45 controls how the presenter is cleared.

ESC f n is used to limit the height of the loop formed in the presenter module during printing. If your kiosk design does not have space above the printer to store the loop, it may be desirable to change the height of the loop that forms, or disable it entirely. When the maximum loop length is reached, the printer will begin presenting the media while continuing to maintain the selected loop length.

n specifies distance that the loop will extend upwards from the printer in centimeters. For example, if you specify a value of 5, the loop will not be allowed to exceed 5cm from the top of the printer. A value of 0 disables the looping action of the presenter and media is fed out directly.

Using this command has the exact same effect as setting paramter n9. Refer to Presenter Loop Length on page 86 for more information.

Important • This command is obsolete and may disappear from future firmware releases. It is recommended that you use parameter n9 instead of this command to set the loop length.
System Related Commands

**ESC ?**

Reset (Full)

```
1B 3F  Hex
27 63  Decimal
```

<ESC>? restarts the printer with a complete reset. During this operation, all buffers are purged, all memory is cleared, and stored parameters are reloaded. USB printers will go off the bus during execution of this command and will reconnect when the reset is complete. After issuing this command, wait approximately 3 seconds for the printer to reset before issuing data to the printer.

**ESC @**

Reset (Initialize)

```
1B 40  Hex
27 64  Decimal
```

<ESC>@ terminates command processing and reinitializes the control board. All parameters are set to power on values and all buffers are purged. After issuing this command, wait approximately 3 seconds for the printer to reset before issuing data to the printer.

**ESC & 1**

Load Logotype

```
1B 26 01 Hex
27 38 1  Decimal
```

<ESC>&<1> stores a logotype bitmap in the flash PROM. The logotype is stored to flash memory and the printer is reset. The logotype can then be printed with <ESC>g and <ESC>L commands, see \texttt{ESC g n1...n5 on page 53} and \texttt{ESC L n1 on page 53}. Also see Logotypes on page 74. The printer indicates that storage is complete by operating the presenter motor for a short period of time.

**ESC & L**

Erase All Logotypes

```
1B 26 4C Hex
27 38 76  Decimal
```

<ESC>&<L> erases all logotypes stored in the flash PROM. The printer indicates that erasure is complete by operating the presenter motor for a short period of time.

**ESC & 4**

Store Current Parameter Values

```
1B 26 04 Hex
27 38 4  Decimal
```

<ESC>&<4> stores the current setting of all parameter values in the printer’s flash memory. These parameters are then used as default power on parameters. Storing the parameters to flash memory takes approximately 4 seconds, during which time the printer cannot communicate. The printer indicates that storage is complete by operating the presenter motor for a short period of time.

\textbf{Note} • The Toolbox application can be used to load new firmware.
<ESC>&<0> is used to load a font to the printer flash PROM. The font is placed in the first free position. The printer indicates that storage is complete by operating the presenter motor for a short period of time. The font position is determined by the order that the fonts are loaded into the printer.

A kiosk printer font file consists of a header containing data describing the font as well as data for each individual character in the font.

Fonts can be designed with the FastFont application included with Toolbox and can be loaded or deleted using the Toolbox application. The fonts loaded are not used by the Windows driver, so it is not necessary to load fonts into the printer to use the Windows driver.

For complete specification of the font format, refer to Font Loading on page 71.

Note • The available font memory is printed on the self-test printout. A maximum of 8 fonts may be loaded (numbered 0 to 7). If you attempt to load a font that is larger than available memory or attempt to load more than 8 fonts, the font loading command will not load the font.

Note • The Toolbox application can be used to load new firmware.

<ESC>&C erases all fonts stored in the flash PROM. The printer indicates that erasure is complete by operating the presenter motor for a short period of time.

<ESC>&D erases the fonts in positions 4–7. Fonts in positions 0–3 are not affected by this command.

The font position is determined by the order that the fonts are loaded into the printer. This command can take up to 20 seconds to execute.

<ESC>&F temporarily sets all parameters to predefined default values that are stored in the firmware. To make the default values permanent, store them in the EEPROM with command <ESC>&<4>.

Unless the parameters are stored, a reset command or power cycle will return the parameters to the settings stored in the EEPROM.
The printer stores its configuration settings in an EEPROM. When the printer is powered on, the values are loaded from the EEPROM. Using this command, a parameter value can be temporarily overridden. The value can later be made permanent with the `<ESC>&<4>` command. Permanently stored values are loaded after a printer reset or at power on.

### Set several parameters at once

You can use this command to set multiple parameters at once. The format for this option is as follows:

```
<ESC>&P<n1><n2><n3><data>
```

When operating in this mode, specify a value of 0 for n1, the first parameter you want to set for n2, and the number of parameters to set for n3, followed immediately by the parameter data.

To set parameters that extend over a range in which the parameter number is not defined, specify 0 for the parameters that do not exist. For example, to set n4 to n7, you must provide all four parameters in data even though n6 does not exist.

**Example** • This example sets the first 5 tabs to 5, 10, 15, 20, and 25. (n2 = 5, n3 = 5)

```
<ESC>&P<0><15><5><10><15><20><25>
```

Store parameters permanently by sending `<ESC>&<4>`.

### Load Firmware

This command should be used when you integrate firmware loading into your kiosk program. After transmitting this command, send the firmware binary file. If the firmware is the proper version for the printer and the firmware checksum is valid, the firmware is then programmed into the printer’s flash memory. This process can take up to 60 seconds and the printer will reset when the process is complete.

**Note** • The Toolbox application can be used to load new firmware.
Status Reporting Commands

**Important** • All status commands except for the acknowledge marker are immediate. This means that these commands bypass the print queue and are answered as soon as they possibly can be.

Status codes are reset when:

- the conditions causing them are removed
- the printer is power cycled (turned off/on)
- the print head is lifted and then lowered to clear a paper jam.

<ESC><ENQ><1>

issues a status enquiry that results in response ACK (06 hex) if there are no errors, or NAK (15 hex) and a byte indicating an error if one or more sensors report some condition.

### Table 3 • Status Codes

<table>
<thead>
<tr>
<th>Status code</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACK</td>
<td>OK (printer is operable)</td>
</tr>
<tr>
<td>NAK 1</td>
<td>Paper left in presenter module. Attempt to clear the paper path failed.</td>
</tr>
<tr>
<td>NAK 2</td>
<td>Cutter jammed</td>
</tr>
<tr>
<td>NAK 3</td>
<td>Out of paper</td>
</tr>
<tr>
<td>NAK 4</td>
<td>Print Head lifted</td>
</tr>
<tr>
<td>NAK 5</td>
<td>Paper-feed error. No paper detected in presenter although 10 cm has been printed. Paper might be wound around the platen or, in some way, has been forced above the presenter module.</td>
</tr>
<tr>
<td>NAK 6</td>
<td>Temperature error. The print head temperature has exceeded the 60 °C maximum limit.</td>
</tr>
<tr>
<td>NAK 7</td>
<td>Presenter not running</td>
</tr>
<tr>
<td>NAK 8</td>
<td>Paper jam during retract</td>
</tr>
<tr>
<td>NAK 0A</td>
<td>Black mark not found</td>
</tr>
<tr>
<td>NAK 0B</td>
<td>Black mark calibration error</td>
</tr>
<tr>
<td>NAK 0C</td>
<td>Index error</td>
</tr>
<tr>
<td>NAK 0D</td>
<td>Checksum error</td>
</tr>
<tr>
<td>NAK 0E</td>
<td>Wrong firmware type or target for firmware loading</td>
</tr>
<tr>
<td>NAK 0F</td>
<td>Firmware cannot start because no firmware is loaded or firmware checksum is wrong.</td>
</tr>
<tr>
<td>NAK 10</td>
<td>Retract function timed out. If the customer doesn’t take the paper and the printer clears the presenter due to a timeout, the pending error bit is set and error code NAK 10h is reported.</td>
</tr>
</tbody>
</table>

**Note** • Errors 0B, 0C, and 10 are one-time errors that clear once they are read.
**Important** • Errors 2 and 5 are terminal faults that require you to reset the printer before it will be operable again. A reset means that any data in the buffer is lost. The printer automatically recovers from the other conditions as soon as the condition is corrected.

<ESC><ENQ><1> can only return one status code at a time. If there are two or more simultaneous conditions, each condition should be cleared and the status enquiry repeated in order to get a complete report of all status codes.

The host computer cannot be certain that all conditions have been cleared until an ACK is received.

In the case of multiple error conditions, the one with the lowest number is reported.

**Note** • To read out all status information at once, use <ESC><ENQ>E.

---

**ESC ENQ 2  Paper-near-end Enquiry**

This command requests a paper-near-end sensor (paper low) status from the printer in a 1-byte format.

<table>
<thead>
<tr>
<th>Value</th>
<th>Indicates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&quot;No paper&quot;</td>
</tr>
<tr>
<td>0</td>
<td>&quot;Paper present&quot; at the sensor position</td>
</tr>
</tbody>
</table>

**Note** • The status of the sensor is sampled every time the printout is cut. If three successive samples show that there is no paper present at the sensor, the status reply changes to 1. This is to prevent false readings if the side of the paper roll is not clean. If you want instantaneous status of the sensor, use <ESC><ENQ><6> and examine the paper near end bit.
<ESC><ENQ><4> requests information regarding loaded fonts and logotypes. This command does not return information about the length of the structure, so you must read all the data up to the last <CR><LF>.

**Example • (↑ = CR LF)**

- **Send**
  - <ESC><ENQ><4>

- **Read**
  - 0:7862 ATM9
  - 1:  
  - 2:  
  - 3:  
  - 4:  
  - 5:  
  - 6:  
  - 7:  
  - Free font memory:123082
  - 00:38 117 Zebra Logo
  - 01:  
  - 02:  
  - 03:  
  - 04:  
  - 05:  
  - 06:  
  - 07:  
  - 08:  
  - 09:  
  - 10:  
  - 11:  
  - 12:  
  - 13:  
  - 14:  
  - 15:  
  - 16:  
  - Free logo memory:126352
<ESC><ENQ><5> returns a 2-byte response, reflecting the status of all virtual sensors. Virtual sensors maintain their functionality in all configurations of this printer, while physical sensors reported by <ESC><ENQ><6> may signal differently depending on installation factors such as vertical or horizontal installation.

The same physical sensor can give several virtual statuses depending on when the sensor is activated in the print cycle.

The first byte of the response is reserved for future use.

Second Byte:

<table>
<thead>
<tr>
<th>Bit</th>
<th>Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Sensor 1,</td>
</tr>
<tr>
<td></td>
<td>Paper before</td>
</tr>
<tr>
<td></td>
<td>head</td>
</tr>
<tr>
<td>6</td>
<td>Sensor 2,</td>
</tr>
<tr>
<td></td>
<td>Black mark</td>
</tr>
<tr>
<td>5</td>
<td>Sensor 3,</td>
</tr>
<tr>
<td></td>
<td>Paper after head</td>
</tr>
<tr>
<td>4</td>
<td>Sensor 4,</td>
</tr>
<tr>
<td></td>
<td>loop ready</td>
</tr>
<tr>
<td>3</td>
<td>Sensor 5,</td>
</tr>
<tr>
<td></td>
<td>presenter</td>
</tr>
<tr>
<td>2</td>
<td>Sensor 6,</td>
</tr>
<tr>
<td></td>
<td>retract ready</td>
</tr>
<tr>
<td>1</td>
<td>Sensor 7,</td>
</tr>
<tr>
<td></td>
<td>in retract</td>
</tr>
<tr>
<td>0</td>
<td>Sensor 8,</td>
</tr>
<tr>
<td></td>
<td>at bin</td>
</tr>
</tbody>
</table>

Figure 27 • Physical-to-Virtual Sensor Mapping
Results in a 2-byte response, reflecting the status of each sensor. This command is intended as a go/no go indication.

First Byte:

<table>
<thead>
<tr>
<th>Bit</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

- Do not use!
- Error black mark
- Power has been OFF***
- Print data exists**
- Status code available*

Second Byte:

<table>
<thead>
<tr>
<th>Bit</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
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<tbody>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Out of paper
- Paper-near-end****
- Cutter stuck
- Print Head lifted
- Retract unit mounted

**Important** • <ESC><ENQ><6> is for compatibility with older printers. Please use <ESC><ENQ><5> in new applications.

**Note** • Mask away the undefined bits in your application program to avoid having to change the application, if future firmware releases starts using them. Mask first reply byte with E8h, Mask second reply byte with BBh

**Table 4 • Sensor Status**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>This bit indicates that a status code is available. Use ESC ENQ 1 or ESC ENQ E to fetch it.</td>
</tr>
</tbody>
</table>
| **| This bit tells you that there is data in the printer that has not yet been printed. There are two possible reasons for that:  
   1) The last command received by the printer was not a command that triggers a printout.  
   2) The printer is printing |
| ***| When parallel cable is connected, both printer and host computer must have been off to set this bit. This is because the interface powers the RAM in the printer. |
| ****| This paper-near-end bit differs from the ESC ENQ 2 response, see Paper-near-end Enquiry on page 63. |

Bit 4 and 5 in the first byte are reset when read.
Results in a 2-byte response representing the version of the installed firmware.

The first byte represents major versions, and the second byte minor versions.

If no firmware is loaded, the printer will answer with 0.

**Example •**

Send→  `<ESC>`<ENQ>`<7>`
Read←  02 29 (hex)

That is, a response with the value 02 29 (hex) indicates version 2.41.

Results in a 6-byte response representing the serial number of the printer’s control board.

**Example •**

Send→  `<ESC>`<ENQ>`<9>`
Read←  00 00 02 2B C6 28 (hex), or 0 2 43 198 40 (dec)

Results in a 1-byte response representing the control board revision. A minus sign indicates that no revision has been made, while A indicates the first revision, and so on.

**Example •**

Send→  `<ESC>`<ENQ>`<10>`
Read←  n Where n can be ‘A’ (ASCII) or 41 (hex) or 65 (dec)

Results in a 1-byte response representing the temperature of the Print Head.

**Example •**

Send→ `<ESC>`<ENQ>`<11>`
Read← n Where n is a value representing the approximate temperature in Celsius.

The answer is a signed byte (two's complement). If bit 7 is 1 than it’s a negative value, invert all bits and add 1 to get the value.
Results in a 2-byte response representing the version of the installed bootware. The first byte represents major versions, and the second byte minor versions.

**Example •**

Send→<ESC><ENQ><12>
Read←01 30 (hex)

That is, a response with the value 01 30 (hex) indicates version 1.48.

**Note •** TTP 2000 does not store the bootware in the printer so this query will always return <0><0>.

Results in a string containing the device ID in the Windows Plug and Play string format. The two first bytes represent the string length.

**Example •**

Send→<ESC><ENQ>c
Read←0—106 (decimal) This indicates that the string is 104 characters (plus two characters indicating the string length)
Extended status is status from the printer together with devices connected to the \( \text{I}^2\text{C} \) options-bus available in some Zebra printers (the TTP 2000 series does not have any \( \text{I}^2\text{C} \) bus so these parts of the command are superfluous). The short message protocol gives replies up to 255 bytes. Other protocols may be defined in the future. Protocols are described in separate documents.

\(<\text{ESC}><\text{ENQ}>E\) results in a variable length reply

<table>
<thead>
<tr>
<th></th>
<th>Protocol version, 11 (hex) = Short Message Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>n1</td>
<td>Protocol length in bytes</td>
</tr>
<tr>
<td>n2</td>
<td>Data specified by the protocol</td>
</tr>
</tbody>
</table>

Short message status examples

**Example 1** • Out of paper presenter Jam, and shutter open error.

\[11 \ 07 \ 01 \ 05 \ 20 \ 83 \ 87 \ 21 \ 81 \text{ Hex} \]

- Status code 1 (shutter device)
- Device Shutter
- Status code 7 (printer device)
- Device local host (printer)
- Tag message length (bytes)
- Tag ID: Status messages
- Protocol length in bytes
- Protocol SM, version 1 (short message)

**Example 2** • No errors in any device.

\[11 \ 02 \ 01 \ 00 \text{ Hex} \]

- Tag message length (bytes)
- Tag ID: Status messages
- Protocol length in bytes
- Protocol SM, version 1 (short message)

**ESC ENQ P n1**

Parameter-Setting Data Enquiry

This command requests information about the setting of parameter n1, that is, the parameter value stored in EEPROM or any parameter value temporarily set by other ESC commands.

<table>
<thead>
<tr>
<th></th>
<th>gives the setting of parameter 1, etc. The parameter names are listed in “Serial interface set-up” under <em>Summary of Parameter Settings on page 81.</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>n1 = 1</td>
<td></td>
</tr>
<tr>
<td>n1 = 0</td>
<td>gives a response where the first two bytes specifies the length of data to come, and then follows a block of data for all parameters in the temporary setup.</td>
</tr>
</tbody>
</table>
The "acknowledge marker" \( n \) is placed in the command queue and when the execution of commands reaches the marker it is sent back to the host computer. This is an addition to the status commands that pass the queue and are answered immediately when received.

\[ \text{ESC ACK } n \]

| 1B 06 \( n \) | hex |
| 27 6 \( n \) | decimal |

\( n \) = One-byte marker. Range 1 to 255

**Example •**

Print data" \(<\text{LF}><\text{ESC}>p<\text{ESC}><\text{ACK}><1>\)

Wait for \(<1>\)

\(<\text{RS}><\text{ESC}><\text{ACK}><2>\)

Wait for \(<2>\)

The printer will send \(<1>\) when \(<\text{print data}>\) has executed and \(<2>\) when the ejecting has been performed.

**Important •** You must wait for the acknowledge marker to return before sending any more data to the printer.

**Note •** Acknowledge marker cannot be used for events that write to the flash PROM, for instance font loading. This is because the writing procedure erases the buffer, including the markers, and uses all RAM in the printer.
Font Loading

The printer can store 8 fonts in its flash PROM. The memory available for fonts is printed on the self-test printout. The character size is fixed, so you must load one font file for each character size you require. The fonts are given font numbers when they are loaded into the printer. The first font is assigned number 0 and the next font 1 etc. up to font 7. Parameter p14 “Font Selection” will determine what font to use when no font selection command has been received (see Print Setup on page 85).

**Note •** Multiple height and width commands can be used on all fonts.

You cannot erase a single font, but must erase font 4-7 with command `<ESC>&D`, or all eight fonts with `<ESC>&C`, then reload the fonts you wanted to keep.

Windows software for font generation and management is available on the Zebra web site. If you need to load fonts in a non-Windows environment, use the `<ESC>&<NUL>` command.

The time required for processing the font data that is loaded is typically 15–20 seconds per font, excluding transfer time. During this time, any data sent to the printer will be lost.

**Note •** The font processing ends with a reset. The presenter motor runs momentarily to indicate that the printer is ready to be used.

**Caution •** Loading to the flash PROM will erase the RAM completely since the RAM is used during the loading process. Any print data residing in RAM will thus be lost.
File Format

A font consists of a header describing the font, then data for every character in the font. The header has to be downloaded even if the font consists of a single character only. Below is a description of the font header.

This will be printed on status printouts. (For example, Swiss 10 cpi.)

<table>
<thead>
<tr>
<th>1 byte</th>
<th>Reserved</th>
<th>Should always be 0 (zero)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 byte</td>
<td>Char. width (X)</td>
<td>The number of bytes required for the width of one character, usually 2 or 3. Range 1 to 8.</td>
</tr>
<tr>
<td>1 byte</td>
<td>Character pitch</td>
<td>The maximum width of one character in the set. This value is used for tab position calculation. Range 1 to 255.</td>
</tr>
<tr>
<td>1 byte</td>
<td>Char. height (Y)</td>
<td>The maximum height of one character matrix measured in pixels. This is also the minimum line spacing for this character set.</td>
</tr>
</tbody>
</table>
| 27 byte | Font name | String of characters used to identify the character set. This field can also contain the name of the code page the font is generated with. This is done with NUL separator between the font name and the code page name. Then, the entire field should be padded with NUL up to 27 bytes. Example: Arial 8<0>Western<0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0><0<
Character Bitmap Data

A character is made up of a bitmap the size of which is:

Char. width (X) * Char. Height (Y) bytes.

The bitmap data consists of bitmap patterns for each character in a character set for which the parameter Char_width in the Char_matrix table is set to a value between 1 and 24. A character that has its Char_width set to zero, is not included in the bitmap data.

The bitmap for one character is then defined according to the following table:

Example • In this example, each row consists of 3 columns equal to 3 bytes.

(COL 0, ROW Ystart) , (COL 1, ROW Ystart) , (COL 2, ROW Ystart)
(COL 0, ROW Ystart+1) , (COL 1, ROW Ystart+1) , (COL 2, Ystart+1)
COL 0, ROW Ystart+Yheight), (COL 1, ROW Ystart+Yheight ), (COL 2, ROW Ystart+Yheight)

In order to minimize the required storage space, only rows between Ystart and Ystart+Yheight are included in the character bitmap.
Logotypes

Up to 16 logotypes can be stored in the flash PROM of the printer. The logotypes can be positioned and printed out with commands <ESC>g or <ESC>L.

The exact number of logotypes and their sizes is determined by the total amount of memory used for fonts, logotypes and loaded firmware. Make a test printout to see how much memory is available.

Note • Logotype No. 0 is printed in the top of the self test printout, so this can be used to customize the self test printout.

Loading

Windows software that converts black and white BMP bitmap files to logotypes and load them into the printer is available on the Zebra web site. If you need to load logotypes in a non-Windows environment, use the <ESC>&1 command.

The time required by the printer to process logotype data, excluding transfer time from the PC, is typically 15 to 20 seconds, per logotype. During this time, any data sent to the printer will be lost.

File Format

A header containing information about the logotype number, size and logotype name shall define each loaded logotype. Immediately after the header follows the actual bitmap of the logotype.

<ESC>&<1><Header><Bitmap>

Header

<table>
<thead>
<tr>
<th>Byte 0</th>
<th>Logotype number used to identify the logotype when printing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Byte 1</td>
<td>X size measured in bytes.</td>
</tr>
<tr>
<td>Byte 2</td>
<td>Y size measured in pixels.</td>
</tr>
<tr>
<td>Byte 3—15</td>
<td>A logotype name that will be printed on test printouts.</td>
</tr>
</tbody>
</table>
Bitmap

The bitmap must have exactly (X size * Y size) number of bytes. 1=black, 0=white dot.

Bit No. 7 in byte 0 represents the top left corner of the logotype.

```
   7 6 5 4 3 2 1 0
   0 1 2 3 4 5 6 7
   0 1 2 3 4 5 6 7
   X size

   Y size
```

Printing

To print a logotype you can use two commands. `<ESC>L<n>` prints the logotype at the current cursor position, just like any character. `<ESC>g<n1><n2><n3><n4><n5>` prints the logotype at a specified X-Y position.

<table>
<thead>
<tr>
<th>n1</th>
<th>One byte logotype number, (0—15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n2n3</td>
<td>Two byte X position measured in pixels from the left hand edge of the print window.</td>
</tr>
<tr>
<td>n4n5</td>
<td>Two byte Y position in pixels from top of the page.</td>
</tr>
<tr>
<td></td>
<td>These bytes must always be inserted but they are ignored in variable-page-length mode where logotypes are always printed at the current Y-position.</td>
</tr>
</tbody>
</table>

Erasing

All logotypes are erased with the `<ESC>&L` command.

Caution • Loading to the flash PROM will erase the RAM completely since the RAM is used during the loading process. Any print data residing in RAM will be lost.
Status Reporting

The printer is equipped with a number of sensors that report the printer status and various conditions such as out-of-paper, previous printout not removed, etc.

Figure 28 • Sensor Placement in the Printer

A good practice in unattended printer applications is to check for errors and paper availability before printing.

1. Send a Status Report Query (\texttt{<ESC><ENQ><6>}, see Status Report on page 66) and check that the answer is "No errors"

2. If “Status codes available” is indicated, read out the status message with Status Request (\texttt{<ESC><ENQ><1>}, see Status Enquiry on page 62), and take appropriate actions.

3. Send a paper-near-end query (\texttt{<ESC><ENQ><2>}, see Paper-near-end Enquiry on page 63) to see if the sensor reports low paper level.

4. If paper-near-end is indicated, report the condition to the systems supervisor so that he can schedule a service visit to the printer.

5. Print the printout.

Important • A status reply must be read! Sending a second status query without reading the reply of the first query may lock the printer.
**Note** • When using a multitask OS, status queries and responses may not be transferred immediately from your application to the printer and vice versa. So write your program in such a way that it repeats the query if it gets a timeout or an invalid reply. Good practice is to ask once every ten seconds, five times before giving up.

**Note** • You should construct your application in such a way so as not to request status while printing, as this can result in loss of data.
Default Parameter Settings

Some of the printer settings can be stored in an EEPROM so that they will be used also after power OFF.

The stored parameter settings are printed out on the self-test printout.

The number in front of the function is the parameter number (n) used when setting the parameter with the command <ESC>&P<n><v>.

You can use the parameter settings pretty much like normal commands. Either send the parameter values with each printout, or set them up once and then send <ESC>&<4> to store all settings in the EEPROM.

You can always return to factory default settings by sending <ESC>&<F>, and then storing those settings with <ESC>&<4>.

Note • The parameters can be locked so that no changes are possible. Check parameter 53 on the self-test printout to find out.

Note • If you try to set a parameter to an invalid value, the parameter will be set to the nearest valid value below.
How the Parameters are Described

Default Value

The default values indicated are "factory default settings" you get by sending \textless ESC\&F\textgreater. These are not necessarily the settings that your printer was originally delivered with because many printers have customized settings when delivered.

Examples

Command examples are formatted in \texttt{Courier} and typed in the same way as used in the Zebra Toolbox:

\begin{verbatim}
<ESC>&P<1><19>
\end{verbatim}

Where \texttt{<ESC>} means the escape character 27 decimal (hex 1B). Numbers between less-than and greater-than characters, for example \texttt{<1><15>}, means 1 and 15 decimal (hex 1 and F).

\begin{itemize}
\item \texttt{Note} • Parameter settings can be permanently stored with \texttt{<ESC>&4>}. 
\end{itemize}
## Summary of Parameter Settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>ESC&amp;F Default</th>
<th>Page</th>
<th>TTP model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Baud rate</td>
<td>96 (9600 Baud)</td>
<td>page 82</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>Data bits</td>
<td>8</td>
<td>page 82</td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>Parity</td>
<td>0 (No parity)</td>
<td>page 83</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>Flow control</td>
<td>2 (Hardware)</td>
<td>page 83</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td>Disable parallel port signaling</td>
<td>1 (Yes)</td>
<td>page 84</td>
<td>X</td>
</tr>
<tr>
<td>7</td>
<td>Burn time</td>
<td>9</td>
<td>page 85</td>
<td>X X X</td>
</tr>
<tr>
<td>8</td>
<td>Print speed</td>
<td>19 (150 mm/s)</td>
<td>page 85</td>
<td>X X X</td>
</tr>
<tr>
<td>9</td>
<td>Presenter loop length</td>
<td>15 (48 cm)</td>
<td>page 86</td>
<td>X X X</td>
</tr>
<tr>
<td>10</td>
<td>Pulse control</td>
<td>3 (2 burn pulses)</td>
<td>page 86</td>
<td>X X X</td>
</tr>
<tr>
<td>12</td>
<td>Font attributes</td>
<td>0 (off)</td>
<td>page 86</td>
<td>X X X</td>
</tr>
<tr>
<td>13</td>
<td>Line spacing</td>
<td>0 (Auto)</td>
<td>page 86</td>
<td>X X X</td>
</tr>
<tr>
<td>14</td>
<td>Font selection</td>
<td>0 (TTP Mono 9)</td>
<td>page 86</td>
<td>X X X</td>
</tr>
<tr>
<td>15 to 30</td>
<td>Tab stop</td>
<td>4, 8, 12 etc.</td>
<td>page 87</td>
<td>X X X</td>
</tr>
<tr>
<td>31</td>
<td>Presenter speed</td>
<td>180 (1800 steps/s)</td>
<td>page 87</td>
<td>X X X</td>
</tr>
<tr>
<td>33</td>
<td>CR/LF</td>
<td>0 (LF = CR/LF, CR=Ignored)</td>
<td>page 88</td>
<td>X X X</td>
</tr>
<tr>
<td>34</td>
<td>Auto cut after FF</td>
<td>1 (Off)</td>
<td>page 88</td>
<td>X X X</td>
</tr>
<tr>
<td>35</td>
<td>Black mark sync</td>
<td>0 (Off)</td>
<td>page 88</td>
<td>X X X</td>
</tr>
<tr>
<td>36</td>
<td>Document mode</td>
<td>1 (Variable)</td>
<td>page 89</td>
<td>X X X</td>
</tr>
<tr>
<td>37 &amp; 38</td>
<td>Page length, Minimum / fixed / BM</td>
<td>2, 88 (75 mm)</td>
<td>page 90</td>
<td>X X X</td>
</tr>
<tr>
<td>39</td>
<td>Max black mark length</td>
<td>80 (10 mm)</td>
<td>page 91</td>
<td>X X X</td>
</tr>
<tr>
<td>40</td>
<td>Min black mark length</td>
<td>24 (3 mm)</td>
<td>page 91</td>
<td>X X X</td>
</tr>
<tr>
<td>41 &amp; 42</td>
<td>Black mark cut offset</td>
<td>0, 0 (0 mm)</td>
<td>page 92</td>
<td>X X X</td>
</tr>
<tr>
<td>43 &amp; 44</td>
<td>Black mark top margin</td>
<td>0, 0 (Disabled)</td>
<td>page 92</td>
<td>X X X</td>
</tr>
<tr>
<td>45</td>
<td>Presenter mode</td>
<td>0 (Eject)</td>
<td>page 92</td>
<td>X X X</td>
</tr>
<tr>
<td>46</td>
<td>Cut position calibration</td>
<td>0</td>
<td>page 93</td>
<td>X X X</td>
</tr>
<tr>
<td>47</td>
<td>Wall compensation</td>
<td>0</td>
<td>page 93</td>
<td>X X X</td>
</tr>
<tr>
<td>48</td>
<td>Paper width</td>
<td>0 (Auto)</td>
<td>page 94</td>
<td>X X X</td>
</tr>
<tr>
<td>49</td>
<td>Advance before cut</td>
<td>1 (On)</td>
<td>page 94</td>
<td>X X X</td>
</tr>
<tr>
<td>51</td>
<td>Black mark level</td>
<td>75</td>
<td>page 94</td>
<td>X X X</td>
</tr>
<tr>
<td>52</td>
<td>Warning level</td>
<td>0 (Off)</td>
<td>page 95</td>
<td>X X X</td>
</tr>
<tr>
<td>53</td>
<td>Lock parameters</td>
<td>0 (unlocked)</td>
<td>page 95</td>
<td>X X X</td>
</tr>
<tr>
<td>56</td>
<td>Max status code</td>
<td>255</td>
<td>page 95</td>
<td>X X X</td>
</tr>
<tr>
<td>57</td>
<td>System</td>
<td>255</td>
<td>page 96</td>
<td>X X X</td>
</tr>
</tbody>
</table>
Default Parameter Settings

Summary of Parameter Settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>ESC&amp;F Default</th>
<th>Page</th>
<th>TTP model</th>
</tr>
</thead>
<tbody>
<tr>
<td>58</td>
<td>Out of paper level</td>
<td>0</td>
<td>page 96</td>
<td>X X X</td>
</tr>
<tr>
<td>59</td>
<td>USB vendor Class</td>
<td>0 (Printer Class)</td>
<td>page 97</td>
<td>X</td>
</tr>
<tr>
<td>60</td>
<td>Partial cut length</td>
<td>10</td>
<td>page 97</td>
<td>X X X</td>
</tr>
</tbody>
</table>

Note • When the printer is set up the way you like it to be, you send \(<\text{ESC}>\&<4>\), and all settings will be stored.

Serial Interface Set-Up

1 96 Default 11 Max 96 Max

Baud Rate

Stores the communication speed on the serial interface.

- \(<\text{ESC}>\&P<1><24>\) 2400 bps
- \(<\text{ESC}>\&P<1><48>\) 4800 bps
- \(<\text{ESC}>\&P<1><96>\) 9600 bps
- \(<\text{ESC}>\&P<1><19>\) 19200 bps
- \(<\text{ESC}>\&P<1><38>\) 38400 bps
- \(<\text{ESC}>\&P<1><57>\) 57600 bps
- \(<\text{ESC}>\&P<1><11>\) 115200 bps

Note • If you set an invalid value, the baud rate will return to the previous value.

2 8 Default 7 Min 8 Max

Data Bits

Selects if 7-bit ASCII, or 8-bit, is used on the serial interface.

- \(<\text{ESC}>\&P<2><8>\) 8-bits (characters 0-255)
- \(<\text{ESC}>\&P<2><7>\) 7-bits (characters 0-127)

Important • In 7-bit mode you can not print graphic, read status or set parameters because no value can ever be greater than 127.
### Parity

Select what parity to use on the serial interface.

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;ESC&gt;&amp;P&lt;3&gt;&lt;0&gt;</code></td>
<td>No parity</td>
</tr>
<tr>
<td><code>&lt;ESC&gt;&amp;P&lt;3&gt;&lt;1&gt;</code></td>
<td>Odd parity</td>
</tr>
<tr>
<td><code>&lt;ESC&gt;&amp;P&lt;3&gt;&lt;2&gt;</code></td>
<td>Even parity</td>
</tr>
</tbody>
</table>

### Flow-Control

Select what handshaking to use on the serial interface.

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;ESC&gt;&amp;P&lt;4&gt;&lt;0&gt;</code></td>
<td>No flow control</td>
</tr>
<tr>
<td><code>&lt;ESC&gt;&amp;P&lt;4&gt;&lt;1&gt;</code></td>
<td>Xon / Xoff</td>
</tr>
<tr>
<td><code>&lt;ESC&gt;&amp;P&lt;4&gt;&lt;2&gt;</code></td>
<td>Hardware</td>
</tr>
</tbody>
</table>

**Important** • DO NOT USE Xon/Xoff if you send any type of binary data like graphics data, status requests etc. Xon / Xoff only works when plain text is sent unidirectional to the printer. Graphics and status replies may well contain the Xon (11 hex) and Xoff (13 hex) characters and will obstruct the communication.
Parallel Port Setup

Pins 12 and 15 on the parallel port signal paper out and error. However, in an unattended kiosk you may not want this because it causes the host computer to stop communicating, and the operating system may display a warning or error message on the kiosk screen.

By disabling the hardware signals, the kiosk software can for example use status commands to find out paper level and alert appropriate personnel when the level is low, then close the kiosk when paper is out.

| <ESC>&P<5><0> | Paper out and error signals are active and enabled. |
| <ESC>&P<5><1> | Paper out and error signals are disabled |

**Note** • When enabled, the hardware signal on pin 12 and 15 will block all communication until the error is corrected. This means that it will be impossible to ask for status.
Print Setup

![Burn Time Table]

**Note** • DRV indicates that, when using Windows, the driver takes over this setting so please set appropriate value in the driver properties/document defaults.

A long burn time gives darker print. On insensitive paper types you may have to increase the burn time to get an acceptable print quality.

---

**Caution** • Set the Burn Time to the lowest value that provides good print quality. Burn Time set too high could cause unreadable text or barcodes.

---

![Max Print Speed Table]

The main reason to decrease the print speed is to enhance print quality, and to reduce average current consumption.

---

**Important** • Some settings result in printer chassis resonance causing increased noise and deteriorated print quality. If this occurs, increase the print speed.

To print in cold weather, please measure the temperature inside the kiosk and set the Print Speed and Presenter Speed according to temperature:

<table>
<thead>
<tr>
<th>Temperature</th>
<th>n8</th>
<th>n31</th>
</tr>
</thead>
<tbody>
<tr>
<td>–10°C</td>
<td>19</td>
<td>150</td>
</tr>
<tr>
<td>–15°C</td>
<td>19</td>
<td>140</td>
</tr>
<tr>
<td>–20°C</td>
<td>19</td>
<td>120</td>
</tr>
<tr>
<td>–30°C</td>
<td>11</td>
<td>70</td>
</tr>
</tbody>
</table>

**Note** • These readings are just guidelines based on the motor specifications; there is no guarantee that the printer will operate at the indicated temperatures.
Limits the maximum loop length. When the set length is reached, the printer ejects part of the printout and continues to print. You use this when you have very limited space for the loop inside the kiosk. Each step represents a 3.2-cm increment.

Setting the parameter to 0 disables the looping and feeds the paper straight out.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;ESC&gt;&amp;P&lt;9&gt;&lt;0&gt;</td>
<td>Disable the loop</td>
</tr>
<tr>
<td>&lt;ESC&gt;&amp;P&lt;9&gt;&lt;5&gt;</td>
<td>16 cm loop</td>
</tr>
<tr>
<td>&lt;ESC&gt;&amp;P&lt;9&gt;&lt;15&gt;</td>
<td>48 cm loop</td>
</tr>
</tbody>
</table>

Caution • 3 and 7 are the only allowed settings, do not set anything else!

Controls how the print head burns the pixels.

- <ESC>&P<10><3> 2 burn pulses
- <ESC>&P<10><7> 4 burn pulses

The line spacing is normally set by the font height. With this parameter you can set a line spacing that is higher than the font height. Line spacing settings lower than the font height will be ignored.

- <ESC>&P<13><30> 30 pixels or font height, whichever is the largest

Store which font number is used if no font is specified. Font is selected using the "Select Font" command <ESC>! &n>. Selecting an invalid font gives a software error status message (invalid index).
Stores 16 different TAB stop positions. The position is set in increments of 2.5 mm.

Tab position 255 sets a tab stop on the last position of the line. Use this if you want underline or reversed text to extend across the full paper width.

To set all tab stops at once, follow the procedure *Set several parameters at once on page 61.*

To move a single tab stop, use the set parameter command `<ESC>&P`.

**Example •**

`<ESC>&P<15><10>` Set the first tab stop 25 mm from the left margin.

Default positions are one TAB on each cm; that is parameter values 4, 8, 12 etc.

Sets the speed at which the paper is ejected / retracted.

1 = 10 steps/s, so the default 180 means 1800 steps/s. Do not exceed the default setting, as this may cause the motor to stall.

To print in cold weather conditions, please measure the temperature inside the kiosk and set the speed according to the temperature:

<table>
<thead>
<tr>
<th>Temperature</th>
<th>n8</th>
<th>n31</th>
</tr>
</thead>
<tbody>
<tr>
<td>–10°C</td>
<td>19</td>
<td>150</td>
</tr>
<tr>
<td>–15°C</td>
<td>19</td>
<td>140</td>
</tr>
<tr>
<td>–20°C</td>
<td>19</td>
<td>120</td>
</tr>
<tr>
<td>–30°C</td>
<td>11</td>
<td>70</td>
</tr>
</tbody>
</table>

**Note •** These readings are just guidelines based on the motor specifications; there is no guarantee that the printer will operate at the indicated temperatures.
Carriage Return and Line Feed can be interpreted in five different ways to suit different operating systems.

<table>
<thead>
<tr>
<th>CR/LF Behavior</th>
<th>&lt;ESC&gt;&amp;P&lt;33&gt;&lt;0&gt;</th>
<th>&lt;ESC&gt;&amp;P&lt;33&gt;&lt;1&gt;</th>
<th>&lt;ESC&gt;&amp;P&lt;33&gt;&lt;2&gt;</th>
<th>&lt;ESC&gt;&amp;P&lt;33&gt;&lt;3&gt;</th>
<th>&lt;ESC&gt;&amp;P&lt;33&gt;&lt;4&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>CR/LF</td>
<td>CR/LF</td>
<td>LF</td>
<td>LF</td>
<td>LF</td>
</tr>
</tbody>
</table>

**Note** • v=0 is suitable for Windows, v=1 for UNIX and Mac OS X, v=2 for DOS, and v=4 for Macintosh Classic.

Note • The character currently interpreted as LF converts text from the input buffer to pixels on the paper. If no such character has been received after 379 characters, a linefeed is inserted automatically.

Decides if the printer should cut after executing an FF command, or if it should just feed the form length.

<table>
<thead>
<tr>
<th>Auto Cut after FF</th>
<th>&lt;ESC&gt;&amp;P&lt;34&gt;&lt;0&gt;</th>
<th>&lt;ESC&gt;&amp;P&lt;34&gt;&lt;1&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>No cut</td>
<td>Cut</td>
<td></td>
</tr>
</tbody>
</table>

Selects if the cut should be synchronized or not:

<table>
<thead>
<tr>
<th>Black Mark Sync</th>
<th>&lt;ESC&gt;&amp;P&lt;35&gt;&lt;0&gt;</th>
<th>&lt;ESC&gt;&amp;P&lt;35&gt;&lt;1&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>No synchronization</td>
<td>Cuts will be synchronized with black marks/gaps</td>
<td></td>
</tr>
</tbody>
</table>

This parameter also determines the function of auto sensor calibration:

If black mar/gap sync is enabled, the auto calibration will set: n37-n40, n57 bit 3, and n58.

If set to zero, only the BM level n51 and out of paper level n58 will be set.
Determines what should control the page length:

<table>
<thead>
<tr>
<th>36</th>
<th>Default</th>
<th>Max</th>
</tr>
</thead>
</table>

- **<ESC>&P<36><0>** Fixed Document Mode. Shorter documents will automatically be extended, while longer documents will be divided into several pages of the desired length. Page length will be the length set by parameters 37 and 38.

- **<ESC>&P<36><1>** Variable Document Mode. The length of the page varies with the contents (printouts shorter than the value specified by parameters 37 and 38 will be extended to that length).

- **<ESC>&P<36><2>** Black Mark Mode. Marks on the paper set the form length. Minimum one form length is always fed. If a black mark is found before that, the printer feeds to the next black mark, then cuts and ejects. This ensures that no small paper strips are cut off and left in the printer.

**Note** • Max page length in Fixed Document Mode is about 140 mm, see *Fixed Document Mode* on page 91.
Defines three different things:

1. The minimum length of a page in variable document mode
2. The actual page length in fixed document mode
3. The distance between black marks in black mark mode

One step is 0.125 mm. Settings shorter than 70 mm will be interpreted as 70 mm.

\[ \text{<ESC>&P<37><6><ESC>&P<38><64>} \quad \text{Set page length to 200 mm.} \]

**Figure 29 • Definition of Page Size**

<table>
<thead>
<tr>
<th>Length</th>
<th>p37</th>
<th>p38</th>
</tr>
</thead>
<tbody>
<tr>
<td>70 mm</td>
<td>&lt;2&gt;</td>
<td>&lt;48&gt;</td>
</tr>
<tr>
<td>75 mm</td>
<td>&lt;2&gt;</td>
<td>&lt;88&gt;</td>
</tr>
<tr>
<td>100 mm</td>
<td>&lt;3&gt;</td>
<td>&lt;32&gt;</td>
</tr>
<tr>
<td>150 mm</td>
<td>&lt;4&gt;</td>
<td>&lt;176&gt;</td>
</tr>
<tr>
<td>200 mm</td>
<td>&lt;6&gt;</td>
<td>&lt;64&gt;</td>
</tr>
<tr>
<td>250 mm</td>
<td>&lt;7&gt;</td>
<td>&lt;208&gt;</td>
</tr>
<tr>
<td>300 mm</td>
<td>&lt;9&gt;</td>
<td>&lt;96&gt;</td>
</tr>
</tbody>
</table>

Page width = applicable print window width

Top margin (Distance between cut and print line, 9 mm)

Page length (minimum 70 mm)

Paper transport direction
Fixed Document Mode

Max fixed document mode page length is depends of the amount of free ram. Make a self-test printout to check how much is available in your printer. (Depends on firmware version).

\[
\text{Page length} = \frac{\text{Free RAM in bytes} - 1024}{\text{Paper width}} - \text{top margin} - \text{bottom margin}
\]

Paper length, top, and bottom margins are in pixel lines. Paper width is in bytes or mm. (1 byte = 1 mm.)

**Example •**

If Free RAM on a TTP 2000 is 114627 bytes, print width is 80 mm = 80 bytes, top margin is 20 mm, and bottom margin 10 mm (20 x 8 = 160 and 10 x 8 = 80 pixel lines):

\[
\text{Page length} = \frac{114627 - 1024}{80} - 160 - 80 = 1180 \text{ pixel lines} = 147 \text{ mm}
\]

If a too large fixed page is specified the printout will be blank from memory full to the cut.

<table>
<thead>
<tr>
<th>BM (black mark) length</th>
<th>DRV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default 80</td>
<td></td>
</tr>
<tr>
<td>Min 1 Max 160</td>
<td></td>
</tr>
</tbody>
</table>

Specifies the length of the black mark in 0.125-mm steps. Measure the length of the black mark on your paper and enter that value here.

Marks 5 mm longer than this value are interpreted as paper out. The default value of 80 equals 10 mm.

\(<\text{ESC}>\&P<39><40>\) Sets max black mark length to 5 mm.

<table>
<thead>
<tr>
<th>Min BM (black mark) length “Garbage Filter”</th>
<th>DRV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default 24</td>
<td></td>
</tr>
<tr>
<td>Min 1 Max 159</td>
<td></td>
</tr>
</tbody>
</table>

Specifies the minimum length of the black mark in 0.125-mm steps. Shorter marks are ignored. The default value of 24 equals 3 mm.

\(<\text{ESC}>\&P<40><32>\) Sets min black mark length to 4 mm.

This parameter is a filter to filter-out pre-print or marks on the paper. If pre-print is smaller than this value, it will not be regarded as a black mark. About 1/3 of the black mark length is usually a suitable setting.
Defines the paper feed between the black mark detection and cut. One step is 0.125 mm.

\[ \text{<ESC>>&P<41><0>&P<42><0>} \]
Auto offset, places the cut in the middle of the black mark.

\[ \text{<ESC>>&P<41><0>&P<42><1>} \]
Places the cut at the physical distance between the black-mark sensor and the cutter. This means the distance between the cut and the black mark is 25 mm.

\[ \text{<ESC>&P<41><1>&P<42><144>} \]
Feeds 50 mm between trailing edge of the black mark and cut.

Defines the distance between the cut in Black mark mode and the top of the first text line in 0.125 mm steps.

0 = disabled top margin. This gives the physical top margin of the printer, which is 9 mm.

Setting that give a margin shorter than 9mm will be extended to 9mm. This parameter can only be used to extend the margin, not reduce it.

\[ \text{<ESC>&P<43><0>&P<44><240>} \]
Add 30-mm top margin.

Sets the function of the presenter.

\[ \text{<ESC>&P<45><0>} \]
Eject page when new page is printed. (Retract disabled)

\[ \text{<ESC>&P<45><3>} \]
Eject page when new page is printed. Page not taken after 30s will be retracted. (Range 1-30, 1 step = 10 s)

\[ \text{<ESC>&P<45><100>} \]
Retract page when new page is printed

\[ \text{<ESC>&P<45><103>} \]
Retract page when new page is printed. Page not taken after 30s will be retracted. (Range 101-130, 1 step = 10 s)

\[ \text{<ESC>&P<45><200>} \]
Do nothing when new page is printed. (Auto-eject and retract disabled).

\[ \text{<ESC>&P<45><203>} \]
Do nothing when new page is printed. Page not taken after 30s will be retracted. (Range 201-230, 1 step = 10 s)
Calibrates the cut position. The value is a signed byte.

A change of 1 moves the cut 1/8 of a mm more than normal.

A change of –1 moves the cut 1/8 of a mm less than normal. -1 is entered as 256-1=255

The positive range is 1-127. The negative range is 128-255.

This parameter can be individually set for each printer and is not affected by the driver or reset commands. It is used to compensate for differences in sensor position in production. After moving or replacing the TOF-sensor, the calibration may have to be done again.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;ESC&gt;&amp;P&lt;46&gt;&lt;0&gt;</td>
<td>The cut is placed at the center of the sensor’s image of the black-mark.</td>
</tr>
<tr>
<td>&lt;ESC&gt;&amp;P&lt;46&gt;&lt;8&gt;</td>
<td>The paper is fed 1 mm extra before being cut.</td>
</tr>
<tr>
<td>&lt;ESC&gt;&amp;P&lt;46&gt;&lt;248&gt;</td>
<td>The paper is fed 1 mm less before being cut.</td>
</tr>
</tbody>
</table>

**Note** • The cut is not 100% repetitive because the paper may be closer to the sensor for one ticket than it is for the next. So do not expect a perfect synchronization between perforation and cut.

It is better to cut slightly after a perforation than before because cutting before perforation leaves a flap that is pushed through the printer and that may cause paper jam.

When the printout is printed and cut, the presenter ejects 50 mm of the page so that the customer can take it. If the kiosk wall is thick, or if you just want a longer part of the printout to be visible, this parameter adds extra eject length.

\<ESC>\&P<47><50\> Adds 50 mm extra eject = 100 mm in total.
Paper Width (mm)

Sets the width of the paper loaded into the printer. The range is 20 to 80 mm. This can also be used to get left and right margins, for instance if you load 80 paper but set the paper width to 60 mm you get a 10 mm margin on both sides of the page.

**Note** • The page width is not changed until the parameters are stored in the EEPROM with the command \(<\text{ESC}>\&<4>\). So you cannot change paper width within a page.

<table>
<thead>
<tr>
<th>48</th>
<th>0</th>
<th>Default</th>
<th>0 &amp; 20</th>
<th>Min</th>
<th>60</th>
<th>Max</th>
</tr>
</thead>
</table>

- \(<\text{ESC}>\&P<48><0><\text{ESC}>\&<4>\) Sets width detection by sensor (54 or 72 mm)
- \(<\text{ESC}>\&P<48><60><\text{ESC}>\&<4>\) Sets 60 mm print width

**Note** • It is recommended that a print width narrower than the actual paper loaded in the printer is used to ensure that the print always remains visible.

Advance Before Cut

Selects if the cut command cuts at the position where the paper is at, or if the printer should advance the paper before cutting.

<table>
<thead>
<tr>
<th>49</th>
<th>1</th>
<th>Default</th>
<th>0</th>
<th>Min</th>
<th>1</th>
<th>Max</th>
</tr>
</thead>
</table>

- \(<\text{ESC}>\&P<49><0>\) Off
- \(<\text{ESC}>\&P<49><1>\) Automatic Distance Calculation

**Note** • "Automatic Distance Calculation" means advancing the paper with the Head-To-Cutter distance (9 mm on the TTP 2000).

Set to 1 if the printer is used in text mode and 0 if it is used from a driver that takes care of this in the driver.

**Note** • The paper is advanced before the FF command calculates the page length to see if the page length is longer than the set minimum length.

Black Mark Sensitivity

This parameter is set automatically when you run the “Calibrating the TOF sensor procedure” (manually or using ESC #). Normally there is no need to set this parameter manually. 0 is white and 255 is pitch black (out of paper).
Default Parameter Settings
Print Setup

### Warning Level

Turns on/off indication of Paper near end level on the status indicator. This affects only the status indicator, not the status enquiries.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No indication</td>
</tr>
<tr>
<td>1</td>
<td>Paper Near End indication</td>
</tr>
</tbody>
</table>

### Lock Parameters

You can lock the parameters so that they cannot be changed by the `<ESC>&P` command.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Unlocked</td>
</tr>
<tr>
<td>1</td>
<td>Locked</td>
</tr>
</tbody>
</table>

### Max Status Code

This will control the highest status code that is reported by `<ESC><ENQ><6>` and `<ESC><ENQ><1>` (Pending-status-code bit). You use this if your kiosk software is not written so it masks away unknown status messages.

#### Example

If you want the TTP 2000 to be compatible with software written for TTP 1020, set parameter 56 to 6h and error codes 7 and up will not be reported.
The system parameter will control up to eight system components in the printer.

The bits specified so far are these:

<table>
<thead>
<tr>
<th>Bit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Clear presenter at reset</td>
</tr>
<tr>
<td>1</td>
<td>Pull detector</td>
</tr>
<tr>
<td>2</td>
<td>Horizontal</td>
</tr>
<tr>
<td>3</td>
<td>Standard BM</td>
</tr>
<tr>
<td>4</td>
<td>Disable USB reconnect</td>
</tr>
</tbody>
</table>

**Note** • This parameter is set automatically when you run the “Calibrating the TOF sensor procedure” (manually or using ESC #).

**Note** • If reconnect is enabled, the PC will not be able to go to sleep mode.

Setting a bit to 1 enables the function and setting it to 0 disables it.

**Important** • If the function of a bit is not specified, it must always be set to 1.

**Example** •

- `<ESC>&P<57><254>` Presenter will not be cleared at power ON and reset
- `<ESC>&P<57><253>` The pull detector is disabled
- `<ESC>&P<57><252>` The presenter will not be cleared at power ON and reset and the pull detector is disabled
- `<ESC>&P<57><251>` The printer is set to vertical mode, that is the retract output and the normal output are swapped.
- `<ESC>&P<57><239>` The printer will monitor USB heartbeat (SOF tokens), and thus try to reconnect if they disappear.
- `<ESC>&P<57><255>` The printer is reset to normal behavior

Sets the level at which the TOF sensor detects out of paper. The out-of-paper level may differ from the black-mark level on label stock where the foil opacity indicates top of form.

This parameter is set automatically when you run the “Calibrating the TOF sensor procedure” (manually or using ESC #).
Switches identity of the device from Printer Class (7 hex) to Vendor Class (FF hex).

Use this parameter to communicate with a USB printer in Linux without installing a driver.

**Note** • After switching into Vendor Class, you must reconnect the USB cable.

The vendor class parameter is normally 0, which sets the TTP2030 to be a Printer Class device. If you set it to 1, the TTP 2030 will be a Vendor Class device, which means it will not require a driver but will appear as a file in Linux. You can then communicate with the printer by writing data to or reading from that file.

**Caution** • When not set to “Printer Class”, no programs that rely on the Windows printer driver will be able to communicate with the printer, and thus not be able to reset the parameter to Printer Class again.

To reset the printer back to Printer Class:

1. Power OFF the printer.
2. Disconnect the USB cable.
3. Open the print head and remove any paper.
4. Leave the print head open, press and hold the Feed button, and power ON the printer.
5. Connect the USB cable.

Sets the length of the partial cuts in mm from the edges of the paper (the blade cuts from the paper edges towards the middle).

The paper width parameter n48 is used to specify the edges of the paper so the printer knows where to start to cut. If parameter n48 is set to auto width, the guide fitted to the printer determines the print width and thus also the start position for the partial cut.

**Caution** • A too large partial cut may cause problems with the presenter, so stay with the default setting if possible.
7

Page setup
Top margin, bottom margin, page length, and synchronization with preprint are set up with parameters in the printer.
Aligning Preprint and Thermal Print

The printer can synchronize the cutting of the printout with black-marks printed on the back of the paper. You use this function when you have preprint on the printout and you don't want a cut in the middle of that preprint, or text printed on top of the preprint.

Figure 30 • Black Mark Sensor

The sensor used to detect the black-marks is the same sensor as used for paper end detection. The sideways position depends on which paper guide is fitted. With 58 and 60 mm guides it is 22 mm to the left of the paper center, and with 80 and 82.5 mm guides, it is 30 mm to the right of the paper center. The distance from the sensor to the cutter is 25 mm. The sensor accuracy is about ±0.5 mm so avoid designing receipts with too high demands for synchronization.
The sensor triggers on the black-to-white transition of the black-mark, which is when the black print ends (trailing edge).

Since the same sensor is used for both paper end and black-mark detection, the printer must know the length of the black-mark to avoid signaling end-of-paper when it detects a black-mark. The default setting accepts black-marks in the range 3 – 16 mm, and works perfectly with the recommended black-mark length of 5 mm. Marks shorter than 3 mm are interpreted as dirt, and marks longer than 16 mm as out-of-paper. You can change both these values by changing the printer default settings.

Black mark mode is selected by setting parameter 36 to 2, and storing the parameters.

**Important** • It is essential that you store the parameters in the printer for black mark synchronization even if you enable black marks in the Windows driver. This is because Windows is not used at paper loading, and feeding with the FF button on the printer.

**Note** • The Windows driver is not overwriting the black-mark related parameters since this is done during the calibration process. Only Parameter 36 is changed in the driver.
Black Mark Calibration Process

**Important** • In variable and fixed page mode, only the paper out level will be calibrated while in black mark mode all parameters affecting black mark detection will be calibrated.

1. Prepare the printer for calibration:

<table>
<thead>
<tr>
<th>If your Firmware is version…</th>
<th>Then…</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.54 or higher</td>
<td>Set Parameter 35 (Black Mark Mode) to a value of 1</td>
</tr>
<tr>
<td>3.50 or lower</td>
<td>Set Parameter 36 (Document Mode) to a value of 2</td>
</tr>
</tbody>
</table>

2. Open the print head by pushing the lever on top.

3. Remove the paper from the printer.

4. With the print head open, hold the Feed button for five seconds.

5. While still holding the Feed button, close the print head.

6. When the Status light goes off, let go of the Feed button.

7. Insert the paper. The printer performs a calibration and stops. If the status light is on and not flashing after calibration, the calibration is successful.

8. Open the print head, remove the paper, then close the print head and insert the paper into the printer. The printer is now ready to be used.

To confirm that the calibration was successful, press the Feed button once. If the printer feeds and cuts at the correct position, the printer is calibrated correctly. If the printer cuts at the incorrect position, repeat steps 1-7 above.

To fine tune the cut, modify the value of parameter 46 (Black Mark Sensor Calibration) or change the Cut position value in the driver.
Parameters Used

Parameter n36 — Document Mode

1. Set to 2 to enable black mark check.

Parameters n37 and n38 — Page Length Minimum

1. Measure the distance from the trailing edge of one black mark to the trailing edge of the next. The resolution is 0.125 mm so multiply the distance by 8, then calculate the value to enter as n37 and n38.

Example • If the page length is 100mm, (100 x 8) / 256 = 3.125. n37 is the integer value, that is 3, while n38 is the fraction, 0.125 x 256 = 32

Parameter n39 — Max Black Mark Length

1. Measure the height of the black mark. The resolution is 0.125 mm so multiply the black mark length (in millimeters) by 8 and enter the value as n39.

Parameter n40 — Min Black Mark Length (Garbage Filter)

This parameter is actually a filter to filter-out garbage on the paper. If a spot is smaller than this value, it will not be regarded as a black mark.

About 1/3 of the black mark length is usually a suitable setting.
Garbage, Black Mark and Out of Paper Detection

For every step the paper is fed, the black mark sensor is sampled to detect garbage, black marks or out of paper.

When the printer detects blackness it has to check if it is only garbage:

<table>
<thead>
<tr>
<th>If the paper…</th>
<th>Then it is…</th>
</tr>
</thead>
<tbody>
<tr>
<td>gets white again</td>
<td>garbage and the spot is</td>
</tr>
<tr>
<td>within n40 x 0.125 mm</td>
<td>ignored</td>
</tr>
<tr>
<td>is still black</td>
<td>probably a black mark</td>
</tr>
<tr>
<td>after n40 x 0.125 mm</td>
<td></td>
</tr>
<tr>
<td>gets white within</td>
<td>a black mark</td>
</tr>
<tr>
<td>an additional n39-n40 plus 5 mm</td>
<td></td>
</tr>
</tbody>
</table>

The 5-mm is a constant added to make sure that noise on the edge not will interfere with the samples. If it is still black at this point, then we have detected out of paper.

**Important** • Be careful about n40 and n39. If n39 – n40 is too small, then the minimum detection area will be too little. This area should not be less than 2 mm.
Parameter n41 and n42 — Black Mark Cut Offset

After the black mark is detected (black to white change) the printer feeds another distance to place the paper in cut position. This distance cannot be negative so placing the black mark too close to the paper edge is better than too far away.

Auto Cut-Offset

If the offset is set to 0, the printer will measure the length of the black mark and add a cut offset that makes it cut in the middle of the black mark.

*Note* • Auto offset was added in firmware version 3.30.
**Manual Cut-Offset**

If set to 1 and above, the auto offset is turned off and you must measure the offset from the actual sensor position that is 25 mm before the cutter.

(ESC x n1 n2 is an obsolete command that sets n41 and n42. It is implemented for backward compatibility with old drivers. Set parameters n41 and n42 with the ESC & P n1 n2 command instead.)

**FF (Form Feed)**

Use FF to print the buffer content, go to the next top of form (black mark), and cut the paper.
ESC Z (Go To Next Top of Form)

Use ESC Z to move the paper to the next top of form. This is practically a Form-Feed without printing and cut. It searches for the next black mark for maximum one page length + black mark length \((256 \times n37+n38 + n39)/8\). An additional length of 20mm is added to be sure to pass the edge of the next black mark. If there is no black mark within the set distance plus 20 mm, an error is raised.

The commands are used together in the following way:

The following examples are not made for a specific programming language or editor, but can be implemented with the tools of your choice.

When setting up the printer, sending the command listed provides the result that follows.

- `<ESC>&P<36><2>` enables black mark sync.
- `<ESC>&P<37><4>`
- `<ESC>&P<38><0>` Sets distance between two black marks. The values in the example give 128 mm.
- `<ESC>&P<39><80>` Sets max Black mark to \(80 \times 0.125 = 10\)mm.
- `<ESC>&P<40><24>` Sets max Black mark to \(24 \times 0.125 = 3\) mm.
- `<ESC>&P<41><0>`
- `<ESC>&P<42><200>` Sets Black mark offset to \(200 \times 0.125 = 25\)mm.
- `<ESC>&P<43><0>`
- `<ESC>&P<44><0>` Sets Black mark top margin to 0mm.
- `<ESC>&<4>` Stores the above parameters as default parameters.

The above setup and stores the parameters in the EEPROM of the printer, so this needs only be sent once to the printer when setting it up for Black mark sync.

- For the document, send the text and graphics.
- At the end of the document:

<table>
<thead>
<tr>
<th>Send This Command…</th>
<th>For This Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;ESC&gt;Z</code></td>
<td>Feeds the printout to the next black-mark + the additional feed specified by the <code>&lt;ESC&gt;</code>x command.</td>
</tr>
<tr>
<td><code>&lt;RS&gt;</code></td>
<td>Cuts and ejects the printout.</td>
</tr>
</tbody>
</table>

Black-Mark Sensing from within Windows

Caution • Using a non-approved cable with the printer may void the FCC and other EMC approvals of the printer.

Serial, TTP 2010

The RS-232 interface of the TTP 2010 printer has a transfer speed that can be set to between 2 400 and 115200 bits/s.

Applications where text-only printouts are to be printed are suitable for serial interface because of its easy to use bi-directional capability. The relatively low transfer speed limits the printing speed when printing graphics. Full-width graphics with 115 200 bits/s result in printing speeds of about 24 mm/s for the 80-mm version of the printer.

Figure 32 • Serial Interface Cable 10825-000

Setup Options

<table>
<thead>
<tr>
<th>Baud:</th>
<th>2 400, 4 800, 9 600, 19 200, 38 400, 57 600, and 115 200 bits/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow control:</td>
<td>None, Xon / Xoff, or Hardware</td>
</tr>
<tr>
<td>Data bits:</td>
<td>7/8</td>
</tr>
<tr>
<td>Stop bits:</td>
<td>1 (fixed)</td>
</tr>
<tr>
<td>Parity:</td>
<td>None, Odd, or Even</td>
</tr>
</tbody>
</table>

Default settings: 9600 bits/s, 8-bits, No parity, 1 stop bit, and hardware flow control.

See also: Default Parameter Settings on page 79.
Parallel, TTP 2020

The TTP 2020 parallel port is bi-directional and support Compatibility and Reverse-Nibble modes.

**Note** • If you intend to use any other mode than Compatibility Mode, we recommend you to get the documents for the IEEE-1284 standards, and study them thoroughly.

### Table 5 • Signal Names for the Parallel Port

<table>
<thead>
<tr>
<th>Pin Host IEEE1284-A (D-Sub)</th>
<th>Direction</th>
<th>Pin Printer IEEE1248-C</th>
<th>Compatible Signal Names</th>
<th>Nibble and Byte Mode Signal Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>↔</td>
<td>15</td>
<td>nStrobe</td>
<td>HostClk</td>
</tr>
<tr>
<td>2-9</td>
<td>↔</td>
<td>6-13</td>
<td>Data</td>
<td>Data</td>
</tr>
<tr>
<td>10</td>
<td>↔</td>
<td>3</td>
<td>nAck</td>
<td>PtrClk</td>
</tr>
<tr>
<td>11</td>
<td>↔</td>
<td>1</td>
<td>Busy</td>
<td>PtrBusy</td>
</tr>
<tr>
<td>12</td>
<td>↔</td>
<td>5</td>
<td>PError</td>
<td>AckDataReq</td>
</tr>
<tr>
<td>13</td>
<td>↔</td>
<td>2</td>
<td>Select</td>
<td>Xflag</td>
</tr>
<tr>
<td>14</td>
<td>↔</td>
<td>17</td>
<td>nAutoFd</td>
<td>HostBusy</td>
</tr>
<tr>
<td>15</td>
<td>↔</td>
<td>4</td>
<td>nFault</td>
<td>nDataAvail</td>
</tr>
<tr>
<td>16</td>
<td>↔</td>
<td>14</td>
<td>nInit</td>
<td>nInit</td>
</tr>
<tr>
<td>17</td>
<td>↔</td>
<td>16</td>
<td>nSelectIn</td>
<td>IEEE 1284 Active</td>
</tr>
<tr>
<td>18-25</td>
<td>GND</td>
<td>19-35</td>
<td>Ground</td>
<td>Ground</td>
</tr>
</tbody>
</table>

**Note** • Signal names starting with "n" are active LOW signals.

### Error Signaling

All errors that are not reset when status is read will set the nFault signal, for example:

- Head lifted
- Cutter not home
- Out of paper

This error also sets the Paper Out/End (PE) together with nFault:

- Out of paper

**Note** • The signaling of nFault and PE can be switched on/off with parameter p5.
USB, TTP 2030

The USB (Universal Serial Bus) is an interface designed to handle peripherals daisy chained to a single connector. The transfer speed is up to 12 Mbits/s, which is quite adequate for the printer. Use this interface in operating systems with USB support, for instance Windows XP. USB devices are Plug and Play compatible and hot swappable, which means that they can be connected and disconnected without turning off the power, or rebooting the computer.

**Table 6 • USB Connector Pin Assignment**

<table>
<thead>
<tr>
<th>Contact Number</th>
<th>Signal Name</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VCC</td>
<td>Cable power</td>
</tr>
<tr>
<td>2</td>
<td>– Data</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>+ Data</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Ground</td>
<td>Cable ground</td>
</tr>
</tbody>
</table>

**Setup Options**

Two parameter settings are available for the USB interface.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>n57 bit 4</td>
<td>Enables/disables USB reconnect</td>
<td>The printer will try to reestablish the connection with the host if TOF tokens stop coming to it.</td>
</tr>
<tr>
<td>n59</td>
<td>USB Vendor Class</td>
<td>Makes the printer into a vendor class device instead of a printer class device and could be used in Linux environments.</td>
</tr>
</tbody>
</table>
9

Maintenance
Fault Finding

In connection with service of the printer, it is good practice to remove paper dust and lint from the paper path, cutter and sensor areas. Paper dust, when accumulated, may interfere with printer functions such as optical sensors.

To avoid smudging the paper, do not apply oil on the cutting knife.

### Table 7 • Fault Finding

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Suggested Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing is printed when you press the feed button in self-test mode,</td>
<td>• Check that the paper roll is turned the correct way with thermal sensitive layer facing up.</td>
</tr>
<tr>
<td>but the document is transported, cut and ejected.</td>
<td>• Check that the paper used meets the paper specifications.</td>
</tr>
<tr>
<td></td>
<td>• Check that the print head cable is fully inserted into the connectors at each end.</td>
</tr>
<tr>
<td>Paper jam</td>
<td>• Check that nothing blocks the paper path.</td>
</tr>
<tr>
<td></td>
<td>• Check that the paper guide is fully seated in the T-hole.</td>
</tr>
<tr>
<td></td>
<td>• Check that the plastic holders for the presenter rollers are fully seated and snapped in.</td>
</tr>
<tr>
<td>Printer does not work at all</td>
<td>• Check that the print head is closed.</td>
</tr>
<tr>
<td></td>
<td>• Check that power is supplied to the printer.</td>
</tr>
<tr>
<td></td>
<td>• Check the Status indicator for error codes.</td>
</tr>
<tr>
<td>Self-test prints OK, but the printer works strangely in normal</td>
<td>• Check that both ends of the interface cable are properly connected.</td>
</tr>
<tr>
<td>operation.</td>
<td>• Application program might be incorrect. Contact system manager.</td>
</tr>
<tr>
<td>No cutting</td>
<td>• Check that the connector for the cutting motor is fully seated on the control board.</td>
</tr>
<tr>
<td>Bad cutting (uneven top and bottom document edges).</td>
<td>• Remove the power to the printer and remove any obstructing paper particles in cutter and presenter modules.</td>
</tr>
<tr>
<td>Inconsistent cutter operation</td>
<td>• Check/clean cutter-home sensor.</td>
</tr>
<tr>
<td>Paper is fed straight through the printer. Paper does not loop.</td>
<td>• Check/clean presenter sensor.</td>
</tr>
<tr>
<td></td>
<td>• Check setting of parameter p9.</td>
</tr>
<tr>
<td>Pull detector does not work.</td>
<td>• Clean presenter rollers with isopropyl alcohol.</td>
</tr>
<tr>
<td>Missing print or irregular spots.</td>
<td>• Paper may be too humid. Let it adapt to ambient temperature and humidity for approximately 24 hours before use.</td>
</tr>
<tr>
<td></td>
<td>• The paper used might not meet the paper specification.</td>
</tr>
<tr>
<td>White longitudinal lines in the printout.</td>
<td>• Faulty print head, replace.</td>
</tr>
<tr>
<td>Faint print.</td>
<td>• The paper used might not meet the paper specification.</td>
</tr>
<tr>
<td></td>
<td>• Clean print head with ethyl or isopropyl alcohol.</td>
</tr>
<tr>
<td></td>
<td>• Adjust print contrast, see Print Setup on page 85.</td>
</tr>
<tr>
<td>Strange characters or graphics printed, or any kind of strange</td>
<td>• Might be caused by erroneous data sent from the host. Check validity of transferred data</td>
</tr>
<tr>
<td>printer behavior.</td>
<td></td>
</tr>
</tbody>
</table>
Cleaning the Print Head

The print head can be cleaned without removal.

1. Remove the power from the printer and allow the print head to cool.
2. Open the print head.
3. Clean the heat elements with a cotton swab immersed in ethyl or isopropyl alcohol.

Note • Zebra recommends using a clean swab dipped in a solution of isopropyl alcohol (minimum 90%) and deionized water (maximum 10%) to clean the print head.

Cleaning the Presenter and Platen Rollers

The presenter rollers feed out the receipt to the customer. But the friction between the feed rollers and the pressure rollers is also essential for the function of the pull detector. So make it a rule to clean the presenter and platen rollers whenever media is replaced in the kiosk. Use a cotton swab and isopropyl alcohol and wipe the rollers clean while rotating them with your finger.
Firmware

The firmware is stored in flash-PROM on the control board. A replacement control board may not contain the same firmware version that you are currently using, so if you replace control board for some reason, upgrade it to the firmware version you want to use.

Loading

**Important** • Always design your kiosk system so that remote upgrade of firmware is possible. If you need to upgrade firmware in the future, the kiosks can be spread over a vast area and upgrade can become very expensive.

Download the firmware from the Zebra web site [http://www.zebra.com](http://www.zebra.com). There you will also find the Toolbox utility program (Windows™ software) facilitating the loading of the firmware into the printer.

Are you using a Windows environment to load the firmware?

<table>
<thead>
<tr>
<th>If...</th>
<th>Then...</th>
</tr>
</thead>
</table>
| No    | a. Send `<ESC><NUL>` (1B 00 hex) to the printer.  
     | b. Wait 0.5 seconds.  
     | c. Send the firmware file to the printer.  
     | d. Wait until the printer buzzes to confirm that the loading is complete (the presenter motor runs for a second). |
| Yes   | The loader program contains a help file with detailed instructions on how to load the firmware into the printer |

**Caution** • The loading and burning can take up to one minute. Do not abort before one minute by turning OFF the power to the printer. Doing so may leave the printer in a state where new firmware cannot be loaded. If this occurs, please return the printer to a Zebra authorized service provider or repair center.

Functions and features are being added from time to time affecting the firmware in the printer.

Please visit our web site [http://www.zebra.com](http://www.zebra.com) for the latest firmware version.
Make a self-test printout to see which firmware version you have in your printer. The firmware number is divided into two sections, the header and the version, separated by a dash.

<table>
<thead>
<tr>
<th>Printer</th>
<th>Barcode Support</th>
<th>Firmware Header</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTP 2010</td>
<td>1D barcodes</td>
<td>1818-xxx</td>
</tr>
<tr>
<td>TTP 2010</td>
<td>2D PDF-417, 1D 2of5, EAN 128</td>
<td>1820-xxx</td>
</tr>
<tr>
<td>TTP 2020</td>
<td>1D barcodes</td>
<td>1814-xxx</td>
</tr>
<tr>
<td>TTP 2020</td>
<td>2D PDF-417, 1D 2of5, EAN 128</td>
<td>1819-xxx</td>
</tr>
<tr>
<td>TTP 2030</td>
<td>1D barcodes</td>
<td>1814-xxx</td>
</tr>
<tr>
<td>TTP 2030</td>
<td>2D PDF-417, 1D 2of5, EAN 128</td>
<td>1819-xxx</td>
</tr>
</tbody>
</table>

A printer can only be updated with firmware that has the same header as the original number. The -xxx indicates the firmware version and for example 310 means firmware version 3.10.
10

Specifications
### General

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printer control</td>
<td>Windows driver. Direct print with ESC commands for formatting.</td>
</tr>
<tr>
<td>Print method</td>
<td>Direct thermal line printing (no ink, no toner, no ribbons, just the paper)</td>
</tr>
<tr>
<td>Resolution</td>
<td>8 dots/mm (203 dpi)</td>
</tr>
<tr>
<td>Print speed</td>
<td>Up to 150 mm/s</td>
</tr>
<tr>
<td>Print duty cycle</td>
<td>Up to 20%</td>
</tr>
<tr>
<td>Presenter</td>
<td>Looping presenter with pull detector, and retract &amp; retain function. Stepper motor control for exact positioning</td>
</tr>
<tr>
<td>Loop storage length</td>
<td>70 to 600 mm (max length may be limited by space in kiosk)</td>
</tr>
<tr>
<td>Max print width</td>
<td>80 mm = 640 pixels</td>
</tr>
</tbody>
</table>

### Auto Selected Print Widths

<table>
<thead>
<tr>
<th>Guide Width</th>
<th>Pixels</th>
</tr>
</thead>
<tbody>
<tr>
<td>58 mm and 60 mm</td>
<td>54 mm = 432 pixels</td>
</tr>
<tr>
<td>80 mm and 82.5 mm</td>
<td>72 mm = 576 pixels</td>
</tr>
</tbody>
</table>

### Interfaces

<table>
<thead>
<tr>
<th>Model</th>
<th>Interface</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTP 2010</td>
<td>Serial RS 232</td>
<td><strong>Note</strong> • The serial receive buffer is 2048 byte and when only 128 bytes are free the handshaking is activated.</td>
</tr>
<tr>
<td>TTP 2020</td>
<td>Parallel IEEE 1284</td>
<td></td>
</tr>
<tr>
<td>TTP 2030</td>
<td>USB 1.1</td>
<td></td>
</tr>
</tbody>
</table>
### Paper

<table>
<thead>
<tr>
<th>Paper supply</th>
<th>Roll paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image life</td>
<td>More than 25 years with appropriate paper quality.</td>
</tr>
<tr>
<td>Roll diameter</td>
<td>250 mm max (can be less depending on roll holder design)</td>
</tr>
<tr>
<td>Spindle diameter</td>
<td>40 mm (25 mm minimum)</td>
</tr>
<tr>
<td>Paper width</td>
<td>58, 60, 80, and 82.5 mm</td>
</tr>
<tr>
<td>Paper thickness/weight</td>
<td>0.054 – 0.11 mm (Approx. 55 –110 g/m²)</td>
</tr>
<tr>
<td>Paper sensors</td>
<td>Out of paper, paper in presenter, paper in retract path, black mark, and input for external paper-low sensor.</td>
</tr>
<tr>
<td>Paper entry angle</td>
<td>Range is +55° to -25°</td>
</tr>
<tr>
<td></td>
<td>With guide plate 104208: Range is +55° to -90°</td>
</tr>
<tr>
<td></td>
<td>For higher angles than 55°, a paper guide with a radius of at least 30mm must be added to the kiosk design.</td>
</tr>
</tbody>
</table>

### Direct Print Mode

<table>
<thead>
<tr>
<th>Orientation</th>
<th>Horizontal (portrait mode) and Vertical (Landscape mode)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard fonts</td>
<td>ATM9, 14 pixels/character fixed spacing font</td>
</tr>
<tr>
<td>Characters/line</td>
<td>30 characters on 58 mm and 60 mm paper using ATM9 font (max 61 characters using 29 cpi font)</td>
</tr>
<tr>
<td></td>
<td>41 characters on 80 mm and 82.5 mm paper using ATM9 font (Max 82 characters using 29 cpi font)</td>
</tr>
<tr>
<td>Text attributes</td>
<td>Underline, Bold, Italics, reverse print, multiple width and height</td>
</tr>
<tr>
<td>Graphics</td>
<td>Logotypes and b&amp;w BMP-files</td>
</tr>
</tbody>
</table>

### Miscellaneous

<table>
<thead>
<tr>
<th>Environment</th>
<th>0°C to +50°C, 35% to 75% RH, non-condensing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>107 x 68 x 144 mm (w x h x d)</td>
</tr>
<tr>
<td>Weight</td>
<td>1.1 kg</td>
</tr>
<tr>
<td>Power requirements</td>
<td>24 Vdc ±5% average 2 A when printing, 85 mA idle.</td>
</tr>
</tbody>
</table>
## Basic Character Set

The default fonts use Windows code page 1252 Western which contains ISO 8859-1 (ANSI) characters. You can use other character sets by creating and loading appropriate font files.

Characters 0 to 31 are control codes that cannot be changed, but 32 to 255 can be custom designed.

The table below shows the characters stored in flash PROM on the printer control board.

### Table 8 • Code Page 1252 Character Table

<table>
<thead>
<tr>
<th>Dec</th>
<th>Hex Key</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
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<td>31</td>
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<td>33</td>
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<tr>
<td><img src="image1.png" alt="image" /></td>
<td><img src="image2.png" alt="image" /></td>
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<td><img src="image6.png" alt="image" /></td>
<td><img src="image7.png" alt="image" /></td>
<td><img src="image8.png" alt="image" /></td>
<td><img src="image9.png" alt="image" /></td>
<td><img src="image10.png" alt="image" /></td>
<td><img src="image11.png" alt="image" /></td>
<td><img src="image12.png" alt="image" /></td>
<td><img src="image13.png" alt="image" /></td>
<td><img src="image14.png" alt="image" /></td>
<td><img src="image15.png" alt="image" /></td>
<td><img src="image16.png" alt="image" /></td>
<td><img src="image17.png" alt="image" /></td>
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</tr>
</tbody>
</table>

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**Specifications**

122 | Basic Character Set

---

Part Number List

Printers

<table>
<thead>
<tr>
<th>Product</th>
<th>NA/LA/AP</th>
<th>EMEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTP 2010 Serial Printer</td>
<td>01971-000</td>
<td>01971-000</td>
</tr>
<tr>
<td>TTP 2020 Parallel Printer</td>
<td>01972-000</td>
<td>01972-000</td>
</tr>
<tr>
<td>TTP 2030 USB Printer</td>
<td>01973-000</td>
<td>01973-000</td>
</tr>
<tr>
<td>TTP 2010 Evaluation Kit</td>
<td>N/A</td>
<td>01971-800</td>
</tr>
<tr>
<td>TTP 2020 Evaluation Kit</td>
<td>N/A</td>
<td>01972-800</td>
</tr>
<tr>
<td>TTP 2030 Evaluation Kit</td>
<td>N/A</td>
<td>01973-800</td>
</tr>
</tbody>
</table>

Note • A paper guide must be used for the printer to be functional but one is not included with the printer. Please order the appropriate paper guide with each printer.
## Accessories

<table>
<thead>
<tr>
<th>Description</th>
<th>NA/LA/AP</th>
<th>EMEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper Guide Kit 58 mm</td>
<td>01970-058</td>
<td>01970-058</td>
</tr>
<tr>
<td></td>
<td>01970-058-2</td>
<td>01970-058-2</td>
</tr>
<tr>
<td>Paper Guide Kit 60 mm</td>
<td>01970-060</td>
<td>01970-060</td>
</tr>
<tr>
<td></td>
<td>01970-060-2</td>
<td>01970-060-2</td>
</tr>
<tr>
<td>Paper Guide Kit 80 mm</td>
<td>01970-080</td>
<td>01970-080</td>
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<tr>
<td></td>
<td>01970-080-2</td>
<td>01970-080-2</td>
</tr>
<tr>
<td>Paper Guide Kit 8.25 mm</td>
<td>01970-082</td>
<td>01970-082</td>
</tr>
<tr>
<td></td>
<td>01970-082-2</td>
<td>01970-082-2</td>
</tr>
<tr>
<td>RS232 serial cable</td>
<td>10825-000</td>
<td>10825-000</td>
</tr>
<tr>
<td>IEEE/1284 parallel cable, 1.8 m (6ft.)</td>
<td>01366-000</td>
<td>01366-000</td>
</tr>
<tr>
<td>IEEE/1284 parallel cable, 90° angle, 1.8m (6ft.)</td>
<td>01366-090</td>
<td>01366-090</td>
</tr>
<tr>
<td>USB cable 1.8 m (6ft.)</td>
<td>105850-028</td>
<td>105850-028</td>
</tr>
<tr>
<td>Roll holder &quot;Universal&quot; variable position, 200 mm dia. max.</td>
<td>103938</td>
<td>103938</td>
</tr>
<tr>
<td>Adapter for roll holder below position, 250 mm dia. max.</td>
<td>104208</td>
<td>104208</td>
</tr>
<tr>
<td>Roll holder Wall Mount, 150 mm dia. max.</td>
<td>104123</td>
<td>104123</td>
</tr>
<tr>
<td>Roll holder spindle with pin and bolt</td>
<td>105017</td>
<td>N/A</td>
</tr>
<tr>
<td>Paper-low sensor with 300 mm cable</td>
<td>01890-300</td>
<td>01890-300</td>
</tr>
<tr>
<td>Quick-fit hub kit with screws</td>
<td>103939</td>
<td>103939</td>
</tr>
<tr>
<td>Leaf spring retainer for quick-fit hubs</td>
<td>01473-000</td>
<td>01473-000</td>
</tr>
<tr>
<td>Output Nozzle Kit, 58 mm</td>
<td>01365-200</td>
<td>01365-200</td>
</tr>
<tr>
<td>82.5mm Bezel kit with screws (qty. of 10 in kit)</td>
<td>P1011185</td>
<td>P1011185</td>
</tr>
<tr>
<td>Shutter Assembly</td>
<td>N/A</td>
<td>104591</td>
</tr>
<tr>
<td>Paper roll 58 mm</td>
<td>10007007</td>
<td>01942-058Z</td>
</tr>
<tr>
<td>Paper roll 60 mm</td>
<td>*</td>
<td>01972-060Z</td>
</tr>
<tr>
<td>Paper roll 80 mm</td>
<td>10007008</td>
<td>01942-080Z</td>
</tr>
<tr>
<td>Paper roll 8.25 mm</td>
<td>*</td>
<td>01942-082Z</td>
</tr>
<tr>
<td>Power supply 24V, 70W (for general printing)</td>
<td>01776-000</td>
<td>01776-000</td>
</tr>
<tr>
<td>Power supply 24V, 150W with on/off switch (for printing large graphics)</td>
<td>S-150-24SW</td>
<td>01035-014</td>
</tr>
<tr>
<td>Power supply to printer cable, 600mm **</td>
<td>01370-000</td>
<td>01370-000</td>
</tr>
<tr>
<td>AC Power Cable</td>
<td>300020-001</td>
<td>46629 (EU)</td>
</tr>
<tr>
<td></td>
<td>(US)</td>
<td>46637T (UK)</td>
</tr>
</tbody>
</table>

* Contact a Zebra representative for a quote

** Requires installation by a qualified engineer
Dimensions

Printer

**Note** • Additional space is required for paper roll and handling.

**Figure 33 • Printer Dimensions (Measurements)**

Use M3 screws for fastening printer
Max length = 4 mm inside printer

The paper path is centered around \( C_L \)

Paper exit

Paper entry

Presenter loop area

Printhead open

Retract output
Universal Roll Holder

The flexible design of the Universal roll holder offers a number of paper roll positions for easy installation of the printer in a variety of kiosk designs. There are three positions for horizontal installations including High, Low and Under as well as a High position for vertical installations. The roll holder arm can also be attached to the left or right side of the printer which provides additional flexibility in kiosk installation.

The Universal roll holder spindle does not need to be adjusted for different paper widths. It can accommodate all four paper widths supported by the TTP 2000 printer including 58mm, 60mm, 80mm and 82.5mm.

The roll holder arm alone accommodates paper rolls with an outer diameter up to 200mm in the High position. The addition of the 104208 Adapter with strain relief is required in both the Low and Under positions. The adapter used with the flexible roll holder arm supports paper roll diameters up to 200mm in the Low position and up to 250mm in the Under position. An optional paper low sensor can also be used with this roll holder.

Note • The optional mechanical shutter adds 7 mm to the depth of the printer. The shutter is not suitable for use with the retract function.
1. Determine the media roll size and then select the appropriate mounting holes in the roll holder arm.

2. See Figure 36. Install the positioning screw into the desired positioning hole until it extends at least 1 mm out the other side.
3. Slide the nut plate into the spindle.

4. Align the spindle with the mounting hole and positioning screw and then install and tighten the mounting screw.
Install the Universal Media Roll Holder

1. See Figure 36. Install the spacer onto the printer with the two mounting screws.

2. In what position is your printer mounted?

<table>
<thead>
<tr>
<th>If…</th>
<th>Then…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal</td>
<td>a. See Figure 38. Horizontal Positions.</td>
</tr>
<tr>
<td></td>
<td>High, Low, or Under.</td>
</tr>
<tr>
<td></td>
<td>b. Align the holes in the arm and spindle assembly with the two spacer</td>
</tr>
<tr>
<td></td>
<td>mounting screws and then install the mounting screw.</td>
</tr>
<tr>
<td></td>
<td>c. See Figure 37. Reposition the spindle to keep the media roll centering</td>
</tr>
<tr>
<td></td>
<td>guides facing up.</td>
</tr>
</tbody>
</table>

| Vertical | a. See Figure 38. Vertical Position.                                  |
|          | b. Align the holes in the arm and spindle assembly with the two spacer |
|          |   mounting screws and then install the mounting screw.                |
|          | c. See Figure 37. Reposition the spindle to keep the media roll centering |
|          |   guides facing up.                                                   |

3. Fit the optional paper low sensor onto the roll support, fasten the cable with tie wraps, and connect it to the connector on the back of the printer.
The only recommended positions of the Universal Roll holder include the High, Low with the 104208 adapter, and Under with the 104208 adapter, as illustrated below. Any other positions will prevent correct feeding of the paper.

**Note**: Where not indicated all measurements are in mm.
Wall Mount Roll Holder

The Wall Mount Roll Holder can be fastened to a kiosk wall and can hold paper rolls below the printer with a maximum diameter of 150mm. Quick fit fastening allows you to easily attach or remove the printer from the roll holder. Additional holes in the roll holder wall can be used to fasten and secure a power supply with straps and fit an optional paper low sensor. There is also a curved flange at the back of the roll holder which prevents paper from coming into contact with power and interface connectors and a slot to allow retracted receipts to easily exit the printer.
70W Power Supply

Figure 41 • Measurements of 70W PSU

150W Power Supply

Figure 42 • Measurements of 150W PSU
<table>
<thead>
<tr>
<th>部件名称</th>
<th>有毒 / 有害物质或元素</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>铅 (PB)</td>
</tr>
<tr>
<td>电子组件 (Electronics)</td>
<td>X</td>
</tr>
<tr>
<td>驾驶火车 (Drive Train)</td>
<td>X</td>
</tr>
<tr>
<td>紧固件 (Fasteners)</td>
<td>X</td>
</tr>
<tr>
<td>打印头 (Print Heads)</td>
<td>X</td>
</tr>
</tbody>
</table>

X 表示该部件的某一均质材料中的有毒有害物质的含量超出 SJ/Txxx-2006 标准规定的限量要求。

(Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.)

O 表示不含有此类物质或此类物质的含量在上述标准规定的限量要求以下。

(Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.)
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Featured Industry: High-end Commercial sector

Media Design Concept:
1) Create Intense Multi-Media Excitement
2) Reflects Vibrancy of City Life
3) Add Sophistication Image to Malls, Offices etc.

Landscape - Default Screen Design

N.B. This is for marketing illustration only, please check with sales for elevator media design and display configuration on selected units. All media files are to be provided by client separately, otherwise additional charges shall be imposed on any requisition of copyright materials as requested.
Welcome to E-Motive Display & TL Jones Asia Pacific

Featured Industry: High-end Commercial sector

Media Design Concept:
1) Create Intense Multi-Media Excitement
2) Reflects Vibrancy of City Life
3) Add Sophistication Image to Malls, Offices etc.

Landscape - Default Screen Design

N.B. This is for marketing illustration only, please check with sales for elevator media design and display configuration on selected units. All media files are to be provided by client separately, otherwise additional charges shall be imposed on any requisition of copyright materials as requested.

(1) BI - Static Background Image
✓ Represents Building Character

(2) Elevator Information
✓ Arial Font, 2D/3D Arrow

(3) Option A
Building Information in Flipping Imagery
✓ Property Directory
✓ Featuring Tenants’ Advertisements
✓ Property Management Marketing
✓ Announcements of Events, Promotions etc.

(4) BI – Broadcast Messages
(Scrolling Up)
✓ Announcements / Notices

(5) BI – Corporate / Property Identity
✓ Logo, Name

Option B
Multi-media Design Content
✓ Corporate / Special Feature Video / Pictures
(Note: video file aspect ratio 16 x 9)
Featured Industry: Finance sector

Media Design Concept:
1) Reflects Finance Hub Character
2) In Sync with Fast-Pace Vibrancy of City Life
3) Add Sophistication Image to Business Hub

N.B. This is for marketing illustration only, please check with sales for elevator media design and display configuration on selected units. All media files are to be provided by client separately, otherwise additional charges shall be imposed on any requisition of copyright materials as requested.
Featured Industry: Tourism sector

Media Design Concept:
1) Create Intense Multi-Media Excitement
2) Reflects Vibrancy of City Life
3) Add Sophistication Image to Malls, Offices etc.

Job Code Portrait: JN000012

N.B. This is for marketing illustration only, please check with sales for elevator media design and display configuration on selected units. All media files are to be provided by client separately, otherwise additional charges shall be imposed on any requisition of copyright materials as requested.
Elevator Media Display Design

PANORAMA

Elevator Information
- Arial Font, 2D/3D Arrow

Multi-media Design Content
- Decorative Feature for Aquarium Effect
- Video or Scrolling Picture

BI – Broadcast Messages
(Horizontal Scrolling)
- Announcements / Notices

Featured Industry: High-end Commercial sector

Media Design Concept:
1) Decorative Style using Aquarium Effect
2) Amaze Patrons in their Elevator Journey
3) Add Sophistication Image to Malls, Offices etc.

Job Code Portrait: JN000013

N.B. This is for marketing illustration only, please check with sales for elevator media design and display configuration on selected units. All media files are to be provided by client separately, otherwise additional charges shall be imposed on any requisition of copyright materials as requested.
Featured Industry: Media sector

Media Design Concept:
1) Building's Character & Recognition
2) Media Agency as Asset Owner
3) International Perspective Venue

Job Code Portrait-JN000014

N.B. This is for marketing illustration only, please check with sales for elevator media design and display configuration on selected units. All media files are to be provided by client separately, otherwise additional charges shall be imposed on any requisition of copyright materials as requested.
Featured Industry: Hospitality sector

Media Design Concept:
1) Promote Hotel Rooms & Events Packages
2) Highlighting Hotel Amenities
3) Update F & B Promotions

Job Code Portrait: JNO00015

N.B. This is for marketing illustration only, please check with sales for elevator media design and display configuration on selected units. All media files are to be provided by client separately, otherwise additional charges shall be imposed on any requisition of copyright materials as requested.
Featured Industry: Tourism/Automotive sector

Media Design Concept:
1) Create Intense Multi-Media Excitement
2) Reflects Vibrancy of City Life
3) Festive, Events Tourism Promotion

Job Code Portrait-JN000016

N.B. This is for marketing illustration only, please check with sales for elevator media design and display configuration on selected units. All media files are to be provided by client separately, otherwise additional charges shall be imposed on any requisition of copyright materials as requested.
Featured Industry: Entertainment/Leisure sector

Media Design Concept:
1) Using Virtual Frame to create Theatrical Effect
2) Stunning Images creating Carnival Fun
3) Thematic Venue Enhancement in Car Lift

Job Code: Portrait-JN000017

N.B. This is for marketing illustration only, please check with sales for elevator media design and display configuration on selected units. All media files are to be provided by client separately, otherwise additional charges shall be imposed on any requisition of copyright materials as requested.
Heralding a new generation in kiosk printing solutions, the TTP 2000 series packages the latest reliability and performance features into one of the most compact kiosk printer models on the market. It also provides excellent reliability for kiosks—with features like the guillotine cutter, jam-preventing loop presenter, tear-preventing pull detector, and retract-and-retain function that protects customers’ private information by retracting any printouts left behind. With its variety of media roll locations (above, behind, and below), its compact size, and its vertical configuration option, the TTP 2000 offers a flexible solution for kiosk integration.

Typical applications for the TTP 2000 include loyalty and discount vouchers, vending and photo kiosk receipts. The TTP 2000 handles paper widths between 2.28”/58 mm and 3.25”/82.5 mm, and is available with a parallel, USB, or serial interface.

**Zebra Kiosk Receipt Printer Advantages**

**Unremitting Reliability to Keep Kiosks Printing**
Optimized for tough printing environments where durability, reliability and minimal maintenance and ease of use are critical, Zebra printers maximize uptime and minimize upkeep.

**Easy to Integrate in Kiosk Designs**
A small footprint and flexible mounting options make Zebra printers ideal for a variety of applications—whether embedded in a custom kiosk solution or Zebra’s Kiosk Print Station.

**End Benefits**
As part of a self-service kiosk solution, Zebra printers help companies improve service, raise customer satisfaction, increase revenue, and lower operational costs.
**SPECIFICATIONS AT A GLANCE***

### Printer models
- TTP 2010™, TTP 2020™, TTP 2030™

### Standard features
- Direct thermal receipt printing for 2.3’/58 mm to 3.25’/82.5 mm width media
- Looping presenter with pull detector and retract & retain function
- Auto media loading
- Various media mounting options for flexible kiosk design, up to 9.8’/250 mm dia. media rolls
- USB, parallel or RS232 serial connectivity
- 203-dpi printing
- Windows® drivers for plug and play
- Prints any font, code-page, bar code, and graphics supported by the operating system

### Printer specifications
- **Resolution**: 203 dpi/8 dots per mm
- **Max print width**: 2.8’/72 mm
- **Max print length**: 23.6’/600 mm
- **Print speed**: 6’/150 mm per second

### Media sensors
- Out-of-paper sensor, paper in presenter, paper in retract path, black mark, and input for external paper-low sensor

### Media characteristics
- **Paper width**: 2.3’/58 mm, 2.4’/60 mm, 3.15’/80 mm, and 3.25’/82.5 mm supported
- **Maximum media roll**: 9.8’/250 mm
- **Media thickness**: 0.002’/0.054 mm to 0.004’/0.1 mm
- **Media types**: Roll or fanfold paper

### Operating characteristics
- **Environmental**:
  - Operating Temp.: 14° F/-10° C to 122° F/50° C
  - Storage Temp.: 14° F/-10° C to 122° F/50° C
  - Operating Humidity: 10% to 95% non-condensing
  - Storage Humidity: 10% to 95% non-condensing excluding paper
- **Electrical**: 24Vdc +/-5% average 2A when printing

### Physical characteristics
- **Width**: 4.1’/105 mm
- **Height**: 2.6’/65 mm
- **Depth**: 5.7’/145 mm
- **Weight**: 2.4 lbs/1.1 kg

### Fonts/Graphics/Symbologies
- **Bar Codes**: EAN, UPC, Interleaved 2-of-5, ISBN, Code 39, Code 128 and 2-D PDF417
- **Graphics**: Logotypes and b&w BMP-files
- **Standard fonts**: ATM9 (Monospaced 14.4 cpi), up to 8 fonts can be uploaded
- **Text attributes**: Underline, bold, italics, reverse print, multiple width and height

### Communication and interface capabilities
- **TTP 2010**: serial RS232
- **TTP 2020**: parallel IEEE-1284
- **TTP 2030**: USB

### Operating system
- Windows® 2000, XP, Server 2003, and OPOS

### Options and accessories
- Roll holder “universal” variable position, 7.9’/200 mm dia. max
- Adapter for roll holder below position, 9.8’/250 mm dia. max
- Roll holder wall mount, 5.9’/150 mm dia. max
- Quick fit hubs TTP 2000
- Paper-low sensor with 11.8’/300 mm cable

---

*Specifications subject to change without notice.

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A revolutionary next-generation elevator media display, the Panorama offers stunningly crisp and exciting visuals for an informative entertainment experience in-elevator. Pure imagery and up-to-the-minute information delivered in a sleek and slim display that will enhance any building space. E-Motive Display, the pioneer in elevator display technology brings you more best in class display product, first!

- Rich Media Integration & Display
- Visual & Audio Entertainment
- Full Network Capability
- Position Indicator for Duplex/Group Elevators
- Ultra Wide Screen & Viewing Angle
- Slim and Light for Narrow Mounting
- Green Technology – LED Backlight
- Building Intelligence Technology

Creative Screen Designs from TL JONES MEDIA

PANORAMA Display Available Sizes:
19”, 28”, 38”

APPLICATION IDEAS – ELEVATOR CAR

System Date & Time
- PC date format
- 12/24 hour format

Duplex Position Indicator

APPLICATION IDEAS – ELEVATOR LOBBY

Group Elevators Position Indicator

Multi-media Design Content
- Video/Audio Streaming
- Cable / Recorded TV Program
- Internet Connectivity, Webcam
- Weather Forecast, Temp.
- Market Trading Info., News

Building Information/Imagery
- Character Information
- Events & Promotions
- Tenants / Floor Directory
- Announcements & Notices

Building / Corporate Identity
- Name, Logo
- Elevator Status Notification or Corporate Message
- Multi-language Capability

E-MOTIVE
Leader in Display Technology
**Network System Architecture (Typical)**

- **Control Centre**
  - Internet
  - Router
  - Switch/Converter
  - Video Server
  - USB Drive
  - VCD/DVD Player
  - TV Point

- **Machine Room**
  - Elevator Controller
  - Encoders
  - Elevator Car/Landing
  - Panasonic Elevator
  - Lift System
  - Control Centre
  - Network System Architecture (Typical)
  - P2 Main Modules
  - Panorama Displays

**Other TL Jones Solutions Available:**

- PVC Wires (AWG 18 or CSA 0.75mm²), Elevator Signal
- 2xPVC Wires (AWG 18 or CSA 0.75mm²), E-Motive 4-Wire Serial Interface
- VGA Cable, VGA Signal
- E-Motive 4-Wire Serial, RS-485
- Shielded Twisted Pair Cable (AWG 18 or CSA 0.75mm²) VDSL Solution (system distance up to 1km)
- Cat 5e/Cat6 LAN Cable, Ethernet Interface
- RCA Cable, S-Video/Composite Video (Audio) Signal
- RG6/11 Coaxial Cable, DVB-T RF Signal
- USB Cable, USB Signal

**PANORAMA™**

**ULTRA WIDE ELEVATOR & BUILDING MEDIA DISPLAYS**

<table>
<thead>
<tr>
<th>Display</th>
<th>19”</th>
<th>28”</th>
<th>38”</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD Type</td>
<td>TFT</td>
<td>TFT</td>
<td>TFT</td>
</tr>
<tr>
<td>Colour Depth</td>
<td>Truecolour</td>
<td>Truecolour</td>
<td>Truecolour</td>
</tr>
<tr>
<td>Resolution (XxY)</td>
<td>1680x350</td>
<td>1366x256</td>
<td>1920x502</td>
</tr>
<tr>
<td>Aspect Ratio</td>
<td>16:3</td>
<td>16:3</td>
<td>16:4:2</td>
</tr>
<tr>
<td>Luminance (cd/m²)</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Contrast Ratio</td>
<td>0.282x0.282</td>
<td>0.51075x0.51075</td>
<td>0.4845x0.4845</td>
</tr>
<tr>
<td>Viewing Angle (X-axis) (°)</td>
<td>+89/-89</td>
<td>+89/-89</td>
<td>+89/-89</td>
</tr>
<tr>
<td>Viewing Angle (Y-axis) (°)</td>
<td>+89/-89</td>
<td>+89/-89</td>
<td>+89/-89</td>
</tr>
<tr>
<td>Viewing Area (WxH) (mm)</td>
<td>474x99</td>
<td>698x131</td>
<td>931x244</td>
</tr>
<tr>
<td>Overall Dimension (WxHxD) (mm)</td>
<td>497x126x58</td>
<td>741x168x56</td>
<td>968x280x62</td>
</tr>
<tr>
<td>Supply Voltage (VAC)</td>
<td>110/230</td>
<td>110/230</td>
<td>110/230</td>
</tr>
<tr>
<td>Operating Voltage (VDC)</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Typical Current Consumption (A)</td>
<td>2.90</td>
<td>3.20</td>
<td>9.25</td>
</tr>
<tr>
<td>Typical Power Consumption (W)</td>
<td>111</td>
<td>38</td>
<td>35</td>
</tr>
<tr>
<td>Operating Temp Range (°C)</td>
<td>0~50</td>
<td>0~50</td>
<td>0~50</td>
</tr>
<tr>
<td>Humidity Range (%RH)</td>
<td>10~90</td>
<td>10~90</td>
<td>10~90</td>
</tr>
<tr>
<td>Signal Interface</td>
<td>E-Motive 4-Wire Serial, RS-485</td>
<td>E-Motive 4-Wire Serial, RS-485</td>
<td>E-Motive 4-Wire Serial, RS-485</td>
</tr>
<tr>
<td>Network Interface</td>
<td>Ethernet, RS-422</td>
<td>Ethernet, RS-422</td>
<td>Ethernet, RS-422</td>
</tr>
<tr>
<td>I/O Interface</td>
<td>DC-In, VGA, RF³, USB, Audio-Out</td>
<td>DC-In, VGA, RF³, USB, Audio-Out</td>
<td>DC-In, VGA, RF³, USB, Audio-Out</td>
</tr>
<tr>
<td>Mounting Option</td>
<td>Flush Surface</td>
<td>Flush Surface</td>
<td>Flush Surface</td>
</tr>
</tbody>
</table>

**Accessories**

- Included: P2 Main Module, AC/DC Power Supply, Stereo Speaker, VGA Cable, Installation Guide
- Optional: Encoder², Converter², Encoder, Transformer, Synchronizer, Lens, Frame, Auxiliary Screen, Network Router/Switch/Converter/Hub, Video Server, RF Booster/Splitter, Configuration Software

1. Non-condensing humidity range
2. Signal interface with elevator controller is via encoder or converter
3. Analog RF for TV program is available upon request
4. Specifications subject to changes without immediate notice
5. Optional accessories sold separately

**Corporate Offices**

- **TL Jones Asia Pacific Pte Ltd**
  - E-Motive Display Pte Ltd
  - SINGAPORE
  - E-mail: info@tljones.com
  - Memco Limited, UK
  - +44 18287 70734
  - +65 6776 4111
  - +65 6774 7555
  - Tel: +65 6776 4111
  - Fax: +65 6774 7555

- **Janus Elevator Products Inc, USA**
  - +1 631 864 3699
  - +61 3 340 4466
  - +86 21 6495 3748

- **Regional Offices**
  - **NEW ZEALAND**
    - +61 3 340 4466
    - +86 21 6495 3748
  - **AUSTRALIA**
    - +61 7 3869 1311
    - +86 20 3879 5188
  - **CHINA**
    - Shanghai
    - Guangzhou
    - Shenyang
    - +86 24 2533 6199
  - **INDIA**
    - Mumbai
    - New Delhi
    - Bengaluru
    - +91 11 2563 7775
  - **UAE**
    - +971 4 265 5648
    - +91 99000 96140
  - **JAPAN**
    - +86 21 6495 3748
    - +86 20 3879 5188

**Other TL Jones Solutions Available:**

- **FRAME ME UP**
- **SMD5013-01**
- **Corporate Offices**
- **Regional Offices**
- **www.tljones.com**
- **www.emotivedisplay.com**
- **Corporate Offices**
- **Regional Offices**
- **www.tljones.com**
- **www.emotivedisplay.com**

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- **Regional Offices**
- **www.tljones.com**
- **www.emotivedisplay.com**
FWD-S42E1 Touch Screen Display
Large-format Interactive LCD

- 42-inch* LCD Touch Screen
- Incorporates 3M™ DST (Dispersive Signal Technology) Touch System
- Thin 20mm Bezel Design
- USA Service and Technical Support
- 1920 x 1080 High Definition
- Touch Screen Integrated within Factory Enclosure
- 3 year Warranty (Monitor)
- 3 Year Warranty (Sensor and Controller)

Sony LCD Monitor Model: FWD-S42E1

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD Element</td>
<td>42-inch* diagonal LCD</td>
</tr>
<tr>
<td>Max. Resolution</td>
<td>(pixels) 1920 x 1080</td>
</tr>
<tr>
<td>Pixel Pitch</td>
<td>0.48 mm</td>
</tr>
<tr>
<td>Max. Colors</td>
<td>1.06 Billion colors</td>
</tr>
<tr>
<td>Display Response Time</td>
<td>8 ms</td>
</tr>
<tr>
<td>Viewing Angle</td>
<td>178° right/left/up/down</td>
</tr>
<tr>
<td>Screen active area</td>
<td>36.63 x 20.59 inches (930.24 x 523.25 mm)</td>
</tr>
<tr>
<td>Contrast Ratio</td>
<td>1000:1</td>
</tr>
<tr>
<td>Brightness</td>
<td>500 cd/m2 (before touch screen)</td>
</tr>
<tr>
<td>Power Requirements</td>
<td>AC 100V—240 V 50/60 Hz</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>98 (typ.) 160 (max)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0° to 35° C</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>20% to 90% (no condensation)</td>
</tr>
<tr>
<td>Speaker</td>
<td>Optional</td>
</tr>
<tr>
<td>Dimensions Approx.</td>
<td>38.27 x 22.24 x 5.17 inches (972.1 x 565.1 x 131.3 mm) excluding protrusions, Touch Screen Installed</td>
</tr>
<tr>
<td>Weight lbs. Approx.</td>
<td>56.0 lbs (25.4 kgs) with integrated Touch Screen installed</td>
</tr>
</tbody>
</table>

Input Terminals

| HDMI™ Connections        | No (Available through option card BKM-FW15)                                  |
| DVI                      | DVI (x1)                                                                     |
| Composite Video          | BNC (x1)                                                                     |
| RGB/Component            | D-sub 15 Pin Female (x1)                                                      |
| S-Video                  | Mini Din 4-pin (x1)                                                           |
| PC Audio                 | Stereo Mini Jack (x1)                                                         |
| Video Audio              | Stereo Mini Jack (x1)                                                         |
| Stereo Mini Jack (x1)    | Stereo Mini Jack (x1)                                                         |

Output Terminals

| Analog Audio             | Stereo Mini Jack (x1)                                                         |
| RGB/Component            | D-sub 15 Pin Female (x1)                                                      |
| Ethernet                 | RJ-45                                                                        |
| Composite Video          | BNC (x1)                                                                     |
| Speaker Out L/R          | Grip Connector                                                               |

* Viewable area, measured diagonally. On-screen image is simulated.
## 3M™ DST (Dispensive Signal Technology) Touch Screen Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total additional weight to monitor</td>
<td>6.0 lbs</td>
</tr>
<tr>
<td>Construction</td>
<td>Glass chemically-strengthened anti-glare substrate</td>
</tr>
<tr>
<td>Input Method</td>
<td>Finger and stylus input</td>
</tr>
<tr>
<td>Positional Accuracy</td>
<td>Reported coordinates are within 1.0% of true position (based on viewing area dimensions)</td>
</tr>
<tr>
<td>Light Transmission</td>
<td>Up to 92%</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-15°C to 90°C</td>
</tr>
<tr>
<td>Minimum Touch Impact</td>
<td>50 mN.s (milli-newton seconds), the equivalent of a very light touch</td>
</tr>
<tr>
<td>Response Time</td>
<td>20 ms for tap input</td>
</tr>
<tr>
<td>Expected Life Performance</td>
<td>No known wear-out mechanism, as there are no layers, coating, or moving parts.</td>
</tr>
<tr>
<td>Total Additional Depth to Sony FWD-S42E1</td>
<td>1/4”</td>
</tr>
<tr>
<td>Touch screen Connector Specifications</td>
<td>USB or RS-232 Serial (specify when ordering)</td>
</tr>
<tr>
<td>Maximum Single USB Cable Length</td>
<td>5m (16.4 ft)</td>
</tr>
</tbody>
</table>

Note: When using USB over distances of 5m, a USB extension system can be used.

Note: Power for the LCD monitor itself requires a connection to a 110 VAC receptacle. In addition, the Sony DST touch screen monitors require an external power supply to drive the integrated touch screen controller. This small form factor 110 VAC to 5Vdc power supply is included with every Sony DST touch screen monitor.
interactive room signs

Whether you'd like to check out the weather forecast, see an interactive map, or simply reserve the conference room - our interactive MeetingMinder™ is up to the task. Display room availability along with all of your digital signage content with these ultra-versatile room signs.

MeetingMinders™ display your existing room reservations from Microsoft Outlook or EMS from Dean Evans & Associates, while allowing you to create a walk-up reservation with only a few touches to the screen. You’ll see room availability at a glance with our large on-screen status light that is GREEN when the room is available and RED when it's not.

To schedule the room, just touch “Reserve” and set the time and meeting length. Optionally, a four-digit PIN can be set to protect your reservation from being erroneously canceled or modified. Walk-up reservations are immediately shared with your Microsoft Exchange or EMS server to avoid double-bookings, and they can be limited to within a few hours of the current time, to the same day, or to a number of days from the current date.

Our room signs are available with a 12-inch or 15-inch LCD and can be surface mounted or recessed in walls. Our Power over Ethernet (PoE) room sign allows you to run one Ethernet cable to the room sign to supply both power and data, so you don't have to worry about concealing power bricks.

Smart Features
For rooms where walk-up reservations aren't appropriate, any interactive MeetingMinder™ can run in non-interactive mode. Dynamic digital signage content and room schedules are displayed full-screen in this mode. Interactive and non-interactive MeetingMinders™ can be used together in the same facility, and a consolidated schedule for all rooms can be shown on large displays using a Visix media player. This helps visitors spot their meeting at a glance on the big screen as they approach your meeting space.

- Show event schedules for one or more rooms
- Display greetings and announcements
- Provide way-finding information and interactive maps
- Keep everyone informed with news, weather and RSS feeds
- Present live, streaming content from your network
- Playback videos and other animated content
- Deliver critical alert notifications

800.572.4935
www.visix.com
**RoomWizard Comparison**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Visix MeetingMinder™</th>
<th>Polyvision RoomWizard™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centralized scheduling</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Walk-up reservations</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Support for Microsoft Exchange 2003 &amp; 2007</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Support for EMS by Dean Evans &amp; Associates</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Interactive timeline</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Custom logo</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Available in multiple sizes</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Wayfinding content</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>RSS, news and weather content</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Graphics, videos and Adobe Flash</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Interactive and dynamic Flash files</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Alert notification content</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Compatible with third-party panelPCs</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

Visix room signs accommodate all types of shared spaces. Our 15-inch model comes in both interactive and non-interactive models, and we offer a Power over Ethernet option. Choose the display size, functionality and accessories to meet your needs:

**MeetingMinder™ Power over Ethernet - 15" LCD**
Dimensions: 14.75w x 12h x 2.08d inches
Weight: 10.7 lbs.

**MeetingMinder™ 1500i - 15" LCD**
Dimensions: 14.63w x 14.37h x 3.3d inches
Weight: 12 lbs.

**MeetingMinder™ 1200i - 12.1" LCD**
Dimensions: 11.81w x 8.66h x 1.02d inches
Weight: 3.57 lbs.

**Architectural Accessories**
We offer a full range of architectural accessories to complement your MeetingMinder™ room sign installation. Wall-mount brackets are included with all models and are mounted using a standard VESA mount. Decorative covers and recessed wall enclosures are also available in a variety of colors and finishes to complement your décor.
10.3 Centralized Database Charter
The purpose of this document is to clarify the purpose and approach of a proposed project in sufficient detail so that a decision to proceed to planning is well-informed; therefore the charter serves as the primary mechanism to move through the “approve-to-plan” stage-gate.

Objectives & Project Summary
Describe the business need, opportunity or problem that the project is undertaking to address. This section will express not only the “what” but also the “why” this project should be done. Also, indicate the organization strategic objectives alignment, if applicable.

Few places can be as confusing as a hospital. This is especially so in the case of large institutions such as NYU Langone Medical Center, which has undergone a number of expansions and reconfigurations over its history, often in piecemeal fashion. For our patients and visitors, difficulty in finding their way around this complex environment is compounded by factors such as intimidating medical terminology, inconsistent or missing cues, and elevated stress levels. Furthermore, visitors and patients with low English proficiency have few tools to navigate our facilities.

In 2008, the Campus Transformation initiative was launched to fundamentally transform the user experience. The Wayfinding and Communications project was chartered to support the initiative and to translate the vision behind the Campus Transformation into a fully integrated, multi-dimensional wayfinding and communications system that will dramatically improve that experience.

The Master Plan for the Wayfinding and Communications project was completed and approved by the Executive Leadership Committee in June 2011 to be implemented in a phased approach. In the Master Plan, a number of digital tools were defined to deliver wayfinding information and to support the maintenance of wayfinding information:

Wayfinding Technology Suite

1. **Enhanced wayfinding section on main NYULMC website.** This section will feature the ability for visitors to generate custom directions from home to any public destination (such as a clinic, department or room number) in the Medical Center. Driving or transit directions will be provided (by a Google Maps API) to the relevant campus entrance, along with parking and valet information. Interior walking directions that follow the wayfinding logic, including the pathway, elevator, and level of the destination will also be provided. Visitors will be able to print, email, or SMS their customized directions. Directions will be accessible from the Maps and Directions section of the website and, if feasible, from the Find a Physician tool.

2. **Infonodes at building entrances.** Infonodes (public kiosks that house touchscreens with small form-factor printers) provide similar functionality to the wayfinding website, providing walking directions to public destinations on the superblock and the ability to print, email or SMS those customized directions. Infonodes provide language selection and deliver directions in English, Spanish, Russian, and Chinese.

3. **Digital directional pylons.** Situated in major decision points in the superblock interior, these digital signs provide directions to major first-floor destinations in English, Spanish, Russian, and Chinese.

4. **Enhanced digital displays for public elevators.** To deliver wayfinding information in the elevator cabs, there will be enhanced displays that will list the major destinations accessible from each floor.

5. **Digital meeting room signage.** At conference rooms, digital displays will convey what events are scheduled in each room.

6. **Centralized wayfinding database.** In order to keep wayfinding information up to date as the institution grows and changes, it is critical to build and maintain a single source of wayfinding data, including public destinations, their location, and the
extended logic of the wayfinding system (Campus > Entrance > Building > Pathway > Elevator > Level > Room Number). An administrative interface must be identified or developed to allow RED&F staff to maintain the wayfinding information as destinations move and facilities expand. In addition to managing the wayfinding data, the system should help RED&F manage the wayfinding signage system itself. The database will “publish” out to the five visitor-facing wayfinding tools listed above as well as other back-end systems as identified.

These six digital tools are further detailed in the Wayfinding & Communications Standards Manual to be delivered in October 2011. Phase 1 implementation will include launch of all the digital tools described above, in conjunction with fabrication and installation of the wayfinding signage on the first floor of the main campus. Through the course of this project, baseline functionality may be defined for each of the tools, along with a lifecycle plan to add enhancements to the system over time. Phase 1 implementation is to coincide with the completion of the Tisch Transformation project, currently scheduled for 2012 Q4.

Project Stakeholders and Team Members
Because this project crosses departmental lines, we propose creating an advisory board to collaborate toward a successful launch of the suite. Potential board members include Matt Lisowski, Mike Mainiero, Eric Goldman, Fred Alvarez, Josef Asteinza, Alex Lee, Paul Schwabacher, Bruce Baulch, Sandro Sherrod, and representatives from HB Communications and TwoTwelve. In our kickoff meeting, we will determine specific responsibilities and milestones for the project.

Project Approach
Describe the high-level project approach for meeting the objectives. This section will address whether or not the approach is a good one, and that the project team is the right one for the job.

There are three aspects to the project that must be addressed in this project: (1) the application development and/or integration efforts, (2) hardware selection and integration considerations, (3) maintenance plan to support the wayfinding technology suite.

There will be two phases to the project: Planning and Implementation. Enhancements beyond the initial release of the suite may be identified during the course of the project.

Project Deliverables & Scope
Identify (list) specific deliverables or outcomes that must be produced to complete the project. Include scope and any known “not in scope” for the project.

PLANNING PHASE

1. Requirements Document
Using the definitions of the six digital tools as published in the Wayfinding & Communications Standards Manual, we will draft a Requirements Document that outlines detailed functionality for implementation of the first release of the suite.

2. Systems & Hardware Assessment and Recommendations
We will evaluate systems that are currently in use at the Medical Center to assess whether any existing functionality may be enhanced in order to fulfill the requirements of this project. Relevant systems include:

   Netsimplicity Meeting Room Manager is currently being used to manage conference room events.

   VISIX Digital Signage Software is currently being used to drive the Refresh & Refurbish digital signage project and is in testing to deliver the Meeting Room Manager content to digital displays. VISIX may be the appropriate channel to deliver all the onsite digital wayfinding information: infonodes, digital directional pylons, and elevator displays.

   PlanOn Facilities Management is currently being implemented for space management and move management and is under consideration for broader adoption in the institution. As the leading candidate to house the wayfinding data, either extensions to the current implementation or the adoption of additional module(s) should be considered.

Other relevant systems may be identified during the planning phase of the project. A similar exercise will be conducted to identify final hardware specs for components of the system, such as touch screens, printers, and digital displays based on any information
about similar hardware currently in use at the institution. (Preliminary hardware recommendations will be delivered in the Wayfinding & Communications Standards Manual.)

If there is a gap between existing systems and required functionality, we will propose recommended solutions to deliver the desired functionality.

2. Project Plan
After the Assessment and Recommendations report is finalized, we will develop a project plan detailing all the tasks and activities required for a successful implementation. If the project plan cannot meet the estimated wayfinding system launch date of 2012 Q4, we will collaborate with the Wayfinding Co-Chairs to identify a subset of functionality that is sufficient for launch and will draft a project charter for a subsequent release or releases.

IMPLEMENTATION PHASE

Upon approval of the project plan, we will proceed with implementation, which may include database design, software procurement or customization, custom application development, testing and content development, as well as system integration. A maintenance plan will be developed during the later phases of implementation, as well as a training plan for staff to use the administrative interface to update wayfinding information.

Risk Analysis

List key risks, what the project will do to mitigate them, and what the project will do if mitigation is impossible. Consider three types of risks: 1) significantly exceeding cost or time projections; 2) adversely impacting the quality of the deliverables the project is creating; 3) Unintended and undesirable consequences that could occur as a result of the deliverables this project creates.

Risks include:

- Successfully meeting an estimated delivery date of 2012 Q4.
- Coordination across departments and with consultants.

Business Justification

Provide a business justification so that anticipated tangible and intangible benefits can be contrasted to expected cost (If a project is part of a Program, reference all or part of the Program’s business justification). For some projects, this could be relatively simple – a few sentences like “this project is essential to allow us to continue to get vendor support on their product” or “this project is essential for NYULMC to meet federal privacy regulations”. Other projects will require a more formal ROI or other such explicit justification. Also, identify cost of not doing the project.

The goal of the Wayfinding Technology Suite and the Wayfinding & Communications project as a whole is to mitigate the problem of lost and late patients. Lost patients experience anxiety that impacts their perception of their experience at NYULMC. When patients are late to appointments, staff must compensate with longer hours or shorter appointments, all impacting the high levels of service that we are committed to achieve.
Group R-2 occupancies, are permitted to be 36 inches by 36 inches (914 mm by 914 mm) minimum.

1010.6.5 Doorways. Where doorways are located adjacent to a ramp landing, manuevering clearances required by ICC A117.1 are permitted to overlap the required landing area.

1010.7 Ramp construction. All ramps shall be built of materials consistent with the types permitted for the type of construction of the building; except that wood handrails shall be permitted for all types of construction. Ramps used as an exit shall conform to the applicable requirements of Sections 1019.1 and 1019.1.1 through 1019.1.3 for vertical exit enclosures.

1010.7.1 Ramp surface. The surface of ramps shall be of slip-resistant materials that are securely attached.

1010.7.2 Outdoor conditions. Outdoor ramps and outdoor approaches to ramps shall be designed so that water will not accumulate on walking surfaces. In other than occupancies in Group R-3, and occupancies in Group U that are accessory to an occupancy in Group R-3, surfaces and landings which are part of exterior ramps in climates subject to snow or ice shall be designed to minimize the accumulation of same.

1010.8 Handrails. Ramps with a rise greater than 6 inches (152 mm) shall have handrails on both sides complying with Section 1009.11.

1010.9 Edge protection. Edge protection complying with Section 1010.9.1 shall be provided on each side of ramp runs and at each side of ramp landings not adjoining another ramp run or stairway.

Exceptions:

1. Edge protection is not required on ramps not required to have handrails, provided they have flared sides that comply with the ICC A117.1 curb ramp provisions.

2. Edge protection is not required on the sides of ramp landings having a vertical dropoff of not more than 0.5 inch (13 mm) within 10 inches (254 mm) horizontally of the required landing area.

3. Edge protection is not required where the floor or ground surface of the ramp run or landing extends 12 inches (305 mm) minimum beyond the inside face of handrail complying with Section 1012.

1010.9.1 Curb, rail, wall or barrier. Edge protection shall be provided as follows:

1. Solid barriers. Solid barriers shall extend at least 4 inches (102 mm) from the floor or ground surface.

2. Other types of barriers. Other types of barriers shall prevent the passage of a 4-inch-diameter (102 mm) sphere, where any portion of the sphere is within 4 inches (102 mm) of the floor or ground surface.

1010.10 Guards. Guards shall be provided where required by Section 1012 and shall be constructed in accordance with Section 1012. Such guards may be used to satisfy the requirement of edge protection of Section 1010.9.

SECTION BC 1011
EXIT SIGNS

1011.1 Where required. Exits and exit access doors shall be marked by an approved exit sign readily visible from any direction of egress travel. Access to exits shall be marked by readily visible exit signs in cases where the exit or the path of egress travel is not immediately visible to the occupants. Exit sign placement shall be such that no point in an exit access corridor is more than 100 feet (30 480 mm) or the listed viewing distance for the sign, whichever is less, from the nearest visible exit sign.

Exceptions:

1. Exit signs are not required in rooms or areas which require only one exit or exit access.

2. Exit signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group I-1 or R. However, in a congregate living unit where the occupancy of such unit exceeds four people, exit signs shall be provided.

3. Exit signs are not required in sleeping areas in occupancies in Group I-1.

4. In occupancies in Groups A-4 and A-5, exit signs are not required on the seating side of vomitories or openings into seating areas where exit signs provided in the concourse are readily apparent from the vomitories. Such vomitories shall be provided with emergency egress lighting to identify each vomitory or opening within the seating area.

1011.1.1 Signs within exits. In high-rise buildings subject to Section 403, exit signs shall be placed within exits at horizontal extensions to indicate the transition from vertical to horizontal direction and at turns along the horizontal path.

1011.2 Illumination. Exit signs shall be internally or externally illuminated.

Exception: Tactile signs required by Section 1011.3 need not be provided with illumination.

1011.3 Tactile exit signs. A tactile sign stating EXIT and complying with ICC A117.1 shall be provided adjacent to each door to an egress stairway, an exit passageway and the exit discharge.

1011.4 Internally illuminated exit signs. Internally illuminated exit signs shall be listed and labeled and shall be installed in accordance with the manufacturer’s instructions and Section 2702. Exit signs shall be illuminated at all times.

1011.4.1 Color. The letters of exit signs shall be red.

1011.4.2 Graphics. The height of letters shall be not less than 6 inches (152 mm), except that in Group A and Group R-1 occupancies letters shall be not less than 8 inches (203 mm) high. Graphics shall have letter widths, strokes and spacing in proportion to their height.
Section 712. There shall be no penetrations or communication openings, whether protected or not, between adjacent exit enclosures.

1019.1.3 Ventilation. Equipment and ductwork for exit enclosure ventilation necessary for independent pressurization shall comply with one of the following items:

1. Such equipment and ductwork shall be located exterior to the building and shall be directly connected to the exit enclosure by ductwork enclosed in construction as required for shafts.

2. Where such equipment and ductwork is located within the exit enclosure, the intake air shall be taken directly from the outdoors and the exhaust air shall be discharged directly to the outdoors, or such air shall be conveyed through ducts enclosed in construction as required for shafts.

3. Where located within the building, such equipment and ductwork shall be separated from the remainder of the building, including other mechanical equipment, with construction as required for shafts. In each case, openings into the fire-resistance-rated construction shall be limited to those needed for maintenance and operation and shall be protected by self-closing fire-resistance-rated devices in accordance with Chapter 7 for enclosure wall opening protective. Exit enclosure ventilation systems shall be independent of other building ventilation systems.

1019.1.4 Vertical enclosure exterior walls. Exterior walls of a vertical exit enclosure shall comply with the requirements of Section 704 for exterior walls. Where nonrated walls or unprotected openings enclose the exterior of the stairway and the walls or openings are exposed to other parts of the building at an angle of less than 180 degrees (3.14 rad), the building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall be constructed as required for a minimum 1-hour fire-resistance rating with \(\frac{1}{4}\)-hour opening protective. This construction shall extend vertically from the floor to a point 10 feet (3048 mm) above the toe of the stair or to the roof line, whichever is lower.

1019.1.5 Enclosures under stairways. The walls and soffits within enclosed usable spaces under enclosed and unenclosed stairways shall be protected by 1-hour fire-resistance-rated construction, or the fire-resistance rating of the stairway enclosure, whichever is greater. Access to the enclosed usable space shall not be directly from within the stair enclosure.

Exception: Spaces under stairways serving and contained within a single residential dwelling in Group R-2 or R-3.

There shall be no enclosed usable space under exterior exit stairways unless the space is completely enclosed in 1-hour fire-resistance-rated construction. The open space under exterior stairways shall not be used for any purpose.

1019.1.6 Discharge identification. A stairway in an exit enclosure shall not continue below the level of exit discharge unless an approved barrier is provided at the level of exit discharge to prevent persons from unintentionally continuing into levels below. Directional exit signage shall be provided as specified in Section 1011. An approved barrier shall consist of 1-hour rated construction separating the portion of the vertical exit above grade from the portion below grade, with a \(\frac{1}{4}\)-hour rated self-closing door, opening in the direction of exit travel from the floors below grade.

Exception: Such barrier separating the above-grade portion of the vertical exit from the portion below grade shall not be required in Group E and R-3 occupancies.

1019.1.7 Stairway floor number and identification signs. A sign shall be provided at each floor landing in interior vertical exit enclosures connecting more than three stories designating the floor level, the terminus of the top and bottom of the stair enclosure and the identification of the stair. The signage shall also state the story of, and the direction to the exit discharge and the availability of roof access from the stairway for the Fire Department. Each stair shall be identified by an alphabetic letter. Stairway identification signs shall be provided on both sides of each stair door. The signs shall be located 5 feet (1524 mm) above the floor landing in a position which is readily visible when the doors are in the open and closed positions.

1019.1.8 Smokeproof enclosures. In buildings required to comply with Section 403.13 or 405.8.2, each of the exits of a building that serves stories where the floor surface is located more than 75 feet (22860 mm) above the lower level of Fire Department vehicle access or more than 30 feet (9144 mm) below the level of exit discharge serving such floor levels shall be a smokeproof enclosure or pressurized stairway in accordance with Section 509.20.

1019.1.8.1 Enclosure exit. A smokeproof enclosure or pressurized stairway shall exit into a public way or into an exit passageway, yard or open space having direct access to a public way. The exit passageway shall be without other openings and shall be separated from the remainder of the building by 2-hour fire-resistance-rated construction.

Exceptions:

1. Openings in the exit passageway serving a smokeproof enclosure are permitted where the exit passageway is protected and pressurized in the same manner as the smokeproof enclosure, and openings are protected as required for access from other floors.

2. Openings in the exit passageway serving a pressurized stairway are permitted where the exit passageway is protected and pressurized in the same manner as the pressurized stairway.

3. A smokeproof enclosure or pressurized stairway shall be permitted to egress through areas on the level of discharge or vestibules as permitted by Section 1023.
1024.1.2.1 Multiple-occupant load sign. When a space is occupied for multiple purposes involving different occupant loads the sign shall read as follows:

OCCUPANCY BY MORE THAN

(number) . . . . PERSONS AS (type of occupancy) . . . .
OR BY
(number) . . . . PERSONS AS (type of occupancy) . . . .
OR BY
(number) . . . . PERSONS AS (type of occupancy) . . . .

IS DANGEROUS AND UNLAWFUL
Certificated of Operation No. . . . . Commissioner,
(where applicable)

Dept. of Buildings, City of New York

1024.1.2.2 Design of capacity signs. Signs shall be at least 12 inches (305 mm) wide and 16 inches (406 mm) high. The lettering shall be red on a white background. The letters shall be at least 1 inch (25 mm) high and the numerals at least 1/4 inches (32 mm) high. Signs shall be framed under a transparent protective cover, and permanently mounted in a location that is conspicuously visible to a person entering the space. Signs shall be lighted by artificial illumination at all times during occupancy to maintain at least 5 foot-candles (54 lux) on the surface of the sign.

1024.1.3 Approved plans. In every place of assembly providing seating or other moveable furnishings, copies of approved plans and approved alternate plans shall be kept on the premises. The plans shall be readily available for inspection, and shall provide the following information:

1. For assembly spaces:
   1.1. The location of each seat of each tier of seating, along with the number of occupants of each seating section.
   1.2. The location and number of standees for each standee area.
   1.3. The total number of occupants of each tier and of the assembly space.
   1.4. The location and classification of all exits.

2. For safe areas:
   2.1. The furniture and equipment arrangement and location.
   2.2. The number of occupants to be accommodated.

3. For stage areas:
   3.1. The maximum number of occupants, including audience seating on the stage.
   3.2. Any conditions limiting the use of the stage area.

1024.2 Assembly with occupant load greater than 300. Buildings or spaces occupied by Group A that have an occupant load of greater than 300 shall be provided with a main exit. Such main exit shall be of sufficient width to accommodate not less than one-half of the occupant load, but such width shall not be less than the total required width of all means of egress leading to the exit. Where the main use or dominant occupancy of the building is classified as Group A, the main exit shall front on at least one street or an unoccupied space of not less than 10 feet (3048 mm) in width that adjoins a street or public way. Other additional exits shall provide an egress capacity for at least one-half of the total occupant load served by that level and comply with Section 1014.2.

Exception: In assembly occupancies where there is no well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total width of egress is not less than 100 percent of the required width.

1024.2.1 Exit classification. Where the net floor area of an assembly space, exclusive of stage area, is less than 12 square feet (1.1 m²) per person, such spaces shall also comply with Section 1024.17.

1024.3 Reserved.

1024.4 Foyers and lobbies. In Group A-1 occupancies, where persons are admitted to the building at times when seats are not available and are allowed to wait in a lobby or similar space, such use of lobby or similar space shall not encroach upon the required clear width of the means of egress. Such waiting areas shall be separated from the required means of egress by substantial permanent partitions or by fixed rigid railings not less than 42 inches (1067 mm) high. Such foyer, if not directly connected to a public street by all the main entrances or exits, shall have a straight and unobstructed corridor or path of travel to every such main entrance or exit.

1024.5 Interior balcony and gallery means of egress. For balconies or galleries having a seating capacity of over 50 located in Group A occupancies, at least two means of egress shall be provided, one from each side of every balcony or gallery, with at least one leading directly to an exit.

1024.5.1 Enclosure of balcony openings. Interior stairways and other vertical openings shall be enclosed in a vertical exit enclosure as provided in Section 1019.1, except that stairways are permitted to be open between the balcony and the main assembly floor in occupancies such as theaters, houses of worship and auditoriums. At least one accessible means of egress is required from a balcony or gallery level containing accessible seating locations in accordance with Section 1007.3 or 1007.4.

1024.6 Width of means of egress for assembly. The clear width of aisles and other means of egress shall comply with this section. The clear width shall be measured to walls, edges of seating and tread edges except for permitted projections.
such below-grade story. Such opening shall open directly into a public street, public alley, yard or court.

**Exceptions:**

1. Buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

2. Sleeping rooms provided with a door to a fire-resistance-rated corridor having access to two remote exits in opposite directions.

3. The emergency escape and rescue opening is permitted to open onto a balcony within an atrium in accordance with the requirements of Section 404, provided the balcony provides access to an exit and the dwelling unit or sleeping unit has a means of egress that is not open to the atrium.

4. High-rise buildings in accordance with Section 403.

5. Emergency escape and rescue openings are not required from below-grade stories or sleeping rooms which have an exit door or exit access door that opens directly into a public street, public alley, yard, egress court or to an exterior exit balcony that opens to a public street, public alley, yard or egress court.

6. Below-grade stories without habitable spaces and having no more than 200 square feet (19 m²) in floor area shall not be required to have emergency escape windows.

**1025.2 Minimum size.** Emergency escape and rescue openings shall have a minimum net clear opening of 6 square feet (0.56 m²).

*Exception:* The minimum net clear opening for emergency escape and rescue grade-floor openings shall be 5 square feet (0.46 m²) unless such opening is required for natural ventilation in accordance with Chapter 12.

**1025.2.1 Minimum dimensions.** The net clear opening height dimension shall not be less than 30 inches (762 mm). The net clear opening width dimension shall not be less than 24 inches (610 mm). The final dimensions shall result in a net clear opening area as required above. The net clear opening dimensions shall be the result of normal operation of the opening.

**1025.3 Maximum height from floor.** Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 36 inches (914 mm) measured from the floor.

**1025.4 Operational constraints.** Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools in accordance with the provisions of Chapter 10 of the *New York City Fire Code*.

**1025.5 Window wells.** An emergency escape and rescue opening with a finished sill height below the adjacent ground level shall be provided with a window well in accordance with Sections 1025.5.1 and 1025.5.2.

**1025.5.1 Minimum size.** The minimum horizontal area of the window well shall be 9 square feet (0.84 m²), with a minimum dimension of 36 inches (914 mm). The area of the window well shall allow the emergency escape and rescue opening to be fully opened.

**1025.5.2 Ladders or steps.** Window wells with a vertical depth of more than 44 inches (1118 mm) shall be equipped with an approved permanently affixed ladder or steps. Ladders or rungs shall have an inside width of at least 12 inches (305 mm), shall project at least 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center (o.c.) vertically for the full height of the window well. The ladder or steps shall not encroach into the required dimensions of the window well by more than 6 inches (152 mm). The ladder or steps shall not be obstructed by the emergency escape and rescue opening. Ladders or steps required by this section are exempt from the stairway requirements of Section 1009.

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**SECTION BC 1026**

**SIGNAGE**

**1026.1 Signage.** Signage shall be provided in accordance with this section.

**1026.2 Exit signs.** Exit signs shall be provided in accordance with Section 1011.

**1026.3 Stairway and elevator identification signs.** Stairway floor number and stairway identification signs shall be provided in accordance with Section 1019.1.7. Elevator identification and emergency signs shall be provided in accordance with Section 3002.3.

**1026.4 Door signs.** For the following buildings, signs shall be posted and maintained on exit stair doors in accordance with this section:

1. Buildings or portions thereof occupied by Group B or arranged to be occupied by more than 100 persons above or below the street level or more than 500 persons in the entire building.

2. High-rise buildings subject to Section 403.

3. Buildings where any stair side door is locked pursuant to Section 1008.1.8.7.

*Exception:* Signs shall not be required on exit stair doors opening directly to dwelling or sleeping units in occupancy Group R where permitted by Section 1013.6.

**1026.4.1 Occupied side.** Where reentry is not provided from a stair to every floor, a sign that reads, “NO REENTRY FROM THIS STAIR” shall be posted on the occupied side of the stair door at every floor.

**1026.4.2 Stair side.** On the stair side, signs shall be posted and maintained at all stair doors at every floor. Such signs shall be either:

1. **Reentry.** Where reentry is provided, a sign shall read, “REENTRY ON THIS FLOOR.”

2. **No reentry.** Where reentry is not provided on that floor, the sign shall read:

   2.1. “NO REENTRY”; where reentry is not provided on any floor;
2.2. "NO REENTRY. NEAREST REENTRY ON THE...... AND...... FLOORS"; where reentry is provided on other floors; and

2.3. "NO REENTRY. REENTRY IS PROVIDED ONLY DURING FIRE EMERGENCIES. NEAREST TELEPHONE ON THE ...... AND...... FLOORS"; where stair side doors are locked in accordance with Section 403.12.

1026.4.3 Graphics. The lettering and numerals of the signs shall be at least $\frac{1}{4}$ inch (12.7 mm) high of bold type. The lettering and background shall be contrasting colors and the signs shall be securely attached approximately 5 feet (1524 mm) above the floor. The signs may be either independent or combined with floor and stairway identification signs.

1026.5 Wall signs, stair side. In high-rise buildings subject to Section 403, signs shall be posted and maintained on the wall as follows:

1. **Reentry.** Where a reentry door is recessed, a supplementary sign complying with Section 1026.4.3, except that the lettering and numerals shall be at least 1 inch (25 mm) high, shall be securely attached on the wall of the landing and shall be readily visible to the evacuee on the stairs indicating the location of such recessed reentry door.

2. **No reentry.** Where there is no reentry from the stair, an additional sign complying with Subdivision 2 of Sections 1026.4.2 and 1026.4.3, except that the lettering and numerals shall be at least 1 inch (25 mm) high, shall be securely attached at the beginning of the descent into such portion of the stair on the wall of the landing and shall be readily visible to the evacuee on the stairs.

1026.6 Accessible means of egress signs. Accessible means of egress shall be provided with signs in accordance with Sections 1007.6.5 and 1007.7.

1026.7 Capacity sign. Occupant load signs shall be provided in accordance with Section 1004.3.

1026.8 Access-controlled doors. Access-controlled doors shall be provided with signs in accordance with Section 1008.1.3.4.

1026.9 Delayed egress locks. Doors equipped with delayed egress shall be provided with signs in accordance with Sections 1008.1.8.6.

1026.10 Signs in sleeping rooms. A sign shall be posted on the inside of every door opening onto a corridor giving access to a sleeping room in all Group R-1 occupancies. The sign shall contain a diagram showing the location where it is posted and the location and letter identification of the exit stairs on the floor. The diagram shall indicate the number of doors opening onto the public corridor which must be passed to reach each exit stair. The sign shall be at least 8 inches by 10 inches (203 mm by 254 mm), located on the inside of the door and securely attached. The top of such sign shall not be more than 6 feet (1829 mm) from the floor level. Such sign shall contain such additional information as the Fire Department may require.

1026.11 Photoluminescent exit path marking. Photoluminescent exit path markings in high-rise buildings subject to Section 403.16 shall be provided in accordance with this section. All exit path markings required herein shall be of an approved photoluminescent material. The markings shall be washable, nontoxic, nonradioactive, and if subjected to fire must be self extinguishing when the flame is removed. Exit path markings shall at a minimum be located:

1. On all doors opening to exits, exit passageways, or horizontal exits and shall be marked with the word "EXIT."

2. Within exit stairs, horizontal extensions in exit stairs, horizontal exits, and exit passageways

   **Exception:** Within street-level lobbies where egress direction is immediately discernible.

Required markings for exit paths shall comply with the technical standards for installation and placement in accordance with rules promulgated by the commissioner.

1026.12 Materials for signs. Signs required by this section shall be of metal or other durable material.
50 percent, but not less than one, of each type provided shall be accessible.

1109.12.5 Queue and waiting lines. Queue and waiting lines servicing accessible counters or check-out aisles shall be accessible.

1109.13 Controls, operating mechanisms and hardware. Controls, operating mechanisms and hardware intended for operation by the occupant, including switches that control lighting and ventilation, and electrical convenience outlets, in accessible spaces, along accessible routes or as parts of accessible elements shall be accessible.

Exceptions:

1. Operable parts that are intended for use only by use only by service or maintenance personnel shall not be required to be accessible.

2. Electrical or communication receptacles serving a dedicated use shall not be required to be accessible.

3. Where two or more outlets are provided in a kitchen above a length of countertop that is uninterrupted by a sink or appliance, one outlet shall not be required to be accessible.

4. Floor electrical receptacles shall not be required to be accessible.

5. HVAC diffusers shall not be required to be accessible.

6. Except for light switches, where redundant controls are provided for a single element, one control in each space shall not be required to be accessible.

1109.13.1 Operable windows. Where operable windows are provided in rooms or spaces that are required to be accessible in accordance with 1107.5.1 through 1107.5.4 and 1107.6.1.1, at least one window in each room shall be accessible and each required operable window shall be accessible. Where operable windows are provided in Type B units in accordance with Section 1107.6.2, such windows shall comply with Section 1107.2.4.

Exception: Accessible windows are not required in bathrooms or kitchens unless otherwise required in Section 1107.2.4.

1109.14 Recreational facilities. Recreational facilities shall be accessible.

1109.15 Stairways. Stairways located alongside accessible routes connecting floor levels that are not connected by an elevator shall be designed and constructed to comply with ICC A117.1 and Chapter 10.

SECTION BC 1110

SIGNAGE

1110.1 Signs. Required accessible elements shall be identified by the International Symbol of Accessibility at the following locations:

1. Accessible parking spaces required by Section 1106.1 except where the total number of parking spaces provided is no more than one.

2. Accessible passenger loading zones.

3. Accessible areas of rescue assistance required by Section 1007.6.

4. Accessible rooms where multiple single-user toilet or bathing rooms are clustered at a single location.

5. Accessible entrances where not all entrances are accessible.

6. Accessible check-out aisles where not all aisles are accessible. The sign, where provided, shall be above the check-out aisle in the same location as the check-out aisle number or type of check-out identification.

7. Unisex toilet and bathing rooms.

8. Accessible dressing, fitting and locker rooms where not all such rooms are accessible.

9. Accessible seating.

10. Accessible portable toilets.

11. Public telephones.

1110.2 Directional signage. Directional signage indicating the route to the nearest like accessible element shall be provided at the following locations. These directional signs shall include the International Symbol of Accessibility:

1. In accessible building entrances.

2. In accessible public toilets and bathing facilities.

3. Elevators not serving an accessible route.

4. At each separate-sea toilet and bathing room indicating the location of the nearest accessible unisex toilet or bathing room where provided in accordance with Section 1109.2.1.

5. At exits and elevators serving an accessible space, but not providing an approved accessible means of egress, signage shall be provided in accordance with Section 1007.7.

1110.3 Other signs. Signage indicating special accessibility provisions shall be provided as follows:

1. Each assembly area required to comply with Section 1108.2.7 shall provide a sign notifying patrons of the availability of assistive listening systems.

Exception: Where ticket offices or windows are provided, signs are not required at each assembly area provided that signs are displayed at each ticket office or window informing patrons of the availability of assistive listening systems.

2. At each door to an egress stairway, exit passageway and exit discharge, signage shall be provided in accordance with Section 1011.3.

3. At areas of rescue assistance, signage shall be provided in accordance with Sections 1007.6.3 through 1007.6.5.

4. At exterior areas for assisted rescue, signage shall be provided in accordance with Section 1007.8.3.

2008 NEW YORK CITY BUILDING CODE 263
SECTION BC 3002
HOISTWAY ENCLOSURES

3002.1 Hoistway enclosure protection. Elevator, dumbwaiter and other hoistway enclosures shall have a fire-resistance rating not less than that specified in Chapter 6 and shall be constructed in accordance with Chapter 7.

3002.1.1 Opening protective. Openings in hoistway enclosures shall be protected as required in Chapter 7.

3002.1.2 Hardware. Hardware on opening protective shall be of an approved type installed as tested, except that approved interlocks, mechanical locks and electric contacts, door and gate electric contacts and door-operating mechanisms shall be exempt from the fire test requirements.

3002.2 Number of elevator cars in a hoistway. Where four or more elevator cars serve all or the same portion of a building, the elevators shall be located in at least two separate hoistways. Not more than four elevator cars shall be located in any single hoistway enclosure. Elevators that service different risers shall be located in separate hoistways.

3002.3 Emergency signs. An approved pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the exit stairways and not to use the elevators in case of fire. The sign shall read: IN FIRE EMERGENCY, DO NOT USE ELEVATOR. USE EXIT STAIRS. The emergency sign shall not be required for elevators that are part of an accessible means of egress complying with Section 1007.4.

3002.4 Elevator car to accommodate ambulance stretcher. In buildings five stories in height or more, at least one elevator shall be provided for Fire Department emergency access to all floors. Emergency power shall be provided in accordance with Sections 2702 and 3003. Such elevator car shall be of such a size and arrangement to accommodate a 24-inch by 76-inch (610 mm by 1930 mm) ambulance stretcher in the horizontal, open position and shall be identified by the international symbol for emergency medical services (star of life). The symbol shall not be less than 3 inches (76 mm) high and shall be placed on both jambs of the hoistway entrances on each floor.

3002.5 Emergency doors. Where an elevator is installed in a single blind hoistway or on the outside of a building, there shall be installed in the blind portion of the hoistway or blind face of the building, an emergency door in accordance with ASME A17.1.

3002.6 Reserved.

3002.7 Common enclosure with stairway. Elevators shall not be in a common shaft enclosure with a stairway.

SECTION BC 3003
ELEVATOR EMERGENCY OPERATIONS

3003.1 Emergency power. In buildings and structures where emergency power is required or furnished to operate an elevator, the operation shall be in accordance with Sections 3003.1.1 through 3003.1.4.

3003.1.1 Manual transfer. Emergency power shall be manually transferable to all elevators in each bank.

3003.1.2 One elevator. Where only one elevator is installed, the elevator shall automatically transfer to emergency power within 60 seconds after failure of normal power.

3003.1.3 Two or more elevators. Where two or more elevators are controlled by a common operating system, all elevators shall automatically transfer to emergency power within 60 seconds after failure of normal power where the emergency power source is of sufficient capacity to operate all elevators at the same time. Where the emergency power source is not of sufficient capacity to operate all elevators at the same time, all elevators shall transfer to emergency power in sequence, return to the designated landing and disconnect from the emergency power source. After all elevators have been returned to the designated level, at least three elevators shall remain operative from the emergency power source.

3003.1.4 Venting. Where emergency power is connected to elevators, the machine room ventilation or air conditioning shall be connected to the emergency power source.

3003.2 Fire-fighters' emergency operation. Elevators shall be provided with Phase I emergency recall operation and Phase II emergency in-car operation in accordance with ASME A17.1 as modified by Appendix K.

3003.3 Elevator in readiness. Requirements for elevator in readiness shall be as defined in Sections 3003.3.1 through 3003.3.2.

3003.3.1 High-rise buildings. Except as provided in Section 3003.3.2, in high-rise buildings as defined in Section 403, all floors shall be served by at least one elevator that shall be kept available for immediate use by the Fire Department during all hours of the night and day, including holidays, Saturdays and Sundays. There shall be available at all times a person competent to operate the elevator. However, an attendant shall not be required for buildings with occupied floors of 150 feet (45 720 mm) or less above the lowest level of the Fire Department vehicle access that have elevators with automatic or continuous pressure operation with keyed switches meeting the requirements of ASME A17.1 as modified by Appendix K so as to permit sole use of the elevators by the Fire Department.

3003.3.2 Number of elevators. A number of elevators shall be kept available at every floor for the sole use of the Fire Department as required by Sections 3003.3.2.1 and 3003.3.2.2. This requirement shall apply to the following types of buildings:

1. High-rise buildings with occupancies classified in Groups A, B, E, I, F, H, M and S;
2. Buildings with Group B occupancies with a gross area of 200,000 square feet (18 581 m²);
3. Buildings with a main use or dominant occupancy in Group R-1 or R-2.

3003.3.2.1 Three or fewer elevators. Where a floor is serviced by three or fewer elevator cars, every car shall be kept available for sole use by the Fire Department.
### TABLE E106.2
**WHEELCHAIR-ACCESSIBLE TELEPHONES**

<table>
<thead>
<tr>
<th>NUMBER OF TELEPHONES PROVIDED ON A FLOOR, LEVEL OR EXTERIOR SITE</th>
<th>MINIMUM REQUIRED NUMBER OF WHEELCHAIR-ACCESSIBLE TELEPHONES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 or more single unit</td>
<td>1 per floor, level and exterior site</td>
</tr>
<tr>
<td>1 bank</td>
<td>1 per floor, level and exterior site</td>
</tr>
<tr>
<td>2 or more banks</td>
<td>1 per bank</td>
</tr>
</tbody>
</table>

**E106.4 TTYs.** TTYs complying with ICC A117.1, including Sections 704.4 through 704.7, shall be provided in accordance with Sections E106.4.1 through E106.4.9.

**E106.4.1 Bank requirement.** Where four or more public pay telephones are provided at a bank of telephones, at least one public TTY shall be provided at that bank.

**Exception:** TTYs are not required at banks of telephones located within 200 feet (60 960 mm) of, and on the same floor as, a bank containing a public TTY.

**E106.4.2 Floor requirement.** Where four or more public pay telephones are provided on a floor of a privately owned building, at least one public TTY shall be provided on that floor. Where at least one public pay telephone is provided on a floor of a publicly owned building, at least one public TTY shall be provided on that floor.

**E106.4.3 Building requirement.** Where four or more public pay telephones are provided in a privately owned building, at least one public TTY shall be provided in the building. Where at least one public pay telephone is provided in a publicly owned building, at least one public TTY shall be provided in the building.

**E106.4.4 Site requirement.** Where four or more public pay telephones are provided on a site, at least one public TTY shall be provided on the site.

**E106.4.5 Rest stops, emergency road stops, and service plazas.** Where a public pay telephone is provided at a public rest stop, emergency road stop or service plaza, at least one public TTY shall be provided.

**E106.4.6 Hospitals.** Where a public pay telephone is provided in or adjacent to a hospital emergency room, hospital recovery room or hospital waiting room, at least one public TTY shall be provided at each such location.

**E106.4.7 Transportation facilities.** Transportation facilities shall be provided with TTYs in accordance with Section E109.2.5 in addition to the TTYs required by Sections E106.4.1 through E106.4.4.

**E106.4.8 Detention and correctional facilities.** In detention and correctional facilities, where a public pay telephone is provided in a secured area used only by detainees or inmates and security personnel, then at least one TTY shall be provided in at least one secured area.

**E106.4.9 Signs.** Public TTYs shall be identified by the International Symbol of TTY complying with Section 703.6.3.2 (International Symbol of TTY) of ICC A117.1. Directional signs indicating the location of the nearest public TTY shall be provided at banks of public pay telephones not containing a public TTY. Additionally, where signs provide direction to public pay telephones, they shall also provide direction to public TTYs. Such signs shall comply with ICC A117.1, including Section 703.2 (Visual Characters), and shall include the International Symbol of TTY.

**E106.5 Shelves for portable TTYs.** Where a bank of telephones in the interior of a building consists of three or more public pay telephones, at least one public pay telephone at the bank shall be provided with a shelf and an electrical outlet in accordance with Section 704.6 (TTY Shelf) of ICC A117.1.

**Exceptions:**

1. In secured areas of detention and correctional facilities, if shelves and outlets are prohibited for purposes of security or safety shelves and outlets for TTYs are not required to be provided.

2. The shelf and electrical outlet shall not be required at a bank of telephones with a TTY.

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**SECTION BC E107**

**SIGNAGE**

**E107.1 Signs.** Required accessible portable toilets and bathing facilities shall be identified by the International Symbol of Accessibility.

**E107.2 Designations.** Interior and exterior signs identifying permanent rooms and spaces shall be tactile. Where pictograms are provided as designations of interior rooms and spaces, the pictograms shall have tactile text descriptors. Signs required to provide tactile characters and pictograms shall comply with Sections 703.3 and 703.5 of ICC A117.1.

**Exceptions:**

1. Exterior signs that are not located at the door to the space they serve are not required to comply.

2. Building directories, menus, seat and row designations in assembly areas, occupant names, building addresses and company names and logos are not required to comply.

3. Signs in parking facilities are not required to comply.

4. Temporary (seven days or less) signs are not required to comply.

**E107.3 Directional and informational signs.** Signs that provide direction to, or information about, permanent interior spaces of the site and facilities shall contain visual characters complying with Section 703.2 (Visual Characters) of ICC A117.1.

**Exception:** Building directories, personnel names, company or occupant names and logos, menus and temporary...
(seven days or less) signs are not required to comply with ICC A117.1.

**E107.4 Other signs.** Signage indicating special accessibility provisions shall be provided at fixed facilities and stations, signage must be provided in accordance with Sections E109.2.2 through E109.2.2.3.

**SECTION BC E108**
RESERVED

**SECTION BC E109**
TRANSPORTATION FACILITIES AND STATIONS

**E109.1 General.** Fixed transportation facilities and stations shall comply with the applicable provisions of Section E109.2.

**E109.2 New construction.** New stations in rapid rail, light rail, commuter rail, intercity rail, high speed rail and other fixed guideway systems shall comply with Sections E109.2.1 through E109.2.8.

**E109.2.1 Station entrances.** Where different entrances to a station serve different transportation fixed routes or groups of fixed routes, all entrance serving each group or route shall comply with Section 1104 and ICC A117.1, including Section 404 (Doors and Doorways).

**E109.2.2 Signs.** Signage in fixed transportation facilities and stations shall comply with Sections E109.2.2.1 through E109.2.2.3.

**E109.2.2.1 Tactile signs.** Where signs are provided at entrances to stations identifying the station or the entrance, or both, at least one sign at each entrance shall be tactile. A minimum of one tactile sign identifying the specific station shall be provided on each platform or boarding area. Such signs shall be placed in uniform locations at entrances and on platforms or boarding areas within the transit system to the maximum extent practicable. Tactile signs shall comply with Section 703.3 (Tactile Characters) of ICC A117.1.

**Exceptions:**
1. Where the station has no defined entrance but signs are provided, the tactile signs shall be placed in a central location.
2. Signs are not required to be tactile where audible signs are remotely transmitted to hand-held receivers, or are user or proximity actuated.

**E109.2.2.2 Identification signs.** Stations covered by this section shall have identification signs containing visual characters complying with Section 703.2 (Visual Characters) of ICC A117.1. Signs shall be clearly visible and within the sightlines of a standing or sitting passenger from within the train on both sides when not obstructed by another train.

**E109.2.2.3 Informational signs.** Lists of stations, routes and destinations served by the station which are located on boarding areas, platforms or mezzanines shall provide visual characters complying with Section 703.2 (Visual Characters) of ICC A117.1. Signs covered by this provision shall, to the maximum extent practicable, be placed in uniform locations within the transit system.

**E109.2.3 Fare machines.** Self-service fare vending, collection and adjustment machines shall comply with Section 707 (ATMs and Fare Machines) of ICC A117.1. Where self-service fare vending, collection or adjustment machines are provided for the use of the general public, at least one accessible machine of each type provided shall be provided at each accessible point of entry and exit.

**E109.2.4 Rail-to-platform height.** Station platforms shall be positioned to coordinate with vehicles in accordance with the applicable provisions of 36 CFR, Part 1192. Low-level platforms shall be 8 inches (203 mm) minimum above top of rail.

**Exception:** Where vehicles are boarded from sidewalks or street level, low-level platforms shall be permitted to be less than 8 inches (203 mm).

**E109.2.5 TTYs.** Where a public pay telephone is provided in a transit facility (as defined by the Department of Transportation) at least one public TTY complying with Sections 704.4 through 704.7 of ICC A117.1 shall be provided in the station. In addition, where one or more public pay telephones serve a particular entrance to a transportation facility, at least one TTY telephone complying with Section 704.4 through 704.7 of ICC A117.1 shall be provided to serve that entrance.

**E109.2.6 Track crossings.** Where a circulation path serving boarding platforms crosses tracks, an accessible route complying with ICC A117.1, including Section 402 (Accessible Routes) shall be provided.

**Exception:** Openings for wheel flanges shall be permitted to be 2 1/2 inches (64 mm) maximum.

**E109.2.7 Public address systems.** Where public address systems convey audible information to the public, the same or equivalent information shall be provided in a visual format.

**E109.2.8 Clocks.** Where clocks are provided for use by the general public, the clock face shall be uncluttered so that its elements are clearly visible. Hands, numerals and digits shall contrast with the background either light-on-dark or dark-on-light. Where clocks are mounted overhead, numerals and digits shall comply with Section 703.2 (Visual Characters) of ICC A117.1.

**E109.3 Reserved.**
PART 2
ELECTRIC ELEVATORS

SECTION 2.1
CONSTRUCTION OF HOISTWAYS AND HOISTWAY ENCLOSURES

2.1.4 Control of smoke and hot gases.

Delete Section 2.1.4.

2.1.6 Projections, recesses and setbacks in hoistway enclosures.

Revise Section 2.1.6.2 to read as follows:

2.1.6.2 On sides not used for loading and unloading:

(a) **Recesses,** except those necessary for installation of elevator equipment, shall not be permitted;

(b) **Beams,** floor slabs, or other building construction making an angle less than 75 degrees with the horizontal shall not project more than \[100 \text{ mm} \ (4 \text{ in.})\] \[50 \text{ mm} \ (2 \text{ in.) inside the hoistway enclosure unless the top surface of the projection is beveled at an angle not less than 75 degrees with the horizontal;\]

(c) **Separators** beams between adjacent elevators are not required to have bevels;

(d) Where setbacks exceeding \[100 \text{ mm} \ (4 \text{ in.}) \] \[50 \text{ mm} \ (2 \text{ in.}) occur in the enclosure wall, the top of the setback shall be beveled at an angle of not less than 75 degrees with the horizontal;

(e) **Bevels** are not required if the projections and setbacks are covered with material conforming to the following:

(i) It shall be equal to or stronger than 1.110 mm (0.0437 in.) wire;

(ii) It shall have openings not exceeding 25 mm (1 in.); and

(iii) It shall be supported and braced such that it will not deflect more than 25 mm (1 in.) when subjected to a force of 4.79 kPa (100 lbs per sq ft) applied horizontally at any point.

SECTION 2.2
PITS

2.2.2 Design and construction of pits.

Delete and revise Section 2.2.2.5 to read as follows:

2.2.2.5 Elevators with sprinklers in the shaftway shall be provided with a drain or sump pump.

2.2.4 Access to pits.

Revise Section 2.2.4.1 to read as follows:

2.2.4.1 Access shall be by means of the lowest hoistway door or by means of a separate pit access door located at the level of the pit floor.

Add new Subsection (f) to Section 2.2.4.4 to read as follows:

2.2.4.4 Separate pit door, when provided, shall be subject to the following requirements:

(f) Pit doors shall be labeled “DANGER, ELEVATOR PIT” with letters not less than 51 mm (2 in) high.

SECTION 2.7
MACHINE ROOMS AND MACHINE SPACES

2.7.3.4 Access doors and openings.

Add new Subsection (e) to Section 2.7.3.4.1 to read as follows:

2.7.3.4.1 Access doors to machine rooms and overhead machinery spaces shall:

(e) Be labeled “ELEVATOR MACHINE ROOM,” with letters not less than 51 mm (2 in.) high.

2.7.5 Lighting, temperature, and humidity in machine rooms and machinery spaces.

Add new Section 2.7.5.3 to read as follows:

2.7.5.3 A duplex receptacle rated at not less than 20A, 120V with ground fault circuit interrupter shall be provided in each machine room and machinery space. The receptacle shall not be used for permanently installed equipment.

2.7.8 Remote machine and control rooms.

Delete and revise Section 2.7.8.4 to read as follows:

2.7.8.4 A permanent two-way voice communication shall be provided between the lobby fire command station (where required or provided), the elevator car and elevator machine room, and/or control room.

SECTION 2.8
EQUIPMENT IN HOISTWAYS AND MACHINE ROOMS

2.8.1 Electrical equipment and wiring.

Revise Section 2.8.1.2 to read as follows:

2.8.1.2 Only such electrical wiring, raceways, and cables used directly in connection with the elevator, including wiring for signals, for communication with the car, fire department communications equipment, for lighting, heating, air conditioning, and ventilating the car, for fire detecting systems, for pit sump pumps, and for heating and lighting the hoistway and/or machine room and equipment allowed in §2.14.1.9.1(d) shall be permitted to be installed inside the hoistway.

2.8.2 Pipes, ducts, tanks, and sprinklers.

Delete and revise Section 2.8.2.3 to read as follows:

2.8.2.3 Sprinkler systems are not permitted in control/machine rooms.
in an operating panel inside the patient elevator(s) to activate the “hospital emergency service,” a special independent operating mode. The switch shall be rotated clockwise to go from the “NORMAL” to “HOSPITAL EMERGENCY SERVICE” position. It shall become effective only when the designated level corridor call “hospital emergency service” switch is in the “HOSPITAL EMERGENCY SERVICE” position and the car has returned to the designated level by “hospital emergency service” recall operation.

(a) When the “in-car” switch is in the “HOSPITAL EMERGENCY SERVICE” position, the patient elevator shall be on emergency service operation, and the patient elevator shall operate as follows:

(1) The patient elevator shall be operable only by a designated person in the car.

(2) Activation of the “in-car” operating mode shall remove the patient elevator from normal automatic and/or attendant service.

(3) The patient elevator(s) shall not be recalled under Phase I (§2.27.3.1) operation after the activation of “in-car” operation mode.

(4) Doors shall remain open until the authorized person registers the car call and initiates the door closing function.

(5) The patient elevator shall travel directly to the selected landing, overriding normal corridor call demand or Phase I (§2.27.3.1) recall and shall automatically open the doors upon the arrival at the selected landing, except when the smoke detector(s) are activated on the selected landing or the water alarm is activated on that floor. In such case, before the patient elevator has reached the selected landing, the patient elevator shall stop at a floor two stories below the selected landing or in the absence of a stop at that floor, at the nearest landing below the selected landing.

(6) When the patient elevator reaches the selected floor and the smoke detector(s) are activated on that landing or the water alarm is activated on that floor before the doors are open, the patient elevator, without opening the doors, shall travel to a floor two stories below the selected landing or in the absence of a stop at that floor, to the nearest landing below the selected landing.

(7) Doors shall remain open with the audible and visual signal functioning until the “in-car” switch is turned to the “NORMAL” position or for a predetermined adjustable time period to allow the removal of patients from the car and the patient elevator is placed into automatic, attendant or Phase I (§2.27.3.1) if in effect, operating mode.

(8) Upon transfer from “HOSPITAL EMERGENCY SERVICE” back to normal operation during a fire emergency and Phase I (§2.27.3.1) is in effect, the patient elevator shall be automatically recalled to the designated level.

2.27.5.3.3 Hospital emergency service switches color. The color of the Hospital Emergency Service switches located in the corridor at the designated level and inside the patient elevator(s) operating panel shall be blue.

Delete Section 2.27.7 in its entirety.

Section 2.27.7 Reserved.

Delete and revise Section 2.27.8 to read as follows:

2.27.8 Switch keys. The switches required by §2.27.2 through §2.27.5 for all elevators in a building shall be operable only by a citywide standard key 2642. The citywide standard key shall be designed in accordance with the requirements of the Fire Department and shall be obtained only through Fire Department authorization. Citywide standard keys shall be kept on the premises by a person responsible for the maintenance and operation of the elevators in a location readily accessible to authorized persons in an emergency, but not where they are available to the public.

SECTION 2.29 IDENTIFICATION

Delete and revise Section 2.29.1 to read as follows:

2.29.1 Identification of equipment. Each elevator shall be assigned a unique alphabetical or numerical identification, a minimum of 6 mm (1/4 in.) in height. The identification number shall be applied to the following locations:

(a) The driving machine;
(b) MG and/or transformers set;
(c) Controller;
(d) Selector;
(e) Governor;
(f) Main line disconnect switch;
(g) The crosshead, or where there is no crosshead, the car frame, such that it is visible from the top of the car;
(h) The car operating panel, minimum of 13 mm (0.5 in.) in height;
(i) Adjacent to or on every elevator entrance at the designated level, minimum of 75 mm (3 in.) height; and
(j) Each bank of elevators shall be identified by an alphabetic letter.

Add new Section 2.29.1.1 to read as follows:

2.29.1.1 New York City identification number. Each elevator shall be assigned a unique numerical identification, a minimum of 6 mm (1/4 in.) in height. The city identification number shall be applied to the following locations:

(a) The driving machine;
(b) MG and/or Transformers set;
**7.2.2.5.4** Stairway Identification

7.2.2.5.4.1 New enclosed stairs serving three or more stories and existing enclosed stairs serving five or more stories shall comply with 7.2.2.5.4.1(A) through 7.2.2.5.4.1(M).

(A) The stairs shall be provided with special signage within the enclosure at each floor landing.

(B) The signage shall indicate the floor level.

(C) The signage shall indicate the terminus of the top and bottom of the stair enclosure.

(D) The signage shall indicate the identification of the stair enclosure.

(E) The signage shall indicate the floor level of, and the direction to, exit discharge.

(F) The signage shall be located inside the enclosure approximately 60 in. (1525 mm) above the floor landing in a position that is visible when the door is in the open or closed position.

(G) The signage shall comply with 7.10.8.1 and 7.10.8.2 of this Code.

(H) The floor level designation shall also be tactile in accordance with ICC/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities.

(I) The signage shall be painted or stenciled on the wall or on a separate sign securely attached to the wall.

(J) The stairway identification letter shall be located at the top of the sign in minimum 1 in. (25 mm) high lettering and shall be in accordance with 7.10.8.2.

(K)* Signage that reads NO ROOF ACCESS and is located under the stairway identification letter shall designate stairways that do not provide roof access. Lettering shall be a minimum of 1 in. (25 mm) high and shall be in accordance with 7.10.8.2.

(L) The floor level number shall be located in the middle of the sign in minimum 5 in. (125 mm) high numbers and shall be in accordance with 7.10.8.2. Mezzanine levels shall have the letter "M" or other appropriate identification letter preceding the floor number, while basement levels shall have the letter "B" or other appropriate identification letter preceding the floor level number.

(M) Identification of the lower and upper terminus of the stairway shall be located at the bottom of the sign in minimum 1 in. (25 mm) high letters or numbers and shall be in accordance with 7.10.8.2.

7.2.2.5.4.2 Wherever an enclosed stair requires travel in an upward direction to reach the level of exit discharge, special signs with directional indicators showing the direction to the level of exit discharge shall be provided at each floor level landing from which upward direction of travel is required, unless otherwise provided in 7.2.2.5.4.2(A) and 7.2.2.5.4.2(B), and both of the following also shall apply:

(1) Such sign shall comply with 7.10.8.1 and 7.10.8.2.

(2) Such sign shall be visible when the door leaf is in the open or closed position.

(A) The requirement of 7.2.2.5.4.2 shall not apply where signs required by 7.2.2.5.4.1 are provided.

(B) The requirement of 7.2.2.5.4.2 shall not apply to stairs extending not more than one story below the level of exit discharge where the exit discharge is clearly obvious.

7.2.2.5.4.3* Stairway Tread Marking. Where new contrasting marking is applied to stairs, such marking shall comply with all of the following:

(1) The marking shall include a continuous strip as a coating on, or as a material integral with, the full width of the leading edge of each tread.

(2) The marking shall include a continuous strip as a coating on, or as a material integral with, the full width of the leading edge of each landing nosing.

(3) The marking strip width, measured horizontally from the leading vertical edge of the nosing, shall be consistent at all nosings.

(4) The marking strip width shall be 1 in. to 2 in. (25 mm to 51 mm).

7.2.2.5.4.4 Where new contrast marking is provided for stairway handrails, it shall be applied to, or be part of, at least the upper surface of the handrail; have a minimum width of ½ in. (13 mm); and extend the full length of each handrail. After marking, the handrail shall comply with 7.2.2.4.4. Where handrails or handrail extensions bend or turn corners, the stripe shall be permitted to have a gap of not more than 4 in. (100 mm).

7.2.2.5.5 Exit Stair Path Markings. Where exit stair path markings are required in Chapters 11 through 43, such markings shall be installed in accordance with 7.2.2.5.5.1 through 7.2.2.5.5.11.

7.2.2.5.5.1 Exit Stair Treads. Exit stair treads shall incorporate a marking stripe that is applied as a paint/coating or be a material that is integral with the nosing of each step. The marking stripe shall be installed along the horizontal leading edge of the step and shall extend the full width of the step. The marking stripe shall also meet all of the following requirements:

(1) The marking stripe shall be not more than ½ in. (13 mm) from the leading edge of each step and shall not overlap the leading edge of the step by more than ½ in. (13 mm) down the vertical face of the step.

(2) The marking stripe shall have a minimum horizontal width of 1 in. (25 mm) and a maximum width of 2 in. (51 mm).

(3) The dimensions and placement of the marking stripe shall be uniform and consistent on each step throughout the exit enclosure.

(4) Surface-applied marking stripes using adhesive-backed tapes shall not be used.

7.2.2.5.5.2 Exit Stair Landings. The leading edge of exit stair landings shall be marked with a solid and continuous marking stripe consistent with the dimensional requirements for stair treads and shall be the same length as, and consistent with, the stripes on the steps.

7.2.2.5.5.3 Exit Stair Handrails. All handrails and handrail extensions shall be marked with a solid and continuous marking stripe and meet all of the following requirements:

(1) The marking stripe shall be applied to the upper surface of the handrail or be a material integral with the upper surface of the handrail for the entire length of the handrail, including extensions.
(3) Self-testing/self-diagnostic battery-operated emergency lighting equipment shall indicate failures by a status indicator.
(4) A visual inspection shall be performed at intervals not exceeding 30 days.
(5) Functional testing shall be conducted annually for a minimum of 1½ hours.
(6) Self-testing/self-diagnostic battery-operated emergency lighting equipment shall be fully operational for the duration of the 1½-hour test.
(7) Written records of visual inspections and tests shall be kept by the owner for inspection by the authority having jurisdiction.

7.9.3.1.3 Testing of required emergency lighting systems shall be permitted to be conducted as follows:

1. Computer-based, self-testing/self-diagnostic battery-operated emergency lighting equipment shall be provided.
2. Not less than once every 30 days, emergency lighting equipment shall automatically perform a test with a duration of a minimum of 30 seconds and a diagnostic routine.
3. The emergency lighting equipment shall automatically perform a test for a minimum of 1½ hours.
4. The emergency lighting equipment shall be fully operational for the duration of the tests required by 7.9.3.1.3(2) and (3).
5. The computer-based system shall be capable of providing a report of the history of tests and failures at all times.

7.10 Marking of Means of Egress.

7.10.1 General.

7.10.1.1 Where Required. Means of egress shall be marked in accordance with Section 7.10 where required in Chapters 11 through 43.

7.10.1.2 Exits.

7.10.1.2.1* Exits, other than main exterior exit doors that obviously and clearly are identifiable as exits, shall be marked by an approved sign that is readily visible from any direction of exit access.

7.10.1.2.2* Horizontal components of the egress path within an exit enclosure shall be marked by approved exit or directional exit signs where the continuation of the egress path is not obvious.

7.10.1.3 Exit Door Tactile Signage. Tactile signage shall be provided to meet all of the following criteria, unless otherwise provided in 7.10.1.4:

1. Tactile signage shall be located at each door exit requiring an exit sign.
2. Tactile signage shall read as follows: EXIT.

7.10.1.4 Existing Exemption. The requirements of 7.10.1.3 shall not apply to existing buildings, provided that the occupancy classification does not change.

7.10.1.5 Exit Access.

7.10.1.5.1 Access to exits shall be marked by approved, readily visible signs in all cases where the exit or way to reach the exit is not readily apparent to the occupants.

7.10.1.5.2* New sign placement shall be such that no point in an exit access corridor is in excess of the rated viewing distance or 100 ft (30 m), whichever is less, from the nearest sign.

7.10.1.6* Floor Proximity Exit Signs. Where floor proximity exit signs are required in Chapters 11 through 43, such signs shall comply with 7.10.3, 7.10.4, 7.10.5, and 7.10.6 for externally illuminated signs and 7.10.7 for internally illuminated signs. Such signs shall be located near the floor level in addition to those signs required for doors or corridors. The bottom of the sign shall be not less than 6 in. (150 mm), but not more than 18 in. (455 mm), above the floor. For exit doors, the sign shall be mounted on the door or adjacent to the door, with the nearest edge of the sign within 4 in. (100 mm) of the door frame.

7.10.1.7* Floor Proximity Egress Path Marking. Where floor proximity egress path marking is required in Chapters 11 through 43, an approved floor proximity egress path marking system that is internally illuminated shall be installed within 18 in. (455 mm) of the floor. Floor proximity egress path marking systems shall be listed in accordance with ANSI/UL 1994, Standard for Luminous Egress Path Marking Systems. The system shall provide a visible delineation of the path of travel along the designated exit access and shall be essentially continuous, except as interrupted by doorways, hallways, corridors, or other such architectural features. The system shall operate continuously or at any time the building fire alarm system is activated. The activation, duration, and continuity of operation of the system shall be in accordance with 7.9.2. The system shall be maintained in accordance with the product manufacturing listing.

7.10.1.8 Visibility. Every sign required in Section 7.10 shall be located and of such size, distinctive color, and design that it is readily visible and shall provide contrast with decorations, interior finish, or other signs. No decorations, furnishings, or equipment that impairs visibility of a sign shall be permitted. No brightly illuminated sign (for other than exit purposes), display, or object in or near the line of vision of the required exit sign that could detract attention from the exit sign shall be permitted.

7.10.1.9 Mounting Location. The bottom of new egress markings shall be located at a vertical distance of not more than 6 ft 8 in. (2030 mm) above the top edge of the egress opening intended for designation by that marking. Egress markings shall be located at a horizontal distance of not more than the required width of the egress opening, as measured from the edge of the egress opening intended for designation by that marking to the nearest edge of the marking.

7.10.2 Directional Signs.

7.10.2.1* A sign complying with 7.10.3, with a directional indicator showing the direction of travel, shall be placed in every location where the direction of travel to reach the nearest exit is not apparent.

7.10.2.2 Directional exit signs shall be provided within horizontal components of the egress path within exit enclosures as required by 7.10.1.2.2.

7.10.3* Sign Legend.

7.10.3.1 Signs required by 7.10.1 and 7.10.2 shall read as follows in plainly legible letters, or other appropriate wording shall be used:

EXIT
7.10.3.2 Where approved by the authority having jurisdiction, pictograms in compliance with NFPA 170, Standard for Fire Safety and Emergency Symbols, shall be permitted.

7.10.4 Power Source. Where emergency lighting facilities are required by the applicable provisions of Chapters 11 through 43 for individual occupancies, the signs, other than approved self-luminous signs and listed photoluminescent signs in accordance with 7.10.7.2, shall be illuminated by the emergency lighting facilities. The level of illumination of the signs shall be in accordance with 7.10.6.3 or 7.10.7 for the required emergency lighting duration as specified in 7.9.2.1. However, the level of illumination shall be permitted to decline to 60 percent at the end of the emergency lighting duration.

7.10.5 Illumination of Signs.

7.10.5.1 General. Every sign required by 7.10.1.2, 7.10.1.5, or 7.10.8.1, other than where operations or processes require low lighting levels, shall be suitably illuminated by a reliable light source. Externally and internally illuminated signs shall be legible in both the normal and emergency lighting mode.

7.10.5.2 Continuous Illumination.

7.10.5.2.1 Every sign required to be illuminated by 7.10.6.3, 7.10.7, and 7.10.8 shall be continuously illuminated as required under the provisions of Section 7.8, unless otherwise provided in 7.10.5.2.2.

7.10.5.2.2 Illumination for signs shall be permitted to flash on and off upon activation of the fire alarm system.

7.10.6 Externally Illuminated Signs.

7.10.6.1 Size of Signs.

7.10.6.1.1 Externally illuminated signs required by 7.10.1 and 7.10.2, other than approved existing signs, unless otherwise provided in 7.10.6.1.2, shall read EXIT or shall use other appropriate wording in plainly legible letters sized as follows:

1. For new signs, the letters shall be not less than 6 in. (150 mm) high, with the principal strokes of letters not less than ¾ in. (19 mm) wide.
2. For existing signs, the required wording shall be permitted to be in plainly legible letters not less than 4 in. (100 mm) high.
3. The word EXIT shall be in letters of a width not less than 2 in. (51 mm), except the letter E, and the minimum spacing between letters shall be not less than ½ in. (9.5 mm).
4. Sign legend elements larger than the minimum established in 7.10.6.1.1(1) through (3) shall use letter widths, strokes, and spacing in proportion to their height.

7.10.6.1.2 The requirements of 7.10.6.1.1 shall not apply to marking required by 7.10.1.3 and 7.10.1.7.

7.10.6.2 Size and Location of Directional Indicator.

7.10.6.2.1 Directional indicators, unless otherwise provided in 7.10.6.2.2, shall comply with all of the following:

1. The directional indicator shall be located outside of the EXIT legend, not less than ¾ in. (9.5 mm) from any letter.
2. The directional indicator shall be of a chevron type, as shown in Figure 7.10.6.2.1.

3. The directional indicator shall be identifiable as a directional indicator at a distance of 40 ft (12 m).
4. A directional indicator larger than the minimum established for compliance with 7.10.6.2.1(3) shall be proportionately increased in height, width, and stroke.
5. The directional indicator shall be located at the end of the sign for the direction indicated.

7.10.6.2.2 The requirements of 7.10.6.2.1 shall not apply to approved existing signs.

7.10.6.3 Level of Illumination. Externally illuminated signs shall be illuminated by not less than 5 fc-candles (54 lux) at the illuminated surface and shall have a contrast ratio of not less than 0.5.

7.10.7 Internally Illuminated Signs.

7.10.7.1 Listing. Internally illuminated signs shall be listed in accordance with ANSI/UL 924, Standard for Emergency Lighting and Power Equipment, unless they meet one of the following criteria:

1. They are approved existing signs.
2. They are existing signs having the required wording in legible letters not less than 4 in. (100 mm) high.
3. They are signs that are in accordance with 7.10.1.3 and 7.10.1.6.

7.10.7.2 Photoluminescent Signs. The face of a photoluminescent sign shall be continuously illuminated while the building is occupied. The illumination levels on the face of the photoluminescent sign shall be in accordance with its listing. The charging illumination shall be a reliable light source, as determined by the authority having jurisdiction. The charging light source, shall be of a type specified in the product markings.

7.10.8 Special Signs.

7.10.8.1 Sign Illumination.

7.10.8.1.1 Where required by other provisions of this Code, special signs shall be illuminated in accordance with 7.10.5, 7.10.6.3, and 7.10.7.

7.10.8.1.2 Where emergency lighting facilities are required by the applicable provisions of Chapters 11 through 43, the required illumination of special signs shall additionally be provided under emergency lighting conditions.

7.10.8.2 Characters. Special signs, where required by other provisions of this Code, shall comply with the visual character requirements of ICC/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities.
7.10.8.3 No Exit.

7.10.8.3.1 Any door, passage, or stairway that is neither an exit nor a way of exit access and that is located or arranged so that it is likely to be mistaken for an exit shall be identified by a sign that reads as follows:

**NO EXIT**

7.10.8.3.2 The NO EXIT sign shall have the word NO in letters 2 in. (51 mm) high, with a stroke width of ½ in. (9.5 mm), and the word EXIT in letters 1 in. (25 mm) high, with the word EXIT below the word NO, unless such sign is an approved existing sign.

7.10.8.4 Elevator Signs. Elevators that are a part of a means of egress (see 7.2.13.1) shall have both of the following signs with a minimum letter height of ½ in. (16 mm) posted in every elevator lobby:

1. Signs that indicate that the elevator can be used for egress, including any restrictions on use
2. Signs that indicate the operational status of elevators

7.10.8.5 Evacuation Diagram. Where a posted floor evacuation diagram is required in Chapters 11 through 43, floor evacuation diagrams reflecting the actual floor arrangement and exit locations shall be posted and oriented in a location and manner acceptable to the authority having jurisdiction.

7.10.9 Testing and Maintenance.

7.10.9.1 Inspection. Exit signs shall be visually inspected for operation of the illumination sources at intervals not to exceed 30 days or shall be periodically monitored in accordance with 7.9.3.1.3.

7.10.9.2 Testing. Exit signs connected to, or provided with, a battery-operated emergency illumination source, where required in 7.10.4, shall be tested and maintained in accordance with 7.9.3.

7.11 Special Provisions for Occupancies with High Hazard Contents. See Section 6.2.

7.11.1* Where the contents are classified as high hazard, exits shall be provided and arranged to allow all occupants to escape from the building or structure, or from the hazardous area thereof, to the outside or to a place of safety with a travel distance of not more than 75 ft (23 m), measured as required in 7.6.1, unless otherwise provided in 7.11.2.

7.11.2 The requirement of 7.11.1 shall not apply to storage occupancies as otherwise provided in Chapter 42.

7.11.3 Egress capacity for high hazard contents areas shall be based on 0.7 in./person (18 mm/person) for stairs or 0.4 in./person (10 mm/person) for level components and ramps in accordance with 7.3.5.1.

7.11.4 Not less than two means of egress shall be provided from each building or hazardous area thereof, unless all of the following criteria are met:

1. Rooms or spaces do not exceed 200 ft² (18.6 m²).
2. Rooms or spaces have an occupant load not exceeding three persons.
3. Rooms or spaces have a travel distance to the room door not exceeding 25 ft (7620 mm).

7.11.5 Means of egress, for rooms or spaces other than those that meet the criteria of 7.11.4(1) through (3), shall be arranged so that there are no dead ends in corridors.

7.11.6 Doors serving high hazard contents areas with occupant loads in excess of five shall be permitted to be provided with a latch or lock only if the latch or lock is panic hardware or fire exit hardware complying with 7.2.1.7.

7.12 Mechanical Equipment Rooms, Boiler Rooms, and Furnace Rooms.

7.12.1 Mechanical equipment rooms, boiler rooms, furnace rooms, and similar spaces shall be arranged to limit common path of travel to a distance not exceeding 50 ft (15 m), unless otherwise permitted by the following:

1. A common path of travel not exceeding 100 ft (30 m) shall be permitted in the following locations:
   a. In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7
   b. In mechanical equipment rooms with no fuel-fired equipment
   c. In existing buildings

2. In an existing building, a common path of travel not exceeding 150 ft (46 m) shall be permitted, provided that all of the following criteria are met:
   a. The building is protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 9.7
   b. No fuel-fired equipment is within the space
   c. The egress path is readily identifiable.

3. The requirement of 7.12.1 shall not apply to rooms or spaces in existing health care occupancies complying with the arrangement of means of egress provisions of 19.2.5 and the travel distance limitations of 19.2.6.

7.12.2 Stories used exclusively for mechanical equipment, furnaces, or boilers shall be permitted to have a single means of egress where the travel distance to an exit on that story is not in excess of the common path of travel limitations of 7.12.1.

7.13 Normally Unoccupied Building Service Equipment Support Areas.

7.13.1* Hazard of Contents.

7.13.1.1 Unless prohibited by Chapters 11 through 43, the provisions of Section 7.13 shall apply, in lieu of the provisions of Sections 7.1 through 7.12, to normally unoccupied building service equipment support areas where such areas do not contain high hazard contents or operations.

7.13.1.2 Building service equipment support areas shall not contain fuel-fired equipment or be used for the storage of combustibles.

7.13.2 Egress Doors.

7.13.2.1* Egress from normally unoccupied building service equipment support areas shall be provided by doors complying with 7.2.1 where the normally unoccupied building service equipment support area exceeds 45,000 ft² (4180 m²) in buildings not protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).

7.13.2.2 Egress from normally unoccupied building service equipment support areas shall be provided by doors complying with 7.2.1 where the normally unoccupied building service equipment support area exceeds 45,000 ft² (4180 m²) in buildings not protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).
8.7.3 Flammable Liquids and Gases.

8.7.3.1 The storage and handling of flammable liquids or gases shall be in accordance with the following applicable standards:

1. NFPA 30, Flammable and Combustible Liquids Code
2. NFPA 54, National Fuel Gas Code
3. NFPA 58, Liquefied Petroleum Gas Code

8.7.3.2* No storage or handling of flammable liquids or gases shall be permitted in any location where such storage would jeopardize egress from the structure, unless otherwise permitted by 8.7.3.1.

8.7.4 Laboratories.

8.7.4.1* Laboratories that use chemicals shall comply with NFPA 45, Standard on Fire Protection for Laboratories Using Chemicals, unless otherwise modified by other provisions of this Code.

8.7.4.2 Laboratories in health care occupancies and medical and dental offices shall comply with NFPA 99, Health Care Facilities Code.

8.7.5* Hyperbaric Facilities. All occupancies containing hyperbaric facilities shall comply with NFPA 99, Health Care Facilities Code, Chapter 20, unless otherwise modified by other provisions of this Code.

Chapter 9 Building Service and Fire Protection Equipment

9.1 Utilities.

9.1.1 Gas. Equipment using gas and related gas piping shall be in accordance with NFPA 54, National Fuel Gas Code, or NFPA 58, Liquefied Petroleum Gas Code, unless such installations are approved existing installations, which shall be permitted to be continued in service.

9.1.2 Electrical Systems. Electrical wiring and equipment shall be in accordance with NFPA 70, National Electrical Code, unless such installations are approved existing installations, which shall be permitted to be continued in service.

9.1.3 Emergency Generators and Standby Power Systems. Where required for compliance with this Code, emergency generators and standby power systems shall comply with 9.1.3.1 and 9.1.3.2.

9.1.3.1 Emergency generators and standby power systems shall be installed, tested, and maintained in accordance with NFPA 110, Standard for Emergency and Standby Power Systems.

9.1.3.2 New generator controllers shall be monitored by the fire alarm system, where provided, or at an attended location, for the following conditions:

1. Generator running
2. Generator fault
3. Generator switch in nonautomatic position


9.2.1 Air-Conditioning, Heating, Ventilating Ductwork, and Related Equipment. Air-conditioning, heating, ventilating ductwork, and related equipment shall be in accordance with NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems, or NFPA 90B, Standard for the Installation of Warm Air Heating and Air-Conditioning Systems, as applicable, unless such installations are approved existing installations, which shall be permitted to be continued in service.

9.2.2 Ventilating or Heat-Producing Equipment. Ventilating or heat-producing equipment shall be in accordance with NFPA 91, Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Noncombustible Particulate Solids; NFPA 211, Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances; NFPA 31, Standard for the Installation of Oil-Burning Equipment; NFPA 54, National Fuel Gas Code; or NFPA 70, National Electrical Code, as applicable, unless such installations are approved existing installations, which shall be permitted to be continued in service.

9.2.3 Commercial Cooking Equipment. Commercial cooking equipment shall be in accordance with NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, unless such installations are approved existing installations, which shall be permitted to be continued in service.

9.2.4 Ventilating Systems in Laboratories Using Chemicals. Ventilating systems in laboratories using chemicals shall be in accordance with NFPA 45, Standard on Fire Protection for Laboratories Using Chemicals, or NFPA 99, Health Care Facilities Code, as appropriate.

9.3 Smoke Control.

9.3.1 Where required by the provisions of another section of this Code, smoke control systems shall be installed, inspected, tested, and maintained in accordance with NFPA 92, Standard for Smoke Control Systems; NFPA 204, Standard for Smoke and Heat Venting; or nationally recognized standards, engineering guides, or recommended practices, as approved by the authority having jurisdiction.

9.3.2 The engineer of record shall clearly identify the intent of the system, the design method used, the appropriateness of the method used, and the required means of inspecting, testing, and maintaining the system.

9.3.3 Acceptance testing shall be performed by a special inspector in accordance with Section 9.9.

9.3.4 Smoke Control System Operation.

9.3.4.1 Floor- or zone-dependent smoke control systems shall be automatically activated by sprinkler waterflow or smoke detection systems.

9.3.4.2 Means for manual operation of smoke control systems shall be provided at an approved location.

9.4 Elevators, Escalators, and Conveyors.

9.4.1* General. An elevator, other than an elevator in accordance with 7.2.13, shall not be considered a component in a required means of egress but shall be permitted as a component in an accessible means of egress.

9.4.2 Code Compliance.

9.4.2.1 Except as modified herein, new elevators, escalators, dumbwaiters, and moving walks shall be in accordance with
Figure A.7.2.2.5.2(a), Figure A.7.2.2.5.2(b), and Figure A.7.2.2.5.2(c) illustrate the requirement, assuming non-rated glass on the exterior wall of the stair is used.

A.7.2.2.5.3 An example of a use with the potential to interfere with egress is storage.

A.7.2.2.5.4 Figure A.7.2.2.5.4 shows an example of a stairway marking sign.

NORTH STAIR
FLOOR

SUB-BASEMENT TO 24TH FLOOR
NO ROOF ACCESS
DOWN TO FIRST FLOOR
FOR EXIT DISCHARGE

FIGURE A.7.2.2.5.4 Example of a Stairway Marking Sign.

A.7.2.2.5.4.1(K) It is not the intent to require a sign that reads ROOF ACCESS, as such message might be misinterpreted by building occupants as an alternative egress route. However signs that read ROOF ACCESS are not prohibited, as many such signs have been installed in existing buildings so as to make a requirement for removal impractical. Historically, the ROOF ACCESS sign has provided information for the fire department. Where there is no roof access, such information will be posted via a NO ROOF ACCESS sign. The absence of the NO ROOF ACCESS sign should be understood by the fire department to mean that roof access is possible.

A.7.2.2.5.4.3 For stair nosing marking, surface-applied material, such as adhesive-backed tape and magnetic strips, should not be used, as it is not durable under the scuffing from users' feet and, in coming loose, it creates a tripping hazard. While a carefully applied and consistently maintained coating is acceptable, contrasting color or photoluminescent material integral with the nosings is preferable because of its permanence. See also 7.1.6.4 and 7.2.2.3.6 for slip resistance uniformity requirements, as well as prohibition of projections on the treads.

Guidance on the use of photoluminescent marking is provided by ASTM E 20930, Guide for Recommended Uses of Photoluminescent (Phosphorescent) Safety Markings. Additional marking, for example, at the side boundaries of the stair, should be applied in accordance with the guidance provided therein.

A.7.2.2.5.4.4 Coatings and other applied markings, if used, should be durable for the expected usage, especially at end terminations of the marking and at changes in stair direction where usage is more extensive and hand forces are larger.

A.7.2.2.5.5 Examples of obstacles addressed by 7.2.2.5.5.5 are standpipes, hose cabinets, and wall projections.

A.7.2.2.5.5.7(1) The marking stripe for door hardware should be of sufficient size to adequately mark the door hardware. This marking could be located behind, immediately adjacent to, or on the door handle or escutcheon.

A.7.2.2.6.2 The guards that are required by 7.1.8 and detailed in 7.2.2.4.5 will usually meet this requirement where the stair is not more than 36 ft (11 m) above the finished ground level. Special architectural treatment, including application of
A.7.10.1.6 See A.7.10.3.

A.7.10.1.7 See 2.3.1.144.2 for the definition of the term internally illuminated.

A.7.10.1.8 In stores, for example, an otherwise adequate exit sign could be rendered inconspicuous by a high-intensity illuminated advertising sign located in the immediate vicinity.

Red is the traditional color for exit signs and is required by law in many places. However, at an early stage in the development of the Code, a provision made green the color for exit signs, following the concept of traffic lights in which green indicates safety and red is the signal to stop. During the period when green signs were specified by the Code, many such signs were installed, but the traditional red signs also remained. In 1949, the Fire Marshals Association of North America voted to request that red be restored as the required exit sign color, because it was found that the provision for green involved difficulties in law enactment that were out of proportion to the importance of safety. Accordingly, the 10th edition of the Code specified red where not otherwise required by law. The present text avoids any specific requirement for color, based on the assumption that either red or green will be used in most cases and that there are some situations in which a color other than red or green could actually provide better visibility.

A.7.10.2.1 A sign complying with 7.10.2 and indicating the direction of the nearest approved exit should be placed at the point of entrance to any escalator or moving walk. (See A.7.10.3.)

A.7.10.3 Where graphics are used, the symbols provided in NFPA 170, Standard for Fire Safety and Emergency Symbols, should be used. Such signs need to provide equal visibility and illumination and are to comply with the other requirements of Section 7.10.

A.7.10.3.2 Pictograms are permitted to be used in lieu of, or in addition to, signs with text.

A.7.10.4 It is not the intent of this paragraph to require emergency lighting but only to have the sign illuminated by emergency lighting if emergency lighting is required and provided.

It is not the intent to require that the entire stroke width and entire stroke height of all letters comprising the word EXIT be visible per the requirements of 7.10.6.3 under normal or emergency lighting operation, provided that the sign is visible and legible at a 100 ft (30 m) distance under all room illumination conditions.

A.7.10.5.1 See A.7.8.1.3.(4).

A.7.10.5.2 It is the intent to prohibit the use of a freely accessible light switch to control the illumination of either an internally or externally illuminated exit sign.

A.7.10.5.2.2 The flashing repetition rate should be approximately one cycle per second, and the duration of the off-time should not exceed ¼ second per cycle. During on-time, the illumination levels need to be provided in accordance with 7.10.6.3. Flashing signs, when activated with the fire alarm system, might be of assistance.

A.7.10.6.1 Experience has shown that the word EXIT, or other appropriate wording, is plainly legible at 100 ft (30 m) if the letters are as large as specified in 7.10.6.1.

A.7.10.6.2 Figure A.7.10.6.2 shows examples of acceptable locations of directional indicators with regard to left and right orientation. Directional indicators are permitted to be placed under the horizontal stroke of the letter T, provided that spacing of not less than ¼ in. (6 mm) is maintained from the horizontal and vertical strokes of the letter T.

FIGURE A.7.10.6.2 Directional Indicators.

A.7.10.6.3 Colors providing a good contrast are red or green letters on matte white background. Glossy background and glossy letter colors should be avoided.

The average luminance of the letters and background is measured in footlamberts or candelas per square meter. The contrast ratio is computed from these measurements by the following formula:

\[ \text{Contrast} = \frac{L_g - L_s}{L_s} \]

Where \( L_g \) is the greater luminance and \( L_s \) is the lesser luminance, either the variable \( L_g \) or \( L_s \) is permitted to represent the letters, and the remaining variable will represent the background. The average luminance of the letters and background can be computed by measuring the illumination at the positions indicated in Figure A.7.10.6.3 by numbered circles.

FIGURE A.7.10.6.3 Measurement of Exit Sign Luminance.

A.7.10.7.2 Photoluminescent signs need a specific minimum level of light on the face of the sign to ensure that the sign is charged for emergency operation and legibility in both the normal and emergency modes. Additionally, the type of light source (e.g., incandescent, fluorescent, halogen, metal halide) is important. Each light source produces different types of visible and invisible light (e.g., UV) that might affect the ability of some photoluminescent signs to charge and might also affect the amount of light output available during emergency mode. This type of sign would not be suitable where the illumination levels are permitted to decline. The charging light source should not be connected to automatic timers, because continuous illumination of the sign is needed; otherwise, the sign illumination would not be available, because it would be discharged.
A.7.10.8.3 The likelihood of occupants mistaking passageways or stairways that lead to dead-end spaces for exit doors and becoming trapped governs the need for exit signs. Thus, such areas should be marked with a sign that reads as follows:

**NO EXIT**

Supplementary identification indicating the character of the area, such as TO BASEMENT, STOREROOM, LINEN CLOSET, or the like, is permitted to be provided.

**A.7.10.8.4(1)** These signs are to be used in place of signs that indicate that elevators are not to be used during fires. Examples of these signs include the following:

In the Event of Fire, This Elevator Will Be Used by the Fire Department for Evacuation of People.

**PROTECTED ELEVATOR—**

**USABLE IN EMERGENCIES**

**A.7.10.8.4(2)** The wording of these signs should reflect human behavior in fires and the control specifics of the elevator system. Subparagraph 7.10.8.4 addresses signs, but provisions for notification of the vision impaired need to be considered. For information about human behavior with respect to elevator evacuation, see Groner and Levin, “Human Factor Considerations in the Potential for Using Elevators in Building Emergency Evacuation Plans”; Levin and Groner, “Human Behavior Aspects of Staging Areas for Fire Safety in GSA Buildings”; and Levin and Groner, “Human Factor Considerations for the Potential Use of Elevators for Fire Evacuation of FAA Air Traffic Control Towers.” Some examples of messages on signs that could be displayed are shown in Table A.7.10.8.4(2).

<table>
<thead>
<tr>
<th>Elevator Status</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal use</td>
<td>Elevator in Service</td>
</tr>
<tr>
<td>Elevators recalled and waiting for fire service</td>
<td>Please Wait for Fire Department or Use Stairs</td>
</tr>
<tr>
<td>Elevator out of service</td>
<td>Elevator Out of Service</td>
</tr>
</tbody>
</table>

**A.7.10.8.5** Egress paths with multiple turns can often be confusing with respect to which exit route will lead to the closest exit door. Floor evacuation diagrams can eliminate the guesswork by giving the occupant a point of reference by the YOU ARE HERE symbol. The entire floor plan should be shown with the primary and secondary exit routes, exit stairs, and elevators clearly identified. For further information, see ASTM E 2298, Standard Guide for Evacuation Route Diagrams.

**A.7.11.1** Seventy-five feet (23 m) can be traversed in approximately 10 seconds to 15 seconds, even when allowing for a momentary delay to decide which way to go, during which it can be assumed that the average individual can hold his or her breath.

**A.7.13.1** 29 CFR 1910.146 of the OSHA regulations describes the aspects of normally unoccupied areas. For example, hazardous atmosphere criteria are presented, and asphyxiation risk due to an entrance becoming engulfed are addressed. The areas described by 29 CFR 1910.146, "Permitted Required Confined Spaces," would be considered hazardous if located within a building or structure regulated by NFPA 101.

**A.7.13.2.1** Egress from normally unoccupied building service equipment support areas not exceeding 45,000 ft² (4180 m²) is permitted to be by access panels or other hardware not complying with the door requirements of 7.2.1.

**A.7.14.1.1** The Phase I Emergency Recall Operation mandated by the firefighters’ emergency operation provisions of ASME A17.1/CSA B 44, Safety Code for Elevators and Escalators, recalls elevators upon detection of smoke by smoke detectors installed in the following locations:

1. At each floor served by the elevator in the lobby (landing) adjacent to the hoistway doors
2. In the associated elevator machine room
3. In the hoistway where sprinklers are located in the hoistway

Where smoke from a fire remote from the elevator lobby (landing), elevator machine room, and elevator hoistway can be kept from reaching the elevator lobby (landing), elevator machine room, and elevator hoistway, the associated elevators can continue to operate in a fire emergency. The provisions of Section 7.14 address the features that need to be provided to make such elevator operation safe for evacuation.

**A.7.14.2.1** Building occupants have traditionally been taught not to use elevators in fire or similar emergencies. The emergency plan should include more than notification that the elevators can be used for emergency evacuation. The plan should include training to make occupants aware that the elevators will be available only for the period of time prior to elevator recall via smoke detection in the elevator lobby, elevator machine room, or elevator hoistway. Occupants should be prepared to use the exit stairs (which are required to be directly accessible from the elevator lobby by 7.14.8.3) where the elevator has been called out of service.

**A.7.14.3.2** The emergency voice/alarm communication system with the ability to provide voice directions on a selective basis to any building floor might be used to instruct occupants of the fire floor who are able to use stairs to relocate to a floor level below. The selective voice notification feature might be used to provide occupants of a given elevator lobby with a status report or supplemental instructions.

**A.7.14.3.3** An audible notification appliance will need to be positioned in the elevator lobby in order to meet the requirement of 7.14.3.4. The continued use of the occupant evacuation elevator system is predicated on elevator lobby doors that are closed to keep smoke from reaching the elevator lobby smoke detector that is arranged to initiate the Phase I Emergency Recall Operation.

**A.7.14.4.2** The presence of sprinklers in the elevator machine room would necessitate the installation of a shunt trip for automatically disconnecting the main line power for compliance with ASME A17.1/CSA B 44, Safety Code for Elevators and Escalators, as it is unsafe to operate elevators while sprinkler water is being discharged in the elevator machine room. The presence of a shunt trip conflicts with
306.3 Knee Clearance.

306.3.1 General. Space under an element between 9 inches (230 mm) and 27 inches (685 mm) above the finish floor or ground shall be considered knee clearance and shall comply with 306.3.

306.3.2 Maximum Depth. Knee clearance shall extend 25 inches (635 mm) maximum under an element at 9 inches (230 mm) above the finish floor or ground.

306.3.3 Minimum Required Depth. Where knee clearance is required under an element as part of a clear floor space, the knee clearance shall be 11 inches (280 mm) deep minimum at 9 inches (230 mm) above the finish floor or ground, and 8 inches (205 mm) deep minimum at 27 inches (685 mm) above the finish floor or ground.

306.3.4 Clearance Reduction. Between 9 inches (230 mm) and 27 inches (685 mm) above the finish floor or ground, the knee clearance shall be permitted to reduce at a rate of 1 inch (25 mm) in depth for each 6 inches (150 mm) in height.

306.3.5 Width. Knee clearance shall be 30 inches (760 mm) wide minimum.

307 Protruding Objects


307.2 Protrusion Limits. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path.

EXCEPTION: Handrails shall be permitted to protrude 4 1/2 inches (115 mm) maximum.

Advisory 307.2 Protrusion Limits. When a cane is used and the element is in the detectable range, it gives a person sufficient time to detect the element with the cane before there is body contact. Elements located on circulation paths, including operable elements, must comply with requirements for protruding objects. For example, awnings and their supporting structures cannot reduce the minimum required vertical clearance. Similarly, casement windows, when open, cannot encroach more than 4 inches (100 mm) into circulation paths above 27 inches (685 mm).

307.3 Post-Mounted Objects. Free-standing objects mounted on posts or pylons shall overhang circulation paths 12 inches (305 mm) maximum when
located 27 inches (685 mm) minimum and 80 inches (2030 mm) maximum above the finish floor or ground. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (685 mm) maximum or 80 inches (2030 mm) minimum above the finish floor or ground.

EXCEPTION: The sloping portions of handrails serving stairs and ramps shall not be required to comply with 307.3.

Figure 307.3 Post-Mounted Protruding Objects

307.4 Vertical Clearance. Vertical clearance shall be 80 inches (2030 mm) high minimum. Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches (2030 mm) high. The leading edge of such guardrail or barrier shall be located 27 inches (685 mm) maximum above the finish floor or ground.

EXCEPTION: Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the finish floor or ground.

Figure 307.4 Vertical Clearance

307.5 Required Clear Width. Protruding objects shall not reduce the clear width required for accessible routes.

308 Reach Ranges

308.1 General. Reach ranges shall comply with 308.

Advisory 308.1 General. The following table provides guidance on reach ranges for children according to age where building elements such as coat hooks, lockers, or operable parts are designed for use primarily by children. These dimensions apply to either forward or side reaches. Accessible elements and operable parts designed for adult use or children over age 12 can be located outside these ranges but must be within the adult reach ranges required by 308.

<table>
<thead>
<tr>
<th>Children’s Reach Ranges</th>
<th>Ages 3 and 4</th>
<th>Ages 5 through 8</th>
<th>Ages 9 through 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward or Side Reach</td>
<td>High (maximum) 36 in (915 mm)</td>
<td>40 in (1015 mm)</td>
<td>44 in (1120 mm)</td>
</tr>
<tr>
<td></td>
<td>Low (minimum) 20 in (510 mm)</td>
<td>18 in (455 mm)</td>
<td>16 in (405 mm)</td>
</tr>
</tbody>
</table>

308.2 Forward Reach.

308.2.1 Unobstructed. Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

Figure 308.2.1 Unobstructed Forward Reach

308.2.2 Obstructed High Reach. Where a high forward reach is over an obstruction, the clear floor space shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 48 inches (1220 mm) maximum where the reach depth is 20 inches (510 mm) maximum. Where the reach depth exceeds 20 inches (510 mm), the high forward reach shall be 44 inches (1120 mm) maximum and
the reach depth shall be 25 inches (635 mm) maximum.

![Image](Fig 308.2.2 Obstructed High Forward Reach)

308.3 Side Reach.

308.3.1 Unobstructed. Where a clear floor or ground space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48 inches (1220 mm) maximum and the low side reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

EXCEPTIONS: 1. An obstruction shall be permitted between the clear floor or ground space and the element where the depth of the obstruction is 10 inches (255 mm) maximum.

2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

![Image](Fig 308.3.1 Unobstructed Side Reach)

308.3.2 Obstructed High Reach. Where a clear floor or ground space allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 inches (865 mm) maximum and the depth of the obstruction shall be 24 inches (610 mm) maximum. The high side reach shall be 48 inches (1220 mm) maximum for a reach depth of 10 inches (255 mm) maximum. Where the reach depth exceeds 10 inches (255 mm), the high side reach shall be 46 inches (1170 mm) maximum for a reach depth of 24 inches (610 mm) maximum.

EXCEPTIONS: 1. The top of washing machines and clothes dryers shall be permitted to be 36 inches (915 mm) maximum above the finish floor.

2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

![Image](Fig 308.3.2 Obstructed High Side Reach)

309 Operable Parts

309.1 General. Operable parts shall comply with 309.

309.2 Clear Floor Space. A clear floor or ground space complying with 305 shall be provided.

309.3 Height. Operable parts shall be placed within one or more of the reach ranges specified in 308.

309.4 Operation. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds (22.2 N) maximum.

EXCEPTION: Gas pump nozzles shall not be required to provide operable parts that have an activating force of 5 pounds (22.2 N) maximum.
407.2.2.3 Audible Signals. Audible signals shall sound once for the up direction and twice for the down direction, or shall have verbal annunciators that indicate the direction of elevator car travel. Audible signals shall have a frequency of 1500 Hz maximum. Verbal annunciators shall have a frequency of 300 Hz minimum and 3000 Hz maximum. The audible signal and verbal annunciator shall be 10 dB minimum above ambient, but shall not exceed 80 dB, measured at the hall call button.

EXCEPTIONS: 1. Destination-oriented elevators shall not be required to comply with 407.2.2.3 provided that the audible tone and verbal announcement is the same as those given at the call button or call button keypad. 2. Existing elevators shall not be required to comply with the requirements for frequency and dB range of audible signals.

407.2.2.4 Differentiation. Each destination-oriented elevator in a bank of elevators shall have audible and visible means for differentiation.

407.2.3 Hoistway Signs. Signs at elevator hoistways shall comply with 407.2.3.

407.2.3.1 Floor Designation. Floor designations complying with 703.2 and 703.4.1 shall be provided on both jambs of elevator hoistway entrances. Floor designations shall be provided in both tactile characters and braille. Tactile characters shall be 2 inches (51 mm) high minimum. A tactile star shall be provided on both jambs at the main entry level.

---

407.2.3.2 Car Designation. Destination-oriented elevators shall provide tactile car identification complying with 703.2 on both jambs of the hoistway immediately below the floor designation. Car designations shall be provided in both tactile characters and braille. Tactile characters shall be 2 inches (51 mm) high minimum.

---

407.3 Elevator Door Requirements. Hoistway and car doors shall comply with 407.3.

407.3.1 Type. Elevator doors shall be the horizontal sliding type. Car gates shall be prohibited.

407.3.2 Operation. Elevator hoistway and car doors shall open and close automatically.

EXCEPTION: Existing manually operated hoistway swing doors shall be permitted provided that they comply with 404.2.3 and 404.2.9. Car door closing shall not be initiated until the hoistway door is closed.

407.3.3 Reopening Device. Elevator doors shall be provided with a reopening device complying with 407.3.3 that shall stop and reopen a car door and hoistway door automatically if the door becomes obstructed by an object or person.

EXCEPTION: Existing elevators with manually operated doors shall not be required to comply with 407.3.3.

407.3.3.1 Height. The device shall be activated by sensing an obstruction passing through the opening at 5 inches (125 mm) nominal and 29 inches (735 mm) nominal above the finish floor.

.3.3.2 Contact. The device shall not require physical contact to be activated, although contact is permitted to occur before the door reverses.

407.3.3.3 Duration. Door reopening devices shall remain effective for 20 seconds minimum.

407.3.4 Door and Signal Timing. The minimum acceptable time from notification that a car is answering a call or notification of the car assigned at the
Chapter 7: Communication Elements and Features

701 General

701.1 Scope. The provisions of Chapter 7 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

702 Fire Alarm Systems

702.1 General. Fire alarm systems shall have permanently installed audible and visible alarms complying with NFPA 72 (1999 or 2002 edition) (incorporated by reference, see “Referenced Standards” in Chapter 1), except that the maximum allowable sound level of audible notification appliances complying with section 4-3.2.1 of NFPA 72 (1999 edition) shall have a sound level no more than 110 dB at the minimum hearing distance from the audible appliance. In addition, alarms in guest rooms required to provide communication features shall comply with sections 4-3 and 4-4 of NFPA 72 (1999 edition) or sections 7.4 and 7.5 of NFPA 72 (2002 edition).

EXCEPTION: Fire alarm systems in medical care facilities shall be permitted to be provided in accordance with industry practice.

703 Signs

703.1 General. Signs shall comply with 703. Where both visual and tactile characters are required, either one sign with both visual and tactile characters, or two separate signs, one with visual, and one with tactile characters, shall be provided.

703.2 Raised Characters. Raised characters shall comply with 703.2 and shall be duplicated in braille complying with 703.3. Raised characters shall be installed in accordance with 703.4.

Advisory 703.2 Raised Characters. Signs that are designed to be read by touch should not have sharp or abrasive edges.

703.2.1 Depth. Raised characters shall be 1/32 inch (0.8 mm) minimum above their background.

703.2.2 Case. Characters shall be uppercase.

703.2.3 Style. Characters shall be sans serif. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

703.2.4 Character Proportions. Characters shall be selected from fonts where the width of the uppercase letter “O” is 55 percent minimum and 110 percent maximum of the height of the uppercase letter “I”.

703.2.5 Character Height. Character height measured vertically from the baseline of the character shall be 5/8 inch (16 mm) minimum and 2 inches (51 mm) maximum based on the height of the uppercase letter “I”.

EXCEPTION: Where separate raised and visual characters with the same information are provided, raised character height shall be permitted to be 1/2 inch (13 mm) minimum.

703.2.6 Stroke Thickness. Stroke thickness of the uppercase letter “I” shall be 15 percent maximum of the height of the character.

703.2.7 Character Spacing. Character spacing shall be measured between the two closest points of adjacent raised characters within a message, excluding word spaces. Where characters have rectangular cross sections, spacing between individual raised characters shall be 1/8 inch (3.2 mm) minimum and 4 times the raised character stroke width maximum. Where characters have other cross sections, spacing between individual raised characters shall be 1/16 inch (1.6 mm) minimum and 4 times the raised character stroke width maximum at the base of the cross sections, and 1/8 inch (3.2 mm) minimum and 4 times the raised character stroke width maximum at the top of the cross sections. Characters shall be separated from raised borders and decorative elements 3/8 inch (9.5 mm) minimum.

703.2.8 Line Spacing. Spacing between the baselines of separate lines of raised characters within a message shall be 135 percent minimum and 170 percent maximum of the raised character height.

703.3 Braille. Braille shall be contracted (Grade 2) and shall comply with 703.3 and 703.4.

703.3.1 Dimensions and Capitalization. Braille dots shall have a domed or rounded shape and shall comply with Table 703.3.1. The indication of an Hercie or capital letters shall only be used before the first word of sentences, proper nouns and names, individual letters of the alphabet, initials, and

703.3 Braille Dimensions

<table>
<thead>
<tr>
<th>Measurement Range</th>
<th>Minimum in Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 703.3.5 Height of Raised Characters
### Figure 703.3.1 Braille Measurement

703.3.2 Position. Braille shall be positioned below the corresponding text. If text is multi-lined, braille shall be placed below the entire text. Braille shall be separated 3/8 inch (9.5 mm) minimum from any other tactile characters and 3/8 inch (9.5 mm) minimum from raised borders and decorative elements.

**EXCEPTION:** Braille provided on elevator car controls shall be separated 3/16 inch (4.8 mm) minimum and shall be located either directly below or adjacent to the corresponding raised characters or symbols.

### Figure 703.3.2 Position of Braille

703.4 Installation Height and Location. Signs with tactile characters shall comply with 703.4.

703.4.1 Height Above Finish Floor or Ground. Tactile characters on signs shall be located 48 inches (1220 mm) minimum above the finish floor or ground surface, measured from the baseline of the lowest tactile character and 60 inches (1525 mm) maximum above the finish floor or ground surface, measured from the baseline of the highest tactile character.

**EXCEPTION:** Tactile characters for elevator car controls shall not be required to comply with 703.4.1.
703.4.2 Location. Where a tactile sign is provided at a door, the sign shall be located alongside the door at the latch side. Where a tactile sign is provided at double doors with one active leaf, the sign shall be located on the inactive leaf. Where a tactile sign is provided at double doors with two active leaves, the sign shall be located to the right of the right hand door. Where there is no wall space at the latch side of a single door or at the right 1/2 of double doors, signs shall be located on the nearest adjacent wall. Signs containing tactile characters shall be located so that a clear floor space of inches (455 mm) minimum by 18 inches (455 mm) minimum, centered on the tactile characters, is provided beyond the arc of any door swing between the closed position and 45 degree open position.

EXCEPTION: Signs with tactile characters shall be permitted on the push side of doors with closers and without hold-open devices.

![Figure 703.4.1 Height of Tactile Characters Above Finish Floor or Ground](image)

703.4.2 Location of Tactile Signs at Doors

703.5 Visual Characters. Visual characters shall comply with 703.5.

EXCEPTION: Where visual characters comply with 703.2 and are accompanied by braille complying with 703.3, they shall not be required to comply with 703.5.2 through 703.5.9.

703.5.1 Finish and Contrast. Characters and their background shall have a non-glare finish. Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.

Advisory 703.5.1 Finish and Contrast. Signs are more legible for persons with low vision when characters contrast as much as possible with their background. Additional factors affecting the ease with which the text can be distinguished from its background include shadows cast by lighting sources, surface glare, and the uniformity of the text and its background colors and textures.

703.5.2 Case. Characters shall be uppercase or lowercase or a combination of both.

703.5.3 Style. Characters shall be conventional in form. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

703.5.4 Character Proportions. Characters shall be selected from fonts where the width of the uppercase letter "O" is 55 percent minimum and 110 percent maximum of the height of the uppercase letter "I".

703.5.5 Character Height. Minimum character height shall comply with Table 703.5.5. Viewing distance shall be measured as the horizontal distance between the character and an obstruction preventing further approach towards the sign. Character height shall be based on the uppercase letter "I".

### Table 703.5.5 Visual Character Height

<table>
<thead>
<tr>
<th>Height to Finish Floor or Ground from Baseline of Character</th>
<th>Horizontal Viewing Distance</th>
<th>Minimum Character Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 inches (1015 mm) to less than or equal to 70 inches (1780 mm)</td>
<td>less than 72 inches (1830 mm)</td>
<td>5/8 inch (16 mm)</td>
</tr>
<tr>
<td>72 inches (1830 mm) and greater</td>
<td>5/8 inch (16 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (1830 mm)</td>
<td></td>
</tr>
<tr>
<td>Greater than 70 inches (1780 mm) to less than or equal to 120 inches (3050 mm)</td>
<td>less than 180 inches (4570 mm)</td>
<td>2 inches (51 mm)</td>
</tr>
<tr>
<td>180 inches (4570 mm) and greater</td>
<td>2 inches (51 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (4570 mm)</td>
<td></td>
</tr>
<tr>
<td>greater than 120 inches (3050 mm)</td>
<td>less than 21 feet (6400 mm)</td>
<td>3 inches (75 mm)</td>
</tr>
<tr>
<td>21 feet (6400 mm) and greater</td>
<td>3 inches (75 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (6400 mm)</td>
<td></td>
</tr>
</tbody>
</table>

703.5.6 Height From Finish Floor or Ground. Visual characters shall be 40 inches (1015 mm) minimum above the finish floor or ground.

EXCEPTION: Visual characters indicating elevator car controls shall not be required to comply with 703.5.6.

703.5.7 Stroke Thickness. Stroke thickness of the uppercase letter "I" shall be 10 percent minimum and 30 percent maximum of the height of the character.

703.5.8 Character Spacing. Character spacing shall be measured between the two closest points of adjacent characters, excluding word spaces. Spacing between individual characters shall be 10 percent minimum and 35 percent maximum of character height.

703.5.9 Line Spacing. Spacing between the baselines of separate lines of characters within a message shall be 135 percent minimum and 170 percent maximum of the character height.

703.6 Pictograms. Pictograms shall comply with 703.6.

703.6.1 Pictogram Field. Pictograms shall have a field height of 6 inches (150 mm) minimum. Characters and braille shall not be located in the pictogram field.
NYU Langone Medical Center
Wayfinding and Communications

Wayfinding Kiosk & Pylon
Content Management Guide
December 16, 2016

DRAFT

Notes on current draft:
• Expanded document to cover both Kiosks and Pylons.
• Added Appendix Summary of User Research.
• To be added: updated screenshots of Pylon interface, page 41 and Pylon Technical Architecture summary, page 63.
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I. Executive Summary

The NYU Langone Medical Center (NYULMC) wayfinding and communications master plan called for a multi-platform solution to wayfinding challenges within the medical center. Two digital solutions are described in detail in this document:

1. Interactive digital **Kiosks** are strategically located at points of entry as well as at key information points. At the Kiosks, patients and visitors can find up-to-date walking directions to physicians and public-facing locations at the superblock. The Kiosks provide the Find a Doctor information also found on the NYU Langone website. The Kiosks currently provide wayfinding guidance in English and three foreign languages with the capability to add future additional languages. The languages chosen were based on NYULMC population statistics and requirements by the Joint Commission: Spanish, Russian, and Mandarin Chinese. The interactive Kiosks are intended to support information desk staff and volunteers in interacting with and providing directions to patients and visitors. It is important to note that no patient information is available in the Kiosks.

2. Digital **Pylons** are large interactive screens embedded in signage that direct to first floor destinations. They provide directions in English, Spanish, Russian and Mandarin Chinese, rotating messages in these languages when not in use. Patients and visitors may touch the screen to select their language and to view walking maps to various destinations.

The Kiosks and Pylons are part of a suite of wayfinding tools—along with signage, printed maps, and verbal directions—that serve the growing number of patients and visitors at the Medical Center.

This guide details the features Kiosks and Pylons and includes step-by-step directions to perform the most common tasks.
Kiosk and Pylon Locations
Each Kiosk and Pylon has a unique name that is used in the content management software and may be used to identify its location when reporting issues. The Kiosk name is printed on a sticker on the back of the Kiosk.

There are three kiosks:
Kiosk 102 (Y1-L1-360a): by Silverstein Elevators
Kiosk 103 (Y1-L1-361a): by Schwartz West Elevators
Kiosk 104 (Y1-L1-362a): by Schwartz East Elevators

There are five Pylons:
Pylon Y2-L1-001a: by the Tisch Elevators
Pylon Y2-L1-105a: in the Tisch Lobby
Pylon Y2-L1-102a: in the Main Lobby at the entrance to the Blue Pathway
Pylon Y2-L1-202a: in the Main Lobby at the entrance to the Yellow Pathway
Pylon Y2-L1-302a: in the Main Lobby at the entrance to the Green Pathway

The naming conventions are (sign type)-(level)-(sign number), as in:
Sign Type: Y1
Level: L1
Sign Number: 360a
II. Wayfinding Logic

The Kiosks and Pylons are vital parts of NYULMC’s integrated wayfinding system which consists of color-coded pathways, interior and exterior signage, and printed maps. All wayfinding tools utilize the same nomenclature and logic:

Pathway > Elevator > Floor > Destination

With only four items to remember, visitors can easily follow this “breadcrumb trail” of information to their destination.

In the Kiosk Admin Tool (described on page 13), every destination is associated with its Pathway, Elevator, and Floor. Aliases or nicknames for destinations and their translated names are also managed in the Tool.

The Pylons highlight access to first floor destinations such as Admissions and the Café.
III. Kiosks

A. User Experience
Kiosks offer directions to departments, physicians’ offices, lecture halls, food and amenities on the superblock.
At the Kiosk, visitors can search for a destination or browse through alphabetical listings to find where they’d like to go. Once a destination has been selected, a map and step-by-step directions from the Kiosk to the destination are displayed on screen. Visitors can then print, text or email those directions. All information on the Kiosks is available in English, Spanish, Mandarin Chinese, and Russian.

1) When not in use, the Kiosk plays an animation to attract visitors.

2) When a visitor taps anywhere on the screen, the home page is displayed. There, they can:
   a) Select a language (upper right)
   b) Search box (top center)
   c) Browse by directory – 4 types of directories (center)

See 4a, 4b, and 4c for more on browsable directories

3a) If a visitor touches inside the search box, a keyboard is revealed. They can type the first few letters of what they are looking for and a drop-down list will reveal matching destinations.

3b) At any point, a visitor can click on the language buttons above to translate the current screen.
4a) When the “Departments” directory is selected, visitors can browse departments by two-finger scrolling, touching a letter on the right-hand alphabet bar, or typing in the search box.

4b) When the “Physicians” directory is selected, visitors can browse physicians by two-finger scrolling, touching a letter on the right-hand alphabet bar, or typing in the search box.

4c) When the “Lecture Halls” directory is selected, visitors can browse lecture halls by two-finger scrolling, touching a letter on the right-hand alphabet bar, or typing in the search box.

4d) When the “Food & Amenities” directory is selected, visitors can browse departments by two-finger scrolling, touching a letter on the right-hand alphabet bar, or typing in the search box.
5) When a destination is selected, a map and directions from the Kiosk are automatically displayed.

6a) Visitors can PRINT directions which are output as a receipt from the Kiosk.

6b) Printed receipt.

7a) Visitors can send directions and a map to an EMAIL address.

7b) Emailed direction set.

8a) Visitors can TEXT directions to their phone.

8b) Texted directions.
B. Responsibilities
Responsibilities for keeping the Kiosk content up to date are shared among RED+F, FGP, and Patient Experience. This matrix outlines the departments responsible for certain types of content. Fred Alvarez is the lead administrator of the Kiosk Admin Tool and should be contacted if changes to the administrator contacts are required.

<table>
<thead>
<tr>
<th>Item</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Departments</td>
<td>RED+F and Patient Experience</td>
</tr>
<tr>
<td>School of Medicine Destinations</td>
<td>RED+F</td>
</tr>
<tr>
<td>Lecture Halls</td>
<td>RED+F</td>
</tr>
<tr>
<td>Physician Departments (HCC)</td>
<td>FGP</td>
</tr>
<tr>
<td>Food &amp; Amenities</td>
<td>RED+F</td>
</tr>
<tr>
<td>Translations</td>
<td>Patient Experience</td>
</tr>
<tr>
<td>Aliases</td>
<td>Patient Experience</td>
</tr>
</tbody>
</table>

Administrator Contacts
RED+F:
Alexandria Lee, Alexandria.Lee@nyumc.org, 212.263.3562
Fred Alvarez, Fred.Alvarez@nyumc.org, 212.263.4927
Leeza Springer, Leeza.Springer@nyumc.org, 212.263.3618

FGP:
Jessica Krol, Jessica.Krol@nyumc.org, 646.754.4532

Patient Experience:
Aliases: Kelly Beattie, Kelly.Beattie@nyumc.org, 212.263.6891
Translations: Letys Mejia, Letys.Mejia@nyumc.org, 212.263.2151

C. Content Management
To keep information on the Kiosks accurate and up to date, authorized NYULMC staff members can access the Kiosk Admin Tool to add and edit destinations. This section walks you through the features of the Admin Tool and includes step-by-step directions to perform the most common tasks. 

If a content change also requires a change to the corresponding map(s), see the section Maintenance: Updating Maps on page 27 of this document.
Content Sources
The Kiosk has four directories: Departments, Physicians, Lecture Halls, and Food & Amenities.

Departments
**Content:** Name and address (suite designation to be added). Locations displayed are physician, clinical, and School of Medicine departments within the Main Campus.

**Sources:** The kiosk has browser-based Admin Tool, which is accessible via the NYULMC intranet. The Admin Tool was custom built to manage manual data entries as there was no consolidated data source for destinations. Each destination has data fields for destination name, translations, pathway, elevator, and floor. Aliases or nicknames for destinations can also be entered.

**Updates:** Data changes must be made manually in the Admin Tool. Authorized users from RED+F, Patient Experience, and FGP can make changes.

Physicians
**Content:** Physician name, specialty, address, phone number. Locations displayed include all physicians at 530 First Avenue (HCC & Skirball), and all non-Main Campus addresses.

**Sources:** The kiosk pulls the nyulangone.org Find a Doc data feed daily. That feed is a combination of Echo and Cactus data which an MCIT team vets against the FGP spreadsheet manually.

**Updates:** If a data change is made on the MCIT side and is viewable on the nyulangone.org website, it will be viewable on the kiosk.

Lecture Halls
**Content:** Name and 550 First Avenue, only Main Campus destinations are included.

**Sources:** Admin Tool, see “Departments, sources”

**Updates:** Data changes must be made manually in the Admin Tool. Authorized users from RED+F can make changes.

Food and Amenities
**Content:** Name and 550 First Avenue, only Main Campus destinations are included.
Types of Content
The destinations managed in the Admin Tool are divided into three categories:

(1) Departments  
(2) Lecture Halls  
(3) Food & Amenities

These categories are presented as buttons on the Kiosk Directory interface. When you enter the Admin Tool, you can navigate to any of these categories to add or edit destinations. Physician content is managed automatically via the daily Physicians’ Feed and cannot be edited within the Admin Tool. The Physicians’ Feed contains a subset of the information found in the NYULMC’s website Find a Doctor section: physician’s name, primary specialty, primary location and office phone number.

Maps are also managed outside of the Admin Tool. Maps are updated in Adobe Illustrator by designers and delivered to XFactor for inclusion in the system.

Logging On
The Kiosk Admin Tool is accessible via the NYULMC intranet. As an authorized user, you will receive a user name, password, and a link to access the Admin Tool. You will also receive a link to the Kiosk interface. As you work in the Kiosk Admin Tool, it’s helpful to have the Kiosk interface in a second browser tab or window so that you can check changes you make in real time. The Kiosks use the FireFox browser, so it’s best to work in FireFox to confirm functionality.

After you log in, you will see the main page of the Admin Tool with links to the main categories of information: Departments, Lecture Halls, and Food & Amenities.
Adding a New Department / Lecture Hall / Food & Amenity
When a new destination opens on the superblock, it is important to add it to the Kiosk database so that visitors can search for and find that destination.

1. Adding a New Department (Owners: RED+F for Clinical and FGP for Physician)

1.1 Click on Departments, and you will see options to Add New Department or to Manage Departments.

1.2 To add a new department, click on the Add New Department button and you will see a list of all entry fields for a new destination.
2. Adding a New Lecture Hall (Owner: RED+F)

2.1 Click on Lecture Halls, and you will see options to Add New Lecture Hall or to Manage Lecture Halls.

2.2 To add a new lecture hall, click on the Add New Lecture Hall button and you will see a list of all entry fields for a new lecture hall.
3. Adding a New Food & Amenity (Owner: RED+F)

3.1 Click on Food & Amenities, and you will see options to Add New Food & Amenities or to Manage Food & Amenities.

3.2 To add a new amenity, click on the Add New Food & Amenities button and you will see a list of all entry fields for a new entry.
4. Content Description

There are multiple owners for different types of content. Please refer to the **Content Responsibilities Matrix** on page 11.

The following fields are required to create a new destination.

**Department Name**: the official wayfinding name for the destination, which should be the same as the name that appears on official Medical Center signage.

**Spanish, Russian, and Chinese Translations** for that destination as provided by Patient Experience.

**Pathway**: the pathway that leads to the closest elevator to that destination (Green, Blue or Yellow).
**Floor:** the floor that the destination is on.

**Elevator:** the public elevator closest to the destination.

**Active:** whether the destination should be published to the Kiosk (Yes) or (No). You may save a destination without making it publicly available on the Kiosk.

*There are two fields that are optional—they do not need to be filled in order to save a department:*

**Alias:** enter any aliases for the department, separated by semicolons, such as “Geriatrics; Dialysis.” There is no limit to the number of aliases you can add. (Please see the section “How to Choose Relevant Aliases” on the following page for more.)

**Notes:** enter any notes about the department here — these notes are not published on the Kiosk, they are just for your reference. This is a good place to capture approvals of name changes, dates of moves, and other information.
Wayfinding Kiosk and Pylon Content Management Guide (12/16/16)

Updating an Existing Department / Lecture Hall / Food & Amenity

Common updates to destinations are:

(1) Changing the name of the destination
(2) Changing the destination’s location (due to relocation)
(3) Adding an alias to a destination

1. Updating an Existing Department (Owners: RED+F for Clinical and FGP for Physician)

   1.1 Click on Manage Departments and you will see a list of all departments that have been entered in the Admin Tool.

   1.2 Click on any department name to edit its information.

2. Updating an Existing Lecture Hall (Owner: RED+F)

   2.1 Click on Manage Lecture Halls and you will see a list of all lecture halls that have been entered in the Admin Tool.
2.2 Click on any lecture hall name to edit its information.

3. Updating an Existing Food & Amenity (Owner: RED+F)
   3.1 Click on Manage Food & Amenities and you will see a list of all food & amenities that have been entered in the Admin Tool.

   3.2 Click on any entry name to edit its information.

4. Moving a Destination (Owner: RED+F)
   4.1 Click on Manage for the type of destination you’d like to edit (Departments, Lecture Halls, Food & Amenities.)
4.2 Click on the name of the destination you’d like to edit.

4.3 Change the floor, pathway, and building as needed.

4.4 Click on the **Save** button.

4.5 To confirm that you’ve entered the change correctly, view the Kiosk interface in another browser window and search for the destination to see that the information has been updated.
5. Editing a Translation (Owner: Patient Experience)

5.1 Click on Manage for the type of destination you’d like to edit (Departments, Lecture Halls, Food & Amenities.)

5.2 Click on the name of the destination you’d like to edit.
5.3 Edit the translation(s) as needed. Note that foreign language fonts are not required. Simply copy the correct text in Cyrillic or Chinese Characters from an email or word document and paste into the appropriate field.

5.4 Click on the **Save** button.

5.5 To confirm that you’ve entered the change correctly, view the Kiosk interface in another browser window and search for the destination to see that the information has been updated.
6. Adding an Alias / Nickname (Owner: Patient Experience)

6.1 Click on **Manage** for the type of destination you’d like to edit (Departments, Lecture Halls, Food & Amenities.)

6.2 Click on the name of the destination you’d like to edit.

6.3 Add or edit the aliases shown in the entry box. Remember to add semicolons between entries. There is no limitation to the number of aliases that can be entered in the system.

6.4 Click on the **Save** button.
6.5 To confirm that you’ve entered the change correctly, view the Kiosk interface in another browser window and search for the destination to see that the information has been updated.
Exporting a Destination List

1. Click on **Manage** for the type of destinations you’d like to export (Departments, Lecture Halls, Food & Amenities.)

2. Click on the **Export Departments** button on the top right header and a .CSV file (Microsoft Excel) will be generated.

3. Open the file in Microsoft Excel. Note that you will need additional language fonts installed to see translations accurately.
D. Maintenance

Updating Maps
Maps will be updated as part of a system-wide change request. Two Twelve, the wayfinding design consultants, manage updating all maps and exporting map files for delivery to XFactor.

The route maps displayed in the Kiosk use the same maps displayed at the Main Campus and in the pocket guides as their base map. That base map is placed in an InDesign file, the “you are here” and “route lines” are live. Any single change to the base map requires all maps for the Kiosk to be re-exported. All map image files must retain their original file name. File organization must remain consistent to XFactor’s specifications. Map image files (exported as jpegs) are organized by Kiosk Location > Language > Elevator and by Kiosk Location > Floor 1 > Language > Destination.

Map variables include:
1. Base Map: if updated may need to be re-cropped for a new destination if not previously on Floor 1.
2. Destination Highlight: either elevator or first floor destination, all upper floor destinations use the correct elevator as map destination
3. You Are Here Marker: based on kiosk location
4. Route line: from kiosk location to destination
5. Language: English, Spanish, Russian, and Mandarin Chinese

Maps have been developed for every route between each Kiosk’s location and first floor destinations and elevators. Each map has been translated into Spanish, Russian, and Mandarin Chinese.
For example, from one kiosk to one first floor location, there are a total of four maps—one in each language.

English, file name: 226.jpg

Spanish, file name: 226_ESP.jpg

Russian, file name: 226_RUS.jpg

Mandarin Chinese, file name: 226_CHI.jpg
Another example: from one kiosk to one elevator to any destination on another floor associated with that elevator.

English, file name: MedicalScience.jpg

Spanish, file name: MedicalScience_ESP.jpg

Russian, file name: MedicalScience_RUS.jpg

Mandarin Chinese, file name: MedicalScience_CHI.jpg
Paper Replacement
RED+F is responsible for replacing paper rolls in the Kiosks. Patient Experience, Security, and other staff members should contact:
Alexandria Lee (Alexandria.Lee@nyumc.org, 212.263.3562)

Touchscreen Failure
If Guest Services and/or Security sees or is notified of a touchscreen failure it is to be reported via email to:
Alexandria Lee, Alexandria.Lee@nyumc.org, 212.263.3562
Fred Alvarez, Fred.Alvarez@nyumc.org, 212.263.4927
Leeza Springer, Leeza.Springer@nyumc.org, 212.263.3618
Daniel Singh, MCIT, Daniel.Singh@nyumc.org
Art Levell, Fidelus, ALavelle@fidelus.com
Todd Kulhman, XFactor, TKuhlman@xfactorcom.com

Printer Failure
If Guest Services and/or Security sees or is notified of a printer failure (not paper replacement) it is to be reported via email to:
Alexandria Lee, Alexandria.Lee@nyumc.org, 212.263.3562
Fred Alvarez, Fred.Alvarez@nyumc.org, 212.263.4927
Leeza Springer, Leeza.Springer@nyumc.org, 212.263.3618
Daniel Singh, MCIT, Daniel.Singh@nyumc.org
Art Levell, Fidelus, ALavelle@fidelus.com
Todd Kulhman, XFactor, TKuhlman@xfactorcom.com

Physicians Feed Issues
Issues found in the Physicians Directory of the Kiosk may either be content related or related to the Physicians feed generated by MCIT that automatically updates the Kiosk data on a nightly basis. For all Physicians Feed issues, please contact both:
Jessica Krol, Jessica.Krol@nyumc.org, 646.754.4532
Huming Tang, Huming.Tang@nyumc.org, 646.524.0028
E. Hardware Specifications

Each Kiosk contains:
1 17’ ELO Touchscreen monitor 1723L
   (more information here)

1 Dell Optiplex 9020 USFF
   (more information here)

1 Zebra KR403 Printer with 4” DIA Roll
   (more information here)

Product sheets follow.
1723L 17" LED Desktop Touchmonitor

The Elo Touch Solutions 1723L 17-inch touchmonitor is well-suited to meet the durability and aesthetic requirements for a variety of high traffic retail and hospitality interactive solutions. Retail peripheral accessories include an encryptable MSR, NFC/RFID for contactless payments, webcam, and rear-facing display bracket.

The edge to edge flat glass style of the 1723L brings a sleek, modern feel to any application. It is available in two touchscreen technologies, IntellITouch Zero-Bezel surface acoustic wave, and IntellITouch Pro projected capacitive with anti-glare surface coating, supporting 10-touch interaction right out of the box.

Both touch technologies provide a stable “drift-free” operation with outstanding image clarity, resolution and light transmission - for an accurate touch response and vivid images.

The 1723L has been “designed for touch” from the ground up, with such features as a spill-resistant sealing, adjustable height stand with tilting functionality, VESA mounting option, connectivity incorporated within the monitor (reducing the number of power bricks and communication cables), and menu controls with lockout capability.

Benefits:

- Integrated peripheral options include a MSR, webcam, RFID reader and brackets for mounting an 1723L rear-facing customer display
- Integrated cable management
- IntellITouch Pro projected capacitive
- IntellITouch Zero-Bezel surface acoustic wave touchscreens couple zero-bezel design with multi-touch functionality
- Desktop, wall or VESA mounting
- Dual position stand—single hinge with high/low settings and tilt functionality

Applications:

- Point-of-Service
- Point-of-Sale
- Loyalty systems
- Kiosk information systems
- Light industrial
- Gaming/entertainment
- Internet access points

About Elo

Elo Touch Solutions is a leading global supplier of touch-enabled technology, products and industry solutions. The Elo portfolio encompasses the broadest selection of OEM touch screen components, touch monitors, and all-in-one touch computers for the demanding requirements of diverse markets, including gaming machines, hospitality systems, industrial automation, interactive kiosks, healthcare, office equipment, point of sale terminals, retail displays, and transportation applications. The Elo touch experience has consistently stood for quality, reliability and innovation with over 20 million installations worldwide.
1723L 17” Desktop Touchmonitor Specifications

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Color</th>
<th>Active Display Area</th>
<th>Dimensions (W x D x H)</th>
<th>Preset Video Timings</th>
<th>Number Of Colors</th>
<th>Brightness (Typical)</th>
<th>Contrast Ratio (Typical)</th>
<th>Viewing Angle (Typical)</th>
<th>Power</th>
<th>On-Screen Display (OSD)</th>
<th>Mounting Options</th>
<th>Weight</th>
<th>Shipping Dimensions (W x D x H)</th>
<th>Temperature</th>
<th>Humidity (Non-Condensing)</th>
<th>Regulatory Approvals Declarations</th>
<th>Warranty</th>
<th>MTBF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1723L</td>
<td>Black or White</td>
<td>13.30” x 10.64”</td>
<td>15.42” x 8.24” x 1.42”</td>
<td>840 x 480 x 65Hz,75Hz; 720 x 400 x 75Hz; 680 x 600 x 56, 60Hz,75Hz; 1024 x 768 x 60Hz,75Hz; 1280 x 1024 x 60Hz,75Hz</td>
<td>16.7 million</td>
<td>LCD Panel: 250 nits; IntelliTouch Pro: 215 nits; IntelliTouch ZB: 225 nits</td>
<td>800:1</td>
<td>Accessible through switches along the bottom; Controls: Menu, Up, Down, Select; Settings: Brightness, Contrast, Clock, Phase, V-position, H-position, V-sync, Auto-Adjust, Aspect Ratio, Sharpness, Color Temperature, OSD Timeout, OSD Language, Volume, Mute, Recall Default; Languages: English, French, Italian, German, Spanish, Simplified Chinese, Traditional Chinese, Japanese; Lockouts: OSD, Power</td>
<td>VESA 4-hole 75mm mounting interface on rear of unit; 3-hole threaded mounting on bottom of stand</td>
<td>Unpackaged: 11.46 lbs (5.2kg); Packaged: 18.74 lbs (8.8kg)</td>
<td>19.76” x 17.13” x 8.39” (502mm x 435mm x 213mm)</td>
<td>Operating: 32°F to 104°F (0°C to 40°C); Storage: -4°F to 140°F (-20°C to 60°C)</td>
<td>C-Tick; cUL, IC; CCC; CE; VCCI; KCC, e-Standby; CoC; BSMI Mark; UL, FCC; CB; RoHS, China and RoHS, WEEE, IMERC</td>
<td>3 years</td>
<td>50,000 hours demonstrated</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Part Number</th>
<th>Technology</th>
<th>Surface Treatment</th>
<th>Interface</th>
<th>Color</th>
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</thead>
<tbody>
<tr>
<td>1723L</td>
<td>E785229</td>
<td>IntelliTouch Zero-Bezel</td>
<td>Anti-glare</td>
<td>USB</td>
<td>Black</td>
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<tr>
<td></td>
<td>E924116</td>
<td>IntelliTouch Zero-Bezel</td>
<td>Anti-glare</td>
<td>USB</td>
<td>White</td>
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<tr>
<td></td>
<td>E683457</td>
<td>IntelliTouch Pro PCAP</td>
<td>Anti-glare</td>
<td>USB</td>
<td>Black</td>
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<tr>
<td></td>
<td>E016808</td>
<td>IntelliTouch Pro PCAP</td>
<td>Anti-glare</td>
<td>USB</td>
<td>White</td>
</tr>
</tbody>
</table>

Optional Peripherals

<table>
<thead>
<tr>
<th>Peripheral</th>
<th>Part Number</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetic Stripe Reader</td>
<td>E628912</td>
<td>Black</td>
</tr>
<tr>
<td>Magnetic Stripe Reader</td>
<td>E617494</td>
<td>White</td>
</tr>
<tr>
<td>Web Cam</td>
<td>E545740</td>
<td>Black</td>
</tr>
<tr>
<td>Web Cam</td>
<td>E196192</td>
<td>White</td>
</tr>
<tr>
<td>RFID Reader</td>
<td>E524847</td>
<td>Black</td>
</tr>
<tr>
<td>RFID Reader</td>
<td>E663259</td>
<td>White</td>
</tr>
<tr>
<td>5070L Mounting Bracket Kit</td>
<td>E808749</td>
<td>Black</td>
</tr>
<tr>
<td>5070L Mounting Bracket Kit</td>
<td>E832504</td>
<td>White</td>
</tr>
</tbody>
</table>

To find out more about our extensive range of Elo touch solutions, go to www.elotouch.com, or call the office nearest you.

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Most manageable desktop

Manage and maintain your OptiPlex 9020 with ease with the latest Intel vPro systems management iAMT 9.x, which helps deliver seamless management even when systems are offline. Update once with Dell’s unique extension for one-to-many remote BIOS management and simplify management with image commonality across form factors.

Confidently safeguard data with Dell Data Protection software for advanced authentication and encryption, Dell Protected Workspace software for protection against the latest malware, Trusted Platform Module (TPM)², encrypted hard drive options, and optional biometric authentication peripherals. Physical lock slot and optional lockable port cover and desk mount further help protect your system.

Dell OptiPlex long lifecycles, managed transitions, and ImageWatch™ advance look at software and hardware changes help ensure long-term stability so you can confidently plan for the future. The OptiPlex desktops are easy to service and maintain with color-coded highlight tool-less accessible system components and grip points (MT/SFF/USFF).

Workforce productivity

Empower your workforce with Dell’s most powerful commercial desktop ever. Users can power through their day with up to the latest Intel® Core™ i7 processors, choice of hard drive, SSD or hybrid drives, high-speed memory options, and optional discrete graphics.

Users can connect and communicate with colleagues around the world with wireless connectivity options, microphone and headset mini-jacks for voice-over-IP, and Microsoft Lync for optimal video conferencing.

Maximize productivity with intuitive design features that adapt to unique work styles, including support for up to three digital native monitors and up to four front or side USB ports.

Equip yourself with the tools to get the most out of your system with Dell’s recommended accessories.

Integrated Solutions

Protect your data from device to the cloud with Dell Data Protection | Encryption, a single solution to protect data on PCs, mobile devices, tablets, external media, and public cloud storage. Remotely manage encryption and authentication policies from a single console, and simplify compliance with one-touch preset policy templates. Data-centric encryption is quick and easy to deploy, and it won’t interfere.

Dell systems management solutions help you simplify management, automate processes, and reduce costs. Save time with Dell automation tools to streamline deployment and configuration, and efficiently monitor, inventory and update your systems with deep integration into Microsoft System Center and Dell KACE consoles. Dell also offers KACE® appliances to help seamlessly manage endpoints, or Dell Services can help define and implement the right client management solution for your unique needs.

Dell OptiPlex desktops can also serve as high-performance endpoints within virtual desktop environments. Dell Cloud Desktop diskless solution enable secure data in a central location, eliminating risk of loss and help prevent theft of sensitive data. It provides a seamless computing experience with fast log-in, application consistency and performance is consistent and reliable, because all applications run locally on the Dell Cloud Desktop.

Dell OptiPlex 9020

Dell’s most powerful commercial desktop ever, the Dell™ OptiPlex™ 9020 is the world’s most manageable Intel® vPro™ enabled desktop and delivers leading-edge reliability and security.

Outstanding reliability

With a robust chassis that has undergone intense Highly Accelerated Life testing, the OptiPlex 9020 is designed for ultimate durability and reliability. Components and assembled systems are tested in order to simulate years of usage and deployments in tough conditions.

The OptiPlex 9020 is designed to seamlessly integrate into the office environment. Choose from four different chassis: mini-tower (MT), small form-factor (SFF), ultra small form-factor (USFF), and the new 9020 All-in-One (AIO) for optimized desk space and maximum performance.

Dell OptiPlex desktops are engineered to respect our planet and offer services that help minimize energy consumption and enable recycling. Dell provides select BFR/PVC-free configurations¹ and recyclable packaging, and OptiPlex systems have a post-consumed recycled plastic enclosure and offer highly efficient power supply options.
Processors
- 4th generation Core™/i7/i5 Quad Core, Core™/i3 Dual Core and Pentium® Dual Core
- Q87 Express Chipset
- Windows 8 Standard 64-bit, Windows 8 Pro 64-bit
- Home Premium SP1, 8 Professional SP1
- Windows 7® Home Premium SP1, 7® Professional SP1
- Ubuntu® (select countries)

Graphics Options
- Integrated Intel® HD Graphics 4600; supports optional discrete graphics solutions from AMD and nVidia

Memory
- Up to 4 DIMM slots (2 for USFF): Non-ECC, dual-channel 1600MHz DDR3 SDRAM, up to 32GB (16GB for USFF)

Networking
- Integrated Intel® I217LM Ethernet LAN 10/100/1000; supports optional PCIe 10/100/1000 network card, optional wireless 802.11n card

I/O Ports
- 4 External USB 3.0 ports (2 front, 2 rear) and 6 External USB 2.0 ports (2 front, 4 rear except USFF - 4 rear only) and 2 internal USB 2.0 (MT only), 1 R-J-45, 1 Serial, 1 VESA, 2 DisplayPort, 2 PS/2 (MT/SFF only), 2 Line-in (microphone), 2 Line-out (headphone/speaker)

Removable Media Options
- Supports optional optical disc drives and media card reader options

Hard Drives
- Hard Disk Drives: up to 1TB
- Solid State Drive (SSD) options
- Solid State Drive RAID 0 & 1 support on select configurations
- Dell Cloud Desktop diskless option

Chassis
- Dimensions (H x W x D)
  - MT: 14.2 x 6.9 x 16.4 / 36.0 x 17.5 x 41.7
  - SFF: 11.4 x 5.7 x 12.3 / 29.0 x 9.3 x 31.2
  - USFF: 9.1 x 5.7 x 9.4 / 23.7 x 9.3 x 24.0
- Dimensions (H x W x D) (in inches/cm)
  - MT: 14.2 x 6.9 x 16.4 / 36.0 x 17.5 x 41.7
  - SFF: 11.4 x 5.7 x 12.3 / 29.0 x 9.3 x 31.2
  - USFF: 9.1 x 5.7 x 9.4 / 23.7 x 9.3 x 24.0
- Min. Weight (lbs/kg)
  - MT: 20.68 / 9.4
  - SFF: 13.2 / 6.0
  - USFF: 7.26 / 3.3

Power Supply
- Standard 290W PSU Active PFC or optional 290W up to 90% Efficient PSU (80 PLUS Gold); Active PFC
- Standard 255W PSU Active PFC or optional 255W up to 90% Efficient PSU (80 PLUS Gold); Active PFC
- 200W up to 90% Efficient PSU (80 PLUS Gold); Active PFC

Recommended Accessories
- Monitor: Dell UltraSharp series - Award-winning high-performance monitors and ultrawide viewing, from 21.5”-30
- Keyboard: Dell USB Entry Keyboard, Dell Multimedia Pro Keyboard, Dell Smart Card Keyboard
- Mouse: Dell USB Optical Mouse, Dell Laser Mouse

Security Options
- Trusted Platform Module® (TPM) 1.2
- Dell Data Protection|Security Tools, Dell Data Protection|Encryption
- Chassis lock slot support, optional Chassis Intrusion Switch, Setup/BIOS Password, I/O (Interface Security, optional Smart Card keyboards, Intel® Trusted Execution Technology, Intel® Anti-Theft Technology, Dell Secure Works, BIOS support for optional Computrace®

Systems Management Options
- Dell vPro Technology (iAMT 9.0) (including Dell unique vPro extensions; Intel® Standard Manageability; No Out Of Band Systems Management)
- Environmental, Ergonomic, & Regulatory Standards

Environmental Standards
- ENERGY STAR 5.0 certified
- CE, CEC, WEEE, Japan Energy Law, South Korea E-standby, South Korea Eco-label (for SFF/USFF only), EU RoHS, China RoHS
- Other Environmental Options: Carbon Off-set, Asset Resale and Recovery Service, BFR/PVC Free configuration available in select regions. Please see your local representative or dell.com for specific details.

Warranty
- Limited Hardware Warranty; Standard 3-year On Site Service after Remote Diagnosis (3-3-3); Optional 3-year Dell ProSupport offers premium support from expert technicians and 24x7 availability

System Configuration
- Factory Image load: BIOS Customization, Hardware Customization, Asset Tagging and Reporting
12. Onsite Service after Remote Diagnosis: Remote Diagnosis is determination by online/phone technician of cause of issue; may involve customer access to inside of system and
11. Limited Hardware Warranty: For copy of Ltd Hardware Warranty, write Dell USA LP, Attn: Warranties, One Dell Way, Round Rock, TX 78682 or see www.dell.com/warranty.
10. Systems Management Options:
9. Computrace: Not a Dell o
7. Hard Drive: GB means 1 billion bytes and TB equals 1 trillion bytes; actual capacity varies with preloaded material and operating environment and will be less.
6. 4GB or Greater System Memory Capability: A 64-bit operating system is required to support 4GB or more of system memory.
5. System Memory and Graphics: Significant system memory may be used to support graphics, depending on system memory size and other factors.
4. O
3. Availability and terms of Dell Services vary by region. For more information, visit www.dell.com/servicedescriptions.
2. TPM: TPM is not available in all regions.
1. OptiPlex 9020 ultra small form factor is brominated flame retardant free (BFR-free) and polyvinyl chloride free (PVC-free); meeting the definition of BFR-/PVC-free as set forth in the

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Feature | OptiPlex 9020 All-in-One Technical Specification
--- | ---
Processors¹ | Intel® 4th generation Core™ i7/i5 Quad Core, i3 Dual Core and Pentium® Dual Core
Chipset | Intel® Q87 Express Chipset
Operating System Options | Microsoft® Windows 8 Standard 64-bit, Microsoft® Windows 8 Pro 64-bit, Microsoft® Windows 8 Home Basic SP1 (32/64 bit), Microsoft® Windows 8 Home Premium SP1 (32/64 bit), Microsoft® Windows 7 Professional SP1 (32/64 bit), Microsoft® Windows 7 Ultimate SP1 (32/64 bit) Ubuntu® (select countries)
Panel | 23" WLED, 1920x1080 FHD resolution with anti-glare coating; optional projected capacitive touchscreen with glossy coating
Graphics Options³ | Integrated Intel® HD Graphics 4600; supports optional discrete graphics solutions from AMD
Memory²/⁴ | 2 SODIMM slots; Non-ECC dual-channel 1600MHz DDR3/DDR3L SDRAM, supports up to 16GB
Networking | Integrated Intel® 82571V Ethernet LAN 10/100/1000; supports optional wireless 802.11n card and optional 802.11m wireless card with Bluetooth. Note: the integrated Intel connection is required to support Intel® vPro™ Technology
I/O Ports | 4 External USB 3.0 ports (2 side, 2 rear) and 4 External USB 2.0 ports; 1 RJ-45, 1 VGA, 1 HDMI; 2 PS/2, 1 Line-in (stereo/microphone), 2 Line-out (1 side for headphone/1 rear for speaker)
Removable Media Options | Dell 8-in-1 Media Card Reader (standard) Supports optional optical disc drives
Hard Drives¹ | Hard Disk Drives: up to 1TB Supports Hybrid, OptiPlex FIPS, and Solid State Drive No Hard Drive – Supports Dell Cloud Desktop diskless option
Chassis | Non-touch All-in-One systems
Camera type | Optional fixed 2.0 MP webcam with sliding door
Dimensions | 39.8 x 51.6 x 7.6 inches/cm
Min. Weight (lbs/kg) | 15.2 x 22.6 x 2.7 / 13.8 lbs. x 5.3 kgs x 0.6 lbs
Max. Weight (lbs/kg) | 15.2 x 22.6 x 2.7 / 13.8 lbs. x 5.3 kgs x 0.6 lbs

---


---

Audio Speakers: Internal Dell audio speaker (standard)

---

Power Supply⁸ | 200W up to 90% Efficient PSU, Active PFC

---


---

Systems Management Options | Intel® vPro Technology (vPro 9.0) including Dell unique vPro extensions; Intel® Standard Manageability; No Out of Band Systems Management

---

Environmental & Regulatory Standards | Environmental Standards (eco-labels) ENERGY STAR 5.2 qualified, EPEAT Registered¹, CECP WEEE, Japan Energy Law, South Korea Eco-label, EU RoHS, China RoHS, China Regulatory Name: OptiPlex 9020A Other Environmental Options: Carbon Off-set, Asset Resale and Recovery Service

---

Warranty | Limited Hardware Warranty². Standard 3-year On Site Service after Remote Diagnosis (3-3-3). Optional 3-year Dell ProSupport offers premium support from expert technicians and 24x7 availability².³

---

Discover professional class desktops at Dell.com/OptiPlex

---

1. OptiPlex 9020 ultra small form factor is brominated flame retardant free (BFR-free) and polyvinyl chloride free (PVC-free); meeting the definition of BFR-/PVC-free as set forth in the ANA Position Statement on the Toxicology of Brominated Flame Retardant (BFRs) and polyvinyl chloride (PVC). PVC is brominated flame retardant free (BFR-free) and less than 1,000 ppm Cl; Cl source is from Cl-containing PVC compounding. All printed circuit board (PCB) and substrate laminates contain bromine/chlorine total less than 1,500 ppm (0.01%), with a maximum chlorine of 950 ppm (0.01%) and maximum bromine being 550 ppm (0.01%). Pending final evaluation.
2. TPM – TPM is not available in all regions.
3. Availability and terms of Dell services vary by region. For more information, visit www.dell.com/service_descriptions.
4. Offering and availability may vary by region.
5. System Memory and Graphics: Significant system memory may be used to support graphics, depending on system memory size and other factors.
6. 4GB or Greater System Memory: A 64-bit operating system is required to support 4GB or more of system memory.
7. Screw-In Drive: Unlocks 1 billion bytes and 1 trillion bytes; actual capacity varies with preloaded material and operating environment and will be less.
8. Power Supply: 200W up to 90% Efficient PSU, Active PFC
9. Warranty: Limited Hardware Warranty². Standard 3-year On Site Service after Remote Diagnosis (3-3-3). Optional 3-year Dell ProSupport offers premium support from expert technicians and 24x7 availability².³
10. Intel® vPro Technology: Fully upgradeable at point of purchase, the vPro systems management option requires vPro processors. Includes support for Intel Advanced Management Technology (AMT) v.8; Intel® Standard Manageability; Fully enabled at point of purchase, the Intel Standard Manageability option is a subset of the AMT features. ISM is not upgradeable to vPro technology post-purchase.
11. No Out of Band Systems Management: This option removes remote out-of-band systems (OOB) management features. The system can still support in-band management (CBS) management support through WMI cannot be upgraded post-purchase.
12. Onsite Service after Remote Diagnosis: Remote Diagnosis is determined by on-site technician of cause of issue, may involve customer access to inside of system and/or extended warranty versions. If issue is caused by limited hardware warranty (i.e., hard drive, memory, motherboard) and/or extended warranty versions, not limited hardware warranty, technician and/or part will be dispatched, usually within 1 business day following completion of Remote Diagnostic. Availability varies. Other conditions apply.
13. Please refer to www.dell.com/support for specific country registration rating and participation.
Zebra® KR400 Series™
Kiosk Receipt Printers

Building on Zebra® kiosk printers’ reputation for reliable performance in tough printing environments, the KR403™ receipt printer offers enhancements ranging from excellent print quality to expanded memory, fonts and barcode sets—including the retail-industry-required GS1 barcode.

The KR403 is easy to integrate into kiosk designs thanks to its compact footprint, range of mounting configurations, and Zebra Programming Language (ZPL®), which increases functionality and allows for a wide variety of applications. And, it decreases total cost of ownership and raises customer satisfaction with features that reduce upkeep and downtime. The large 9.8”/250 mm media roll capacity, for example, means fewer roll changes. Paper-jam and other automatic remote alerts enable proactive diagnostics and maintenance. And, to curtail paper jams, count on the patented looping presenter with integrated cutter and retract function that retains leftover printouts—protecting kiosk user’s privacy and reducing litter.

The KR403 offers a variety of ways to connect—from serial and USB interfaces to 10/100 Ethernet—for simple kiosk integration. Enabling easy setup and configuration via Zebra advanced printer management tools, the KR403 optional Ethernet connectivity offers optimal integration for today’s network environment.

**KR400 Series Printers Offer:**

**Unremitting Reliability to Keep Kiosks Printing**
Optimized for tough printing environments where durability, reliability, minimal maintenance and ease of use are critical, Zebra printers maximize uptime and minimize upkeep.

**Easy to Integrate in Kiosk Designs**
A small footprint and flexible mounting options make our printers ideal for a variety of applications—whether embedded in a custom kiosk solution or Zebra’s Kiosk Print Station.

**End Benefits**
As an integral part of a self-service kiosk solution, Zebra printers help companies improve service, raise customer satisfaction, increase revenue and lower operational costs.
• Numerous software tools for commissioning, maintenance alerts
• 1.5 MB Flash memory supports a wide range of Unicode™-compliant
• 15 bitmap fonts and one scalable font
• Windows® drivers for plug and play
• Excellent print quality achieved through printhead alignment features and Energy Equalizer™ (E3™)
• Windows® drivers for plug and play
• 21 resident 1-D and 10 resident 2-D barcodes
• 2-Dimensional Barcodes: Aztec, Codablock, Code 49, Data Matrix, MicroPDF417, Matrixcode, MicroPDF417, PDF417, QR Code, RSS (reduced space symbology), Standard 2-of-5, UCC/EAN-128, UPC-A, UPC-A and UPC-E with 2 or 5 digit extensions, UPC-E
• 2-Dimensional Barcodes: Aztec, Codablock, Code 49, Data Matrix, MicroPDF417, Matrixcode, MicroPDF417, PDF417, QR Code, RSS (reduced space symbology), Standard 2-of-5, UCC/EAN-128, UPC-A, UPC-A and UPC-E with 2 or 5 digit extensions, UPC-E
• Depth: 5.7"/145 mm
• Height: 2.7"/69 mm
• Width: 4.2"/107 mm
• Embedded
• Weight: 2.4 lbs/1.1 kg
• Resolution
• 203 dpi/8 dots per mm

Operating Characteristics

Environmental
• Operating Temp.: 14°F/10°C to 122°F/50°C
• Storage Temp.: -4°F/-20°C to 158°F/70°C
• Operating Humidity: 10% to 95% non-condensing
• Storage Humidity: 5% to 95% non-condensing excluding paper

Physical Characteristics

Embedded
• Width: 4.2"/107 mm
• Depth: 5.7"/145 mm
• Height: 2.7"/69 mm
• Weight: 2.4 lbs/1.1 kg

Printers/Architectures

Interfaces

• RS-232 serial and USB 1.1 (2.0 compatible)
• 10/100 Ethernet and USB 1.1 (2.0 compatible)—Optional

Options and Accessories

• Media guides: 58, 60, 80 and 82.5 mm
• Roll holder “universal” variable position, 7.9”/200 mm diameter max
• Adapter for roll holder below position, 9.8”/250 mm diameter max
• Roll holder wall mount, 5.9”/150 mm diameter max
• Quick fit hubs for easy mounting and removal of printer
• Paperlow sensor with 11.8”/300 mm cable
• Adapter plate and spindle for 0.5”/12 mm media rolls
• Paperlow sensor with 19.7”/500 mm cable
• Output bezel for easier integration
• Output shutter to protect the printer from intrusion or damage
• Accessory kits for quick deployment
• ZBI 2.0™—Zebra Basic Interpreter for stand-alone applications
• Expanded 64 MB Flash memory
• Large media roll adapter
• Small media core adapter
• Paperlow sensor with 19.7”/500 mm cable
• 10/100 Ethernet and USB 1.1 connectivity

Other Locations | USA: California, Georgia, Illinois, Rhode Island, Texas, Wisconsin | Europe: France, Germany, Italy, the Netherlands, Poland, Spain, Sweden, Turkey, United Kingdom | Asia-Pacific: Australia, China, Hong Kong, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, Vietnam

Latin America: Argentina, Brazil, Colombia, Florida (LA Headquarters in USA), Mexico

Corporate Headquarters
+1 847 955 2283
inquiry4@zebra.com

Asia-Pacific Headquarters
+65 6858 0722
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EMEA Headquarters
+44 01628 556000
mseafrica@zebra.com

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+52 5425 3520
mesamérica@zebra.com

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F. Technical Architecture

The Kiosk application was developed by XFactor Communications with user interface and functionality designed by Two Twelve. It is a web-based application utilizing PHP and Javascript and accessing a mySQL database. The physician data is imported nightly via a REST API supplied by MCIT. The application resides on a Windows server managed by MCIT and within NYULMC’s VPN. MCIT configured the Dell Optiplex computers inside each Kiosk and the Kiosk application is accessed via a web browser in Kiosk mode.
IV. Pylons

A. User Experience
Positioned at decision points on the ground floor of the superblock, the digital pylons direct visitors to ground-floor destinations and elevator lobbies. On the embedded digital screen, directions to nearby destinations are shown in English, with their equivalents rotating in NYULMC’s three major languages: Spanish, Mandarin Chinese, and Russian. Buttons on the bottom of the screen allow visitors to skip ahead to their preferred language. They can also touch any destination to display a map to it in their preferred language.
English destination names are always shown, followed by destination names that rotate slowly between Spanish, Mandarin Chinese and Russian.

[ screen shots of pylon and three languages. ]

If a visitor touches any of the destinations, a pop-up map will show directions from the Pylon to that destination.

[ screenshot of pylon with pop-up map. ]

A visitor can touch the buttons at the bottom of the screen to select their language or they can touch on a destination to get a map showing directions to that destination.

[ screenshot of pylon with map selected ]
B. Responsibilities
RED+F is responsible for keeping the Pylon content up to date. Fred Alvarez is the lead administrator of the Pylon Admin Tool and should be contacted if there are any issues.

Administrator Contacts
RED+F:
Alexandria Lee, Alexandria.Lee@nyumc.org, 212.263.3562
Fred Alvarez, Fred.Alvarez@nyumc.org, 212.263.4927

C. Content Management
To keep information on the Pylon accurate and up to date, authorized RED+F staff members can access the Pylon Admin Tool to add and edit destinations and their translations and to update maps.

Logging On
The Pylon Admin Tool is accessible via the NYULMC intranet. As an authorized user, you will receive a user name, password, and a link to access the Admin Tool. You will also receive a link to the Pylon interface. As you work in the Pylon Admin Tool, it’s helpful to have the Pylon interface in a second browser tab or window so that you can check changes you make in real time.

Adding a Destination
Pylons display directions to major first-floor destinations.

1. Select the Pylon where the new destination should be added. (See Pylon names and locations on page 4 of this document.)
2. Click on **Add New** to the right of a row and a new empty line of content will be displayed. Click in each of the fields to add a directional arrow (if needed), an icon, and the destination names in each language. A new destination will need a new set of maps displaying routes to that destination. Please see **Maintenance: Updating Maps** on page 51 in the next section for more information. Note that you can move the new line of content up or down in the list by dragging and dropping a row to a new place on the list.

3. **Select “View published screen”** to check that your changes have been saved. A new window will open with a browser preview of the functional edited screen.
Editing a Destination
If there is a change in a destination name (or its translation), its location, or its icon (if it has one), you can make those changes in the Pylon Admin Tool.

1. Select the Pylon to edit. (See Pylon names and locations on page 4 of this document.)

2. To edit the destination name or any of its translations, select the message line to edit and the text fields will be highlighted so that you can enter new content.

3. Select “View published screen” to check that your changes have been saved. A new window will open with a browser preview of the functional edited screen.
Deleting a Destination

1. Select the Pylon to edit. (See Pylon names and locations on page 4 of this document.)

2. Click on **Delete** at the end of the row that you want to delete.
3. Select “View published screen” to check that your changes have been saved. A new window will open with a browser preview of the functional edited screen.
Adding or Replacing Icons
1. To add or edit a destination’s icon, click on the Manage Icons tab of the Pylon Admin Tool and a list of icons will be displayed.

Icons are color-coded to each Pathway. Note that these icons have been revised and tested for digital screen viewing and are not the same artwork as the icon artwork used on signage and in printed communications for the NYULMC wayfinding program. Icons are 98 pixels x 98 pixels and saved as a PNG at 72 DPI.
Adding or Replacing Maps
Please see the following section Maintenance: Updating Maps on page 51 to understand how maps are designed for the Pylons. There are two types of maps displayed on the Pylon:

**Route Maps** show directions from the Pylon to a selected first-floor destination. They are displayed when the visitor touches a given destination. There are four maps (one in each language) for each destination.

**Main Campus Maps** show the first floor of the Main Campus with a You Are Here symbol at the Pylon’s location. There are four maps (one in each language) for each Pylon.
To replace a Route Map, select the destination that it is associated with and click **Upload Popup**. To replace a Large Map, select **Choose File** from the items in the **Large Map Management** section.
D. Maintenance

Updating Maps
Maps will be updated as part of a system-wide change request.

Map changes are made in Adobe Illustrator and exported out as 180 DPI PNGs. Route Map dimensions 3033 x 3548 pixels. Main Campus Map dimensions are 6626 x 3728 pixels.

Each Illustrator file is organized in layers by color groupings and by actual Pylon name and respective language (END, SPA, RUS, CHI). Route Map layers also include a “P” and a number to indicate the Route Map number, a destination keyword, and the two languages per Route Map (English and a second language.)

Examples:
**Touchscreen Failure**

If Guest Services and/or Security sees or is notified of a touchscreen failure it is to be reported via email to:

- Alexandria Lee, Alexandria.Lee@nyumc.org, 212.263.3562
- Fred Alvarez, Fred.Alvarez@nyumc.org, 212.263.4927
- Leeza Springer, Leeza.Springer@nyumc.org, 212.263.3618
- Daniel Singh, MCIT, Daniel.Singh@nyumc.org
- Art Levell. Fidelus, ALavelle@fidelus.com
- Todd Kuhlman, XFactor, TKuhlman@xfactorcom.com
E. Hardware Specifications

Yellow and Green Pylons contain:
1 42’ ELO 4201L Touchscreen  
(more information here)

1 Cisco 4600 series player  
(more information here)

Blue Pylons contain:
1 42’ LG M4210T Touchscreen  
(more information here)

1 Cisco 4600 series player  
(more information here)

Product sheets follow.
4201L 42” Interactive Digital Signage (IDS) Touch Display

Elo’s 4201L 42-inch interactive digital signage touchscreen delivers a professional-grade large format display in a slim, integrated package. Designed from the bottom up for retail, hospitality, healthcare and other commercial markets, the Elo IDS is a high-quality, interactive canvas for attracting and engaging consumers. The 4201L offers system integrators and value-added resellers (VARs) a high performance solution that is easy to deploy and maintain in public environments. With a total thickness of 3.2 inches (81 mm), the 4201L is compliant with the ADA and IBC requirements at less than 4-inch protrusion for wall-mounted products when used with a compatible wall mount.

Available with IntelTouch Plus surface acoustic wave dual-touch or optical multi-touch technology, display clarity is undiminished due to use of clear glass. The optical touchscreen enables up to six simultaneous touches for multi-user interaction. Optical technology offers a fast and extremely sensitive response similar to the experience on mobile devices and is compatible with Microsoft Windows® 7 and Windows® 8 operating systems. Till mounts are available for easy cable access. State of the art HD display technology is utilized including a high contrast/brightness LED-backlit LCD panel, extended color gamut with movies/ gaming/ photo modes, black level adjustment, and on-screen menu enhancements.

Optional, high performance computer modules are available which turn the 4201L into a completely integrated all-in-one computer—without the need for any cables or additional mounting hardware. Computer modules are available in a choice of three models: ECMG2B-13 based on a 3.4GHz Intel® Core™ 4th Gen i3 processor and HD4400 graphics; ECMG2B-15 based on a 3.7GHz Intel® Core™ 4th Gen i5 processor and HD4600 graphics and ECMG2B-17 based on a 4.0GHz Intel® Core™ 4th Gen i7 processor and HD4600 graphics. The computer modules make the 4201L a reliable platform that is interoperable with most content management servers and supports optimal partitioning of locally cached and network streamed content.

Benefits:

- Professional-grade hardware with strengthened touchscreen glass to withstand the rigors of public use
- IntelTouch Plus technology designed to endure medical disinfectant wipe down procedures in healthcare environments
- Thin (<4” mounted) design is attractive and compliant with ADA and IBC protrusion requirements
- Reliable, integrated IDS solution with optional NFC / RFID scanners and webcam kits
- 3 year standard warranty with optional 2 year extended warranty. On-site advance replacement exchange option available in USA
- Remote management capability for device hardware with support for future cloud applications
- Intel OPS compliant with available adapter kit
- Flexible mounting in portrait, landscape and tabletop orientation

About Elo

Elo founders pioneered the touchscreen over 40 years ago. Today, Elo Touch Solutions is a leading global supplier of touch-enabled technology, products and industry solutions. The Elo portfolio encompasses the broadest selection of OES touchscreen components, touchmonitors, and all-in-one touchcomputers for the demanding requirements of diverse markets, including gaming machines, hospitality systems, industrial automation, interactive kiosks, healthcare, office equipment, point of sale terminals, retail displays, and transportation applications. The Elo touch experience has consistently stood for quality, reliability and innovation with over 20 million installations worldwide.
**4201L 42” Interactive Digital Signage (IDS) Touch Display**

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Form Factor</th>
<th>Bezel Color</th>
<th>Active Display Area (W x H)</th>
<th>Dimensions (W x D x H)</th>
<th>LCM Technology</th>
<th>Mounting Options</th>
<th>Display Technology</th>
<th>Aspect Ratio</th>
<th>Number of Colors</th>
<th>Brightness (typical)</th>
<th>Response Time (f + t) (typical)</th>
<th>Viewing Angle (typical)</th>
<th>Contrast Ratio (typical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4201L</td>
<td>Digital Signage</td>
<td>Black/White</td>
<td>36.6” x 20.6” (930 mm x 523 mm)</td>
<td>Intellitouch Plus: 39.2” x 23.1” (999mm x 77.7mm x 588mm)</td>
<td>Optical: 39.2” x 23.1” (999mm x 80.7mm x 588mm)</td>
<td>Active matrix TFT LCD with LED backlight</td>
<td>Full HD 1920 x 1080 (native) active matrix TFT LCD with LED backlight</td>
<td>1:9</td>
<td>16.7 million</td>
<td>LCD Panel 700 nits; Optical 630 nits; Intellitouch Plus 630 nits</td>
<td>4 ms</td>
<td>Horizontal: still*, Vertical: still*</td>
<td></td>
</tr>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**Power**

- Input power connector: IEC 60320 C14.
- Power Consumption: typical at 110V at 60Hz: 85W; SLEEP: 13W; OFF: 1W.
- Monitor Only - Power Consumption: typical at 230V at 50Hz: 82W; SLEEP: 14W; OFF: 2W.

**Video Inputs**

- Video Analog VGA on Female DE-15 connector; HDCP-capable HDMI 1.3 on Type A connector; DisplayPort 1.1a connector; Input Video Horizontal Sync frequency range: 31.5-73KHz; Input Video Vertical Sync (frame rate) frequency range: 47-85Hz

**Audio**

- Internal Speakers: 4 x 5W stereo speakers; Input audio connector: 3.5mm TRS jack; Input audio signal range: 1Vrms max stereo signal (standard PC line out); Headphone output connector: 3.5mm TRS jack

**Weight**

- IntelliTouch Plus: Unpackaged—with ECMG2B: 53.7 lbs (24.4kg); without ECMG2B: 48.8 lbs (22.2kg); Packaged: with ECMG2B: 69.1 lbs (31.4kg); without ECMG2B: 64.2 lbs (29.2kg)
- Optical: Unpackaged—with ECMG2B: 57.2 lbs (26.0kg); without ECMG2B: 52.4 lbs (23.8kg); Packaged: with ECMG2B: 72.6 lbs (33.0kg); without ECMG2B: 67.8 lbs (30.8kg)

**Shipping Dimensions**

- Width: 43.7” (1110 mm); Height: 28.3” (720 mm); Depth: 8.5” (215 mm)

**Temperature**

- Operating: 32°F to 104°F (0°C to 40°C); Storage: -4°F to 122°F (-20°C to 50°C)

**Humidity (non-condensing)**

- Operating: 20%-80%; Storage: 10%-95%

**Regulatory Approvals and Declarations**

- UL, FCC, CUL, IC, CE, VCCI, C-Tick, NOM CoC, GOST; BSMI, KC, e-Standby; CCC, China RoHS; with RFID: UL, FCC, CE

**Accessories**

- NFC Adapter (E603158), OPS Kit (E102270), CSD Control Box (E483757), Replacement Cable Kit (E000263), Stand (E455084), Wall Mount Kit (E750497), Webcam (E574975)

**Warranty**

- 3 years standard. On-site exchange (U.S. only) and extended warranty available

**MTBF**

- 50,000 hours demonstrated

*See dimensional drawings for details

**Ordering Information**

<table>
<thead>
<tr>
<th>Model</th>
<th>Part Number</th>
<th>Technology</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>4201L</td>
<td>E000736</td>
<td>42-inch LED IntelliTouch Plus</td>
<td>Black</td>
</tr>
<tr>
<td></td>
<td>E000737</td>
<td>42-inch LED IntelliTouch Plus</td>
<td>White</td>
</tr>
</tbody>
</table>

**Optional Computer Modules**

<table>
<thead>
<tr>
<th>Model</th>
<th>Part Number</th>
<th>Processor</th>
<th>RAM</th>
<th>HDD</th>
<th>OS</th>
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</thead>
<tbody>
<tr>
<td>ECMG2B-03</td>
<td>E001292</td>
<td>Intel® Core™ 4th Gen i3 3.4 GHz HD4400</td>
<td>2GB</td>
<td>320GB</td>
<td>No OS</td>
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<tr>
<td></td>
<td>E001293</td>
<td>Intel® Core™ 4th Gen i3 3.4 GHz HD4400</td>
<td>2GB</td>
<td>320GB</td>
<td>Windows 7</td>
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<tr>
<td></td>
<td>E001294</td>
<td>Intel® Core™ 4th Gen i3 3.4 GHz HD4400</td>
<td>2GB</td>
<td>320GB</td>
<td>Windows 8.1</td>
</tr>
<tr>
<td>ECMG2B-15</td>
<td>E001295</td>
<td>Intel® Core™ 4th Gen i5 3.7 GHz HD4600</td>
<td>4GB</td>
<td>320GB</td>
<td>No OS</td>
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<tr>
<td></td>
<td>E001296</td>
<td>Intel® Core™ 4th Gen i5 3.7 GHz HD4600</td>
<td>4GB</td>
<td>320GB</td>
<td>Windows 8.1</td>
</tr>
<tr>
<td></td>
<td>E001297</td>
<td>Intel® Core™ 4th Gen i5 3.7 GHz HD4600</td>
<td>4GB</td>
<td>320GB</td>
<td>Windows 8.1</td>
</tr>
<tr>
<td>ECMG2B-17</td>
<td>E001298</td>
<td>Intel® Core™ 4th Gen i7 4.0 GHz HD4600</td>
<td>8GB</td>
<td>320GB</td>
<td>No OS</td>
</tr>
<tr>
<td></td>
<td>E001299</td>
<td>Intel® Core™ 4th Gen i7 4.0 GHz HD4600</td>
<td>8GB</td>
<td>320GB</td>
<td>Windows 7</td>
</tr>
<tr>
<td></td>
<td>E001300</td>
<td>Intel® Core™ 4th Gen i7 4.0 GHz HD4600</td>
<td>8GB</td>
<td>320GB</td>
<td>Windows 8.1</td>
</tr>
</tbody>
</table>

To find out more about our extensive range of Elo touch solutions, go to [www.elotouch.com](http://www.elotouch.com), or call the office nearest you.

<table>
<thead>
<tr>
<th>North America</th>
<th>North America</th>
<th>North America</th>
<th>North America</th>
<th>North America</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elo Touch Solutions</td>
<td>800-ELO-TOUCH</td>
<td>Tel +1 408 997 8000</td>
<td>Fax +1 408 997 8001</td>
<td><a href="mailto:customerservice@elotouch.com">customerservice@elotouch.com</a></td>
</tr>
<tr>
<td>1033 McCarthy Boulevard</td>
<td>800-ELO-TOUCH</td>
<td>Tel +1 408 997 8000</td>
<td>Fax +1 408 997 8001</td>
<td><a href="mailto:customerservice@elotouch.com">customerservice@elotouch.com</a></td>
</tr>
<tr>
<td>Milpitas, CA 95035</td>
<td>800-ELO-TOUCH</td>
<td>Tel +1 408 997 8000</td>
<td>Fax +1 408 997 8001</td>
<td>elotouch.com</td>
</tr>
</tbody>
</table>

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Cisco Interactive Experience Platform: Cisco Interactive Experience Client 4610 and 4632

Cisco® Interactive Experience Platform transforms customer experiences with interactive digital media. With this solution business and public agencies can deliver interactive content and information in real time, improving loyalty and revenues, while increasing efficiencies in business processes.

A key component of the Cisco Interactive Experience Platform is the Cisco Interactive Experience Clients 4610 and 4632, interactive computing and collaboration devices that deliver interactive web applications and rich media content on a scalable platform. The 4610 and 4632 power engaging customer experiences on interactive displays and kiosks to end users in retail stores, bank branches, and transit points (train stations, bus transit centers, and airports).

Figure 1 shows a basic solution configuration with a kiosk powered by a Cisco Interactive Experience Client 4632 device and managed by the Cisco Interactive Experience Manager.

Figure 1. Cisco Interactive Experience Platform Components
The devices can be managed in batches and controlled through the use of policies and groups. The Interactive Experience Manager manages users and devices, as well as featuring real-time monitoring, policy scheduling, live viewing of remote screen content, notification of events, and session management. The 4610 and 4632 are greener than a PC, consuming five times less power. It is also a very robust device with a high mean time between failure (MTBF) rate of 8.5 years.

Product Features

The 4610 and 4632 are manageable, convenient, and secure, as well as easy to deploy and upgrade. They both support multiple zones of content, web clipping, web client automation, and support for customer applications. Content can be displayed in either portrait or landscape orientation. The Interactive Experience Client touchscreen compatibility includes:

- Integration with peripherals including webcams, magnetic card readers, barcode scanners, optical scanners, and printers
- Integration with the Remote Control IEP-IR-K9
- SIP client support for two-way video calls
- Embedded video encoder card for HD video conferencing between two Interactive Experience Client devices
- Encoder driver that enables video snapshots and 1080p streaming
- Aggressive (off-line) caching
- Debugging console for troubleshooting
- Secure, managed, reliable computing
- Custom web-based application platform for touchscreen interactive applications
- Management by a powerful remote management platform
- Single- and dual-core processor models
- Fanless design, providing for reliable and quiet operation
- Solid-state, space-saving design
- Interactive multimedia support with multiple video outputs
- Wi-Fi, Ethernet, and Bluetooth enabled

Table 1 contains guidelines for content formats and peripherals.

Table 1. Content Formats and Peripherals Guidelines

<table>
<thead>
<tr>
<th>Content Format or Peripheral</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio, voice</td>
<td>AAC-LC/LD/HE, AC3, MP3, MP4A, WMA1, WMA2, G.711, G.729ab, AMR, FLAC, MPGA</td>
</tr>
<tr>
<td>Video</td>
<td>H.264, H.263++, MPEG4, MPEG2, WMV/1/2, MJPEG</td>
</tr>
<tr>
<td>Video containers</td>
<td>AVI, MOV, WMV, MP4, MPG, MPEG-2/TS, (extensions: avi, mov, wmv, mp4, mp3, mp2, mpg, ts)</td>
</tr>
<tr>
<td>Web formats</td>
<td>HTML5 (early support), HTML4/CSS3, Flash 11, JRE 1.6.0_24 (Version 6 update 24)</td>
</tr>
<tr>
<td>Widgets</td>
<td>Media player, camera, ticker, web clipping, virtual on-screen keyboard</td>
</tr>
<tr>
<td>Viewers</td>
<td>PDF, text, JPEG, PNG, GIF, SVG, BMP</td>
</tr>
<tr>
<td>Touchscreens</td>
<td>HID-compliant with dual monitor support</td>
</tr>
<tr>
<td>Webcams</td>
<td>HID-compliant</td>
</tr>
<tr>
<td>Printers</td>
<td>CUPS-compliant; content: text, PDF, PNG, JGP</td>
</tr>
</tbody>
</table>
● Improve customer service with virtual assistance
● Increase revenues by providing a venue for third-party advertising
● Reduce costs with increased operational efficiency in customer and business processes
● Increase operational consistency by enabling reuse of existing web content
● Simplify deployment with Cisco Interactive Experience Client 4600 Series
● Reduce use of management resources with remote manageability
● Reduce deployment and management timelines using policies and groups
● Improve management experience with an integrated solution architecture (network, collaboration, video, interactive media, and noninteractive media)

Product Specifications
The dimensions and weight of the 4610 and 4632 are shown in Table 2.

Table 2. Cisco Interactive Experience Client 4610 and 4632 Dimensions and Weight

<table>
<thead>
<tr>
<th>Units of Measurement</th>
<th>Width</th>
<th>Depth</th>
<th>Height</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>US customary units</td>
<td>7.3 inches</td>
<td>7.4 inches</td>
<td>1.9 inches</td>
<td>3 pounds</td>
</tr>
<tr>
<td>Modern metric units</td>
<td>18.5 cm</td>
<td>18.8 cm</td>
<td>4.8 cm</td>
<td>1.36 kilograms</td>
</tr>
</tbody>
</table>

Table 3 shows the specifications for the 4610 and 4632.

Table 3. Cisco Interactive Experience Client 4610 and 4632 Specifications

<table>
<thead>
<tr>
<th>Features</th>
<th>4610</th>
<th>4632</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCBA form factor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board size</td>
<td>6.0 in. x 6.0 in. (150 mm x 150 mm)</td>
<td>6.0 in. x 6.0 in. (150 mm x 150 mm)</td>
</tr>
<tr>
<td>Processor</td>
<td>Intel Celeron M Processor</td>
<td>Intel Core 2 Duo Processor</td>
</tr>
<tr>
<td>Memory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>DDR3-800/1066 memory (SO-DIMM Slot)</td>
<td>DDR3-800/1066 memory (SO-DIMM Slot)</td>
</tr>
<tr>
<td>System memory size</td>
<td>2 GB</td>
<td>4 GB</td>
</tr>
<tr>
<td>Storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>SATA socket Disk on Module (DOM)</td>
<td>SATA socket Disk on Module (DOM)</td>
</tr>
<tr>
<td>Storage memory size</td>
<td>8 GB</td>
<td>32 GB</td>
</tr>
<tr>
<td>BIOS flash memory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory size</td>
<td>32 Mb</td>
<td>32 Mb</td>
</tr>
<tr>
<td>Ethernet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Speeds</td>
<td>10/100/1000 Mbps</td>
<td>10/100/1000 Mbps</td>
</tr>
<tr>
<td>Connectors</td>
<td>1 port RJ45 with transformer</td>
<td>1 port RJ45 with transformer</td>
</tr>
<tr>
<td>Video</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onboard</td>
<td>GS45 HDMI</td>
<td>GS45 HDMI</td>
</tr>
<tr>
<td>Connectors</td>
<td>1 HDMI port</td>
<td>1 HDMI port</td>
</tr>
<tr>
<td></td>
<td>1 VGA port</td>
<td>1 VGA port</td>
</tr>
</tbody>
</table>
## Features

<table>
<thead>
<tr>
<th></th>
<th>4610</th>
<th>4632</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>USB 2.0 controller</td>
<td>USB 2.0 controller</td>
</tr>
<tr>
<td>Connectors</td>
<td>2 right USB A type</td>
<td>2 right USB A type</td>
</tr>
<tr>
<td></td>
<td>2 back USB A type</td>
<td>2 back USB A type</td>
</tr>
<tr>
<td></td>
<td>1 front USB A type</td>
<td>1 front USB A type</td>
</tr>
<tr>
<td>WiFi+Bluetooth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Speed</td>
<td>802.11 b/g, Bluetooth V2.1+EDR</td>
<td>802.11 b/g, Bluetooth V2.1+EDR</td>
</tr>
<tr>
<td>Front I/O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LED</td>
<td>1 green LED</td>
<td>1 green LED</td>
</tr>
<tr>
<td></td>
<td>1 red LED</td>
<td>1 red LED</td>
</tr>
<tr>
<td>IR receiver</td>
<td>1 built-in IR receiver</td>
<td>1 built-in IR receiver</td>
</tr>
<tr>
<td>USB</td>
<td>1 USB connector (for preinstall device)</td>
<td>1 USB connector (for preinstall device)</td>
</tr>
<tr>
<td>Back I/O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC jack</td>
<td>1 12V DC in connector</td>
<td>1 12V DC in connector</td>
</tr>
<tr>
<td>Video</td>
<td>1 VGA port</td>
<td>1 VGA port</td>
</tr>
<tr>
<td></td>
<td>1 HDMI port</td>
<td>1 HDMI port</td>
</tr>
<tr>
<td>Ethernet</td>
<td>1 RJ45 connector with dual LEDs</td>
<td>1 RJ45 connector with dual LEDs</td>
</tr>
<tr>
<td>USB</td>
<td>1 USB two-stack connector</td>
<td>1 USB two-stack connector</td>
</tr>
<tr>
<td>Left I/O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COM</td>
<td>1 3.5 mm phone jack type</td>
<td>1 3.5 mm phone jack type</td>
</tr>
<tr>
<td>IR extension</td>
<td>1-IR extension cable</td>
<td>1-IR extension cable</td>
</tr>
<tr>
<td>Audio</td>
<td>1 audio port (MIC-in)</td>
<td>1 audio port (MIC-in)</td>
</tr>
<tr>
<td></td>
<td>1 audio port (line-out)</td>
<td>1 audio port (line-out)</td>
</tr>
<tr>
<td>USB</td>
<td>1 USB two-stack connector</td>
<td>1 USB two-stack connector</td>
</tr>
<tr>
<td>Right I/O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buttons</td>
<td>1 power on/off button (with soft/hard power option)</td>
<td>1 power on/off button (with soft/hard power option)</td>
</tr>
<tr>
<td></td>
<td>1 reset button</td>
<td>1 reset button</td>
</tr>
<tr>
<td>Power</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adapter</td>
<td>12V@4A (48W)</td>
<td>12V@4A (48W)</td>
</tr>
<tr>
<td></td>
<td>Input 100V - 240V ~1A 50-60Hz</td>
<td>Input 100V - 240V ~1A 50-60Hz</td>
</tr>
<tr>
<td></td>
<td>Output 12V ~4A</td>
<td>Output 12V ~4A</td>
</tr>
<tr>
<td>Power consumption</td>
<td>12V@48W maximum</td>
<td>12V@48W maximum</td>
</tr>
<tr>
<td>CPU VR</td>
<td>Intel Mobile Voltage Positioning (Intel MVP6) Structure</td>
<td>Intel Mobile Voltage Positioning (Intel MVP6) Structure</td>
</tr>
</tbody>
</table>

Figure 4. Rear Ports of Cisco Interactive Experience Client 4610 and 4632

The differences between the 4610 and 4632 models are their processors (single-core or dual-core), memory (2 GB or 4 GB), and storage memory size (8 GB DOM or 32 GB DOM). Choose your model according to the types of applications and content that will be displayed on the interactive screens. If content and applications require less processing power or memory to run (such as websites and feeds), the 4610 should be suitable.
If content is primarily interactive multimedia (including video and animations and applications that require heavy processing power and memory), the 4632 might be more appropriate.

Table 4 provides the environmental tolerance ranges of 4610 and 4632.

**Table 4. Cisco Interactive Experience Client 4610 and 4632 Environmental Tolerance Ranges**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Temperature</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating</td>
<td>0°C (32°F)</td>
<td>40°C (104°F)</td>
<td></td>
</tr>
<tr>
<td>Nonoperating</td>
<td>-20°C (-4°F)</td>
<td>70°C (158°F)</td>
<td></td>
</tr>
<tr>
<td>Relative Humidity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>10% indoor use</td>
<td>85% indoor use</td>
<td></td>
</tr>
<tr>
<td>Nonoperating</td>
<td>0% indoor and outdoor</td>
<td>95% indoor and outdoor</td>
<td></td>
</tr>
<tr>
<td>Altitude</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating and nonoperating</td>
<td>0m (0 feet)</td>
<td>2000m (6561 feet)</td>
<td></td>
</tr>
</tbody>
</table>

**Product Numbers**

Table 5 provides product numbers for the 4610 and 4632 hardware, software, and licenses.

**Table 5. Cisco IEC 4610 and 4632 Products**

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEP-4610-HW-K9</td>
<td>SC, 2 GB, 8 GB DOM, WIFI, BT</td>
</tr>
<tr>
<td>IEP-4632-HW-K9</td>
<td>DC, 4 GB, 32 GB DOM, WIFI, BT</td>
</tr>
<tr>
<td>IEP-4600-SW-20-K9</td>
<td>IEC4600 Software</td>
</tr>
<tr>
<td>L-IEP-MGR-FL-1</td>
<td>1 IEP Manager License</td>
</tr>
<tr>
<td>L-IEP-MGR-FL-10</td>
<td>10 IEP Manager License</td>
</tr>
<tr>
<td>L-IEP-MGR-FL-50</td>
<td>50 IEP Manager License</td>
</tr>
<tr>
<td>L-IEP-MGR-FL-100</td>
<td>100 IEP Manager License</td>
</tr>
<tr>
<td>L-IEP-MGR-FL-500</td>
<td>500 IEP Manager License</td>
</tr>
<tr>
<td>L-IEP-MGR-FL-1000</td>
<td>1000 IEP Manager License</td>
</tr>
<tr>
<td>IEP-IR-K9x</td>
<td>IR Remote</td>
</tr>
</tbody>
</table>

An Interactive Experience Manager license is required for each 4650 device that is managed by the Interactive Experience Manager. A single license can be purchased or license bundles that support up to 10, 50, 100, 500, or 1000 devices can be purchased.

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- NATIVE DISPLAY RESOLUTION
  1920 x 1080 (FHD)
- HIGH BRIGHTNESS
  500 cd/m²
- CONTRAST RATIO
  1,300:1, 3000:1 (DCR)
- SUPER IPS
  178° Viewing Angle
- VIEWING ANGLE and LIFE EXPECTANCY
  Enhanced in Portrait and Landscape Mode
- NARROW BEZEL
  30.4mm
- HDMI™/DVI WITH HDCP
- RS-232C CONTROL
- CONVENIENT EXTERNAL SPEAKER-OUT
- ENERGY STAR® 5.0 AND RoHS COMPLIANT
- INFORMATION DISPLAY FOR SERIAL NUMBER
- OPTIONAL HIDDEN SPEAKERS
- 3-YEAR LIMITED WARRANTY
  parts/labor

Offered by

Touch-enabled by

3M Dispersive Signal Technology

www.kristel.com

www.3M.com/touch

www.LGsolutions.com
# The Reliable Touch Solution for Large Screen Displays

## Feature

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefit</th>
</tr>
</thead>
</table>
| Dispersive Signal Technology | • Superior surface durability is designed to maintain optical and functional performance over the life of the product  
                             • Provides reliable operation in the presence of dust, dirt, and other surface contaminants |
| Durable Glass Surface | • Requires MoHS 7 or higher to induce a cosmetic scratch ensuring reliable performance in high-use environments.  
                             • Chemically-strengthened glass meets EN/UL 60950 glass breakage specifications  
                             • Anti-glare surface etch provides excellent optical properties in a wide range of ambient light conditions and minimizes the appearance of fingerprints |
| Versatile Installation Options | • Outstanding performance in either vertical position (portrait and landscape) and horizontal position (as in a tabletop configuration) |

## System Performance

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Method</td>
<td>Finger and stylus input</td>
</tr>
<tr>
<td>Accuracy</td>
<td>Reported coordinates are within 1.0% of true position (based on viewing area dimensions)</td>
</tr>
<tr>
<td>Touch System Resolution</td>
<td>16k x 16k (maximum resolution)</td>
</tr>
<tr>
<td>Response Time</td>
<td>20 ms for tap input</td>
</tr>
<tr>
<td>Minimum Touch Impact*</td>
<td>50 mN (milli-newton-seconds), the equivalent of a very light touch</td>
</tr>
</tbody>
</table>

## Optics

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Transmission**</td>
<td>92% light transmission (±2%)</td>
</tr>
<tr>
<td>Surface Finish</td>
<td>Anti-glare etch (standard)</td>
</tr>
</tbody>
</table>

## Mechanical

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass Thickness</td>
<td>2.2 mm (± 0.2 mm), glass only</td>
</tr>
<tr>
<td>Overall Thickness</td>
<td>4.4 mm (± 0.5 mm)</td>
</tr>
<tr>
<td>Includes glass thickness, tint, electronics components, and mounting material</td>
<td></td>
</tr>
<tr>
<td>Substrate Material</td>
<td>Chemically-strengthened glass substrate</td>
</tr>
<tr>
<td>Surface Hardness</td>
<td>Mohs pick with a hardness rating of 7 or higher is required to induce a scratch. Scratches will not result in a functional failure</td>
</tr>
<tr>
<td>Cleaning</td>
<td>Recommended: 50:50 isopropyl alcohol and water solution</td>
</tr>
</tbody>
</table>

## Reliability

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Obstructions</td>
<td>Touch screen operation withstands surface contaminants such as dirt, dust and grime</td>
</tr>
</tbody>
</table>
| Operating Temperature* | -15°C to +70°C for the touch screen  
                             RH: Up to 95% non-condensing |
| Storage Temperature*** | -50°C to +85°C  
                             RH: Up to 90% non-condensing |

## Electronics (3M MicroTouch Controller DX)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
</table>
| Communications        | Auto-sensing dual mode  
                             (Serial or USB-HD) |
| Protocol              | Nominal Uncased  
                             2.66” x 3.75” x 0.45” |
| Dimensions            | 67.56 mm x 95.25 mm x 11.43 mm |
| MTBF                  | >140K hours per MIL Std 217F calculation |
| Regulatory            | UL/cUL, FCC-A, CE, VCCI, CSA, AS/EN 3548 |
| Drivers               | MicroTouch MT7 for Microsoft® Windows®  
                             2000, XP and Vista |

## System Warranty

3-year limited warranty

---

**Notes:**
- *Tested at 75 dB(A) under pink noise, ambient condition
- Test uses B/R, Gardner Hum-Gard Plus.
- **See 3M MicroTouch SCT2270DX Delivery Specifications for storage and operating temperatures at varying humidity levels.

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F. Technical Architecture
V. Appendix

A. How to Choose a Relevant Alias for the Kiosks

As mentioned above, the official wayfinding name of the destination should be exactly the same as the name that appears on signs, maps and other official NYU Langone communication so that all names are consistent, no matter where a visitor sees them. However, a visitor searching for a destination at the Kiosk might know the destination by a different term, so we’ve built the Alias function to make other names (“nicknames”) searchable.

When a visitor starts typing in the destination search box, the system looks for destination name matches and alias matches. If the system finds an alias match, the alias is displayed along with the official name of that destination. For example, “Internal Medicine & Geriatrics” is the official destination name and appears on all signage. We’ve added “Dialysis” as an alias for that department. As a visitor starts typing “Dialysis” the system will display “Internal Medicine & Geriatrics (Dialysis).” This introduces the visitor to the official name they will see on signs when they arrive.

Most aliases are common words and phrases that may be used by the general public. Your telephone operations staff and Patient Experience staff may have some good advice on aliases to include in the system.

You do not need to create aliases for words that are already included in the formal name. For example, “Emergency” is not an alias for “Emergency Department” because the search engine looks for all words in a destination name. Also, be sure to confirm proper spelling of all inputs to avoid any misspellings being published to the Kiosks.
B. Summary of User Research

From inception through implementation, the Wayfinding and Communications program for NYULMC has been bolstered by the incorporation of best practices, usability research findings, community input, and data analysis. Of the five major studies conducted, two research studies specifically informed the design and functionality of the Wayfinding Kiosks and Pylons.

October, 2011:
Usability of wayfinding technology prototypes

1. How well do visitors navigate with appointment slips, barcodes, touchscreens, printed directions, and digital signage?
2. Are there improvements to be made to the functionality and user interfaces of these proposed tools?

26 participants, majority with low literacy or limited English proficiency

Major outcomes:
Several novel uses of wayfinding technology were proposed during the design process so it was critical to test how visitors would interact with uncommon tools such as a barcode reader and an interactive digital sign. This study found that visitors were uncomfortable interacting with a barcode reader and so that wayfinding element was removed from the system design. The interactive digital sign tested well, and additional functionality was designed into that element, which became the digital pylon.

October, 2013:
Usability of the newly-installed wayfinding digital pylons for non-English visitors

1. Heuristic review of the digital directional pylon display including predictive eye-tracking study
2. Usability test of the digital directional pylon display, including shadowing self-directed visitor journeys to first-floor destinations
3. Usability test of the Tisch South Elevator cab display

26 native speakers of Chinese, Russian and Spanish

Major outcomes:
After the first phase of digital pylons were installed, this usability study was undertaken to evaluate the placement of the pylons, the information and visual design of their screens, and their relevance within a visitor’s journey. Since they were designed to address multi-lingual needs, it was important to perform usability exercises with native speakers. The study’s results led to improvements in the information design and visual design of the interface, as well as guidance where subsequent pylons should be placed for optimum usage.