#2022-122
Mercyhealth Hospital – Final PUD Amendment
Project Review for Planning and Zoning Commission

Meeting Date: July 6, 2022

Requests: Final Planned Unit Development Amendment for wall and free-standing signs for the hospital complex.

Location: 875 Route 31

Acreage: 16.39 acres

Existing Zoning: O PUD Office

Surrounding Properties:
North: B-2 PUD General Commercial
South: M Manufacturing
East: M Manufacturing
West: M Manufacturing

Staff Contact: Elizabeth Maxwell (815.356.3615)

Background:

- Mercyhealth received the Final Planned Unit Development Approval in 2018. The complex is currently under construction.
- Signage was not finalized at the time of the Final PUD approval and so no variations were approved. Several conditions were placed in the Final PUD ordinance about signage. Condition 5A.that reads, "All signage must meet the UDO requirements," is being modified by this request.

Land Use Analysis:

ZONING

- The site is currently zoned O PUD Office and Mercy received a Special Use Permit for a hospital and helipad and Final PUD approval.
- The Comprehensive Land Use Plan designates this area as Commercial. The proposed office use is an acceptable business use in the Commercial land use district.

SIGNAGE

- The campus signage proposed is designed and sized proportionate to the hospital campus size, location, and function. The signage needs to be quickly and easily readable to those unfamiliar with the site and location of services.

Wall Signage

- The building will have five wall signs.
- The ordinance allows the building to have 150 square feet of total signage. The total proposed wall signage is 920.35 square feet.
- The breakdown of the wall signs is detailed below:
    - Sign B 1 "Mercyhealth" on the south elevation is 378 square feet in area.
    - Sign B 2 "Mercyhealth" on the west elevation is 378 square feet in area.
    - Sign B 3 "Emergency" on the north elevation is 87.75 square feet in area
    - Sign B 4 "Emergency Urgent Care" cabinet sign on the north elevation is 26.6 square feet.
    - Sign B 5 "Ambulance Enter Exit" cabinet sign on the northeast elevation is 50 square feet.

Free-Standing Signage

- There are four monument signs and five directional signs.
- The ordinance allows one monument sign at 6 feet high and 32 square feet and multiple directional or way-finding signage. Hospital falls under the office sign standards.
- Monument Signs
    - Monument Signs 1 and 2 are 30 feet in height and 381 square feet. They are located at the corners of the property adjacent to Route 31. They are designed to be readable at 480 feet away giving drivers 6-8 seconds of read time before arriving at the property.
    - Monument Signs 3 and 4 are 15 feet in height and 73.5 square feet. They are located at the entrances driveways at Three Oaks Road and Raymond Drive.
- Directional Signs
    - Directional Signs 1-5 are 8 feet in height and 28 square feet. These signs are located along the ring road providing crucial way-finding for patrons.

Findings of fact:

Final Planned Unit Development Amendment

The petitioner is requesting approval of a Final Planned Unit Development Amendment to allow the installation of signage for the hospital campus, which requires variations from the UDO. A Planned Unit Development is a Special Use and Special Uses require separate review because of their potential to impact surrounding properties and the orderly development of the City.

Section 2-400 B General Standards for all special uses in the Unified Ordinance establishes standards for all special uses in Crystal Lake. Briefly, the criteria are as follows:

1. The use is necessary or desirable, at the proposed location, to provide a service or facility which will further the public convenience and general welfare.
   ☐ *Meets* ☐ *Does not meet*

2. The use will not be detrimental to area property values.
   ☐ *Meets* ☐ *Does not meet*

3. The use will comply with the zoning districts regulations.
   ☐ *Meets* ☐ *Does not meet*

4. The use will not negatively impact traffic circulation.
   ☐ *Meets* ☐ *Does not meet*

5. The use will not negatively impact public utilities or municipal service delivery systems. If required, the use will contribute financially to the upgrading of public utilities and municipal service delivery systems.
   ☐ *Meets* ☐ *Does not meet*

6. The use will not negatively impact the environment or be unsightly.
   ☐ *Meets* ☐ *Does not meet*

7. The use, where possible will preserve existing mature vegetation, and provide landscaping and architecture, which is aesthetically pleasing, compatible or complementary to surrounding properties and acceptable by community standards.
   ☐ *Meets* ☐ *Does not meet*

8. The use will meet requirements of all regulating governmental agencies.
   ☐ *Meets* ☐ *Does not meet*

9. The use will conform to any conditions approved as part of the issued Special Use Permit.
   ☐ *Meets* ☐ *Does not meet*

10. The use will conform to the regulations established for specific special uses, where applicable.
    ☐ *Meets* ☐ *Does not meet*

In addition PUDs must also meet the standards in Section 4-500 C. Development Standards and 4-500 D. 1 Additional standards for Planned Unit Developments Commercial PUDs.

1. Implements the vision and land use policies of the Comprehensive Plan.
   ☐ Meets ☐ Does not meet

2. Shall not result in substantial adverse effect on adjacent property, natural resources, infrastructure, public sites or other matter of public health, safety and welfare.
   ☐ Meets ☐ Does not meet

3. PUDs must provide transitional uses to blend with adjacent development.
   ☐ Meets ☐ Does not meet

4. PUD phases must be logically sequenced.
   ☐ Meets ☐ Does not meet

5. The density and intensity of a PUD shall be in accordance with the Comprehensive Plan.
   ☐ Meets ☐ Does not meet

6. All dimensional standards shall be listed within the PUD plan if they do not meet the Ordinance minimum standards.
   ☐ Meets ☐ Does not meet

7. The responsible parties for all on-site and other required public improvements shall be established and a utility plan indicating all proposed easements shall be provided.
   ☐ Meets ☐ Does not meet

8. Any private infrastructure shall comply with the city standards.
   ☐ Meets ☐ Does not meet

9. The PUD plan shall establish the responsibility of the applicant/developer.
   ☐ Meets ☐ Does not meet

10. A bond or letter of credit shall be posted to cover required fees or public improvements.
    ☐ Meets ☐ Does not meet

Planned Unit Development Variations
The purpose of Planned Unit Developments is to encourage and allow more creative and imaginative design of land developments than is possible under district zoning regulations. Planned Unit Developments are, therefore, intended to allow substantial flexibility in planning and designing a proposal. This flexibility is often in the form of relief from compliance with conventional zoning ordinance site and design requirements which may otherwise require individual requests and applications for zoning variations.

Ideally, this flexibility results in a development that is better planned, contains more amenities, and is ultimately more desirable than one that would have been produced through compliance with typical zoning ordinance and subdivision controls.

Therefore more lenient site requirements may be granted where the Planned Unit Development contains features not normally required of traditional developments. Although a formal variation request is not required to be made in conjunction with a Planned Unit Development, Staff identifies those aspects of the Planned Unit Development which effectively result in variations from UDO requirements. If the evidence is not found to justify these variations from the UDO that fact shall be reported to the City Council with a recommendation that the variations from the UDO which are proposed as part of the Planned Development be lessened or denied.

The Planned Unit Development proposed by the Petitioner includes the following variations from the UDO:

Article 4-1000 Signs

- UDO allows one free-standing monument sign at six feet high and 32 square feet.
  - Request: Four monument signs, two at 30 feet high and 381 square feet and two at 15 feet in height and 73.5 square feet. This is a variation of three signs and a total of 877 square feet.

- UDO allows multiple free-standing directional signs at three feet high and four square feet each.
  - Request: Five directional signs at eight feet high and 28 square feet each. This is a variation of five feet in height for each sign and a variation of 24 square feet each.

- UDO allows 150 square feet of total wall signage.
  - Request: Total wall signage is 920.35 square feet. This is a variation of 770.35 square feet.

Free-Standing Signs

	Size	Height	Quantity
UDO Allows	32 square feet	6 feet high	1
Mercy Proposed	381 square feet	30 feet high	2

Directional Signs

	Size	Height	Quantity
UDO Allows	4 square feet	3 feet high	Multiple
Mercy Proposed	28 square feet	8 feet high	5

Wall Signs

	Size	Quantity
UDO Allows	150 square feet	Multiple
Mercy Proposed	920.35 square feet	2

Comprehensive Land Use Plan 2030 Vision Summary Review:

The Comprehensive Plan designates the subject property as Office, which allows for existing and future office and business uses. The following goal is applicable to this request:

Land Use – Office

Goal: Maintain and expand the availability of professional and research office in appropriate locations throughout the city to complement commercial and manufacturing uses.

This can be accomplished with the following supporting actions:

Supporting Action: Encourage office development along major roadways, near transit stops and bicycle routes, and in proximity to residential uses.

Success Indicator: The number of new office occupancies.

Recommended Conditions:

If a motion to recommend approval of the petitioner's request is made it should be with the following conditions:

1. Approved plans, reflecting staff and advisory board recommendations, as approved by the City Council:
   A. Application (Mercyhealth, received 06/03/22)
   B. Sign Plans (Reverence Engineering, dated 01/25/22, received 06/03/22)
   C. Narrative (Mercyhealth, dated 05/27/22, received 06/03/22)

2. Landscape is required at one square foot per square footage of signage for all free-standing signs. A mix of small deciduous trees, medium evergreen trees, ornamental trees and deciduous and evergreen shrubs is required. At least 50% of the required landscaping area shall be planted with trees and shrubs.

3. Conditions from Ordinance 7454 remain valid, as applicable unless modified by this request.

4. All free-standing signs shall be a minimum of 10 feet from the property lines.

5. The petitioner shall address all of the review comments and requirements of the Community Development Departments.

PIQ Map
875 S. Route 31



City of Crystal Lake
Development Application
Ownership Sign-off Acknowledgement Form

The following information is related to a development application. As the owner of the property in question, I (we) acknowledge that the information provided in the submittal was reviewed and approved.

Owner Information

Name: Mercy Alliance Inc

Address: 1000 Mineral Point Dr, PO Box 5003

Janesville, WI 535475003

Phone: (507) 254-9746

E-mail: jbenning@mhemail.org

Project Name & Description: Mercyhealth Hospital

875 Route 31 PUD # 2018-12

PUD amendment for signage

Project Address/Location: 909 Lutter Drive, Crystal Lake, IL 60014

Signature

Joanna Benning — 5/31/22

Owner: Print and Sign name — Date

NOTE: If the property is held in a trust, the trust officer must sign this petition as owner. In addition, the trust officer must provide a letter that names all beneficiaries of the trust.

SHAW MEDIA
EST. 1851
PO BOX 250
CRYSTAL LAKE IL 60039-0250
(815)459-4040

ORDER CONFIRMATION

Salesperson: BARBARA BEHRENS Printed at 06/14/22 10:05 by bbehr-sm

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Acct #: 10069745 Ad #: 1992075 Status: New WHOLD

MCHENRY COUNTY PREPAID LEGALS
PO BOX 250
CRYSTAL LAKE IL 60014

Start: 06/17/2022 Stop: 06/17/2022
Times Ord: 1 Times Run: ***
CLEG 1.00 X 67.00 Words: 230
Total CLEG 67.00
Class: C8100 PUBLIC NOTICES
Rate: LEGAL Cost: 105.28
Affidavits: 2
Ad Descrpt: PUD - MERCY

Contact: LEGAL CLERK
Phone: (815)459-4040
Fax#:
Email:
Agency:

Descr Cont: 1992075
Given by: DEB KELLY
P.O. #: 516-702-2636
Created: bbehr 06/14/22 09:52
Last Changed: bbehr 06/14/22 10:05

URL: _____

Source: _____ Section: _____ Page: __
Camera Ready: N Group: LEGALS AdType: _____
Misc:
n/c - village gave her wrong thing to run in nov.
Color: _____
Proof: __ _____ Pickup Date: _____ Ad#: _____
Delivery Instr: _____ Pickup Src: _____
Changes: None __ Copy __ _____ Art __ Size __ Copy Chg Every Run __
Coupon: __ Gang Ad #: _____
Ad Copy Method: _____
Special Instr: _____

COMMENTS:
COPIED from AD 1989718

PUB	ZONE	EDT	TP	RUN DATES
NW	CL	97	S	06/17
WEB	CL	99	S	06/17
APNW	CL	97	S	06/17

(CONTINUED ON NEXT PAGE)

SHAW MEDIA
EST. 1851
PO BOX 250
CRYSTAL LAKE IL 60039-0250
(815)459-4040

ORDER CONFIRMATION (CONTINUED)

Salesperson: BARBARA BEHRENS Printed at 06/14/22 10:05 by bbehr-sm

Acct #: 10069745 Ad #: 1992075 Status: New WHOLD WHOL

PUBLIC NOTICE

BEFORE THE PLANNING AND ZONING COMMISSION OF THE CITY OF CRYSTAL LAKE, MCHENRY COUNTY, ILLINOIS

IN THE MATTER OF THE PETITION OF
Mercy Alliance Inc.

LEGAL NOTICE

Notice is hereby given in compliance with the Unified Development Ordinance of the City of Crystal Lake, Illinois that a public hearing will be held before the Planning and Zoning Commission upon the application by Joanna Benning, representing Mercy Alliance Inc., for a Final Planned Unit Development Amendment, relating to the property at 875 S. Route 31 in Crystal Lake, Illinois 60014. PIN: 19-10-400-010, 19-10-401-009, 19-10-401-008.

This application is filed for the purpose of seeking an amendment to an approved Final Planned Unit Development to allow changes to allow for a master sign plan with the construction of wall and free-standing signs including variations to size, height, quantity, and setbacks, pursuant to Article 4 and Article 9. Plans for this project can be viewed at the Crystal Lake Community Development Department at City Hall.

A public hearing before the Planning and Zoning Commission for this request will be held at 7:00 p.m. on Wednesday July 6, 2022, at the Crystal Lake City Hall, 100 West Woodstock Street, at which time and place any person determining to be heard may be present.

Jeff Greenman, Chairperson
Planning and Zoning Commission
City of Crystal Lake

(Published in the Northwest Herald on June 17, 2022)
1992075


PUBLIC HEARING
CITY OF CRYSTAL LAKE, ILLINOIS
PETITIONER: MERCY
REQUEST: FINAL PUD AMENDMENT
DATE: JULY 6, 2022
TIME: 7:30 p.m.
LOCATION: 100 WEST WOODSTOCK STREET
CITY HALL COUNCIL CHAMBERS
PLEASE DIRECT INQUIRIES TO THE PLANNING & ECONOMIC DEVELOPMENT DEPARTMENT AT (815) 356-3615



STATE OF ILLINOIS

COUNTY OF MCHENRY

IN THE MATTER OF THE APPLICATION OF
Mercy Alliance Inc;

AFFIDAVIT

Jim Merriman, being first duly sworn on oath deposes and states as follows:

A. That a copy of the legal notice, concerning the hearing date for the above mentioned Petitioner, was sent to each of the persons named on the attached list by regular mail notifying them of the hearing before the Planning and Zoning Commission on July 6, 2022, at 7:00 p.m., at the City of Crystal Lake City Hall, 100 West Woodstock Street in Crystal Lake, Illinois. Said notice was mailed to each of the below mentioned persons by regular mail on 6.14.2022

B. That the posting requirements of the Zoning Ordnance have been complied with by placing the customary public notice sign on the subject property on 6.14.2022

Jim Merriman
(name) (Signature)

Subscribed and Sworn to me before
This 14th day of June, 2022

Kari A. Van Lanen
Notary Public

KARI A. VAN LANEN
NOTARY
PUBLIC
STATE OF WISCONSIN

Crystal Lake Campus

Route 31 & Three Oaks Road
Crystal Lake, IL 60014

February 10, 2022

BRAND STANDARDS

COLORS/FINISHES

DIGITAL PRINT

DP-1 DIGITALLY PRINTED GRAPHICS
PMS 2144 C BLUE & PMS 7544 C GREY
ON TRANSLUCENT WHITE VINYL

DP-2 DIGITALLY PRINTED GRAPHICS
PMS 2144 C BLUE & PMS 7544 C GREY
ON OPAQUE WHITE VINYL

MATERIAL

M-1 ALLOY 304 STAINLESS STEEL, POLISHED

PAINT

P-1 MP MATCH TO PMS 2144 C BLUE

P-2 MP WHITE

P-3 MP MATCH TO PMS 7544C GREY

P-4 MP GUNMETAL GRAY METALLIC

P-5 MP MATCH SW 7069 IRON ORE

P-6 MP 18094 METALLIC SILVER

P-7 LEP LIGHT ENHANCING PAINT
FOR LIT LETTER INTERIORS

P-8 MP MATCH PMS 1797 C

VINYL

V-1 3M 3630-10 WHITE TRANSLUCENT

V-2 3M 7725-10 WHITE OPAQUE

V-3 3M 680-10 WHITE REFLECTIVE

V-4 3M 3630-33 RED TRANSLUCENT

V-5 3M 7725-13 RED OPAQUE

V-6 3M 680-72 RED REFLECTIVE

V-7 BLOCK OUT VINYL W/ MP MATCH TO PMS 7544C GREY

V-8 3M WHITE DIFFUSER (2ND SURFACE)

V-9 BLOCK OUT VINYL W/ MP MATCH TO PMS 2144C BLUE

V-10 3M 3632-015 YELLOW TRANSLUCENT

V-11 3M 7725-20 BLACK OPAQUE

FONTS

UNIVERS 55 ROMAN

abcdefghijklmnopqrstuvwxyz 0123456789
ABCDEFGHIJKLMNOPQRSTUVWXYZ

SWISS BLACK - USED FOR ADDRESSES ONLY

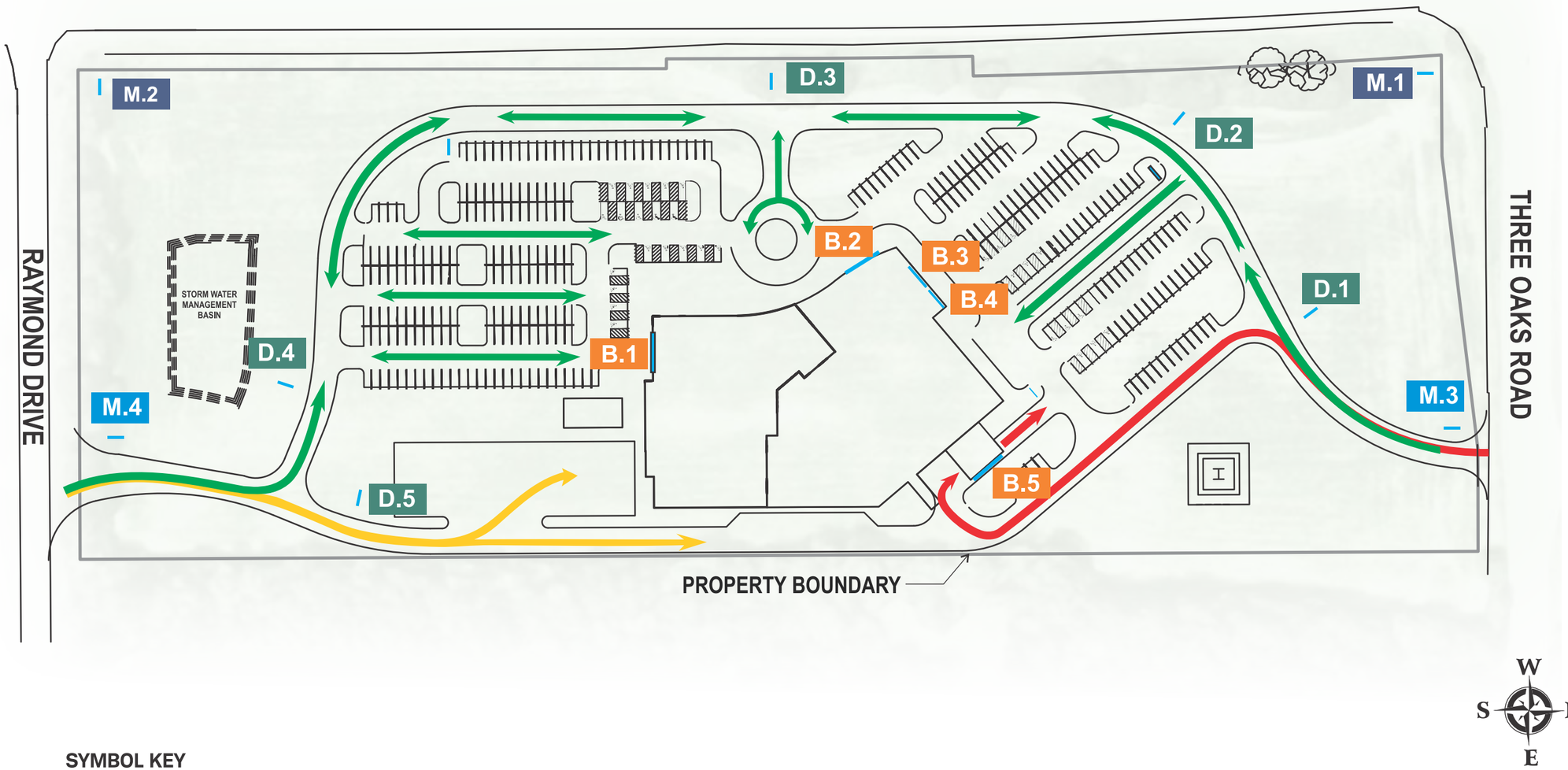
abcdefghijklmnopqrstuvwxyz 0123456789
ABCDEFGHIJKLMNOPQRSTUVWXYZ

MASONRY SPECS



QUARRY CREEK RANDOM ASHLAR PATTERN SPLIT FACE
PROVIDED IN BUFF, CREAM, GREY RUST BROWN AND BLENDING VARIATIONS
ALL TONES TO BE DISTRIBUTED EVENLY
COURSE HEIGHTS OF 20% 1 1/2"=3", 50% 3"-6" and 30% 6" - 9"
BED DEPTH OF 2 1/2" - 5 1/2".
RANDOM LENGTHS UP TO APPROXIMATELY 4'-0"
NATURAL STRATA FACE WITH SPLIT BEDS AND SAWN BACKS.
ENDS PROVIDED IN A COMBINATION OF SPLIT AND/OR SAWN.
NO SUBSTITUTIONS ARE ACCEPTABLE.
USE OF HDU FOAM PRODUCTS IS PROHIBITED.

SIGN LOCATION AND CIRCULATION PLAN



SIGN TYPE KEY

- **B.1** SOUTH ELEVATION — MERCY HEALTH
- **B.2** WEST ELEVATION — MERCY HEALTH
- **B.3** NORTH ELEVATION — EMERGENCY
- **B.4** NORTH ELEVATION — URGENT CARE
- **B.5** NORTHEAST ELEVATION — AMBULANCE

- **M.1** 30' MONUMENT SIGN
- **M.2** 30' MONUMENT SIGN
- **M.3** 15' MONUMENT
- **M.4** 15' MONUMENT

- **D.1** 8' DIRECTIONAL SIGN
- **D.2** 8' DIRECTIONAL SIGN
- **D.3** 8' DIRECTIONAL SIGN
- **D.4** 8' DIRECTIONAL SIGN
- **D.5** 8' DIRECTIONAL SIGN

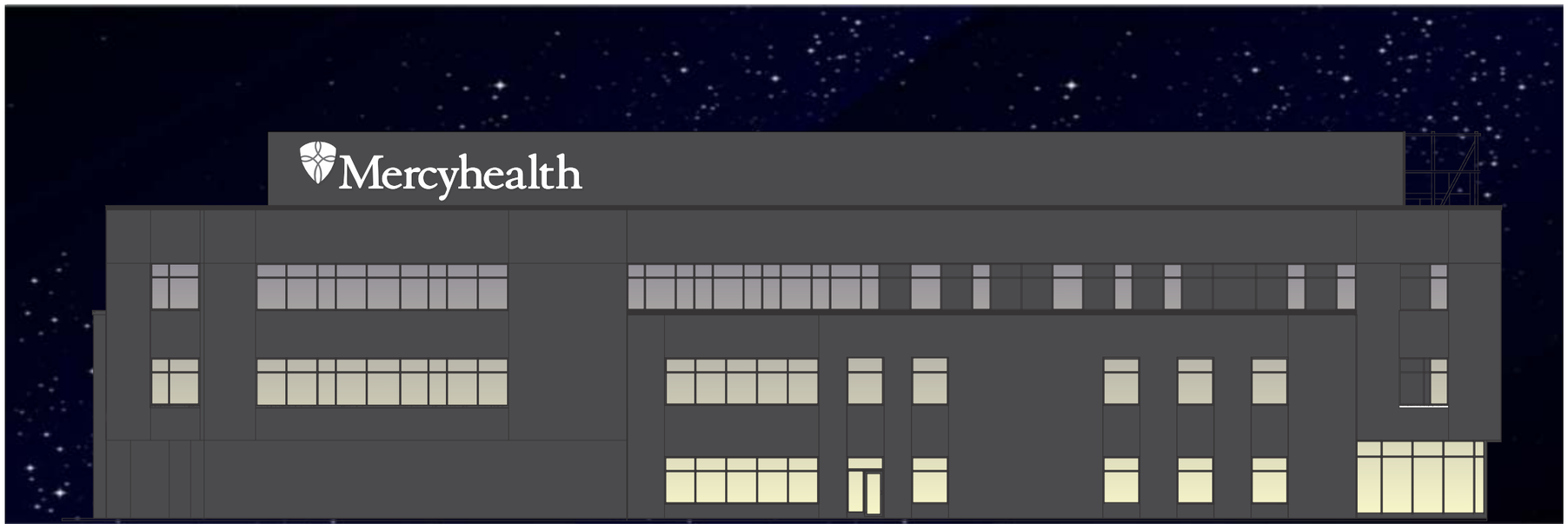
SYMBOL KEY

- GENERAL TRAFFIC FLOW
- EMERGENCY VEHICLE ROUTE
- SERVICE/DELIVERY
- INTERNAL ILLUMINATION
- **B** BUILDING SIGN
- **M** MONUMENT SIGN
- **D** DIRECTIONAL SIGN

B.1 PLACEMENT ON ELEVATIONS



DAYTIME VIEW - SOUTH ELEVATION
SCALE 3/64" = 1'-0"

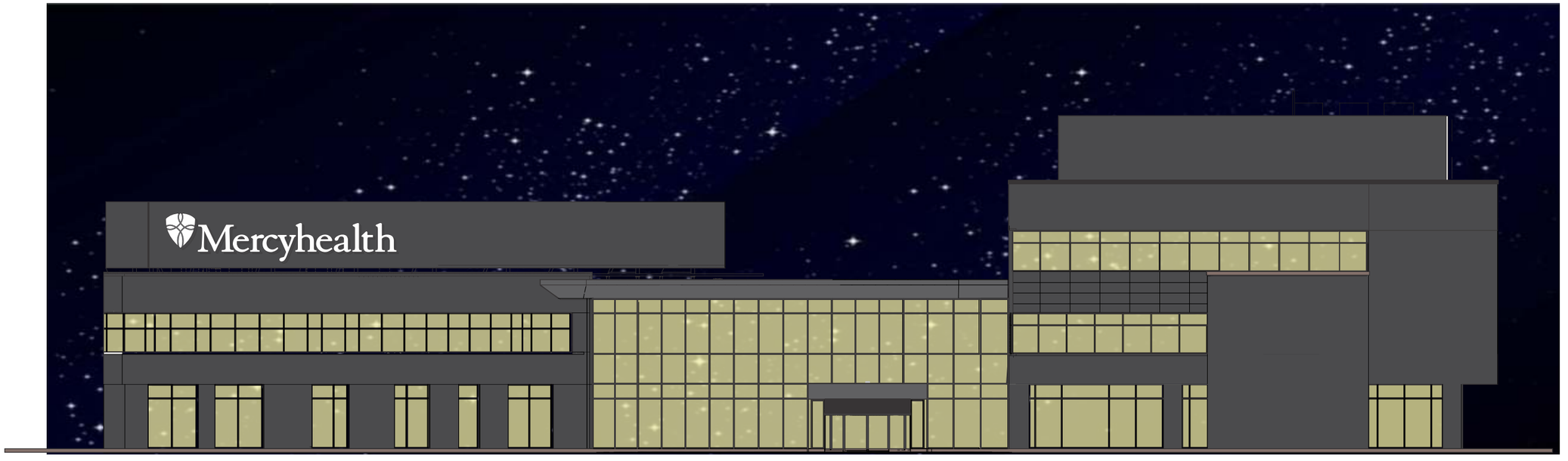


NIGHTTIME VIEW - SOUTH ELEVATION
SCALE 3/64" = 1'-0"

B.2 PLACEMENT ON ELEVATIONS

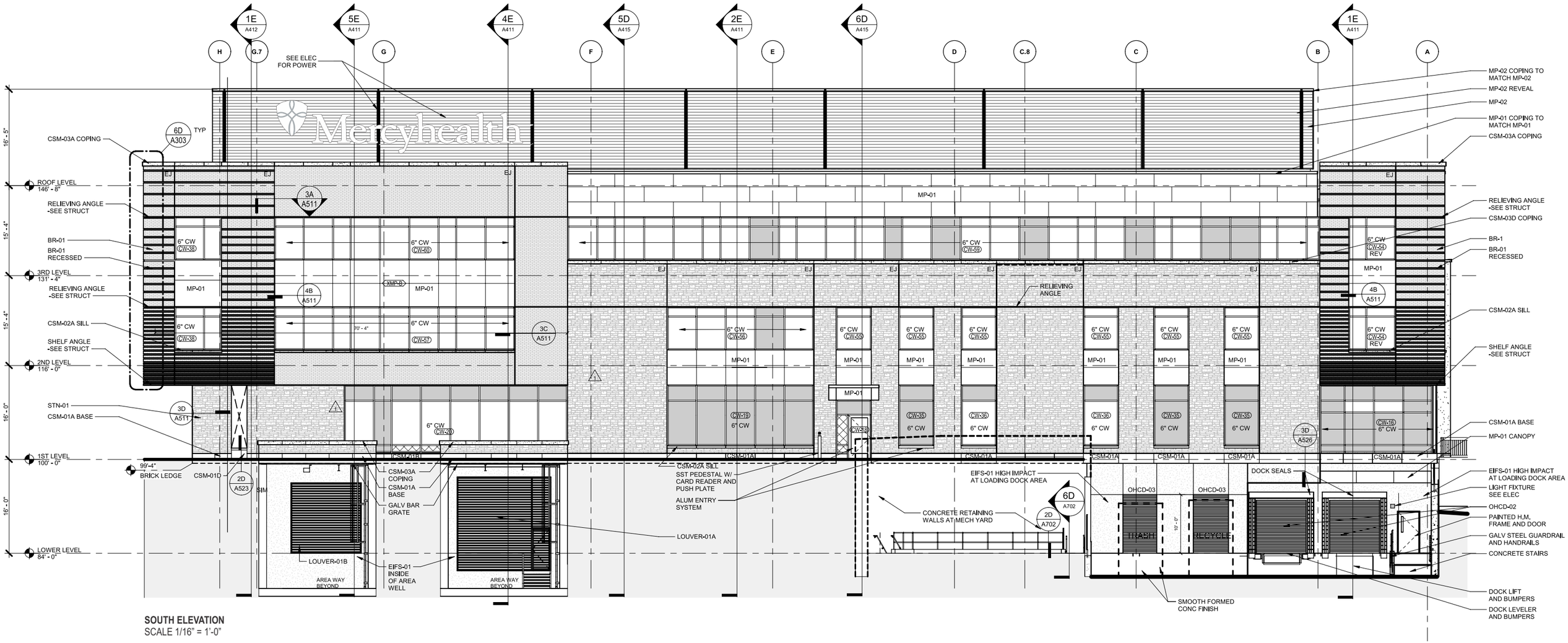


DAYTIME VIEW - WEST ELEVATION
SCALE 3/64" = 1'-0"



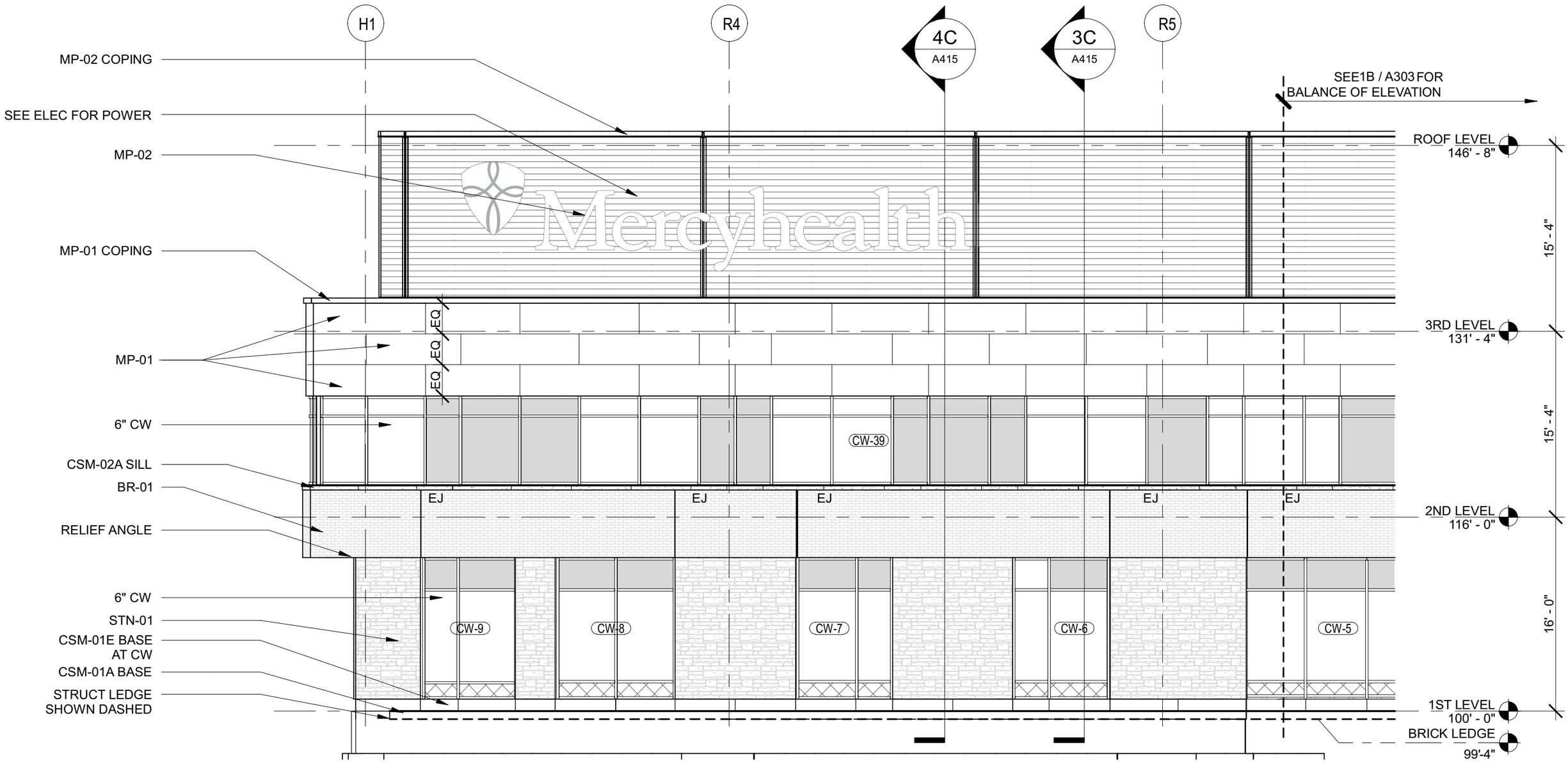
NIGHTTIME VIEW - WEST ELEVATION
SCALE 3/64" = 1'-0"

B.1 PLACEMENT ON ELEVATIONS



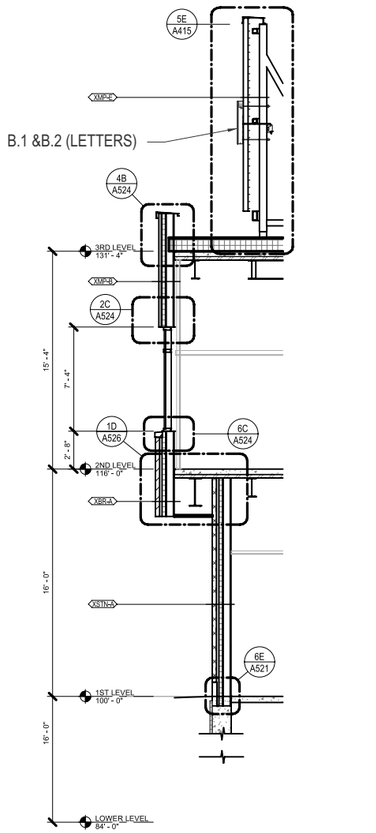
SOUTH ELEVATION
SCALE 1/16" = 1'-0"

B.2 PLACEMENT ON ELEVATIONS

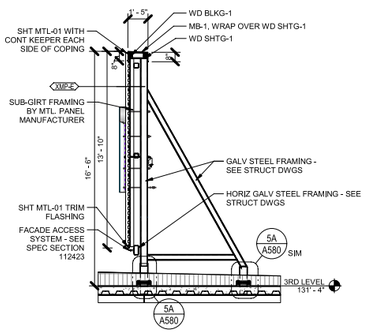


PARTIAL WEST ELEVATION
SCALE 1/8" = 1'-0"

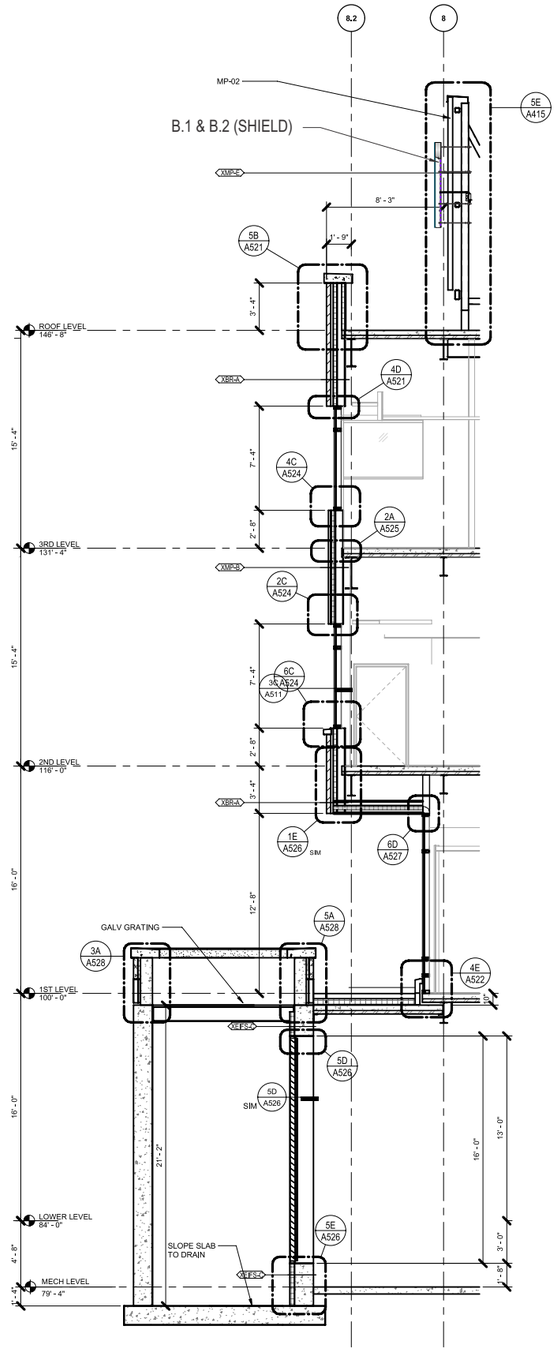
B.1 & B.2 PLACEMENT ON WALL SECTIONS



WALL SECTION @ HOSPITAL
4C (STONE)
A415 SCALE: 1/4" = 1'-0"

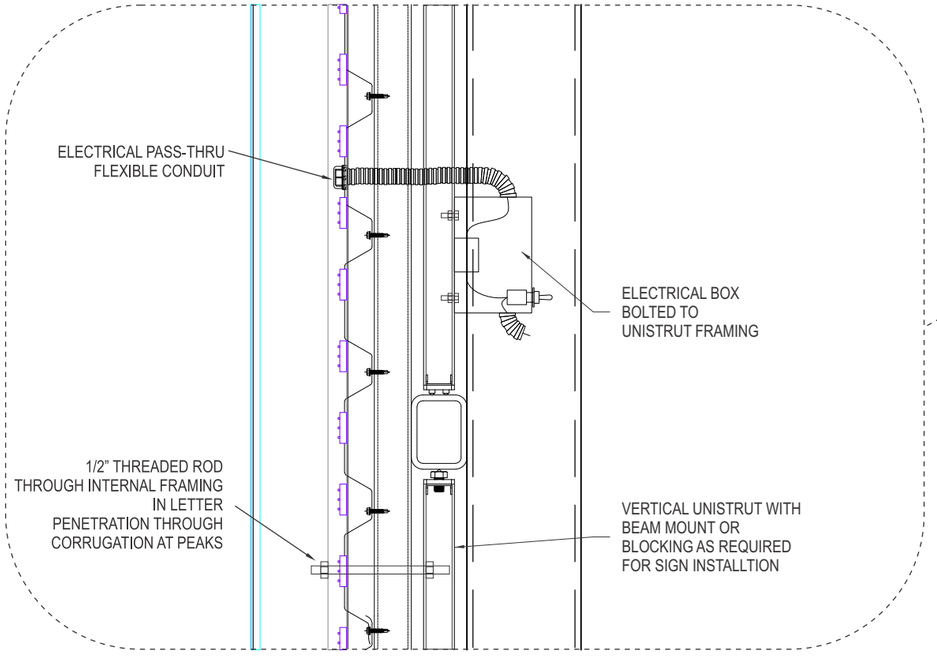


SECTION AT SCREENWALL
5E (TYP.)
A415 SCALE 3/32" = 1'-0"

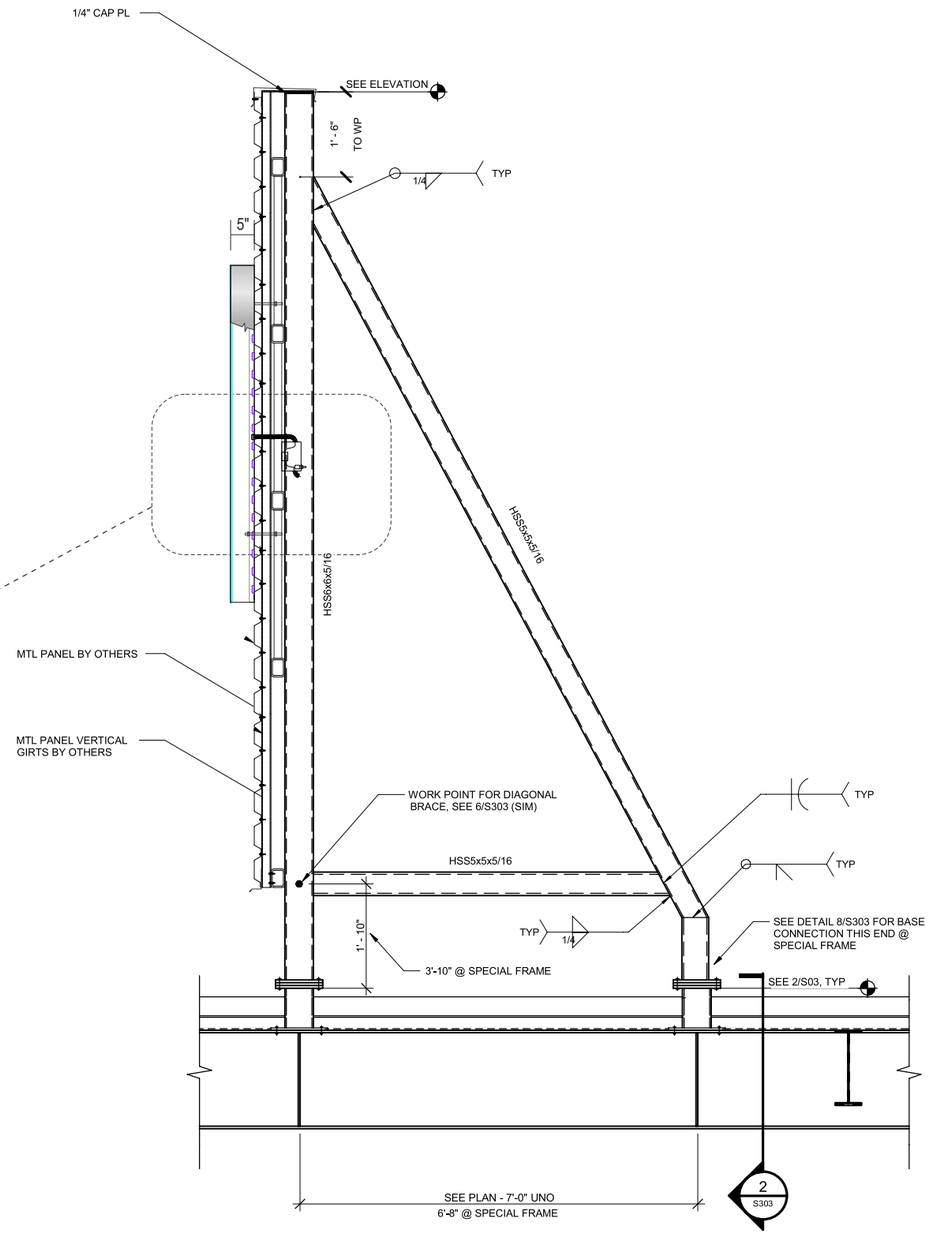


4E WALL SECTION @ AREA WAY (CLINIC)
A411 SCALE 3/32" = 1'-0"

B.1 & B.2 PLACEMENT ON SECTIONS



CROSS SECTION DETAIL
SCALE 1 1/2" = 1'-0"

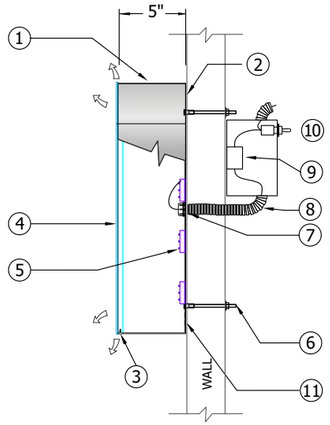


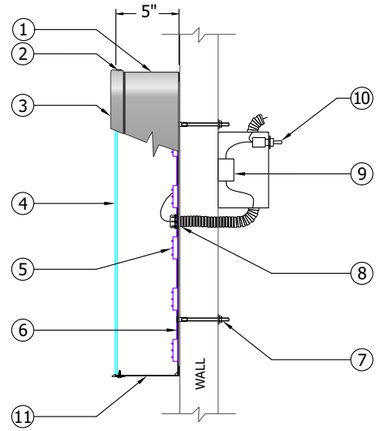
CROSS SECTION
SCALE 3/8" = 1'-0"

B.1 & B.2 CHANNEL LETTERS (QTY. 2)



FRONT VIEW
SCALE 1/4" = 1'-0"





SPECIFICATIONS

1. INDIVIDUAL LED LIT CHANNEL LOGO
   CUSTOM FACE-LIT SIDE HIGHLIGHT
2. DIGITALLY PRINT DIE CUT ELEMENT IN SHIELD, V-1
3. INDIVIDUAL LED LIT CHANNEL LETTERS
   STANDARD FACE-LIT LETTERS W/ TRIMCAP
4. POWER IS OUT AT THE CENTER
5. ATTACHMENT HARDWARE TO BE STAINLESS STEEL

NOTES
- ALL BLOCKING PROVIDED BY MERCYHEALTH

COLORS/FINISHES

- P-6 MP 18094 METALLIC SILVER
- P-7 LEP LIGHT ENHANCING PAINT, LIT LETTER INTERIORS
- V-7 BLOCK OUT VINYL W/ MP MATCH TO PMS 7544C GREY
- V-8 3M WHITE DIFFUSER (2ND SURFACE)

SHIELD DETAIL - REMOTE WIRED FACE LIT SHIELD LOGO
TRIM-LESS EDGE LIT
SCALE: NTS

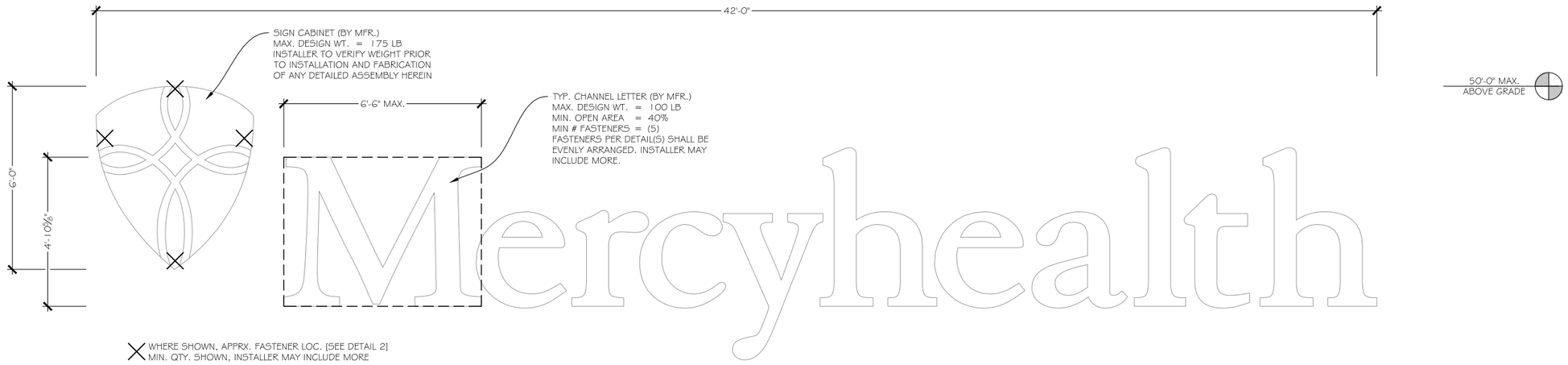
1. .063" X 5" ALUMINUM COIL (WHITE INSIDE P-7) PAINTED P-6
2. WELDED AND SEALED TO .063" ALUMINUM BACK WHITE INSIDE P-7
3. #8 - ½" FLAT HEAD C'SUNK SCREWS PAINTED P-6
4. 1/2" CLEAR ACRYLIC WITH DIGITALLY PRINTED VINYL APPLIED 1ST SURFACE V-7, V-8 DIFFUSER APPLIED 2ND SURFACE
5. LEDs / 1 ROW SECURED TO BACK OF LETTER
6. MOUNTING HARDWARE HLC SLEEVE ANCHOR 1 1/2" EMBEDMENT
7. 7/8" ELECTRICAL HOLE / 3/4" COUPLER WITH FLEXIBLE CONDUIT TO POWER SUPPLY BOX
8. LED POWER SUPPLY INSIDE POWER SUPPLY BOX
9. TOGGLE SWITCH MOUNTED TO POWER SUPPLY BOX
10. 1/4" DIA. WEEP HOLES (BRAKE FORMED ALUMINUM TENT)
11. TO PREVENT LIGHT LEAKS

LETTER DETAIL - REMOTE WIRED FACE LIT CHANNEL LETTERS
SCALE: NTS

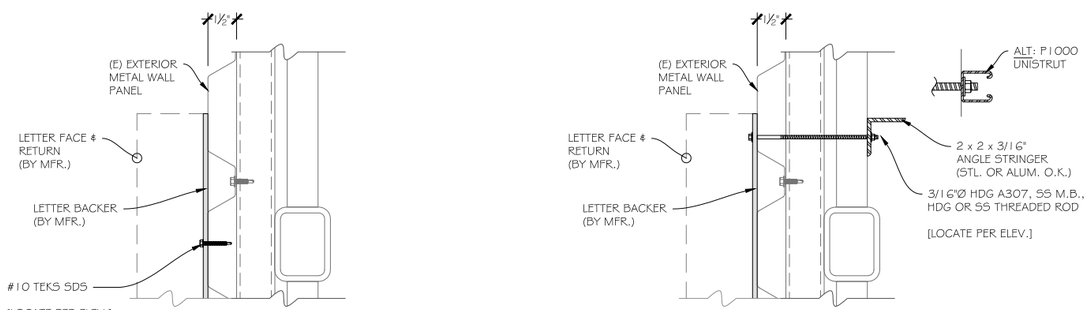
1. .040" X 5" ALUMINUM COIL (WHITE INSIDE P-7) PAINTED P-6
2. #8 - ½" PAN HEAD SCREWS PAINTED P-6
3. 1" JEWELITE CHEMICALLY BONDED TO FACES PAINTED P-6
4. 3/16" WHITE ACRYLIC
5. LEDs / 1 ROW SECURED TO BACK OF LETTER
6. .063" PRE-FINISHED BLK/WHT ALUMINUM BACK
7. MOUNTING HARDWARE HLC SLEEVE ANCHOR 1 1/2" EMBEDMENT
8. 7/8" ELECTRICAL HOLE / 3/4" COUPLER WITH FLEXIBLE CONDUIT TO POWER SUPPLY BOX
9. LED POWER SUPPLY INSIDE POWER SUPPLY BOX
10. TOGGLE SWITCH MOUNTED TO POWER SUPPLY BOX
11. 1/4" DIA. WEEP HOLES (BRAKE FORMED ALUMINUM TENT)
11. TO PREVENT LIGHT LEAKS



NIGHT VIEW
SCALE: NTS



1 SIGN B.1 & B.2 ELEVATION



2 CONNECTION DETAIL

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SAN DIEGO, CA 92101

PREPARED FOR:
MERCYHEALTH

PROJECT #:
2112063

MERCYHEALTH SIGN PACKAGE

ROUTE 31 & THREE OAKS ROAD
CRYSTAL LAKE, IL 60014

No:	Issue/Revision:	Date:
----	Initial Submittal	1-25-2022
1		
2		
3		
4		

LICENSED STRUCTURAL ENGINEER
WILLIAM EDD MITCHELL, JR.
STATE OF ILLINOIS

Murdoch Engineering
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Howell, New Jersey
(973)-570-8215
1/27/22
William E. Mitchell, Jr.
IL Structural Engineer
License #081006535

SHEET TITLE:
STRUCTURAL

SHEET:
S.2

ORIGINAL SHEET SIZE: 11x17

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B.3 & B.4 PLACEMENT ON ELEVATIONS

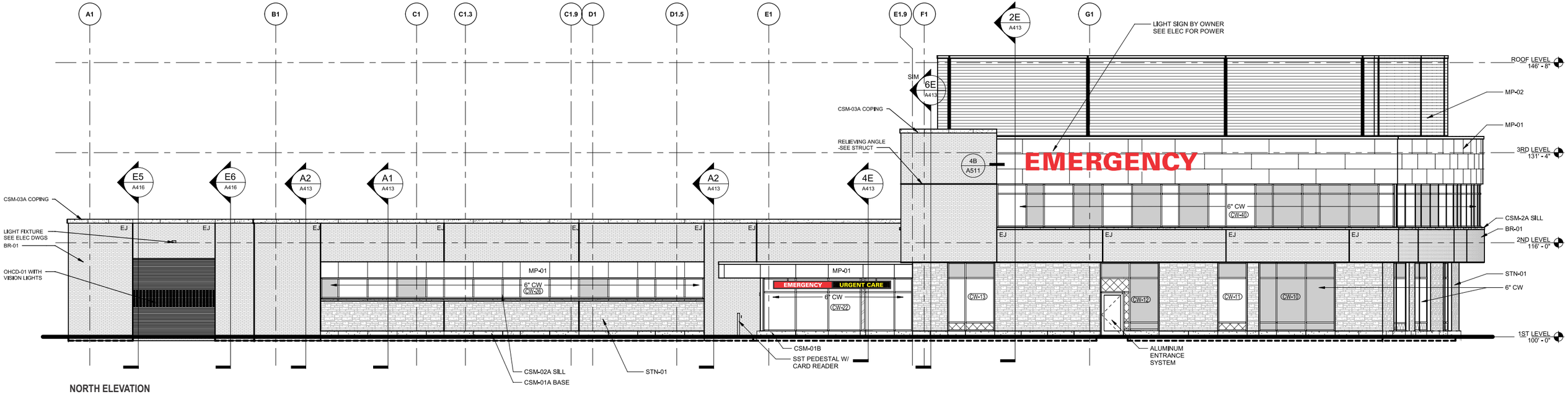


DAYTIME VIEW - NORTH ELEVATION
SCALE 3/64" = 1'-0"



NIGHTTIME VIEW - NORTH ELEVATION
SCALE 3/64" = 1'-0"

B.3 & B.4 PLACEMENT ON ELEVATIONS

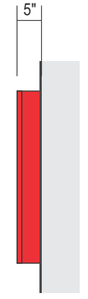


NORTH ELEVATION
SCALE 1/16" = 1'-0"

B.3 CHANNEL LETTERS - EMERGENCY



FRONT VIEW
SCALE 3/8" = 1'-0"



SIDE VIEW
SCALE 3/8" = 1'-0"

SPECIFICATIONS

1. .040" X 5" ALUMINUM COIL (WHITE INSIDE) (SEAMS IN CORNERS OR TOP) P-8
2. ACM BACKS / LETTER LOCKED TO RETURNS
3. WHITE LED'S
4. 3/16" ACRYLIC / V-4
5. 1" PRE-FINISHED JEWELITE CHEMICALLY BONDED TO FACES (SEAMS AT THE TOP) P-8
6. MOUNTING HARDWARE TO SUIT FIELD CONDITIONS
7. #8 - 1/2" PAN HEAD SCREWS (NO MORE THAN 24" APART)
8. 1/4" DIA. WEEP HOLES W/ .063" DRAIN HOLE COVER (EXTERIOR APPLICATIONS ONLY)
9. 7/8" ELECTRICAL HOLE / 3/4" COUPLER WITH FLEXIBLE CONDUIT TO POWER SUPPLY BOX (IN MIDDLE OF LETTER UNLESS NOTED OTHERWISE)
10. LED POWER SUPPLY INSIDE POWER SUPPLY BOX
11. TOGGLE SWITCH MOUNTED TO POWER SUPPLY BOX
12. 15 FT. MIN. WHIP LENGTH

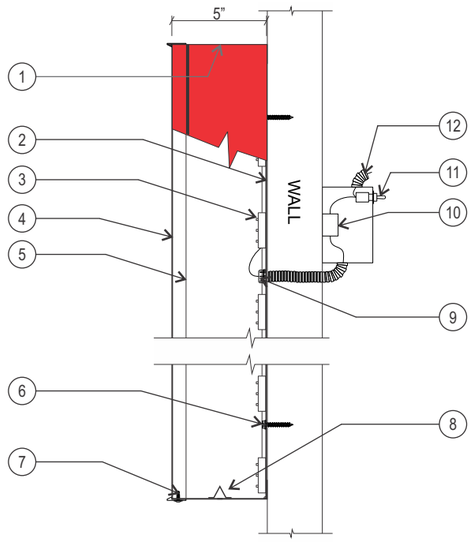
NOTES

- ALL BLOCKING PROVIDED BY MERCYHEALTH

COLORS/FINISHES

P-8 TO MATCH PMS 1797 C

V-4 3M 3630-33 RED TRANSLUCENT



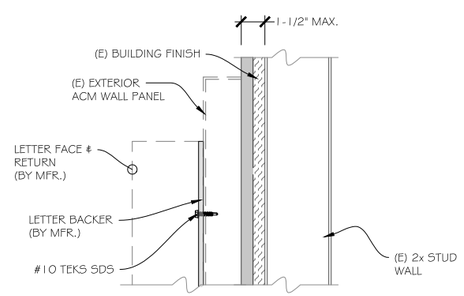
CROSS SECTION VIEW
SCALE 1 1/2" = 1'-0"



NIGHT VIEW
SCALE: NTS



1 SIGN B.3 ELEVATION



2 CONNECTION DETAIL

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PREPARED FOR:
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PROJECT #:
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License #081006535

SHEET TITLE:
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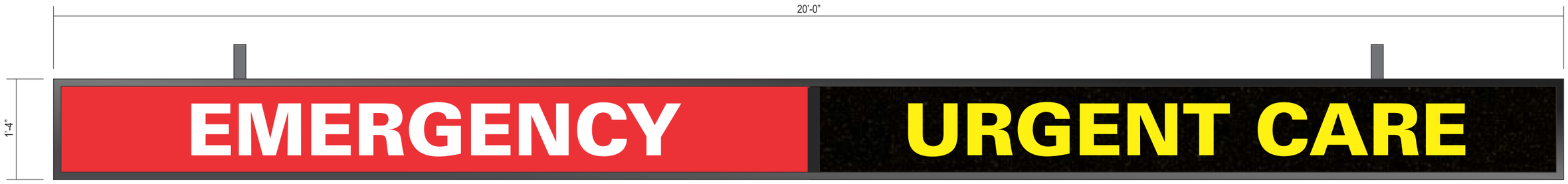
SHEET:
S.3

ORIGINAL SHEET SIZE: 11x17

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B.4 S/F CABINET SIGN - EMERGENCY | URGENT CARE



FRONT VIEW
SCALE 3/4" = 1'-0"

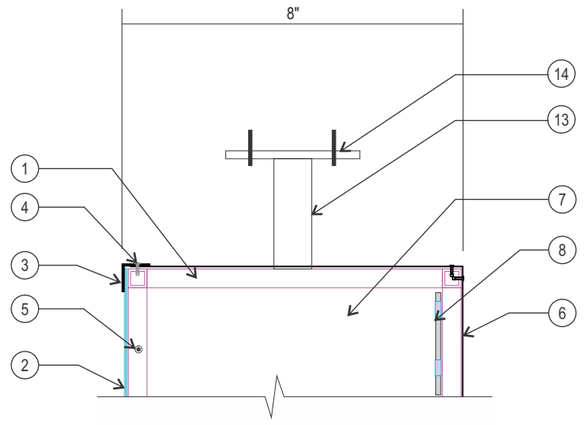
SPECIFICATIONS

1. ALUMINUM TUBE, BUTTED & WELDED
2. WHITE POLYCARBONATE FACES, V-4, V-10, V-11
3. ALUM. RETAINER P-4
4. POP RIVET RETAINER AT TOP & BOTTOM P-4
5. NON-DRILL POINT PAN-HEAD SCREW RETAINER AT SIDES
6. ACM BACK, CAULKED & POP-RIVETED TO FRAME
7. .063" ALUMINUM SKIN AT SIDES, POP RIVETED TO FRAME P-4
8. WHITE LED'S
9. LED POWER SUPPLY
10. TOGGLE SWITCH / SWITCH PLATE
11. ELECTRICAL HOLE
12. 1" X 2" TUBULAR / ANGLE ALUMINUM SUPPORTS ON 4 FT. CENTERS
13. TUBE & PLATE MOUNT TBV AT TOP OF SIGN TO CANOPY P-4
14. MOUNTING HARDWARE TO SUIT FIELD CONDITIONS

NOTES
- ALL BLOCKING PROVIDED BY MERCYHEALTH

COLORS/FINISHES

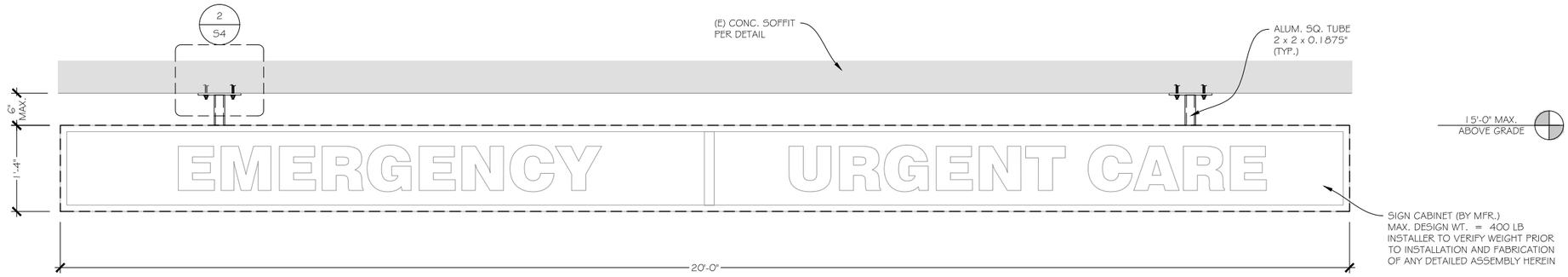
- P-4 MP GUNMETAL GRAY METALLIC
- V-4 3M 3630-33 RED TRANSLUCENT
- V-10 3M 3632-015 YELLOW TRANSLUCENT
- V-11 3M BLACK OPAQUE



CROSS SECTION VIEW
SCALE: NTS



NIGHT VIEW
SCALE: NTS



1 SIGN B.4 ELEVATION

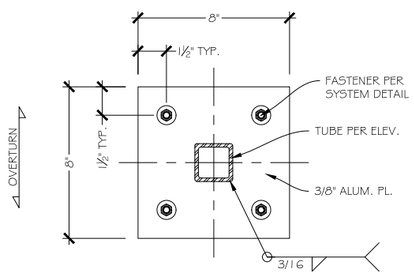
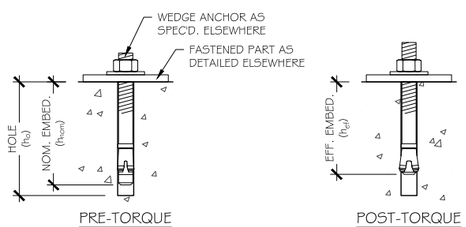
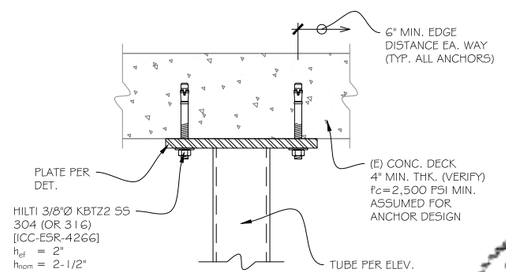


PLATE DETAIL



NOTES:
1. WHERE DISCREPANCIES OCCUR, APPROPRIATE ICC-ESR / LARR SHALL GOVERN.
2. DRILL TO MINIMUM HOLE DEPTH (h_o).
3. DUST AND DEBRIS MUST BE REMOVED FROM HOLE PRIOR TO INSTALLATION.
4. ANCHOR MUST BE HAMMERED INTO HOLE TO ACHIEVE NOMINAL EMBEDMENT (h_{nom}).
5. AFTER ACHIEVING h_{nom}, ANCHOR TO BE TIGHTENED TO SPEC'D TORQUE (T_{inst}).



SYSTEM DETAIL

2 CONNECTION DETAIL

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PROJECT #:

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MERCYHEALTH SIGN PACKAGE

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1/27/22

William E. Mitchell, Jr.
Structural Engineer
License #081006535

WILLIAM EDG
MITCHELL, JR.
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

SHEET TITLE:

STRUCTURAL

SHEET:

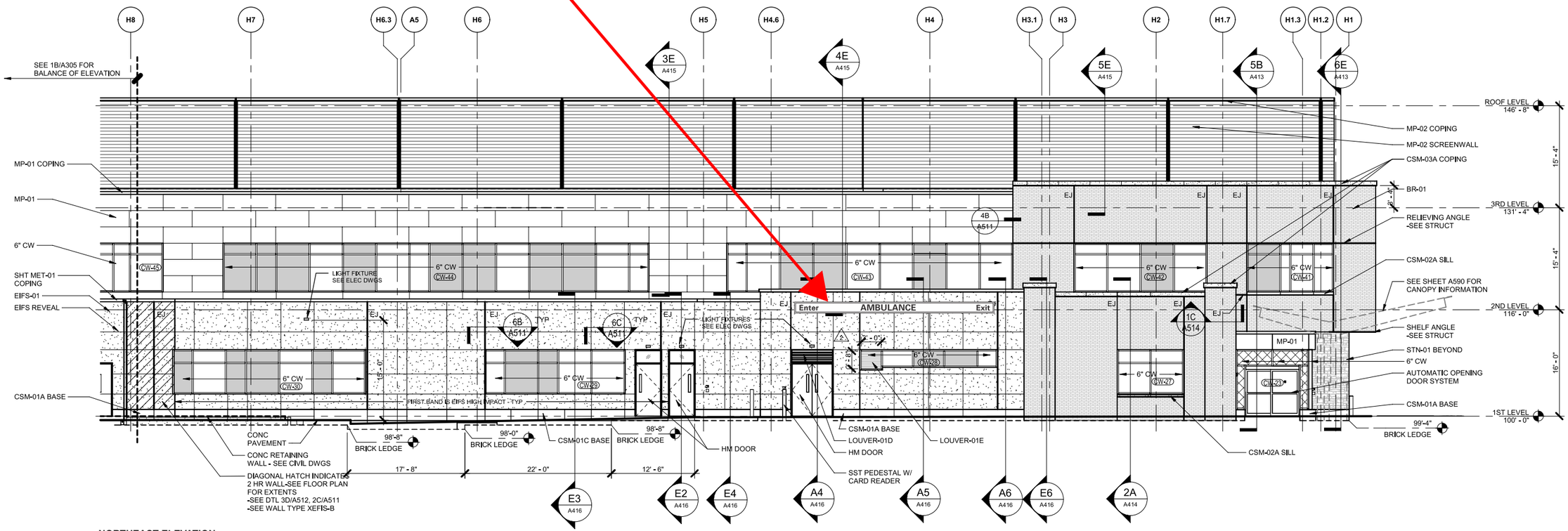
S.4

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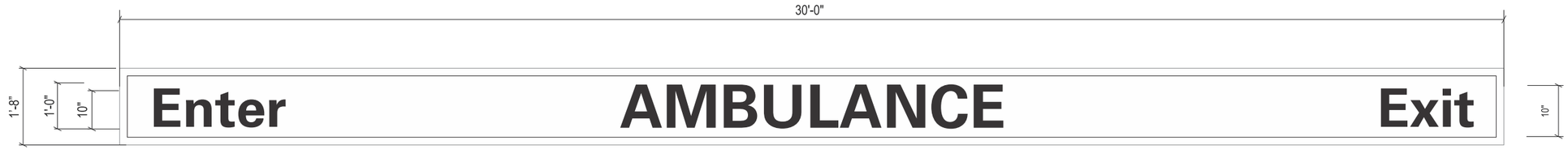
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B.5 PLACEMENT ON ELEVATIONS



NORTHEAST ELEVATION
SCALE 1/16" = 1'-0"

B.5 S/F CABINET SIGN - AMBULANCE



FRONT VIEW
SCALE 3/8" = 1'-0"

SPECIFICATIONS

1. ALUMINUM TUBE, BUTTED & WELDED
2. WHITE POLYCARBONATE FACES, V-11
3. ALUM. RETAINER P-2
4. POP RIVET RETAINER AT TOP & BOTTOM P-2
5. NON-DRILL POINT PAN-HEAD SCREW RETAINER AT SIDES
6. ACM BACK, CAULKED & POP-RIVETED TO FRAME
7. .063" PRE-FINISHED WHITE ALUMINUM SKIN AT SIDES, POP RIVETED TO FRAME
8. WHITE LED'S
9. LED POWER SUPPLY
10. TOGGLE SWITCH / SWITCH PLATE
11. ELECTRICAL HOLE
12. 1" X 2" TUBULAR / ANGLE ALUMINUM SUPPORTS ON 4 FT. CENTERS
13. MOUNTING HARDWARE TO SUIT FIELD CONDITIONS

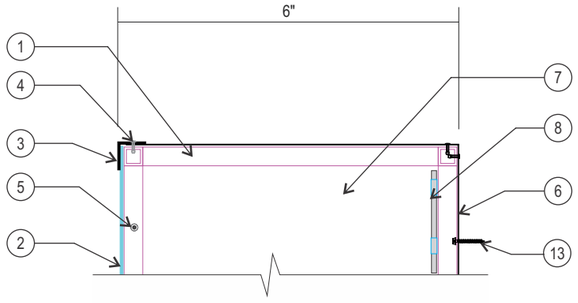
- LOCATION TBD

NOTES
- ALL BLOCKING PROVIDED BY MERCYHEALTH

COLORS/FINISHES

V-11 3M BLACK OPAQUE

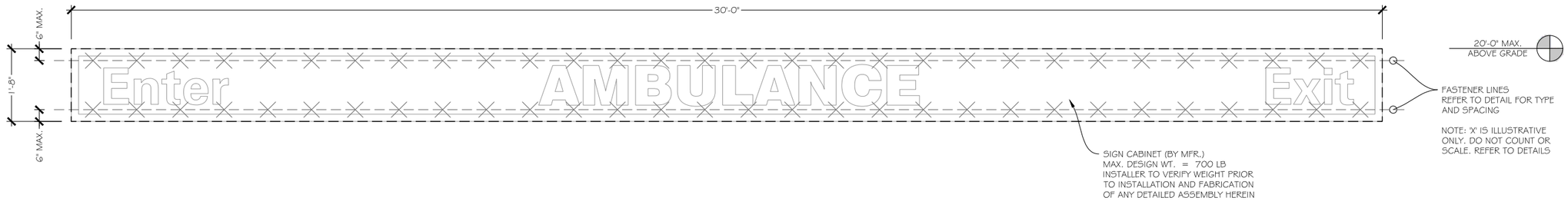
P-2 WHITE



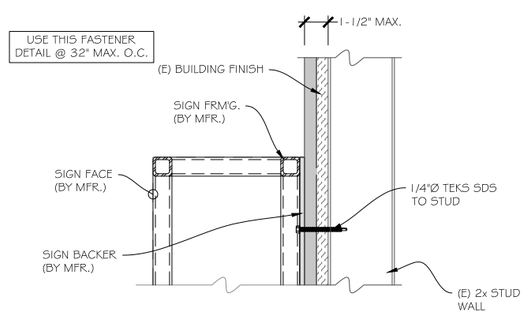
CROSS SECTION VIEW
SCALE: NTS



NIGHT VIEW
SCALE: NTS



1 SIGN B.5 ELEVATION



2 CONNECTION DETAIL

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SAN DIEGO, CA 92101

PREPARED FOR:

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PROJECT #:

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1/27/22

William E. Mitchell, Jr.
IL Structural Engineer
License #081006535

SHEET TITLE:

STRUCTURAL

SHEET:

S.5

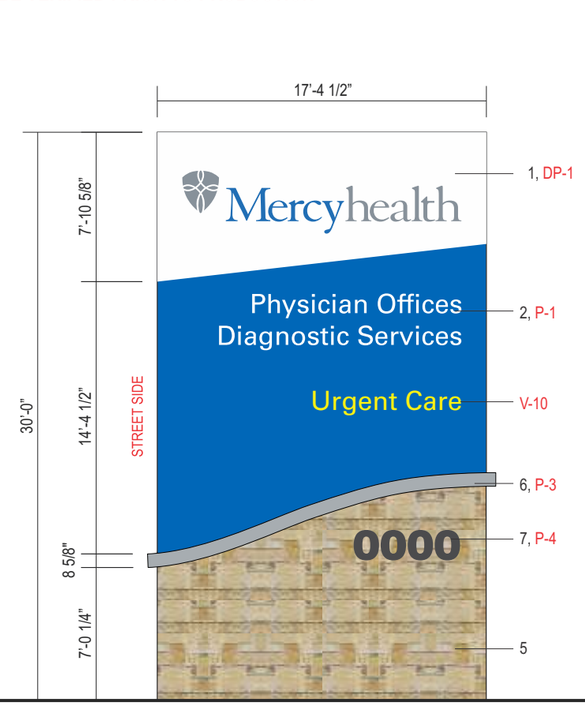
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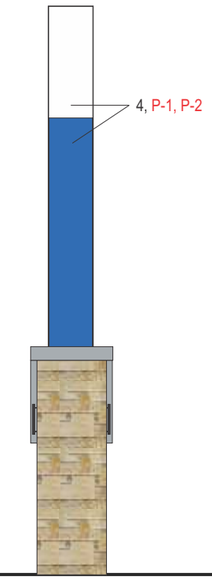
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M.1 & M.2 D/F 30’ MONUMENT SIGN (QTY. 2)

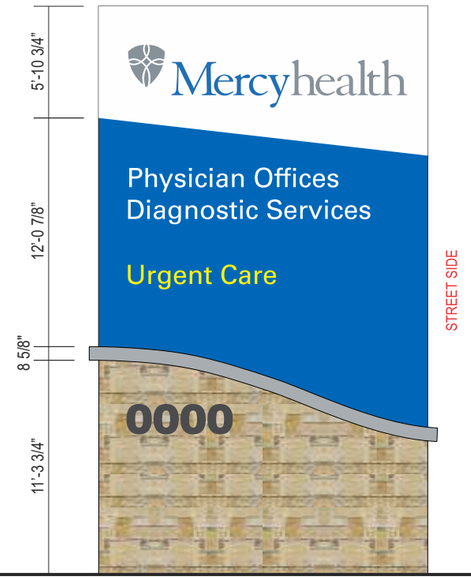
NOTE: ALL COPY TO BE VERIFIED PRIOR TO PRODUCTION



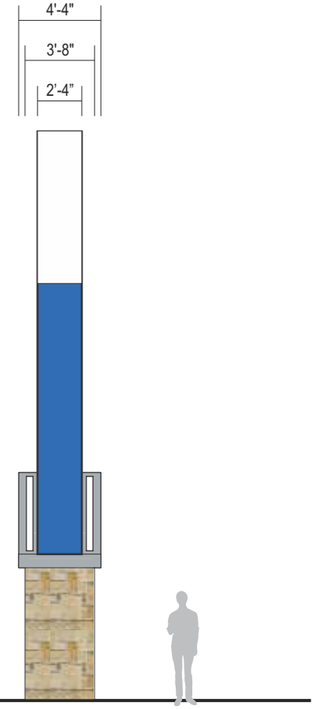
FRONT VIEW
SCALE 1/8” = 1’-0”



END VIEW 1
SCALE 1/8” = 1’-0”



BACK VIEW
SCALE 1/8” = 1’-0”



END VIEW 2
SCALE 1/8” = 1’-0”

SPECIFICATIONS
1. ILLUMINATED RETAINERLESS TOP CABINET
   DIGITAL PRINT FLEX-FACE DP-1
2. FRAMED ALUM. BOTTOM CABINET
   ROUTED ALUM. FACE P-1, COPY BACKED W/ WHITE PLASTIC
3. INTERNALLY LIT W/ WHITE OSRAM BACK PLUS II DS LEDs
4. ENDS CLAD W/ 3MM ACM, P-1, P-2
5. STEEL FRAMED BASE W/ STONE VENEER
6. FABRICATED ALUM. TOP CAP P-3, W/ BLUE LED UPLIGHTING
7. ADDRESS 1/2” FLAT CUT ALUM. STUD MOUNT P-4

NOTES
- STONE IS LOWER AT STREET SIDE
- URGENT CARE IS YELLOW

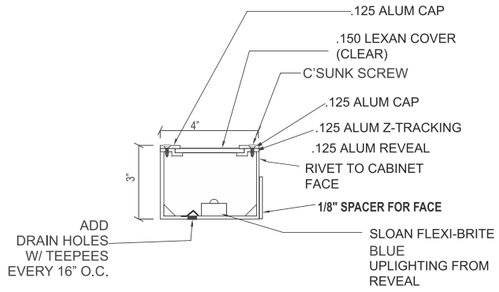
COLORS/FINISHES

cyhealth	DP-1	DIGITALLY PRINTED GRAPHICS PMS 2144 C BLUE & PMS 7544 C GREY ON TRANSLUCENT WHITE VINYL
	P-1	MP MATCH TO PMS 2144 C BLUE
	P-2	MP WHITE
	P-3	MP MATCH TO PMS 7544C GREY
	P-4	MP GUNMETAL GRAY METALLIC
	V-10	3M 3632-015 YELLOW TRANSLUCENT

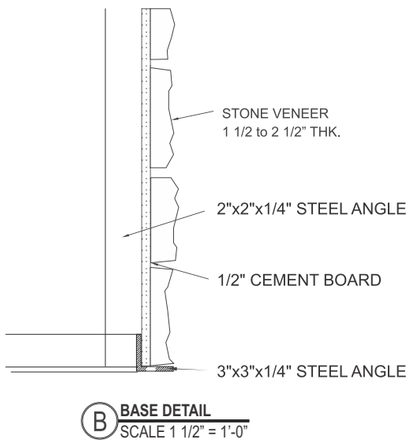


NIGHT VIEW
SCALE: NTS

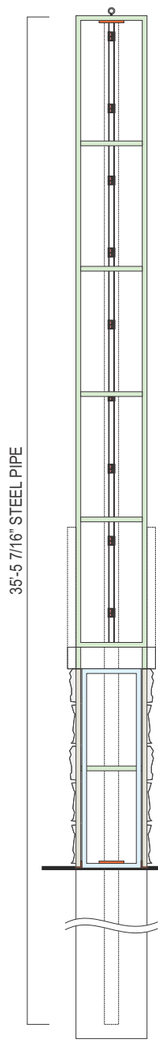
M.1 & M.2 D/F 30’ MONUMENT SIGN STRUCTURE AND ELECTRIC

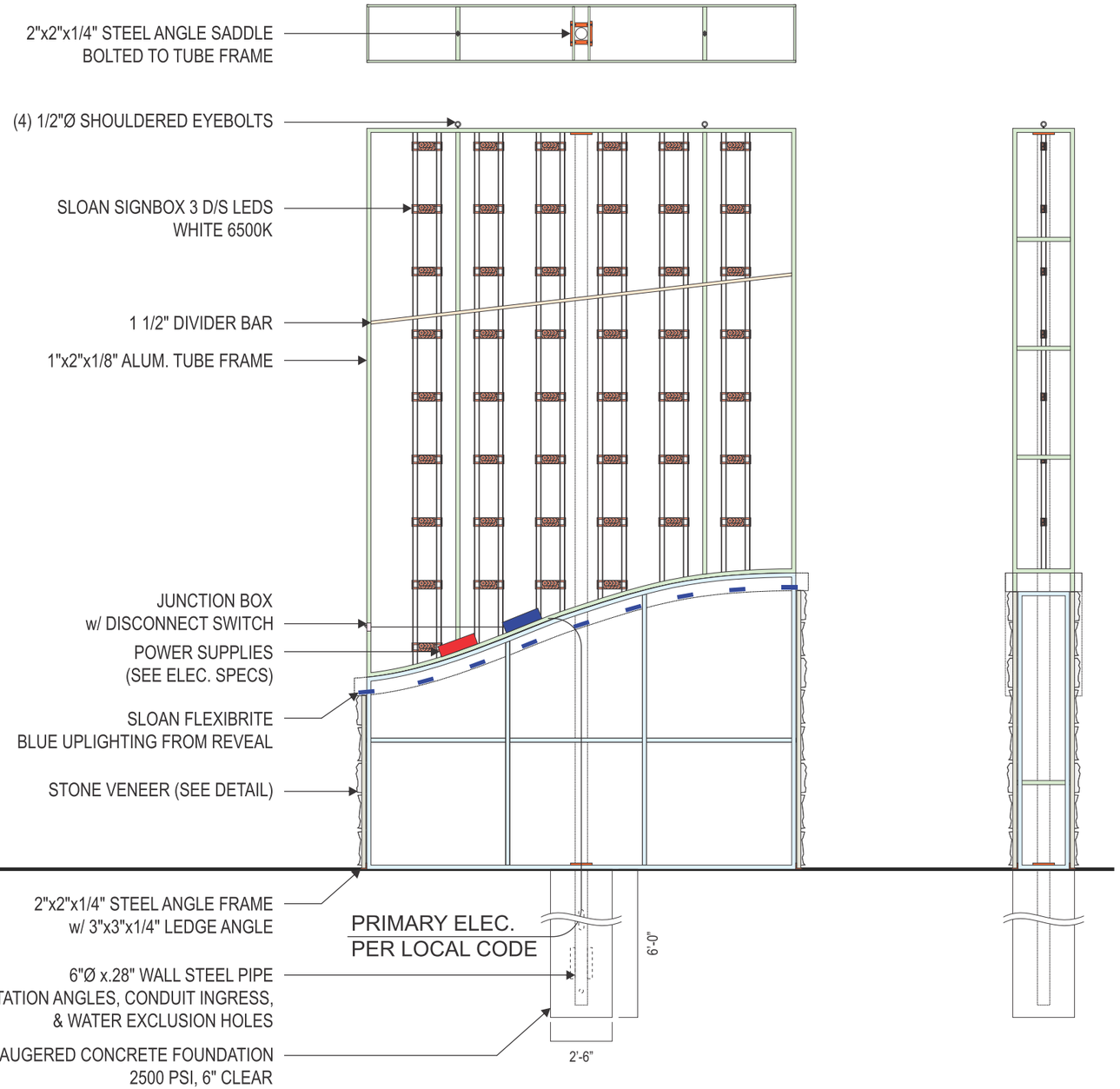


A **4 5/8” REVEAL DETAIL**
SCALE 3” = 1’-0”



B **BASE DETAIL**
SCALE 1 1/2” = 1’-0”



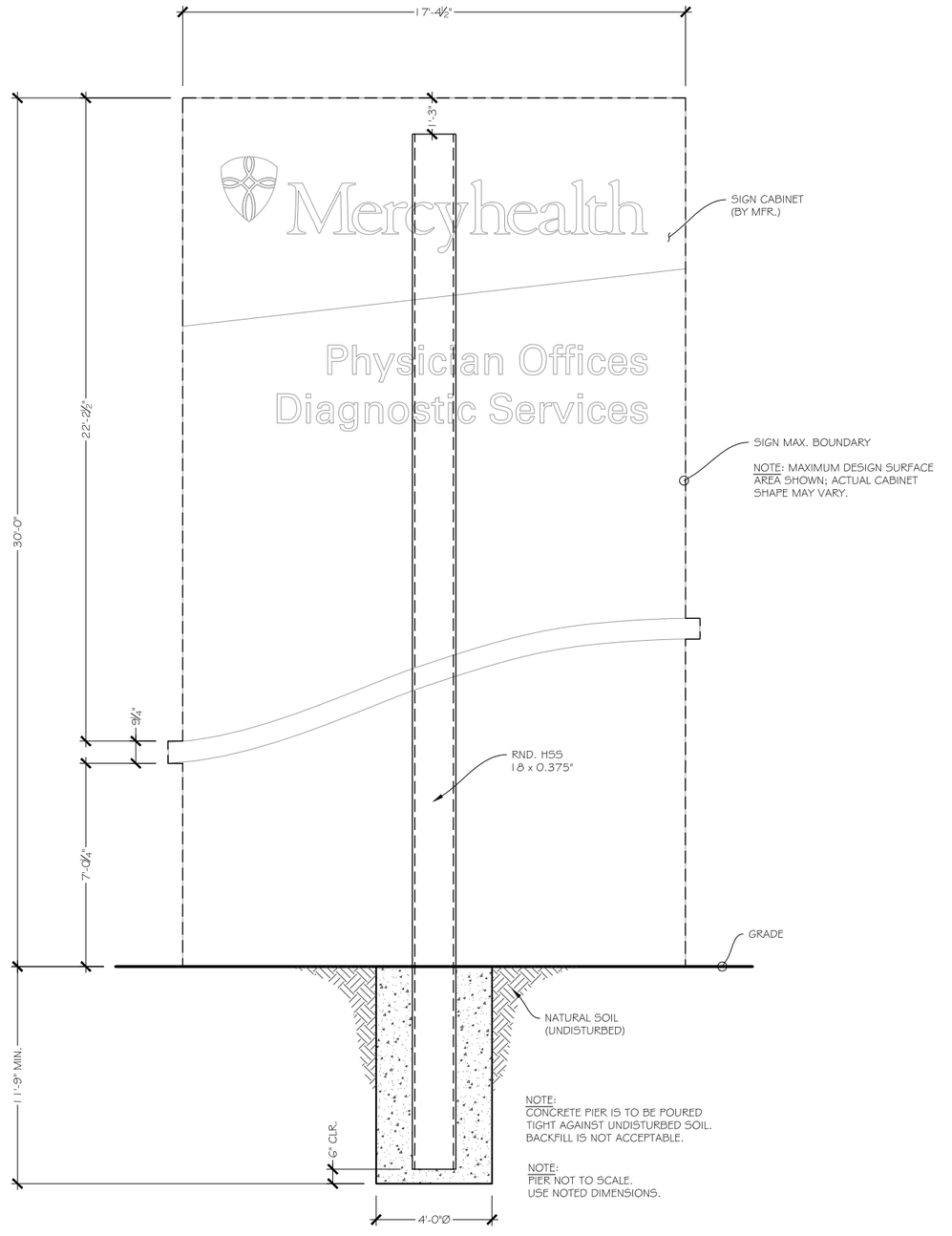


2 **LEFT END**
SCALE 3/16” = 1’-0”

3 **FRONT VIEW**
SCALE 3/16” = 1’-0”

4 **RIGHT END**
SCALE 3/16” = 1’-0”

ELECTRICAL SPECS
(54) SLOAN SIGNBOX 3 D/S LEDS - 6500K WHITE
(3) SLOAN 100W @ 24V POWER SUPPLIES (1.3A / EA.)
(16') SLOAN FLEXIBRITE BLUE LEDS
(1) SLOAN 60W @ 12V POWER SUPPLY (.85A / EA.)
SIGN TOTAL: 4.75A @ 277V



1 SIGN M.1 & M.2 ELEVATION

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SHEET TITLE:

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SHEET:

S.6

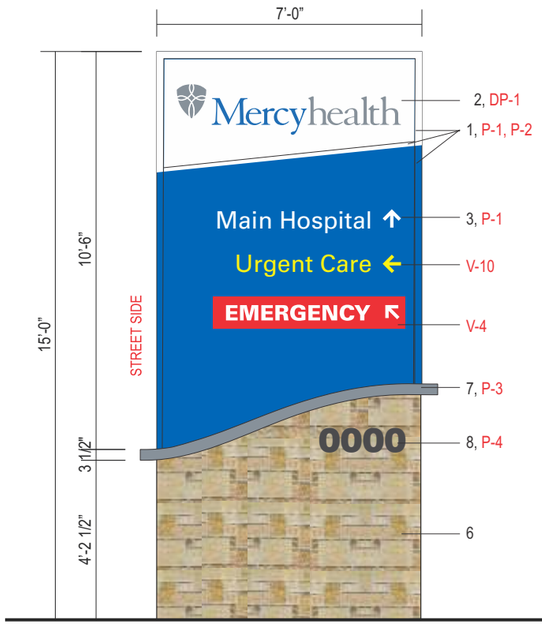
ORIGINAL SHEET SIZE: 11x17

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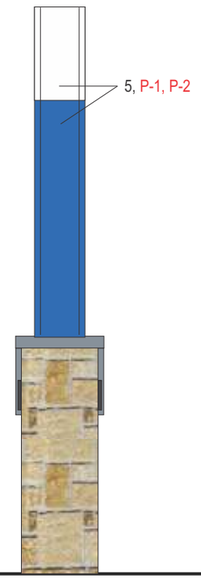
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M.3 D/F 15’ MONUMENT SIGN

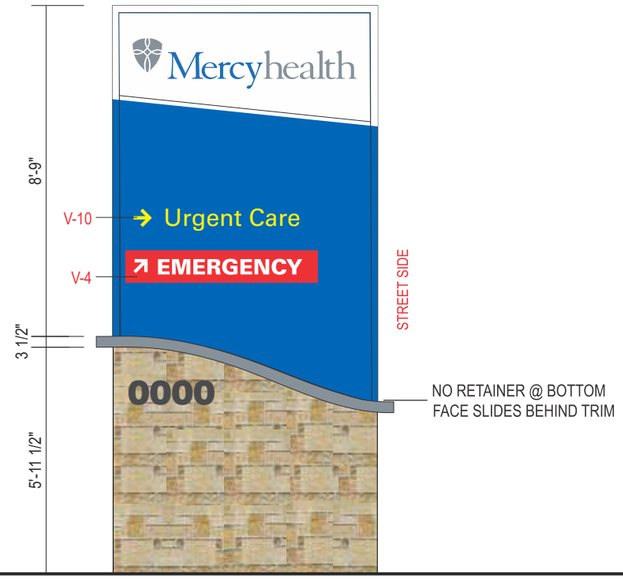
NOTE: ALL COPY TO BE VERIFIED PRIOR TO PRODUCTION



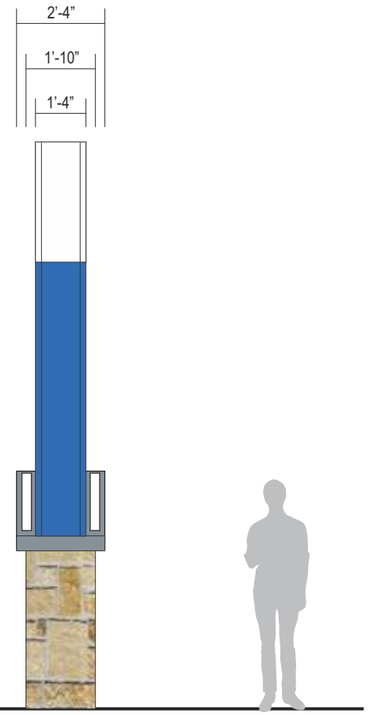
FRONT VIEW
SCALE 1/4” = 1’-0”



END VIEW 1
SCALE 1/4” = 1’-0”



BACK VIEW
SCALE 1/4” = 1’-0”



END VIEW 2
SCALE 1/4” = 1’-0”

SPECIFICATIONS
1. ILLUMINATED CABINET & 2” X 2” BREAK-FORMED RETAINERS & 1 1/2” DIVIDER P-1, P-2
2. TOP FACE: WHITE POLYCARBONATE W/ DIGITALLY PRINTED GRAPHICS DP-1
3. BOTTOM FACE: ALUM. P-1 W/ ROUTED COPY BACKED W/ WHITE POLYCARBONATE
4. INTERNALLY LIT W/ WHITE SLOAN SIGNBOX II DS LEDs
5. ENDS CLAD W/ 3MM ACM, P-1, P-2
6. STEEL FRAMED BASE W/ STONE VENEER
7. FABRICATED ALUM. TOP CAP P-3, W/ BLUE LED UPLIGHTING
8. ADDRESS 1/2” FLAT CUT ALUM. STUD MOUNT P-4

NOTES
- STONE IS LOWER AT STREET SIDE
- URGENT CARE IS YELLOW

COLORS/FINISHES

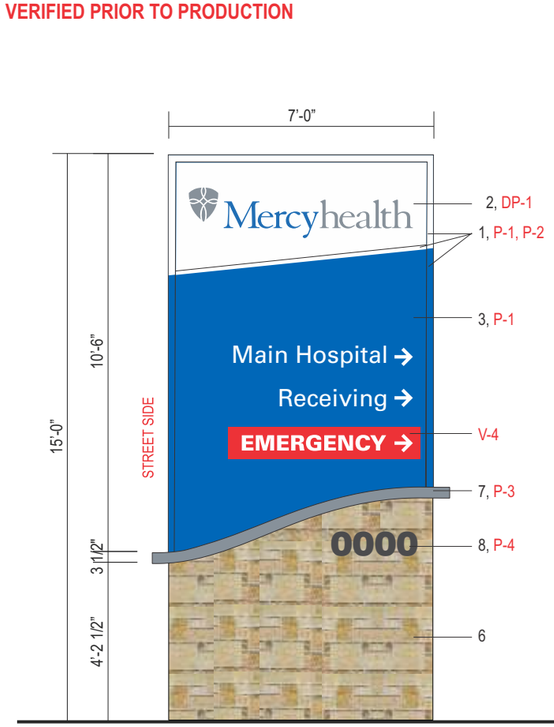
	DP-1	DIGITALLY PRINTED GRAPHICS PMS 2144 C BLUE & PMS 7544 C GREY ON TRANSLUCENT WHITE VINYL
	P-1	MP MATCH TO PMS 2144 C BLUE
	P-2	MP WHITE
	P-3	MP MATCH TO PMS 7544C GREY
	P-4	MP GUNMETAL GRAY METALLIC
	V-4	3M 3630-33 RED TRANSLUCENT
	V-10	3M 3632-015 YELLOW TRANSLUCENT



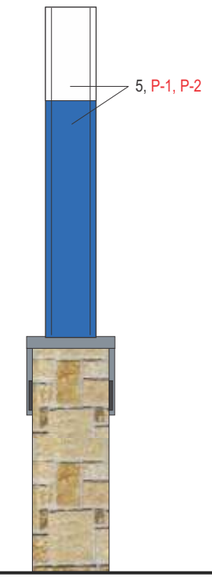
NIGHT VIEW
SCALE: NTS

M.4 D/F 15’ MONUMENT SIGN

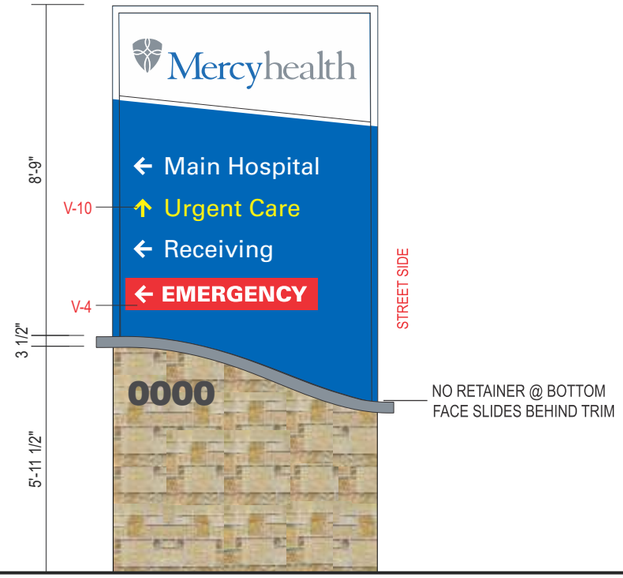
NOTE: ALL COPY TO BE VERIFIED PRIOR TO PRODUCTION



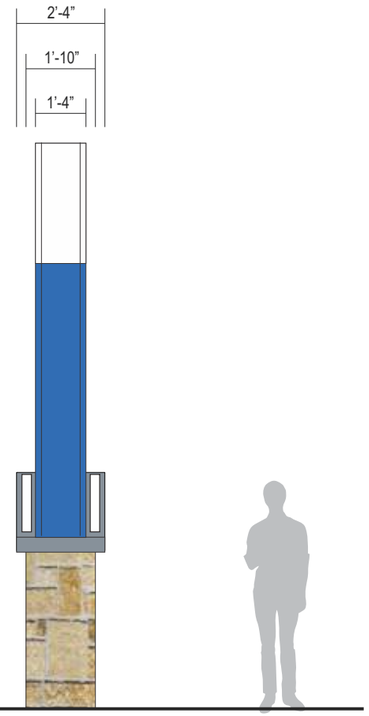
FRONT VIEW
SCALE 1/4” = 1’-0”



END VIEW 1
SCALE 1/4” = 1’-0”



BACK VIEW
SCALE 1/4” = 1’-0”



END VIEW 2
SCALE 1/4” = 1’-0”

SPECIFICATIONS
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2. TOP FACE: WHITE POLYCARBONATE W/ DIGITALLY PRINTED GRAPHICS DP-1
3. BOTTOM FACE: ALUM. P-1 W/ ROUTED COPY BACKED W/ WHITE POLYCARBONATE
4. INTERNALLY LIT W/ WHITE SLOAN SIGNBOX II DS LEDs
5. ENDS CLAD W/ 3MM ACM, P-1, P-2
6. STEEL FRAMED BASE W/ STONE VENEER
7. FABRICATED ALUM. TOP CAP P-3, W/ BLUE LED UPLIGHTING
8. ADDRESS 1/2” FLAT CUT ALUM. STUD MOUNT P-4

NOTES
- STONE IS LOWER AT STREET SIDE
- URGENT CARE IS YELLOW

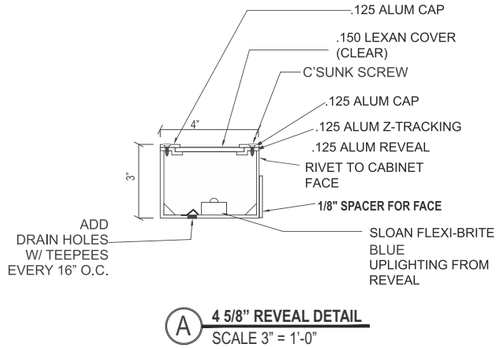
COLORS/FINISHES

Mercyhealth	DP-1	DIGITALLY PRINTED GRAPHICS PMS 2144 C BLUE & PMS 7544 C GREY ON TRANSLUCENT WHITE VINYL
	P-1	MP MATCH TO PMS 2144 C BLUE
	P-2	MP WHITE
	P-3	MP MATCH TO PMS 7544C GREY
	P-4	MP GUNMETAL GRAY METALLIC
	V-4	3M 3630-33 RED TRANSLUCENT
	V-10	3M 3632-015 YELLOW TRANSLUCENT

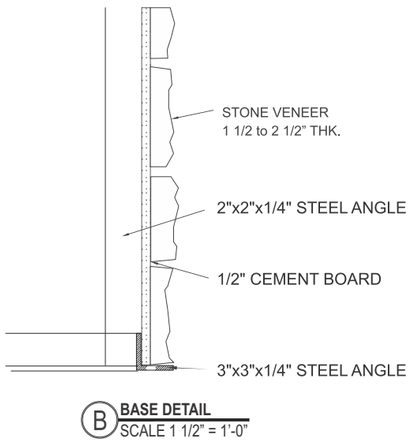


NIGHT VIEW
SCALE: NTS

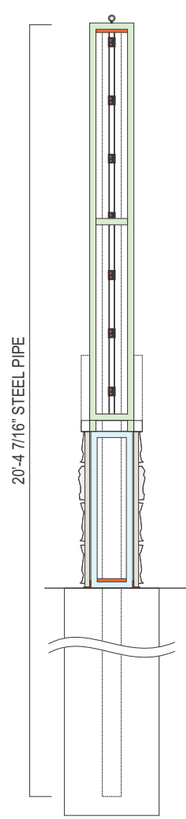
M.3 AND M.4 D/F 15’ MONUMENT SIGN STRUCTURE AND ELECTRIC



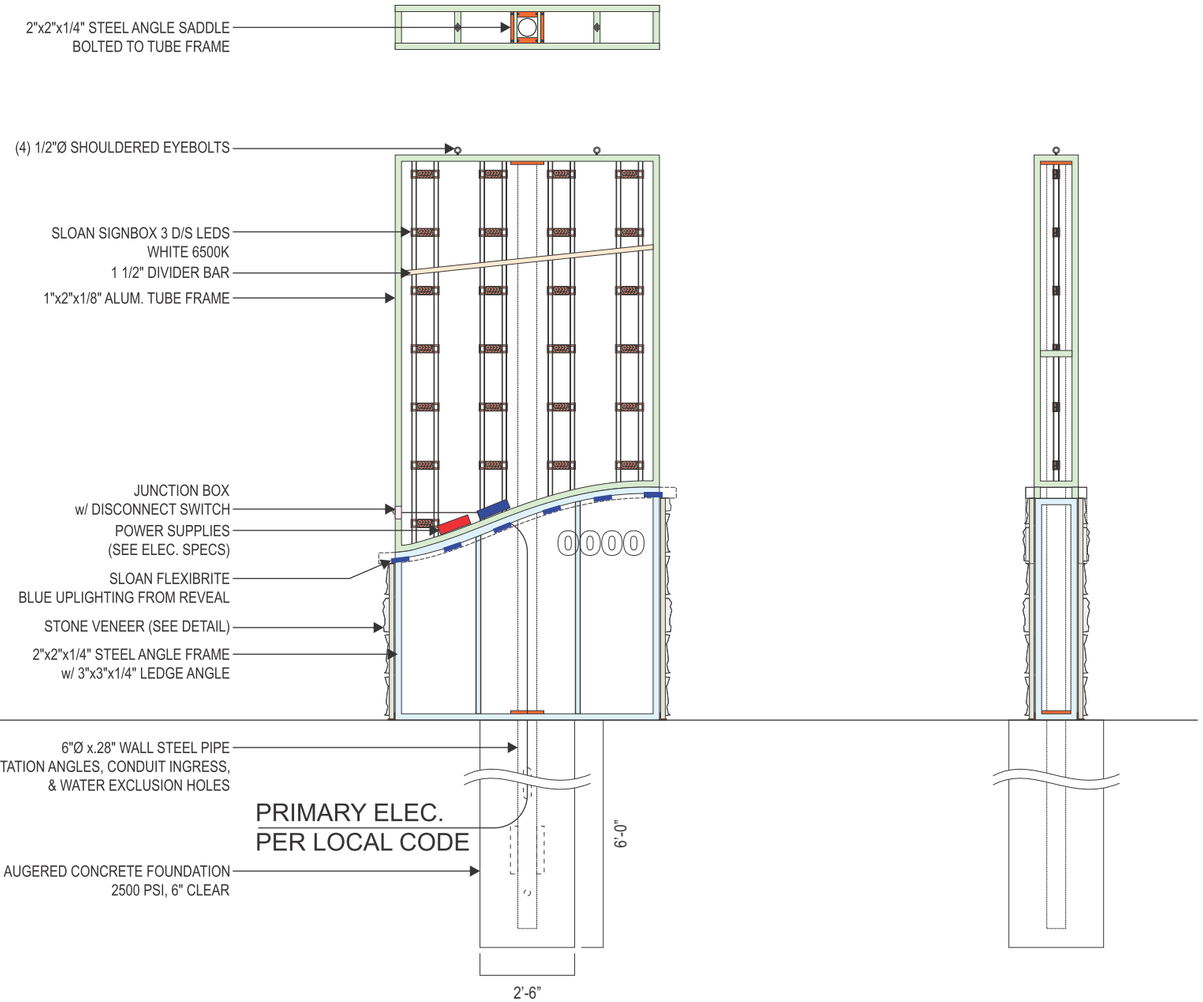
A **4 5/8” REVEAL DETAIL**
SCALE 3” = 1’-0”



B **BASE DETAIL**
SCALE 1 1/2” = 1’-0”



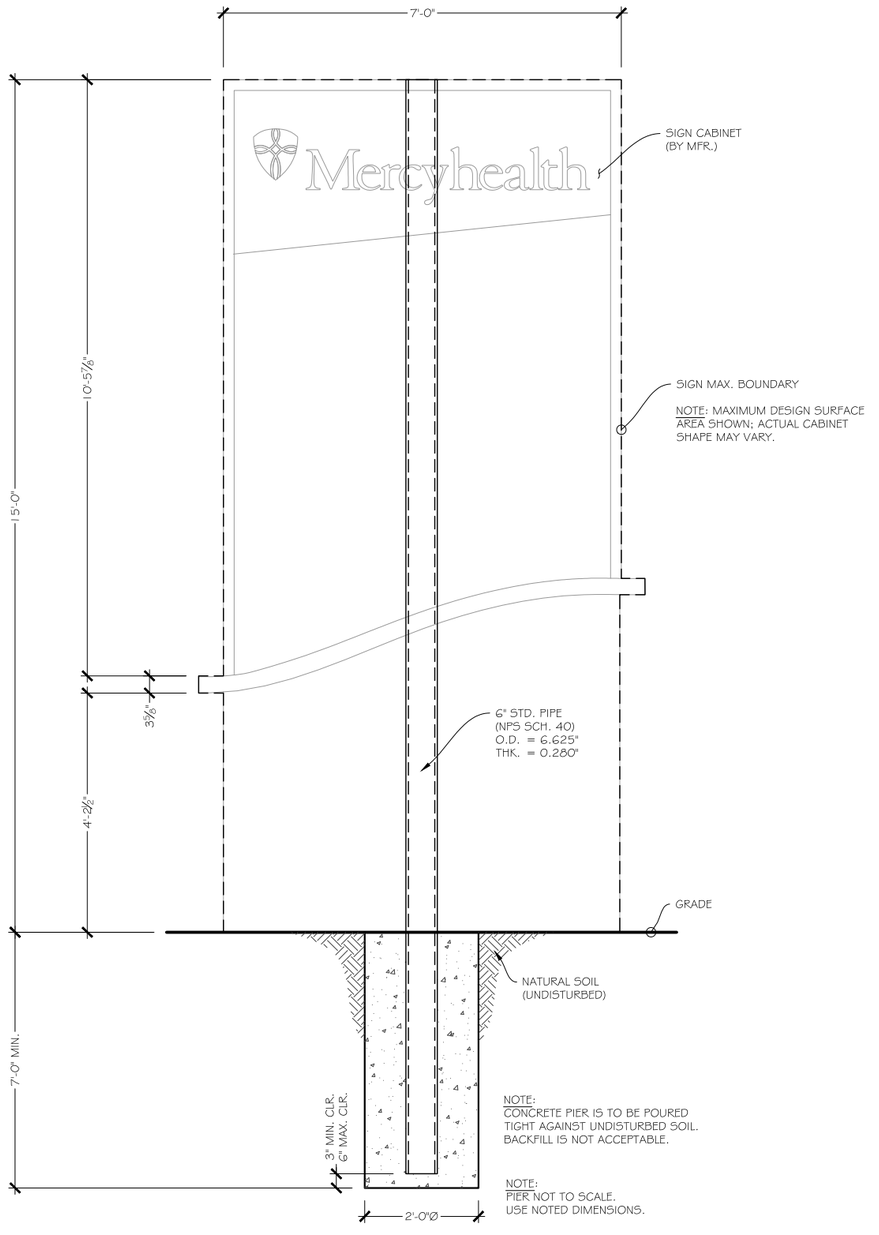
2 **LEFT END**
SCALE 1/4” = 1’-0”



3 **FRONT VIEW**
SCALE 1/4” = 1’-0”

4 **RIGHT END**
SCALE 1/4” = 1’-0”

ELECTRICAL SPECS
(54) SLOAN SIGNBOX 3 D/S LEDS - 6500K WHITE
(3) SLOAN 100W @ 24V POWER SUPPLIES (1.3A / EA.)
(16’) SLOAN FLEXIBRITE BLUE LEDS
(1) SLOAN 60W @ 12V POWER SUPPLY (.85A / EA.)
SIGN TOTAL: 4.75A @ 277V



1 SIGN M.3 & M.4 ELEVATION

REVERENCE ENGINEERING
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600 B STREET, STE 300
SAN DIEGO, CA 92101

PREPARED FOR:

MERCYHEALTH

PROJECT #:

2112063

MERCYHEALTH SIGN PACKAGE

ROUTE 31 & THREE OAKS ROAD
CRYSTAL LAKE, IL 60014

No:	Issue/Revision:	Date:
----	Initial Submittal	1-25-2022
1		
2		
3		
4		

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(973)-570-8215

1/27/22

William E. Mitchell, Jr.
IL Structural Engineer
License #081006535

SHEET TITLE:

STRUCTURAL

SHEET:

S.7

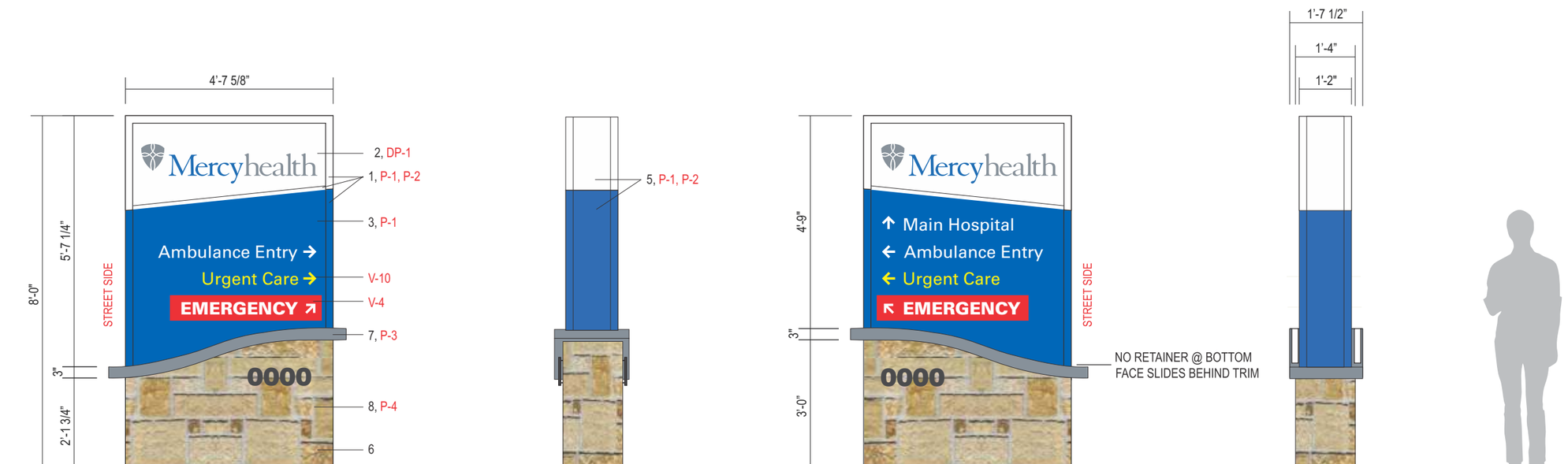
ORIGINAL SHEET SIZE: 11x17

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D.1, D.2, D.3, D.4, & D.5 D/F 8’ DIRECTIONAL SIGN (QTY. 5)

NOTE: ALL COPY TO BE VERIFIED PRIOR TO PRODUCTION



FRONT VIEW
SCALE 3/8” = 1’-0”

END VIEW 1
SCALE 3/8” = 1’-0”

BACK VIEW
SCALE 3/8” = 1’-0”

END VIEW 2
SCALE 3/8” = 1’-0”

SPECIFICATIONS

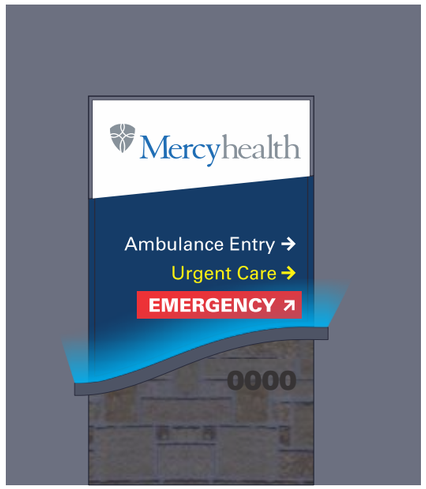
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7. FABRICATED ALUM. TOP CAP P-3, W/ BLUE LED UPLIGHTING
8. ADDRESS 1/2” FLAT CUT ALUM. STUD MOUNT P-4

NOTES

- STONE IS LOWER AT STREET SIDE
- URGENT CARE IS YELLOW

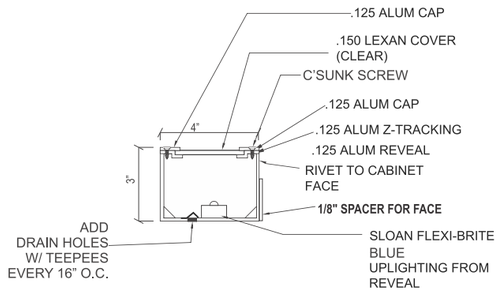
COLORS/FINISHES

Syhealth	DP-1	DIGITALLY PRINTED GRAPHICS PMS 2144 C BLUE & PMS 7544 C GREY ON TRANSLUCENT WHITE VINYL
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	V-4	3M 3630-33 RED TRANSLUCENT
	V-10	3M 3632-015 YELLOW TRANSLUCENT

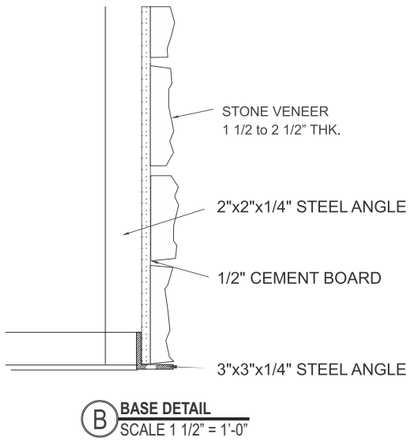


NIGHT VIEW (EXAMPLE ONLY)
SCALE: NTS

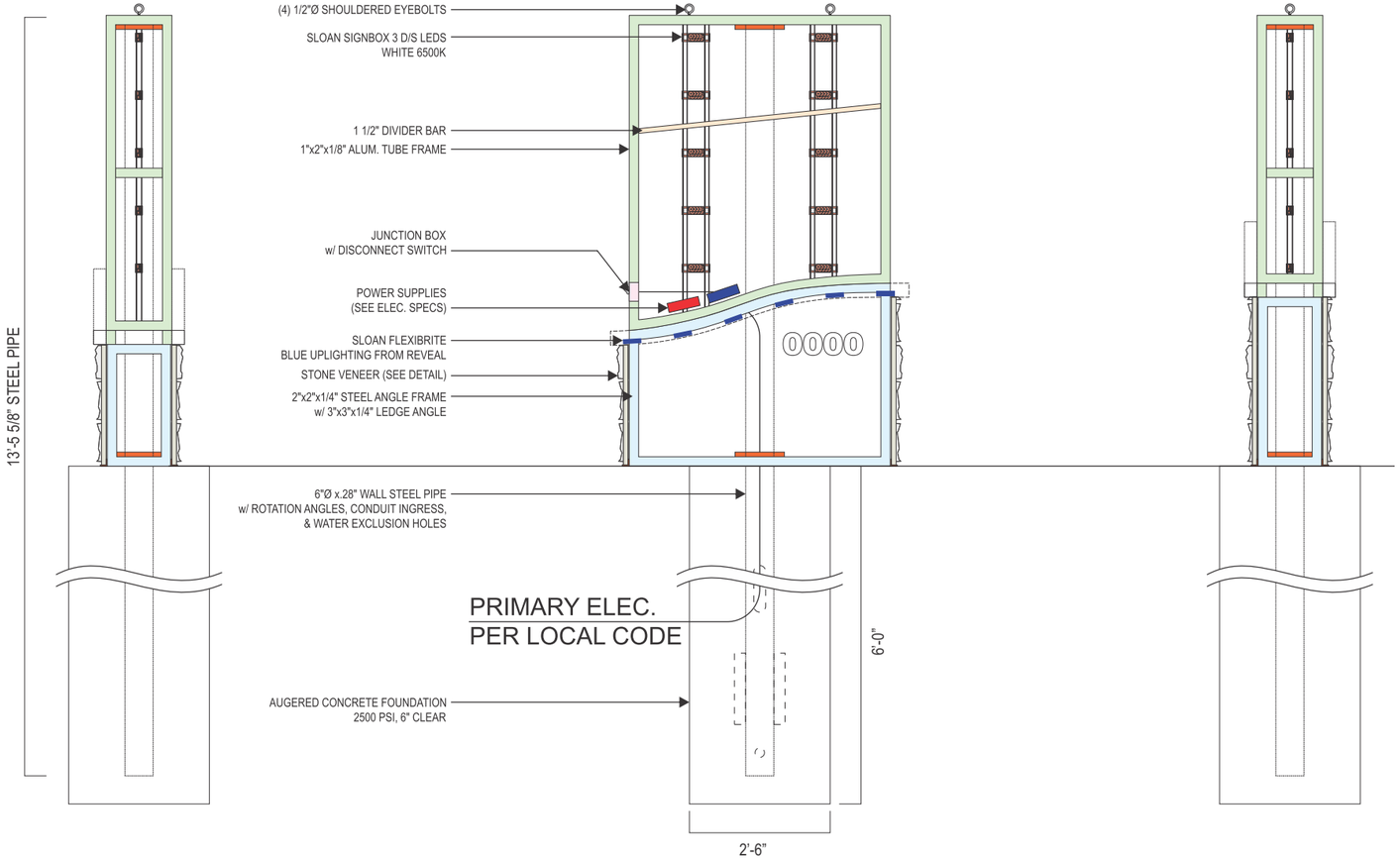
D.1, D.2, D.3, D.4, & D.5 D/F 8’ DIRECTIONAL STRUCTURE AND ELECTRIC



A **4 5/8” REVEAL DETAIL**
SCALE 3” = 1’-0”



B **BASE DETAIL**
SCALE 1 1/2” = 1’-0”

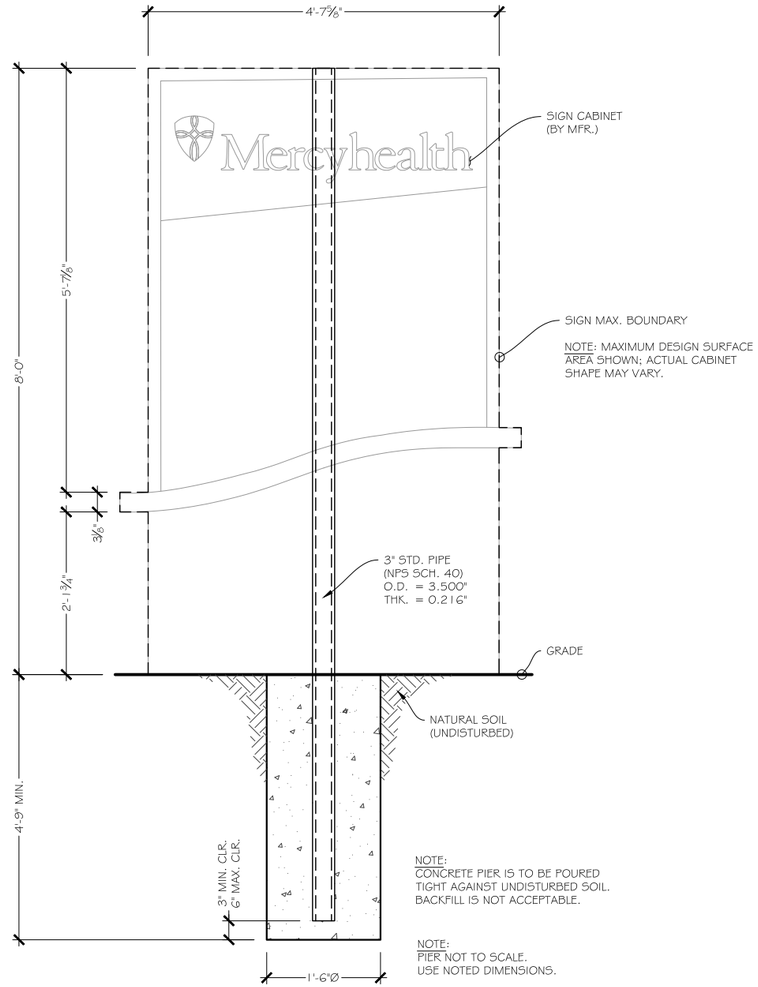


2 **LEFT END**
SCALE 3/8” = 1’-0”

3 **FRONT VIEW**
SCALE 3/8” = 1’-0”

4 **RIGHT END**
SCALE 3/8” = 1’-0”

ELECTRICAL SPECS
(54) SLOAN SIGNBOX 3 D/S LEDS - 6500K WHITE
(3) SLOAN 100W @ 24V POWER SUPPLIES (1.3A / EA.)
(16’) SLOAN FLEXIBRITE BLUE LEDS
(1) SLOAN 60W @ 12V POWER SUPPLY (.85A / EA.)
SIGN TOTAL: 4.75A @ 277V



1 ELEVATION (QTY.=5)

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600 B STREET, STE 300
SAN DIEGO, CA 92101

PREPARED FOR:

MERCYHEALTH

PROJECT #:

2112063

MERCYHEALTH SIGN PACKAGE

ROUTE 31 & THREE OAKS ROAD
CRYSTAL LAKE, IL 60014

No:	Issue/Revision:	Date:
----	Initial Submittal	1-25-2022
1		
2		
3		
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LICENSED STRUCTURAL ENGINEER
WILLIAM EDD MITCHELL, JR.
STATE OF ILLINOIS

Murdoch Engineering
2 Hummingbird Ct.
Howell, New Jersey
(973)-570-8215

1/27/22

William E. Mitchell, Jr.
IL Structural Engineer
License #081006535

SHEET TITLE:

STRUCTURAL

SHEET:

S.8

ORIGINAL SHEET SIZE: 11x17

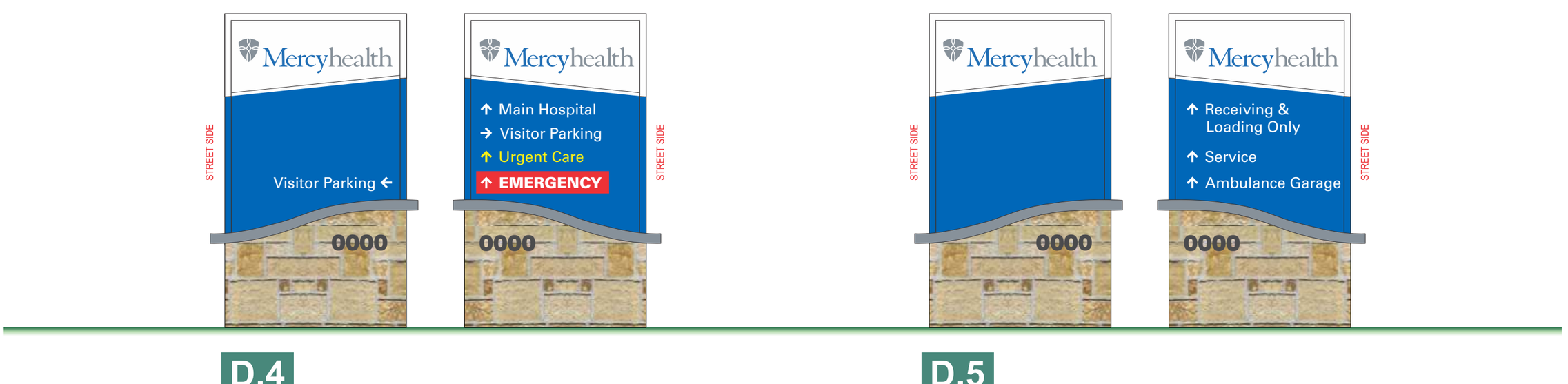
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D.1, D.2, D.3, D.4, & D.5 D/F 8’ DIRECTIONAL SIGN MESSAGE LAYOUTS

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Mercyhealth Crystal Lake Hospital- 30' high Monument Site Line Diagram



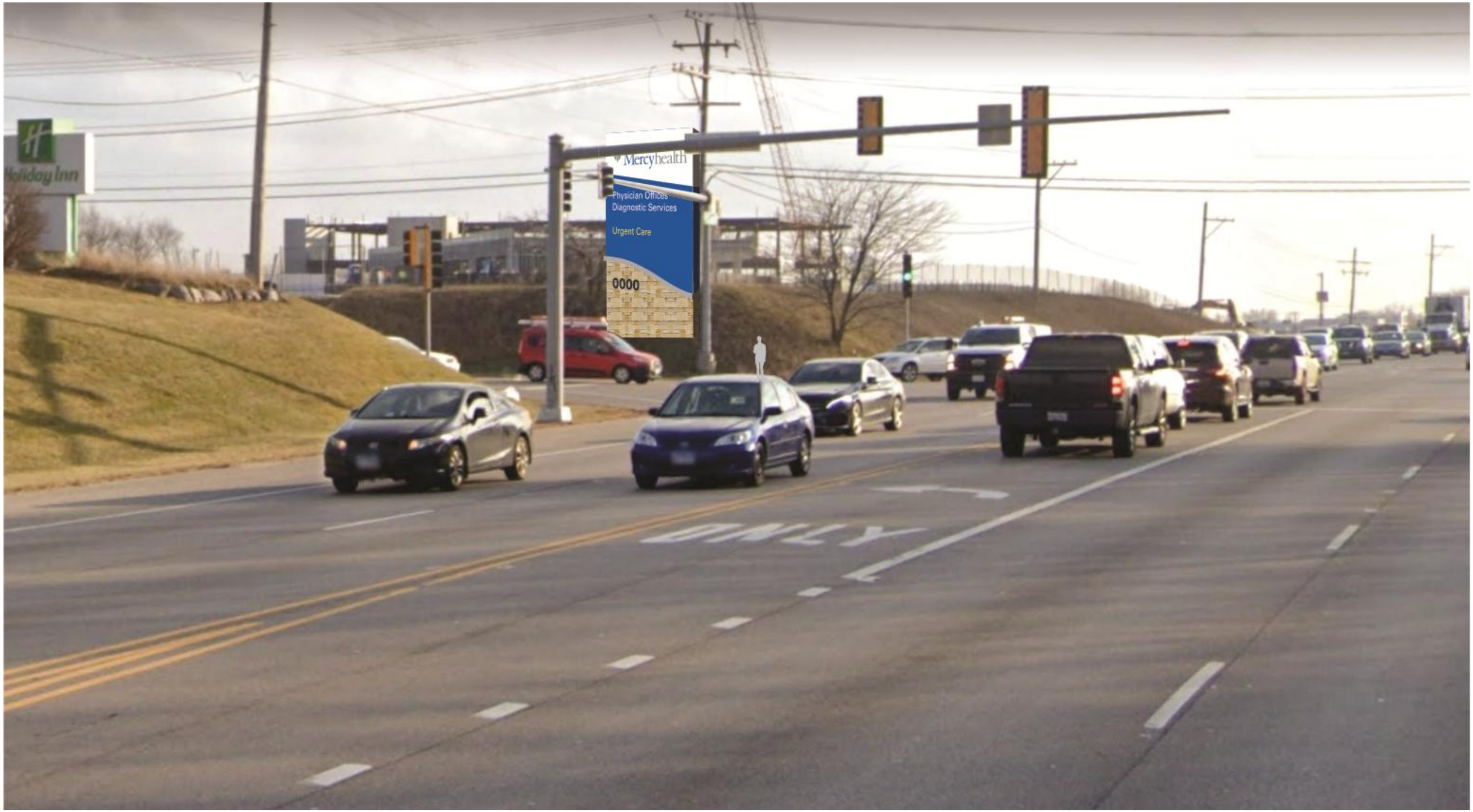
Mercyhealth Crystal Lake Hospital- 30' high M.1 Monument Sign Visibility
View from 1,000ft Southbound Route 31 approaching Three Oaks Road



Mercyhealth Crystal Lake Hospital- 30' high M.1 Monument Sign Visibility
View from 500ft Southbound Route 31 approaching Three Oaks Road



Mercyhealth Crystal Lake Hospital- 30' high M.1 Monument Sign Visibility
View from 200ft Southbound Route 31 approaching Three Oaks Road



Mercyhealth Crystal Lake Hospital- 30' high M.2 Monument Sign Visibility
View from 1,000ft Northbound Route 31 approaching Raymond Drive



Mercyhealth Crystal Lake Hospital- 30' high M.2 Monument Sign Visibility
View from 500ft Northbound Route 31 approaching Raymond Drive



Mercyhealth Crystal Lake Hospital- 30' high M.2 Monument Sign Visibility
View from 200ft Northbound Route 31 approaching Raymond Drive



5/27/2022 Mercyhealth Crystal lake Hospital campus

Master Sign Plan justification brief

The functionality of the signs should consider the particular aspects of a healthcare setting that has Emergency services.

Sign design and sizing is proportionate to the hospital campus size location and function

The proposed sign heights allow messaging to be readable from safe distance

50mph speed of adjacent roadway must be considered in safe sign functionality

M.1 and M.2 monument signs

The proposed 30 ft height of the primary monument signs M.1, M.2 sign height affords readability from appropriate distance to allow proper time for motorists to read and react, and safely enter the property. This is of particular importance in a health care situation with older and/or stressed visitors which require more time to safely maneuver their vehicles.

Due to the topography, setback and position of the hospital building within the campus it is critical that the hospital has adequate signage on Route 31 at either end of the property to ensure traffic at the two entrance roadways is properly routed.

The two primary monuments on Route 31 include 8 words in the sign messaging. These signs are intended to help drivers identify the property and safely navigate the turn into the hospital. A sign with 8 words requires a bare minimum 5.6 seconds to safely read and react based upon visual research studies. (see table 3 page 7 of attached ISA visibility guidelines). This is under normal conditions. The time increases based upon driver's psychological state and familiarity with a sign and its contents. Time can increase to as much as 24 to 36 seconds.

Please see the attached site line visibility and ISA Guidelines document for visual data documentation.

The signs are in keeping with the architectural style and proportions of the hospital campus. Modern clean lines, simple contrasting colors for readability, masonry bases and efficient wording.

M.3 and M.4 monument signs

Proposed M.3, M.4 monument signs are located at the driveway entries on Raymond Drive and Three Oaks Road. These 15ft high signs are necessary and appropriate for safety and to ensure accessibility.

The visibility of these two monuments are of major importance as they identify the Emergency services available at the hospital.

In this large campus setting the signs are critical to preventing motorists from passing the entry drives and causing turn arounds or other delays and possible traffic backups. This is of particular importance in a health care setting.

It is important that the two driveway entry monuments maintain 15ft height to ensure they are visible as soon as drivers navigate the turn onto Three Oaks Road or Raymond Drive to reassure drivers that the entry driveways are just ahead and no further decisions need to be made in order to enter the property.

The 15ft sign height allows for an 8” letter height on both the Emergency and Urgent Care wording this provides 320ft of readability, which is approximately the distance from the driveway to Route 31. Having 5 words each these signs require an average reader a minimum of 3.5 seconds to read and react. (see attached ISA Visibility Guidelines). At 35 mph this size of sign gives the driver 6 seconds to safely read and react, turning into the driveway safely.

D.1 thru D.5 directional signs

Please note the sign location plan page within the application plans. This document indicates the circulation routes through the campus. The D series signs perform the critical function of maintaining proper circulation between visitors, patients, ambulance, staff and services.

These signs are strategically placed at each driver decision point to ensure smooth traffic circulation throughout the campus.

Emergency, Urgent Care and Ambulance traffic are routed with these signs. The sign heights at 8ft are necessary to keep the signs messaging at a functional viewing height for motorists within the campus where other vehicles and or pedestrians may impact visibility. The size affords for 3” wording heights readable from 120ft with appropriate negative space to provide ease of reading.

SIGNLINE

ISSUE FIFTY ONE 2007

Conspicuity and Readability

Speech is a two-way interaction, in which one person conveys a message to another, and it is only complete when the recipient of the message understands it. If someone whispers in a crowded room, you cannot understand them. If their back is turned to you so that their words are muffled and you cannot read their lips, and others are attempting to talk to you at the same time, you cannot understand them. If someone covers their mouth while they are trying to speak, you cannot understand them. If they speak in a language you do not know, you cannot understand them. If they do not express themselves well enough, or speak too quickly, you cannot understand them.

Like any other form of speech, the purpose of any sign is to convey a message. But if that message is to be understood it must first be noticed and then read – that is, it must be conspicuous and readable. While this may appear to be obvious, the factors that result in a conspicuous and readable sign are numerous and complex. For the sign industry, "conspicuity and readability" have become synonymous with sufficiency in size, height, placement, and illumination to allow the message to be seen, read and comprehended.

Planners who regulate signage can benefit from understanding the numerous and complex factors that result in conspicuous and readable signage that can serve as a planning tool to facilitate efficient resource allocation, enhance traffic safety, beautify retail/commercial districts, and stimulate the local economy.

Definition of Terms

Before going further, four terms need to be defined: conspicuity, visibility, legibility and readability.

Conspicuity: The capacity of a sign to stand out or be distinguishable from its surroundings and thus be readily discovered by the eye. It is the noticeable contrast between a sign and its background, attributed to an exogenous (unplanned) or endogenous (planned) mindset, with the display having features that attract attention to the sign. Conspicuity is considered a subjective outcome.

Visibility: The physical attributes of a sign and its contents that allow for detection at a given distance, although legibility may be uncertain. Visibility is considered an objective stimulus.

Legibility: The physical attributes of a sign that allow for differentiation of its letters, words, numbers, or graphics and that directly relate to an observer's visual acuity. Legibility is considered an objective stimulus.

Readability: That which enables the observer to correctly perceive the information content of letters, numbers or symbols grouped together in words, sentences, or other meaningful relationships on the sign. Readability is the character of a sign that leads to comprehension of its intended message, and depends on legibility and other considerations of contents and time restraints. It is considered a subjective outcome.

The on-premise signs used by businesses to communicate with passing traffic are functioning in a complex environment. Those on the receiving end of the message signs convey are typically viewing the signs through the windshield of their vehicle. In order to mentally process and respond safely to the information on the sign, they must within seconds be capable of noticing it, reading it, comprehending it, and making a decision as to whether to maneuver through traffic and stop at the business. When a passing motorist sees a business that is interesting and either stops at the business or remembers it for future use, the benefit is shared by the business, its potential customer, and the municipality in which the business is located.

As a matter of good public policy and smart planning, sign regulations should be written to allow local businesses to communicate effectively with passing motorists. That means signs should be allowed sufficient size, height, placement, and illumination to be certain the sign will be noticed and its message understood. This brings numerous benefits to the local community, not the least of which is enhancement of public safety through effective wayfinding.

Time, Place and Manner

In the regulation of speech under the First Amendment, governments are constitutionally restrained from stepping outside the bounds of content-neutral regulation of "time, place and manner" of expression. In the case of signs, this refers to the "time" when a message may be displayed on a sign, the "place" at which the sign may be located, and the "manner" in which the message may be displayed. Translated into sign code language,

this means the government may regulate the size, height, placement, and illumination of a sign.

But the Court has placed limits on how far the government may go in regulating these factors. In Virginia State Board of Pharmacy v. Virginia Citizen Consumer Council, Inc.,[1] a First Amendment case, the Court laid out the test for determining whether a speech-restricting ordinance is constitutional:

> Time, place and manner restrictions on commercial speech are permissible only if the restrictions:
>
> (1) are justified without reference to the content of the speech,
> (2) serve a significant government interest, and
> (3) leave open ample alternative channels for effective communication of the information.

These guidelines were enhanced in Central Hudson Gas & Elec. Corp v. Public Service Comm.[2] Today, if a sign ordinance is to withstand a constitutional challenge, the government must show all of the following:

> (1) a substantial government interest that justifies the regulation;
> (2) the regulation directly advances that interest;
> (3) the regulation is narrowly tailored to achieve that interest; and
> (4) the regulation leaves open ample alternative avenues of communication for those it affects.

This was clarified in Cleveland Area Board of Realtors v. City of Euclid,[3] in which Euclid, Ohio passed an ordinance allowing real estate signs to be displayed only in windows, and barring them from their normal placement on front lawns. Euclid's ordinance was struck down largely because it did not allow for adequate alternative communication. The selling of real estate could only reasonably be facilitated through the placement of signs on front lawns. Placing the signs in windows rendered them virtually invisible to passing motorists. The Court found that it was not enough that the homeowners be able to "speak" by putting their for sale signs in their windows, their message also had to be capable of being "heard." In other words, the Court affirmed that for speech to be protected, the intended recipient had to be capable of receiving and understanding the message, and government could not arbitrarily interfere with the reception of that message.

As applied to sign regulations, this would indicate that signs must be allowed sufficient size, height, placement, and illumination to be capable of being seen, read and understood by the passing motorist. Most states require a minimum of 20/40 vision to obtain a driver's license; therefore, signs should minimally be capable of communicating effectively with drivers having 20/40 vision.

While we will not address at great length the variety of factors that affect individuals' abilities to read and comprehend the message on a sign, it is worthwhile for communities to consider whether they might need to accommodate the visual needs of particular members of society, at least where they relate to particular businesses. For instance, as people age, they are less able to distinguish between certain colors, have longer reaction times, their field of view narrows, and their vision declines. These individuals need to be able to see and read signs from a greater distance than others in order to safely read and react to them. Other issues that can interfere with a person's ability to see or read a sign include color blindness, cultural differences, and visual impairment. The special visual needs of the community should be considered as part of the zoning in areas where appropriate, such as in retirement communities and/or campuses.

Let's look a little more closely at visibility, conspicuity, legibility, and readability, both at what they mean and how they are achieved.

Visibility

The very first step in assuring a sign can communicate effectively is ensuring that sign can be seen – that it is visible. This is primarily a matter of placement, but other factors also affect visibility. For instance, in order to be visible at night a sign must be illuminated. If the sign does not sufficiently contrast with its environment, is poorly maintained, or is parallel to the roadway it can become essentially



The average person takes approximately 0.33 seconds to recognize a familiar single word or symbol.



Research has shown that parallel signs are missed significantly more times than perpendicular signs.

invisible. If it is too small, too high, or too low to be seen through a windshield, it has no visibility. Blockage by trees, other vehicles, buildings, inclement weather, or other signs can also impair a sign's visibility.

Imagine you are the owner of an independent bookstore and your business is located in the downtown area of a mid-sized town. Street trees have been added all along the street in front of your business, and your sign, though large enough to be seen from the road, is blocked from view by a lush, leafy tree. Your long-time customers know where you are, but because 16% of Americans relocate each year,[4] and almost as many change their work location each year,[5] they are slowly dwindling away and newcomers to your town do not know your business exists. Sure, word-of-mouth will replace some of your lost customers, but, at least according to one comprehensive survey,[6] half of an independent small business's first-time customers will stop at the business because they saw its sign. What all of this means is that unless you can find some other way to make your store more visible to passing motorists, your business will steadily decline or, at a minimum, fail to grow as it should.

Some businesses attempt to overcome visibility problems through the use of temporary signage, such as banners, sandwich board signs, balloons, flashing lights, etc. Many communities, however, view these alternative forms of signage as "clutter" and bar their use. The problem here is that by first infringing upon the right of the business to "speak" to passing motorists, and then refusing to allow alternate forms of communication, regulators are quite possibly engaging in unconstitutional censorship of speech.

Imagine you are looking to buy a book and would like to buy from an independent bookstore, rather than one of the very visible and well-known chain stores. You have never seen the independent book store downtown, but you have heard one is located there. As you try to safely maneuver through traffic, watching for pedestrians and cars entering and exiting the roadway, you are also looking for the bookstore's sign. Unfortunately, all you can see are trees. You become very frustrated, perhaps even risking further distraction by picking up your cell phone and dialing information in hopes of finding out the store's location. You may or may not eventually locate the store, but in the mean time you have taken safety risks and perhaps even driven around the block several times, wasting gas and time.

When signs are not visible, nobody is better off. For reasons of safety, economics, and even aesthetics, it is incumbent upon cities to ensure local businesses' signs can be seen by motorists.

Conspicuity

Whereas visibility addresses issues of physical conditions that allow a sign to be seen, conspicuity addresses issues related to the viewer noticing and being aware of the sign. For a sign to be conspicuous, the viewer must be able to differentiate it from the surrounding background.

Visibility can be objectively and consistently determined. For instance, a photograph will readily reveal whether a sign

Variables Affecting Conspicuity

Measurements and construction of the sign

- Placement of the sign
  - a. Height
  - b. Setback (distance to the first edge of the sign)
  - c. Obliquity of viewing angle
- Size of the sign
  - a. Letter height
  - b. Number and length of words
  - c. Dimensions of logos or other graphics
  - d. "White" space
  - e. Square footage
- Illumination (day or night) on the sign
  - a. Luminance (candelas per square foot or square meter)
  - b. Luminance contrast (positive or negative)
  - c. Color contrast
- Type of sign (roof, pole, projecting, monument, V, wall)

Considerations external to the sign

- a. Speed of traffic (affecting seeing, reading, and reacting times)
- b. Number of traffic lanes
- c. Artistic and attractive qualities of the sign
- d. Obstructions or distractions affecting conspicuity
- Community Aesthetics

is visible. Conspicuity, on the other hand, is subjective and cannot be consistently measured. One motorist might readily notice it, while another will drive right past it and never know it is there.

One of the reasons a sign will be conspicuous to one person and not another has to do with whether or not the person is looking for a particular business or type of business. If someone is hungry, that person is much more likely to notice a restaurant than someone who is simply on the way to work. Someone who has a special preference for the color red will be more likely to notice a business with a red sign than someone who has no feeling about the color one way or the other.

Most businesses need to be noticed and remembered by those who pass them on the street, but often their signs are placed among many other visual stimuli. Nonetheless, if a sign is properly designed and placed it will be noticed even by those who are not specifically seeking it at that moment. The conspicuity of a sign is enhanced by virtue of its placement within the cone of vision (see below), its angle in relationship to the viewer (signs facing the roadway are far more difficult to read than signs facing the oncoming motorist), the ease with which it can be read, the design elements (colors, shapes, contrast, illumination, motion, and borders) that differentiate it from its surroundings, the speed at which traffic is passing, and the familiarity of the sign's graphic elements, such as logos.

A sign's shape and color are usually noticed and recognized from a much greater distance than its legend. Corporations, chains and franchises know this, which is why they make the most of trademark colors, logos and shapes. Public roadway signage is designed based on the same principle. You don't need to read a stop sign to know what it is; its shape and color are only used for one purpose. When you see a green sign with white lettering along the highway, you know it will contain information about places ahead and how many miles away they are located.

Cone of Vision

The human eye is designed to focus in one direction, with peripheral vision extending out to either side, creating a fan-shaped zone of visual awareness. A sub-portion of that zone



Color contrasts and familiar symbols or logos are likely to enhance conspicuity.

TABLE 1

The Standard Relationship Between Vehicle Speed and Legibility Distance In Feet and Meters

Vehicle Speed		MRLD
55 mph (88 kph)	81’ /sec (25 m/sec)	440’ (134 m)
50 mph (90 kph)	73’ /sec (22.25 m/sec)	400’ (122 m)
45 mph (72 kph)	66’ /sec (20 m/sec)	360’ (110 m)
40 mph (64 kph)	59’ /sec (18 m/sec)	320’ (98 m)
35 mph (56 kph)	51’ /sec (15.5 m/sec)	280’ (85 m)
30 mph (48 kph)	44’ /sec (13.4 m/sec)	240’ (73 m)
25 mph (40 kph)	37’ /sec (11.3 m/sec)	200’ (61 m)

Source: Schwab, Richard N.;[7] also, Garvey, P.M., et al, 1996.[8]

is the “cone of vision,” which is variously reported to be limited to 18 to 24 degrees. Location within a range of 20 degrees from the motorist (the half-angle being 10 degrees) is recommended for on-premise signage, and outside of that visual cone, a sign’s conspicuity is dramatically diminished. Once the sign is noticed with peripheral vision, the motorist will have to make accurate eye movements to look directly at the sign with central vision for legibility and readability.

At night, the cone of vision is greatly reduced, often to only the area illuminated by the vehicle’s headlights. Unless a sign otherwise optimally visible is either internally illuminated or lighted by exterior flood lamps, it is essentially invisible at night. Even signs containing retroreflective materials cannot be seen unless they can be illuminated by vehicle headlights. For this to occur, a sign must be located near the right shoulder of the roadway.

Legibility

Legibility occurs when a sign’s letters, symbols and graphics are capable of being deciphered sufficiently that it’s meaning may then be understood. How easily a sign can be read by oncoming drivers of 20/40 visual acuity is first dependent on the sign’s legibility, which in turn is dependent upon such characteristics as letter size, font, spacing of letters and words, extent of negative space (blank area of sign), whether the sign contains a dark legend on a light background or a light legend on a dark background, the color combinations between legend and background, and (in the case of obliquely oriented signs) foreshortening effects, among other factors.

Before judging the legibility of a sign, it is essential to first determine the distance from the sign at which it must be legible. This, of course, is because the intended viewer of the sign’s message will not be standing in a sign shop or at a permit hearing looking at a drawing. They will be seated behind the windshield of a moving vehicle, focusing their attention on the driving task in an environment full of items vying for their attention. Moreover, they must be able to notice and read the sign in sufficient time to make a decision to stop at the business and then safely stop at the business. The key, therefore, is the speed at which they are traveling and the duration of time they will need to read and react to the sign.

In most research minimum sight distance is referenced as the MRLD, or the Minimum Required Legibility Distance at which a sign should be detectable and readable. The distance will vary according to the speed of approaching vehicles, the sign’s placement in relation to the roadway, its conspicuity and readability, and the complexity of the message. For simplicity’s sake, Table 1 offers the minimum distance at which a sign must be legible to the average driver of 20/40 visual acuity (the minimum required for a driver’s license). It assumes the sign being viewed is within 5 to 10 feet of the edge of the right-of-way, that it is of optimal height, that it is optimally conspicuous and readable, and that it is not subject to any environmental degradation, distractions or visual obstructions.

The next step is to determine how large the letters must be at that distance to be legible to the average driver of 20/40 visual acuity. Forbes and Holmes developed a Legibility Index (LI)[9] to describe the relative legibility of different letter sizes used on highway signs. They found that for every 50 feet of distance, lettering needed one inch in height to be read by a person with 20/23 visual acuity. Although the Forbes-Holmes standard was used for many years, the needs of drivers with lower visual acuity have been taken into consideration by the Federal Highway Administration, and the standard has been reduced to one inch of letter height for every 35 feet of distance. For a person of 20/40 visual acuity, however, one inch of letter height is needed for every 28.6 feet of distance.

Because the previous MRLD studies had been conducted primarily on test tracks where no driving tasks were involved, in 2001 a study by Chrysler, et al[10] was undertaken that included driving tasks. The test group, which included

TABLE 2

Standard Letter Height Guidelines for On-Premise Signs

Speed Limit (mph)	Speed Limit (kph)	MRLD (Feet)	MRLD (meters)	Letter Height (Inches)	Letter Height (Centimeters)
25	40	200	61	7	18
35	55	280	85	9	23
45	70	360	110	12	30
55	90	445	136	15	38

older drivers, was asked to find and read street name signs throughout Minneapolis, MN. The subjects were instructed to observe all traffic rules and engage in safe-driver behaviors. The test signs were located on both sides of the roadway in varying degrees of visual-field complexity, and consisted of several types of retroreflective materials.

The researchers found a mean legibility distance of 153 feet for 6-inch letters, or an LI of 25 feet/inch. For left-mounted signs using low reflectance materials, the LI dropped to 16 feet/inch, and if said signs were placed in high complexity locations, the LI dropped to 5.5 feet/inch. Clearly, when driving tasks are taken into account, drivers need larger lettering than has long been thought to be able to decipher roadway signs.

The reality of on-premise signs is that unlike highway signs, they are extremely varied in font, color, size, and design. This fact prompted Garvey, et al[11] to further study the detectability and legibility of a variety of on-premise signs under real life environmental conditions. The results of their study disclosed that even under the best conditions (daytime and low complexity), the LI was approximately 30 feet/inch. In high complexity circumstances, the LI dropped as low as 7 feet/inch (consistent with Chrysler, et al), with the mean LI determined at 25 feet/inch.

Clearly, then, an increase in letter height will increase legibility distance, although the ultimate size of lettering needed depends heavily on the selected font. Often the most aesthetically pleasing fonts are more difficult to read, while plain block fonts are most legible. Table 2 sets out recommended minimum letter heights based on standard highway-style fonts for 20/40 visual acuity and various speeds of traffic.

Speed, setback, distance, and letter size are not the only considerations. Of equal importance is the length of time needed to recognize and comprehend the message on the sign. Griffin and Bailey[12] have found that when test subjects are asked to read words that are flashed at them, a level of 75% accuracy in 0.7 seconds can be expected. Accuracy approaches 100% when the subject has 1 to 2 seconds to read the word. Table 3 can be used as a guideline when 0.7 time factor is applied. For example, a sign with three words would take 2.1 seconds (3 x 0.7 = 2.1). Note that individuals with literacy problems, such as those associated with dyslexia or in those who are not fluent in English, can be expected to have difficulty with word recognition with estimated more time being necessary.

Wall signs are particularly troublesome as communication devices in terms of legibility. This is so for two reasons. First, the effect of foreshortening is so intense that the words on the sign simply cannot be deciphered from any reasonable distance, no matter how large they are. Second, because the signs are parallel to the roadway, unless the driver is approaching from a direction directly or nearly-directly opposite, the sign is outside the cone of vision. To those driving past, it can only be discerned by a 90 degree sideways turn of the head. In many cases, neither action provides the driver enough time to safely slow down, brake, or change lanes should the sign prompt a responsive reaction or contain information the driver is looking for. According to Schwab,[13] a general assumption is that at angles greater than 2-3 degrees, the sign's legend or copy is foreshortened, thereby decreasing legibility and readability. One way to correct this problem is to install a building-mounted, double-faced projecting sign that is either "V" shaped or perpendicular to the roadway.

Although the "V" sign is a compromise between a perpendicular sign and a parallel wall sign, Griffin and Bailey[14] concluded that such a sign angled approximately 30 degrees from the wall of a building that is parallel to the roadway is highly readable (criterion of 75% accuracy under normal viewing conditions). They found, however, that readability at increasingly oblique angles is greatly reduced when a sign utilizes crowded letters (small spaces between letters); although, larger letters may be used to help offset crowding if wider spacing is not an option.

Readability

Readability is the ultimate goal of any sign, and it speaks to the ability of the message to be comprehended. Johnston and Cole (1976)[15] pointed out what researchers have consistently found about signs – that even when a driver is exposed to several signs within a short distance, the signs do not cause

TABLE 3

Readability Time per Number of Words

Number of Words	Normal Reader	Nonfluent or Dyslexic
1	0.7 seconds	3 to 13 seconds
2	1.4 seconds	6 to 16 seconds
3	2.1 seconds	9 to 19 seconds
4	2.8 seconds	12 to 22 seconds
5	3.5 seconds	15 to 25 seconds
6	4.2 seconds	18 to 28 seconds
7	4.9 seconds	21 to 31 seconds
8	5.6 seconds	24 to 34 seconds
9	6.3 seconds	27 to 37 seconds

traffic accidents. This is so because the normal human brain has a remarkable ability to process visual input, recognizing even highly complex items, such as the movement of vehicles and pedestrians on a crowded road, buildings, landscaping, signs, and more as single inputs, make rapid decisions and selectively choose items of importance requiring more attention, while rejecting others.

Engel (1977)[16] found that recognition relied not only on sensory and visual prominence, but also on cognitive recognition. In other words, the driver's psychological state, motivations, and familiarity with a sign and its contents greatly affect the ability of that driver to recognize and comprehend its message. The more familiar an object or figure on a sign is to the driver, the fewer glances he or she will require to recognize it, thereby reducing recognition time. In situations where a driver may become distracted by too much information in the visual field, the average driver will be quickly concentrate attention on the information he or she needs to attend to the driving task and ignore everything else.

Aesthetics play an important role in the readability of a sign. People who may only glance at a sign will within milliseconds comprehend a message about the business based on the fonts, colors, shapes and graphics used in the sign and use that information to decide whether to take a second look an attempt to read the words on the sign. For example, a person seeking a fast food restaurant will not bother to read a lavender colored sign with a lovely script font. Thus, all aspects of a sign contribute to the successful conveyance of its unique message.

A properly designed sign will meet the marketing needs of the business and conform to appropriate standards of safety, quality and functionality. If the community desires a thriving business district, then the sign that allows a business to flourish will be a sign that is compatible with the desired character of the community. The purpose of the sign code should be to facilitate the city's objectives without regulating the content or restricting creativity. Establishing minimum standards for conspicuity and readability of signs based on sound science will ensure that each sign serves the communication purpose for which it was intended, bringing benefit to the business, the consumer, and the community as a whole.

A sign code must resist content-interference, including interfering with the aesthetic features that flavor the textual content, as well as the imposition of physical constraints that result in design interference, and instead allow local businesses sufficient leeway to engage in creative expression within a framework of thoughtful design, structural safety, and community values. Undue restrictions on time, place and manner – or size, height, placement and illumination – simply



When a script font is used, the size of the lettering - and, thus, the size of the sign itself - must be increased to ensure readabiltiy.

work to undermine the attractiveness and effectiveness of the sign's communication ability. When forced to reduce a sign's message to fit into a smaller space, a business will have no choice but to abandon aesthetic elements and fonts and instead use the most basic, readable fonts and colors available to maximize visibility and legibility. The business's unique message is lost. Differentiation between the small, locally-owned business and major corporations begins to disappear, and the locally-owned small business is usually the one that suffers.

Constitutional application of content-neutral regulation of time, place and manner – or size, height, placement and illumination – will ensure that the sign's message, as designed by the speaker, is capable of being seen and comprehended by its intended recipient. It will ensure that signs are allowed to be readable and conspicuous, thereby functioning as effectively as possible in our highly mobile society.

Endnotes:

1. Virginia State Board of Pharmacy v. Virginia Citizen Consumer Council, Inc., 425 U.S. 748, 761-773 (1976).
2. Central Hudson Gas & Elec. Corp v. Public Service Comm., 447 U.S. 557 (1980).
3. Cleveland Area Bd. of Realtors v. City of Euclid, 88 F.3d 382, (6th Cir., 1996).
4. The rate for some groups is particularly high. More than one in three people aged 20 to 24 move each year, and nearly 31% of those between 25 and 29 move annually. Additionally, a full third of renters moves each year. Schimmel, Bruce, "Moving Facts", Philadelphia citypaper.net, April 10-17, 1997. <http://www.citypaper.net/articles/041097/article019.shtml>
5. Nolte, Carl, "Driving Force for Many – Parking: Survey finds 67% are alone at the wheel" San Francisco Chronicle, p. A13, September 4, 2000.
6. Based on a 1997-99 survey, in conjunction with Signtronix, of nearly 2500 first-time customers who were visiting 165 independent small businesses within 30 to 45 days after those businesses installed a new sign. The Signage Sourcebook. (Sherwood, OR: The Signage Foundation for Communication Excellence and the U.S. Small Business Administration, 2003), p. 183.
7. Richard N. Schwab, Ret., Safety and Human Factors: Design Considerations for On-Premise Commercial Signs. (Washington DC: International Sign Association, 1998).
8. P.M. Garvey, et al., Sign Visibility: Research and Traffic Safety Overview. (Bristol, PA: The United States Sign Council, 1996).
9. T.W. Forbes and R.S. Holmes, "Legibility Distance of Highway Destination Signs in Relation to Letter Height, Letter Width, and Reflectorization," Proceedings: Highway Research Board, Vol. 19, pp. 321-326, 1939.
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11. P.M. Garvey, et al., Real World On-Premise Sign Visibility: The Impact of the Driving Task on Sign Detection and Legibility. (Bristol, PA: The United States Sign Council, 2002).
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15. A.W. Johnston, B.L. Cole, Investigations of Distraction by Irrelevant Information. (Australian Road Research, 1976; 6:3-23).
16. F.L. Engle, Visual Conspicuity, Visual Search and Fixation Tendencies of the Eye. (Vision Research, 1977; 17:95-108).

Several legal issues are discussed throughout ISA's Signline series. Signline is offered for educational and informational purposes only and not to be construed as given legal advice to any user. Competent legal advice/advisors should be sought after and obtained by the user.

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