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May 14, 2025

Michael Burrell, Development Services Director
City of Manor Development Services Department
416 Gregg St.
Manor, TX 78653

Re: Sign Variance Request for St. David's HealthCare Emergency Medical Facility (TCAD Parcel No. 0237591309)

Mr. Burrell,

Please accept this packet as supplemental backup material supporting the sign variance request for the planned St. David's HealthCare Emergency Medical Facility at US-290 and Gregg Manor Road. This update includes additional information that explains our need for a larger sign at this location. As a result of the high travel speeds along US-290, the congested and visually complex sign environment, and the critical nature of emergency medical services, a sign variance is necessary to help drivers – who may be experiencing heightened stress – navigate to the emergency center safely and efficiently.

Attached please find (1) an illustration from the United States Sign Council ("USSC") and the American Planning Association ("APA") showing recommended sign sizes based on travel speed and reaction time; (2) an excerpt from the USSC Foundation's publication *Best Practice Standards for On-Premise Signs*; (3) a schematic of the proposed sign with dimensions; (4) mockups depicting the proposed sign from distances of 350 and 600 ft.; and (5) a photo of the St. David's HealthCare emergency medical facility sign in Bastrop, Texas, which was built to the same standards requested herein.

Our proposal takes into account critical factors such as speed of travel, road design, driveway location, and the urgent nature of emergency medical situations. For example, the speed limit on this section of US-290 is 50 miles per hour, but we could reasonably expect vehicles to be traveling faster than the limit—especially when drivers are seeking emergency medical attention. Drivers traveling westbound must see the sign from across the highway, read it, and maneuver across multiple lanes to turn left at the intersection of US-290 and Gregg Manor Road. In addition to the road environment, we must also acknowledge that drivers looking for the emergency medical facility may be experiencing heightened stress, which can impact attentiveness and reaction time.

The USSC recommends 242 square feet of sign area on roadways where traffic is traveling 55 miles per hour. We are requesting 160 square feet, which will provide the necessary visibility for safe maneuvering using a more efficient design. Our proposal aligns closely with the USSC's Average Viewer Reaction Time tables and Viewer Reaction Distance calculations. The proposed sign design allows the emergency symbol to be visible from 1,000 ft. and the letters to be visible from 600 ft., giving drivers about twelve and seven seconds, respectively, to locate the sign, read it, and respond accordingly.

We have also included mockups showing the proposed sign's visibility from 350 and 600 ft. for cars traveling eastbound along US-290. You will see that the above-ground utility poles and lines contribute to a congested visual environment. Such complexity increases the visual stimuli presented to drivers and can reduce a sign's legibility, lengthening reaction times. To mitigate these factors and improve the sign's visibility, we request a height of 40 ft.

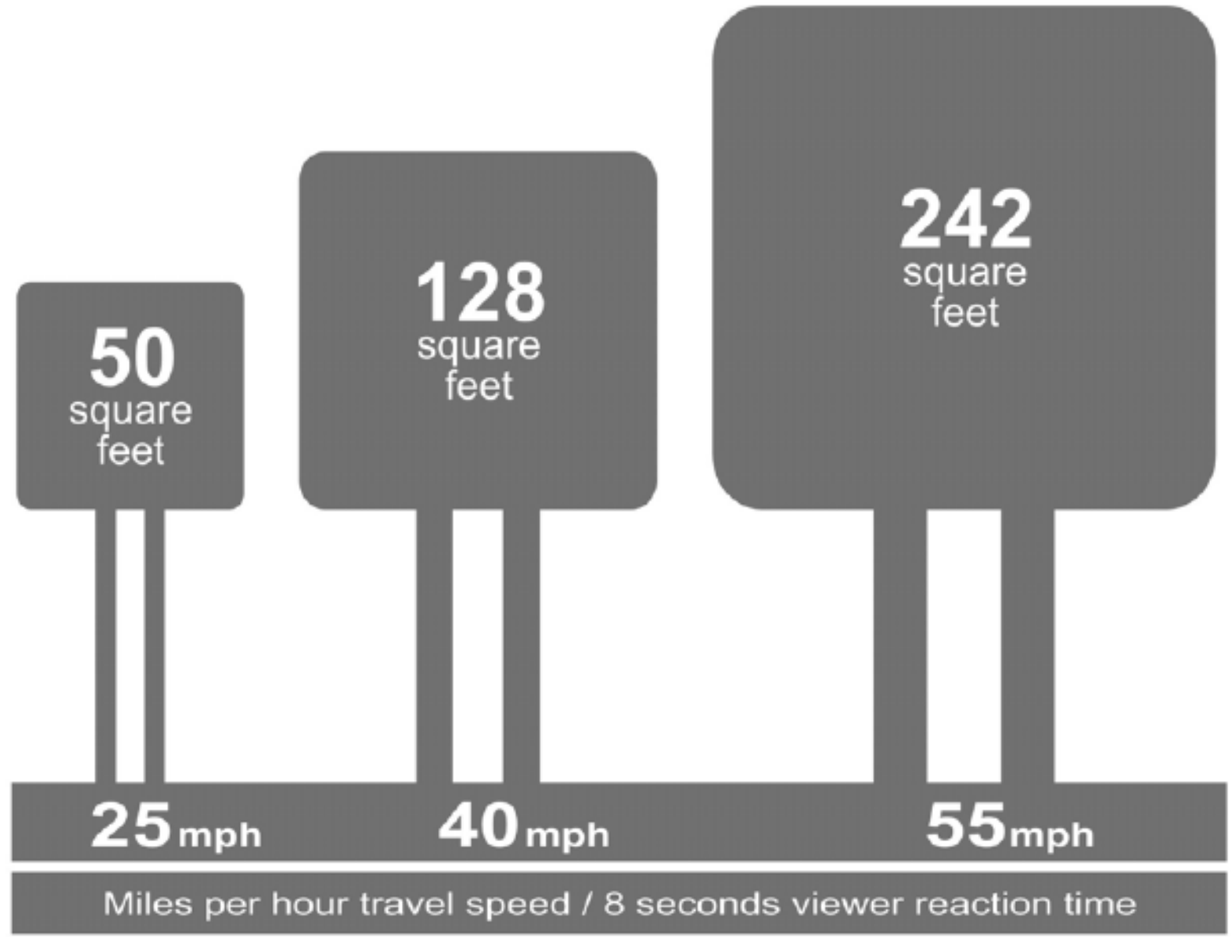
Through this variance request, St. David's HealthCare seeks to balance the critical navigation needs of emergency personnel and civilian drivers with the City's responsibility to protect public safety, aesthetics, and quality of life. We believe the proposed design is both efficient and effective and will enable drivers to reach the the emergency medical facility more safely than would be possible with a smaller sign's reduced reaction window. We respectfully ask the City to recognize the unique nature of an emergency medical service sign and support our variance request.

Thank you for your consideration. Please do not hesitate to contact me with any questions related to this request.

Respectfully,

April A. Brown

US Sign Council Recommendations



Average sign size related to speed of travel and reaction time

Illustration from *Street Graphics and the Law*,
American Planning Association, 2004

US Sign Council Sign Size Recommendations

- Based on Driver Visual Reaction Time
- Percent of sign used space (60%)
- Legibility Index (Font/ Colors)
- Speed of vehicle

Letter Visibility Chart	
Viewing Distance	Minimum Letter Height
100 ft	4 in
250 ft	10 in
360 ft (a city block)	16 in
500 ft	22 in
750 ft	33 in
1000 ft	43 in
1320 ft (1/4 mile)	57 in

USSC Minimum Height of letters
Optimal is approximately 2x size

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USSC **FOUNDATION**

On-Premise Sign Standards

Research-based Approach to:

- Sign Size
- Sign Legibility
- Sign Height
- Parallel Sign Size
- Sign Lighting

USSCF ON-PREMISE SIGNS / BEST PRACTICES STANDARDS

USSC Foundation
Best Practice Standards for On-Premise Signs

By Andrew Bertucci, Past Executive Director, United States Sign Council, and Richard Crawford, United States Sign Council Foundation, Inc.

A Research Based Approach To:
Sign Size
Sign Legibility
Sign Height
Parallel Sign Size
Sign Lighting

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EXCERPT

heightened difficulty of the driving task incurred by the additional visual demands of reading a sign.

The Driving Maneuver

When a motorist detects a sign indicating a sought-after location, s/he will respond by executing some form of driving maneuver. Depending on the number of lanes of traffic, traffic volume, and complexity of the driving environment, potential reactions may include signaling, deceleration, braking, changing lanes, and turning either right or left to gain access to the desired location.

The time interval needed to complete the driving maneuver may or may not be included in the computation of Viewer Reaction Time, depending on whether or not such maneuver must be made before (pre-sign) or after (post-sign) the sign location is passed. Generally, since on-premise identity signs are designed to mark the specific location of a given business or institutional entity, driving maneuvers necessary for entry into that location must be executed before passing the sign. The driving maneuver component, then, will be included as part of Viewer Reaction Time.

On the other hand, signs containing directional and/or wayfinding information, or other signs (such as projecting signs in crowded cityscapes) not directing ingress to the location of the sign, do not necessarily require any driving maneuver to be made until after the sign is passed. In these instances, the driving maneuver is not incorporated as part of Viewer Reaction Time.

The USSC standard for the Driving Maneuver varies from four to six seconds depending on roadside complexity and traffic volume.

Table 2. Computation of Viewer Reaction Time

Viewer Reaction Time

Computation Relative to Primary Message

	Driving Environment		
Task	Simple	Complex[1]	Multi Lane[2]
Detection	0.5 Second	1 Second	1 Second
Message Scan	0.1 Sec / Letter 0.5 Sec / Symbol	0.1 Sec / Letter 0.5 Sec / Symbol	0.1 Sec / Letter 0.5 Sec / Symbol
Re-Orientation Scan	0.02 Sec / Letter 0.1 Sec / Symbol	0.04 Sec / Letter 0.2 Sec / Symbol	0.04 Sec / Letter 0.2 Sec / Symbol
Maneuver	4 Seconds	5 Seconds	6 Seconds

1. Developed town or city commercial areas. Single or multi-lane travel under 35 mph
2. Developed urban/suburban commercial areas. Multi-lane travel over 35 mph

The computation table above is designed to provide a reasonably accurate assessment of the minimum Viewer Reaction Time for a motorist, with at least the 20/40 visual acuity necessary to maintain a driving license, to view an individual sign. Because of the significant variations that can exist in individual sign design and placement, motorist response, and the roadside environment in which the sign is placed, the table is intended as a guideline only and not as a substitute for actual field observation.

Viewer Reaction Time – Average Standard

Although the computation chart provides a useful guideline for the Viewer Reaction Time ascribed to a particular sign, it can also be used to approximate a broad average for a variety of signs within a particular landscape. This average

Viewer Reaction Time is helpful in preparing sign size limits for a planned development, a community sign system, or a series of highway oriented and/or wayfinding signs, among others. Assuming a message content of six words (30 letters) on a typical sign, the USSC standard Viewer Reaction Time average in simple environments for pre-sign maneuver is 8 seconds; and for post-sign maneuver, 4 seconds. In complex or multi lane environments, the pre-sign maneuver average advances to 10 or 11 seconds, respectively, and the post-sign maneuver average advances to 5 or 6 seconds.
Table 2 below details these average Viewer Reaction Time values through the range of traffic conditions.

Table 3. Average Viewer Reaction Time

Road Conditions	Maneuver	
	Pre Sign	Post Sign
Simple	8 Sec.	4 Sec.
Complex	10 Sec.	5 Sec.
Multi Lane	11 Sec.	5 Sec.

Average Viewer Reaction Time

Viewer Reaction Distance: Converting Time to Distance

Viewer Reaction Distance represents the distance in lineal feet that a viewer will cover at a given rate of speed during the Viewer Reaction Time interval. Essentially, Viewer Reaction Distance represents the same visual dynamic as Viewer Reaction Time, except it is expressed in lineal feet instead of seconds of elapsed time.

Viewer Reaction Distance is essential to the determination of sign legibility and size. The distance between the viewer and the sign at the point of initial detection determines the letter height necessary for the viewer to acquire and understand the message. By converting Viewer Reaction Time to Viewer Reaction Distance, a relatively precise calculation of initial detection distance can be established.

Viewer Reaction Distance, expressed in feet, can be calculated by first converting travel speed in miles per hour (MPH) to feet per second (FPS) by using the multiplier, 1.47.

FPS = (MPH) 1.47

Viewer Reaction Distance (VRD) is then calculated by multiplying feet per second by the Viewer Reaction Time (VRT).

The following is the resultant equation:

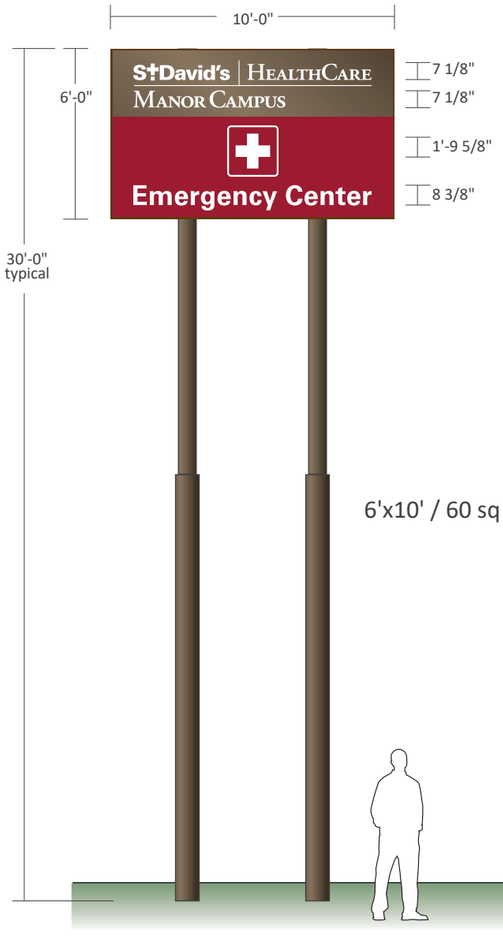
VRD = (MPH) (VRT) 1.47

Letter Height / The USSC Standard Legibility Index

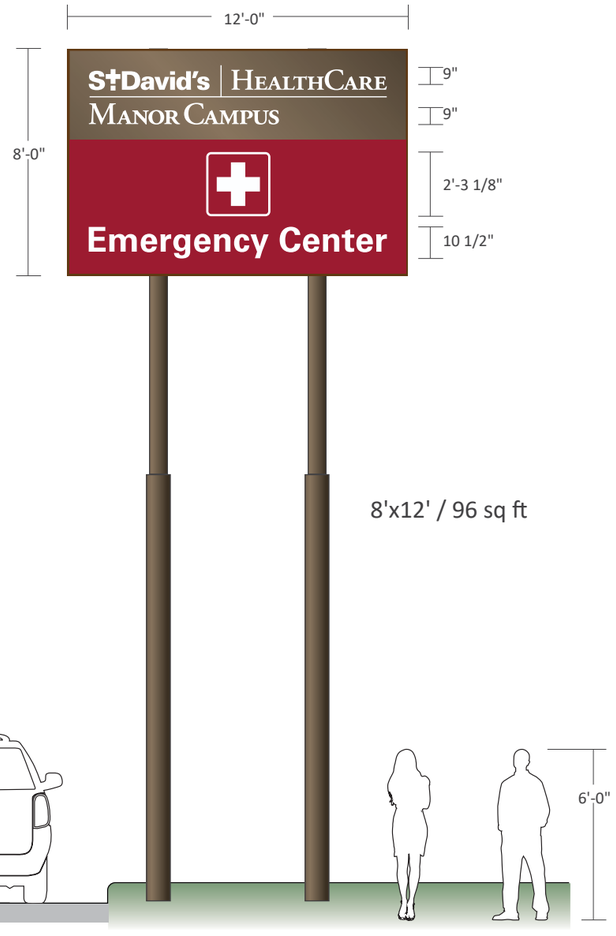
The overall legibility of a sign is, essentially, a function of the height, color, and font characteristics of the letters making up its message component. For the publication, *Sign Legibility: The Impact of Color and Illumination*, test track studies of individual signs were conducted, using subjects in all age groups, to determine the effect that different conditions of daylight and darkness have on detecting and reading signs of varying colors. In order to simulate real-world conditions, two letterforms, Helvetica and Clarendon, were chosen for the study, as they best represent the two general letterform families used in the English language: sans-serif Gothic style (Helvetica) and serif Roman style (Clarendon). The research produced a definitive understanding of the legibility of letterforms under many color and illumination conditions, as well as an understanding of the letter heights necessary for legibility over varying distances from the observer.

Pylon Sign

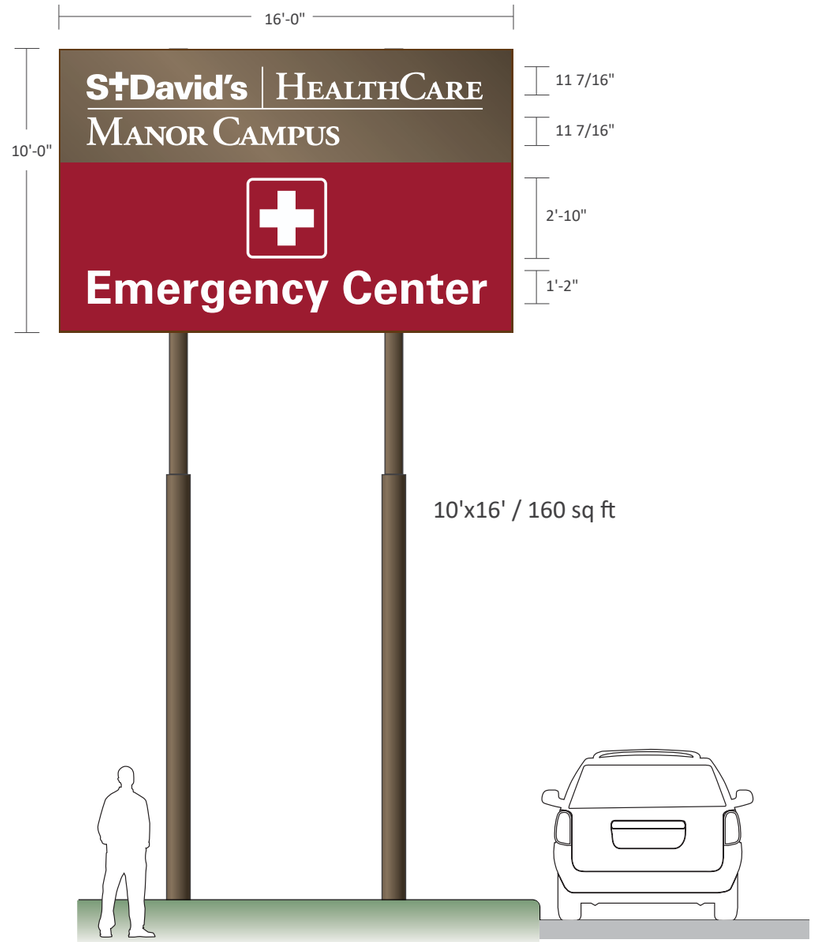
Quantity 1



Elevation
Scale: 3/16" = 1'-0"



Elevation
Scale: 3/16" = 1'-0"



Elevation
Scale: 3/16" = 1'-0"

Trade Image
DESIGN | FABRICATION | INSTALLATION

project
HCA St. David's SAMC
Interior Sign System

designer
Albert Morales

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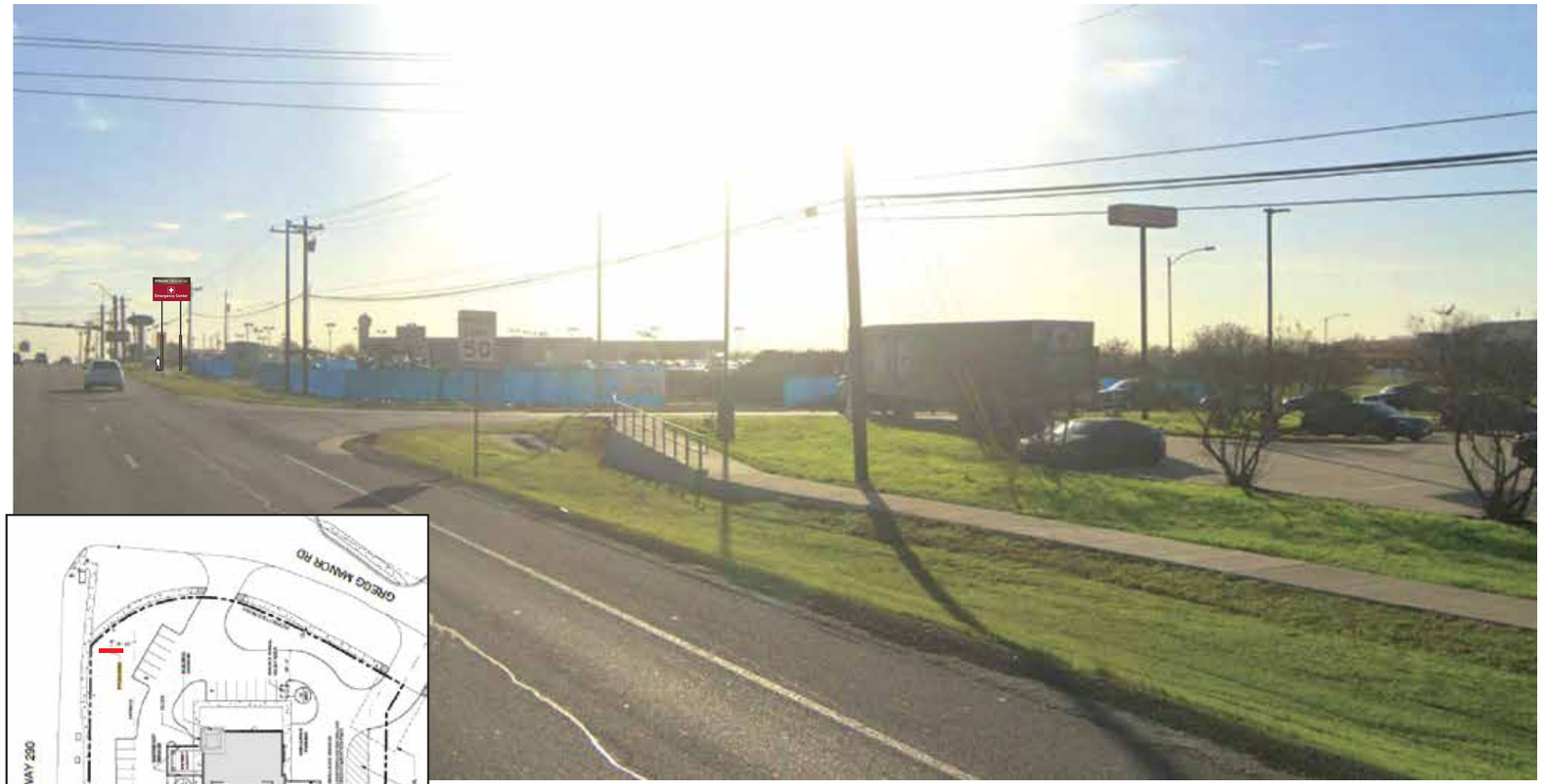
V1 - 013125
V2 - 021425

sign type
PS

40' Pylon

10'x16' / 160 sq ft



Distance 600 ft

Distance 350 ft

Site Plan/Sign Location

Trade Image
DESIGN | FABRICATION | INSTALLATION

project
HCA St. David's SAMC
Exterior Sign System

designer
Albert Morales

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V1 - 050625

sign type
PS

St. David's HealthCare Emergency Center Sign in Bastrop