

**APPLICATION FOR A CERTIFICATE OF APPROPRIATENESS FOR  
A SIGN IN A SPECIAL PROVISION SIGN DISTRICT (SPSD)**

**UPTOWN SPECIAL PURPOSE DISTRICT**

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**CASE NUMBER:** SIGN-25-001727

**DATE FILED:** October 24th, 2025

**LOCATION:** 2323 CEDAR SPRINGS RD  
(SOUTHEAST ELEVATION)

**SIZE OF REQUEST:** 435 sq. ft.

**COUNCIL DISTRICT:** 14

**ZONING:** PD-193, PDS-146

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**APPLICANT:** Josephine Gonzales of Pattison ID

**OWNER:** 23 Springs, LP

**OWNER REP.:** Sidley Austin TX (LLP)

**REQUEST:** An application for a Certificate of Appropriateness by Josephine Gonzales of Pattison ID, for a 435-square-foot LED illuminated channel letter sign reading 'SIDLEY' at 2323 CEDAR SPRINGS RD (SOUTHEAST ELEVATION).

**SUMMARY:** The applicant proposes to install a 435-square-foot LED illuminated channel sign, eight inch white front lit channel letters with white polycarbonate faces, to be mounted to an engineered metal stringer system.

**STAFF RECOMMENDATION:** Approval.

**SSDAC RECOMMENDATION:** Approval.

**BACKGROUND:**

- The subject site is located in Uptown Special Purpose District and is zoned PD-193, PDS-146, Oak Lawn Special Purpose District.  
These regulations are established in: [Sec. 51A-7.1100](#) (Specific details included below).
- The applicant proposes to install a 435-square-foot LED illuminated channel sign, eight inch white front lit channel letters with white polycarbonate faces, to be mounted to an engineered metal stringer system.
  - The sign is composed of 8" aluminum channel letters, painted PMS 7469 Sidley Blue with white polycarbonate faces and mounted to a metal stringer system with a backer panel.
  - Sign elements are constructed entirely of metal, plastic, and LED lighting. The overall height of the sign will not exceed 10-feet.
- This is the only application under review by this body for this site. This sign is to be located on Cedar Springs Road.
- Construction of the proposed sign is in accordance with SPSD regulations and meets the requirements of the Dallas City Code per Sec. 51A-7.1100.

**51A-7.1102 PURPOSE.**

The purpose of this division is to regulate both the construction of new signs and the alterations of existing signs with a view towards enhancing, preserving and developing the unique character of this district. The general objectives of this division include those listed in Section 51A-7.101 as well as aesthetic considerations to insure that signs are appropriate to the architecture of the district, do not obscure significant architectural features of its buildings, and lend themselves to the developing character of the area. (Ord. Nos. 19649; 20037)

**51A-7.1104 SPECIAL PROVISIONS FOR ALL SIGNS.**

(a) Pursuant to the authority of Section 51A-7.503 of this article, the rules relating to the erection of all signs in the Uptown Sign District are expressly modified as follows:

(1) No illuminated sign may contain flashing or moving elements or change its brightness, except as otherwise provided in this division.

(2) Except as provided in this paragraph, signs may be illuminated by fluorescent back lighting or indirect lighting. Signs in the 23 Springs subdistrict may also be illuminated by LED.

(3) The use of neon or single incandescent bulbs is allowed.

(4) The use of fiberglass as a sign material is allowed.

(5) Except as provided in this subsection, the use of plastic as an exterior face of a sign is prohibited. Plastic may be used as a backing for routed letters in a sign can or as decorative ornaments.

(6) For signs located within the 23 Springs subdistrict, plastic may be used for faces of individual channel letters. Channel letters must be either visually trim capless or use metal fabricated trim caps. No plastic trim caps are allowed.

(7) The use of fluorescent color on a sign is prohibited.

(8) No sign or part of a sign may move or rotate, with the exception of a wind device, the motion of which is not restricted.

*Plastic faces will be used in conjunction with fabricated metal retainers.*

**51A-7.1105 SPECIAL PROVISIONS FOR ATTACHED SIGNS.**

(7) Attached upper level signs in the 23 Springs subdistrict may exceed 30 square feet in effective area per sign with the following restrictions:

(A) signs within the top 50 feet of the top of building may not exceed a cumulative effective area of 450 square feet;

(B) signs below 50 feet from the top of the facade may not exceed a cumulative effective area of 100 square feet;

(C) signs must be spaced vertically at least 260 feet apart;

(D) signs must be spaced horizontally at least 150 feet apart; and

(E) the combined effective area of all signs may not exceed five percent of the total area of the facade.

*This upper level sign is the only sign in the upper 50-feet and does not exceed 450 square-feet. This sign is spaced vertically 275-feet from the nearest sign.*

**51A-7.505**

**PERMIT PROCEDURES FOR SPECIAL PROVISION SIGN DISTRICTS.**

(B) **Factors the committee shall consider.** In reviewing an application, the committee shall first consider whether the applicant has submitted sufficient information for the committee to make an informed decision. If the committee finds the proposed sign to be consistent with the special character of the special provision sign district, the committee shall make a recommendation of approval to the city plan commission. **The committee shall consider the proposed sign in terms of its appropriateness to the special provision sign district with particular attention to the effect of the proposed sign upon the economic structure of the special provision sign district and the effect of the sign upon adjacent and surrounding premises without regard to any consideration of the message conveyed by the sign.** After consideration of these factors, the committee shall recommend approval or denial of the application and forward that recommendation to the city plan commission.

(6) **Decision by the commission.** Upon receipt of a recommendation by the committee, the commission shall hold a public hearing to consider the application. At least 10 days before the hearing, notice of the date, time, and place of the hearing, the name of the applicant, and the location of the proposed sign must be published in the official newspaper of the city and the building official shall serve, by hand-delivery or mail, a written notice to the applicant that contains a reference to this section, and the date, time, and location of this hearing. A notice sent by mail is served by depositing it properly addressed and postage paid in the United States mail. In addition, if the application is for a detached sign or for an attached sign that has more than 100 square feet of effective area, the applicant must post the required number of notification signs in accordance with Section 51A-1.106. **In making its decision, the commission shall consider the same factors that were required to be considered by the committee in making its recommendation.** If the commission approves the application, it shall forward a certificate of appropriateness to the building official within 15 days after its approval. If the commission denies the application, it shall so inform the building official in writing. Upon receipt of the written denial, the building official shall so advise the applicant within five working days of the date of receipt of the written notice.

**Property Ownership**

23 Springs, LP  
5601 Granite PKWY, Suite 1200  
Plano, TX 75024

Officer names: Bill Brown, President  
Ace Roman, CFO  
Carson Dennis, Director of Investments

**Tenant Ownership**

Sidley Austin TX (LLP)  
One South Dearborn  
Chicago, IL 60603

Officer names: Timothy Bergen, Executive Director  
Stephen Dempsey, Director of Administration

**SSDAC Action:**

**November 20, 2025**

**MOTION:** It was moved to **approve**:

An application for a Certificate of Appropriateness by Josephine Gonzales of Pattison ID, for a 435-square-foot LED illuminated channel letter sign reading 'SIDLEY' at 2323 CEDAR SPRINGS RD (SOUTHEAST ELEVATION).

Maker: Dumas  
Second: Hardin  
Result: Carried: 3 to 0

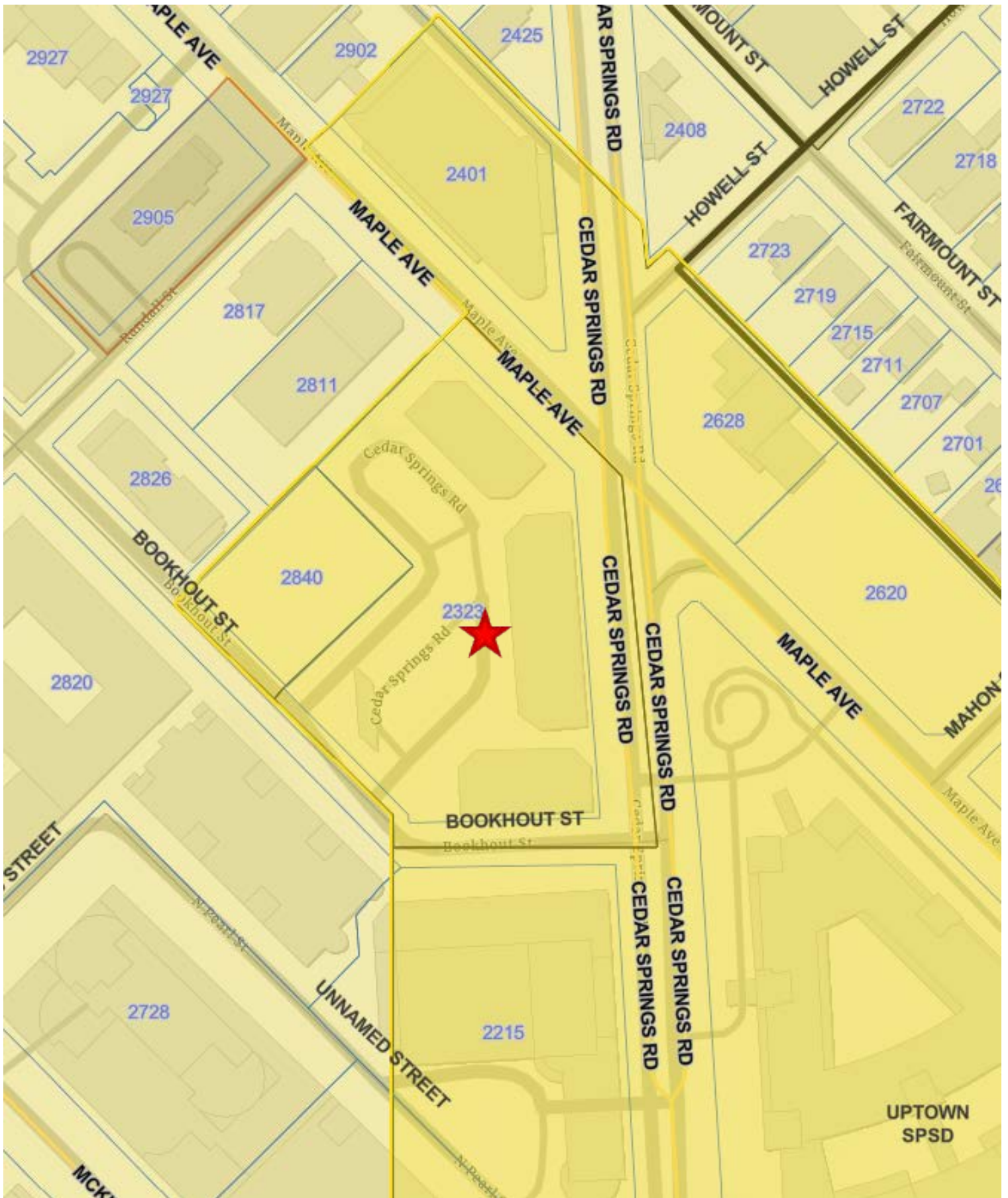
For: 3 - Peadon, Dumas, and Hardin  
Against: 0 - none  
Absent: 2 - Murphy and Hall  
Conflict: 0 - none

Speakers: none

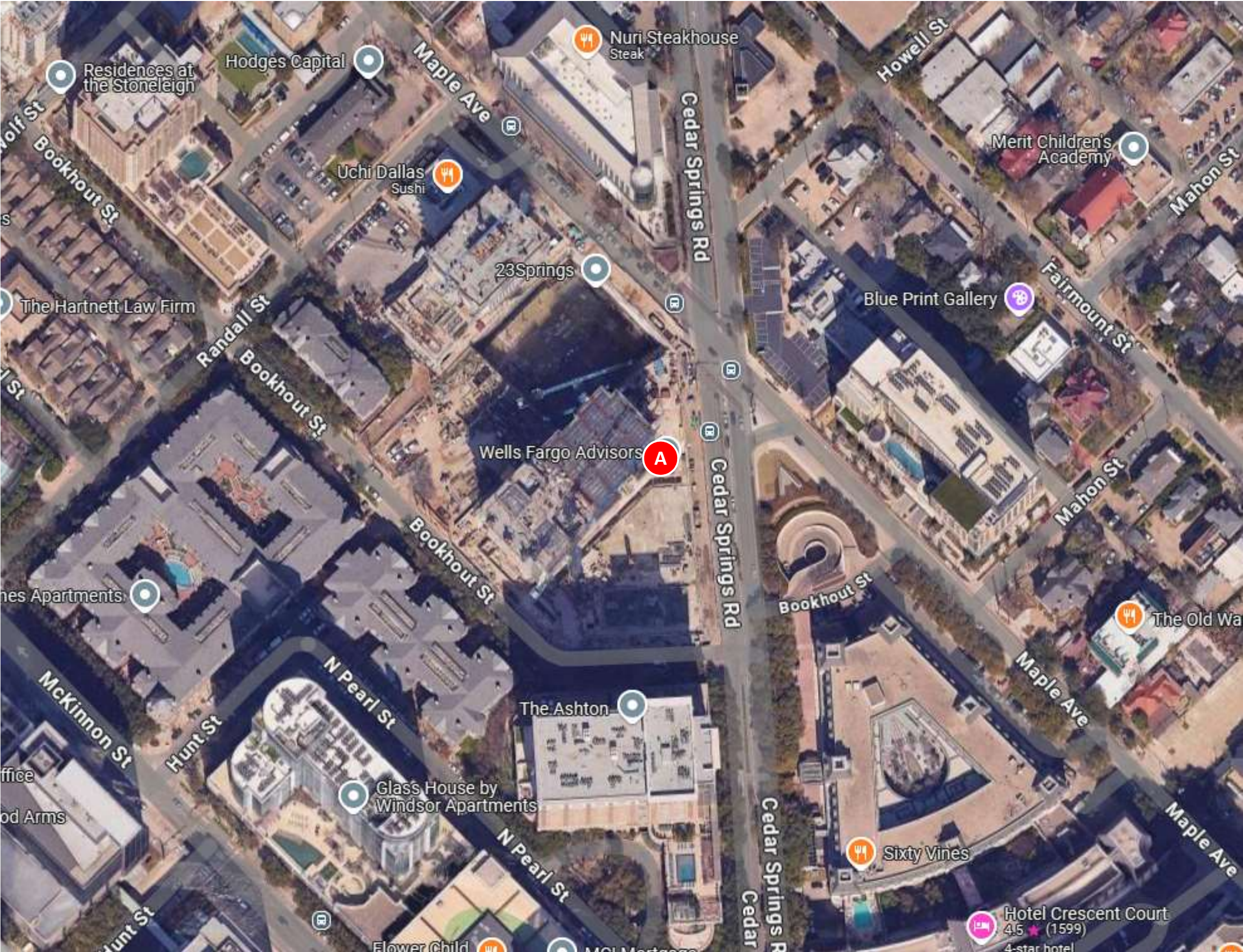












SITE VIEW

Project ID  
**0429994Ar4**

**SIDLEY**  
2323 CEDAR SPRINGS RD,  
DALLAS, TEXAS

Date: 6/4/2025  
Contact: RICHARD BROWN  
Designer: ES

Sign Item

SITE PLAN

Scale: NTS

Revision Note

R1 RFF 06.25.25 revd a colors & specs & added opt 2  
R2-AC-8/7/25: add OPT 1, rev color callouts  
R3-LDB-09/04/25: Removed OPT 1 & 3; lowered installation placement, changed color of background panel to match existing mullions.  
R4 JMC 9/30/25: REVISED SIGN A

Information Required  
for Production

Customer Approval

Signature

MM/DD/YYYY

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It is the Customer's responsibility to ensure that the sign installation location is suitable to accept and support the installation of the signs being ordered. Notify Pattison ID immediately if further details are required.

Pattison



1.866.635.1110  
pattisonid.com





Project ID  
0429994Ar4

**SIDLEY**  
2323 CEDAR SPRINGS RD,  
DALLAS, TEXAS

Date: 6/4/2025  
Contact: RICHARD BROWN  
Designer: ES

Sign Item  
**A - CONCEPT ART**

Scale: NTS

Revision Note

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R2-AC-8/7/25: add OPT 1, rev color callouts  
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R4 JMC 9/30/25: REVISED SIGN A

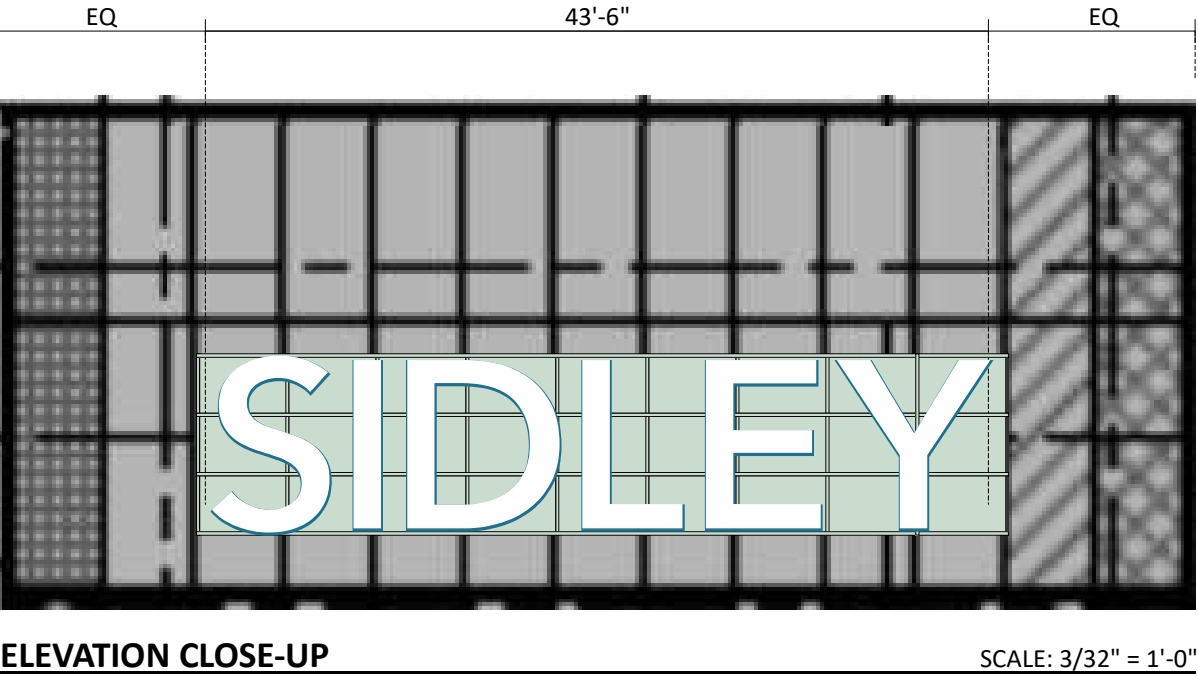
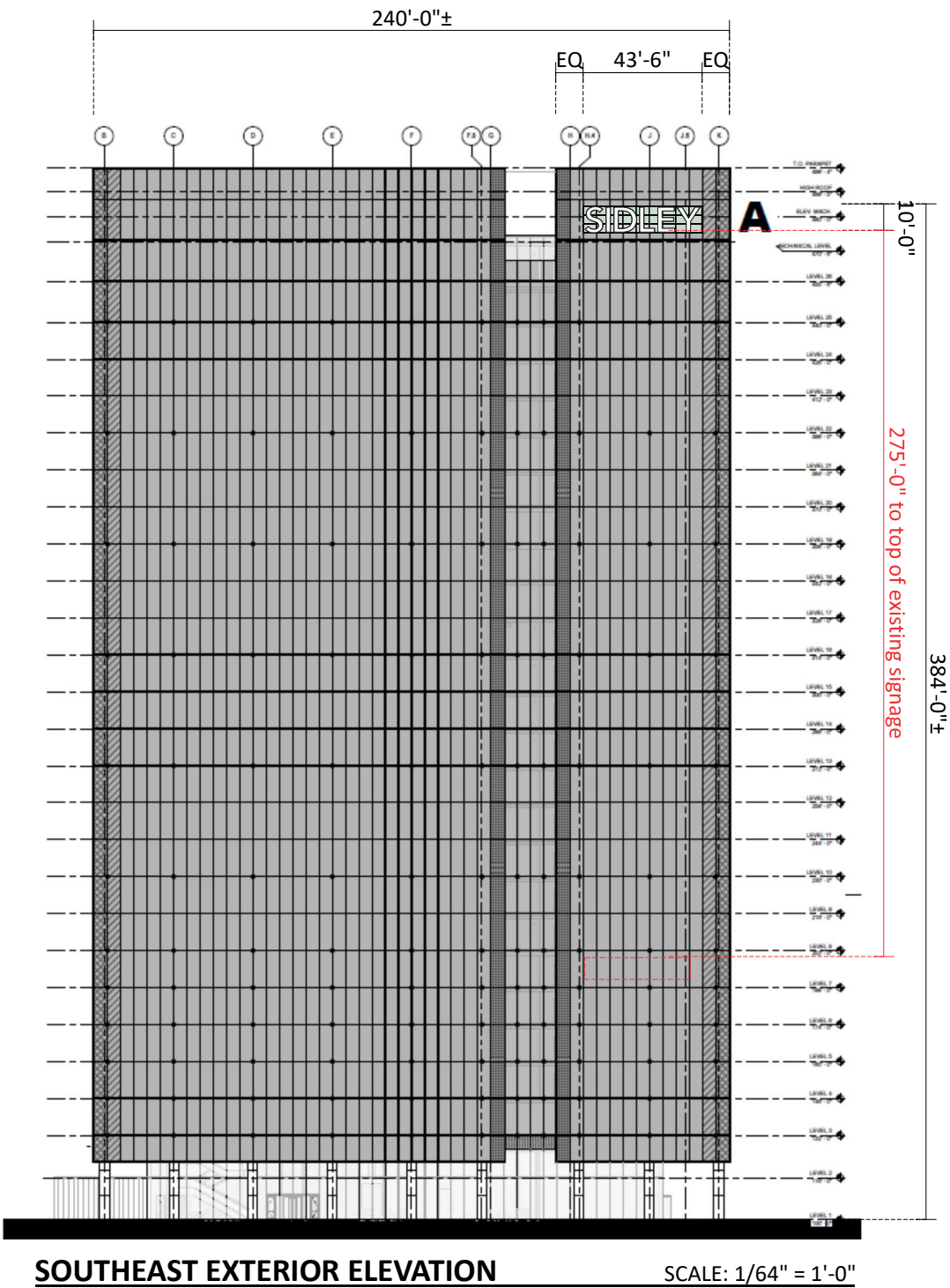
Information Required for Production

Customer Approval

Signature  
  
MM/DD/YYYY

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Project ID  
0429994Ar4

**SIDLEY**  
2323 CEDAR SPRINGS RD,  
DALLAS, TEXAS

Date: 6/4/2025  
Contact: RICHARD BROWN  
Designer: ES

Sign Item

A - ELEVATION

Scale: AS NOTED

Revision Note

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Information Required  
for Production

Customer Approval

Signature

MM/DD/YYYY

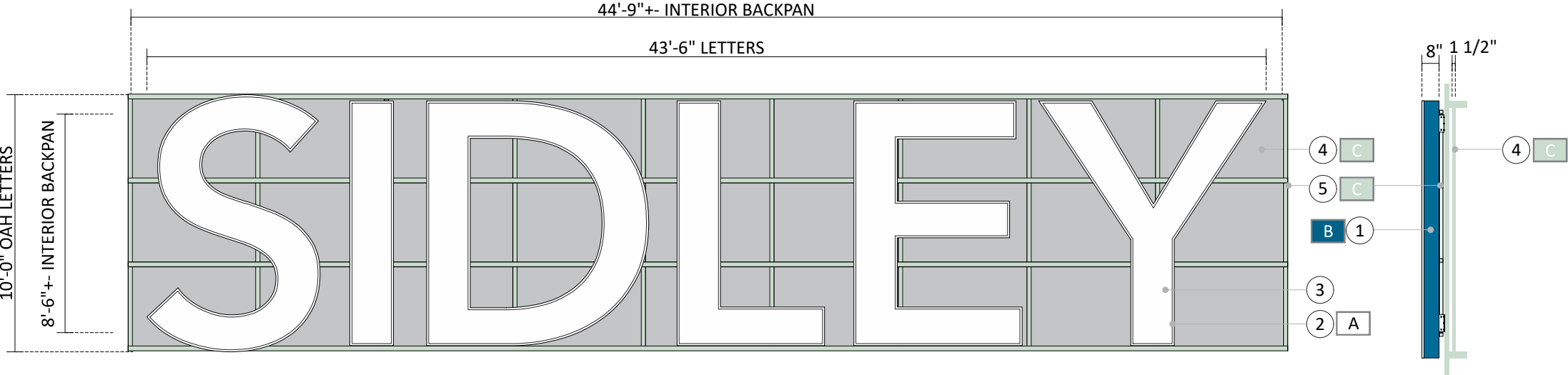
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**A CHANNEL LETTERS DETAIL**

SCALE: 3/16" = 1'-0"  
SQ FT: 435

**SIDE VIEW**

NOTE: THE PROPOSED FORMED ALUMINUM BACKPAN PANEL WILL BE ONLY INSTALLED AT SIDLEY'S DISCRETION IF THEY ARE CONCERNED FOR LIGHT WASHOUT

MFG/INSTALL (1) ONE SET  
FACE LIT CHANNEL LETTERS

- # Description:
1. 8" DEEP ALUM. CHANNEL LETTERS - PAINTED RETURNS & ¼" ALUM. LETTER BACKS
  2. 1" ALUM. PAINTED RETAINERS
  3. #7328 WHITE POLYCARBONATE FACES - WHITE GE TETRAMAX LED ILLUMINATION MOUNT TO STRINGER SYSTEM, HARDWARE FINISHED TO MATCH WINDOW MULLIONS - ELECTRICAL LOCATION & ROUTE TBD
  4. .090 FORMED ALUM. BACKPAN PANEL 1 1/2" DEEP PAINTED ON BOTH SIDES TO MATCH WINDOW MULLIONS (**COLOR TBD**) MOUNTED INSIDE THE BUILDING - THIS BACKPAN WILL BLOCK LIGHT WITHIN THE BUILDING AND WON'T AFFECT LEGIBILITY OF THE LETTERS AT NIGHT
  5. STRINGER SYSTEM- PAINTED TO MATCH WINDOW MULLIONS (**COLOR TBD**)

Colors:	
A	AKZONOBEL WHITE
B	PMS 7469 C SIDLEY BLUE (SATIN FINISH)
C	PAINT TO MATCH BUILDING MULLIONS ( <b>TBD</b> )

Project ID  
**0429994Ar4**

**SIDLEY**  
2323 CEDAR SPRINGS RD,  
DALLAS, TEXAS

Date: 6/4/2025  
Contact: RICHARD BROWN  
Designer: ES

**Sign Item**  
**CHANNEL LETTERS**

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

**Revision Note**

R1 RFF 06.25.25 revd a colors & specs & added opt 2

R2-AC-8/7/25: add OPT 1, rev color callouts

R3-LDB-09/04/25: Removed OPT 1& 3; lowered installation placement, changed color of background panel to match existing mullions.

R4 JMC 9/30/25: REVISED SIGN A

**Information Required for Production**

**Customer Approval**

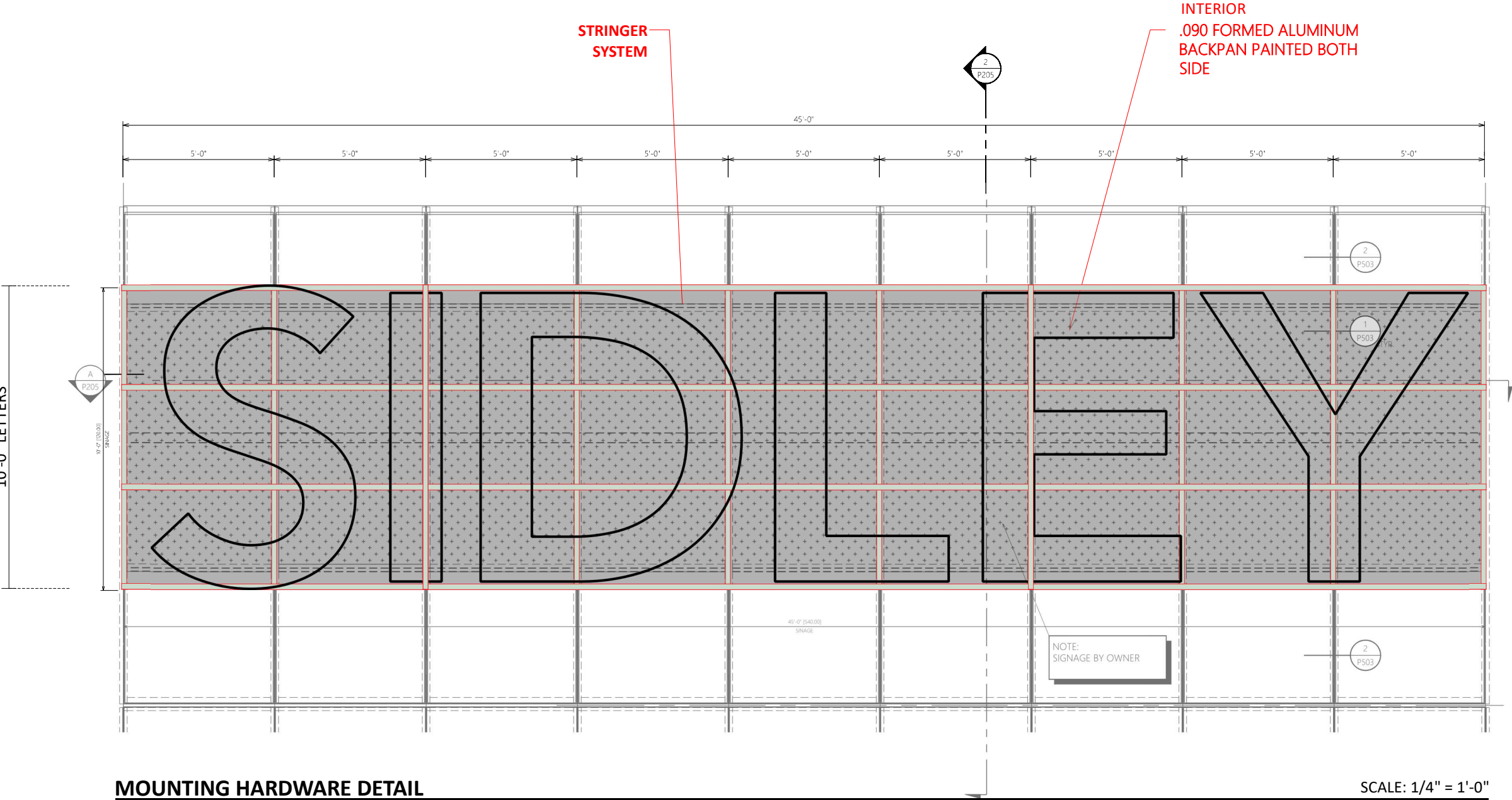
Signature

MM/DD/YYYY

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**MOUNTING HARDWARE DETAIL**

EXACT MOUNTING METHOD & MATERIALS TBD BY TECH DEPARTMENT

Project ID  
0429994Ar4

SIDLEY  
2323 CEDAR SPRINGS RD,  
DALLAS, TEXAS

Date: 6/4/2025  
Contact: RICHARD BROWN  
Designer: ES

Sign Item

MOUNTING DETAIL

Scale: 1/4" = 1'-0"

Revision Note

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Information Required for Production

Customer Approval

Signature

MM/DD/YYYY

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2323 CEDAR SPRINGS RD,  
DALLAS, TEXAS

Designer: ES

### Sign Item

### SECTION VIEW

Scale: AS NOTED

## Revision Note

R3-LDB-09/04/25: Removed OPT 1& 3; lowered installation placement, changed color of background panel to match existing mullions.

R4 JMC 9/30/25: REVISED SIGN  
A

### Information Required for Production

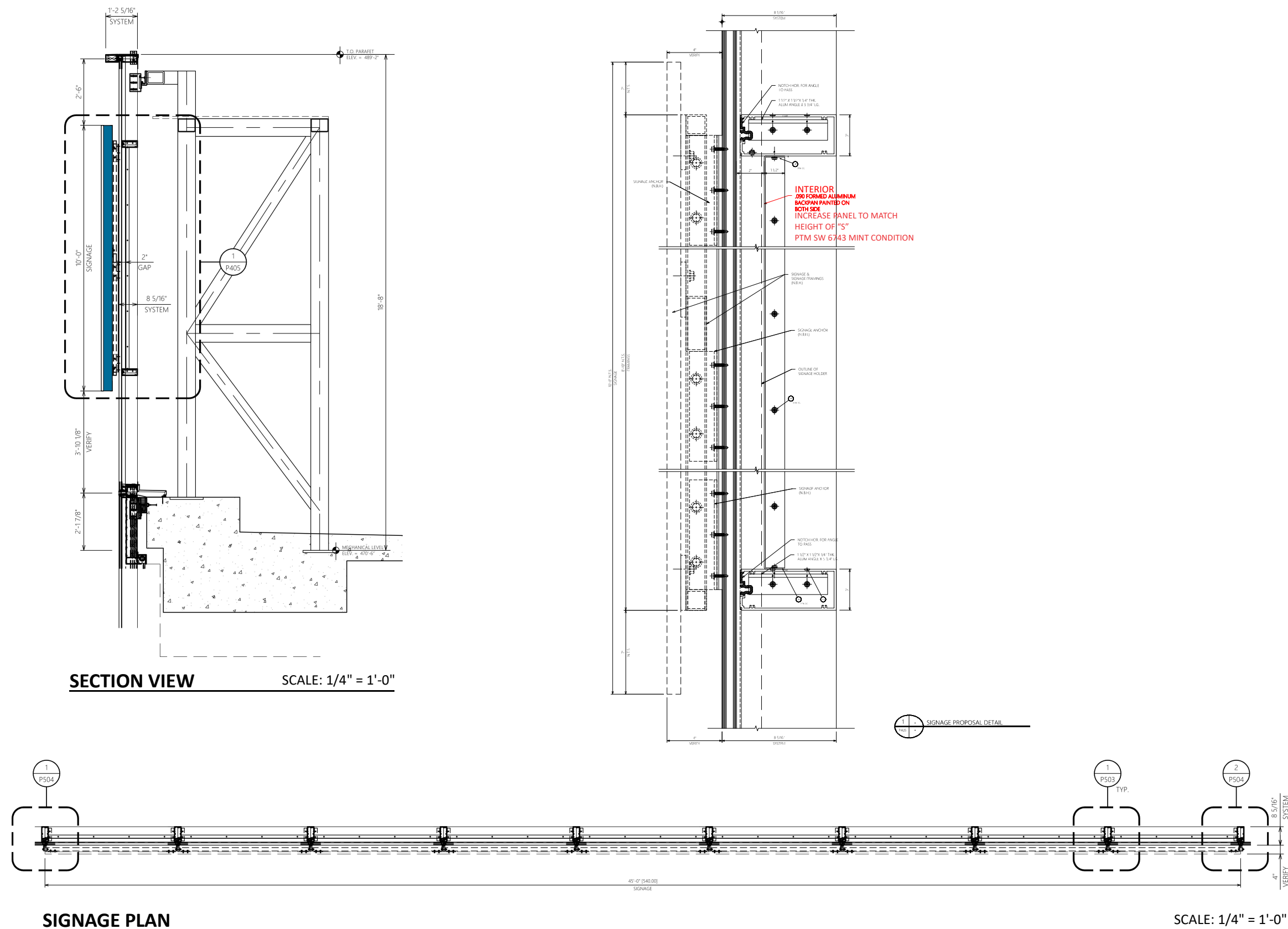
### Customer Approval

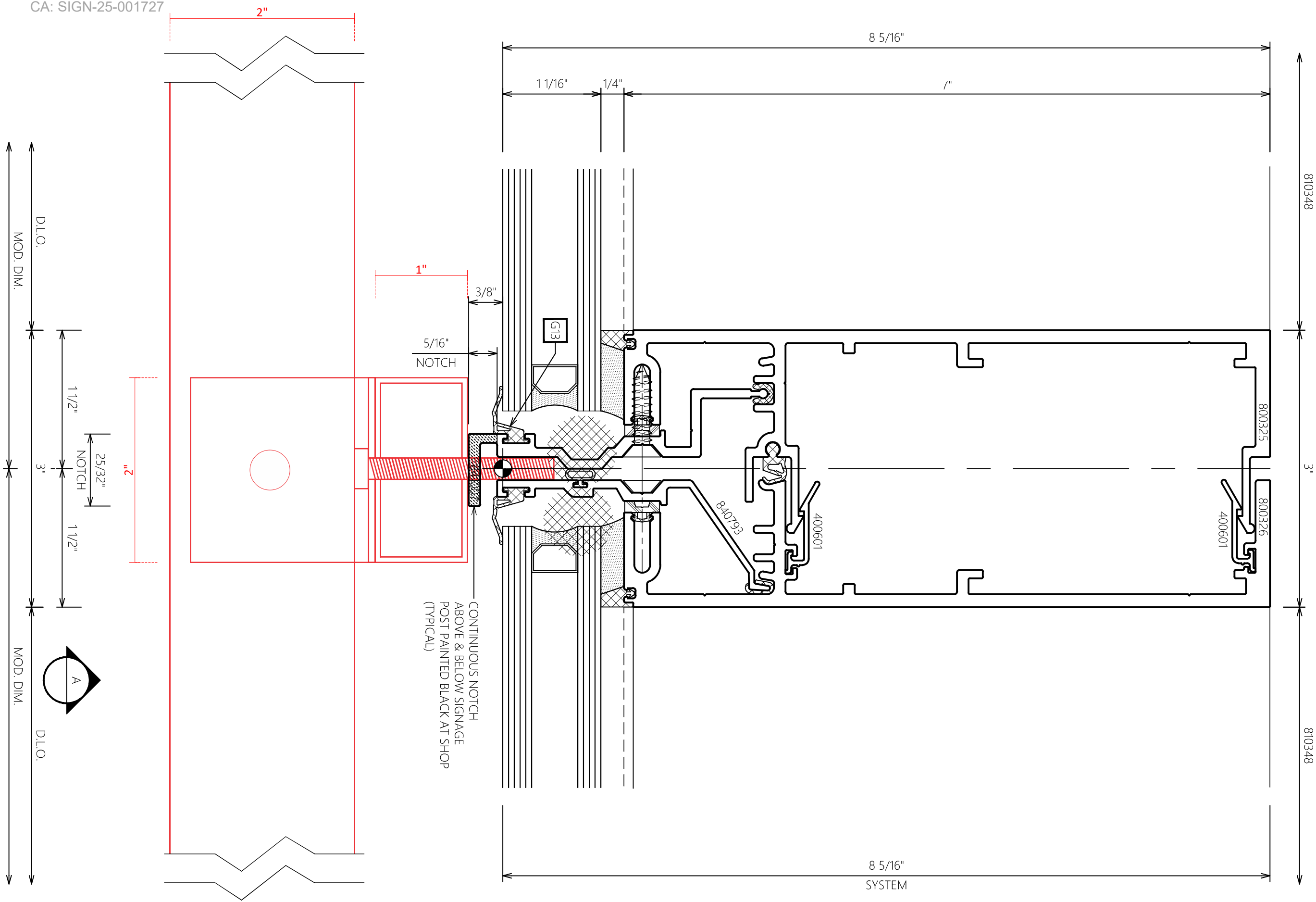
MM/DD/YYYY

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MOUNTING HARDWARE DETAIL

SCALE: 1:1

Project ID  
0429994Ar4

SIDLEY  
2323 CEDAR SPRINGS RD,  
DALLAS, TEXAS

Date: 6/4/2025  
Contact: RICHARD BROWN  
Designer: ES

Sign Item

SECTION VIEW

Scale: AS NOTED

Revision Note

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R4 JMC 9/30/25: REVISED SIGN A

Information Required  
for Production

Customer Approval

Signature

MM/DD/YYYY

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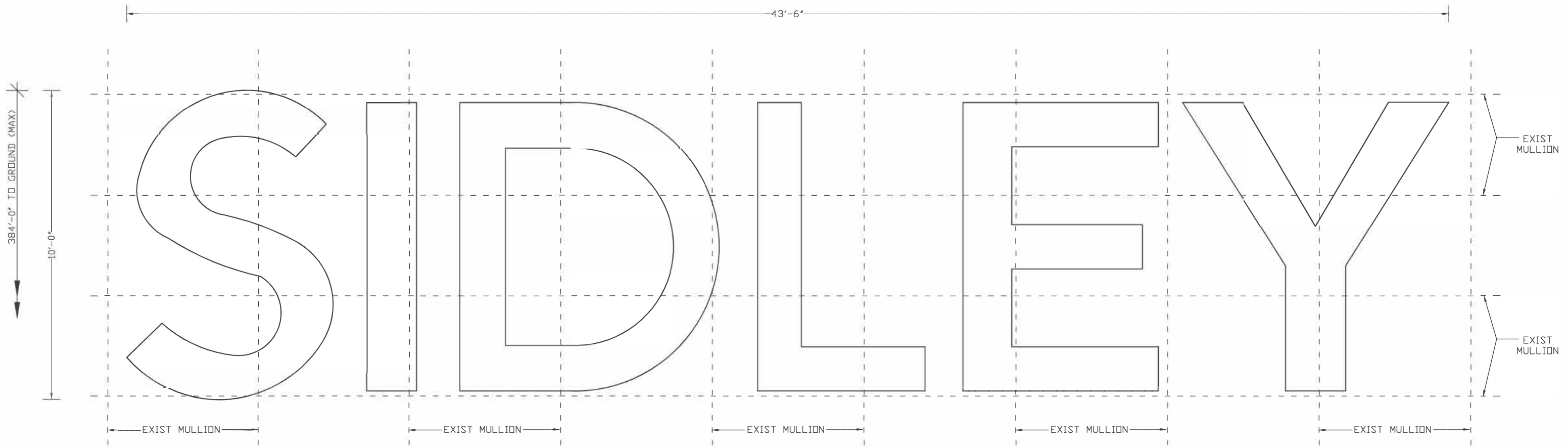
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Pattison



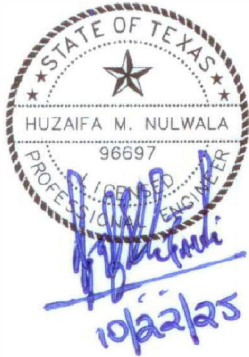
1.866.635.1110  
pattisonid.com

ELEVATION



NOTES:

1. DESIGN IS BASED ON 2024 IBC - WIND SPEED OF 115 MPH (3-SEC GUST), EXPOSURE C.
2. THIS DESIGN IS INTENDED FOR A SINGLE (1) SIGN THAT SHALL BE INSTALLED AT THE ADDRESS SHOWN AND SHALL NOT BE USED FOR MULTIPLE SIGN/S AT THIS OR ANY OTHER LOCATION/S UNLESS CERTIFIED BY A PROFESSIONAL ENGINEER.
3. ENGINEER IS NOT THE ENGINEER OF RECORD FOR THE OVERALL PROJECT AND SHALL ONLY BE RESPONSIBLE FOR THE DESIGN OF SIGN STRUCTURE SHOWN IN THIS PACKAGE. (SIGN FRAME STRUCTURE DESIGN SHALL BE PROVIDED BY OTHERS).
4. ALL HSS TUBE SECTIONS SHALL MEET ASTM A500 GRADE-B WITH MINIMUM YIELD STRESS  $F_y=46$  KSI.
5. ALL OTHER STEEL INCLUDING CONNECTION PLATES, ANGLES, ETC. SHALL MEET ASTM A36 WITH MINIMUM YIELD STRESS  $F_y=36$  KSI.
6. ALL ALUMINUM USED SHALL BE GRADE 6061-T6 OR EQUIVALENT WITH MINIMUM YIELD STRESS  $F_y=35$  KSI.
7. STRUCTURAL BOLTS SHALL CONFORM TO ASTM A325 UNLESS OTHERWISE NOTED AND SHALL BE GALVANIZED.
8. ALL STEEL WELDING SHALL BE MADE WITH E70xx ELECTRODES AND SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE WITH AWS STANDARDS.
9. ALL ALUMINUM WELDING SHALL BE MADE WITH E40xx ELECTRODES AND SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE AWS STANDARDS.
10. SIZE AND NUMBER OF BOLTS ARE MINIMUM RECOMMENDED AND SHALL BE INCREASED DEPENDING ON FIELD CONDITIONS TO SECURE SIGN FIRMLY ONTO EXISTING CURTAIN WALL (GLASS WALL) STRUCTURE.
11. BOLTS SHALL BE CONNECTED TO EXISTING CURTAIN WALL (GLASS WALL) STRUCTURE (FRAME) AT ALL LOCATIONS.
12. EXISTING CURTAIN WALL (GLASS WALL) STRUCTURE INFORMATION NOT PROVIDED BY SIGN CONTRACTOR.
13. ANALYSIS OF EXISTING CURTAIN WALL (GLASS WALL) STRUCTURE TO SUPPORT PROPOSED LOADS NOT IN SCOPE OF SMB ENGINEERING, LLC AND DESIGN ENGINEER AND HENCE NOT PERFORMED AND PROVIDED.
14. SMB ENGINEERING, LLC AND DESIGN ENGINEER SHALL NOT BE HELD RESPONSIBLE FOR DAMAGE CAUSED TO EXISTING CURTAIN WALL (GLASS WALL) OR EXISTING BUILDING DUE TO ADDITION OF PROPOSED LOADS.



**SMB**  
**ENGINEERING, LLC**  
WWW.SMB-ENGINEERING.COM  
TEL: 832-443-7328

TEXAS REGISTRATION NUMBER : F-10116

**PATTISON ID**

**SIDLEY**  
**CEDAR SPRINGS ROAD,**  
**DALLAS, TX**

PRJ # : 25-K077

DWG BY : HMN

SCALE : NTS

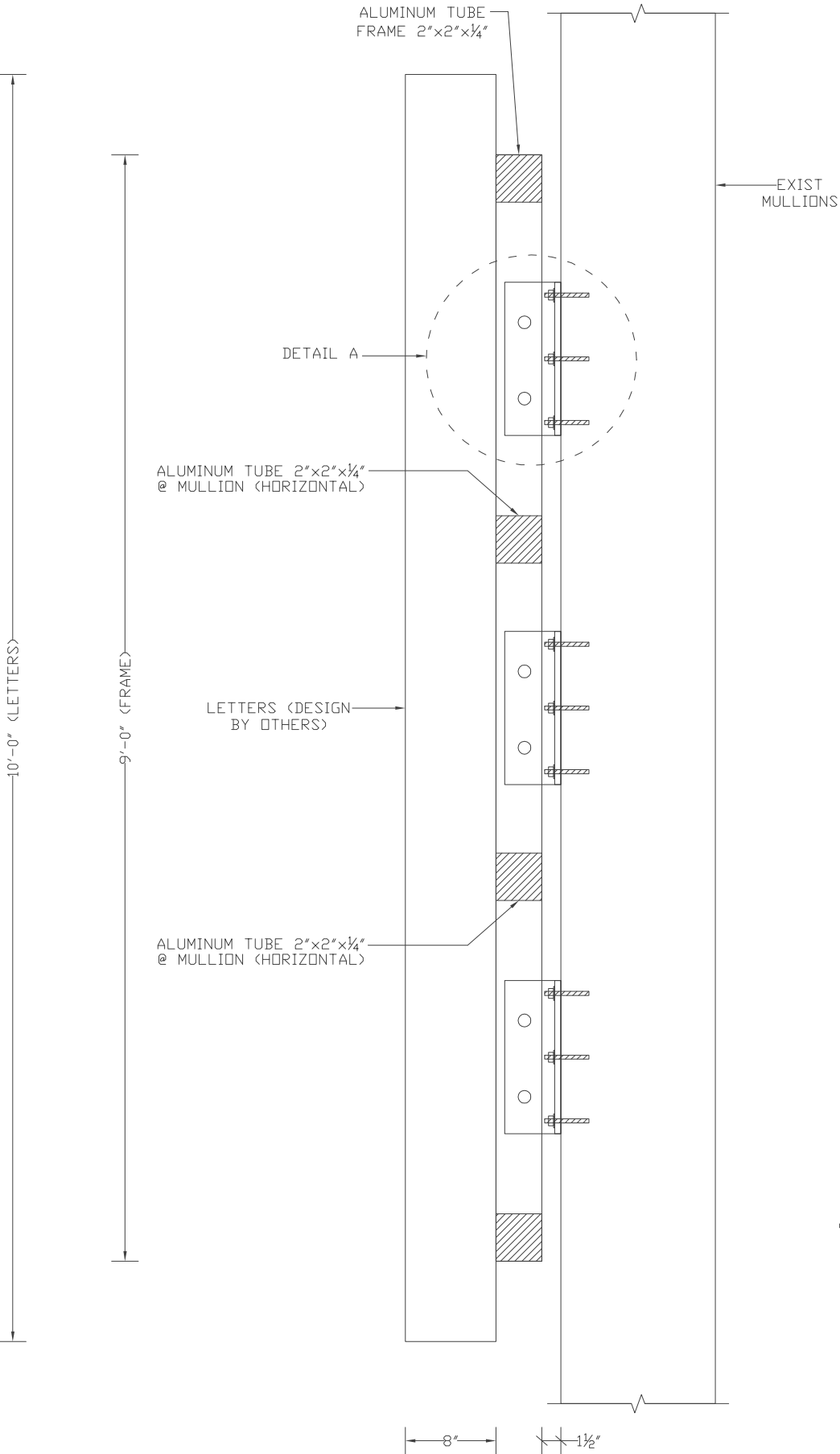
DATE : OCT 2025

REV : 0

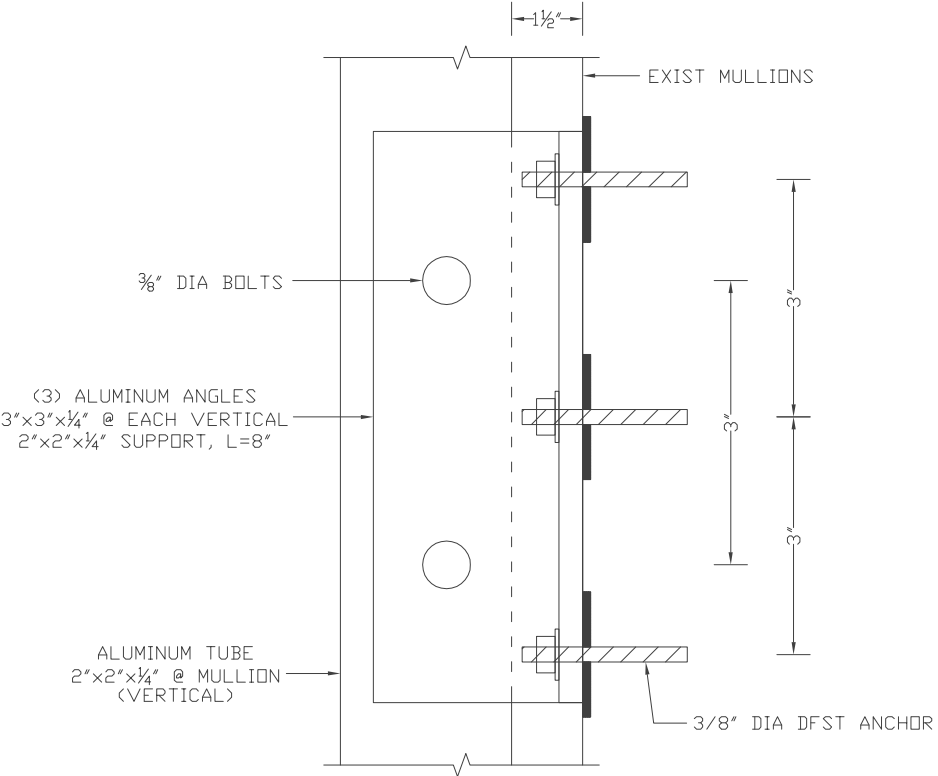
PAGE : 1 OF 2



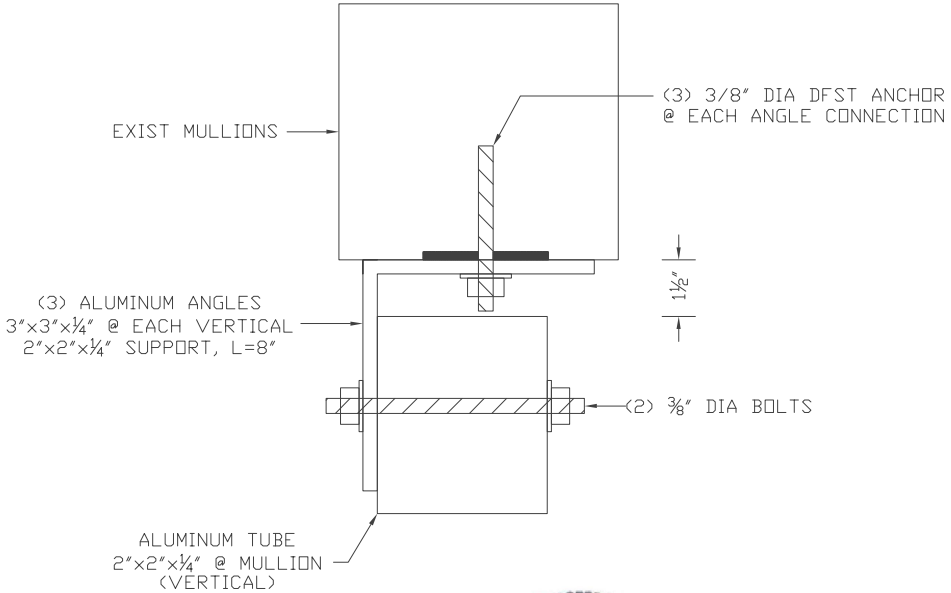
SIDE VIEW



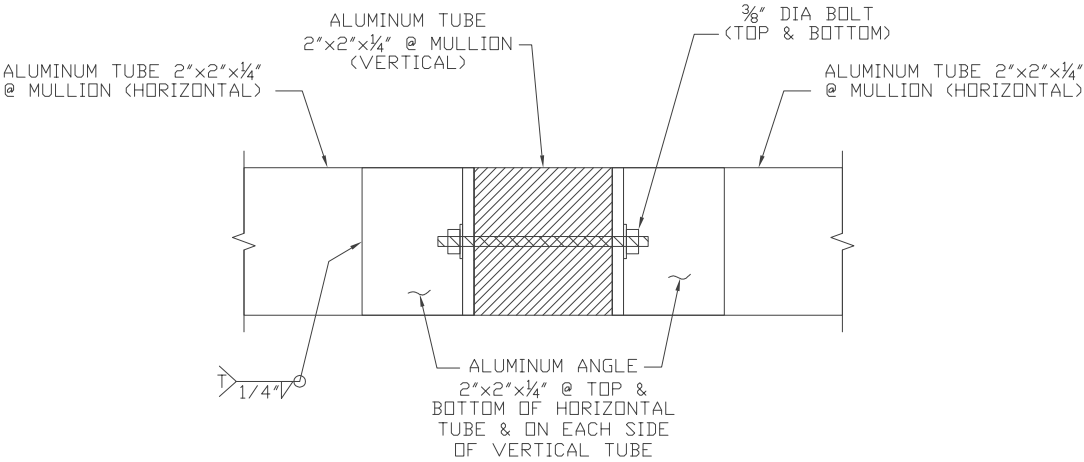
DETAIL A (SIDE VIEW)



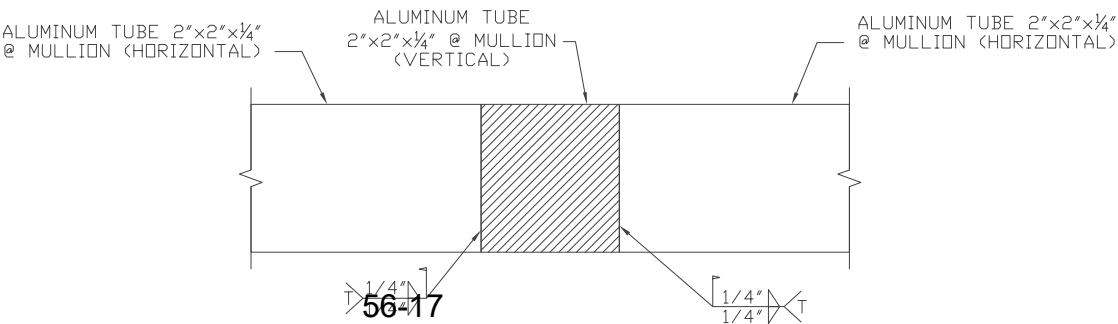
DETAIL A (TOP VIEW)



FRAME CONNECTION DETAIL (TYP 1)



FRAME CONNECTION DETAIL (TYP 2)



IMPORTANT NOTE:

BOLTS SHALL NOT BE CONNECTED TO EXISTING CURTAIN WALL FACADE (EXISTING GLASS) AT ANY LOCATION.

**SMB**  
**ENGINEERING, LLC**  
WWW.SMB-ENGINEERING.COM  
TEL: 832-443-7328

TEXAS REGISTRATION NUMBER : F-10116

**PATTISON ID**

**SIDLEY**  
CEDAR SPRINGS ROAD,  
DALLAS, TX

PRJ # : 25-K077

DWG BY : HMN

SCALE : NTS

DATE : OCT 2025

REV : 0

PAGE : 2 OF 2





2095 N. Collins Blvd., Suite 100, Richardson, Texas 75080 Phone(972)644-0640 Fax(972)644-4204

## SIGNAGE ANALYSIS SUMMARY

**ELEVATION: 3154 & 3155; DETAIL: 4217 & 5219**

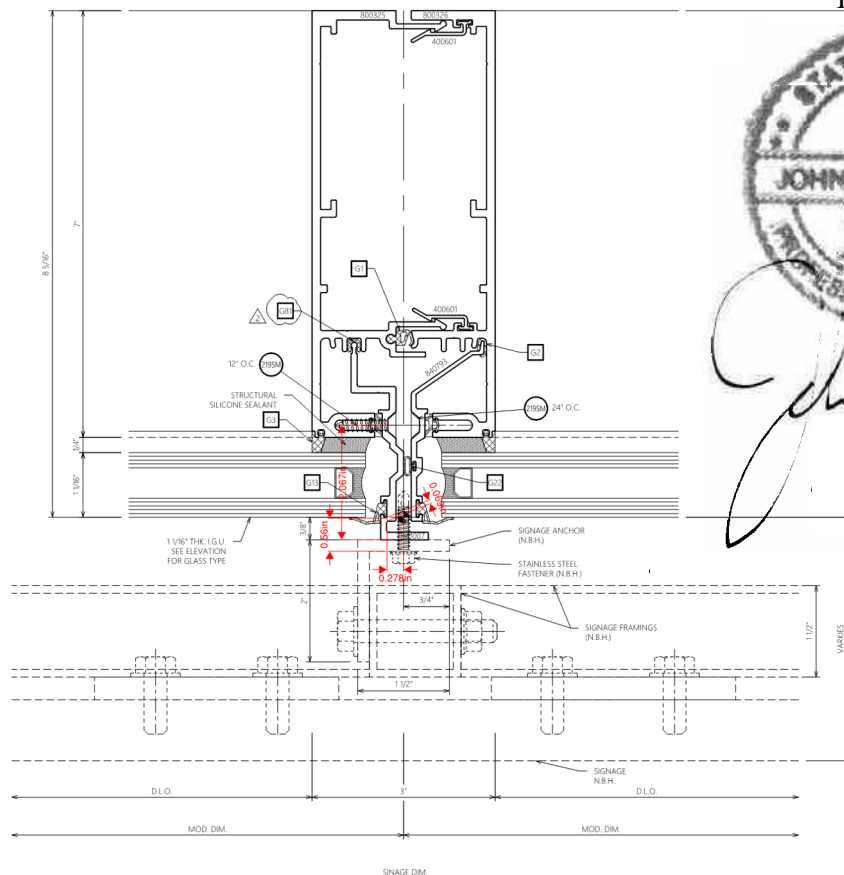
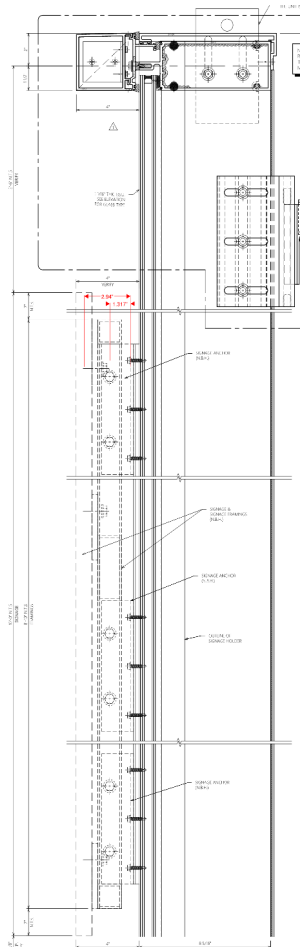
### LOAD

Windload Front Reaction  $WL_f \equiv 100\text{psf} \cdot (0.6) \cdot (10\text{ft}) \cdot (5\text{ft}) \cdot (0.5)$   $WL_f = 1500\text{ lbf}$

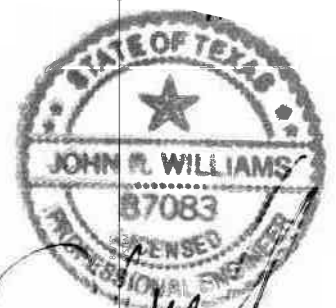
Assumed Deadload Reaction (Signage)  $DL_s \equiv (2) \cdot 250\text{ lbf}$   $DL_s = 500\text{ lbf}$

Deadload Reaction (Framings)  $DL_f \equiv (2) \cdot \left(0.067 \frac{\text{lbf}}{\text{in}}\right) \cdot (5\text{ft}) + (1) \cdot \left(0.127 \frac{\text{lbf}}{\text{in}}\right) \cdot (5\text{ft}) \dots$   $DL_f = 24\text{ lbf}$   
 $+ (1) \cdot \left(0.067 \frac{\text{lbf}}{\text{in}}\right) \cdot (10\text{ft})$

Use Deadload (Framings)  $DL_f \equiv 50\text{ lbf}$   $DL_f = 50\text{ lbf}$



10/16/2025



**DEC, INC.**  
**F-3430**

R-5



2095 N. Collins Blvd., Suite 100, Richardson, Texas 75080 Phone(972)644-0640 Fax(972)644-4204

### CHECK (3) #12-14 X 1" C.W. STAINLESS STEEL ELCO BI-FLEX CONNECTING SIGNAGE ANCHOR TO FIN

Allowable Tension  $T_{all} = 645 \text{ lbf}$  (Ref: R-8 )

Allowable Pullout  $P_{all} = 530 \text{ lbf}$  (Ref: R-23 )

Applied Tension  $T_{app} = \frac{W L_f}{3 \cdot (3)}$   $T_{app} = 167 \text{ lbf}$

Allowable Shear  $V_{all} = 373 \text{ lbf}$  (Ref: R-8 )

Applied Shear  $V_{app} = \frac{D L_s + D L_f}{3}$   $V_{app} = 183 \text{ lbf}$

Interaction  $\left( \frac{T_{app}}{T_{all}} \right)^2 + \left( \frac{V_{app}}{V_{all}} \right)^2 = 0.308 < 1$  **OK**

### CHECK (12" O.C.) #12-14 X 1" C.W. STAINLESS STEEL SMS CONNECTING FIN TO SCREW CHASE

Allowable Shear (Downward)  $V_{yall} = \frac{892.5 \text{ lbf} - 27.5 \text{ lbf}}{3.0}$   $V_{yall} = 288 \text{ lbf}$

Applied Shear (Downward)  $V_{yapp} = \frac{D L_s + D L_f}{2}$   $V_{yapp} = 275 \text{ lbf}$  **OK**

Allowable Shear (Outward)  $V_{xall} = \frac{668.2 \text{ lbf} - 29.2 \text{ lbf}}{3.0}$   $V_{xall} = 213 \text{ lbf}$

Applied Shear (Outward)  $V_{xapp} = \frac{W L_f}{3 \cdot (2)}$   $V_{xapp} = 250 \text{ lbf}$

### CHECK BENDING ON FIN (6063-T6)

Allowable Bending  $F_{bx} = 22.7 \text{ ksi}$  (Ref: R-5 )

Applied Bending  $F_{bx} = \frac{\frac{W L_f}{3} \cdot (0.278 \text{ in})}{12 \text{ in} \cdot \frac{(0.069 \text{ in})^2}{6}}$   $F_{bx} = 14598 \text{ psi}$  **OK**



**Table 2-21**  
**ALLOWABLE STRESSES  $F/\Omega$  (k/in<sup>2</sup>) FOR BUILDING-TYPE STRUCTURES (UNWELDED)**

<u>Axial Tension</u>		Section	$F/\Omega$	6063 - T6 B221, B241, B429 0.000 to 1.000 in. thick			
axial tension stress on net effective area		D.2b	15.4				
axial tension stress on gross area		D.2a	15.2				
<u>Shear or torsion</u>							
Shear or torsion rupture		G, H.2	9.2	$F_{ty} =$	25 k/in <sup>2</sup>		
<u>Bearing</u>				$F_{cy} =$	25 k/in <sup>2</sup>		
bolts or rivets on holes		J.3.6a, J.4.6	30.8	$F_{tu} =$	30 k/in <sup>2</sup>		
bolts on slots, pins on holes, flat surfaces		J.3.6b, J.6.5, J.8	20.5	$E =$	10,100 k/in <sup>2</sup>		
screws in holes		J.5.5.1	20.0	$k_t =$	1		

		$\lambda$	$F/\Omega$ for $\lambda \leq \lambda_1$	$\lambda_1$	$F/\Omega$ for $\lambda_1 < \lambda < \lambda_2$	$\lambda_2$	$F/\Omega$ for $\lambda \geq \lambda_2$
<u>Axial Compression</u> - member buckling	E.2	$kL/r$	15.2	18.2	$0.00022 \lambda^2 - 0.133\lambda + 17.5$	78	$51,352/\lambda^2$
<u>Flexure</u> - lateral-torsional buckling	F.4	see F.4.2		-	see F.4	78	$60,414/\lambda^2$
<u>Elements - Uniform Compression</u>							
flat elements supported on one edge in columns whose buckling axis is not an axis of symmetry	B.5.4.1	$b/t$	15.2	7.3	$19.0 - 0.530 \lambda$	15	$2,417/\lambda^2$
flat elements supported on one edge in all other columns and all beams	B.5.4.1	$b/t$	15.2	7.3	$19.0 - 0.530 \lambda$	12.6	$155/\lambda$
flat elements supported on both edges	B.5.4.2	$b/t$	15.2	22.8	$19.0 - 0.170\lambda$	39	$484/\lambda$
flat elements supported on both edges and with an intermediate stiffener	B.5.4.4	$\lambda_s$	15.2	18.2	$16.7 - 0.088\lambda$	78	$60,414/\lambda^2$
round hollow elements	B.5.4.5	$R_b/t$	15.2	31.2	$18.5 - 0.593 \lambda^{1/2}$	189	$3,776/(\lambda k_n)^\dagger$
flat elements - direct strength method	B.5.4.6	$\lambda_{eq}$	15.2	36.5	$19.0 - 0.106\lambda$	63	$775/\lambda$
<u>Elements - Flexural Compression</u>							
flat elements supported on both edges	B.5.5.1	$b/t$	22.7	34.7	$27.9 - 0.150\lambda$	93	$1,298/\lambda$
flat elements supported on tension edge, compression edge free	B.5.5.2	$b/t$	22.7	6.5	$27.9 - 0.810\lambda$	23	$4,932/\lambda^2$
flat elements supported on both edges and with a longitudinal stiffener	B.5.5.3	$b/t$	22.7	77.8	$27.9 - 0.067\lambda$	208	$2,910/\lambda$
pipes and round tubes	B.5.5.4	$R_b/t$	$27.7 - 1.70\lambda^{1/2}$	70.0	$18.5 - 0.593\lambda^{1/2}$	189	$3,776/(\lambda k_n)^\dagger$
flat elements - direct strength method	B.5.5.5	$\lambda_{eq}$	$M_{np}/S_{xc}$	36.5	see B.5.5.5	74	$696/\lambda$
<u>Elements - Shear</u>							
flat elements supported on both edges	G.2	$b/t$	9.1	38.7	$11.5 - 0.062\lambda$	76	$38,665/\lambda^2$
flat elements supported on one edge	G.3	$b/t$	9.1	16.1	$11.5 - 0.150\lambda$	32	$6,713/\lambda^2$
pipes and round or oval tubes	G.4	$\lambda_p^*$	9.1	72.2	$15.0 - 0.081\lambda$	76	$50,264/\lambda^2$
<u>Torsion</u> - pipes and round or oval tubes	H.2.1	$\lambda_p^*$	9.1	38.7	$11.5 - 0.062\lambda$	76	$38,665/\lambda^2$

$$*\lambda_p = 2.9(R_b/t)^{5/8} (L/R_b)^{1/4}$$

$$^\dagger k_n = (1 + \lambda^{1/2}/35)^2$$

TABLE 20.9: Fastener Capacity

STAINLESS STEEL - Alloy Groups 1, 2 and 3, Condition CW (UNC Threads)												
Nominal Fastener Diameter & Threads per Inch	D Nominal Thread Diameter (in)	A(S) Tensile Stress Area (in <sup>2</sup> )	A(R) Thread Root Area (in <sup>2</sup> )	Allowable Tension (lbs)	Allowable Shear		Allowable Bearing (lbs)			Minimum Material Thickness (lbs) to Equal Tensile Capacity of Fastener (in)		Maximum Tensile Load (lbs) for Available 3/8" Plate Thickness
					Single (lbs)	Double (lbs)	1/8" Steel A36	1/8" Aluminum 6063-T5	1/8" Aluminum 6063-T6	6063-T5 A36	6063-T6 0.1943	3/8" Steel A36
#6-32	0.1380	0.0091	0.0078	303	150	300	900	253	345	0.1335	0.2538	303
#8-32	0.1640	0.0140	0.0124	467	239	477	1,070	301	410	0.1733	0.2466	467
#10-24	0.1900	0.0175	0.0151	584	292	583	1,240	348	475	0.1872	0.2501	584
#12-24	0.2160	0.0242	0.0214	805	411	822	1,409	396	540	0.2269	0.3016	805
1/4-20	0.2500	0.0318	0.0280	1,061	538	1,076	1,631	458	625	0.2534	0.3373	1,061
5/16-18	0.3125	0.0524	0.0469	2,097	1,083	2,166	2,039	573	781	0.2867	> 3/8"	2,097
3/8-16	0.3750	0.0775	0.0699	3,100	1,614	3,228	2,447	688	938	0.3181	> 3/8"	3,100
7/16-14	0.4375	0.1063	0.0961	4,252	2,220	4,440	2,855	802	1,094	0.3442	> 3/8"	4,252
1/2-13	0.5000	0.1419	0.1292	5,676	2,984	5,968	3,263	917	1,250	> 3/8"	> 3/8"	5,642
9/16-12	0.5625	0.1819	0.1664	7,278	3,842	7,685	3,670	1,031	1,406	> 3/8"	> 3/8"	6,444
5/8-11	0.6250	0.2260	0.2071	9,040	4,782	9,584	4,078	1,146	1,563	> 3/8"	> 3/8"	7,148
3/4-10	0.7500	0.3345	0.3091	11,372	6,022	12,045	4,894	1,375	1,875	> 3/8"	> 3/8"	8,612
7/8-9	0.8750	0.4617	0.4285	15,583	8,351	16,701	5,709	1,604	2,188	> 3/8"	> 3/8"	10,158
1-8	1.0000	0.6057	0.5630	20,444	10,970	21,940	6,525	1,833	2,500	> 3/8"	> 3/8"	11,696
STAINLESS STEEL - Alloy Groups 1, 2 and 3, Condition CW (Spaced Threads)												
Nominal Fastener Diameter & Threads per Inch	D Nominal Thread Diameter (in)	K Basic Minor Diameter (in)	A(R) Thread Root Area (in <sup>2</sup> )	Allowable Tension (lbs)	Allowable Shear		Allowable Bearing (lbs)			Minimum Material Thickness (lbs) to Equal Tensile Capacity of Fastener (in)		Maximum Tensile Load (lbs) for Available 3/8" Plate Thickness
					Single (lbs)	Double (lbs)	1/8" Steel A36	1/8" Aluminum 6063-T5	1/8" Aluminum 6063-T6	6063-T5 A36	6063-T6 0.1378	3/8" Steel A36
#6-20	0.1380	0.0990	0.0077	257	148	296	900	253	345	0.1191	0.1695	257
#8-18	0.1640	0.1160	0.0106	352	203	407	1,070	301	410	0.1437	0.1930	352
#10-16	0.1900	0.1350	0.0143	477	275	551	1,240	348	475	0.1528	0.2225	477
#12-14	0.2160	0.1570	0.0194	645	373	745	1,409	396	540	0.1820	0.2610	645
1/4-14	0.2500	0.1850	0.0269	896	517	1,035	1,631	458	625	0.2181	0.2994	896
5/16-12	0.3125	0.2360	0.0437	1,750	1,010	2,020	2,039	573	781	0.2839	> 3/8"	1,750
3/8-12	0.3750	0.2990	0.0702	2,809	1,622	3,243	2,447	688	938	> 3/8"	> 3/8"	2,773
Group 1,2,3-Cond. CW				≤ 5/8" Dia.	≥ 3/4" Dia.		For Diameters < 3/4"			Effective Area (UNC Threads)		
Fu (Min. Ultimate Tensile Strength)				100,000 psi	85,000 psi		Fu = Fu/SF			Effective Area (Spaced Threads)		
Ft (Allow. Tensile Stress, D≤1/4")				33,333 psi	N/A psi		Allowable Tension = Fu/[A(S)]			A(R) = π(D-1.2269N) <sup>2</sup> /4		
Ft (Allow. Tensile Stress, D> 1/4")				40,000 psi	33,750 psi		Fu = Fu / (SF x sq rt (3))			A(S) = π(D-0.9743N) <sup>2</sup> /4		
Fv (Allowable Shear Stress, D≤1/4")				19,245 psi	N/A psi		Allowable Single Shear = Fu/[A(R)]					
Fv (Allowable Shear Stress, D>1/4")				23,094 psi	19,486 psi							

## NOTE 11:

1. Values are taken from AISI, ASTM, IFI, SAE and AA documents. K values for spaced threads are taken as the minimum values in IFI Fastener Handbook, 6th Ed. 2. Safety Factor used for fasteners with diameters 1/4" or less is 3.0, Safety Factor used for fasteners with diameters 5/16" or greater is 2.5.
3. Fasteners with diameters of 3/4" and greater are fabricated from different material than fasteners less than 3/4" in diameter.
4. For diameters of 3/4" and greater,  $F_y = 45,000$  psi. For these, tensile and shear yields govern the allowable tension and shear values (i.e.,  $0.75 F_y < F_u/SF$

TABLE 22.11 (Spaced Threads)

6063-T6											
Nominal Thread Diameter & Thread Per Inch	D Nominal Thread Diameter (Inch)	Aluminum Thickness (Inches)								Allowable Pullout (Pounds)	
		0.038	0.060	0.072	0.080	0.094	0.125	0.156	0.188	0.250	0.312
#8-18	0.1640	53	83	100	132	155	235	350	468	669	835
#10-16	0.1900	61	96	116	153	180	239	372	509	775	968
#12-14	0.2160	--	110	132	174	204	271	374	530	833	1100
1/4-14	0.2500	--	127	152	201	236	314	433	614	964	1273
5/16-12	0.3125	--	--	--	--	--	--	--	809	1334	1860
3/8-12	0.3750	--	--	--	--	--	--	--	971	1601	2232
		6063-T6									
F <sub>U</sub> (Tensile Ultimate Strength)				30000	psi						
F <sub>Y</sub> (Tensile Yield Strength)				25000	psi						
Shading indicates transition region.											

**NOTE 32:**

- Each table lists allowable pull-out (internal threads) values.  $S_F = 3.0$  for  $D \leq 0.25"$ ;  $S_F = 2.5$  for  $D \geq 0.3125"$ . Fastener allowable strength (basic tension and external threads) needs to be checked separately.
- For pilot hole sizes refer to tables 21.1 to 21.7
- Fastener pullout not shown for aluminum thickness less than approximately 2 threads, unless tested at a lesser thickness.
- Multiple fastener connections and embrittlement need to be checked separately.