

# HISTORIC AND DESIGN REVIEW COMMISSION

November 01, 2023

**HDRC CASE NO:** 2023-422  
**ADDRESS:** 923 E CARSON  
511 SPOFFORD  
**LEGAL DESCRIPTION:** NCB 1259 (QUITMAN MULTI-FAMILY IDZ), LOT 64  
NCB 1260 (QUITMAN MULTI-FAMILY IDZ), LOT 48  
**ZONING:** IDZ-3, H  
**CITY COUNCIL DIST.:** 2  
**DISTRICT:** Government Hill Historic District  
**APPLICANT:** Robert Hunt/GRAYSON HEIGHTS LLC  
**OWNER:** Robert Hunt/GRAYSON HEIGHTS LLC  
**TYPE OF WORK:** Signage  
**APPLICATION RECEIVED:** October 10, 2023  
**60-DAY REVIEW:** December 9, 2023  
**CASE MANAGER:** Edward Hall  
**REQUEST:**

The applicant is requesting a Certificate of Appropriateness for approval to install signage at 923 E Carson, a multi-family residential development. Within this request the applicant has proposed the following:

1. One (1) blade sign on the E Carson (south) façade of Building 1 to read “Grayson” to feature 29’ – 6” in height and 4’ – 6” in width for a total size of approximately 266 square feet. The proposed sign will feature a painted aluminum sign face with reverse lit channel letters.
2. One (1) blade sign on the Quitman (north) façade of Building 2 to read “Grayson” to feature 21’ – 5” in height and 4’ – 0” in width for a total size of approximately 171 square feet. The proposed sign will feature a painted aluminum sign face with reverse lit channel letters.
3. One (1) set of painted aluminum letters below the building cornice on the Quitman (north) façade of Building 1 to read “Grayson”. The proposed sign will feature 24’ – 4” in width and 3’ – 0” in height for a total size of approximately 73 square feet in size. The proposed sign will not feature illumination.
4. One (1) set of channel letters to be installed on an entrance canopy on the E Carson (south) façade to read “retail”. The proposed channel letters will feature a total width of 7’ – 4” and an overall height of 1’ – 1” for a total size of approximately 8 square feet. The proposed sign will not feature illumination.
5. One (1) set of channel letters to be installed on an entrance canopy on the E Carson (south) façade to read “leasing”. The proposed channel letters will feature a total width of 9’ – 0” and an overall height of 1’ – 1” for a total size of approximately 10 square feet. The proposed sign will not feature illumination.
6. Two (2) sets of channel letters to be installed on an entrance canopy on the E Carson (south) façade to read “parking”. The proposed channel letters will feature a total width of 9’ – 2” and an overall height of 1’ – 1” for a total size of approximately 10. The proposed sign will feature internal illumination.
7. Two (2) plaques reading “RGH, Residences at Grayson Heights” to feature 2’ – 0” in width and 1’ – 6” in height for a total size of approximately 3 square feet. One plaque will be installed on the E Carson (south) façade of building 1 and one will be installed on the Spofford (east) façade of building 2. The proposed signs will feature painted aluminum with die cut vinyl graphics.

## APPLICABLE CITATIONS:

*Historic Design Guidelines, Chapter 6, Guidelines for Signage*

### 1. General

#### A. GENERAL

*i. Number and size*—Each building will be allowed one major and two minor signs. Total requested signage should not exceed 50 square feet.

*ii. New signs*—Select the type of sign to be used based on evidence of historic signs or sign attachment parts along the building storefront where possible. Design signs to respect and respond to the character and/or period of the area in which they are being placed. Signs should identify the tenant without creating visual clutter or distracting from building features and historic districts.

*iii. Scale*—Design signage to be in proportion to the facade, respecting the building's size, scale and mass, height, and rhythms and sizes of window and door openings. Scale signage (in terms of its height and width) to be subordinate to the overall building composition.

## B. HISTORIC SIGNS

*i. Preservation*—Preserve historic signs, such as ghost signs or other signs characteristic of the building's or district's period of significance, whenever possible.

*ii. Maintenance*—Repair historic signs and replace historic parts in-kind when deteriorated beyond repair.

## C. PLACEMENT AND INSTALLATION

*i. Location*—Place signs where historically located and reuse sign attachment parts where they exist. Do not erect signs above the cornice line or uppermost portion of a facade wall, or where they will disfigure or conceal architectural details, window openings, doors, or other significant details.

*ii. Obstruction of historic features*—Avoid obscuring historic building features such as cornices, gables, porches, balconies, or other decorative elements with new signs.

*iii. Damage*—Avoid irreversible damage caused by installing a sign. For example, mount a sign to the mortar rather than the historic masonry. *iv. Pedestrian orientation*—Orient signs toward the sidewalk to maintain the pedestrian oriented nature of the historic districts.

## D. DESIGN

*i. Inappropriate materials*—Do not use plastic, fiberglass, highly reflective materials that will be difficult to read, or other synthetic materials not historically used in the district.

*ii. Appropriate materials*—Construct signs of durable materials used for signs during the period of the building's construction, such as wood, wrought iron, steel, aluminum, and metal grill work.

*iii. Color*—Limit the number of colors used on a sign to three. Select a dark background with light lettering to make signs more legible.

*iv. Typefaces*—Select letter styles and sizes that complement the overall character of the building façade. Avoid hard-to-read or overly intricate styles.

## E. LIGHTING

*i. Lighting sources*—Use only indirect or bare-bulb sources that do not produce glare to illuminate signs. All illumination shall be steady and stationary. Internal illumination should not be used.

*ii. Neon lighting*—Incorporate neon lighting as an integral architectural element or artwork appropriate to the site, if used.

## F. PROHIBITED SIGNS

*i.* An abbreviated list of the types of signs prohibited within San Antonio's historic districts and on historic landmarks is provided below. Refer to UDC Section 35- 612(j) and Chapter 28 of the Municipal Code for more detailed information on prohibited signs.

- Billboards, junior billboards, portable signs, and advertising benches.
- Pole signs.
- Revolving signs or signs with a kinetic component.
- Roof mounted signs, except in the case of a contributing sign.
- Digital and/or LED lighted signs, not to include LED light sources that do not meet the definition of a sign.
- Moored balloons or other floating signs that are tethered to the ground or to a structure.
- Any sign which does not identify a business or service within the historic district or historic landmark.
- Any non-contributing sign which is abandoned or damaged beyond 50 percent of its replacement value, including parts of old or unused signs.
- Notwithstanding the above, signs designated as a contributing sign or structure by the historic preservation officer shall not be prohibited unless or until such designation is revoked.

## G. MULTI-TENANT PROPERTIES

- i. Signage Plan*—Develop a master signage plan or signage guidelines for the total building or property.
- ii. Directory signs*—Group required signage in a single directory sign to minimize visual color and promote a unified appearance.

### 3. Projecting and Wall-Mounted Signs

#### A. GENERAL

- i. Mounting devices*—Construct sign frames and panels that will be used to be attach signs to the wall of a building of wood, metal, or other durable materials appropriate to the building's period of construction.
- ii. Structural supports*—Utilize sign hooks, expansion bolts, or through bolts with washers on the inside of the wall depending upon the weight and area of the sign, and the condition of the wall to which it is to be attached.
- iii. Appropriate usage*—Limit the use of projecting and wall-mounted signs to building forms that historically used these types of signs, most typically commercial storefronts. To a lesser degree, these signage types may also be appropriate in areas where residential building forms have been adapted for office or retail uses, if sized accordingly.

#### B. PROJECTING SIGNS

- i. Placement*—Mount projecting signs perpendicularly to a building or column while allowing eight feet of overhead clearance above public walkways.
- ii. Public right-of-way*—Limit the extension of projecting signs from the building facade into the public right-of-way for a maximum distance of eight feet or a distance equal to two-thirds the width of the abutting sidewalk, whichever distance is greater.
- iii. Area*—Projecting signs should be scaled appropriately in response to the building façade and number of tenants.

#### C. WALL-MOUNTED SIGNS

- i. Area*—Limit the aggregate area of all wall-mounted signs to twenty-five percent of a building facade.
- ii. Projection*—Limit the projection of wall-mounted signs to less than twelve inches from the building wall.
- iii. Placement*—Locate wall signs on existing signboards—the area above the storefront windows and below the second story windows—when available. Mount wall signs to align with others on the block if an existing signboard is not available.
- iv. Channel letters*—Avoid using internally-illuminated, wall-mounted channel letters for new signs unless historic precedent exists. Reverse channel letters may be permitted.

### FINDINGS:

- a. The applicant is requesting a Certificate of Appropriateness for approval to install signage at 923 E Carson and 511 Spofford, a multi-family residential development. Within this request, the applicant has proposed to install two (2) blade signs, three (3) canopy signs, one (1) wall sign, and two (2) plaques. This property is located within the Government Hill Historic District.
- b. ALLOWABLE SIGNAGE – The Unified Development Code recommends one major and two minor signs per application, not to exceed fifty (50) square feet total. The Commission may approve additional signage and square footage.
- c. BLADE SIGN (E Carson Façade) – The applicant has proposed to install one (1) blade sign on the E Carson (south) façade of Building 1 to read “Grayson” to feature 29’ – 6” in height and 4’ – 6” in width for a total size of approximately 266 square feet. The proposed sign will feature a painted aluminum sign face with reverse lit channel letters. Staff finds the proposed sign to be appropriate as its design and scale are appropriate for the building’s façade.
- d. BLADE SIGN (Quitman) – The applicant has proposed to install one (1) blade sign on the Quitman (north) façade of Building 2 to read “Grayson” to feature 21’ – 5” in height and 4’ – 0” in width for a total size of approximately 171 square feet. The proposed sign will feature a painted aluminum sign face with reverse lit channel letters. Staff finds the proposed sign to be appropriate as its design and scale are appropriate for the building’s façade.
- e. WALL SIGN (Quitman) – The applicant has proposed to install one (1) set of painted aluminum letters below the building cornice on the Quitman (north) façade of Building 1 to read “Grayson”. The proposed sign will feature 24’ – 4” in width and 3’ – 0” in height for a total size of approximately 73 square feet in size. The proposed sign will not feature illumination. Staff finds the design and placement of this sign to be appropriate.

- f. CANOPY SIGN (Retail Sign) – The applicant has proposed to install one (1) set of channel letters to be installed on an entrance canopy on the E Carson (south) façade to read “retail”. The proposed channel letters will feature a total width of 7’ – 4” and an overall height of 1’ – 1” for a total size of approximately 8 square feet. The proposed sign will not feature illumination. Staff finds the proposed sign to be appropriate.
- g. CANOPY SIGN (Leasing Sign) – The applicant has proposed to install one (1) set of channel letters to be installed on an entrance canopy on the E Carson (south) façade to read “leasing”. The proposed channel letters will feature a total width of 9’ – 0” and an overall height of 1’ – 1” for a total size of approximately 10 square feet. The proposed sign will not feature illumination. Staff finds the proposed sign to be appropriate.
- h. CANOPY SIGN (Parking Signs) – The applicant has proposed to install two (2) sets of channel letters to be installed on an entrance canopy on the E Carson (south) façade and Quitman (north) façade to read “parking”. Both signs will be installed above automobile entrances to the parking structure. The proposed channel letters will feature a total width of 9’ – 2” and an overall height of 1’ – 1” for a total size of approximately 10 square feet. The proposed signs will feature internal illumination. Staff finds the proposed sign to be appropriate.
- i. PLAQUE SIGNS – The applicant has proposed to install two (2) plaques reading “RGH, Residences at Grayson Heights” to feature 2’ – 0” in width and 1’ – 6” in height for a total size of approximately 3 square feet. One plaque will be installed on the E Carson (south) façade of building 1 and one will be installed on the Spofford (east) façade of building 2. The proposed signs will feature painted aluminum with die cut vinyl graphics. Staff finds both of these sign to be appropriate.

## **RECOMMENDATION:**

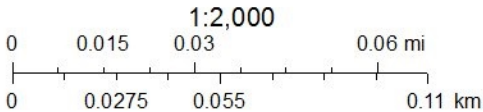
Staff recommends approval as submitted based on findings a through i.



City of San Antonio One Stop



October 23, 2023







R E S I D E N C E S   A T  
GRAYSON · HEIGHTS

BUILDING 1 - 923 E Carson St, San Antonio, TX 78208  
BUILDING 2 - 510 Spofford Ave, San Antonio, TX 78208

HISTORIC - PROPOSED SIGNAGE

Client Approval Signature: _____	<input type="checkbox"/> Approved as Submitted	<input type="checkbox"/> Approved as Noted	<input type="checkbox"/> Rejected: Revise and Resubmit	Revision: -	Date: 10.4.2023
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[illegible]

a multifamily project for

**Sketch 1**

## The Residences at Grayson Heights

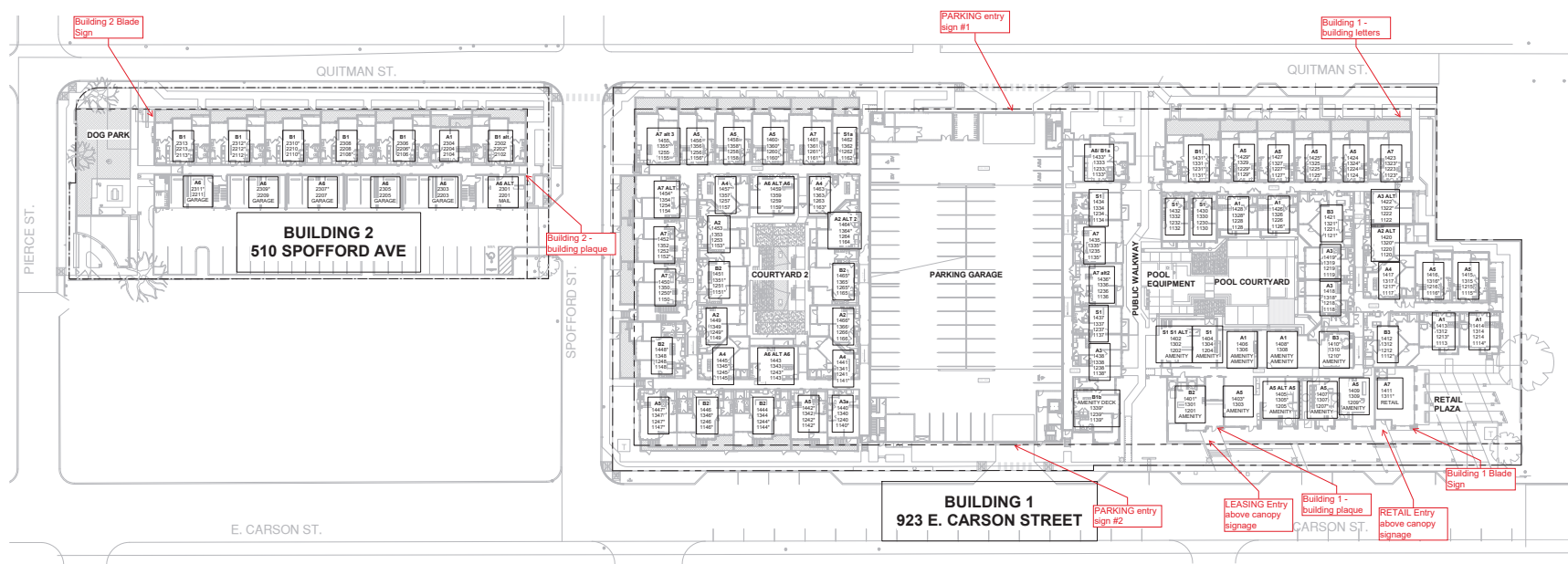
Building 1 - 923 E. Carson Street  
Building 2 - 510 Spofford Avenue  
San Antonio, Texas 78208

### Address Plan

Project Number	18035
Date	February 28, 2023
Drawn By	Author
Checked By	HMO

A006

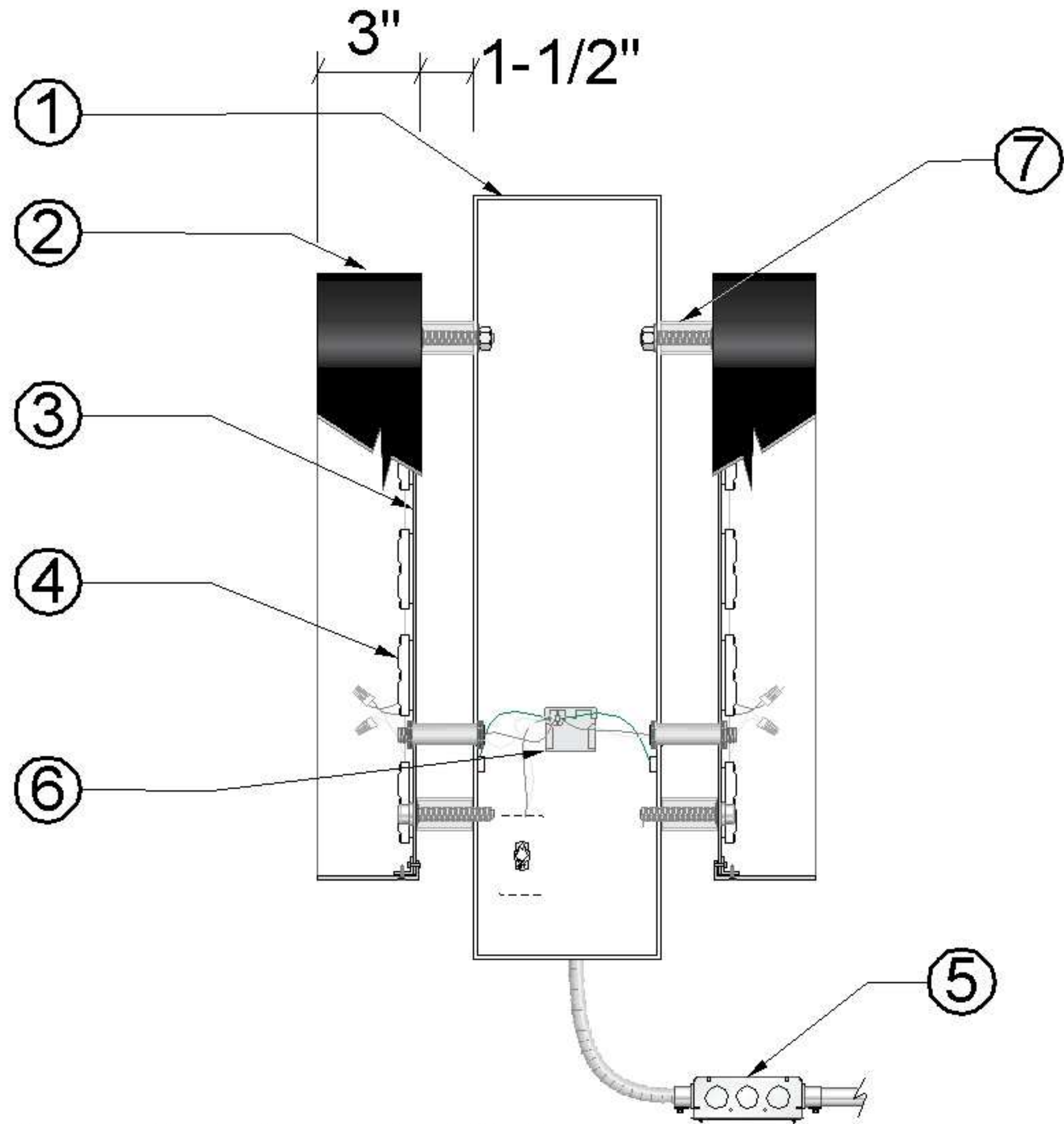
Scale 1" = 30'-0"





EXTERIOR BUILDING 1 BLADE SIGN SPECS

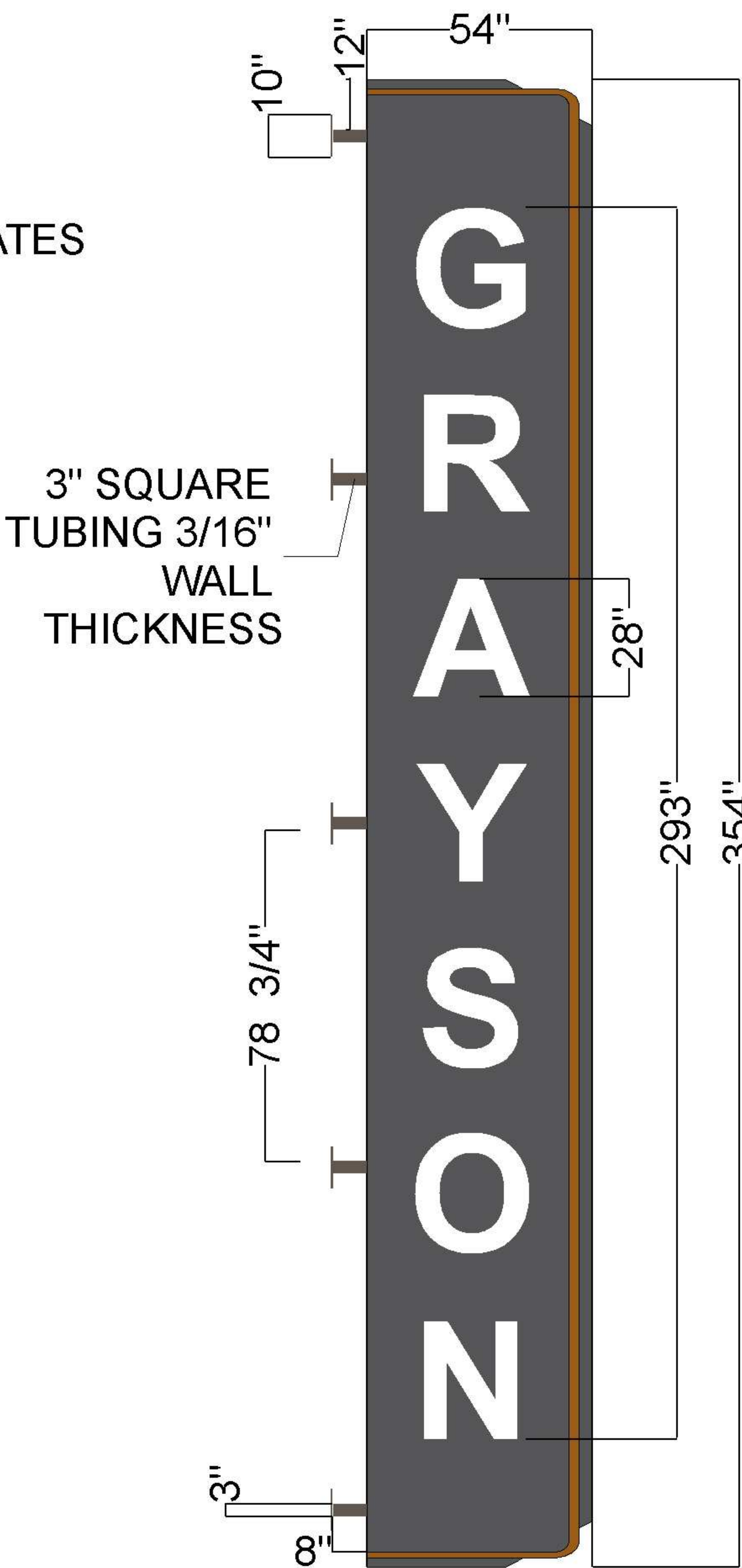
QUANTITY: ONE (1) DOUBLE SIDED BLADE SIGN  
BLADE SIZE: 29'-6"(h) x 4'-6"(w)  
BLADE SIGN: PAINTED ALUMINUM  
LETTERS: REVERSE LIT CHANNEL LETTERS  
ATTACHMENT: SQUARE TUBE W/ MOUNTING PLATES  
FASTENED TO BUILDING



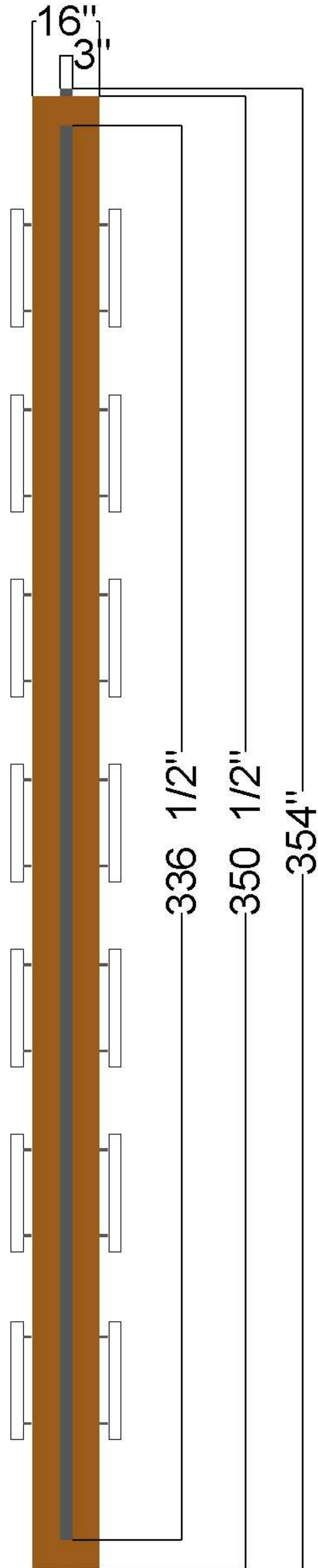
BLADE SIGN SPECS

- 1. PAINTED ALUMINUM BLADE SIGN
- 2. PAINTED REVERSE LIT .063 CHANNEL LETTER
- 3. 3/16" CLEAR LEXAN BACKERS
- 4. ILLUMINATED WITH WHITE LEDs
- 5. PRIMARY ELECTRICAL - 120 V DEDICATED CIRCUIT @ 20 AMPS
- 6. POWER SUPPLIES
- 7. 1-1/2" STANDOFFS

SECTION VIEW



FACE VIEW



SIDE VIEW

BUDGET  
SIGNS

PTM PMS BLACK #7C	PTM SW LATTE #6108	PTM WHITE
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PAINT COLORS



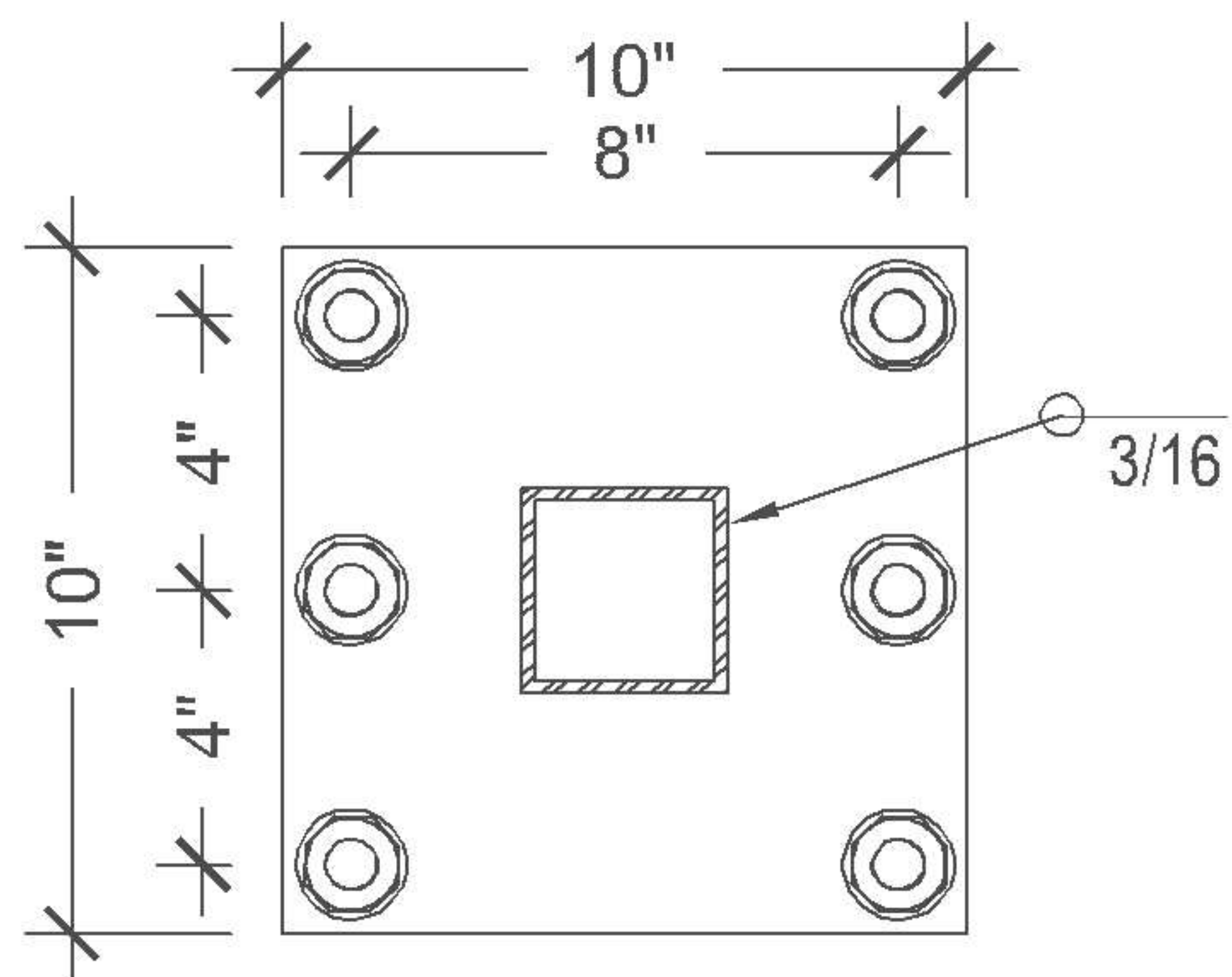
BUILDING 1 - SOUTH ELEVATION - CARSON STREET

Client Approval Signature: _____	<input type="checkbox"/> Approved as Submitted	<input type="checkbox"/> Approved as Noted	<input type="checkbox"/> Rejected: Revise and Resubmit	Revision: 1	Date: 10.4.2023
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EXTERIOR BUILDING 1 BLADE SIGN PLACEMENT



10"x10"x $\frac{1}{2}$ " STEEL PLATE  
W/ (6)  $\frac{3}{4}$ " $\varnothing$  LAG SCREWS  
MIN. EMBED.=3" INTO WOOD BLOCKING  
MIN.THREADED PEN.=3"  
W/ SPACE AS NEEDED  
MOUNTING PLATE DETAIL, TYP.

**ADDITIONAL NOTES:**  
**Wood stud wall w/ brick veneer existing / provided by others**  
**Wood blocking behind steel plate existing / provided by others**  
**Steel plate should match up with wood blocking and per spacing on PDF drawings**

Client Approval Signature: _____	<input type="checkbox"/> Approved as Submitted	<input type="checkbox"/> Approved as Noted	<input type="checkbox"/> Rejected: Revise and Resubmit	Revision: -	Date: 9.7.2023
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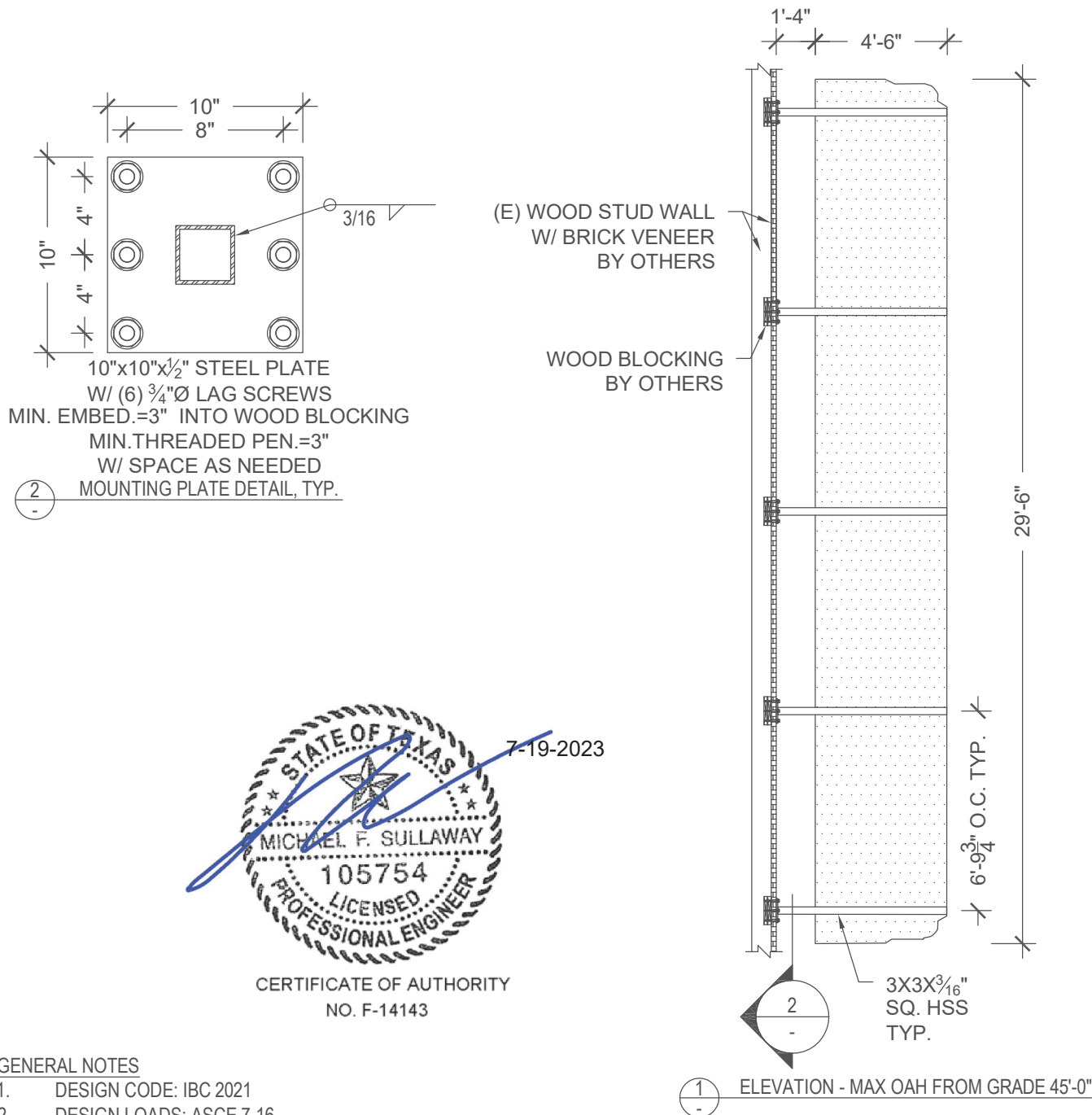




11545 W. BERNARDO COURT, SUITE 201  
 SAN DIEGO, CA 92127  
 PROJECTMANAGER@SULLAWAYENG.COM  
 PHONE: 1-858-312-5150 FAX: 1-858-777-3534

PROJECT: GRAYSONV, SIGN TYPE: SIGN 2, 923 E. CARSON STREET, SAN ANTONIO, TX  
 PROJECT #: 41279B-1  
 CLIENT: BUDGET SIGNS, LTD.

DATE: 07/19/2023  
 ENGINEER: RM  
 LAST REVISED:





PROJECT: GRAYSONV

DATE: 07/19/23

PROJ. NO.: 41279B-1

ENGINEER: RM

CLIENT: BUDGET SIGNS, LTD.

V5.5

units; pounds, feet unless noted otherwise

### Applied Wind Loads; from ASCE 7-16

$p_{net} = \lambda K_{zt} p_{net30}$	(ASCE 30.4-1)	
$\lambda = 1.53$	(ASCE Fig. 30.4-1)	
$K_{zt} = 1.0$	(unless unusual landscape)	
$V = 110$ mph	Exposure =	c
Area = 132.75 ft <sup>2</sup>		
max. height = 45.00 ft		
$p_{net30} = 18.29$ psf		$p_{net} = 27.99$ psf
$p_{net30} = -22.23$ psf		$p_{net} = -34.01$ psf

### Loads on 0.75" Dia. Lag Screws - Mounting Plate to Wall (LRFD):

$P_{net} =$		= 34.01 psf (See Above)
Tributary Area =	$A = (6'-9.75") \times (4'-6") + (1'-4") \times (3") =$	30.990 ft <sup>2</sup>
Wind Load =	$WL = P_{net} \times A =$	1054 lbs
Dead Load =	$DL = 1.2 \times 10 \text{ psf} \times A =$	372 lbs
# screws =		= 6 screws
dia. =		= 0.750 in
arm (WL) =	$(4'-6")/2 + (1'-4") =$	43 in
MWL =	$WL \times \text{arm} =$	45326 lb-in
arm (DL) =	$(4'-6")/2 + (1'-4") =$	43 in
MDL =	$DL \times \text{arm} =$	15991 lb-in
Spacing (WL) =	$Sw =$	8 in
Additional tension due to WL =	$TWL = MWL / Sw / 3 \text{ screws} =$	1889 lbs
Spacing (DL) =	$Sd =$	8 in
Additional tension due to DL =	$TDL = MDL / Sd / 2 \text{ screws} =$	999 lbs
Tension per screw =	$T = TWL + TDL =$	2888 lbs
Shear per screw =	$V = WL / \# \text{ screws} + DL / \# \text{ screws} =$	238 lbs

### Check 10x10x0.5" Steel Mounting Plate (LRFD):

	$f_y =$	36 ksi	$\phi =$	0.9
arm = 2.575 in	$T = \text{MAX}(3 \times TWL + TDL, TWL + 2 \times TDL) =$	6.665 k	(See Above)	
b = 10 in	t =	0.5 in		
M at Mounting Plate =	$T \times \text{arm} =$	17.163 k-in		
Z =	$bt^2/4 =$	0.625 in <sup>3</sup>		
$\phi Mn =$	$\phi \times f_y \times Z =$	20.250 k-in		
Ratio check =	$(M \text{ at Mounting Plate}) / (\phi Mn) =$	0.848 < 1	OK	

### Check 3x3x3/16 Sq. HSS (LRFD)

$M_u =$	$MWL + MDL =$	5.110 k-ft (See Above)
$\phi Mn =$	=	6.810 k-ft (From AISC Manual)
Ratio check =	$M_u / \phi Mn =$	0.750 < 1 OK

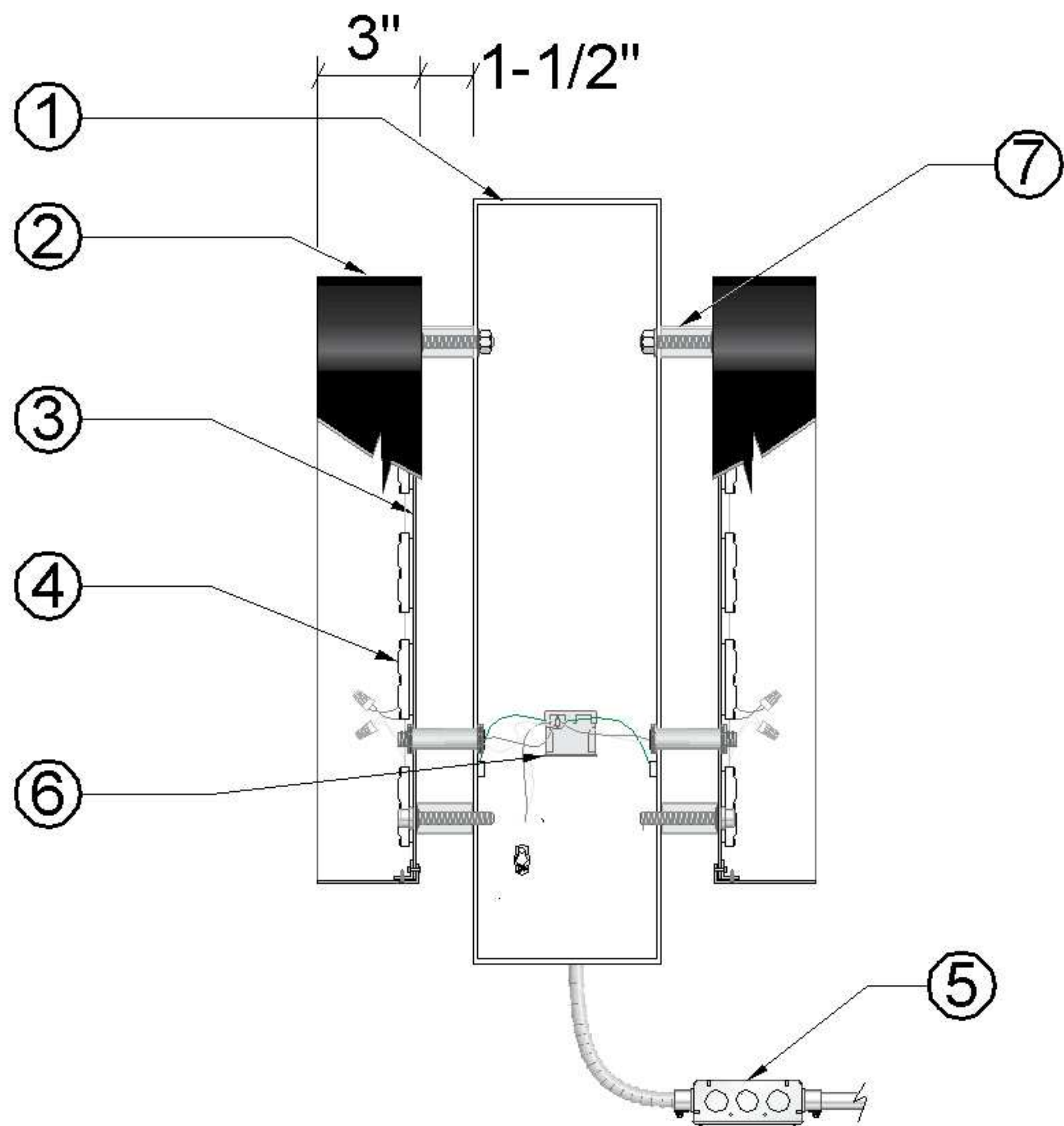
CLIENT: BUDGET SIGNS, LTD.

$\alpha$  1.4887 rad = 85.296 deg  
 $Z_u'$  2897.8 lb  
 $Z_\alpha'$  3290.8 lb Based on  $p_{t,sel}$   
 RATIO 0.881 **PASS**



EXTERIOR BUILDING 2 BLADE SIGN SPECS

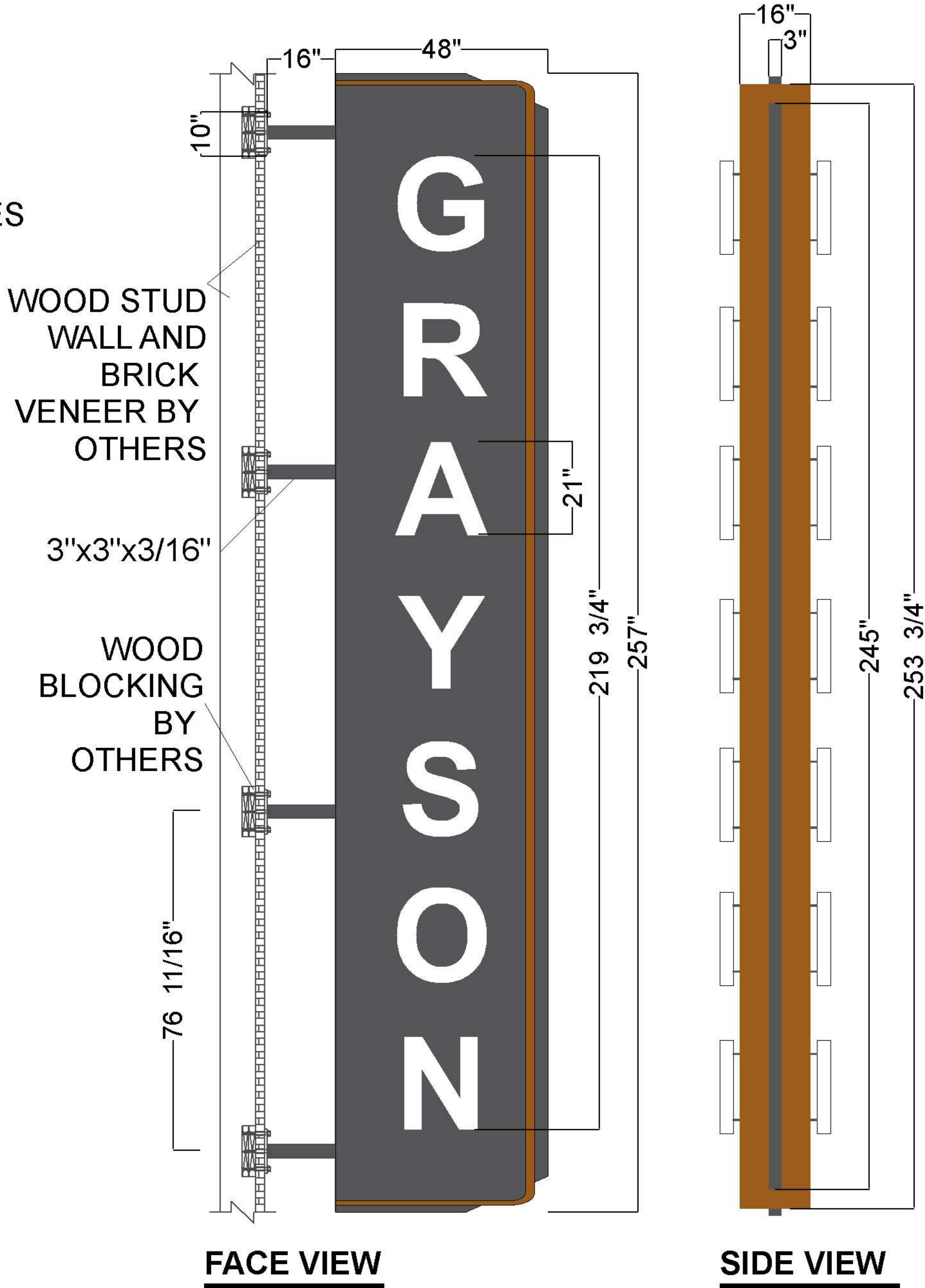
QUANTITY: ONE (1) DOUBLE SIDED BLADE SIGN  
BLADE SIZE: 21'-5"(h) x 4'-0"(w)  
BLADE SIGN: PAINTED ALUMINUM  
LETTERS: REVERSE LIT CHANNEL LETTERS  
ATTACHMENT: SQUARE TUBE W/ MOUNTING PLATES  
FASTENED TO BUILDING



BLADE SIGN SPECS

- 1. PAINTED ALUMINUM BLADE SIGN
- 2. PAINTED REVERSE LIT .063 CHANNEL LETTER
- 3. 3/16" CLEAR LEXAN BACKERS
- 4. ILLUMINATED WITH WHITE LEDs
- 5. PRIMARY ELECTRICAL - 120 V DEDICATED CIRCUIT @ 20 AMPS
- 6. POWER SUPPLIES
- 7. 1-1/2" STANDOFFS

SECTION VIEW



FACE VIEW

SIDE VIEW

**BUDGET**  
**SIGNS**

PTM  
PMS BLACK  
#7C

PTM  
SW LATTE  
#6108

PTM  
WHITE

PAINT COLORS



BUILDING 2 - NORTH ELEVATION - QUITMAN STREET

ADDITIONAL NOTE: REFERENCE SULLAWAY ENGINEERING PDF DRAWING "41279A-1-ENG-SS" FOR MORE DETAILS.

Client Approval Signature: _____	<input type="checkbox"/> Approved as Submitted	<input type="checkbox"/> Approved as Noted	<input type="checkbox"/> Rejected: Revise and Resubmit	Revision: 3	Date: 10.4.2023
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EXTERIOR BUILDING 2 BLADE SIGN PLACEMENT



BUILDING 2 - WEST ELEVATION - PIERCE STREET

Client Approval Signature: _____	<input type="checkbox"/> Approved as Submitted	<input type="checkbox"/> Approved as Noted	<input type="checkbox"/> Rejected: Revise and Resubmit	Revision: 2	Date: 9.26.2023
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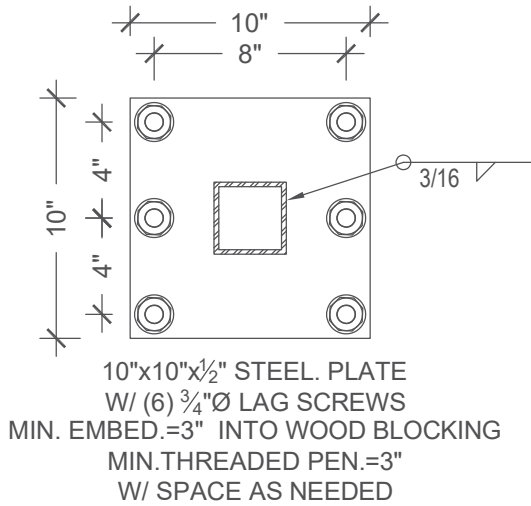




11545 W. BERNARDO COURT, SUITE 201  
 SAN DIEGO, CA 92127  
 PROJECTMANAGER@SULLAWAYENG.COM  
 PHONE: 1-858-312-5150 FAX: 1-858-777-3534

PROJECT: GRAYSONV, SIGN TYPE: SIGN 1, 923 E. CARSON STREET, SAN ANTONIO, TX  
 PROJECT #: 41279A-1  
 CLIENT: BUDGET SIGNS, LTD.

DATE: 07/19/2023  
 ENGINEER: RM  
 LAST REVISED:



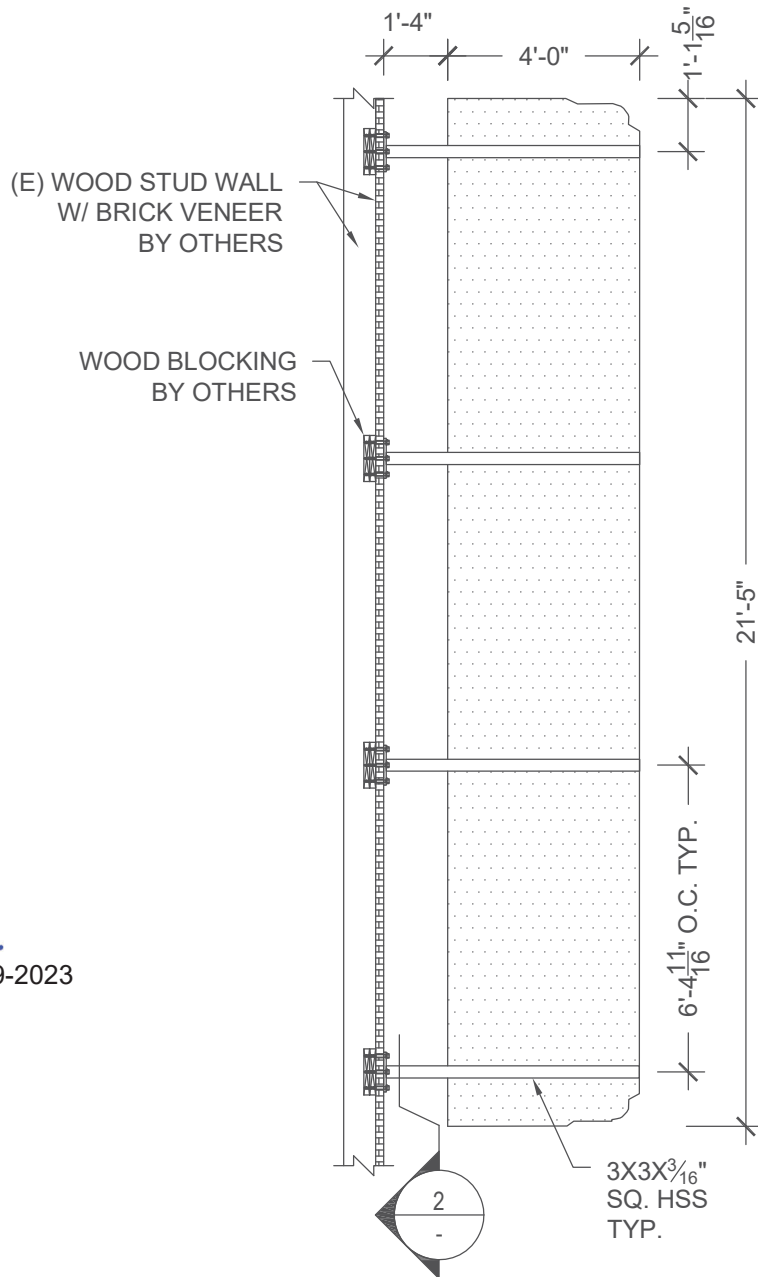
2  
-  
MOUNTING PLATE DETAIL, TYP.



CERTIFICATE OF AUTHORITY  
 NO. F-14143

#### GENERAL NOTES

- DESIGN CODE: IBC 2021
- DESIGN LOADS: ASCE 7-16
- WIND VELOCITY 110 MPH EXPOSURE C
- SQ. HSS STEEL ASTM A500 GR. B,  $F_y = 46$  KSI MIN.
- PLATE STEEL ASTM A36
- WELDING STRENGTH,  $F_{exx} = 70$  KSI
- LAG SCREWS PER NDS SPECIFICATIONS
- PROVIDE PROTECTION AGAINST DISSIMILAR METALS
- ALL DIMENSIONS TO BE VERIFIED PRIOR TO FABRICATION
- ALL EXISTING ELEMENTS AND DIMENSIONS TO BE VERIFIED IN FIELD



1  
-  
ELEVATION - MAX OAH FROM GRADE 37'-0"



PROJECT: GRAYSONV

DATE: 07/19/23

PROJ. NO.: 41279A-1

ENGINEER: RM

CLIENT: BUDGET SIGNS, LTD.

V5.5

units: pounds, feet unless noted otherwise

### Applied Wind Loads; from ASCE 7-16

$p_{net} = \lambda K_{zt} p_{net30}$	(ASCE 30.4-1)
$\lambda = 1.45$	(ASCE Fig. 30.4-1)
$K_{zt} = 1.0$	(unless unusual landscape)
$V = 110$ mph	Exposure = c
Area = 85.67 ft <sup>2</sup>	
max. height = 37.00 ft	
$p_{net30} = 18.77$ psf	$p_{net} = 27.22$ psf
$p_{net30} = -23.18$ psf	$p_{net} = -33.61$ psf

### Loads on 0.75" Dia. Lag Screws - Mounting Plate to Wall (LRFD):

$P_{net} =$	$=$	33.61 psf (See Above)
Tributary Area =	$A = (6'-4.6875") \times (4'-0") + (1'-4") \times (3") =$	25.896 ft <sup>2</sup>
Wind Load =	$WL = P_{net} \times A =$	870 lbs
Dead Load =	$DL = 1.2 \times 10 \text{ psf} \times A =$	311 lbs
# screws =	$=$	6 screws
dia. =	$=$	0.750 in
arm (WL) =	$(4'-0")/2 + (1'-4") =$	48 in
MWL =	$WL \times \text{arm} =$	41771 lb-in
arm (DL) =	$(4'-0")/2 + (1'-4") =$	48 in
MDL =	$DL \times \text{arm} =$	14916 lb-in
Spacing (WL) =	$Sw =$	8 in
Additional tension due to WL =	$TWL = MWL / Sw / 3 \text{ screws} =$	1740 lbs
Spacing (DL) =	$Sd =$	8 in
Additional tension due to DL =	$TDL = MDL / Sd / 2 \text{ screws} =$	932 lbs
Tension per screw =	$T = TWL + TDL =$	2673 lbs
Shear per screw =	$V = WL / \# \text{ screws} + DL / \# \text{ screws} =$	197 lbs

### Check 10x10x0.5" Steel Mounting Plate (LRFD):

	$f_y =$	36 ksi	$\phi =$	0.9
arm = 2.575 in	$T = \text{MAX}(3 \times TWL + TDL, TWL + 2 \times TDL) =$	6.154 k	(See Above)	
b = 10 in	$t =$	0.5 in		
M at Mounting Plate =	$T \times \text{arm} =$	15.846 k-in		
Z =	$bt^2/4 =$	0.625 in <sup>3</sup>		
$\phi Mn =$	$\phi \times f_y \times Z =$	20.250 k-in		
Ratio check =	$(M \text{ at Mounting Plate}) / (\phi Mn) =$	0.782 < 1	OK	

### Check 3x3x3/16 Sq. HSS (LRFD)

Mu=	MWL+MDL=	4.724 k-ft (See Above)
ϕMn=	=	6.810 k-ft (From AISC Manual)
Ratio check=	Mu/ϕMn=	0.694 <1 <b>OK</b>



PROJECT: GRAYSONV

DATE: 07/19/23

PROJ. NO.: 41279A-1

ENGINEER: RM

CLIENT: BUDGET SIGNS, LTD.

## LAG SCREWS (LRFD) - SOLID WOOD TO SOLID STEEL - WITHDRAWAL AND SINGLE SHEAR LATERAL

DESIGN INPUT	FACTORED FASTENER LOADING			MAIN MEMBER		SIDE MEMBER	
	$W_u$	2673 lb	Withdrawal Load	DOUGLAS FIR-LARCH		STEEL PER ASTM A36	
	$Z_u$	197 lb	Lateral Load	$G$	0.5	$F_u$	58 ksi Ultimate Strength
	FASTENER DIMENSIONS			$t_m$	3 in	$t_s$	0.500 in Thickness
	$L_m$	3 in	Length into Main MBR	$\theta$	90 deg		
	$D$	0.750 in	Nominal Diameter				
	$w$	0 in	Washer				
	$g$	0 in	Gap				
							Main Member End Grain (x)
$p_{min}$	3 in		Minimum dowel penetration for lateral loading [NDS 11.1.3.7]				
$p$	3 in		Actual dowel penetration based on selected dowel length				

## STANDARD HEX LAG SCREWS [NDS Appendix Table L2]

$D_r$	0.579 in		$D$	0.25	0.3125	0.375	0.4375	0.5	0.625	0.75	0.875	1	1.125	1.25
$F_{yb}$	45000 psi	[NDS Table I1]	$D_r$	0.173	0.227	0.265	0.328	0.371	0.471	0.579	0.683	0.78	0.887	1.012

## DOWEL BEARING CALCULATIONS

$F_{e,II}$	5600 psi		Dowel bearing strength, perpendicular to grain [NDS Table 11.3.2 Footnote 2]	
$F_{e,perp}$	2578.1 psi		Dowel bearing strength, parallel to grain [NDS Table 11.3.2 Footnote 2]	
$F_{em}$	2578.1 psi	$F_e$	87000 psi	Dowel bearing strength - Hankinson formula [NDS 11.3-11] & Steel [NDS Comm. I2]
$L_m$	3 in	$L_s$	0.5 in	Dowel bearing length
$q_m$	1492.7 lbs/in	$q_s$	50373 lbs/in	Dowel bearing resistance [AWC Technical Report 12] - $D_r$ Assumption
$M_m$	1455.8 in-lbs	$M_s$	1455.8 in-lbs	Dowel moment resistance based [AWC Technical Report 12] - $D_r$ Assumption

## YIELD MODE DOWEL EQUATIONS [AWC Technical Report 12 Table 1-1]

$I_m$	895.64 lb	P	4478.2							$R_d$	5	$K_D$	6.29	$\theta$	90
$I_s$	5037.3 lb	P	25187							$R_d$	5	$K_D$	6.29	$K_\theta$	1.25
II	642.97 lb	P	2893.4	A	0.0002	B	1.75	C	-6507	$R_d$	4.5	$K_D$	6.29		
III <sub>m</sub>	620.35 lb	P	2481.4	A	0.0002	B	1.5	C	-4814	$R_d$	4	$K_D$	6.29		
III <sub>s</sub>	832.73 lb	P	3330.9	A	0.0003	B	0.25	C	-4604	$R_d$	4	$K_D$	6.29		
IV	726.39 lb	P	2905.6	A	0.0003	B	0	C	-2912	$R_d$	4	$K_D$	6.29		
Z	620.35 lb	Ref Value	Adjustment Factors [NDS Table 10.3.1]												
Z'	1340 lb	Adj Value	$C_M$	$C_t$	$C_g$	$C_\Delta$	$C_d$	$C_{eg}$	$C_{st}$	$C_{di}$	$C_{tn}$	$K_F$	$\phi$	$\lambda$	
RATIO	0.147	PASS	1	1	1	1		1		1	1	3.32	0.65	1	

## WITHDRAWAL LOADING [NDS 11.2.1]

$W$	512.89 lb/in	Reference Value [NDS 11.2-1]
$W'$	1107.8 lb/in	Adj Value
$p_{t,req}$	2.4125 in	Required thread penetration for withdrawal
$p_{t,req}$	2.500 in	-->Rounded up to nearest 1/8"
$p_{t,ovr}$	3.000	Override for additional thread penetration
$p_{t,sel}$	3.000 in	

## Adjustment Factors [NDS Table 10.3.1]

$C_M$	$C_t$	$C_{eg}$	$K_F$	$\phi$	$\lambda$
1	1	1	3.32	0.65	1

## COMBINED LATERAL AND WITHDRAWAL LOADING [NDS 11.4.1]

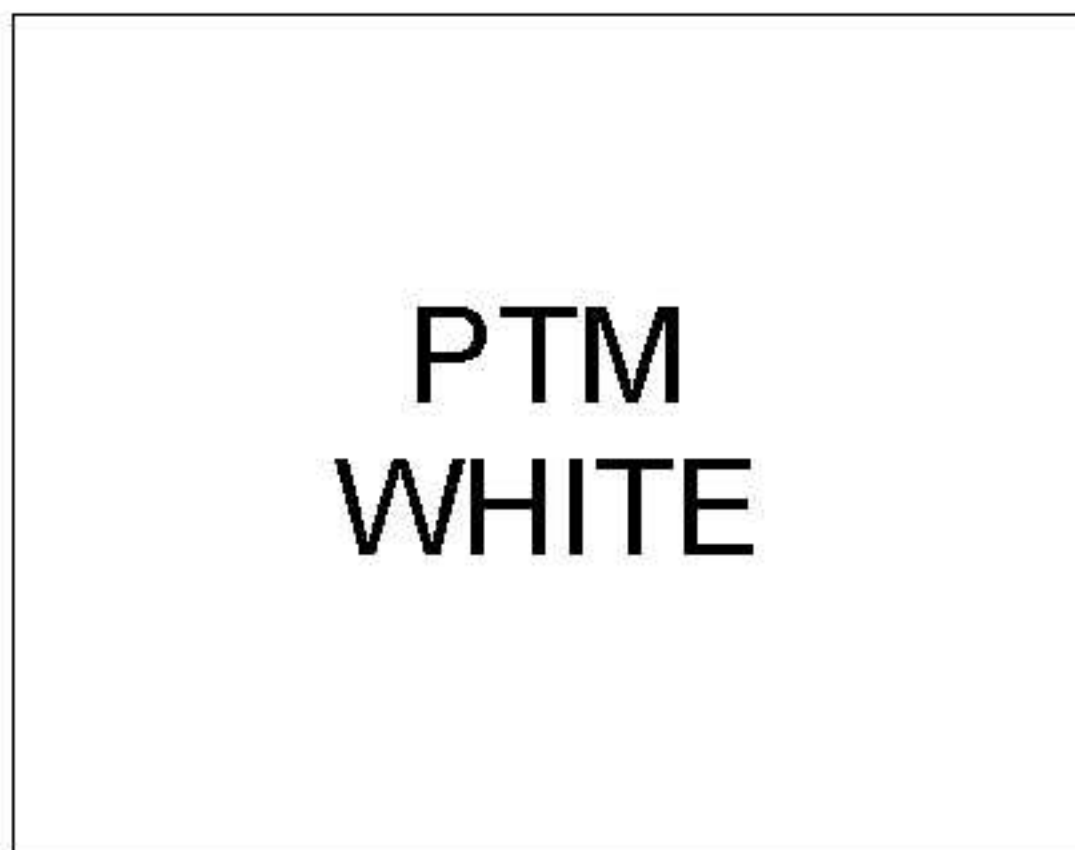
$\alpha$	1.4973 rad = 85.788 deg
$Z_u'$	2679.9 lb
$Z_\alpha'$	3297.2 lb Based on $p_{t,sel}$
RATIO	0.813



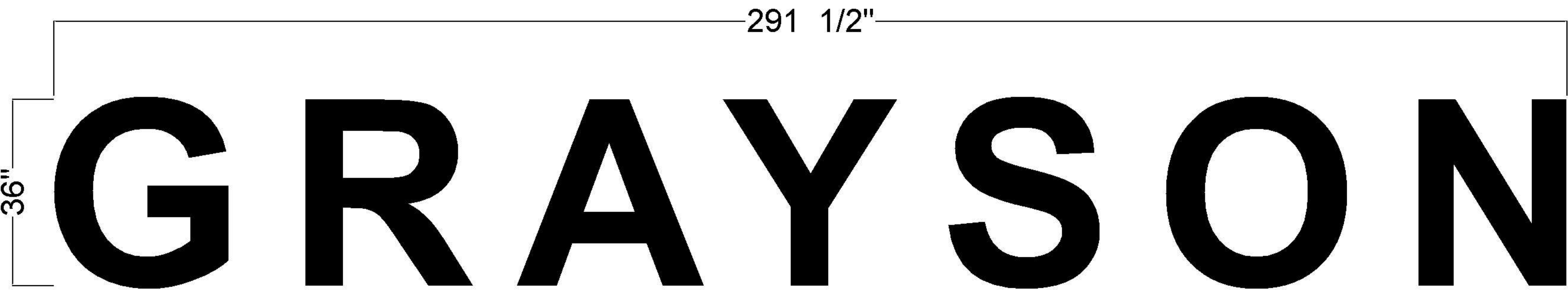
GRAYSON RESIDENCES - BUILDING 1 (923 E CARSON STREET, SAN ANTONIO, TEXAS, 78208)

EXTERIOR BUILDING 1 BLDG LETTER SPECS

QUANTITY: ONE (1) SET NON-LIT  
LETTER HEIGHT: 36" TALL  
MATERIAL: FABRICATED ALUMINUM  
DEPTH: 3"  
FINISH: PAINTED ALUMINUM  
COLOR: TBD  
FONT: ARIAL BOLD  
ATTACHMENT: FLUSH STUD MOUNTED TO THE WALL



TBD - PAINT COLORS  
COLOR OPTIONS



FACE VIEW



BUILDING 1 - NORTH ELEVATION - QUITMAN STREET

Client Approval Signature: _____	<input type="checkbox"/> Approved as Submitted	<input type="checkbox"/> Approved as Noted	<input type="checkbox"/> Rejected: Revise and Resubmit	Revision: 1	Date: 10.4.2023
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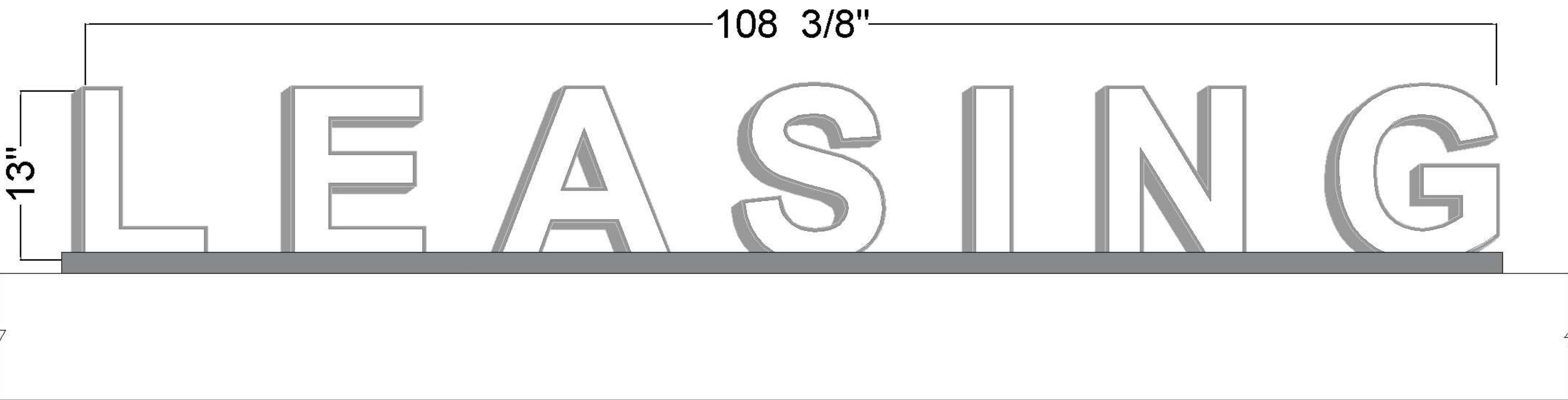
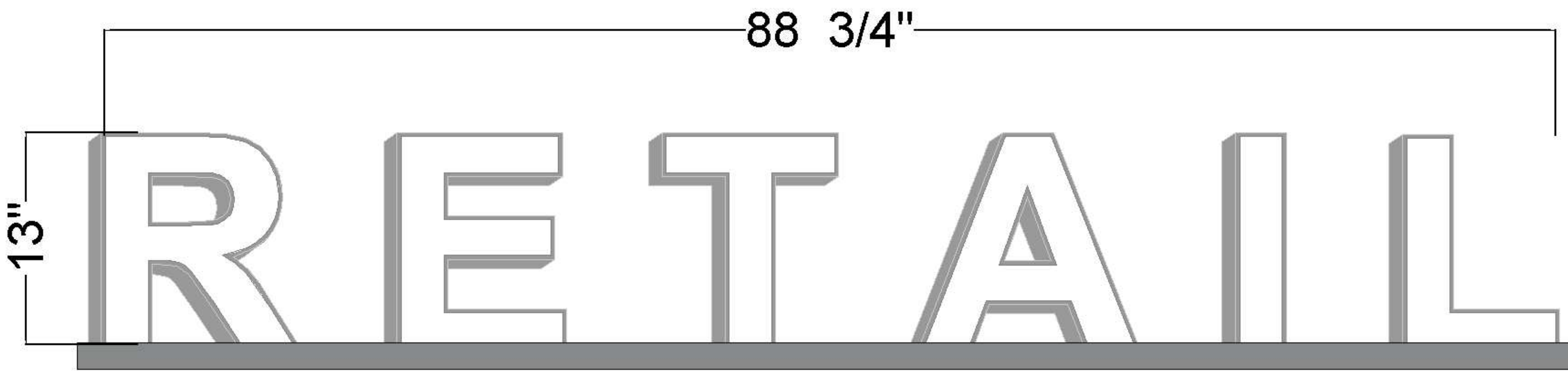


LEASING\_RETAIL EXTERIOR NON-LIT CANOPY LETTER SPECS

QTY: TWO (2) SETS - ONE OF EACH  
LETTER HEIGHT: 13"  
FONT" ARIAL BOLD  
RETURNS: PAINT COLOR TBD  
TRIMCAPS: COLOR TBD  
ACRYLIC FACE: COLOR TBD  
WIREWAY: PAINT COLOR TBD  
LETTERS: NON-LIT

LOCATION:  
BLDG 1 SOUTH ELEVATION - CARSON ST.

ADDITIONAL NOTE:  
THESE LETTERS WILL BE NON-LIT BUT FABRCIATED  
TO MATCH THE "PARKING" LETTERS SO THEY APPEAR  
THE SAME DURING THE DAY



FRONT VIEW

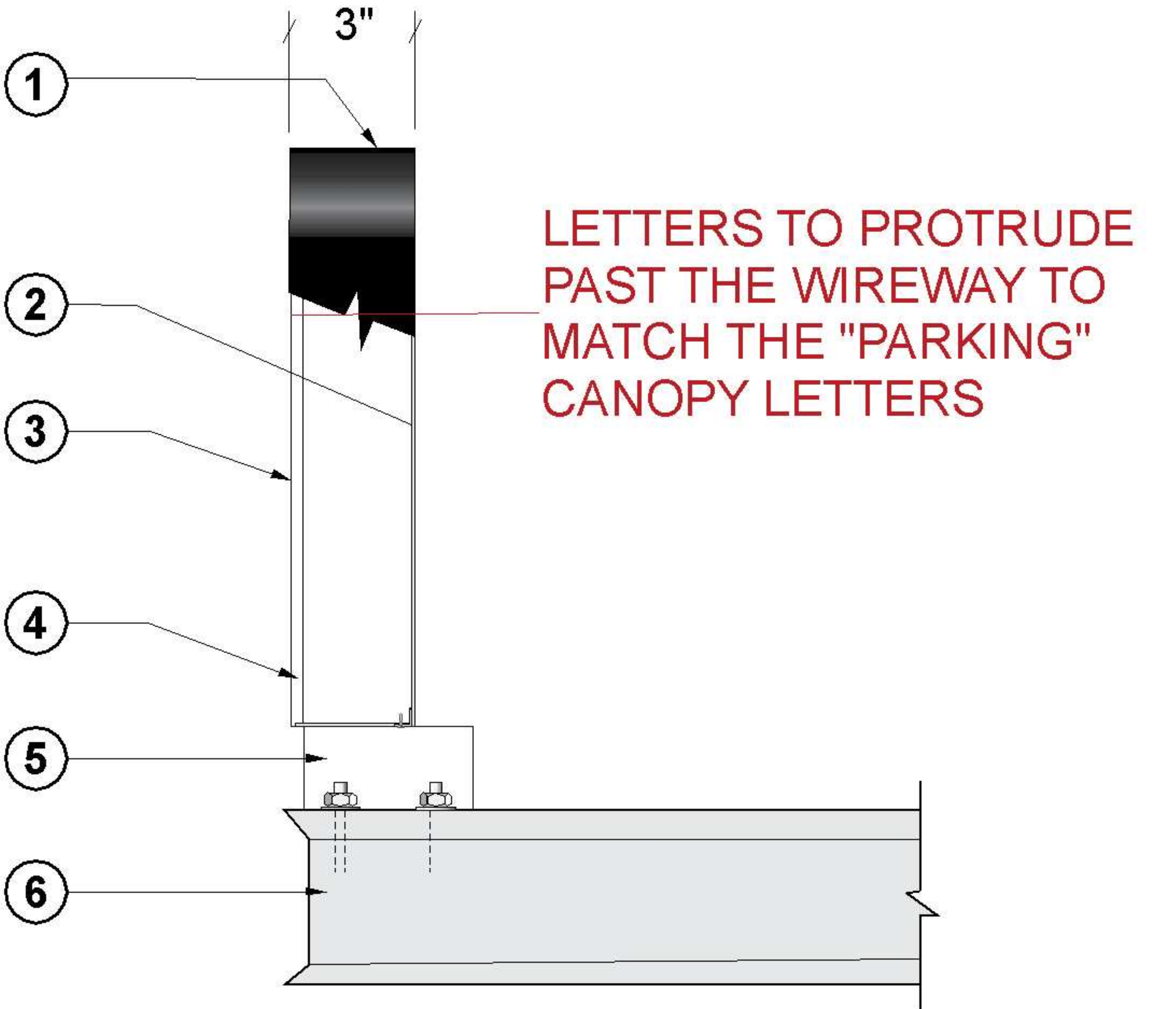
RETURNS  
PAINT COLOR TBD

TRIMCAPS  
PAINT COLOR TBD

FACES  
COLOR TBD

WIREWAY  
PAINT COLOR TBD

COLORS



CANOPY SIGN SECTION VIEW

- 1. PAINTED .040 ALUMINUM 3" RETURN
- 2. PAINTED .060 ALUMINUM BACKER
- 3. 3/16" ACRYLIC FACES
- 4. 1" TRIMCAP
- 5. PAINTED ALUMINUM ENCLOSED WIREWAY
- 6. EXISTING CANOPY STRUCTURE

SECTION VIEW

Client Approval Signature: _____	<input type="checkbox"/> Approved as Submitted	<input type="checkbox"/> Approved as Noted	<input type="checkbox"/> Rejected: Revise and Resubmit	Revision: -	Date: 10.4.2023
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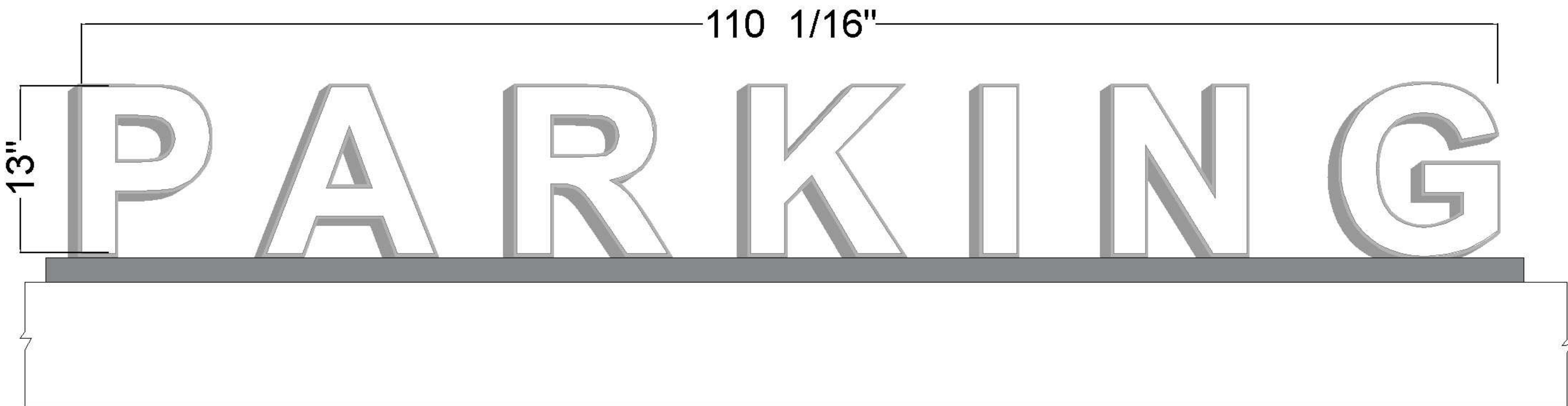
PARKING EXTERIOR LIT CANOPY LETTER SPECS

QTY: TWO (2) SETS  
LETTER HEIGHT: 13"  
OVERALL LENGTH: 9'-2.0625"  
TOTAL SQ FT.: APPROX. 10  
FONT" ARIAL BOLD  
RETURNS: PAINT COLOR TBD  
TRIMCAPS: COLOR TBD  
ACRYLIC FACE: COLOR TBD  
WIREWAY: PAINT COLOR TBD  
ILLUMINATION: WHITE LEDs

ELECTRICAL NOTES

Sign Company DOES NOT provide primary electrical to sign.  
Power to the sign must be done by a licensed electrical contractor or licensed electrician.  
Each sign must have: 1. A minimum of one dedicated 120V 20A circuit  
2. Junction box installed within 6 feet of sign  
3. Three wires: Line, Ground, Neutral

LOCATIONS:  
BLDG 1 SOUTH ELEVATION - CARSON ST.  
BLDG 1 NORTH ELEVATION - QUITMAN ST.



FRONT VIEW

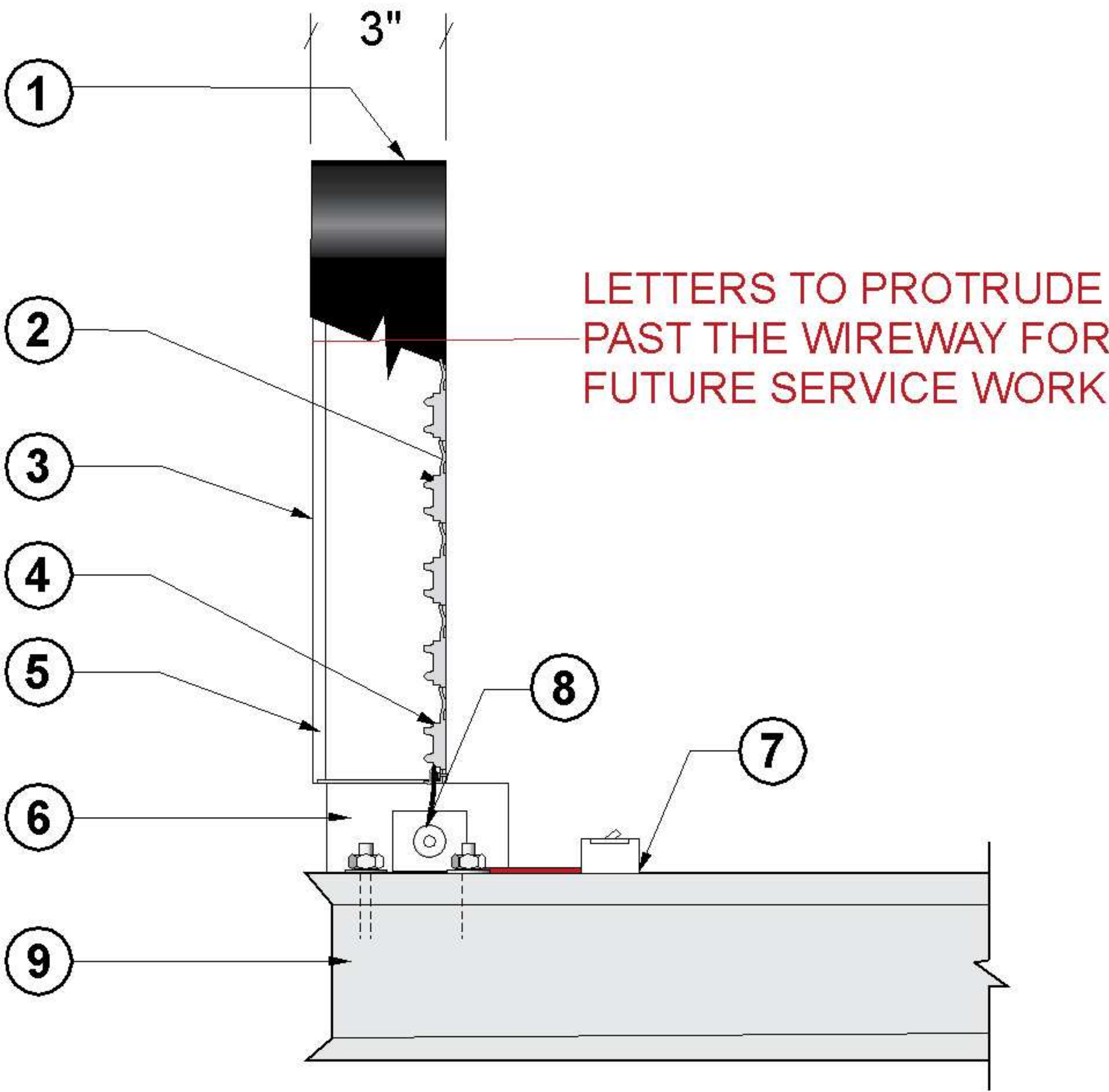
RETURNS  
PAINT COLOR TBD

TRIMCAPS  
PAINT COLOR TBD

FACES  
COLOR TBD

WIREWAY  
PAINT COLOR TBD

COLORS



CANOPY SIGN SECTION VIEW

- 1. PAINTED .040 ALUMINUM 3" RETURN
- 2. PAINTED .060 ALUMINUM BACKER
- 3. 3/16" ACRYLIC FACES
- 4. LEDs
- 5. 1" TRIMCAP
- 6. PAINTED ALUMINUM ENCLOSED WIREWAY
- 7. 120 V JUNCTION BOX (SEE ELEC. NOTES)
- 8. LED POWER SUPPLY
- 9. EXISTING CANOPY STRUCTURE

SECTION VIEW

Client Approval Signature: _____	<input type="checkbox"/> Approved as Submitted	<input type="checkbox"/> Approved as Noted	<input type="checkbox"/> Rejected: Revise and Resubmit	Revision: -	Date: 9.5.2023
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EXTERIOR CANOPY LETTERS PLACEMENT



PARKING - ELEVATION

BLDG 1 SOUTH ELEVATION - CARSON ST.  
BLDG 1 NORTH ELEVATION - QUITMAN ST.



LEASING - ELEVATION

BLDG 1 SOUTH ELEVATION - CARSON ST.



RETAIL - ELEVATION

BLDG 1 SOUTH ELEVATION - CARSON ST.

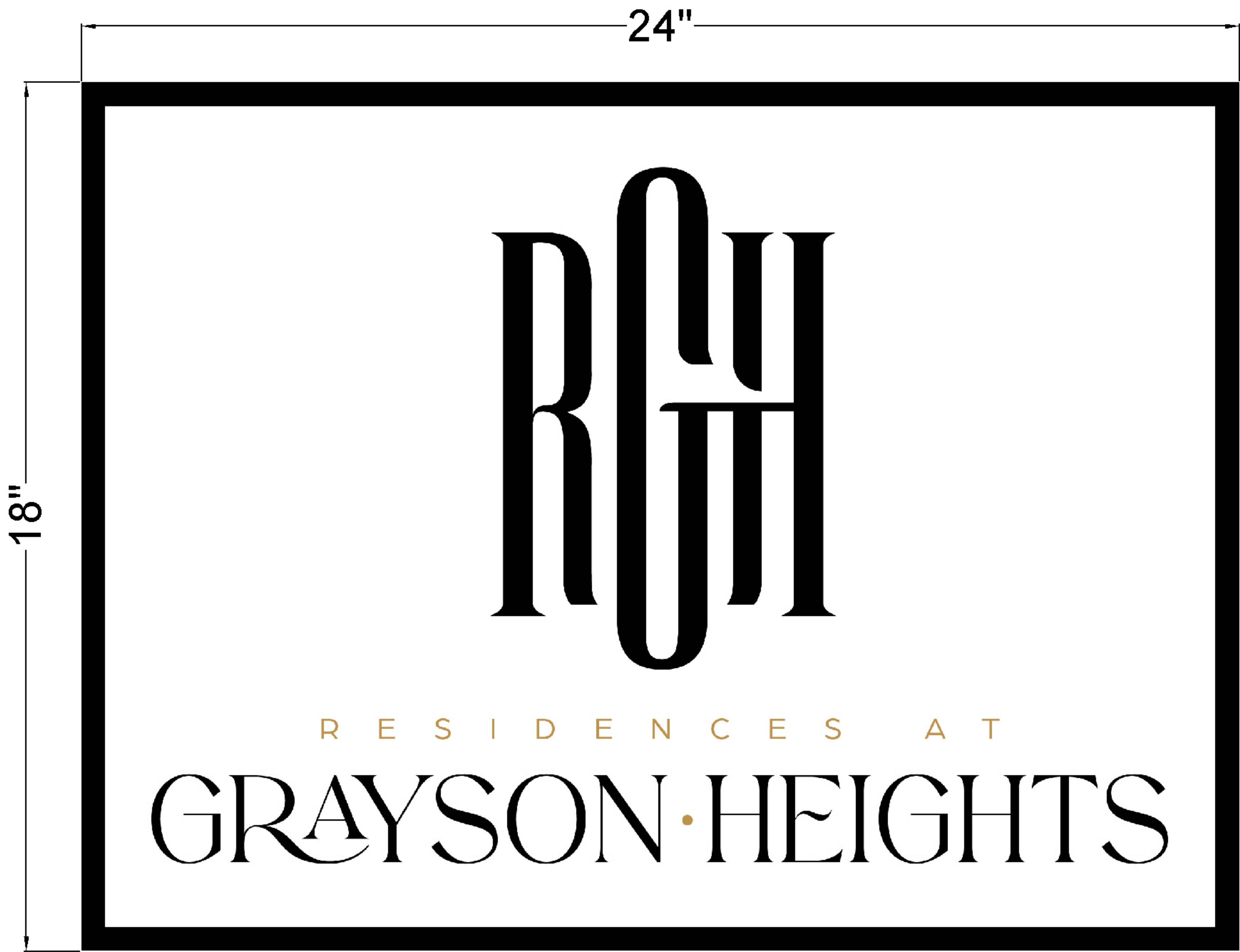
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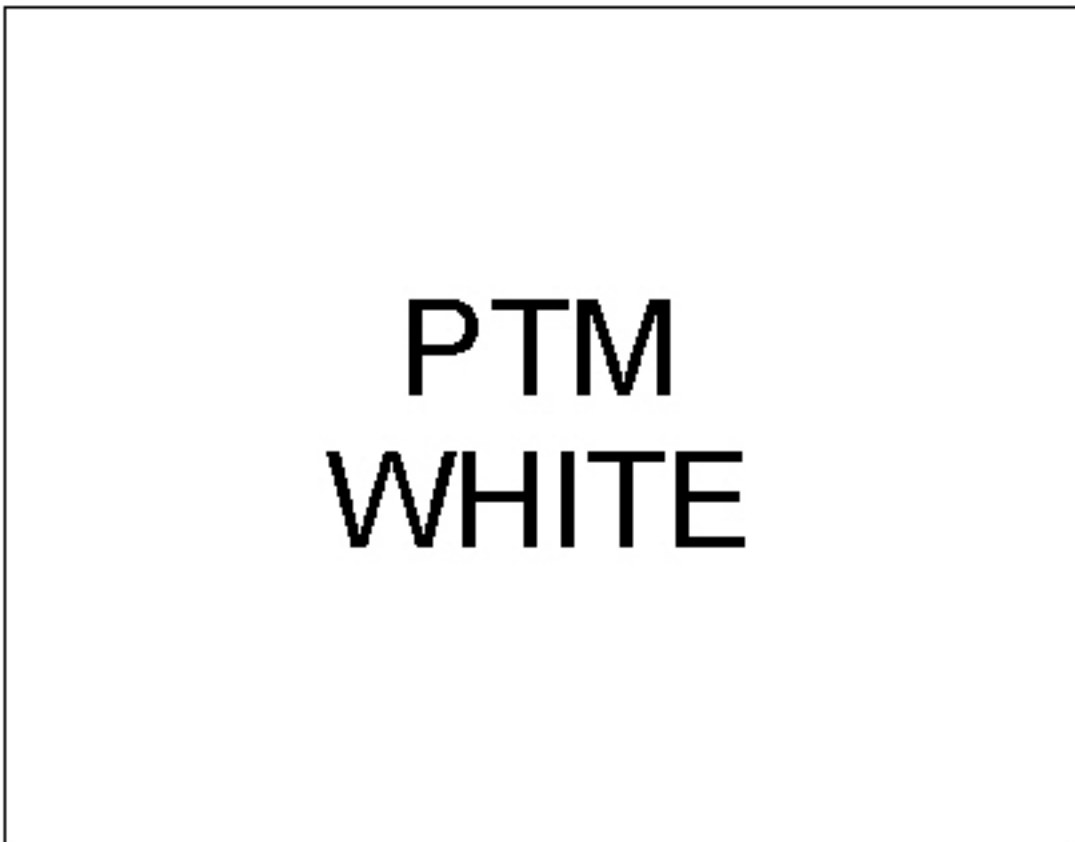


ENTRY BUILDING PLAQUE SPECS

QUANTITY: TWO (2)  
BLADE SIZE: 18"(h) x 24"(w)  
MATERIAL: 1/8" PAINTED ALUMINUM  
BLACK GRAPHICS: 1/8" PAINTED FCO ALUMINUM LETTERS  
LATTE GRAPHICS: DIE CUT VINYL  
ATTACHMENT: PANEL FLUSH STUD MOUNTED TO THE BUILDING



FRONT VIEW



PAINT COLORS



MOUNTING ELEVATION

Client Approval Signature: _____	<input type="checkbox"/> Approved as Submitted	<input type="checkbox"/> Approved as Noted	<input type="checkbox"/> Rejected: Revise and Resubmit	Revision: 1	Date: 10.4.2023
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