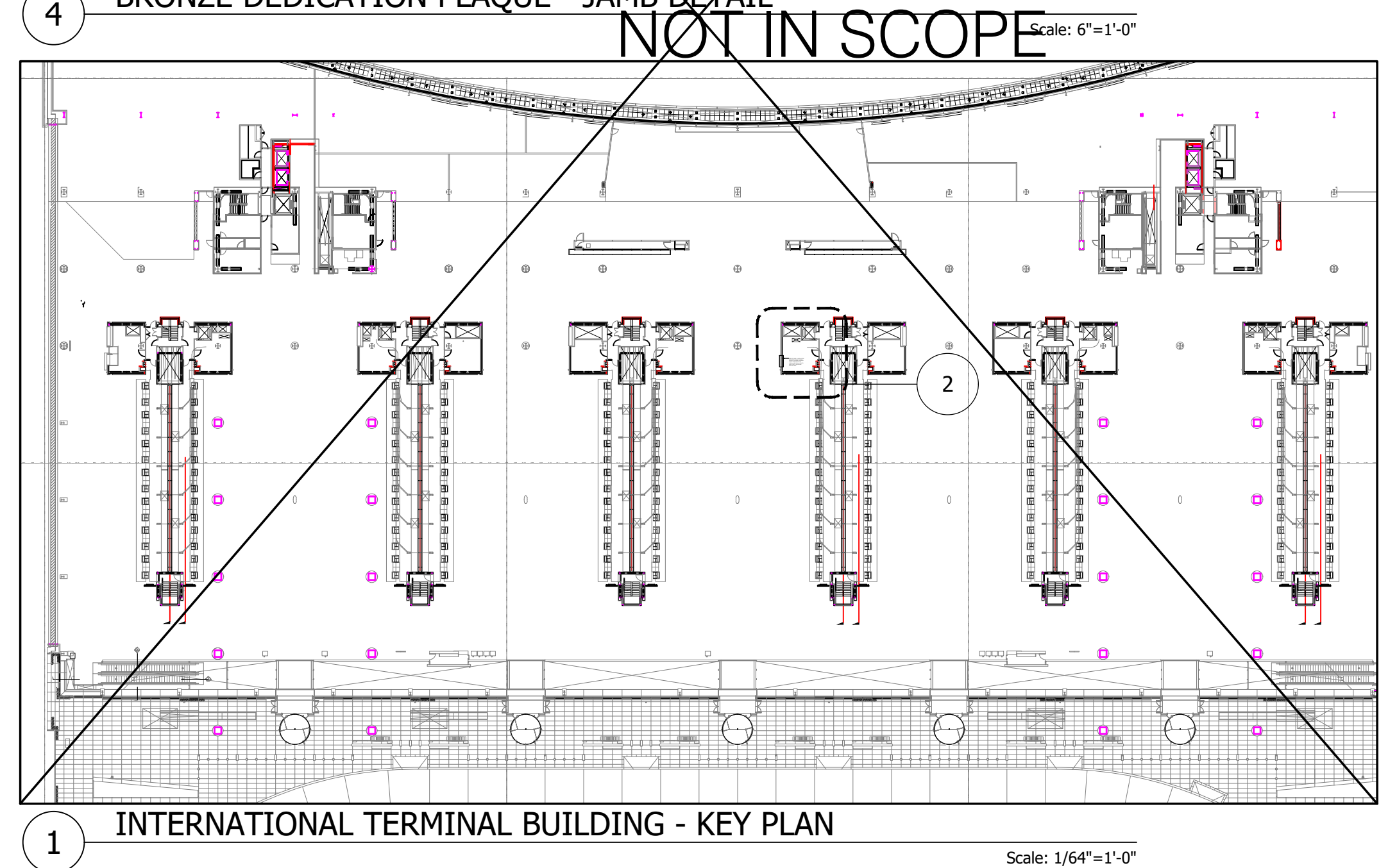
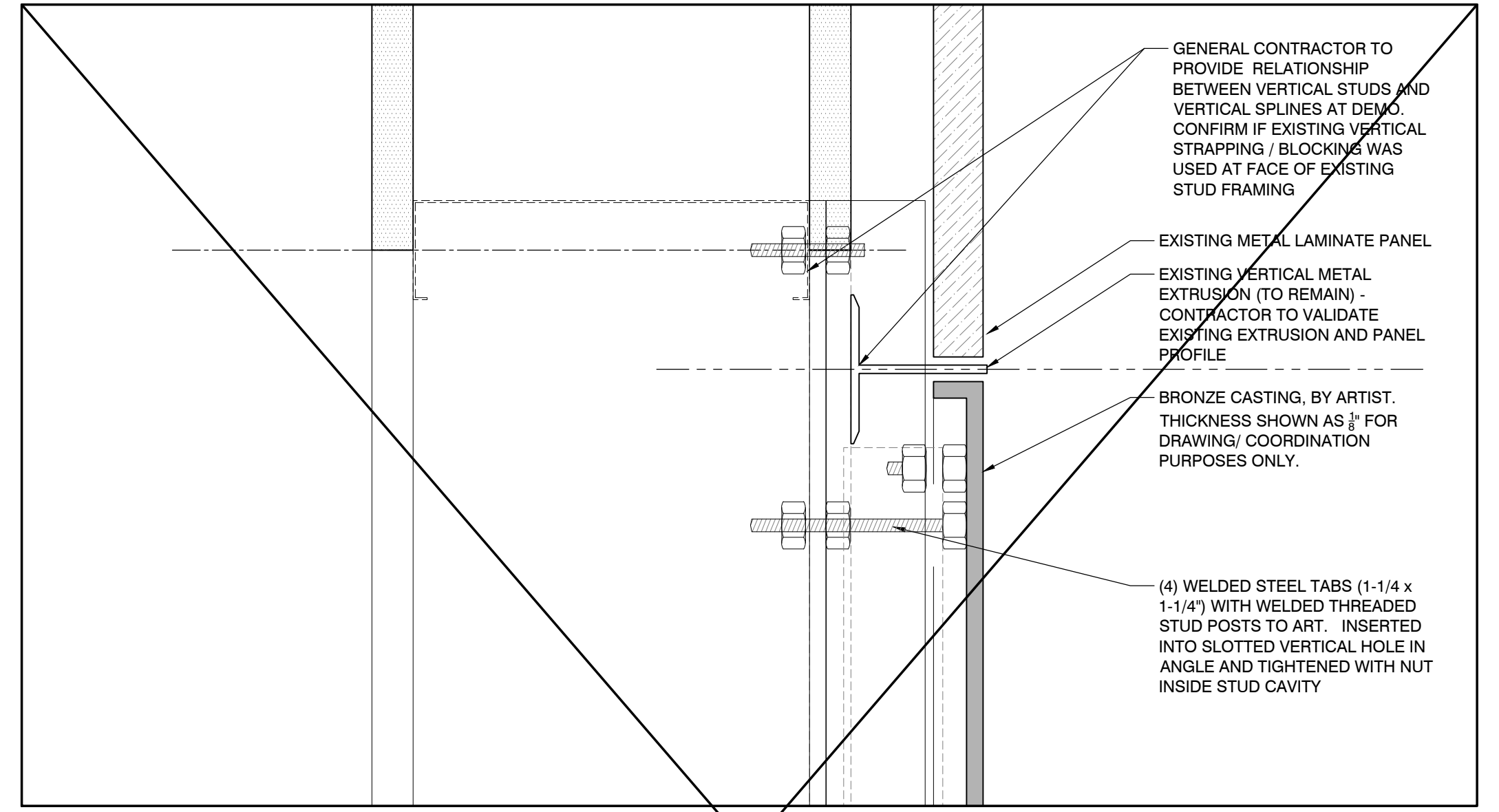
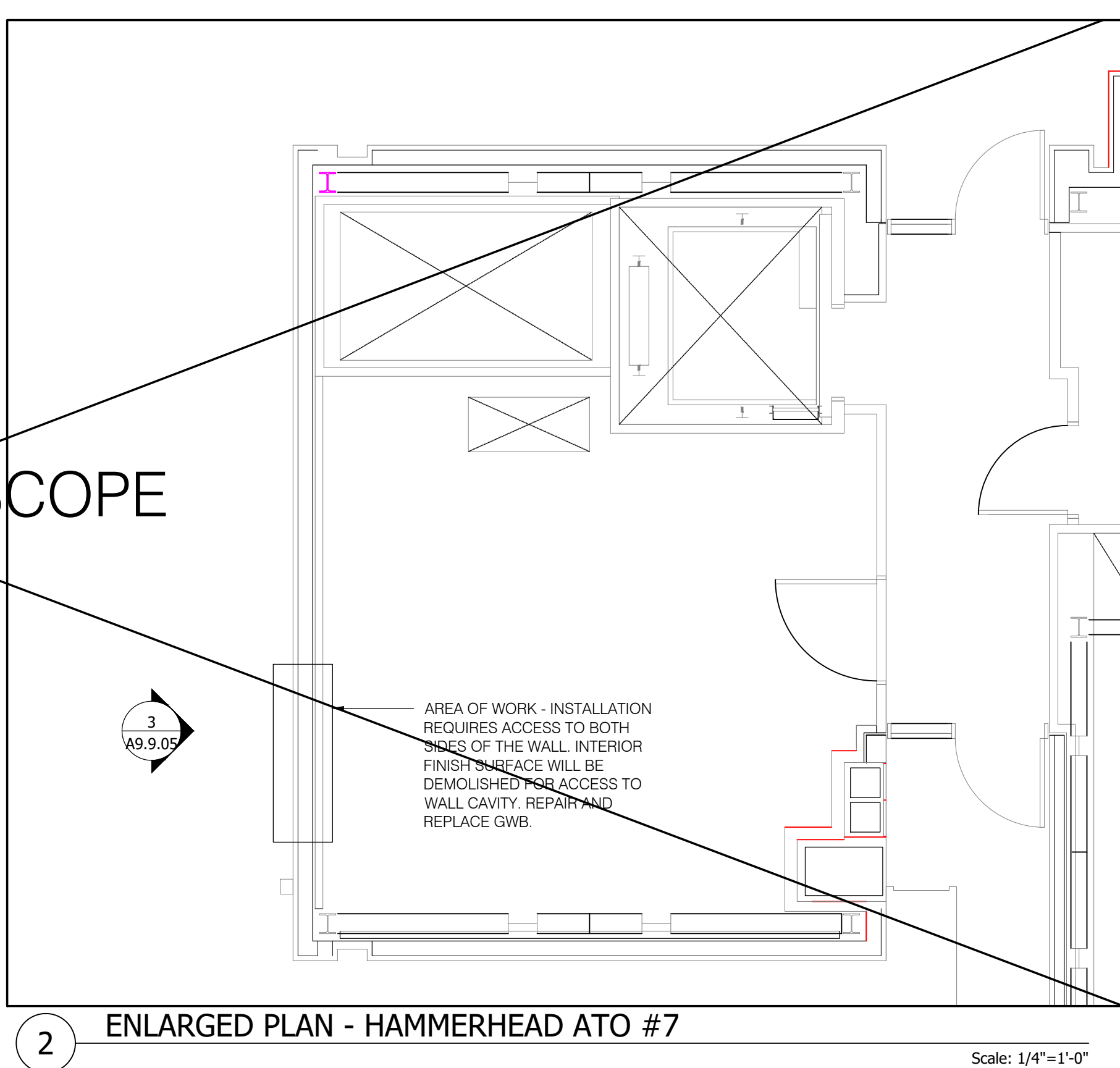
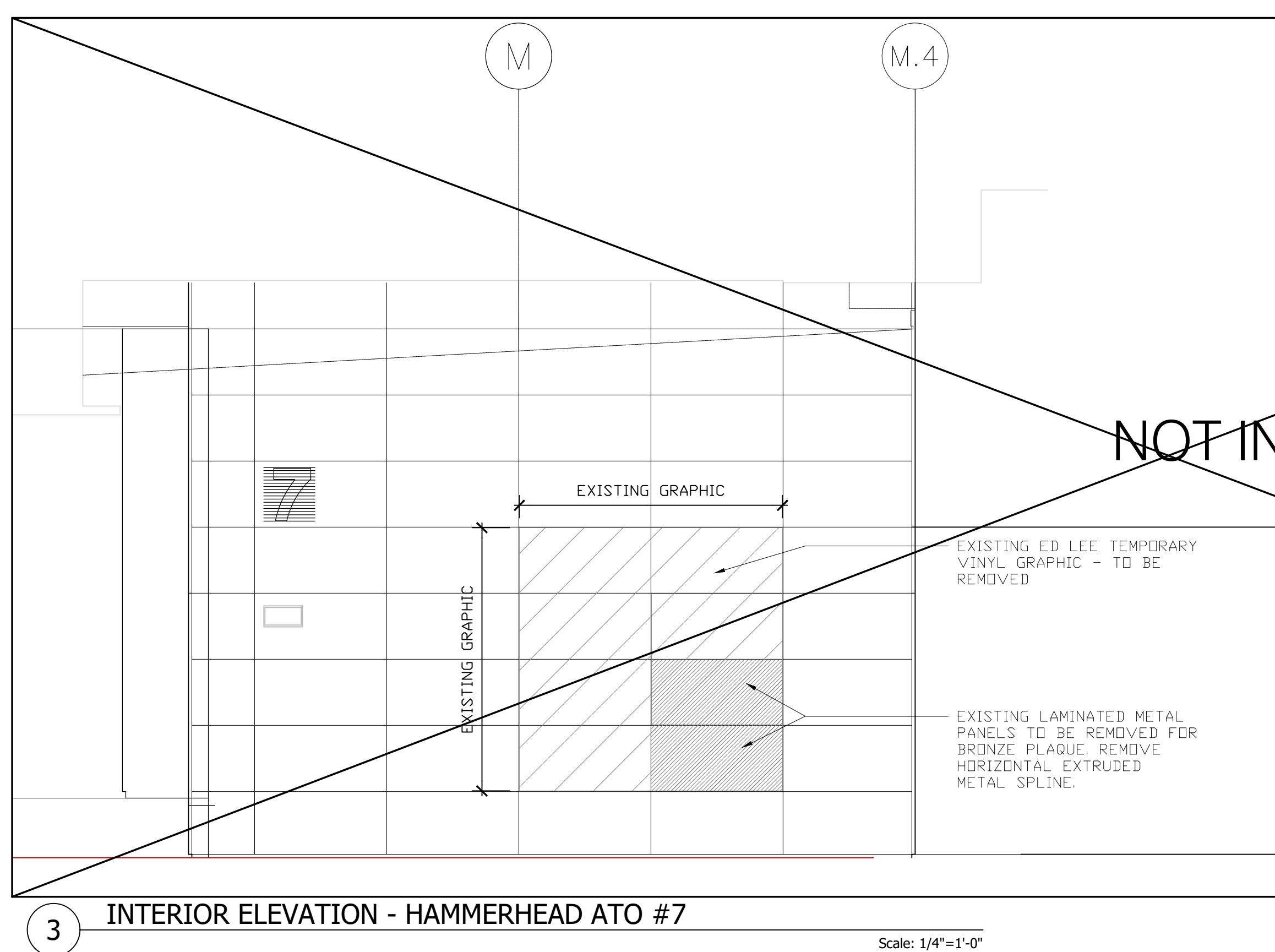
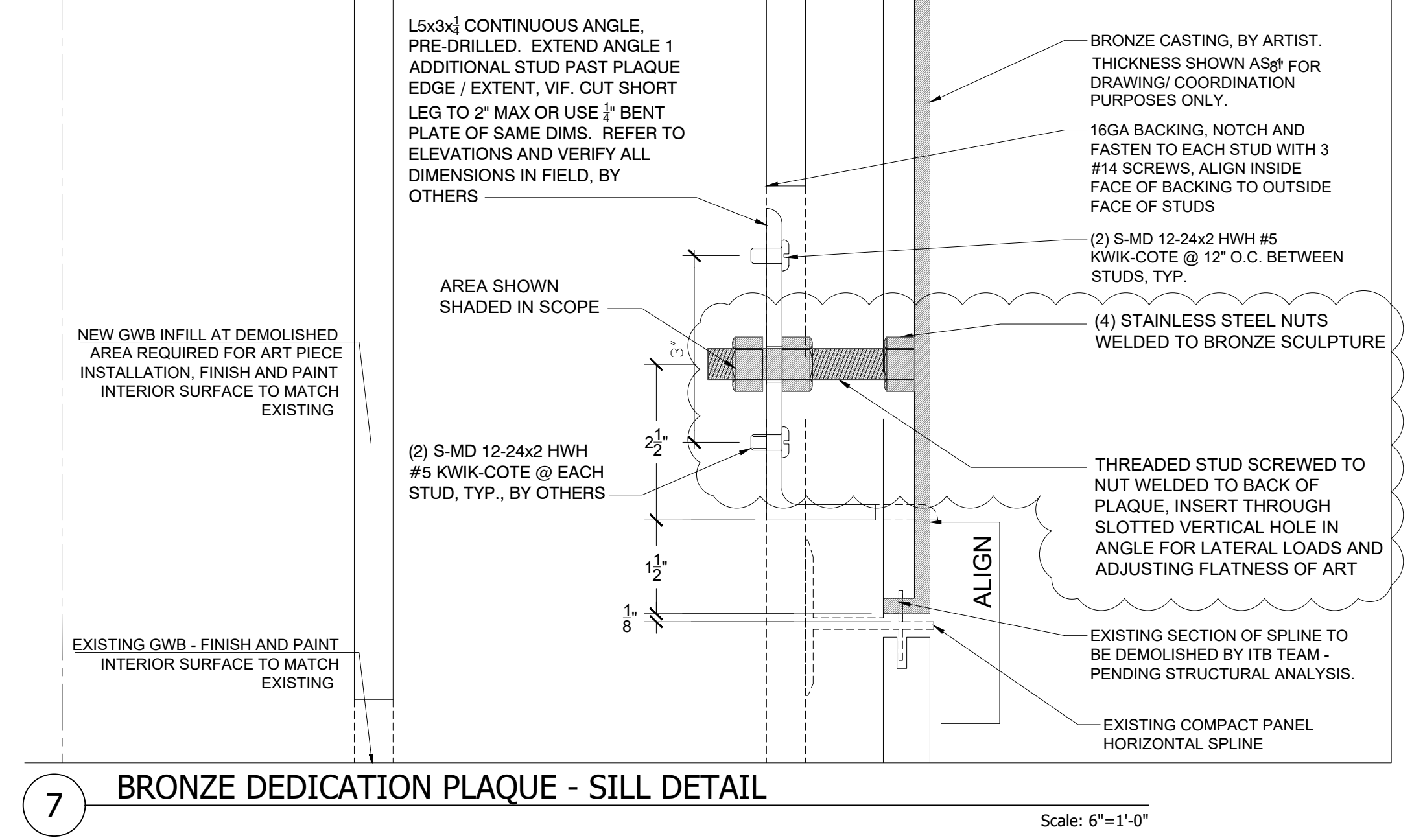
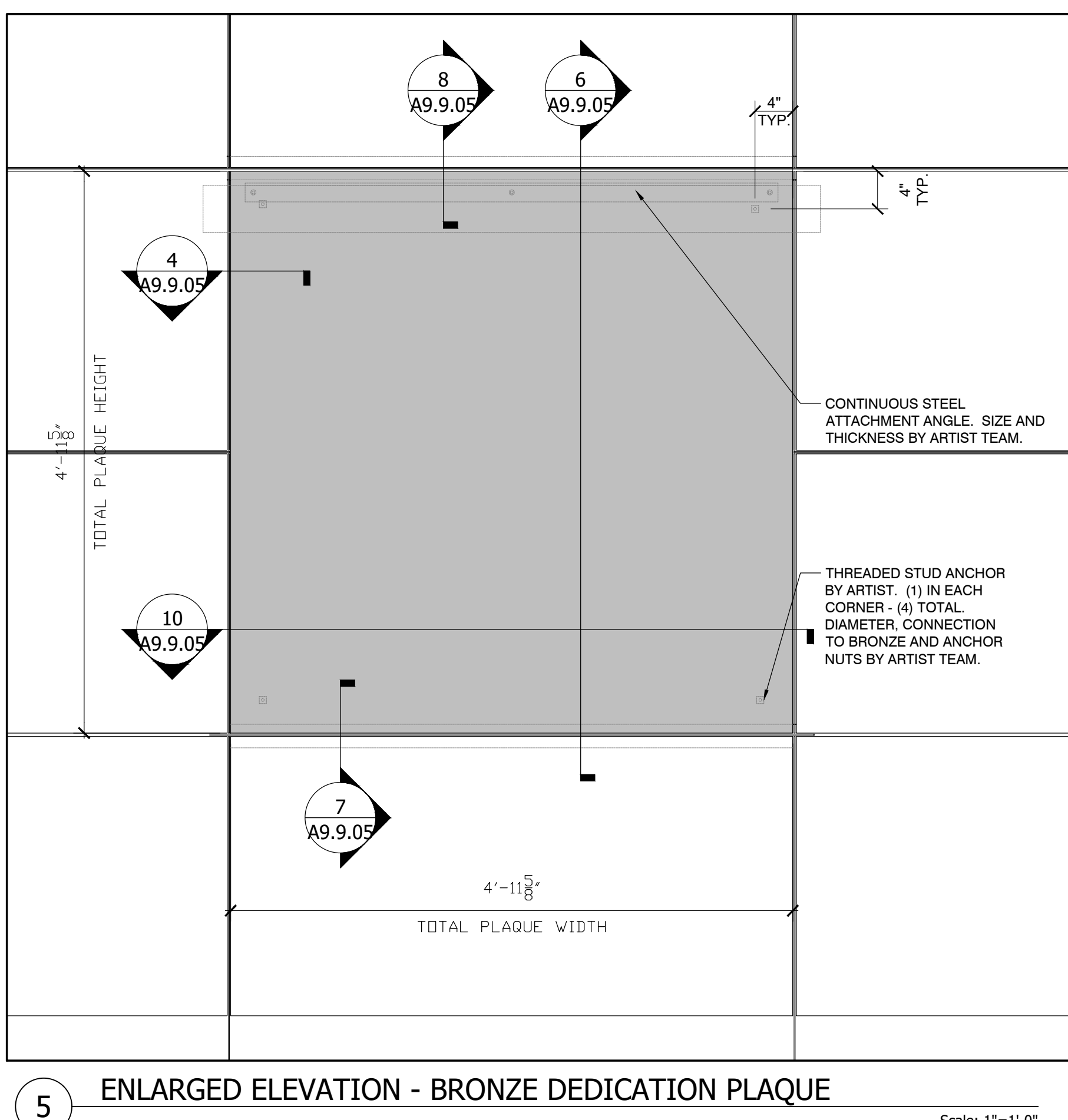
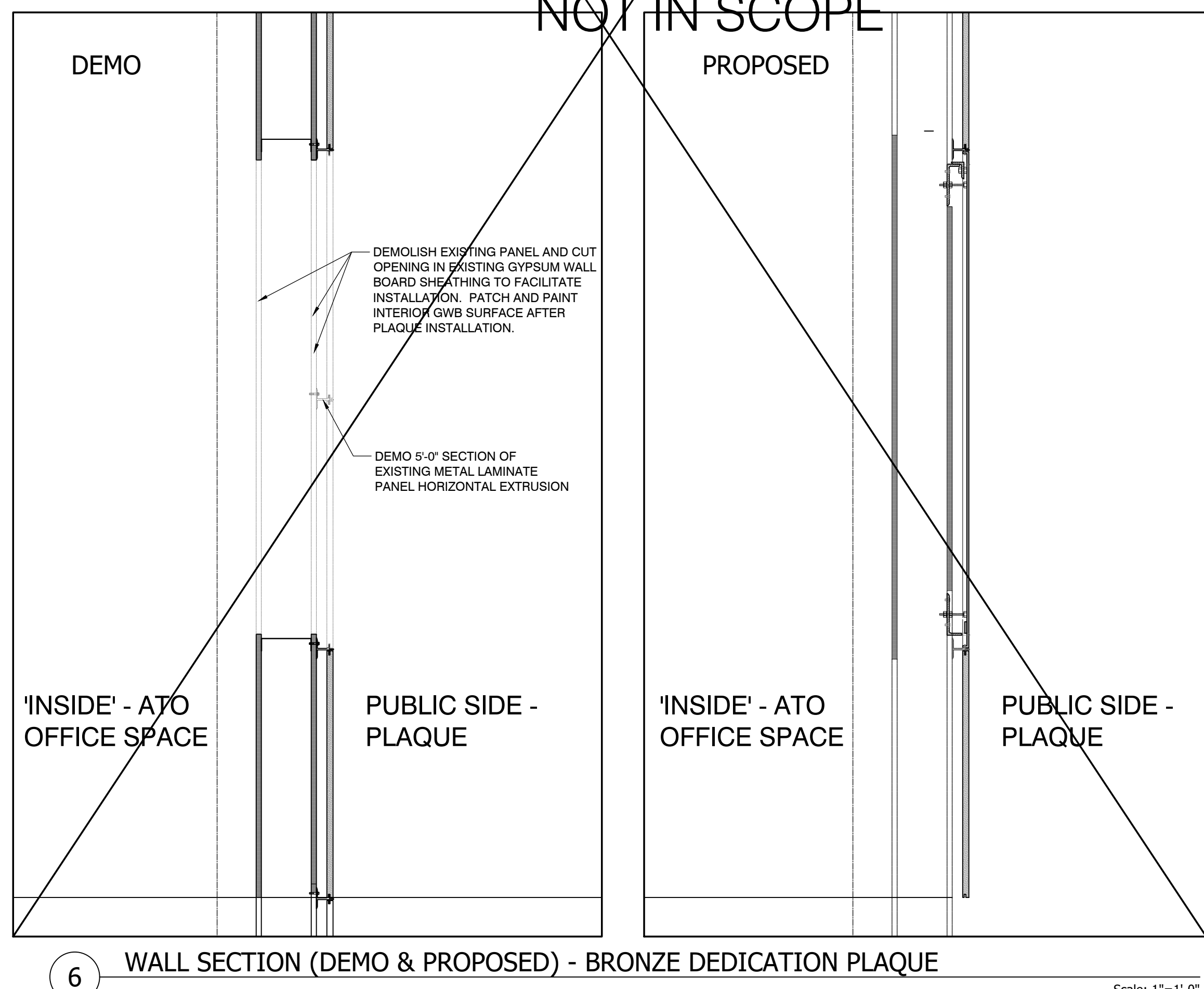
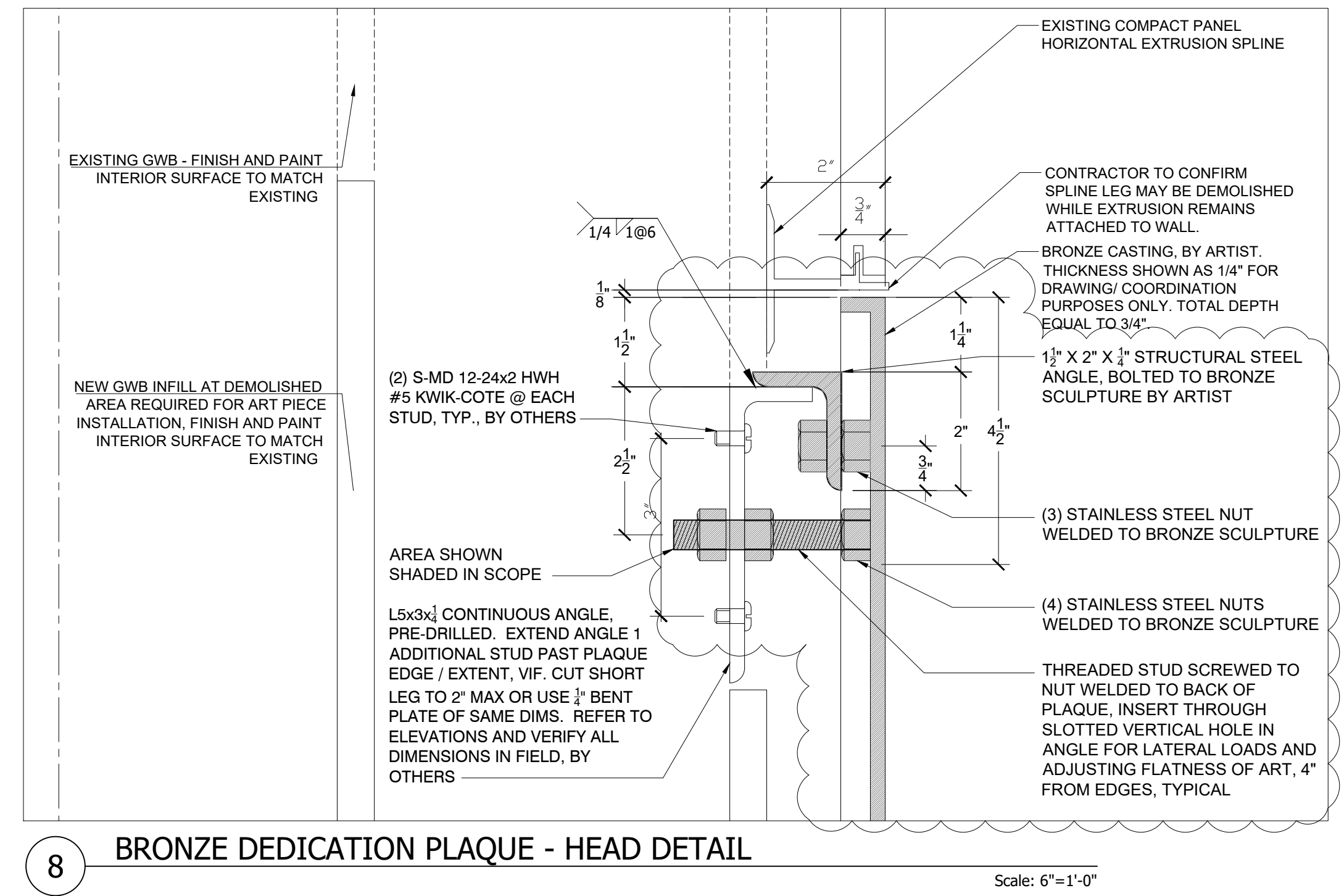
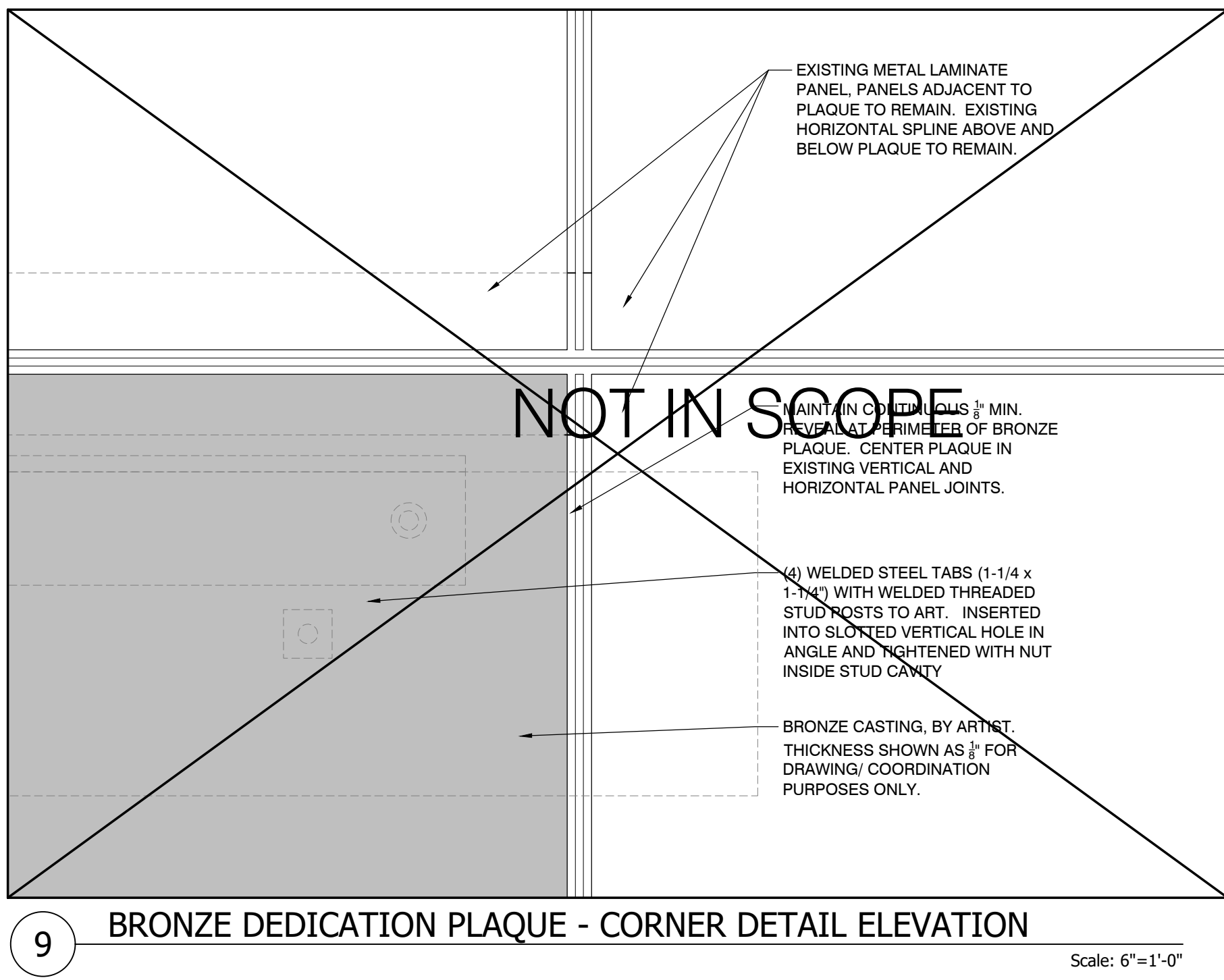
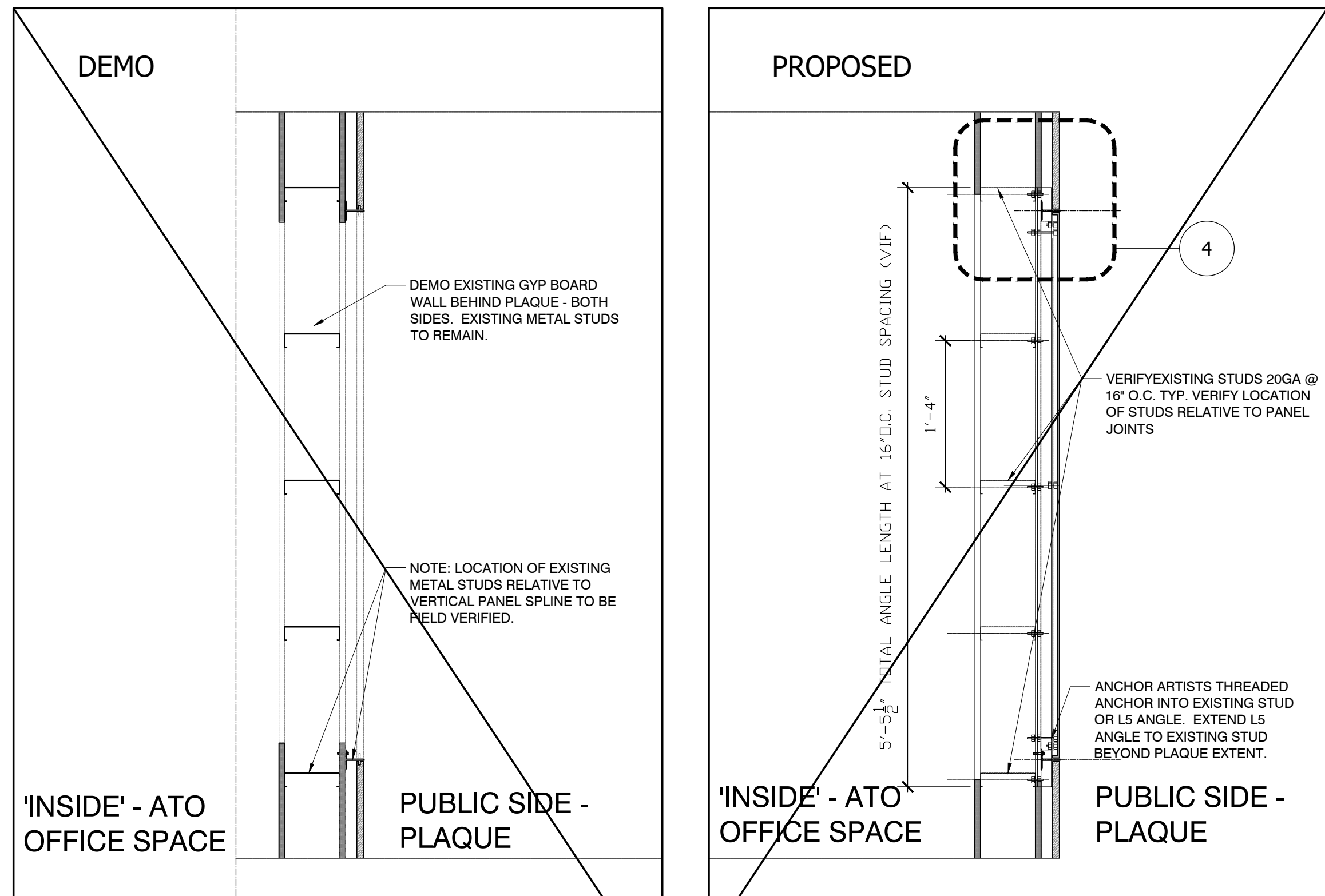


NOTE: If this drawing is not on 30" x 42" in, it has been revised from its original size. Scales as noted on drawings/details are no longer applicable.
 8/28/2019 10:17:29 AM



21-07 Mendez Plaque of Ed Lee

San Francisco International Airport
ITB Phase 1
Permit Submittal
11 March 2021

Loads	1
Connections	2-3



21-07 Mendez

Loads

3/9/2021 | 1

Dead Load

Estimate from foundry = 280 lbs

Conservative assumption = 350 lbs including misc. angle and bolts

Live Load

5 psf lateral partition load

Wind Load

Interior, no wind loads

Seismic Loads

ASCE 7-16, ch. 13

$a_p = 2.5$

Signs + billboards

$R_p = 3.0$

$\Omega = 2.0$

$S_{ps} = 1.46$

assume $z = h$ (conservative)

$I_p = 1.0$

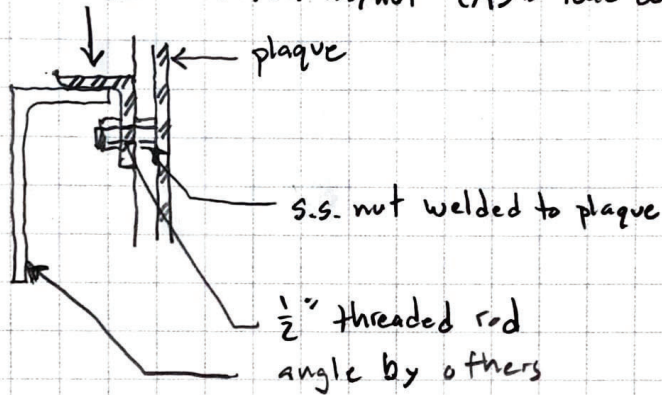
$$F_p = \frac{0.4 a_p S_{ps} W_p}{R_p / I_p} \left(1 + 2 \frac{z}{h}\right) = \frac{0.4 \cdot 2.5 \cdot 1.46 W_p}{3.0} (1 + 2) = 1.46 W_p$$

$$F_p = 1.46 \cdot 350 \text{ lbs} = 511 \text{ lbs}$$

$$\text{Force/ft} = \frac{511 \text{ lbs}}{5' \times 5'} = 20.4 \text{ psf} > 5 \text{ psf} \therefore \text{ seismic load governs}$$

Check gravity connection

350lb/3 nuts = 117 lbs/nut (ASD load combo)



• Angle bearing : $\frac{3}{4}$ " bearing, O.K. by inspection

• nut welded to plaque. $V = 117$ lbs

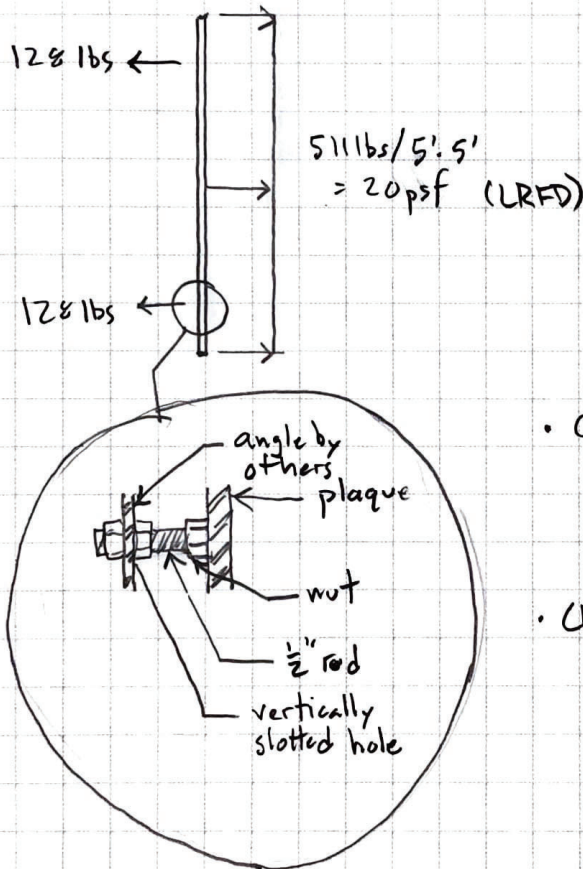
$\frac{1}{8}$ " weld = 1.9 K/in

req'd weld = $\frac{0.117K}{1.9K/in} = \frac{1}{16}$ " long weld - O.K.

• $\frac{1}{2}$ " bolt $R_n = F_u A_b = 0.6 \cdot 30 \text{ksi} \cdot 0.14 \text{in}^2 = 2.54$ K

$\frac{R_n}{\Omega} = \frac{2.54}{2} = 1.27$ K > 0.117 K O.K.

Check seismic connection



(4) bolts total

$$\frac{511 \text{ lbs}}{4} = 128 \text{ lbs/bolt (LRFD)}$$

- Check nut welding $P = 128 \text{ lbs}$
 $\frac{1}{8}'' \text{ weld} = 2.8 \text{ k/in}$
 $\text{req'd weld} = \frac{0.128 \text{ lbs}}{2.8 \text{ k/in}} = \frac{1}{16}'' \text{ long weld O.K.}$

• Check $\frac{1}{2}''$ bolt

$$\begin{aligned} \phi R_n &= 0.75 F_{ut} A_b \\ &= 0.75 \cdot 30 \text{ ksi} \cdot 0.141 \text{ in}^2 \\ &= 3.2 \text{ k} > 0.128 \text{ k} \quad \text{O.K.} \end{aligned}$$