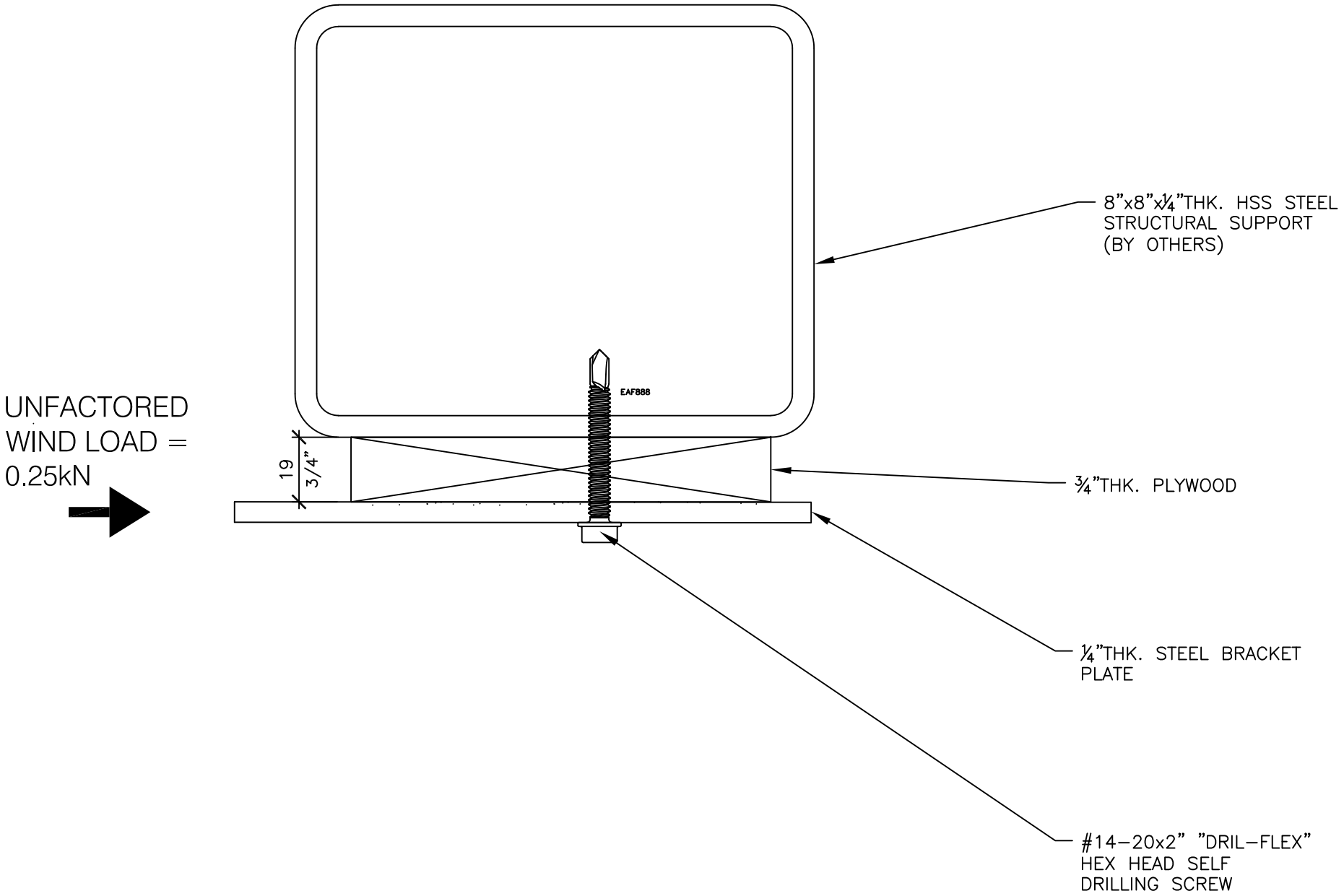
UNFACTORED
WIND LOAD =
0.25kN
19
3/4"
EAF888
8"x8"x¼"THK. HSS STEEL
STRUCTURAL SUPPORT
(BY OTHERS)
¾"THK. PLYWOOD
¼"THK. STEEL BRACKET
PLATE
#14–20x2" "DRIL–FLEX"
HEX HEAD SELF
DRILLING SCREW

#1. Given

Screw Diameter	$d := 6\ mm$
Screw Cross Section Area	$A := \left(\pi \cdot d^2\right) \cdot 4^{-1} = \left(2.827 \cdot 10^{-5}\right)\ m^2$
Screw Yield Strength	$F_y := 92\ ksi = 634.318\ MPa$
Section Modulus of Screw Cross Section	$S := \left(\pi \cdot d^3\right) \cdot 32^{-1} = \left(2.121 \cdot 10^{-8}\right)\ m^3$
Unfactored Wind Load	$F_{wl} := 0.25\ kN$
Moment Arm	$r := 19\ mm$

#2. Screw Bending Strength Check

Factored Wind Moment	$M_f := 1.4 \cdot F_{wl} \cdot r = 0.007\ kN \cdot m$
Moment Resistance	$M_r := 0.9 \cdot S \cdot F_y = 0.012\ kN \cdot m$

$$CSR := \frac{M_f}{M_r} = 0.549$$

Design OK!