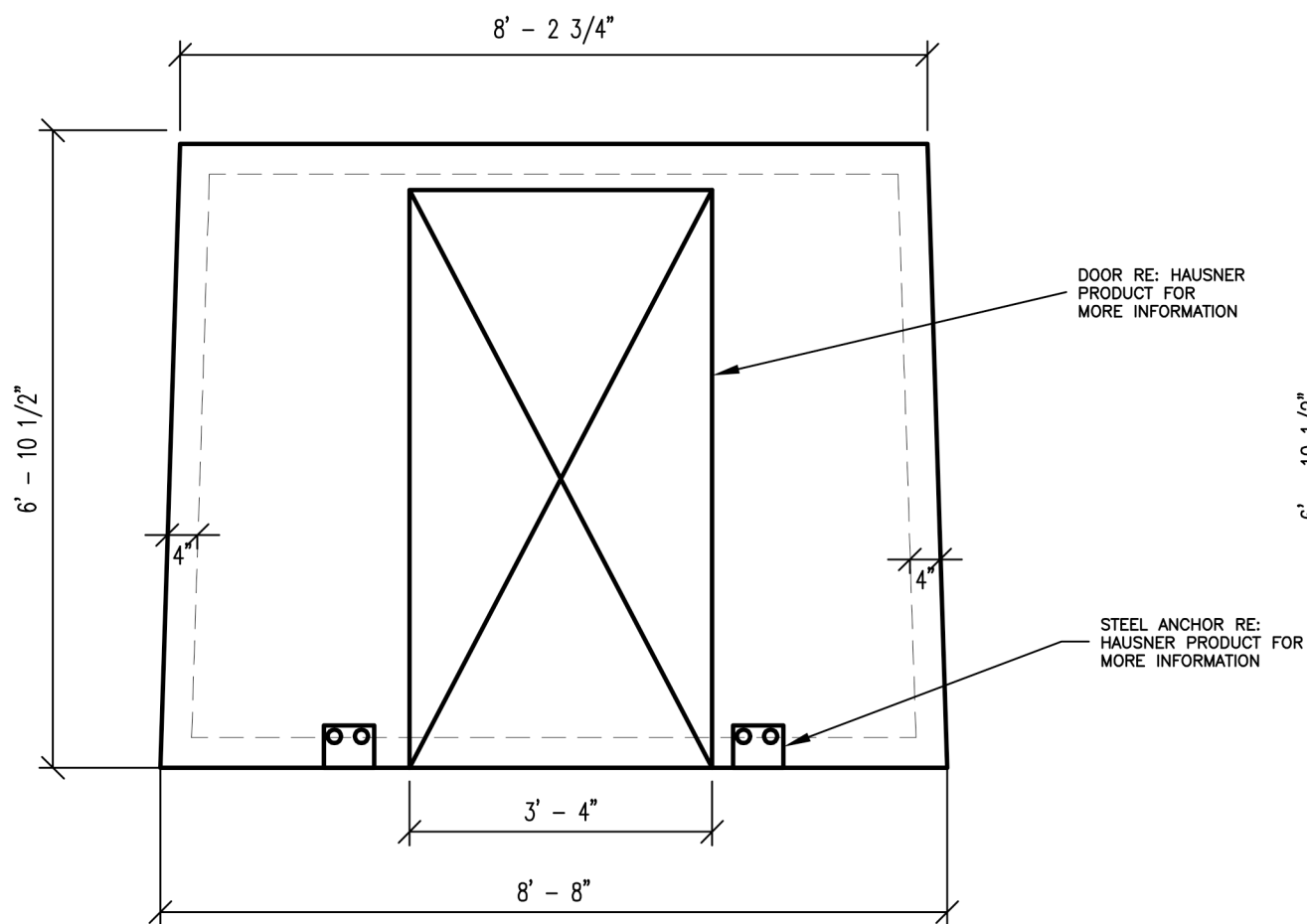
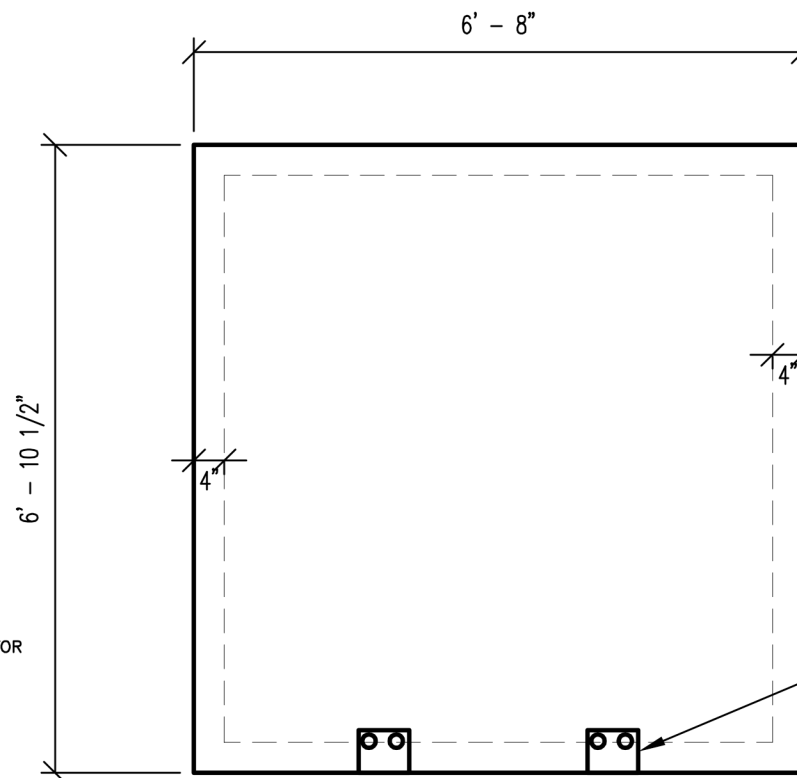


(A) PLAN VIEW



(B) FRONT VIEW



(C) SIDE VIEW

**GENERAL DESIGN NOTES:**

THE DESIGN OF THE CONCRETE STRUCTURE COMPLIES WITH FEMA 320 AND ICC-500 STANDARDS FOR TORNADO SHELTER:  
WIND SPEED = 250 MPH, I - 1.0, EXPOSURE C, GCPI = 0.18, KZT = 1.0, KD = 1.0

CONCRETE THICKNESS SHALL BE AS SHOWN, 4 INCHES.

ALL WALL AND CEILING REINFORCING SHALL BE PLACED AT THE CENTER OF THE WALL AND CEILING SLABS. REINFORCING IN FLOOR SLAB SHALL BE PLACED WITH 2 INCHES OF COVER BENEATH IT.

ALL SOIL PLACED ADJACENT TO STRUCTURE SHALL BE CLEAN SAND AND COMPACTED IN UNIFORM LIFTS NOT TO EXCEED 12 INCHES.

FOUNDATION DESIGN FOR SHELTER DESIGNED BY OTHERS, ENGINEER ASSUMES NO LIABILITY FOR DESIGN.

NO SHELTER SHALL BE PLACED WITHIN THE LIMITS OF ZONE A OR ZONE AE, 100-YEAR FLOODPLAIN.

ENGINEER OF RECORD RECOMMENDS GEOTECHNICAL ENGINEER BE CONSULTED TO DETERMINE SITE SOIL CONDITIONS.

SHELTER DOOR INCLUDING LATCHING SYSTEM AND HINGES HAS BEEN TESTED FOR MISSILE IMPACT CRITERIA (ICC-500). ANY EXPOSED PERIMETER WALLS MUST ALSO BE TESTED AS REQUIRED BY ICC-500, MISSILE IMPACT DESIGN CRITERIA.

ANCHORS MUST BE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

SHELTER DESIGN IS VALID FOR A PERIOD OF TWO YEARS BASED OF CURRENT ICC-500. ANY CHANGES/UPDATE TO ICC-500 WOULD REQUIRE DESIGN TO BE VERIFIED. ANY MODIFICATION TO THE DESIGN THAT MAY AFFECT STRENGTH OF STRUCTURE MUST BE APPROVED BY ENGINEER PRIOR TO COMMENCEMENT OF ALTERATION.

**DESIGN STRENGTHS:**

CONCRETE STRENGTH = 6000 PSI. THE WATER-CEMENT RATIO SHALL NOT EXCEED 0.45.

REINFORCING STEEL SHALL BE #4 BARS AS SHOWN AND COMPLY WITH ASTM A615 AND SHALL HAVE A YIELD STRENGTH OF 60,000 PSI.

**LIMITATION OF DESIGN:**

ENGINEER NOR HAUSNER'S CAN NOT PREDICT ACTUAL PERFORMANCE OF ANY STRUCTURE FOR TORNADOES OR SEVERE STORMS, BUT THIS DESIGN INCORPORATES CURRENT KNOWLEDGE TO BEST PROTECT THE OCCUPANTS. THE ENGINEER AND FABRICATOR SHALL NOT BE OBLIGATED OR LIABLE FOR ACTUAL, INCIDENTAL, CONSEQUENTIAL, OR OTHER DAMAGES TO USERS OF THIS SHELTER FOR ANY PURPOSE, INCLUDING THOSE INSTALLING OR MAINTAINING THEREOF.



*Corren C. Robertson*

THE SEAL APPEARING ON THIS DRAWING WAS AUTHORIZED BY CORREEN C. ROBERTSON  
P.E. 106494, ON 6/17/2013



6' x 8'

CONCRETE STORM SHELTER

HAUSNER INC.

DATE:	DRAWN BY:	REVISIONS:	SHEET
4/30/2013	CCR	IFR	