19 March 2021

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RE: Engineering Judgment Firestop Review
Project: Stockton Products
Location: Orange, CA
CEMCO Detail: WFCi Report #20091, dated: 8 March 2021
F Rating: 1- and 2-hour

Dear Mr. Patzkowsky:

We have received and reviewed the Engineering Judgment Details prepared by CEMCO's Joseph Sigala, drawing WFCi Report #20091, dated 8 March 2021, along with a copy of the Fire Performance Report prepared by Western Fire Center, Inc. (Report #20091s). The presented data was based upon a steel-stud wall assembly with a cross reveal tested to ASTM E119, "Standard Test Methods for Fire Test of Building Construction and Materials." The intent was to test the wall and corresponding reveal for a 120-minute (2-hour) duration.

Briefly, a 10' x 10' wall assembly was constructed, consisting of steel frame, two layers of 5/8", Type 'X' gypsum wallboard on each side, and an aluminum protective reveal (RatedReveal) in both horizontal and vertical directions. Unfaced fiberglass batt insulation was placed in each stud cavity, as well as within the ½" gap between the two center studs (reveal location). All joints and fastener heads were coated with two layers of joint compound and 2" wide tape was applied over the joints including the reveal edges. Details on the wall assembly are shown on the attached CEMCO drawings.

A 11/16" wide groove was provided in the two layers of gypsum board in both the vertical and horizontal directions, for installation of the 5/8" wide x 5/8" deep aluminum reveal. The flange width on the reveal is 7/8". A 5/8" wide strip of factory-applied intumescent tape (RatedReveal Tape) was affixed to the back width of the reveal, toward the stud cavity. The reveal was fastened to the gypsum with 2-1/4" Type 'S' screws spaced on 12" centers.

Thermocouples were placed at strategic points on the wall assembly as shown in the following detail (Figure 5 from the WCFi Report #20091s):

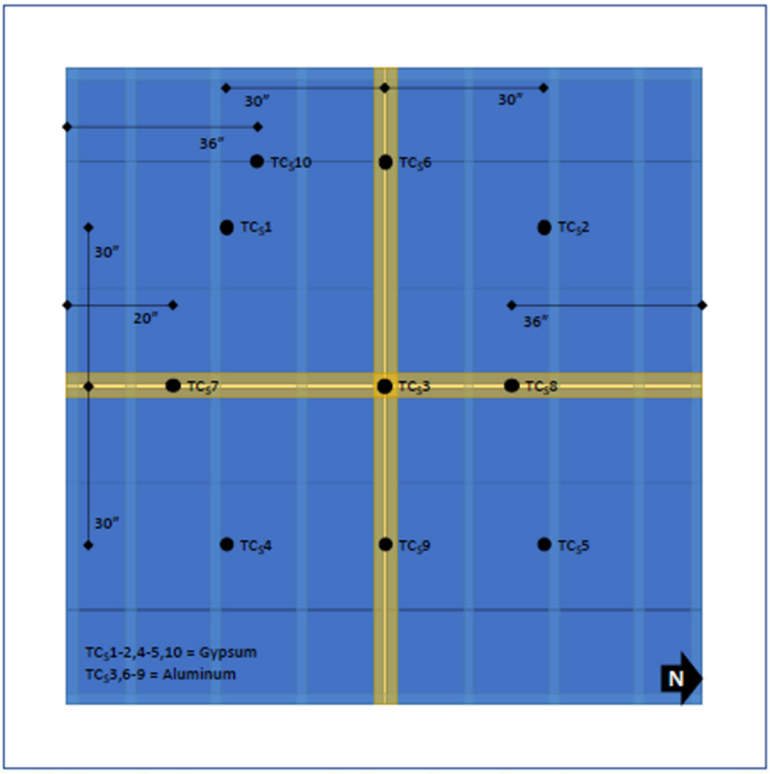

Figure 5. Sample thermocouple locations showing unexposed TCs.

Testing of the wall assembly was completed in accordance with the requirements of ASTM E119 and included a hose stream test. Temperatures and pressures were continuously monitored and recorded, as was horizontal deflection. Once the area under the Time-Temperature Curve was met, the furnace was shut down and the test terminated. This occurred at 120 m 33 s into the test. The assembly passed the time test of 120-minutes. In addition, temperatures recorded indicated that both average and single point thresholds (139 C + ambient, 181 C + ambient, respectively) were not exceeded. The reveal temperatures were approximately the same as the balance of the gypsum temperatures.

The hose steam test, which is the application of a 30-psi stream of water for 150-seconds (2-1/2-minutes), occurred approximately 3-minutes after the assembly was removed from the furnace. No holes or penetrations developed in the assembly the permitted the projection of water from the hose stream beyond the unexposed surface, which satisfied the hose stream test.

Pursuant to our review of the presented evaluation, we find the report provides substantial justification that we support the conclusions drawn that the assembly, with the installed reveal, will provide a 120-

minute fire-resistance rating. The installation of the reveals will not have an adverse effect on the overall fire-rated performance of the wall.

This review is limited to those specific assemblies depicted and only for use as part of the above referenced project and cannot be extended to other assemblies or projects any deviation of the engineering judgment referenced above will require an additional review. The fire rating of the assembly is dependent on the performance of the surrounding construction under fire exposure with maximum possible F-rating of 2-hours. The contractor is responsible for compliant installation.

Prepared by: John D. Campbell, P.E.

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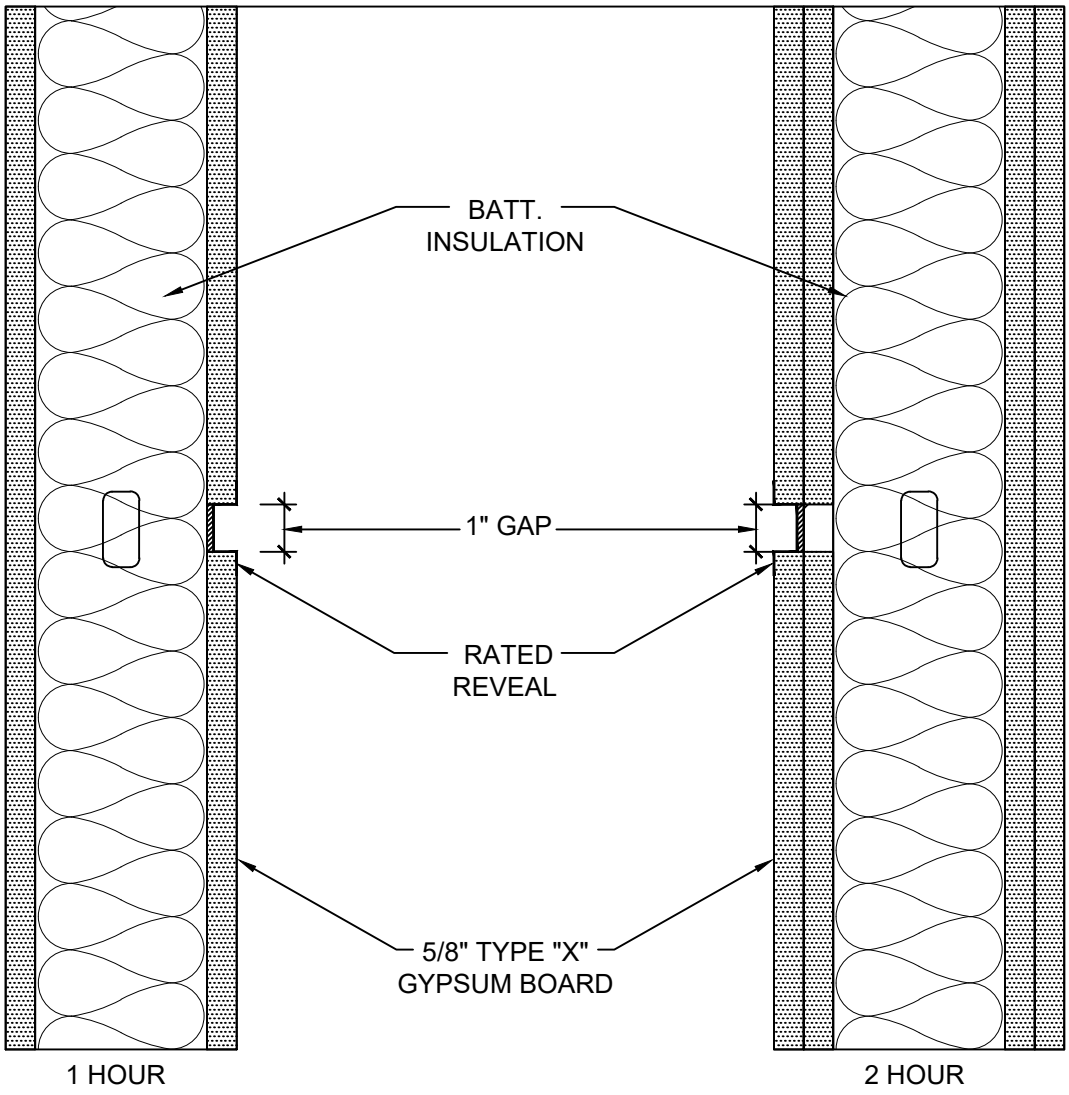

WFCi#20091

ASSEMBLY RATING: 1 & 2HR

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REVISION:

DRAWN BY: JOSEPH SIGALA
DATE: 03/08/2021

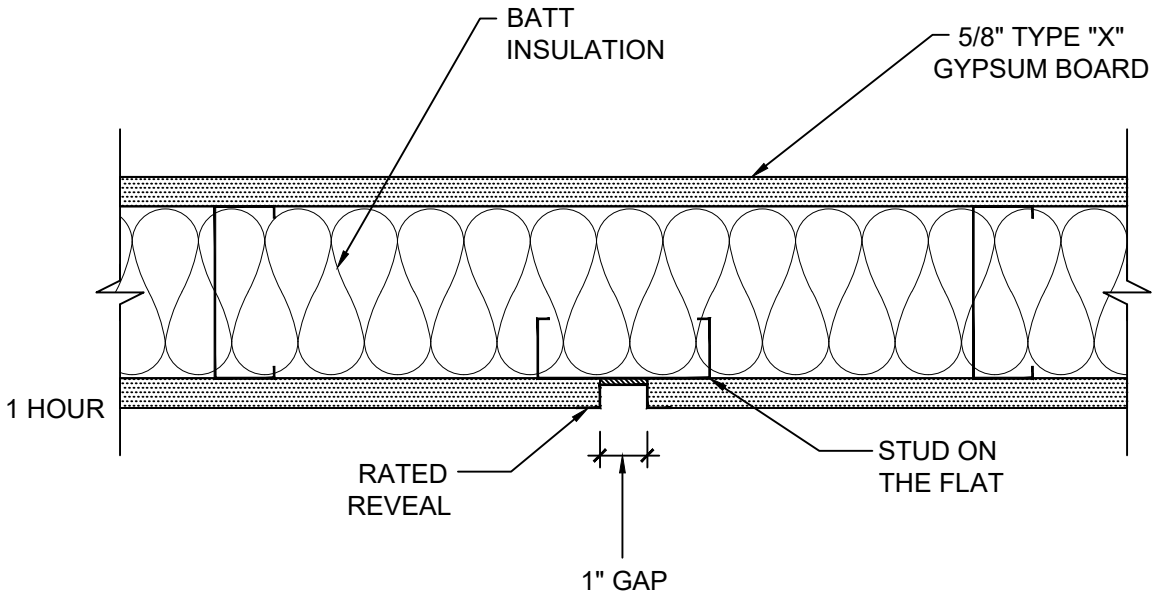
APPROVED BY: DON PILZ
DATE: 03/08/2021

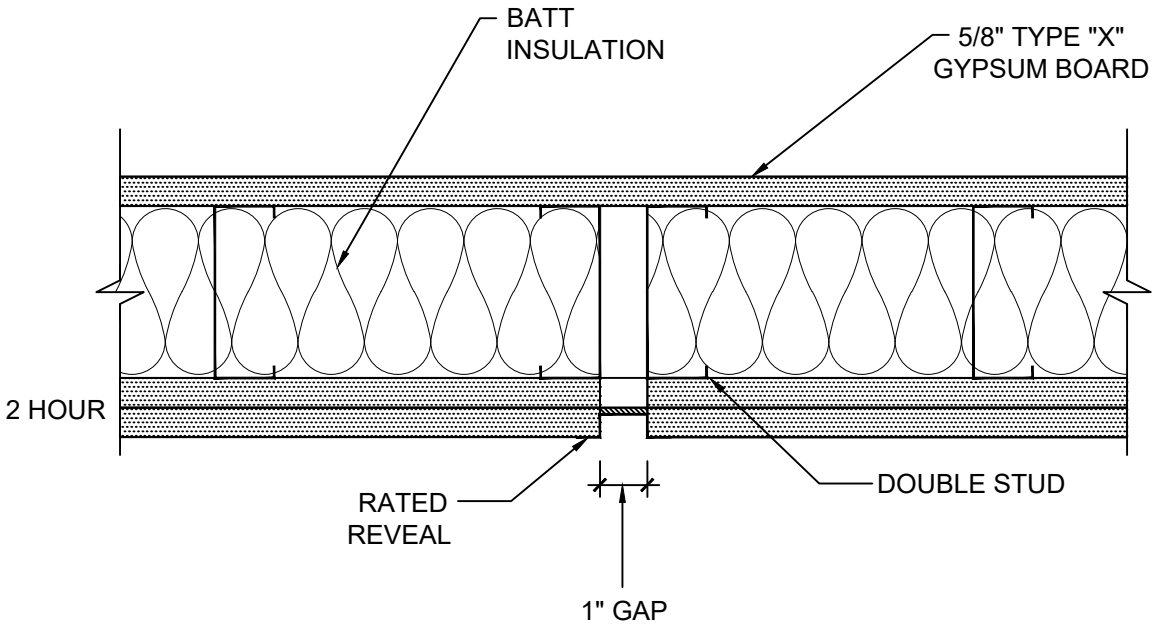
SCALE: 3"=1'-0"

JOB NO.: UL DETAILS

SHEET NO.:

WFCi Report #20091





HW-D-0622

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