

Development Services

From Concept to Construction

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APPEAL SUMMARY

Status: Mixed Decision. Item 1: Hold for Additional Information. Items 2 and 3: Decision Rendered.

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| Appeal ID: 20225 | Project Address: 909-919 SW Taylor St |
| Hearing Date: 4/10/19 | Appellant Name: Ingrid Hoffman |
| Case No.: B-022 | Appellant Phone: 5032133575 |
| Appeal Type: Building | Plans Examiner/Inspector: John Cooley |
| Project Type: commercial | Stories: 1 Occupancy: M Construction Type: I-B |
| Building/Business Name: Guild Theater/Kinokuniya Bookstores of America | Fire Sprinklers: Yes - |
| Appeal Involves: Alteration of an existing structure | LUR or Permit Application No.: 18-183386-CO |
| Plan Submitted Option: pdf [File 1] | Proposed use: Bookstore |

APPEAL INFORMATION SHEET

Appeal item 1

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| Code Section | Table 403.2.4 |
| Requires | SFRM bond strength of 430psf for high-rise buildings up to 420 feet. |
| Proposed Design | SFRM product submitted as "Exhibit A" is proposed for use in the fireproofing application of the roof structural members for this project. This product is fully compliant with the standards of OSSC section 1705.13 including 1705.13.6 Bond Strength. |
| Reason for alternative | <p>The Guild Theater building is being classified as construction type I-B due to its attachment to the Studio Building, however The Guild Theater building itself is a single story 35' high concrete building and is not subject to the same risks that a high-rise building might be subject to.</p> <p>The increased bond strength requirement for high-rise buildings were created "in response to the recommendations made by the International Code Council's (ICC's) Ad-hoc Committee on Terrorism Resistant Buildings (TRB) proposals. The committee studied the National Institute of Standards and Technology (NIST) reports and made recommendations based on the World Trade Center attack documents. In the reports, NIST recommended an increased bond strength requirement for "high-rise buildings," which are defined in Chapter 2 of the IBC as those with an occupied floor located more than 23 m (75 ft) above the lowest level of fire department vehicle access." See more at: https://www.constructionspecifier.com/sprayed-fire-resistive-materials-bond-strength-and-the-ibc/</p> <p>In addition, more than 60% of the truss members being protected are more than 20' above the floor below and would typically be exempt from any required protection. Also please note that this is an existing building and the fireproofing requirements were not in place when it was built.</p> |

Appeal item 2

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| Code Section | 704.2 Column Protection |
| Requires | Where columns are required to have protection to be fire-resistance rated, the entire column shall be provided individual encasement protection by protecting it on all sides for the full column length, including connections to other structural members, with materials having the required fire-resistance rating. |
| Proposed Design | See detail submitted as "Exhibit B". |
| Reason for alternative | This project is being constructed and is ready for gyp board immediately. The encapsulation of the columns was not captured in the permitted documents and was brought to attention by the building inspector. Columns are located in shear walls and a full encapsulation would disrupt the shear panel. Per an onsite meeting between the contractor, architect, structural engineer, plans examiner, and building inspector (as well as additional communication with the plans examiner) the submitted detail is proposed for the protection of the columns within the rated walls. The columns support the mezzanine floor only. The GA assembly calls for a 1-3/4" thickness which we are providing on three sides, and on the shear wall side we are providing 1-1/4" thickness plus a layer of metal protection. See submitted "Exhibit C" for documentation that references the fire-resistance of the series 200 Sure Board as better than standard gyp board due to the addition of metal protection. |

Appeal item 3

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| Code Section | UL N501 |
| Requires | Encasement of beams below the floor assembly. |
| Proposed Design | See submitted "Exhibit D" |
| Reason for alternative | A modification of the UL N501 design is proposed to encase beams in the floor assembly of the mezzanine. This encasement is per the GA Fire resistance manual for beams that project more than 6" below the plane of the ceiling. Beams are not subject to OSSC section 704.3 as they support only one floor. There is one beam that is W8x10 and this size beam is not addressed by any UL assembly. We propose adding one additional layer of Type C gyp board to encase the W8x10 beam. This particular beam has a very limited tributary area (see "Exhibit E" structural plan view) and we believe the additional layer of gyp bd compensates for the smaller beam size. Beams ends will be captured within 2-hour column and wall assemblies. |

APPEAL DECISION

- 1. Reduction in bond strength of spray applied fire resistant material: Hold for additional information.**
- 2. Alternate 2 hour beam encasement: Granted as proposed.**
- 3. Alternate 2 hour UL beam assembly: Granted as proposed.**

Appellant may contact John Butler (503 823-7339) with questions.

The Administrative Appeal Board finds that the information submitted by the appellant demonstrates that the approved modifications or alternate methods are consistent with the intent of the code; do not lessen health, safety, accessibility, life, fire safety or structural requirements; and that special conditions unique to this project make strict application of those code sections impractical.

Pursuant to City Code Chapter 24.10, you may appeal this decision to the Building Code Board of Appeal within 180 calendar days of the date this decision is published. For information on the appeals process and costs, including forms, appeal fee, payment methods and fee waivers, go to www.portlandoregon.gov/bds/appealsinfo, call (503) 823-7300 or come in to the Development Services Center.

MONOKOTE® MK-6®/HY® and MK-6s

Product data and application instructions

Product Description

Monokote® MK-6®/HY® and MK-6s are single component, spray applied, mill-mixed fire resistive plasters. MK-6/HY and MK-6s have approval for use on structural steel members and fluted decking to provide up to four hours of fire protection, and on flat plate cellular decking for up to three hours with Spatterkote® SK-3.

Note: Monokote MK-6/HY and MK-6s afford the same level of the fire protection at identical protection thicknesses. By simply specifying “Monokote MK-6” the fireproofing subcontractor can select the product that will provide the most efficient fire protection for the specific project conditions.

Features & Benefits

Monokote cementitious fireproofing offers many significant advantages to the architect, owner, applicator and building occupant. These include:

- Proven in-place performance
- Low in-place cost
- Fast, efficient application
- UL fire tested and factory inspected
- Building Code compliant

Delivery & Storage

- All material to be used for fireproofing shall be delivered in original unopened packages bearing the name of the manufacturer, the brand and proper UL labels for fire hazard and fire resistance classifications.
- The material shall be kept dry until ready for use. Packages of material shall be kept off the ground, under cover and away from sweating walls and other damp

surfaces. All bags that have been exposed to water before use shall be discarded. Stock of material is to be rotated and used before its expiration date.

Steel & Concrete Surfaces

- Prior to the application of Monokote MK-6, an inspection shall be made to determine that all steel surfaces are acceptable to receive fireproofing. The steel shall be free of oil, grease, rolling compounds or lubricants, loose mill scale, excess rust, noncompatible primer, lock down agent or any other substance that will impair proper adhesion. Where necessary, the cleaning of steel surfaces to receive fireproofing shall be the responsibility of the general contractor.
- The project architect shall determine if the painted/primed structural steel to receive fireproofing has been tested in accordance with ASTM E119, to provide the required fire resistance rating.
- Many Fire Resistance Designs allow the use of painted metal floor or roof-deck in place of galvanized decking. Painted decking must be UL listed in the specific fire resistance designs and must carry the UL classification marking. Consult your local GCP sales representative for details.
- Prior to application of Monokote MK-6, a bonding agent, approved by the fireproofing manufacturer, shall be applied to all concrete substrates to receive MK-6.
- Fireproofing to the underside of roof deck assemblies shall be done only after roofing application is complete and roof traffic has ceased.
- No fireproofing shall be applied prior to completion of concrete work on steel decking.

Performance Characteristics

| Physical Properties | Recommended Specification | Laboratory Tested* Values | Test Method |
|---------------------------------|--|--|-----------------------|
| Dry density, minimum average | 15 pcf (240 kg/m ³) | 15 pcf (240 kg/m ³) | ASTM E605 |
| Bond strength | 200 psf (9.6 KPa) | 352 psf (16.9 KPa) | ASTM E736 |
| Compression, 10% deformation | 8.3 psi (51 kPa) | 32 psi (220 KPa) | ASTM E761 |
| Air erosion | Max 0.000 g/ft ² (0.00 g/m ²) | 0.000 g/ft ² (0.00 g/m ²) | ASTM E859 |
| High velocity air erosion | No continued erosion after 4 hours | No continued erosion after 4 hours | ASTM E859 |
| Corrosion | Does not contribute to corrosion | Does not contribute to corrosion | ASTM E937 |
| Bond impact | No cracking, spalling or delamination | No cracking, spalling or delamination | ASTM E760 |
| Deflection | No cracking, spalling or delamination | No cracking, spalling or delamination | ASTM E759 |
| Resistance to mold growth | No growth after 28 days | No growth after 28 days | ASTM G21 |
| Surface burning characteristics | Flame spread = 0 Smoke developed = 0 | Flame spread = 0 Smoke developed = 0 | ASTM E84 |
| Combustibility | Less than 5 MJ/m ² total, 20 kw/m ² peak heat release | Less than 5 MJ/m ² total, 20 kw/m ² peak heat release | ASTM E1354 |
| Impact penetration | Max 6 cm ³ abraded | 3.9 cm ³ | City of San Francisco |
| Abrasion resistance | Max 15 cm ³ abraded | 8.3 cm ³ | City of San Francisco |

*Actual laboratory tested values meet or exceed GCP's recommended value. Test reports are available on request from your GCP sales representative.

- g. Other trades shall not install ducts, piping, equipment, or other suspended items until the fireproofing is completed and inspected.
- h. Other trades shall install clips, hangers, support sleeves, and other attachments that penetrate the fireproofing, prior to application of the fireproofing.

Mixing

- a. Monokote Fireproofing shall be mixed by machine in a conventional, plaster-type mixer or a continuous mixer specifically modified for cementitious fireproofing. The mixer shall be kept clean and free of all previously mixed material. The mixer speed in a conventional mixer shall be adjusted to the lowest speed which gives adequate blending of the material and a mixer density of 40–45 pcf (640–720 kg/m³) of material.
- b. Using a suitable metering device and a conventional mixer, all water shall be first added to the mixer as the blades turn. Mixing shall continue until the mix is lump-free, with a creamy texture. All material is to be thoroughly wet. Target density of 43 ± 1 pcf (688 ± 16 kg/m³) is most desirable. Overmixing Monokote will reduce pumping rate.

Application

- a. Application of Monokote Fireproofing can be made in the following sequence:
 1. For thicknesses of approximately ½ in. (13 mm) or less, apply in one pass.
 2. For thicknesses of ¾ in. (16 mm) or greater, apply subsequent passes after the first coat has set.
- b. Spatterkote SK-3 shall be applied to all cellular steel floor units with flat plate on the bottom and to roof decking where required prior to application of Monokote. Spatterkote shall be applied in accordance with manufacturer's application instructions.
- c. Monokote Fireproofing material shall not be used if it contains partially set, frozen or caked material.
- d. The minimum average density shall be that required by the manufacturer, listed in the UL Fire Resistance Directory for each rating indicated, ICBO Evaluation Report, as required by the authority having jurisdiction, or minimum average 15 lbs/ft³ (240 kg/m³), whichever is greater.
- e. Monokote shall be mixed with water at the job site.
- f. Monokote Accelerator is to be used with Monokote Fireproofing* to enhance set characteristics and product yield. The Monokote Accelerator is injected into the Monokote Fireproofing at the spray gun. Monokote Accelerator shall be mixed and used according to manufacturer's recommendations.

- g. Monokote is applied directly to the steel, at various rates of application which will be job dependent, using standard plastering type equipment or continuous mixer/pump units. A spray gun, with a properly sized orifice and spray shield and air pressure at the nozzle of approximately 20 psi (38 KPa), will provide the correct hangability, density and appearance. NOTE: If freshly sprayed Monokote does not adhere properly, it is probably due to a too wet mix, poor thickness control, or an improperly cleaned substrate.

Temperature & Ventilation

- a. An air and substrate temperature of 40°F (4.4°C) minimum shall be maintained for 24 hours prior to application, during application and for a minimum of 24 hours after application of Monokote.
- b. Provisions shall be made for ventilation to properly dry the fireproofing after application. In enclosed areas lacking natural ventilation, air circulation and ventilation must be provided to achieve a minimum total fresh air exchange rate of 4 times per hour until the material is substantially dry.

Field Tests

- a. The architect will select an independent testing laboratory (for which the owner will pay) to sample and verify the thickness and density of the fireproofing in accordance with the applicable building code.
- b. The architect will select an independent testing laboratory (for which the owner will pay) to randomly sample and verify the bond strength of the fireproofing in accordance with the provisions of ASTM E736.
- c. Results of the above tests will be made available to all parties at the completion of pre-designated areas which shall have been determined at a pre-job conference.

Safety

- a. Monokote is slippery when wet. The general contractor and applicator shall be responsible for posting appropriate cautionary "SLIPPERY WHEN WET" signs. Signs should be posted in all areas in contact with wet fireproofing material. Anti-slip surfaces should be used on all working surfaces.
- b. Material Safety Data Sheets for Monokote MK-6/HY and MK-6s are available on our web site at www.ggcpat.com or by calling 866-333-3SBM.

Use of accelerator with MK-6s will provide rapid set but will not result in yield increase.

We hope the information here will be helpful. It is based on data and knowledge considered to be true and accurate, and is offered for consideration, investigation and verification by the user, but we do not warrant the results to be obtained. Please read all statements, recommendations, and suggestions in conjunction with our conditions of sale, which apply to all goods supplied by us. No statement, recommendation, or suggestion is intended for any use that would infringe any patent, copyright, or other third party right.

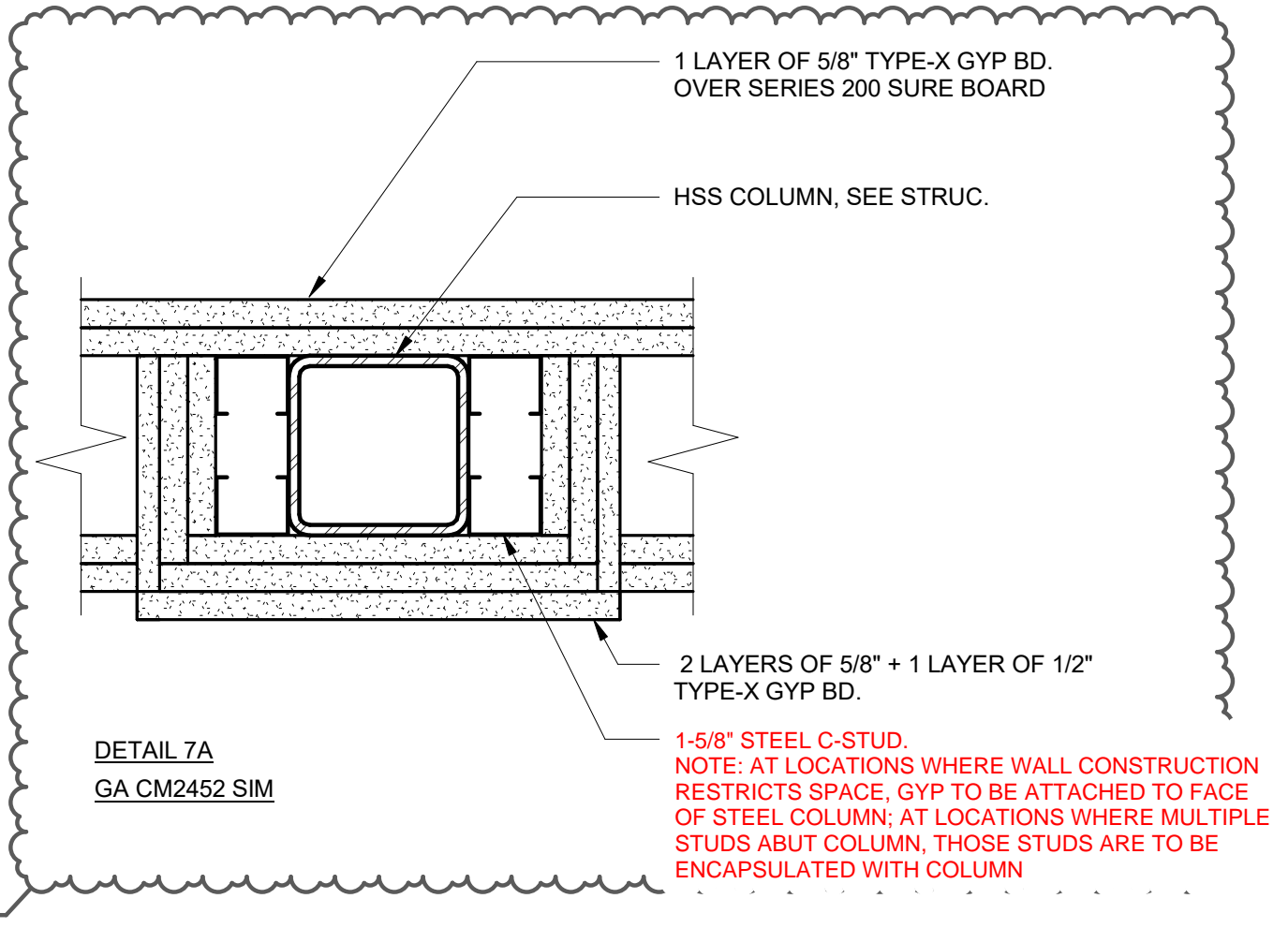
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EXHIBIT B



no longer needed. Our test program revealed that the presence of the Series 200 and 200W steel sheet products improved fire resistance of the wall assembly. The steel tended to even out the unexposed side temperatures, and the wall assemblies tested passed the hose stream tests after the full fire exposure rating period, which is unusual for conventional gypsum wallboard assemblies. The steel sheets provided a solid barrier, and hence prevented the passage of a stream of water through the assemblies. The MDF of the 200W improved the fire resistance of the wall assemblies, as is expected according to the "Ten Rules of Fire Resistance Rating" by T.Z. Harmathy, which states that adding materials to an assembly will add fire resistance. The steel sheets also add lateral stability to reduce the ability for the studs to buckle under load, hence improving the load bearing characteristics. For these reasons, the addition of Sure-Board® products described should not reduce the fire resistance of the assemblies described in the Gypsum Association Fire Resistance Design Manual.

Conclusion

Firestance Professional Services Ltd. is in complete agreement with the above assessment provided by Intertek of the performance of International Materials Inc. Sure-Board® Series 200/200W structural panels, based on review of the fire test reports. The Sure-Board® Series 200 can be used in place of a layer of equivalent Type X gypsum wallboard in any gypsum wallboard assembly and not reduce the fire resistance rating of the assembly. The Sure-Board® Series 200W or Series 200 can be added to any fire rated wood framed wall assembly and will not reduce the fire rating of the assembly.

Signature

Report Prepared By;

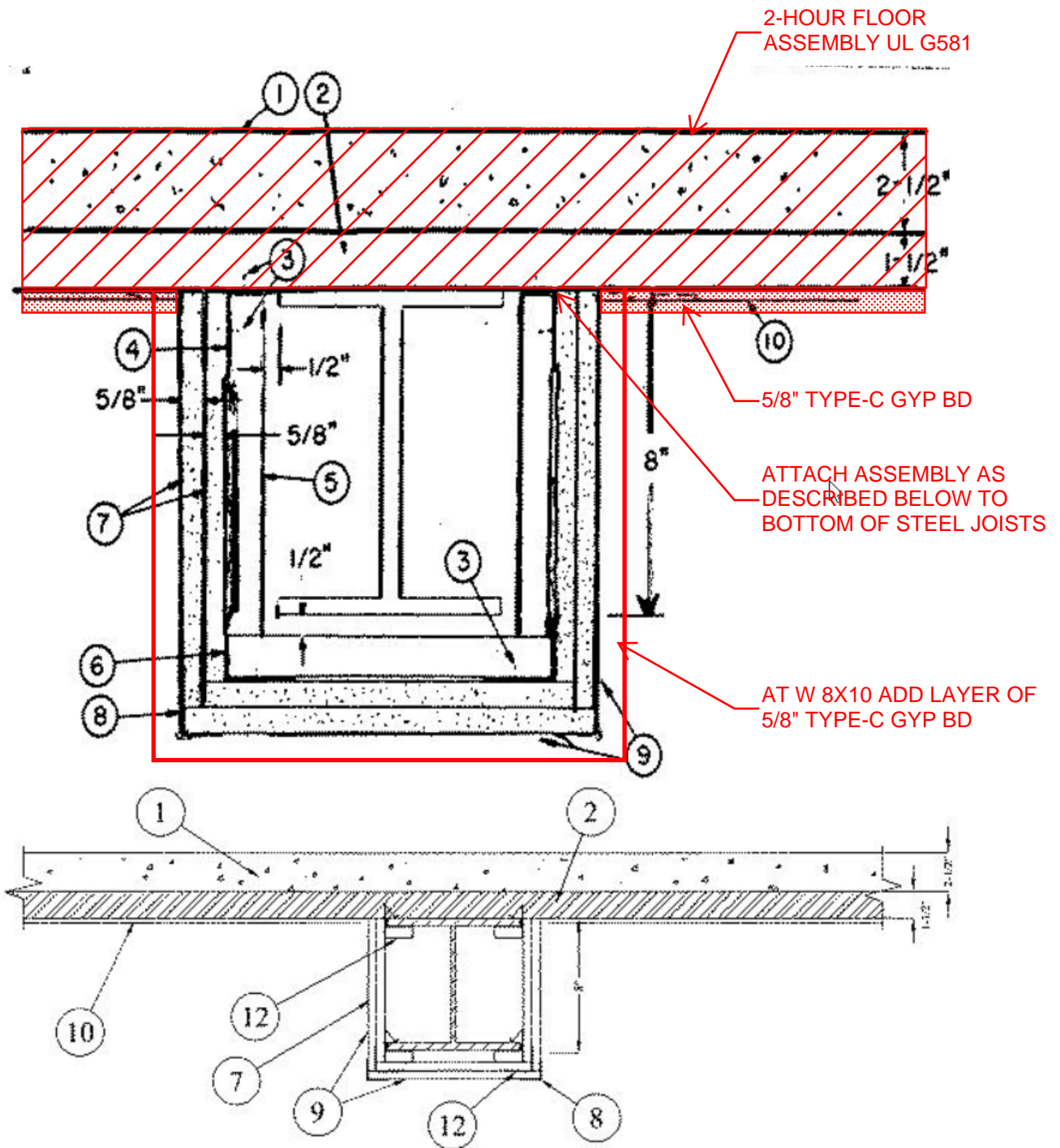
Mike van Geyn

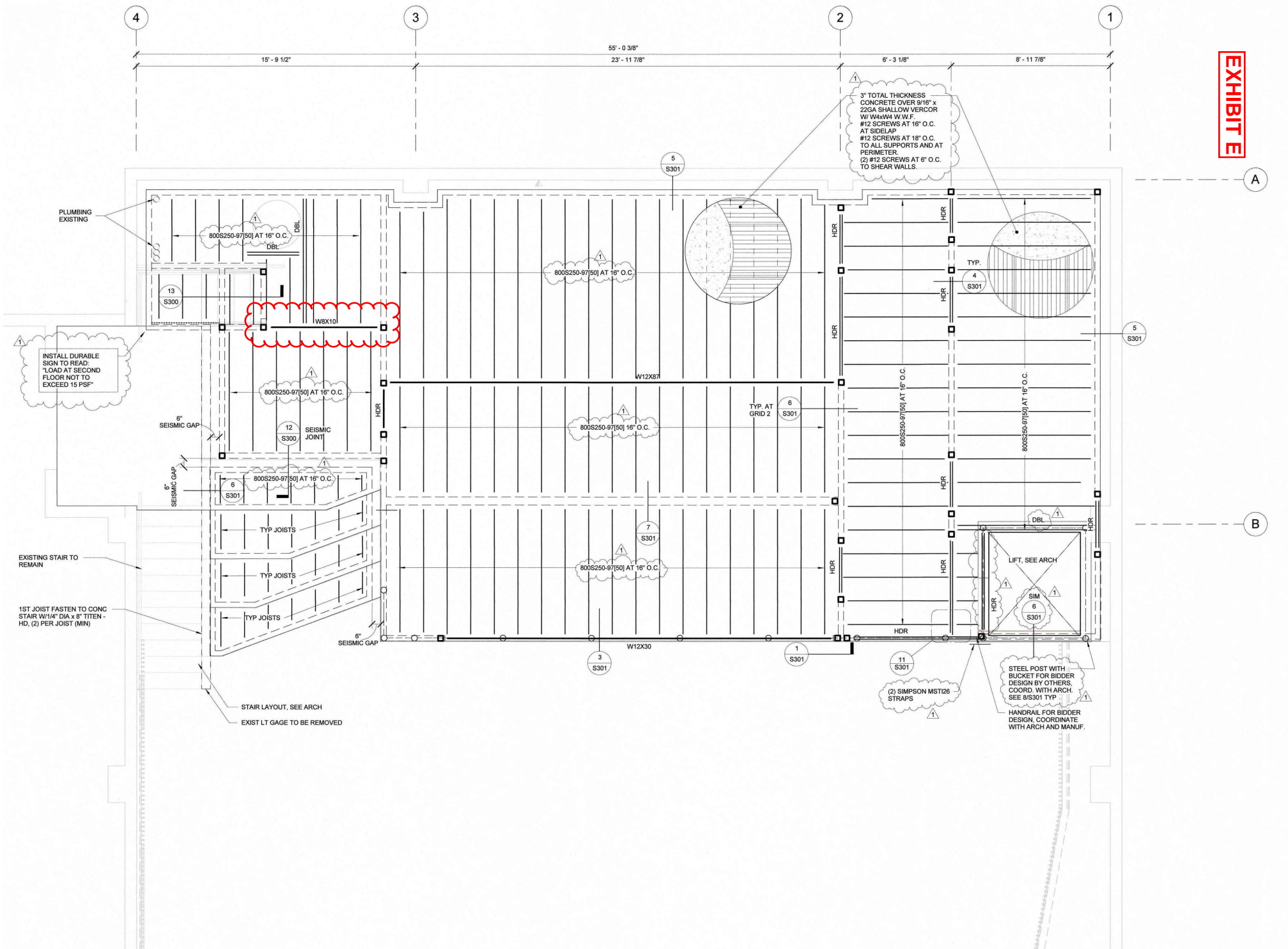
Mike van Geyn, A.Sc.T.

Principal

Firestance Professional Services Ltd.

EXHIBIT D





1. SECOND LEVEL FRAMING PLAN

SCALE: 3/8" = 1'-0"

