



ARCHITECTURE • PLANNING • INTERIOR DESIGN

Ms. Jeanie Bourke
Code Enforcement / Plans Review
Planning and Urban Development Department
389 Congress Street, Room 308
Portland, ME 04101

May 21, 2012

Re: Otto Pizza, 576 Congress Street

Dear Ms. Bourke,

I am representing the interests of Mike Keon, one of two owners of Otto Pizza. This correspondence follows our previous telephone conversations to you regarding proposed access from the current Otto's Pizza Take Out Restaurant located at 574 Congress Street, to a renovated first floor dining area located at 574 Congress Street. The dining area is intended to be limited occupancy and total no more than 40 occupants. The occupancy limit shall be posted.

The building and space in question are located at 576 Congress Street is estimated to be in excess of 80-100 years old. The tenant above is a Tattoo Shop and therefore considered a "business use", the previous use was a Burrito Shop. The current structure is separated from adjacent buildings on the first floor by a brick masonry bearing walls which extend to the second floor and serves functionally as a structural support component, through which a connecting doorway is planned (attached please find a structural assessment letter from Aaron Jones, P.E., Structural Integrity Engineers). The floor / ceiling assemblies are comprised of wood plank decking and timber framing, with wood timber column supports. The columns and beams are "fire-cut" yet the overall dimensions of the wood components are not to be considered "heavy timber", as such I believe the construction classification for the existing structure would be a Type V, combustible wood frame. Given that the occupancy does not exceed 40 and the classification as a "business use" does not change from the previous occupant's use, we consider this not to be a change of use by definition.

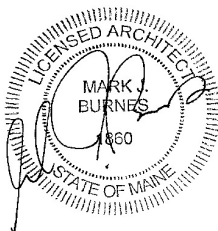
The overall dimensions of the space are approximately 30' x36' in the current "gutted" state that exists. The occupied square footage is expected to be reduced by the basement access stair, a new handicapped accessible toilet room and necessary access / egress pathways. We project the use of ten (10) four top tables to be in the future seating arrangements.

In review of current building conditions and respective of the proposed future use I suggest inclusion of the following new components:

1. Provide a one hour fire-rated door/frame and closer device in existing brick masonry tenant / party wall to provide a connection from 574 Congress St. to 576 Congress St. (refer to attached structural comments from Aaron Jones, P.E) with automatically releasing hold-open device.
2. Provide fire stopping and caulking within the existing masonry tenant / party walls and penetrations.
3. Provide a one hour fire-rated wall assembly w/ door/frame and closer at the basement access location, refer to attached UL Assembly information.
4. Provide one hour fire-rated ceiling assembly for vertical fire separation / tenant separation with the second floor Tattoo Shop, refer to attached UL Assembly information.
5. Provide new smoke detectors, exit signage, emergency lighting and horn/strobe devices to be installed in the dining, toilet room and basement areas.
6. The selection and installation of the above components and construction are to be performed as contractors to Otto Pizza and subject to inspection and approval by the City of Portland.

Attached, please find copies of the proposed fire- rated ceiling assembly, fire-rated wall assembly and HP toilet room plan and elevations for your review. Mike Keon and I are available to meet with Portland Inspectional Services and Portland Fire Department Representatives at the site or in your offices as you are able. Thank you for your consideration, we look forward to hearing from you in the near future and look forward to beginning the aforementioned renovation in the near future.

Yours Truly,



Mark J. Burnes

Cc: Mike Keon, Captain Chris Pirone, File

Structural Integrity

Consulting Engineers, Inc.

April 19, 2012

Mr. Aaron Bourassa
Great Falls Construction
20 Mechanic Street
Gorham, Maine 04038

Reference:

New Opening in Existing Masonry Wall
Otto's Pizza Expansion
576 Congress Street
Portland, Maine
Structural Integrity Job #12-0033

Dear Aaron,

As requested, I am writing this memo to discuss my findings regarding the new opening in the existing East masonry wall at Otto's Restaurant in Portland, ME.

The opinions and comments contained herein are based on visual observations made during my visit to the site on April 3, 2012. Physical testing and professional instrument based elevation and location surveys have not been performed. Architectural, mechanical, electrical, and plumbing conditions are not included in this report. No warranty expressed or implied, as to the condition of the complete structure, is intended.

The wall is a masonry infill demising wall with an existing 12" deep wide flange beam above which spans to pilasters at the corners of the building. While this masonry infill does add some vertical and lateral stiffness to the building, it is acceptable to remove a 5'-0" wide portion, as discussed on site, between the existing space at 576 Congress street into the new expanded area to the East.

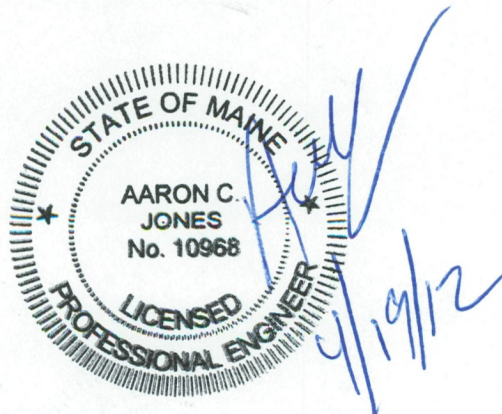
The new opening should be limited to 5'-0" in width. The jambs should be cut with a rotary diamond blade saw or the jambs can be rebuilt with squared off edges at the opening. The existing masonry at this new opening should be removed full height to the 12" steel beam above.

Please do not hesitate to call with any questions or if I can be of further assistance.

Sincerely,



Aaron C. Jones, P.E., SECB, LEED AP
President





Design No. L508 BXUV.L508 Fire Resistance Ratings - ANSI/UL 263

Page Bottom

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Listed or Classified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered as Classified, Listed, or Recognized.

Fire Resistance Ratings - ANSI/UL 263

[See General Information for Fire Resistance Ratings - ANSI/UL 263](#)

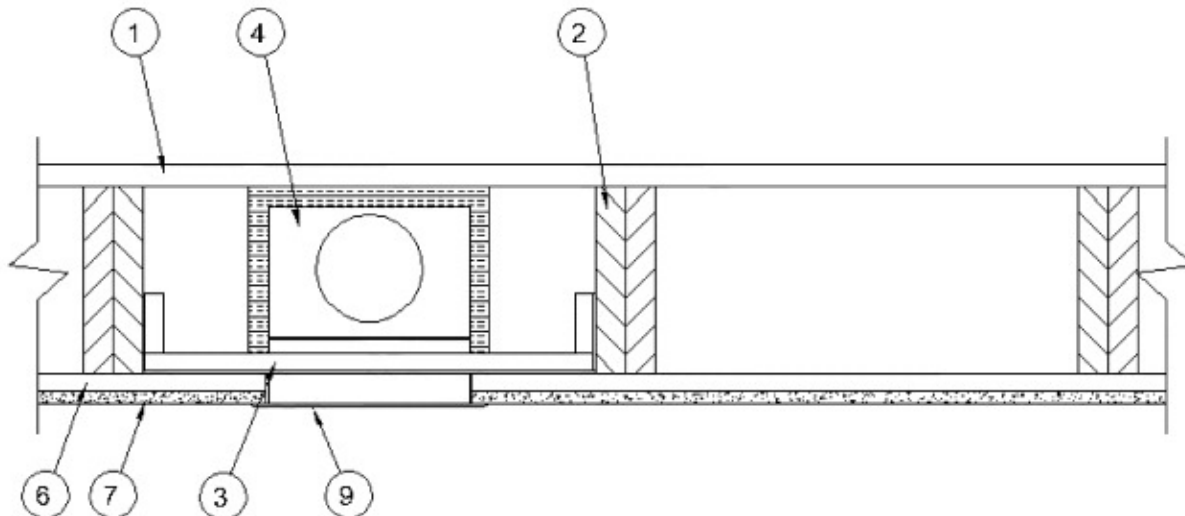
Design No. L508

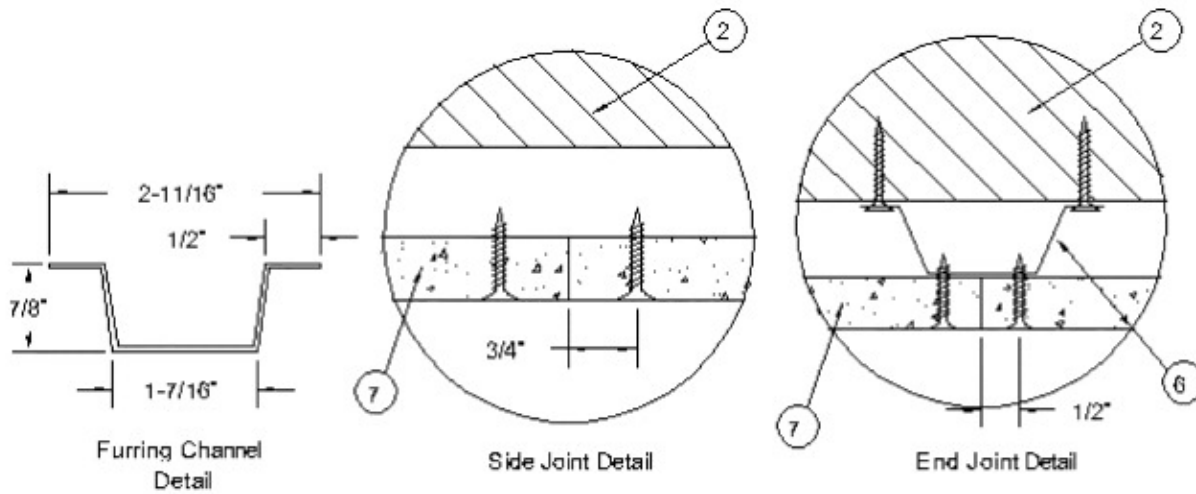
May 11, 2012

Unrestrained Assembly Rating — 1 Hr.

Finish Rating — 29 Min.

Load Restricted for Canadian Applications — See Guide [BXUV7](#)





1. **Flooring System** — The flooring system shall consist of one of the following:

System No. 1

Subflooring—Nom 1-1/8 in. thick T & G wood structural panels , min grade "Underlayment" or "Single Floor". Panels installed perpendicular to joists, with butted end joints staggered and centered on joists. Panels fastened with 8d helically threaded flooring nails spaced 6 in. OC across panels at each joist and 1/2 in. from end joints.

System No. 2

Subflooring—Nom 1-1/8 in. thick T & G wood structural panels , min grade "Underlayment" or "Single Floor". Panels installed perpendicular to joists, with butted end joints staggered and centered on joists. Panels fastened with 8d helically threaded flooring nails spaced 6 in. OC across panels at each joist and 1/2 in. from end joints.

Finish Floor - Mineral and Fiber Board*—Min 1/2 in. thick, supplied in sizes ranging from 3 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. with adjacent sub-floor joints.

HOMASOTE CO — Type 440-32 Mineral and Fiber Board

System No. 3

Subflooring—Nom 1-1/8 in. thick T & G wood structural panels , min grade "Underlayment" or "Single Floor". Panels installed perpendicular to joists, with butted end joints staggered and centered on joists. Panels fastened with 8d helically threaded flooring nails spaced 6 in. OC across panels at each joist and 1/2 in. from end joints.

Floor Mat Materials* — (Optional)— Nom 6 mm thick floor mat material adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of floor-topping mixture. When floor mat material is used, min thickness of floor topping mixture is 1 in.

HACKER INDUSTRIES INC — Type Hacker Sound-Mat.

Alternate Floor Mat Materials* — (Optional) — Floor mat material nom 10 mm thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1-1/2 in. of floor-topping mixture.

HACKER INDUSTRIES INC — Type Hacker Sound-Mat II.

Alternate Floor Mat Materials* — (Optional) — Floor mat material nom 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a min of 1 in.

HACKER INDUSTRIES INC — Type Quiet Qurl 55/025

Alternate Floor Mat Materials* — (Optional) — Floor mat material nom 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/2 in.

HACKER INDUSTRIES INC — Type Quiet Qurl 60/040

Alternate Floor Mat Materials* — (Optional) — Floor mat material nom 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/2 in.

HACKER INDUSTRIES INC — Type Quiet Qurl 65/075

Metal Lath (Optional) — For use with 3/8 in. or 10 mm floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1-1/4 in. over the floor mat.

Finish Flooring - Floor Topping Mixture*—Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand.

HACKER INDUSTRIES INC — Firm-Fill Gypsum Concrete, Firm-Fill 2010, Firm-Fill 3310, Firm-Fill 4010, Firm-Fill High Strength, Gyp-Span Radiant

System No. 4

Subflooring—Nom 1-1/8 in. thick T & G wood structural panels , min grade "Underlayment" or "Single Floor". Panels installed perpendicular to joists, with butted end joints staggered and centered on joists. Panels fastened with 8d helically threaded flooring nails spaced 6 in. OC across panels at each joist and 1/2 in. from end joints.

Floor Mat Materials* - (Optional)—Nom 1/4 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer to be applied to the surface of the mat prior to the floor topping placement. Floor topping thickness shall be a min 1 in. over the floor mat. Floor topping thickness a min 3/4 in. over Acousti-Mat I floor mat.

MAXXON CORP — Type Acousti-Mat I, Acousti-Mat II

Alternate Floor Mat Materials* - (Optional) — Nom 0.8 in. thick floor mat material loose laid over the subfloor with Crack Suppression Mat (CSM) loose laid over the floor mat material. Floor topping thickness shall be min 1-1/2 in.

MAXXON CORP — Type Acousti-Mat 3, Crack Suppression Mat (CSM)

Metal Lath (Alternate to Crack Suppression Mat (CSM)) — 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid over the floor mat material. Floor topping thickness shall be min 1-1/2 in.

Alternate Floor Mat Materials* - (Optional) — Nom 0.4 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer to be applied to the surface of the mat prior to the floor topping placement. Floor topping thickness shall be min 1-1/2 in.

MAXXON CORP — Type Enkasonic 9110

Alternate Floor Mat Materials* - (Optional) — Nom 0.2 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer may be applied to the surface of the mat prior to the floor topping placement. Floor topping thickness shall be as specified under **Floor Topping Mixture**.

MAXXON CORP — Type Acousti-Mat LP-R

Metal Lath (Optional) — For use with floor mat materials, 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd or Maxxon Corp. UL Classified Crack Suppression Mat (CSM) loose laid over the floor mat material. Floor topping thickness shall be min 1 in.

MAXXON CORP — Type Crack Suppression Mat (CSM)

Finish Flooring - Floor Topping Mixture*—Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Mixture shall consist of 3 to 7 gal of water to 80 lbs of floor topping mixture to 1.0 to 2.1 cu ft of sand.

MAXXON CORP — Type D-C, GC, GC2000, L-R, T-F, CT

System No. 5

Subflooring—Nom 1-1/8 in. thick T & G wood structural panels , min grade "Underlayment" or "Single Floor". Panels installed perpendicular to joists, with butted end joints staggered and centered on joists. Panels fastened with 8d helically threaded flooring nails spaced 6 in. OC across panels at each joist and 1/2 in. from end joints.

Floor Mat Materials* - (Optional) —Nom 1/4 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer to be applied to the surface of the mat prior to the floor topping placement. Floor topping thickness shall be a min 1 in. over the floor mat. Floor topping thickness a min 3/4 in. over Acousti-Mat I floor mat.

MAXXON CORP — Type Acousti-Mat I, Acousti-Mat II

Alternate Floor Mat Materials* - (Optional) — Nom 0.8 in. thick floor mat material loose laid over the subfloor with Crack Suppression Mat (CSM) loose laid over the floor mat material. Floor topping thickness shall be min 1-1/2 in.

MAXXON CORP — Type Acousti-Mat 3, Crack Suppression Mat (CSM)

Metal Lath (Alternate to Crack Suppression Mat (CSM)) — 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid over the floor mat material. Floor topping thickness shall be min 1-1/2 in.

Alternate Floor Mat Materials* - (Optional) — Nom 0.4 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer to be applied to the surface of the mat prior to the floor topping placement. Floor topping thickness shall be min 1-1/2 in.

MAXXON CORP — Type Enkasonic 9110

Alternate Floor Mat Materials* - (Optional) — Nom 0.2 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer may be applied to the surface of the mat prior to the floor topping placement. Floor topping thickness shall be as specified under **Floor Topping Mixture**.

MAXXON CORP — Type Acousti-Mat LP-R

Metal Lath (Optional) — For use with floor mat materials, 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd or Maxxon Corp. UL Classified Crack Suppression Mat (CSM) loose laid over the floor mat material. Floor topping thickness shall be min 1 in.

MAXXON CORP — Type Crack Suppression Mat (CSM)

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1200 psi. Mixture shall consist of 4 to 7 gal of water to 80 lbs of floor topping mixture to 1.4 to 1.9 cu ft of sand.

RAPID FLOOR SYSTEMS — Type RF, RFP, RFU, RFR, Ortecrete

System No. 6

Subflooring — Nom 1-1/8 in. thick T & G wood structural panels, min grade "Underlayment" or "Single Floor". Panels installed perpendicular to joists, with butted end joints staggered and centered on joists. Panels fastened with 8d helically threaded flooring nails spaced 6 in. OC across panels at each joist and 1/2 in. from end joints.

Vapor Barrier — (Optional) - Nom 0.030 in. thick commercial asphalt saturated felt.

Floor Mat Materials* — (Optional) - Min 3/8 in. to max 3/4 in. thick floor mat material loose laid over the subfloor.

UNITED STATES GYPSUM CO — LEVELROCK® Brand Sound Reduction Board

Alternate Floor Mat Materials* — (Optional) - Nom 1/4 in. thick floor mat material loose laid over the subfloor. Floor topping thickness shall be as specified under Floor Topping Mixture.

UNITED STATES GYPSUM CO — LEVELROCK® Brand Floor Underlayment SRM-25

Alternate Floor Mat Materials* — (Optional) - Nom 3/8 in. thick floor mat material loose laid over the subfloor.

GRASSWORX L L C — Type SC50

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1200 psi. Refer to manufacturer's instructions accompanying the material for specific mix design. Thickness increased to min 1 in. for use with LEVELROCK® Brand Floor Underlayment SRM-25.

UNITED STATES GYPSUM CO — Type LRK

System No. 7

Subflooring — Nom 1-1/8 in. thick T & G wood structural panels, min grade "Underlayment" or "Single Floor". Panels installed perpendicular to joists, with butted end joints staggered and centered on joists. Panels fastened with 8d helically threaded flooring nails spaced 6 in. OC across panels at each joist and 1/2 in. from end joints.

Vapor Barrier — (Optional) - Nom 0.030 in. thick commercial asphalt saturated felt.

Floor Mat Materials* — (Optional) - Min 3/8 in. to max 3/4 in. thick floor mat material loose laid over the subfloor.

UNITED STATES GYPSUM CO — LEVELROCK® Brand Sound Reduction Board

Alternate Floor Mat Materials* — (Optional) - Nom 1/4 in. thick floor mat material loose laid over the subfloor. Floor topping thickness shall be as specified under Floor Topping Mixture.

UNITED STATES GYPSUM CO — LEVELROCK® Brand Floor Underlayment SRM-25

Alternate Floor Mat Materials* — (Optional) - Nom 3/8 in. thick floor mat material loose laid over the subfloor.

GRASSWORX L L C — Type SC50

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 3000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design. Thickness increased to min 1 in. for use with LEVELROCK® Brand Floor Underlayment SRM-25.

UNITED STATES GYPSUM CO — Type HSLRK

System No. 8

Subflooring — Min 1-1/8 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered.

Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.

Vapor Barrier — (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring* — Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to Fire Resistance. See Floor- and Roof-Topping Mixtures (CCOX) category for names of Classified Companies.

Floor Mat Materials* — (Optional) - Nom. 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 55/025 and Quiet Qurl 55/025 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 60/040 and Quiet Qurl 60/040 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 65/075, Quiet Qurl 65/075 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 52/013 and Quiet Qurl 52/013 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/4 in. entangled net core with a compressible fabric attached to the bottom loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

KEENE BUILDING PRODUCTS CO INC — Quiet Qurl 55/025 MT and Quiet Qurl 55/025 N MT

System No. 9

Subflooring — Nom 1-1/8 in. thick T & G wood structural panels, min grade "Underlayment" or "Single Floor". Panels installed perpendicular to joists, with butted end joints staggered and centered on joists. Panels fastened with 8d helically threaded flooring nails spaced 6 in. OC across panels at each joist and 1/2 in. from end joints.

Vapor Barrier - (Optional) — Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

ALLIED CUSTOM GYPSUM PLASTERWORKS L L C — Accu-Crete, AccuRadiant, AccuLevel G40 and AccuLevel SD30.

Floor Mat Material* — (Optional) - Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of 1 in.

ALLIED CUSTOM GYPSUM PLASTERWORKS L L C — Type AccuQuiet P80, Type AccuQuiet C40, Type AccuQuiet RSM 20, Type AccuQuiet RSM 32, Type AccuQuiet RSM 48, Type AccuQuiet RSM 64, Type AccuQuiet RSM 120, and Type AccuQuiet D-18.

System No. 10

Subflooring — Min 23/32 in. thick T&G wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with end joints staggered 4 ft. Panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Gypsum Board* — One layer of nom 5/8 in. thick, 4 ft wide gypsum board, installed with long dimension perpendicular to joists. Gypsum board secured with 1 in. long No. 6 Type W bugle head steel screws spaced 12 in. OC and located a min of 1-1/2 in. from side and end joints. The joints of the gypsum board are to be staggered a minimum of 12 inches from the joints of the subfloor.

GEORGIA-PACIFIC GYPSUM L L C — Type DS

Floor Mat Materials* — (As an alternate to the single layer gypsum board) - Floor mat material loose laid over the subfloor.

MAXXON CORP — Type Acousti-Mat I, Acousti-Mat II, Acousti-Mat 3, Enkasonic 9110, Acousti-Mat LP-R.

Gypsum Board* — (For use when floor mat is used) Two layers of nom 5/8 in. thick, 4 ft wide gypsum board, installed with long dimension perpendicular to joists on top of the floor mat material. Gypsum board secured to each other with 1 in. long No. 6 Type G bugle head steel screws spaced 12 in. OC and located a min of 1-1/2 in. from side and end joints. The joints of the gypsum board are to be staggered a minimum of 12 inches in between layers and from the joints of the subfloor.

GEORGIA-PACIFIC GYPSUM L L C — Type DS

2. **Wood Joists** — Min 4 by 10 in. or double 2 by 10 in. pieces fastened together with 12d cement coated nails spaced 12 in. OC, 2 in. from top and bottom edges. Joists spaced 48 in. OC and effectively fireblocked in accordance with local codes.

3. **Horizontal Bridging** — Used in same joist bay as ceiling damper (Item 4), when ceiling damper is employed. Wood 2 by 4 in. secured between joists with nails.

4. **Ceiling Damper* - (Optional)** — Max nom area shall be 198 sq in. Max rectangular size shall be 12 in. wide by 16-1/2 in. long. Max height of damper shall be 8-3/4 in. Aggregate damper openings shall not exceed 99 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille (Item 9) shall be installed in accordance with installation instructions.

AIR KING VENTILATION PRODUCTS — Series AS, Series AK

AIR MANAGEMENT INC — Models AMI-50-CD-WG-B, AMI-50-CD-WG-B/VC

DLX: DAMPERS AND LOUVERS EXPRESS — Models CRD.S.HC, CRD.R.HC

E H PRICE LTD — Models CD-S/R-HC, CD-RD-HC

GREENHECK FAN CORP — Model CRD-1WJ

METAL INDUSTRIES INC — Models CD-S/R-HC, CD-S/R-HC-A, CD-RD-HC, CD-RD-HC-A

METROPOLITAN AIR TECHNOLOGY — Model C-S/R-HC

NCA MFG INC — Models CD-S/R-HC, CD-S/R-HC-A, CD-RD-HC, CD-RD-HC-A

RUSKIN COMPANY — Model CFD7

UNITED ENERTECH CORP — Models C-S/R-HC(-A), C-RD-HC(-A)

5. **Batts and Blankets* - (Optional, Not Shown)** — For use with **Steel Framing Members*** (Item 6C) and **Gypsum Board*** (Item 7A) - Any thickness mineral wool or glass fiber insulation bearing the UL Classification Marking for Surface Burning Characteristics, having a flame spread index of 25 or less and a smoke spread index of 50 or less. Insulation fitted in the concealed space, draped over steel framing members/gypsum board ceiling membrane.

6. **Furring Channels** — Furring channels, 7/8 in. deep by 2-11/16 in. wide at the base and 1-7/16 in. wide at the face, formed from No. 25 ga galv steel, spaced 24 in. OC perpendicular to joists. Channels secured to each joist with two 1-1/4 in. long No. 6 steel screws. Channels overlapped 7-1/2 in. at splices and secured with double strand of 18 SWG galv steel wire at each end of overlap. Additional furring channels positioned so as to coincide with end joints of gypsum board (Item 8). Additional channels shall extend min 6 in. beyond each side edge of board.

6A. **Steel Framing Members* - (Not Shown)** — As an alternate to Item 6, main runners nom 12 ft long spaced 48 in. OC. Cross tees nom 4 ft long installed perpendicular to main runners and spaced 16 in. OC. Additional cross tees located 8 in. from and on each side of gypsum board end joints. Main runners suspended by min 12 SWG galv steel hanger wires spaced 48 in. OC. Hanger wires to be located adjacent to main runner/cross tee intersections. Hanger wires wrapped and twist-tied on 16d nails driven into the side of joists at least 5 in. above the joist bottom face.

CHICAGO METALLIC CORP — Types 650, 650C, 670, 670C

6B. **Steel Framing Members* - (Not Shown)** — As an alternate to Items 6 and 6A. main runners nom 12 ft long, spaced 48 in. OC. Cross tees, measuring 1-1/2 in. across the flange and nom 4 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional cross tees required at each gypsum board end joint, 4 in. from and on each side of gypsum board end joint.

ARMSTRONG WORLD INDUSTRIES INC — Type DFR-8000

6C. **Steel Framing Members* - (Not Shown)** — As an alternate to Items 6, 6A, 6B. Main runners, cross tees, cross channels and wall angle as listed below:

a. **Main Runners** — Nom 10 or 12 ft. long, 15/16 in. or 1-1/2 in. wide face, spaced 4 ft. OC. Main runners suspended by min 12 SWG galv steel hanger wires spaced 48 in. OC. Hanger wires to be located adjacent to main runner/cross tee intersections. Hanger wires wrapped and twist-tied on 16d nails driven in to the side of joists at least 5 in. above the bottom face.

b. **Cross Tees** — Nom 4 ft. long, 1-1/2 in. wide face, installed perpendicular to the main runners, spaced 24 in. OC. When **Batts and Blankets*** (Item 5) are used, cross tees spaced 16 in. OC. Additional cross tees or cross channels used at 8 in. from each side of butted gypsum board end joints. The cross tees or cross channels may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.

c. **Cross Channels** — Nom 4 ft. long, installed perpendicular to main runners, spaced 24 in. OC. When **Batts and Blankets*** (Item 5) are used, cross channels spaced 16 in. OC.

d. **Wall Angle or Channel** — Painted or galv steel angle with 1 in. legs or channel with 1 in. legs, 1-9/16 in. deep attached to walls at perimeter of ceiling with fasteners 16 in. OC. To support steel framing member ends and for screw-attachment of the gypsum board.

CGC INC — Types DGL, RX

USG INTERIORS LLC — Types DGL, RX

6D. **Alternate Steel Framing Members* - (Not Shown)** — As an alternate to Items 6, 6A, 6B and 6C. For use in corridors or rooms having a maximum width dimension of 14 ft. Steel framing members consist of grid runners, locking angle wall molding and hanger bars. Locking angle wall molding secured to walls with steel nails or screws spaced max 24 in. OC. Slots of locking angle wall molding parallel with hanger bars to be aligned with tabbed cutouts in bottom edge of hanger bars. Hanger bars spaced max 50 in. OC and suspended with No. 12 AWG steel hanger wires spaced max 48 in. OC. Adjoining lengths of hanger bar to overlap 12 in. and to be secured together and suspended by a shared hanger wire. A min clearance of 1/4 in. shall be maintained between the ends of the hanger bars and the walls. Grid runners cut-to-length and installed perpendicular to hanger bars and spaced max 24 in. OC with additional grid runners installed 8 in. OC at gypsum board end joints. Grid runners parallel with walls to be spaced max 16 in. from wall. Ends of grid runners to rest on and engage slots of locking angle wall molding with a clearance of 3/8 in. to 1/2 in. maintained between each end of the grid runner and the wall. Bulb of grid runner to be captured by tabbed cutouts in bottom edge of hanger bars.

ARMSTRONG WORLD INDUSTRIES INC — Type DFR-8000-SS

6E. **Alternate Steel Framing Members* - (Not Shown)** — As an alternate to Items 6, 6A, 6B, 6C and 6D. Main runners nom 12 ft long, spaced 72 in. OC. Cross tees, nom 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with butted gypsum board end joints centered between cross tees spaced 8 in. OC. The main runners and cross tees may be riveted or screw-attached to the wall angle or channel to facilitate the ceiling installation.

ARMSTRONG WORLD INDUSTRIES INC — Type DFR-8000

7. **Gypsum Board*** — Nom 5/8 in. thick, 4 ft wide gypsum board, installed with long dimension perpendicular to furring channels and center line of sheet located under a joist. Gypsum board secured to furring channels with 1 in. No. 6 Type S bugle head screws spaced 12 in. OC and located a min of 3/4 in. and 1/2 in. from butted side and end joists, respectively. End joints of gypsum board similarly fastened to additional furring channels positioned at end joint locations.

When **Steel Framing Members*** (Item 6A, 6B or 6C) are used, gypsum board installed with long dimension perpendicular to cross tees with side joints centered along main runners and end joints centered along cross tees. Gypsum board secured

to cross tees with 1 in. long No. 6 Type S bugle head screws spaced 12 in. OC in the field and 8 in. OC along end joints. Gypsum board secured to main runners with 1 in. long No. 6 Type S bugle head screws spaced midway between cross tees. Screws along sides and ends of boards spaced 3/8 to 1/2 in. from board edge. End joints of the sheets shall be staggered with spacing between joints on adjacent boards not less than 4 ft OC.

When alternate **Steel Framing Members*** (Item 6D) are used, gypsum board sheets installed with long dimension (side joints) perpendicular to the grid runners with the end joints staggered min 4 ft and centered between grid runners which are spaced 8 in. OC. Prior to installation of the gypsum board sheets, backer strips consisting of nom 7-3/4 in. wide by 48 in. long pieces of gypsum board are to be laid atop the grid runner flanges and centered over each butted end joint location. The backer strips are to be secured to the flanges of the grid runners at opposite corners of the backer strip to prevent the backer strips from being uplifted during screw-attachment of the gypsum board sheets. Gypsum board fastened to grid runners with drywall screws spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. The butted end joints are to be secured to the backer strip with No. 10 by 1-1/2 in. long Type G laminating screws located 1 in. from each side of the butted end joint and spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. Joints to be covered with paper tape and joint compound.

When alternate **Steel Framing Members*** (Item 6E) are used, gypsum board sheets installed with long dimension (side joints) perpendicular to the 6 ft long cross tees with the end joints staggered min 4 ft and centered between cross tees which are spaced 8 in. OC. Gypsum board side joints may occur beneath or between main runners. Prior to installation of the gypsum board sheets, backer strips consisting of nom 7-3/4 in. wide pieces of gypsum board are to be laid atop the cross tee flanges and centered over each butted end joint location. The backer strips are to be secured to the flanges of the cross tees at opposite corners of the backer strip to prevent the backer strips from being uplifted during screw-attachment of the gypsum board sheets. Gypsum board fastened to cross tees with drywall screws spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. The butted end joints are to be secured to the backer strip with No. 10 by 1-1/2 in. long Type G laminating screws located 1 in. from each side of the butted end joint and spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. Joints to be covered with paper tape and joint compound.

AMERICAN GYPSUM CO — Types AGX-1, AG-C

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1

CERTAINTEEED GYPSUM INC — Types FRPC, EGRG, GlasRoc, Type C, Type X

CERTAINTEEED GYPSUM CANADA INC — Type C, Type X, Type Abuse-Resistant

CGC INC — Types C, IP-X1, IP-X2, IPC-AR, SCX, WRX

GEORGIA-PACIFIC GYPSUM L L C — Types 5, 9, C, GPFS6, DA, DAP, DAPC, DGG, DS.

LAFARGE NORTH AMERICA INC — Types LGFC6, LGFC6A, LGFC-C, LGFC-C/A

NATIONAL GYPSUM CO — Types FSK-C, FSW-C, FSW-G, FSW-6

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-11 or PG-9

PANEL REY S A — Type PRC

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1

TEMPLE-INLAND — Type TG-C, Type X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Soffit-Type X, GreenGlass Type X.

UNITED STATES GYPSUM CO — Types C, IP-X1, IP-X2, IPC-AR, SCX, WRX

USG MEXICO S A DE C V — Types C, IP-X1, IP-X2, IPC-AR, SCX, WRX

7A. Gypsum Board* — For use when **Batts and Blankets*** (Item 5) and **Steel Framing Members*** (Item 6C) are used. Nom 5/8 in. thick, 4 ft wide gypsum board, installed with long dimension perpendicular to cross tees with side joints centered along main runners and end joints centered along cross tees. Gypsum board secured to cross tees with 1 in. long No. 6 Type S bugle head screws spaced 8 in. OC in the field and 8 in. OC along end joints. Gypsum board secured to main

runners with 1 in. long No. 6 Type S bugle head screws spaced midway between cross tees. Screws along sides and ends of boards spaced 3/8 to 1/2 in. from board edge. End joints of the sheets shall be staggered with spacing between joints on adjacent boards not less than 4 ft OC.

CGC INC — Type C, IP-X2, IPC-AR

UNITED STATES GYPSUM CO — Type C, IP-X2, IPC-AR

USG MEXICO S A DE C V — Type C, IP-X2, IPC-AR

8. **Finishing System - (Not Shown)** — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw-heads. Nom 2 in. wide paper tape embedded in first layer of compound over all joints. As an alternate, nom 3/32 in. thick veneer plaster may be applied to the entire surface of gypsum board.

9. **Grille** — Steel grille, installed in accordance with the installation instructions provided with the ceiling damper.

*Bearing the UL Classification Mark

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Design No. U305 BXUV.U305 Fire Resistance Ratings - ANSI/UL 263

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- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered as Classified, Listed, or Recognized.

Fire Resistance Ratings - ANSI/UL 263

[See General Information for Fire Resistance Ratings - ANSI/UL 263](#)

Design No. U305

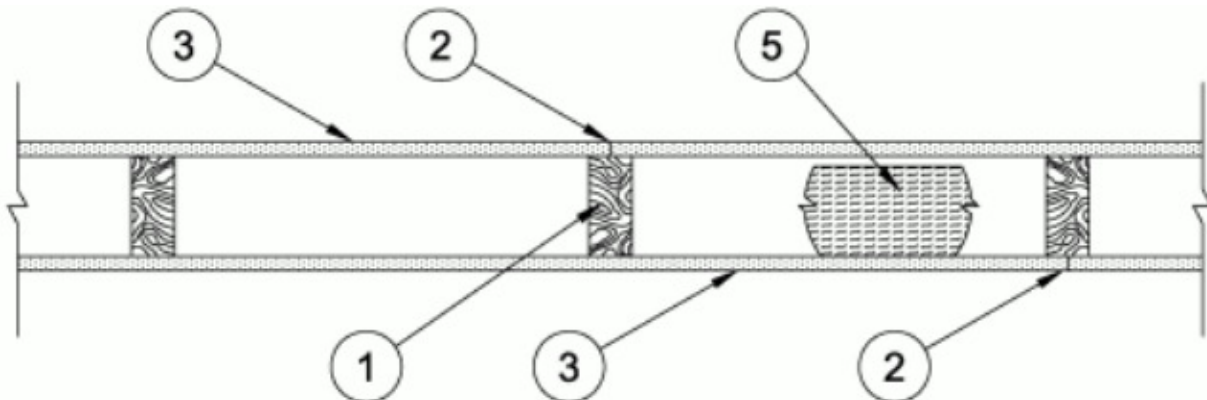
May 11, 2012

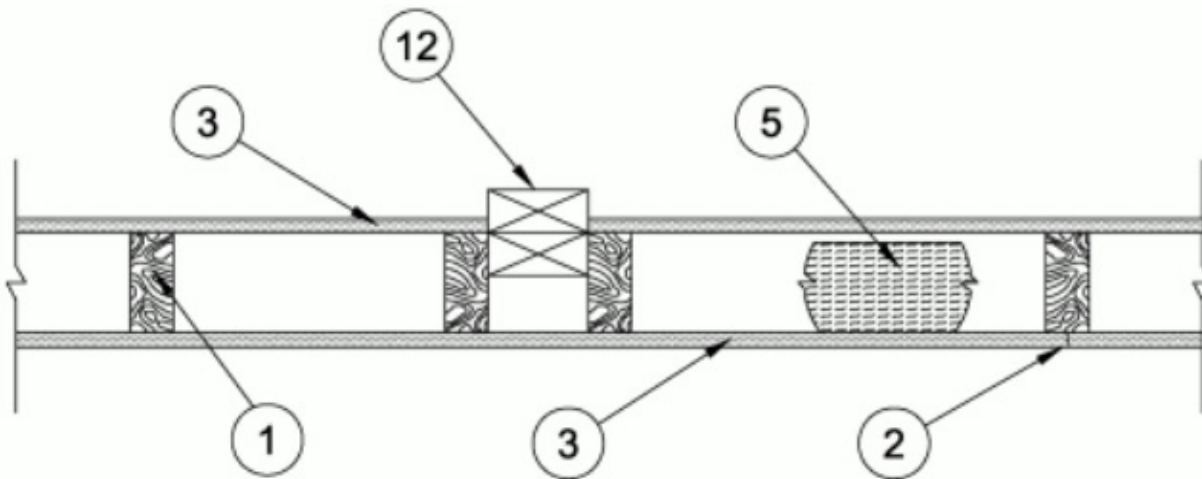
Bearing Wall Rating — 1 HR.

Finish Rating — See Items 3, 3A, 3D, 3E, 3F, 3G, 3H, 3J and 3L.

STC Rating - 56 (See Item 9)

Load Restricted for Canadian Applications — See Guide [BXUV7](#)





1. **Wood Studs** — Nom 2 by 4 in. spaced 16 in. OC max, effectively firestopped.

2. **Joints and Nail-Heads** — Joints covered with joint compound and paper tape. Joint compound and paper tape may be omitted when square edge boards are used. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with the joints reinforced with paper tape. Nailheads exposed or covered with joint compound.

3. **Gypsum Board*** — 5/8 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally. For an alternate method of attachment of gypsum panels, refer to Item 6, 6A or 6B, **Steel Framing Members***.

When Item 6, **Steel Framing Members***, is used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.

When Item 6A, **Steel Framing Members***, is used, two layers of gypsum panels attached to furring channels. Base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC. Face layer attached to furring channels with 1-5/8 in. long Type S bugle-head steel screws spaced 12 in. OC. All joints in face layers staggered with joints in base layers. One layer of gypsum board attached to opposite side of wood stud without furring channels as described in Item 3.

When Item 6B, **Steel Framing Members***, is used, two layers of gypsum panels attached to furring channels. Base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC. Face layer attached to furring channels with 1-5/8 in. long Type S bugle-head steel screws spaced 12 in. OC. All joints in face layer staggered with joints in base layer a minimum of 16 in. Joints oriented vertically and base layer staggered on opposite sides of the assembly. One layer of gypsum board attached to opposite side of wood stud without furring channels as described in Item 3.

When Item 7, resilient channels are used, 5/8 in. thick, 4 ft wide gypsum panels applied vertically. Screw attached furring channels with 1 in. long, self-drilling, self-tapping Type S or S-12 steel screws spaced 8 in. OC, vertical joints located midway between studs.

ACADIA DRYWALL SUPPLIES LTD — Type X (finish rating 22 min)

AMERICAN GYPSUM CO — Types AGX-1 (finish rating 23 min.), M-Glass (finish rating 23 min.), Type AGX-11 (finish rating 26 min), Type LightRoc (finish rating 22 min) or Type AG-C

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1 (finish rating 24 min).

CERTAINTED GYPSUM INC — Type 1, Type SF3 (finish rating 20 min) or FRPC, Type C or Type X (finish rating 26 min), Type EGRC or GlasRoc (finish rating 23 min)

CERTAINTED GYPSUM CANADA INC — Type C, Type X or Type Abuse-Resistant (finish rating 26 min)

CGC INC — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type ULX (finish rating 22 min), Type WRC (finish rating 24 min), Type WRX (finish rating 24 min).

GEORGIA-PACIFIC GYPSUM L L C — Type 5 (finish rating 26 min), Type 6 (finish rating 23 min), Type 9 (finish rating 26 min), Type C (finish rating 26 min), Type DGG (finish rating 20 min), Type GPFS1 (finish rating 20 min), Type GPFS2 (finish rating 20 min), Type GPFS6 (finish rating 26 min), Type DS, Type DAP, Type DD (finish rating 20 min), Type DA, Type DAPC, Type LS (finish rating 23 min).

LAFARGE NORTH AMERICA INC — Type LGFC2 (finish rating 20 min), Type LGFC3 (finish rating 20 min), Type LGFC6 (finish rating 26 min), Type LGFC-C (finish rating 20 min), Type LGFC6A (finish rating 34 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX (finish rating 21 min).

NATIONAL GYPSUM CO — Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min), Type FSL (finish rating 24 min).

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-2 (finish rating 20 min), PG-3 (finish rating 20 min), Types PG-3W, PG-5W (finish rating 20 min), Type PG-4 (finish rating 20 min), Type PG-6 (finish rating 23 min), Types PG-3WS, PG-5WS (finish rating 20 min), Types PG-5, PG-9 (finish rating 26 min), PG-11 or Type PG-C.

PANEL REY S A — Type PRX; Types RHX, MDX, ETX (finish rating 22 min)

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1 (finish rating 26 min)

TEMPLE-INLAND — Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type X.

UNITED STATES GYPSUM CO — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type FCV (finish rating 24 min), Type FRX-G (finish rating 29 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type SCX (finish rating 24 min), Type SGX (finish rating 24 min), Type ULX (finish rating 22 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min).

USG MEXICO S A DE C V — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), SCX (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type ULX (finish rating 22 min).

3A. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.

AMERICAN GYPSUM CO — Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), Type AG-C (finish rating 25 min.).

CGC INC — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type WRC (finish rating 24 min), Type WRX (finish rating 24 min).

UNITED STATES GYPSUM CO — Type AR (finish rating 24 min), Type SCX (finish rating 24 min), Type SGX (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type FCV (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type FRX-G (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min).

USG MEXICO S A DE C V — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type SCX, Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min).

3B. Gypsum Board* — (As an alternate to Item 3) — Nom 3/4 in. thick, installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-3/8 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A.

CGC INC — Types AR, IP-AR.

UNITED STATES GYPSUM CO — Types AR, IP-AR.

USG MEXICO S A DE C V — Types AR, IP-AR.

3C. **Gypsum Board*** — (As an alternate to Items 3, 3A and 3B) - 5/8 in. thick, 2 ft wide, tongue and groove edge, applied horizontally to one side of the assembly. Installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-1/4 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A. Joint covering (Item 2) not required.

CGC INC — Type SHX.

UNITED STATES GYPSUM CO — Type SHX.

USG MEXICO S A DE C V — Type SHX.

3D. **Wall and Partition Facings and Accessories*** — (As an alternate to Items 3, 3A, 3B and 3C, not shown) - Nominal 5/8 in. thick, 4 ft wide panels, applied vertically to studs and bearing plates on one side of the assembly with 1-5/8 in. long Type S screws spaced 12 in. OC at perimeter of panels and 8 in. OC in the field. Horizontal joints of vertically applied panels need not be backed by studs. Panel joints covered with paper tape and two layers of joint compound. Screwheads covered with two layers of joint compound. Batts and Blankets placed in stud cavity as described in Item 5E. Not evaluated for use with Steel Framing Members, Furring Channels or Fiber, Sprayed.

SERIOUS ENERGY INC — Type QuietRock QR-530 (finish rating 23 min).

3E. **Gypsum Board*** — (As an alternate to Items 3, 3A, 3B, 3C, or 3D -not shown) For Direct Application to Studs Only- Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs or tabs may be used in lieu of or in addition to the lead batten strips or optional at other locations. Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards underneath screw locations prior to the installation of the screws. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

RAY-BAR ENGINEERING CORP — Type RB-LBG (finish rating 24 min).

3F. **Gypsum Board*** — (As an alternate to Items 3, 3A, 3B, 3C, 3D, and 3E) — 5/8 in. thick gypsum panels, with square edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last 2 screws 1 and 4 in. from edge of board or nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.

TEMPLE-INLAND — GreenGlass Type X (finish rating 23 min).

3G. **Gypsum Board*** — (As an alternate to Items 3, 3A, 3B, 3C, 3D, 3E and 3F) - 5/8 in. glass-mat faced with square edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC around the perimeter and in the field with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Nails shall be placed 1 inch and 3 inch from horizontal joints and 7 inch OC thereafter.

UNITED STATES GYPSUM CO — Type USGX (finish rating 22 min.)

3H. **Gypsum Board*** — (As an alternate to Items 3 through 3G) - 5/8 in. thick paper surfaced applied vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

TEMPLE-INLAND — Type X ComfortGuard Sound Deadening Gypsum Board (finish rating 27 min).

3I. **Gypsum Board*** — (As an alternate to Items 3) - Not to be used with items 6 or 7. 5/8 in. thick paper surfaced applied vertically only. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

NATIONAL GYPSUM CO — SoundBreak XP Type X Gypsum Board

3J. **Wall and Partition Facings and Accessories*** — (As an alternate to Items 3 through 3I, not shown) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically. Panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Panel joints covered with paper tape and two layers of joint compound. Nailheads covered with two layers of joint compound.

SERIOUS ENERGY INC — Type QuietRock ES (finish rating 20 min), Type QuietRock QR-527 (finish rating 24 min).

3K. Gypsum Board* — (As an alternate to Items 3) - Not to be used with items 6 or 7. 5/8 in. thick paper surfaced applied vertically only. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

CERTAINTED GYPSUM INC — Type SilentFX

3L. Gypsum Board* — (As an alternate to Item 3) - 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 8 in. OC with the last screw 1 in. from the edge of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.

NATIONAL GYPSUM CO — Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min).

3M. Gypsum Board* — (As an alternate to Item 3) For Direct Application to Studs Only- Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 10 ft long with a max thickness of 0.140 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, max 5/16 in. diam by max 0.140 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grades "A, B, C or D".

MAYCO INDUSTRIES INC — "X-Ray Shielded Gypsum"

3N. Gypsum Board* — (As an alternate to Items 3) For Direct Application to Studs Only- For use as the base layer or as the face layer. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field when applied as the base layer. When applied as the face layer screw length to be increased to 2-1/2 in. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Fasteners for face layer gypsum panels (Items 4, 4A or 4B) when installed over lead backed board to be min 2-1/2 in. Type S-12 bugle head steel screws spaced as described in Item 4.

RADIATION PROTECTION PRODUCTS INC — Type RPP-LBG

3O. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick, 4 ft. wide, applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Secured as described in Item 3.

CERTAINTED GYPSUM INC — 5/8" Easi-Lite Type X

4. Steel Corner Fasteners — (Optional) — For use at wall corners. Channel shaped, 2 in. long by 1 in. high on the back side with two 1/8 in. wide cleats protruding into the 5/8 in. wide channel, fabricated from 24 gauge galv steel. Fasteners applied only to the end or cut edge (not along tapered edges) of the gypsum board, no greater than 2 in. from corner of gypsum board, max spacing 16 in. OC. Nailed to adjacent stud through tab using one No. 6d cement coated nail per fastener. Corners of wall board shall be nailed to top and bottom plate using No. 6d cement coated nails.

5. Batts and Blankets* — (Optional - Required when Item 6A is used) Glass fiber or mineral wool insulation. Placed to completely or partially fill the stud cavities. When Item 6A is used, glass fiber or mineral wool insulation shall be placed to completely fill the stud cavities and shall be secured to the studs 24 in. OC with staples, nails or screws.

CERTAINTED CORP

GUARDIAN FIBERGLASS INC

JOHNS MANVILLE INTERNATIONAL INC

KNAUF INSULATION GMBH

OWENS CORNING HT INC, DIV OF OWENS CORNING — Corning Fiberglas Corp.

ROCK WOOL MANUFACTURING CO — Delta Board.

ROCKWOOL MALAYSIA SDN BHD — Acoustical Fire Batts

ROXUL INC — Acoustical Fire Batts

THERMAFIBER INC — Type SAFB.

5A. **Fiber, Sprayed*** — (Not shown - Not for use with Item 6A) As an alternate to Batts and Blankets (Item 5) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 3.0 lb/ft³. Alternate application method: The fiber is applied with U.S. Greenfiber LLC Type AD100 hot melt adhesive at a nominal ratio of one part adhesive to 6.6 parts fiber to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 2.5 lb/ft³.

U S GREENFIBER L L C — Cocoon2 Stabilized or Cocoon-FRM (Fire Rated Material)

5B. **Fiber, Sprayed*** — (Not shown - Not for use with Item 6A) As an alternate to Batts and Blankets (Item 5) and Item 5A - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.

NU-WOOL CO INC — Cellulose Insulation

5C. **Batts and Blankets*** — Required for use with resilient channels, Item 7, 3 in. thick mineral wool batts, placed to fill interior of wall, attached to the 4 in. face of the studs with staples placed 24 in. OC.

THERMAFIBER INC — Type SAFB

5D. **Glass Fiber Insulation** — (As an alternate to Item 5C) — 3 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, placed to fill the interior of the wall, attached to the 4 in. face of the studs with staples placed 24 in. OC. See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

5E. **Batts and Blankets*** — (Required for use with Wall and Partition Facings and Accessories, Item 3D) — Glass fiber insulation, nom 3-1/2 in. thick, min. density of 0.80 pcf, with a flame spread of 25 or less and a smoke developed of 50 or less, friction-fitted to completely fill the stud cavities. See Batts and Blankets Category (BKNV) for names of manufacturers.

5F. **Fiber, Sprayed*** — (Optional, Not Shown - Not for use with Item 6, 6A or 6B). As an alternate to Batts and Blankets (Item 5) and Item 5A - Spray applied granulated mineral fiber material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. See **Fiber, Sprayed** (CCAZ).

AMERROCK PRODUCTS L P — Rockwool

5G. **Fiber, Sprayed*** — (Optional, Not Shown - Not for use with Items 6, 6A or 6B). As an alternate to Batts and Blankets (Item 5) and Item 5A - Brown Colored Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed stud cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft³.

INTERNATIONAL CELLULOSE CORP — Celbar-RL

6. **Steel Framing Members (Optional, Not Shown)*** — Furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members*** — Used to attach furring channels (Item 6a) to studs. Clips spaced 48 in. OC. RSIC-1 clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

PAC INTERNATIONAL INC — Types RSIC-1, RSIC-V.

6A. **Steel Framing Members (Optional, Not Shown)*** — Furring channels and Steel Framing Members on one side of studs as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs.

Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members*** — used to attach furring channels (Item 6Aa) to one side of studs only. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips.

KINETICS NOISE CONTROL INC — Type Isomax.

6B. Steel Framing Members (Optional, Not Shown)* — Furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item.

b. **Steel Framing Members*** — Used to attach furring channels (Item 6Ba) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

PLITEQ INC — Type Genie Clip

7. Furring Channel — Optional - Not Shown - For use on one side of the wall - Resilient channels, 25 MSG galv steel, spaced vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long diamond shaped point, double lead Phillips head steel screws. When resilient channels are used, insulation, Items 5C or 5D is required.

7A. Steel Framing Members* — Optional - Not Shown - Used as an alternate method to attach resilient channels (Item 7) to one side of studs only. Clips attached at each intersection of the resilient channel and the wood studs (Item 1). Resilient channels are friction fitted into clips, and then clips are secured to the wood stud with min. 1-3/4 in. long diamond shaped point, double lead Phillips head steel screws through the center hole of the clip and the resilient channel flange.

KEENE BUILDING PRODUCTS CO INC — Type RC Assurance.

8. Caulking and Sealants — (not shown, optional) A bead of acoustical sealant applied around the partition perimeter for sound control.

9. STC Rating — The STC Rating of the wall assembly is 56 when it is constructed as described by Items 1 through 6, except:

A. Item 2, above - Nailheads Shall be covered with joint compound.

B. Item 2, above - Joints As described, shall be covered with fiber tape and joint compound.

C. Item 5, above - Batts and Blankets* The cavities formed by the studs shall be friction fit with R-19 unfaced fiberglass insulation batts measuring 6-1/4 in. thick and 15-1/4 in. wide.

D. Item 6, above - Steel Framing Members* Type RSIC-1 clips shall be used to attach gypsum board to studs on either side of the wall assembly.

E. Item 8, above - Caulking and Sealants (not shown) A bead of acoustical sealant shall be applied around the partition perimeter for sound control.

F. Steel Corner Fasteners (Item 4), Fiber, Sprayed (Items 5A and 5B) and Steel Framing Members (Item 6A), not evaluated as alternatives for obtaining STC rating.

10. Wall and Partition Facings and Accessories* — (Optional, Not shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

SERIOUS ENERGY INC — Type QuietRock QR-510.

11. Cementitious Backer Units* — (Optional Item Not Shown - For Use On Face Of 1 Hr Systems With All Standard Items Required) - 1/2 in., 5/8 in., 3/4 in. or 1 in. thick, min. 32 in. wide.- Applied vertically or horizontally with vertical joints centered over studs. Fastened to studs and runners with cement board screws of adequate length to penetrate stud by a minimum of 3/8 in. for steel framing members, and a minimum of 3/4 in. for wood framing members spaced a max of 8 in. OC. When 4 ft. wide boards are used, horizontal joints need not be backed by framing.

NATIONAL GYPSUM CO — Type PermaBase

12. **Non-Bearing Wall Partition Intersection** — (Optional) — Two nominal 2 by 4 in. studs or nominal 2 by 6 in. studs nailed together with two 3 in. long 10d nails spaced a max. 16 in. OC. vertically and fastened to one side of the minimum 2 by 4 in. stud with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Maximum one non-bearing wall partition intersection per stud cavity. Non-bearing wall partition stud depth shall be at a minimum equal to the depth of the bearing wall.

13. **Mesh Netting** — (Not shown) - Any thin, woven or non-woven fibrous netting material attached with staples to the outer face of one row of studs to facilitate the installation of the sprayed fiber from the opposite row.

14. **Mineral and Fiber Board*** — (Optional, Not shown) — For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing with 2 in. long Type W steel screws, spaced 12 in. OC. The required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

HOMASOTE CO — Homasote Type 440-32

*Bearing the UL Classification Mark

Last Updated on 2012-05-11

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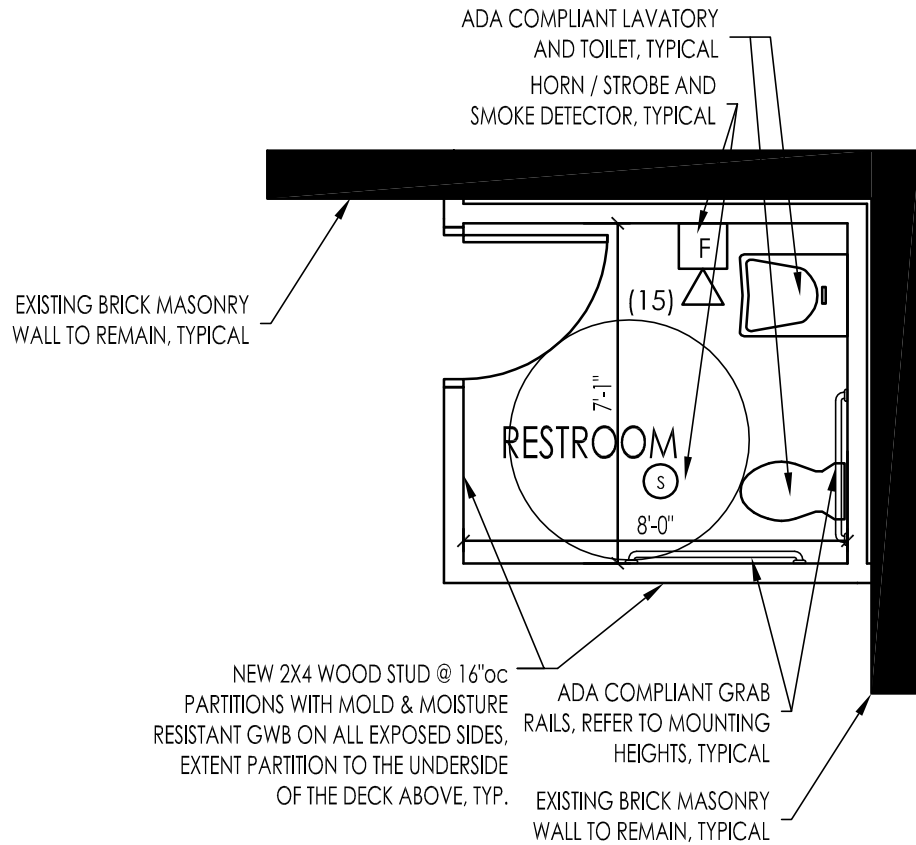
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REVISIONS:



TOILET ROOM FLOOR PLAN TYPICAL



NOT TO SCALE



**FORESIDE
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Project Status:
 PERMITTING /
 REVIEW

Project Number:
 OP 1012

Project Title:
 OTTO PIZZA,
 576 Congress Street
 Portland Maine

Drawing Name:
 TOILET ROOM PLAN

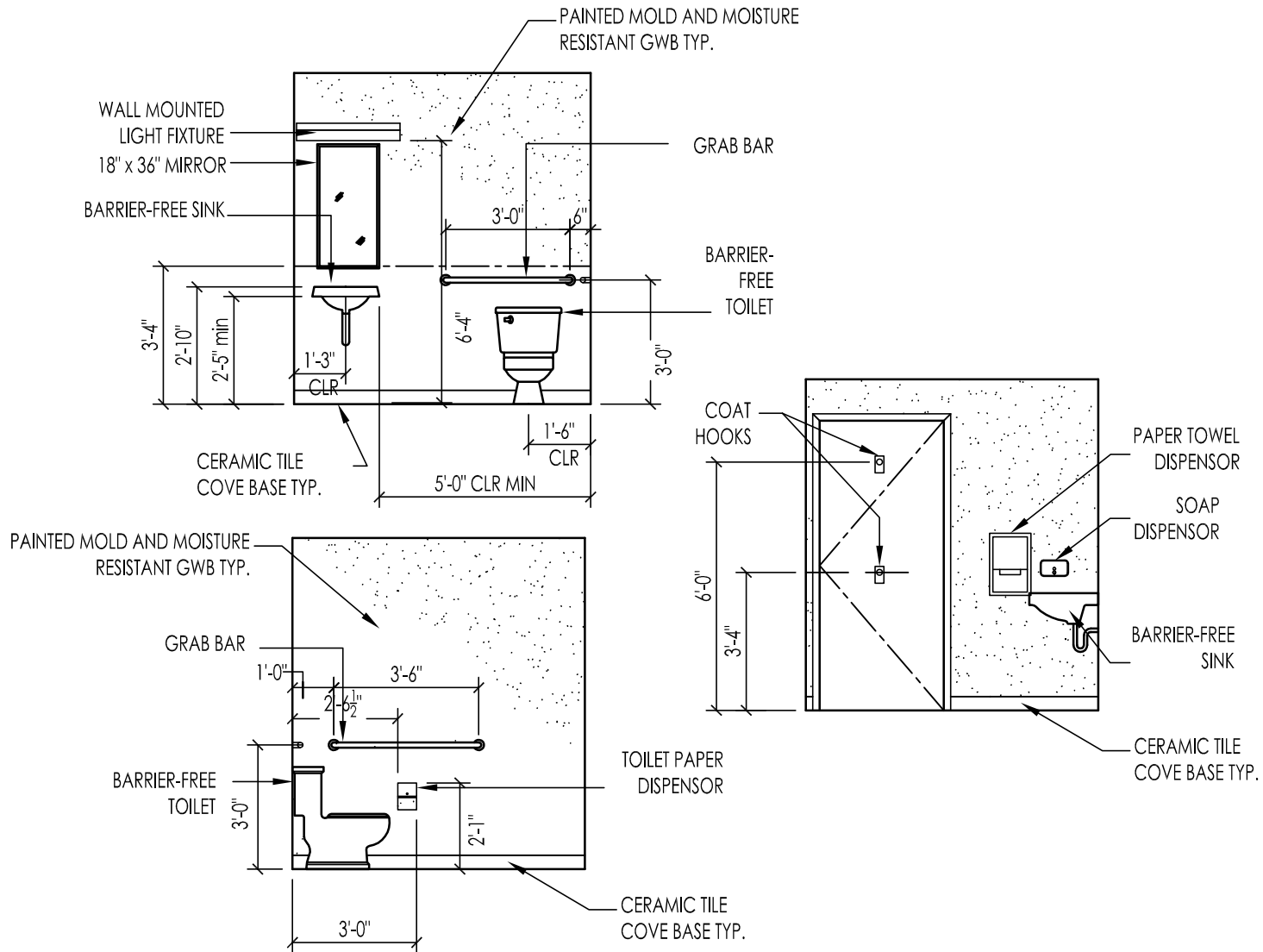
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REVISIONS:



2

TOILET ROOMS ELEVATIONS AND MOUNTING HEIGHTS

NOT TO SCALE

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Project Number: OP 1012	

Project Title:

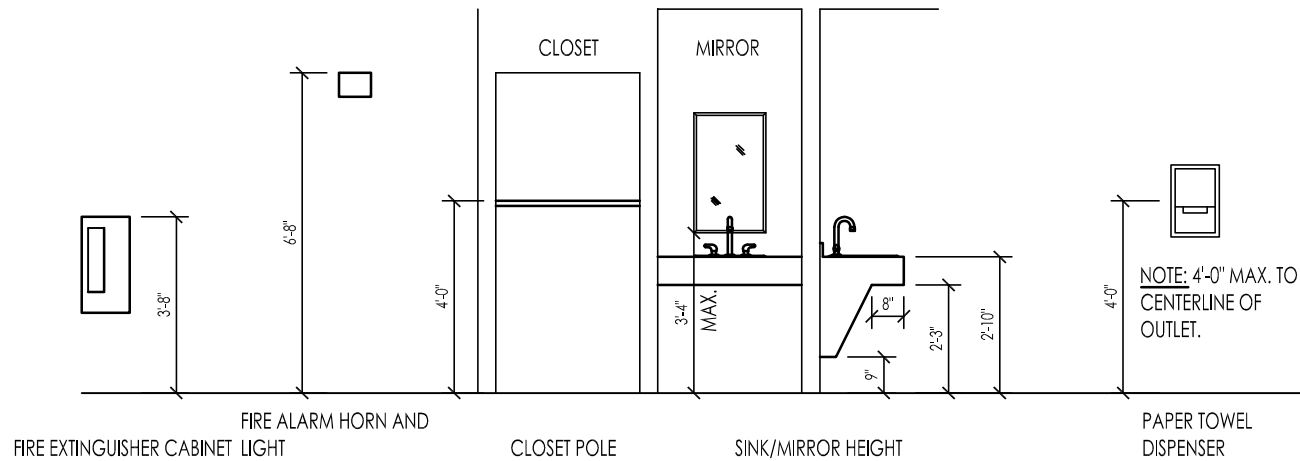
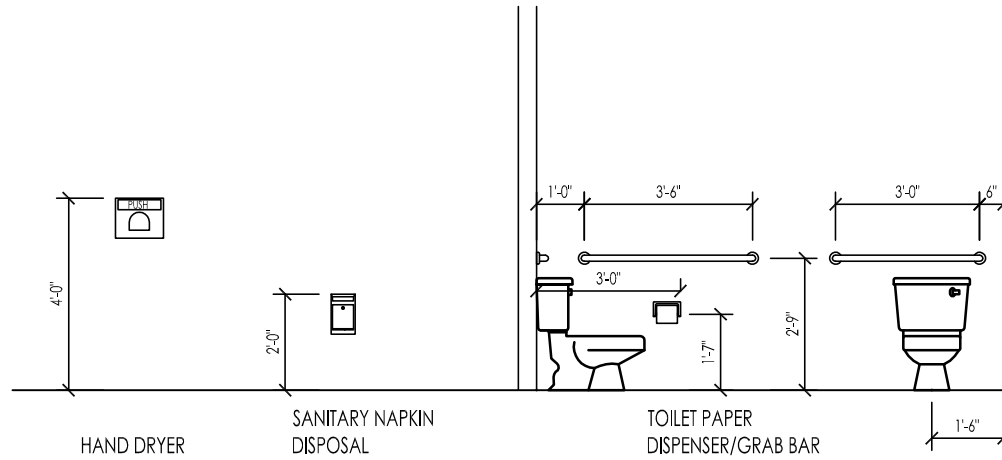
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 TOILET ROOM ELEVATIONS
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 LLC

REVISIONS:



3 CLEARANCES AND MOUNTING HEIGHTS, TOILET ROOM ACCESSORIES

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Project Number: OP 1012	

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Drawing Name:
 Clearances, Mounting Heights and Accessories

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