

KEYNOTES

WINDOW, SEE WINDOW TYPE. 2. DOOR, SEE DOOR SCHEDULE.

3. LIGHT SWITCH.

4. PTAC UNIT. 5. WALL COVERING W/ FLOOR BASE, SEE FINISH SCHEDULE & I.D. DWGS.

6. POWER OUTLET, DUPLEX VOICE/DATA OUTLET - HORIZONTAL ABOVE COUNTER/DESK. 7. CABINETRY @ REFRESHMENT ZONE.

8. A/V DEVICES. PROVIDE VISUAL ALARMS, NOTIFICATION DEVICES, AND TELEPHONE FOR GUESTROOMS W/ HEARING IMPAIRED DESIGNATION, SEE FLOOR PLANS & ELEC DWGS.

9. TELEPHONE OUTLET. 10. GFI POWER OUTLET.

SHOWER HEAD.

12. SHOWER CONTROL AREA.

IS. CERAMIC TILE FLOOR W/ TILE BASE. 14. WINDOW HEAD & SILL W/ ROLLER SHADE BRACKET, SEE TYP. DTLS. 36 & 366/A505.

15. INSULATE EXPOSED PIPES PER ADA. 16. BATHTUB OR SHOWER PAN AS INDICATED ON FLOOR PLANS, SEE PLUMBING DWGS.

17. WATER CLOSET, SEE PLUMBING DWGS. 18. LAVATORY, SEE PLUMBING DWGS.

19. GRANITE VANITY/COUNTERTOP W/ 4" SPLASH ON ALL SIDES.

21. ROBE HOOK. 22. OWNER SUPPLIED COFFEE MAKER, REFRIGERATOR & MICROWAVE.

23. TOILET TISSUE DISPENSER.

20. ENTRY COUNTER.

24. TOWEL RACK/BAR.

25. CURVED SHOWER CURTAIN ROD @ BATHTUB OR GLASS ENCLOSURE @ SHOWER STALL.

26. SOAP \$ SHAMPOO HOLDER (HIGH) \$ BAR SOAP HOLDER (LOW).

27. J-BOX W/ BACK-LIT VANITY MIRROR. 28. WALL MOUNTED LIGHT FIXTURE.

29. MIXING VALVE W/ SPOUT. 30. FULL HEIGHT 3-SIDED TILES TUB/SHOWER SURROUND.

31. CONNECTING DOORS WHERE OCCURS.

32. ADA ACCESSIBLE BATHTUB W/ PORTABLE TRANSFER SEAT. 33. ADJUSTABLE HEIGHT HAND SHOWER ON A VERTICAL BAR W/ 60" LONG HOSE & ALLO

FOR 6'-0" MIN HT ADJUSTABLE SHOWERHEAD.

A. ROOM DIMENSIONS ARE FROM THE FACE OF STUD, U.N.O.

FACE OF ADJACENT WALL STUD.

TYPICAL @ ALL GUEST ROOMS:

ABOVE COUNTER/DESK

ABOVE SHELVES MICROWAVE

TYP. WALL SWITCH TYP. WALL OUTLET

@ ACCESSIBLE GUEST ROOMS:

B. DIMENSIONS OF THE M & P SHAFT ARE TO/FROM THE INSIDE CLEAR SPACE TO THE

SEE SHEET AIII TO AII4 FOR REFL. CLG. PLAN FOR GUEST ROOMS @ EA FLOOR. SEE SHEET AIOI TO AIO4 FOR WALL TYPE, DOOR & WINDOW DESIGNATIONS. ELECTRICAL MOUNTED HEIGHTS (TO CENTERLINE OF DEVICE), TYP. - (U.N.O.)

BATHROOM VANITY SWITCH/OUTLET @ +48" A.F.F.

ABOVE COUNTER COFFEE MAKER @ +44" A.F.F. UNDER COUNTER REFRIGERATOR @ +12" A.F.F.

SEE DTL. X/A501 FOR OFFSET CONDITION REQUIRED AT "BACK-TO-BACK" J-BOX LOCATIONS BETWEEN TWO GUEST ROOMS. J-BOXES MUST BE COORDINATED W

SEE I.D. DWGS PACKAGE FOR ACTUAL GUEST ROOM FINISHES & MATERIALS, N.I.C.

FF&E SHOWN FOR REFERENCE ONLY, N.I.C. & TO BE SUPPLIED BY OWNER & INSTALLED

ALL KEYNOTES & DIMENSIONS ARE TYPICAL & APPLIED TO ALL GUEST ROOM TYPES

G.C. TO COORDINATE W/ FIXTURE FABRICATOR WHERE NECESSARY TO PROVIDE

SEE ELEC. DWGS. FOR ADDITIONAL HEARING IMPAIRED DEVICES.

APPROPRIATE OPENINGS IN CASEWORK - SEE ID DWGS.

PROPER BLOCKING IN WALL FOR ITEM KEYNOTED.

PROVIDE WID BACKING & BLOCKING FOR ALL WALL MOUNTED ACCESSORIES, EQUIPMENT

@ +48" A.F.F.

@ +18" A.F.F.

@ +40" A.F.F.

35. 250 lbs CAPACITY WALL MOUNTED, FOLDING TYPE TRANSFER SEAT W/ ADA ACCESSIBLE ROLL-IN SHOWER W/ $\frac{1}{2}$ " MAX THRESHOLD HEIGHT PER ANSI 608.7.

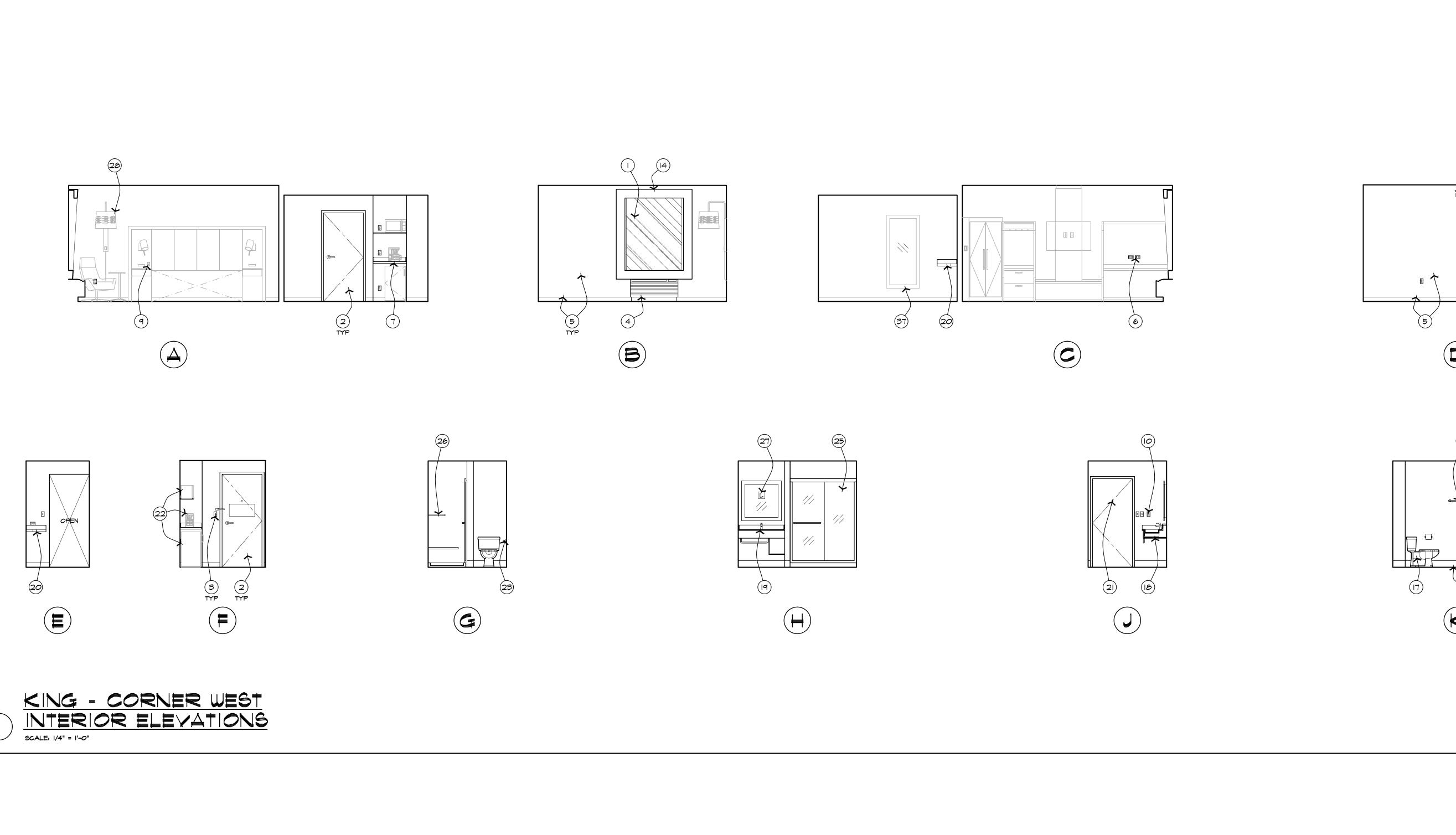
36. LOW WALL. 37. WALL MOUNTED MIRROR.

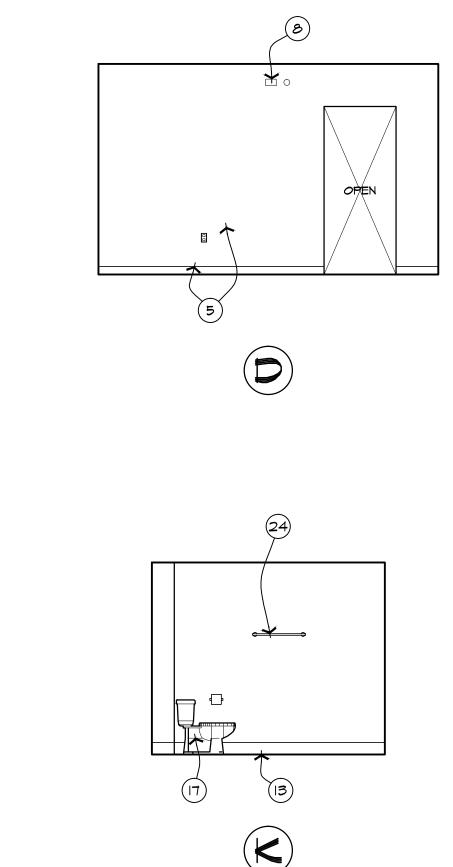
GERALD

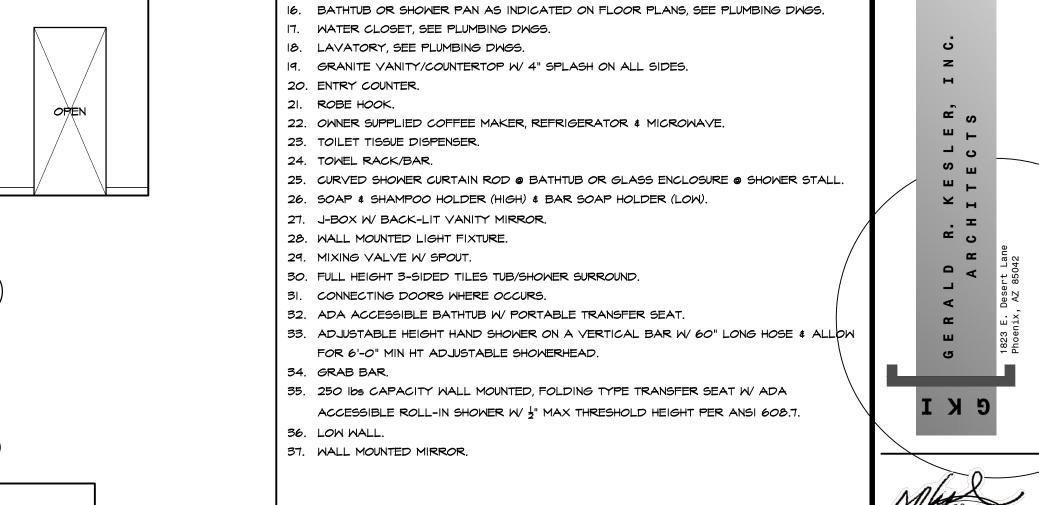
JOB NUMBER

DATE Ø7-24-2Ø15 REVISION

INT. ELEVATION, KING - STD, LONG \$ CORNER EAST SHEET NUMBER







5. WALL COVERING W/ FLOOR BASE, SEE FINISH SCHEDULE & I.D. DWGS.

6. POWER OUTLET, DUPLEX VOICE/DATA OUTLET - HORIZONTAL ABOVE COUNTER/DESK.

14. WINDOW HEAD & SILL W/ ROLLER SHADE BRACKET, SEE TYP. DTLS. 36 & 366/A505.

8. A/V DEVICES. PROVIDE VISUAL ALARMS, NOTIFICATION DEVICES, AND TELEPHONE FOR GUESTROOMS W/ HEARING IMPAIRED DESIGNATION, SEE FLOOR PLANS & ELEC DWGS.

KEYNOTES

3. LIGHT SWITCH. 4. PTAC UNIT.

9. TELEPHONE OUTLET. 10. GFI POWER OUTLET. SHOWER HEAD.

12. SHOWER CONTROL AREA.

MINDOW, SEE MINDOM TYPE. 2. DOOR, SEE DOOR SCHEDULE.

7. CABINETRY @ REFRESHMENT ZONE.

13. CERAMIC TILE FLOOR W/ TILE BASE.

15. INSULATE EXPOSED PIPES PER ADA.

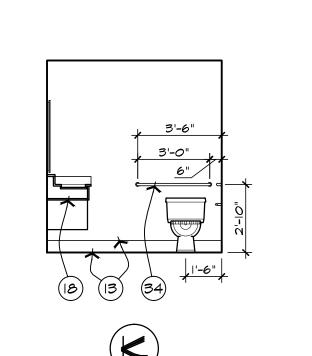


- A. ROOM DIMENSIONS ARE FROM THE FACE OF STUD, U.N.O. B. DIMENSIONS OF THE M & P SHAFT ARE TO/FROM THE INSIDE CLEAR SPACE TO THE FACE OF ADJACENT WALL STUD.
- . PROVIDE WD BACKING & BLOCKING FOR ALL WALL MOUNTED ACCESSORIES, EQUIPMENT
- SEE SHEET AIII TO AII4 FOR REFL. CLG. PLAN FOR GUEST ROOMS @ EA FLOOR.
- SEE SHEET AIOI TO AIO4 FOR WALL TYPE, DOOR & WINDOW DESIGNATIONS. ELECTRICAL MOUNTED HEIGHTS (TO CENTERLINE OF DEVICE), TYP. - (U.N.O.)

TYPICAL @ ALL GUEST ROOMS: @ +48" A.F.F. TYP. WALL SWITCH @ +18" A.F.F. TYP. WALL OUTLET ABOVE COUNTER/DESK @ +40" A.F.F. BATHROOM VANITY SWITCH/OUTLET @ +48" A.F.F.

ABOVE SHELVES MICROWAVE ABOVE COUNTER COFFEE MAKER @ +44" A.F.F. UNDER COUNTER REFRIGERATOR @ +12" A.F.F. BATHROOM VANITY SWITCH/OUTLET @ +44" A.F.F.

- SEE ELEC. DWGS. FOR ADDITIONAL HEARING IMPAIRED DEVICES. SEE DTL. X/A501 FOR OFFSET CONDITION REQUIRED AT "BACK-TO-BACK" J-BOX LOCATIONS BETWEEN TWO GUEST ROOMS. J-BOXES MUST BE COORDINATED W APPROPRIATE OPENINGS IN CASEMORK - SEE ID DWGS.
- SEE I.D. DWGS PACKAGE FOR ACTUAL GUEST ROOM FINISHES & MATERIALS, N.I.C. FF&E SHOWN FOR REFERENCE ONLY, N.I.C. & TO BE SUPPLIED BY OWNER & INSTALLED ALL KEYNOTES & DIMENSIONS ARE TYPICAL & APPLIED TO ALL GUEST ROOM TYPES
- G.C. TO COORDINATE W/ FIXTURE FABRICATOR WHERE NECESSARY TO PROVIDE PROPER BLOCKING IN WALL FOR ITEM KEYNOTED.

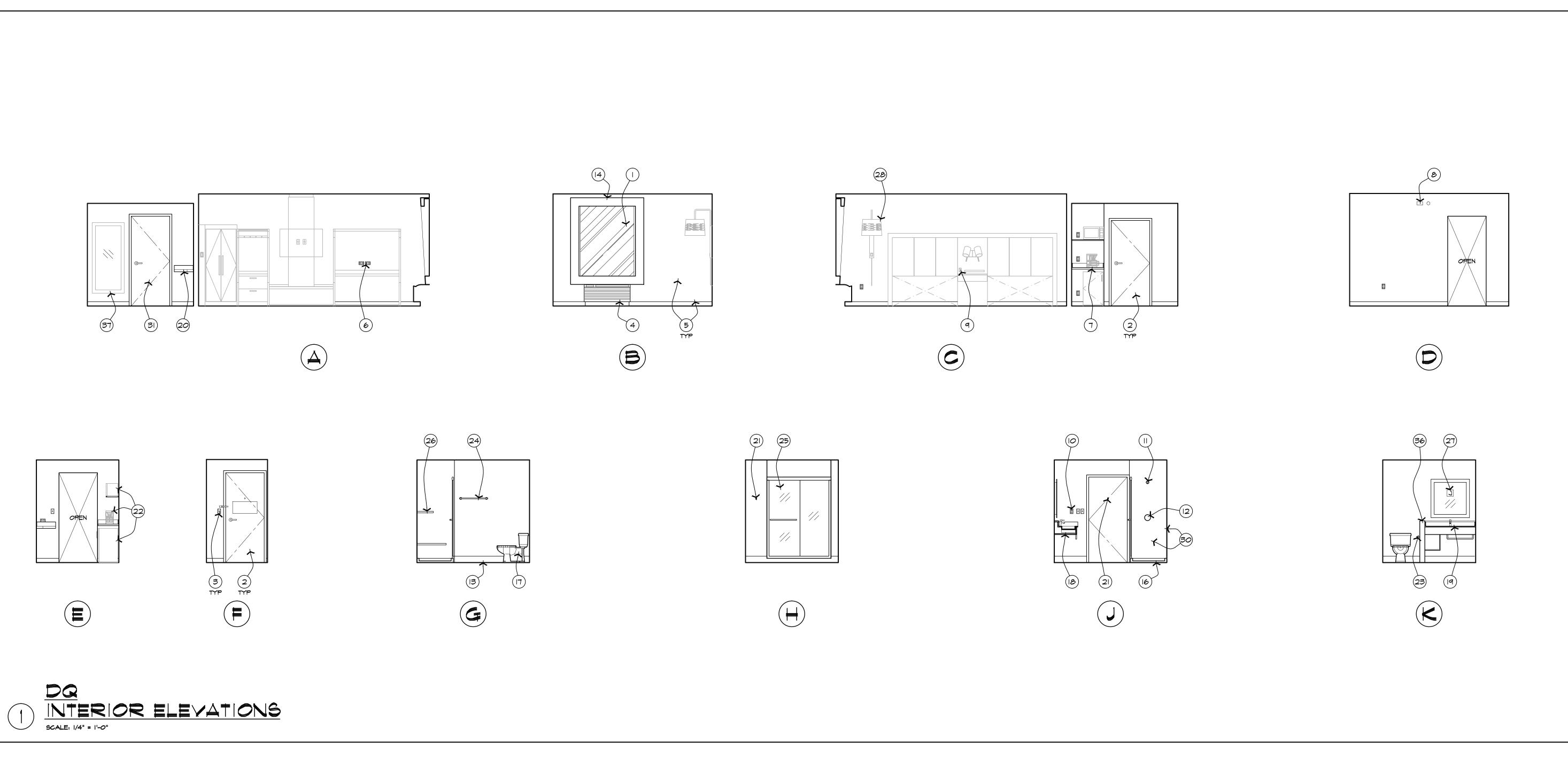


DATE

Ø7-24-2Ø15 REVISION

> INT. ELEVATION, KING - CORNER W & KING - ACC SHEET NUMBER

4'-6"



<u>| ''-0"</u>

3'-4"



KEYNOTES

LIGHT SWITCH.
 PTAC UNIT.

9. TELEPHONE OUTLET.10. GFI POWER OUTLET.11. SHOWER HEAD.

20. ENTRY COUNTER.
21. ROBE HOOK.

24. TOWEL RACK/BAR.

34. GRAB BAR.

36. LOW WALL.

37. WALL MOUNTED MIRROR.

23. TOILET TISSUE DISPENSER.

12. SHOWER CONTROL AREA.

MINDOW, SEE MINDOW TYPE.
 DOOR, SEE DOOR SCHEDULE.

7. CABINETRY @ REFRESHMENT ZONE.

13. CERAMIC TILE FLOOR W/ TILE BASE.

15. INSULATE EXPOSED PIPES PER ADA.

17. WATER CLOSET, SEE PLUMBING DWGS.

27. J-BOX W/ BACK-LIT VANITY MIRROR.

31. CONNECTING DOORS WHERE OCCURS.

28. WALL MOUNTED LIGHT FIXTURE.
29. MIXING VALVE W/ SPOUT.

19. GRANITE VANITY/COUNTERTOP W/ 4" SPLASH ON ALL SIDES.

22. OWNER SUPPLIED COFFEE MAKER, REFRIGERATOR & MICROWAVE.

26. SOAP & SHAMPOO HOLDER (HIGH) & BAR SOAP HOLDER (LOW).

30. FULL HEIGHT 3-SIDED TILES TUB/SHOWER SURROUND.

FOR 6'-0" MIN HT ADJUSTABLE SHOWERHEAD.

32. ADA ACCESSIBLE BATHTUB W/ PORTABLE TRANSFER SEAT.

18. LAVATORY, SEE PLUMBING DWGS.

5. WALL COVERING W/ FLOOR BASE, SEE FINISH SCHEDULE & I.D. DWGS.

6. POWER OUTLET, DUPLEX VOICE/DATA OUTLET - HORIZONTAL ABOVE COUNTER/DESK.

14. WINDOW HEAD & SILL W/ ROLLER SHADE BRACKET, SEE TYP. DTLS. 36 & 366/A505.

16. BATHTUB OR SHOWER PAN AS INDICATED ON FLOOR PLANS, SEE PLUMBING DWGS.

25. CURVED SHOWER CURTAIN ROD @ BATHTUB OR GLASS ENCLOSURE @ SHOWER STALL.

33. ADJUSTABLE HEIGHT HAND SHOWER ON A VERTICAL BAR W/ 60" LONG HOSE & ALLO

35. 250 lbs CAPACITY WALL MOUNTED, FOLDING TYPE TRANSFER SEAT W/ ADA

ACCESSIBLE ROLL-IN SHOWER W/ $\frac{1}{2}$ " MAX THRESHOLD HEIGHT PER ANSI 608.7.

8. A/V DEVICES. PROVIDE VISUAL ALARMS, NOTIFICATION DEVICES, AND TELEPHONE FOR GUESTROOMS W/ HEARING IMPAIRED DESIGNATION, SEE FLOOR PLANS & ELEC DWGS.

A. ROOM DIMENSIONS ARE FROM THE FACE OF STUD, U.N.O.

B. DIMENSIONS OF THE M & P SHAFT ARE TO/FROM THE INSIDE CLEAR SPACE TO THE FACE OF ADJACENT WALL STUD.

C. PROVIDE WD BACKING & BLOCKING FOR ALL WALL MOUNTED ACCESSORIES, EQUIPMENT & FIXTURES.
 D. SEE SHEET AIII TO AII4 FOR REFL. CLG. PLAN FOR GUEST ROOMS @ EA FLOOR.

E. SEE SHEET AIOI TO AIO4 FOR WALL TYPE, DOOR & WINDOW DESIGNATIONS.

F. ELECTRICAL MOUNTED HEIGHTS (TO CENTERLINE OF DEVICE), TYP. - (U.N.O.)

TYPICAL @ ALL GUEST ROOMS:

APPROPRIATE OPENINGS IN CASEWORK - SEE ID DWGS.

@ ACCESSIBLE GUEST ROOMS:

BATHROOM VANITY SWITCH/OUTLET @ +44" A.F.F.

ABOVE SHELVES MICROWAVE @ +26" A.F.F.

G. SEE ELEC. DWGS. FOR ADDITIONAL HEARING IMPAIRED DEVICES.

H. SEE DTL. X/A50I FOR OFFSET CONDITION REQUIRED AT "BACK-TO-BACK" J-BOX LOCATIONS BETWEEN TWO GUEST ROOMS. J-BOXES MUST BE COORDINATED W/

J. SEE I.D. DWGS PACKAGE FOR ACTUAL GUEST ROOM FINISHES & MATERIALS, N.I.C.
 K. FF&E SHOWN FOR REFERENCE ONLY, N.I.C. & TO BE SUPPLIED BY OWNER & INSTALLED BY CONTRACTOR.
 L. ALL KEYNOTES & DIMENSIONS ARE TYPICAL & APPLIED TO ALL GUEST ROOM TYPES.

U.N.O.

M. G.C. TO COORDINATE W/ FIXTURE FABRICATOR WHERE NECESSARY TO PROVIDE PROPER BLOCKING IN WALL FOR ITEM KEYNOTED.

PES.

13452 GERALD

JOB NUMBER

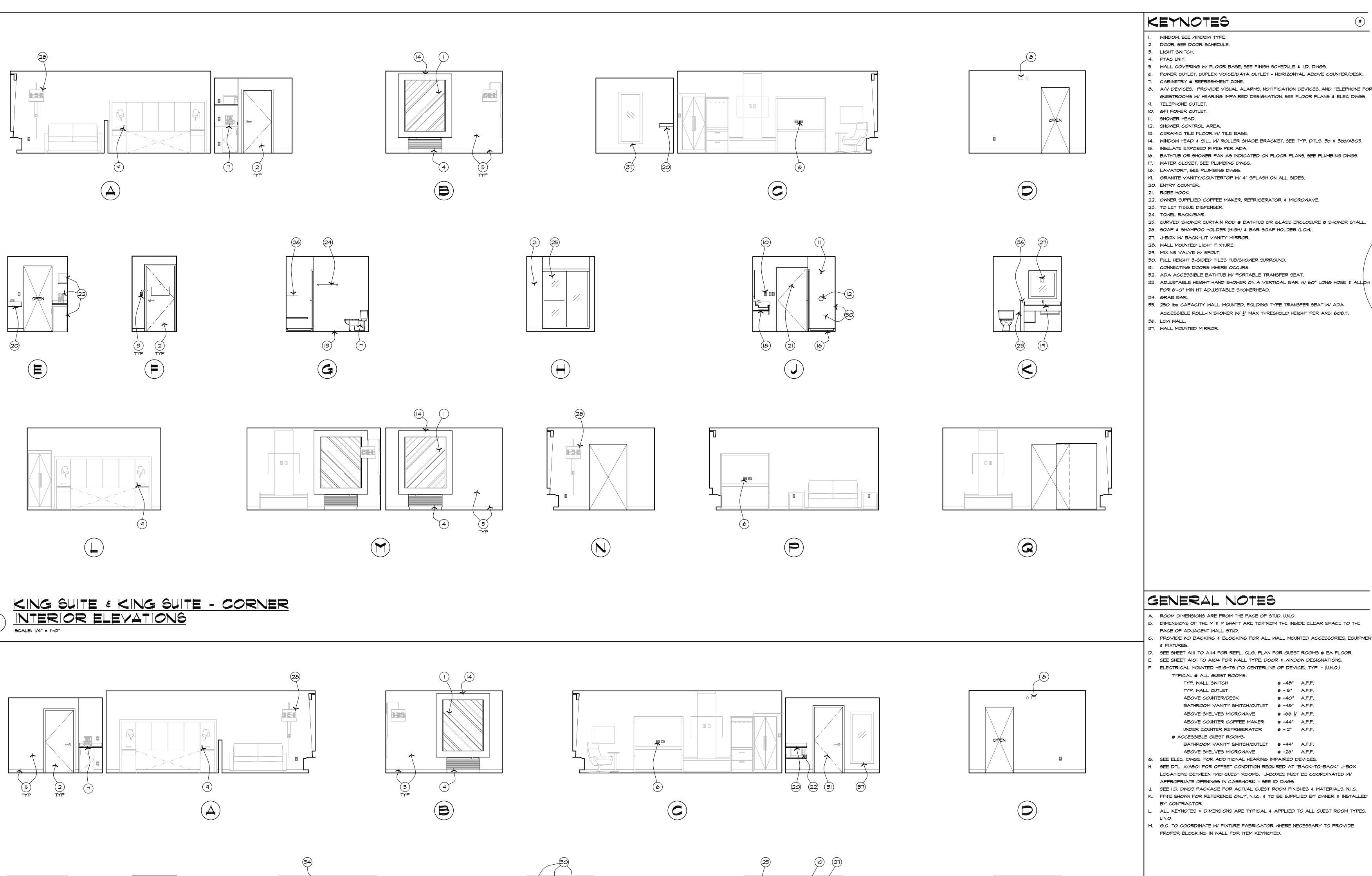
DATE07-24-2015 **REVISION**

SHEET TITLE
INT. ELEVATION,
DQ & DQ - ACC
SHEET NUMBER

DQ - ACCESSIBLE

INTERIOR ELEVATIONS

SCALE: 1/4" = 1'-0"



WINDOW, SEE WINDOW TYPE.

7. CABINETRY @ REFRESHMENT ZONE.

FOR 6'-0" MIN HT ADJUSTABLE SHOWERHEAD.

ACCESSIBLE ROLL-IN SHOWER W/ $\frac{1}{2}$ " MAX THRESHOLD HEIGHT PER ANSI 608.7.

SHOWER HEAD.

12. SHOWER CONTROL AREA.

5. WALL COVERING W/ FLOOR BASE, SEE FINISH SCHEDULE & I.D. DWGS.

6. POWER OUTLET, DUPLEX VOICE/DATA OUTLET - HORIZONTAL ABOVE COUNTER/DESK.

GUESTROOMS W/ HEARING IMPAIRED DESIGNATION, SEE FLOOR PLANS & ELEC DWGS.

- GENERAL NOTES A. ROOM DIMENSIONS ARE FROM THE FACE OF STUD, U.N.O. B. DIMENSIONS OF THE M & P SHAFT ARE TO/FROM THE INSIDE CLEAR SPACE TO THE
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TYP. WALL SWITCH TYP. WALL OUTLET @ +18" A.F.F. ABOVE COUNTER/DESK @ +40" A.F.F. BATHROOM VANITY SWITCH/OUTLET @ +48" A.F.F.

ABOVE SHELVES MICROWAVE ABOVE COUNTER COFFEE MAKER @ +44" A.F.F. UNDER COUNTER REFRIGERATOR @ +12" A.F.F. @ ACCESSIBLE GUEST ROOMS:

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JOB NUMBER

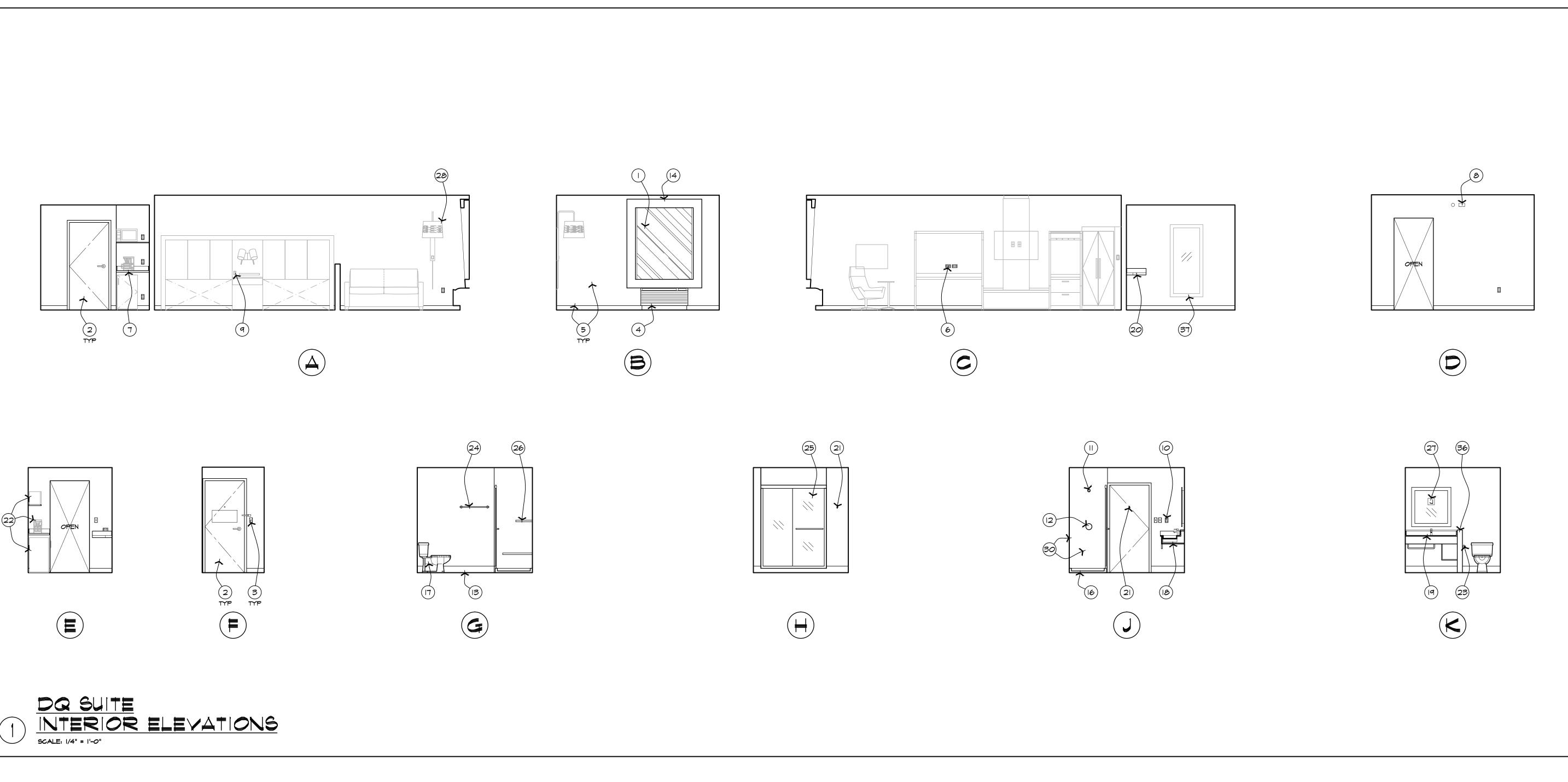
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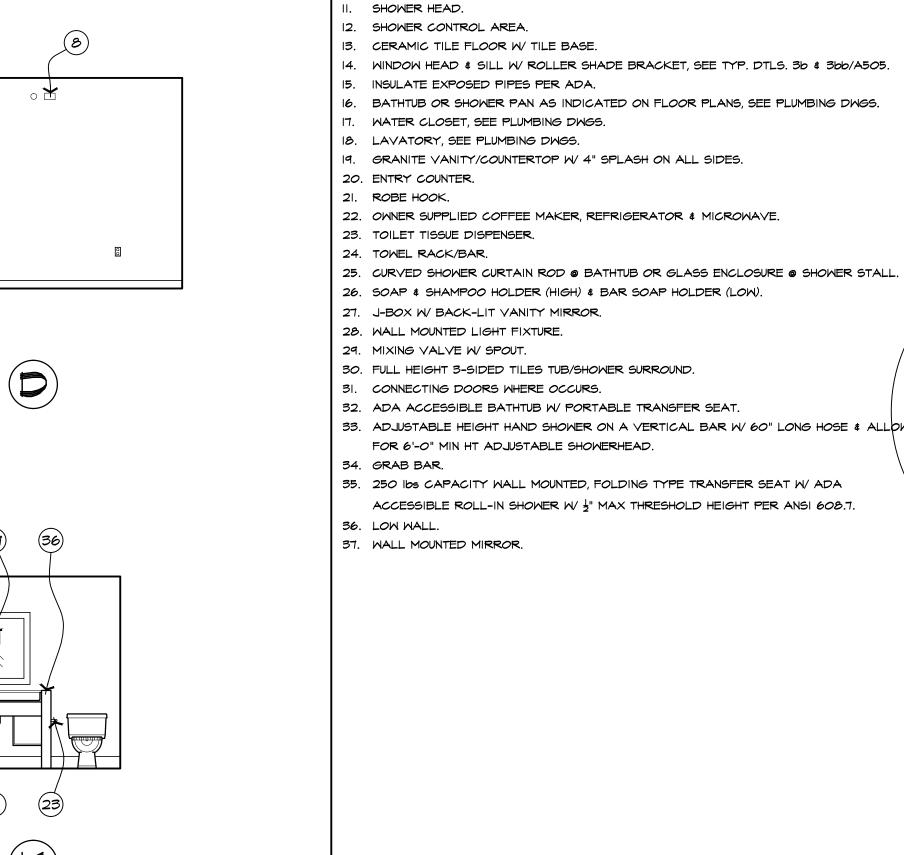
K SUITE \$ K SUITE - ACC SHEET NUMBER

INTERIOR ELEVATIONS

4'-6"

¥ 3'-6" 3'-0"





KEYNOTES

3. LIGHT SWITCH. 4. PTAC UNIT.

9. TELEPHONE OUTLET. 10. GFI POWER OUTLET.

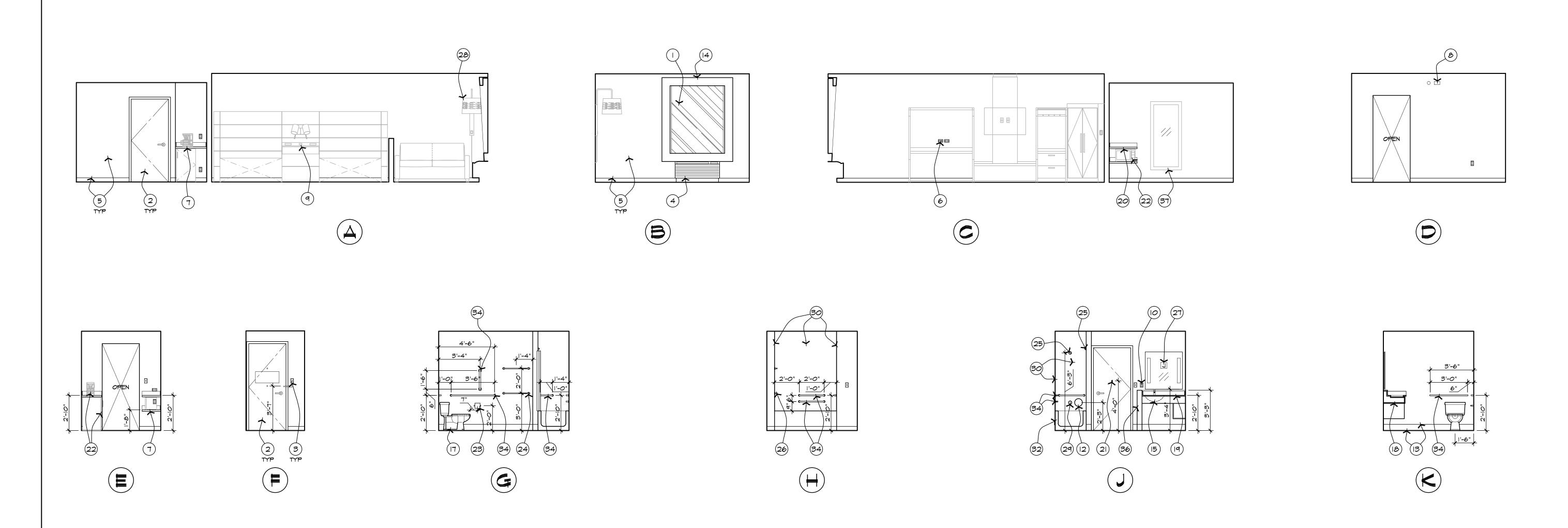
MINDOW, SEE MINDOM TYPE. 2. DOOR, SEE DOOR SCHEDULE.

7. CABINETRY @ REFRESHMENT ZONE.

5. WALL COVERING W/ FLOOR BASE, SEE FINISH SCHEDULE & I.D. DWGS.

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- SEE SHEET AIII TO AII4 FOR REFL. CLG. PLAN FOR GUEST ROOMS @ EA FLOOR.
- SEE SHEET AIOI TO AIO4 FOR WALL TYPE, DOOR & WINDOW DESIGNATIONS.
- ELECTRICAL MOUNTED HEIGHTS (TO CENTERLINE OF DEVICE), TYP. (U.N.O.) TYPICAL @ ALL GUEST ROOMS:
- @ +48" A.F.F. TYP. WALL SWITCH

@ +18" A.F.F. TYP. WALL OUTLET ABOVE COUNTER/DESK @ +40" A.F.F. BATHROOM VANITY SWITCH/OUTLET @ +48" A.F.F.

ABOVE SHELVES MICROWAVE ABOVE COUNTER COFFEE MAKER @ +44" A.F.F. UNDER COUNTER REFRIGERATOR @ +12" A.F.F. @ ACCESSIBLE GUEST ROOMS:

BATHROOM VANITY SWITCH/OUTLET @ +44" A.F.F. SEE ELEC. DWGS. FOR ADDITIONAL HEARING IMPAIRED DEVICES. SEE DTL. X/A501 FOR OFFSET CONDITION REQUIRED AT "BACK-TO-BACK" J-BOX

APPROPRIATE OPENINGS IN CASEWORK - SEE ID DWGS. SEE I.D. DWGS PACKAGE FOR ACTUAL GUEST ROOM FINISHES & MATERIALS, N.I.C. FF&E SHOWN FOR REFERENCE ONLY, N.I.C. & TO BE SUPPLIED BY OWNER & INSTALLED

LOCATIONS BETWEEN TWO GUEST ROOMS. J-BOXES MUST BE COORDINATED W

ALL KEYNOTES & DIMENSIONS ARE TYPICAL & APPLIED TO ALL GUEST ROOM TYPES

. G.C. TO COORDINATE W/ FIXTURE FABRICATOR WHERE NECESSARY TO PROVIDE PROPER BLOCKING IN WALL FOR ITEM KEYNOTED.

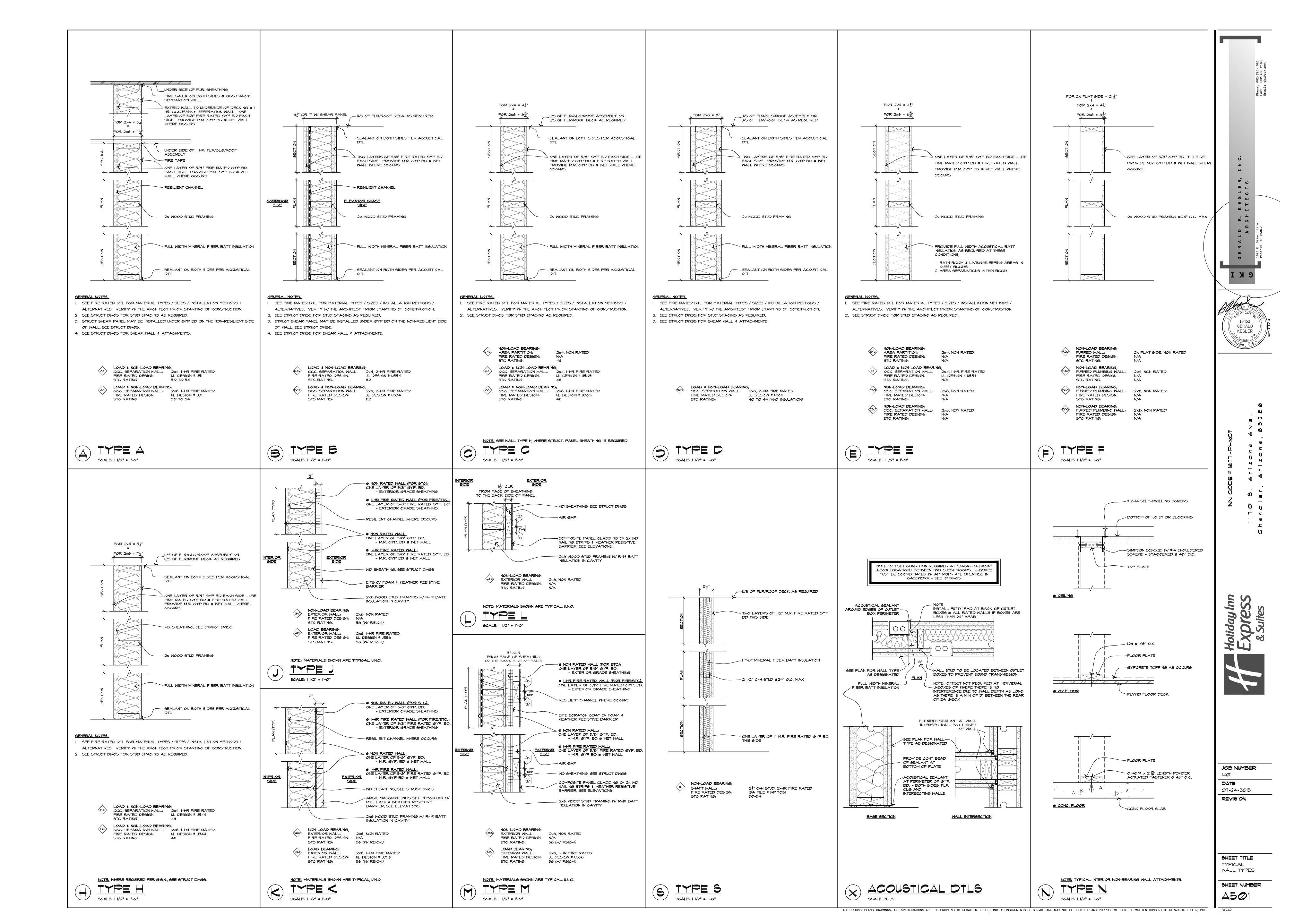
DATE Ø7-24-2Ø15 REVISION

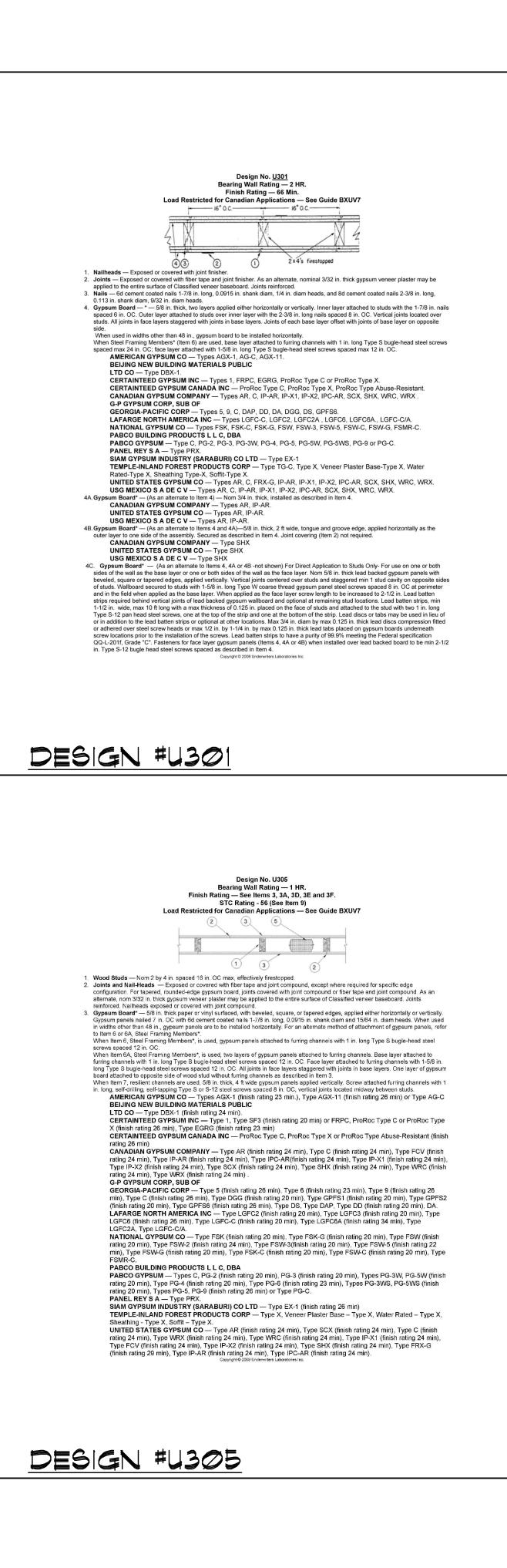
GERALD

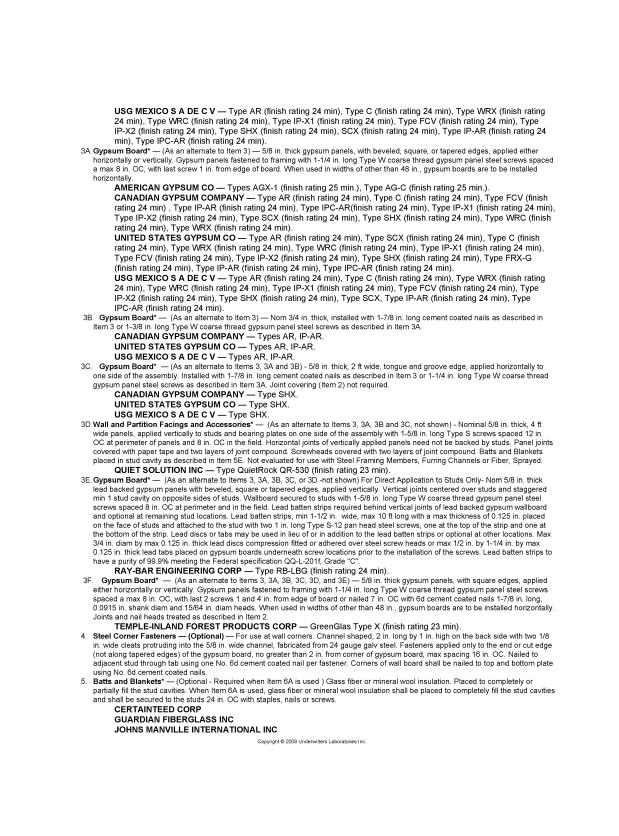
INT. ELEVATION, DQ SUITE \$ DQ SUITE - ACC SHEET NUMBER

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INTERIOR ELEVATIONS







RAY-BAR ENGINEERING CORP — Type RB-LBG.

accordance with manufacturer's recommended installation details.

ALSIDE, DIV OF ASSOCIATED MATERIALS

GENTEK BUILDING PRODUCTS LTD EARTLAND BUILDING PRODUCTS INC

NEBRASKA PLASTICS INC

VYTEC CORP

4D. Gypsum Board* — As an Alternate to Item 4 - 5/5 in. thick applied either horizontally or vertically. Inner layers 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. Outer layers fastened to framing with 1-7/8 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 other than 48 in., gypsum board to be installed horizontally. All joints in face layers staggered with joints in base layers. Joints of each base layer offset with joints of base layer on opposite side.

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

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. Wallboard attached to furring channels as described in Item 4.

B. Steel Framing Members* — Resilient sound isolation clip used to attach furring channels (Item 6a) to studs. Clips spaced 48 in.

 ∞ , and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction

fitted into clips.

PAC INTERNATIONAL INC — Type RSIC-1.

7. 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 shown) — Rard

QUIET SOLUTION INC — Type QuietRock QR-510.

Cementitious Backer Units* — (Optional Item Not Shown – For Use On Face Of 2 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 with vertical joints centered over studs. Face layer fastened over gypsum board 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.

NATIONAL GYPSUM CO — Type PermaBase

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5. Molded Plastic* — Not shown, Optional — Solid vinyl siding mechanically secured over the outer layer to framing members in

Steel Framing Members — (Optional, Not Shown)* - Furring channels and resilient sound isolation clip as described below:

ninimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board

KNAUF INSULATION GMBH OWENS CORNING HT INC. DIV OF OWENS CORNING — Corning Fiberglas Corp. ROCK WOOL MANUFACTURING CO - Delta Board ROXUL INC 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 fiher is applied with water to completely fill the e the product. Nominal dry density of 3.0 lb/ft³. Alternate application method: The fiber is applied with U.S. Greenfiber LLC Type AD100 not 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 e insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft. NU-WOOL CO INC — Cellulose Insulation 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 Class 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 study with staples placed 24 in. OC. See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies.

E. 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. 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. statile of No. 16 SWG galay seet wile hear each end of overlap. As an alternate, ends of adjoining training training the overlapped of and secured together with two self-tapping #6 framing screws 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 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 KINETICS NOISE CONTROL INC — Type Isomax. 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 rews. When resilient channels are used, insulation, Items 5C or 5D is required. Caulking and Sealants — (not shown, optional) A bead of acoustical sealant applied around the partition perimeter for sound control. 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 - Bats 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, aDove - Steel Framing Members* Type RSIC-1 clips shall be used to attach gypsum board to studs on either side of the wall E. Item 8, above - Caulking and Sealants (not shown) A bead of acoustical sealant shall be applied around the partition perimeter for sound E. Steel Corner Fasteners (Item 4), Fiber, Sprayed (Items 5A and 5B) and Steel Framing Members (Item 6A), not evaluated as alternatives 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 imum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board **QUIET SOLUTION INC** — Type QuietRock QR-510. 1. Cementitious Backer Units* — (Optional Item Not Shown – For Use On Face Of 1 Hr Systems With All Standard Items Required) Copyright © 2008 Underwriters Laboratories Inc.

Design No. <u>U311</u>

Load Restricted for Canadian Applications — See Guide BXUV7

Resilient Channel — 25 MSG galv steel. Resilient channels 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.

2A. Steel Framing Members (Optional, Not Shown)* — As an alternate to Item 2, furring channels and resilient sound isolation clip as

3. Gypsum Board* — 5/8 in. thick, 4 ft wide. Screw attached one side to furring channels with 1 in. long, self-drilling, self-tapping stee sypatin Board — 36 in . 10ct, 4 it wide. Salew attached his add to fulling challed with 1 in. long, self-alming, self-almi

4. Batts and Blankets* — 3 in. thick mineral wool batts, placed to fill interior of wall, attached to the 4-in. face of the studs with staples

4A. Glass Fiber Insulation — (As an alternate to Item 4) — 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.
4B. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 4) — Spray applied cellulose material. The fiber is applied with water

lb/ft³. Alternate application method: The fiber is applied with U.S. Greenfiber LLC Type AD100 hot melt adhesive at a nominal ratio of

Joints and Screw heads — Wallboard joints covered with paper tape and joint compound. Screw heads covered with joint compound.
As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints

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

oletely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 3.0

shaped point, double lead Phillips head steel screws spaced 12 in. OC, vertical joints located over studs.

AMERICAN GYPSUM CO — Types AG-C.

CERTAINTEED GYPSUM INC — Type FRPC, ProRoc Type C.

CANADIAN GYPSUM COMPANY — Types C, IP-X2, IPC-AR.

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

CERTAINTEED GYPSUM CANADA INC — ProRoc Type C

NATIONAL GYPSUM CO — Types FSK-C, FSW-C, FSW-G. PABCO BUILDING PRODUCTS L L C, DBA

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR. USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR.

ROCK WOOL MANUFACTURING CO — Delta Board. JOHNS MANVILLE INTERNATIONAL INC

PABCO GYPSUM — Type C or PG-C.
TEMPLE-INLAND FOREST PRODUCTS CORP — Type TG-C.

escribed 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

b. Steel Framing Members* — Resilient sound isolation clip used to attach furring channels (Item a) to studs (Item 1). Clips spaced

16" or 24"0.C. 16" or 24"0.C.

Horizontal Section

Bearing Wall Rating — 1 HR. Finish Rating — 23 Min.

Wertical Section

. Wood Studs - Nom 2 by 4 in., spaced 16 or 24. OC. Effectively cross brace

friction fitted into clips.

PAC INTERNATIONAL INC — Type RSIC-1.

GEORGIA-PACIFIC CORP — Type 5

product. Nominal dry density of 2.5 lb/ft³

DESIGN #U311

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 cked by framing.

NATIONAL GYPSUM CO — Type PermaBase

reinforced.

6. 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.

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QUIET SOLUTION INC — Type QuietRock QR-510.

*Bearing the UL Classification Mark

Bearing Wall Rating — 1 HR. Finish Rating — See Item 2 Load Restricted for Canadian Applications — See Guide BXUV7

INTERIOR SIDE Wood Studs — Nominal 2 by 4 in. spaced 16 in. on center, effectively cross braced at mid-height and fire stopped at top and bottom. Gyspum Board* — 5/8 in, thick, 4 ft wide, applied vertically. Wallboard attached to stude and bearing plates with 1-3/4 in, long galv nails h 0.128 in. diam shank and 7/16 in. diam head, spaced 8 in. on center. G-P GYPSUM CORP, SUB OF GEORGIA-PACIFIC CORP — Type DGG (finish rating 20 min), Type DAP, DD, DS.

Gypsum Board* — 5/8 in. thick, 4 ft wide, applied vertically. Wallboard attached to studs and bearing plates with 1-3/4 in. long galv nails h 0.128 in. diam shank and 7/16 in. diam head, spaced 8 in. on center.

AMERICAN GYPSUM CO — Types AGX-1 (finish rating 23 min.), AG-C.
BEIJING NEW BUILDING MATERIALS PUBLIC CERTAINTEED GYPSUM INC — Type EGRG (finish rating 23 min). G-P GYPSUM CORP, SUB OF GEORGIA-PACIFIC CORP — Types 5, 9, C, Type DGG (finish rating 20 min), Type GPFS2 (finish rating 24 min), Type GPFS6 (finish rating 20 min), Type DS, Type DAP, Type DD (finish rating 20 min), DA.

LAFARGE NORTH AMERICA INC — Type LGFC2 (finish rating 24 min), Type LGFC2A, Type LGFC3 (finish rating 20 min), Type LGFC6 (finish rating 20 min), Type LGFC-C (finish rating 20 min), Type LGFC6A (finish rating 34 min), PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-9. SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1 (finish rating 26 min) TEMPLE-INLAND FOREST PRODUCTS CORP — Types TG-C, Type X, Veneer Plaster Base – Type X, Water Rated– Type X, Sheathing - Type X, Soffit – Type X. 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

4. Joints and Nailheads — Exposed or covered with paper tape and joint compound. For tapered, rounded-edge wallboard, joints covered

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AMERICAN GYPSUM CO — Types AGX-1 (finish rating 23 min.), AG-C.

Design No. U334

Bearing Wall Rating — 2 HR. STC Rating - 62 (See Item 7)

Wood Studs — Nom 2 by 4 in., spaced 16 in. OC. Studs cross braced at mid-height and effectively fire stopped at top and bottom of

2. Resilient Channel — 25 MSG galv steel, nom 2-1/2 in, wide by 1/2 in, deep, Resilient channels placed perpendicular to study, spaced

vertically max 24 in. OC, flange portion attached to each intersecting stud with 1 in. long Type S steel screws.

A. Steel Framing Members (Optional, Not Shown)* — As an alternate to Item 2, furring channels and resilient sound isolation clip as

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 study 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

Steel Framing Members* — resilient sound isolation clip used to attach furring channels (Item a) to studs (Item 1). Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are

friction fitted into clips.

PAC INTERNATIONAL INC — Type RSIC-1.

Gypsum Board* — 5/8 in. thick, 4 ft wide. Attached to furring channels: base layer with 1 in. long Type S steel screws spaced max 24 in.

OC, face layer with 1-5/8 in. long Type S steel screws spaced max 12 in. OC. Attached to wood studs: base layer with 1-7/8 in. long 6d coated nails spaced max 14 in. OC, face layer with 2-3/8 in. long 8d coated nails spaced max 7 in. OC. Base layers installed vertically. Face layers installed horizontally with but joints offset 16 in. from base layers.

4. Batts and Blankets* — Nom 2 in. thick mineral wool insulation, 96 in. long, cut to 15 in. widths, friction fitted between study in wall cavity.

THERMAFIBER INC — Type SAFB.

4A. Batts and Blankets* — Glass fiber insulation. The cavities formed by the studs friction fit with R-19 unfaced fiberglass insulation batts measuring 6-1/4 in. thick and 15-1/4 in. wide. See Batts and Blankets* (BZJZ) category for names of Classified Companies.

Joint Tape and Compound — Vinyl, dry or premixed joint compound, applied to joints, screw heads, and nail heads (two applications); paper tape, 2 in. wide, embedded in first layer of compound over all joints.

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

a. Item 2A, above - Steel Framing Members* Shall be used to attach wallboard to study on either the acoustical source or receiving

8. 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 t QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board.

inimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of 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

c. Item 6, above - Caulking and Sealants (not shown) A bead of acoustical sealant shall be applied around the partition perimeter for

b. Item 4a above - Batts and Blankets* As described above, fiberglass insulation shall be used.

e layers installed horizontally with butt joints offset to AMERICAN GYPSUM CO — Types AG-C

PABCO BUILDING PRODUCTS L L C, DBA

PABCO GYPSUM — Type C or PG-C.

CERTAINTEED GYPSUM INC — ProRoc Type C.
CERTAINTEED GYPSUM CANADA INC — ProRoc Type C

CANADIAN GYPSUM COMPANY — Types C, IP-X2, IPC-AR G-P GYPSUM CORP, SUB OF

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

TEMPLE-INLAND FOREST PRODUCTS CORP — Type TG-C.
UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR.

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

QUIET SOLUTION INC — Type QuietRock QR-510.

*Bearing the UL Classification Mark

DESIGN #U334

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

13452 GERALD KESLER

DESIGN #U33"

GYPSUM WALLBOARD, STEEL C-H OR C-T STUDS layer 1" x 24" proprietary type X gypsum panels inserted between 21/2" floor and ceiling J runners with T section of 21/2" steel C-H or C-T studs between panels. Face layer 1/2" proprietary type X gypsum wallboard applied parallel to studs with vertical joints midway between studs and laminated to proprietary gypsum panels with 4" wide strips of taping compound at wallboard perimeter and vertical centerline. 11/2" Type G drywall screws PPOSITE SIDE: One layer 1/2" proprietary type X gypsum wallboard applied at right Approx. Weight: 9 psf angles to stude with 1" Type S drywall screws 24" o.c. See WP 7051 Fire Test: (UL R7094, 93NK8151, 9-14-93, Sound tested with 17/8" glass fiber insulation in stud space. (NLB) PROPRIETARY GYPSUM BOARD 1/2" FireBloc® Type C Sound Test: American Gypsum Company LLC (RAL TL93-181, 7-1-93) 1/2" FLAME CURB® Super 'C'™ 1" PABCORE® Gypsum Liner Board 1" Silent Guard™ Gypsum Liner Board

GYPSUM WALLBOARD, RIGID FURRING CHANNELS WOOD JOISTS or WOOD I-JOISTS, ROOF COVERING Sase layer \$1s" type X gypsum wallboard applied at right angles to either 2 x 8 wood joists or 91/2" deep wood I-joists 24" o.c. with 11/4" Type W drywall screws 12" o.c. Second layer 5/s" type X gypsum wallboard applied at right angles to joists or I-joists with 2" Type W drywall screws 12" o.c. Second layer joints offset 24" from base layer joints. Third layer 5/8" type X gypsum wallboard applied at right angles to joists or I-joists with 21/2 Type W drywall screws 12" o.c. Third layer joints offset 12" from second layer joints. Hat-shaped rigid furring channels 24" o.c. applied at right angles to joists or I-joists over third layer with two 21/2" long Type W drywall screws at each joist or I-joist. Face layer 5/8" type X gypsum wallboard applied at right angles to furring channels with 11/8" Type S type X gypsum wallboard applied at right angles to furring channels with 11/8" Type S drywall screws 12" o.c. Wood joists or I-joists supporting 3/4" T & G edge plywood Fire Test: UL R4024, 00NK26545, applied at right angles to joists or I-joists with 8d nails 6" o.c. at joints and 12" at intermediate joists or I-joists. Appropriate roof covering. Ceiling provides two-hour fire-resistance protection for wood framing. UL R4042, 03NK11206, UL Design L556;

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Wood Studs — Nom 2 by 4 in spaced 24 in OC, laterally braced, and effectively fire stopped at top and bottom Wood Structural Panel Sheathing — Nom 15/32 in. thick, 4 ft wide APA Rated Sheathing 32/16. Exposure 1, plywood or oriented strand board (OSB) per PS1, PS2 or APA Standard PRP-108. Installed with long dimension of sheet (strength axis) or face grain of plywood, parallel with study. Vertical joints centered on study, and staggered one study space from wallboard joints. Horizontal joints backed with nom 2 by 4 in. wood backing. Attached to studs on exterior side of wall with 6d cement coated steel box nails spaced 12 in. OC along interior studs and 6 in. OC at perimeter of panels.

3. Batts and Blankets* — 3-1/2 in. thick foil-faced glass fiber batts. Supplied in rolls 23 in. wide. Density to be nom 0.70 pcf. Placed in stud and secured to stude with 5/8 in, long steel staples spaced nom 12 in, OC See Batts and Blankets* (BZJZ) category for names of Classified Companies.

3A. Fiber, Sprayed*— As an alternate to Batts and Blankets (Item 3) — 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 3.4 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) O S GREENFIBER L L C — COCOO12 Stabilized of Cocoon-FRM (Fire Rated Material)

4. Gypsum Board* — 5/8 in. thick, 4 ft wide, applied horizontally or vertically. Attached to studs through plywood sheathing with 8d cement coated nails 2-3/8 in. long, 0.113 in. shank diam, 9/32 in. diam head nails spaced 7 in. OC along studs and at perimeter of panels. When used in widths other than 48 in., wallboard is to be installed horizontally. Joints exposed or covered with tape and compound. When Item 6, Steel Framing Members*, is used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel

WS SPACED 12 IN. OC.

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

CANADIAN GYPSUM COMPANY — Type AR, C, IP-X2, IPC-AR, SCX, SHX, WRC, WRX. LAFARGE NORTH AMERICA INC — Types LGFC6, LGFC6A, LGFC-C, LGFC-C/A. TEMPLE-INLAND FOREST PRODUCTS CORP — Types TG-C, Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Sofft - Type X.

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-X2, IPC-AR, WRC, SCX, SHX or WRX. USG MEXICO S A DE C V — Type AR, C, IP-X2, IPC-AR, SCX, SHX, WRC or WRX. USG MEXICO S A DE C V — Type AR, C, IP-X2, IPC-AR, SCX, SHX, WRC or WRX.

5. Gypsum Board* — 5/8 in. thick, 4 ft wide applied horizontally or vertically. Attached to stude or blocking at 7 in. OC with 6d cement coated nails, 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam heads. When used in widths other than 48 in., wallboard to be installed horizontally. Joints exposed or covered with tape and compound.

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

Design No. U344

Finish Rating — 26 Min

Load Restricted for Canadian Applications — See Guide BXUV7

AMERICAN GYPSUM CO — Types AGX-1, AG-C.
CANADIAN GYPSUM COMPANY — Type AR, C, IP-X1, IP-X2, IPC-AR, SCX or WRX.
LAFARGE NORTH AMERICA INC — Types LGFC6, LGFC6A, LGFC-C, LGFC-C/A. TEMPLE-INLAND FOREST PRODUCTS CORP — Type TG-C UNITED STATES GYPSUM CO — Type AR, C, FRX-G, IP-X1, IP-X2, IPC-AR, SCX or WRX. USG MEXICO S A DE C V — Type AR, C, IP-X1, IP-X2, IP-AR, SCX or WRX.

5A. Gypsum Board* — As an alternate to Item 5 - (not shown) - 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

led horizontally. Joints exposed or covered with tape and compound.

AMERICAN GYPSUM CO — Types AGX-1, AG-C (Finished Rating is 25 minutes). CERTAINTEED GYPSUM INC — ProRoc Type C or ProRoc Type X (Finished Rating is 23 minutes). CERTAINTEED GYPSUM CANADA INC — ProRoc Type C or ProRoc Type X (Finished Rating is 23 minutes) CANADIAN GYPSUM COMPANY — Type AR, C, IP-X2, IPC-AR, SCX, SHX, WRC, WRX. (Finished Rating is 24 UNITED STATES GYPSUM CO — Type AR, C, FRX-G, IP-X1, IP-X2, IPC-AR, SCX or WRX. (Finished Rating is 24

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

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USG MEXICO S A DE C V — Type AR, C, IP-X1, IP-X2, IPC-AR, SCX or WRX. (Finished Rating is 24 minutes). a Furring Channels — Formed of No. 25 MSG galy steel, 2-3/8 in, wide by 7/8 in, deep, spaced 24 in, OC perpendicular to study 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 Items 4 and 5. Steel Framing Members* — Used to attach furring channels (Item 6a) to stude. Clips spaced 48 in. OC., and secured to stude with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.

PAC INTERNATIONAL INC — Type RSIC-1.

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Design No. U356 (Exposed to Fire on Interior Face Only)
Bearing Wall Rating — 1 Hr Finish Rating — 23 Min or 25 Min (See Item 2C) Load Restricted for Canadian Applications — See Guide BXUV

. Wood Studs — Nom 2 by 4 in. spaced 16 in. OC with two 2 by 4 in. top and one 2 by 4 in. bottom plates. Studs laterally-braced by wood structural panel sheathing (Item 5). When Mineral and Fiber Boards* (Item 5A) are considered as bracing for the studs, the load is restricted to 76% of allowable axial load. Walls effectively fire stopped at top and bottom of wall. **Gypsum Board*** — Any Classified 5/8 in. thick, 4 ft wide, applied vertically and nailed to studs and bearing plates 7 in. OC with 6d ement-coated nails, 1-7/8 in. long with 1/4 in. diam head. When Item 7, Steel Framing Members*, is used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel rews spaced 12 in. OC.
/hen Item 7A, 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. ong Type S bugle-head steel screws spaced 12 in. OC. All joints in face layers staggered with joints in base layers. See Gypsum Board (CKNX) Category for names of Classified Companies.

2A. Gypsum Board* — (As an alternate to Item 2, not shown) - Any 5/8 in. thick 4 ft wide gypsum panels supplied by the Classified Companies listed below shown Gyosum Board* (CKNX) category. Applied vertically and attached to study and bearing plates 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.

CANADIAN GYPSUM COMPANY

UNITED STATES GYPSUM CO USG MEXICO S A DE C V 2B. Gypsum Board* — (As an alternate to Item 2, not shown) - 5/8 in. thick 4 ft wide gypsum panels applied vertically and attached to studs and bearing plates with 1-1/4 in. long ⊺ype W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 AMERICAN GYPSUM CO — Types AGX-1, AG-C CERTAINTEED GYPSUM INC — ProRoc Type C or ProRoc Type X

CERTAINTEED GYPSUM CANADA INC — ProRoc Type C or ProRoc Type X

Sheathing Type-X,Soffit-Type X

2C. Gypsum Board* — (As an alternate to Item 2, not shown) – For Use with Item 5A only - 5/8 in. thick 4 ft wide gypsum panels applied ntally and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in, OC, with last screws 1 in, and 4 in, from edges of board. Finish Rating is 25 mir TEMPLE-INLAND FOREST PRODUCTS CORP — Type X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X,Soffit-Type X 3. Joints and Nailheads — (Not Shown) — Wallboard joints covered with tape and joint compound. Nail heads covered with joint 4. Batts and Blankets* — Mineral fiber or glass fiber insulation, 3-1/2 in. thick, pressure fit to fill wall cavities between studs and plates. Mineral fiber insulation to be unfaced and to have a min density of 3 pcf. Glass fiber insulation to be faced with aluminum foil or kraft paper and to have a min density of 0.9 pcf (min R-13 thermal insulation rating). See Batts and Blankets (BKNV) Category in the Building Materials Directory and Batts and Blankets (BZJZ) Category in the Fire 4A. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 4) — 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)

TEMPLE-INLAND FOREST PRODUCTS CORP — Type X, Veneer Plaster Base-Type X, Water Rated-Type X,

5. Wood Structural Panel Sheathing — Min 7/16 in. thick, 4 ft wide wood structural panels, min grade "C-D" or "Sheathing". Installed with long dimension of sheet (strength axis) or face grain of plywood parallel with or perpendicular to studs. Vertical joints centered on studs Horizontal joints backed with nom 2 by 4 in. wood blocking. Attached to studs on exterior side of wall with 6d cement coated box nails spaced 6 in. OC at perimeter of panels and 12 in. OC along interior studs.

5A. Mineral and Fiber Boards* — As an alternate to Item 5 - Min 1/2 in. thick, 4 ft wide sheathing, installed vertically to studs. Vertical joints Copyright @ 2008 Underwriters Laboratories Inc.

centered on studs. Horizontal joints backed with nom 2 by 4 in. wood blocking. Attached to studs on exterior side of wall with 1-1/2 in. long galvanized roofing nails spaced 6 in. OC at perimeter of panels and 12 in. OC along interior studs. As an option a weather resistive barrier FEMPLE-INLAND FOREST PRODUCTS CORP — Types FiberBrace or QuietBrace 6. Exterior Facings — Installed in accordance with the manufacturer's installation instructions. One of the following exterior facings is to be A. Vinyl Siding — Molded Plastic* — Contoured rigid vinyl siding having a flame spread value of 20 or less.

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See Molded Plastic (BTAT) category in the Building Materials Directory for names of manufacturers B. Particle Board Siding — Hardboard exterior sidings including patterned panel or lap siding.
 Wood Structural Panel or Lap Siding — APA Rated Siding, Exterior, plywood, OSB or composite panels with veneer faces and structural wood core, per PS 1 or APA Standard PRP-108, including textured, rough sawn, medium density overlay, brushed,). Cementitious Stucco — Portland cement or synthetic stucco systems with self-furring metal lath or adhesive base coat. Thickness from 3/8 to 3/4 in., depending on system.

E. **Brick Veneer** — Any type on nom 4 in. wide brick veneer. When brick veneer is used, the rating is applicable with exposure on either face. Brick veneer fastened with corrugated metal wall ties attached over sheathing to wood studs with 8d nail per tie: ties spaced not more than each sixth course of brick and max 32 in. OC horizontally. One in. air space provided between brick veneer and sheathing.

Exterior Insulation and Finish System(EIFS) — Nom 1 in. Foamed Plastic* insulation bearing the UL Classification Marking,

attached over sheathing and finished with coating system, or Portland cement or synthetic stucco systems, in accordance with manufacturer's instructions. See **Foamed Plastic** (BRYX and CCVW) categories for names of Classified companies. Siding — Aluminum or steel siding attached over sheathing to studs. H. Fiber-Cement Siding — Fiber-cement exterior sidings including smooth and patterned panel or lap siding.

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 2.

Steel Framing Members* — Used to attach furring channels (Item 7a) to studs. Clips spaced 48 in. OC., and secured to stude

with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.

PAC INTERNATIONAL INC — Type RSIC-1.

7A. Steel Framing Members (Optional, Not Shown)* — Furring channels and Steel Framing Members as described below: 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. Two layers of gypsum board attached to furring channels as described in Item 2 b. Steel Framing Members* — Used to attach furring channels (Item 7Aa) to interior side of studs. 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.

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GA FILE #WP 705

DESIGN #U344

DESIGN #U356

JOB NUMBER 1401 DATE Ø7-24-2Ø15

REVISION

Sheet title FIRE RATED ASSEMBLY DETAILS SHEET NUMBER

PAC INTERNATIONAL INC — Type RSIC-1, RSIC-V 5B. Steel Framing Members* — (Optional, Not Shown) - Used as an alternate method to attach min. 1/2 in. deep resilient channels (Item 5) to wood joists (Item 2). Resilient channels are friction fitted into clips, and then clips are secured to the bottom of each wood joist with a nin. 1-3/4 in. long No. 7 Type S bugle head steel screw through the center hole of the clip and the resilient channel flange. Adjoining esilient channels are overlapped 4 in. under joists. The clip flange is opened slightly to accommodate the two overlapped channels. Additional clips required to hold resilient channel that supports the gypsum board butt joints, as described in Item 6.

KEENE BUILDING PRODUCTS CO INC — Type RC Assurance.

Gypsum Board* — Nom 1/2 in. thick, 4 ft wide gypsum board. When resilient channels (Item 5) are used, gypsum board installed with long dimension perpendicular to resilient channels and the side edges of the board located between joists. Gypsum board fastened to regilient channels with 1 in. long No. 7 Type S bugle head screws spaced 12 in. OC. End joints of gypsum board similarly fastened to additional resilient channels most benefit of the screws spaced 12 in. OC. End joints of gypsum board similarly fastened to additional resilient channels positioned at end joint locations. Screw located 3/4 in. min distance from sides and 1/2 in. min from ends of gypsum board sheets. When **Steel Framing Members*** (Item 5A) are used, gypsum board installed with long dimension perpendicular to

furring channels and side joints of sheet located beneath joists. Gypsum board secured to channels with 1-1/4 in. long No. 7 Type S bugle head screws spaced 12 in. OC in the field. Butt joints shall be staggered min 2 ft within the assembly, and occur between the main furring channels. At the butt joints, each end of each gypsum board shall be supported by a sile length of furring channel equal to the width of the gypsum board plus 6 in. on each end. The two furring channels shall be spaced approximately 3-1/2 in. OC, and be attached to the

joist with one clip at each end of the channel. Screw spacing along the butt joint to attach the gypsum board to the furring channels shall

AMERICAN GYPSUM CO — Type AG-C
CERTAINTEED GYPSUM INC — Types FRPC, ProRoc Type C
CERTAINTEED GYPSUM CANADA INC — ProRoc Type C CANADIAN GYPSUM COMPANY — Types C, IP-X2, IPC-AR G-P GYPSUM CORP, SUB OF GEORGIA-PACIFIC CORP — Type 5
LAFARGE NORTH AMERICA INC — Types LGFC-C, LGFC-C/A NATIONAL GYPSUM CO — Types FSK-C, FSW-C PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-C TEMPLE-INLAND FOREST PRODUCTS CORP — Type TG-C UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR

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

8. **Grille** — Steel grille, installed in accordance with the installation instructions provided with the ceiling damper. Bearing the UL Classification Mark

SOLUTIA INC — Type SC50 Finish Flooring - Floor Topping Mixture* — Min 1/2 or 3/4 in. thickness of floor topping mixture for min 19/32 or min 15/32 in. thick wood structural panels respectively, having a min compressive strength of 2100 psi. Refer to manufacturer's instructions accompanying the material for specific mix design. UNITED STATES GYPSUM CO — Levelrock 3500, Levelrock Commercial RH System No. 14

Subflooring — Min 15/32 in. thick wood structural panels , min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to joists with joints staggered.

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. Floor topping thickness shall be as specified under Floor Topping Mixture .

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 all 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. Floor topping thickness

shall be as specified under Floor Topping Mixture.

SOLUTIA INC — Type SC50 Finish Flooring - Floor Topping Mixture* — Min 1/2 or 3/4 in. thickness of floor topping mixture for min 19/32 or min 15/32 in. thick wood structural panels respectively, having a min compressive strength of 3000 psi. Refer to manufacturer's instructions accompanying UNITED STATES GYPSUM CO — Levelrock 4500 System No. 15

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to joists with joints staggered.

Vapor Barrier - (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt. Finish Flooring - Floor Topping Mixture* — Min 3/4 or 1 in. thickness of floor topping mixture for 19/32 or 15/32 in. thick wood structural panels respectively, having a min compressive strength of 1000 psi. Refer to manufacturer's instructions material for specific mix design.

ALLIED CUSTOM GYPSUM PLASTERWORKS LLC — Accu-Crete Alternate Floor Mat Material* – (Optional) – Floor mat material nominal 2 – 6.4 mm thick loose laid over the subfloor. Floor topping shall be a min of 3/4 in. or 1 in. thickness of floor topping mixture for 19/32 or 15/32 in. thick wood structural panels respectively.

ALLIED CUSTOM GYPSUM PLASTERWORKS LLC — Type AccuQuiet RSM 20, Type AccuQuiet RSM 32, Type

AccuQuiet RSM 48, Type AccuQuiet RSM 64, and Type AccuQuiet RSM 120 System No. 16 Subflooring — 15/32 or 19/32 in. thick wood structural panels, min. grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to joists with joints staggered.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt. Finish Flooring — Floor Topping Mixture* — Min 3/4 or 1 in. thickness of floor topping mixture for 19/32 or 15/32 in. thick wood structural panels respectively, having a min compressive strength of 2100 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

MAXIT INC — Maxit 493 System No. 17 Subflooring — Min 3/4 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to joists with joints staggered. Long edges may be T & G or square.

Finish Flooring — Floor Topping Mixture* — Compressive strength to be 2500 psi min. Thickness to be 3/4 in. min. Refer to

manufacturer's instructions accompanying the material for specific mix design.

ALPHA 7 GYPSUM L L C — Gyp-Cement Commercial Floor Topping

Wood Joists — Min 2 by 10, spaced 16 in. OC and effectively fireblocked in accordance with local codes. Cross Bridging — Min 1 by 3 in. or min 2 by 10 solid blocking.

3A. Horizontal Bridging — Used in lieu of Item 3 in same joist bay as Item 4 (ceiling damper), when Item 4 is employed. Wood 2 by 4 in.

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 8-34 in . Aggregate damper openings shall not exceed 99 sq in. per 100 sq if of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille (Item 8) shall be installed in accordance with installation instructions.

cordance with installation instructions.

ACME ENGINEERING & MFG CORP — Models RD521, RD521-R

AIR KING LTD — Series AS, Series AK DLX: DAMPERS AND LOUVERS EXPRESS — Models CRD.S.HC, CRD.R.HC E H PRICE LTD — Models CD-S/R-HC, CD-RD-HC

NCA MFG INC — Models CD-S/R-HC, CD-RD-HC NCA MFG LTD — Models CD-S/R-HC, CD-RD-HC UNITED ENERTECH CORP — Models CD-S/R-HC, CD-RD-HC

End Joint Detail Resilient Channel Detail 1. Flooring System — The flooring system shall consist of one of the following: System No. 1

Subflooring — Min 1 by 6 in. T & G lumber fastened perpendicular to joists, or min 15/32 in. thick plywood or 7/16 in. thick oriented strand board (OSB) wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be straint board (255) wood structural pariest, nimi grade C-D of Sheathing . Face grain of perpendicular to the joists with joints staggered.

Vapor Barrier - (Optional) — Nom 0.010 in. thick commercial rosin-sized building paper. Finish Flooring — Min 1 by 3 in. T & G lumber fastened diagonally to joists, or min 19/32 in. thick plywood wood structural panels, min grade "Underlayment" or "Single Floor". Face grain of plywood or strength axis of panels to be perpendicular to joists with joints System No. 2

Design No. <u>L514</u> Unrestrained Assembly Rating — 1 Hr. Finish Rating — 26 Min.

Load Restricted for Canadian Applications — See Guide BXUV7

Subflooring — Min 15/32 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) — 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. Floor topping thickness shall be as specified under Floor Topping Mixture.

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. snail 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. Floor topping thickness

SOLUTIA INC — Type SC50

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1500 tions accompanying the material for specific mix design. UNITED STATES GYPSUM CO — Type LRK System No. 3

Subflooring — Min 19/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to joists with joints staggered.

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.

imer to be applied to the surface of the mat prior to the placement of a min 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

NOTES:
I. GYP. BD. THICKNESS INDICATED IN ITEM #6 SHALL BE 5/8". PROVIDE ADDITIONAL FACE LAYER OF 5/8" THK GYP. BD. SIMILAR TO ICC DESIGN #ESR-1153: SOUND RATING: ASSEMBLY "B", OPTION 2

DESIGN #L514

ICC-ES Evaluation Report

DIVISION: 06 00 00-WOOD, PLASTICS AND

Section: 06 17 33—Wood I-joists

REPORT HOLDER:

WEYERHAEUSER POST OFFICE BOX 8449 BOISE, IDAHO 83707-2449

ADDITIONAL LISTEES:

ANTHONY-DOMTAR, INC

REDBUILT™ LLC 200 EAST MALLARD DRIVE BOISE, IDAHO 83706

EVALUATION SUBJECT:

1.0 EVALUATION SCOPE

Properties evaluated:

■ Fire-resistance ratings

■ Structural

Sound ratings

SAULT STE MARIE, ONTARIO P6C 3W7

PACIFIC WOODTECH CORPORATION

TJI® PREFABRICATED WOOD I-JOISTS

Compliance with the following codes:

■ 2012 and 2009 International Building Code[®] (IBC)

■ 2012 and 2009 International Residential Code® (IRC)

TJI joists are prefabricated wood I-joists used as floor

joists, roof rafters, blocking panels and rim joists, to support code-required loads. Prefabricated wood I-joists described in this report comply with Section 2303.1.2 of the IBC, for allowable stress design; and Section R502.1.4 of

www.icc-es.org | (800) 423-6587 | (562) 699-0543 A Subsidiary of the International Code Council®

3.1 General:

Most Widely Accepted and Truste

This report is subject to renewal May 1, 2015.

TJI joists are prefabricated wood I-joists having wood or wood-based flanges and Performance Plus® oriented strand board (OSB) webs. Either the top and bottom flanges are parallel, forming a constant-depth joist; or the top flange has a single taper, forming a variable-depth joist. The web panels have the face grain oriented to the parallel and the parallel parallel and the parallel parallel parallel.

vertically, and the web-to-web connection is either butt jointed or serrated and glued to form a continuous web. The web-to-flange connection is a proprietary tongue-and-groove glued joint. Refer to Table 1 for TJI joist series and

aterial descriptions. The TJI L65, TJI L90, TJI H90 JI HD90, and TJI HS90, may also be trademarked as

ГЈІ L460, ТЈІ L560, ТЈІ H560, ŤЈІ HD560, and ТЈІ HS560

3.2.1 Flanges: Flange material is either Microllam[®] laminated veneer lumber (LVL), TimberStrand[®] laminated strand lumber (LSL) or machine stress rated lumber (MSR). Microllam LVL and TimberStrand LSL are recognized in evaluation report ESR-1387, Table 1 of this report specifies flange widths and depths. Flange material

and grades are as specified in the quality control manual

3.2.2 Webs: Web material is Performance Plus® OSB conforming to DOC Voluntary Product Standard PS2, Exposure 1, along with further requirements set forth in the

quality control manual that contains Weyerhaeuser manufacturing standards. Web material thickness requirements are noted in Table 1 of this report.

2.3 Adhesives: Adhesives are of the types specified in

the quality control manual that contains Weyerhaeuse

The design and installation of TJI joists described in this

Table 3 specifies reference design moments, reactions vertical shear forces, and joist stiffness (EI). Reference

ISI/AF&PA NDS, National Design Specification for Wood

3.2 Material Specifications:

4.0 DESIGN AND INSTALLATION

4.1 General:

Construction (NDS).

ESR-1153*

ESR-1153 | Most Widely Accepted and Trusted $1^{3}/_{4}$ inches, $2^{1}/_{2}$ inches and $3^{1}/_{2}$ inches (45, 64 and 89 mm). **4.5 Lateral Support**: 17/4 inches, 27/2 inches and 37/2 inches (45, 64 and 89 mm), for simple spans; and 37/2, 51/4 and 7 inches (89, 133 and 178 mm) at intermediate support points for continuous spans. When joists are used as multiple span members, the calculated shear, used for design at the intermediate support, may be reduced by the percentage determined from the following formula and limited to the depths show restraint to prevent rollover. Code-prescribed methods

 $\textbf{Alternate Floor Mat Materials}^{\star} - (\text{Optional}) - \text{Floor mat material nom 3/8 in. thick loose laid over the subfloor. Floor topping thickness}$

Alternate Floor Mat Materials* — (Optional) — Floor mat material nom 3/4 in. thick loose laid over the subfloor. Floor topping thickness

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 page 1.4 1/4 in such the floor primer to be applied prior to the placement of the metal lath. When metal lath is used, floor

topping thickness a norm 1-14 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

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

Subflooring — Min 15/32 in. thick wood structural panels , min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of

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

Finish Flooring - Floor Topping Mixture* — Min 1-1/2 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 100 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 psi through

nozzle. Mixture shall consist of 1.4 cu feet of preformed foam concentrate to 94 lbs Type I Portland cement, 300 lbs of sand with 5-1/2 gal

System No. 5
Subflooring — Min 15/32 in. thick wood structural panels , min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of

panels to be perpendicular to joists with joints staggered.

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

Finish Flooring - Floor Topping Mixture* — Min 1-1/2 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 100 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 psi through nozzle. Mixture shall consist of 1.2 cu feet of preformed foam concentrate to 94 lbs Type I Portland cement, 300 lbs of sand with 5-1/2 gal

System No. 6

Subflooring — Min 15/32 in. thick wood structural panels , min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of

panels to be perpendicular to joists with joints staggered.

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

Finish Flooring - Floor Topping Mixture* — Min 1 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 100 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 psi through

nozzle. Mixture shall consist of 1.4 cu feet of preformed foam concentrate to 94 lbs Type I Portland cement, 62.5 lbs of Pea Gravel, 312.5

System No. 7
Subflooring — Min 19/32 in. thick wood structural panels , min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of

System No. 8

System No. 9

panels to be perpendicular to joists with joints staggered.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1200 psi and a cast density of 105 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 psi through nozzle. Mixture shall consist of 1.2 cu feet of preformed foam concentrate to 94 lbs Type I Portland cement, 300 lbs of sand, 5 oz Type N

Subflooring — Min 15/32 in. thick wood structural panels , min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to joists with joints staggered.

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

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a 28-day compressive strength of 190 to 350 psi, as determined in accordance with ASTM C495-66, and a dry density of 31.5 plus or minus 3.0 pcf. Mixture shall consist of 2.95 cu ft of stabilized preformed foam to 94 lb of Portland cement premixed with 6 gal of water.

CELLUFOAM CONCRETE SYSTEMS, DIV OF

Subflooring — Min 15/32 in. thick wood structural panels , min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of

To the surface of the mat prior to the floor topping placement. When floor mat material is used, min thickness of floor topping mixture is 1

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HACKER INDUSTRIES INC — Type Quiet Qurl 60/040

HACKER INDUSTRIES INC — Type Quiet Qurl 65/075

High Strength, Gyp-Span Radiant

panels to be perpendicular to joists with joints staggered.

ELASTIZELL CORP OF AMERICA — Type FF

ELASTIZELL CORP OF AMERICA — Type ZC

CELLUFOAM CONCRETE OF — Type Cellufoam

panels to be perpendicular to joists with joints staggered.

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

CELLULAR CONCRETE L L C — Floor Topping Mixture

 $R = W \div K_{\text{red}} \le 18\%$ $K_{red} = V_{12} \div 100.$ R = The percent reduction. V₁₂ = The reference design shear for an 11⁷/₈-inchdeep (302 mm) joist (pounds).

The tables in Figures 2 and 3 specify allowable sizes and
location of round, square and rectangular holes in the TJI

W = The uniform load (off).

The tables in Figures 2 and 3 specify allowable sizes and
location of round, square and rectangular holes in the TJI
joist webs. TJI joists with holes located in the web in W = The uniform load (plf). The reference design shear at the interior supports of

multiple-span-member TJI joists up to 12 inches (305 mm) deep, used in residential floor construction, is permitted to be increased by 10 percent. This increase in reference design shear does not apply to the design shear at the ends of the joists.

Adjustments for duration of load, in accordance with Part 2.3.2 of the NDS or Item 6 of Section 2316.2 of the UBC, apply to the TJI joists and their fastenings. 4.3 Fasteners: Reference lateral and withdrawal design loads for

4.8 In-service Moisture Conditions: fasteners, installed parallel or perpendicular to Microllam LVL or TimberStrand LSL flange glue lines, must be determined in accordance with ESR-1337 and the applicable code. Reference lateral and withdrawal design TJI joists must be installed in dry service conditions, where pads for fasteners installed into TJI joist sawn lumber 4.9 Repetitive-member Use: flanges must be designed using the applicable code and a pecific gravity of 0.42, such as for spruce-pine-fir. Allowable nail spacings for TJI joist diaphragm applications must be as specified in Sections 4.14 and

Microllam LVL or TimberStrand LSL flanges must be greater than or equal to the closest permitted on-center spacing prescribed by the code for fasteners installed in sawn lumber. The spacing of fasteners installed into the edge grain of Microllam LVL or TimberStrand LSL flanges must be greater than or equal to the closest permitted on-center spacing requirements detailed in <u>ESR-1387</u>. 2. The spacing of fasteners installed into TJI joist sawn lumber flanges must be as prescribed by the code for fasteners installed in sawn lumber. 11/2-inch-long (38 mm) common nails used to connect minimum No. 18 gage [0.048 inch (1.2 mm) base-metal thickness] metal straps or tension-ties, recognized in a current ICC-ES evaluation report, to TJI joist flanges, in conformance with Figure 6 of this report, is 112 pounds-force (498 N) per nail. The connections this pounds of the connections with the connection with the connection to the connection of the connections.

The repetitive-member use factor applicable to the resistive moment capacities listed in Table 3 is limited to 1.0. 4.10 Member Spans: TJI joist spans must be determined in accordance with Part 3.2.1 of the NDS. Vertical shear calculations must include all loads within the span from face to face of supports. 4.11 Deflection: Deflection of simple span TJI joists with either uniform los 4.12 Blocking Panels: Bearing walls perpendicular to and supported by TJI joists at the end or intermediate supports, or both, require (406 mm) in depth, when used as blocking panels, have blocking panels, have a maximum vertical load transfer capacity of 1,550 plf (22 620 N/m). TJI joists having depths of up to and including 16 inches with the structural composite lumber flanges may be used for out-of-plane wall anchorage to flexible diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) may be used as rim joists and boundary members of horizontal wood structural diaphragms. The diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) may be used as rim joists and boundary members of horizontal wood structural diaphragms. The diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) may be used as rim joists and boundary members of horizontal wood structural diaphragms. The diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) may be used as rim joists and boundary members of horizontal wood structural diaphragms. The diaphragms in lieu set as rim joists and boundary members of horizontal wood structural diaphragms. The diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) may be used as rim joists and boundary members of horizontal wood structural diaphragms. The diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) may be used as rim joists and boundary members of horizontal wood structural diaphragms. The diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) may be used as rim joists and boundary members of horizontal wood structural diaphragms. The diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) have a maximum vertical load transfer capacity to diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) have a maximum vertical load transfer capacity to diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) have a maximum vertical load transfer capacity to diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) have a maximum vertical load transfer capacity to diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) have a maximum vertical load transfer capacity to diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) have a maximum vertical load transfer capacity to diaphragms in lieu of the minimum 2¹/₂-inch (63.5 mm) have a maximum vertical load transfer capacity to diaphragms in lieu of the mi

4.4 Web Stiffeners:

supported at the bottom, and the gravity loads must be uniformly applied along the top. Other loading and support conditions must be investigated and approved by a design

ateral restraint specified for sawn lumber are acceptate

in the fire-resistive-rated Assemblies B, C, D, E, F, C

4.6 Holes in TJI Joist Web:

4.7 Duration of Load:

Bridging is not required for floor and roof TJI joist

ESR-1153 | Most Widely Accepted and Trusted 4.14 TJI Joists as Prescriptive Diaphragm Framing systems using lightweight concrete or gypsum concrete TJI joists are permitted as framing members in prescriptive 4.19 Sound Ratings: TJI joists are permitted as training memoers in presurprive floor and roof diaphragm construction in accordance with Section 2308 of the IBC or Chapters 5 and 8 of the IRC.

Section 2308 of the IBC or Chapters 5 and 8 of the IRC in Figures 48, 4D and 4G, have sound transmission class in Figures 48, 4D and 4G, (STC) and impact insulation class (IIC) ratings as given in floor diaphragm construction, the thickness of the sheathing must be ¹⁹/₃₂ inch (15.1 mm) or greater. (STC) and impact insulation class (IIC) ratings as given i Table 6, provided they are constructed with the additional assembly components and floor coverings specified in 4.15 TJI Joists as Engineered Diaphragm Framing
Members: 5.0 CONDITIONS OF USE The TJI Prefabricated Wood I-joists described in this repo

MAXXON CORP — Type Acousti-Mat II

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

Mixture shall consist of 5 to 8 gal of water to 80 lbs of floor topping mixture to 2.1 cu ft of sand.

ULTRA QUIET FLOORS — UQF-A, UQF-Super Blend, UQF-Plus 200

panels to be perpendicular to joists with joints staggered.

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

Mat (CSM) loose laid over the floor mat material. Floor topping mixture shall be min 1-1/2 in MAXXON CORP — Type Acousti-Mat 3, Crack Suppression Mat (CSM)

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

eaggered a min of 12 in. with adjacent sub-floor joints.

HOMASOTE CO — Type 440-32 Mineral and Fiber Board

MAXXON CORP — Type 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 mixture 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 mixture 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

the surface of the mat prior to the floor topping placement. Floor topping mixture shall be min 1-1/2 in.

MAXXON CORP — Type Enkasonic 9110

Metal Lath (Optional) — For use with floor mat materials, 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd or Maxxon

MAXXON CORP — Type Crack Suppression Mat (CSM) loose laid over the floor mat material. Floor topping mixture shall be min 1 in.
 MAXXON CORP — Type Crack Suppression Mat (CSM)

System No. 10
Subflooring — Min 15/32 in. thick wood structural panels , min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of

System No. 11

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of

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. When floor mat material is used, min thickness of floor topping mixture is 1

Alternate Floor Mat Materials* - (Optional) — Nom 0.8 in. thick floor mat material loose laid over the subfloor with Crack Suppression

Metal Lath (Alternate to Crack Suppression Mat (CSM)) — 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid

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 mixture shall be min 1 in.

System No. 12

System No. 13

panels to be perpendicular to joists with joints staggered.

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. Floor topping

UNITED STATES GYPSUM CO — Levelrock Brand Floor Underlayment SRM-25

Subflooring — Min 15/32 in. thick wood structural panels , min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of

thickness shall be as specified under Floor Topping Mixture .

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

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

load in accordance with the applicable code.

5.7 TJI joists are produced at the Weyerhaeuser plant

i Josts are produced at the Veryentedes in plants i located in Castleberry, Alabama; Eugene, Oregon, and Natchitoches, Louisiana; and at the RedBuilthe LLC plant located in Stayton, Oregon; and the Anthony-Domtar plant located in Sault Ste. Marie, Ontario, Canada; and at the Pacific Woodlech Label Least described.

plant located in Burlington, Washington; under a quality control program with inspections by PFS Corporation (AA-652), or APA—The Engineered Wood Association (AA-649).

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Subflooring — Min 1 by 6 in. T & G lumber fastened perpendicular to joists, or min 15/32 in. thick plywood or 7/16 in. thick oriented strand board (OSB) 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.

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

over the floor mat material. Floor topping mixture 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 mixture shall be min 1-1/2 in.

MAXXON CORP — Type Enkasonic 9110

MAXXON CORP — Type Crack Suppression Mat (CSM)

Finish Flooring - Floor Topping Mixture* —Min 3/4 or 1 in. thickness of floor topping mixture for min 19/32 or min 15/32 in. thick wood structural panels respectively, having a min compressive strength of 1200 psi. Mixture shall consist of 4 to 7 gal of water mixed with 80 lbs

panels to be perpendicular to joists with joints staggered.

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

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000

Finish Flooring - Floor Topping Mixture* — Min 3/4 or 1 in. thickness of floor topping mixture for min 19/32 or min 15/32 in. thick wood structural panels respectively, having a min compressive strength of 1000 psi. Mixture shall consist of 3 to 7 gal of water to 80 lbs of floor

TJI 110, TJI 210, TJI 230, TJI 360, TJI 560, TJI 560D, TJI s31, TJI s33, TJI s47, TJI 100C and TJI 300C joists may be used as framing members in blocked and SDPWS, subject to the limitations specified in Table 2 of 5.1 TJI joists are designed in accordance with this report. 5.2 Drawings and design details verifying compliance wit TJI L65, TJI L90, TJI H90, TJI HD90 and TJI HS90 joists permitted sheathing nail spacing in a single row is 3 inches 6 mm) on center for 10d common nails or 2 inches construction is required, construction complies with this report. 4.16 Cantilevered TJI Joists: TJI joists are permitted to be installed with cantilevered

ends, provided the cantilevers have a maximum length equal to one-third of the adjacent span and support 5.5 No cutting or notching of TJI joist flanges is permitted. niform loads only, unless designed by a design 5.6 Sound rated assemblies described in Table 6, with 4.17 TJI Joists with Flak Jacket™ Protection Used in TJI[®] Joists with Flak Jacket[™] protection applied to both the requirements of a floor assembly demonstrating equivalent floor performance. TJI® Joists with Flak Jacket® protection are identified in the field by a Flak Jacket® Protection stamp or label placed on the web of the I-joist member. Flak Jacket™ protection is applied in accordance with the TJI® Joist with Flak Jacket™ Protection 6.0 EVIDENCE SUBMITTED Manufacturing Standard and quality control program.

6.1 Data in accordance with the ICC-ES Acceptance The TJI[®] Joist Flak Jacket[™] protection is limited to TJI[®] Criteria for Prefabricated Wood I-joists (AC14), dated February 2013. The TUT Joist Flax Jacket protection is limited to 13, 210, 230, 360, 560 and 560D Hjoists which have a minimum flange depth of 13/g-inches (34.9 mm). The flooring attachment to the I-joists must include the ASTM E119. application of construction adhesive complying with ASTM D3498.

ASTM D3498.

6.3 Reports of sound transmission tests conducted it 4.18 Fire-resistance-rated Roof-ceiling or Floor-ceiling
Assemblies:

accordance with ASTM E90, ASTM E413 an
ASTM E492. Refer to Figures 4A through 4F, and 4H, for details on One-hour fire-resistance and a refer to Figure 4. one-hour fire-resistance-rated roof-ceiling or floor-ceiling assemblies. Refer to Figure 4G for details on two-hour fire-resistance-rated roof-ceiling or floor-ceiling assemblies. When assemblies over unusable crawl spaces, it is and the name or logo of the inspection agency. permitted to omit the ceiling membrane. Additionally, flooring is permitted to be omitted where unusable attic

ESR-1153 | Most Widely Accepted and Trusted FIGURE 4B—ASSEMBLY B (One-hour Fire-resistance-rated Roof-ceiling or Floor-ceiling Assembly):

Assemb	ly Component	Component Specifications	Installation
1	Sheathing	Single layer of 48/24 span-rated, tongue-and-groove, sheathing (Exposure 1). When used as a roof-ceiling assembly, the decking is permitted to be any wood deck recognized in the code.	Nailed and glued to the top of the TJI® joists. Construction adhesive conforming to ASTM D3498 must be applied to the top of the joists prior to placing sheathing. All butt joints of the sheathing must be located over framing members.
2	Gypsum Board	□ Two layers of ¹/₂-inch-thick NGC Gold Bond® Fire-Shield C gypsum board, or □ Two layers of ¹/₂-inch-thick USG SHEETROCK® Brand FIRECODE® C gypsum panels, or □ Two layers of ⁵/₂-inch-thick, Type X gypsum board complying with ASTM C36.	For TJI® joists spaced 24 inches on-center or less, attach ceiling to joist bottom flange. The first layer of gypsum board must be installed perpendicular to the TJI joists and attached using 15%-inch-long, Type S screws spaced 12 inches on-center. The second layer must be installed with the joints staggered from the first layer. The second layer must be fastened to the TJI joists with 2-inch-long, Type S screws spaced 12 inches on-center in the field and 8 inches on-center at the but joints. Type G screws, 1½ inches long, must be spaced 8 inches on-center and 6 inches from each side of the transverse joints of the second layer. The second layer must be finished with joint tape and compound.
3	TJI [®] Joist	TJI [®] joist.	Installed in accordance with this report, with a maximum spacing of 24 inches on-center for floor-ceiling assemblies. When used in roof-ceiling assemblies, the joists are permitted to be spaced a maximum of 48 inches on-center.
(not shown)	Optional Glass Fiber Insulation	Minimum 3 ¹ / ₂ -inch-thick glass fiber insulation or glass fiber insulation rated R-30 or less.	May be installed in the joist plenum when resilient channels are used. The insulation must be placed above the resilient channels between the joist bottom flanges.
(not shown)	Optional Resilient Channels	RC-1 resilient channels spaced 16 inches on-center (may be increased to 24 inches on-center if the joists are spaced 16 inches on-center).	□ Fasten perpendicular to the TJI joists using 1-inch-long, Type S screws. When resilient channels are used, the first layer of the ceiling membrane must be installed perpendicular to the channels and attached to the resilient channels using 1-inch-long, Type S screws spaced 12 inches on-center. The second layer must be installed with the joints staggered from the first layer and attached using 1⁴/ _k -inch-long, Type S screws. The screw spacing for the second layer of gypsum board must be a maximum of 12 inches on-center in the field and 8 inches on-center at the butt joints. Type G screws, 1½ inches long, must be spaced 8 inches on-center and 6 inches from each side of the transverse joints of the second layer. The second layer must be finished with joint tape and compound.
(not shown)	Stripping	Minimum of nominal 2-by-4 construction-grade Douglas fir lumber for spans up to 5 feet.	☐ In roof-ceiling assemblies in which the TJI® joists are spaced more than 24 inches on-center, the ceiling, including the resilient channels, must be applied to stripping spaced 24 inches on-center. The attachment of the ceiling membrane to the stripping members must be similar to the attachment of the ceiling membrane to the TJI® Joists. □ Attached to the joist bottom flange using a minimum of two 10d box nails into each bottom flange. Stripping materials of equivalent strength and attachment are permitted when approved by the code official.

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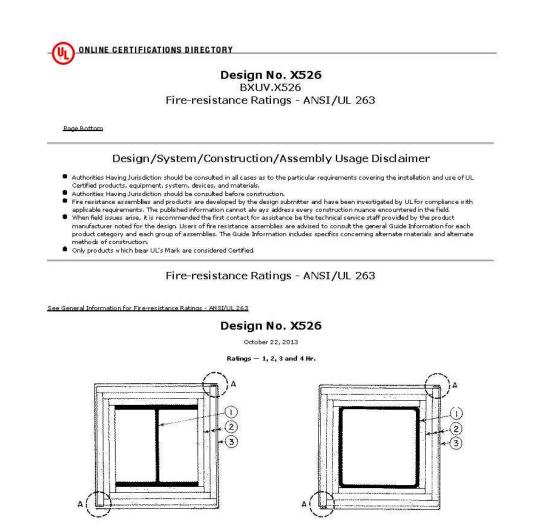
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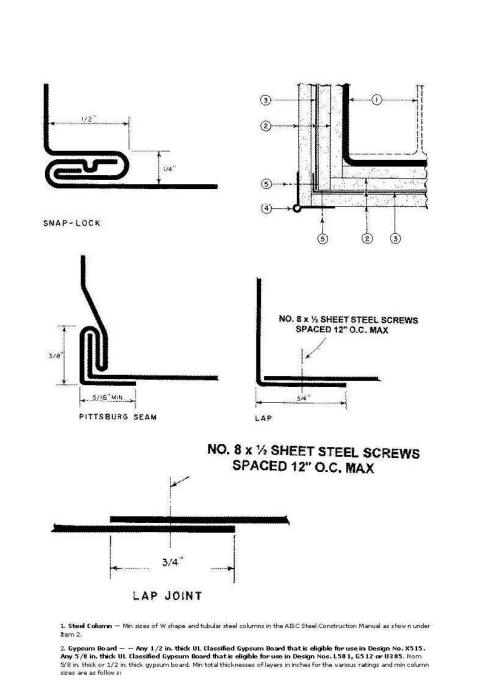
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ESR-1153 | Most Widely Accepted and Trusted Page 23 of 24 TABLE 5-ALTERNATE FLOOR OR ROOF SYSTEMS Applicable
Assembly Description Location Spacing Sheathing Required Floor or Roof Topping Required Gypsum concrete must be recognized i current ICC-ES evaluation report, and the report must include an evaluation for fire

Assembly	Assembly Figure	STC Rating	Assembly Components Required	IIC Rating	Floor Covering Required
				60	The floor covering must include a 40-ounce per-square-yard pad and a 56-ounce-per- square-yard carpet.
Assembly B Option 1	Figure 4B	50, minimum	Assembly B constructed with resilient channels spaced at 16 inches on- center to separate the ceiling membrane from the structural framing.	51	□ Floor covering must consist of Tarkett Acoustiflor sheet vinyl, □ Ceiling must consist of two layers of %-inch thick, Type X gypsum board, and the □ Bottom of the floor cavity must contain 3%-inch-thick glass-fiber insulation.
				45	The floor covering must include a 43.2- ounce-per-square-yard, minimum 0.123- inch-thick cushioned vinyl.
				54	The floor covering must include a 40-ounce per-square-yard pad and a 56-ounce-per- square-yard carpet.
Assembly B Option 2	Figure 4B	58, minimum	Assembly B constructed with resilient channels spaced at 16 inches on center to separate the ceiling membrane from the structural framing.	54	Floor covering must consist of Tarkett Acoustiflor sheet vinyl, Ceiling must consist of two layers of %-inct thick, Type X gypsum board, and the Bottom of the floor cavity must contain 3½-inch-thick glass-fiber insulation.
			 %-inch-thick floor topping of gypsum concrete recognized in a current ICC-ES evaluation report. 	50	Floor covering must be either Armstrong VIOS or Armstrong Cambray sheet vinyl, Ceiling must consist of two layers of %-incl thick Type X gypsum board, and Bottom of the floor cavity must contain 3/s-inch-thick class fiber insulation.

ICC DESIGN #ESR-1153: SOUND RATING: ASSEMBLY "B", OPTION 2 (STC = 58)





		1111	Column	O ILC	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		ituting i				
		Outside Dimensions	Flange Thkns	Web Thkns	In. ²		otal Thkns of s of Wallboard In.				
	Deg	In.	In.	In.	Area	1	2	3	4		
	W4x13	4-1/8x4	0.345	0.280	3.82	1	1-1/2	2-1/4	_		
	W6x15.5	6x6	0.269	0.235	4.56	1	1-1/2	2-1/4	3-1/8		
	W10x49	10x10	0.558	0.340	14.4	1/2	1-1/8	1-7/8	2-1/2		
			Tubular S	hape C	olumns						
							Rating Hr				
							Total Thkns of				
		Min	Column	Size		L	ayers of	Wallboard	d In.		
	Dsg	Outside Dimensions In.	Thkn In.		. ² Area	1	2	3	4		
	TS4X4X0.188	4X4	0.188	2.74	Ę	1	1-3/4	2-5/8	-		
	TS8X8X0.250	8X8	0.250	7.48	3	5/8	1-1/2	2-1/2	-		
	GYPSUM CO <u>(View</u> EW BUILDING MAT	-			lassifica	tion) —	CKNX.R19	9374			
AINTE	EED GYPSUM CANA	DA INC (View C	lassificatio	<u>≥n)</u> — Cŀ	(NX.R15	187					
AINTE	EED GYPSUM INC (View Classificatio	n) — CKN	X.R3660)î:						
NC (V	(iew Classification) —	CKNX.R19751									
GIA-I	PACIFIC GYPSUM I	. L C (View Class	ification)	– CKNX	.R2717						
RGE N											
	IORTH AMERICA II	NC (View Classific	ation). —	CKNX.R	18482						

NATIONAL GYPSUM CO (View Classification) — CKNX.R3501

PANEL REY S A (View Classification) — CKNX.R21796

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM (View Classification) — CKNX.R7094

W Shape Column	ns								
i chape comm		n Column	Size		Т	Ra	ting Hr	r	1
				П	\vdash		Thkns		
Deq	Outside Dimensions In.	Flange Thkns In.	Web Thkns In.	In. ² Area	\vdash		Wallbo 2	oard In. 3	4
W4x13	4-1/8x4	0.345	0.280	_	+-	1-1	_	2-1/4	_
W6x15.5	6x6	0.269	0.235	-	-	1-1	-	2-1/4	3-1/
W10x49	10x10	0.558	0.340	14.4	1/2	2 1-1	/8	1-7/8	2-1/
	'	Tubular	Shape C	olumns	5				
							Ratin	ng Hr	
						1	otal Ti	hkns of	
		n Column	Size		_	Layer	s of W	Va Ilboa rd	In.
	Outside Dimensions	Thkr	2000	2007					
Dsg	In.	In.		. ² Area		1	2	3	4
TS4X4X0.188	4X4	0.188			1		-3/4	2-5/8	_
TS8X8X0.250	8X8	0.250			-1.		-1/2	2-1/2	
layers as shown in ab lacement of succeeding		ach layer	held toge	ether wi	ith pap	per mas	king ad	dhesive ta	ape du
in ratings of 2 hr or les									
DRYWALL SUPPLIES						eu I III.	TOTH CIT	ne board	euge
AN GYPSUM CO <u>(Vie</u> v	w Classification) -	- CKNX.R	14196						
NEW BUILDING MA	TERIALS PUBLI	C LTD CC	(View (Classifica	ation)) — CKN	X.R193	374	
TEED GYPSUM CAN	IADA INC (View C	Classificati	<u>on)</u> — C	KNX.R1	5187	,			
TEED GYPSUM INC	(View Classification	on) — CKI	NX.R366	0					
(View Classification) -	- CKNX.R19751								
					20				
A-PACIFIC GYPSUM	ILLC (View Clas	sification)	- CKNX	R2717	e				
E NORTH AMERICA	INC (View Classif	ication) —	CKNX.R	18482					
	Lanett Sidesill		2. 4.741						

Horizontal Shaftw ■ DESCRIPTION	all Duct and Ceiling	Assemblies DETAILS	09 21 16.23/NO
I-Stud Cavity Shaftwall Systems can be erected horizontally and used as economical fire resistive assemblies for corridor ceilings, stair soffits, and protection for mechanical ducts. The I-Stud Cavity Shaftwall System for Horizontal Duct Protection consists of I- Studs 24" o.c. with 1" Fire- Shield Shaftliner panels inserted in the stud tabs, and three layers of 1/2" Fire-Shield C Gypsum Board attached to the stud flanges opposite the Shaftliner panels. This System provides fire protection for mechanical ducts and has been tested from both sides. Two layers of 1/2" Fire-Shield C Gypsum Board attached to the stud flanges opposite the Shaftliner provide 2- hour fire protection when used as a corridor ceiling or stair soffit.*	Similarly, single layer 5/8" Fire-Shield or Fire-Shield C Gypsum Board attached to the stud flanges opposite the Shaftliner panels provide 1-hour fire protection when used as a corridor ceiling or stair soffit.* LIMITATIONS I-Stud Cavity Shaftwall Systems erected horizontally for corridor ceilings or stair soffits are designed to carry their own deadweight only, and should not be used where there is access to an attic or loft above, or any probability of storage. In addition, the 2-hour horizontal duct protection system is not designed to carry live loads or the weight of the mechanical ducting it is protecting. Maximum allowable horizontal spans of each system are shown in the table below.	J TRACK POWER DRIVEN FASTENERS 24° O.C. 1/2° FIRE-SHIELD C GYPSUM BOARD TWO HOUR HORIZONTAL DU WHI 694-0300 902-0906 Scale: 2° = 1'-0'	

	IZONTAL SPANS FOR I-STUD A	Corridor	Ceilings And Soffits	Horizontal Membrane And Duct Protection
Stud Size	Minimum Steel Thickness	1-Hour Fire	2-Hour Fire	2-Hour Fire
in. (mm)	in. (mm)	Resistive Rating	Resistive Rating	Resistive Rating
2 1/2" (63.5 mm)	0.020 (.508)	7'-8" (2337 mm)	7'-8" (2337 mm)	7'-2" (2184 mm)
2 1/2" (63.5 mm)	0.0329 (.836)	8'-8" (2642 mm)	9'-4" (2845 mm)	8'-8" (2642 mm)
4" (102 mm)	0.020 (.508)	10'-3" (3124 mm)	10'-9" (3277 mm)	10'-0" (3048 mm)
4" (102 mm)	0.0329 (.836)	11'- 9" (3581 mm)	12'-1" (3683 mm)	11'-3" (3429 mm)
6" (152 mm)	0.0329 (.836)	14'- 10" (4521 mm)	14'-10" (4521 mm)	13'-10" (4216 mm)

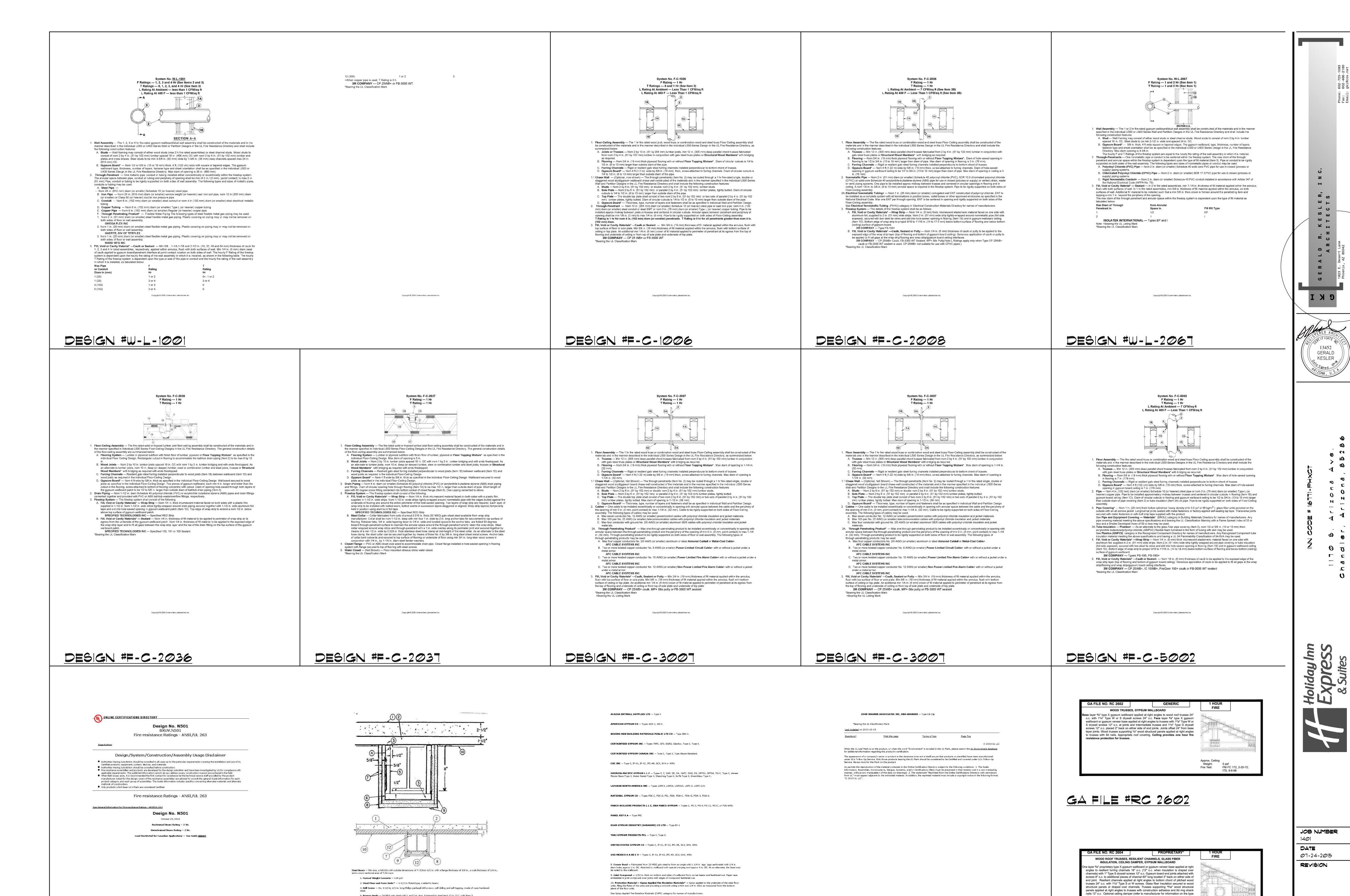
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13452 GERALD KESLER

JOB NUMBER DATE Ø7-24-2Ø15 REVISION

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See Spray-Applied Fire Resistive Materials (CHPX) category for names of manufacturers.

11. Alternate Joint System — (Not Shown) — For lath only. A 1/16 in. thickness of gypsum plaster applied to entire

exposed surface over either paper tape on joints embedded in cementitious compound or 2 1/2 in. wide glass fiber tape stapled 8 in. OC on joints.

12. Alternate Construction - Steel Framing Members* — As an alternate to Items 3, 4, 5 and 6 steel clips attached to both sides of beam flanges 2 ft OC and at ends of beam. First layer of gypsum board fastened to steel clips with 1-1/4 in. long Type 5 drywall screws. 2 in. by 2 in. 25 MSG angle fastened to clips on bottom portion of assembly with 2 in. long Type 5 drywall screws. Second layer of gypsum board fastened to angle and steel clips with 1. long Type 5 drywall screws. Second layer of gypsum board fastened to angle and steel clips with 1. long Type 5 drywall screws. Spaced 2 ft OC. Screws are self-drilling and self-tapping Phillips head made of case-hardened steel.

4. Runner Angle - 24 MSG galv steel with 1 and 2-in. legs. Fastened to steel deck 12 in. O.C. with Item 3.

6. Corner Angle — Same material as Item 4, fastened to channel brackets with Item 3.

5. Channel Bracket — Fabricated from 25 MSG galv steel, 1-11/16 in. deep with 1-in, legs and spaced 24 in. O.C. Fastened to the runner angles with Item 3.

7. **Gypsum Board*** — 5/8 in. thick. First layer fastened with 1-1/4 in. long, 0.150 in. diam screws spaced 16 in. O.C. Second layer attached with 1-3/4 in. long, 0.150 in. diam screws spaced 8 in. O.C. Screws are self-drilling and self-tapping Phillips head made of case-hardened steel.

PROPRIETARY GYPSUM BOARD

- 5/8" SHEETROCK® Brand FIRECODE® C

Core Gypsum Panels

Weight: Fire Test:

3 psf UL R15858, 02NK24136,

UL Design P544; UL R15858, 02NK41925,

UL Design P531; UL R1319, 98NK41378,

Sheet title

FIRE RATED ASSEMBLY DETAILS

nited States Gypsum Company

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