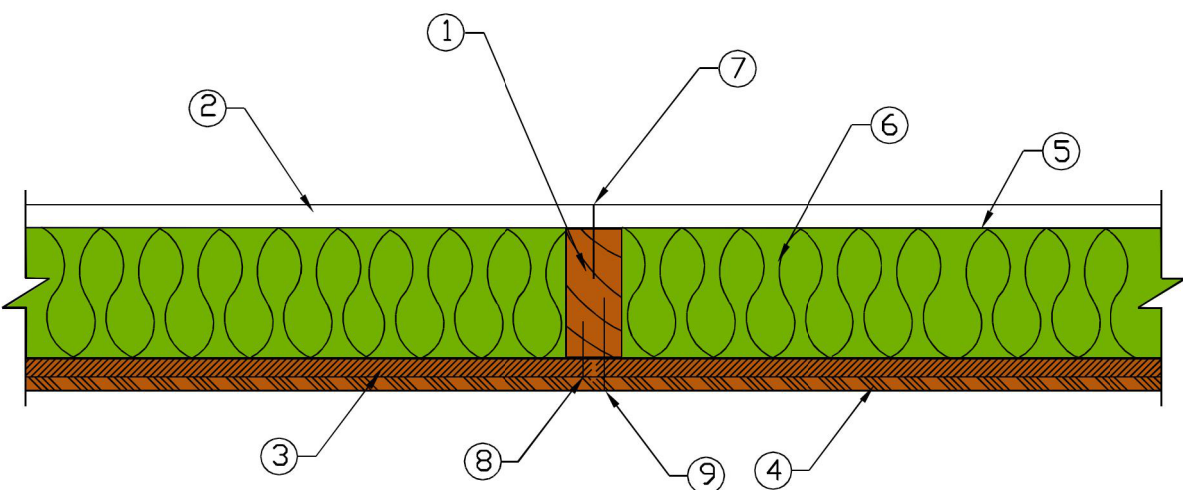


FIRE-RESISTANCE-RATED WOOD-FRAME WALL AND FLOOR/CEILING ASSEMBLIES 13

WS4-1.3 One-Hour Fire-Resistance-Rated Wood-Frame Wall Assembly
(Rated from gypsum wallboard side)
2x4 Wood Stud Wall – 78% Design Load – ASTM E 119/NFPA 251



1. Framing - Nominal 2x4 wood studs, spaced 16 in. o.c., double top plates, single bottom plate
2. Interior Sheathing - 5/8 in. Type X gypsum wallboard, 4 ft. wide, applied vertically, unblocked
3. Exterior Sheathing - Minimum 1/2 in. fiberboard sheathing. *Alternate construction - minimum 1/2 in. lumber siding or 1/2 in. wood-based sheathing.*
4. Exterior Siding - 3/8 in. hardboard shiplap edge panel siding. *Alternate construction - lumber, wood based, vinyl, or aluminum siding.*
5. Vapor Barrier - 4-mil polyethylene sheeting
6. Insulation - 3-1/2-inch-thick mineral wool insulation (2.5 pcf, nominal)
7. Gypsum Fasteners - 6d cement coated box nails spaced 7 in. o.c.
8. Fiberboard Fasteners - 1-1/2 in. galvanized roofing nails - 6 in. o.c. in the field, 3 in. o.c. panel edges
9. Hardboard Fasteners - 8d galvanized nails - 8 in. o.c. in the field, 4 in. o.c. panel edges
10. Joints and Fastener Heads - Wallboard joints covered with paper tape and joint compound; fastener heads covered with joint compound

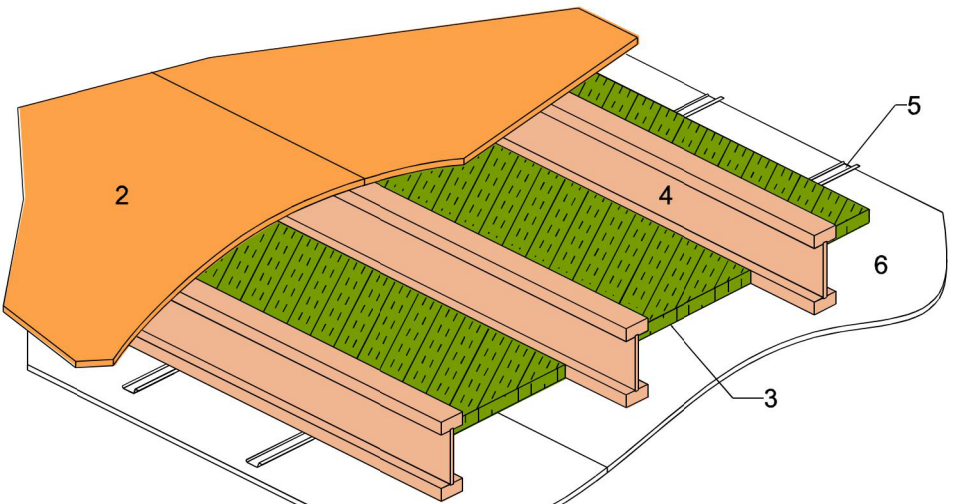
Tests conducted at the Gold Bond Building Products Fire Testing Laboratory
Test No: WP-584 (Fire Endurance & Hose Stream) March 19, 1981
Third Party Witness: Warnock Hersey International, Inc.
Report WHI-690-003

This assembly was tested at 78% design load using an L/d of 33, calculated in accordance with the 2018 *National Design Specification® for Wood Construction*. The authority having jurisdiction should be consulted to assure acceptance of this report.

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22 FIRE-RESISTANCE-RATED WOOD-FRAME WALL AND FLOOR/CEILING ASSEMBLIES

WIJ-1.2 One-Hour Fire-Resistance-Rated Ceiling Assembly
Floor/Ceiling - 100% Design Load - 1 Hour Rating - ASTM E 119 / NFPA 251



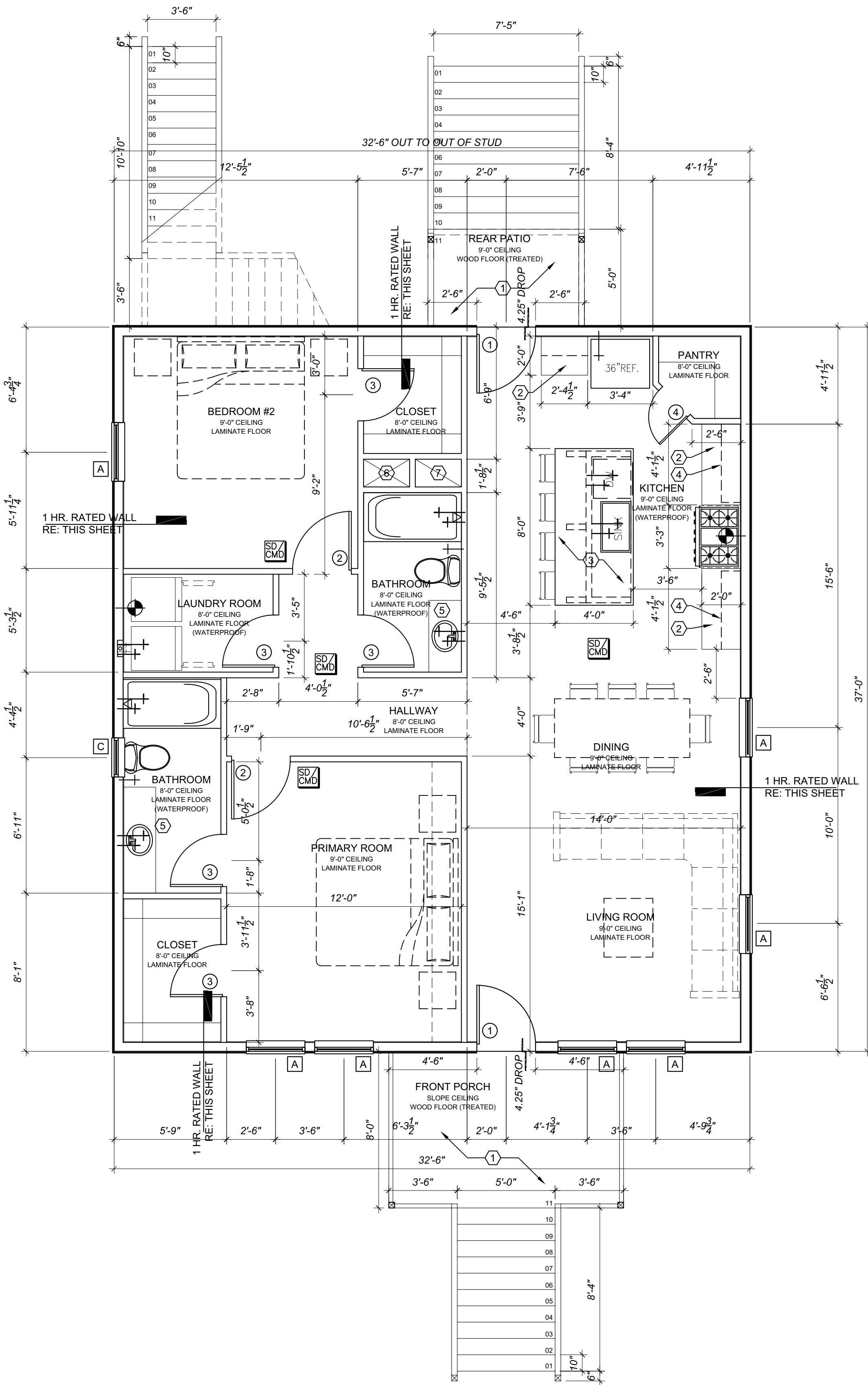
1. **Floor Topping (optional, not shown):** Gypsum concrete, lightweight or normal concrete topping.
2. **Floor Sheathing:** Minimum 23/32-inch-thick tongue-and-groove wood sheathing (Exposure 1). Installed per code requirements with minimum 8d common nails and glued to joist top flanges with AFG-01 construction adhesive.
3. **Insulation:** Minimum 1-1/2-inch-thick mineral wool batt insulation – 2.5 pcf (nominal), supported by resilient channels.
4. **Structural Members:** Wood I-joists spaced a maximum of 24 inches on center. See ASTM D 5055 for qualification requirements. Additional requirements are as follows:
Minimum I-joist flange depth: 1-1/2 inches Minimum I-joist flange area: 5.25 inches²
Minimum I-joist web thickness: 7/16 inch Minimum I-joist depth: 9-1/4 inches
5. **Resilient Channels:** Minimum 0.019-inch-thick galvanized steel resilient channels, attached perpendicular to I-joists using 1-5/8-inch-long drywall screws. Resilient channels spaced 16 inches on center and doubled at each wallboard end joint extending to the next joist.
6. **Gypsum Wallboard:** Minimum 5/8-inch-thick Type C gypsum wallboard installed with long dimension perpendicular to resilient channels and fastened to each channel with minimum 1-inch-long Type S drywall screws. Fasteners spaced 12 inches on center in the field of the wallboard, 8 inches on center at wallboard end joints, and 3/4 inches from panel edges and ends. End joints of wallboard staggered.
7. **Finish System (not shown):** Face layer joints covered with tape and coated with joint compound. Screw heads covered with joint compound.

Fire Test conducted at Gold Bond Building Products Research Center June 19, 1984
Third Party Witness: Warnock Hersey International, Inc. Report No: WHI-694-0159

Joist/ RC Spacing ^a	STC and IIC Sound Ratings				Without Gypsum Concrete				With 1" Gypsum Concrete			
	Cushioned Vinyl		Carpet & Pad		Cushioned Vinyl		Carpet & Pad		Cushioned Vinyl		Carpet & Pad	
	STC	IIC	STC	IIC	STC	IIC	STC	IIC	STC	IIC	STC	IIC
24"o.c./16"o.c.	48 (51) ^b	42 (43) ^b	48 (51) ^b	61 (63) ^b	63 (65) ^b	50 (52) ^b	63 (65) ^b	65 (67) ^b	63 (65) ^b	50 (52) ^b	63 (65) ^b	65 (67) ^b
16"o.c./16"o.c.	44 (46) ^b	37 (39) ^b	44 (46) ^b	60 (61) ^b	56 (57) ^b	46 (47) ^b	56 (57) ^b	58 (59) ^b	56 (57) ^b	46 (47) ^b	56 (57) ^b	58 (59) ^b

^a This assembly may also be used in a fire-rated roof/ceiling application, but only when constructed exactly as described.
^b STC and IIC values established by engineering analysis using the AWC Technical Report 15 (TR15) model, based on 1.5"-thick mineral wool batt insulation (values in parentheses are based on 3.5"-thick mineral wool batt).
^c STC and IIC values for assemblies with a joist spacing of 16"o.c. may be used for assemblies with joist spacings between 16"o.c. and 24"o.c..

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DOOR LEGEND

MARK	DESCRIPTION	QTY.
①	(WIDTH/HEIGHT), SMOOTH WHITE TWO PANELS, HALF LITE, PRIMED (LOW-E)	3
②	(WIDTH/HEIGHT), SMOOTH FOUR PANEL, HOLLOW CORE, PRIMED, COMPOSITE INTERIOR DOOR	4
③	(WIDTH/HEIGHT), SMOOTH FOUR PANEL, HOLLOW CORE, PRIMED, COMPOSITE INTERIOR DOOR	10
④	(WIDTH/HEIGHT), PANTHY, HOLLOW CORE, PRIMED, COMPOSITE INTERIOR DOOR	2

WINDOW LEGEND

MARK	DESCRIPTION	HDR. HT.	QTY.
A	(WIDTH/HEIGHT), SINGLE WINDOW, DOUBLE PANE, (LOW-E) 1/2 GLAZING WITH VINYL FRAME, WHITE FINISH.	8'-6" @ 1st 7'-0" @ 2nd	15
B	(WIDTH/HEIGHT), SINGLE WINDOW, DOUBLE PANE, (LOW-E) 1/2 GLAZING WITH VINYL FRAME, WHITE FINISH.	7'-0" @ 2nd	2
C	(WIDTH/HEIGHT), PRIVACY SLIDER WINDOW, DOUBLE PANE, (LOW-E) 1/2 GLAZING WITH VINYL FRAME, WHITE FINISH.	6'-6" @ 1st & 2nd	2
D	(WIDTH/HEIGHT), SINGLE WINDOW, DOUBLE PANE, (LOW-E) 1/2 GLAZING WITH VINYL FRAME, WHITE FINISH.	7'-0" @ 2nd	1

PRSSCRIPTIVE METHOD: R-VALUE COMPUTATION

TO SHOW ENERGY CONSERVATION COMPLIANCE USING THE R-VALUE COMPUTATION COMPLIANCE METHOD (SECTION R402.1.2 OF THE 2015 IECC) SPECIFY THE FOLLOWING REQUIRED INSULATION AND FENESTRATION VALUES FOR CLIMATE ZONE 2:

- MAXIMUM FENESTRATION U-FACTOR: 0.40 (0.65 FOR SKYLIGHTS)
- MAXIMUM GLAZED FENESTRATION SHGC: 0.25
- MINIMUM CEILING R-VALUE: 38
- MINIMUM WALL R-VALUE: 13
- MINIMUM FLOOR R-VALUE: 13
- OPEN OR CLOSE CELL FOAM (MANUFACTURE SPECIFICATION TO MEET R VALUE OR NOISE VALUES)

* SKYLIGHTS MAY BE EXCLUDED FROM GLAZED FENESTRATION SHGC REQUIREMENTS IN CLIMATE ZONES 1 THROUGH 3 WHERE THE SHGC FOR SUCH SKYLIGHTS DOES NOT EXCEED 0.30.

KEYED NOTES:

- ① FRONT & REAR WOOD PATIO
- ② 34" - 36" KITCHEN COUNTER
- ③ 4'x8" GRANITE ISLAND (OR SIMILAR) W/ SHELVES BELOW
- ④ WALL CABINETS
- ⑤ 34" - 36" BATHROOM COUNTERTOP
- ⑥ A/C SUPPLY
- ⑦ A/C RETURN
- ⑧ ATTIC ACCESS 25"x47" WITH PULL DOWN LADDER
- ⑨ ROOF LINE ABOVE

SYMBOLS

SYMBOL	DESCRIPTION
+	WATER LINE
+	HOT & COLD WATER
+	GAS SERVICE
+	SMOKE / CARBON MONOXIDE DETECTOR COMBO

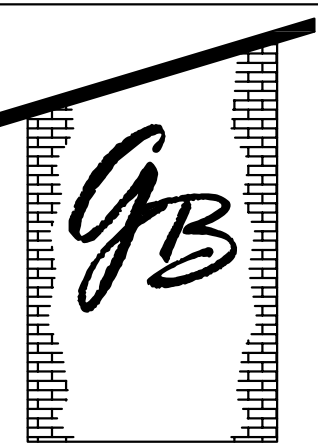
PROPOSED FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0" (EXPOSED WOOD TO BE PRESSURE TREATED)

City of Houston Texas



24618101
REVIEWED FOR COMPLIANCE
Performance of this review
does not relieve the applicant
from full responsibility to
comply with all applicable
codes, ordinances and
regulations
11/02/24



Gonzalez Building
Designs

Houston, T.X.
(832) 618-4465

gonzalezbuildingdesigns@gmail.com

DESCRIPTION
FOR PERMIT
DATE
01/25/24

PROJECT LOCATION:
TWO FAMILY RESIDENCE
PROPOSED TWO STORY DUPLEX
5217 - A & B PICKFAIR ST
HOUSTON, TEXAS 77026

JOB NO: 23016.01

SCALE:

DATE: 01/24/24

SHEET NO:

A2.1

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