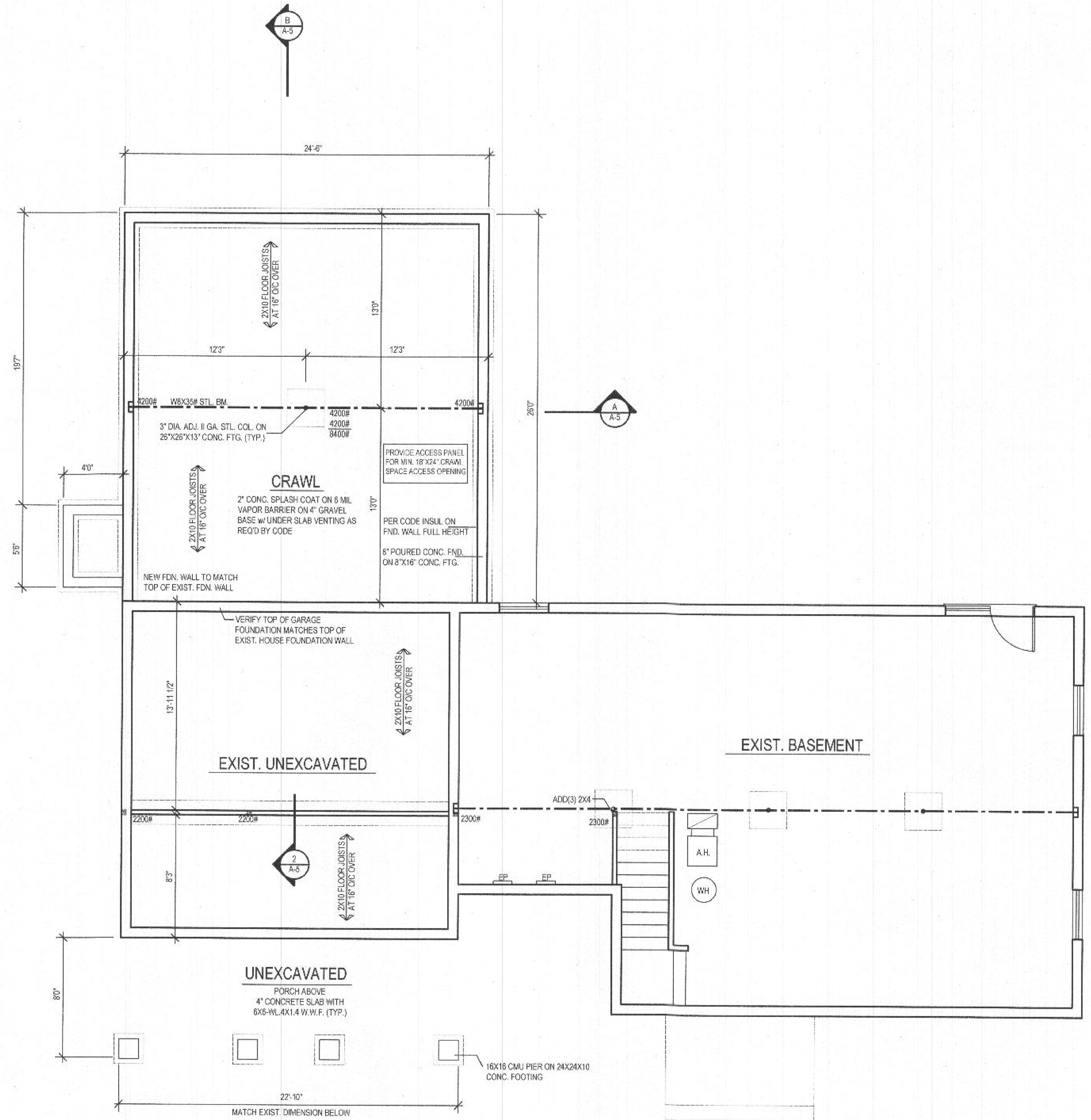


1 FOUNDATION PLAN

SCALE: 3/16" = 1'-0"

CLOSED CRAWL SPACES

Air sealed walls. closed crawlspaces shall be built to minimize the entry of outdoor air into the crawl space. Specifically prohibited are foundation wall vents and wall openings to ventilated porch foundations. When outdoor packaged heating and cooling equipments is used, solid blocking and sealants shall be used to seal gaps between the exterior wall opening and the smaller supply and return ducts that pass throught the opening.

Caulking and sealants. Air sealing caulk, gaskets or sealants shall be applied to the foundation wall and floor assembles that separate the crawl space from outside and other ventilated areas such as joints around access door and frame, between foundation and sill plate, at penetrations for plumbing, mechanical, electrical and gas lines and at duct penetrations.

Access panel/door. A minimum access opening measuring 18 inches by 24 inches (475mm by 610mm) shall be provided to the crawl space. See the MARYLAND Mechnical code for access requirements where mechanical equipment is located under floors. To minimize air entry, provide a tight fitting access panel/door with a latch mechanism. Access panels or doors shall be insulated to a minimum of R-2.

Ground vapor retarder. Closed crawl spaces shall be protected from water entry by the evaporation of water from the ground surface.

Ground vapor retarder. A minimum 6-mil (0.15mm) polyethylene vapor retarder or equivalent shall be installed and secured to nominally cover all exposed earth in the crawl space, with joints lapped not less than 12 inches. Minor pockets or wrinkles that prevent total drainage across the surface of the vapor retarder are allowed. The floor of the crawl space shall be graded so that it drains to one or more low spots. Install a drain to daylight or sump pump at each low spot. Crawl space drains shall be kept separate from roof gutter drain systemps and foundation perimeter drains.

Liner. The ground vapor retarder may be installed as a full interior line by sealing the edges to the walls and beam columns and sealing the seams. Single piece liner systems are approved. The top edge of the wall liner shall terminate 3 inches below the top edge of the masonry foundation wall. The top edge of liner shall be brought up the interior columns a minimum of 4 inches above the crawl space floor. The floor of the crawl space shall be graded so that it drains to one or more low spots. Install a drain to daylight or sump pump at each low spot. Crawl space drains shall be separate from roof gutter drain systems abd foundation perimeter drains.

Wall Liner termite inspection gap. Provide a clear and unobstructed 3" minumum inspection gap between the top of the wall liner and the bottom of the wood sill. This inspection gap may be ignored with regards to energy performance and is not intended to create an energy penalty.

Concrete floor surfacing. The ground vapor retarder may be protected against ripping and displacement by pouring an un-reinforced, minimum 2-inch thick, concrete surface directly over the vapor barrier. A base coarse of gravel or other drainage material under rhe ground moisture barrier is not requiered. The floor of the crawl space shall be graded so that the concrete surface drains to one or more low spots. Install a drain to daylight or sum pump at each low spot. Crawl space drains shall be separate from roof gutter drain systems and foundation perimeter drains.

Drains and vent terminations. Drains (including but not limited to hoy water tank pressure relief and drain pans, and condensate drain pipes) shall terminate outdoors, to crawl space floor drains or interior pumps, and shall not intentionally discharge water into the crawl space. Crawls space drains shall be separate from roof gutter drain systems and foundtation perimeter drains. Dryer vents shall terminate outdoors.

Wall dampproofing. Where the outside grade the exterior walls shall be dampproofed from the top of the footing to the finished grade as required by R406.1.

Site grading. The building site shall be grade to drain water away from the crawl space foundation per the requirements of R401.3.

Space moisture vapor control. Closed crawl space shall be provided with a mechanical drying capacibility to control space moisture levels. The allowed methods are listed below in R409.5.1

At least one method shall be provided; however, combination systems shall be allowed.

Dehumidifier. A permanently installed dehumidifier shall be provided in the crawl space. The minimum rated capacity per day is 15 pints (7.1 liters.) Condensate discharge shall be drained to daylight or interior condensate pump. Permanently installed dehumidifier shall be provided with an electrical outlet.

Supply air. Supply air from the dwelling air conditioning system shall be ducted into the crawl space at the rate of 1 cubic foot per minute (0.5 L/s) per 30 square feet (4.6m2) of crawl space floor area. No return air duct from the crawl space to the dwelling air conditioning system is allowed. The crawl space supply air duct shall be fittled with a backflow damper to prevent the entry of crawl space air into the supply duct system when the system fan is not operating. An air relief vent to the outdoors may be installed. Crawl space with moisture vapor control installed in accordance with this section are not be considered plenums.
House air. House air shall be blown into the crawl space with a fan at the rate of 1 cubic foot per minute (0.5 L/s) per 50 square feet (4.6m2) of crawl space floor area. The fan motor shall be rated for continuous duty. No return air duct from the crawl sapce back to the dwelling air conditioning system is allowed. An air relief vent to the outdoors may be installed. Crawl spaces with moisture vapor control installed in accordance with this section are not to be considered plenums.

Exhaust fan. Crawl space air shall be exhausted to outside with a fan at the rate of 1 cubic foot per minute (0.5 L/s) per 50 square feer (4.6m2) of crawl space floor area. The fan motos shall be rated for continuous duty. There is no requirement for make-up air.

Conditioned space. The crawl space shall be designed as a heated and/or cooled, conditioned space with wall insulation installed per the requirements of local codes. Intentionally returning air from the crawl space to space conditioning equipment that serves the dwelling shall be allowed. Foam plastic insulation located in a crawl space plenum shall be protected against by an approved thermal barrier.

Plenums. Crawl space prenums
Shall not contain plumbing cleanouts, gas lines or other prohibited components. Foam plastic insulation located in a crawl space plenum shall be protected against ignition by an approved thermal barrier.

Combustion air. The air sealing requirements of a closed crawl space may result in a foundation which can not provide adequate combustion air for fuel-burning appliances; therefore, fuelburning appliances located in the crawl space such as furnaces and water heaters shall obtain combustion air from outdoors as per the MD Mechanical Code.

Insulation. The thermal insulation in a closed crawl space may be located in the floor system or at the exterior walls. The required insulation value can be determined from Table N1102.1
Exception: Insulation shall be placed at the walls when the following condition exist:
1. The closed crawl space is designed to be an intentionally heated or cooled, conditioned space.

Wall insulation. Where the floor above a closed crawl space is not insulated, the wall shall be insulated. Wall insulation can be located on any combination of the exterior and interior surfaces and within the structural cavities or materials of the exterior crawl space walls.
Wall insulation systems require that the band joist area of the floor frame be insulated. Wall insulation shall begin 3 inches below the top of the masonry foundation wall and shall extend down to 3 inches above the top of the footing or concrete floor, 3 inches above the interior ground surface or 24-inches below the outside finished ground level, whichever is less. No insulation shall be required on masonry walls of 9 inches height or less.

From plastic termite inspection gap. For outside wall Section R324 governs applications. When expanded polystyrene, extruded polystyrene, polyisocyanurate, or other foam plastic insulation is installed on the inside surface of the exterior foundation walls, provisions R409.8.1.1.1 - 2 below apply.

Earth floored crawl spaces. Provide a clear and unobstructed 3-inch minimum termite inspection gap between the top of the foam plastic wall insulation and the bottom of the wood sill. Because insulation ground contact is not allowed, provide a continuous 3-inch minimum clearance gap between the bottom edge of the foam plastic wall insulation and the earth floor surface. Refer to N1102.1.7 to determine maximum allowances for insulation gaps.

Concrete floor surfaced crawl spaces. Provide a clear and unobstructed 3-inch minimum termite inspection gap between the top of the foam plastic wall insulation and the bottom of the wood sill. Provide a continuous 3-inch minimum clearance gap between the bottom edge of the foam plastic wall insulation and the concrete floor surface. Refer to N1102.1.7 to determine maximum allowances for insulation gaps.

Foam plastic fire safety. Foam plastic insulation may be installed inside crawl spaces without a thermal cover when the insulation product has bemmm tested in accordance with ASTM E 84 to have a flame-spread rating of not more than 25 and a smoke developed rating of not more than 450. Foam plastics that have not been tested to meet there ratings shall be protected against ignition by covering them with a thermal barrier. Acceptable thermal barriers include but are not limited to $\frac{1}{2}$ inch cement board, metal foil sheets, metal foil tape, steel or aluminum metal sheets or other appoved materials installed in such a manner that the foam is not exposed.
Exception: Foam plastic insulation located in closed crawl spaces used as conditioned spaces or plenums shall be protected against ignition by an approved thermal barrier.

Floor air leakage control. All plumbing, electrical, duct, plenum, gas line and other wiring penetrations through the subfloor shall be sealed with non-porus materials. caulks or sealants. The use of rockwool or fiberglass insulation is prohibited as an air sealant.

Duct air leakage control. All heating and cooling ductwork located in the crawl space shall be sealed with mastic or other industry approved duct closure systems.

Removal of debris. The crawl space floor shall be cleaned of all vegetation and organic material. All wood forms used for placing concrete shall be removed before a building is occupied or used for any purpose. All construction materials shall be removed before a building is occupied or used for any purpose.

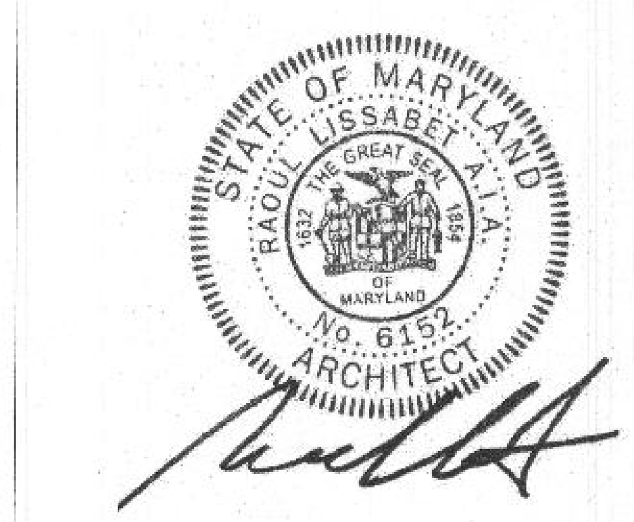
Finished grade. The finished grade of the crawl space floor may be located at the bottom of the footings; however, where there is evidence that the groundwater table can rise to within 6 inches (152mm) of the finished grade of the crawl space at the perimeter or where there is evidence that the surface water does not really drain from the building site, the floor in crawl space.

3 BROTHERS

HOME IMPROVEMENTS

LCC

THESE DRAWINGS WERE DEVELOPED BASED ON DRAWINGS PROVIDED BY OWNER AND PREPARED BY JB HOME DESIGN, LLC.



Revisions

#	Date

Client:

Location:
16119 Patapsco Overlook
Mt Airy, Maryland

Project:
RESIDENCE RENOVATION AND ADITION

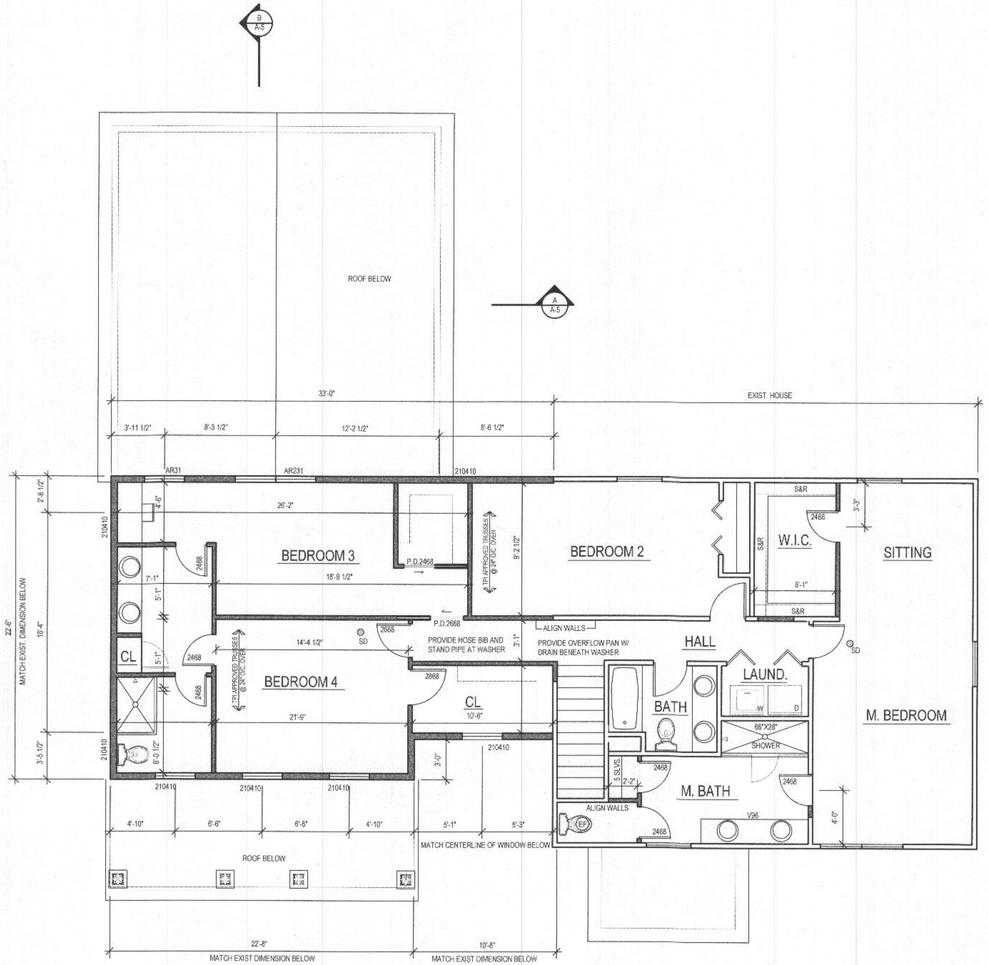
Drawing Title:
FOUNDATION PLAN

Drawn by

Project No. 031522-A 04/10/2022

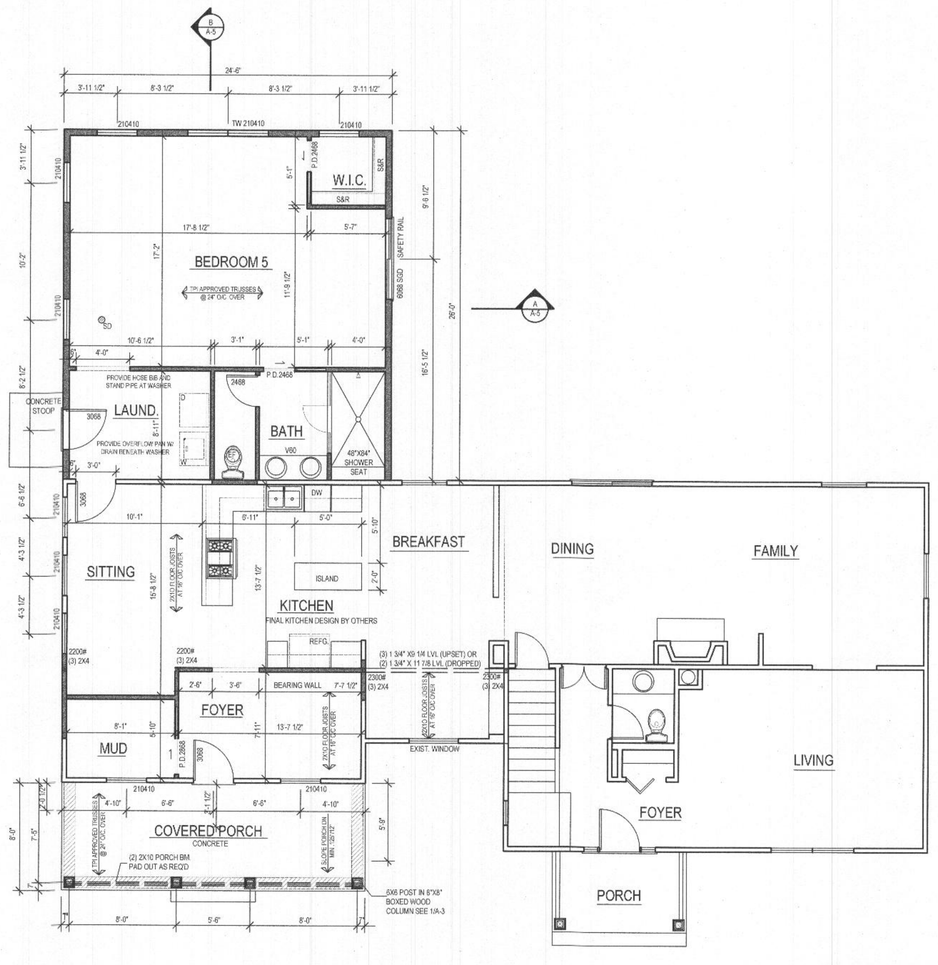
04/10/2022 PERMIT SET

Drawing No:
A002



2 SECOND FLOOR PLAN

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



1 FIRST FLOOR PLAN

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

3 BROTHERS

HOME IMPROVEMENTS

LCC

THESE DRAWINGS WERE DEVELOPED BASED ON DRAWINGS PROVIDED BY OWNER AND PREPARED BY JB HOME DESIGN, LLC.

STATE OF MARYLAND
RAOUL ISSABEY
No. 6152
ARCHITECT

Revisions

#	Date

Client:

Location:
16119 Patapsco Overlook
Mt Airy, Maryland

Project:
RESIDENCE RENOVATION AND ADITION

Drawing Title:
FLOOR PLANS

Drawn by

Project No. 031522-A

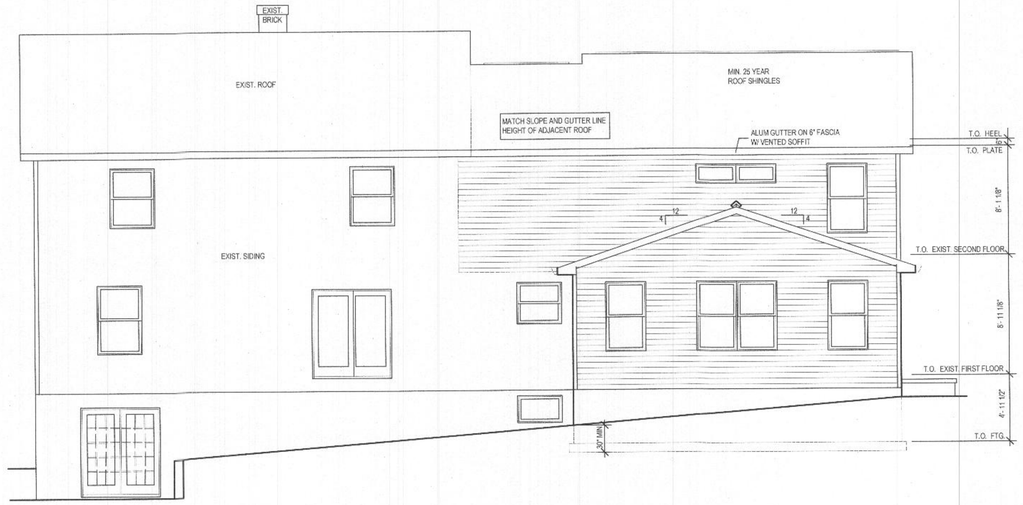
04/10/2022

04/10/2022 PERMIT SET

Drawing No:
A003

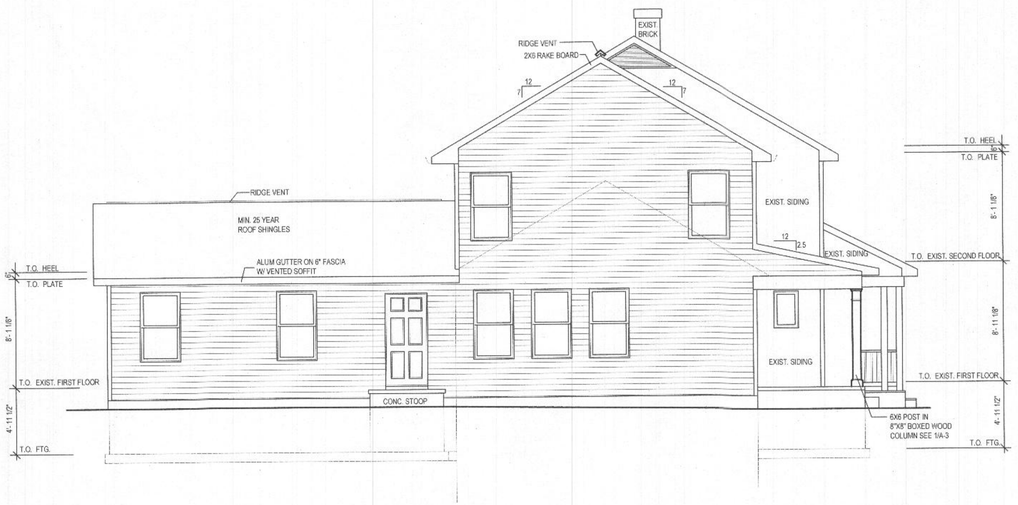
4 FRONT ELEVATION

SCALE: 3/16" = 1'-0"



2 REAR ELEVATION

SCALE: 3/16" = 1'-0"



3 LEFT SIDE ELEVATION

SCALE: 3/16" = 1'-0"

1 RIGHT SIDE ELEVATION

SCALE: 3/16" = 1'-0"

3 BROTHERS

HOME IMPROVEMENTS

LCC

THESE DRAWINGS WERE DEVELOPED BASED ON DRAWINGS PROVIDED BY OWNER AND PREPARED BY JB HOME DESIGN, LLC.

STATE OF MARYLAND
RAOUL LISSABET NIA
No. 6152
ARCHITECT

Revisions

#	Date

Client:

Location:
16119 Patapsco Overlook
Mt Airy, Maryland

Project:
RESIDENCE RENOVATION
AND ADITION

Drawing Title:
ELEVATIONS

Drawn by

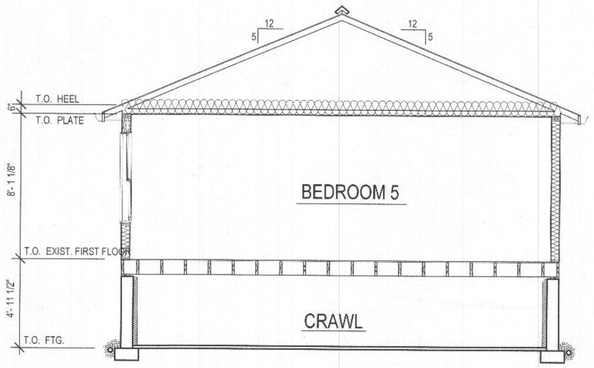
Project No. 031522-A

04/10/2022

04/10/2022 PERMIT SET

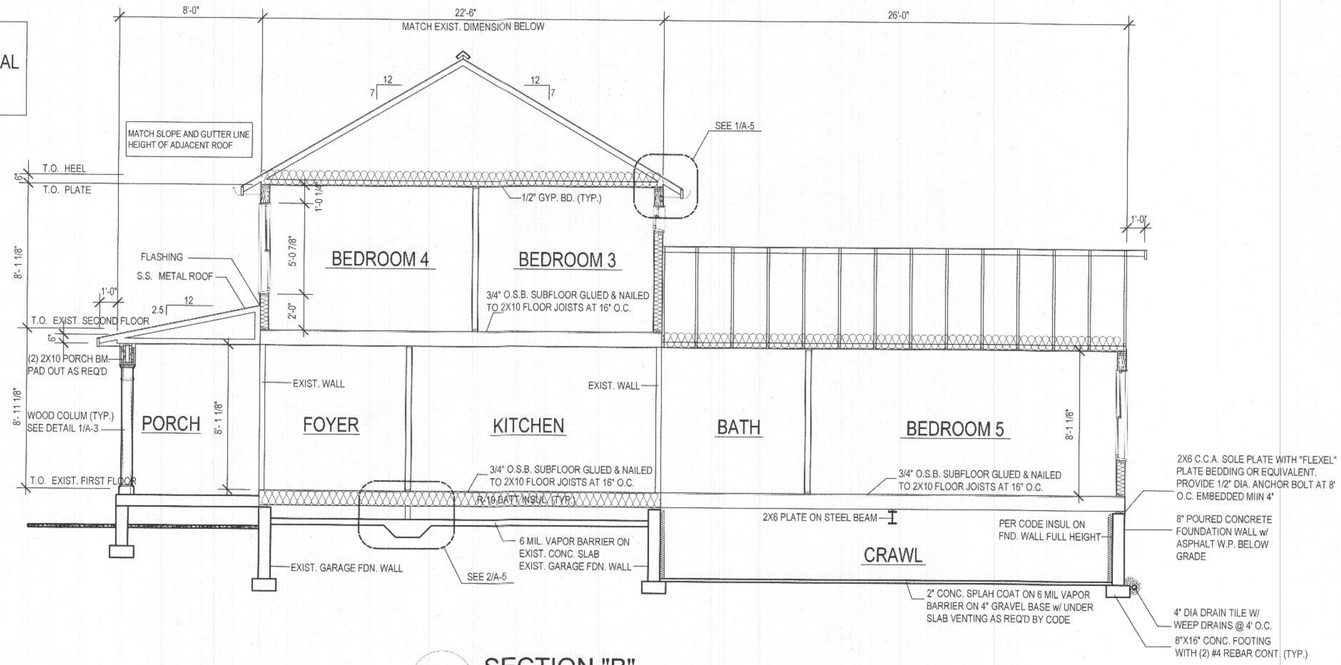
Drawing No:
A004

SEE SECTION B FOR TYPICAL CONSTRUCTION NOTES



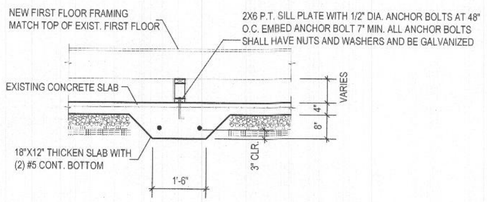
4 SECTION "A"

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



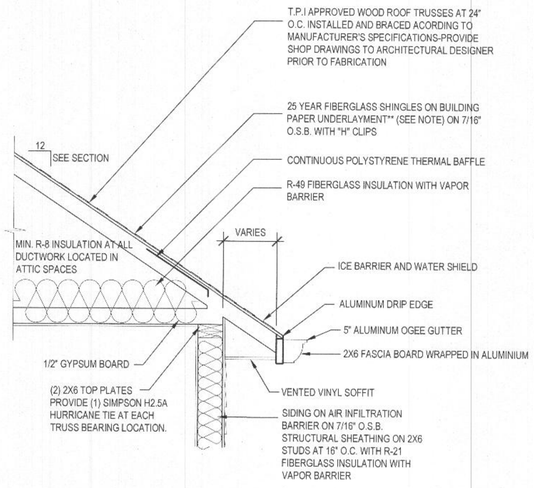
3 SECTION "B"

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



2 TYP. THICKEN SLAB

SCALE: 1/2" = 1'-0"



1 TYP. EAVE DETAIL

SCALE: 3/4" = 1'-0"

3 BROTHERS

HOME IMPROVEMENTS

LCC

THESE DRAWINGS WERE DEVELOPED BASED ON DRAWINGS PROVIDED BY OWNER AND PREPARED BY JB HOME DESIGN, LLC.

Revisions

#	Date

Client:

Location:
16119 Patapsco Overlook
Mt Airy, Maryland

Project:
RESIDENCE RENOVATION AND ADITION

Drawing Title:
SECTIONS

Drawn by

Project No. 031522-A

04/10/2022

04/10/2022 PERMIT SET

Drawing No:
A005

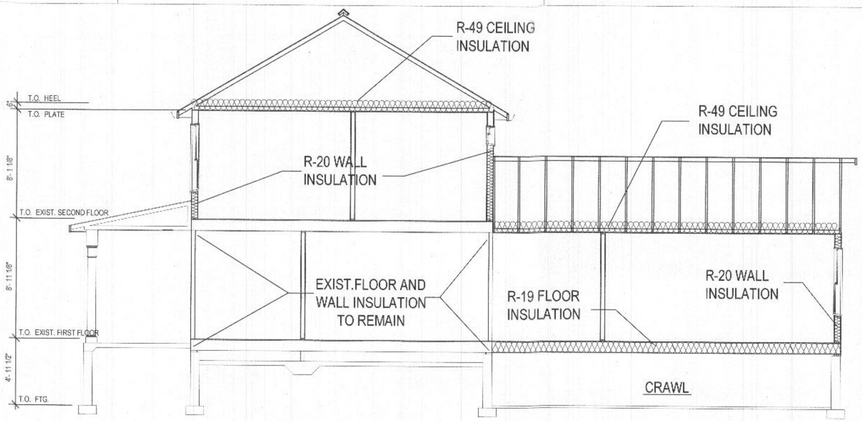
Compliance with PRESCRIPTIVE COMPONENT REQUIREMENTS

Air Leakage

Building thermal envelope. The Building thermal envelope shall be durably sealed to limit infiltration. The sealing methods between dissimilar materials shall allow for differential expansions and contraction. The following shall be caulked, gasketed, weatherstripped or otherwise sealed with air barrier material, suitable film or solid material:

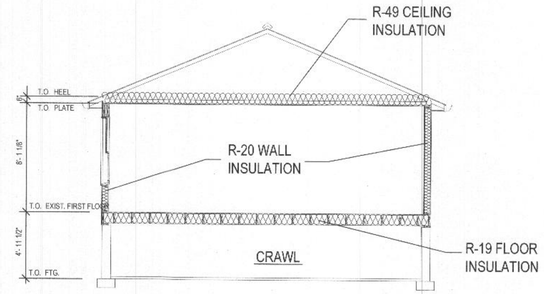
1. All joints, seams and penetrations.
2. Site-built windows, doors and skylights.
3. Openings between window and door assemblies and their respective jambs and framing.
4. Utility penetrations.
5. Dropped ceilings or chases adjacent to the thermal envelope.
6. Knee walls.
7. Walls and ceilings separating a garage from conditioned spaces.
8. Behind tubs and showers on exterior walls.
9. Common walls between dwelling units.
10. Attic spaces openings.
11. Rim joists junctions.
12. Other sources of infiltration.

ALL WINDOWS / EXTERIOR DOORS WILL HAVE A MAXIMUM "U" FACTOR OF 0.32



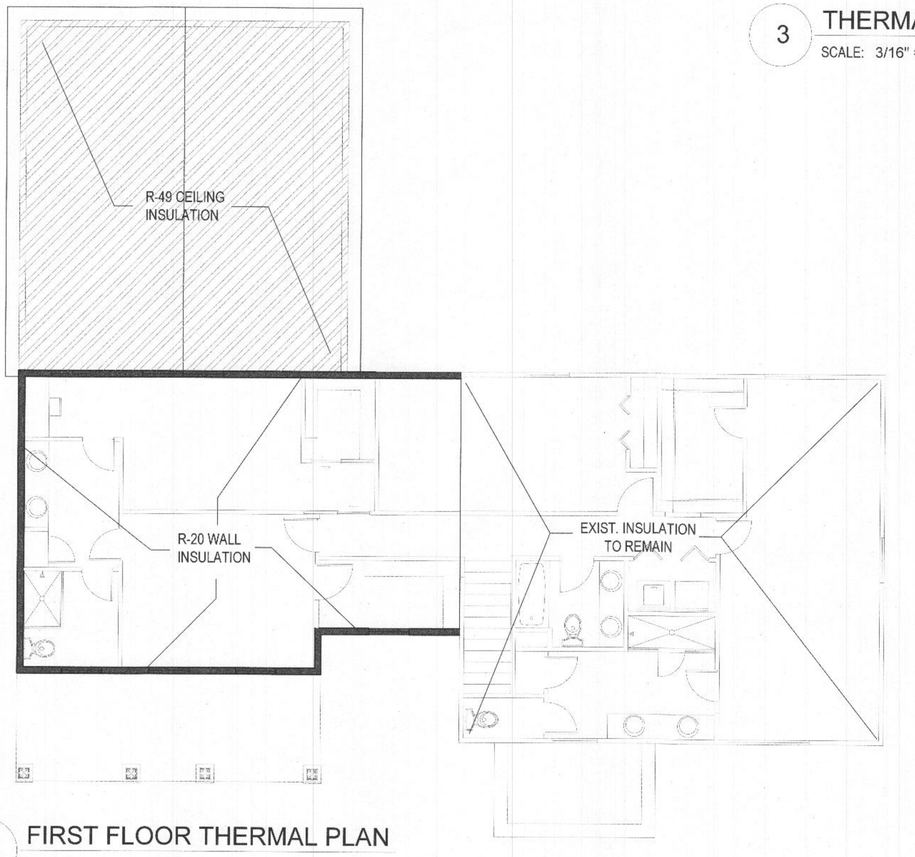
3 THERMAL SECTION

SCALE: 3/16" = 1'-0"



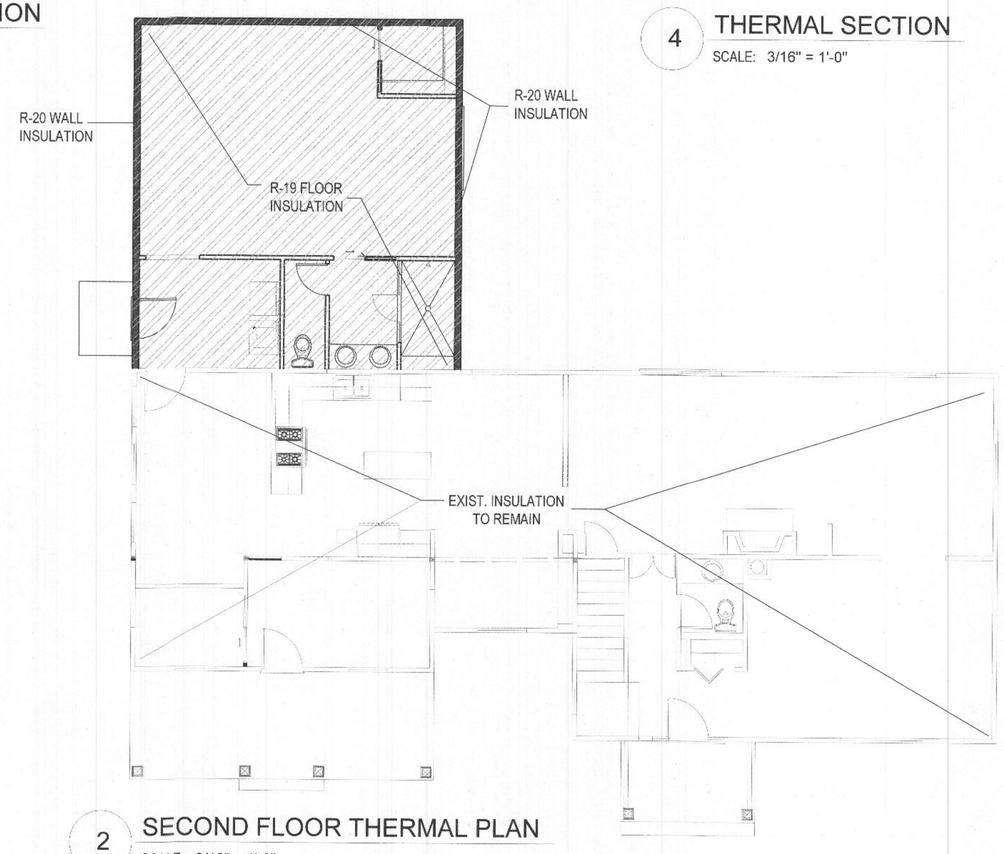
4 THERMAL SECTION

SCALE: 3/16" = 1'-0"



1 FIRST FLOOR THERMAL PLAN

SCALE: 3/16" = 1'-0"



2 SECOND FLOOR THERMAL PLAN

SCALE: 3/16" = 1'-0"

INSUALTION AND FENESTRATION REQUIREMENTS BY COMPONENT (IECC TABLE R402.1.2)

	CLIMATE ZONE	FENESTRATION U - FACTOR	SKYLIGHT U - FACTOR	GLAZED FENESTRATION SHGC	CEILING R-VALUE	WOOD FRAMED WALL R-VALUE	MASS WALL R-VALUE	FLOOR R-VALUE	BASEMENT WALL R-VALUE	SLAB R-VALUE & DEPTH	CRAWL SPACE WALL R-VALUE
REQUIRED	4A (Except Marine)	0.32	0.55	0.4	49	20 or 13 (CAVITY) + 5 (EXTERIOR CI)	8 or 13 IF MORE THAN HALF OF TEH R-VALUE IS ON THE INTERIOR OF THE MASS WALL	19	10 CONT INSUL ON THE INTERIOR OR EXTERIOR OF THE HOME OR 13 CAVITY INSULATION ON THE INTERIOR OF BASEMENT WALL	10, 2 FEET	10 CONT INSUL ON THE INTERIOR OR EXTERIOR OF THE HOME OR 13 CAVITY INSULATION ON THE INTERIOR OF CRAWL SPACE WALL
PROVIDED		0.32	N/A	0.4	49	20	N/A	19	N/A	N/A	R-13 CONT. INTERIOR

ALL WINDOWS / EXTERIOR DOORS WILL HAVE A MAXIMUM "U" FACTOR OF 0.32

COMPLIANCE WITH PRESCRIPTIVE COMPONENT REQUIREMENTS

AIR LEAKAGE

Building thermal envelope. The Building thermal envelope shall be durably sealed to limit infiltration. The sealing methods between dissimilar materials shall allow for differential expansions and contraction. The following shall be caulked, gasketed, weatherstripped or otherwise sealed with air barrier material, suitable film or solid material:

1. All joints, seams and penetrations.
2. Site-built windows, doors and skylights.
3. Openings between window and door assemblies and their respective jambs and framing.
4. Utility penetrations.
5. Dropped ceilings or chases adjacent to the thermal envelope.
6. Knee walls.
7. Walls and ceilings separating a garage from conditioned spaces.
8. Behind tubs and showers on exterior walls.
9. Common walls between dwelling units.
10. Attic spaces openings.
11. Rim joists junctions.
12. Other sources of infiltration.

3 BROTHERS

HOME IMPROVEMENTS

LCC

THESE DRAWINGS WERE DEVELOPED BASED ON DRAWINGS PROVIDED BY OWNER AND PREPARED BY JB HOME DESIGN, LLC.

STATE OF MARYLAND
RAOUL LISSABET, A.I.A.
No. 6152
ARCHITECT

Revisions

#	Date

Client:

Location:
16119 Patapsco Overlook
Mt Airy, Maryland

Project:
RESIDENCE RENOVATION AND ADITION

Drawing Title:
THERMAL PLANS

Drawn by

Project No. 031522-A

04/10/2022

04/10/2022 PERMIT SET

Drawing No:
A006