



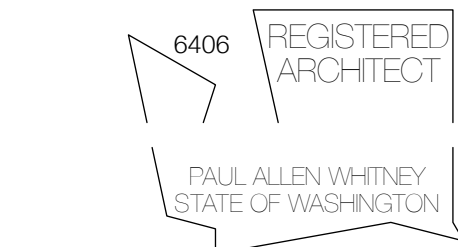
1537 NW Ballard Way Seattle WA 98107
WhitneyArchitecture.com
v. 206.789.3934 f. 206.789.1871

PROJECT:

Archer-Graham Residence

A remodel and addition to an existing single-family residence at:

6556 21st Ave NW



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OF

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FLASHING: IRC R703.8

- Approved corrosion-resistant flashing shall be applied shingle-fashion in such a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components; self adhered membranes used as flashing shall comply with AAMA 771. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion-resistant flashings shall be installed at all of the following locations:
 - Exterior window and door openings. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to the water -resistive barrier for subsequent drainage.
 - At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings.
 - Under and at the ends of masonry, wood or metal copings and sills.
 - Continuously above all projecting wood trim.
 - Where exterior porches, deck or stairs attach to a wall or floor assembly of wood-frame construction.
 - At wall and roof intersections.
 - At built-in gutters.

FLASHING NOTES

- All flashing systems shall conform with applicable codes and SMACNA standards. All materials used shall be approved for such use. All metals used shall be of appropriate composition and thickness. All flashing fabrication shall be preformed by a SMACNA approved professional contractor / fabricator. All flashings shall be review and approved by the project architect prior to fabrication. All soldered joints shall be pretested prior to flashing installation.

Door and window head flashing:

Flashing extends up the wall a minimum of 4 inches and beyond the opening a minimum of 4 inches each side. Flashing shall extend out over frame of window or door trim with a sloped section having end dams and continue down the face of frame or trim a minimum of 1/2 inch. Flashing shall terminate with a cleat or hemmed drip edge. All flashing shall be bent or soldered at all intersections.

One layer of self adhering flashing shall precede the installation of metal flashing –lapping window flange or door frame and extend above the top of metal flashing 1 inch and beyond the sides of the metal flashing by one inch.

Once metal flashing has been installed a second lay of self adhering flashing shall be applied. This flashing shall lap metal flashing a minimum of 3 inches and lap up wall 3 inches and 3 inches beyond each side.

Two layers of building paper or approved house wrap shall then be applied to exterior.

Door and window jamb flashing:

Jamb flashing shall be made up of self adhering flexible flashing. This flexible flashing shall tuck under head flashing above and over sill flashing below. Jamb flashing will lap over exterior face of wall a minimum of 2 inches(over the two layers of building paper and one layer of un-adhesive flexible flashing having a minimum width of 9 inches.) At windows a second layer of self adhering flexible flashing shall be applied over window flange –lapping flange fully and extending beyond first layer of flashing by two inches horizontally.

Blocking use at door or window jambs shall be full depth of the frame and slope to the exterior.

Door and window sill flashing:

Flashing sill shall be sloped 1/8 inch per inch of depth toward exterior. Depth of flashing shall be interior of window frame 1/4 inch to allow for sealant at this location. Depth of flashing shall be determined by the depth of the door threshold – with the sill flashing terminating under the threshold. Sill flashing shall have a minimum of 5/8 inch up turn dam at the interior edge. Sill flashing shall lap up sides of opening a minimum of 2 inches and over the exterior face of opening 2 inches – sides and bottom.

It is recommended that this sill flashing be installed over the two layers of building paper. One layer of un-adhesive flexible flashing with a minimum height of 9 inches to be applied to wall below flashing. One layer of self adhesive shall be applied to window opening and lap down wall over first layer of flexible flashing a minimum of 2 inches.

Roof to wall flashing:

The flashing must extend up the wall and onto the roof a minimum of 4 inches. Nail the flashing pieces to the roof sheathing above the top of each shingle course.

Flashings are generally formed in 10 foot sections. Sections should be lapped 8 inches minimum in the direction of flow. The top of each section should be fastened with nails of material compatible with the flashing.

Roof valley flashing:

The valley flashing shown on drawings is of an open type, where some of the flashing is exposed to view. The open portion of the valley should be a minimum of 5 inches and the shingles should lap the flashing a minimum of 5 inches. (the flashing should lap each section of roof a minimum of 10 inches) The edges of the valley flashing should be formed with a hook edge and cleated on 24 inch centers.

On roof pitches over 6:12 and on dissimilar pitches, increase the inverted vee ("V" Crimp) in the valley to 2 inch height.

Flashings are generally formed in 10 foot sections. Sections should be lapped 8 inches minimum in the direction of flow. The top of each section should be fastened with nails of material compatible with the flashing. A 30 inch wide felt is placed in the valley.

The felt in the valley should lap 6 inches over the upper end of the alley flashing pieces. The roofing felt should lap over the cleated edges of the flashing.

Copper (minimum 16oz.), or stainless steel (minimum of 0.018 inches) is recommended for valley flashings. Where the expected life of the roof is less than 15 years, pre-finished or galvanized steel (minimum 24 gage may be used – galvanized flashing must be pre-painted.)

Roof edge flashing:

The method for gable and rake end flashing for a shingle roof is as follows. Flashing is formed in sections and is lapped in the direction of flow. Flashing extending 4 inches on the roof is nailed to the sheathing 18 inches on center. A hem in the roof flange is recommended for shake and tile roofing. Flashing extending a minimum of 1-1/2 inches down the face of fascia ending with a continuous cleated or hemmed drip edge. Felt is lapped over the flashings in this application.

Roof penetration flashing:

Many approved pre-manufactured roof penetration flashings are readily available for a variety of roof penetrations. These shall be use for approved locations intended by the manufacturer and installed per specifications provided by the manufacture.

If however a custom flashing is required for a roof penetration the follow shall apply. A suitable / compatible metal shall be used. The base flange of the flashing shall extend onto the roof a minimum of 4 inches. All seams and joints shall be fully soldered. The flashing shall form a shape that prevents water intrusion – refer to SMACNA standards.

R1006 EXTERIOR AIR SUPPLY

- R1006.1 Exterior air. Factory-built or masonry fireplaces covered in this chapter shall be equipped with an exterior air supply to assure proper fuel combustion unless the room is mechanically ventilated and controlled so that the indoor pressure is neutral or positive.

R1006.1.1 Factory-built fireplaces. Exterior combustion air ducts for factory-built fireplaces shall be a listed component of the fireplace and shall be installed according to the fireplace manufacturer's instructions.

R315 CARBON MONOXIDE ALARMS

- For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel-fired appliances are installed and in dwelling units that have attached garages.
- Where work requiring a permit occurs in existing dwellings that have attached garages or in existing dwellings within which fuel-fired appliances exist, carbon monoxide alarms shall be provided in accordance with Section R318.1.
- Single station carbon monoxide alarms shall be listed as complying with UL 2034 and shall be installed in accordance with this code and the manufacturer's installation instructions.

R317 WOOD PRODUCT DECAY PROTECTION

- Protection of wood and wood based products from decay shall be provided in the following locations by the use of naturally durable wood or wood that is preservative-treated in accordance with AWWPA U1 for the species, product, preservative and end use. Preservatives shall be listed in Section 4 of AWWPA U1.
 - Wood joists or the bottom of a wood structural floor when closer than 18 inches (457 mm) or wood girders when closer than 12 inches (305 mm) to the exposed ground in crawl spaces or unexcavated area located within the periphery of the building foundation.
 - All wood framing members that rest on concrete or masonry exterior foundation walls and are less than 8 inches (203 mm) from the exposed ground.
 - Sills and sleepers on a concrete or masonry slab that is in direct contact with the ground unless separated from such slab by an impervious moisture barrier.
 - The ends of wood girders entering exterior masonry or concrete walls having clearances of less than 1/2 inch (12.7 mm) on tops, sides and ends.
 - Wood siding, sheathing and wall framing on the exterior of a building having a clearance of less than 6 inches (152 mm) from the ground or less than 2 inches (51 mm) measured vertically from concrete steps, porch slabs, patio slabs, and similar horizontal surfaces exposed to the weather.
 - Wood structural members supporting moisture-permeable floors or roofs that are exposed to the weather, such as concrete or masonry slabs, unless separated from such floors or roofs by an impervious moisture barrier.
 - Wood furring strips or other wood framing members attached directly to the interior of exterior masonry walls or concrete walls below grade except where an approved vapor retarder is applied between the wall and the furring strips or framing members.
- Field-cut ends, notches and drilled holes of preservative-treated wood shall be treated in the field in accordance with AWWPA M4.
- All wood in contact with the ground, embedded in concrete in direct contact with the ground or embedded in concrete exposed to the weather that supports permanent structures intended for human occupancy shall be approved pressure-preservative-treated wood suitable for ground contact use, except untreated wood may be used where entirely below groundwater level or continuously submerged in fresh water.

R311.7.5 LANDINGS FOR STAIRWAYS

- There shall be a floor or landing at the top and bottom of each stairway. A flight of stairs shall not have a vertical rise larger than 12 feet (3658 mm) between floor levels or landings. The width of each landing shall not be less than the width of the stairway served. Every landing shall have a minimum dimension of 36 inches (914 mm) measured in the direction of travel.

Exception: A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided a door does not swing over the stairs.

R601.1 MOISTURE CONTROL

- Class 1 or 2 vapor retarders are required for interior side of frame walls for Zone 4.

Exceptions:
1.Basement walls
2.Below grade portion of any exterior wall.
3. Construction where moisture or freezing will not damage the materials.

- Class III vapor retarders shall be permitted where any one of the conditions in table R601.3.1 is met.
- Material vapor retarder class shall be base on the manufacturer's certified testing or testing assembly.

The following shall be deemed to meet the class specified:

Class 1: Sheet polypropylene, unperforated aluminum foil.
Class II: Kraft-faced fiberglass batts.
Class III: Latex or enamel paint.

- Vented cladding shall include the following minimum clear air spaces. Other openings with eh equivalent vent area shall be permitted.

1.Vinyl lap or horizontal aluminum siding applied over a weather resistive barrier as specified in Table R703.4.
2. Brick veneer with a clear airspace as specified in in Section R703.7.4.2.
3. Other approved vented claddings.

TABLE R601.3.1

ZONE	CLASS III VAPOR RETARDERS PERMITTED FOR
Marine 4	Vented cladding over OSB Vented cladding over plywood Vented cladding over fiberboard Vented cladding over gypsum Insulated sheathing with R-value ≥ 2.5 over 2 x 4 wall Insulated sheathing with R-value ≥ 3.75 over 2 x 6 wall

ENERGY CODE COMPLIANCE: WSEC

This project shall comply with the current Washington State Energy Code (WSEC).

This project meets the requirements of the energy code in that existing spaces are remaining unchanged, and in that the new construction complies with the applicable prescriptive approach of the wsec. the following shall apply:

- The project is R3 occupancy.
- Construction is wood frame.
- All building components meet the requirements listed in table 6-1, Option III of the 2009 WSEC for Climate Zone 1. (See building section and glazed window & exterior door schedule on A3.03)
- The project will meet all other provisions of the WESC and SRC and IMC.

ENERGY CODE COMPLIANCE: WSEC

U VALUES AND R VALUES:

In accordance with Option III of table 6-1 of the 2009 WSEC for climate zone 1, the U-values and R-values for this project shall be at least:

Vertical glazing:	U-0.30	Walls above grade int [6]	R-21
Overhead glazing:	U-0.50	Walls below grade, int	R-21 TB
Opaque doors:	U-0.20	Walls below grade, exterior[3]	R-10
Ceiling[1]:	R-49	Floor over unheated space[4]:	R-30 / U0.029
Vaulted ceiling[2]:	R-38	Slabs on grade [5]:	R-10, 2'

[1] Requirement applies to all ceilings except single rafter or joist vaulted ceilings complying with note 2. 'Adv' denotes Advanced Framed Ceiling.
[2] Requirement applicable only to single rafter or joist vaulted ceilings.
[3] Below grade walls shall be insulated either on the exterior to a minimum level of R-10 continuous, or on the interior as a framed wall. Exterior insulation installed on below grade walls shall be a water resistant material, manufactured for its intended use, and installed according to the manufacturer's specifications. See Section 602.2.
[4] Floors over crawl spaces or exposed to ambient air conditions.
[5] Required slab perimeter insulation shall be a water resistant material, manufactured for its intended use, and installed according to manufacturer's specifications. See Section 602.4. For slabs inside a foundation wall, the insulation shall be installed to provide a thermal break (TB) between the slab edge and the foundation. Monolithic slabs shall include insulation, installed outside the foundation wall, and shall extend downward from the top of the slab for a minimum distance of 24 inches or downward and then horizontally for a minimum combined distance of 24 inches. Monolithic slabs shall also include R-10 insulation under the non-load-bearing portions of the slab.
[6] Int. denotes standard framing 16 inches on center with headers insulated with a minimum of R-10 insulation.

SOURCE-SPECIFIC EXHAUST VENTILATION: M1507

- Source specific exhaust ventilation is required in each kitchen, bathroom, water closet, laundry room, indoor swimming pool, spa, and other rooms where water vapor or cooking odor is produced.
The minimum source specific ventilation effective exhaust capacity shall not be less than levels specified in Table M1507.3.
- Exhaust fans providing source specific ventilation shall have a minimum fan flow rating not less than 50 cfm at 0.25 inches water gauge for bathrooms, laundries, or similar rooms and 100 cfm at 0.25 inches water gauge for kitchens. Manufacturers' fan flow ratings shall be determined as per HVI 916 (April 1995) or AMCA 210.
EXCEPTION: Where a range hood or down draft exhaust fan is used to satisfy the source specific ventilation requirements for kitchens, the range hood or down draft exhaust shall not be less than 100 cfm at 0.10 inches water gauge.
- Source specific ventilation systems shall be controlled by manual switches, dehumidistats, timers, or other approved means. Source specific ventilation system controls shall be readily accessible.
- Source specific ventilation ducts shall terminate outside the building. Exhaust ducts shall be equipped with back-draft dampers. All exhaust ducts in unconditioned spaces shall be insulated to a minimum of R-4. Terminal elements shall have at least the equivalent net free area of the duct work. Terminal elements for exhaust fan duct systems shall be screened or otherwise protected from entry by leaves or other material. Minimum 50% net free area shall meet the requirements of R303.5.

WHOLE HOUSE VENTILATION: M1508

- Each dwelling unit or guest room shall be equipped with a ventilation system complying with Section M1508.4, M1508.5, M1508.6 or M1508.7. Compliance is also permitted to be demonstrated through compliance with the International Mechanical Code.
- Installers shall provide the manufacturer's installation, operating instructions, and a whole house ventilation system operation description.
- Continuously operating exhaust ventilation systems shall provide the minimum flow rates specified in Table M1508.2.
- The delivered ventilation rate for intermittently operating ventilation systems shall be the combination of its delivered capacity from Table M1508.2, and its ventilation effectiveness and daily fractional operation time from Table M1508.3.
- Exhaust fans providing whole house ventilation shall have a flow rating at 0.25 inches water gauge as specified in Table M1503.2 [M1508.2]. Manufacturers' fan flow ratings shall be determined according to HVI 916 (April 1995) or AMCA 210.
- Ventilation Duct Insulation. All supply ducts in the conditioned space shall be insulated to a minimum of R-4.
- Whole house fans located 4 feet or less from the interior grille shall have a sone rating of 1.0 or less measured at 0.1 inches water gauge. Manufacturer's noise ratings shall be determined as per HVI 915 (October 1995). Remotely mounted fans shall be acoustically isolated from the structural elements of the building and from attached duct work using insulated flexible duct or other approved material.
- The whole house ventilation fan shall be controlled by a 24-hour clock timer with the capability of continuous operation, manual and automatic control. The 24-hour timer shall be readily accessible. The 24-hour timer shall be capable of operating the whole house ventilation fan without energizing other energy-consuming appliances. At the time of final inspection, the automatic control timer shall be set to operate the whole house fan for at least 8 hours a day. A label shall be affixed to the control that reads "Whole House Ventilation (see operating instructions)."
- Outdoor air shall be distributed to each habitable room by individual outdoor air inlets.
Where outdoor air supplies are separated from each room by doors, provisions shall be made to ensure air flow by installation of distribution ducts, undercutting doors, installation of grilles, transoms, or similar means. Doors shall be undercut to a minimum of 1/2 inch above the surface of the finish floor covering.

Individual room outdoor air inlets shall:
1. Have controllable and secure openings;
2. Be sleeved or otherwise designed so as not to compromise the thermal properties of the wall or window in which they are placed;
3. Provide not less than 4 square inches of net free area of opening for each habitable space. Any inlet or combination of inlets which provide 10 cfm at 10 Pascals as determined by the Home Ventilating Institute Air Flow Test Standard (HVI 901 November 1996) are deemed equivalent to 4 square inches net free area.

Inlets shall be screened or otherwise protected from entry by leaves or other material.
Outdoor air inlets shall be located so as not to take air from the following areas:
1. Closer than 10 feet from an appliance vent outlet, unless such vent outlet is 3 feet above the outdoor air inlet.
2. Where it will pick up objectionable odors, fumes or flammable vapors.
3. A hazardous or unsanitary location.
4. A room or space having any fuel-burning appliances therein.
5. Closer than 10 feet from a vent opening of a plumbing drainage system unless the vent opening is at least 3 feet above the air inlet.
6. Attic, crawl spaces, or garages.



503.8.1 TEMPERATURE CONTROL

- Temperature Control: The primary space conditioning system within each dwelling unit shall be provided with at least one programmable thermostat for the regulation of temperature. The thermostat shall allow for, at a minimum, a 5-2 programmable schedule (weekdays/weekends) and be capable of providing at least two programmable setback periods per day.
Each additional system provided within a dwelling unit shall be provided with at least one adjustable thermostat for the regulation of temperature. The thermostat shall allow or, at a minimum, a 5-2 programmable schedule/(weekdays/weekends).
EXCEPTIONS:
1. Systems controlled by an occupied sensor that is capable of shutting the system off when no occupant is sensed for a period of up to 30 minutes.
2. Systems controlled solely by a manually operated timer capable of operating the system for no more than two hours.
Each thermostat shall be capable of being set by adjustment or selection of sensors as follows:
2. 503.8.1.1: When used to control heating only: 55°F to 75°F.
3. 503.8.1.2: When used to control cooling only: 70°F to 85°F.
4. When used to control both heating and cooling, it shall be capable of being set from 55°F to 85°F and shall be capable of operating the system heating and cooling in sequence. The thermostat and/or control system shall