

TRANSMITTAL SHEET

<p>To: City of Mercer Island</p> <hr/> <p>Company: Department Services – Building & Planning</p> <hr/> <p>Address: 9611 SE 36 Street Mercer Island, WA 98040</p> <hr/>	<p>From: Erik Voris</p> <hr/> <p>Project: Project 2109-226</p> <hr/> <p>Date: 2/28/2022</p> <hr/> <p>Regarding: Correction Cycle#1</p> <hr/>
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In addition to the transmitted documents, please refer to the specific responses to each plan reviewer's correction comments below.

Planning Review Corrections received on 12/22/21 from Tim McHarg

1. Lot slope is 16.3%. Please correct for clarity.
2. Please confirm that existing rockeries have been included in the "retaining wall" line item in the hardscape calculations. If not, please add them as a separate line item.
3. Please provide Average Building Elevations on this sheet or on Sheet A1.1.
4. Please clarify surfacing after pool/patio demo to confirm it is not hardscape.
5. Please provide seating wall height. Per 19.02.020.C.3.g, all portions of the seating wall in the rear yard setback must be 30" or less.
6. Per MICC 19.02.020.C.3.a.ii, no building elements are permitted to encroach into minimum side yard setbacks. Since this is part of the foundation, it is a building element. The existing foundation wall will need to be cut down to match proposed grade.
7. Please correct to West Elevation.

Response:

- 1 - The lot slope has been revised on sheet A0.2.**
- 2 - The portions of existing rockery along the west lot line have been shown on A1.1 site plan and added to site plan A0.2 Lot Coverage Calculations as a separate line item. A revised site development worksheet has been included with the correction response documents.**
- 3 - The average building elevations and wall lengths are shown on 1/A0.2 Site Plan – Lot Width & Average Grade Diagram. The average grade calculation is located on A0.1 under the Maximum Structure Height within the Land Use Code Review Section. The average grade calculation has been added under 1/A0.2.**
- 4 - The abandoned pool area will become new landscape area, not hardscape.**
- 5 - The partial height seat wall height is located on detail 5/S3.0. The wall height is 1'-6" max. A note has been added to A1.1 for clarity.**
- 6 - The existing foundation wall does not encroach into the 6'-6" minimum side yard setback. The wall is 6'-8" from the lot line per the survey and is shown graphically on A.2 2 and building section 2/A3.1. However, the wall does encroach into the 7'-6" variable side yard setback, and since the wall is considered not structurally independent of the new wall that is in compliance with the 7'-6" variable side yard setback it was agreed per phone conversation with Tim McHarg on 1/19/22 the existing foundation wall shall be cut down to within 6-8" of proposed grade to be able to provide a vertical surface at grade for the waterproofing and cap flashing detail. See revised note and existing foundation line on West Elevation 2/A4.3**
- 7 - The title of the elevation on 2/A4.3 has been revised to read West Elevation.**

Engineering Review Corrections received on 12/18/21 from Ruji Ding

1. I do not think the water service line is shared. However, the water service line will need to be replaced even the size is the same. The water service line was installed in 1999, prior to the Federal No-Lead law. Meter can be located at the same location. Please add the note.
2. No not place concrete in the ROW.
3. Footing drainage elevation??
4. Please add note:

The existing storm pipe to the City CB must be field verify with a video inspection, if the condition is in a satisfaction condition as determined by the City Inspector, the existing storm pipe must be replaced with the new pipe. The excavation for the new pipe must be monitoring by the project geotechnical engineer.

Response:

- 1 – See Civil Engineering drawings.**
- 2 – Plan has been revised to show asphalt in ROW; see Civil Engineering drawings.**
- 3 – Footing drain elevation has been added to C2.0; see Civil Engineering drawings.**
- 4 – Note has been added to C2.0; see Civil Engineering drawings.**

Building Review Corrections received on 12/29/21 from Gareth Reece

Non Structural

1. We are not finding the building area per floor and the area of the decks clearly indicated (separate from the GFA calculation). Please verify the following number and clearly indicate on the drawings:

Lower level: 1,087 s.f.

Main level: 2,290 s.f.

Total heated floor area: 3,377 s.f. Garage: 460 s.f.

Decks (covered entry, covered rear deck): 180 s.f.

2. Provide manufacturer's specifications and connection details for guardrail system or note on the drawings that the design and connections will be a deferred submittal and that the contractor shall verify to the inspector that all guards shall be capable of resisting a 200-pound load on the top rail acting in any direction as required by IRC R301.5.
3. Will the inner stair handrail be by the manufacturer as well? A hand grip that meets the requirements of IRC R311.7.8 must be provided. Potentially mounting handrails at the outer sides of the stair may be necessary. Indicate how compliance will be met.
4. The carbon monoxide alarm outside the Primary Bedroom should be revised to a combination smoke/carbon monoxide alarm. See Sheet A2.2 and IRC R314.4.3.
5. We do not find any notes on the drawings addressing the interconnection of smoke alarms and carbon monoxide alarms as required in IRC R314.4 and R315.5. Provide notes on the drawings addressing the interconnectivity requirement.
6. IRC R317.1 requires wood framing members that rest on concrete to be not less than 8" from exposed ground unless they are pressure-treated and wood siding, sheathing, and wall framing to have a not less than 6" from ground or 2" from concrete unless it is pressure-treated. Provide dimensions on the drawings and clarify details such as 1/A5.1.
7. Class I or II vapor retarders (i.e., sheet polyethylene or kraft-faced fiberglass batts) are required on the interior side of walls per IRC R702.7. Please call for this on the drawings except at basement walls and below-grade walls. We do not find this component addressed on the exterior wall assemblies, typically.
8. Where existing foundation walls are used, the foundation wall assemblies refer to a drainage mat and dampproofing on the outside of the existing walls; see Detail 3/A5.4, for example. Is it assumed that the drainage mat and dampproofing are existing or will this be supplied by the contractor? Please clarify.
9. A 6-mil polyethylene or approved vapor retarder with joints lapped not less than 6" is required at the crawl spaces per IRC R408.1. Call this out on the drawings.
10. The minimum net area of ventilation openings in the crawl space is 1:300 per IRC R408.2 unless the space is mechanically vented per IRC R408.3, Item 2. Address the following:
 - a. The notes on Sheet A2.1 indicate the crawlspace under the main floor at the Primary Bedroom is mechanically ventilated; what about the crawlspace under the entry?
 - b. If the crawl space is mechanically ventilated, provide a continuously operated mechanical exhaust rate equal to 1 cubic foot per minute for each 50 s.f. of crawl space floor area. Show the size and location of the exhaust fan on the drawings. The fan must terminate to the exterior.
 - c. If not mechanically ventilating the crawlspace under the entry, provide an evaluation of the required ventilation area and show the location, size, and required quantity of foundation vents.
11. Crawl space access is required to each separate crawl space area per IRC R408.4 to be 18" x 24" through floors or 16" x 24" through walls. We find an existing access opening to the main crawl space; verify size. What about at the crawl space access at the area under the entry?
12. Cut a detail between the high and low roof areas on Sheet A2.3 to show relationship.
13. Detail 3/A5.1 is cut on the Roof Plan, Sheet A2.3. This detail does not exist.
14. Revise General Note 1, Sheet A2.3, as roof venting at 1:150 is required even with the vapor barrier. IRC R806.2, Exception 1, does not apply in Climate Zone 4C.
15. A vapor barrier is noted only at the low roof and west high roof areas according to General Note 2, Sheet A2.3. What about the east high roof?
16. Enclosed attics and rafter spaces must have cross ventilation for each space per IRC R806.1. The minimum net free ventilating area of 1:150 must be provided unless the provisions of the exception to IRC R806.2 are met which would not be applicable for this roof system. Address the following regarding the calculations provided on Sheet A2.3:
 - a. The calculations for the west and low roofs use a required minimum net free ventilating area of 1:300. 1:150 must be used. Revise as necessary.
 - b. It appears that there are four 1-1/2" diameter holes for each 18" long block at the parapet caps. We calculate the net area provided to be 3.53 square inches per lineal foot assuming a 75% net free ventilation area. Your calculations assume 5.28 square inches per lineal foot is provided. Please explain/justify.
 - c. The calculations assume the low roof area has 182.72' of vented parapet cap. Justify this perimeter. We assume Detail 3/A7.1 would apply at this condition which only vents the upper roof where the upper and lower roofs meet.
17. Show that secondary drains are provided at the roof per IRC R903.4.

18. Call out the type of membrane roofing material and specify underlayment per IRC R905.1.
19. The architectural site plan on Sheet A1.1 shows new concrete stairs off the new terrace and on the west side of the dwelling leading up from the basement level. Provided details of these stairs including handrails and guards.

Non Structural Response:

- 1 - The Floor Areas have been added to sheet A0.1 under the Building Code Review section.**
- 2 - A note has been added to A2.2 indicating the exterior stair handrail will be type I and the railing design and connection details will be a deferred submittal.**
- 3 - A note has been added to A2.2 indicating the interior stair handrail will be type I and the railing design and connection details will be a deferred submittal.**
- 4 - The carbon monoxide detector outside the Primary bedroom has been revised to a combination smoke / carbon monoxide detector.**
- 4 - SD detectors has been shown in bedrooms on A2.1 Lower Floor Plan and A2.2 Main Floor Plan.**
- 5 - General Note 13. has been added to the floor plans on A2.1 and A2.2 to address the interconnection of smoke alarms and carbon monoxide detectors.**
- 6 - The concrete details on S3.1 call out the pressure treated sill plates and height of concrete stem walls above grade or concrete paving.**
- 7 - The Typical Wall Assembly on 1/A5.1 has added kraft-faced fiberglass batt insulation as a Class II vapor retarder.**
- 8 - Where the existing foundation wall is exposed from excavation for the new basement foundation wall and terrace the existing wall receive new drainage mat over damproofing provided by the contractor.**
- 9 - Crawlspace vapor barrier note has been added to the Lower Floor Plan and described with new general note 14.**
- 10a - The crawlspace under the entry will be mechanically ventilated with class I vapor retarder.**
- 10b - Mechanical ventilation calculations have been added to sheet A2.1 and the exterior wall termination has been added to East Elevation 2/A4.1.**
- 10c - The area of the crawlspace under the entry has been included in the mechanical ventilation calculation added to sheet A2.1.**
- 11 - The existing crawlspace access size is 36" x 48". A new crawlspace access for the area under the entry has been shown at the existing foundation wall on the Lower Floor Plan sheet A2.1.**
- 12 - The wall section 3/A5.4 and structural details 7 & 12/S4.2 show the condition between the high and low roof areas.**
- 13 - The wall section marker 3/A5.1 on sheet A2.3 has been revised to 3/A5.4.**
- 14 - The high and low roof assemblies have been revised to a non-vented roof / attic assembly per R806.5 - 5.1.3 & 5.1.4. See the revised Typical Low Slope Roof Assembly on wall section 1/A5.1.**
- 15 - No interior vapor barriers will be installed at the roof assemblies that have been revised to non-vented assemblies.**
- 16a-c - The roof assembly has been revised to a non-vented assembly per R806.5. See revised wall section sheets A5.1-A5.4.**
- 17 - The roof plan drainage was revised to thru-wall scuppers with conductor heads and downspouts on the outside of the building, with the exception of the roof drains to remain over the covered patio roof. Each roof area has multiple drains or thru-wall scuppers to meet the requirements for secondary drainage. See revised A2.3.**
- 18 - The Typical Low Slope Roof Assembly has been revised to indicate the roof membrane is a thermoplastic single-ply membrane; no underlayment is required per R905.13.**
- 19 - The stair at the side of the driveway is called out as a new concrete stair and there is a wall mounted handrail called out on the East Elevation 2/A4.1. The grade is within 30" of the stair therefore no guardrail is required.**

Energy & Ventilation

1. We do not find clarity on the drawings in regard to the heated vs. unheated areas at the basement. Please clarify. The Lower Floor Plan, Sheet A2.1, and section 1/A3.1 do not show furred walls at the existing basement at the family room closet or Mech 106. Detail 2/A5.1, however, shows Mech 106 insulated, but there are no clarifying notes. We assume these will be heated spaces and the drawings clarified.
2. The location of all interior and exterior mechanical equipment must be clearly indicated on the drawings. It is unclear where the heat pump is to be located. We find the air handler and water heater in Mech 106.
3. Energy Credit Option 2.2 has been selected per WSEC Table R406.3 for Air Leakage Control and Efficient Ventilation. This requires the tested air leakage rate in WSEC 402.4.1.2 to be reduced to 2.0 air changes per hour maximum at 50 Pascals. There is a conflicting note on Sheet A0.1 noting the air leakage rate needs to be tested to not exceed 1.5 air changes per hour. Resolve discrepancy.
4. Sheet A0.1 indicates that a heat pump system is being utilized for this project (Fuel Normalization System Type 2) yet Option 3.1 is specified for a gas or propane furnace. If using a heat pump, select one of the high efficient HVAC equipment options that utilize a heat pump not a gas or propane furnace. Also, clarify if this is a ducted heat pump system (which we assume you intend).

5. Energy Credit Option 4.2 has been selected per WSEC Table R406.3 for High Efficiency HVAC Distribution System. All system components must be located in conditioned spaces. Show locations of ducts and equipment in order to qualify for this credit.
6. A certificate is required to be posted on a wall in the space where the furnace is located, a utility room, or on an electrical panel per WSEC R401.3 and include the following: predominate R-values, U-values of fenestration, results from duct system and building envelope air leakage testing, the results from the whole-house mechanical ventilation system flow rate test, and the types and efficiencies of heating/cooling/whole-house mechanical ventilation/water heating equipment. Please expand the note on Sheet A0.1 to capture the above information.
7. Intermediate framing at wood walls requires headers insulated to a minimum of R-10 per WSEC Table R402.1.1 footnote h. Call for headers insulated with R-10 on the drawings.
8. Below-grade insulation used on the interior (warm) side of the wall shall extend from the top of the below-grade wall to the below-grade floor level and shall include R-5 rigid board providing a thermal break between the concrete wall and the slab per WSEC R402.2.8. Show the thermal break in details. For example, see Detail 1/A5.1.
9. Provide general notes to address air barrier and insulation installation requirements listed in WSEC Table R402.4.1.1.
10. Provide heating system sizing calculations.
11. Clarify the mechanical ventilation rate in accordance with IRC M1505.4.3. The minimum whole-house ventilation rate from IRC Table M1505.4.3(1) must be adjusted by the system coefficient in IRC Table M1505.4.3(2) based on the system type and further adjusted for intermittent operations per IRC M1505.4.3.2. We only find that an intermittent whole house system is to be provided by the mechanical system per the note on Sheet A0.1. Clarify design. See also IRC M1505.4.1.5.
12. Per IRC M1505.4.1.1, whole-house ventilation fans must be rated for sound at a maximum of 1.0 sone. This sound rating shall be at a minimum of 0.1 in. w.c. static pressure in accordance with HVI procedures specified in IRC M1505.4.1.2 and M1505.4.1.3. Please note this requirement on the drawings.
13. Because there are some conflicting system types, please have your mechanical contractor review your energy code options to confirm design before resubmitting.

Energy & Ventilation Response:

- 1 – The whole lower floor is heated space. Furred walls with insulation have been shown on the Lower Floor Plan sheet A2.1 and clarified in the wall section foundation wall assembly notes.**
- 2 - The heat pump has been located outside the primary bathroom on the site plan sheet A1.1.**
- 3 – The energy Code option 2.2 has been changed to option 2.1, which requires 3.0 air changes per hour maximum at 50 pascals. The note under section 402.4.1.2 Blower Door Testing has been revised to be consistent with Air Leakage Control option 2.1.**
- 4 - The initial heating system will utilize an air-source, centrally ducted heat pump located at the exterior and used in conjunction with an electric furnace located in the Mechanical Room. Energy Credit Option 3.1 has been revised to option 3.5.**
- 5 – HVAC supply ducts have been shown on the Lower Floor Plan and Building Sections. The supply and return ducts will be fully insulated in framing cavities at areas over crawlspace. At the Lower Floor, a dropped ceiling area has been identified for duct runs to heat the lower floor rooms and rooms on the main floor above the basement.**
- 6 - The energy Code note under section 401.3 has been revised to include the additional information requested.**
- 7 - On sheet A8.2 the Sheet Notes #5 calls out R-10 insulation at all window & door headers. A typical note has also been added to wall section 1/A5.1.**
- 8 – The R-5 rigid insulation thermal break has been added to the wall sections between the floor slab and concrete foundation wall.**
- 9 - General notes have been added in the Energy Code Requirements section under Building Thermal Envelope to address air barrier and cavity insulation requirements.**
- 10 – The 2018 WSEC Simple Heating System Size has been submitted with the correction response.**
- 11 - The Whole House Ventilation Rate has been revised to 70 CFM from 100 CFM based on table R1505.4.3(1). Per table 1505.4.3(2) for a balanced and distributed system the coefficient factor is 1.0 and per table 1505.4.3(3) with a 100% run time factor of 1.0.**
- 12 – The whole house ventilation fans rated sound and minimum static pressure note has been added under the whole house ventilation note in the Energy Code Requirement section on sheet A0.1.**
- 13 – The revisions to the Energy Credit options 2.1 and 3.5 were the result from coordinating the heating system with the mechanical contractor.**

Geotechnical

1. Submit a letter from the geotechnical engineer that indicates that the final plans have been reviewed and that the plans are consistent with the recommendations of the geotechnical report.
2. The geotechnical engineer should review the revised grades on the architectural site plan, Sheet A1.1, in the vicinity of the new rear raised deck where the existing rockery is being removed and permanent grade is significantly sloped. Recommendations for final grade protection should be provided and incorporated into the design.

Geotechnical Response:

- 1 - The plan review letter from the Geotechnical Engineer has been included with the correction response.**
- 2 - The existing rockery will be removed outside the new Terrace stair and the slope of the grade will be reduced per recommendations from the Geotechnical Engineer.**

Thank you,

Erik Voris