TRANSMITTAL SHEET

To:	City of Mercer Island	From:	Erik Voris
Company:	Department Services – Building & Planning	Project:	Project 2101-202
Address:	9611 SE 36 Street Mercer Island, WA 98040	Date:	6/9/2021
		Regarding:	Correction Cycle#1

In addition to the transmitted documents, please refer to the specific responses to each plan reviewer's correction comments below.

Tree Review Corrections received on 3/31/21 from John Kenney

1. It appears a new driveway/construction access to the south of the house may impact onsite and adjacent trees. Provide an Arborist report for all trees in the area of construction including adjacent trees that may be impacted. And a tree protection plan as described in the following checklist.

Response:
Via email correspondence on 4/5/21 John acknowledged an arborist report is not required and showing tree protection for on-site and adjacent trees along the driveway will resolve the issue.
See revisions on A1.1 Site Plan for the added tree protection along the driveway.

Planning Review Corrections received on 4/22/21 from Lauren Anderson

1. Please adjust the lot coverage calcs on the plan set and site development worksheet (SDW) as no new lot coverage is proposed. Stating "proposed lot coverage" states that it is new - please revise to state just the total and 0sf proposed.
2. The SDW states under section (I) that there is new lot coverage. Please remove this area and only include these areas under existing. (I)(1-4) should be 0sf.
3. The SDW states there's 41sf of new rockery or retaining walls. Please indicate this on the site plan.
4. Per MICC 19.13.050(K)(4) new development totaling 500 square feet or more of any combination of additional gross floor area, lot coverage or hardscape, including the primary structures and appurtenances, shall be required to provide native vegetation coverage over 50 percent of the 20-foot vegetation area shown on Figure C. This total shall include all gross floor area, lot coverage, and hardscape added in the five years immediately prior to the development proposal.
    a. Update: the shoreline plantings are required for additional (net new) hardscape and gross floor area that exceeds 500sf. Please clearly state on the plans the amount of hardscape to be removed, replaced, and new to illustrate that the project is under 500sf of net new hardscape and GFA combined.
5. The SDW states 14sf of new walkway - where is this located?

Response:
1 & 2 - The Site Development Worksheet has been revised to show no new lot coverage.
3 – The 41 SF is existing rockery and not proposed new. The SDW has been revised.
4 – Total new hardscape and GFA is 194 SF; therefore shoreline vegetation planting per MICC 19.13.050(K)(4) for development totaling 500 SF net new is not required.
5 – The entry roof removal, which was building coverage, exposes existing deck below which becomes the new 14 SF of hardscape.

Civil Review Corrections received on 4/26/21 from Ruji Ding

1. The new backflow prevention valve at side sewer cannot be at the main which in under the water.

Response:
The new backflow prevention valve location has been moved further up line into the rear yard.
See revision on A1.1 Site Plan for new location.

Building Review Corrections received on 5/6/21 from Paul Skidmore

1. The Geotechnical Engineer is required to provide a written statement that the project documents have been reviewed for conformance to the geotechnical recommendations.
2. Please clarify what the elements are that are being removed. Is this a soffit? Wall? Steps?
3. CO detector required outside the bedroom(s).

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Seattle Washington 98112
206 329 4227
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4. SD required in each room.
5. Handrail? Clearly indicate the extent of the handrail on the plans.
6. If the single (assumed) overflow roof drain is intended to provide overflow drainage for the whole roof deck, please confirm drainage capacity.
7. Note stair rise and run. Confirm that this is a single riser.
8. Provide overflow roof drain this deck.
9. Provide structural framing for upper new roof eave extension.
10. Provide verification the membrane is approved for use as a walking deck and for the installation of the decking material directly on top of the membrane per the International Code Council Evaluation Service (ICC-ES) Roof and Walking Deck Membranes in accordance with the ICC-ES Criteria for Walking decks (AC39).
11. R-30 Minimum.
12. Please coordinate design with the structural design. 11-7/8" deep floor joists?
13. Confirm secondary overflow roof drain has been provided.

Response:

1 - The Geotech engineer has provided a plan review letter with minimal risk statement.

2 – The elements are existing soffits to remain. See AD2.1 for clarification.

3 – CO detectors has been shown outside of bedrooms on A2.1 Lower Floor Plan and A2.2 Main Floor Plan.

4 – SD detectors has been shown in bedrooms on A2.1 Lower Floor Plan and A2.2 Main Floor Plan.

5 - A wall mounted handrail has been added to the partial height wall along the stair and handrail mounted to the guardrail posts at lower stair from landing to terrace. Structural revisions include the handrail mounting at posts.

6 – The (3) roof drains at the main portion of the deck are all within 2" elevation of one another and act as overflow. The roof drain capacity for a 4" drain leader at 3" / hour rainfall is 6,130 SF of coverage. The proposed deck is less than 300 SF so one roof drain has the capacity to for overflow.

7 – The rise / run of the single step at the main portion of deck has been noted on A2.2.

8 – A combination roof drain / overflow drain has been added to the deck outside the Master Bedroom on A2.2.

9 – The new upper eave is fastened to the existing roof joists that are to be cut-back for the new entry roof below. Refer to the structural response for upper eave support.

10 – DeckShield membrane protection pad has been added under the paver pedestals. See revised deck assembly on sheet A3.1. DeckShield is in accordance with the ICC-ES AC39 criteria for walking decks. See attached Code Compliance Research Report CCRR-0395, Supporting Evidence 7.3

11 – See revision to detail 1/A7.1 for minimum R-30 insulation.

12 - The 2x4 framing is accurate at the stepped down section of the deck outide the Livign Room and shown on the structural framing plans.

13 – At the stepped down portion of the deck there is a combination roof drain overflow drain on the plans.

Thank you,

Erik Voris

Code Compliance Research Report
CCRR-0395

Issue Date: 12-20-2020
Revised Date: 04-15-2021
Renewal Date: 04-30-2022

DIVISION: 07 00 00 – THERMAL AND MOISTURE PROTECTION
Section: 07 18 13 – Pedestrian Traffic Coatings
Section: 07 54 19 – Polyvinyl-Chloride PVC Roofing

REPORT HOLDER:
IB Roof Systems
506 East Dallas Road, Suite 300
Grapevine, TX 76051

REPORT SUBJECT:
DeckShield™

1.0 SCOPE OF EVALUATION

1.1. This research report addresses compliance with the following Codes:

- 2021, 2018, 2015 *International Building Code®* (IBC)
- 2021, 2018, 2015 *International Residential Code®* (IRC)

Note: This report references the 2021 code. Section numbers in earlier versions may differ.

1.2. DeckShield™ has been evaluated for the following properties (see Table 1):

- Physical Properties
- Wind Resistance
- Chemical Resistance
- Fire Resistance

1.3. DeckShield™ has been evaluated for the following uses.

- DeckShield™ is a walking surface applied to a wood deck substrate
- DeckShield™ is a roofing surface applied to wood or non-combustible DensDeck roof board substrates. When applied to DensDeck roof board decking, DeckShield™ has a Class A fire resistance classification.

2.0 STATEMENT OF COMPLIANCE

2.1. DeckShield™ complies with the Codes listed in Section 1.1, for the properties stated in Section 1.2 and uses stated in Section 1.3, when installed as described in this report, including the Conditions of Use stated in section 6.0.

3.0 DESCRIPTION

3.1. DeckShield™ is a calendared poly vinyl chloride (PVC) membrane that is laminated to a polyethylene non-woven scrim-back ply.

3.2. DeckShield™ is printed and embossed with a variety of patterns and colors and applied as a deck or roof covering and available in 72-inch-wide rolls.

3.3. The tri-laminate membrane weighs approximately 54 ounces per square yard and is nominally 60 mils thick.

4.0 PERFORMANCE CHARACTERISTICS

4.1. Wind Uplift rated at 98 psf maximum design pressure (includes safety factor) when installed in accordance to section 5 of this report.

5.0 INSTALLATION

DeckShield™ must be installed in accordance with the manufacturer's published installation instructions, the applicable Code and this Research Report. A copy of the manufacturer's instructions must be available on the jobsite during installation.

5.1. Substrates must be structurally sound and in accordance with applicable code. Surface shall be dry and free from all debris with installation being limited to time periods where precipitation is not expected.

5.2. Flashing shall be installed in accordance with applicable code must be applied to all door thresholds, jambs, fascia and walls.

5.3. Subsequent sheets of membrane are installed with a 1 inch overlap and melted together with an approved heat gun and nozzle. A seam roller is used to bond the two surfaces together.

5.4. DeckShield™ shall be installed with ITW Miracle Decking Adhesive.

5.5. Repairs to the membrane require that the damaged film be cut and removed. Application of the patch is as described in Section 5.3.

6.0 CONDITIONS OF USE

6.1. Installation must comply with this Research Report, the manufacturer's published installation instructions and the applicable Code. In the event of a conflict, this report governs.

6.2. The DeckShield™ described in this Research Report complies with, or is a suitable alternative to, what is specified in those Codes listed in Sections 1.0 of this report, subject to the following conditions:

6.3. DeckShield™ installation as a walking deck is limited to a level walking surface.

6.4. DeckShield™ Class A roof installation is limited to non-combustible DensDeck substrate with a pitch of 1/4:12 or less.

6.5. Wind uplift pressure based upon nominal wind speed (V_{asd}) on any roof area, including edge and corner zones, must not exceed the allowable wind uplift pressure for the system installed in that particular roof area.

6.6. The DeckShield™ is manufactured under a quality program with inspections by Intertek Testing Services NA, Inc.

7.0 SUPPORTING EVIDENCE

7.1. Reports of tests in accordance with UL 1897-15, Uplift Tests for Roof Covering Systems.

7.2. Fire classification testing in accordance with ASTM E108-17 Standard test Methods for Fire Tests of Roof Coverings.

7.3. Data in accordance with the ICC-ES AC39, Acceptance Criteria for Walking Decks, approved June 2017.

7.4. Reports of testing in accordance with ICC-ES AC75, Acceptance Criteria for Roofing Membrane Roof-Covering Systems, July 2010, editorially revised March 2018.

8.0 IDENTIFICATION

DeckShield™ is identified with the company name IB Roof Systems, address and telephone number, the product name DeckShield™, the Intertek Mark as shown below, and the Code Compliance Research Report number (CCRR-0395).

CODE COMPLIANCE
Intertek
CCRR-0395

9.0 OTHER CODES

This section is not applicable.

10.0 CODE COMPLIANCE RESEARCH REPORT USE

10.1. Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

10.2. Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

10.3. Reference to the Intertek website address: whdirectory.intertek.com is recommended to ascertain the current version and status of this report.

TABLE 1 – PROPERTIES EVALUATED

PROPERTY	IBC SECTION	IRC SECTION
Physical Properties	1504.6	R904
Wind Resistance	1504.3	Not Applicable
Chemical Resistance	Not applicable	Not Applicable
Fire Classification	1505	R902

SIZING DATA (For Conventional Drainage)

Zurn makes it easy to size roof drains. The four things you will need to know are: 1) rate of precipitation; 2) total area of roof; 3) size of leader required; and 4) area handled by each drain.

When sizing roof drains, the limiting factor for the amount of water each drain will carry away is the size of leader. Therefore, increasing leader size decreases the number of drains required.

STEP-BY-STEP SIZING OF ZURN DRAINS

Step 1: A. Calculate total roof area.
Example: Roof area is 300 x 500 ft; 300 x 500 = 150,000 sq. ft.

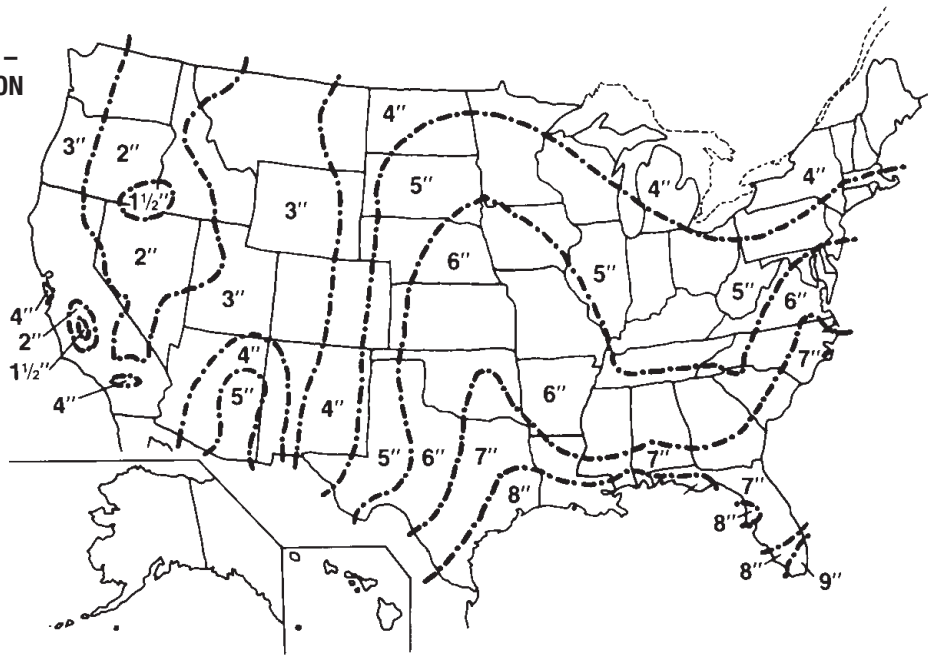
B. Determine the size of leader to be used.
Example: 4" leader size is selected.

Step 2: Locate building site on map below to find rainfall rate. **Note:** This map is taken from the National Standard Plumbing Code, Appendix A, and should only be used for general reference. Consult local codes for more precise data. **Example:** For a building located in Erie, PA, the map shows a 4" hourly rainfall.

Step 3: Cross reference leader size with hourly rainfall in chart below to obtain roof area that can be handled by each leader. **Example:** For a 4" hourly rainfall and 4" leader, each drain can handle 4,600 sq. ft. of roof area.

Step 4: Divide total roof area by area found in Step 3 to obtain the number of drains required. **Example:** 150,000 sq. ft. divided by the 4,600 sq. ft. equals 32.6, or 33 drains required. The drains should be equally spaced and located symmetrically about the roof.

STORM DRAINAGE SIZING
PRECIPITATION RATE INCHES/HOUR –
BASED ON 15-MINUTE PRECIPITATION



ROOF DRAIN VERTICAL REQUIREMENT FOR HORIZONTAL ROOF AREAS AT VARIOUS RAINFALL RATES*

Leader Size		Hourly Rainfall In Inches									
Pipe Size (Inches)	Open Area (Sq. In.)	1	1-1/2	2	2-1/2	3	4	5	6	7	8
		Total Square Footage Covered Per Drain									
2	3.14	2,880	1,920	1,440	1,150	960	720	575	480	410	360
3	7.06	8,880	5,860	4,400	3,520	2,930	2,200	1,760	1,470	1,260	1,100
4	12.56	18,400	12,700	9,200	7,360	6,130	4,600	3,680	3,070	2,630	2,300
5	19.60	34,600	23,050	17,300	13,840	11,530	8,650	6,920	5,765	4,945	4,325
6	28.30	54,000	36,000	27,000	21,600	18,000	13,500	10,800	9,000	7,715	6,750
8	50.25	116,000	77,400	58,000	46,400	38,660	29,000	23,200	19,315	16,570	14,500

*Above sizing data is offered as a guide only. For actual applications consult local codes.