STAFF REPORT
FOR THE HISTORIC REVIEW BOARD

FILE NUMBER: HDR-24-03

HEARING DATE: February 19, 2025

REQUEST: Class II Historic Design Review to install nine rooftop solar panels facing the front-yard on a not-in-period compatible home within the Willamette Historic District.

APPROVAL CRITERIA: Community Development Code
Chapter 25 Overlay Zones – Historic District
Chapter 99 Procedures for Decision Making: Quasi-Judicial

STAFF REPORT PREPARED BY: Aaron Gudelj, Associate Planner

Planning Manager's Initials DSW

TABLE OF CONTENTS

STAFF ANALYSIS
GENERAL INFORMATION 3
EXECUTIVE SUMMARY 4
BACKGROUND AND CONTEXT 4
PUBLIC COMMENT 4
RECOMMENDATION 5

ADDENDUM
APPLICABLE REGULATIONS AND ASSOCIATED SUPPLEMENTAL FINDINGS 6

EXHIBITS
HRB-1 APPLICANT SUBMITTAL 16
HRB-2 WILLAMETTE HISTORIC DISTRICT REGISTER – PAGE 10 EXCERPT 130

HRB-3 WILLAMETTE HISTORIC DISTRICT REGISTER – PAGE 37 EXCERPT……132
HRB-4 WILLAMETTE HISTORIC DISTRICT REGISTER – PAGE 41 EXCERPT……134
HRB-5 SECRETARY OF INTERIOR TREATMENT OF HISTORIC PROPERTIES PAGE 11 EXCERPT…..136
HRB-6 DR-00-04 ADDITION TO FRONT PORCH……138
HRB-7 DR 12-02 ADDITION TO REAR……192
HRB-8 COMPLETENESS LETTER 251
HRB-9 AFFIDAVIT AND NOTICE PACKET..... 253

GENERAL INFORMATION

APPLICANT:	Cordell Lawson 1403 N 630 E Orem, UT 84097
OWNER:	Elizabeth Smolens 1852 4th Ave West Linn, OR 97068
SITE LOCATION:	1852 4th Avenue
TAXLOT #:	31E02BD00500
SITE SIZE:	5,000 square feet
ZONING:	R-5 Residential with Willamette Historic District Overlay
COMP PLAN DESIGNATION:	Medium Density Residential
APPROVAL CRITERIA:	Community Development Code (CDC) Chapter 25: Overlay Zones – Historic District Chapter 99: Procedures for Decision Making: Quasi-Judicial.
120-DAY PERIOD:	This application became complete on December 21, 2024. The 120-day maximum application processing period ends on April 17, 2025.
PUBLIC NOTICE:	Public notice was mailed to property owners within 500 feet of the subject property, the State Historic Preservation Office, and the Willamette Neighborhood Association on January 30, 2025. The property was posted with a sign on January 30, 2025. The notice was posted on the City's website on January 30, 2025. Therefore, public notice requirements of CDC 99 have been met.

EXECUTIVE SUMMARY

The applicant has requested approval to install nine (9) rooftop mounted solar panels facing the front-yard on an existing not-in-period compatible home within the Willamette Historic District. No other changes to the existing house are proposed. The proposed design shows: 1) four solar panels totaling 284 sq. ft. on the frontmost portion of the roof facing the westerly side yard, and 2) five solar panels totaling 369 sq. ft. in the middle section of the roof facing the front yard; totaling 653 square feet. The proposed design shows the solar panels mounted flat on the roof consistent with the pitch of the roof and below the existing peak of roof. No other work is proposed.

BACKGROUND AND CONTEXT

The subject property is located at 1852 4th Avenue and is zoned R-5 Residential. The property is located within the Willamette Falls Historic District and is identified as a not-in-period compatible home with a Neo-colonial design. Pursuant to West Linn Community Development Code (CDC) Chapter 2: DEFINITIONS, not-in-period buildings are defined as:

Not in period. *A building, structure, object, or site that was originally constructed outside a historic district's applicable period of significance.*
Not in period compatible. *A building, structure, object or site built after the period of significance with a degree of craftsmanship that is compatible with the architecture of the district.*
Not in period noncompatible. *A building, structure, object or site built after the period of significance that is generally incompatible with the architecture of the district.*

In 2000 the property was approved for a 17'x13' front porch addition by the Historic Review Board and in 2012 the property was approved by the Historic Review Board for 11' x 19' addition to the rear of the building that also included changes of the exterior siding from vinyl siding to wood shingles, a false entryway arch at the front porch, new square columns, and a wood railing.

The subject property is one of four homes home located on 4th Avenue between 12th Street and 13th Street; the other three homes are classified as eligible contributing historic resources. There are no other rooftop solar panel installations on adjacent and neighboring properties. The property to the rear of the subject property is identified as an Eligible Significant Historic Building while other surrounding properties along 4th Avenue and 5th Avenue are a mixture of Eligible Contributing Buildings and Not-in-Period Buildings (See HRB-3).

Public comments. As of the publication of this staff report, staff has not received any comments from the public.

ADDENDUM
APPLICABLE REGULATIONS AND ASSOCIATED SUPPLEMENTAL FINDINGS
HDR-24-03

CHAPTER 25, HISTORIC RESOURCES
25.020 USE OF THIS CHAPTER
A. Applicability. This chapter shall apply to all properties designated as historic resources as shown on the City's zoning map and properties listed on the National Register. Specific sections apply as noted in subsections B and C of this section.

Staff Finding 1: The subject property is within the Willamette Historic District as shown on the City's zoning map. West Linn Community Development Code Chapter 2 defines a Historic Resource as a "historic landmark or historic district listed on the National Register or designated as a local historic landmark by the City Council."

C. Applicability of historic design standards. Development subject to this chapter must comply with applicable Historic Design Review standards unless otherwise approved through the modifications process under CDC 25.080. The "X" in the following chart indicates which standards are applicable to different types of development.

STANDARDS APPLICABILITY MATRIX						
SECTION	***PROPOSED ACTIVITY***	***ADDITIONS AND ALTERATIONS***	***ADDITIONS AND ALTERATIONS***	***NEW CONSTRUCTION***	***ACCESSORY STRUCTURES***	***ACCESSORY STRUCTURES***
	LOCATION	***HISTORIC LANDMARK***	***HISTORIC DISTRICT***	***HISTORIC DISTRICT***	***HISTORIC LANDMARK***	***HISTORIC DISTRICT***
25.060 DESIGN STANDARDS APPLICABLE TO HISTORIC RESOURCES	*A. STANDARDS FOR ALTERATIONS AND ADDITIONS*	*X*	*X*	*X*	*X*	*X*
	B. STANDARDS FOR ACCESSORY STRUCTURES				*X*	*X*
25.070 ADDITIONAL DESIGN STANDARDS	*A. STANDARDS FOR*		*X*			*X*

STANDARDS APPLICABILITY MATRIX						
SECTION	***PROPOSED ACTIVITY***	***ADDITIONS AND ALTERATIONS***	***ADDITIONS AND ALTERATIONS***	***NEW CONSTRUCTION***	***ACCESSORY STRUCTURES***	***ACCESSORY STRUCTURES***
	LOCATION	***HISTORIC LANDMARK***	***HISTORIC DISTRICT***	***HISTORIC DISTRICT***	***HISTORIC LANDMARK***	***HISTORIC DISTRICT***
APPLICABLE TO HISTORIC DISTRICTS	*ALTERATIONS AND ADDITIONS*					
	B. STANDARDS FOR NEW CONSTRUCTION			*X*		*X*
	C. WILLAMETTE HISTORIC DISTRICT GENERAL STANDARDS		*X*	*X*		*X*

Staff Finding 2: The subject project is an alteration/addition to a home within a historic district and is subject to the Design Standards and Additional Design Standards of Chapter 25.060 and 25.070. Findings for the project as it applies to Chapters 25.060 and 25.070 are found later in this report, Findings 6 through Findings 24. The criteria are met.

25.030 PERMITTED USES
Unless otherwise provided for in this chapter, uses permitted by the base zoning district that are in accordance with the CDC are allowed on sites containing historic resources.

Staff Finding 3: The existing property is in the R-5 Residential zone and contains a single-family residence. No change of use is proposed; the criteria are met.

25.040 HISTORIC DESIGN REVIEW PROCESSES
Proposed changes to historic resources that are not exempted by subsection A of this section...are subject to subsection B of this section, Class I historic design review, or subsection C of this section, Class II historic design review...The processes for conducting Class I and Class II historic design review are in Chapter 99 CDC.
…..
A. Exemptions from Historic Design Review. The following are exempt from Historic Design Review:

1. Ordinary maintenance. Ordinary maintenance or repair including a change of facade colors, unless the color is specifically listed in the historic resource inventory, historic resource nomination, or National Register nomination as an attribute that contributes to the resource's historic significance.

……

13. Solar energy systems. Replacement or installation of solar energy systems that are not part of a project that includes other elements subject to Historic Design Review, provided the following requirements are met:

a. On a flat roof, the horizontal portion of a mansard roof, or roofs surrounded by a parapet that is at least 12 inches higher than the highest part of the roof surface:

1) The solar energy system must be mounted flush or on racks with the system or rack extending no more than five feet above the top of the highest point of the roof.

2) The solar energy system must be screened from view from all streets by an existing parapet along the street-facing facade that is as tall as the tallest part of the solar energy system, or by setting the solar energy system back from the roof edges facing the street four feet for each foot of solar energy system height.

b. On a pitched roof, solar energy systems may be located on a section of pitched roof facing a rear lot line or on a section of pitched roof facing within 45 degrees of the rear lot line. (See the example on the right side of Figure 3.) The system must be mounted flush, with the plane of the system parallel with the roof surface, with the system no more than 12 inches from the surface of the roof at any point, and set back three feet from the roof edge and ridgeline.

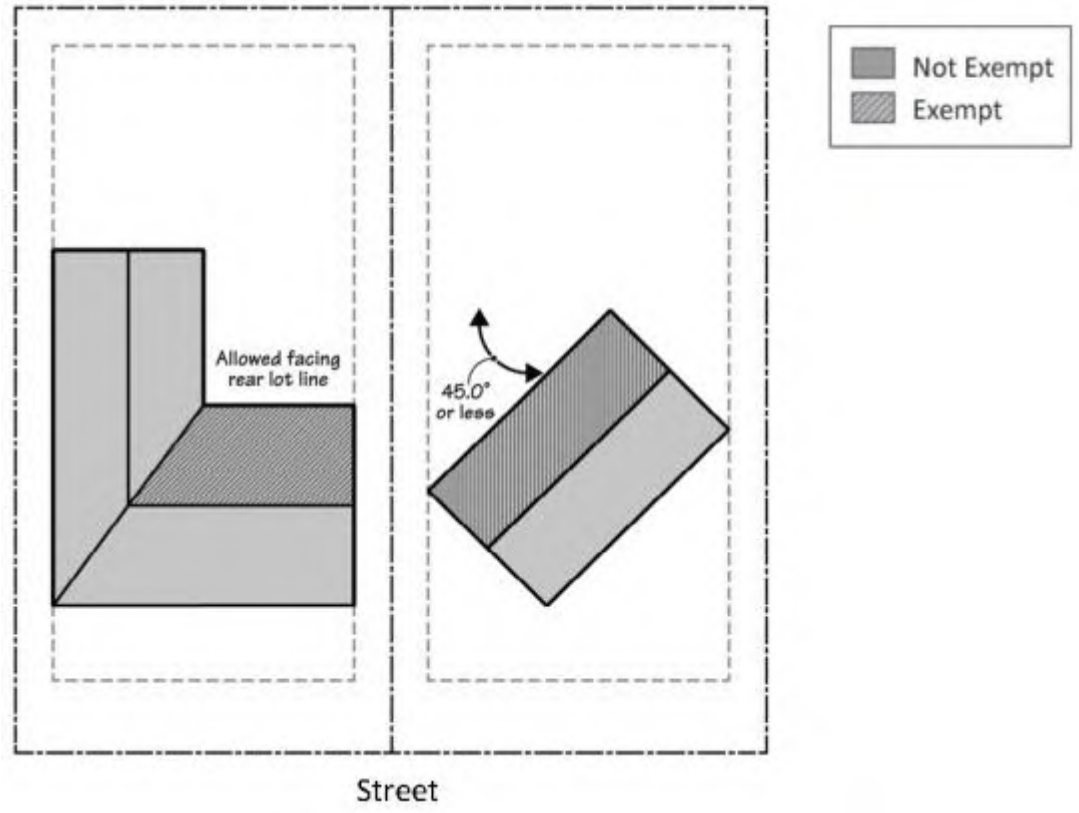


Figure 3: Exempt Solar Energy System Locations

…….

Staff Finding 4: The proposed solar energy installation is located on a pitched roof and is facing the front yard and side yard. The criteria for an exemption is not met, therefore a Design Review is required.

B. Class I Historic Design Review. The following are subject to Class I Historic Design Review to determine their compliance with the applicable approval standards:
1. Nonexempt. Items listed in CDC 25.040(A)(1) through (16) that do not qualify for an exemption;
2. Facade alteration. Alteration of a facade when 100 square feet or less of the structure's facade is being altered;
3. Ingress/egress. Revised points of ingress/egress to a site;
4. Americans with Disabilities Act. Proposals seeking compliance with the Americans with Disabilities Act, not including the public right-of-way; and
5. Art and statuary. Construction of freestanding art and statuary over 10 feet tall.
C. Class II Historic Design Review. All proposed new construction, alterations, and additions, not identified as exempt under subsection A of this section, or subject to Class I Historic Design Review under subsection B of this section, are subject to Class II Historic Design Review and must meet the applicable approval standards. (Ord. 1614 § 6, 2013; Ord. 1735 § 3 (Exh. B), 2022)

Staff Finding 5: The proposed solar energy installation 1) does not meet the standards for an exemption according to CDC 25.040(1) through (16), and 2) does not classify as a façade alteration of 100 square feet or less, and 3) does not propose revised ingress/egress to the site, and 4) is not seeking compliance with the Americans with Disabilities Act, and 5) does not involve construction of freestanding art over 10 feet tall; therefore the subject solar energy installation is subject to a Class II Design Review.

25.060 DESIGN STANDARDS APPLICABLE TO HISTORIC RESOURCES
The following design standards apply to all changes, including alterations, additions, and new construction proposed on a designated historic resource. These standards are intended to preserve the features that made the resources eligible for historic designation. Development must comply with all applicable standards, or be approved through the modifications process specified in CDC 25.080.
A. Standards for alterations and additions. This section applies to historic reviews for alteration of and additions to designated historic resources:
1. Retention of original exterior construction and overall structural integrity. The original exterior construction and structural integrity shall be maintained or restored to the greatest extent practicable. Stylistic features of original construction that shall be preserved include, but are not limited to: a line of columns, decorative shingles, projecting bays, windows and doors including their related functional and decorative features, other primary structural elements, spatial relationships that characterize the property, examples of skilled craftsmanship that characterize the building, and architectural details defining the structure's character and historic significance.

Staff Finding 6: The proposed rooftop solar energy installation to the not-in-period compatible home would be affixed to the pitched, non-decorative, asphalt shingle roof less than 12-inches from the roof surface. The proposed installation would not alter original exterior construction, structural integrity, and stylistic features.

2. Retention of exterior historic material. Removal or alteration of historic exterior materials and features shall be avoided during the construction of new additions or alterations. Deteriorated materials and architectural features shall be repaired rather than replaced, unless the material is beyond repair. In the event replacement of an existing feature is necessary, new materials shall match those of the original building in terms of composition, design, color, texture, and other visual features.

Staff Finding 7: According to City Records (West Linn Maps) the home was built in 1984 and has previously been altered in the year 2000 with a 17'x13' front porch addition and in 2012 via an 11'x19' addition to the rear of the home. The home is classified as not-in-period compatible, thereby limiting the amount of historic material present on the home. The proposed rooftop solar energy installation will not alter historic exterior materials and features on the subject building.

3. Time period consistency. Buildings shall be recognizable as a physical record of their time and place. Alterations which have no historical basis or which seek to create a false sense of historical development are not allowed.

Staff Finding 8: City records indicate the not-in-period compatible home was built in 1984. Previous alterations in 2000 for a 17'x13' front porch addition and 2012 for a 11'x19' addition to the rear of the home were approved by the Historic Review Board. The proposed rooftop solar energy installation does not have a historical basis. A false sense of historical development would not be created.

4. Significance over time. Changes to a property that have acquired historic significance in their own right, and during the period of significance, shall be retained and preserved.

Staff Finding 9: The not-in-period compatible home was built in 1984 – not during the period of significance – and does not have features that have exhibited historic significance over time in their own right.

5. Differentiate old from new. Alterations, additions, and related new construction shall be differentiated from the original buildings to avoid creating a false sense of history, and shall be compatible with the historic materials, features, size, scale, proportion, and massing to protect the integrity of the property. Additions and alterations shall be done in accordance with the Secretary of the Interior's Standards for new exterior additions to historic buildings.

Staff Finding 10: The proposed rooftop solar energy installation is able to be differentiated from the original building construction and does not create a false sense of history. The not-in-period compatible home does not contain historic materials, thereby compatibility of the solar energy installation with historic materials and features cannot be determined. The size, scale, and proportion of the home are not impacted by the proposal. According to The Secretary of the Interior's Standards for the Treatment of Historic Properties (HRB-5) "*installing roof-top mechanical or service equipment should not damage or obscure character-defining roof features or be conspicuous on the site or from the public right-of-way.*" The not-in-period compatible home is not

identified as a historic building according to the Oregon Historic Sites database, however the proposed rooftop solar energy installation would not comply with this Secretary of Interior recommendation if the property were identified as a historic building.

6. Reversibility. Additions and alterations shall be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its context would be unimpaired.

Staff Finding 11: If installed, the proposed rooftop solar energy installation could be removed from the building and the essential form and integrity of the property would not be impaired.

7. Building additions. Building additions shall be subordinate to the original building, smaller in scale, and attached to the rear or set back along the side. Features of building additions, including the proportions of window and door openings, shall be consistent with those of the existing building. Dimensional and other requirements in the underlying zone, as applicable, shall apply.

Staff Finding 12: The proposed rooftop solar energy installation is not considered a building addition.

8. Building height and roof pitch. Existing or historic building heights and roof pitch shall be maintained.

Staff Finding 13: The proposed rooftop solar energy installation will be below the highest roof ridge and will not alter the existing roof pitch.

9. Roof materials. Replacement of a roof or installation of a new roof with materials other than cedar shingles, three tab asphalt shingles, or architectural composition shingles must be demonstrated, using photographic or other evidence, to be in character with those of the original roof, or with materials that are consistent with the original construction.

Staff Finding 14: The proposed rooftop solar energy installation will not alter existing roof materials.

10. Existing exterior walls and siding. Replacement of the finish materials of existing walls and siding must be with building materials consistent with the original construction.
11. New exterior walls and siding.
…….
12. Gutters and downspouts.
…….
13. New windows.
……..
14. Storm windows.
……..
15. Window replacement.
……..
16. Doors.
……..

17. Porches.

…….

18. Decks.

……

19. Foundations.

……

20. Lighting. Residential lighting shall be shielded to prevent glare and compatible with the architectural character of the building. Blinking, flashing, or moving lighting is not permitted.

Staff Finding 14: The proposed rooftop solar energy installation will not alter existing exterior walls, siding, gutters, downspouts, windows, doors, porches, decks, or the foundation. The criteria does not apply.

B. Standards for accessory structures. The following standards apply to accessory structures on properties designated as historic resources in addition to the regulations in Chapter 34 CDC:

1. All accessory structures.

a. Location.

…..

2. Conversions and additions. Existing detached, unheated structures including, but not limited to, workshops and garages, may be converted into other allowable accessory uses under the following conditions:

…..

a. The structure is located behind the house's front building line;

…….

d. The conversion of an existing structure is not required to meet the design standards in CDC 34.030, but it must conform to all applicable requirements of this chapter. (Ord. 1614 § 6, 2013; Ord. 1735 § 3 (Exh. B), 2022)

Staff Finding 15: The proposed rooftop solar energy installation is not an accessory structure. The criteria does not apply.

25.070 ADDITIONAL STANDARDS APPLICABLE TO HISTORIC DISTRICTS

This section provides additional standards that are applicable to properties within a historic district.

A. Standards for alterations and additions.

1. Compatibility with nearby context. Alterations and additions shall be:

a. Similar in scale and mass to adjacent properties, and constructed such that they maintain the privacy of the residents of adjacent properties through window placement, orientation or landscaping.

Staff Finding 16: The proposed solar energy installation is unique in relation to adjacent properties. No other rooftop solar energy installations currently exist on the neighboring Eligible Significant and Eligible Contributing homes. The CDC Chapter 25 Overlay Zones – Historic District permits rooftop solar energy installations to be exempt from Design Review if the solar energy system faces the rear property line or is at a 45-degree angle from the rear property line, thus minimizing its visual effect

on the historic district when viewed from the right-of-way. However, the proposed design faces the front yard and side yard and does not qualify for an exemption from a Historic Design Review.

2. Not in period buildings. Alterations to compatible, not in period buildings shall follow all applicable standards of this chapter to avoid creating a false sense of history.

Staff Finding 17: City records indicate the subject building was built in 1984 and is classified as a not-in-period compatible structure. The proposed solar energy installation does not create a false sense of history.

3. Not in period noncompatible buildings. Alterations to not in period, noncompatible buildings shall be consistent with applicable standards in CDC 25.060 and 25.070. Such buildings do not contribute to the historic value of the district and are not subject to standards pertaining to siding, windows, and other materials listed in CDC 25.060(A); however, such buildings shall not be so stylistically different from adjacent buildings that they detract from the district's historic character.

Staff Finding 18: The subject building is classified as not-in-period compatible; the criteria does not apply.

B. Standards for new construction. The standards in this section apply only to new construction, including new accessory structures, in a historic district. The standards for new construction do not apply to alterations and additions to existing structures. These standards shall apply in addition to any other applicable standards (see the Standards Applicability Matrix in CDC 25.020).

Staff Finding 19: The proposed project is classified as addition or alteration. The criteria does not apply.

C. Willamette Historic District general design standards. This subsection applies only to alterations and additions, new construction, and accessory structure construction of residential and historically residential properties in the Willamette Historic District. Other buildings are subject to the requirements in Chapter 58 CDC. Dimensional and other requirements of the underlying zone, as applicable, shall apply.

1. Front yard setback.

…….

1. Side yard setback. Side yard setbacks shall be five feet, except:

……

2. Side street setback. Setbacks from side streets…..

3. Rear yard setback. The rear…….

4. Orientation. New home construction …….

5. Repealed by Ord. 1675.

Staff Finding 20: The proposed solar energy installation will not alter any existing setback nor will the building orientation be modified.

7. Building height.
a. Residential structures are limited to 28 feet in height. Cupolas and towers shall not exceed 50 feet in height.
b. Repealed by Ord. 1735.
c. Repealed by Ord. 1735.
d. Accessory structures shall not exceed the height of the primary dwelling.

Staff Finding 21: The proposed rooftop solar energy installation will be mounted on the roof pitch and will not exceed the existing height of the building.

8. Building shapes and sizes. No building shall exceed 35 feet in overall width. Front facade gables shall not exceed 28 feet in overall width.

Staff Finding 22: The building shape and size will not be altered.

9. Roof pitch. Roofs shall have a pitch of at least 6:12.

Staff Finding 23: The rooftop solar energy installation will not change the existing roof pitch. The solar panels will be installed on the roof, parallel to the existing roof pitch.

10. Garage access and parking areas.
a. Garages shall be accessed from an alley, if present. No garage door may face or have access onto a street except when alley access is not available.
b. Parking areas.
1) No residential lot shall be converted solely to parking use.
2) No rear yard area shall be converted solely to parking use.
3) When a lot is adjacent to an alley, all parking access shall be from the alley. (Ord. 1614 § 6, 2013; Ord. 1636 § 23, 2014; Ord. 1675 § 33, 2018; Ord. 1735 § 3 (Exh. B), 2022)

Staff Finding 24: The proposed project will not alter the existing garage, access, or parking on the property.

99.060 APPROVAL AUTHORITY
D. Historic Review Board authority. The Historic Review Board shall review an application for compliance with Chapters 25 and 58 CDC, as applicable. The Historic Review Board shall have the authority to:
1. Approve, deny, or approve with conditions an application regarding the following:
a. Class II Historic Design Review;
…..
Staff Finding 31: The application is being presented to the Historic Review Board at it February 19, 2025 meeting. The criteria is met.

99.080 NOTICE
Notice shall be given in the following ways:

A. Class A Notice. Notice of proposed….

…….

B. Class B Notice. Notice of a proposed action on a development application pursuant to CDC 99.060 shall be given by the Director in the following manner:

1. At least 14 days prior to the decision date, a notice shall be sent by mail to:

a. The applicant or their agent;

b. The affected recognized neighborhood association or citizens advisory committee; and

c. All property owners of record within 300 feet of the site perimeter;

2. At least 10 days prior to the earliest date that the approval authority can take action on the application, the applicant shall place a sign, provided by the Community Development Department, on the subject property in plain view. The sign shall state, "This property is the subject of a land use decision," with the type of use or request indicated.

3. The Director shall cause an affidavit of mailing of notice and posting of notice to be filed and made part of the administrative record.

4. At the conclusion of the land use action the signs shall be removed.

Staff Finding 32: The applicants proposal has been properly noticed per Exhibit HRB-9. Public notice was mailed to the Willamette Neighborhood Association and affected property owners within 300 feet of the site on February 6, 2025. The property was posted with a notice sign on February 6, 2025. The notice was published in the West Linn Tidings on February 6, 2025. The notice requirements of CDC Chapter 99 have been met.

EXHIBIT HRB-1 APPLICANT SUBMITTAL

City of West Linn
Planning & Development • 22500 Salamo Rd #1000 • West Linn, Oregon 97068
Telephone 503.656-3535 • westlinnoregon.gov

DEVELOPMENT REVIEW APPLICATION

For Office Use Only			
STAFF CONTACT: Wyss	PROJECT NO(S).: HDR-24-03		PRE-APPLICATION NO.
NON-REFUNDABLE FEE(S): $100	REFUNDABLE DEPOSIT(S): 0	TOTAL: $100	

Type of Review (Please check all that apply):

- ☐ Annexation (ANX)
- ☐ Appeal (AP)
- ☐ CDC Amendment (CDC)
- ☐ Code Interpretation (MISC)
- ☐ Conditional Use (CUP)
- ☐ Design Review (DR
- ☐ Tree Easement Vacation (MISC)
- ☐ Expediated Land Division (ELD)
- ☐ Extension of Approval (EXT)
- ☐ Final Plat (FP) Related File #_____
- ☐ Flood Management Area (FMA)
- ☑ Historic Review (HDR)
- ☐ Lot Line Adjustment (LLA)
- ☐ Minor Partition (MIP)
- ☐ Modification of Approval (MOD)
- ☐ Non-Conforming Lots, Uses & Structures
- ☐ Planned Unit Development (PUD)
- ☐ Street Vacation
- ☐ Subdivision (SUB)
- ☐ Temporary Uses (MISC)
- ☐ Time Extension (EXT)
- ☐ Right of Way Vacation (VAC)
- ☐ Variance (VAR)
- ☐ Water Resource Area Protection/Single Lot (WAP)
- ☐ Water Resource Area Protection/Wetland (WAP)
- ☐ Willamette & Tualatin River Greenway (WRG)
- ☐ Zone Change (ZC)

Pre-Application, Home Occupation, Sidewalk Use, Addressing, and Sign applications require different forms, available on the website.

Site Location/Address: 1852 4th Ave West Linn, OR 97068

Assessor's Map No.: 31E02BD
Tax Lot(s): 31E02BD00500
Total Land Area: 4792 Sqft

Brief Description of Proposal:

3.825 kW grid-tied rooftop photovoltaic solar system to be installed on the roof of the Main dwelling. 9 425 watt modules will be mounted to the front of the home, facing the street. This property is located in the Williamette Historic District

Applicant Name*: Cordell Lawson / Blue Raven Solar LLC
Address: 1403 N 630 E, Orem, UT 84097
City State Zip:
Phone: 800.377.4480
Email: qualitycontrol@blueravensolar.com

Owner Name (required): Elizabeth Smolens
Address: 1852 4th Ave West Linn, OR 97068
City State Zip:
Phone: 503.680.6141
Email: smolense@gmail.com

Consultant Name:
Address:
City State Zip:
Phone:
Email:

1. Application fees are non-refundable (excluding deposit). Applications with deposits will be billed monthly for time and materials above the initial deposit. ***The applicant is financially responsible for all permit costs.**
2. The owner/applicant or their representative should attend all public hearings.
3. A decision may be reversed on appeal. The decision will become effective once the appeal period has expired.
4. Submit this form, application narrative, and all supporting documents as a single PDF through the Submit a Land Use Application web page: https://westlinnoregon.gov/planning/submit-land-use-application

The undersigned property owner authorizes the application and grants city staff the **right of entry** onto the property to review the application. Applications with deposits will be billed monthly for time and materials incurred above the initial deposit. The applicant agrees to pay additional billable charges.

Cordell Lawson 10/02/2024

Applicant's signature Date Owner's signature ***(required)*** Date

DEVELOPMENT REVIEW CHECKLIST

The application form and supporting materials should be submitted electronically through https://westlinnoregon.gov/planning/submit-land-use-application **as one (1) .pdf file**. To create a single PDF file, go to Adobe Acrobat Free Merge PDF online tool. Other free Acrobat PDF tools like converting a file to PDF or reducing the file size are available on the Adobe website.

Supporting reports may be uploaded separately through this web form if the file size is too large. The separate submissions should be numbered (i.e., Submittal 1 of 2) and noted under transmittal contents. All plan set files MUST be flattened and reduced.

Submission requirement to upload through the web form:

- .pdf format.
- Individual file size no larger than 128 MB.
- Do not attach 'zip' files. Our server will reject all 'zip' files.
- Reduce and flatten all plan sets BEFORE uploading plan sets. The raster/vector settings should be optimized for printing.

A complete application must include the following:

- ☑ Development Review Application. Original signatures from all owners must be on the application form. **Do NOT use DocuSign.**
- ☑ A **project narrative** outlining the project's scope in detail, including the changes to the site, structure, landscaping, parking, land use, and lot consolidations.
- ☑ Complete written responses to identified approval criteria in the Community Development Code (CDC).
- ☐ A Service Provider Letter from Tualatin Valley Fire and Rescue - https://www.tvfr.com/399/Service-Provider-Permit Please contact Jason Arn at jason.arn@tvfr.com with any questions about TVF&R requirements.
- ☑ Vicinity Map showing the site within the City.
- ☑ Site Plan drawn to scale showing the:
  - Taxlot and address of the project,
  - Area of the site (acres or square feet),
  - Zoning and Neighborhood Association,
  - Location and dimensions of existing and proposed buildings, structures,
  - Location of existing and proposed on-site driveways and off-street parking,
  - Configuration and dimensions of all existing and proposed lots and tracts, including a proposed park, open space, and or drainage tracts or easements,
  - Location and width of existing and proposed easement for access, drainage, etc., and
  - Location of existing and proposed trees and other proposed landscaping.
  - Location of existing public and private utilities, easements, and 100-year floodplain,
  - Sensitive areas, including the location of on-site wetlands and riparian areas,
  - Location of existing off-site driveways across the street,
  - If applicable, internal circulation system, name, and location of existing and proposed roadways and roadway easements (private and public), and
  - Location and width of existing and proposed on-site pedestrian and bicycle facilities on-site.
- ☐ If applicable, a Utility Plan and Landscape plan, drawn to scale.
- ☑ If applicable, Building elevation drawings with exterior elevations for every side of each structure, height including building materials and floor levels, drawn to scale.
- ☑ If required, documentation of any required meeting with the respective City-recognized neighborhood association per CDC 99.038.
- ☑ Any other materials identified by city staff at the pre-application meeting.

For applications that the Planning Commission decides, the applicant or applicant's representative should present their proposal to the PC at the public hearing.

City of West Linn

Planning & Development • 22500 Salamo Rd #1000 • West Linn, Oregon 97068
Telephone 503.656-3535 • westlinnoregon.gov

DEVELOPMENT REVIEW APPLICATION

For Office Use Only		
STAFF CONTACT	PROJECT NO(S).	PRE-APPLICATION NO.
NON-REFUNDABLE FEE(S)	REFUNDABLE DEPOSIT(S)	TOTAL

Type of Review (Please check all that apply):

- ☐ Annexation (ANX)
- ☐ Appeal (AP)
- ☐ CDC Amendment (CDC)
- ☐ Code Interpretation (MISC)
- ☐ Conditional Use (CUP)
- ☑ Design Review (DR
- ☐ Tree Easement Vacation (MISC)
- ☐ Expediated Land Division (ELD)
- ☐ Extension of Approval (EXT)
- ☐ Final Plat (FP) Related File #
- ☐ Flood Management Area (FMA)
- ☑ Historic Review (HDR)
- ☐ Lot Line Adjustment (LLA)
- ☐ Minor Partition (MIP)
- ☐ Modification of Approval (MOD)
- ☐ Non-Conforming Lots, Uses & Structures
- ☐ Planned Unit Development (PUD)
- ☐ Street Vacation
- ☐ Subdivision (SUB)
- ☐ Temporary Uses (MISC)
- ☐ Time Extension (EXT)
- ☐ Right of Way Vacation (VAC)
- ☐ Variance (VAR)
- ☐ Water Resource Area Protection/Single Lot (WA
- ☐ Water Resource Area Protection/Wetland (WA
- ☐ Willamette & Tualatin River Greenway (WR
- ☐ Zone Change (ZC)

Pre-Application, Home Occupation, Sidewalk Use, Addressing, and Sign applications require different forms, available on the website.

Site Location/Address: 1852 4th Ave, West Linn, Oregon, 97068

Assessor's Map No.: 31E02BD00500
Tax Lot(s): 0.11 acres
Total Land Area: 1702

Brief Description of Proposal:
The applicant proposes to install a solar photovoltaic panel system on the South & Southwest-facing roof faces of the primary dwelling on 1852 4th Ave.

Applicant Name*: BRS Permitting
Address: 1403 N Research Way, Orem, Utah 84097
City State Zip:
Phone: (385)482-0045
Email: permitting.department@blueravensolar.com

Owner Name (required): Elizabeth Smolens
Address: 1852 4th Ave
City State Zip: West Linn, Oregon, 97068
Phone: 5036806141
Email: smolense@gmail.com

Consultant Name:
Address:
City State Zip:
Phone:
Email:

1. Application fees are non-refundable (excluding deposit). Applications with deposits will be billed monthly fo time and materials above the initial deposit. ***The applicant is financially responsible for all permit costs.**
2. The owner/applicant or their representative should attend all public hearings.
3. A decision may be reversed on appeal. The decision will become effective once the appeal period has expire
4. Submit this form, application narrative, and all supporting documents as a single PDF through the Submit a Land Use Application web page: https://westlinnoregon.gov/planning/submit-land-use-application

The undersigned property owner authorizes the application and grants city staff the **right of entry** onto the property to revi the application. Applications with deposits will be billed monthly for time and materials incurred above the initial deposit. T applicant agrees to pay additional billable charges.

Amber Thompson — Applicant's signature — 08 / 28 / 2024 Date

Owner's signature ***(required)*** — 9/3/2 Date

Date: 08/28/2024
Permit #: 935-24-000774-STR E1810124
Project Name: **Elizabeth Smolens**
Address: 1852 4th Ave West Linn, OR 97068

To whom it may concern,
This letter is to address the 25.060 Design Standards applicable to Historic Resources

I hope this letter finds you well. We are writing to inform you about our upcoming solar installation within your jurisdiction. Our company is fully committed to ensuring that our project aligns with all applicable regulations and standards, particularly those concerning historic resources.
We understand the significance of Section 25.060 Design Standards Applicable to Historic Resources, which governs the design, placement, and appearance of solar energy systems in historic districts or on historic properties. We assure you that our proposed solar installation will fully comply with these standards.

Our Commitment to Compliance:

1. **Aesthetic Considerations:** We will design the solar installation to minimize visual impact on the historic character of the property and surrounding area. This includes carefully considering panel placement, color matching, and visibility from public rights-of-way.
2. **Preservation of Historic Features:** The installation will not alter or damage the property's historic materials or features. All work will be reversible and will avoid any physical or visual disruption to the integrity of the historic resource.
3. **Consultation and Review:** We are committed to working closely with the city's planning department and any relevant historical review bodies. We will submit detailed plans for review and approval, ensuring that all stakeholders are fully informed and satisfied with the proposed installation.

We appreciate your attention to this matter and look forward to collaborating with your office to ensure that our solar project meets and exceeds the standards outlined in Section 25.060. Please do not hesitate to contact us if you require further information or have any specific concerns.
Thank you for your time and consideration. We are excited to contribute to the sustainability goals of while preserving its valuable historic resources.

Please reach out to me directly if you have any questions.

Thank you and I look forward to your response,

Cordell Lawson
Quality Control Technician
Cordell.Lawson@blueravensolar.com
QualityControl@blueravensolar.com
385.273.1105

BLUE RAVEN SOLAR | The Future of Energy. Today.

Proposed Rooftop Photovoltaic Solar Installation

Narrative

1852 4th Ave
West Linn, OR 97068
Owner: Elizabeth Smolens

This proposed solar project is a rooftop solar installation on the main home located on a residential property listed as a historic resource in the Willamette Falls Neighborhood Historic District.

The panels will be facing south, (the most efficient solar orientation), as shown in Figure 1. We have to place them on the south due to vents on the back of the home. 4 Panels will not be directly facing the street and the other 5 will be obscured mostly by a dormer.

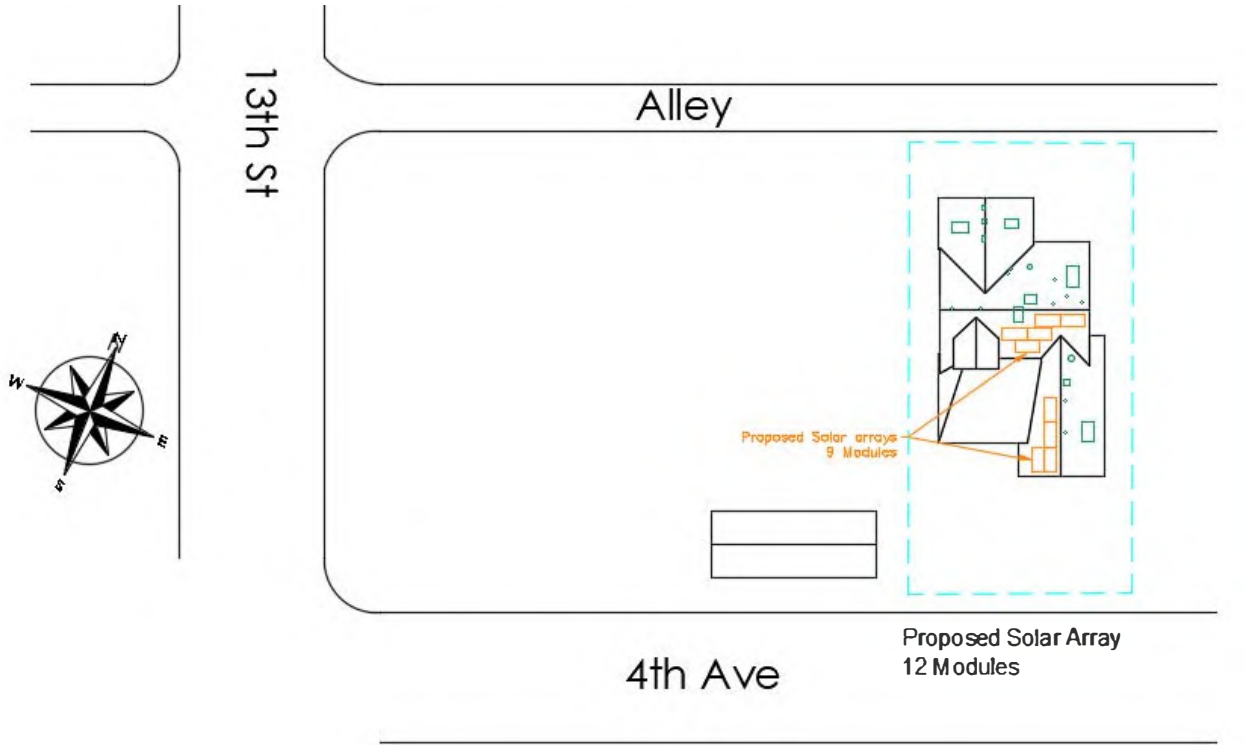


Figure 1: Location of Proposed Solar Array on Main Home

Blue Raven Solar LLC | www.blueravensolar.com
1403 N 630 E, Orem, UT 84097 | Phone: (800) 377-4480 |
CCB # 64700103 | UT Business License # 10972392-5501

Figure 2: Main home visible from 4th Avenue

Figure 3: Main home visible from 4th Avenue with 2 arrays added to home.

Solar systems exempt from West Linn Historical Review meet the following criteria:

- On a pitched roof facing a rear lot line or on a section of pitched roof facing within 45 degrees of the rear lot line.

  X - The proposed system will face the street.

- The system must be mounted flush, with the plane of the system parallel with the roof surface.

  ☑ - The system will be mounted parallel to the roof plane.

- The system must be no more than 12 inches from the surface of the roof at any point.

  ☑ - The system will be approximately 6 inches from the roof surface at all points.

- The system must be set back three feet from the roof edge and ridgeline.

  X - The system will be approximately 1 foot 9 inches from the ridge and 6 inches from each side.

This system is not exempt from historical review because it is too close to the ridge and roof edges for exemption, however it meets all of the other criteria.

Figure 4 & Figure 5 illustrate the locations that a person would have to be standing in order to see the array from the front of the home. A tall person with eyes 6 feet from the ground would need to be standing in the grass in front of the fence of the home across the street. A person with eyes 5 feet from the ground would need to be standing behind the fence of the home across the street.

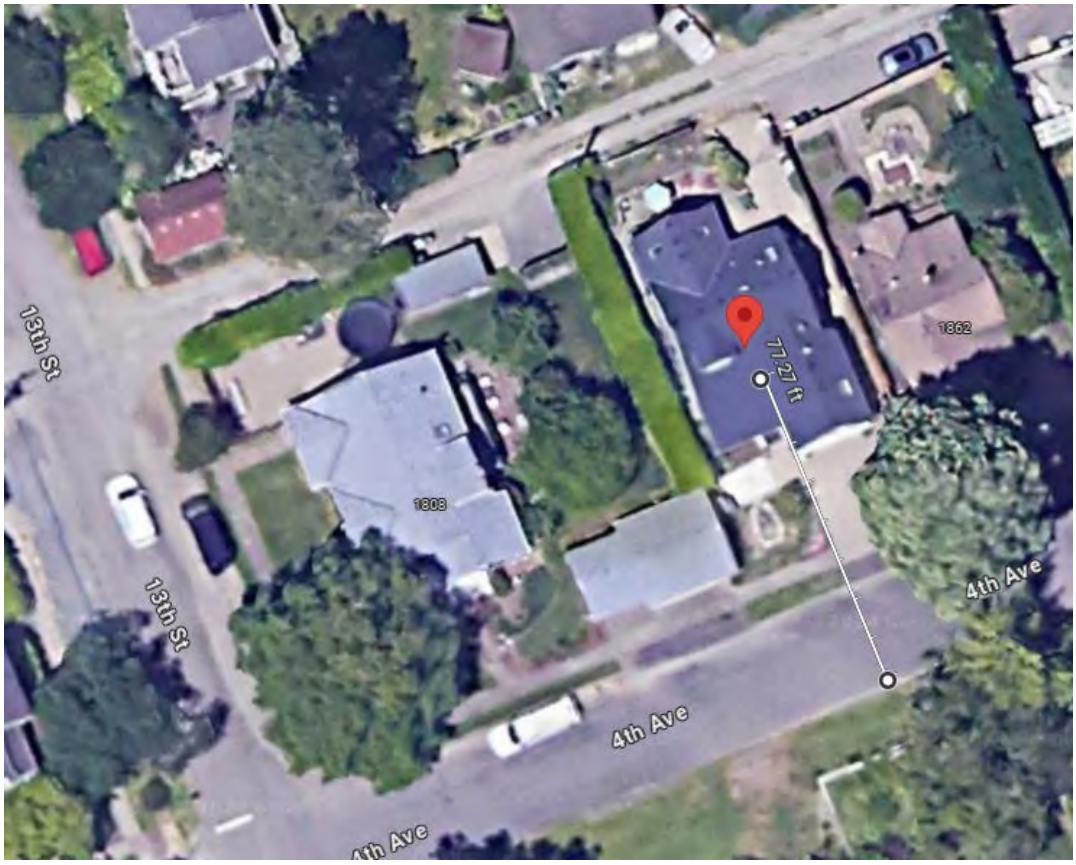


Figure 4: Aerial View of the Property with distances to points on the property facing the subject property where a person will be able to see the modules clearly from the street. Note the panels will not be visible from the public right of way (alley).

Figure 4: Locations where solar modules will be visible for all eyes from the ground. Panels will not be visible past the garage when heading east down 4th Ave, however when turning onto 4th Ave from 13th St the panels will be visible until passing the home.

The array will consist of 25 Q-Cells Solar modules, Q.TRON BLK M-G2+, which have black frames, black cells, and a black backsheet, making the module appear all-black, as seen in Figure 5. These modules will blend into the roof t ll st ll e not e le s n e t e re on t e ront o t e o e.

Figure 5: Silfab Solar Module Image – Module is all black with a black frame

Responses to Community Development Code

West Linn, OR

1611 6th Ave, West Linn, OR 97068
Owner: Kathy Selvaggio

Several Community Development Codes will apply to the proposed rooftop solar installation at the home of Ms. Kathy Selvaggio, located at 1611 6th Ave, West Linn, OR 97068. The solar modules will be mounted on the rear roof of the detached garage, an accessory structure, located at the rear of the residential property. The Property is located in the Willamette Falls Neighborhood Historic District.

The following Community Development Codes will apply to this project:

- Chapter 13: Residential, R-5
  - 13.030 This property is a single-family detached residential unit which is a permitted use.
- Chapter 25: Overlay Zones – Historic District
  - Notes relating to Chapter 25's requirements are provided below, under each relevant code section.
- Chapter 34: Accessory Structures, Accessory Dwelling Units, and Accessory Uses
  - 34.020 This accessory structure is a detached garage which is currently used as a garage and will continue to be used as a garage after completion of the proposed solar installation.
- Chapter 99: Procedures for Decision Making: Quasi-Judicial
  - The requirements of this chapter will be followed to the best of our abilities. We have completed the Pre-application Conference. This document is part of the Land Use Application.

Chapter 25: Overlay Zones – Historic District
Comments & Responses regarding the proposed solar project are in Blue

25.020 USE OF THIS CHAPTER

A. Applicability. This chapter shall apply to all properties designated as historic resources as shown on the City's zoning map and properties listed on the National Register. Specific sections apply as noted in subsections B and C of this section.

B. Hierarchy of regulation. The provisions of this chapter shall supersede any conflicting standards or criteria elsewhere in the CDC. The underlying zoning provisions for the applicable zone still apply.

1. Exemptions. The items listed in CDC 25.040(A), Exemptions from Historic Design Review, are exempt from historic review; provided, that they comply with any applicable requirements in CDC 25.040(A).

This proposed project is not exempt from the historic review. See the additional comments in 25.040.13 b.

2. Design standards. CDC 25.060, Design standards applicable to historic resources, applies to historic reviews for designated properties, except for CDC 25.060(B), Standards for accessory structures, which applies only to accessory structures on sites containing historic resources.

This project complies with all relevant design standards. See the additional comments in 25.060.

3. Additional design standards. CDC 25.070, Additional design standards applicable to historic districts, provides additional standards that are applicable to Historic Design Review for historic district properties.

This project complies with all relevant design standards. See the additional comments in 25.070.

a. CDC 25.070(A), Standards for alterations and additions, applies only to Historic Design Review in a historic district.

b. CDC 25.070(B), Standards for new construction, applies only to new development or construction in a historic district beyond alterations and additions, and including accessory structures.

c. CDC 25.070(C), Willamette Historic District general standards, applies only to alterations and additions, new construction, and accessory structure construction in the Willamette Historic District.

C. Applicability of historic design standards. Development subject to this chapter must comply with applicable Historic Design Review standards unless otherwise approved through the modifications process under CDC 25.080. The "X" in the following chart indicates which standards are applicable to different types of development.

No alternatives are needed for this proposed project to comply with existing design standards.

25.030 PERMITTED USES

Unless otherwise provided for in this chapter, uses permitted by the base zoning district that are in accordance with the CDC are allowed on sites containing historic resources. (Ord. 1614 § 6, 2013; Ord. 1735 § 3 (Exh. B), 2022)

This proposed solar installation would be permitted by the base zoning district.

25.040 HISTORIC DESIGN REVIEW PROCESSES

Proposed changes to historic resources that are not exempted by subsection A of this section, Exemptions from Historic Design Review, are subject to subsection B of this section, Class I Historic Design Review, or subsection C of this section, Class II Historic Design Review. Class I Historic Design Review addresses significant changes that warrant staff review. Class II Historic Design Review addresses major changes including additions and new construction, subject to Historic Review Board approval. The processes for conducting Class I and Class II Historic Design Review are in Chapter 99 CDC.

A. Exemptions from Historic Design Review. The following are exempt from Historic Design Review:

This project is not exempt from the historic review. See the additional comments in 25.040.13 b.

1. Ordinary maintenance. Ordinary maintenance or repair including a change of facade colors, unless the color is specifically listed in the historic resource inventory, historic resource nomination, or National Register nomination as an attribute that contributes to the resource's historic significance.

2. Gutters and downspouts. Replacement or addition of gutters and downspouts that are rectangular, ogee, half-round or K-shaped and composed of wood or metal material, or styles and materials that match those that were typically used on similar style buildings of the era, or the era the building style references.

3. Foundation. Repair of a foundation with the same material or construction of a foundation in the same location that does not result in raising or lowering the building elevation.

4. Building material. Replacement of building material, when such material is beyond repair, with building material that matches the original material.

5. Roof material. Repair or replacement of roof material with material comparable to the existing roof, or replacement of the roof in its entirety with cedar shingles, three tab asphalt shingles, or architectural composition shingles.

6. Storm windows. Storm windows made of painted wood, a material with a baked enamel finish, anodized aluminum, or other materials with forms that complement or match the color, detail, and proportions of the building.

7. Egress windows. Addition of egress windows on secondary facades with wood windows or windows that are consistent with subsection (A)(6) of this section.

8. Landscaping. Landscaping changes unless the landscaping is identified in the historic resource inventory, historic resource nomination, or National Register nomination, as an attribute that contributes to the resource's historic value.

9. Fences. Construction of fences that meet the following requirements in addition to the requirements of Chapter 44 CDC:

a. Traditional fences. Any fence along a front lot line or along the portion of a side lot line between the street and the primary structure (see Figures 1 and 2) which:

1) Consists of pickets, each of which are between one and three inches wide and spaced equally;

2) Does not have solid portions exceeding 50 percent; and

3) Is no greater than 36 inches in height.

b. General fences. Any fence that is not located along a front lot line or along the portion of a side lot line between the street and the primary structure that is:

1) Constructed of wood fence boards, rails, posts, and associated hardware only; and

2) No greater than 72 inches in height.

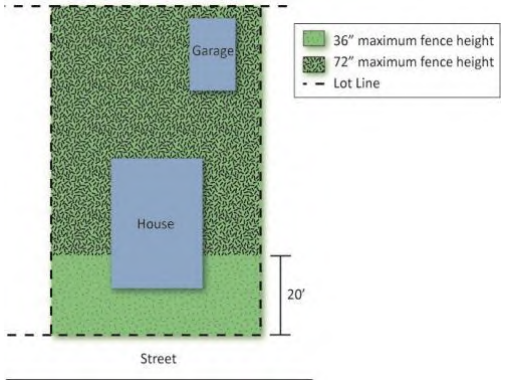


Figure 1: Example of Exempt Interior Lot Fence Locations

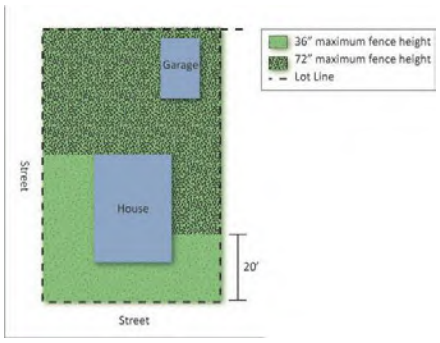


Figure 2: Example of Exempt Corner Lot Fence Locations

10. Retaining walls. Construction of retaining walls that meet the following requirements:

a. No greater than three feet high; and

b. Project above upper grade no more than 12 inches.

11. Swimming pools. Construction of in-ground swimming pools in rear yards.

12. Mechanical equipment. Replacement or installation of mechanical equipment, if 100 percent screened by a permitted building, fence, or landscaping that precludes visibility from any street.

13. Solar energy systems. Replacement or installation of solar energy systems that are not part of a project that includes other elements subject to Historic Design Review, provided the following requirements are met:

a. On a flat roof, the horizontal portion of a mansard roof, or roofs surrounded by a parapet that is at least 12 inches higher than the highest part of the roof surface:

1) The solar energy system must be mounted flush or on racks with the system or rack extending no more than five feet above the top of the highest point of the roof.

2) The solar energy system must be screened from view from all streets by an existing parapet along the street-facing facade that is as tall as the tallest part of the solar energy system, or by setting the solar energy system back from the roof edges facing the street four feet for each foot of solar energy system height.

b. On a pitched roof, solar energy systems may be located on a section of pitched roof facing a rear lot line or on a section of pitched roof facing within 45 degrees of the rear lot line. (See the example on the right side of Figure 3.) The system must be mounted flush, with the plane of the system parallel with the roof surface, with the system no more than 12 inches from the surface of the roof at any point, and set back three feet from the roof edge and ridgeline.

This solar system will be mounted on a rear-facing roof of an accessory structure.

It will be mounted parallel to the roof plane.

It will be no more than 12 inches from the roof surface. Our installations are typically about 6 inches above the roof surface.

It will NOT be set back 3 feet from the ridgeline of the structure, as that would reduce the number of solar modules that would fit on this roof by 25%, and the system is already less than the target size for offsetting the home's energy consumption.

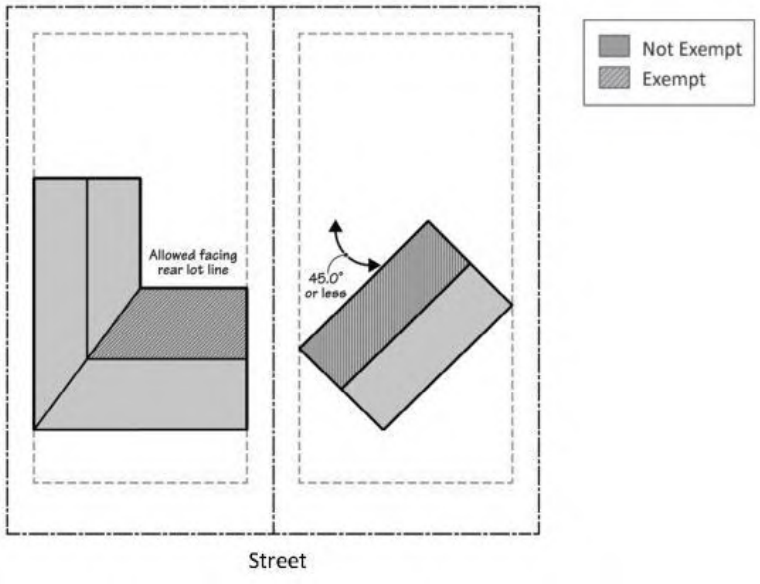


Figure 3: Exempt Solar Energy System Locations

14. Skylights. Replacement or installation of skylights that are not part of a project that includes other elements subject to Historic Design Review, provided the following requirements are met:

a. For skylights that are on a flat roof, the horizontal portion of a mansard roof, or roofs surrounded by a parapet that is at least 12 inches higher than the highest part of the roof surface, the skylight must be screened from view from all streets by:

1) An existing parapet along the street-facing facade that is as tall as the tallest part of the skylight; or

2) Setting the skylight back from the roof edges facing the street four feet for each foot of skylight height.

b. For skylights that are on a pitched roof, the skylight must be flat and must face a side or rear lot line or be located on a section of a pitched roof that faces within 45 degrees of a rear lot line. (See the right side of Figure 3.)

15. Utilities, street infrastructure, and street furniture. Replacement or installation of utilities, street infrastructure, or street furniture except for streetlights, utility boxes, benches, receptacles, and the installation of curbs where there are none. Replacement and new sidewalks shall not exceed four feet in width except as required to comply with the Americans with Disabilities Act and shall be compatible in location, pattern, spacing, dimensions, and materials with existing sidewalks.

16. Accessory structures. Construction of accessory structures under 120 square feet and 10 feet in height (greenhouses, storage sheds, jacuzzis, spas, structures, gazebos, etc.) in a side or rear yard.

B. Class I Historic Design Review. The following are subject to Class I Historic Design Review to determine their compliance with the applicable approval standards:

1. Nonexempt. Items listed in CDC 25.040(A)(1) through (16) that do not qualify for an exemption;

The solar installation will fall into this category.

2. Facade alteration. Alteration of a facade when 100 square feet or less of the structure's facade is being altered;

3. Ingress/egress. Revised points of ingress/egress to a site;

4. Americans with Disabilities Act. Proposals seeking compliance with the Americans with Disabilities Act, not including the public right-of-way; and

5. Art and statuary. Construction of freestanding art and statuary over 10 feet tall.

C. Class II Historic Design Review. All proposed new construction, alterations, and additions, not identified as exempt under subsection A of this section, or subject to Class I Historic Design Review under subsection B of this section, are subject to Class II Historic Design Review and must meet the applicable approval standards. (Ord. 1614 § 6, 2013; Ord. 1735 § 3 (Exh. B), 2022)

25.050 APPLICATION REQUIREMENTS

A. Historic Design Review. Applications for Historic Design Review shall include the following:

1. Narrative. Written narrative explaining the proposal and how it meets the approval criteria in CDC 25.060 and 25.070, as applicable;

Please see separate Narrative document.

2. Existing plan and elevation drawings. Plan and elevation drawings of the existing structure, if applicable, including materials;

Please see the solar plan set for the elevation drawing of the accessory structure.

3. Proposed plan and elevation drawings. Plan and elevation drawings of the proposed changes, including materials;

Please see the solar plan set for the elevation drawing of the accessory structure with solar modules mounted on the south-facing roof.

4. Current photographs. Current photographs of the existing structure with adjacent properties for context, including all elevations and features proposed for modification;

Please see the included photographs of the accessory structure which include the neighboring garage that has a roof-mounted solar array.

5. Historic photographs. Historic photographs and/or drawings of the existing structure, if available; and

No historic photos were available

6. Supplementary. For additions that increase the gross square footage of the structures on the site by more than 50 percent, and/or new construction in a historic district:

This does not apply. We are not increasing the square footage of the structure.

a. Plan and elevation drawings of adjacent properties; and

b. A rendering and/or photo-simulation showing the proposal in context.

B. Designation of a historic resource. Applications for designation as a historic resource shall include the following:

N/A – We do not seek to make changes to the historic resource designation of the property.

1. Narrative. Written narrative description of the proposed historic resource and how it meets one or more of the approval criteria in CDC 25.090(A);

2. Site plan. Site plan depicting the property boundaries and all structures and features on the site;

3. Current photographs. Current photographs of all elevations of the existing structure and any significant features;

4. Historic photographs. Historic photographs, plans, or maps, if available;

5. Supplementary documentation. Any other documentation demonstrating the significance of the proposed historic resource; and

6. Owner consent. Owner consent as follows:

a. Historic landmarks. The property owner must consent, in writing, to a proposed historic landmark designation with the exception that properties listed on the National Register shall be regulated as historic landmarks regardless of the owner's consent.

b. Historic districts. A property owner may refuse to consent to historic district designation at any point during the designation process. Properties in historic districts listed on the National Register shall be regulated as historic properties regardless of the owner's consent.

C. Removal of historic resource designation. Applications for removal of historic resource designation shall include the following:

N/A – We do not seek to make changes to the historic resource designation of the property.

1. Narrative. Written narrative description of the historic resource proposed for removal of designation that addresses the considerations identified in CDC 25.100;

2. Site plan. Site plan depicting the property boundaries and all structures and features on the site;

3. Current photographs. Current photographs of all elevations of the existing structure and any significant features;

4. Historic photographs. Historic photographs, plans, or maps, if available; and

5. Supplementary documentation. Documentation that the property owner objected, on the record, at the time of designation, if applicable.

D. Relocation of a historic resource. Applications for relocation of a historic resource shall include the following:

N/A – We do not propose to relocate the historic resource.

1. Examination of alternatives. Documentation that all reasonable alternatives to relocation have been explored and that relocation is the preferred alternative.

2. Structure and site documentation. Documentation of the historic structure and site conditions prior to relocation, including detailed photography, notes, drawings, and reference measurements.

3. Moving procedures. Clearly stated moving procedures that will be utilized to protect historic elements and document the relocation, including: plans for minimizing damage to historic materials, labeling system for dismembered elements to assure accurate reconstruction in the new location, and plans for protecting the historic resource until reconstruction is complete.

E. Demolition of a historic resource.

N/A – We do not propose to demolish the historic resource.

1. Historic landmark or contributing primary structure. An application for the demolition of a historic landmark or contributing primary structure shall include:

a. A statement of the historic significance of the structure or resource to the community, taking into consideration its designation as a historic landmark or its contributing status in a historic district.

b. A statement demonstrating good faith efforts of the property owner to sell or relocate the structure or resources, including property documentation, but not limited to:

1) Real estate taxes for the two years immediately preceding the application;

2) Assessed value for the two years immediately preceding the application;

3) Current fair market value of the structure or resource as determined by an appraiser;

4) All listings for the structure or resource for the past two years including prices asked and offers received; and

5) Documentation of all attempts to relocate the structure or resource.

c. Documentation of the historic structure and site conditions prior to demolition, including detailed photography, notes, drawings, and reference measurements.

d. A report from a structural engineer on the condition of the structure or resource.

e. The estimated cost of rehabilitation of the structure or resource.

f. A report from a real estate or other market professional identifying potential alternative uses for the structure or resource permitted within the existing zoning classification.

g. A report identifying available economic incentives for adaptive reuse of the structure or resource.

h. A proposed plan for redevelopment of the site on which the structure or resource is located.

2. Non-contributing or not in period primary structure and accessory structure. An application for the demolition of a non-contributing or not in period primary structure or an accessory structure shall include:

a. A statement of the historic significance of the structure or resource to the community, taking into consideration its location on the site of a historic landmark or within a historic district.

b. A site plan depicting the property boundaries and all structures and features on the site.

c. A proposed plan for redevelopment of the site on which the structure or resource is located. (Ord. 1614 § 6, 2013; Ord. 1735 § 3 (Exh. B), 2022)

25.060 DESIGN STANDARDS APPLICABLE TO HISTORIC RESOURCES

The following design standards apply to all changes, including alterations, additions, and new construction proposed on a designated historic resource. These standards are intended to preserve the features that made the resource eligible for historic designation. Development must comply with all applicable standards, or be approved through the modifications process specified in CDC 25.080.

A. Standards for alterations and additions. This section applies to historic reviews for alteration of and additions to designated historic resources:

1. Retention of original exterior construction and overall structural integrity. The original exterior construction and structural integrity shall be maintained or restored to the greatest extent practicable. Stylistic features of original construction that shall be preserved include, but are not limited to: a line of columns, decorative shingles, projecting bays, windows and doors including their related functional and decorative features, other primary structural elements, spatial relationships that characterize the property, examples of skilled craftsmanship that characterize the building, and architectural details defining the structure's character and historic significance.

We will be directly editing the style of the roof with the addition of solar panels. This is to offset current homeowners power with green solar power.

2. Retention of exterior historic material. Removal or alteration of historic exterior materials and features shall be avoided during the construction of new additions or alterations. Deteriorated materials and architectural features shall be repaired rather than replaced, unless the material is beyond repair. In the event replacement of an existing feature is necessary, new materials shall match those of the original building in terms of composition, design, color, texture, and other visual features.

The proposed solar installation will not remove the exterior elements of the accessory structure. The existing structure will be unchanged.

3. Time period consistency. Buildings shall be recognizable as a physical record of their time and place. Alterations which have no historical basis or which seek to create a false sense of historical development are not allowed.

Solar panels will not be consistent with time period.

4. Significance over time. Changes to a property that have acquired historic significance in their own right, and during the period of significance, shall be retained and preserved.

Solar panels will be more significant over time, but thats hard to measure in a historical matter.

5. Differentiate old from new. Alterations, additions, and related new construction shall be differentiated from the original buildings to avoid creating a false sense of history, and shall be compatible with the historic materials, features, size, scale, proportion, and massing to protect the integrity of the property. Additions and alterations shall be done in accordance with the Secretary of the Interior's Standards for new exterior additions to historic buildings.

The proposed solar installation will not create a false sense of history. The alteration will consist of solar modules that will align with the slope of the existing roof and fit within the boundaries of the existing roof.

6. Reversibility. Additions and alterations shall be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its context would be unimpaired.

The proposed solar installation will be mounted as a permanent modification. However, if the solar system is removed in the future, the existing structure will generally appear unchanged from its original condition.

7. Building additions. Building additions shall be subordinate to the original building, smaller in scale, and attached to the rear or set back along the side. Features of building additions, including the proportions of window and door openings, shall be consistent with those of the existing building. Dimensional and other requirements in the underlying zone, as applicable, shall apply.

The proposed solar panels will not be a structural addition, rather an electric additon. It shouldn't effect floor plan.

8. Building height and roof pitch. Existing or historic building heights and roof pitch shall be maintained.

The proposed solar installation will not change the building height or roof pitch. The solar panels will be parallel to the roof plane.

9. Roof materials. Replacement of a roof or installation of a new roof with materials other than cedar shingles, three tab asphalt shingles, or architectural composition shingles must be demonstrated, using photographic or other evidence, to be in character with those of the original roof, or with materials that are consistent with the original construction.

The proposed solar installation will not include changes to the existing roof material.

10. Existing exterior walls and siding. Replacement of the finish materials of existing walls and siding must be with building materials consistent with the original construction.

The proposed solar installation will not include changes to the existing walls and siding.

11. New exterior walls and siding. Wood siding or shingles shall be used unless the applicant demonstrates that an alternative material has a texture and finish typically used on similar style buildings of the era, or the era the building style references. Vinyl or other materials that do not match those that were typically used on similar style buildings of the era, or the era the building style references, are not permitted.

The proposed solar installation will not include changes to the existing walls and siding.

12. Gutters and downspouts. Replacement or new gutters and downspouts shall be rectangular, ogee, half-round or K-shaped and comprised of wood or metal material, or styles and materials that match those that were typically used on similar style buildings of the era, or the era the building style references. Vinyl or other materials and styles that do not match those that were typically used on similar style buildings of the era, or the era the building style references, are not permitted.

The proposed solar installation will not include changes to the existing gutters or downspouts.

13. New windows. New windows shall be located on rear or secondary facades, unless required for a new use. New windows shall match the appearance and size of the original windows as closely as possible. Wood window frames and sashes shall be used unless the applicant demonstrates that the non-wood windows are consistent with the original historic appearance and material, including profile and proportion of the sash, sill, trim, light patterns, glass color, and profile of mullions and muntins. Replacement of existing windows shall meet standards for window replacement.

The proposed solar installation will not incorporate any windows.

14. Storm windows. Storm windows shall be made of painted wood, a material with a baked enamel finish, anodized aluminum, or another material that is consistent with the color, detail, and proportions of the building.

The proposed solar installation will not incorporate any windows.

15. Window replacement. Replacement of windows or window sashes shall be consistent with the original historic appearance and material, including the profile of the sash, sill, trim, window plane relative to the building wall plane, light pattern, glass color, profile of mullions and muntins, and color, method of operation and related features, such as shutters.

The proposed solar installation will not incorporate any windows.

16. Doors. Doors shall be painted or stained wood, fiberglass clad, or metal clad, or another material that is consistent with the original historic appearance.

The proposed solar installation will not incorporate any doors.

17. Porches. Front porches are allowed on new construction. No front porch shall be added to a structure if there was not one originally. Existing front porches shall not be enclosed or enlarged. Alterations to existing front porches and side yard porches that face a street shall:

The proposed solar installation will not incorporate any porches.

a. Maintain the shape, width, and spacing of the original columns; and

b. Maintain the height, detail, and spacing of the original balustrade.

18. Decks. Decks shall be located in the rear yard or the portion of the side yard behind the front 50 percent of the primary structure.

The proposed solar installation will not incorporate any decks.

19. Foundations. Repair or construction of a foundation that results in raising or lowering the building elevation must demonstrate that:

The proposed solar installation will not incorporate any foundation changes.

a. The proposal is consistent with the original design and, if applicable, is consistent in the context of adjacent and other structures on the block, based on photographic or other evidence; or

b. It is necessary to satisfy a requirement of the building code and/or floodplain regulations (Chapter 27 CDC).

20. Lighting. Residential lighting shall be shielded to prevent glare and compatible with the architectural character of the building. Blinking, flashing, or moving lighting is not permitted.

The proposed solar installation will not incorporate any lighting changes.

B. Standards for accessory structures. The following standards apply to accessory structures on properties designated as historic resources in addition to the regulations in Chapter 34 CDC:

The proposed solar installation will not change the location, height, size, or use of the existing accessory structure.

1. All accessory structures.

a. Location.

1) Accessory structures in the Willamette Historic District are subject to the setback requirements of CDC 25.070(C)(1) through (4);

2) Accessory structures on historic landmark properties must meet the setback requirements of the underlying zone and Chapter 34 CDC;

3) Detached accessory structures shall be in the rear yard; and

4) Two-story accessory structures shall be at least 10 feet from the house; and one-story accessory structures shall be at least three feet from the house.

b. Height. Accessory structures in the Willamette Historic District are subject to CDC 25.070(C)(7). Accessory structures on historic landmark properties must meet the height requirements of the underlying zone and Chapter 34 CDC.

2. Conversions and additions. Existing detached, unheated structures including, but not limited to, workshops and garages, may be converted into other allowable accessory uses under the following conditions:

a. The structure is located behind the house's front building line;

b. A structure in the front yard cannot be converted to a heated accessory structure;

c. A story may be added to an existing non-contributing garage or similar accessory structure; provided, that the final design meets the setback standards of this chapter for a two-story accessory structure (see CDC 25.070(C)(1) through (4)) for the historic district, or the setbacks in Chapter 34 CDC for a historic landmark; and

d. The conversion of an existing structure is not required to meet the design standards in CDC 34.030, but it must conform to all applicable requirements of this chapter. (Ord. 1614 § 6, 2013; Ord. 1735 § 3 (Exh. B), 2022)

25.070 ADDITIONAL STANDARDS APPLICABLE TO HISTORIC DISTRICTS

This section provides additional standards that are applicable to properties within a historic district.

A. Standards for alterations and additions.

1. Compatibility with nearby context. Alterations and additions shall be:

a. Similar in scale and mass to adjacent properties, and constructed such that they maintain the privacy of the residents of adjacent properties through window placement, orientation or landscaping.

The solar system will be similar to previously installed solar systems in historic district. This will not interfere with any neighboring homes or properties. This is completely due to home owner wanting to use green energy to power their home.

2. Not in period buildings. Alterations to compatible, not in period buildings shall follow all applicable standards of this chapter to avoid creating a false sense of history.

Solar panels are not likely to be mistaken for a false sense of history.

3. Not in period noncompatible buildings. Alterations to not in period, noncompatible buildings shall be consistent with applicable standards in CDC 25.060 and 25.070. Such buildings do not contribute to the historic value of the district and are not subject to standards pertaining to siding, windows, and other materials listed in CDC 25.060(A); however, such buildings shall not be so stylistically different from adjacent buildings that they detract from the district's historic character.

The proposed solar will not change style of home, rather it will offset electric utility power with green solar energy.

B. Standards for new construction. The standards in this section apply only to new construction, including new accessory structures, in a historic district. The standards for new construction do not apply to alterations and additions to existing structures. These standards shall apply in addition to any other applicable standards (see the Standards Applicability Matrix in CDC 25.020).

No new construction is proposed with this project. It is an alteration of an existing structure.

1. New construction shall complement and support the district. The historic district's defining characteristics include a discernible aesthetic rhythm of massing, scale, and siting. Infill buildings shall not deviate in a detracting manner from these elements, but appear as complementary members of the district, by conforming to the following:

a. Massing, scale, proportion, form, siting, floor area ratio, window patterns, building divisions, and height shall correspond to the contributing buildings within the district, and any specific historic district standards and the applicable requirements of the underlying zone.

b. Infill buildings shall relate to and strengthen the defining characteristics, including architectural style, without replicating the historic buildings. Buildings shall differentiate by use of materials, mechanical systems, construction methods, and, if applicable, signage. Architectural style shall not be the primary indicator of differentiation.

c. Mechanical and automobile infrastructure must be appropriately concealed when not consistent with the district's character.

2. Reconstruction. Reconstruction of buildings that existed within the district during the period of significance is allowed. Reconstructions shall be done in accordance with the Secretary of the Interior's Standards for Reconstruction.

3. Archaeological resources shall be preserved in place or mitigated. When new construction must disturb archaeological resources, mitigation measures shall be carried out consistent with applicable state and federal laws. As appropriate, information yielded from archaeological mitigation shall be interpreted in the new building or site.

C. Willamette Historic District general design standards. This subsection applies only to alterations and additions, new construction, and accessory structure construction of residential and historically residential properties in the Willamette Historic District. Other buildings are subject to the requirements in Chapter 58 CDC. Dimensional and other requirements of the underlying zone, as applicable, shall apply.

1. Front yard setback.

N/A – This solar project does not propose any changes to the front yard setback.

a. The front yard setback shall equal the average of the front setbacks of adjacent homes on the block face. For corner lots, the setback shall be the average between the adjacent house to the side and 20 feet. The setback shall be the distance measured from the front property line to the dominant vertical face of the building, exclusive of any porches or front landings.

b. Unenclosed porches with no living space above may encroach into the front yard setback six feet from the dominant vertical face of the building.

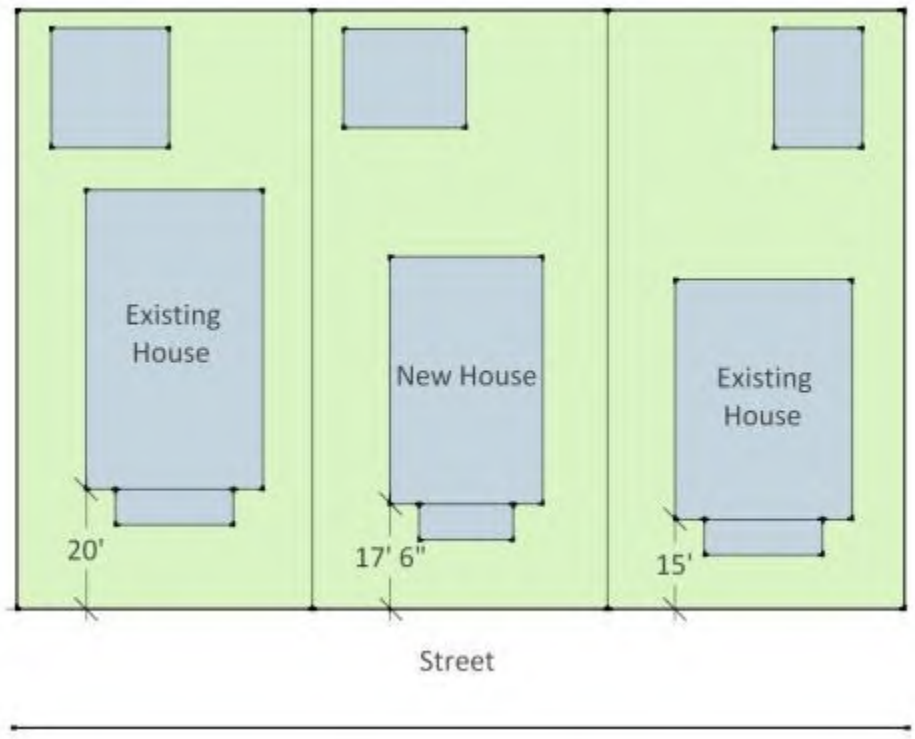


Figure 4: Front Yard Setback

2. Side yard setback. Side yard setbacks shall be five feet, except:

N/A – This solar project does not propose any changes to the side yard setback.

a. Bays, porches and chimneys and other projections that are cumulatively no more than 20 percent of the overall respective building wall length may intrude 18 inches into the side yard setback; and

b. One-story accessory structures may be sited within three feet of the side property line and two-story accessory structures shall be a minimum of 15 feet from the side property line.

3. Side street setback. Setbacks from side streets shall be 10 feet for both developed and undeveloped streets, except:

N/A – This solar project does not propose any changes to the side street setback.

a. Bays, porches and chimneys and other projections may intrude two feet into side street yard setback; and

b. One- and two-story accessory structures may be sited within five feet of the side street property line.

4. Rear yard setback. The rear yard setback shall be a minimum of 20 feet, except for accessory structures, which may be sited to within three feet of the rear property lines.

N/A – This solar project does not propose any changes to the rear yard setback.

5. Orientation. New home construction on corner lots shall be oriented the same direction as the majority of homes on the street with the longest block frontage.

N/A – This solar project does not propose any new home construction.

6. *Repealed by Ord. 1675.*

7. Building height.

a. Residential structures are limited to 28 feet in height. Cupolas and towers shall not exceed 50 feet in height.

N/A – This solar project is not proposed on a residential structure.

b. *Repealed by Ord. 1735.*

c. *Repealed by Ord. 1735.*

d. Accessory structures shall not exceed the height of the primary dwelling.

N/A – This solar project is proposed on a single story detached garage accessory structure which is shorter than the existing 2-story residence on the property.

8. Building shapes and sizes. No building shall exceed 35 feet in overall width. Front facade gables shall not exceed 28 feet in overall width.

N/A – This solar project will not change the shape or size of any buildings.

9. Roof pitch. Roofs shall have a pitch of at least 6:12.

N/A – This solar project will not change the shape or size of any roofs.

10. Garage access and parking areas..

a. Garages shall be accessed from an alley, if present. No garage door may face or have access onto a street except when alley access is not available.

b. Parking areas.

1) No residential lot shall be converted solely to parking use.

2) No rear yard area shall be converted solely to parking use.

3) When a lot is adjacent to an alley, all parking access shall be from the alley. (Ord. 1614 § 6, 2013; Ord. 1636 § 23, 2014; Ord. 1675 § 33, 2018; Ord. 1735 § 3 (Exh. B), 2022)

25.080 MODIFICATIONS TO DESIGN STANDARDS

This section provides for deviation from site development standards in this chapter to enable flexibility and innovation consistent with the purposes of this chapter while ensuring that the features that historic designations are intended to preserve are maintained.

N/A – No alternatives are needed for this proposed project to comply with existing design standards.

A. Applicability. The provisions of Chapter 75 CDC, Variance, shall not apply to the standards in this chapter.

B. Assessment of modification. When an applicant proposes an alternative to the standards of this chapter the approval authority shall grant a modification when:

1. Historical records. The applicant demonstrates by review of historical records or photographs that the proposed alternative is consistent with and appropriate to the architecture in the historic district, or is appropriate to the applicable style of architecture;

2. Consistency. The resulting development of the proposal would be consistent with the intent of the standards for which the modification is requested, as determined by the approval authority;

3. Negative impacts. Negative impacts to adjacent homes and/or a historic district will be minimized. These include, but are not limited to, loss of solar access, light, or air to an adjacent structure, and scale or mass that visually overwhelm or are not deferential to an adjacent landmark or contributing structure; and

4. Exceptional architecture. The proposal incorporates exceptional and appropriate architectural elements into the building.

5. Material substitution. The substitute material conveys the form, design, scale, detailing, and overall appearance of the historic material, and the application of the substitute does not damage, destroy, or obscure historic features. (Ord. 1614 § 6, 2013; Ord. 1735 § 3 (Exh. B), 2022)

25.090 DESIGNATION OF A HISTORIC RESOURCE

N/A – We do not propose to add to or change the historic resource designation.

25.100 REMOVAL OF HISTORIC RESOURCE DESIGNATION

N/A – We do not propose to remove the historic resource designation.

25.110 RELOCATION OF A HISTORIC RESOURCE

N/A – no relocation proposed

25.120 DEMOLITION OF A HISTORIC RESOURCE

N/A – no demolition proposed

25.130 DEMOLITION BY NEGLECT

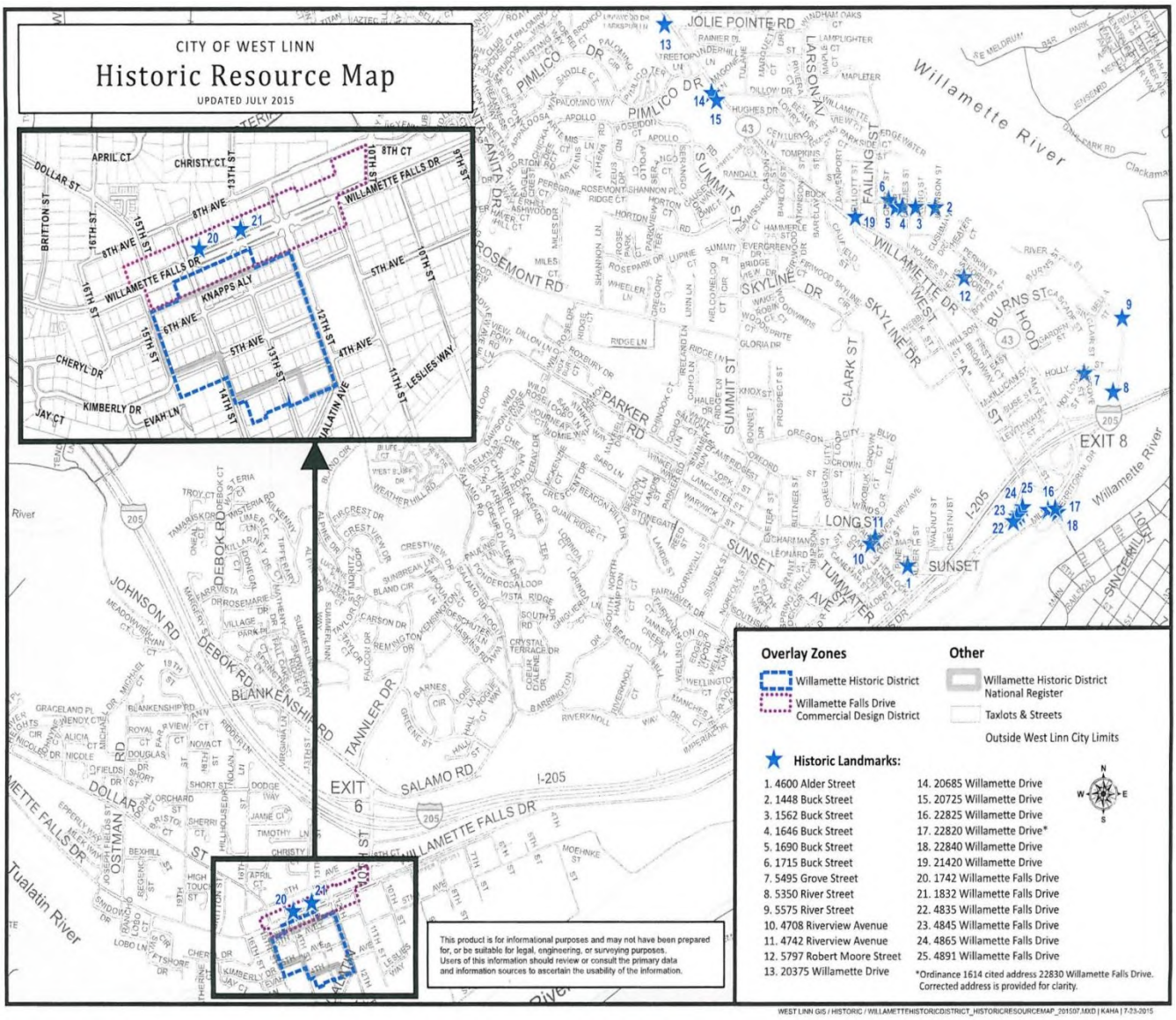
N/A – no demolition proposed

25.140 HISTORIC RESOURCE MAP

The Historic Resource Map, shown in Figure 1 below, identifies the Willamette Historic District, as shown on the Zoning Map; the Willamette Falls Drive Commercial Design District, as identified in CDC 58.030(C); and the historic landmarks identified on the Zoning Map.

The proposed solar project will be located on the rear roof of the detached garage accessory structure on a residential property located within the boundaries of the Willamette Historic District. The property is located at the southeast corner of the intersection of 6th Avenue and 15th Street.

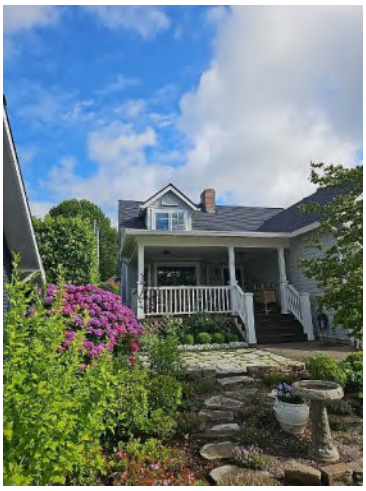
FIGURE 1



(Ord. 1638 § 1, 2015; Ord. 1735 § 3 (Exh. B), 2022)

BLUE RAVEN SOLAR

Site Survey Report



Elizabeth Smolens

1002114
1852 4th Ave West Linn, Oregon 97068
Site Survey Manager

Contents

1 - Customer Information 1
2 - Exterior 2
3 - Roof 5
4 - Attic and Substructure 8
5 - Electrical 18
6 - Additional Structures Use Determination 22
7 - Additional Structures Exterior and Roof 22
8 - Additional Structures Attic and Substructure 22
9 - Additional Structures Electrical 23
9.5 - Battery Backup 23
10 - Office Feedback 23
11 - Home Damage 24

1 - Customer Information

Site Surveyor Name	Steven gonzalez
Manager	Site Survey Manager
Customer Name	Elizabeth Smolens
Project ID	1002114
Customer Address and Photo of House Number	1852 4th Ave West Linn, Oregon 97068
Assessment Date	07/01/2024

Year Home Built	1984
How many years has the customer lived in the home?	18
Year of Additions / Remodels (if applicable)	yes the backroom of the house is new
What does the customer know about the roof?	Roof Replaced
What year was the roof replaced?	2021
Does the proposal contain any outbuildings?	No
Is there any known history of roof leaks or structural damage? If yes, denote location and any repairs that have been made.	Yes bit not since the roof was redone
How many stories is the home?	2
Is the basement finished?	No
How many utility meters are located on the property? (Please survey all meters and electrical equipment and include in context map)	1
Does the home have a generator or generator hookup installed? (If yes, photos of the generator and hookup /transfer switch MUST be included in the electrical section)	No
Are there any unpermitted structures on the property?	No
Are there any pets that may need to be locked up during the installation?	Yes 1 dog 1 cat
Account Notes	

2 - Exterior

At any point around the house is there less than 10 feet of clearance from the Roof line to a neighbors house or fence that would make putting up a ladder difficult?	Yes
Measure how much space there is for a ladder to be setup at install. (include a picture)	5 foot 2 inches
Is this survey for a retrofit?	No

Exterior Electrical - Notes

Exterior Electrical - Notes 2

2 - Exterior / Exterior Ground Level - 1.) Photos Needed of ENTIRE Front, Back, and Sides of Home 2.) Photo of House Number on Property / Home 3.) Photo(s) of Gas Meter(s) and AC unit(s)

Loc: **45.3421, -122.6536** Az: **327.5468**, Elv Ang: **11.7569**, Alt: **111.52 ft.**

2 - Exterior / Exterior Ground Level - 1.) Photos Needed of ENTIRE Front, Back, and Sides of Home 2.) Photo of House Number on Property / Home 3.) Photo(s) of Gas Meter(s) and AC unit(s)

Loc: **45.3421, -122.6536** Az: **351.1883**, Elv Ang: **14.2138**, Alt: **111.52 ft.**

2 - Exterior / Exterior Ground Level - 1.) Photos Needed of ENTIRE Front, Back, and Sides of Home 2.) Photo of House Number on Property / Home 3.) Photo(s) of Gas Meter(s) and AC unit(s)

Loc: **45.3421, -122.6536** Az: **300.6887**, Elv Ang: **13.4818**, Alt: **112.504 ft.**

2 - Exterior / Roof Shading Front - 8+ photos creating a 360° photo set. Photos should be taken from the ground with your phone. Be sure to capture the entire height of all surrounding trees relative to the height of the home.

Loc: **45.3421, -122.6536** Az: **324.5708**, Elv Ang: **27.605**, Alt: **111.52 ft.**

2 - Exterior / Roof Shading Front - 8+ photos creating a 360° photo set. Photos should be taken from the ground with your phone. Be sure to capture the entire height of all surrounding trees relative to the height of the home.

Loc: **45.3421, -122.6536** Az: **319.1687**, Elv Ang: **22.9472**, Alt: **111.52 ft.**

Exterior and Roof - Notes

Exterior and Roof - Notes 2

Mounting Plane 1

Identify Mounting Plane	MP1
3+ Mounting Plane Photos	
Are there any obstructions? (pipes, satellite dishes, vents, etc.)	Yes
How many obstructions are there?	chimney

Mounting Plane 2

Identify Mounting Plane	MP2
3+ Mounting Plane Photos	
Are there any obstructions? (pipes, satellite dishes, vents, etc.)	No
How many obstructions are there?	

3 - Roof / **Mounting Plane** MP1 / **3+ Mounting Plane Photos**

Loc: **45.3422, -122.6537** Az: **0**, Elv Ang: **0**, Alt: **0 ft.**

3 - Roof / **Mounting Plane** MP1 / **3+ Mounting Plane Photos**

Loc: **45.3422, -122.6537** Az: **0**, Elv Ang: **0**, Alt: **0 ft.**

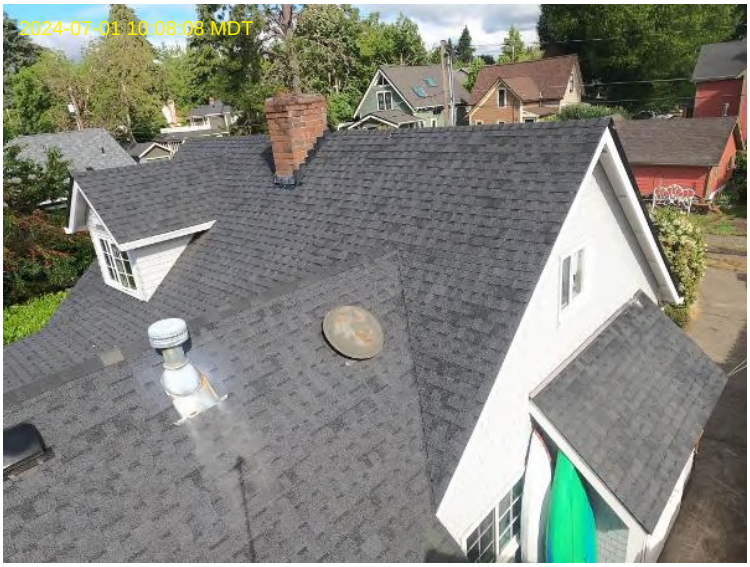
3 - Roof / **Mounting Plane** MP2 / **3+ Mounting Plane Photos**

Loc: **45.3421, -122.6537** Az: **0**, Elv Ang: **0**, Alt: **0 ft.**

3 - Roof / **Mounting Plane** MP2 / **3+ Mounting Plane Photos**

Loc: **45.3421, -122.6537** Az: **0**, Elv Ang: **0**, Alt: **0 ft.**

3 - Roof / **Remaining Roof Plane photos**



Loc: **45.3422, -122.6536** Az: **0**, Elv Ang: **0**, Alt: **0 ft.**

Q.TRON BLK M-G2+ SERIES

405 - 430 Wp | 108 Cells
22.0 % Maximum Module Efficiency

MODEL Q.TRON BLK M-G2+

High performance Qcells N-type solar cells

Q.ANTUM NEO Technology with optimized module layout boosts module efficiency up to 22.0 %.

A reliable investment

Inclusive 25-year product warranty and 25-year linear performance warranty[1].

Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology[2], Hot-Spot Protect.

Extreme weather rating

High-tech aluminium alloy frame, certified for high snow (8100 Pa) and wind loads (3600 Pa).

Innovative all-weather technology

Optimal yields, whatever the weather with excellent low-light and temperature behaviour.

The most thorough testing programme in the industry

Qcells is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.

[1] See data sheet on rear for further information.
[2] APT test conditions according to IEC/TS 62804-1:2015, method A (−1500 V, 96 h)

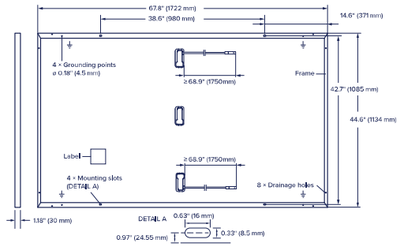
The ideal solution for:

Rooftop arrays on residential buildings

Q.TRON BLK M-G2+ SERIES

Mechanical Specification

Format	67.8 in × 44.6 in × 1.18 in (including frame) (1722 mm × 1134 mm × 30 mm)
Weight	46.7 lbs (21.2 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 18 monocrystalline Q.ANTUM NEO solar half cells
Junction box	2.09-3.98 in × 1.26-2.36 in× 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), Protection class IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥68.9 in (1750mm), (−) ≥68.9 in (1750mm)
Connector	Stäubli MC4; IP68

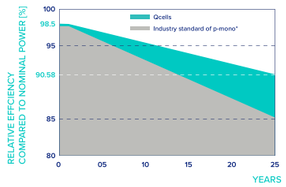


Electrical Characteristics

POWER CLASS				405	410	415	420	425	430
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / −0 W)									
Minimum	Power at MPP[1]	P_{MPP}	[W]	405	410	415	420	425	430
	Short Circuit Current[1]	I_{SC}	[A]	13.33	13.41	13.49	13.58	13.66	13.74
	Open Circuit Voltage[1]	V_{OC}	[V]	37.91	38.19	38.47	38.75	39.03	39.32
	Current at MPP	I_{MPP}	[A]	12.69	12.76	12.83	12.91	12.98	13.05
	Voltage at MPP	V_{MPP}	[V]	31.93	32.13	32.34	32.54	32.74	32.94
	Efficiency[1]	η	[%]	≥20.7	≥21.0	≥21.3	≥21.5	≥21.8	≥22.0
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[2]									
Minimum	Power at MPP	P_{MPP}	[W]	306.1	309.9	313.7	317.5	321.2	325.0
	Short Circuit Current	I_{SC}	[A]	10.74	10.81	10.87	10.94	11.00	11.07
	Open Circuit Voltage	V_{OC}	[V]	35.96	36.23	36.50	36.77	37.04	37.31
	Current at MPP	I_{MPP}	[A]	9.98	10.04	10.10	10.15	10.21	10.27
	Voltage at MPP	V_{MPP}	[V]	30.66	30.87	31.07	31.26	31.46	31.65

[1] Measurement tolerances P_{MPP} ±3 %; I_{SC}; V_{OC} ±5 % at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • [2] 800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY

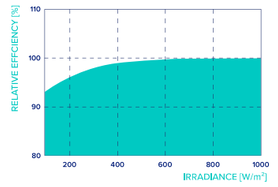


At least 98.5 % of nominal power during first year. Thereafter max. 0.33 % degradation per year. At least 95.53 % of nominal power up to 10 years. At least 90.58 % of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

*Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	−0.24
Temperature Coefficient of P_{MPP}	γ	[%/K]	−0.30	Nominal Module Operating Temperature	NMOT	[°F]	109 ± 5.4 (43 ± 3 °C)

Properties for System Design

Maximum System Voltage	V_{SYS}	[V]	1000 (IEC)/1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating		[A DC]	25	Fire Rating based on ANSI/UL 61730	C / TYPE 2
Max. Design Load, Push/Pull[3]		[lbs/ft²]	113 (5400 Pa)/50 (2400 Pa)	Permitted Module Temperature on Continuous Duty	−40 °F up to +185 °F (−40 °C up to +85 °C)
Max. Test Load, Push/Pull[3]		[lbs/ft²]	169 (8100 Pa)/75 (3600 Pa)		

[3] See Installation Manual

Qualifications and Certificates

UL61730-1 & UL61730-2, CE-compliant, Quality Controlled PV - TÜV Rheinland, IEC 61215:2016, IEC 61730:2016, U.S. Patent No. 9,893,215 (solar cells).

*Contact your Qcells Sales Representative for details regarding the module's eligibility to be Buy American Act (BAA) compliant.

Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.

Hanwha Q CELLS America Inc. 400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA I TEL +1 949 748 59 96 I EMAIL hqc-inquiry@qcells.com I WEB www.qcells.com

BLUE RAVEN SOLAR

DRAWING NUMBER:

April 11th, 2024

To Whom It May Concern,

This letter is confirmation that the Q Cells Q.TRON M-G2+ & Q.TRON BLK M-G2+ modules are compatible with Unirac's SFM racking system. These modules have been reviewed to ensure that, when installed with SFM, all structural and grounding and bonding features of the racking system mate properly with the modules' frame. These modules are UL fire rated as Type 2, for which the SFM system is UL 2703 certified. The Unirac product warranty applies to the installation of the Q Cells Q.TRON M-G2+ & Q.TRON BLK M-G2+ modules with SFM.

Please contact Unirac with any questions.

Regards,
Robert D'Anastasio

Robert D'Anastasio
Validation Engineer
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ENPHASE

US DATA SHEET

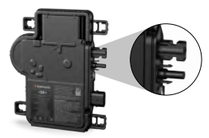
IQ8M and IQ8A Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC), which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built using advanced 55-nm technology with high-speed digital logic and has superfast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.

Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the IQ Battery, IQ Gateway, and the Enphase App monitoring and analysis software.

Enphase 25 year limited warranty

IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



Connect PV modules quickly and easily to the IQ8 Series Microinverters that have integrated MC4 connectors.

UL CERTIFIED SAFETY

IQ8 Series Microinverters are UL Listed as PV rapid shutdown equipment and conform with various regulations when installed according to the manufacturer's instructions.

* Meets UL 1741 only when installed with IQ System Controller 2.
** IQ8M and IQ8A support split-phase, 240 V installations only.

Easy to install

- Lightweight and compact with plug-and-play connectors
- Power line communication (PLC) between components
- Faster installation with simple two-wire cabling

High productivity and reliability

- Produce power even when the grid is down*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

- Complies with the latest advanced grid support**
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) and IEEE 1547:2018 (UL 1741-SB 3rd Ed.)

NOTE:

- IQ8 Microinverters cannot be mixed together with previous generations of Enphase microinverters (IQ7 Series, IQ6 Series, and so on) in the same system.
- IQ Gateway is required to change the default grid profile at the time of installation to meet the local Authority Having Jurisdiction (AHJ) requirements.

IQ8M and IQ8A Microinverters

INPUT DATA (DC)	UNITS	IQ8M-72-M-US	IQ8A-72-M-US
Commonly used module pairings[1]	W	260–460	295–500
Module compatibility		To meet compatibility, PV modules must be within the following maximum input DC voltage and maximum module I_{sc}. Module compatibility can be checked at https://enphase.com/installers/microinverters/calculator	
MPPT voltage range	V	30–45	32–45
Operating range	V	16–58	
Minimum/Maximum start voltage	V	22/58	
Maximum input DC voltage	V	60	
Maximum continuous input DC current	A	12	
Maximum input DC short-circuit current	A	25	
Maximum module I_{sc}	A	20	
Overvoltage class DC port		II	
DC port backfeed current	mA	0	
PV array configuration		1 x 1 ungrounded array; no additional DC side protection required; AC side protection requires max 20 A per branch circuit	
OUTPUT DATA (AC)	**UNITS**	**IQ8M-72-M-US**	**IQ8A-72-M-US**
Peak output power	VA	330	366
Maximum continuous output power	VA	325	349
Nominal grid voltage (L-L)	V	240, split-phase (L-L), 180°	
Minimum and Maximum grid voltage[2]	V	211-264	
Maximum continuous output current	A	1.35	1.45
Nominal frequency	Hz	60	
Extended frequency range	Hz	47–68	
AC short-circuit fault current over three cycles	Arms	2	
Maximum units per 20 A (L-L) branch circuit[3]		11	
Total harmonic distortion	%	<5	
Overvoltage class AC port		III	
AC port backfeed current	mA	30	
Power factor setting		1.0	
Grid-tied power factor (adjustable)		0.85 leading ... 0.85 lagging	
Peak efficiency	%	97.8	97.7
CEC weighted efficiency	%	97.5	97
Nighttime power consumption	mW	21	22
MECHANICAL DATA			
Ambient temperature range		-40°C to 60°C (-40°F to 140°F)	
Relative humidity range		4% to 100% (condensing)	
DC connector type		Stäubli MC4	
Dimensions (H × W × D)		212 mm (8.3") × 175 mm (6.9") × 30.2 mm (1.2")	
Weight		1.1 kg (2.43 lbs)	
Cooling		Natural convection–no fans	
Approved for wet locations		Yes	
Pollution degree		PD3	
Enclosure		Class II double-insulated, corrosion-resistant polymeric enclosure	
Environmental category/UV exposure rating		NEMA Type 6/outdoor	

(1) No enforced DC/AC ratio.
(2) Nominal voltage range can be extended beyond nominal if required by the utility.
(3) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

BLUE RAVEN SOLAR

DRAWING NUMBER:
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Enphase Q Cable Accessories

The **Enphase Q Cable™** and accessories are part of the latest generation Enphase IQ System™. These accessories provide simplicity, reliability, and faster installation times.

Enphase Q Cable

- Two-wire, double-insulated Enphase Q Cable is 50% lighter than the previous generation Enphase cable
- New cable numbering and plug and play connectors speed up installation and simplify wire management
- Link connectors eliminate cable waste

Field-Wireable Connectors

- Easily connect Q cables on the roof without complex wiring
- Make connections from any open connector and center feed any section of cable within branch limits
- Available in male and female connector types

Enphase Q Cable Accessories

CONDUCTOR SPECIFICATIONS	
Certification	UL3003 (raw cable), UL 9703 (cable assemblies), DG cable
Flame test rating	FT4
Compliance	RoHS, OIL RES I, CE, UV Resistant, combined UL for Canada and United States
Conductor type	THHN/THWN-2 dry/wet
Disconnecting means	The AC and DC bulkhead connectors have been evaluated and approved by UL for use as the load-break disconnect required by NEC 690.

Q CABLE TYPES / ORDERING OPTIONS				
Connectorized Models	**Size / Max Nominal Voltage**	**Connector Spacing**	**PV Module Orientation**	**Connector Count per Box**
Q-12-10-240	12 AWG / 277 VAC	1.3 m (4.2 ft)	Portrait	240
Q-12-17-240	12 AWG / 277 VAC	2.0 m (6.5 ft)	Landscape (60-cell)	240
Q-12-20-200	12 AWG / 277 VAC	2.3 m (7.5 ft)	Landscape (72-cell)	200

ENPHASE Q CABLE ACCESSORIES		
Name	**Model Number**	**Description**
Raw Q Cable	Q-12-RAW-300	300 meters of 12 AWG cable with no connectors
Field-wireable connector (male)	Q-CONN-10M	Make connections from any open connector
Field-wireable connector (female)	Q-CONN-10F	Make connections from any Q Cable open connector
Cable Clip	Q-CLIP-100	Used to fasten cabling to the racking or to secure looped cabling
Disconnect tool	Q-DISC-10	Disconnect tool for Q Cable connectors, DC connectors, and AC module mount
Q Cable sealing caps (female)	Q-SEAL-10	One needed to cover each unused connector on the cabling
Terminator	Q-TERM-10	Terminator cap for unused cable ends
Enphase EN4 to MC4 adaptor[1]	ECA-EN4-S22	Connect PV module using MC4 connectors to IQ micros with EN4 (TE PV4-S SOLARLOK). 150mm/5.9” to MC4.
Enphase EN4 non-terminated adaptor[1]	ECA-EN4-FW	For field wiring of UL certified DC connectors. EN4 (TE PV4-S SOLARLOK) to non-terminated cable. 150mm/5.9”
Enphase EN4 to MC4 adaptor (long)[1]	ECA-EN4-S22-L	Longer adapter cable for EN4 (TE PV4-S SOLARLOK) to MC4. Use with split cell modules or PV modules with short DC cable. 600mm/23.6”
Replacement DC Adaptor (MC4)	Q-DCC-2	DC adaptor to MC4 (max voltage 100 VDC)
Replacement DC Adaptor (UTX)	Q-DCC-5	DC adaptor to UTX (max voltage 100 VDC)

1. Qualified per UL subject 9703.

TERMINATOR
Terminator cap for unused cable ends, sold in packs of ten (Q-TERM-10)

SEALING CAPS
Sealing caps for unused aggregator and cable connections (Q-BA-CAP-10 and Q-SEAL-10)

DISCONNECT TOOL
Plan to use at least one per installation, sold in packs of ten (Q-DISC-10)

CABLE CLIP
Used to fasten cabling to the racking or to secure looped cabling, sold in packs of one hundred (Q-CLIP-100)

To learn more about Enphase offerings, visit **enphase.com**

2020-06-26

DRAWING NUMBER:
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ENPHASE

DATA SHEET

X-IQ-AM1-240-5
X-IQ-AM1-240-5C

IQ Combiner 5/5C

The IQ Combiner 5/5C consolidates interconnection equipment into a single enclosure and streamlines IQ Series Microinverters and IQ Gateway installation by providing a consistent, pre-wired solution for residential applications. IQ Combiner 5/5C uses wired control communication and is compatible with IQ System Controller 3/3G and IQ Battery 5P.

The IQ Combiner 5/5C, IQ Series Microinverters, IQ System Controller 3/3G, and IQ Battery 5P provide a complete grid-agnostic Enphase Energy System.

IQ Series Microinverters
The high-powered smart grid-ready IQ Series Microinverters (IQ6, IQ7, and IQ8 Series) simplify the installation process.

IQ System Controller 3/3G
Provides microgrid interconnection device (MID) functionality by automatically detecting grid failures and seamlessly transitioning the home energy system from grid power to backup power.

IQ Battery 5P
Fully integrated AC battery system. Includes six field-replaceable IQ8D-BAT Microinverters.

IQ Load Controller
Helps prioritize essential appliances during a grid outage to optimize energy consumption and prolong battery life.

Enphase 5 year limited warranty

5-year limited warranty

*For country-specific warranty information, see the https://enphase.com/installers/resources/warranty page.

Smart

- Includes IQ Gateway for communication and control
- Includes Enphase Mobile Connect (CELLMODEM-M1-06-SP-05), only with IQ Combiner 5C
- Supports flexible networking: Wi-Fi, Ethernet, or cellular
- Provides production metering (revenue grade) and consumption monitoring

Easy to install

- Mounts to one stud with centered brackets
- Supports bottom, back, and side conduit entries
- Supports up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 80 A total PV branch circuits
- Bluetooth-based Wi-Fi provisioning for easy Wi-Fi setup

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- 5-year limited warranty
- 2-year labor reimbursement program coverage included for both the IQ Combiner SKUs*
- UL1741 Listed

IQ Combiner 5/5C

MODEL NUMBER	
IQ Combiner 5 (X-IQ-AM1-240-5)	IQ Combiner 5 with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSIC12.20 ±0.5%), consumption monitoring (± 2.5%), and IQ Battery monitoring (±2.5%). Includes a silver solar shield to deflect heat.
IQ Combiner 5C (X-IQ-AM1-240-5C)	IQ Combiner 5C with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSI C12.20 ±0.5%), consumption monitoring (±2.5%) and IQ Battery monitoring (±2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05)[1]. Includes a silver solar shield to deflect heat.
WHAT'S IN THE BOX	
IQ Gateway printed circuit board	IQ Gateway is the platform for total energy management for comprehensive, remote maintenance, and management of the Enphase Energy System
Busbar	80 A busbar with support for 1 × IQ Gateway breaker and 4 × 20 A breaker for installing IQ Series Microinverters and IQ Battery 5P
IQ Gateway breaker	Circuit breaker, 2-pole, 10 A/15 A
Production CT	Pre-wired revenue-grade solid-core CT, accurate up to ±0.5%
Consumption CT	Two consumption metering clamp CTs, shipped with the box, accurate up to ±2.5%
IQ Battery CT	One battery metering clamp CT, shipped with the box, accurate up to ±2.5%
CTRL board	Control board for wired communication with IQ System Controller 3/3G and the IQ Battery 5P
Enphase Mobile Connect (only with IQ Combiner 5C)	4G-based LTE-M1 cellular modem (CELLMODEM-M1-06-SP-05) with a 5-year T-Mobile data plan
Accessories kit	Spare control headers for the COMMS-KIT-02 board
ACCESSORIES AND REPLACEMENT PARTS (NOT INCLUDED, ORDER SEPARATELY)	
CELLMODEM-M1-06-SP-05	4G-based LTE-M1 cellular modem with a 5-year T-Mobile data plan
CELLMODEM-M1-06-AT-05	4G-based LTE-M1 cellular modem with a 5-year AT&T data plan
Circuit breakers (off-the-shelf)	Supports Eaton BR2XX, Siemens Q2XX and GE/ABB THQL21XX Series circuit breakers (XX represents 10, 15, 20, 30, 40, 50, or 60). Also supports Eaton BR220B, BR230B, and BR240B circuit breakers compatible with the hold-down kit.
Circuit breakers (provided by Enphase)	BRK-10A-2-240V, BRK-15A-2-240V, BRK-20A-2P-240V, BRK-15A-2P-240V-B, and BRK-20A-2P-240V-B (more details in the "Accessories" section)
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 5/5C
XA-ENV2-PCBA-5	IQ Gateway replacement printed circuit board (PCB) for IQ Combiner 5/5C
X-IQ-NA-HD-125A	Hold-down kit compatible with Eaton BR-B Series circuit breakers (with screws)
XA-COMMS2-PCBA-5	Replacement COMMS-KIT-02 printed circuit board (PCB) for IQ Combiner 5/5C
ELECTRICAL SPECIFICATIONS	
Rating	80 A
System voltage and frequency	120/240 VAC, 60 Hz
Busbar rating	125 A
Fault current rating	10 kAIC
Maximum continuous current rating (input from PV/storage)	64 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR, Siemens Q, or GE/ABB THQL Series distributed generation (DG) breakers only (not included)
Maximum total branch circuit breaker rating (input)	80 A of distributed generation/95 A with IQ Gateway breaker included
IQ Gateway breaker	10 A or 15 A rating GE/Siemens/Eaton included
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (CT-200-CLAMP)	A pair of 200 A clamp-style current transformers is included with the box
IQ Battery metering CT	200 A clamp-style current transformer for IQ Battery metering, included with the box

1. A plug-and-play industrial-grade cell modem for systems of up to 60 microinverters. Available in the United States, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.

IQC-5-5C-DSH-00007-3.0-EN-US-2024-03-01

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MECHANICAL DATA		
Dimensions (W × H × D)		37.5 cm × 49.5 cm × 16.8 cm (14.75" × 19.5" × 6.63"). Height is 21.06" (53.5 cm) with mounting brackets
Weight		7.5 kg (16.5 lbs)
Ambient temperature range		-40°C to 46°C (-40°F to 115°F)
Cooling		Natural convection, plus heat shield
Enclosure environmental rating		Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction
Wire sizes		• 20 A to 50 A breaker inputs: 14 to 4 AWG copper conductors • 60 A breaker branch input: 4 to 1/0 AWG copper conductors • Main lug combined output: 10 to 2/0 AWG copper conductors • Neutral and ground: 14 to 1/0 copper conductors • Always follow local code requirements for conductor sizing
Communication (in-premise connectivity)		Built-in CTRL board for wired communication with IQ Battery 5P and IQ System Controller 3/3G. Integrated power line communication for IQ Series Microinverters
Altitude		Up to 2,600 meters (8,530 feet)
COMMUNICATION INTERFACES		
Integrated Wi-Fi		802.11b/g/n (dual band 2.4 GHz/5 GHz), for connecting the Enphase Cloud through the internet
Wi-Fi range (recommended)		10 m (32.8 feet)
Bluetooth		BLE4.2, 10 m range to configure Wi-Fi SSID
Ethernet		Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included), for connecting to the Enphase Cloud through the internet
Cellular/Mobile Connect		CELLMODEM-M1-06-SP-05 or CELLMODEM-M1-06-AT-05 (included with IQ Combiner 5C)
Digital I/O		Digital input/output for grid operator control
USB 2.0		Mobile Connect, COMMS-KIT-01 for IQ Battery 3/3T/10/10T, COMMS-KIT-02 for IQ Battery 5P
Access point (AP) mode		For connection between the IQ Gateway and a mobile device running the Enphase Installer App
Metering ports		Up to two Consumption CTs, one IQ Battery CT, and one Production CT
Power line communication		90–110 kHz
Web API		See https://developer-v4.enphase.com
Local API		See guide for local API
COMPLIANCE		
IQ Combiner with IQ Gateway		UL 1741, CAN/CSA C22.2 No. 107.1, Title 47 CFR, Part 15, Class B, ICES 003, NOM-208-SCFI-2016, UL 60601-1/CANCSA 22.2 No. 61010-1, IEEE 1547: 2018 (UL 1741-SB, 3rd Ed.), IEEE 2030.5/CSIP Compliant, Production metering: ANSI C12.20 accuracy class 0.5 (PV production)
COMPATIBILITY		
PV	Microinverters	IQ6, IQ7, and IQ8 Series Microinverters
COMMS-KIT-01 [2]	IQ System Controller	EP200G101-M240US00
	IQ System Controller 2	EP200G101-M240US01
	IQ Battery	ENCHARGE-3-1P-NA, ENCHARGE-10-1P-NA, ENCHARGE-3T-1P-NA, ENCHARGE-10T-1P-NA
COMMS-KIT-02 [3]	IQ System Controller 3	SC200D111C240US01, SC200G111C240US01
	IQ Battery	IQBATTERY-5P-1P-NA

2. For information about IQ Combiner 5/5C compatibility with the 2nd-generation batteries, refer to the compatibility matrix.
3. IQ Combiner 5/5C comes pre-equipped with COMMS-KIT-02.

Accessories

Mobile Connect

4G-based LTE-M1 cellular modem with a 5-year data plan
(CELLMODEM-M1-06-SP-05 for Sprint and CELLMODEM-M1-06-AT-05 for AT&T)

Circuit breakers

BRK-10A-2-240V Circuit breaker, 2-pole, 10 A, Eaton BR210
BRK-15A-2-240V Circuit breaker, 2-pole, 15 A, Eaton BR215
BRK-20A-2P-240V Circuit breaker, 2-pole, 20 A, Eaton BR220
BRK-15A-2P-240V-B Circuit breaker, 2-pole, 15 A, Eaton BR215B with hold-down kit support
BRK-20A-2P-240V-B Circuit breaker, 2-pole, 20 A, Eaton BR220B with hold-down kit support

CT-200-SOLID

200 A revenue-grade solid core Production CT with <0.5% error rate (replacement SKU)

CT-200-CLAMP

200 A clamp-style consumption and battery metering CT with <2.5% error rate (replacement SKU)

IQC-5-5C-DSH-00007-3.0-EN-US-2024-03-01

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Enphase IQ Envoy

The **Enphase IQ Envoy**™ communications gateway delivers solar production and energy consumption data to Enphase Enlighten™ monitoring and analysis software for comprehensive, remote maintenance and management of the Enphase IQ System.

With integrated revenue grade production metering and optional consumption monitoring, Envoy IQ is the platform for total energy management and integrates with the Enphase Ensemble™and the Enphase IQ Battery™.

Smart

- Enables web-based monitoring and control
- Bidirectional communications for remote upgrades
- Supports power export limiting and zeroexport applications

Simple

- Easy system configuration using Enphase Installer Toolkit™ mobile app
- Flexible networking with Wi-Fi, Ethernet, or cellular

Reliable

- Designed for installation indoors or outdoors
- Five-year warranty

Enphase IQ Envoy

MODEL NUMBERS	
Enphase IQ Envoy™ ENV-IQ-AM1-240	Enphase IQ Envoy communications gateway with integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and optional consumption monitoring (+/- 2.5%). Includes one 200A continuous rated production CT (current transformer).
ACCESORIES (Order Seperately)	
Enphase Mobile Connect™ CELLMODEM-M1 (4G based LTE-M/5-year data plan) CELLMODEM-M1-B (4G-based LTE-M1/5-year data plan)	Plug and play industrial grade cellular modem with data plan for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.)
Consumption Monitoring CT CT-200-SPLIT	Split-core consumption CTs enable whole home metering.
Ensemble Communications Kit COMMS-KIT-01	Installed at the IQ Envoy. For communications with Enphase Encharge™ storage and Enphase Enpower™ smart switch. Includes USB cable for connection to IQ Envoy or Enphase IQ Combiner™ and allows wireless communication with Encharge and Enpower.
POWER REQUIREMENTS	
Power requirements	120/240 VAC split-phase. Max 20 A overcurrent protection required.
Typical Power Consumption	5W
CAPACITY	
Number of microinverters polled	Up to 600
MECHANICAL DATA	
Dimensions (WxHxD)	21.3 x 12.6 x 4.5 cm (8.4” x 5” x 1.8”)
Weight	17.6 oz (498 g)
Ambient temperature range	-40° to 65° C (-40° to 149° F) -40° to 46° C (-40° to 115° F) if installed in an enclosure
Environmental rating	IP30. For installation indoors or in an NRTL-certified, NEMA type 3R enclosure.
Altitude	To 2000 meters (6,560 feet)
Production CT	- Limited to 200A of continuous current / 250A OCPD – 72kW AC - Internal aperture measures 19.36mm to support 250MCM THWN conductors (max) - UL2808 certified for revenue grade metering
Consumption CT	- For electrical services to 250A with parallel runs up to 500A - Internal aperture measures 0.84” x 0.96” (21.33mm x 24.38mm) to support 3/0 THWN conductor - UL2808 certified, for use at service entrance for services up to 250Vac
INTERNET CONNECTION OPTIONS	
Integrated Wi-Fi	802.11b/g/n
Ethernet	802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)
Mobile	CELLMODEM-M1 (4G) or CELLMODEM-M1-B (4G). Not included. Note that an Enphase Mobile Connect cellular modem is required for all Ensemble installations.
COMPLIANCE	
Compliance	UL 61010-1 CAN/CSA C22.2 No. 61010-1 47 CFR, Part 15, Class B, ICES 003 IEC/EN 61010-1:2010, EN50065-1, EN61000-4-5, EN61000-6-1, EN61000-6-2 Metering: ANSI C12.20 accuracy class 0.5 (PV production only)

CERTIFIED SAFETY

To learn more about Enphase offerings, visit **enphase.com**

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CONTRACTOR:
BRS FIELD OPS
385-498-6700

DRAWING BY:

PLOT DATE:

PROJECT NUMBER:

SHEET NAME:
SPEC SHEET

REVISION:

PAGE NUMBER:
SS

HRB Staff Report

EZ⚡SOLAR
making solar simple.

JB-1.2.OR
Specification Sheet
PV Junction Box for Composition/Asphalt Shingle Roofs

A. System Specifications and Ratings

- Maximum Voltage: 1,000 Volts
- Maximum Current: 80 Amps
- Allowable Wire: 14 AWG – 6 AWG
- Spacing: Please maintain a spacing of at least ½" between uninsulated live parts and fittings for conduit, armored cable, and uninsulated live parts of opposite polarity.
- Enclosure Rating: Type 3R
- Roof Slope Range: 2.5 – 12:12
- Max Side Wall Fitting Size: 1"
- Max Floor Pass-Through Fitting Size: 1"
- Ambient Operating Conditions: (-35°C) - (+75°C)
- Compliance:
  - JB-1.2: UL1741
  - Approved wire connectors: must conform to UL1741
- System Marking: **Interek Symbol and File #5019942**
- Periodic Re-inspections: If re-inspections yield loose components, loose fasteners, or any corrosion between components, components that are found to be affected are to be replaced immediately.

Table 1: Typical Wire Size, Torque Loads and Ratings

	1 Conductor	2 Conductor	Torque				
			Type	NM	Inch Lbs	Voltage	Current
ABB ZS6 terminal block	10-24 awg	16-24 awg	Sol/Str	0.5-0.7	6.2-8.85	600V	30 amp
ABB ZS10 terminal block	6-24 awg	12-20 awg	Sol/Str	1.0-1.6	8.85-14.16	600V	40 amp
ABB ZS16 terminal block	4-24 awg	10-20 awg	Sol/Str	1.6-2.4	14.6-21.24	600V	60 amp
ABB M6/8 terminal block	8-22 awg		Sol/Str	.08-1	8.85	600V	50 amp
Ideal 452 Red WING-NUT Wire Connector	8-18 awg		Sol/Str	Self-Torque	Self-Torque	600V	
Ideal 451 Yellow WING-NUT Wire Connector	10-18 awg		Sol/Str	Self-Torque	Self-Torque	600V	
Ideal, In-Sure Push-In Connector Part #39	10-14 awg		Sol/Str	Self-Torque	Self-Torque	600V	
WAGO, 2204-1201	10-20 awg	16-24 awg	Sol/Str	Self-Torque	Self-Torque	600V	30 amp
WAGO, 221-612	10-20 awg	10-24 awg	Sol/Str	Self-Torque	Self-Torque	600V	30 amp
Dottie DRC75	6-12 awg		Sol/Str	Snap-In	Snap-In		
ESP NG-53	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
ESP NG-717	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
Brumall 4-5,3	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		

Table 2: Minimum wire-bending space for conductors through a wall opposite terminals in mm (inches)

Wire size, AWG or kcmil (mm2)	Wires per terminal (pole)							
	1		2		3		4 or More	
	mm	(inch)	mm	(inch)	mm	(inch)	mm	(inch)
14-10 (2.1-5.3)	Not Specified		-		-		-	
8 (8.4)	38.1	(1-1/2)	-		-		-	
6 (13.3)	50.8	(2)	-		-		-	

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making solar simple.

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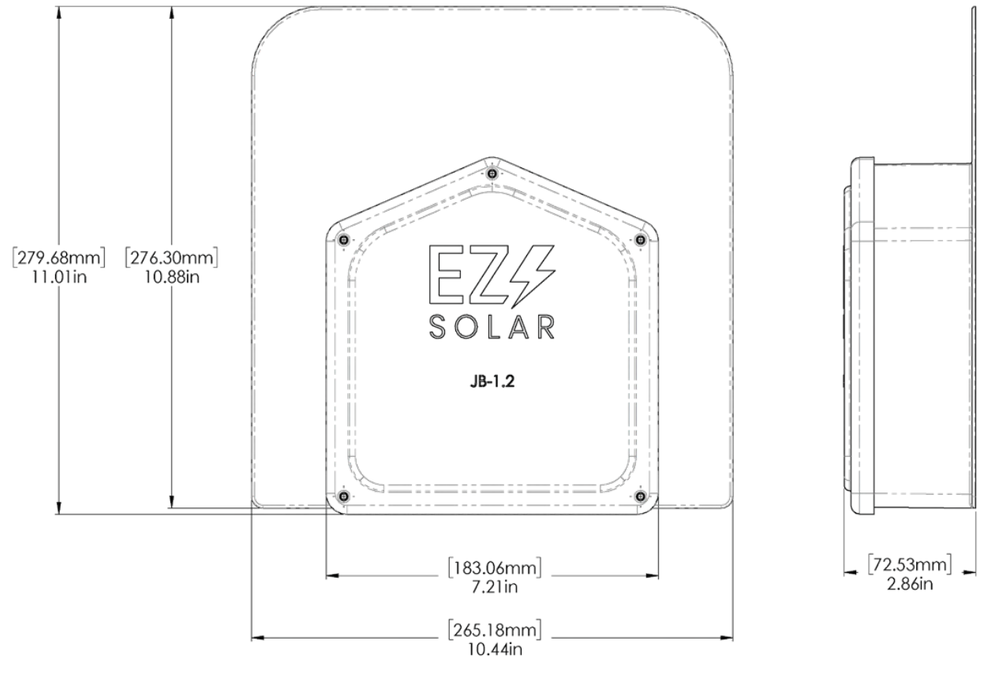
WWW.EZSOLARPRODUCTS.COM

BLUE RAVEN SOLAR

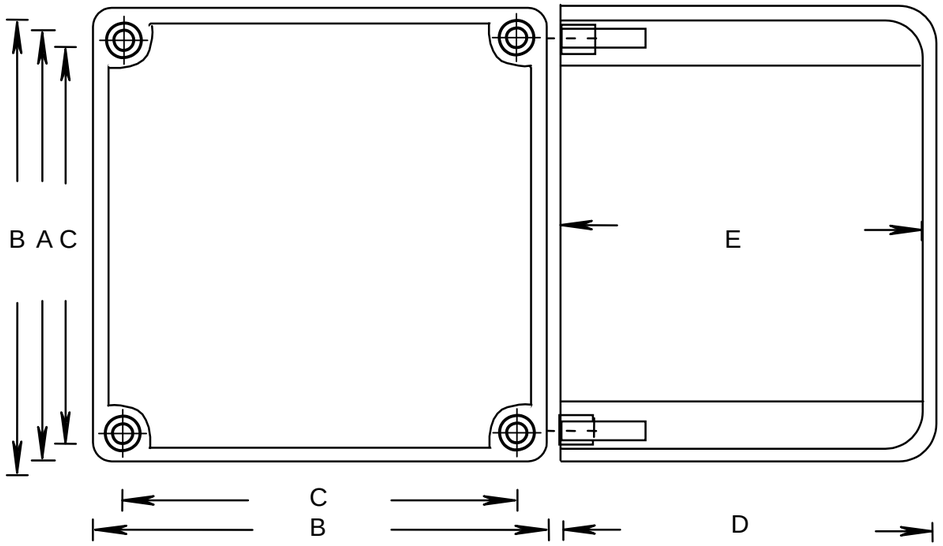
ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	JB-1.2 BODY	POLYCARBONATE WITH UV INHIBITORS	1
2	JB-1.2 LID	POLYCARBONATE WITH UV INHIBITORS	1
3	JB-1.2 FLASHING	WITHOUT GROOVE	1
4	#10 X 1-1/4" PHILLIPS PAN HEAD SCREW		6
5	#8 X 3/4" PHILLIPS PAN HEAD SCREW		6

SIZE	DWG. NO.	REV
B	JB-1.2.OR	
SCALE: 1:2	WEIGHT: 1.45 LBS	SHEET 1 OF 4

TORQUE SPECIFICATION:	15-20 LBS
CERTIFICATION:	UL STANDARD 1741, NEMA 3R
WEIGHT:	1.45 LBS



DRAWING NUMBER: SS



PRODUCT CODE	PART NUMBER	NOMINAL SIZE (in)	NOMINAL SIZE (mm)	A (in)	A (mm)	B (in)	B (mm)	C (in)	C (mm)
076668	J444 STAHLIN	4	103	3.675	93	4.000	102	3.450	88
076259	AMJB444 ALLIED	4	103	3.675	93	4.000	102	3.450	88
077643*	2037-424T CANLET	4	103	3.675	93	4.000	102	3.450	88
077696	JB 444	4	103	4.000	101	4.395	112	3.950	101

PRODUCT CODE	PART NUMBER	NOMINAL SIZE (in)	NOMINAL SIZE (mm)	D (in)	D (mm)	E (in)	E (mm)	VOLUME (cu. In)	VOLUME (cu. Cm)
076668	J444 STAHLIN	4	103	4.180	106.	3.850	98	51.5	844.6
076259	AMJB444 ALLIED	4	103	4.180	106	3.850	98	51.5	844.6
077643*	2037-424T CANLET	4	103	4.180	106	3.850	98	51.5	844.6
077696	JB 444	4	103	4.170	106	3.930	100	51.5	844.6

PRODUCT CODE	PART NUMBER	NOMINAL SIZE (in)	NOMINAL SIZE (mm)	GASKET CODE	INSERT CODE	SCREW CODE	M.FEET CODE
076668	J444 STAHLIN	4	103		072538 (4)		
076259	AMJB444 ALLIED	4	103		072538 (4)		
077643*	2037-424T CANLET	4	103		072538 (4)		
077696	JB 444	4	103	097731	072538 (4) 072539 (2)	072522 (4) 072513 (2)	097747

* BOX WITH MOLDED MOUNTING FEET, INSERT ONLY; NO COVER, OR GASKET, UL LISTED 576J

RIGID PVC CONDUIT FITTINGS

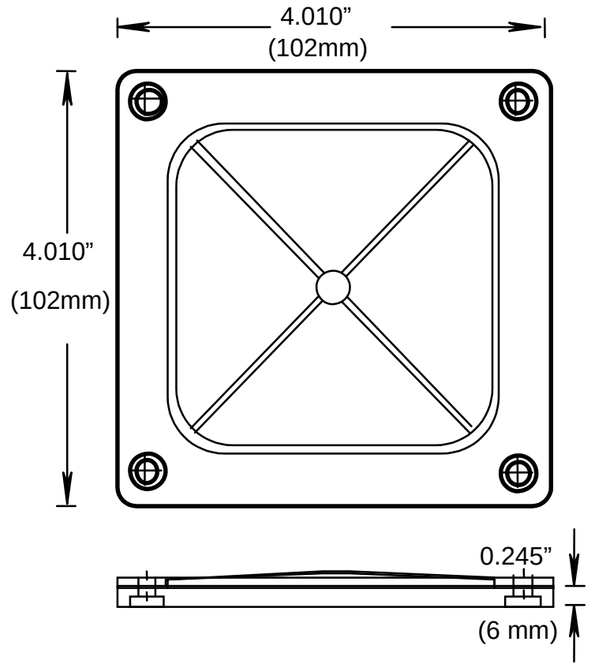
JB444 JUNCTION BOXES

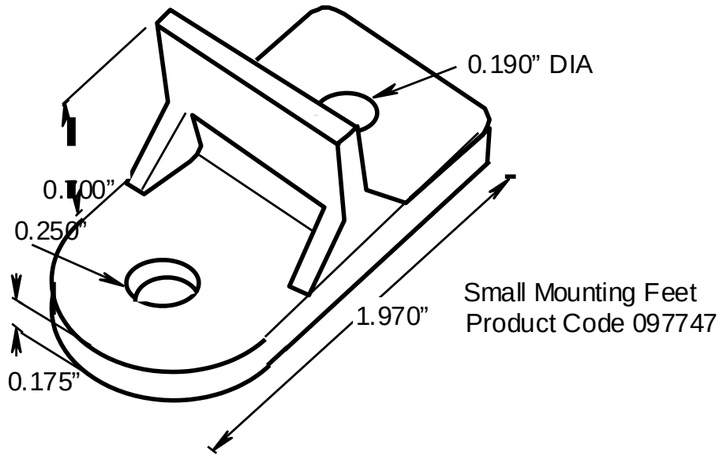
ISSUE DATE:
DATE D'EMISSION: 2009 04 30

SUPERCEDES:
REMPLACE: 2004 07 15

5

COVER DIMENSIONS





Small Mounting Feet
Product Code 097747

Heyco®-Tite Liquid Tight Cordgrips for Enphase Q Cables

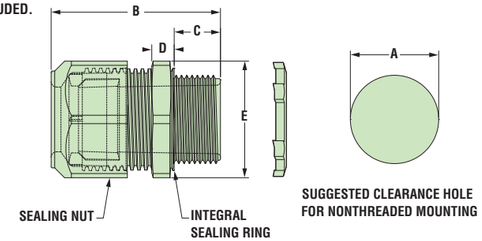
Straight-Thru, NPT Hubs with Integral Sealing Ring

The Ultimate in Liquid Tight Strain Relief Protection

ALL NEW PRODUCT!

GLAND CONFIGURATION Conductors Type *	Size mm.	No.	PART NO. Black	DESCRIPTION	UL/CSA or cULus	PART DIMENSIONS A Clearance Hole Dia. in.	mm.	B Max. O.A. Length in.	mm.	C Thread Length in.	mm.	D Wrenching Thickness in.	mm.	E Nut Flat Size in.	mm.
Oval Gland															
Q Cable	6,1 x 9,7	1	**M3231GCZ**	LTCG 1/2 6.1x9.7MM	UL/CSA	.875	22,2	1.70	43,2	.61	15,5	.21	5,3	.98	24,9
Break-Thru Skinned Over Gland															
Q Cables plus Ground	6,1 x 9,7 3,3	2 1	**M3234GDA-SM**	SMCG 3/4 2-6.1x9.7MM 1-3.3MM	UL/CSA	1.040	26,4	2.00	50,8	.62	15,7	.25	6,4	1.30	33,0

Metal Locknuts INCLUDED.



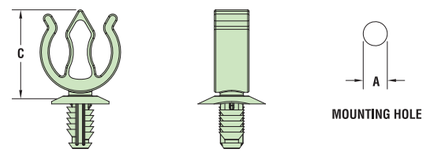
Material	Nylon 6/6 with TPE Sealing Gland
Certifications	UL Listed under Underwriters' Laboratories File E504900
	CSA Certified by the Canadian Standards Association File 93876
Flammability Rating	94V-2
Temperature Range	Static -40°F (-40°C) to 239°F (115°C) Dynamic -4°F (-20°C) to 212°F (100°C)
IP Rating	IP 68

- Two new cordgrips now accommodate the Enphase Q Cable – M3231GCZ (1/2˝ NPT) and M3234GDA-SM (3/4˝ NPT).
- The 1/2˝ version provides liquid tight entry for one Enphase Q Cable – .24 x .38˝ (6,1 x 9,7 mm).
- The 3/4˝ version provides liquid tight entry for up to two Enphase Q Cables – .24 x .38" (6,1 x 9,7 mm) and an additional .130" (3,3 mm) dia. hole for a #8 solid grounding cable.
- The 3/4˝ version utilizes our skinned-over technology so any unused holes will retain a liquid tight seal.
- Rated for use with DG Cable.

Heyco® Helios® UVX Clip – Blind Mount

ALL NEW PRODUCT!

PANEL THICKNESS RANGE Minimum in.	mm.	Maximum in.	mm.	WIRE DIAMETER RANGE 1-2 Wires	PART NO.	DESCRIPTION	MOUNTING HOLE DIA. A in.	mm.	OVERALL HEIGHT C in.	mm.
1-2 Wires										
.028	0,7	.250	6,4	.23 (5,8 mm) - .32 (8,0 mm) each cable	**S6520**	Helios UVX Clip 100 Pack	.260	6,6	.96	24,4
					S6560	Helios UVX Clip Bulk				



Material	Nylon 6/6 with extended UV Capabilities
Flammability Rating	94V-2
Temperature Range	Dynamic -4°F (-20°C) to 185°F (85°C)

- The jersey pine tree mounting style installs easily with superior holding power.
- UVX nylon protects from corrosion due to outdoor exposure.
- Installs into .260˝ (6,6 mm) mounting hole.
- Holds up to 2 cables between .230 - .315˝ (5,8 - 8,0 mm) each.
- Cables install with fingertip pressure.
- Molded from our robust UVX nylon 6/6 with extended UV capabilities for our Solar 20 Year Warranty.

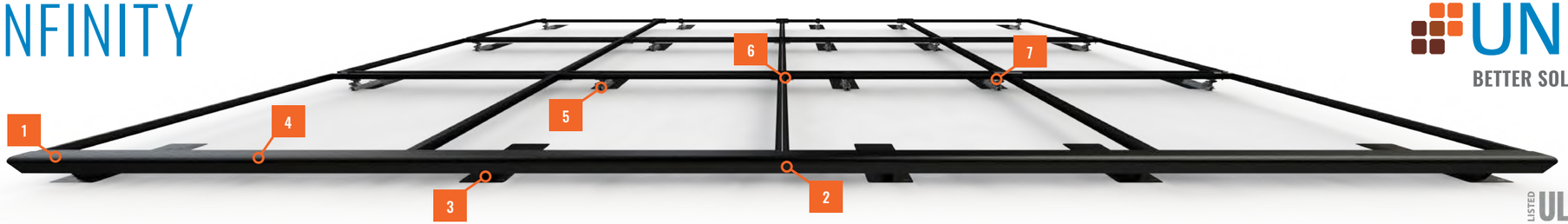
1-800-526-4182 • 732-286-1800 (NJ) • FAX: 732-244-8843 • www.heyco.com

1-4b

BLUE RAVEN SOLAR

DRAWING NUMBER: SS

SFM INFINITY



UNIRAC®
BETTER SOLAR STARTS HERE

LISTED UL2703 BONDING & GROUNDING MECHANICAL LOADING SYSTEM FIRE CLASSIFICATION

2 INSTALLS PER DAY

Make two installs per day your new standard. **SFM** INFINITY has fewer roof attachments, one tool installation, and pre-assembled components to get you off the roof 40% faster.

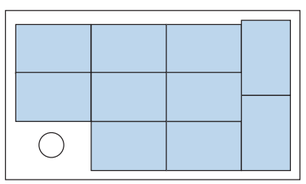
87% OF HOMEOWNERS **PREFER**

BETTER AESTHETICS

Install the system with the aesthetics preferred by homeowners, with integrated front trim, trim end caps, dark components, and recessed hardware.

MAXIMUM POWER DENSITY

Easily mix module orientations to achieve optimal power density without incurring the increased bill of materials, labor, and attachments required by rail.



SYSTEM OVERVIEW

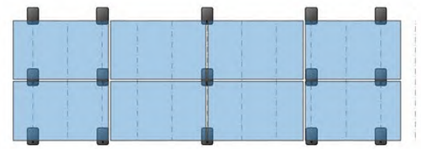
	PART NAME	DESCRIPTION
1	TRIMRAIL	Structural front trim provides aesthetic and aligns modules.
2	TRIMRAIL SPLICE	Connects and electrically bonds sections of **TRIM**RAIL.
3	TRIMRAIL FLASHKIT	Attaches **TRIM**RAIL to roof. Available for comp shingle or tile.
4	MODULE CLIPS	Secure modules to **TRIM**RAIL.
5	MICRORAIL	Connects modules to SLIDERS. Provides post-install array leveling.
6	SPLICE	Connects and supports modules. Provides east-west bonding. ATTACHED SPLICE also available.
7	SLIDER FLASHKIT	Roof attachment and flashing. Available for comp shingle and tile.

BONDING AND ACCESSORIES

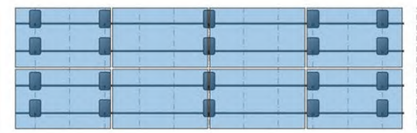
PART NAME	DESCRIPTION
TRIMRAIL ENDCAPS	Covers ends of **TRIM**RAIL for refined aesthetic.
TRIMRAIL BONDING CLAMP	Electrically bonds **TRIM**RAIL and modules
N/S BONDING CLAMP	Electrically bonds rows of modules

20% FEWER ATTACHMENTS

Save time and money on every project: **SFM** INFINITY requires fewer attachments than rail systems.



SFM INFINITY 15 Attachments



RAIL 20 Attachments

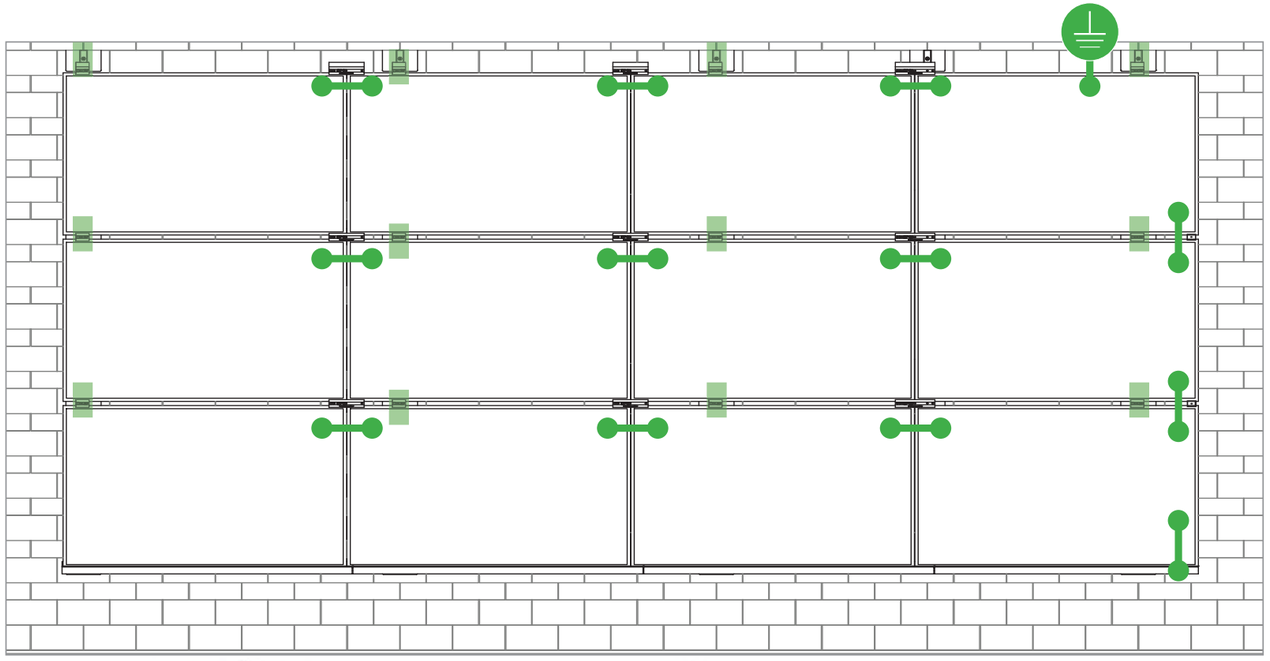
30% LOGISTICS SAVINGS

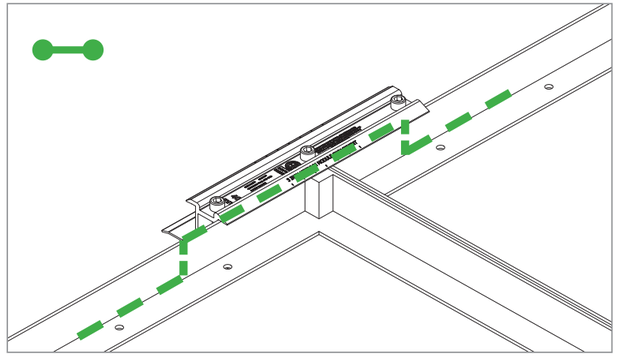
With fewer SKUs and compact components, **SFM** INFINITY is easier to stock, easier to transport, and easier to lift to the roof. Plus, make more efficient use of your vehicle fleet.

SFM INFINITY REVOLUTIONIZES ROOFTOP SOLAR WITH BENEFITS ACROSS YOUR BUSINESS, FROM DESIGN AND LOGISTICS, THROUGH ARRAY INSTALLATION AND SERVICE.

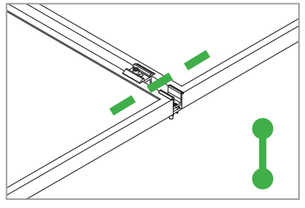
BLUE RAVEN SOLAR

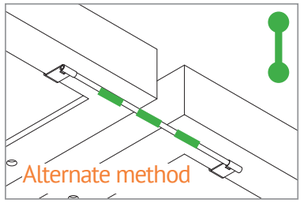
DRAWING NUMBER: SS



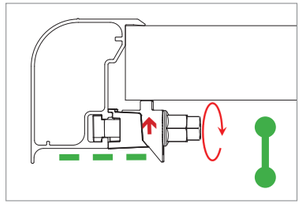


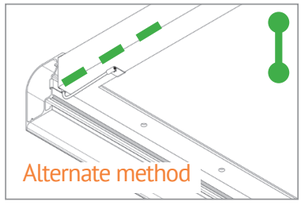
E-W BONDING PATH:
E-W module to module bonding is accomplished with 2 pre-installed bonding pins which engage on the secure side of the MicrorailTM and splice.





N-S BONDING PATH:
N-S module to module bonding is accomplished with bonding clamp with 2 integral bonding pins. **(refer also to alternate method)**



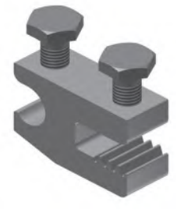


TRIMRAIL BONDING PATH:
Trimrail to module bonding is accomplished with bonding clamp with integral bonding pin and bonding T-bolt. **(refer also to alternate method)**

Star Washer is Single Use Only

TERMINAL TORQUE, Install Conductor and torque to the following:
4-6 AWG: 35in-lbs
8 AWG: 25 in-lbs
10-14 AWG: 20 in-lbs

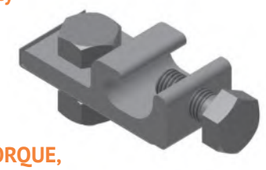
LUG DETAIL & TORQUE INFO
Ilsco Lay-In Lug (GBL-4DBT)
- 10-32 mounting hardware
- Torque = 5 ft-lb
- AWG 4-14 - Solid or Stranded



TERMINAL TORQUE, Install Conductor and torque to the following:
4-14 AWG: 35in-lbs

LUG DETAIL & TORQUE INFO
Ilsco Flange Lug (SGB-4)
- 1/4" mounting hardware
- Torque = 75 in-lb
- AWG 4-14 - Solid or Stranded

WEEBLUG
Single Use Only



TERMINAL TORQUE, Install Conductor and torque to the following:
6-14 AWG: 7ft-lbs

LUG DETAIL & TORQUE INFO
Wiley WEEBLug (6.7)
- 1/4" mounting hardware
- Torque = 10 ft-lb
- AWG 6-14 - Solid or Stranded

NOTE: ISOLATE COPPER FROM ALUMINUM CONTACT TO PREVENT CORROSION

System bonding is accomplished through modules. System grounding accomplished by attaching a ground lug to any module at a location on the module specified by the module manufacturer.

DRAWING NUMBER: SS

BLUE RAVEN SOLAR

SYSTEM LEVEL FIRE CLASSIFICATION

The system fire class rating requires installation in the manner specified in the SUNFRAME MICRORAIL (SFM) Installation Guide. SFM has been classified to the system level fire portion of UL 1703. This UL 1703 classification has been incorporated into the UL 2703 product certification. SFM has achieved Class A, B & C system level performance for low slope & steep sloped roofs when used in conjunction with type 1 and type 2 modules. Class A, B & C system level fire performance is inherent in the SFM design, and no additional mitigation measures are required. The fire classification rating is valid for any roof pitch. There is no required minimum or maximum height limitation above the roof deck to maintain the Class A, B & C fire rating for SFM. SUNFRAME MICRORAIL™ components shall be mounted over a fire resistant roof covering rated for the application.

Module Type	Roof Slope	System Level Fire Rating	Microrail Direction	Module Orientation	Mitigation Required
Type 1 and Type 2	Steep Slope & Low Slope	Class A, B & C	East-West	Landscape OR Portrait	None Required

UL2703 TEST MODULES

See pages 22 and 23 for a list of modules that were electrically and mechanically tested or qualified with the SUNFRAME MICRORAIL (SFM) components outlined within this Installation Guide.

- Maximum Area of Module = 27.76 sqft
- UL2703 Design Load Ratings:
  - a) Downward Pressure – 113 PSF / 5400 Pa
  - b) Upward Pressure – 50 PSF / 2400 Pa
  - c) Down-Slope Load – 21.6 PSF / 1034 Pa
- Tested Loads:
  - a) Downward Pressure – 170 PSF / 8000 Pa
  - b) Upward Pressure – 75 PSF / 3500 Pa
  - c) Down-Slope Load – 32.4 PSF / 1550 Pa
- Maximum Span = 6ft
- Use with a maximum over current protection device OCPD of 30A
- System conforms to UL Std 2703, certified to LTR AE-001-2012
- Rated for a design load of 2400 Pa / 5400 Pa with 24 inch span
- PV modules may have a reduced load rating, independent of the SFM load rating. Please consult the PV module manufacturer's installation guide for more information
- Down-Slope design load rating of 30 PSF/ 1400 Pa for module areas of 22.3 sq ft or less

DRAWING NUMBER: SS

Manufacture	Module Model / Series
Aleo	P-Series
Aptos	DNA-120-(BF/MF)26 DNA-144-(BF/MF)26
Astronergy	CHSM6612P, CHSM6612P/HV, CHSM6612M, CHSM6612M/HV, CHSM6610M (BL)(BF)/(HF), CHSM72M-HC
Auxin	AXN6M610T, AXN6P610T, AXN6M612T & AXN6P612T
Axitec	AXIblackpremium 60 (35mm), AXIpower 60 (35mm), AXIpower 72 (40mm), AXIpremium 60 (35mm), AXIpremium 72 (40mm).
Boviet	BVM6610, BVM6612
BYD	P6K & MHK-36 Series
Canadian Solar	CS1(H/K/U/Y)-MS CS3(K/L/U), CS3K-MB-AG, CS3K-(MS/P) CS3N-MS, CS3U-MB-AG, CS3U-(MS/P), CS3W CS5A-M, CS6(K/U), CS6K-(M/P), CS6K-MS CS6P-(M/P), CS6U-(M/P), CS6V-M, CS6X-P
Centrosolar America	C-Series & E-Series
CertainTeed	CT2xxMxx-01, CT2xxPxx-01, CTxxxMxx-02, CTxxxM-03, CTxxxMxx-04, CTxxxHC11-04
Dehui	DH-60M

Manufacture	Module Model / Series
Eco Solargy	Orion 1000 & Apollo 1000
ET Solar	ET-M672BHxxxTW
Freedom Forever	FF-MP-BBB-370
FreeVolt	Mono PERC
GCL	GCL-P6 & GCL-M6 Series
Hansol	TD-AN3, TD-AN4, UB-AN1, UD-AN1
Heliene	36M, 60M, 60P, 72M & 72P Series, 144HC M6 Monofacial/ Bifacial Series, 144HC M10 SL Bifacial
HT Solar	HT60-156(M) (NDV) (-F), HT 72-156(M/P)
Hyundai	KG, MG, TG, RI, RG, TI, MI, HI & KI Series HiA-SxxxHG
ITEK	iT, iT-HE & iT-SE Series
Japan Solar	JPS-60 & JPS-72 Series
JA Solar	JAP6 60-xxx, JAM6-60-xxx/SI, JAM6(K)-60/ xxx, JAP6(k)-72-xxx/4BB, JAP72SYY-xxx/ZZ, JAP6(k)-60-xxx/4BB, JAP60SYY-xxx/ZZ, JAM6(k)-72-xxx/ZZ, JAM72SYY-xxx/ZZ, JAM6(k)-60-xxx/ZZ, JAM60SYY-xxx/ZZ. i. YY: 01, 02, 03, 09, 10 ii. ZZ: SC, PR, BP, HiT, IB, MW, MR
Jinko	JKM & JKMS Series Eagle JKMxxxM JKMxxxM-72HL-V
Kyocera	KU Series

Manufacture	Module Model / Series
LG Electronics	LGxxxN2T-A4 LGxxx(A1C/E1C/E1K/N1C/N1K/N2T/N2W/ Q1C/Q1K/S1C/S2W)-A5 LGxxxN2T-B5 LGxxxN1K-B6 LGxxx(A1C/M1C/M1K/N1C/N1K/Q1C/Q1K/ QAC/QAK)-A6 LGxxx(N1C/N1K/N2T/N2W)-E6 LGxxx(N1C/N1K/N2W/S1C/S2W)-G4 LGxxxN2T-J5 LGxxx(N1K/N1W/N2T/N2W)-L5 LGxxx(N1C/Q1C/Q1K)-N5 LGxxx (N1C/N1K/N2W/Q1C/Q1K)-V5
LONGi	LR4-60(HIB/HIH/HPB/HPH)-xxxM LR4-72(HIH/HPH)-xxxM LR6-60(BP/HBD/HIBD)-xxxM (30mm) LR6-60(BK)(PE)(HPB)(HPH)-xxxM (35mm) LR6-60(BK)(PE)(PB)(PH)-xxxM (40mm) LR6-72(BP)(HBD)(HIBD)-xxxM (30mm) LR6-72(HV)(BK)(PE)(PH)(PB)(HPH)-xxxM (35mm) LR6-72(BK)(HV)(PE)(PB)(PH)-xxxM (40mm)
Mission Solar Energy	MSE Series
Mitsubishi	MJE & MLE Series
Neo Solar Power Co.	D6M & D6P Series

- Unless otherwise noted, all modules listed above include all wattages and specific models within that series. Variable wattages are represented as "xxx"
- Items in parenthesis are those that may or may not be present in a compatible module's model ID
- Slashes "/" between one or more items indicates that either of those items may be the one that is present in a module's model ID
- Please see the SFM UL2703 Construction Data Report at Unirac.com to ensure the exact solar module selected is approved for use with SFM
- SFM Infinity is not compatible with module frame height of less than 30mm and more than 40mm. See Module Mounting section, page 12 for further information

DRAWING NUMBER: SS

Manufacture	Module Model / Series
Panasonic	EVPVxxx (H/K/PK), VBHNxxxSA15 & SA16, VBHNxxxSA17 & SA18, VBHNxxxSA17(E/G) & SA18E, VBHNxxxKA01 & KA03 & KA04, VBHNxxxZA01, VBHNxxxZA02, VBHNxxxZA03, VBHNxxxZA04
Peimar	SGxxxM (FB/BF)
Phono Solar	PS-60, PS-72
Prism Solar	P72 Series
Q.Cells	Plus, Pro, Peak, G3, G4, G5, G6(+), G7, G8(+) Pro, Peak L-G2, L-G4, L-G5, L-G6, L-G7 Q.PEAK DUO BLK-G6+ Q.PEAK DUO BLK-G6+/TS Q.PEAK DUO (BLK)-G8(+) Q.PEAK DUO L-G8.3/BFF Q.PEAK DUO (BLK) ML-G9(+) Q.PEAK DUO XL-G9/G9.2/G9.3 Q.PEAK DUO (BLK) ML-G10(+) Q.PEAK DUO XL-G(10/10.2/10.3/10.c/10.d) Q.PEAK DUO BLK ML-G10+ / t
REC Solar	Alpha (72) (Black) (Pure) RECxxxAA PURE-R RECxxxNP3 Black N-Peak (Black) N-Peak 2 (Black) PEAK Energy Series PEAK Energy BLK2 Series PEAK Energy 72 Series

Manufacture	Module Model / Series
REC Solar (cont.)	TwinPeak Series TwinPeak 2 Series TwinPeak 2 BLK2 Series TwinPeak 2S(M)72(XV) TwinPeak 3 Series (38mm) TP4 (Black)
Renesola	Vitrus2 Series & 156 Series
Risen	RSM72-6 (MDG) (M), RSM60-6
SEG Solar	SEG-xxx-BMD-HV SEG-xxx-BMD-TB
S-Energy	SN72 & SN60 Series (40mm)
Seraphim	SEG-6 & SRP-6 Series
Sharp	NU-SA & NU-SC Series
Silfab	SLA, SLG, BC Series & SILxxx(BL/NL/NT/HL/ML/BK/NX/NU/HC)
Solarever USA	SE-166*83-xxxM-120N
Solaria	PowerXT-xxxR-(AC/PD/BD) PowerXT-xxxC-PD PowerXT-xxxR-PM (AC)
SolarWorld	Sunmodule Protect, Sunmodule Plus
Sonali	SS-M-360 to 390 Series, SS-M-390 to 400 Series, SS-M-440 to 460 Series, SS-M-430 to 460 BiFacial Series, SS 230 - 265
SunEdison	F-Series, R-Series & FLEX FXS Series

Manufacture	Module Model / Series
Suniva	MV Series & Optimus Series
SunPower	A-Series A400-BLK , SPR-MAX3-XXX-R, X-Series, E-Series & P-Series
Suntech	STP, STPXXXS - B60/Wnhb
Talesun	TP572, TP596, TP654, TP660, TP672, Hipor M, Smart
Tesla	SC, SC B, SC B1, SC B2 TxxxH, TxxxS
Trina	PA05, PD05, DD05, DE06, DD06, PE06, PD14, PE14, DD14, DE09.05, DE14, DE15, PE15H
Upsolar	UP-MxxxP(-B), UP-MxxxM(-B)
United Renewable Energy (URE)	D7MxxxH7A, D7(M/K)xxxH8A FAKxxx(C8G/E8G), FAMxxxE7G-BB FAMxxxE8G(-BB) FBMxxxMFG-BB
Vikram	Eldora, Solivo, Somera
Waaree	AC & Adiya Series
Winaico	WST & WSP Series
Yingli	YGE & YLM Series
ZN Shine	ZXM6-72, ZXM6-NH144-166_2094

- Unless otherwise noted, all modules listed above include all wattages and specific models within that series. Variable wattages are represented as "xxx"
- Items in parenthesis are those that may or may not be present in a compatible module's model ID
- Slashes "/" between one or more items indicates that either of those items may be the one that is present in a module's model ID
- Please see the SFM UL2703 Construction Data Report at Unirac.com to ensure the exact solar module selected is approved for use with SFM
- SFM Infinity is not compatible with module frame height of less than 30mm and more than 40mm. See Module Mounting section, page 12 for further information

DRAWING NUMBER: SS

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AUTHORIZATION TO MARK

This authorizes the application of the Certification Mark(s) shown below to the models described in the Product(s) Covered section when made in accordance with the conditions set forth in the Certification Agreement and Listing Report. This authorization also applies to multiple listee model(s) identified on the correlation page of the Listing Report.

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Applicant:	Unirac, Inc	**Manufacturer:**	
Address:	1411 Broadway Blvd NE Albuquerque, NM 87102	**Address:**	
Country:	USA	**Country:**	

Party Authorized To Apply Mark: Same as Manufacturer
Report Issuing Office: Intertek Testing Services NA, Inc., Lake Forest, CA

Control Number: *5003705* **Authorized by:** Keenan Lavery
for L. Matthew Snyder, Certification Manager

C ETL US LISTED
Intertek

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Intertek Testing Services NA Inc.
545 East Algonquin Road, Arlington Heights, IL 60005
Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672

Standard(s):	Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels [UL 2703:2015 Ed.1+R:24Mar2021] PV Module and Panel Racking Mounting System and Accessories [CSA TIL No. A-40:2020]
Product:	Photovoltaic Mounting System, Sun Frame Microrail Installation Guide, PUB2023MAY10
Brand Name:	Unirac
Models:	Unirac SFM

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Applicant:	Unirac, Inc	**Manufacturer:**	
Address:	1411 Broadway Blvd NE Albuquerque, NM 87102	**Address:**	
Country:	USA	**Country:**	

Party Authorized To Apply Mark: Same as Manufacturer
Report Issuing Office: Intertek Testing Services NA, Inc., Lake Forest, CA

Control Number: *5014989* **Authorized by:** Keenan Lavery
for L. Matthew Snyder, Certification Manager

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Intertek

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Intertek Testing Services NA Inc.
545 East Algonquin Road, Arlington Heights, IL 60005
Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672

Standard(s):	Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels [UL 2703:2015 Ed.1+R:24Mar2021] PV Module and Panel Racking Mounting System and Accessories [CSA TIL No. A-40:2020]
Product:	Photovoltaic Mounting System, Sun Frame Microrail Installation Guide, PUB2023MAY10
Brand Name:	Unirac
Models:	Unirac SFM

BLUE RAVEN SOLAR

DRAWING NUMBER: SS

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Applicant:	Unirac, Inc	**Manufacturer:**	
Address:	1411 Broadway Blvd NE Albuquerque, NM 87102	**Address:**	
Country:	USA	**Country:**	

Party Authorized To Apply Mark: Same as Manufacturer
Report Issuing Office: Intertek Testing Services NA, Inc., Lake Forest, CA

Control Number: *5019851* **Authorized by:** Keenan Lavery
for L. Matthew Snyder, Certification Manager

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Intertek Testing Services NA Inc.
545 East Algonquin Road, Arlington Heights, IL 60005
Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672

Standard(s):	Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels [UL 2703:2015 Ed.1+R:24Mar2021] PV Module and Panel Racking Mounting System and Accessories [CSA TIL No. A-40:2020]
Product:	Photovoltaic Mounting System, Sun Frame Microrail Installation Guide, PUB2023MAY10
Brand Name:	Unirac
Models:	Unirac SFM

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AUTHORIZATION TO MARK

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This document is the property of Intertek Testing Services and is not transferable. The certification mark(s) may be applied only at the location of the Party Authorized To Apply Mark.

Applicant:	Unirac, Inc	**Manufacturer:**	
Address:	1411 Broadway Blvd NE Albuquerque, NM 87102	**Address:**	
Country:	USA	**Country:**	

Party Authorized To Apply Mark: Same as Manufacturer
Report Issuing Office: Intertek Testing Services NA, Inc., Lake Forest, CA

Control Number: *5021866* **Authorized by:** Keenan Lavery
for L. Matthew Snyder, Certification Manager

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Intertek Testing Services NA Inc.
545 East Algonquin Road, Arlington Heights, IL 60005
Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672

Standard(s):	Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels [UL 2703:2015 Ed.1+R:24Mar2021] PV Module and Panel Racking Mounting System and Accessories [CSA TIL No. A-40:2020]
Product:	Photovoltaic Mounting System, Sun Frame Microrail Installation Guide, PUB2023MAY10
Brand Name:	Unirac
Models:	Unirac SFM

BLUE RAVEN SOLAR

DRAWING NUMBER: SS

1.0 Reference and Address			
Report Number	102393982LAX-002	Original 11-Apr-2016	Revised: 5-Oct-2022
Standard(s)	Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels [UL 2703:2015 Ed.1+R:24Mar2021] PV Module and Panel Racking Mounting System and Accessories [CSA TIL No. A-40:2020]		

Applicant	Unirac, Inc	Manufacturer 2	
Address	1411 Broadway Blvd NE Albuquerque, NM 87102	Address	
Country	USA	Country	
Contact	Klaus Nicolaedis Todd Ganshaw	Contact	
Phone	505-462-2190 505-843-1418	Phone	
FAX	NA	FAX	
Email	klaus.nicolaedis@unirac.com toddg@unirac.com	Email	

Manufacturer 3		Manufacturer 4	
Address		Address	
Country		Country	
Contact		Contact	
Phone		Phone	
FAX		FAX	
Email		Email	

Manufacturer 5
Address
Country
Contact
Phone
FAX

Listing Constructional Data Report (CDR)

1.0 Reference and Address			
Report Number	102393982LAX-002	Original 11-Apr-2016	Revised: 5-Oct-2022
Email			

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

BLUE RAVEN SOLAR

DRAWING NUMBER:

SS

2.0 Product Description	
Product	Photovoltaic Mounting System, Sun Frame Microrail Installation Guide, PUB2022SEP28
Brand name	Unirac
Description	The product covered by this report is the Sun Frame Micro Rail roof mounted Photovoltaic Rack Mounting System. This system is designed to provide bonding and grounding to photovoltaic modules. The mounting system employs anodized or mill finish aluminum brackets that are roof mounted using the slider, outlined in section 4 of this report. There are no rails within this product, whereas the 3" Micro Rail, Floating Splice, and 9" Attached Splice electrically bond the modules together forming the path to ground. The Micro Rails are installed onto the module frame by using a stainless steel bolt anodized with black oxide with a stainless type 300 bonding pin, torqued to 20 ft-lbs, retaining the modules to the bracket. The bonding pin of the Micro Rail when bolted and torqued, penetrate the anodized coating of the photovoltaic module frame (at bottom flange) to contact the metal, creating a bonded connection from module to module. The grounding of the entire system is intended to be in accordance with the latest edition of the National Electrical Code, including NEC 250: Grounding and Bonding, and NEC 690: Solar Photovoltaic Systems or the Canadian Electrical Code, CSA C22.1 Part 1 in accordance to the revision in effect in the jurisdiction in which the project resides. Any local electrical codes must be adhered in addition to the national electrical codes. The Grounding Lug is secured to the photovoltaic module, torqued in accordance with the installation manual provided in this document. Other optional grounding includes the use of the Enphase UL2703 certified grounding system, which requires a minimum of 2 micro-inverters mounted to the same rail, and using the same engage cable.

2.0 Product Description	
Models	Unirac SFM
Model Similarity	NA
Ratings	Fuse Rating: 30A Module Orientation: Portrait or Landscape Maximum Module Size: 17.98 ft² UL2703 Design Load Rating: 33 PSF Downward, 33 PSF Upward, 10 PSF Down-Slope Tested Loads - 50 psf/2400Pa Downward, 50psf/2400Pa Uplift, 15psf/720Pa Down Slope Trina TSM-255PD05.08 and Sunpower SPR-E20-327 used for Mechanical Loading Increased size ML test: Maximum Module Size: 22.3 ft² UL2703 Design Load Rating: 113 PSF Downward, 50 PSF Upward, 30 PSF Down-Slope LG355S2W-A5 used for Mechanical Loading test. Mounting configuration: Four mountings on each long side of panel with the longest span of 24" UL2703 Design Load Rating: 46.9 PSF Downward, 40 PSF Upward, 10 PSF Down-Slope LG395N2W-A5, LG360S2W-A5 and LG355S2W-A5 used for used for Mechanical Loading test. Mounting configuration: Six mountings for two modules used with the maximum span of 74.5" IEC 61646 Test Loads - 112.78 psf/5400Pa Downward, 50psf/2400Pa Uplift Mechanical Load test to add FlashLoc Slider and Trim Assemblies to UL2703 and IEC 61646 Certifications, & Increase SFM System UL2703 Module Size: Maximum Module Size: 27.76 ft² UL2703 Design Load Rating: 113 PSF Downward, 50 PSF Upward, 21.6 PSF Down-Slope Jinko Eagle 72HM G5 used for Mechanical Loading test. Mounting configuration: Four mountings on each long side of panel with the longest span of 24" Mamzimum module size: 21.86 ft2 IEC 61646 Test Loads - 112.78 psf/5400Pa Downward, 75psf/3600Pa Uplift SunPower model SPR-A430-COM-MLSD used for Mechanical Loading Fire Class Resistance Rating: - Class A for Steep Slope Applications when using Type 1 Modules. Can be installed at any interstitial gap. Installations must include Trim Rail. - Class A for Steep Slope Applications when using Type 2 Modules. Can be installed at any interstitial gap. Installations must include Trim Rail. - Class A Fire Rated for Low Slope applications with Type 1 or 2 listed photovoltaic modules. This system was evaluated with a 5” gap between the bottom of the module and the roof’s surface See section 7.0 illustractions # 1, 1a and 1b for a complete list of PV modules evaluated with these racking systems
Other Ratings	NA

BLUE RAVEN SOLAR

DRAWING NUMBER: SS

City of West Linn
Planning & Development • 22500 Salamo Rd #1000 • West Linn, Oregon 97068
Telephone 503.656-3535 • westlinnoregon.gov

DEVELOPMENT REVIEW APPLICATION

For Office Use Only			
STAFF CONTACT	PROJECT NO(S).		PRE-APPLICATION NO.
NON-REFUNDABLE FEE(S)	REFUNDABLE DEPOSIT(S)	TOTAL	

Type of Review (Please check all that apply):

- ☐ Annexation (ANX)
- ☐ Appeal (AP)
- ☐ CDC Amendment (CDC)
- ☐ Code Interpretation (MISC)
- ☐ Conditional Use (CUP)
- ☑ Design Review (DR
- ☐ Tree Easement Vacation (MISC)
- ☐ Expediated Land Division (ELD)
- ☐ Extension of Approval (EXT)
- ☐ Final Plat (FP) Related File #_____
- ☐ Flood Management Area (FMA)
- ☑ Historic Review (HDR)
- ☐ Lot Line Adjustment (LLA)
- ☐ Minor Partition (MIP)
- ☐ Modification of Approval (MOD)
- ☐ Non-Conforming Lots, Uses & Structures
- ☐ Planned Unit Development (PUD)
- ☐ Street Vacation
- ☐ Subdivision (SUB)
- ☐ Temporary Uses (MISC)
- ☐ Time Extension (EXT)
- ☐ Right of Way Vacation (VAC)
- ☐ Variance (VAR)
- ☐ Water Resource Area Protection/Single Lot (WAP)
- ☐ Water Resource Area Protection/Wetland (WAP)
- ☐ Willamette & Tualatin River Greenway (WRG)
- ☐ Zone Change (ZC)

Pre-Application, Home Occupation, Sidewalk Use, Addressing, and Sign applications require different forms, available on the website.

Site Location/Address: 1852 4th Ave, West Linn, Oregon, 97068

Assessor's Map No.: 31E02BD00500
Tax Lot(s): 31E02BD00500
Total Land Area: 5,000 sqft

Brief Description of Proposal:
The applicant proposes to insll a solar photovoltaic panel system on the roof of the property.

Applicant Name*: BRS Permitting
Address: 1403 N Research Way, Orem, Utah 84097
City State Zip:
Phone: (385)482-0045
Email: permitting.department@blueravensolar.com

Owner Name (required): Elizabeth Smolens
Address: 1852 4th Ave, West Linn, Oregon,
City State Zip: 97068
West Linn, Oregon, 97068
Phone: 5036806141
Email: smolense@gmail.com

Consultant Name:
Address:
City State Zip:
Phone:
Email:

1. Application fees are non-refundable (excluding deposit). Applications with deposits will be billed monthly for time and materials above the initial deposit. ***The applicant is financially responsible for all permit costs.**
2. The owner/applicant or their representative should attend all public hearings.
3. A decision may be reversed on appeal. The decision will become effective once the appeal period has expired.
4. Submit this form, application narrative, and all supporting documents as a single PDF through the Submit a Land Use Application web page: https://westlinnoregon.gov/planning/submit-land-use-application

The undersigned property owner authorizes the application and grants city staff the **right of entry** onto the property to review the application. Applications with deposits will be billed monthly for time and materials incurred above the initial deposit. The applicant agrees to pay additional billable charges.

Diana Sanchez
Applicant's signature

12 / 21 / 2024
Date

Owner's signature ***(required)***

Date

DEVELOPMENT REVIEW CHECKLIST

The application form and supporting materials should be submitted electronically through https://westlinnoregon.gov/planning/submit-land-use-application **as one (1) .pdf file**. To create a single PDF file, go to Adobe Acrobat Free Merge PDF online tool. Other free Acrobat PDF tools like converting a file to PDF or reducing the file size are available on the Adobe website.

Supporting reports may be uploaded separately through this web form *if* the file size is too large. The separate submissions should be numbered (i.e., Submittal 1 of 2) and noted under transmittal contents. All plan set files MUST be flattened and reduced.

Submission requirement to upload through the web form:

- .pdf format.
- Individual file size no larger than 128 MB.
- Do not attach 'zip' files. Our server will reject all 'zip' files.
- Reduce and flatten all plan sets BEFORE uploading plan sets. The raster/vector settings should be optimized for printing.

A complete application must include the following:

- ☑ Development Review Application. Original signatures from all owners must be on the application form. **Do NOT use DocuSign.**
- ☑ A **project narrative** outlining the project's scope in detail, including the changes to the site, structure, landscaping, parking, land use, and lot consolidations.
- ☑ Complete written responses to identified approval criteria in the Community Development Code (CDC).
- ☐ A Service Provider Letter from Tualatin Valley Fire and Rescue - https://www.tvfr.com/399/Service-Provider-Permit Please contact Jason Arn at jason.arn@tvfr.com with any questions about TVF&R requirements.
- ☑ Vicinity Map showing the site within the City.
- ☑ Site Plan drawn to scale showing the:
    - Taxlot and address of the project,
    - Area of the site (acres or square feet),
    - Zoning and Neighborhood Association,
    - Location and dimensions of existing and proposed buildings, structures,
    - Location of existing and proposed on-site driveways and off-street parking,
    - Configuration and dimensions of all existing and proposed lots and tracts, including a proposed park, open space, and or drainage tracts or easements,
    - Location and width of existing and proposed easement for access, drainage, etc., and
    - Location of existing and proposed trees and other proposed landscaping.
    - Location of existing public and private utilities, easements, and 100-year floodplain,
    - Sensitive areas, including the location of on-site wetlands and riparian areas,
    - Location of existing off-site driveways across the street,
    - If applicable, internal circulation system, name, and location of existing and proposed roadways and roadway easements (private and public), and
    - Location and width of existing and proposed on-site pedestrian and bicycle facilities on-site.
- ☐ If applicable, a Utility Plan and Landscape plan, drawn to scale.
- ☑ If applicable, Building elevation drawings with exterior elevations for every side of each structure, height including building materials and floor levels, drawn to scale.
- ☑ If required, documentation of any required meeting with the respective City-recognized neighborhood association per CDC 99.038.
- ☑ Any other materials identified by city staff at the pre-application meeting.

For applications that the Planning Commission decides, the applicant or applicant's representative should present their proposal to the PC at the public hearing.

RESIDENTIAL ROOFTOP SOLAR PERMIT PACKAGE

NABCEP CERTIFIED
PV Installation Professional
Cecil Lopeman
#042013-75

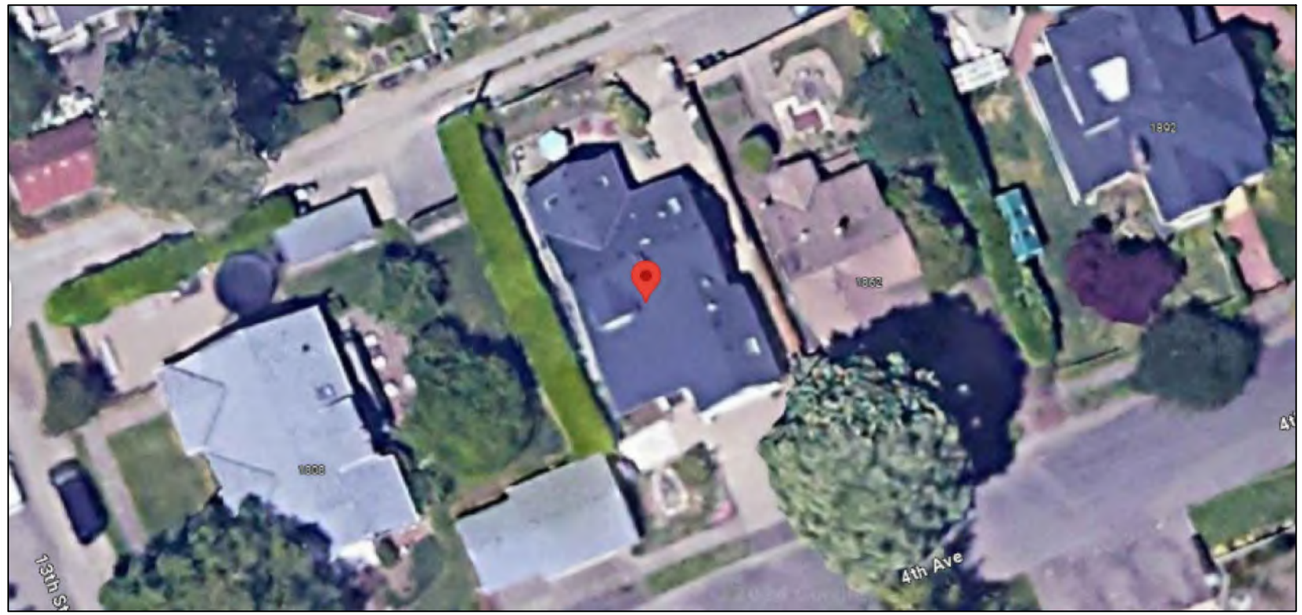
Elizabeth Smollens
1852 4th Ave
West Linn, Oregon 97068
5036806141

Enphase Platinum Installer

SUNPOWER® Authorized Dealer

BLUE RAVEN SOLAR
1403 N 630 E
Orem, Utah 84097
(800) 377-4480
BlueRavenSolar.com

SCOPE OF WORK
INSTALLATION OF ROOFTOP MOUNTED PHOTOVOLTAIC SOLAR SYSTEM



SHEET INDEX

PV1 *COVER SHEET*
PV2 *SITE PLAN*
PV3 *ROOF PLAN*
PV4 *STRUCTURAL*
PV5 *ELECTRICAL 3-LINE*
PV6 *ELECTRICAL CALCULATIONS*
PV7 *LABELS*
PV8 *PLACARD*
SS *SPEC SHEETS*

TYPICAL STRUCTURAL INFORMATION
ROOF MATERIAL: Comp Shingle
SHEATHING: PLYWOOD
FRAMING: Rafter
RACKING: UNIRAC SFM INFINITY
ROOF ATTACHMENT: UNIRAC SFM INFINITY FLASHKIT
TOTAL ATTACHMENTS: 31

NEW PV SYSTEM INFORMATION
DC SYSTEM SIZE: 3.825 kW DC
AC SYSTEM SIZE: 2.925 kW AC
MODULE TYPE: (9) Qcells Q.TRON BLK M-G2+ 425
INVERTER TYPE: (9) Enphase IQ8M-72-M-US

TOTAL PV DC SYSTEM SIZE
3.825 kW DC

TOTAL PV AC SYSTEM SIZE
2.925 kW AC

DESIGN CRITERIA
WIND SPEED: 100
WIND EXPOSURE FACTOR: C
RISK CATEGORY: II
GROUND SNOW LOAD: 25
ROOF SNOW LOAD: 20
SEISMIC DESIGN CATEGORY: D

WEATHER STATION DATA
WEATHER STATION: PORTLAND INTERNATIONAL AP
HIGH TEMP 2% AVG: 32°C
EXTREME MINIMUM TEMP: -6°C

GENERAL NOTES

AHJ
City of West Linn

UTILITY COMPANY
Portland General Electric (PGE)

APPLICABLE CODES
*2023 OREGON ELECTRIC SPECIALTY CODE (OESC)
*2023 OREGON STRUCTURAL SPECIALTY CODE
*2023 OREGON RESIDENTIAL SPECIALTY CODE, AND ALL STATE AND LOCAL BUILDING AND ELECTRICAL CODES

CUSTOMER NAME: Elizabeth Smollens
1852 4th Ave
West Linn, Oregon 97068

AHJ: City of West Linn

UTILITY COMPANY: Portland General Electric (PGE)

PROJECT ID: 1002114

PV DC SYSTEM SIZE: 3.825 kW DC

PV AC SYSTEM SIZE: 2.925 kW AC

REVISIONS:

A	11/26/2024
B	----
C	----
D	----

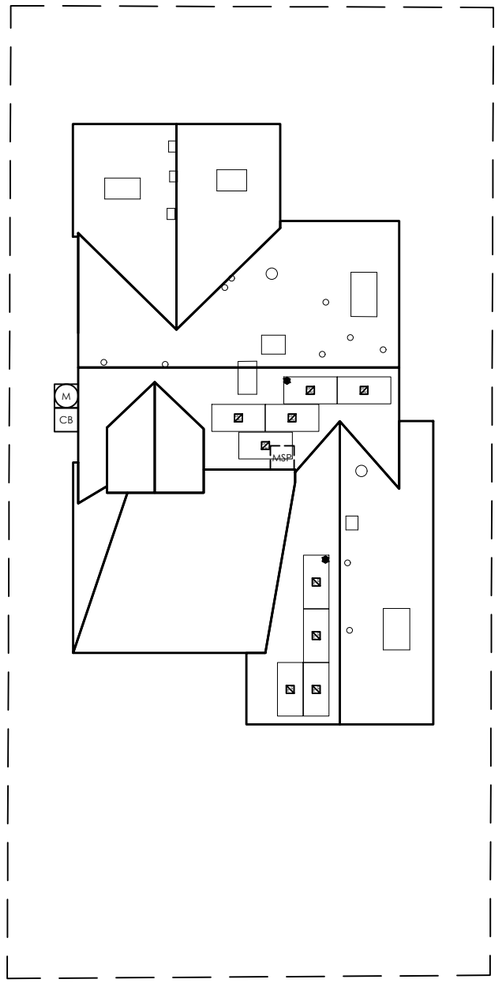
DRAWN BY: Grace Hymas

PLOT DATE: November 26, 2024

DRAWING TITLE: Cover Sheet

DRAWING NUMBER: PV1

FOR PRESCRIPTIVE INSTALLATIONS, ROOF ATTACHMENTS SHALL BE SPACED NO GREATER THAN 24 IN. OC IN ANY DIRECTION WHERE LOCATED WITHIN 3 FT. OF A ROOF EDGE, HIP, EAVE, OR RIDGE (OSSC 3111.3.5.3). FOR NON-PRESCRIPTIVE INSTALLATIONS, PLANS WILL BE APPROVED AND STAMPED BY LICENCED ENGINEER AND ALL ATTACHMENT SPACING WILL BE AS SHOWN ON PV4.



FRONT OF HOME
1852 4th Ave

SITE PLAN
SCALE: 1/16" = 1'-0"

LEGEND

M	UTILITY METER	BE	BREAKER ENCLOSURE	BAT	ESS - BATTERY		FIRE SETBACK HATCH
MSP	MAIN SERVICE PANEL	AC	AC DISCONNECT	ESC	ESS - CONTROLLER	DC/AC	MICROINVERTER
SUB	SUBPANEL	PV	PV PRODUCTION METER	RPO	REMOTE POWER OFF SWITCH		ROOF TOP JUNCTION BOX
CT	UTILITY METER CT CABINET	CB	COMBINER BOX	ATS	GENERATOR ATS PANEL	INV	INVERTER

TRENCH OR OVERHEAD

PROPERTY LINE

ICONS WITH DOTTED OUTLINE INDICATE INTERIOR LOCATION

PV SYSTEM SPECIFICATIONS

NEW PV SYSTEM INFORMATION

PV MODULE: (9) Qcells Q.TRON BLK M-G2+ 425, **POWER RATING:** 425 W
INVERTER: (9) Enphase IQ8M-72-M-US, **POWER RATING:** 325 W

COMPASS

N W E S

BLUE RAVEN SOLAR
1403 N 630 E
Orem, Utah 84097
(800) 377-4480
BlueRavenSolar.com

CUSTOMER NAME: Elizabeth Smollens
1852 4th Ave
West Linn, Oregon 97068

AHJ: City of West Linn

UTILITY COMPANY: Portland General Electric (PGE)

PROJECT ID: 1002114

PV DC SYSTEM SIZE: 3.825 kW DC

PV AC SYSTEM SIZE: 2.925 kW AC

REVISIONS:

A	11/26/2024
B	----
C	----
D	----

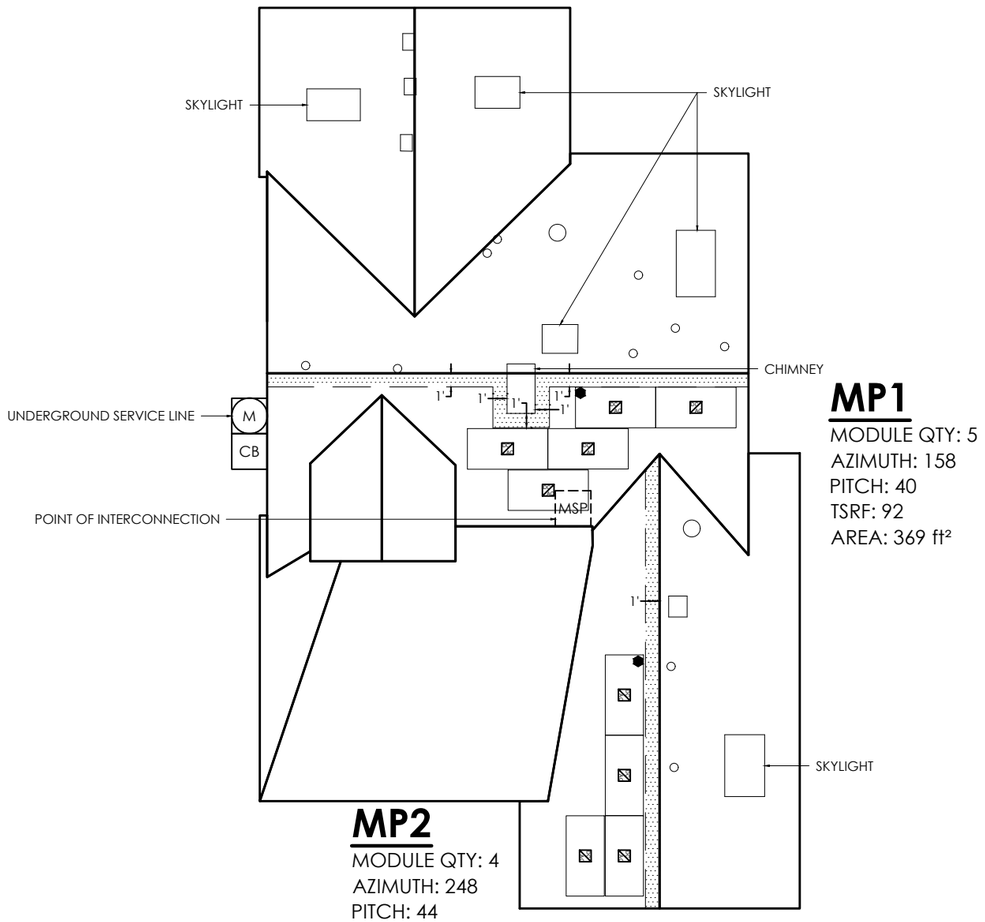
DRAWN BY: Grace Hymas

PLOT DATE: November 26, 2024

DRAWING TITLE: Site Plan

DRAWING NUMBER: PV2

FOR PRESCRIPTIVE INSTALLATIONS, ROOF ATTACHMENTS SHALL BE SPACED NO GREATER THAN 24 IN. OC IN ANY DIRECTION WHERE LOCATED WITHIN 3 FT. OF A ROOF EDGE, HIP, EAVE, OR RIDGE (OSSC 3111.3.5.3). FOR NON-PRESCRIPTIVE INSTALLATIONS, PLANS WILL BE APPROVED AND STAMPED BY LICENCED ENGINEER AND ALL ATTACHMENT SPACING WILL BE AS SHOWN ON PV4.



MP1
MODULE QTY: 5
AZIMUTH: 158
PITCH: 40
TSRF: 92
AREA: 369 ft²

MP2
MODULE QTY: 4
AZIMUTH: 248
PITCH: 44
TSRF: 81
AREA: 284 ft²

FRONT OF HOME

ROOF PLAN
SCALE: 3/32" = 1'-0"

LEGEND

M	UTILITY METER	BE	BREAKER ENCLOSURE	BAT	ESS - BATTERY		FIRE SETBACK HATCH
MSP	MAIN SERVICE PANEL	AC	AC DISCONNECT	ESC	ESS - CONTROLLER	DC/AC	MICROINVERTER
SUB	SUBPANEL	PV	PV PRODUCTION METER	RPO	REMOTE POWER OFF SWITCH		ROOF TOP JUNCTION BOX
CT	UTILITY METER CT CABINET	CB	COMBINER BOX	ATS	GENERATOR ATS PANEL	INV	INVERTER

TRENCH OR OVERHEAD

PROPERTY LINE

ICONS WITH DOTTED OUTLINE INDICATE INTERIOR LOCATION

PV SYSTEM SPECIFICATIONS

NEW PV SYSTEM INFORMATION

PV MODULE: (9) Qcells Q.TRON BLK M-G2+ 425, **POWER RATING:** 425 W
INVERTER: (9) Enphase IQ8M-72-M-US, **POWER RATING:** 325 W

COMPASS

N W E S

BLUE RAVEN SOLAR

1403 N 630 E
Orem, Utah 84097
(800) 377-4480
BlueRavenSolar.com

CUSTOMER NAME: **Elizabeth Smollens**
1852 4th Ave
West Linn, Oregon 97068

AHJ: City of West Linn

UTILITY COMPANY: Portland General Electric (PGE)

PROJECT ID: 1002114

PV DC SYSTEM SIZE: 3.825 kW DC

PV AC SYSTEM SIZE: 2.925 kW AC

REVISIONS:

A	11/26/2024
B	----
C	----
D	----

DRAWN BY: Grace Hymas

PLOT DATE: November 26, 2024

DRAWING TITLE: Roof Plan

DRAWING NUMBER: PV3

	PANEL COUNT	AZIMUTH (DEG)	PITCH (DEG)	TSRF (%)	AREA (ft²)	ROOF MATERIAL	SHEATHING TYPE	FRAMING TYPE	FRAMING SIZE AND SPACING	CEILING JOIST/ PURLINS SIZE AND SPACING	RACKING TYPE	ATTACHMENT TYPE	MAXIMUM ATTACHMENT SPACING (S)	MAXIMUM CANTILEVER (C)
MP1	5	158	40	92	369	Comp Shingle	PLYWOOD	Rafter	2x8 @ 24 in OC	2x8 @ 24 in OC	UNIRAC SFM INFINITY	UNIRAC SFM INFINITY FLASHKIT	48"L / 48"P	24"L / 24"P
MP2	4	248	44	81	284	Comp Shingle	PLYWOOD	Rafter	2x8 @ 24 in OC	2x8 @ 24 in OC	UNIRAC SFM INFINITY	UNIRAC SFM INFINITY FLASHKIT	48"L / 48"P	24"L / 24"P
MP3	0													
MP4	0													
MP5	0													
MP6	0													
MP7	0													
MP8	0													
MP9	0													
MP10	0													

TOTAL PV ARRAY AREA (ft²)	188.99
TOTAL ROOF AREA (ft²)	2565
DISTRIBUTED LOAD (psf)	2.21
ROOF COVERAGE (%)	7.37
TOTAL PV ARRAY WEIGHT (lbs)	417.33
TOTAL PV ATTACHMENTS	31
POINT LOAD (lbs/att.)	13.5

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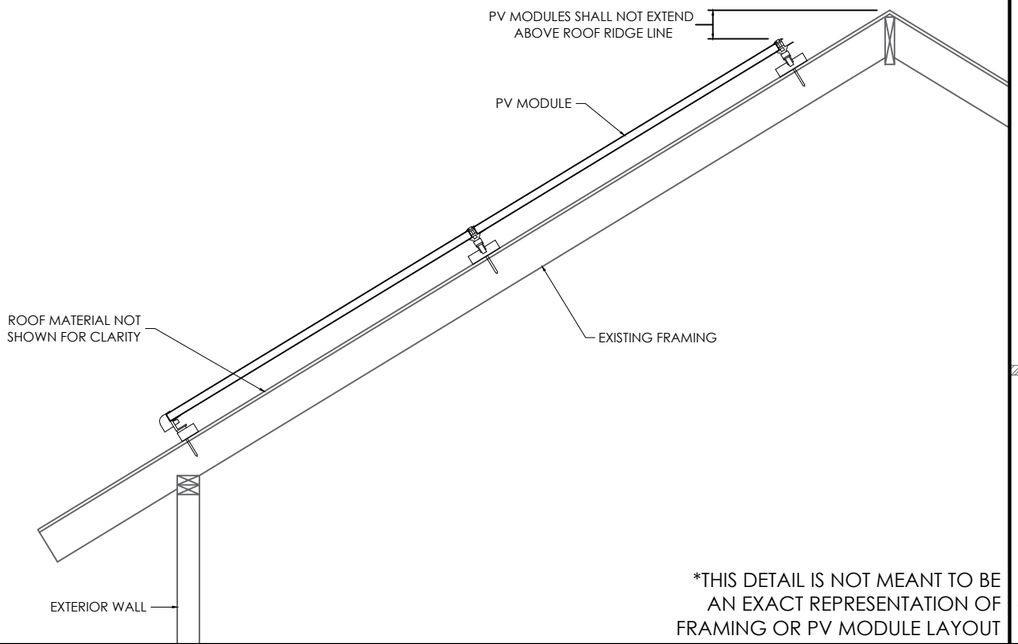
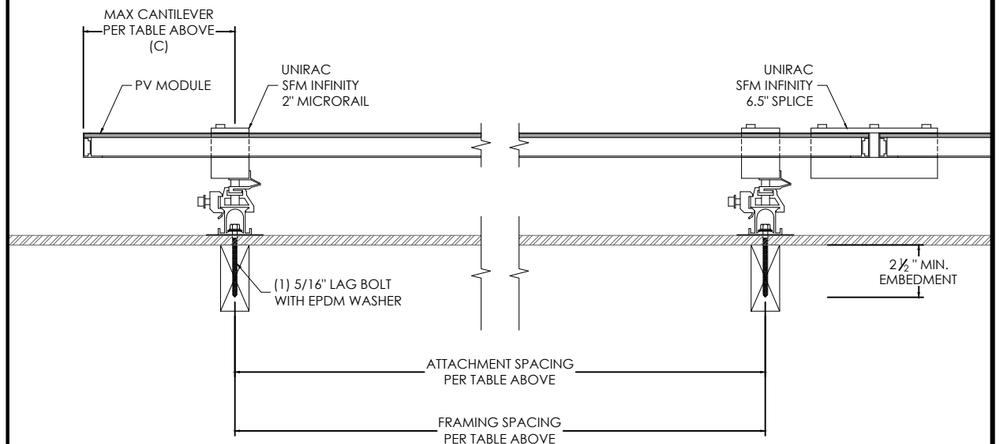


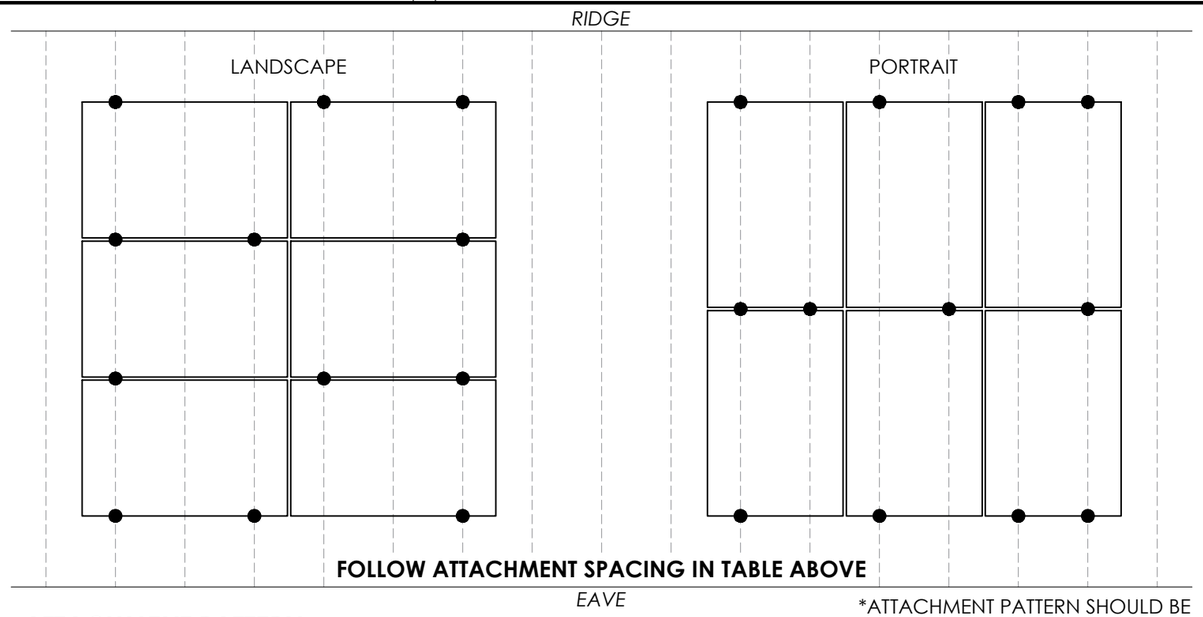
1 FRAMING DETAIL
SCALE: 1/2" = 1'-0"

*THIS DETAIL IS NOT MEANT TO BE AN EXACT REPRESENTATION OF FRAMING OR PV MODULE LAYOUT

ATTACHMENT TYPE:
Unirac SFM Infinity



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



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

*ATTACHMENT PATTERN SHOULD BE STAGGERED UNLESS OTHERWISE NOTED IN ENGINEERING LETTER

NOTES

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Elizabeth Smollens
1852 4th Ave
West Linn, Oregon 97068

CUSTOMER NAME:
AHJ: City of West Linn
UTILITY COMPANY: Portland General Electric (PGE)

PROJECT ID: 1002114

PV DC SYSTEM SIZE: 3.825 kW DC

PV AC SYSTEM SIZE: 2.925 kW AC

REVISIONS:

A	11/26/2024
B	----
C	----
D	----

DRAWN BY: Grace Hymas

PLOT DATE: November 26, 2024

DRAWING TITLE: Structural

DRAWING NUMBER: PV4

A

FRONT OF HOME

1852 4th Ave

BLUE RAVEN SOLAR

1403 N 630 E
Orem, Utah 84097
(800) 377-4480
BlueRavenSolar.com

CUSTOMER NAME:
Elizabeth Smollens
1852 4th Ave
West Linn, Oregon 97068

AHJ:
City of West Linn

UTILITY COMPANY:
Portland General Electric (PGE)

PROJECT ID:
1002114

PV DC SYSTEM SIZE:
3.825 kW DC

PV AC SYSTEM SIZE:
2.925 kW AC

REVISIONS:

A	11/26/2024
B	----
C	----
D	----

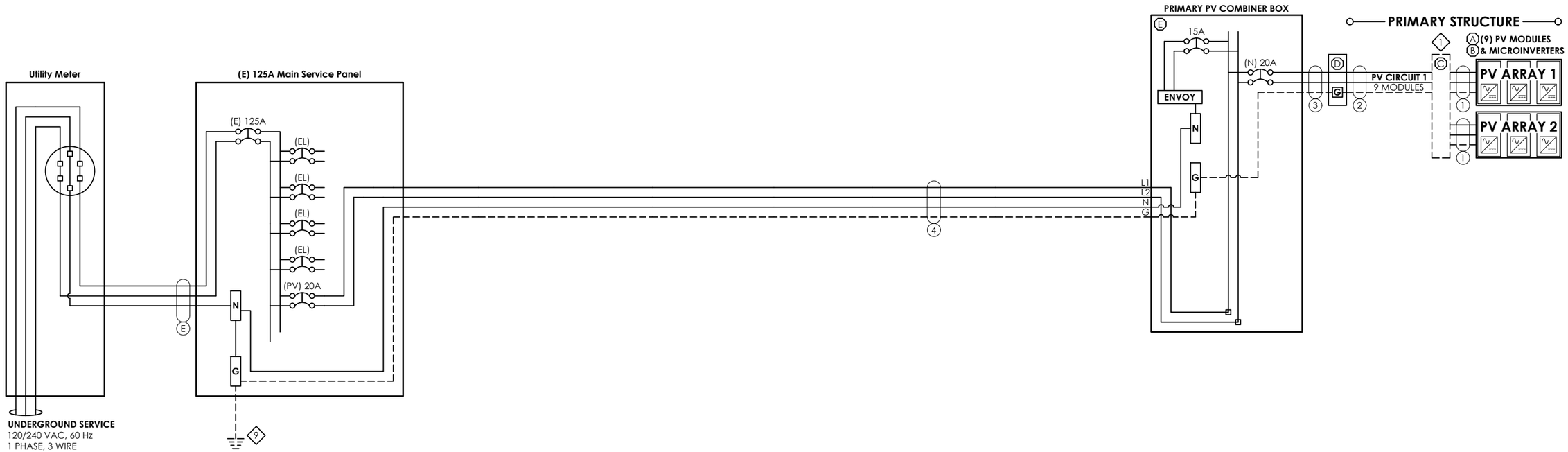
DRAWN BY:
Grace Hymas

PLOT DATE:
November 26, 2024

DRAWING TITLE:
Elevation
Side View

DRAWING NUMBER:
PV4.1

4	L1 (1) 10 AWG THHN/THWN-2 CU BLACK L2 (1) 10 AWG THHN/THWN-2 CU RED N (1) 10 AWG THHN/THWN-2 CU WHITE G (1) 10 AWG THHN/THWN-2 CU GREEN 3/4 INCH EMT	Exterior
3	L1 (1) 10 AWG THHN/THWN-2 CU BLACK L2 (1) 10 AWG THHN/THWN-2 CU RED G (1) 10 AWG THHN/THWN-2 CU GREEN *TYPE UF CABLE MAY BE SUBSTITUTED FOR USE IN CONDUIT WHERE NEC CODE PERMITS	3/4 INCH EMT*
2	L1 (1) 10 AWG THHN/THWN-2 CU BLACK L2 (1) 10 AWG THHN/THWN-2 CU RED G (1) 10 AWG THHN/THWN-2 CU GREEN *TYPE NM (ROMEX) OR UF CABLE IS PERMITTED FOR INTERIOR OR ATTIC RUNS AND SHALL BE USED WHEN NEC CODE PERMITS	3/4 INCH *
1	L1 (1) 12 AWG THHN/THWN-2 CU BLACK L2 (1) 12 AWG THHN/THWN-2 CU RED G (1) 6 AWG BARE, CU ENPHASE Q-CABLE, 2-WIRE, FREE AIR	Exterior



INTERCONNECTION NOTES

Utility Meter Number: 26304622

Load Side Breaker in MSP, Interior POI

LEGEND

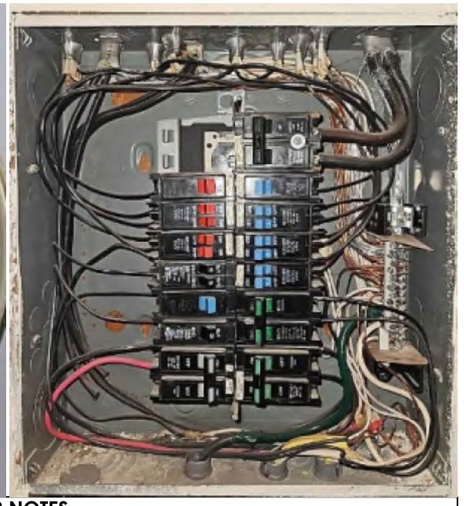
(E)	EXISTING	(PV)	PV BREAKER
(N)	NEW	(FIB)	FACTORY INSTALLED BREAKER
(EL)	EXISTING LOADS	SPD	SURGE PROTECTIVE DEVICE
(RL)	RELOCATED LOADS	MI	MECHANICAL INTERLOCK

EQUIPMENT NOTES

1. FINAL CONFIGURATION OF PV CIRCUITS TO BE DECIDED BY INSTALLER. MUST COMPLY WITH MAX MICROINVERTERS PER CIRCUIT AS LISTED ON ATTACHED SPEC SHEET.
2.
3.
4.
5.
6.
7.
8.
9. GROUNDING ELECTRODE SYSTEM SHALL BE IN ACCORDANCE WITH NEC 250.53.
10.
11.
12.

EQUIPMENT DESCRIPTIONS

- (A) **PV MODULE:** Qcells Q.TRON BLK M-G2+ 425, 425 W DC, UL 1703 / UL 61730 COMPLIANT
- (B) **MICROINVERTER:** ENPHASE IQ8M-72-M-US, 325 W AC (0.325 kW), 1 PHASE, UL 1741 COMPLIANT
- (C) **ROOFTOP JUNCTION BOX:** EZ SOLAR JB-1.2.OR JUNCTION BOX
- (D) **JUNCTION BOX:** PVC 4 X 4 JUNCTION BOX
- (E) **PV COMBINER BOX:** ENPHASE COMBINER 5 (X-IQ-AM1-240-5)
- (F)
- (G)
- (H)
- (I)
- (J)
- (K)
- (L)
- (M)
- (N)
- (O)
- (P)
- (Q)
- (R)
- (S)
- (T)



OTHER NOTES

ALL CONDUIT TO BE RAN AT LEAST 7/8 IN. ABOVE ROOF SURFACE WHERE EXPOSED TO SUNLIGHT.

BLUE RAVEN SOLAR

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CUSTOMER NAME:

AHJ: City of West Linn

UTILITY COMPANY: Portland General Electric (PGE)

PROJECT ID: 1002114

PV DC SYSTEM SIZE: 3.825 kW DC

PV AC SYSTEM SIZE: 2.925 kW AC

REVISIONS:

A	11/26/2024
B	----
C	----
D	----

DRAWN BY: Grace Hymas

PLOT DATE: November 26, 2024

DRAWING TITLE: Electrical 3-Line

DRAWING NUMBER: PV5

ELECTRICAL INFORMATION

UTILITY ELECTRICAL SYSTEM	
1-Phase, 3-Wire, 60Hz, 120/240V	
NEW PV SYSTEM	
1-Phase, 3-Wire, 60Hz, 120/240V	
AC SYSTEM SIZE	2.925kW AC
DC SYSTEM SIZE	3.825kW DC
PV MODULES	
QUANTITY	9
TYPE	Qcells Q.TRON BLK M-G2+ 425
WATTAGE	425W DC
MICROINVERTERS	
TYPE	Enphase IQ8M-72-M-US
OUTPUT CURRENT	1.35A AC
NOMINAL VOLTAGE	240V AC
OUTPUT POWER	325W AC

PV BREAKER BACKFEED CALCULATIONS

NEC 705.12(B) -- "120% RULE"
(BUSBAR RATING * 120%) - OCPD RATING = AVAILABLE BACKFEED

	MAIN SERVICE PANEL	SUBPANEL 1	SUBPANEL 2
BUSBAR RATING	125A	----A	----A
PANEL OCPD RATING	125A	----A	----A
AVAILABLE BACKFEED (120% RULE)	25A	##A	##A
PV BREAKER RATING	20A	20A	20A

THESE CALCULATIONS ARE ONLY APPLICABLE IF PV INTERCONNECTION IS A LOAD SIDE BREAKER. *PV BREAKER MUST BE RATED LESS THAN OR EQUAL TO AVAILABLE BACKFEED FOR CODE COMPLIANCE

DESIGN LOCATION AND TEMPERATURES

DATA SOURCE	ASHRAE Weather Station Data
STATE	Oregon
CITY	West Linn
WEATHER STATION	PORTLAND INTERNATIONAL AP
HIGH TEMP 2% AVG	32°C
EXTREME MINIMUM TEMP	-6°C

WIRE SIZE SPECIFICATIONS

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
MINIMUM CONDUCTOR AMPACITY	15.19A AC	15.19A AC	15.19A AC	15.19A AC	----A AC	----A AC	----A AC	----A AC	----A AC	----A AC
CONDUCTOR MATERIAL	CU	CU	CU	CU	----	----	----	----	----	----
CONDUCTOR TYPE	THHN/THWN-2	THHN/THWN-2	THHN/THWN-2	THHN/THWN-2	----	----	----	----	----	----
CONDUCTOR SIZE	12 AWG	10 AWG	10 AWG	10 AWG	----					
CONDUCTOR AMPACITY	30A	40A	40A	40A	----A	----A	----A	----A	----A	----A
AMBIENT TEMPERATURE ADJUSTMENT FACTOR	0.96	0.96	0.96	0.96	----	----	----	----	----	----
CONDUIT FILL ADJUSTMENT FACTOR	1	1	1	1	----	----	----	----	----	----
ADJUSTED CONDUCTOR AMPACITY	28.8A	38.4A	38.4A	38.4A	----A	----A	----A	----A	----A	----A
WIRE RUN DISTANCE (FT)	59	55	20	25	----	----	----	----	----	----
CALCULATED VOLTAGE DROP	0.65%	0.69%	0.25%	0.31%	0%	0%	0%	0%	0%	0%

PV CIRCUIT SPECIFICATIONS

	PRIMARY STRUCTURE								DETACHED STRUCTURE				
	CIRCUIT 1	**CIRCUIT 2**	**CIRCUIT 3**	**CIRCUIT 4**	**CIRCUIT 5**	**CIRCUIT 6**	**CIRCUIT 7**	**CIRCUIT 8**	**CIRCUIT 1**	**CIRCUIT 2**	**CIRCUIT 3**	**CIRCUIT 4**	**CIRCUIT 5**
NUMBER OF MODULES PER CIRCUIT	9	0	0	0	0	0	0	0	0	0	0	0	0
RATED AC OUTPUT CURRENT (I_{OUT})	12.2A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A
MINIMUM AMPACITY (I_{OUT} x 125%)	15.2A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A
OVERCURRENT PROTECTION RATING	20A	20A	20A	20A	20A	20A	20A	20A	20A	20A	20A	20A	20A
COMBINED AC OUTPUT CURRENT (C_{OUT})	12.2A								0.0A				
MINIMUM AMPACITY (C_{OUT} x 125%)	15.2A								0.0A				
COMBINED PV BREAKER RATING	20AA								0AA				

TOTAL VOLTAGE DROP

	VOLTAGE DROP
WIRE TAG #1	0.65%
WIRE TAG #2	0.69%
WIRE TAG #3	0.25%
WIRE TAG #4	0.31%
WIRE TAG #5	0%
WIRE TAG #6	0%
TOTAL	***1.900000%***

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AHJ: City of West Linn

UTILITY COMPANY: Portland General Electric (PGE)

PROJECT ID: 1002114

PV DC SYSTEM SIZE: 3.825 kW DC

PV AC SYSTEM SIZE: 2.925 kW AC

REVISIONS:

A	11/26/2024
B	----
C	----
D	----

DRAWN BY: Grace Hymas

PLOT DATE: November 26, 2024

DRAWING TITLE: Electrical Calculations

DRAWING NUMBER: PV6

WARNING LABELS

UTILITY METER

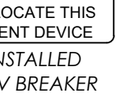
⚠ CAUTION
MULTIPLE SOURCES OF POWER
POWER TO THIS BUILDING IS ALSO SUPPLIED FROM A ROOF MOUNTED SOLAR ARRAY. PV DISCONNECT IS LOCATED WITHIN 10 FT AND LINE OF SIGHT OF UTILITY METER.

⚠WARNING
DUAL POWER SUPPLY
SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

NOTICE
IN CASE OF EMERGENCY, PLEASE CONTACT:
BLUE RAVEN SOLAR
(800) 377-4480

MAIN SERVICE PANEL

PHOTOVOLTAIC SYSTEM
AC DISCONNECT
⚠WARNING
ELECTRIC SHOCK HAZARD
TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION
DUAL POWER SUPPLY
SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM
OPERATING VOLTAGE 240 VOLTS
OPERATING CURRENT 12.2 AMPS

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUTDOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY.


⚠ CAUTION
MULTIPLE SOURCES OF POWER
POWER TO THIS BUILDING IS ALSO SUPPLIED FROM A ROOF MOUNTED SOLAR ARRAY. PV DISCONNECT IS LOCATED WITHIN 10 FT AND LINE OF SIGHT OF UTILITY METER.

⚠WARNING
POWER SOURCE
OUTPUT CONNECTION
DO NOT RELOCATE THIS OVERCURRENT DEVICE

**LABEL INSTALLED NEXT TO PV BREAKER*

PV COMBINER BOX

PHOTOVOLTAIC SYSTEM
COMBINER PANEL
⚠WARNING
AUTHORIZED PERSONNEL ONLY
DO NOT ADD LOADS
NO DC WIRES PRESENT
RAPID SHUTDOWN
TEST NOT REQUIRED

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D	----

DRAWN BY: Grace Hymas

PLOT DATE: November 26, 2024

DRAWING TITLE: Warning Labels

DRAWING NUMBER: PV7

Q.TRON BLK M-G2+ SERIES

405 - 430 Wp | 108 Cells
22.0 % Maximum Module Efficiency

MODEL Q.TRON BLK M-G2+

High performance Qcells N-type solar cells

Q.ANTUM NEO Technology with optimized module layout boosts module efficiency up to 22.0 %.

A reliable investment

Inclusive 25-year product warranty and 25-year linear performance warranty[1].

Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology[2], Hot-Spot Protect.

Extreme weather rating

High-tech aluminium alloy frame, certified for high snow (8100 Pa) and wind loads (3600 Pa).

Innovative all-weather technology

Optimal yields, whatever the weather with excellent low-light and temperature behaviour.

The most thorough testing programme in the industry

Qcells is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.

[1] See data sheet on rear for further information.
[2] APT test conditions according to IEC/TS 62804-1:2015, method A (−1500 V, 96 h)

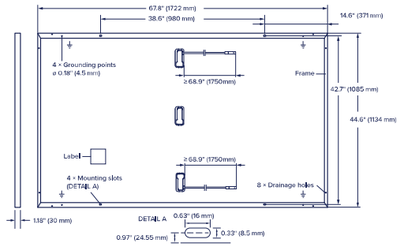
The ideal solution for:

Rooftop arrays on residential buildings

Q.TRON BLK M-G2+ SERIES

Mechanical Specification

Format	67.8 in × 44.6 in × 1.18 in (including frame) (1722 mm × 1134 mm × 30 mm)
Weight	46.7 lbs (21.2 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 18 monocrystalline Q.ANTUM NEO solar half cells
Junction box	2.09-3.98 in × 1.26-2.36 in× 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), Protection class IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥68.9 in (1750mm), (−) ≥68.9 in (1750mm)
Connector	Stäubli MC4; IP68

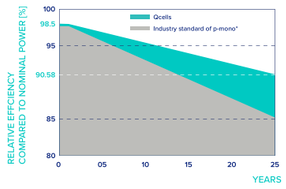


Electrical Characteristics

POWER CLASS				405	410	415	420	425	430
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / −0 W)									
Minimum	Power at MPP[1]	P_{MPP}	[W]	405	410	415	420	425	430
	Short Circuit Current[1]	I_{SC}	[A]	13.33	13.41	13.49	13.58	13.66	13.74
	Open Circuit Voltage[1]	V_{OC}	[V]	37.91	38.19	38.47	38.75	39.03	39.32
	Current at MPP	I_{MPP}	[A]	12.69	12.76	12.83	12.91	12.98	13.05
	Voltage at MPP	V_{MPP}	[V]	31.93	32.13	32.34	32.54	32.74	32.94
	Efficiency[1]	η	[%]	≥20.7	≥21.0	≥21.3	≥21.5	≥21.8	≥22.0
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[2]									
Minimum	Power at MPP	P_{MPP}	[W]	306.1	309.9	313.7	317.5	321.2	325.0
	Short Circuit Current	I_{SC}	[A]	10.74	10.81	10.87	10.94	11.00	11.07
	Open Circuit Voltage	V_{OC}	[V]	35.96	36.23	36.50	36.77	37.04	37.31
	Current at MPP	I_{MPP}	[A]	9.98	10.04	10.10	10.15	10.21	10.27
	Voltage at MPP	V_{MPP}	[V]	30.66	30.87	31.07	31.26	31.46	31.65

[1] Measurement tolerances P_{MPP} ±3 %; I_{SC}; V_{OC} ±5 % at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • [2] 800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY

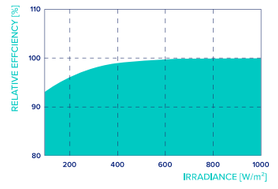


At least 98.5 % of nominal power during first year. Thereafter max. 0.33 % degradation per year. At least 95.53 % of nominal power up to 10 years. At least 90.58 % of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

*Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	−0.24
Temperature Coefficient of P_{MPP}	γ	[%/K]	−0.30	Nominal Module Operating Temperature	NMOT	[°F]	109 ± 5.4 (43 ± 3 °C)

Properties for System Design

Maximum System Voltage	V_{SYS}	[V]	1000 (IEC)/1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating		[A DC]	25	Fire Rating based on ANSI/UL 61730	C / TYPE 2
Max. Design Load, Push/Pull[3]		[lbs/ft²]	113 (5400 Pa)/50 (2400 Pa)	Permitted Module Temperature on Continuous Duty	−40 °F up to +185 °F (−40 °C up to +85 °C)
Max. Test Load, Push/Pull[3]		[lbs/ft²]	169 (8100 Pa)/75 (3600 Pa)		

[3] See Installation Manual

Qualifications and Certificates

UL61730-1 & UL61730-2, CE-compliant, Quality Controlled PV - TÜV Rheinland, IEC 61215:2016, IEC 61730:2016, U.S. Patent No. 9,893,215 (solar cells).

*Contact your Qcells Sales Representative for details regarding the module's eligibility to be Buy American Act (BAA) compliant.

Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.
Qcells North America Inc. 400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL hqc-inquiry@qcells.com | WEB www.qcells.com

Specifications subject to technical changes © **Qcells** Q.TRON_BLK_M-G2+_series_405-430_DA_2023-12_Rev02_NA

BLUE RAVEN SOLAR

DRAWING NUMBER:

April 11th, 2024

To Whom It May Concern,

This letter is confirmation that the Q Cells Q.TRON M-G2+ & Q.TRON BLK M-G2+ modules are compatible with Unirac's SFM racking system. These modules have been reviewed to ensure that, when installed with SFM, all structural and grounding and bonding features of the racking system mate properly with the modules' frame. These modules are UL fire rated as Type 2, for which the SFM system is UL 2703 certified. The Unirac product warranty applies to the installation of the Q Cells Q.TRON M-G2+ & Q.TRON BLK M-G2+ modules with SFM.

Please contact Unirac with any questions.

Regards,
Robert D'Anastasio

Robert D'Anastasio
Validation Engineer
robert.danastasio@unirac.com

ENPHASE

US DATA SHEET

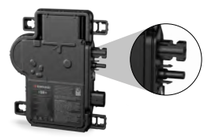
IQ8M and IQ8A Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC), which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built using advanced 55-nm technology with high-speed digital logic and has superfast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.

Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the IQ Battery, IQ Gateway, and the Enphase App monitoring and analysis software.

Enphase 25 year limited warranty

IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



Connect PV modules quickly and easily to the IQ8 Series Microinverters that have integrated MC4 connectors.

UL CERTIFIED SAFETY

IQ8 Series Microinverters are UL Listed as PV rapid shutdown equipment and conform with various regulations when installed according to the manufacturer's instructions.

* Meets UL 1741 only when installed with IQ System Controller 2.
** IQ8M and IQ8A support split-phase, 240 V installations only.

Easy to install

- Lightweight and compact with plug-and-play connectors
- Power line communication (PLC) between components
- Faster installation with simple two-wire cabling

High productivity and reliability

- Produce power even when the grid is down*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

- Complies with the latest advanced grid support**
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) and IEEE 1547:2018 (UL 1741-SB 3rd Ed.)

NOTE:

- IQ8 Microinverters cannot be mixed together with previous generations of Enphase microinverters (IQ7 Series, IQ6 Series, and so on) in the same system.
- IQ Gateway is required to change the default grid profile at the time of installation to meet the local Authority Having Jurisdiction (AHJ) requirements.

IQ8M and IQ8A Microinverters

INPUT DATA (DC)	UNITS	IQ8M-72-M-US	IQ8A-72-M-US
Commonly used module pairings[1]	W	260–460	295–500
Module compatibility		To meet compatibility, PV modules must be within the following maximum input DC voltage and maximum module I_{sc}. Module compatibility can be checked at https://enphase.com/installers/microinverters/calculator	
MPPT voltage range	V	30–45	32–45
Operating range	V	16–58	
Minimum/Maximum start voltage	V	22/58	
Maximum input DC voltage	V	60	
Maximum continuous input DC current	A	12	
Maximum input DC short-circuit current	A	25	
Maximum module I_{sc}	A	20	
Overvoltage class DC port		II	
DC port backfeed current	mA	0	
PV array configuration		1 x 1 ungrounded array; no additional DC side protection required; AC side protection requires max 20 A per branch circuit	
OUTPUT DATA (AC)	**UNITS**	**IQ8M-72-M-US**	**IQ8A-72-M-US**
Peak output power	VA	330	366
Maximum continuous output power	VA	325	349
Nominal grid voltage (L-L)	V	240, split-phase (L-L), 180°	
Minimum and Maximum grid voltage[2]	V	211-264	
Maximum continuous output current	A	1.35	1.45
Nominal frequency	Hz	60	
Extended frequency range	Hz	47–68	
AC short-circuit fault current over three cycles	Arms	2	
Maximum units per 20 A (L-L) branch circuit[3]		11	
Total harmonic distortion	%	<5	
Overvoltage class AC port		III	
AC port backfeed current	mA	30	
Power factor setting		1.0	
Grid-tied power factor (adjustable)		0.85 leading ... 0.85 lagging	
Peak efficiency	%	97.8	97.7
CEC weighted efficiency	%	97.5	97
Nighttime power consumption	mW	21	22
MECHANICAL DATA			
Ambient temperature range		-40°C to 60°C (-40°F to 140°F)	
Relative humidity range		4% to 100% (condensing)	
DC connector type		Stäubli MC4	
Dimensions (H × W × D)		212 mm (8.3") × 175 mm (6.9") × 30.2 mm (1.2")	
Weight		1.1 kg (2.43 lbs)	
Cooling		Natural convection–no fans	
Approved for wet locations		Yes	
Pollution degree		PD3	
Enclosure		Class II double-insulated, corrosion-resistant polymeric enclosure	
Environmental category/UV exposure rating		NEMA Type 6/outdoor	

(1) No enforced DC/AC ratio.
(2) Nominal voltage range can be extended beyond nominal if required by the utility.
(3) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

IQ8MA-MC4-DSH-00205-2.0-EN-US-2023-11-03

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Enphase Q Cable Accessories

The **Enphase Q Cable™** and accessories are part of the latest generation Enphase IQ System™. These accessories provide simplicity, reliability, and faster installation times.

Enphase Q Cable

- Two-wire, double-insulated Enphase Q Cable is 50% lighter than the previous generation Enphase cable
- New cable numbering and plug and play connectors speed up installation and simplify wire management
- Link connectors eliminate cable waste

Field-Wireable Connectors

- Easily connect Q cables on the roof without complex wiring
- Make connections from any open connector and center feed any section of cable within branch limits
- Available in male and female connector types

Enphase Q Cable Accessories

CONDUCTOR SPECIFICATIONS	
Certification	UL3003 (raw cable), UL 9703 (cable assemblies), DG cable
Flame test rating	FT4
Compliance	RoHS, OIL RES I, CE, UV Resistant, combined UL for Canada and United States
Conductor type	THHN/THWN-2 dry/wet
Disconnecting means	The AC and DC bulkhead connectors have been evaluated and approved by UL for use as the load-break disconnect required by NEC 690.

Q CABLE TYPES / ORDERING OPTIONS				
Connectorized Models	**Size / Max Nominal Voltage**	**Connector Spacing**	**PV Module Orientation**	**Connector Count per Box**
Q-12-10-240	12 AWG / 277 VAC	1.3 m (4.2 ft)	Portrait	240
Q-12-17-240	12 AWG / 277 VAC	2.0 m (6.5 ft)	Landscape (60-cell)	240
Q-12-20-200	12 AWG / 277 VAC	2.3 m (7.5 ft)	Landscape (72-cell)	200

ENPHASE Q CABLE ACCESSORIES		
Name	**Model Number**	**Description**
Raw Q Cable	Q-12-RAW-300	300 meters of 12 AWG cable with no connectors
Field-wireable connector (male)	Q-CONN-10M	Make connections from any open connector
Field-wireable connector (female)	Q-CONN-10F	Make connections from any Q Cable open connector
Cable Clip	Q-CLIP-100	Used to fasten cabling to the racking or to secure looped cabling
Disconnect tool	Q-DISC-10	Disconnect tool for Q Cable connectors, DC connectors, and AC module mount
Q Cable sealing caps (female)	Q-SEAL-10	One needed to cover each unused connector on the cabling
Terminator	Q-TERM-10	Terminator cap for unused cable ends
Enphase EN4 to MC4 adaptor[1]	ECA-EN4-S22	Connect PV module using MC4 connectors to IQ micros with EN4 (TE PV4-S SOLARLOK). 150mm/5.9" to MC4.
Enphase EN4 non-terminated adaptor[1]	ECA-EN4-FW	For field wiring of UL certified DC connectors. EN4 (TE PV4-S SOLARLOK) to non-terminated cable. 150mm/5.9"
Enphase EN4 to MC4 adaptor (long)[1]	ECA-EN4-S22-L	Longer adapter cable for EN4 (TE PV4-S SOLARLOK) to MC4. Use with split cell modules or PV modules with short DC cable. 600mm/23.6"
Replacement DC Adaptor (MC4)	Q-DCC-2	DC adaptor to MC4 (max voltage 100 VDC)
Replacement DC Adaptor (UTX)	Q-DCC-5	DC adaptor to UTX (max voltage 100 VDC)

1. Qualified per UL subject 9703.

TERMINATOR
Terminator cap for unused cable ends, sold in packs of ten (Q-TERM-10)

SEALING CAPS
Sealing caps for unused aggregator and cable connections (Q-BA-CAP-10 and Q-SEAL-10)

DISCONNECT TOOL
Plan to use at least one per installation, sold in packs of ten (Q-DISC-10)

CABLE CLIP
Used to fasten cabling to the racking or to secure looped cabling, sold in packs of one hundred (Q-CLIP-100)

To learn more about Enphase offerings, visit **enphase.com**

2020-06-26

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ENPHASE

DATA SHEET

X-IQ-AM1-240-5
X-IQ-AM1-240-5C

IQ Combiner 5/5C

The IQ Combiner 5/5C consolidates interconnection equipment into a single enclosure and streamlines IQ Series Microinverters and IQ Gateway installation by providing a consistent, pre-wired solution for residential applications. IQ Combiner 5/5C uses wired control communication and is compatible with IQ System Controller 3/3G and IQ Battery 5P.

The IQ Combiner 5/5C, IQ Series Microinverters, IQ System Controller 3/3G, and IQ Battery 5P provide a complete grid-agnostic Enphase Energy System.

IQ Series Microinverters
The high-powered smart grid-ready IQ Series Microinverters (IQ6, IQ7, and IQ8 Series) simplify the installation process.

IQ System Controller 3/3G
Provides microgrid interconnection device (MID) functionality by automatically detecting grid failures and seamlessly transitioning the home energy system from grid power to backup power.

IQ Battery 5P
Fully integrated AC battery system. Includes six field-replaceable IQ8D-BAT Microinverters.

IQ Load Controller
Helps prioritize essential appliances during a grid outage to optimize energy consumption and prolong battery life.

Enphase 5 year limited warranty

5-year limited warranty

*For country-specific warranty information, see the https://enphase.com/installers/resources/warranty page.

Smart

- Includes IQ Gateway for communication and control
- Includes Enphase Mobile Connect (CELLMODEM-M1-06-SP-05), only with IQ Combiner 5C
- Supports flexible networking: Wi-Fi, Ethernet, or cellular
- Provides production metering (revenue grade) and consumption monitoring

Easy to install

- Mounts to one stud with centered brackets
- Supports bottom, back, and side conduit entries
- Supports up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 80 A total PV branch circuits
- Bluetooth-based Wi-Fi provisioning for easy Wi-Fi setup

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- 5-year limited warranty
- 2-year labor reimbursement program coverage included for both the IQ Combiner SKUs*
- UL1741 Listed

IQ Combiner 5/5C

MODEL NUMBER	
IQ Combiner 5 (X-IQ-AM1-240-5)	IQ Combiner 5 with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSIC12.20 ±0.5%), consumption monitoring (± 2.5%), and IQ Battery monitoring (±2.5%). Includes a silver solar shield to deflect heat.
IQ Combiner 5C (X-IQ-AM1-240-5C)	IQ Combiner 5C with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSI C12.20 ±0.5%), consumption monitoring (±2.5%) and IQ Battery monitoring (±2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05)[1]. Includes a silver solar shield to deflect heat.
WHAT'S IN THE BOX	
IQ Gateway printed circuit board	IQ Gateway is the platform for total energy management for comprehensive, remote maintenance, and management of the Enphase Energy System
Busbar	80 A busbar with support for 1 × IQ Gateway breaker and 4 × 20 A breaker for installing IQ Series Microinverters and IQ Battery 5P
IQ Gateway breaker	Circuit breaker, 2-pole, 10 A/15 A
Production CT	Pre-wired revenue-grade solid-core CT, accurate up to ±0.5%
Consumption CT	Two consumption metering clamp CTs, shipped with the box, accurate up to ±2.5%
IQ Battery CT	One battery metering clamp CT, shipped with the box, accurate up to ±2.5%
CTRL board	Control board for wired communication with IQ System Controller 3/3G and the IQ Battery 5P
Enphase Mobile Connect (only with IQ Combiner 5C)	4G-based LTE-M1 cellular modem (CELLMODEM-M1-06-SP-05) with a 5-year T-Mobile data plan
Accessories kit	Spare control headers for the COMMS-KIT-02 board
ACCESSORIES AND REPLACEMENT PARTS (NOT INCLUDED, ORDER SEPARATELY)	
CELLMODEM-M1-06-SP-05	4G-based LTE-M1 cellular modem with a 5-year T-Mobile data plan
CELLMODEM-M1-06-AT-05	4G-based LTE-M1 cellular modem with a 5-year AT&T data plan
Circuit breakers (off-the-shelf)	Supports Eaton BR2XX, Siemens Q2XX and GE/ABB THQL21XX Series circuit breakers (XX represents 10, 15, 20, 30, 40, 50, or 60). Also supports Eaton BR220B, BR230B, and BR240B circuit breakers compatible with the hold-down kit.
Circuit breakers (provided by Enphase)	BRK-10A-2-240V, BRK-15A-2-240V, BRK-20A-2P-240V, BRK-15A-2P-240V-B, and BRK-20A-2P-240V-B (more details in the "Accessories" section)
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 5/5C
XA-ENV2-PCBA-5	IQ Gateway replacement printed circuit board (PCB) for IQ Combiner 5/5C
X-IQ-NA-HD-125A	Hold-down kit compatible with Eaton BR-B Series circuit breakers (with screws)
XA-COMMS2-PCBA-5	Replacement COMMS-KIT-02 printed circuit board (PCB) for IQ Combiner 5/5C
ELECTRICAL SPECIFICATIONS	
Rating	80 A
System voltage and frequency	120/240 VAC, 60 Hz
Busbar rating	125 A
Fault current rating	10 kAIC
Maximum continuous current rating (input from PV/storage)	64 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR, Siemens Q, or GE/ABB THQL Series distributed generation (DG) breakers only (not included)
Maximum total branch circuit breaker rating (input)	80 A of distributed generation/95 A with IQ Gateway breaker included
IQ Gateway breaker	10 A or 15 A rating GE/Siemens/Eaton included
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (CT-200-CLAMP)	A pair of 200 A clamp-style current transformers is included with the box
IQ Battery metering CT	200 A clamp-style current transformer for IQ Battery metering, included with the box

1. A plug-and-play industrial-grade cell modem for systems of up to 60 microinverters. Available in the United States, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.

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MECHANICAL DATA		
Dimensions (W × H × D)		37.5 cm × 49.5 cm × 16.8 cm (14.75" × 19.5" × 6.63"). Height is 21.06" (53.5 cm) with mounting brackets
Weight		7.5 kg (16.5 lbs)
Ambient temperature range		-40°C to 46°C (-40°F to 115°F)
Cooling		Natural convection, plus heat shield
Enclosure environmental rating		Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction
Wire sizes		• 20 A to 50 A breaker inputs: 14 to 4 AWG copper conductors • 60 A breaker branch input: 4 to 1/0 AWG copper conductors • Main lug combined output: 10 to 2/0 AWG copper conductors • Neutral and ground: 14 to 1/0 copper conductors • Always follow local code requirements for conductor sizing
Communication (in-premise connectivity)		Built-in CTRL board for wired communication with IQ Battery 5P and IQ System Controller 3/3G. Integrated power line communication for IQ Series Microinverters
Altitude		Up to 2,600 meters (8,530 feet)
COMMUNICATION INTERFACES		
Integrated Wi-Fi		802.11b/g/n (dual band 2.4 GHz/5 GHz), for connecting the Enphase Cloud through the internet
Wi-Fi range (recommended)		10 m (32.8 feet)
Bluetooth		BLE4.2, 10 m range to configure Wi-Fi SSID
Ethernet		Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included), for connecting to the Enphase Cloud through the internet
Cellular/Mobile Connect		CELLMODEM-M1-06-SP-05 or CELLMODEM-M1-06-AT-05 (included with IQ Combiner 5C)
Digital I/O		Digital input/output for grid operator control
USB 2.0		Mobile Connect, COMMS-KIT-01 for IQ Battery 3/3T/10/10T, COMMS-KIT-02 for IQ Battery 5P
Access point (AP) mode		For connection between the IQ Gateway and a mobile device running the Enphase Installer App
Metering ports		Up to two Consumption CTs, one IQ Battery CT, and one Production CT
Power line communication		90–110 kHz
Web API		See https://developer-v4.enphase.com
Local API		See guide for local API
COMPLIANCE		
IQ Combiner with IQ Gateway		UL 1741, CAN/CSA C22.2 No. 107.1, Title 47 CFR, Part 15, Class B, ICES 003, NOM-208-SCFI-2016, UL 60601-1/CANCSA 22.2 No. 61010-1, IEEE 1547: 2018 (UL 1741-SB, 3rd Ed.), IEEE 2030.5/CSIP Compliant, Production metering: ANSI C12.20 accuracy class 0.5 (PV production)
COMPATIBILITY		
PV	Microinverters	IQ6, IQ7, and IQ8 Series Microinverters
COMMS-KIT-01 [2]	IQ System Controller	EP200G101-M240US00
	IQ System Controller 2	EP200G101-M240US01
	IQ Battery	ENCHARGE-3-1P-NA, ENCHARGE-10-1P-NA, ENCHARGE-3T-1P-NA, ENCHARGE-10T-1P-NA
COMMS-KIT-02 [3]	IQ System Controller 3	SC200D111C240US01, SC200G111C240US01
	IQ Battery	IQBATTERY-5P-1P-NA

2. For information about IQ Combiner 5/5C compatibility with the 2nd-generation batteries, refer to the compatibility matrix.
3. IQ Combiner 5/5C comes pre-equipped with COMMS-KIT-02.

Accessories

Mobile Connect

4G-based LTE-M1 cellular modem with a 5-year data plan
(CELLMODEM-M1-06-SP-05 for Sprint and CELLMODEM-M1-06-AT-05 for AT&T)

Circuit breakers

BRK-10A-2-240V Circuit breaker, 2-pole, 10 A, Eaton BR210
BRK-15A-2-240V Circuit breaker, 2-pole, 15 A, Eaton BR215
BRK-20A-2P-240V Circuit breaker, 2-pole, 20 A, Eaton BR220
BRK-15A-2P-240V-B Circuit breaker, 2-pole, 15 A, Eaton BR215B with hold-down kit support
BRK-20A-2P-240V-B Circuit breaker, 2-pole, 20 A, Eaton BR220B with hold-down kit support

CT-200-SOLID

200 A revenue-grade solid core Production CT with <0.5% error rate (replacement SKU)

CT-200-CLAMP

200 A clamp-style consumption and battery metering CT with <2.5% error rate (replacement SKU)

IQC-5-5C-DSH-00007-3.0-EN-US-2024-03-01

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Enphase IQ Envoy

The **Enphase IQ Envoy**™ communications gateway delivers solar production and energy consumption data to Enphase Enlighten™ monitoring and analysis software for comprehensive, remote maintenance and management of the Enphase IQ System.

With integrated revenue grade production metering and optional consumption monitoring, Envoy IQ is the platform for total energy management and integrates with the Enphase Ensemble™and the Enphase IQ Battery™.

Smart

- Enables web-based monitoring and control
- Bidirectional communications for remote upgrades
- Supports power export limiting and zeroexport applications

Simple

- Easy system configuration using Enphase Installer Toolkit™ mobile app
- Flexible networking with Wi-Fi, Ethernet, or cellular

Reliable

- Designed for installation indoors or outdoors
- Five-year warranty

Enphase IQ Envoy

MODEL NUMBERS	
Enphase IQ Envoy™ ENV-IQ-AM1-240	Enphase IQ Envoy communications gateway with integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and optional consumption monitoring (+/- 2.5%). Includes one 200A continuous rated production CT (current transformer).
ACCESORIES (Order Seperately)	
Enphase Mobile Connect™ CELLMODEM-M1 (4G based LTE-M/5-year data plan) CELLMODEM-M1-B (4G-based LTE-M1/5-year data plan)	Plug and play industrial grade cellular modem with data plan for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.)
Consumption Monitoring CT CT-200-SPLIT	Split-core consumption CTs enable whole home metering.
Ensemble Communications Kit COMMS-KIT-01	Installed at the IQ Envoy. For communications with Enphase Encharge™ storage and Enphase Enpower™ smart switch. Includes USB cable for connection to IQ Envoy or Enphase IQ Combiner™ and allows wireless communication with Encharge and Enpower.
POWER REQUIREMENTS	
Power requirements	120/240 VAC split-phase. Max 20 A overcurrent protection required.
Typical Power Consumption	5W
CAPACITY	
Number of microinverters polled	Up to 600
MECHANICAL DATA	
Dimensions (WxHxD)	21.3 x 12.6 x 4.5 cm (8.4” x 5” x 1.8”)
Weight	17.6 oz (498 g)
Ambient temperature range	-40° to 65° C (-40° to 149° F) -40° to 46° C (-40° to 115° F) if installed in an enclosure
Environmental rating	IP30. For installation indoors or in an NRTL-certified, NEMA type 3R enclosure.
Altitude	To 2000 meters (6,560 feet)
Production CT	- Limited to 200A of continuous current / 250A OCPD – 72kW AC - Internal aperture measures 19.36mm to support 250MCM THWN conductors (max) - UL2808 certified for revenue grade metering
Consumption CT	- For electrical services to 250A with parallel runs up to 500A - Internal aperture measures 0.84” x 0.96” (21.33mm x 24.38mm) to support 3/0 THWN conductor - UL2808 certified, for use at service entrance for services up to 250Vac
INTERNET CONNECTION OPTIONS	
Integrated Wi-Fi	802.11b/g/n
Ethernet	802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)
Mobile	CELLMODEM-M1 (4G) or CELLMODEM-M1-B (4G). Not included. Note that an Enphase Mobile Connect cellular modem is required for all Ensemble installations.
COMPLIANCE	
Compliance	UL 61010-1 CAN/CSA C22.2 No. 61010-1 47 CFR, Part 15, Class B, ICES 003 IEC/EN 61010-1:2010, EN50065-1, EN61000-4-5, EN61000-6-1, EN61000-6-2 Metering: ANSI C12.20 accuracy class 0.5 (PV production only)

CERTIFIED SAFETY

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PV INSTALLATION PROFESSIONAL
Scott Gurney
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CONTRACTOR:
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385-498-6700

DRAWING BY:

PLOT DATE:

PROJECT NUMBER:

SHEET NAME:
SPEC SHEET

REVISION:

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HRB Staff Report

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JB-1.2.OR
Specification Sheet
PV Junction Box for Composition/Asphalt Shingle Roofs

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BLUE RAVEN SOLAR

A. System Specifications and Ratings

- Maximum Voltage: 1,000 Volts
- Maximum Current: 80 Amps
- Allowable Wire: 14 AWG – 6 AWG
- Spacing: Please maintain a spacing of at least ½" between uninsulated live parts and fittings for conduit, armored cable, and uninsulated live parts of opposite polarity.
- Enclosure Rating: Type 3R
- Roof Slope Range: 2.5 – 12:12
- Max Side Wall Fitting Size: 1"
- Max Floor Pass-Through Fitting Size: 1"
- Ambient Operating Conditions: (-35°C) - (+75°C)
- Compliance:
  - JB-1.2: UL1741
  - Approved wire connectors: must conform to UL1741
- System Marking: **Interek Symbol and File #5019942**
- Periodic Re-inspections: If re-inspections yield loose components, loose fasteners, or any corrosion between components, components that are found to be affected are to be replaced immediately.

Table 1: Typical Wire Size, Torque Loads and Ratings

	1 Conductor	2 Conductor	Torque				
			Type	NM	Inch Lbs	Voltage	Current
ABB ZS6 terminal block	10-24 awg	16-24 awg	Sol/Str	0.5-0.7	6.2-8.85	600V	30 amp
ABB ZS10 terminal block	6-24 awg	12-20 awg	Sol/Str	1.0-1.6	8.85-14.16	600V	40 amp
ABB ZS16 terminal block	4-24 awg	10-20 awg	Sol/Str	1.6-2.4	14.6-21.24	600V	60 amp
ABB M6/8 terminal block	8-22 awg		Sol/Str	.08-1	8.85	600V	50 amp
Ideal 452 Red WING-NUT Wire Connector	8-18 awg		Sol/Str	Self-Torque	Self-Torque	600V	
Ideal 451 Yellow WING-NUT Wire Connector	10-18 awg		Sol/Str	Self-Torque	Self-Torque	600V	
Ideal, In-Sure Push-In Connector Part #39	10-14 awg		Sol/Str	Self-Torque	Self-Torque	600V	
WAGO, 2204-1201	10-20 awg	16-24 awg	Sol/Str	Self-Torque	Self-Torque	600V	30 amp
WAGO, 221-612	10-20 awg	10-24 awg	Sol/Str	Self-Torque	Self-Torque	600V	30 amp
Dottie DRC75	6-12 awg		Sol/Str	Snap-In	Snap-In		
ESP NG-53	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
ESP NG-717	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
Brumall 4-5,3	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		

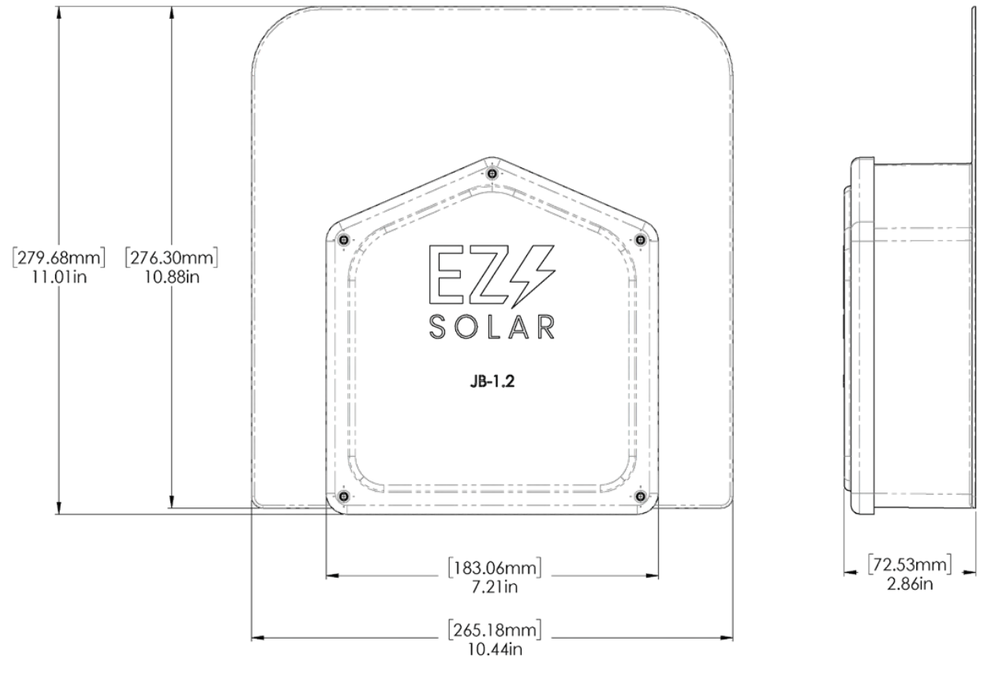
Table 2: Minimum wire-bending space for conductors through a wall opposite terminals in mm (inches)

Wire size, AWG or kcmil (mm2)	Wires per terminal (pole)							
	1		2		3		4 or More	
	mm	(inch)	mm	(inch)	mm	(inch)	mm	(inch)
14-10 (2.1-5.3)	Not Specified		-		-		-	
8 (8.4)	38.1	(1-1/2)	-		-		-	
6 (13.3)	50.8	(2)	-		-		-	

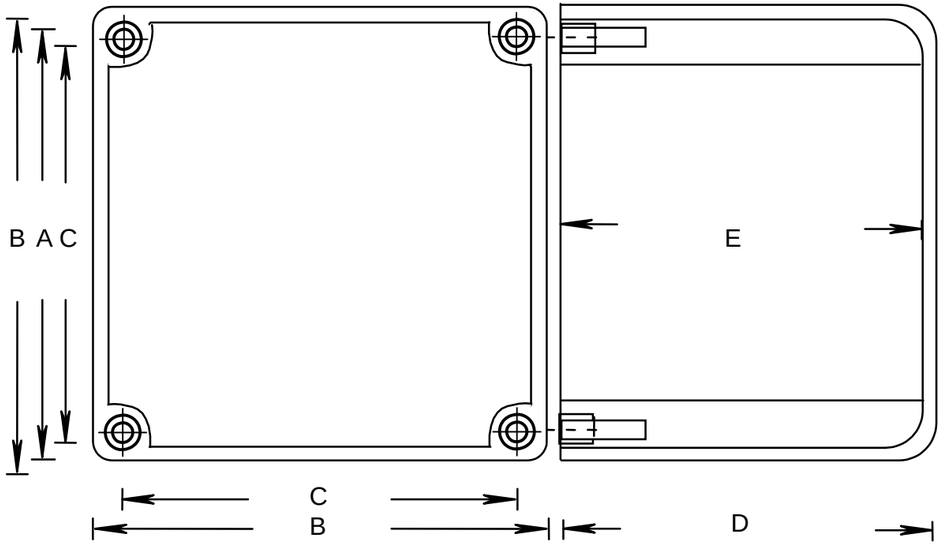
ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	JB-1.2 BODY	POLYCARBONATE WITH UV INHIBITORS	1
2	JB-1.2 LID	POLYCARBONATE WITH UV INHIBITORS	1
3	JB-1.2 FLASHING	WITHOUT GROOVE	1
4	#10 X 1-1/4" PHILLIPS PAN HEAD SCREW		6
5	#8 X 3/4" PHILLIPS PAN HEAD SCREW		6

SIZE	DWG. NO.	REV
B	JB-1.2.OR	
SCALE: 1:2	WEIGHT: 1.45 LBS	SHEET 1 OF 4

TORQUE SPECIFICATION:	15-20 LBS
CERTIFICATION:	UL STANDARD 1741, NEMA 3R
WEIGHT:	1.45 LBS



DRAWING NUMBER: SS



PRODUCT CODE	PART NUMBER	NOMINAL SIZE (in)	NOMINAL SIZE (mm)	A (in)	A (mm)	B (in)	B (mm)	C (in)	C (mm)
076668	J444 STAHLIN	4	103	3.675	93	4.000	102	3.450	88
076259	AMJB444 ALLIED	4	103	3.675	93	4.000	102	3.450	88
077643*	2037-424T CANLET	4	103	3.675	93	4.000	102	3.450	88
077696	JB 444	4	103	4.000	101	4.395	112	3.950	101

PRODUCT CODE	PART NUMBER	NOMINAL SIZE (in)	NOMINAL SIZE (mm)	D (in)	D (mm)	E (in)	E (mm)	VOLUME (cu. In)	VOLUME (cu. Cm)
076668	J444 STAHLIN	4	103	4.180	106.	3.850	98	51.5	844.6
076259	AMJB444 ALLIED	4	103	4.180	106	3.850	98	51.5	844.6
077643*	2037-424T CANLET	4	103	4.180	106	3.850	98	51.5	844.6
077696	JB 444	4	103	4.170	106	3.930	100	51.5	844.6

PRODUCT CODE	PART NUMBER	NOMINAL SIZE (in)	NOMINAL SIZE (mm)	GASKET CODE	INSERT CODE	SCREW CODE	M.FEET CODE
076668	J444 STAHLIN	4	103		072538 (4)		
076259	AMJB444 ALLIED	4	103		072538 (4)		
077643*	2037-424T CANLET	4	103		072538 (4)		
077696	JB 444	4	103	097731	072538 (4) 072539 (2)	072522 (4) 072513 (2)	097747

* BOX WITH MOLDED MOUNTING FEET, INSERT ONLY; NO COVER, OR GASKET, UL LISTED 576J

RIGID PVC CONDUIT FITTINGS

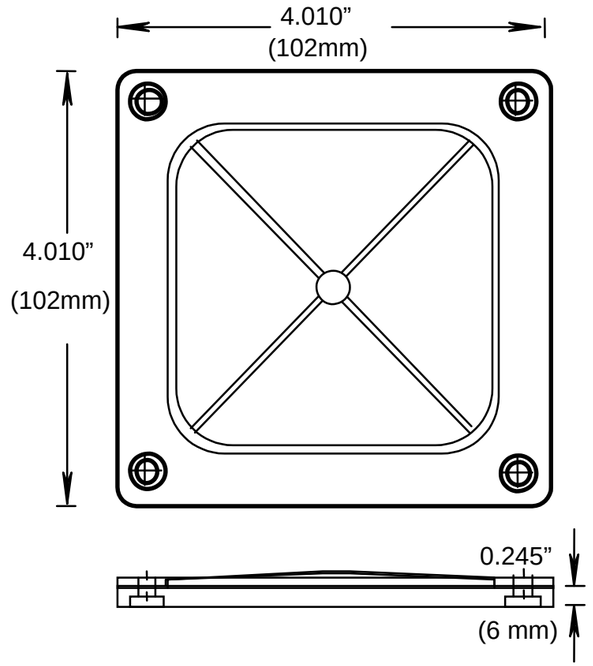
JB444 JUNCTION BOXES

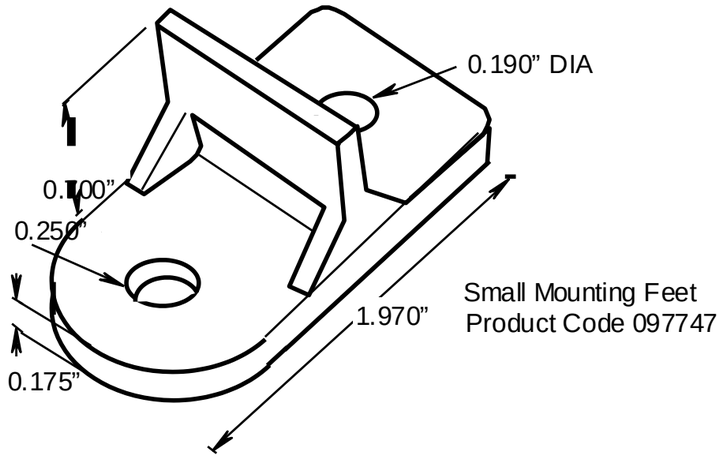
ISSUE DATE:
DATE D'EMISSION: 2009 04 30

SUPERCEDES:
REMPLACE: 2004 07 15

5

COVER DIMENSIONS





Small Mounting Feet
Product Code 097747

"Stay Connected" with HEYCO® Solar Power Components

a PennEngineering® Company

Heyco®-Tite Liquid Tight Cordgrips for Enphase Q Cables

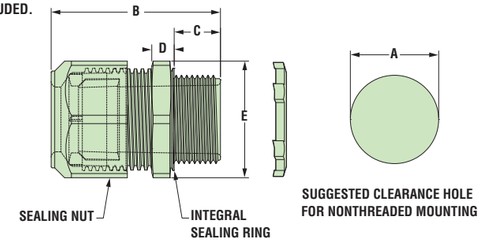
Straight-Thru, NPT Hubs with Integral Sealing Ring

The Ultimate in Liquid Tight Strain Relief Protection

ALL NEW PRODUCT!

GLAND CONFIGURATION Conductors Type *	Size mm.	No.	PART NO. Black	DESCRIPTION	UL/CSA or c UL us	PART DIMENSIONS A Clearance Hole Dia. in.	mm.	B Max. O.A. Length in.	mm.	C Thread Length in.	mm.	D Wrenching Thickness in.	mm.	E Nut Flat Size in.	mm.
Oval Gland															
Q Cable	6,1 x 9,7	1	**M3231GCZ**	LTCG 1/2 6.1x9.7MM	UL/CSA	.875	22,2	1.70	43,2	.61	15,5	.21	5,3	.98	24,9
Break-Thru Skinned Over Gland															
Q Cables plus Ground	6,1 x 9,7 3,3	2 1	**M3234GDA-SM**	SMCG 3/4 2-6.1x9.7MM 1-3.3MM	UL/CSA	1.040	26,4	2.00	50,8	.62	15,7	.25	6,4	1.30	33,0

Metal Locknuts INCLUDED.



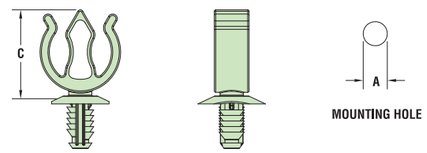
Material	Nylon 6/6 with TPE Sealing Gland
Certifications	UL Listed under Underwriters' Laboratories File E504900
	CSA Certified by the Canadian Standards Association File 93876
Flammability Rating	94V-2
Temperature Range	Static -40°F (-40°C) to 239°F (115°C) Dynamic -4°F (-20°C) to 212°F (100°C)
IP Rating	IP 68

- Two new cordgrips now accommodate the Enphase Q Cable – M3231GCZ (1/2˝ NPT) and M3234GDA-SM (3/4˝ NPT).
- The 1/2˝ version provides liquid tight entry for one Enphase Q Cable – .24 x .38˝ (6,1 x 9,7 mm).
- The 3/4˝ version provides liquid tight entry for up to two Enphase Q Cables – .24 x .38" (6,1 x 9,7 mm) and an additional .130" (3,3 mm) dia. hole for a #8 solid grounding cable.
- The 3/4˝ version utilizes our skinned-over technology so any unused holes will retain a liquid tight seal.
- Rated for use with DG Cable.

Heyco® Helios® UVX Clip – Blind Mount

ALL NEW PRODUCT!

PANEL THICKNESS RANGE Minimum in.	mm.	Maximum in.	mm.	WIRE DIAMETER RANGE 1-2 Wires	PART NO.	DESCRIPTION	MOUNTING HOLE DIA. A in.	mm.	OVERALL HEIGHT C in.	mm.
1-2 Wires										
.028	0,7	.250	6,4	.23 (5,8 mm) - .32 (8,0 mm) each cable	**S6520**	Helios UVX Clip 100 Pack	.260	6,6	.96	24,4
					S6560	Helios UVX Clip Bulk				



Material	Nylon 6/6 with extended UV Capabilities
Flammability Rating	94V-2
Temperature Range	Dynamic -4°F (-20°C) to 185°F (85°C)

- The jersey pine tree mounting style installs easily with superior holding power.
- UVX nylon protects from corrosion due to outdoor exposure.
- Installs into .260˝ (6,6 mm) mounting hole.
- Holds up to 2 cables between .230 - .315˝ (5,8 - 8,0 mm) each.
- Cables install with fingertip pressure.
- Molded from our robust UVX nylon 6/6 with extended UV capabilities for our Solar 20 Year Warranty.

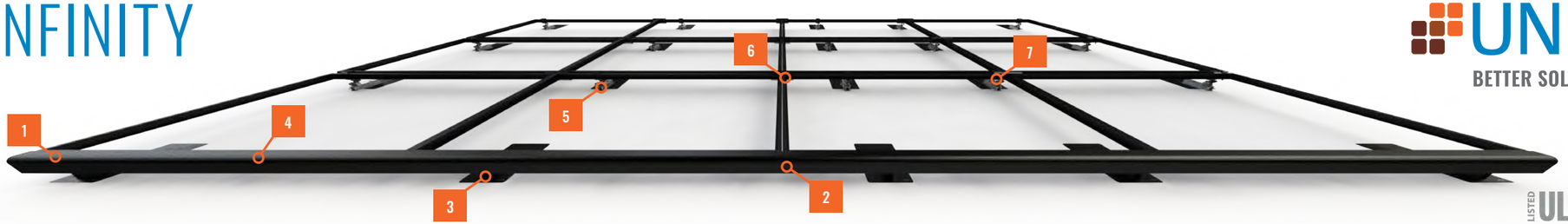
1-800-526-4182 • 732-286-1800 (NJ) • FAX: 732-244-8843 • www.heyco.com

1-4b

BLUE RAVEN SOLAR

DRAWING NUMBER: SS

SFM INFINITY



UNIRAC®
BETTER SOLAR STARTS HERE

LISTED UL2703 BONDING & GROUNDING MECHANICAL LOADING SYSTEM FIRE CLASSIFICATION

2 INSTALLS PER DAY

Make two installs per day your new standard. **SFM** INFINITY has fewer roof attachments, one tool installation, and pre-assembled components to get you off the roof 40% faster.

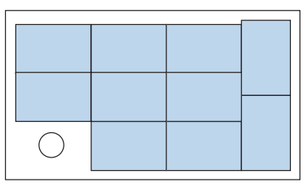
87% OF HOMEOWNERS **PREFER**

BETTER AESTHETICS

Install the system with the aesthetics preferred by homeowners, with integrated front trim, trim end caps, dark components, and recessed hardware.

MAXIMUM POWER DENSITY

Easily mix module orientations to achieve optimal power density without incurring the increased bill of materials, labor, and attachments required by rail.



SYSTEM OVERVIEW

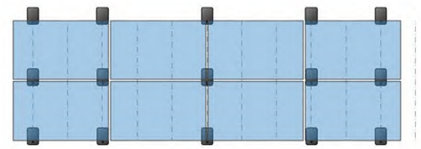
	PART NAME	DESCRIPTION
1	TRIMRAIL	Structural front trim provides aesthetic and aligns modules.
2	TRIMRAIL SPLICE	Connects and electrically bonds sections of **TRIM**RAIL.
3	TRIMRAIL FLASHKIT	Attaches **TRIM**RAIL to roof. Available for comp shingle or tile.
4	MODULE CLIPS	Secure modules to **TRIM**RAIL.
5	MICRORAIL	Connects modules to SLIDERS. Provides post-install array leveling.
6	SPLICE	Connects and supports modules. Provides east-west bonding. ATTACHED SPLICE also available.
7	SLIDER FLASHKIT	Roof attachment and flashing. Available for comp shingle and tile.

BONDING AND ACCESSORIES

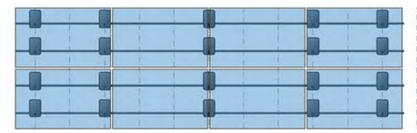
PART NAME	DESCRIPTION
TRIMRAIL ENDCAPS	Covers ends of **TRIM**RAIL for refined aesthetic.
TRIMRAIL BONDING CLAMP	Electrically bonds **TRIM**RAIL and modules
N/S BONDING CLAMP	Electrically bonds rows of modules

20% FEWER ATTACHMENTS

Save time and money on every project: **SFM** INFINITY requires fewer attachments than rail systems.



SFM INFINITY 15 Attachments



RAIL 20 Attachments

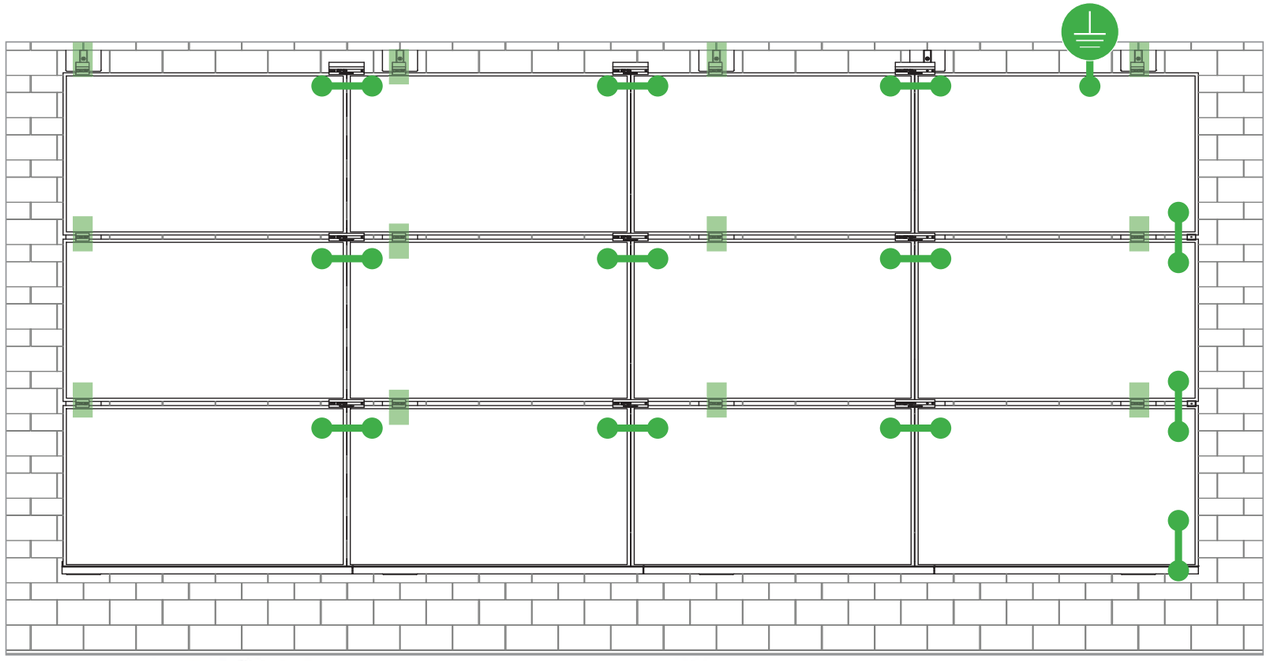
30% LOGISTICS SAVINGS

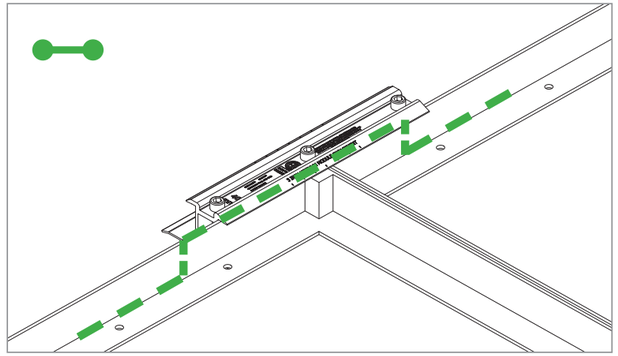
With fewer SKUs and compact components, **SFM** INFINITY is easier to stock, easier to transport, and easier to lift to the roof. Plus, make more efficient use of your vehicle fleet.

SFM INFINITY REVOLUTIONIZES ROOFTOP SOLAR WITH BENEFITS ACROSS YOUR BUSINESS, FROM DESIGN AND LOGISTICS, THROUGH ARRAY INSTALLATION AND SERVICE.

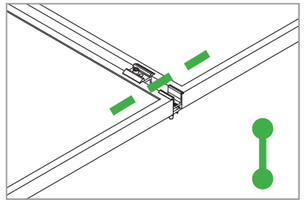
BLUE RAVEN SOLAR

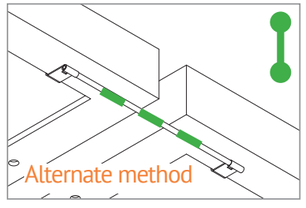
DRAWING NUMBER: SS



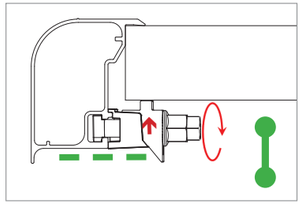


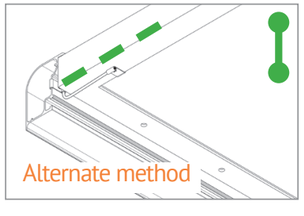
E-W BONDING PATH:
E-W module to module bonding is accomplished with 2 pre-installed bonding pins which engage on the secure side of the MicrorailTM and splice.





N-S BONDING PATH:
N-S module to module bonding is accomplished with bonding clamp with 2 integral bonding pins. **(refer also to alternate method)**



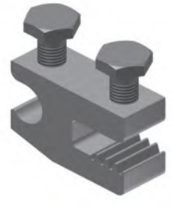


TRIMRAIL BONDING PATH:
Trimrail to module bonding is accomplished with bonding clamp with integral bonding pin and bonding T-bolt. **(refer also to alternate method)**

Star Washer is Single Use Only

TERMINAL TORQUE, Install Conductor and torque to the following:
4-6 AWG: 35in-lbs
8 AWG: 25 in-lbs
10-14 AWG: 20 in-lbs

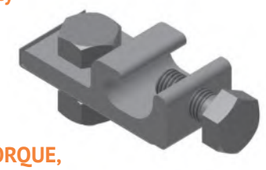
LUG DETAIL & TORQUE INFO
Ilsco Lay-In Lug (GBL-4DBT)
- 10-32 mounting hardware
- Torque = 5 ft-lb
- AWG 4-14 - Solid or Stranded



TERMINAL TORQUE, Install Conductor and torque to the following:
4-14 AWG: 35in-lbs

LUG DETAIL & TORQUE INFO
Ilsco Flange Lug (SGB-4)
- 1/4" mounting hardware
- Torque = 75 in-lb
- AWG 4-14 - Solid or Stranded

WEEBLUG
Single Use Only



TERMINAL TORQUE, Install Conductor and torque to the following:
6-14 AWG: 7ft-lbs

LUG DETAIL & TORQUE INFO
Wiley WEEBLug (6.7)
- 1/4" mounting hardware
- Torque = 10 ft-lb
- AWG 6-14 - Solid or Stranded

NOTE: ISOLATE COPPER FROM ALUMINUM CONTACT TO PREVENT CORROSION

System bonding is accomplished through modules. System grounding accomplished by attaching a ground lug to any module at a location on the module specified by the module manufacturer.

DRAWING NUMBER: SS

BLUE RAVEN SOLAR

SYSTEM LEVEL FIRE CLASSIFICATION

The system fire class rating requires installation in the manner specified in the SUNFRAME MICRORAIL (SFM) Installation Guide. SFM has been classified to the system level fire portion of UL 1703. This UL 1703 classification has been incorporated into the UL 2703 product certification. SFM has achieved Class A, B & C system level performance for low slope & steep sloped roofs when used in conjunction with type 1 and type 2 modules. Class A, B & C system level fire performance is inherent in the SFM design, and no additional mitigation measures are required. The fire classification rating is valid for any roof pitch. There is no required minimum or maximum height limitation above the roof deck to maintain the Class A, B & C fire rating for SFM. SUNFRAME MICRORAIL™ components shall be mounted over a fire resistant roof covering rated for the application.

Module Type	Roof Slope	System Level Fire Rating	Microrail Direction	Module Orientation	Mitigation Required
Type 1 and Type 2	Steep Slope & Low Slope	Class A, B & C	East-West	Landscape OR Portrait	None Required

UL2703 TEST MODULES

See pages 22 and 23 for a list of modules that were electrically and mechanically tested or qualified with the SUNFRAME MICRORAIL (SFM) components outlined within this Installation Guide.

- Maximum Area of Module = 27.76 sqft
- UL2703 Design Load Ratings:
  - a) Downward Pressure – 113 PSF / 5400 Pa
  - b) Upward Pressure – 50 PSF / 2400 Pa
  - c) Down-Slope Load – 21.6 PSF / 1034 Pa
- Tested Loads:
  - a) Downward Pressure – 170 PSF / 8000 Pa
  - b) Upward Pressure – 75 PSF / 3500 Pa
  - c) Down-Slope Load – 32.4 PSF / 1550 Pa
- Maximum Span = 6ft
- Use with a maximum over current protection device OCPD of 30A
- System conforms to UL Std 2703, certified to LTR AE-001-2012
- Rated for a design load of 2400 Pa / 5400 Pa with 24 inch span
- PV modules may have a reduced load rating, independent of the SFM load rating. Please consult the PV module manufacturer's installation guide for more information
- Down-Slope design load rating of 30 PSF/ 1400 Pa for module areas of 22.3 sq ft or less

DRAWING NUMBER: SS

Manufacture	Module Model / Series
Aleo	P-Series
Aptos	DNA-120-(BF/MF)26 DNA-144-(BF/MF)26
Astronergy	CHSM6612P, CHSM6612P/HV, CHSM6612M, CHSM6612M/HV, CHSM6610M (BL)(BF)/(HF), CHSM72M-HC
Auxin	AXN6M610T, AXN6P610T, AXN6M612T & AXN6P612T
Axitec	AXIblackpremium 60 (35mm), AXIpower 60 (35mm), AXIpower 72 (40mm), AXIpremium 60 (35mm), AXIpremium 72 (40mm).
Boviet	BVM6610, BVM6612
BYD	P6K & MHK-36 Series
Canadian Solar	CS1(H/K/U/Y)-MS CS3(K/L/U), CS3K-MB-AG, CS3K-(MS/P) CS3N-MS, CS3U-MB-AG, CS3U-(MS/P), CS3W CS5A-M, CS6(K/U), CS6K-(M/P), CS6K-MS CS6P-(M/P), CS6U-(M/P), CS6V-M, CS6X-P
Centrosolar America	C-Series & E-Series
CertainTeed	CT2xxMxx-01, CT2xxPxx-01, CTxxxMxx-02, CTxxxM-03, CTxxxMxx-04, CTxxxHC11-04
Dehui	DH-60M
Eco Solargy	Orion 1000 & Apollo 1000
ET Solar	ET-M672BHxxxTW
Freedom Forever	FF-MP-BBB-370
FreeVolt	Mono PERC
GCL	GCL-P6 & GCL-M6 Series
Hansol	TD-AN3, TD-AN4, UB-AN1, UD-AN1
Heliene	36M, 60M, 60P, 72M & 72P Series, 144HC M6 Monofacial/ Bifacial Series, 144HC M10 SL Bifacial
HT Solar	HT60-156(M) (NDV) (-F), HT 72-156(M/P)
Hyundai	KG, MG, TG, RI, RG, TI, MI, HI & KI Series HiA-SxxxHG
ITEK	iT, iT-HE & iT-SE Series
Japan Solar	JPS-60 & JPS-72 Series
JA Solar	JAP6 60-xxx, JAM6-60-xxx/SI, JAM6(K)-60/ xxx, JAP6(k)-72-xxx/4BB, JAP72SYY-xxx/ZZ, JAP6(k)-60-xxx/4BB, JAP60SYY-xxx/ZZ, JAM6(k)-72-xxx/ZZ, JAM72SYY-xxx/ZZ, JAM6(k)-60-xxx/ZZ, JAM60SYY-xxx/ZZ. i. YY: 01, 02, 03, 09, 10 ii. ZZ: SC, PR, BP, HiT, IB, MW, MR
Jinko	JKM & JKMS Series Eagle JKMxxxM JKMxxxM-72HL-V
Kyocera	KU Series
LG Electronics	LGxxxN2T-A4 LGxxx(A1C/E1C/E1K/N1C/N1K/N2T/N2W/ Q1C/Q1K/S1C/S2W)-A5 LGxxxN2T-B5 LGxxxN1K-B6 LGxxx(A1C/M1C/M1K/N1C/N1K/Q1C/Q1K/ QAC/QAK)-A6 LGxxx(N1C/N1K/N2T/N2W)-E6 LGxxx(N1C/N1K/N2W/S1C/S2W)-G4 LGxxxN2T-J5 LGxxx(N1K/N1W/N2T/N2W)-L5 LGxxx(N1C/Q1C/Q1K)-N5 LGxxx (N1C/N1K/N2W/Q1C/Q1K)-V5
LONGi	LR4-60(HIB/HIH/HPB/HPH)-xxxM LR4-72(HIH/HPH)-xxxM LR6-60(BP/HBD/HIBD)-xxxM (30mm) LR6-60(BK)(PE)(HPB)(HPH)-xxxM (35mm) LR6-60(BK)(PE)(PB)(PH)-xxxM (40mm) LR6-72(BP)(HBD)(HIBD)-xxxM (30mm) LR6-72(HV)(BK)(PE)(PH)(PB)(HPH)-xxxM (35mm) LR6-72(BK)(HV)(PE)(PB)(PH)-xxxM (40mm)
Mission Solar Energy	MSE Series
Mitsubishi	MJE & MLE Series
Neo Solar Power Co.	D6M & D6P Series

- Unless otherwise noted, all modules listed above include all wattages and specific models within that series. Variable wattages are represented as "xxx"
- Items in parenthesis are those that may or may not be present in a compatible module's model ID
- Slashes "/" between one or more items indicates that either of those items may be the one that is present in a module's model ID
- Please see the SFM UL2703 Construction Data Report at Unirac.com to ensure the exact solar module selected is approved for use with SFM
- SFM Infinity is not compatible with module frame height of less than 30mm and more than 40mm. See Module Mounting section, page 12 for further information

DRAWING NUMBER: SS

Manufacture	Module Model / Series
Panasonic	EVPVxxx (H/K/PK), VBHNxxxSA15 & SA16, VBHNxxxSA17 & SA18, VBHNxxxSA17(E/G) & SA18E, VBHNxxxKA01 & KA03 & KA04, VBHNxxxZA01, VBHNxxxZA02, VBHNxxxZA03, VBHNxxxZA04
Peimar	SGxxxM (FB/BF)
Phono Solar	PS-60, PS-72
Prism Solar	P72 Series
Q.Cells	Plus, Pro, Peak, G3, G4, G5, G6(+), G7, G8(+) Pro, Peak L-G2, L-G4, L-G5, L-G6, L-G7 Q.PEAK DUO BLK-G6+ Q.PEAK DUO BLK-G6+/TS Q.PEAK DUO (BLK)-G8(+) Q.PEAK DUO L-G8.3/BFF Q.PEAK DUO (BLK) ML-G9(+) Q.PEAK DUO XL-G9/G9.2/G9.3 Q.PEAK DUO (BLK) ML-G10(+) Q.PEAK DUO XL-G(10/10.2/10.3/10.c/10.d) Q.PEAK DUO BLK ML-G10+ / t
REC Solar	Alpha (72) (Black) (Pure) RECxxxAA PURE-R RECxxxNP3 Black N-Peak (Black) N-Peak 2 (Black) PEAK Energy Series PEAK Energy BLK2 Series PEAK Energy 72 Series

Manufacture	Module Model / Series
REC Solar (cont.)	TwinPeak Series TwinPeak 2 Series TwinPeak 2 BLK2 Series TwinPeak 2S(M)72(XV) TwinPeak 3 Series (38mm) TP4 (Black)
Renesola	Vitrus2 Series & 156 Series
Risen	RSM72-6 (MDG) (M), RSM60-6
SEG Solar	SEG-xxx-BMD-HV SEG-xxx-BMD-TB
S-Energy	SN72 & SN60 Series (40mm)
Seraphim	SEG-6 & SRP-6 Series
Sharp	NU-SA & NU-SC Series
Silfab	SLA, SLG, BC Series & SILxxx(BL/NL/NT/HL/ML/BK/NX/NU/HC)
Solarever USA	SE-166*83-xxxM-120N
Solaria	PowerXT-xxxR-(AC/PD/BD) PowerXT-xxxC-PD PowerXT-xxxR-PM (AC)
SolarWorld	Sunmodule Protect, Sunmodule Plus
Sonali	SS-M-360 to 390 Series, SS-M-390 to 400 Series, SS-M-440 to 460 Series, SS-M-430 to 460 BiFacial Series, SS 230 - 265
SunEdison	F-Series, R-Series & FLEX FXS Series

Manufacture	Module Model / Series
Suniva	MV Series & Optimus Series
SunPower	A-Series A400-BLK , SPR-MAX3-XXX-R, X-Series, E-Series & P-Series
Suntech	STP, STPXXXS - B60/Wnhb
Talesun	TP572, TP596, TP654, TP660, TP672, Hipor M, Smart
Tesla	SC, SC B, SC B1, SC B2 TxxxH, TxxxS
Trina	PA05, PD05, DD05, DE06, DD06, PE06, PD14, PE14, DD14, DE09.05, DE14, DE15, PE15H
Upsolar	UP-MxxxP(-B), UP-MxxxM(-B)
United Renewable Energy (URE)	D7MxxxH7A, D7(M/K)xxxH8A FAKxxx(C8G/E8G), FAMxxxE7G-BB FAMxxxE8G(-BB) FBMxxxMFG-BB
Vikram	Eldora, Solivo, Somera
Waaree	AC & Adiya Series
Winaico	WST & WSP Series
Yingli	YGE & YLM Series
ZN Shine	ZXM6-72, ZXM6-NH144-166_2094

- Unless otherwise noted, all modules listed above include all wattages and specific models within that series. Variable wattages are represented as "xxx"
- Items in parenthesis are those that may or may not be present in a compatible module's model ID
- Slashes "/" between one or more items indicates that either of those items may be the one that is present in a module's model ID
- Please see the SFM UL2703 Construction Data Report at Unirac.com to ensure the exact solar module selected is approved for use with SFM
- SFM Infinity is not compatible with module frame height of less than 30mm and more than 40mm. See Module Mounting section, page 12 for further information

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Address:	1411 Broadway Blvd NE Albuquerque, NM 87102	**Address:**	
Country:	USA	**Country:**	

Party Authorized To Apply Mark: Same as Manufacturer
Report Issuing Office: Intertek Testing Services NA, Inc., Lake Forest, CA

Control Number: *5003705* **Authorized by:** Keenan Lavery
for L. Matthew Snyder, Certification Manager

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Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672

Standard(s):	Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels [UL 2703:2015 Ed.1+R:24Mar2021] PV Module and Panel Racking Mounting System and Accessories [CSA TIL No. A-40:2020]
Product:	Photovoltaic Mounting System, Sun Frame Microrail Installation Guide, PUB2023MAY10
Brand Name:	Unirac
Models:	Unirac SFM

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Product:	Photovoltaic Mounting System, Sun Frame Microrail Installation Guide, PUB2023MAY10
Brand Name:	Unirac
Models:	Unirac SFM

BLUE RAVEN SOLAR

DRAWING NUMBER:
SS

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Address:	1411 Broadway Blvd NE Albuquerque, NM 87102	**Address:**	
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Control Number: *5019851* **Authorized by:** Keenan Lavery
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Product:	Photovoltaic Mounting System, Sun Frame Microrail Installation Guide, PUB2023MAY10
Brand Name:	Unirac
Models:	Unirac SFM

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Applicant:	Unirac, Inc	**Manufacturer:**	
Address:	1411 Broadway Blvd NE Albuquerque, NM 87102	**Address:**	
Country:	USA	**Country:**	

Party Authorized To Apply Mark: Same as Manufacturer
Report Issuing Office: Intertek Testing Services NA, Inc., Lake Forest, CA

Control Number: *5021866* **Authorized by:** Keenan Lavery
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Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672

Standard(s):	Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels [UL 2703:2015 Ed.1+R:24Mar2021] PV Module and Panel Racking Mounting System and Accessories [CSA TIL No. A-40:2020]
Product:	Photovoltaic Mounting System, Sun Frame Microrail Installation Guide, PUB2023MAY10
Brand Name:	Unirac
Models:	Unirac SFM

BLUE RAVEN SOLAR

DRAWING NUMBER: SS

1.0 Reference and Address			
Report Number	102393982LAX-002	Original 11-Apr-2016	Revised: 5-Oct-2022
Standard(s)	Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels [UL 2703:2015 Ed.1+R:24Mar2021] PV Module and Panel Racking Mounting System and Accessories [CSA TIL No. A-40:2020]		

Applicant	Unirac, Inc	Manufacturer 2	
Address	1411 Broadway Blvd NE Albuquerque, NM 87102	Address	
Country	USA	Country	
Contact	Klaus Nicolaedis Todd Ganshaw	Contact	
Phone	505-462-2190 505-843-1418	Phone	
FAX	NA	FAX	
Email	klaus.nicolaedis@unirac.com toddg@unirac.com	Email	

Manufacturer 3		Manufacturer 4	
Address		Address	
Country		Country	
Contact		Contact	
Phone		Phone	
FAX		FAX	
Email		Email	

Manufacturer 5
Address
Country
Contact
Phone
FAX

Listing Constructional Data Report (CDR)

1.0 Reference and Address			
Report Number	102393982LAX-002	Original 11-Apr-2016	Revised: 5-Oct-2022
Email			

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BLUE RAVEN SOLAR

DRAWING NUMBER:

SS

2.0 Product Description	
Product	Photovoltaic Mounting System, Sun Frame Microrail Installation Guide, PUB2022SEP28
Brand name	Unirac
Description	The product covered by this report is the Sun Frame Micro Rail roof mounted Photovoltaic Rack Mounting System. This system is designed to provide bonding and grounding to photovoltaic modules. The mounting system employs anodized or mill finish aluminum brackets that are roof mounted using the slider, outlined in section 4 of this report. There are no rails within this product, whereas the 3" Micro Rail, Floating Splice, and 9" Attached Splice electrically bond the modules together forming the path to ground. The Micro Rails are installed onto the module frame by using a stainless steel bolt anodized with black oxide with a stainless type 300 bonding pin, torqued to 20 ft-lbs, retaining the modules to the bracket. The bonding pin of the Micro Rail when bolted and torqued, penetrate the anodized coating of the photovoltaic module frame (at bottom flange) to contact the metal, creating a bonded connection from module to module. The grounding of the entire system is intended to be in accordance with the latest edition of the National Electrical Code, including NEC 250: Grounding and Bonding, and NEC 690: Solar Photovoltaic Systems or the Canadian Electrical Code, CSA C22.1 Part 1 in accordance to the revision in effect in the jurisdiction in which the project resides. Any local electrical codes must be adhered in addition to the national electrical codes. The Grounding Lug is secured to the photovoltaic module, torqued in accordance with the installation manual provided in this document. Other optional grounding includes the use of the Enphase UL2703 certified grounding system, which requires a minimum of 2 micro-inverters mounted to the same rail, and using the same engage cable.

2.0 Product Description	
Models	Unirac SFM
Model Similarity	NA
Ratings	Fuse Rating: 30A Module Orientation: Portrait or Landscape Maximum Module Size: 17.98 ft² UL2703 Design Load Rating: 33 PSF Downward, 33 PSF Upward, 10 PSF Down-Slope Tested Loads - 50 psf/2400Pa Downward, 50psf/2400Pa Uplift, 15psf/720Pa Down Slope Trina TSM-255PD05.08 and Sunpower SPR-E20-327 used for Mechanical Loading Increased size ML test: Maximum Module Size: 22.3 ft² UL2703 Design Load Rating: 113 PSF Downward, 50 PSF Upward, 30 PSF Down-Slope LG355S2W-A5 used for Mechanical Loading test. Mounting configuration: Four mountings on each long side of panel with the longest span of 24" UL2703 Design Load Rating: 46.9 PSF Downward, 40 PSF Upward, 10 PSF Down-Slope LG395N2W-A5, LG360S2W-A5 and LG355S2W-A5 used for used for Mechanical Loading test. Mounting configuration: Six mountings for two modules used with the maximum span of 74.5" IEC 61646 Test Loads - 112.78 psf/5400Pa Downward, 50psf/2400Pa Uplift Mechanical Load test to add FlashLoc Slider and Trim Assemblies to UL2703 and IEC 61646 Certifications, & Increase SFM System UL2703 Module Size: Maximum Module Size: 27.76 ft² UL2703 Design Load Rating: 113 PSF Downward, 50 PSF Upward, 21.6 PSF Down-Slope Jinko Eagle 72HM G5 used for Mechanical Loading test. Mounting configuration: Four mountings on each long side of panel with the longest span of 24" Mamzimum module size: 21.86 ft2 IEC 61646 Test Loads - 112.78 psf/5400Pa Downward, 75psf/3600Pa Uplift SunPower model SPR-A430-COM-MLSD used for Mechanical Loading Fire Class Resistance Rating: - Class A for Steep Slope Applications when using Type 1 Modules. Can be installed at any interstitial gap. Installations must include Trim Rail. - Class A for Steep Slope Applications when using Type 2 Modules. Can be installed at any interstitial gap. Installations must include Trim Rail. - Class A Fire Rated for Low Slope applications with Type 1 or 2 listed photovoltaic modules. This system was evaluated with a 5” gap between the bottom of the module and the roof’s surface See section 7.0 illustractions # 1, 1a and 1b for a complete list of PV modules evaluated with these racking systems
Other Ratings	NA

BLUE RAVEN SOLAR

DRAWING NUMBER: SS

EXHIBIT HRB-3 WILLAMETTE HISTORIC DISTRICT REGISTER – PAGE 37 EXCERPT

EXHIBIT HRB-2 WILLAMETTE HISTORIC DISTRICT REGISTER – PAGE 10 EXCERPT

continued to be popular for decades. The style is regionally expressed most commonly in a symmetrical form, one or two stories, with classical decorative elements such as pilasters and sidelights. There are three examples of the Colonial Revival style in the Willamette neighborhood; although, only 1747 5th Avenue (ca. 1905) contributes to the district.

CHANGES WITHIN THE DISTRICT

Alterations to the buildings within the district include siding and window replacement and the construction of additions, including garages, porches, dormers, and additional living space. Some residents have constructed small fences or retaining walls. Most of these alterations are relatively minor and do not detract from the overall integrity of the neighborhood or the individual building. In total, there are only five non-contributing buildings built during the period of significance.

While the Willamette Falls Neighborhood Historic District represents a cohesive and intact picture of late-nineteenth and early-twentieth century residential development. It has been, and continues to be, impacted by infill development. Early builders in the Willamette Falls Neighborhood Historic District often bought two adjoining lots to build a house on one while using the second for a garden. This led to a district defined by lower building density. Construction in the Willamette Falls Neighborhood slowed substantially after 1929 due to the lack of available lots and the economic downturn. A few homes were constructed on vacant lots within and around the district in the 1930s and 40s. Building picked up again in the area in the postwar period, beginning in the 1950s and continuing through the 1970s. Residences built during this period are simple with a minimum of applied detail. Styles of the period include Minimal Traditional, WWII Period Cottage, and Ranch. Within the nominated area, only three ranch-type buildings were constructed that exhibit the characteristic low-pitch roof, horizontal profile, minimal porch, and large picture windows. One building was constructed in the Northwest Regional Style during the same time. All of these buildings were constructed after the major development period of the neighborhood and are outside the period of significance.

In the last several decades, development pressure in the Portland area and the lack of buildable lots has led to a significant number of vacant lots in the neighborhood being sold and developed. In the Willamette Falls Neighborhood Historic District 14 buildings were constructed since 1980 throughout the neighborhood, reflecting the continuing availability of empty lots between historic resources. These houses were constructed between 1962 and 2008 and represent a variety of contemporary styles. The most prevalent non-historic style in the district is the Neo-Victorian, a contemporary interpretation of the late-nineteenth century Victorian-era styles, most frequently the Queen Anne style. Other styles represented include the Ranch type and the Neo-Colonial Style. While these newer buildings do not contribute the historic character of the district, their compatible styles do not significantly detract from the district's historic associations.

In addition to new construction, the neighborhood's utilities have been upgraded overtime. The original wood power poles have been replaced in kind by modern ones in approximately the same locations in the neighborhood's alleyways. Although the under-ground sewer system has been upgraded with modern pipes and fittings, segments of the original clay tile system still remain. Despite alterations to the historic utilities, the historic location and orientation of the buildings and streets are retained, thus reflecting the original

Willamette Falls Neighborhood Historic District
District Map

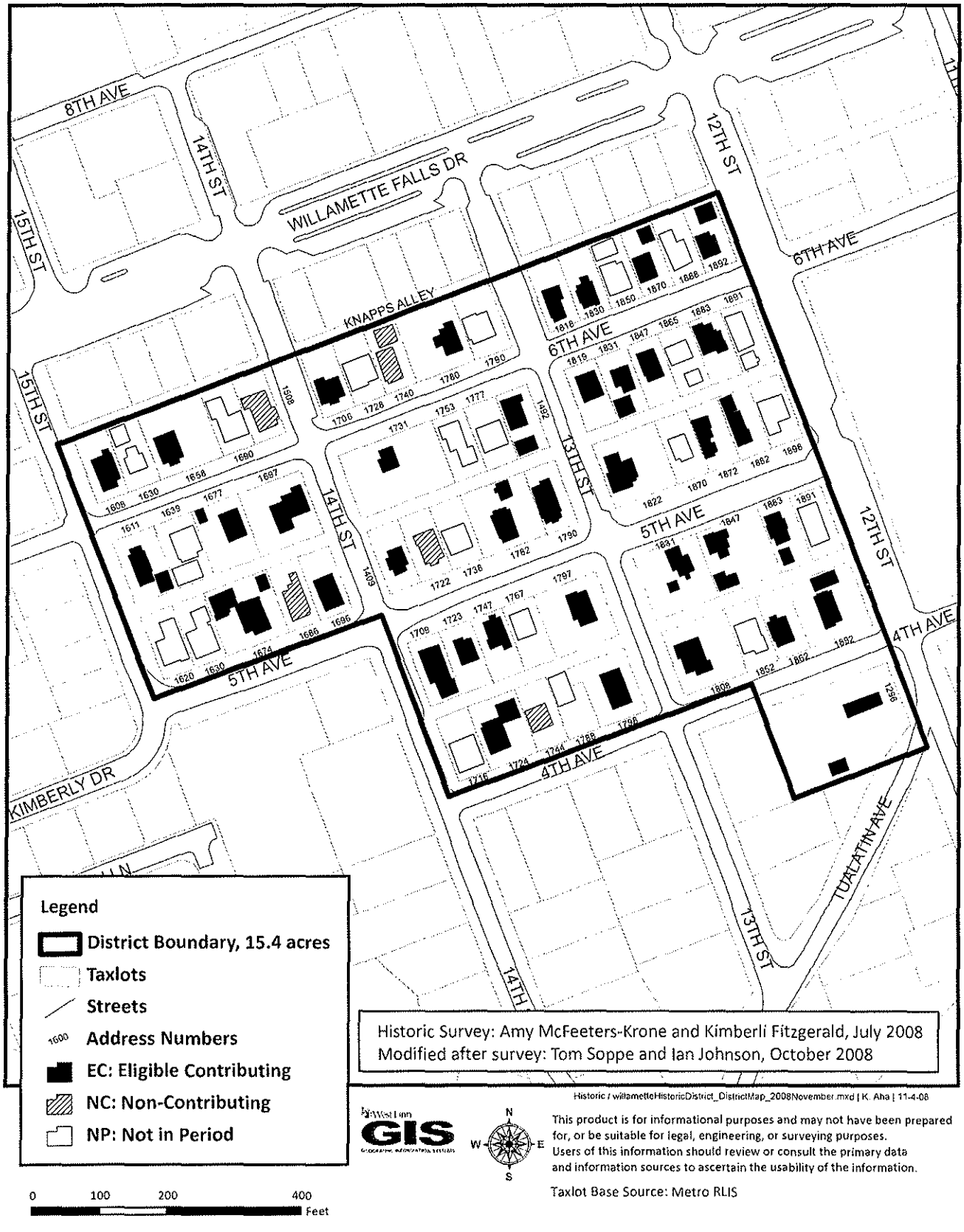


Figure 2

EXHIBIT HRB-4 WILLAMETTE HISTORIC DISTRICT REGISTER – PAGE 41 EXCERPT

Architectural Survey Data for West Linn, Willamette Falls Neighborhood, Historic District, 2008

Oregon State Historic Preservation Office

Address/ Property Name	Ht	Eval/ NR	Yr(s) Built	Materials	Arch Classifs/Styles	Orig. Use/ Plan (Type)	RLS / ILS Dates	Listed Date
1296 12th St Sherriff Ernest T Mass House *Sherriff E.T. Mass*	2	EC	c.1906	Horizontal Board	Queen Anne Vernacular	Single Dwelling Side Passage/Entry	3/17/2006	
Comments: Sherriff Mass House, Britton Barn ca. 1906 barn moved to site from 19th and Dollar Street in 1993.								
1492 13th St Sherriff Mass House	2.5	EC	c.1897	Horizontal Board	Queen Anne Vernacular	Single Dwelling Crosswing	3/17/2006	
1409 14th St E.J. Maple House *[House]*	2.5	EC	c.1895	Horizontal Board	Queen Anne Vernacular	Single Dwelling Crosswing	3/17/2006	
1508 14th St	1	NC	c.1916	Horizontal Board	Bungalow (Gen.) Colonial Revival	Single Dwelling Bungalow	3/17/2006	
Comments: Extremely altered-original wood siding, doors and windows replaced. New entry way.								
1716 4th Ave	2	NP	2008	Horizontal Board Shingle	Other / Undefined	Single Dwelling Other Late 20th Century Type	10/28/2008	
Comments: New construction								
1724 4th Ave Downey House *James Downey*	2	EC	1903	Horizontal Board Shingle	Queen Anne Vernacular	Single Dwelling Crosswing	3/17/2006	
Comments: At one time this structure had a turrett.								
1744 4th Ave	1	NC	c.1895	Vinyl Siding	Bungalow (Gen.)	Single Dwelling Bungalow	3/17/2006	
Comments: Early settlers brought this home up from river. Siding has been replaced, window openings altered, ramp added.								
1788 4th Ave	1	NP	c.1934	Horizontal Board	Bungalow (Gen.) Vernacular	Single Dwelling Bungalow	3/17/2006	
Comments: Windows and siding replaced-hardiplank, stone veneer foundation, vinyl windows.								
1798 4th Ave A.W. Schwan House	1.5	EC	c.1895	Horizontal Board Shingle	Queen Anne Vernacular	Single Dwelling Crosswing	3/17/2006	
1808 4th Ave	2	EC	c.1916	Horizontal Board	Bungalow (Gen.)	Single Dwelling Bungalow	3/17/2006	
Comments: Ewalt Leisman/twin of 1674 5th.								

Figure 5

Supplemental Information, Page 7

Evaluation Codes: ES=eligible/significant EC=eligible/contributing NC=not eligible/non-contributing NP=not eligible/out of period UN=undetermined/lack of info XD=demolished
NR Status Codes: NRI=individually listed NHD=listed in Hist Dist NRB=listed individually and w/i Hist Dist NHL=listed as National Hist Landmark

EXHIBIT HRB-5 SECRETARY OF INTERIOR TREATMENT OF HISTORIC PROPERTIES PAGE 11 EXCERPT

ROOFS

RECOMMENDED	NOT RECOMMENDED
Alterations and Additions for a New Use	
Installing mechanical and service equipment on the roof (such as heating and air-conditioning units, elevator housing, or solar panels) when required for a new use so that they are inconspicuous on the site and from the public right-of-way and do not damage or obscure character-defining historic features.	Installing roof-top mechanical or service equipment so that it damages or obscures character-defining roof features or is conspicuous on the site or from the public right-of-way.
Designing rooftop additions, elevator or stair towers, decks or terraces, dormers, or skylights when required by a new or continuing use so that they are inconspicuous and minimally visible on the site and from the public right-of-way and do not damage or obscure character-defining historic features.	Changing a character-defining roof form, or damaging or destroying character-defining roofing material as a result of an incompatible rooftop addition or improperly-installed or highly-visible mechanical equipment.
Installing a green roof or other roof landscaping, railings, or furnishings that are not visible on the site or from the public right-of-way and do not damage the roof structure.	Installing a green roof or other roof landscaping, railings, or furnishings that are visible on the site and from the public right-of-way.

[17] New wood elements have been used selectively to replace rotted wood on the underside of the roof in this historic warehouse.

EXHIBIT HRB-6 DR-00-04 ADDITION TO FRONT PORCH

FINAL DECISION NOTICE

FILE NO. DR-00-04

At a special meeting of the West Linn/Clackamas County Historic Review Board on March 20, 2000, a public hearing was convened to consider the request of Richard Ellery to construct a 17X13 foot front porch at 1852 8th Avenue (Assessor's Map 3 1E 2BD, Tax Lot 500). This property is in the Willamette Historic District. The standards of Chapter 25 of the West Linn Community Development Code apply.

After the hearing was convened and the proposal was discussed, a motion was made and seconded to approve the proposal as submitted. The HRB unanimously approved the application. There were no conditions of approval except that the porch must be built per submitted construction plans shown on pages A-4 to A-6 of the record.

This decision shall become effective at 5 p.m., 14 days from the date of mailing. Appeals by parties with standing must be filed before that deadline.

PETER SPIR
STAFF PLANNER TO THE HISTORIC REVIEW BOARD

Mailed this 21 day of March, 2000.

p:\devrvw\fin dec.HRB-dr-00-04

3/20/00

Attendees at Historic Review Board

Please sign below

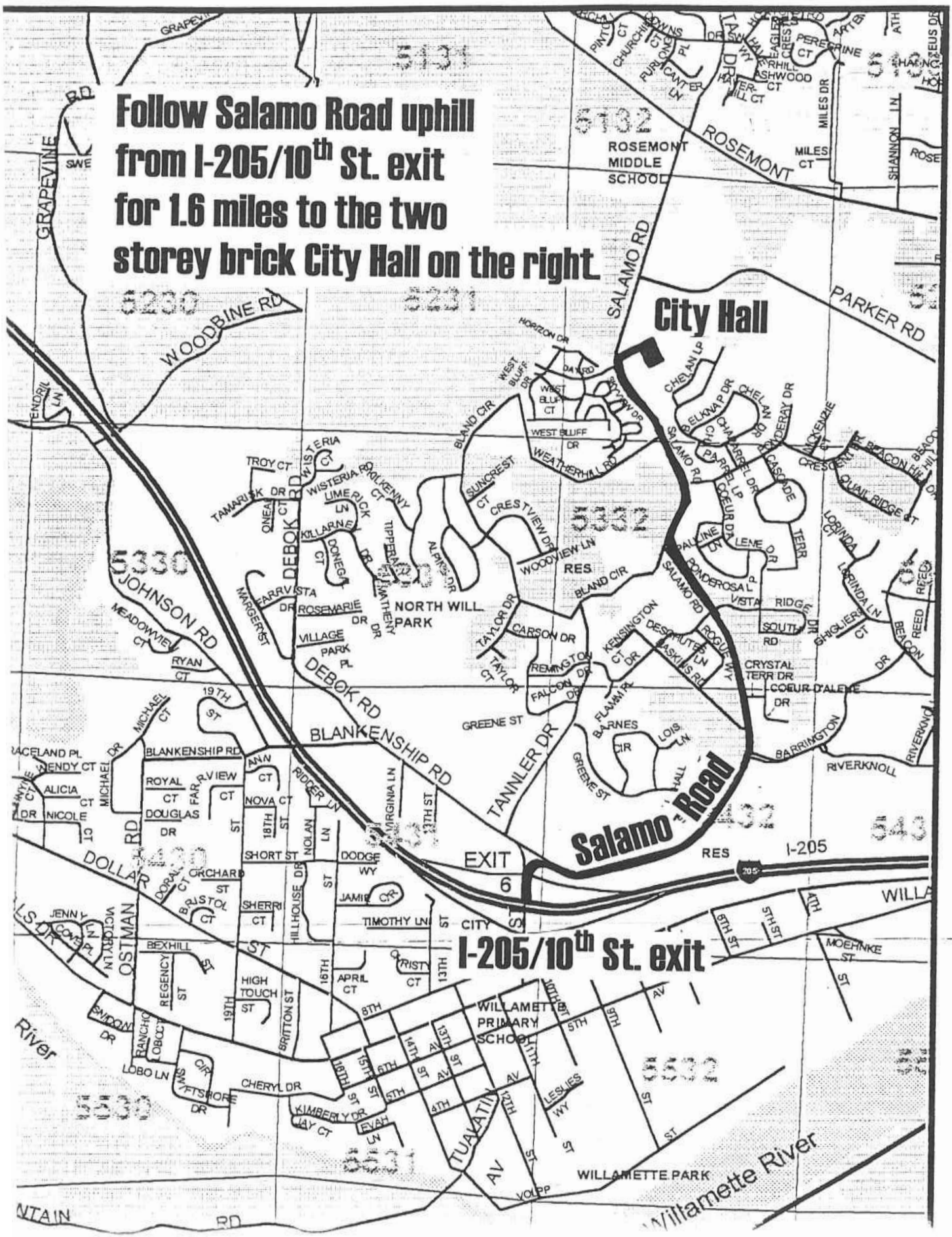
Cynthia E. Ellis
Al Belar
Harlan E. Levy HRB member
RANDY ROWLETTE HRB MEMBER
Ben Martin " "
JON McLOUGHLIN HRB MEMBER
Herb Beals HRB Member
TODD ISELIN HRB MEMBER

Historic Review Board Hearing

Monday,March 20, 2000 at 7pm.
at West Linn City Hall
(22500 Salamo Road)
(see map next page)

in Willamette Conference
room on first floor

Street Location Map



City of West Linn
PLANNING & BUILDING DEPT.
LAND USE ACTION

TO: West Linn/Clackamas County Historic Review Board

FROM: West Linn Planning Staff (Peter Spir, Associate Planner)

DATE: March 8, 2000

FILE NO.: DR-00-04

SUBJECT: Addition of a 17X13 foot porch on the front of a house in the Historic District. Architectural review under CDC Chapter 25 is required.

Planning Director _____

SPECIFIC DATA

APPLICANT/ OWNER: Richard Ellery, 1852 4th Avenue, West Linn

LOCATION: 1852 8th Avenue

LEGAL DESCRIPTION: Assessor's Map 3 1E 2BD, Tax Lot 500

ZONING: R-5 (Willamette Historic District)

APPROVAL CRITERIA: CDC Section 25.070

PUBLIC NOTICE: This is a Type C land use application. All property owners within 100 feet were notified on February 29, 2000. The applicant received notice on the same date as did the Willamette Neighborhood Association. Although it was not required, a sign was posted at the property on March 9, 2000.

MAJOR ISSUES

The subject house is not a primary or secondary structure in the Historic District and does not embody any architectural features of the 1890-1915 period. It is a vernacular contemporary design dominated by a front loading garage. The issue becomes whether or not the porch design is compatible with, or at least does not detract from, the surrounding architecture.

PUBLIC COMMENTS

Since public notice was initiated, staff has received no comments from the public.

RECOMMENDATION

Based upon the staff's findings attached below as exhibit A, and the applicant's findings, hereby adopted as exhibit B, Staff recommends that the Historic Review Board approve the remodel as proposed and shown in exhibit B. (No conditions of approval are proposed.)

Exhibit A

FINDINGS

25.000 HISTORIC DISTRICT
25.070 CONSTRUCTION/REMODEL STANDARDS

B. SITING

1. ***Front yard:*** ***A distance measured to the dominant vertical face of the building, equal to the average of the front setbacks of adjacent "primary" or "secondary" structures. Where there are no adjacent primary or secondary structures, the setback shall be 15 feet.***

2. ***Side yard:*** ***Five feet shall be the standard; however, where adjacent structures encroach into the required side yard, the Planning Director may reduce one of the side yards to a minimum of 3 feet to center a new structure between existing buildings, provided no space between buildings is reduced below 8 feet.***

3. ***Rear yard:*** ***The rear yard setback shall be a minimum of 20 feet, except for accessory structures, which may be sited to within 3 feet of the side or rear property lines.***

4. ***New construction on corner lots must face the avenue.***

FINDING NO. 1

The requirement is that there should be a minimum of 15 feet of front yard setback, and the applicant is providing a setback of 32 feet. Side yard setback, per the Code is 5 feet and the applicant is providing a 7-foot setback, which also is in agreement with the Code. Rear yard setback is 20 feet per Code, and the applicant is proposing no modification at the rear of the building, which is now set 31 feet from the rear property line. New construction as it relates to corner lots is not applicable since this is an interior lot with no corner frontage. A site visit revealed that there is a garage to the west of the property with a zero foot setback from the front

property line. Meanwhile, the primary structure to the east has a setback equal to the front loading garage of the subject property. That means that the proposed porch will be well behind the other buildings on the street and should not distract from the primary or secondary structures. Therefore, the criterion is met.

I. ***ENTRYWAYS. Porches are a key architectural feature on most homes in Willamette Town. Frequently, the porch and entryway creates a dominant architectural feature on the main facade. On corner lots, the entry usually faces the east-west avenues. Front doors are often notably detailed; many contain glass panes or carvings.***

Standards:

1. ***Buildings shall have a permanently protected entry. Awnings are not permanent protection.***
2. ***All main entrances should face the avenues.***
3. ***Flush (flat) doors are prohibited.***
4. ***Doors with windowed areas are recommended. Front porch enclosure of any dwelling unit may not be enclosed. Back porches may be enclosed.***

FINDING NO. 2

Staff finds that the design is not consistent with period designs of wrap-around porches or small covered entryways. However, this is a contemporary vernacular design with a front-loading garage that dominates the front elevation. With that existing architecture, it is not realistic to expect the house to match the historic qualities of nearby primary structures. Staff finds that so long as the porch addition works with the existing house and doesn't create undue attention or distraction, then it is acceptable. Staff finds that the 16X13 foot porch area will not significantly alter the visual effect of the house and will not detract from adjacent primary or secondary homes. Staff finds that the entrance will continue to front on 4th Avenue. Regarding the door design, the criteria states that no flat or flush doors are permitted. Staff finds that the present door is not flush and there are no intentions to change from the present construction. Therefore, the criterion is met.

Regarding the possible design of the door with a window, staff finds that so long as the existing door will remain, then no windows are required in that door. Therefore, the criterion has been met.

J. ***SIDING AND EXTERIOR FINISH. Standards:***

1. ***Horizontal wood siding shall be the primary exterior finish.***
2. ***Shingles should only be used in conjunction with horizontal wood siding.***
3. ***Single color exteriors are discouraged. Stained exteriors are not recommended.***

FINDING NO. 3

Staff finds that the applicant is not proposing any horizontal wood siding; therefore, this criteria is not applicable. Regarding shingles, staff finds that the roof shingles will need to match the present black 3-tab composition roof. On the subject of exterior colors, the applicant states that exterior colors will be used to match the present color of the dwelling. Staff would support the color scheme. The use of different colors is appropriate for homes built to the standards of Chapter 25 from scratch, or homes built in the actual 1890-1915 period. However, contemporary vernacular homes can best downplay their prominence in the district by using a single color scheme and leaving multi-color schemes to the primary and secondary structures of the District.

25.080 ADDITIONAL ARCHITECTURAL SPECIFICS FOR NEW CONSTRUCTION AND REMODELING

Many houses in Willamette are rich in architectural detail. Certain architectural components are used in fairly specific ways. Standards:

A. Distinguishing original qualities defining a structure's character shall not be destroyed. Removal or alteration of historic (i.e., original) materials or distinctive architectural features should be avoided when possible.

B. Houses and other structures shall be recognized as products of their own time. Alterations that have no historical basis or which seek to create an earlier appearance, shall be avoided.

C. Distinctive stylistic features, or examples of skilled craftsmanship which characterize a structure, shall be maintained or restored, if possible.

D. Deteriorated architectural features shall be repaired rather than replaced, whenever possible.

E. In the event replacement is necessary, new materials should match the material being replaced in composition, design, color, texture, and other visual qualities.

F. Alterations to the rear of a house, or to other portions not visible from the public right-of-way (exclusive of alleys), need not adhere to the design standards contained herein.

FINDING NO. 4

Staff finds that these standards are intended for primary and secondary structures. As has already been stated, this is a contemporary vernacular structure and the main goal is not to stray any further afield from the architecture of the District. It would be inappropriate for us to impose architectural standards on a home built in the 1950s since it would tend to trivialize the architecture that is intended to be the focal point of the District—the homes that were built during 1890-1915 period. Staff finds that the addition does not distract from nearby homes and is, therefore, acceptable.

Exhibit B
Addendum to Staff's submittal

West Linn

February 29, 2000

Richard Ellery
1852 4th Ave.
West Linn, Or.
97068

Re: Design Review (DR 00-04)

Dear Mr. Ellery:

Your application has been deemed complete. The city has 120 days to exhaust local review, however since the hearing is scheduled for March 20th, the city's review process should be complete by that date. The hearing is very informal and should not last more than 25-30 minutes. It will be held on the first floor of City Hall on Salamo Road at 7pm on Monday, March 20, 2000. Hope to see you then.

Sincerely,

Peter Spir
Associate Planner

1/8

We, the undersigned do hereby certify that, in the interest of the party (parties) initiating a proposed land use, the following took place on the dates indicated below:

GENERAL

File No. DR-00-04 Applicant's Name Richard Ellery

Development Name Remodel project @ 1852 4th Avenue

Scheduled Meeting/Decision Date 3-20-2000

NOTICE: Notices were sent at least 20 days prior to the scheduled hearing, meeting or decision date as per Section 99.080 of the Community Development Code. **(check one below)**

Type A _____

A. The applicant (date) _____ (signed) _____

B. Affected property owners (date) _____ (signed) _____

C. School District/Board (date) _____ (signed) _____

D. Other affected gov't. agencies (date) _____ (signed) _____

E. Affected neighborhood associations (date) _____ (signed) _____

F. All parties to an appeal or review (date) _____ (signed) _____

At least 10 days prior to the scheduled hearing or meeting, notice was published in the newspaper.

Tidings (published date) _____ (signed) _____

Type B _____

A. The applicant (date) _____ (signed) _____

B. Affected property owners (date) _____ (signed) _____

C. School District/Board (date) _____ (signed) _____

D. Other affected gov't. agencies (date) _____ (signed) _____

E. Affected neighborhood associations (date) _____ (signed) _____

Type C ✓

✓ A. The applicant (date) 2/29/00 (signed) [signature]

✓ B. Affected neighborhood associations (date) 2/29/00 (signed) [signature]
Willamette

SIGN ✓ HRB 2/29/00 [signature]

At least 10 days prior to the scheduled hearing, meeting or decision date, a sign was posted on the property per Section 99.080 of the Community Development Code.

(date) 2-8-00 (signed) [signature] (not required)

STAFF REPORT mailed to applicant, City Council/Planning Commission and any other applicable parties.

(date) _____ (signed) _____

FINAL DECISION notice mailed to applicant, all other parties with standing, and, if zone change, the County surveyor's office.

(date) _____ (signed) _____

Copy of relevant minutes placed in file (date) _____ (signed) _____

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CITY OF WEST LINN
CLACKAMAS COUNTY/WEST LINN HISTORIC REVIEW BOARD
PUBLIC HEARING NOTICE

FILE NO. DR-00-04

The West Linn Historic Review Board (HRB) will hold a public hearing on the request of Richard Ellery to consider his proposal to add a covered (17'X13') porch to the front of his house at 1852 4th Avenue. The hearing is scheduled to be held on **Monday, March 20, 2000, at 7 p.m.** in the Willamette Conference Room (1st floor) at City Hall (22500 Salamo Road, West Linn, OR). The hearing will be based upon the provisions of Chapter 25 of the West Linn Community Development Code. Approval or disapproval of the request by the HRB will be based upon these criteria and these criteria only. At the hearing, it is important that comments relate specifically to the applicable criteria listed.

You have been notified of this proposal because records indicate that you own property within 100 feet of the proposed site also identified as Tax Lot 500 of Assessor's Map 3 1E 2BD.

All documents and applicable criteria in the above-noted file are available for inspection at no cost, or copies can be obtained for a minimal charge per page. At least seven days prior to the hearing, a copy of the staff report will be available for inspection. For further information, please contact Peter Spir, Associate Planner, at City Hall, 22500 Salamo Road, West Linn, OR (phone 656-4211).

The hearings will be conducted in accordance with the rules of Section 99.170 of the Community Development Code, adopted December 14, 1987, Ordinance 1129. Anyone wishing to present written testimony on this proposed action may do so in writing prior to, or at the public hearing. Oral testimony may be presented at the public hearing. At the public hearing, the HRB will receive a staff report presentation from the City Planner; and invite both oral and written testimony. The HRB may continue the public hearing to another meeting to obtain additional information, or close the public hearing and take action on the application.

If a person submits evidence in support of the application, any party is entitled to request a continuance of the hearing. If there is no continuance granted at the hearing, any participant in the hearing may request that the record remain open for a least seven days after the hearing. Failure to raise an issue in person or by letter at some point prior to the close of the hearing, or failure to provide sufficient specificity to afford the decision maker an opportunity to respond to the issue, precludes an appeal to the Land Use Board of Appeals based on that issue.

NANCY L. SCHMIDT
Planning Secretary

p:\devrvw\notices\HRBnotic.dr00-04

AWALT CHARLES A
1847 5TH AVE
WEST LINN OR 97068

BRINEY MICHAEL J
& MARY JILL
1808 4TH AVE
WEST LINN OR 97068

CALHOON JERRY J TRUSTEE
1892 4TH AVE
WEST LINN OR 97068

CARSON JODY
& JOHN E KLATT
1296 12TH ST
WEST LINN OR 97068

ELLERY RICHARD DOUGHTY
& CLYDEAN MARIE
1852 4TH AVE
WEST LINN OR 97068

HANES JAMES E
& JUDITH D
1819 4TH AVE
WEST LINN OR 97068

OFFER JERRY D
& RUTH C
1831 5TH AVE
WEST LINN OR 97068

SOPHER SONJA LEE
1883 5TH AVE
WEST LINN OR 97068

VENTURA MARY E
1862 4TH AVE
WEST LINN OR 97068

WEST LINN HISTORIC REV BD

WILLAMETTE N/A
WENDY CONLIE, PRES

//

Vicinity Map
File No. DR-00-04

CITY OF WEST LINN
GEOGRAPHIC INFORMATION SYSTEMS (GIS)

Site
Tax Lots

TAXLOT BASE SOURCE: CLACKAMAS COUNTY GIS

publicnotice\pubnotice / 02-14-00/ peters

This map and other information have been compiled for preliminary and general purposes. They are not intended to be complete and accurate for any other purposes. Specifically, this information is not intended to be complete for purposes of land use restriction, zoning, title, size, and suitability of the property for specific uses.

90 0 90 180 Feet

12

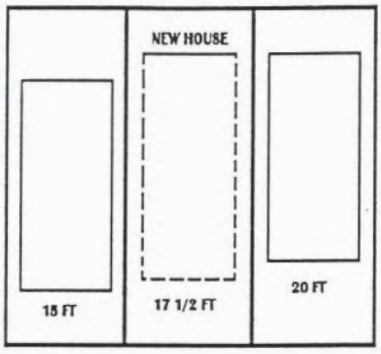
Approval criteria

8. Economic, social, environmental and energy consequences related to LCDC Goal #5.

25.070 CONSTRUCTION/REMODEL STANDARDS

A. For new home construction, remodels and single-family structures in the Willamette Historic District (and landmark structures as appropriate), the Historic Review Board shall use the following design standards in reaching a decision.

B. **SITING.**



1. Front yard: A distance measured to the dominant vertical face of the building, equal to the average of the front setbacks of adjacent "primary" or "secondary" structures. Where there are no adjacent primary or secondary structures, the setback shall be 15 feet.

2. Side yard: Five feet shall be the standard; however, where adjacent structures encroach into the required side yard, the Planning Director may reduce one of the side yards to a minimum of three feet to center a new structure between existing buildings, provided no space between buildings is reduced below eight feet.

3. Rear yard: The rear yard setback shall be a minimum of 20 feet, except for accessory structures, which may be sited to within 3 feet of the side or rear property lines.

4. New construction on corner lots must face the avenue.

C. **PARKING**. Parking in Willamette Town traditionally was handled from the alleys or along the "streets" (as opposed to avenues). Detached garages along the alleys or "streets" characterizes many homes in the district. Alleys were established to provide for parking out of view; with this older pattern, garages are much less dominant than in newer residential areas.

N/A

1. Standards, Garages:

a. Garages shall be accessed from the alley. Where no alley exists, access to a garage may be from the street.

b. Garage remodels and new construction must match house or existing garage building materials. Damaged or deteriorated non-conforming garages must be reconstructed / relocated in accordance with this Code where remodeling or rebuilding costs exceed 50% of the full replacement cost in current dollars.

↑

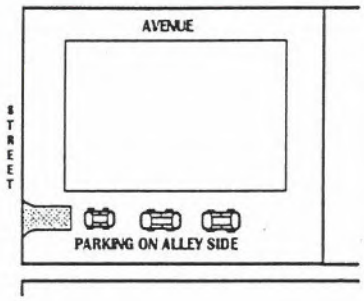
N/A

c. Typically, the garage pitch wasn't as steep as the house. Some architectural styles of garages have lower pitched roofs. Garage roof pitch shall not exceed house roof pitch.

↓

d. Garages located within the rear yard may have a zero foot side yard setback so long as it is constructed with one hour fire walls, with no openings in wall and no overhang, per City building standards. The three foot rear setback shall still apply.

2. Standards, Parking:



a. No residential lot shall be converted solely to parking use.

b. All vehicle access and storage (i.e., boats, camper shells, trails, recreational vehicles, etc.) shall be stored or parked in the rear of the property as opposed to the front or side yards.

c. On corner lots or where homes face streets, the parking and storage shall be located on the alley side of the house.

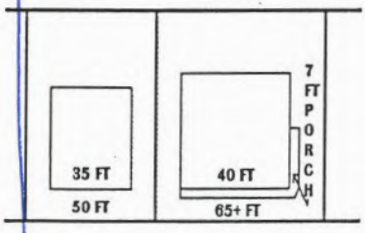
d. No front yard curb cut shall be established unless it is determined by City Engineer that all reasonable access alternatives have been exhausted.

e. The parking provisions of Section 26.050(B) shall apply to any non-conforming uses of a structure (i.e., bed and breakfast), as well as any application for Class II home occupations. These provisions would not apply to General Commercial zone uses in the Historic District.

D. **BUILDING HEIGHT**. Buildings in Willamette Town vary in height, most evident are 1-1/2 story Victorians and bungalows. Some buildings reach 2-1/2 stories, and there are several single story structures as well.

1. No building shall exceed the height of any primary structure in the district so that the existing neighborhood scale is maintained.
2. No building shall exceed 2-1/2 stories. Cupolas and towers are excluded from the aforementioned height limitation; however, no such structure may exceed the height of any existing cupola or tower in the district.
3. Existing building heights should be maintained.
4. Alteration of roof pitches or raising or lowering a structure's permanent elevation, when constructing a foundation, shall be avoided.
5. The original height of "primary" and "secondary" structures shall be preserved.

E. **BUILDING SHAPES AND SIZES.**



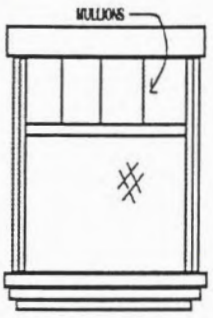
1. No building on a 50-foot wide lot shall exceed 35 feet in overall width. Lots with a 65 foot width or greater may have a building width of 40 feet plus the porches, eaves or veranda extensions so that the maximum total width is 47 feet.
2. End walls (street facing) should be designed with consideration of scale and aesthetic character of the main facade.
3. Buildings should avoid a horizontal orientation in their roof and window designs, unless the design can be shown to respond to nearby structures and styles. Buildings in districts other than the Willamette District shall be designed and oriented as appropriate to that area as determined by the Historic Review Board with consideration of Section 25.060(3).

F. **SIGNS AND LIGHTING**. Signs, lighting, and other appurtenance such as walls, fences and awnings, shall be visually compatible with the scale and traditional architectural character of the historic building.

G. **HORIZONTAL ADDITIONS**.

1. The scale and proportion of building additions, including the relationship of windows to walls, shall be visually compatible with the traditional architectural character of the historic building.
2. Contemporary construction for alterations and additions are acceptable if the design respects the building's original design and is compatible with the original scale, materials, window and door opening proportions of the structure.

H. **WINDOWS**. Window sizes vary considerably in the district. Windows on the primary and secondary structures are wood sash, usually a double hung type. Victorian styled structures typically have narrower, vertically-oriented windows. Bungalow styled structures from the "Craftsman" era (1905-1930) may have wider windows with mullions across the top of larger paned areas. Most windows have fairly wide trim boards, usually 5 inches.



Standards:

1. Wood sash windows are preferred.
2. "Mill aluminum" (shiny) windows are prohibited. Matte finish anodized/coated aluminum windows are permitted so long as they meet dimensional standards.
3. Windows shall be surrounded by exterior trim on the top and sides; window trim shall be at least 4-1/2 inches minimum width.
4. Window replacements shall match the visual qualities of original windows as closely as possible; this does not require wood windows. Non-wood window replacements must exhibit similar visual qualities as their wooden counterparts. The original number

of window "lights" (i.e., panes) shall be maintained or restored when replacements are required.

5. Alterations to the rear of a house, or to other portions not visible from the public right-of-way (exclusive of alleys) need not adhere to the design standards contained herein.

6. Storm windows should follow the standards for windows. Matte finish anodized/coated frames are permitted. The 4-1/2 inch trim is not required for the storm windows. The color should match underlying trim.

I. **ENTRYWAYS**. Porches are a key architectural feature on most homes in Willamette Town. Frequently, the porch and entryway creates a dominant architectural feature on the main facade. On corner lots, the entry usually faces the east-west avenues. Front doors are often notably detailed; many contain glass panes or carvings. Standards:

1. Buildings shall have a permanently protected entry. Awnings are not permanent protection.
2. All main entrances should face the avenues.
3. Flush (flat) doors are prohibited.
4. Doors with windowed areas are recommended. Front porch enclosure of any dwelling unit may not be enclosed. Back porches may be enclosed.

J. **SIDING AND EXTERIOR FINISH**. Standards:

1. Horizontal wood siding shall be the primary exterior finish.
2. Shingles should only be used in conjunction with horizontal wood siding.
3. Single color exteriors are discouraged. Stained exteriors are not recommended.

K. **ROOFSCAPE**. Standards:

1. Roofs shall have a pitch of at least 8/12 to maintain the pattern of steep roof pitches. The Historic Review Board will consider deviations from the 8/12 to 12/12 standard for additions to the main body of the house so long as it is consistent with a particular architectural style.
2. Roofing materials should be composite shingles. Cedar shakes were not used in period construction. Milled cedar shingles were used and are permitted.
3. Alternating, patterned or checkerboard shingles are not permitted.

25.080 ADDITIONAL ARCHITECTURAL SPECIFICS FOR NEW CONSTRUCTION AND REMODELING

Many houses in Willamette are rich in architectural detail. Certain architectural components are used in fairly specific ways. Standards:

A. Distinguishing original qualities defining a structure's character shall not be destroyed. Removal or alteration of historic (i.e., original) materials or distinctive architectural features should be avoided when possible.

B. Houses and other structures shall be recognized as products of their own time. Alterations that have no historical basis or which seek to create an earlier appearance shall be avoided.

C. Distinctive stylistic features, or examples of skilled craftsmanship which characterize a structure, shall be maintained or restored, if possible.

D. Deteriorated architectural features shall be repaired rather than replaced, whenever possible.

E. In the event replacement is necessary, new materials should match the material being replaced in composition, design, color, texture, and other visual qualities.

F. Alterations to the rear of a house, or to other portions not visible from the public right-of-way (exclusive of alleys), need not adhere to the design standards contained herein.

G. Contemporary designs for alterations and additions would be acceptable if the design respects the building's original design, and it is compatible with the original scale, materials, window and door opening proportions of the structure.

H. Wherever possible, new additions or alterations to structures shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the original structure could be restored.

25.090 COMMERCIAL REMODELS AND NEW CONSTRUCTION

A. Construction of new commercial businesses or remodeling of businesses in the Commercial district shall emphasize contextual design, style, material and period consistency. The Historic Review Board may consider applicable portions of Section 25.080, "Additional Architectural Specifics," and Section 25.060, "Criteria for Exterior Alteration and Construction."

B. Setbacks should be consistent with adjacent uses or between 0-10 feet.

C. Underlying zone provisions of the Commercial zone shall apply except for the off-street parking requirements which are waived under Chapter 46.

25.100 MINOR ALTERATIONS AND MAINTENANCE

The Planning Director shall determine the status of a proposed alteration. Minor alterations shall be reviewed and approved by the Planning Director, who may consult with the Historic Review Board, or any member thereof, in applying the provisions of this section. An alteration shall be considered "minor" when the result of the proposed action is to maintain or restore portions of the exterior to the original historic appearance while performing normal maintenance and repairs, such as:

A. Replacement of gutters and downspouts, or the addition of gutters and downspouts, using materials that match those that were typically used on similar style buildings.

B. Repairing, or providing a compatible new foundation that does not result in raising or lowering the building elevation.

C. Replacement of building material, when required due to deterioration of material, with building material that matches the original material.

D. Repair and/or replacement of roof materials with the same kind of roof materials existing, or with materials which are in character with those of the original roof.

E. Application of storm windows made with wood, bronze, or flat finished anodized aluminum, or baked enamel frames which complement or match the color detail and proportions of the building and match the number of pains of the underlying window.

F. Replacement of wood sashes with new wood sashes, or the addition of wood sashes, when such is consistent with the original historic appearance. Non-wood window materials are allowed so long as the visual quality effectively simulates traditional wood windows.

G. Additions of solar equipment which, when removed, do not destroy essential elements of the building's character-defined features may be allowed if such equipment is not visible from the public right-of-way. New flush-mounted solar panels may be mounted with a southerly aspect, preferably out of sight or screened from the public right-of-way. Solar panels may be located in the rear of property following the standards for TV satellite dishes of CDC 34.020(A)(3).

H. Accessory structures under 120 square feet and 10 feet in height (greenhouses, storage sheds, jacuzzis, spas, structures, gazebos, etc.) are exempt where they are located in the side or rear yard.

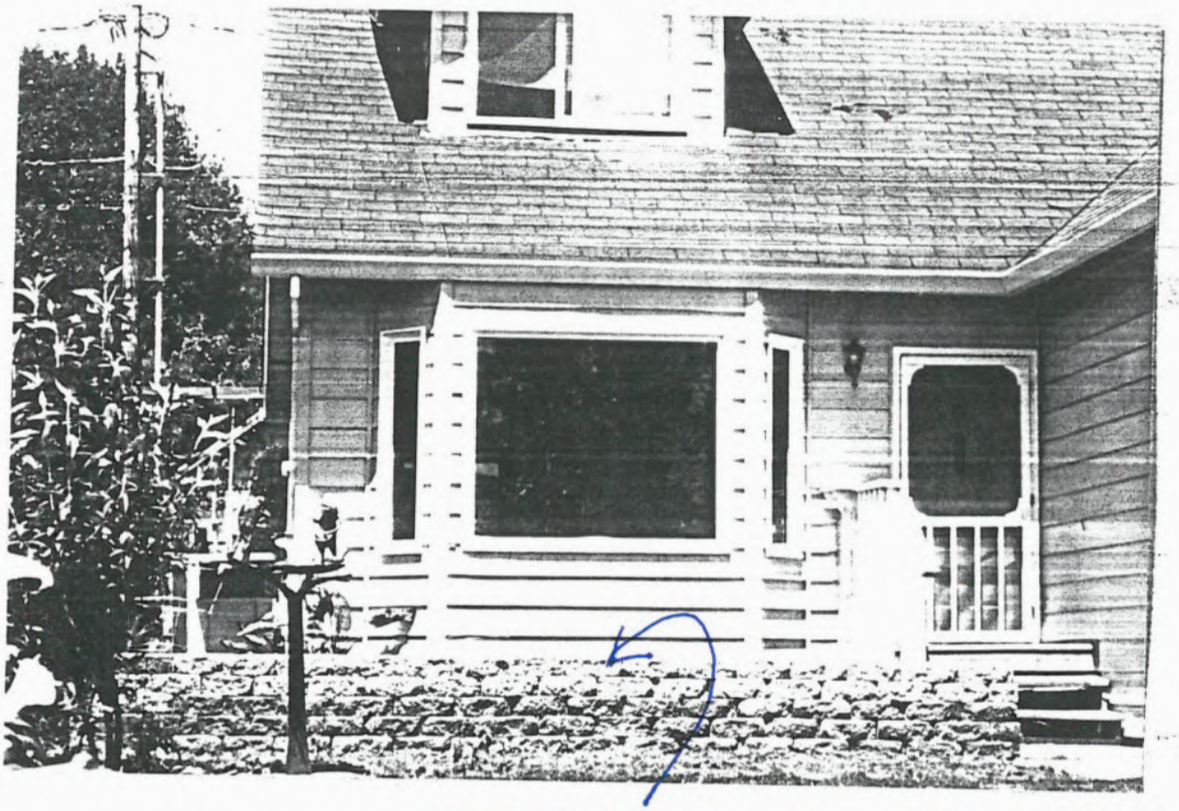
I. In-ground swimming pools are exempt in the side or rear yard.

J. Above-grade pools must be in the side or rear yard with adequate screening.

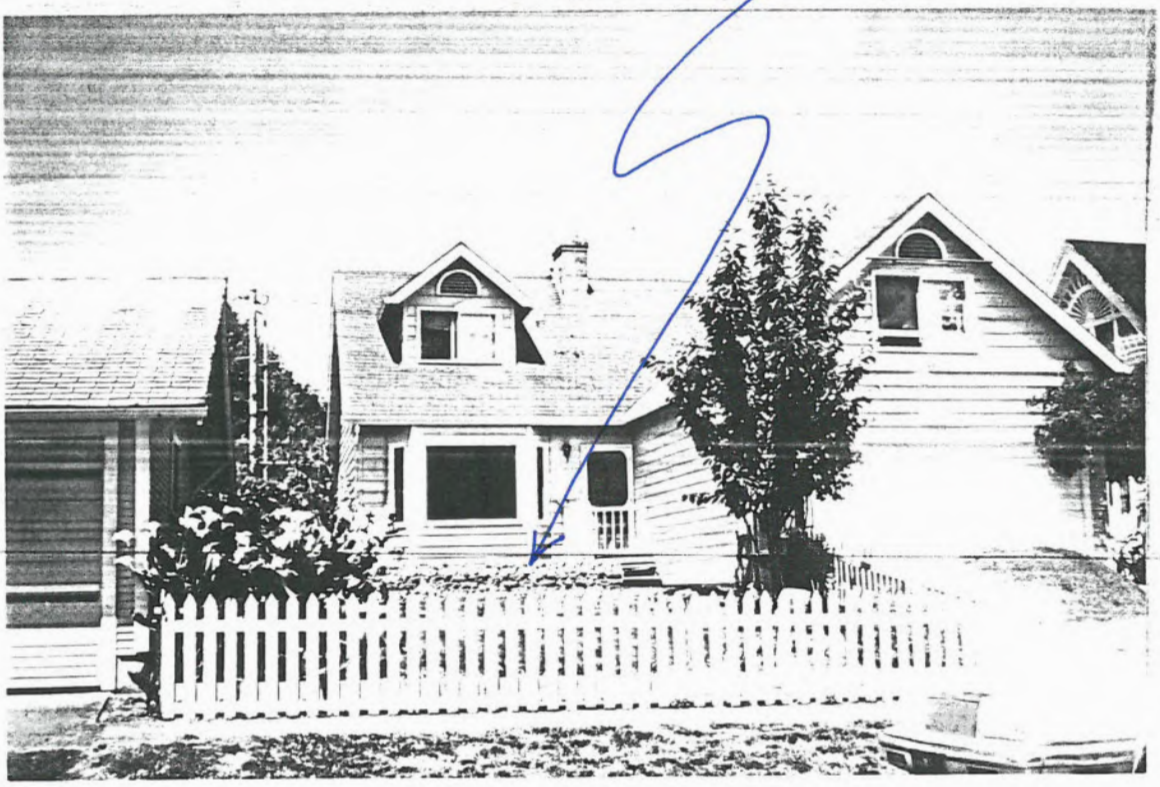
K. Fences in the front yard should be time period consistent.

L. Other improvements may be determined by the Planning Director to be exempt so long as their impact is no greater than improvements exempted by other sub-sections of 25.100.

Exhibit C
Applicant's submittal

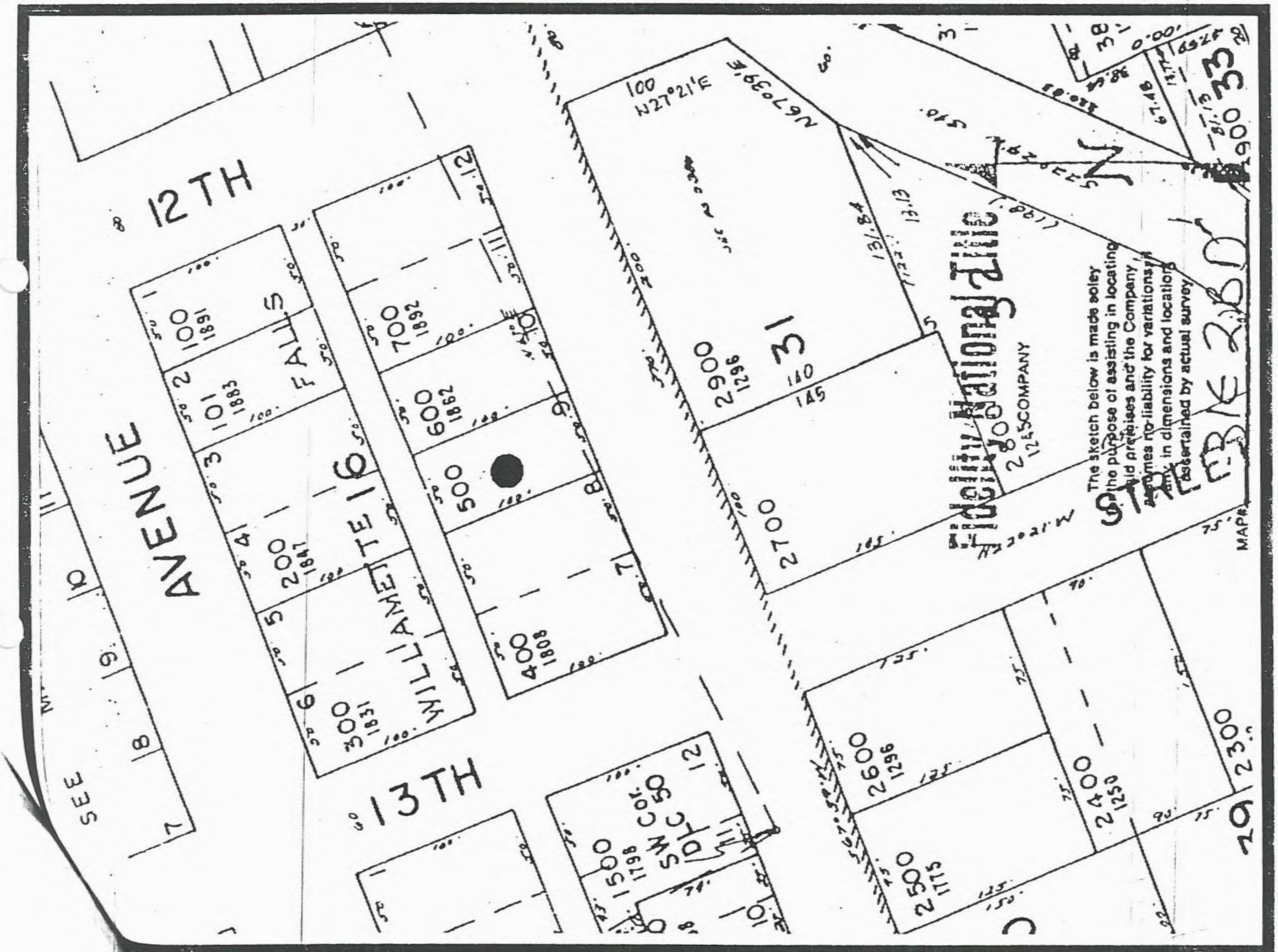


ADDITION WILL GO HERE ON TOP OF LOW WALL

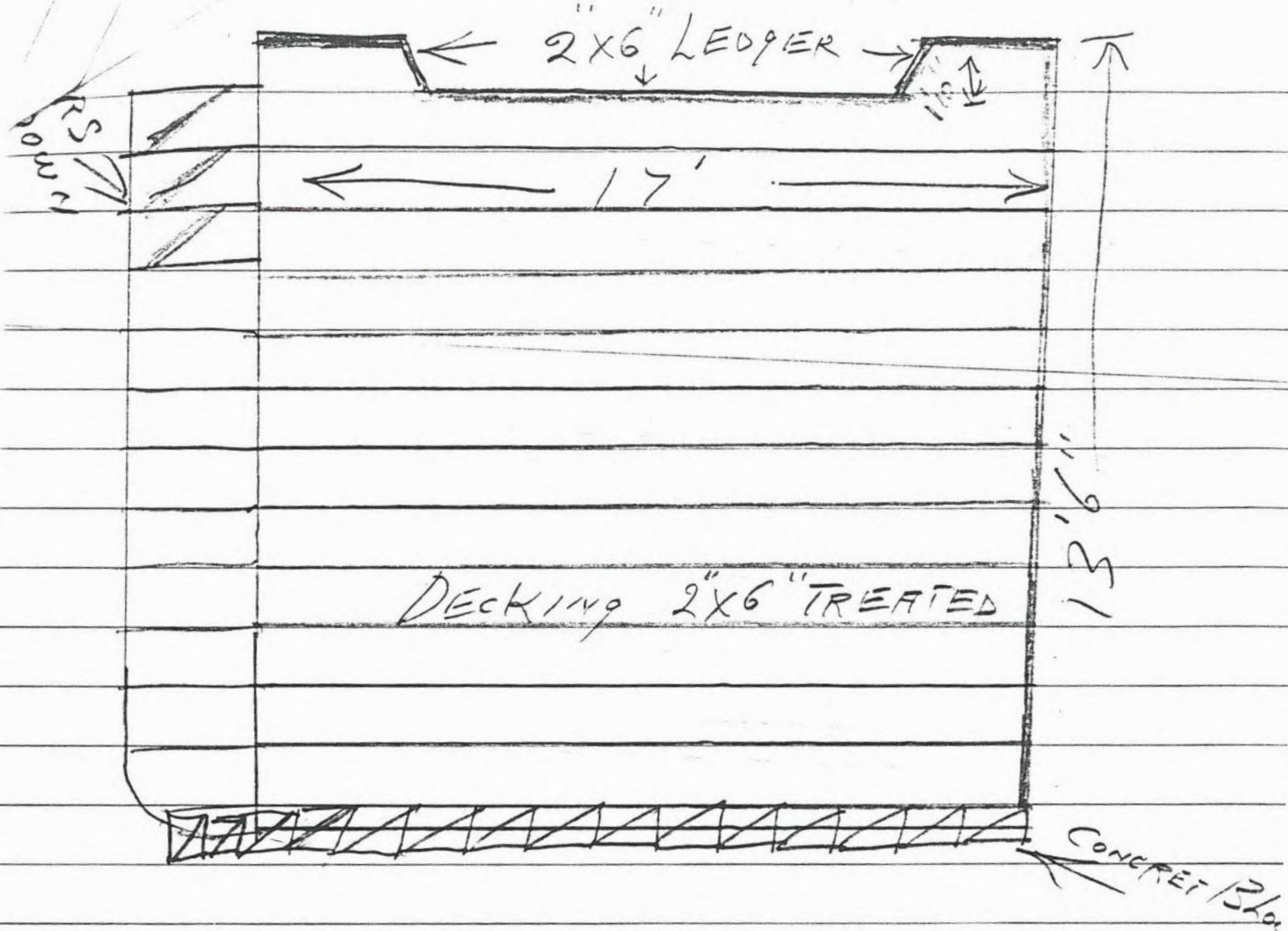


A-2

Plat Map

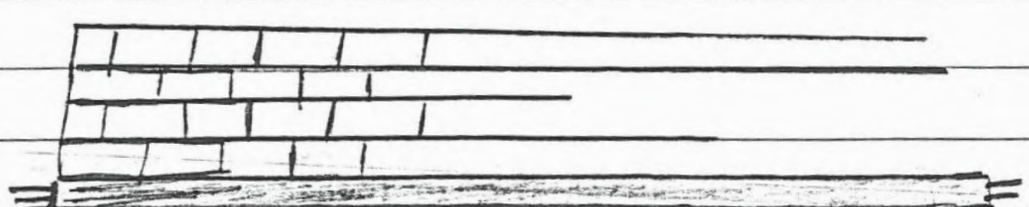

12TH
13TH
AVENUE
WILLAMETTE
FALLS
STREET
N27°21'E
Fidelity National Title
The sketch below is made soley for the purpose of assisting in locating said premises and the Company assumes no liability for variations, if any, in dimensions and location ascertained by actual survey

A-3



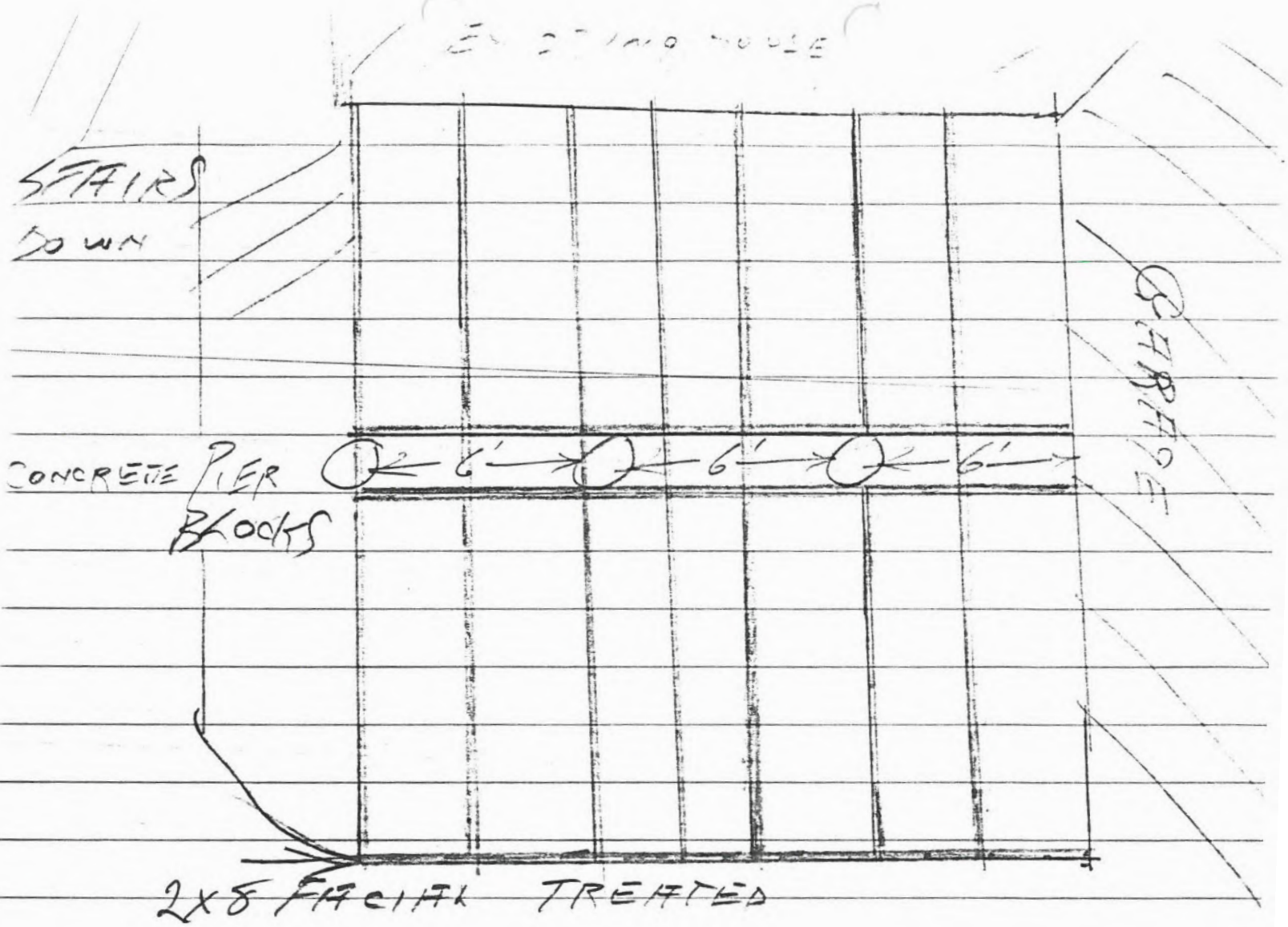
LEDGER - 2X6 TREATED

DECKING - " " ON 16" CENTERED OR 24" CENTERED 2X8 TREA



CONCRETE BASE FRONT 4" DEEP 10" WIDE - REINFORCED R. BAR - 2 - #
CONCRETE BLOCKS 8"X12" - 4 ROWS HIGH 1/2" EACH

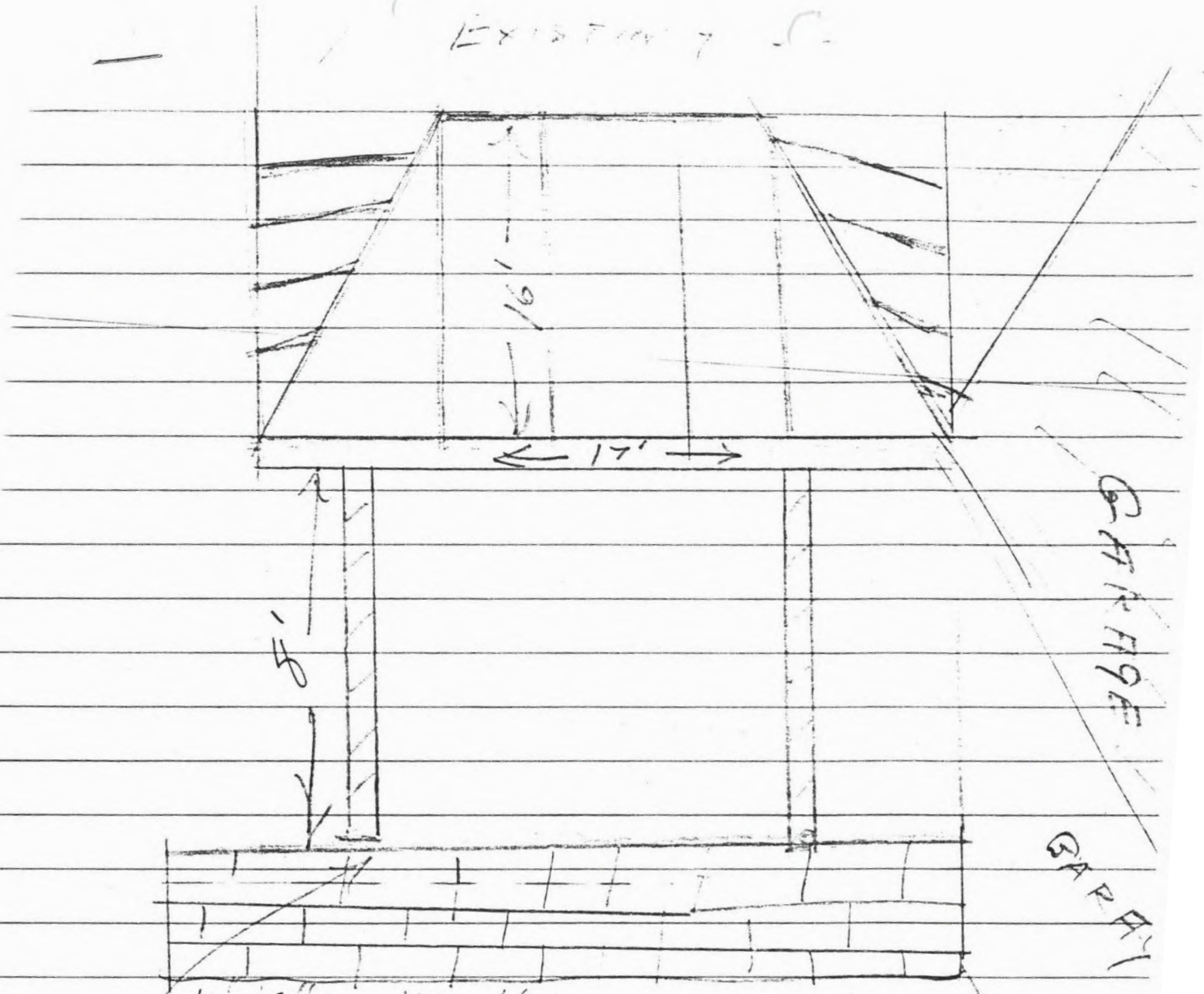
A-4



CONCRETE PIER BLOCKS - 3

JOISTS 2"X6" X 14' SPACED AT 24" TREATED

A-5



4X6" X 17 HEADER
2-10" ROUND COLUMNS TO HOLD HEADER

00-056

A-6

D.- No deteriorated features
E.- All new materials are trying to be done in a fashion to compliment existing dwelling.
F.- No alterations to rear of house
G.- Alterations are new & hopefully acceptable to the original design of house
H- It is believed if alterations were to be removed at a later date the original structure could be restored.

Homes in Historic Ave with similar front & back porches & roofline.

1819	4th Ave
1686	5th Ave
1630	" "
1611	6th Ave
1816	" "
1813	" "
1847	" "
1492	13th St.
1521	11th St.
1358	" "
1296	12th St
1785	Willamette Falls Drive.

Richard D Ellegy
1852 Fourth Ave
West Linn Or 97068
557-7725

A-7

25,070 Page 25-8

B-#1 Setback is-32'

#2 Sideyard will be-7'

#3 Rear Yard of existing building-31'

#4 New Construction is not on a corner lot. but will face 4th Ave.

I Page 25-12

1. Building will provid a permanetly protected entry. for which it does not at present have.

2. Main entrance will face 4th Ave.

3. Present door is not flush and there are no intentions to change from present construction.

4. Present door has no window Front porch will not be enclosed.

J Siding & Exterior Finish.

1. No additional siding is planed

2. Roof shingles will be to match present black 3 tab composition roof to dwelling.

3. Esterios colors will be used to match present Color of dwelling.

25,080 Page 25-13

Additional Architectural specifics for new construction & remodeling.

a. No historic materials

B. Alterations are attempted to mach. porches existing presently on 12 homes in the historic district

Addresses attached on Page #2

C. Distinctive Stylistic Features are being attempted if possible

A-8

West Linn

DEVELOPMENT REVIEW APPLICATION

DR-00-04

TYPE OF REVIEW (Please check all boxes that apply):

[ ]	Annexation	[ ]	Non-Conforming Lots, Uses & Structures
[ ]	Appeal and Review	[ ]	One-Year Extension
[ ]	Conditional Use	[ ]	Planned Unit Development
[ ]	Design Review	[ ]	Pre-Application Meeting
[ ]	Easement Vacation	[ ]	Quasi-Judicial Plan or Zone Change
[ ]	Extraterritorial Ext. of Utilities	[ ]	Sidewalk Use App
[ ]	Final Plat or Plan	[ ]	Sign Review
[ ]	Flood Plain Construction	[ ]	Street Vacation
[ ]	Hillside Protection and Erosion Control	[ ]	Subdivision
[✓]	Historic District Review	[ ]	Temporary Uses
[ ]	Legislative Plan or Change	[ ]	Tualatin River Greenway
[ ]	Home Occupation/App	[ ]	Variance
[ ]	Lot Line Adjustment	[ ]	Wetland
[ ]	Minor Partition (Preliminary Plat or Plan)	[ ]	Willamette River Greenway
[ ]	Natural Drainageway Protection	[ ]	Other/Misc

TOTAL FEES/DEPOSIT Ø MINOR RESIDENTIAL REMODEL

OWNER'S	ADDRESS	CITY	ZIP	PHONE(res.& bus.)
Richard Ellery	1852 4TH AVE	West Linn OR	97068	503 557 7725
APPLICANT'S	ADDRESS	CITY	ZIP	PHONE(res.& bus.)
"	"	"	"	"
CONSULTANT	ADDRESS	CITY	ZIP	PHONE

SITE LOCATION 1852 4TH AVE WEST LINN

Assessor's Map No.: 31E02BD00500 Tax Lot(s): 00500 Total Land Area: 50 X 100

CODE AREA 003002

1. All application fees are non-refundable (excluding deposit).
2. The owner/applicant or their representative should be present at all public hearings.
3. A denial or grant may be reversed on appeal.. No permit will be in effect until the appeal period has expired.

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application.

SIGNATURE OF PROPERTY OWNER(S)

X Richard D Ellery Date 2-11-2000

SIGNATURE OF APPLICANT(S)

X Richard D Ellery Date 2-11-2000

BY SIGNING THIS APPLICATION, THE CITY IS AUTHORIZED REASONABLE ACCESS TO THE PROPERTY.
ACCEPTANCE OF THIS APPLICATION DOES NOT INFER A COMPLETE SUBMITTAL.
COMPLETENESS WILL BE DETERMINED WITHIN 30 DAYS OF SUBMITTAL.

PLANNING AND BUILDING; 22500 SALAMO RD #1000; WEST LINN, OR 97068;
PHONE: 656-4211 FAX: 656-4106

p:\development review\review application 1/00

A-9

2

AREA OF
EXTENDED PORCH

3

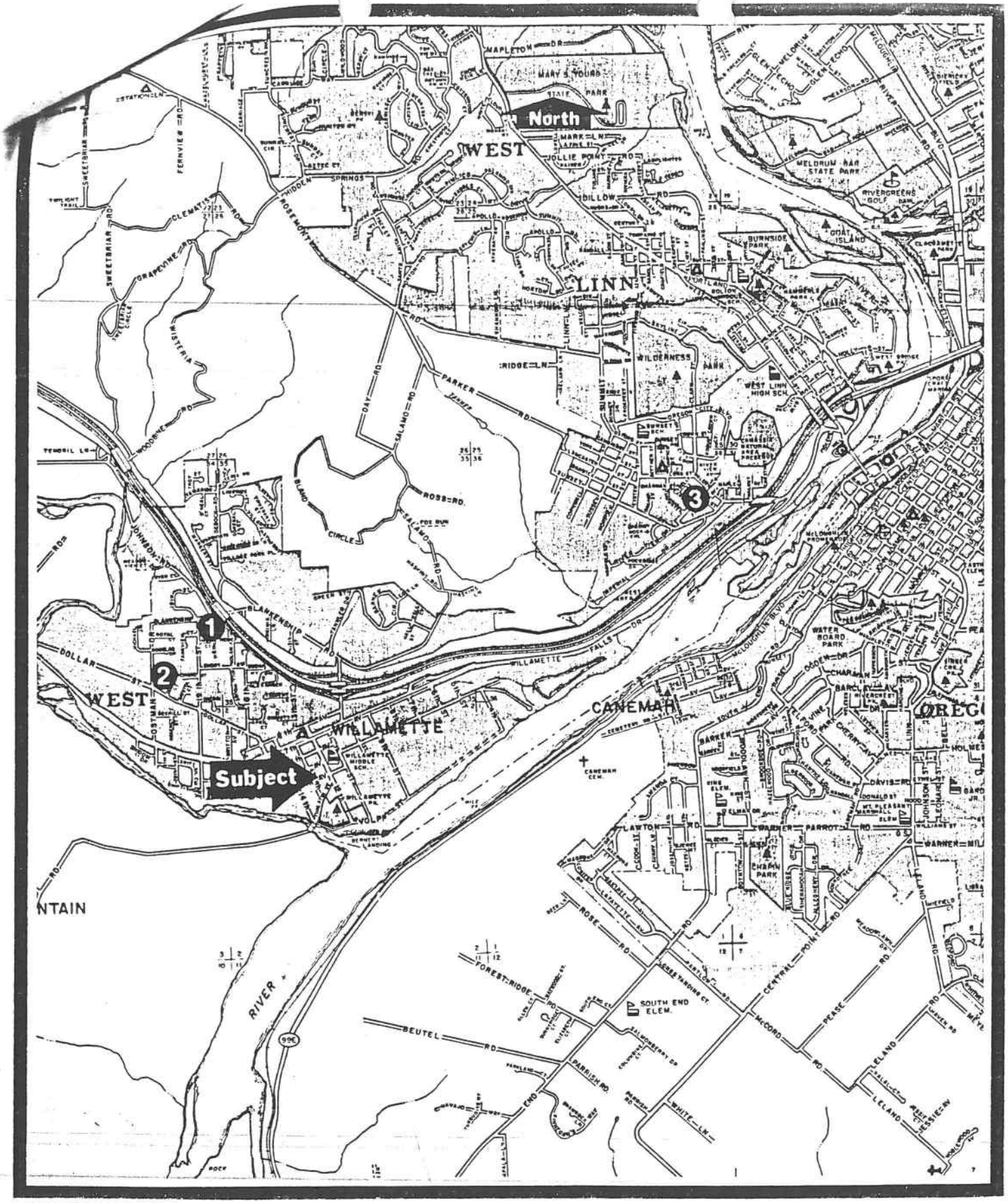
4

5

6

7

OWNER	COOWNER	MAILADDR	MAILCITY	MAILS	MAILZIP
AWALT CHARLES A		1847 5TH AVE	WEST LINN	OR	97068
BRINEY MICHAEL J	&MARY JILL	1808 4TH AVE	WEST LINN	OR	97068
CALHOON JERRY J TRUSTEE		1892 4TH AVE	WEST LINN	OR	97068
CARSON JODY	&JOHN E KLATT	1296 12TH ST	WEST LINN	OR	97068
ELLERY RICHARD DOUGHTY	&CLYDEAN MARIE	1852 4TH AVE	WEST LINN	OR	97068
HANES JAMES E	&JUDITH D	1819 4TH AVE	WEST LINN	OR	97068
OFFER JERRY D	&RUTH C	1831 5TH AVE	WEST LINN	OR	97068
SOPHER SONJA LEE		1883 5TH AVE	WEST LINN	OR	97068
VENTURA MARY E		1862 4TH AVE	WEST LINN	OR	97068



Comparable Sales

CITY OF WEST LINN
BUILDING PERMIT APPLICATION

PERMIT # : 00-056

Date Received : 01/28/2000

Project Address : 1852 4TH AVE

Owner : RICHARD ELLERY
Address : 1852 4TH AVE
City,St.Zip : WEST LINN OR 97068
Phone/Fax : 557-7725

Builder : ELLERY
Address :
City,St.Zip :
Phone/Fax :
Mobil :

Arch/Eng :
Address :
City,St.Zip :
Phone/Fax :
Plan Number :

Type Of Permit : RMIS

Lot :

Block :

Subdivision :

Zoning : R-5

Occupancy Class : R-3

Est. Valuation :$ 2000.00 Preliminary Plan Review 21.13

City/Metro # :

Registration # :

example across the street. front porch

****

I, as the permittee, agree to pay for any and all work done by the City of West Linn, regardless of whether the permit is picked up and processed. I further agree that the building will not be occupied until it has been approved for the use for which it was intended. I certify that my registration with the Builders Board is in full force and effect as required by ORS 701.055; that if exempt, the basis for exemption is noted herein. I now have, or have applied for a City of West Linn Business License to do business in the City.

Permittee:Print RICHARD D. ELLERY

Signature Richard D Ellery Date 1-28-2000

Plans Examiner:_____ Date:_____

CITY OF WEST LINN
FEE SCHEDULE

Permit # :00-056 Date : 01/28/2000
Project location :1852 4TH AVE Phone # :

****

VALUATION

Main Floor Square Footage	x 74	=	0.00
Upper Floor Square Footage	x 74	=	0.00
Bonus Room Square Footage	x 74	=	0.00
Basement Square Footage	x 37	=	0.00
Lower Level Square Footage	x 74	=	0.00
Garage Square Footage	x 21	=	0.00
Elevated Garage	x 26	=	0.00
Deck Square Footage	x 11	=	0.00
Covered Deck	x 15	=	0.00
Miscellaneous			2000.00
Contract_____			
Valuation.....		$	2000.00

****

CONSTRUCTION FEES

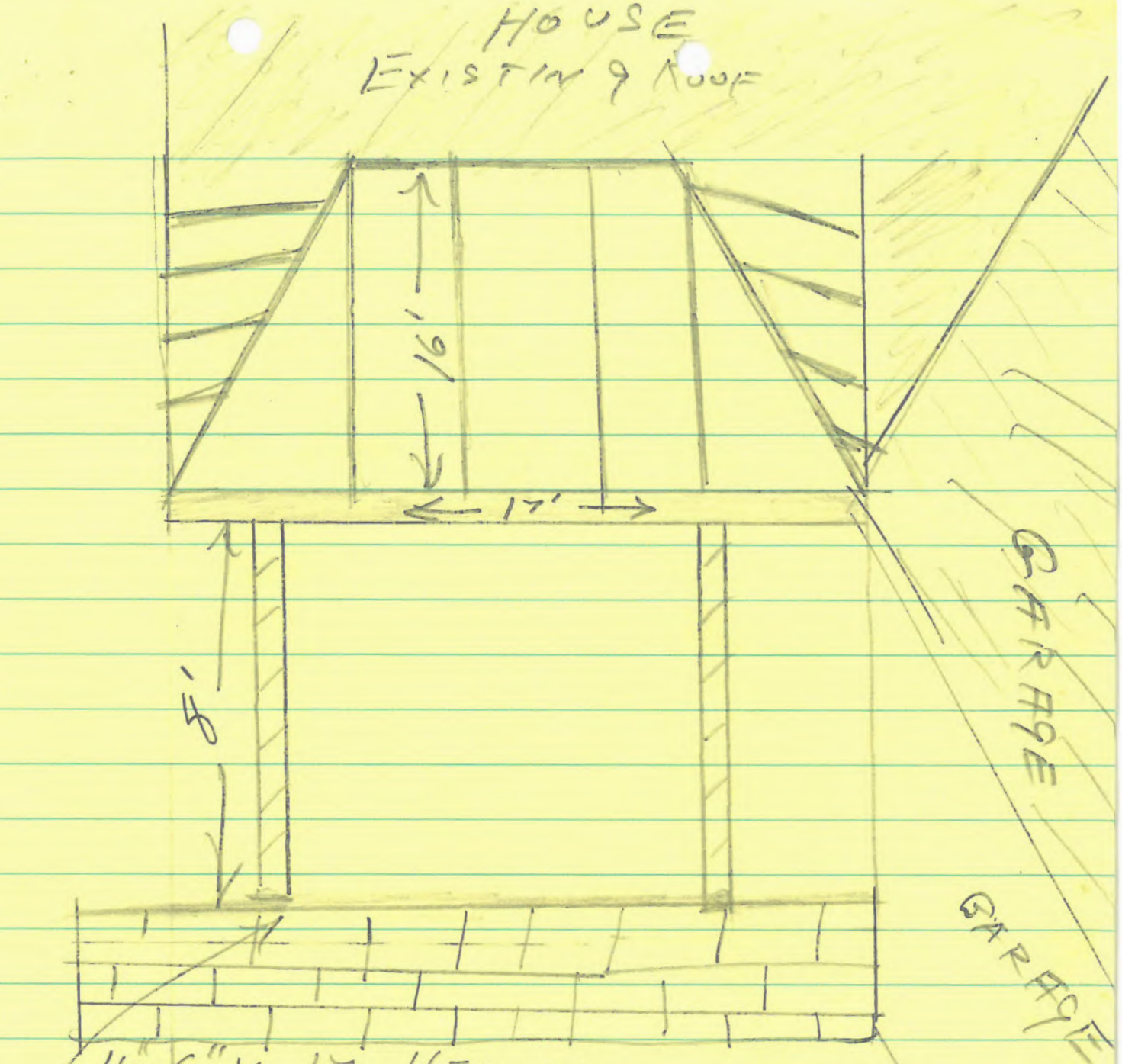
System Development Fees	0.00
Building Permit Fee.....	32.50
State Surcharge 8%	2.60
Structural Plan Review Fee 65% Bldg Fee.....	0.00
Fire Life Safety Plan Review Fee 40%	0.00
Engineering And Planning Fees.....	
Plumbing Permit Fee	
Plumbing State Surcharge 8%.....	
Plumbing Plan Review Fee 25% Plg Fee	
Mechanical Permit Fee.....	
Mechanical State Surcharge 8%	
Mechanical Plan Review 25% Mech Fee.....	
Electrical Permit Fee	
Electrical State Surcharge 5%.....	
Manufactured Dwelling State Administration Fee	
Erosion Control Permit Fee.....	0.00
Erosion Control Plan Review Fee	0.00
Water Connection Fee.....	
Sewer Connection Fee	

---

* For Office Use Only *

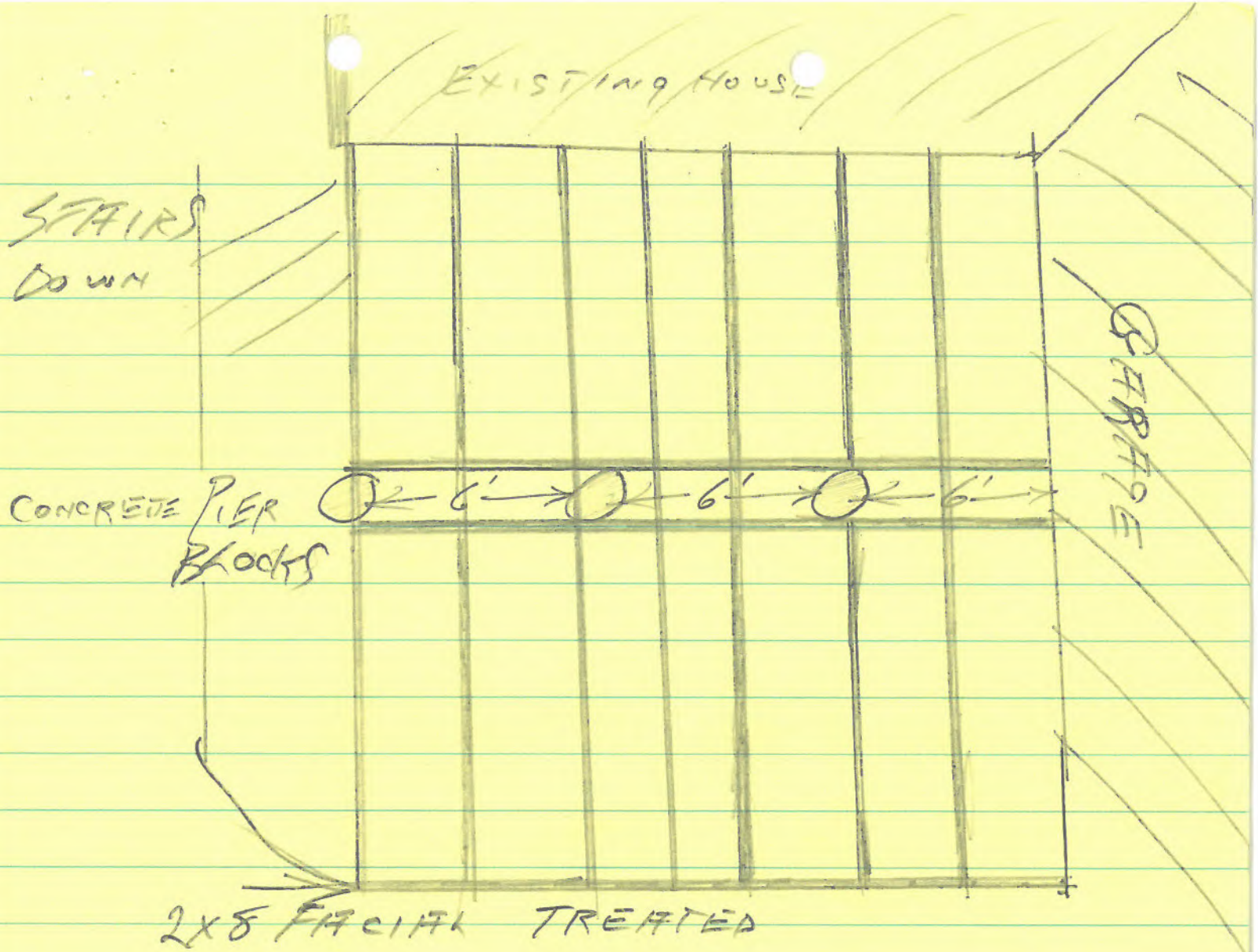
SUBTOTAL ALL PLANREVIEW, EROSION CONTROL AND ENGINEERING		
SUBTOTAL PERMIT & PLANREVIEW	$	32.50
SUBTOTAL STATE SURCHARGES	$	2.60

TOTAL CONSTRUCTION FEES **$ 35.10**

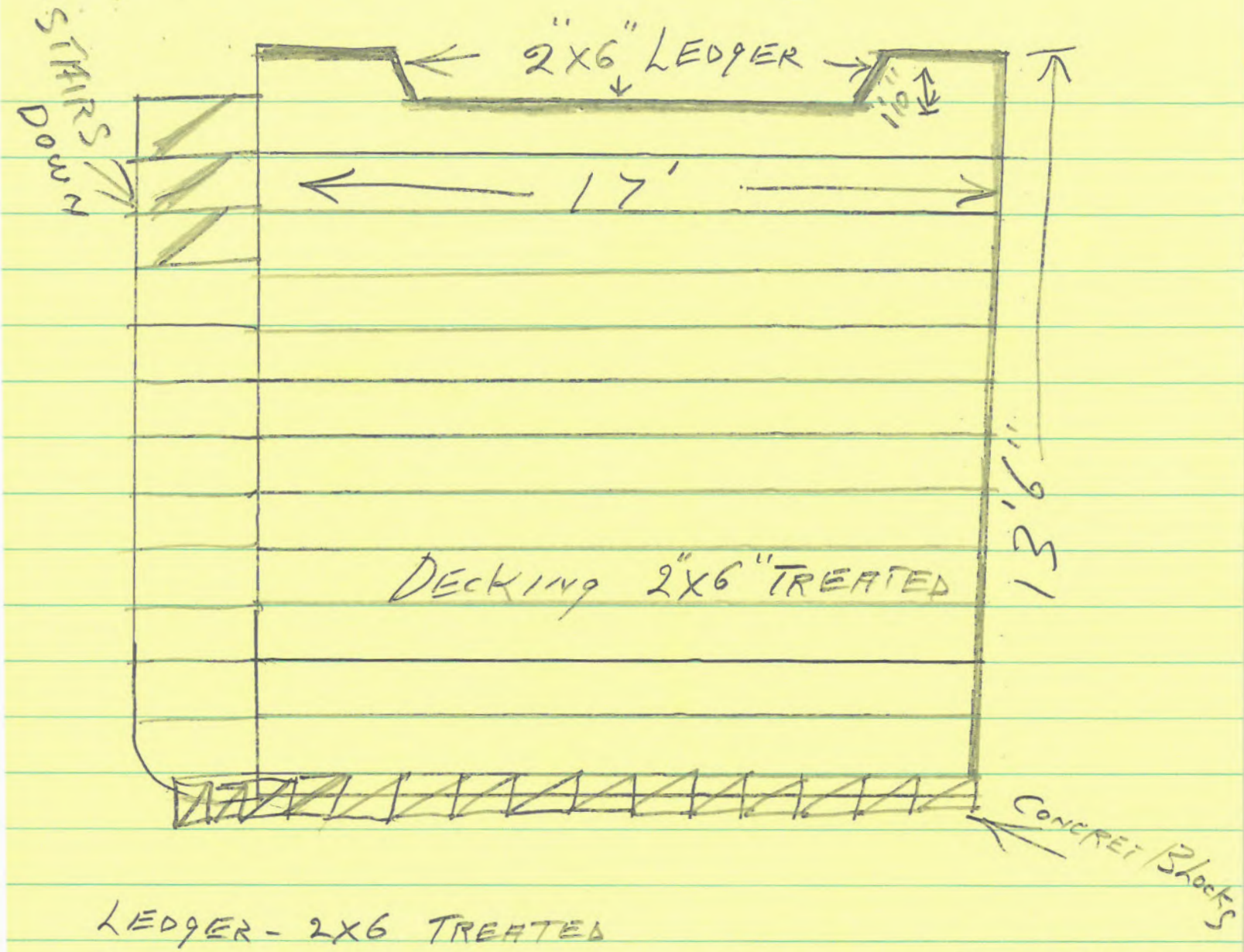


4X6" X 17 HEADER
2-10" ROUND COLUMNS TO HOLD HEADER & ROOF

00-056

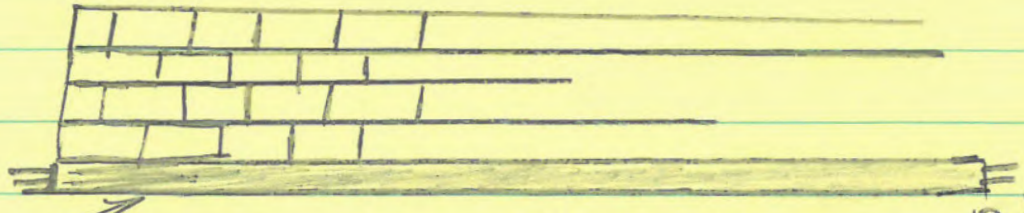


CONCRETE PIER BLOCKS - 3
JOISTS 2"X6" X 14' SPACED AT 24" TREATED



LEDGER - 2X6 TREATED

DECKING - " " ON 16" CENTERED OR 24" CENTERED 2X8 TREATED



CONCRETE BASE FRONT 4" DEEP 10" WIDE - REINFORCED R. BAR - 2 - AT ½" EACH

CONCRETE BLOCKS 8"X12" - 4 ROWS HIGH

=METROSCAN PROPERTY PROFILE=
Clackamas County

OWNERSHIP INFORMATION

Parcel :00750912 TRSQ:03S-01E-02-NW SE
Ref Parcel :R31E02BD00500
Owner :ELLERY RICHARD DOUGHTY;CLYDEAN MARIE
CoOwner :
Site Address:1852 4TH AVE WEST LINN 97068
Mail Address:1852 4TH AVE WEST LINN OR 97068
Telephone :503-~~657-0886~~ — 657-7725 —

SALES AND LOAN INFORMATION

Transferred:03/01/88 Loan Amount:
Document # :88-08966 Lender :
Sale Price :$65,000 Loan Type :
Deed Type :WARRANTY

ASSESSMENT AND TAX INFORMATION

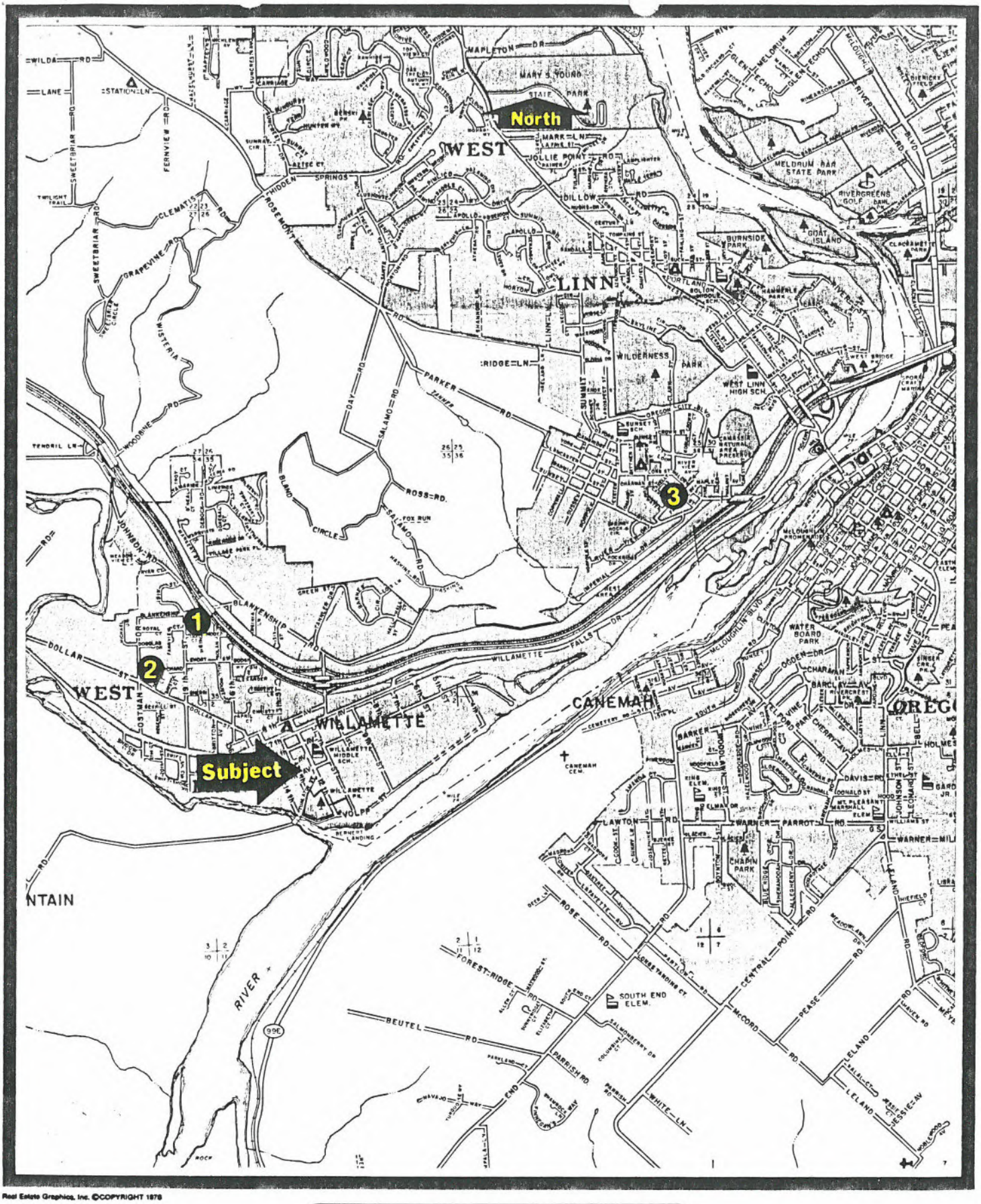
Land :$19,630 Exempt Amount:
Structure:$77,850 Exempt Type :
Total :$97,480 Levy Code :003002
%Improved:80 M-5 Rate :23.4855
92-93 Taxes :$2,289.34

PROPERTY DESCRIPTION

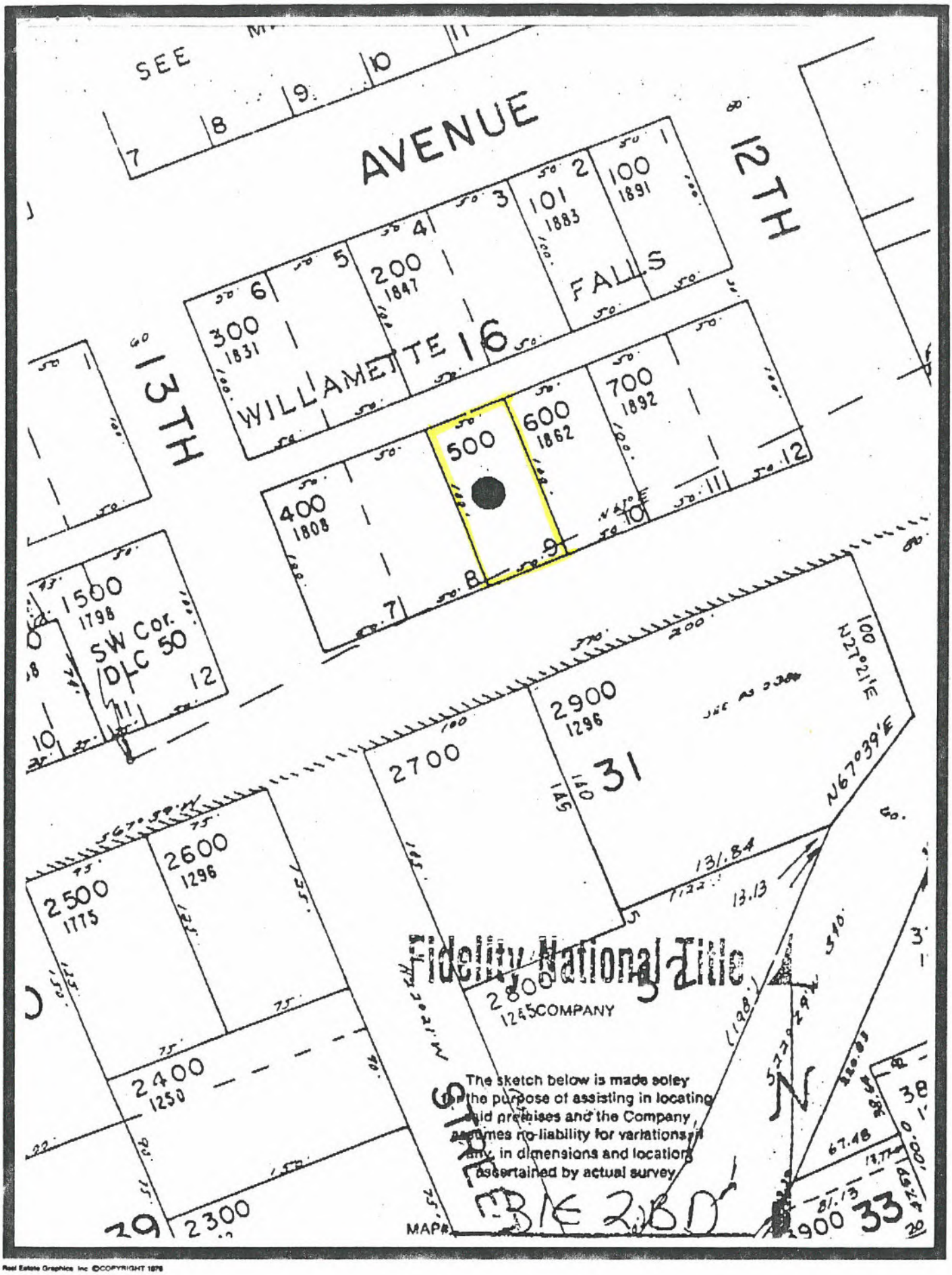
Census :Tract 207.00 Block 1
Map Grid:716 G2
NbrhdCd :W583
Sub/Plat:WILLAMETTE FALLS
Imprvmnt:SGL FAMILY,R1-5,1-STORY
Land Use:1015 RES,RESIDENTIAL LAND,IMPROVED
Legal :WILLAMETTE FALLS LT 9 BLK 16 ORD
:174 TRI-MET 91-92
:

PROPERTY CHARACTERISTICS

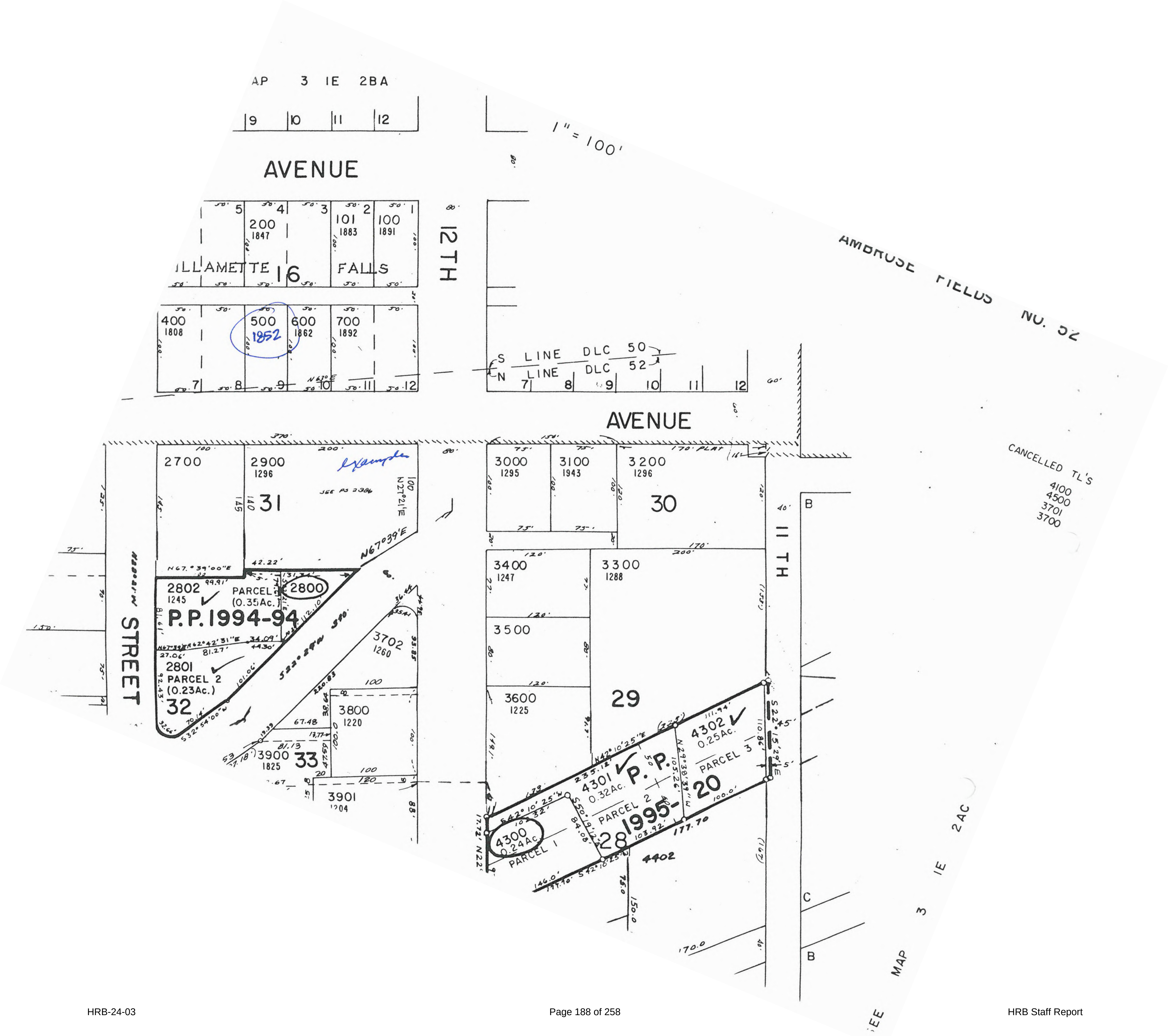
Bedrooms :3	Year Built :1984	Lot Acres :
Bathrooms:	School District :003	Lot Sq Ft :
Bldg SqFt:1,493	Utility District:	



Comparable Sales



Plat Map


MAP 3 1E 2BA
1" = 100'
AVENUE
12TH
WILLAMETTE FALLS
AMBROSE FIELDS NO. 52
S LINE DLC 50
N LINE DLC 52
AVENUE
STREET
11TH
CANCELLED TL'S
4100
4500
3701
3700
P.P. 1994-94
PARCEL 1 (0.35Ac.)
PARCEL 2 (0.23Ac.)
P.P. 1995-20
4300 0.24Ac. PARCEL 1
4301 0.32Ac. PARCEL 2
4302 0.25Ac. PARCEL 3
4402
SEE MAP 3 1E 2AC

25,070 Page 25-8

B - #1 Setback is -32'

#2 Sideyard will be -7'

#3 Rear Yard of existing building - 31'

#4 New Construction is not on a corner lot. but will face 4th Ave.

I Page 25-12

1. Building will provid a permanetly protected entry. for which it does not at present have.

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1. No additional siding is planed

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3. Exterios colors will be used to match present Color of dwelling.

25.080 Page 25-13

Additional Architectural specifics for new construction & remodeling.

A. No Historic materials

B. Alterations are attempted to mach. porches existing presently on 12 homes in the historic district

Addresses attached on Page #2

C. Distinctive Stylistic Features are being attempted if possible

D.- No deteriorated features
E.- All new materials are trying to be done in a fashion to compliment existing dwelling.
F.- No alterations to rear of house
G.- Alterations are new & hopefully acceptable to the original design of house
H- It is believed if alterations were to be removed at a later date the original structure could be restored.

Homes in Historic Area with similar front & back porches & roofline.

1819	4th Ave
1686	5th Ave
1630	" "
1611	6th Ave
1816	" "
1813	" "
1847	" "
1492	13th St.
1521	11th St.
1358	" "
1296	12th St
1785	Willamette Falls Drive.

Richard D Ellzey
1852 Fourth Ave
West Linn Or 97068
557-7725

West Linn

DEVELOPMENT REVIEW APPLICATION

DR-00-04

TYPE OF REVIEW (Please check all boxes that apply):

[ ]	Annexation	[ ]	Non-Conforming Lots, Uses & Structures
[ ]	Appeal and Review	[ ]	One-Year Extension
[ ]	Conditional Use	[ ]	Planned Unit Development
[ ]	Design Review	[ ]	Pre-Application Meeting
[ ]	Easement Vacation	[ ]	Quasi-Judicial Plan or Zone Change
[ ]	Extraterritorial Ext. of Utilities	[ ]	Sidewalk Use App
[ ]	Final Plat or Plan	[ ]	Sign Review
[ ]	Flood Plain Construction	[ ]	Street Vacation
[ ]	Hillside Protection and Erosion Control	[ ]	Subdivision
[✓]	Historic District Review	[ ]	Temporary Uses
[ ]	Legislative Plan or Change	[ ]	Tualatin River Greenway
[ ]	Home Occupation/App	[ ]	Variance
[ ]	Lot Line Adjustment	[ ]	Wetland
[ ]	Minor Partition (Preliminary Plat or Plan)	[ ]	Willamette River Greenway
[ ]	Natural Drainageway Protection	[ ]	Other/Misc

TOTAL FEES/DEPOSIT ∅ MINOR RESIDENTIAL REMODEL 503/557-7725

OWNER'S	ADDRESS	CITY	ZIP	PHONE(res.& bus.)
Richard Ellery	1852 4TH AVE	West Linn, OR	97068	
"	"	"	"	"

APPLICANT'S	ADDRESS	CITY	ZIP	PHONE(res.& bus.)

CONSULTANT	ADDRESS	CITY	ZIP	PHONE

SITE LOCATION 1852 4TH AVE WEST LINN

Assessor's Map No.: 31E02BD00500 **Tax Lot(s):** 00500 **Total Land Area:** 50 X 100

CODE AREA 003002

1. All application fees are non-refundable (excluding deposit).
2. The owner/applicant or their representative should be present at all public hearings.
3. A denial or grant may be reversed on appeal.. No permit will be in effect until the appeal period has expired.

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application.

SIGNATURE OF PROPERTY OWNER(S)

X Richard D Ellery **Date** 2-11-2000

SIGNATURE OF APPLICANT(S)

X Richard D Ellery **Date** 2-11-2000

BY SIGNING THIS APPLICATION, THE CITY IS AUTHORIZED REASONABLE ACCESS TO THE PROPERTY.

ACCEPTANCE OF THIS APPLICATION DOES NOT INFER A COMPLETE SUBMITTAL. COMPLETENESS WILL BE DETERMINED WITHIN 30 DAYS OF SUBMITTAL.

PLANNING AND BUILDING; 22500 SALAMO RD #1000; WEST LINN, OR 97068;
PHONE: 656-4211 FAX: 656-4106

p:\development review\review application 1/00

EXHIBIT HRB-7 DR 12-02 ADDITION TO REAR

WEST LINN HISTORIC REVIEW BOARD

FINAL DECISION NOTICE

FILE NO. DR-12-02

IN THE MATTER OF A REAR ADDITION, RESIDING AND FRONT PORCH ALTERATIONS

At their meeting of February 21, 2012, the Historic Review Board (HRB) held a public hearing to consider the request by the applicants, Elizabeth Smolens and Aron Helligas, to construct a rear addition at 1852 4th Avenue. The property is located in the Willamette Historic District. The decision was based upon the approval criteria of Chapter 25 of the West Linn Community Development Code (CDC). The hearing was conducted pursuant to the provisions of CDC Chapter 99.

HRB Chair Jon McLoughlin opened the public hearing. Sara Javoronok, Associate Planner, presented for the City. Ms. Smolens and Mr. Helligas presented and offered testimony.

The HRB discussed the project. The applicant requested a design modification to permit a 2' encroachment into the rear setback and for cedar shingles as the primary exterior siding. Chair McLoughlin asked why the applicant requested 2' for an 11' addition rather than an even number of feet. The applicant explained that this was the minimum necessary to accommodate a large dining room table for family celebrations.

Public testimony in favor of the project was heard from Adam Petersen of 1818 6th Avenue. He expressed support for the project, including the proposed design modifications, and stated that it did not detract from the district, it was fantastic to get rid of vinyl, and that the proposed changes would help the 1984 home fit in better with the district.

A motion was made by Vice Chair Mattis to approve the application based upon the findings in the staff report; subject to the following condition:

1. Site Plan, Elevations, and Narrative. The project shall conform to the plans, elevations, and narrative submitted in Exhibit HRB-3.

The motion was seconded by Pearce and approved 6-0.

This decision will become effective 14 days from the date of mailing of this final decision as identified below. Those parties with standing (i.e., those individuals who submitted letters into the record, or provided oral or written testimony during the course of the hearing, or signed in on the attendance sheet at the hearing, or who have contacted City Planning staff and made their identities known to staff) may appeal this decision to the West Linn City Council within 14 days of the mailing of this decision pursuant to the provisions of Chapter 99 of the CDC. Such appeals would require payment of fee and a completed appeal application form together with the specific grounds for appeal to the Planning Director prior to the appeal-filing deadline.

Jon McLoughlin, Chair
West Linn Historic Review Board

2/23/12
Date

Mailed this 24th day of February, 2012.

Therefore, this decision becomes final at 5 p.m., March 9, 2012.

File #: DR-12-02

120 Day Clock for Quasi-Judicial Cases (not legislative)

Ext Initial or Original Expiration Date: _____

Extended to: _____ Extended to: _____

Extended to: _____ Extended to: _____

Attach written Extension Authorization from applicant, applicant's attorney, or authorized designee or reference hearing date where applicant orally stated when it would be extended to or for how many days. ***This applies to each extension.***

FINAL DECISION MAILING LIST

Applicant & Persons of Standing/County Surveyor Zone Change

(c: **Kathy Aha** on ZC & Annexation, **DSL** on WRG, FM & ND)

Date Mailed: _____ Page: _____ of _____

Applicant:

Elizabeth Smolens + Aron Helligas
1852 4th Ave.
WL

Applicant's Rep:

Barry Sandhorst
Windfall Construction + Design
23281 Bosky Dell
WL

Interested Parties:

Adam

Neighborhood Association:

Willamette

Persons with Standing:

Adam Petersen
1818 6th Ave.
WL

Persons with Standing:

File #: _____ Page: _____ of _____

Persons with Standing:

_____

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Persons with Standing:

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City of West Linn

STAFF REPORT
FOR THE HISTORIC REVIEW BOARD

FILE NUMBER: DR-12-02

HEARING DATE: February 21, 2012

REQUEST: Rear addition, Residing and Front Porch Alterations

APPROVAL CRITERIA: Community Development Code (CDC) Chapter 25, Historic District

STAFF REPORT PREPARED BY: Sara Javoronok, Associate Planner

Planning Director's Review

EXECUTIVE SUMMARY

The applicant is proposing to add a rear addition, reside with a different material, and alter the front porch of the residence at 1852 4th Avenue. These alterations are subject to the approval criteria in CDC Chapter 25, Historic District.

The subject property is located on the north side of 4th Avenue between 12th and 13th Streets. It is in the City's Willamette Neighborhood, local Willamette Historic District, and the National Register Willamette Falls Neighborhood Historic District. The residence was built in 1984 and the 2006 reconnaissance level survey of the neighborhood reported its style as Neo-Colonial and classified it as not-in-period.

Staff finds that the applicant's proposal, supplemented with a condition of approval, meets the applicable criteria. Therefore, staff recommends approval.

TABLE OF CONTENTS

STAFF ANALYSIS AND RECOMMENDATION

EXECUTIVE SUMMARY 1
GENERAL INFORMATION 3
BACKGROUND 4
ANALYSIS 6
RECOMMENDATION 7

ADDENDUM

APPLICABLE REGULATIONS AND ASSOCIATED SUPPLEMENTAL FINDINGS 8

EXHIBITS

HRB-1 AFFIDAVIT OF NOTICE 14
HRB-2 NOTICE MAILING PACKET 15
HRB-3 APPLICANT SUBMITTAL 19
HRB-4 HISTORIC SITE INVENTORY FORM 45

GENERAL INFORMATION

APPLICANT/ OWNER:	Elizabeth Smolens & Aron Helligas
SITE LOCATION:	1852 4th Ave.
LEGAL DESCRIPTION:	Clackamas County Assessor's Map 31E-02BD, Tax Lot 500
SITE SIZE:	5,000 square feet
ZONING:	R-5, Single Family Residential Detached
COMP PLAN DESIGNATION:	Medium Density Residential
120-DAY PERIOD:	The application was complete on January 20, 2012. Therefore, the 120-day application processing period ends on May 21, 2012.
PUBLIC NOTICE:	Public notice was mailed to the Willamette Neighborhood Association and to affected property owners on January 30, 2012 and the application has been posted on the City's website. Therefore, notice requirements have been satisfied.

BACKGROUND

As previously noted, the subject property is located in the Willamette neighborhood and Willamette Historic District at 1852 4th Avenue, between 12th and 13th Streets.

Site Conditions. The lot currently accommodates a 1½ story single family house with an attached two-car garage and was constructed in 1984. The property was included in the 2006 Reconnaissance Level Survey of the Willamette Falls Neighborhood Historic District. The survey form is attached as Exhibit HRB-4.

The residence has a side gabled roof with a front facing dormer window. The attached garage has a front facing gable and a window in the gable end. Below the dormer window, there is an existing porch with Neo-Colonial fluted columns. The porch is one-half the length of the front elevation and the attached garage comprises the remainder of the front elevation. The Sanborn maps do not show a house or other structure on this property.

Front elevation

Rear and side elevation

Rear yard, proposed location of addition

Rear yard screening/vegetation

Project Description. The applicant is proposing to add a rear addition, reside the house, and alter the front porch. For the rear addition, the applicant is proposing an 11 x 19 ft. addition with paired windows on the east and west elevations and single-lite French doors. Currently, the house is sided with vinyl siding and the applicant is proposing wood shingles. The porch alterations include a false arch over the entry and left bay, new square columns with wood trim, and a wood railing. The applicant is also planning on removing the diagonal trim on the garage to square the overhead door opening.

Surrounding Land Use. The parcel is surrounded by residential properties. Those on the north side of Fourth Avenue are zoned R-5, while those on the south are zoned R-10.

DIRECTION FROM SITE	LAND USE	ZONING
North	Single-family residential detached and duplex	R-5
East	Single-family residential detached and duplex	R-5
South	Single-family residential detached	R-10
West	Single-family residential detached and duplex	R-5

Public comments. To date, staff has not received any comments from the public.

ANALYSIS

CDC Chapter 25, Historic District applies to this project, specifically Sections 25.060, 25.070, 25.080, and 25.150.

The applicant is proposing two changes that trigger Section 25.150, Design Modification Procedures. The first is a two-foot modification from the rear yard setback requirement in 25.070 B, and the second is a modification from the siding requirements in Section 25.050 J. Section 25.150 Design Modification Procedures specifies the requirements for a modification. Unlike other areas of the City, Chapter 75, Variances, does not apply in the Willamette Historic District.

RECOMMENDATION

Staff recommends approval of the application subject to the following condition:

1. Site Plan, Elevations, and Narrative. The project shall conform to the plans, elevations, and narrative submitted in Exhibit HRB-3.

Notes to applicant.

- Expiration of Approval. This approval shall expire three years from the effective date of this decision.
- Additional Permits Required. Your project may require the following additional permits:
  - Public improvement permit: contact Pat in Engineering at (503) 723-5501 or prich@westlinnoregon.gov
  - Public works permit: contact Pat in Engineering at (503) 723-5501 or prich@westlinnoregon.gov
  - On-Site Utilities: contact the Building Division at (503) 656-4211, jnomie@westlinnoregon.gov. (Electrical permits are through Clackamas County, not the City of West Linn.)
  - Building permit: contact the Building Division at (503) 656-4211, jnomie@westlinnoregon.gov.
  - Final inspection, for occupancy: Call the Building Division's Inspection Line at (503) 722-5509.

APPLICABLE REGULATIONS AND ASSOCIATED SUPPLEMENTAL FINDINGS

DR-12-02

CHAPTER 25, HISTORIC DISTRICT

25.060 CRITERIA FOR EXTERIOR ALTERATION AND NEW CONSTRUCTION

A. Except as provided pursuant to CDC 25.100, no person may alter the exterior of any structure in an Historic District in a manner as to affect its exterior appearance, nor may any new structure be constructed in an Historic District, unless the site and evaluation drawings are approved by the Historic Review Board.

B. Exterior remodeling as governed by this chapter shall include any change or alteration in design or other exterior treatment excluding painting.

C. For new home construction or exterior alterations of structures in an Historic District, the criteria to be used by the Historic Review Board in reaching the decision shall include the following:

1. *The purpose of the Historic District as set forth in CDC 25.040.*
2. *The policies of the West Linn Comprehensive Plan.*
3. *The economic use of the structure in an Historic District and the reasonableness of the proposed alteration and their relationship to the public interest in the structure's or landmark's preservation or renovation. (Applicable to commercial only.)*
4. *The value and significance of the structure or landmark in an Historic District. (Applicable to remodeling only.)*
5. *The physical condition of the structure or landmark in an Historic District. (Applicable to remodeling only.)*
6. *The general compatibility of exterior design, arrangement, proportion, detail, scale, color, texture and materials proposed to be used with an existing structure in an Historic District.*
7. *Pertinent aesthetic factors as designed by the Historic Review Board.*
8. *Economic, social, environmental and energy consequences related to LCDC Goal No. 5. (Ord. 1594 § 1 (Exh. A), 2010)*

FINDING NO. 1: The applicant's proposal will be reviewed by the Historic Review Board. Staff finds that the value, significance, physical condition, compatibility, and aesthetic impacts of this not-in-period residence have been considered and will be impacted as little as possible. The impacts of the proposed changes to contributing residences in the district have also been considered. The criteria are met.

25.070 APPROVAL CRITERIA FOR REMODELS, NEW HOME AND ACCESSORY STRUCTURE CONSTRUCTION

B. Siting.

1. *Front yard:*
   a. *The front yard setback shall be the distance measured from the front property line to the dominant vertical face of the building, exclusive of any porches or front landings, equal to the average of the front setbacks of adjacent homes. For corner lots, the setback shall be the average between the adjacent house to the side and 20 feet.*
   b. *Unenclosed porches with no living space above may encroach six feet further from the dominant vertical face of the building.*

2. *Side yard: Five feet shall be the standard; however, where adjacent structures encroach into the required side yard, the Planning Director may reduce one of the side yards to a minimum of three feet to center a new structure between existing buildings, provided no space between buildings is reduced below eight feet. To encourage sidewall variation, "pop outs," including chimneys, may intrude 18 inches into side yard setback.*
3. *Side street: 10 feet for both developed and undeveloped street. To encourage sidewall variation, "pop outs," including chimneys, may intrude 24 inches into side street yard setback after every 400 square feet of sidewall.*
4. *Rear yard: The rear yard setback shall be a minimum of 20 feet, except for accessory structures (non-dwelling or non-accessory dwelling units (ADU)), which may be sited to within three feet of the side or rear property lines. See section on ADUs for ADU setbacks.*
5. *Orientation: New home construction on corner lots must orient the front of the house to the avenue and not the street.*
6. *Lot coverage: 50 percent. Unlike the rest of West Linn, lot coverage shall apply to the new and remodeled primary dwellings, attached and detached garages, all accessory buildings and ADUs. Decks, paved and impermeable surfaces (patios and driveways etc.) shall not be included. Underlying zone (e.g., R-5) lot coverage shall not apply.*

FINDING NO. 2: Criterion 1 does not apply to the rear addition. For #2, the proposed rear addition will not decrease the existing side yard setback, which is 7.5 feet to the west and approximately 7.5 feet to the east. Criterion 3 does not apply. For #4, the lot depth is 100 feet, and the rear of the proposed structure will be approximately 18 feet from the rear lot line, two feet less than the required 20 feet. See Finding No. 13 for Criterion 4, which the applicant is requesting a modification from. Criterion 5 does not apply. For #6, lot coverage, the total is approximately 34 percent, less than the 50 percent permitted. Criteria 1 and 2 are met.

D. *Building height. (Note: Buildings in Willamette Town vary in height; most evident are one and one-half story Victorians and bungalows. Some buildings reach two stories, and there are several single-story structures as well.)*
   1. *No building shall exceed the height of 28 feet to the dominant gable or roof ridgeline as measured per Chapter 02 CDC. This restriction shall apply regardless of the existing or finished grade of the site.*
   2. *In order to transition in scale, new houses that are taller than homes adjacent to them must have the predominant roof ridgeline extending perpendicular to the front property line so that the roof slopes down on the sides to effect that transition. Dormers are allowed on that sloping roof area facing the adjacent home(s) but cannot constitute more than 25 percent of the roof as measured lineally or horizontally (e.g., if roof is 50 feet long the dormer(s) cannot be more than 25 percent of that distance or 12.5 feet long in total). Also, the dormer height must be at least two feet below the gable ridgeline height.*
   3. *Cupolas and towers are not excluded from the aforementioned height limitation.*
   4. *Alteration of roof pitches or raising or lowering a structure's permanent elevation, when constructing a foundation, shall be avoided.*
   5. *The original height of the structure's front elevation shall be preserved. Additions to the rear portion of the house shall be allowed where those additions do not compromise the character of the front elevation or the scale or significantly modify the mass of the house as seen from the right-of-way.*

FINDING NO. 3: Criteria 2-4 do not apply. The proposed addition will be approximately 18 feet from grade. The lot gently slopes to the south. The peak of the gable on the addition is approximately the same height as the gable on the garage. The addition will not compromise the character of the front elevation or the scale of the residence. It will also not significantly modify the

mass of the house as seen from the right-of-way. With screening, the addition will be minimally visible from the right-of-way in the alley. It will not be visible from the 4th Avenue or 12th Street rights-of-way. The applicable criteria are met.

E. Building shapes and sizes.

1. *No building on a 50-foot-wide lot shall exceed 35 feet in overall width. Lots with a 65-foot width or greater may have a building width of 40 feet plus the porches, eaves or veranda extensions so that the maximum total width is 47 feet.*
2. *End walls (street facing) shall be designed with consideration of scale and aesthetic character of the main facade.*
3. *Buildings shall avoid a horizontal orientation in their roof and window designs, unless the design can be shown to match the original roof design or approximate the design of nearby structures and styles.*
4. *Sidewalls on the side of new homes shall have a minimum 18-inch "pop out" or indent after every 400 square feet of sidewall measured laterally/horizontally. The "pop out" or indent shall be at least six feet wide and shall be at least nine feet tall. (Bay windows could qualify). Sidewalls on the side street side of new homes shall have minimum 24-inch "pop out" or indent after every 400 square feet of sidewall measured laterally/horizontally. "Pop outs" may intrude into the setback area.*

FINDING NO. 4: For #1, the proposed rear addition is 19 feet, less than the maximum permitted. Criteria 2-4 do not apply. The applicable criterion is met.

G. Horizontal additions.

1. *The scale and proportion of building additions, including the relationship of windows to walls, shall be visually compatible with the traditional architectural character of the historic building.*
2. *Contemporary construction for alterations and additions are acceptable if the design respects the building's original design and is compatible with the original scale, materials, window and door opening proportions of the structure.*

FINDING NO. 5: The scale and proportion of the proposed addition, including the proposed entry and windows are visually compatible with the architectural character of the not-in-period residence. The proposed addition maintains the roof pitch and architectural features of the original section of the residence. It has a compatible scale, similar materials and window and door openings that are proportional to the original section of the residence.

H. Windows. Window sizes vary considerably in the district. Windows on the primary and secondary structures are wood sash, usually a double hung type. Victorian styled structures typically have narrower, vertically-oriented windows. Bungalow styled structures from the "Craftsman" era (1905 – 1930) may have wider windows with mullions across the top of larger paned areas. Most windows have fairly wide trim boards, usually five inches. Standards:

1. *Historic window sashes and frames shall be repaired rather than replaced unless the approval authority determines that repair is not possible. In that case, the replacement shall match the old window sash and frame in design, texture, materials, and other visual qualities. Existing replacement windows shall be replaced with windows that match the original window in design, texture, and other visual qualities, and, where possible, materials, as determined by the approval authority. Windows in new construction and*

additions shall be compatible with the massing, size, scale, and architectural features of the structure. Wood windows are preferred.

2. *Aluminum windows are prohibited unless they were the original materials and meet dimensional standards.*
3. *Windows shall be surrounded by exterior trim on the top and sides; window trim shall be at least four and one-half inches minimum width unless the original window was less.*
4. *Window replacements shall match the visual qualities of original windows.*
5. *Storm windows should follow the standards for windows and shall have a mullion that matches the divide between the upper and lower window sashes. The color should match underlying trim.*

FINDING NO. 6: The applicant is proposing casement windows that are a composite material, Fibrex. The size and scale of the windows are compatible with the existing residence. The residence is not historic. The proposed windows are compatible with the massing, size, scale and architectural features of residence. The trim is not identified and staff recommends adopting the condition stating that the trim on the windows shall be at least four and one-half inches wide or match the existing trim on the residence. Criteria 2, 4, and 5 do not apply. The applicable criteria are met.

I. *Entryways. Porches are a key architectural feature on most homes in Willamette Town. Frequently, the porch and entryway creates a dominant architectural feature on the main facade. On corner lots, the entry usually faces the east-west avenues. Front doors are often notably detailed; many contain glass panes or carvings. Standards:*
   1. *Buildings shall have a permanently protected entry. Awnings are not permanent protection.*
   2. *All main entrances should face the avenues.*
   3. *Flush (flat) doors are prohibited.*
   4. *Doors with windowed areas are recommended. Front porch enclosure of any dwelling unit may not be enclosed. Back porches may be enclosed.*

FINDING NO. 7: There is a single entry on the proposed addition. The applicant is proposing French doors made of a composite material, Fibrex, which is also proposed for the windows. The doors each have a single lite. The applicable criteria are met.

J. *Siding and exterior finish. Standards:*
   1. *Horizontal wood siding shall be the primary exterior finish.*
   2. *Shingles should only be used in conjunction with horizontal wood siding.*
   3. *Single color exteriors are discouraged. Stained exteriors are not recommended.*

FINDING NO. 8: Currently, the residence has vinyl siding and the applicant is proposing to replace the vinyl siding with wood shingles. This does not meet Criteria 1 and 2 which state that horizontal wood siding shall be the primary exterior finish and that shingles should only be used in conjunction with horizontal wood siding. See Finding No. 13 pertaining to the modification that the applicant is seeking.

K. *Roofscape. Standards:*
   1. *Roofs shall have a pitch of at least 8:12 to maintain the pattern of steep roof pitches. The Historic Review Board will consider deviations from the 8:12 to 12:12 standard for additions to the main body of the house so long as it is consistent with a particular architectural style.*
   2. *Roofing materials should be asphalt composite shingles. Milled cedar shingles may only be used if they are replacing milled cedar shingles or if they were the original material. Cedar shakes were not used in period construction.*

3. *Alternating or checkerboard shingles are not permitted.*

FINDING NO. 9: The proposed roof pitch on the addition is 9:12, which complies with the criteria, and it is the same pitch as the original residence. The shingles will be asphalt composition to match the existing roofing. The criteria are met.

L. Massing. The square footage of the principal dwelling/house and any attached garage (not counting the basement) cannot exceed 125 percent of the average square footage of the adjacent homes (and any attached garage) on either side of the subject house, or 1,200 square feet, whichever is greater. For the purpose of this section, homes to the rear, or across the street, shall not be used as the basis of the square footage calculation. Homes on corner lots shall base their square footage on the one house and any attached garage adjacent to them. The square footage of the adjacent home will be based on actual measurement of all livable space in the house plus any attached garage (exclude crawlspaces or attic areas with less than five-foot vertical clearance plus all basement areas).

FINDING NO. 10: The proposed addition is 209 sq. ft. Per the massing calculations above, the existing residence, including the attached garage, is 1,784 sq. ft. The addition increases the square footage to 1,993 sq. ft. Per the Clackamas County Assessor's Office, and not including the basements (included in the applicant's submittal), the adjacent properties are 1,832 sq. ft. (1808 4th Ave.) and 1,358 sq. ft. (1862 4th Ave.). The average of these two is 1,595 sq. ft. and 125% of this average is 1,994 sq. ft. The proposed addition would not increase the residence to more than 125% of the adjacent residences. The criterion is met.

25.080 ADDITIONAL ARCHITECTURAL SPECIFICS FOR NEW CONSTRUCTION AND REMODELING

Many houses in Willamette are rich in architectural detail. Certain architectural components are used in fairly specific ways. Standards:

A. *Distinguishing original qualities defining a structure's character shall not be destroyed. Removal or alteration of historic (i.e., original) materials or distinctive architectural features should be avoided when possible.*
B. *Houses and other structures shall be recognized as products of their own time. Alterations that have no historical basis or which seek to create an earlier appearance shall be avoided.*
C. *Distinctive stylistic features, or examples of skilled craftsmanship which characterize a structure, shall be maintained or restored, if possible.*
D. *Deteriorated architectural features shall be repaired rather than replaced, whenever possible.*
E. *In the event replacement is necessary, new materials should match the material being replaced in composition, design, color, texture, and other visual qualities.*
F. *Alterations to the rear of a house, or to other portions not visible from the public right-of-way (exclusive of alleys), need not adhere to the design standards contained herein.*
G. *Contemporary designs for alterations and additions would be acceptable if the design respects the building's original design, and it is compatible with the original scale, materials, window and door opening proportions of the structure.*
H. *Wherever possible, new additions or alterations to structures shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the original structure could be restored.*

FINDING NO. 12: The proposed changes will not seek to create an earlier appearance. They will improve the aesthetics of the residence, but it will remain distinguishable from the historic residences in the neighborhood. The proposed addition is compatible with the scale, materials, and

window and door opening proportions of the original residence. In addition, the proposed addition is also compatible with the scale, materials, and window and door opening proportions of the historic residences in the neighborhood.

25.150 DESIGN MODIFICATION PROCEDURES

A. When an alternative(s) to the standards of this chapter is proposed, the decision making body (e.g., Historic Review Board) may grant a design modification in those cases where at least one of the following criteria is met:

1. *The applicant can demonstrate by review of historical records or photographs that the alternative is correct and appropriate to the architecture in the Willamette Historic District of West Linn in 1890 – 1930 or is appropriate to the specific style of architecture proposed with no negative impacts to adjacent homes and the Historic District. Negative impacts shall be defined as loss of sunlight, loss of privacy compared to a design per this code, inappropriate scale or mass which visually overwhelms or is not deferential to the adjacent structure, particularly if it is a primary structure, etc.*

2. *The applicant is incorporating exceptional 1890 – 1930 architecture into the building which overcompensates for an omission. The emphasis is upon superior design, detail, or workmanship which can be verified reviewing previous works of the architect or builder. There shall be no negative impacts to adjacent homes and the Historic District.*

3. *The building placement, scale, lot coverage, setback or height fits the site and integrates well, with no negative impacts to adjacent structures and the Historic District.*

B. The provisions of Chapter 75 CDC, Variance, shall not apply.

FINDING NO. 13: The applicant is requesting a modification from two of the required criteria. The first modification is to permit a rear yard setback of 18 feet rather than the required 20 feet. The second is to permit residing the house; changing it from vinyl siding to wood shingles. The standards require wood siding and permit shingles only in conjunction with wood siding.

In regards to the setback, staff finds that it satisfies (3) above. An 18' setback for the rear addition is appropriate for the site. Unlike most of the houses in the neighborhood, this residence has an attached garage that fronts 4th Avenue rather than is located in the alley (the alley loaded garages are generally located in the rear yard setback). There are no additional structures in the rear yard. At this point in time, there is also significant screening and the proposed addition will be minimally visible from the public right-of-way. In addition, the adjacent properties do not have living areas facing the addition.

For the siding, staff finds that it satisfies the following provision in (1), "the alternative is correct and appropriate to the architecture in the Willamette Historic District of West Linn in 1890 – 1930." The applicant has provided staff with examples of residences in and near the District that have shingle siding. These demonstrate that residing the house from vinyl to wood shingle is appropriate for District.

AFFIDAVIT OF NOTICE

We, the undersigned do hereby certify that, in the interest of the party (parties) initiating a proposed land use, the following took place on the dates indicated below:

GENERAL
File No. DR-12-02 Applicant's Name Elizabeth Smolens; Aron Helligas
Development Name _____
Scheduled ~~Meeting~~/Decision Date 2/21/12

NOTICE: Notices were sent at least 20 days prior to the scheduled hearing, meeting, or decision date per Section 99.080 of the Community Development Code. **(check below)**

TYPE A _____

A.	The applicant (date) _____	(signed)	_____
B.	Affected property owners (date) _____	(signed)	_____
C.	School District/Board (date) _____	(signed)	_____
D.	Other affected gov't. agencies (date) _____	(signed)	_____
E.	Affected neighborhood assns. (date) _____	(signed)	_____
F.	All parties to an appeal or review (date) _____	(signed)	_____

At least 10 days prior to the scheduled hearing or meeting, notice was published/posted:

Tidings (published date) _____ (signed) _____
City's website (posted date) _____ (signed) _____

SIGN

At least 10 days prior to the scheduled hearing, meeting or decision date, a sign was posted on the property per Section 99.080 of the Community Development Code.

(date) _____ (signed) _____

NOTICE: Notices were sent at least 14 days prior to the scheduled hearing, meeting, or decision date per Section 99.080 of the Community Development Code. **(check below)**

TYPE B ✓

A.	The applicant (date) 1/30/12	(signed)	S. Shroyer
B.	Affected property owners (date) 1/30/12	(signed)	S. Shroyer
C.	School District/Board (date) _____	(signed)	_____
D.	Other affected gov't. agencies (date) _____	(signed)	_____
E.	Affected neighborhood assns. (date) 1/30/12 ALL	(signed)	S. Shroyer

Notice was posted on the City's website at least 10 days prior to the scheduled hearing or meeting.
Date: 2/7/12 (signed) S. Shroyer

STAFF REPORT mailed to applicant, City Council/Planning Commission and any other applicable parties 10 days prior to the scheduled hearing.

(date) _____ (signed) _____

FINAL DECISION notice mailed to applicant, all other parties with standing, and, if zone change, the County surveyor's office.

(date) 2/24/12 (signed) S. Shroyer

p:\devrvw\forms\affidvt of notice-land use (9/09)

PUBLIC NOTICE CHECKLIST

FILE NO.: DR-12-02 **SITE ADDRESS:** 1852 4th Ave

PROJECT MANAGER: Sara Javoronok **DATE:** 1/30/12

MAILING DEADLINE DATE – (14-day or 20-day (circle one): 2/7/12

PUBLISH IN LOCAL PAPER (10 days prior): **Yes** _____ **No** X

MEETING DATE: 2/21/12

SEND TO (check where applicable):

Applicant: Name: Elizabeth Smolens & Aron Helligas Applicant Address: 1852 4th Ave

If Applicant Representative or Owner to receive please list in others below:

School District/Board	_____	Division of State Lands	_____
Metro	_____	US Army Corps of Engineers	_____
Tri-Met	_____	Stafford-Tualatin CPO	_____
Clackamas County	_____	City of Lake Oswego	_____
ODOT (if on State Hwy. or over 40 dwelling units)	_____	Dept. of Fish & Wildlife	_____
		Other(s):	_____
Neighborhood Assn(s).			_____
(please specify) Willamette + all			_____
Other(s): Barry Sandhoff Windfall Construction + Design 23281 Bosky Dell WL		Other(s):	_____
Other(s):	_____	Other(s):	_____
	_____		_____
	_____		_____
	_____		_____
Other(s):	_____	Other(s):	_____
	_____		_____
	_____		_____

CITY OF WEST LINN HISTORIC REVIEW BOARD
PUBLIC HEARING NOTICE
FILE NO. DR-12-02

The City of West Linn Historic Review Board (HRB) will hold a public hearing on Tuesday, February 21, 2012, at 7:00 p.m. in the Bolton Room of City Hall at 22500 Salamo Road, West Linn regarding an application for the construction of a rear addition and other proposed alterations at 1852 4th Avenue (Tax Lot 500 of Assessor's Map 31E-02BD) in the Willamette Historic District. The hearing will be based upon the provisions of Chapter 25 of the West Linn Community Development Code (CDC). Approval or disapproval of the request by the HRB will be based solely upon these criteria. At the hearing, it is important that comments relate specifically to the applicable criteria listed.

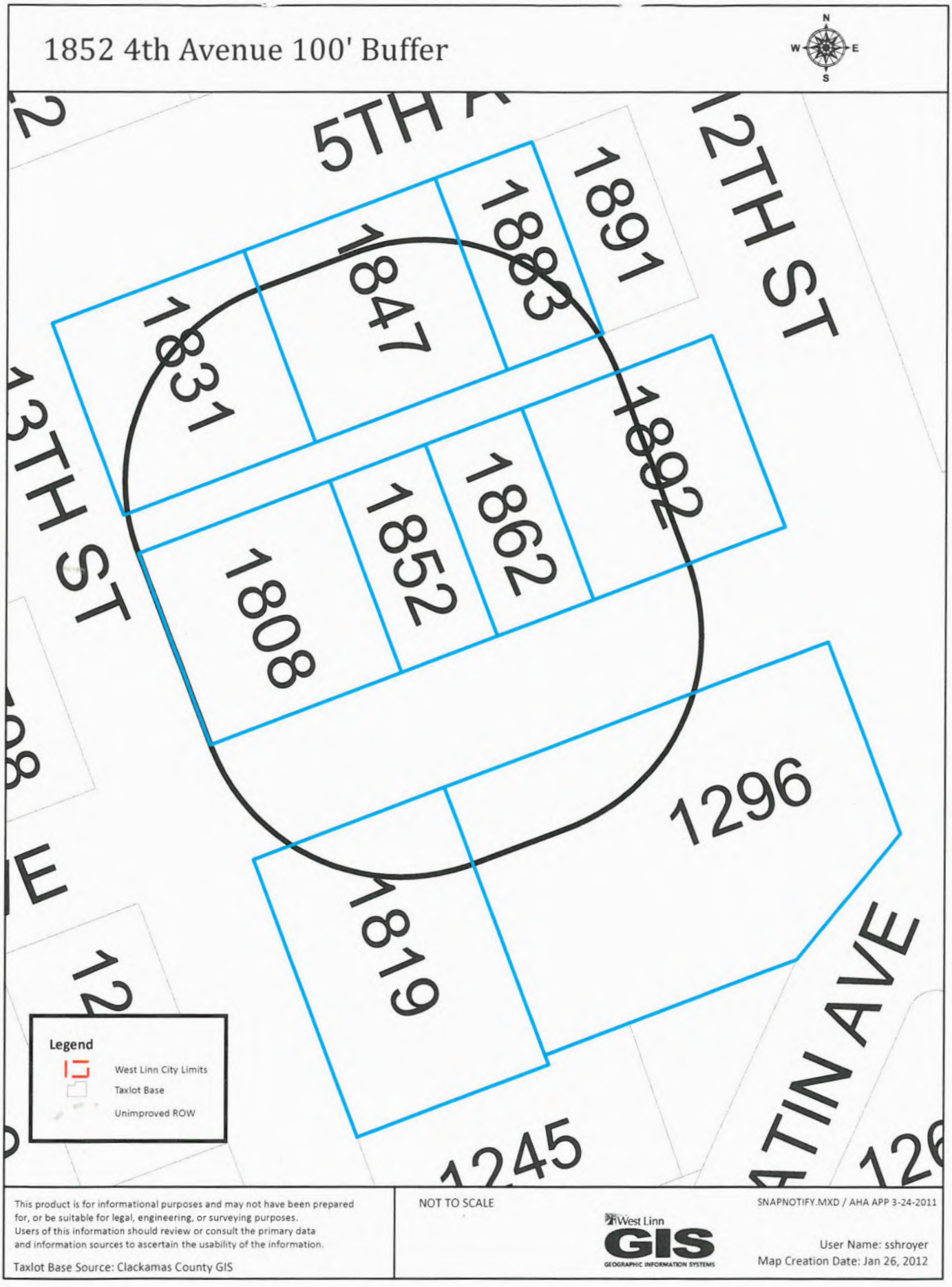
You have received this notice because you own property within 100 feet of this property or as otherwise required by the CDC. See the attached 100-foot radius map.

All documents and applicable criteria for DR-12-02 are available for inspection, at no cost, at the Planning Department at City Hall and also via the City's web site at http://westlinnoregon.gov/planning/1852-4th-avenue-design-review-historic-district-addition-residing-front-porch-alterations, or copies can be obtained for a minimal charge per page. At least 10 days prior to the hearing, a copy of the staff report will be available for inspection. For further information, please contact Sara Javoronok, Associate Planner, at City Hall, 22500 Salamo Road, West Linn, OR, (503) 722-5512, or sjavoronok@westlinnoregon.gov.

The hearing will be conducted in accordance with the rules of Section 99.170 of the CDC. Anyone wishing to present written testimony on this proposed action may do so in writing prior to, or at the public hearing. Oral testimony may be presented at the public hearing. At the public hearing, the HRB will receive a staff presentation, and invite both oral and written testimony. The HRB may continue the public hearing to another meeting to obtain additional information, or close the public hearing and take action on the application.

If a person submits evidence in support of the application, any party is entitled to request a continuance of the hearing. If there is no continuance granted at the hearing, any participant in the hearing may request that the record remain open for at least seven days after the hearing. Failure to raise an issue in person or by letter at some point prior to the close of the hearing, or failure to provide sufficient specificity to afford the decision maker an opportunity to respond to the issue, precludes an appeal to the Land Use Board of Appeals based on that issue.

SHAUNA SHROYER
Planning Administrative Assistant


1852 4th Avenue 100' Buffer
N
W
E
S
5TH
12TH ST
13TH ST
1891
1883
1847
1831
1892
1862
1852
1808
1296
1819
1245
Legend
West Linn City Limits
Taxlot Base
Unimproved ROW
This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes.
Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.
Taxlot Base Source: Clackamas County GIS
NOT TO SCALE
West Linn GIS GEOGRAPHIC INFORMATION SYSTEMS
SNAPNOTIFY.MXD / AHA APP 3-24-2011
User Name: sshroyer
Map Creation Date: Jan 26, 2012

SOPHER SONJA LEE
1883 5TH AVE
WEST LINN, OR 97068

AWALT CHARLES A
1847 5TH AVE
WEST LINN, OR 97068

OFFER JERRY D & RUTH C
1831 5TH AVE
WEST LINN, OR 97068

BRINEY MICHAEL J & MARY JILL
1808 4TH AVE
WEST LINN, OR 97068

~~KIERES ELIZABETH S~~
1852 4TH AVE
WEST LINN, OR 97068

MAYSELS CHERYL A TRUSTEE
1862 4TH AVE
WEST LINN, OR 97068

SWENSON ANN M
1892 4TH AVE
WEST LINN, OR 97068

HANES JAMES E & JUDITH D
1819 4TH AVE
WEST LINN, OR 97068

CARSON JODY & JOHN E KLATT
1296 12TH ST
WEST LINN, OR 97068

STEVE GARNER
BHT NA PRESIDENT
3525 RIVERKNOLL WAY
WEST LINN OR 97068

SALLY MCLARTY
BOLTON NA PRESIDENT
19575 RIVER RD # 64
GLADSTONE OR 97027

ALEX KACHIRISKY
HIDDEN SPRINGS NA PRESIDENT
6469 PALOMINO WAY
WEST LINN OR 97068

JEFF TREECE
MARYLHURST NA PRESIDENT
1880 HILLCREST DR
WEST LINN OR 97068

BILL RELYEA
PARKER CREST NA PRESIDENT
3016 SABO LN
WEST LINN OR 97068

THOMAS BOES
ROBINWOOD NA PRESIDENT
18717 UPPER MIDHILL DR
WEST LINN OR 97068

~~DEAN SUHR~~
~~ROSEMONT SUMMIT NA PRESIDENT~~
~~21345 MILES DR~~
~~WEST LINN OR 97068~~

DAVE RITTENHOUSE
SAVANNA OAKS NA PRESIDENT
2101 GREENE ST
WEST LINN OR 97068

KRISTIN CAMPBELL
SKYLINE RIDGE NA PRESIDENT
1391 SKYE PARKWAY
WEST LINN OR 97068

TROY BOWERS
SUNSET NA PRESIDENT
2790 LANCASTER ST
WEST LINN OR 97068

BETH SMOLENS
WILLAMETTE NA PRESIDENT
1852 4TH AVE
WEST LINN OR 97068

ALMA COSTON
BOLTON NA DESIGNEE
PO BOX 387
WEST LINN OR 97068

SUSAN VAN DE WATER
HIDDEN SPRINGS NA DESIGNEE
6433 PALOMINO WAY
WEST LINN OR 97068

KEVIN BRYCK
ROBINWOOD NA DESIGNEE
18840 NIXON AVE
WEST LINN OR 97068

DOREEN VOKES
SUNSET NA SEC/TREAS
4972 PROSPECT ST
WEST LINN OR 97068

WEST LINN CHAMBER OF COMMERCE
1745 WILLAMETTE FALLS DR
WEST LINN OR 97068

Barry Sandhort
Windfall Construction & Design
23281 Bosky Dell
West Linn, OR 97068

Oregon Historic Site Form

LOCATION AND PROPERTY NAME

address: **1852 4th Ave** ☐ apprx. addrs

West Linn ☐ vcnt **Clackamas County**

historic name:

current/ other names:

Optional Information

assoc addresses: (former addresses, intersections, etc.)

location descr: (remote sites)

block nbr: ____ lot nbr: ____ tax lot nbr: ____

township: ____ range: ____ section: ____ 1/4: ____

zip: ____

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): **1.5**

elig. evaluation: **not eligible/out of period**

primary constr date: **1986** (c. ☑) secondary date: ____ (c.) ☐ (optional--use for major addns)

primary orig use: **Single Dwelling**

secondary orig use:

primary style: **Neo-Colonial**

secondary style:

primary siding: **Vinyl Siding**

secondary siding:

plan type: **Other Late 20th Century Type**

comments/notes:

total # eligible resources: ____ total # ineligible resources: ____

NR status: **Listed in Historic District**

NR date listed: ____ (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name	Other (enter description)
COWL Willamette Historic District	Other (enter description)
West Linn Survey- Willamette Conservation District, 2006	Survey & Inventory Project
West Linn, Willamette Falls Neighborhood, RLS 2008, 2008	Survey & Inventory Project
Willamette Falls Neighborhood Historic District, 2008	Listed Historic District

farmstead/cluster name:

external site #: 44 (ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

NR date listed: ____ **NHD**

ILS survey date: ____

RLS survey date: **3/17/2006**

Gen File date: ____

106 Project(s)

Javoronok, Sara

From: Elizabeth Smolens [smolense@gmail.com]
Sent: Tuesday, February 07, 2012 2:38 PM
To: Javoronok, Sara
Subject: Re: FW: DR-12-01 1852 4th Avenue

Hi Sara, I was going to put together something tonight. But, this is better. I think the house on 6th and 16th is as close to what my house would be as one can get-shingled, stained, garage in front, newer construction. It is more than a 1 1/2 story which is what I have and I am not sure what style it is. I don't particularly agree with the "neo-colonial" classification of my house...you are smiling...what exactly does that mean? I mean...really. I would argue that my house is as close to "cottage or cape cod" as any other-the modifications w Greek columns and the larger front porch are confusing-I think. If you need more comment from me I am happy to supply it. Thank you for your time.

sincerely, Beth

On Tue, Feb 7, 2012 at 1:26 PM, Javoronok, Sara <sjavoronok@westlinnoregon.gov> wrote:

Hi Beth,

I looked at your project again. I think it'll be ok with the photos that you submitted already. It seems appropriate for the district – I just wasn't sure about your house. Let me know if you have questions.

Sara

City of West Linn
Sara Javoronok
sjavoronok@westlinnoregon.gov
Associate Planner
22500 Salamo Rd
West Linn, OR 97068
P: (503) 722-5512
F: (503) 656-4106
Web: westlinnoregon.gov

From: Javoronok, Sara
Sent: Tuesday, February 07, 2012 8:25 AM
To: 'Elizabeth Smolens'

Subject: RE: DR-12-01 1852 4th Avenue

Hi Beth,

Just checking in with you to see if you have more examples. I need to finish things up soon.

Sara

From: Elizabeth Smolens [mailto:smolense@gmail.com]

Sent: Wednesday, February 01, 2012 1:07 PM
To: Javoronok, Sara
Subject: Re: DR-12-01 1852 4th Avenue

Dear Sara, I am working on putting together more examples then the ones I have sent. I believe I can get them to you early next week (I will work on it on the weekend). Thank you, Beth

On Tue, Jan 31, 2012 at 4:38 PM, Javoronok, Sara <sjavoronok@westlinnoregon.gov> wrote:

Beth,

Just checking in with you on this. Do you have examples of homes with a similar architectural style to yours that have shingles? I'm working on the staff report and would like to incorporate this info into my recommendation.

Sara

Sara Javoronok
sjavoronok@westlinnoregon.gov
Associate Planner
22500 Salamo Rd
West Linn, OR 97068
P: (503) 722-5512
F: (503) 656-4106
Web: westlinnoregon.gov

Error! Filename not specified.

From: Elizabeth Smolens [mailto:smolense@gmail.com]

Sent: Monday, January 23, 2012 12:35 PM
To: Javoronok, Sara
Cc: Barry Sandhorst
Subject: Re: DR-12-01 1852 4th Avenue

Dear Sara, Thank you for your letter. We will work on getting more evidence that shingles would be appropriate for this style house.

Thank you, Beth

On Mon, Jan 23, 2012 at 12:31 PM, Elizabeth Smolens <smolense@gmail.com> wrote:

Barry, If you feel able to assist with her questions about the shingles, let me know. Yeah! We are scheduled!.

Beth

---------- Forwarded message ----------
From: **Javoronok, Sara** <sjavoronok@westlinnoregon.gov>
Date: Fri, Jan 20, 2012 at 2:59 PM
Subject: DR-12-01 1852 4th Avenue
To: Elizabeth Smolens <smolense@gmail.com>
Cc: "Shroyer, Shauna" <SShroyer@westlinnoregon.gov>

Hi Beth,

Attached is the "complete" letter for your design review application. It is scheduled for the February 21, 2012 Historic Review Board meeting.

I am still looking for additional information for the siding/shingles. I talk about this more in the attached letter. Basically, I'm looking for additional information that shingles are appropriate for a house of *your* architectural style, not just in the district. The district is helpful, but I also want to make sure that it's appropriate for your house too.

Let me know if you have questions about this or anything else.

Hope you have a great weekend!

Sara

Error! Filename not specified.
Sara Javoronok
sjavoronok@westlinnoregon.gov
Associate Planner
22500 Salamo Rd
West Linn, OR 97068
P: (503) 722-5512
F: (503) 656-4106
Web: westlinnoregon.gov

City of West Linn GIS (Geographic Information System), SnapMap Date: 1/17/2012

Scale: 055 Feet

MAP DISCLAIMER:
This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

CITY HALL 22500 Salamo Rd. West Linn Oregon 97068 telephone: (503) 657 0331 fax: (503) 650 9041

City of West Linn

January 20, 2012

Elizabeth Smolens
Aron Helligas
1852 4th Avenue
West Linn, OR 97068

VIA E-MAIL AND U.S. MAIL

SUBJECT: DR-12-02, 1852 4th Avenue

Dear Ms. Smolens and Mr. Helligas:

The Planning Department finds that this application is **complete** as of January 20, 2012. The City now has 120 days (until May 21, 2012) to exhaust all local review per state statute.

In regards to the design modifications requested, staff would like additional information (photos would be fine) detailing how the proposed wood shingles are, pursuant to Section 25.150, "appropriate to the specific style of architecture proposed with no negative impacts to adjacent homes and the Historic District." The photos you submitted show me that it is appropriate for the Historic District as a whole, but don't address the appropriateness for a residence with your architectural style. The historic survey from 2006 called your house "Neo-colonial" in style. Examples of homes that are this style or other 1- 1 ½ story homes from the same era with shingles would also be helpful. **This isn't an incomplete item, but it may affect whether staff recommends approval of this aspect of the project.**

The application is expected to be heard by the Historic Review Board on February 21, 2012. You will receive a copy of the staff report approximately 10 days prior to the meeting.

Please contact me at 503-722-5512, or by email at sjavoronok@westlinnoregon.gov if you have any questions or comments.

Sincerely,

Sara Javoronok

Sara Javoronok
Associate Planner

- does not meet rear yard setback
- What are the existing windows?
  - ~~a~~ appear to be proposing Anderson Renewal windows
  - grilles?
  - looks like Andersen A-series patio doors full-lite double door

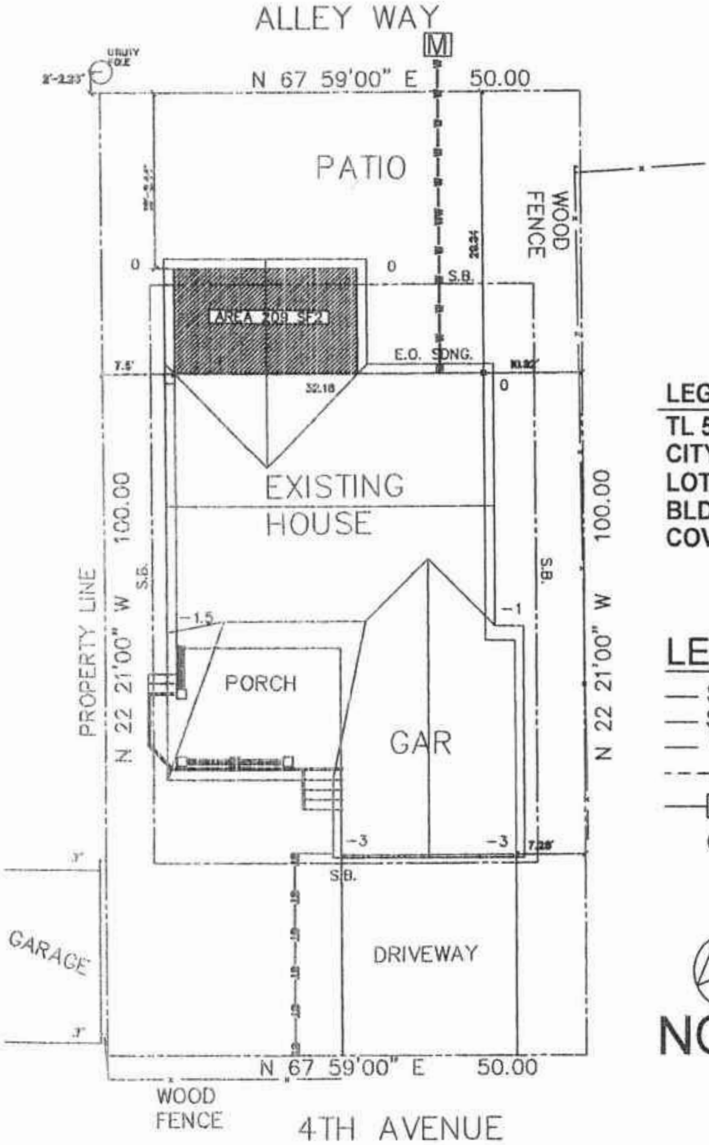
replacing sliders w/ casement windows?

- Siding — ~~not homes~~ homes in photos from same neigh., not era
  - shingles
  - does that matter?
  - code for area + numerous examples

- what porch alterations are you proposing?
  - in app. brief description, not included in the narrative

- existing rounded porch columns

- add a false arch between the columns,
- square them off
- wood moulding?
- wood railing



LEGAL

TL 500 WILLAMETTE FALLS
CITY OF WEST LINN
LOT SIZE 5000 SF
BLDG FTPRNT. 1702 SF
COVERAGE: 34%

LEGEND

— ST —	3" STORM LINE
— SS —	4" SANITARY SEWER
— W —	1" WATER LINE
- - - - - -	BLDG. ENVELOPE
—[M]—	WATER METER
○	UTILITY POLE

NORTH

SITE PLAN

SCALE: 1"=20'0"

CLIENT: SMOLENS/HELLIGAS

SITE: 1852 4TH AVE. WEST LINN OR

SHEET S.1

SITING CALCS

LOT COVERAGE

Area	Square Footage	SF
Lot	5000	SF
Existing House	1493	SF
Proposed Addition	209	SF
TOTAL	1702	SF
Coverage	34%	
Coverage Allowed *	50%	

* Chapter 25.070.B.6 city of WL CDC

MASSING

PROPERTY AREAS	ADDRESS	
LEFT NEIGHBOR	1808 4TH AVE	2936 SF
RIGHT NEIGHBOR	1862 4TH AVE	1358 SF
TOTAL		4294 SF
AVERGAGE		2147 SF
ALLOWED 125%		2683.75 SF
PROPOSED	1852 4TH AVE	1702 SF

Address
1808 4TH AVE
WEST LINN, OR. 97068

Jurisdiction Information

City	West Linn
Urban Growth Boundary	URBAN

Building Characteristics

Sq Ft	2936
Bedrooms	3
Baths	1
Built	1916

Zoning · Contact City

Last Sale

0.00

Tax Information

Map Number (TLNO)	31E02BD00400
Parcel Number	00750903
View tax map	
Est. Market Building Value	191800.00
Est. Market Land Value	97961.00
Est. Market Total Value	289761.00
Current Year Assessed Value	182254.00
Tax Code	003-002
Est. Acres	0.23
Elementary School Attendance	Willamette Primary
Middle School Attendance	Athey Creek Middle
High School Attendance	West Linn High

For owner information contact:

Services Provided

Cable Provider	City
Community Planning Organization	West Linn
School District	SCH 3 WLINN/WILS
Garbage Hauler	West Linn Refuse & Recycle
State House District	37
State Senate District	19
Voting Precinct	131
Congressional District	5
Sewer District	Tri-City Service Dist. #4
Fire District	Tualatin Valley Fire & Rescue
Water District	City

Natural Hazard Information

Earthquake	You may be at a moderate risk.
Flood	Likely not in a flood zone
Elevation Range	151 - 200

Wildfire	Your risk may be .e lowest.
Soil Type	WILLAMETTE SILT LOAM, WET, 0 TO 3 PERCENT SLOPES

Census Data

Tract Block Group 0207001

25.070
B. Siting

Front and side yard are not a part of this analysis since they do not figure into the Setback requirements. Regarding the rear yard:

4. Rear yard: The rear yard setback shall be a minimum of 20 feet, except for accessory structures (non-dwelling or non-accessory dwelling units (ADU)), which may be sited to within three feet of the side or rear property lines. See section on ADUs for ADU setbacks.

My site plan show that you do NOT meet this criteria since your rear SB is 18 +or-.

6. Lot Coverage

6. Lot coverage: 50 percent. Unlike the rest of West Linn, lot coverage shall apply to the new and remodeled primary dwellings, attached and detached garages, all accessory buildings and ADUs. Decks, paved and impermeable surfaces (patios and driveways etc.) shall not be included. Underlying zone (e.g., R-5) lot coverage shall not apply.

I have included the following calculations for siting:

https://docs.google.com/spreadsheet/ccc?key=0ArXIpC5jXFiBdGU4Q0JpRFpDYlk5eUhhV0ZCOXlMN2c&hl=en_US#gid=0

My figures show that your Total Area meet or exceed the requirements

C. Parking. N/A
D. Building height. No Changes
E. Building shapes and sizes. (See Spreadsheet for massing calcs)
F. Signs and lighting. N/A
G. Horizontal additions. N/A
H. Windows
I. Entryways. No changes
J. Siding and exterior finish.
   2. Shingles should only be used in conjunction with horizontal wood siding.
K. Roofscape. Standards: Your roof: 9/12
   1. Roofs shall have a pitch of at least 8:12
   2. Roofing materials should be asphalt composite shingles.
L. Massing See Spreadsheet
M. Foundations and basements. Note: Foundation faces rear no exp requirement.

25.080 ADDITIONAL ARCHITECTURAL SPECIFICS FOR NEW CONSTRUCTION AND REMODELING

G. Contemporary designs for alterations and additions would be acceptable if the design respects the building's original design, and it is compatible with the original scale, materials, window and door opening proportions of the structure.

Notes: I would say that sidewall shingles respect the original design but not the original material (vinyl) which in this case is a plus.

This concludes the study of the development code as it applies to your residence/project. Let me know if you have any questions or concerns.

SONY DSC-HX5V Focal Length: 9.0mm 1/60s f/4.5 ISO: 125

WFD

SONY DSC-HX5V Focal Length: 14.3mm 1/160s f/5.0 ISO: 160

WFD

SONY DSC-HX5V Focal Length: 6.9mm 1/100s f/9.0 ISO: 125

6th Ave

SONY DSC-HX5V Focal Length: 12.3mm 1/125s f/4.5 ISO: 125

WFD

Site Address: 1852 4th Avenue

Owner: Elizabeth Kieres

Historic Review Board Design Modifications Review

This is a primary residence built as an in-fill property in 1984 and is classified as a non-contributing structure within the Willamette Historic District. The proposed remodel for the home will include the addition of a single story room off the rear of the home, new siding and some redesign of the front porch. What we are proposing is a slight reduction in the rear setback to provide for a minimum addition length deemed reasonable for the proposed space. We are proposing to update the front porch design, replacing "Greek" style columns with more historically appropriate ones, adding rails to the porch, removing vinyl siding and replacing with paint/stained wood shingles.

The rear set back required per CDC is currently 20'. The set back of the home is approximately 29' and the homeowner is proposing an 11x19 addition which will reduce the rear set back to approximately 18' which translates to a 9% reduction to the rear setback. According to the CDC 25.150: "the decision body HRB (Historic Review Board) may grant a design modification in those cases where at least one of the following criteria is met":

25.150 DESIGN MODIFICATION PROCEDURES

1. The applicant can demonstrate by review of historical records or photographs that the alternative is correct and appropriate to the architecture in the Willamette Historic District of West Linn in 1890 - 1930 or is appropriate to the specific style of architecture proposed with no negative impacts to adjacent homes and the Historic District. Negative impacts shall be defined as loss of sunlight, loss of privacy compared to a design per this code, inappropriate scale or mass which visually overwhelms or is not deferential to the adjacent structure, particularly if it is a primary structure, etc.

- **Granting this addition and remodeling does not negatively impact adjacent homes in the historic district as it is one level and will not be seen by any other home due to hedges and fencing at the sides and rear of the property. The home is also buffered by an alley creating an additional 10' buffer to the rear of the home. The home owner believes that the project design changes to the front of the home will only enhance the property value, and improve the street appeal to benefit the home and neighborhood.**

2. The applicant is incorporating exceptional 1890 – 1930 architecture into the building which overcompensates for an omission. The emphasis is upon superior design, detail, or workmanship which can be verified reviewing previous works of the architect or builder. There shall be no negative impacts to adjacent homes and the Historic District.

- **The applicant is incorporating exceptional 2011 design strategies to honor the cottage style of this home while improving the overall look of the home from its current disrepair. We propose to replace very tired vinyl siding with a more esthetically pleasing and historically prevalent material...wood shingles. We propose a more historical style trimming and wood windows.**

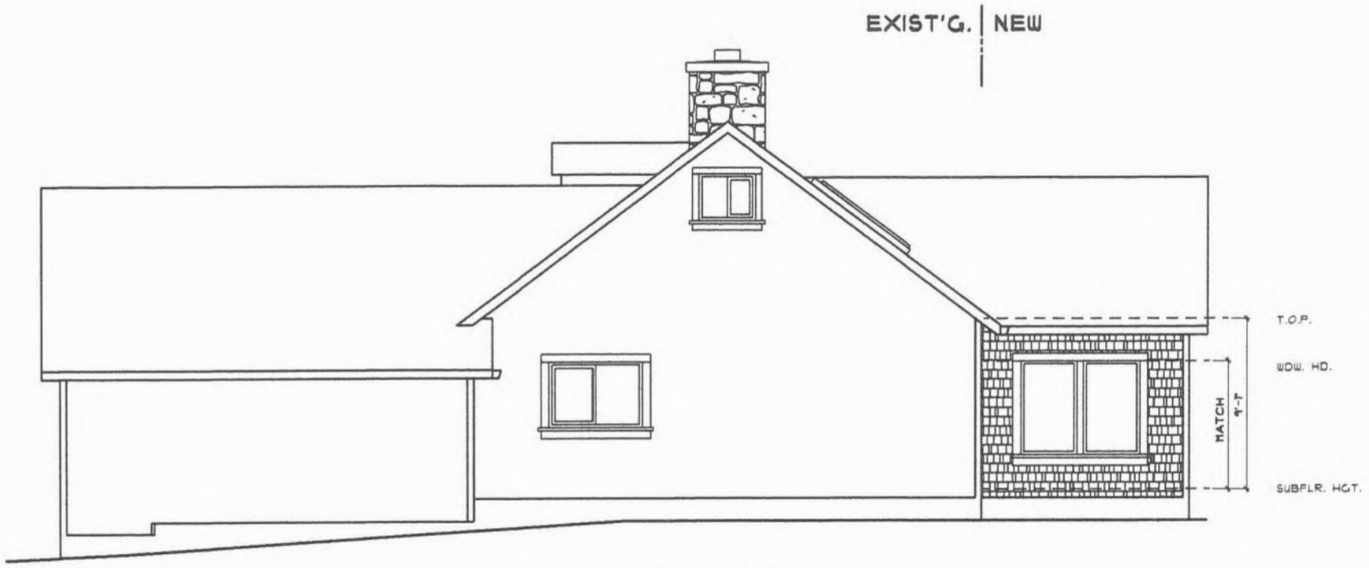
3. The building placement, scale, lot coverage, setback or height fits the site and integrates well, with no negative impacts to adjacent structures and the Historic District.

- **The 2' setback variance for the addition is the only part of the project which does not comply with the current CDC setback requirement. Granting this addition and remodeling does not negatively impact adjacent homes in the historic district as it is one level and will not be seen by any other home due to hedges and fencing at the sides and rear of the property. The home is also buffered by an alley creating an additional 10' buffer to the rear of the home. The use of wood shingles to replace vinyl siding is thought to be the most appropriate material to honor the cottage style of the home while complying with the "wood" requirement of the historic district code. The wood windows with divided lights will be a vast improvement over sliders to honor the cottage style while complying with the historic district code emphasizing wood (preferred) windows when possible.**

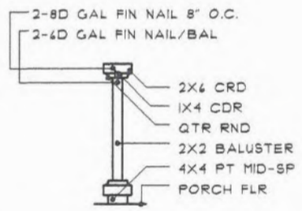
- **The homeowner believes that while honoring the character of this cottage style home she will be improving the overall impact that this home has within the historic district. The "quaintness" and uniqueness of the cottage style is seen throughout the district in multiple homes and can be incorporated to bring this 1984 built home up to the standards of the historic designs seen within the neighborhood.**

- **Power point presentation of shingled homes in Willamette.**

- **Materials review.**

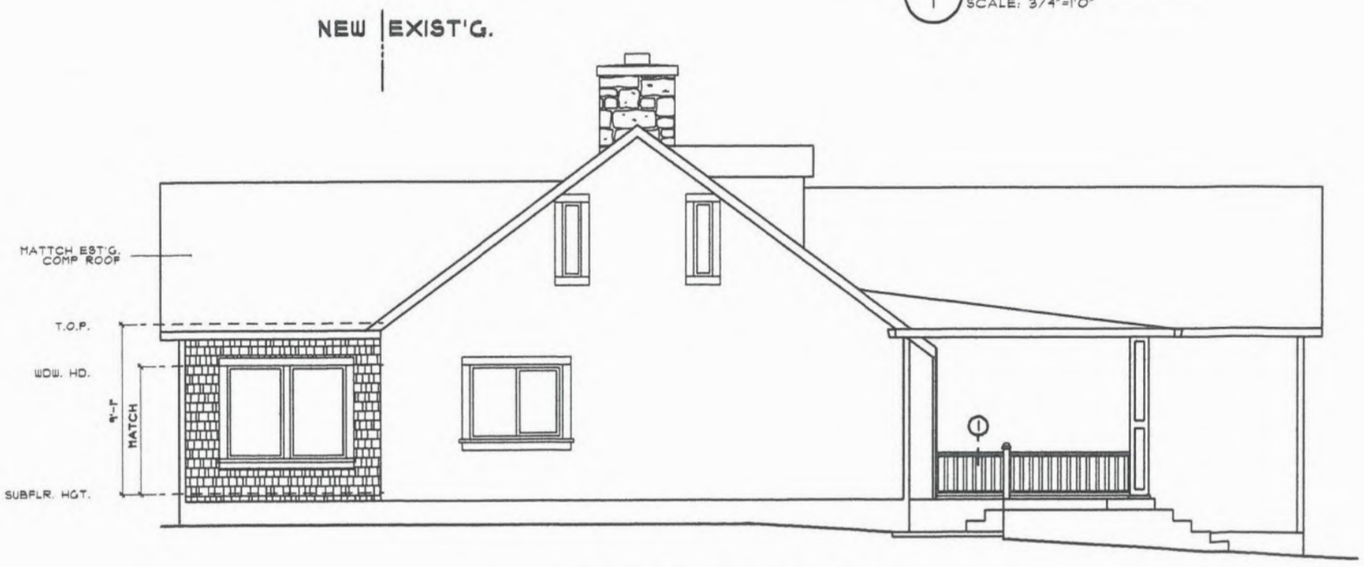


RIGHT ELEVATION
SCALE:1/4"=1'0"



1 PORCH RAIL
SCALE: 3/4"=1'0"

REAR ELEVATION
SCALE:1/4"=1'0"

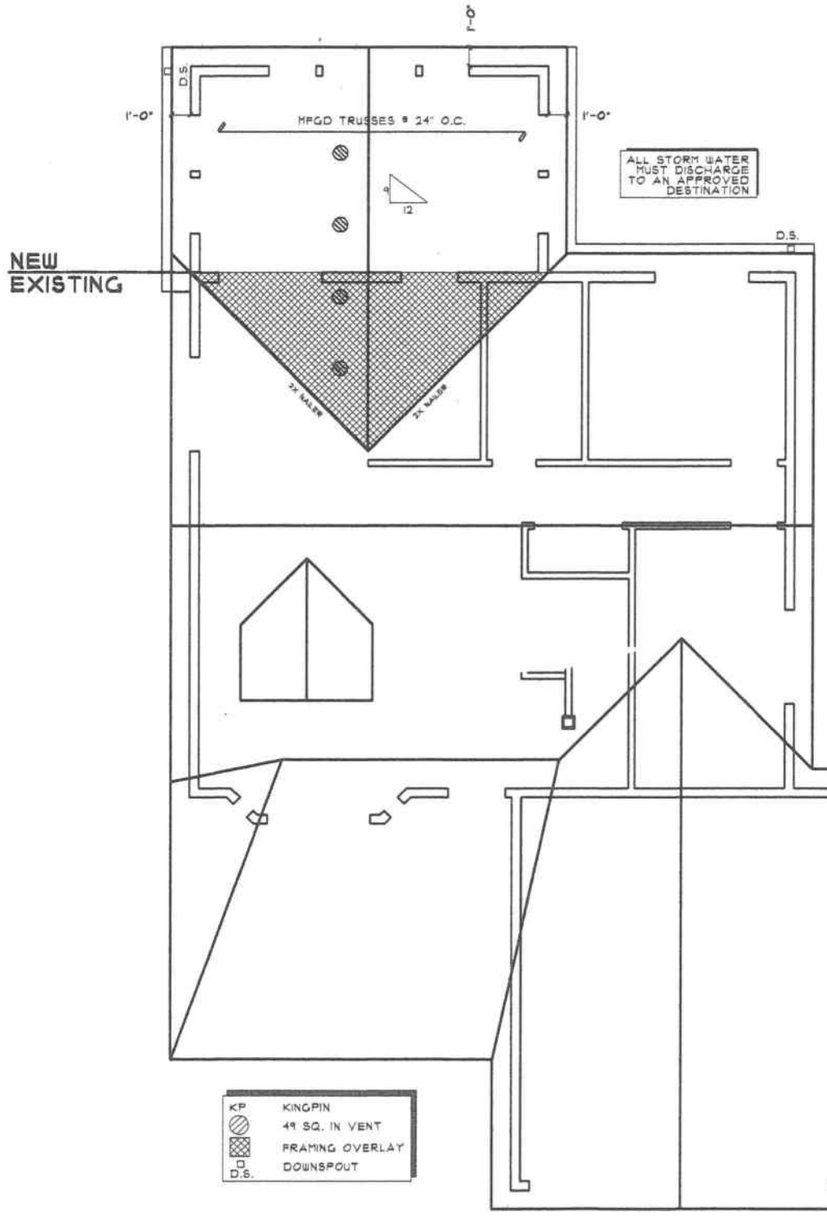


LEFT ELEVATION
SCALE:1/4"=1'0"

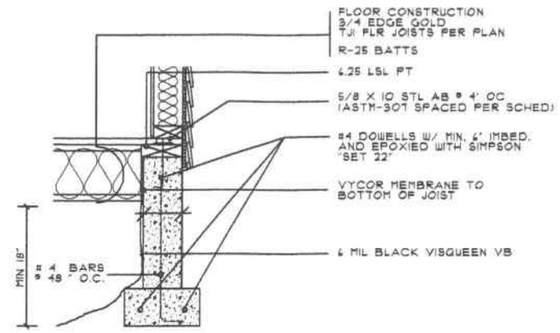
FRONT ELEVATION
SCALE:1/4"=1'0"

MAIN KEYNOTES

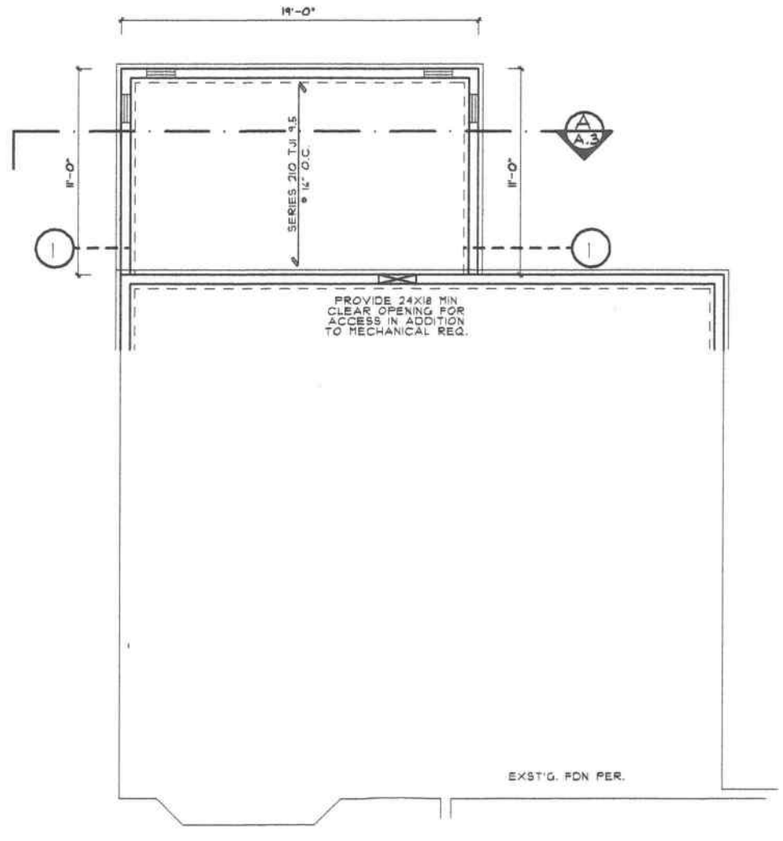
1. REMOVE REAR SLIDER AND FINISH OPEINING
2. REMOVE WINDOW AND FINISH OPENING W/ SERVING SHELF
3. REMOVE VINYL SIDING FROM ENTIRE HOUSE AND RESIDE PER PLAN
4. REMOVE CENTER COLUMN AND RECONSTRUCT PER PLAN



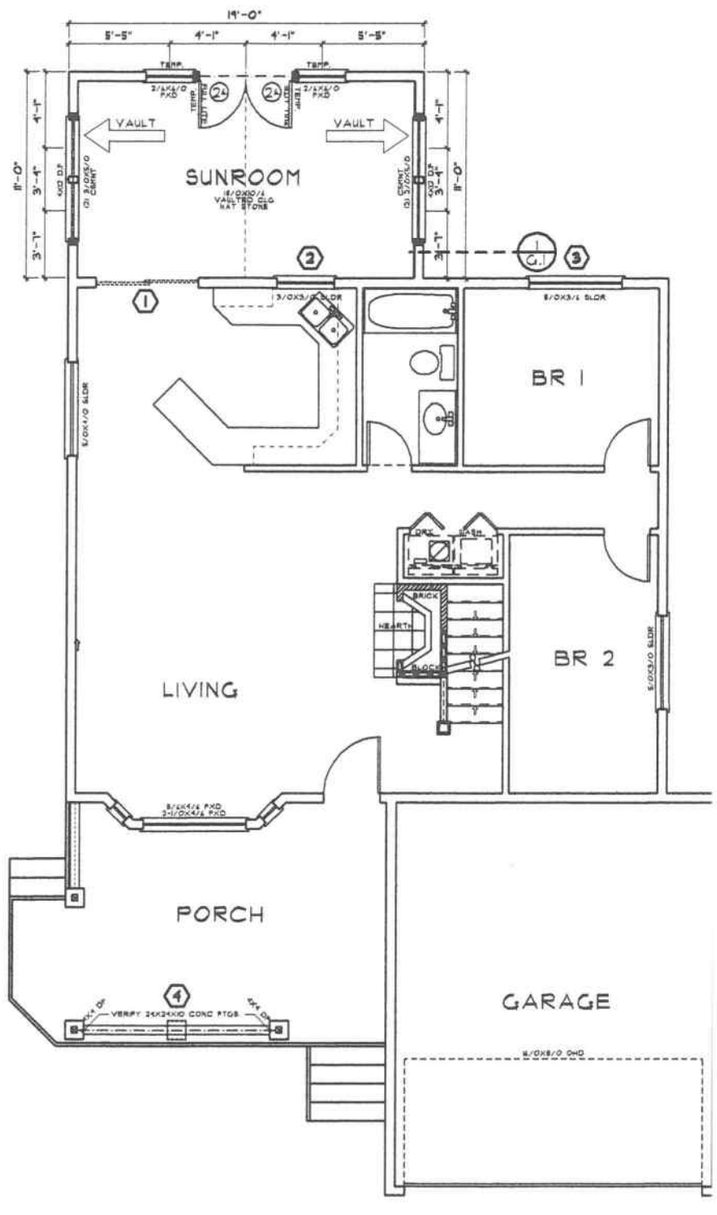
ROOF PLAN
SCALE: 1/4"=1'0"



1 FDN WALL CONNECTION
SCALE: 1" =1'0"



FOUNDATION PLAN
SCALE: 1/4"=1'0"



MAIN FLOOR PLAN
SCALE: 1/4"=1'0"

City of West Linn
Planning & Development • 22500 Salamo Rd #1 • West Linn, Oregon 97068
Telephone 503.656.4211 • Fax 503.656.4106 • westlinnoregon.gov

DEVELOPMENT REVIEW APPLICATION

For Office Use Only		
STAFF CONTACT Sara	PROJECT NO(S) DR-12-02	
NON-REFUNDABLE FEE(S) $100 -	REFUNDABLE DEPOSIT(S)	TOTAL

Type of Review (Please check all that apply):

- [ ] Annexation (ANX)
- [ ] Appeal and Review (AP) *
- [ ] Conditional Use (CUP)
- [x] Design Review (DR)
- [ ] Easement Vacation
- [ ] Extraterritorial Ext. of Utilities
- [ ] Final Plat or Plan (FP)
- [ ] Flood Management Area
- [ ] Hillside Protection & Erosion Control
- [x] Historic Review
- [ ] Legislative Plan or Change
- [ ] Lot Line Adjustment (LLA) */**
- [ ] Minor Partition (MIP) (Preliminary Plat or Plan)
- [ ] Non-Conforming Lots, Uses & Structures
- [ ] Planned Unit Development (PUD)
- [ ] Pre-Application Conference (PA) */**
- [ ] Street Vacation
- [ ] Subdivision (SUB)
- [ ] Temporary Uses *
- [ ] Time Extension *
- [ ] Variance (VAR)
- [ ] Water Resource Area Protection/Single Lot (WAP)
- [ ] Water Resource Area Protection/Wetland (WAP)
- [ ] Willamette & Tualatin River Greenway (WRG)
- [ ] Zone Change

Home Occupation, Pre-Application, Sidewalk Use, Sign Review Permit, and Temporary Sign Permit applications require different or additional application forms, available on the City website or at City Hall.

Site Location/Address: 1852 4TH AVE WEST LINN OR 97068

Assessor's Map No.:

Tax Lot(s): Lot 9 block 16 Clackamas

Total Land Area: 5,000

Brief Description of Proposal: SINGLE STORY ADDITION ON REAR OF HOME, RESIDING ENTIRE HOME, FRONT PORCH ALTERATIONS INCLUDING RAILING AND NEW COLUMNS.

Applicant Name: (please print) ELIZABETH SMOLENS AND ARON HELLIGAS — 503-680-6141

Address: 1852 4TH AVENUE — smolense@gmail.com

City State Zip: WEST LINN OREGON 97068

Owner Name (required): (please print) SAME AS ABOVE — Phone:

Address: — Email:

City State Zip:

Consultant Name: (please print) BARRY SANDHORST-WINDFALL RESIDENTIAL PLANNING AND DESIGN — Phone: 503-638-5068

Email: brsandhorst@gmail.com

Address:

1. All application fees are non-refundable (excluding deposit). **Any overruns to deposit will result in additional billing.**
2. The owner/applicant or their representative should be present at all public hearings.
3. A denial or approval may be reversed on appeal. No permit will be in effect until the appeal period has expired.
4. **Three (3) complete hard-copy sets (single sided) of application materials must be submitted with this application. One (1) complete set of digital application materials must also be submitted on CD in PDF format. If large sets of plans are required in application please submit only two sets.**

* No CD required / ** Only one hard-copy set needed

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application. Acceptance of this application does not infer a complete submittal. All amendments to the Community Development Code and to other regulations adopted after the application is approved shall be enforced where applicable. Approved applications and subsequent development is not vested under the provisions in place at the time of the initial application.

Elizabeth Smolens — 1/6/12 — Elizabeth Smolens — 1/6/12

Applicant's signature — Date — Owner's signature *(required)* — Date

CITY OF West Linn

PRE-APPLICATION CONFERENCE MEETING

September 1, 2011

SUBJECT:	Sunroom/Rear Addition	
ATTENDEES:	Applicant:	Beth Kieres
	Consultant:	Thomas Watton
PREPARED BY:	Staff:	Sara Javoronok, Associate Planner

The following is a summary of the meeting discussion provided to you from staff meeting notes. Additional information may be provided to address any "follow-up" items identified during the meeting. <u>These comments are PRELIMINARY in nature</u>. Please contact the Planning Department with any questions regarding approval criteria, submittal requirements, or any other planning-related items. Please note disclaimer statement below.

<u>Project Details</u>

The applicant is proposing a rear sunroom addition at 1852 4th Ave. The proposed sunroom would be added to the rear of the house and would be 12' (not 13' as depicted on the site plans) in width by 20' in length. A set of three windows is proposed for the side east and west elevations. French or sliding doors flanked by smaller windows are proposed for rear north elevation.

There are two areas of this proposal that do not meet CDC criteria. It does not meet the criteria in Section 25.070 B for the rear setback or Section 25.070 L related to massing. The applicant could apply for a Design Modification from the requirements of Sections 25.070 B and L using Section 25.150.

<u>Site Analysis and Site Visit</u>

Staff identified that the applicant will need to address the following criteria in several sections of Chapter 25 of the CDC:

- **Section 25.060** Criteria for Exterior Alteration and New Construction
- **Section 25.070** Approval Criteria for Remodels, New Home and Accessory Structure Construction

- **Section 25.080** Additional Architectural Specifics for New Construction and Remodeling
- The submittal requirements as described in **Section 25.140**, including a written narrative. **I will also need a set of 11 x 17 plans for distribution to the Historic Review Board.**
- Based on the current setback and massing, the applicant would need to respond to **Section 25.150**

Staff has identified issues with the applicant's submittal relating to the following code sections:

25.070 B. Siting
Rear yard setback: A 17' rear yard setback is proposed, which is less than the 20' required by this provision. Section 25.150 does allow for modifications in setback and other provisions.

Lot coverage: Please provide information on lot coverage. It must be less than 50%. The number includes the primary dwelling (including a front porch), and the proposed addition. It would also include any other accessory buildings, including an ADU. It does not include decks or driveways.

Please also change the site plan to depict the 12' rather than 13' width of the addition.

25.070 H. Windows.
Please provide cut sheets and/or a note on the type and material of the proposed windows, including the muntin type.

25.070 I. Entryways.
Please provide cut sheets and/or a note on the type and material of the proposed rear door(s), including the muntin type.

25.070 J. Siding and exterior finish.
Please specify the siding material in a note or in the narrative. Wood is required.

25.070 L. Massing
The massing of the dwelling and attached garage is limited to 125% of the square footage of the average of the adjacent homes and any attached garage or 1,200 square feet, whichever is greater. See below and the attached sheets.

In this case, the existing dwelling is 1,784 square feet. The adjacent properties are 1,832 and 1,358 square feet with an average of 1,595 square feet. 125% of this is 1,994 square feet. The proposed plans would increase it to 2,024 or 2,044 depending on the dimensions of the addition. This would not meet the criteria. To meet the criteria, the

total square footage of the house cannot exceed 1,994 square feet. Section 25.150 does allow for modifications to various aspects of the project.

Process

Historic Design Review is required.

A neighborhood meeting is not required for a Historic Design Review, but neighborhood meetings are always encouraged by staff nonetheless. Follow the provisions of 99.038 precisely. The applicant is required to provide the neighborhood association with conceptual plans and other material at least 10 days prior to the meeting, if they choose to have the meeting.

The fee for Historic Design Review is $100.

Once the submittal is deemed complete, the staff will schedule a public hearing before the Historic Review Board. Notice for the Historic Review Board hearing will be sent at least 14 days in advance. The Historic Review Board decision may be appealed by the applicant or anyone with standing to City Council, requiring at least one City Council hearing.

Pre-application notes are void after 18 months. After 18 months with no application approved or in process, a new pre-application conference is required.

The City has 30 days to determine if the application is complete or not. Most applications are incomplete, usually due to inadequate responses to approval criteria or lack of sufficient engineering information on the drawings. The applicant has 180 days to make it complete, although usually it is complete within three months of the original submittal. Once complete, the City has 120 days to exhaust all local review and appeals. The Historic Residential Remodel is a Historic Review Board decision. In the event of an appeal, the review body is the City Council. Subsequent appeals go to the Land Use Board of Appeals.

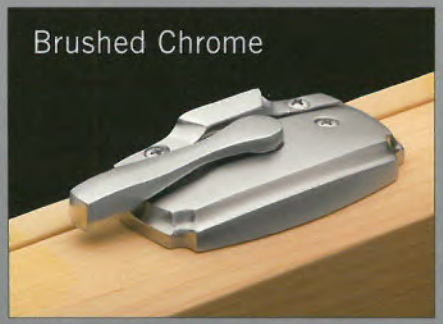
Submittal requirements may be waived but the applicant must first identify the specific submittal requirement and request, in letter form, that it be waived by the Planning Director and must identify the specific grounds for that waiver. The waiver may or may not be granted by the Planning Director. For the approval criteria, no waivers are allowed. N/A is not an acceptable response to the approval criteria. Prepare the application and submit to the Planning Department with deposit fees and signed application form.

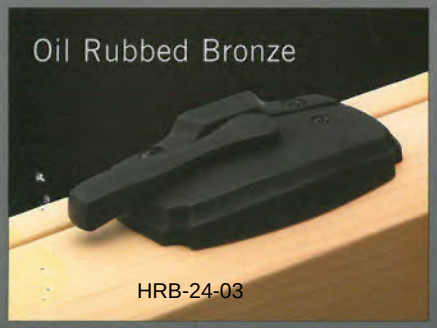
Typical land use applications can take 6-10 months from beginning to end.

DISCLAIMER: This summary discussion covers issues identified to date. It does not imply that these are the only issues. The burden of proof is on the applicant to demonstrate that all approval criteria have been met. These notes do not constitute an endorsement of the proposed application. Staff responses are based on limited

material presented at this pre-application meeting. New issues, requirements, etc. could emerge as the application is developed. Also note that these notes have a limited "shelf life" of 18 months in that future changes to the CDC standards may require a different design or submittal. Any applications submitted in excess of 18 months from the date of this pre-application conference will require an additional pre-application meeting with the City unless waived by the Planning Director.

Estate™ Collection





NEW Hardware Finishes

The new Estate™ Collection of hardware offers you a selection of eight distinctive metal finishes.

Available on all window styles, Estate hardware is forged from solid brass, not stamped, to withstand the test of time.*

- Brass, nickel and chrome finishes feature special coatings that seal the desired finish, providing tarnish and corrosion protection for years to come.*
- Bronze hardware has a "living" finish where the patina grows more beautiful over time.

Make a beautiful window extraordinary

renewal BY ANDERSEN®

*See the limited warranty for details.

renewalbyandersen.com

Let your creativity soar...

Add eight new Estate™ Collection hardware finishes (plus standard white, canvas, or stone hardware) to our wide choice of window colors and grille styles and you have a wealth of options to customize your windows.

Enhance. Use hardware to enhance the beauty of any room. Match other finishes in your home—such as choosing brushed chrome for the kitchen and antique brass in the living room.

Design. Don't just replace your windows, make them better. With so many design options, you can create the windows you've always wanted with the design features that are right for you and your home.

Casement and Awning Window Hardware

- **Standard hardware**
  Standard on casement and awning windows

- **Metro™ hardware**
  Optional–
  Folding operator handle

- **Compact hardware**
  Optional–
  Low interference with window treatments

- **Metal T-handle**
  Optional–
  Small operator handle

Standard Finishes

White

Canvas

Stone

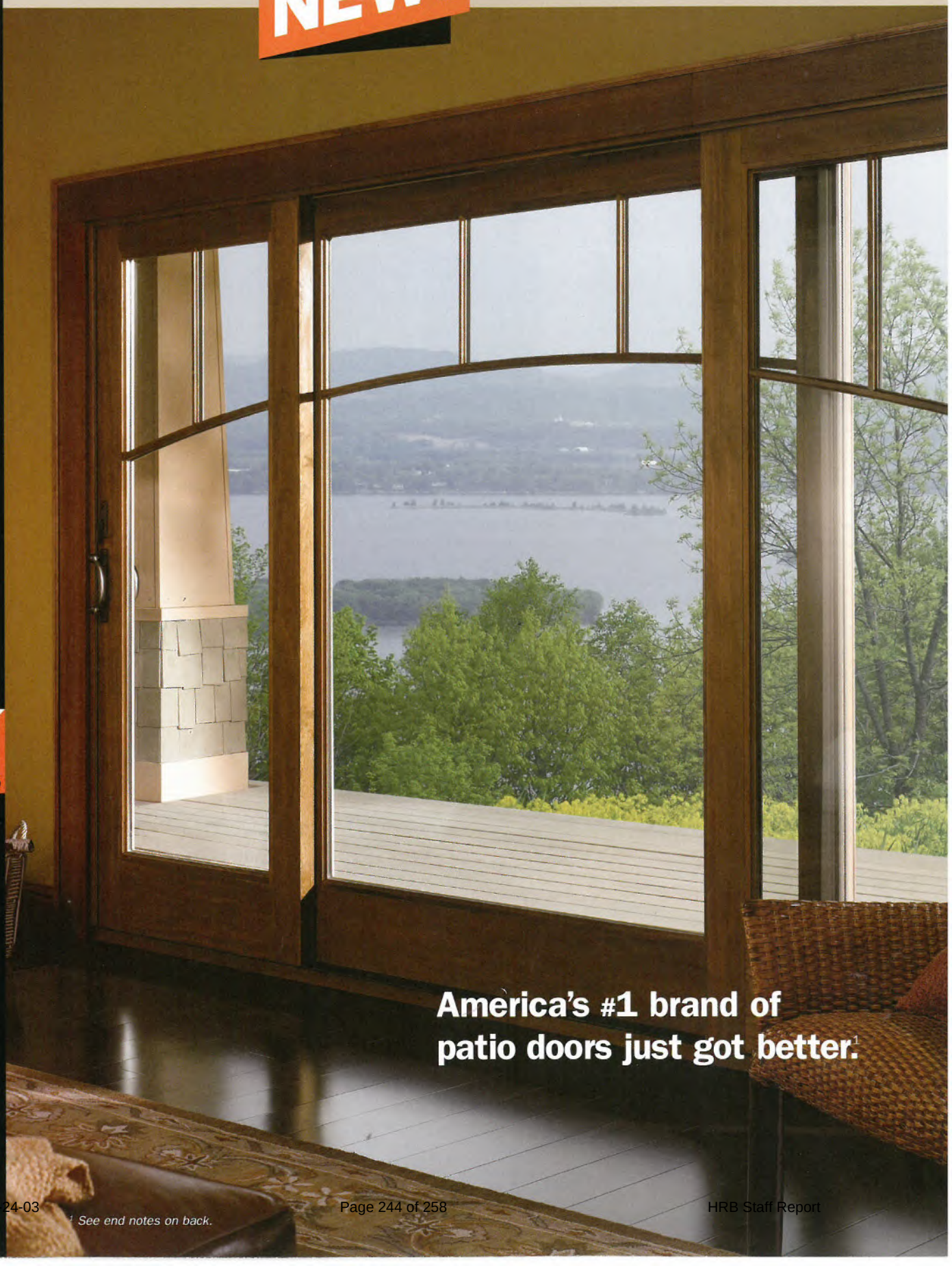
renewal BY ANDERSEN

renewalbyandersen.com

A-SERIES
Patio Doors

NEW!

More Exterior Colors
Architecturally Inspired Exterior Trim
Pre-finished Stained Interiors



America's #1 brand of patio doors just got better.[1]

Andersen® WINDOWS • DOORS

[1] See end notes on back.

Introducing the all-new Andersen® A-Series patio door.

Add style and comfort to your home with classic beauty and state-of-the-art performance. Andersen® A-Series doors make it easy to achieve any architectural style for your home with new design options, including many color choices, complementary exterior trim and pre-finished wood interiors. And when it comes to performance, A-Series patio doors operate effortlessly, maintain their beauty over time[2], and provide energy efficiency that helps save money and keeps you comfortable no matter what Mother Nature is doing outside.

Beauty is in the details.

Choose from 11 exterior colors.

Add complementary exterior trim.

Choose from unfinished or pre-finished natural wood interiors.

Select beautiful hardware, grilles, between-the-glass art glass, and much more.

Custom sizing makes it easy to replace any existing patio door.

See design selections inside.

LEFT: Door in Sandtone color with 4 ½" flat trim and 3 ⅝" cornice top in Canvas color.

RIGHT: Hinged inswing pine door with Mocha interior finish and Encino® Distressed Bronze hardware with Arts and Crafts art glass.

See end notes on back.

3-panel, center-fixed, gliding door in Cocoa Bean color with 3 ½" flat trim and decorative drip cap in Sandtone color, Yuma® hardware in Distressed Bronze and custom grille pattern.

COVER PHOTO: 3-panel, center-fixed, gliding door in pine with Cinnamon finish, Yuma® hardware in Distressed Bronze and custom grille pattern.

Comfort is knowing it will last.[2]

Virtually Maintenance-free, Easy to Operate.

Andersen® A-Series doors and trim never need painting. They have a beautiful finish that won't flake, rot, blister, peel, pit or corrode.[2] High-Performance™ Low-E4® glass stays cleaner longer and dries faster with up to 99% fewer water spots.[3] And features like rugged hinges, ball bearing rollers, and smooth-operating hardware make A-Series doors easy to live with.

Lower Heating and Cooling Costs

A-Series patio doors not only meet or exceed all ENERGY STAR criteria, they can help save you hundreds of dollars on heating and air conditioning every year.[4]

High-Performance™ Low-E4® glass provides remarkable energy efficiency and filters harmful rays that can fade fabrics and damage furniture.

ENERGY STAR PARTNER

See end notes on back.

Peace of Mind

A-Series doors stand up to eight inches of rain per hour and hurricane wind speeds. They perform flawlessly after thousands of open-close tests, and endure exposure to the cold of Alaska winters and the heat of Death Valley summers.[2]

Tax credit up to $1,500.[5]

A-Series patio doors can qualify for the Federal energy tax credit. Ask your sales associate for more information. See end notes.

Glass and Insect Screens

High-Performance™ Low-E4® Tempered Glass

High-Performance™ Low-E4® tempered glass options stay cleaner, loosen dirt and dry faster with up to 99% fewer water spots.[3]

New High-Performance™ Low-E4® **SmartSun**™ tempered glass provides a balance of high visibility and comfort. It rejects unwanted solar heat while allowing sunlight to stream through. It also helps protect furniture, carpets and drapes by blocking out 95% of ultraviolet rays that can cause fading. In addition it helps reduce energy consumption, leading to lower heating and cooling costs.

Low-E4®	Low-E4® Sun	Low-E4® SmartSun™
		
High energy efficiency	High energy efficiency	**Maximum energy efficiency**
UV protection	UV protection	**Increased UV protection**
Maximum visibility	Less visibility	**High visibility**

Between-the-glass Art Glass NEW!

Andersen® A-Series doors offer between-the-glass art glass, which places the decorative panel between the insulated glass panels on doors, sidelights and transoms. This provides superior protection for the art glass and makes it easy to keep clean. Choose from three design collections and customize them with colors to match your home.

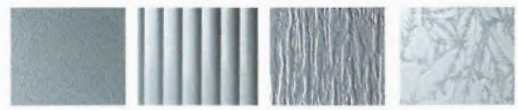

Frank Lloyd Wright® Series


Victoria Design


Queen Anne Design NEW!

Patterned Glass

Offers beauty and a higher level of privacy. Also available in Low-E4®.


Obscure Reed Cascade Fern

Insect Screens

A-Series doors offer several insect screen styles, **including a new smooth-operating, top-hung gliding option**. Retractable insect screens are available painted or with an optional wood interior.

Single Top-Hung Gliding for hinged and gliding doors

Single Gliding for gliding and inswing doors

Single Hinged for inswing doors

Double Hinged for inswing doors

Single Retractable for outswing and gliding doors

Double Retractable for outswing doors

EcoExcel Energy Performance Package

Tax credit up to $1,500 guaranteed.[5] A-Series patio doors with the EcoExcel package can qualify for the Federal energy tax credit.[5] See www.andersenwindows.com/EcoExcel for more details.

Easy Installation

It's easy to order and install Andersen® A-Series patio doors. Visit **www.andersenwindows.com/doormeasure** to find measurement and installation tips that will help you order and install the right size door for your home.

Environmental Responsibility

Andersen products are environmentally responsible, not because we say they are, but because these organizations say so. We strictly adhere to the guidelines set forth by these nonprofit groups in order to provide products that can reduce the environmental impact of your building projects.

ENERGY STAR PARTNER · NFRC National Fenestration Rating Council CERTIFIED · WDMA · U.S. Green Building Council MEMBER

owner2owner LIMITED WARRANTY

The Andersen® limited warranty is one of the best in the business. It is non-prorated, so you can count on it for 20 years on glass and 10 years on non-glass parts. It is also fully transferable, which can add real value should you decide to sell your home. Plus, Andersen has one of the largest service networks in the industry, so help is always there if you need it.

End Notes

[1] Based on sales reported by Traqline, May 2009.

[2] See the Andersen Owner-to-Owner limited warranty for details.

[3] Exterior glass pane when activated by sunlight. Comparison made to ordinary Low-E glass.

[4] A study of identical homes comparing Low-E to ordinary dual-pane glass showed 25% in savings on cooling bills, 10% on heating bills. Savings may vary geographically.

[5] See the Andersen Manufacturer's Certification Statement at www.andersenwindows.com for a list of products in Andersen's EcoExcel™ package and other products that meet the eligibility requirements for the tax credit under Section 25C of the Internal Revenue Code as amended by the American Recovery and Reinvestment Act of 2009. Andersen bears no responsibility in validating or obtaining the tax credit. Please consult with a professional tax advisor or the IRS. Andersen guarantees only that products will meet the tax credit performance criteria. Andersen expressly disclaims any responsibility for determining whether a particular purchase or application meets the other criteria necessary to qualify for the tax credit. Further, Andersen does not intend to and is not providing legal or tax advice and recommends that purchasers consult their own tax advisor to determine whether the products they purchase for a particular application qualify for the tax credit.

For more information visit www.andersenwindows.com or call 1-800-426-4261

WINDOWS • DOORS Andersen

Come home to Andersen.

Three doors with endless style options.

Choose from three popular doors and many configurations, options and accessories that are only available with Andersen® A-Series patio doors. A-Series doors not only give you more options, they give you the right options to easily match an existing architectural style, or create a style of your own.

Exterior views shown.

Gliding

Gliding door in Red Rock color with 3 ½" flat, 3 ⅝" cornice trim in Prairie Grass color and 4-wide, 1-high grille pattern with Gray sill.

Gliding patio doors have two or more panels, with at least one panel that glides smoothly past another door panel allowing for maximum space inside and out.

2-panel 3-panel 4-panel

Exterior views shown.

Hinged Inswing

Hinged inswing in Canvas color with brick mould trim in Terratone® color and Colonial grille pattern with Gray sill.

Inswing patio doors have at least one functioning panel that swings inward, saving room on balconies, small decks and patios.

Single 2-panel 3-panel

Hinged Outswing

Hinged outswing in Cocoa Bean color with 3 ½" flat trim and diamond grille pattern with Dark Bronze sill.

Outswing patio doors have at least one functioning panel that swings outward allowing for more usable space on the inside of your room.

Single 2-panel

Transom and 3 ½" flat exterior trim in Red Rock color with 4-wide grille pattern.

Transoms and Sidelights

Expand the beauty of your door and let more light into your home by putting a transom above or a sidelight beside your door. A-Series doors offer many options, including a new venting transom that allows fresh air into your home, even when keeping the door open isn't an option.

RIGHT: Inswing single-panel door with new venting transom in maple with Honey finish and Queen Anne art glass pattern.

Exterior Options

Exterior Trim and Door Colors NEW!

White

Sandtone

Canvas

Prairie Grass

Red Rock

Black

Terratone®

Forest Green

Dove Gray

Dark Bronze

Cocoa Bean

Architectural Exterior Trim Styles NEW!

Create beautiful doors and achieve distinct architectural styles in a snap with Andersen® A-Series exterior trim. Choose from six profiles and 11 exterior colors — select matching colors, or use different colors to set the trim apart from your door frames. Trim snaps easily and securely into place without compromising the weathertightness of your home.

Examples of trim shown on doors with Sandtone color.

2" brick mould in Canvas color

3 ½" or 4 ½" flat in Terratone® color

3 ½" or 4 ½" flat with extended top in Red Rock color

3 ½" or 4 ½" flat with **decorative drip cap** in Forest Green color

3 ½" or 4 ½" flat with **2" cornice top** in Prairie Grass color

3 ½" or 4 ½" flat with **3 ⅝" cornice top** in White color

Door in Sandtone color with 3 ½" flat trim with extended top in Cocoa Bean color with Prairie Grille pattern.

Printing limitations prevent exact duplication of exterior colors. Please see your sales associate for actual samples.

Hardware

Styles

Gliding patio doors feature a new two-point locking system that pulls the panel securely against the frame.

Albany™

Black
Gold Dust
Stone
White

Tribeca®

White
Stone

Newbury®

Antique Brass
Bright Brass
Brushed Chrome
Oil Rubbed Bronze
Polished Chrome
Satin Nickel

Covington™

Antique Brass
Bright Brass
Oil Rubbed Bronze

Whitmore®

Antique Brass
Bright Brass
Oil Rubbed Bronze
Satin Nickel

Yuma®

Distressed Bronze
Distressed Nickel

Encino®

Distressed Bronze
Distressed Nickel

Anvers®

Bright Brass
Oil Rubbed Bronze
Satin Nickel

Hinged patio doors feature a new, intuitive three-point locking system that lets the user activate the center dead-bolt separately from the upper and lower locks.

Bold names denote finish shown.

Finishes

Bright Brass

Antique Brass

Polished Chrome

Brushed Chrome

Satin Nickel

Oil Rubbed Bronze

Distressed Nickel

Distressed Bronze

White

Stone

Gold Dust

Black

Interior Options

Wood Species

Unfinished

Pine

Oak

Maple

Pre-finished Interiors NEW!

Stained (shown on maple wood species)

Clear Coat

Honey

Cinnamon

Russet

Mocha

Espresso

Painted

White

Birch Bark

Primed

Naturally occurring variations in grain, color and texture make each door one-of-a-kind.

Printing limitations prevent exact duplication of stains and paint colors and replication of hardware finishes. Please see your Andersen supplier for actual samples and visit **www.andersenwindows.com/patiodoorhardware** for more details.

Hinged inswing, single-paneled painted door and Covington® hardware with Oil Rubbed Bronze finish.

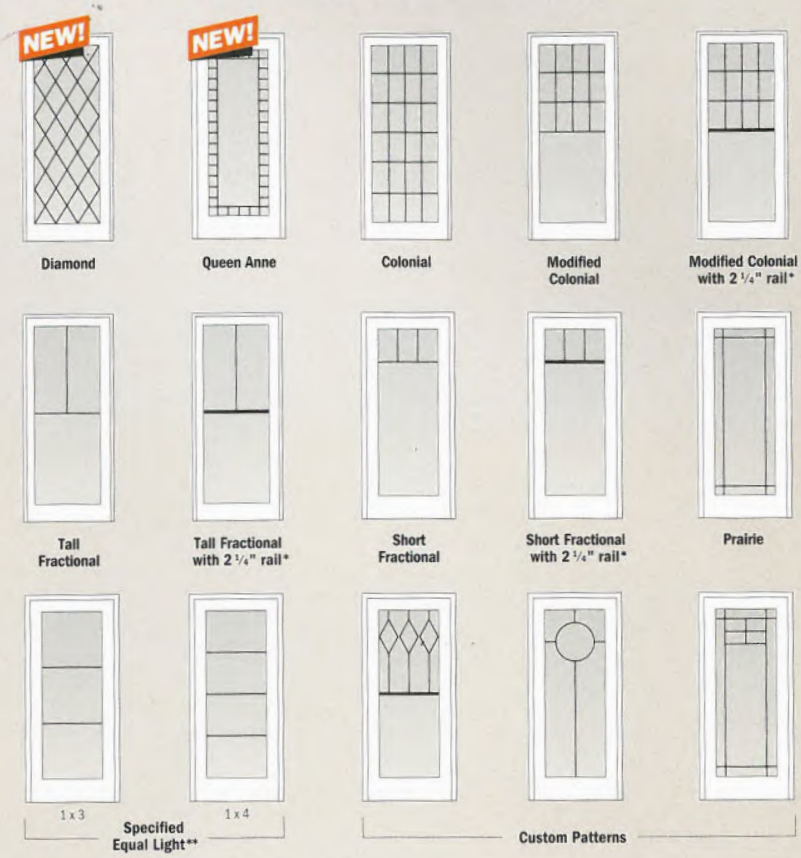
A multi-point lock is standard on all doors.

Maple gliding door with Russet finish and Anvers® hardware with Satin Nickel finish.

Divided Light

Grille Patterns

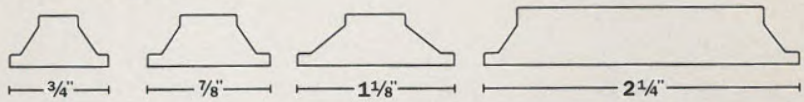
Choose from 10 standard grille patterns or create a custom design.



* Horizontal rails are also available in 7/8" and 1 1/8" custom widths.

** Any number of same-size rectangles across or down.

Grille Profiles (not to scale)



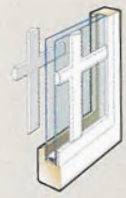
Grille Types

Full Divided Light

Permanent exterior, permanent interior with spacer

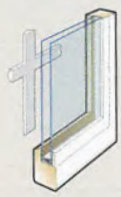
Simulated Divided Light

Permanent exterior, permanent interior



Permanent exterior, removable interior

Convenient Cleaning Options



Removable interior grille

Finelight ™ grilles-between-the-glass

EXHIBIT HRB-8 COMPLETENESS LETTER

January 28, 2025

Cordell Lawson
Blue Raven Solar LLC
1403 N 630 E
Orem, UT 84097

Subject: HDR-24-03: Proposal to install solar panels on the existing home at 1852 4th Avenue that is located within the Willamette National Historic District

Dear Mr. Lawson:

The city accepted this application for review on October 7, 2024. The Planning Department reviewed your application and found it incomplete on November 6, 2024 with a request to provide proposed plans and elevation drawings. The applicant resubmitted the application on December 21, 2024 with the requested plan and elevation drawings and the application is now complete.

Please be aware that determination of a complete application does not guarantee a recommendation of approval from staff for your proposal as submitted – it signals that staff believes you have provided the necessary information for the Historic Review Board to render a decision on your proposal.

A 20-day public notice will be prepared and mailed. This item will be reviewed by the Historic Review Board at their February 19, 2025 meeting.

Please contact me at 503-742-6057, or by email at agudelj@westlinnoregon.gov if you have any questions or comments.

Sincerely,

A. Gudelj

Aaron Gudelj
Associate Planner

EXHIBIT HRB-9 AFFIDAVIT AND NOTICE PACKET

CITY OF West Linn

AFFIDAVIT OF NOTICE
HISTORIC REVIEW BOARD DECISION

We, the undersigned, certify that, in the interest of the party initiating a proposed land use, the following took place on the dates indicated below:

PROJECT
File No.: **HDR-24-03** Address: **1852 4th Avenue**
Applicant's Name: **Cordell Lawson / Blue Raven Solar LLC**
Scheduled Decision Date: **Historic Review Board hearing on 02/19/2025**

MAILED NOTICE
Notice of Upcoming HRB Decision was mailed at least 20 days before the decision date, per Section 99.080 of the Community Development Code to:

Elizabeth Smolens, applicant	**1/29/25**	*Lynn Schroder*
Property owners within 500ft of the site perimeter	**1/29/25**	*Lynn Schroder*
OR SHPO	**1/29/25**	*Lynn Schroder*
Willamette Neighborhood Association	**1/29/25**	*Lynn Schroder*

EMAILED NOTICE
Notice of Upcoming HRB Decision was emailed at least 20 days before the decision date to:

Willamette Neighborhood Association	**1/29/25**	*Lynn Schroder*
Elizabeth Smolens, applicant	**1/29/25**	*Lynn Schroder*

WEBSITE
Notice was posted on the City's website 20 days before the decision date.

1/29/25	*Lynn Schroder*

TIDINGS
Notice was posted in the West Linn Tidings at least 10 days before the hearing, per Section 99.080 of the CDC.

2/5/25	*Lynn Schroder*

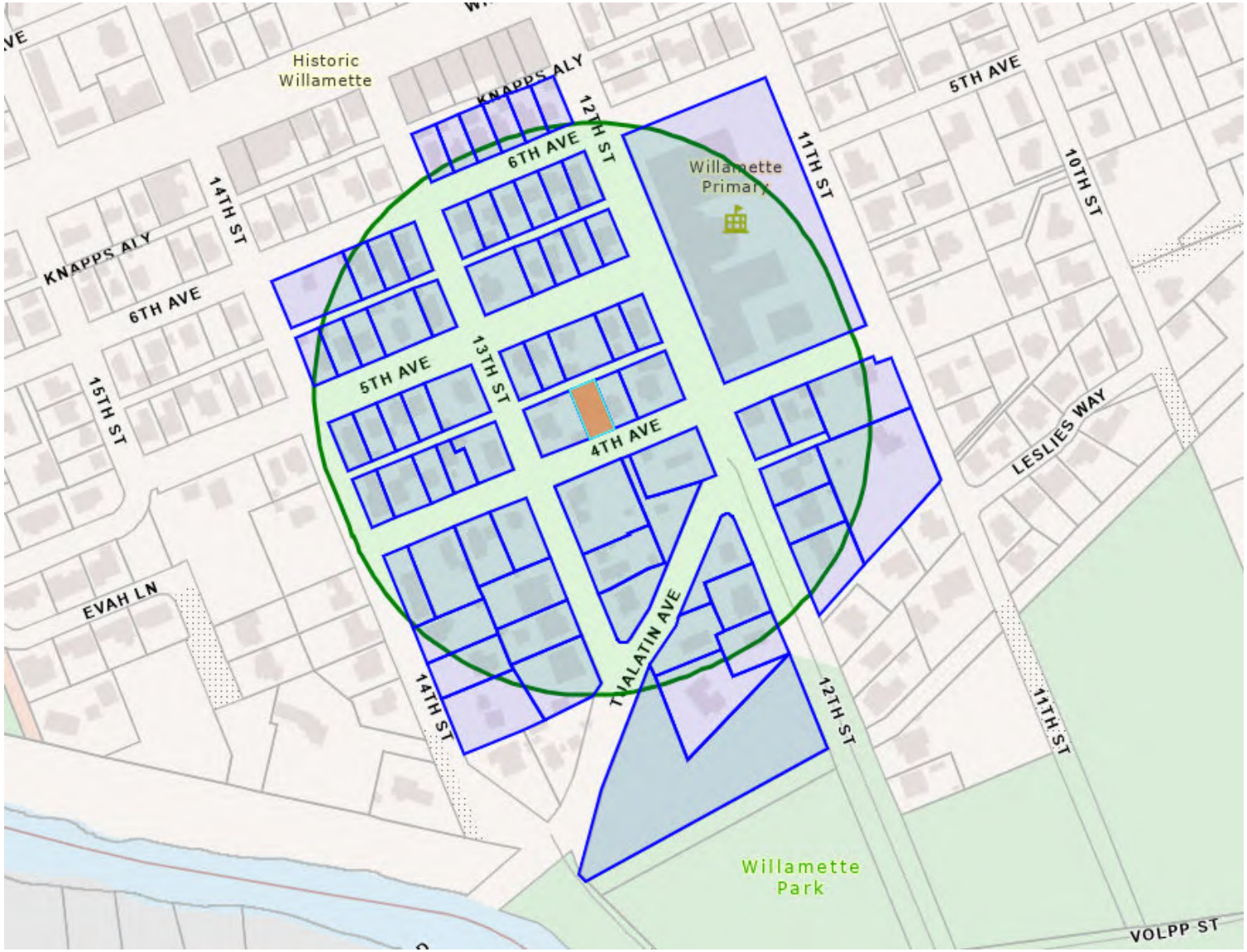
SIGN
A sign was posted on the property at least 10 days before the hearing, per Section 99.080 of the CDC.

2/6/25	*Aaron Gudelj*

FINAL DECISION
Notice of Final Decision was mailed to the applicant, all parties with standing, and posted on the City's website, per Section 99.040 of the Community Development Code.

	Lynn Schroder

HDR- 24-03 Properties within 500feet of 1852 4th Ave



CITY OF WEST LINN HISTORIC REVIEW BOARD
PUBLIC HEARING NOTICE
FILE NO. HDR-24-03

The West Linn Historic Review Board will hold a hybrid public hearing on **Wednesday, February 19, 2025** at **6:00 pm** in the Council Chambers of City Hall, 22500 Salamo Road, West Linn, to consider a request for Class II Historic Design Review at 1852 4th Avenue. The applicant is requesting approval to install nine (9) rooftop mounted, front-yard facing, solar panels on a non-contributing residential home within the Willamette Historic District.

The HRB will make its decision based on applicable criteria found in Chapters 25 and 99. of the Community Development Code (CDC). The CDC approval criteria are available for review on the City website http://www.westlinnoregon.gov/cdc or at City Hall and the City Library.

The application is posted on the City's website https://westlinnoregon.gov/projects. The application, all documents or evidence relied upon by the applicant, and applicable criteria are available for inspection at City Hall at no cost. Copies may be obtained at a reasonable cost. The staff report will be posted on the website and available for inspection at no cost, or copies may be obtained at a reasonable cost, at least ten days before the hearing.

The hearing will be conducted according to CDC Section 99.170 in a hybrid format with some members, staff, presenters, and public attending remotely via Webex and others attending in-person at City Hall. The public can watch the meeting online on YouTube: https://youtube.com/live/FYn_dj4vQ8A?feature=share

Anyone wishing to present written testimony for consideration should submit all materials before 12:00 pm on the meeting day to agudelj@westlinnoregon.gov or mail them to City Hall.

Those who wish to participate remotely should complete the speaker form at https://westlinnoregon.gov/citycouncil/meeting-request-speak-signup **before 4:00 pm on the meeting day** to receive an invitation to join the meeting. Virtual participants can join online or dial in by phone.

It is important to submit all testimony in response to this notice. All comments submitted for consideration of this application should relate specifically to the applicable criteria. Failure to raise an issue in a hearing, in person, or by letter, or failure to provide sufficient specificity to afford the decision-maker an opportunity to respond to the issue, precludes appeal to the Oregon Land Use Board of Appeals based on that issue (CDC Section 99.090).

The final decision will be posted on the website and available at City Hall. Persons with party status may appeal the decision by submitting an appeal application to the Planning Department within 14 days of mailing the final decision notice pursuant to CDC 99.240.

For additional information, please contact Aaron Gudelj, Associate Planner, City Hall, 22500 Salamo Rd., West Linn, OR 97068, 503-742-6057.

Scan this QR Code to go to Project Web Page:

CITY OF West Linn

COMMUNITY DEVELOPMENT

NOTICE OF UPCOMING
HISTORIC REVIEW BOARD DECISION

PROJECT # HDR-24-03
MAIL: 1/29/25 TIDINGS: N/A

CITIZEN CONTACT INFORMATION

To lessen the bulk of agenda packets and land use application notice, and to address the concerns of some City residents about testimony contact information and online application packets containing their names and addresses as a reflection of the mailing notice area, this sheet substitutes for the photocopy of the testimony forms and/or mailing labels. A copy is available upon request.