EPA
United States
Environmental Protection
Agency

Solar Photovoltaic
SPECIFICATION, CHECKLIST AND GUIDE

Renewable Energy Ready Home

Table of Contents

About the Renewable Energy Ready Home Specifications

The Renewable Energy Ready Home (RERH) specifications were developed by the U.S. Environmental Protection Agency (EPA) to assist builders in designing and constructing homes equipped with a set of features that make the installation of solar energy systems after the completion of the home's construction easier and less expensive. The specifications were developed with significant input from stakeholders including policymakers, code officials, solar installers, and successful RERH builders. The specifications are based on best management practices and balanced with practical issues of cost, benefits to homeowners, builder production process compatibility, and marketability. Homebuilders that outfit houses that comply with the RERH specifications can assure homebuyers that, when they are ready, solar renewable energy systems can quickly and easily be integrated into their house with minimal retrofit installation costs.

The RERH specifications and checklists take a builder and a project design team through the steps of assessing a home's solar resource potential and defining the minimum structural and system components needed to support a solar energy system. The following document also provides recommendations on aspects of homeowner education as it applies to the renewable energy ready concept. Satisfying the elements of the RERH specification may not be possible in all home building situations due to factors such as excessive shading on the proposed array location.

To assist in evaluating each home, EPA has developed an online Renewable Energy Ready Home Solar Site Assessment Tool (RERH SSAT), which compares the solar resource potential of a proposed array site to the optimal solar resource potential at the same location. Under this specification, proposed array locations that demonstrate a minimum solar resource potential are considered good candidates to be outfitted with the necessary structural and system components to make the home RERH. Builders should use this tool to assess each property prior to making the home renewable energy ready.

It should be noted that this guide was developed to assist builders from across the country and that regional or local building practices and codes may differ from what is presented. It is advisable to consult code and solar energy professionals when planning a project to avoid issues that may impact the future installation of a renewable energy system. By following the specification, a builder should feel confident that the proposed array location on a home, built to the RERH specification, will provide a suitable installation environment for a fully operational solar energy system in the future.

Assumptions of the RERH Solar Photovoltaic Specification

These specifications were created with certain assumptions about the house and the proposed solar energy system. They are designed for builders constructing single family homes with pitched roofs, which offer adequate access to the attic after construction. It is assumed that aluminum framed photovoltaic (PV) panels mounted on a "post" and rail mounting system, the most common in the industry today, will be installed by the homeowner. While metering the system is encouraged, the specification does not address system wiring elements for associated system sensors or monitoring equipment.

For builders that desire to meet the elements of these specifications but are constructing multifamily buildings, flat roof residential structures, or buildings without attic access, or using alternatives to the mounted aluminum framed PV panels (i.e., other PV technologies or ground mount systems), EPA recommends that an installer certified by the North American Board of Certified Energy Practitioners (NABCEP) determine the ideal system for the project's unique building environment. The installer must ensure that the system design is in compliance with all applicable codes: electrical and structural.

Builder and Specification Limitations

EPA has developed the following RERH specification as an educational resource for interested builders. EPA does not conduct third-party verification of the site data or the online site assessment results, or verify whether the home has been properly outfitted with a set of features that comply with this specification. The RERH specifications are not currently part of or recognized under any EPA program. Builders should avoid making implied or explicit claims that homes meeting this specification are EPA verified, recognized, labeled, or endorsed. Conformance to this specification is not predictive of future energy system performance. Homeowners are encouraged to seek assistance from a certified solar energy professional when installing an on-site solar energy system.

Renewable Energy Ready Home Solar Photovoltaic Checklist

Home Location:	City:	State:

	RERH Checklist (See Renewable Energy Ready Home (RERH) specifications for details)	Builder Verified	NA
1 Building/Array Site Assessment			
1.1	Designate a proposed array location and square footage on architectural diagram: _____sq. ft.	❑	
1.2	Identify orientation (azimuth) of proposed array location: _____degrees.	❑	
1.3	Identify inclination of proposed array location: _____degrees.	❑	
1.4	Conduct a shading study documenting impacts on proposed array location: _____% adjusted annual shading impact. If using monthly values as verified through the solar path assessments, check here: _____.	❑	
1.5	Assess if proposed array location supports a solar resource potential of more than 75 percent of the optimal solar resource potential for the same location using the online RERH Solar Site Assessment Tool (SSAT). Yes ❑ This home meets the minimum recommended solar resource potential of 75 percent per the RERH SSAT results; continue with Section 2 below. No ❑ This home does not meet the recommended solar resource potential per the RERH SSAT results; this location is not a good host for a future solar energy system and should not be made renewable energy ready.	❑	
2 Structural and Safety Considerations: Solar Photovoltaics			
2.1	Provide code-compliant documentation of the maximum allowable dead load and live load ratings of the existing roof; recommended allowable dead load rating can support an additional 6 lbs/sq. ft. for future solar system.	❑	
2.2	Install permanent roof anchor fall safety system (NA for roof pitch ≤ 3:12).	❑	❑
3 Renewable Energy Ready Home Infrastructure: Solar Photovoltaics			
3.1	Install and label a 4' x 4' plywood panel area for mounting an inverter and balance of system components.	❑	
3.2	Install a 1" metal conduit for the DC wire run from the designated array location to the designated inverter location (cap and label both ends).	❑	
3.3	Install a 1" metal conduit from designated inverter location to electrical service panel (cap and label both ends).	❑	
3.4	Install and label a 70-amp dual pole circuit breaker in the electrical service panel for use by the PV system (label the service panel).	❑	
3.5	Provide architectural drawing and riser diagram of RERH solar PV system components.	❑	
4 Homeowner Education			
4.1	Provide to the homeowner a copy of this checklist and all the support documents listed below (to be provided to future solar designer).		
	- Copy of the Renewable Energy Ready Home Specification guide	❑	
	- Fully completed RERH checklist (all sections)	❑	
	- Architectural drawings detailing proposed array location and square footage	❑	
	- Electrical drawings and riser diagram of RERH PV system components that detail the dedicated location for the mounting of the balance components	❑	
	- Shading study with percent monthly or adjusted annual shading impact(s)	❑	
	- Site assessment record generated by the online RERH SSAT indicating that the proposed site meets a minimum solar resource potential of 75 percent of optimal	❑	
	- Code-compliant documentation of the maximum allowable dead load and live load ratings of the roof	❑	
4.2	Record electric utility service providers contact information:		
	Electric utility service providers name and Web address:		
5 Builder Best Practices (Optional Elements)			
5.1	Develop a detailed landscape plan with a clear emphasis on low-growth vegetation	❑	❑
5.2	Place roof penetrations above or north of the proposed array to prevent casting shadows on the array location	❑	❑

Builder Completion Date:	Builder Company Name:
Builder Employee Name:	Builder Employee Signature:
Interested in Solar Incentives? Please visit: http://www.dsireusa.org/solar/	

1 Building/Array Site Assessment

1.1 Designate future/proposed array location

Builders should detail the location and the square footage of the proposed solar array area relative to the home on a project specific site plan (see Figure 1).

There are multiple options for locating a solar array in a residential setting, including mounting the array on the roof or on the ground. If the proposed solar array location is on a surface that does not fall under the specification's basic assumption of a single family home with a pitched roof that offers adequate attic access, EPA recommends that the builder consult with a certified solar energy professional when evaluating the home.

Builders that intend to meet both the solar PV and solar water heating RERH specifications should detail the location and the square footage of the roof area to accommodate both technologies. Although the RERH specification does not set a minimum array area requirement, builders should minimally specify an area of 50 square feet in order to operate the smallest grid-tied solar PV inverters on the market. As a point of reference, the average size of a grid-tied PV residential system installation in the United States has increased to just over 5.0 kilowatts$_{DC}$ as of 2009, which would require on the order of 500 square feet of usable roof space (average of 1 kilowatt per 100 square feet) to install the solar panels. However, homes with a higher than average level of energy efficiency, such as those meeting ENERGY STAR® Homes Standards, may not necessitate an average-sized system.

1.2 Identify orientation (azimuth) of proposed array location

Builders should detail the orientation of the roof plane(s) for the proposed array location on an architectural diagram (see Figure 1), and record the orientation in degrees on the Checklist in 1.2. (South facing orientation = 180º, East = 90º, West = 270º. See Table 1.)

The energy output of a solar energy system is optimized by siting the array where the roof is oriented due south at an 180º azimuth (on a compass dial that is corrected for magnetic declination). For the purpose of this specification and checklist, proposed orientations that deviate from an 180º azimuth

Table 1. Orientation of the system and corresponding azimuth angle which should be recorded in the RERH Checklist.

N	0 or 360
NE	45
E	90
SE	135
S	180
SW	225
W	270
NW	315

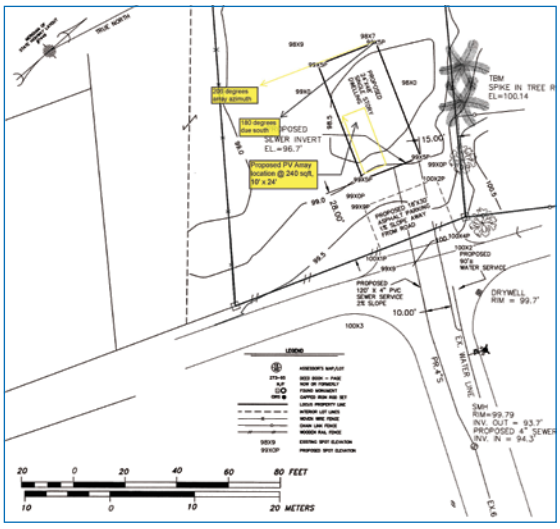

Figure 1: Site Plan. The site plan should detail the location, orientation, and the square footage of the proposed solar array area.

are acceptable. Depending on the home's location, azimuths that deviate more than +- 45° off of due south can result in unacceptable performance losses. For the purpose of this specification, building mounted arrays will be assumed to be mounted flush with the roof surface found at the proposed array location.

1.3 Identify inclination (tilt or roof pitch) of proposed array location

Builders should detail the inclination (tilt or roof pitch) for the proposed array location on a architectural drawing (see Figure 2) and record the inclination in degrees on the Checklist in 1.3. (Horizontal or flat roof = 0°, Vertical roof = 180°. See Table 2.)

The energy output of a solar energy system is optimized by designing the array to be tilted on an incline that approximately matches the degrees of the geographic latitude of the array's location; significant deviations from this tilt can result in system performance losses. Although system arrays (panels or collectors) can be racked up to meet the inclination/tilt needed for optimal system output, this specification is based on and limited to the known building attributes (roof pitch) at the time of construction. For the purpose of this specification and checklist:

- Building mounted arrays will be assumed to be mounted flush with the roof surface found at the proposed array location.
- Builders should only assume an inclination/tilt other than that of the existing roof pitch if alternative design drawings have been completed by a NABCEP solar professional.

Table 2. Existing roof pitch and corresponding tilt angle should be recorded in the RERH Checklist.

Roof Pitch	Tilt Angle (°)
Flat	0
4:12	18.4
5:12	22.6
6:12	26.6
7:12	30.3
8:12	33.7
9:12	36.9
10:12	39.8
11:12	42.5
12:12	45.0

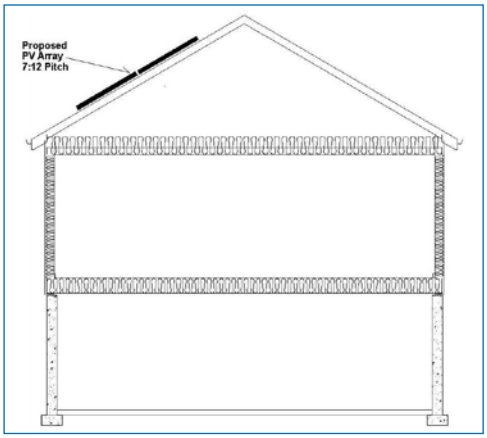

Figure 2: Roof Pitch Detail. The inclination (roof pitch or tilt) for the proposed array location should be detailed in an architectural diagram.

1.4 Conduct a solar shading study on proposed array location

Builders should conduct a comprehensive shading study, which documents the impacts of permanent and seasonal shading on the proposed array location. The builder should record the site's monthly and/or annual percent shading impacts from the solar shading study (see Figure 3) in the RERH Checklist and for use in the online RERH SSAT. (No shading = 0%, Site is fully shaded = 100%)

The energy output of a solar energy system is optimized by siting a solar array where there is little to no current or anticipated shading. (See section 5.1 for landscaping shading considerations.) Shading potentially represents the largest impact on a site's suitability to support a solar energy system. A solar site assessment study helps to ensure that permanent and seasonal shading impacts are accounted for under actual site conditions. With minimal equipment and training, builders can easily conduct a shading study or choose to have a solar professional provide this service. For the purpose of this specification and checklist:

- Builders or designers must conduct a solar shading study using an industry-accepted sunpath tool, such as a Solar Pathfinder, Solmetric SunEye, or a solar PV industry-accepted equivalent approach, to determine the seasonal shading impacts on the proposed array location.
- The solar shading study should identify the percent of available solar radiation (or conversely the percent shading impact for the proposed array location) on a monthly and/or adjusted annual basis. Refer to the directions of the solar sunpath tool on how to make this determination. The RERH SSAT will accept either annual or monthly percent shading values. The estimated shading impact will contribute to a system output derate factor which will affect the site's suitability to support a system.
- If the proposed array location is particularly large in square footage, or is divided between two different roof planes, then the builder should conduct multiple shading studies at various points across the proposed array area(s).

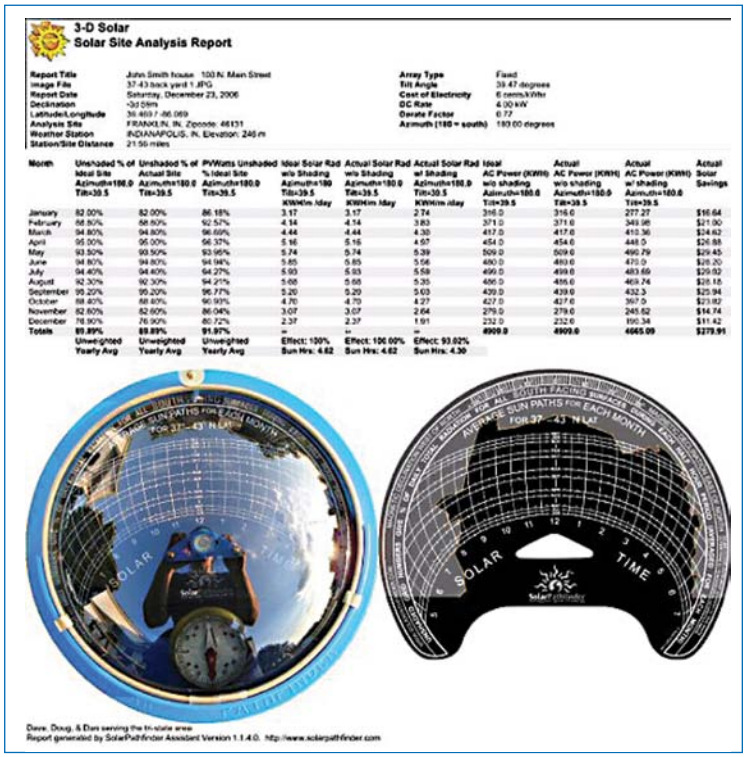

Figure 3: Solar Pathfinder Report. The sunpath tool report identifies the percent shading impact for the proposed array location on a monthly and/or adjusted annual basis.

1.5 Document the solar resource potential at the designated array location

Builders should use EPA's online RERH SSAT to demonstrate that each proposed system site location meets a minimum solar resource potential.

EPA has developed an online site assessment tool, which assists builders in assessing whether a new home offers an appropriate installation environment for the future installation of a solar energy system. The RERH SSAT takes into account known factors of the proposed array location (azimuth, tilt/inclination, and shading) and compares the solar resource potential of the proposed array location to an optimally sited solar system in the same location (see Figure 4). The results of the tool should not be interpreted as an estimation of the future energy generation. The builder will need the following site information for each proposed home assessment:

- Location of home (ZIP code or latitude and longitude coordinates)
- Orientation of proposed array surface (azimuth in degrees)
- Roof inclination/pitch at proposed array surface (degrees off of horizontal)
- Percent shading at proposed array location (monthly or annual input options)

The builder can access the RERH SSAT at *http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.pt_bldr.* Proposed array sites that demonstrate a minimum of 75 percent of the optimal solar resource potential are considered good candidates for making a home renewable energy ready. The RERH SSAT results page can be printed to provide to homeowners (see Figure 5).

For sites that fail to provide a suitable solar resource potential, builders and project design teams are encouraged to propose alternate or improved site locations. The data inputs (orientation, inclination, and shading) used in the RERH SSAT to estimate the solar resource opportunity have a cumulative impact on the site assessment results. Shading tends to have the largest impact, whereas orientation and inclination tend to have less of an impact on the solar site assessment results. Builders are encouraged to design the home with these factors in mind.

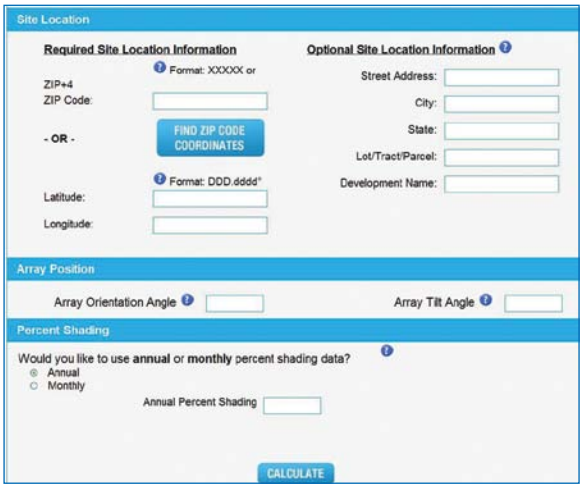

Figure 4: RERH Solar Site Assessment Tool Inputs. The RERH SSAT requires the following inputs for the proposed array: location, orientation, inclination and percentage shading.

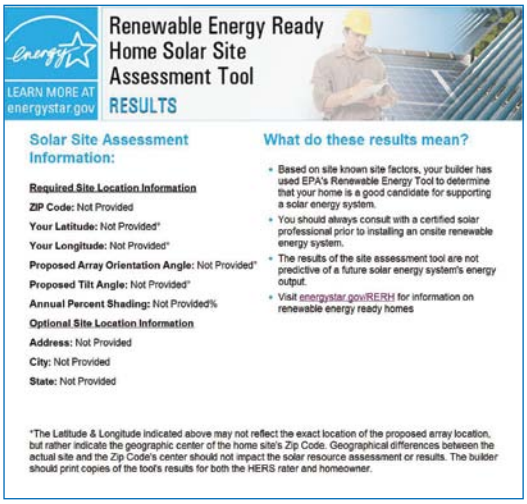

Figure 5: Results page generated by the RERH Solar Site Assessment Tool.

2 RERH Structural and Safety Considerations

2.1 Document the maximum allowable dead and live load ratings of the existing roof

The builder should submit code-compliant documentation of the structural capacity of the roof and of the current dead loads on the roof. This documentation should demonstrate that the roof has the capacity to support a minimum of 6 pounds per square foot additional dead load for a future PV system.

A conventional PV system that includes racking materials will add approximately 6 pounds per square foot of dead load to the roof or structure, though actual weights can vary for different types of systems. Wind will add live loads; the magnitude of live loads will depend on the geographic region and the final PV system. It is recommended that the roof has the capacity to support a minimum of 6 pounds additional dead load for a future PV system. The builder should ensure that these future loads are accounted for in the design of the roof and provide design drawings and/or calculations, prepared in conformance and in a format that is acceptable to the permitting agency. At a minimum, these documents must include specific documentation of dead loads, live loads, wind loads, and, where applicable, snow loads for the existing roof design. These plans will provide important information for the solar designer when the homeowner decides to install a system. Please note that a low sloped roof, a 4:12 pitch or lower, may require additional reinforcement beyond what is typically found in a conventional framing or truss design.

2.2 Install permanent roof anchor fall safety system on sloped roofs

It is recommended that the builder install a fall safety system on roofs with a pitch greater than 3:12.

The process of installing a system on a sloped roof carries inherent risk. A permanent roof anchor fall safety system is encouraged on roof pitches steeper than 3:12 to provide adequate protection to installers (see Figure 6).[1] The roof anchor should be installed on a roof subsurface or vertical wall (see Figure 7).[2]

The permanent roof anchor should meet the federal requirements of the Occupational Safety and Health Administration. The fall safety system should also be compliant with ANSI standard *A10.14: Construction and Demolition Operations—Requirements for Safety Belts, Harnesses, Lanyards, and Lifelines for Construction and Demolition Use.*

Figure 6: Miller Single-D roof anchor before installation.

Figure 7: Roof anchor should be installed on a roof subsurface or vertical wall.

[1] Image courtesy of Miller Fall Protection.
[2] Image courtesy of Miller Fall Protection.

3 RERH Infrastructure: Solar Photovoltaics

3.1 Dedicate an area for mounting the inverter and balance of system components

The builder should designate a dedicated space for a 4′ x 4′ plywood panel backing for mounting the inverter and balance of system components. The area should be clearly labeled as an RERH component and identified on electrical and architectural diagrams (see Figure 8) to be provided to the homeowner.

Solar PV system inverters can be quite heavy (>80 pounds), necessitating a solid backing to mount the inverter. Pre-installing a 4′ x 4′ piece of finished plywood provides the future solar installer an area to place the balance of system components, such as the PV system inverter, meters, and disconnects. The purpose of the plywood backing is to:

- Ensure a dedicated space for these components and maintain a finished aesthetic to the wall area.
- Provide a secure foundation for mounting future equipment.
- Facilitate the future installation of these components by the installer.

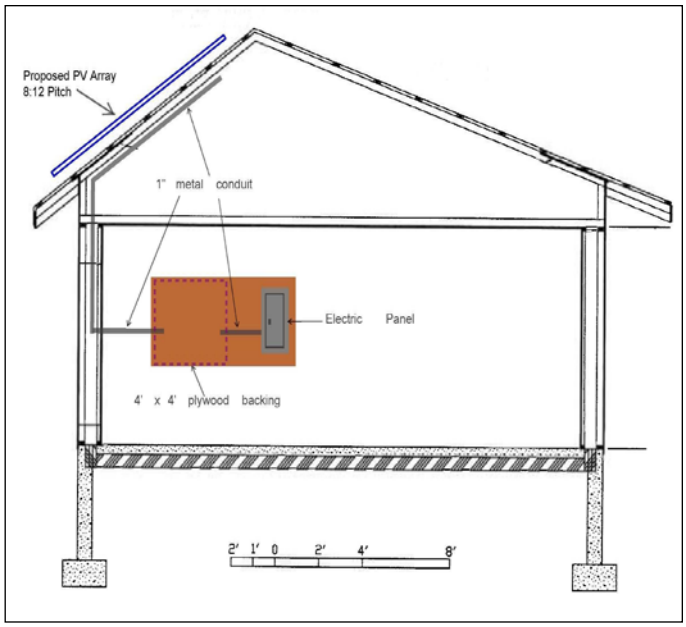

Figure 8: Architectural Drawing. A dedicated space for a 4′ x 4′ plywood panel backing for mounting the inverter and balance of system components should be identified on electrical and architectural diagrams.

The 4′ x 4′ plywood sheet should be fastened to the wall studs and mounted so that its center is roughly 4.5 feet above the floor. The dedicated inverter area may be located inside or outside the home. In either case, the dedicated inverter location should be free of direct sunlight, excessive heat, or any harsh or extreme weather conditions. It is also recommended that the inverter mounting area not share a common wall with a living space, such as an adjacent bedroom, where slight noise and vibration may be considered a nuisance. In all cases, the builder should conform to all local or national codes when meeting this specification. The builder may wish to review sections 3.2 and 3.3 of this guide before placing the plywood mount.

The builder should clearly identify the location of the designated area on electrical and architectural diagrams. This area should be labeled as the RERH balance of system component. (See Appendix A for labeling guidance.)

3.2 Install a conduit for the DC wire run from the array to the designated inverter location

The builder should install a 1″ metal conduit from the designated array location to the designated inverter location with the end of the conduit clearly labeled as an RERH component and indicating its purpose and intended use. The conduit run should be identified on electrical and architectural diagrams (see Figure 8) to be provided to the homeowner.

The builder should install a 1" metal conduit[3] beginning at a point above the finished insulation depth directly below the designated array location in the attic crawl space. The end of the conduit should be clearly labeled as an RERH component and indicate its intended use. The conduit should:

- Be located in an area that provides sufficient accessibility and clearance for a solar installer to continue the conduit run above the roof deck to the solar array area at a future point in time.
- Be rooted from the attic space through the building envelope, minimizing total overall distance, to a point near the bottom edge of the 4′ x 4′ plywood backing (see section 3.1).
- Have three or fewer 90-degree turns from the attic to the designated 4′ x 4′ plywood area or provide for accessible pull boxes, as required by the National Electric Code.
- Terminate near the bottom edge of the plywood area in order to facilitate the final connections to the balance of system components at the time of the full system installation (see Figure 9), or, for aesthetic reasons, terminate into a flush mount junction or pull box near the bottom edge of the plywood area.

To facilitate the wiring of the solar PV system at a later date, the builder may also want to include a pull line in the conduit, particularly if the overall conduit run is lengthy or has multiple bends.

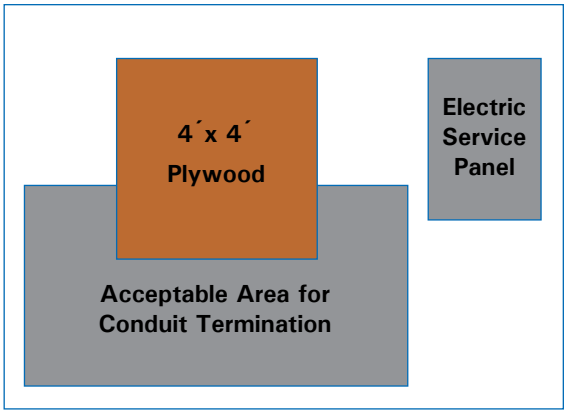

Figure 9: Conduit Termination. An acceptable area for conduit termination is near the bottom edge of the plywood area to facilitate the final connections to the balance of system components.

3.3 Install a conduit for the AC wire run from the designated inverter location to the electric service panel

The builder should install a 1" metal conduit from the designated inverter location to the main service panel where the system is intended to be tied into the home's electrical service. The conduit should be capped and clearly labeled as an RERH component on the stubbed end near the inverter location. The conduit run should be identified on electrical and architectural diagrams (see Figure 8) to be provided to the homeowner.

The builder should install a 1" metal conduit from the designated inverter location to the main electric service panel (see Figure 8). The builder should land one end of the conduit into the main electric service panel and stub it out on the other end just below the designated inverter location. The stub end of the conduit should be clearly labeled as an RERH component and clearly indicate its purpose and intended use. To facilitate the wiring of the solar PV system at a later date, the builder may also want to include a pull line in the conduit, particularly if the conduit run is lengthy or has multiple bends.

The builder should be aware that certain jurisdictions or utilities require that an AC manual disconnect be accessible on the outside of the building, often near an exterior service panel or where the utility enters the building. This allows one to manually isolate the solar system from the home's electric service panel and from the utility grid. Builders should be aware of these local requirements and make accommodations in the AC conduit run accordingly. The builder should not assume that the inverter installed will include an onboard manual AC disconnect switch.

[3] Contractors that choose to use conduit other than 1" Electrical Metallic Tubing (EMT) must select a code-appropriate material and size that can accommodate the same number of conductors as a 1" EMT conduit over the same distance.

3.4 Designate and install circuit breaker for use by the PV system in the electrical service panel

The builder should install and label slots suitable for a 70-amp double pole breaker in the electric service panel for use by the solar PV system (see Figure 10).

The builder should reserve and designate space in the electrical service panel, or an appropriate subpanel, for a double pole circuit breaker. The circuit breaker should be installed and labeled for use by the PV system.

3.5 Provide architectural drawing and riser diagrams of the RERH PV system components

The builder should develop architectural drawings and diagrams that summarize the installed system equipment (conduit, etc.) as detailed below (see Figure 11). These drawings should accurately represent the installed elements of the system and should be provided to the homeowner as part of the educational package.

The builder should provide a basic architectural drawing or diagram to the homeowner summarizing where the equipment is located within the house (see Figure 11).[4] The builder should also provide the homeowner with a one-line electrical riser diagram of the PV system components. The diagram should have sufficient detail to clearly identify:

- Conduit size and type
- Electrical service panel location and dedicated circuit breaker slots
- Length of conduit from the designated array location to the designated inverter location
- Location and number of necessary pull boxes in line with each conduit run
- Length of conduit from the designated inverter location to the electrical service panel

Figure 10: 70-Amp Double Pole Breaker. The electric service panel should have designated and labeled slots suitable for a 70-amp double pole breaker for use by the solar PV system.

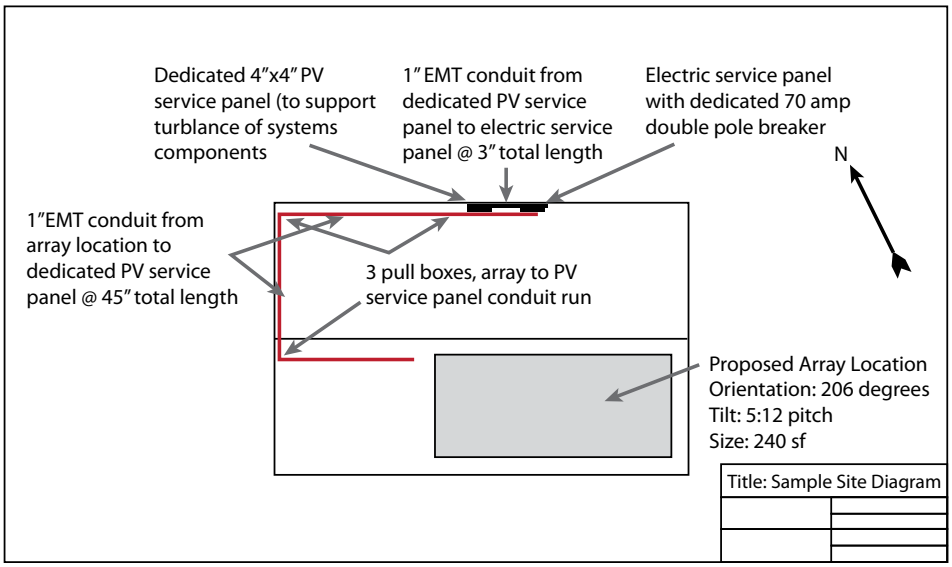

Figure 11: Site/System Diagram. The diagram should include: array location, size, orientation, conduit size and location and balance of system component locations.

[4] The NABCEP inspector's guide for PV systems (http://www.nabcep.org/resources) also includes an example site diagram with the configuration of a fully installed PV system.

4 Homeowner Education

4.1 For all RERH homes, develop and provide a homeowner education packet

For homes that satisfy the elements of the RERH specification, it's recommended that the builder develop a homeowner education packet to be left on-site that includes this guide and companion checklist, all necessary architectural drawings, shading study, code-compliant load documentation, as well as electrical drawings and riser diagrams.

A renewable energy ready home not only involves important design considerations and additions to the building itself but a transfer of this information to the future homeowner. Builders are encouraged to provide the homeowner the following documents:

- Copy of the Renewable Energy Ready Home Specification guide
- Fully completed RERH checklist
- Architectural drawings detailing the proposed array location and square footage (see Figures 1 and 2)
- Electrical drawings and riser diagram of RERH PV system components that detail the dedicated location for the mounting of the balance components (see Figures 8 and 11)
- Shading study with percent monthly or adjusted annual shading impact(s) (see Figure 3)
- Site assessment record generated by EPA's online solar site assessment tool indicating that the proposed site meets a minimum solar resource potential of 75 percent of optimal
- Code-compliant documentation of the maximum allowable dead load and live load ratings of the existing roof

If a builder sites a system that falls outside of the assumptions outlined in this specification (see the Assumptions section), an NABCEP installer should update the diagrams and/or provide homeowner education information that documents the RERH components of the proposed future system.

4.2 Record the name and Web address of the electric utility service provider

The builder should identify the local electric utility company and its Web address on the checklist.

Renewable energy metering requirements, and possibly financial incentives, vary from utility to utility. Homeowners should be encouraged to contact and consult their utility service provider as a first step when they begin to plan for the installation of a renewable energy system. The builder should record the name of the electric utility company and its Web address on the checklist.

5 Builder Best Practices (Optional Elements)

5.1 Landscape Plan

The builder should avoid implementing landscaping that has the potential to shade the proposed array location at the time of home construction or in future years. As a rule of thumb, vegetation with a mature species height should adhere to a distance-to-height ratio of 2.6 to the nearest point of the proposed array location. Builders and/or landscape architects should seek input from state or local agricultural agents if they are unsure about the expected height of the vegetation they are considering. The builder should submit a detailed landscape plan with a clear emphasis on low-growth vegetation.

5.2 Placement of non-array roof penetrations and structural building elements

Careful placement of roof penetrations will maximize the available roof space for and facilitate the eventual installation of the proposed array. If the proposed array is to be located on a roof, care must be taken to ensure that the proposed array location is not affected by typical plumbing or mechanical roof penetrations. The placement of such penetrations should be above or north of the proposed array so that shadows are not cast on the array location. Typical plumbing and mechanical roof penetrations can hinder the installation of a flush-mounted system on the proposed roof area.

Appendix A: RERH Labeling Guidance

EPA does not provide labels for labeling the RERH components described in the specification. However, guidance is provided below for the builder about the suggested application and size of labels for each applicable item in the specification.

General Guidance:

- EPA suggests using a weatherproof label to ensure that the components stay labeled until the time of renewable energy system installation. Avery® White WeatherProof™ Labels for Laser Printers 5520 may be a good choice.
- Builders should include a date on the label.
- The size and placement of the labels below are merely suggestions. Builders are encouraged to use their best judgment to ensure that the elements are clearly labeled to avoid confusion, damage, or duplication for the solar installer or other contractors working in the home.

Table 3. Label suggestions for the RERH components to ensure appropriate use upon installation of the RE system.

Items	Approximate Label Size	Labeling Guidance	Label Placement	# of Labels	Section Reference
Solar PV Inverter/Service Panel Location	10" x 6"	RENEWABLE ENERGY READY HOME Solar PV Inverter/Service Panel Location	Label can be placed on the wall area in the center of the plywood panel.	1	3.1
Solar PV—DC Conduit	3" x 1"	RENEWABLE ENERGY READY HOME Solar PV—DC Conduit	Labels can be wrapped around the conduit so the text is visieble and upright (if possible). Label both ends.	2	3.2
Solar PV—AC Conduit	3" x 1"	RENEWABLE ENERGY READY HOME Solar PV—AC Conduit	Label can be wrapped around the conduit so the text is visible and upright (if possible). Label both ends.	2	3.3
Solar PV—Dedicated Breaker	3" x 1"	RENEWABLE ENERGY READY HOME Solar PV—Dedicated Breaker	Labels can be placed in the electric service panel indicating its intended use.	1	3.4

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