Building Energy Data Exchange Specification (BEDES) Compliant Mapping

Date	10/26/2016
Implementation	HPXML
Implementation Version	V2.2
BEDES Version	V2.0

For more information about BEDES, please visit   https://bedes.lbl.gov/bedes-online

B.1 CUSTOMER INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.1.1	Prefix			Text		May be repeated for multiple contacts	Customer Full Name	Contact Label="Customer"	
B.1.2	First name			Text		May be repeated for multiple contacts		Full Name=[value]	
B.1.3	Middle name			Text		May be repeated for multiple contacts			
B.1.4	Last name			Text		May be repeated for multiple contacts			
B.1.5	Suffix			Text		May be repeated for multiple contacts			
B.1.6	Individual type			Enumeration	Owner-occupant, Owner-non-occupant, Property manager, Real estate agent, Tenant, Other	May be repeated for multiple contacts	Contact Label	Contact Label=[value]	
B.1.7	Telephone type			Enumeration	Day, Evening, Mobile	May be repeated for multiple contacts	Telephone Number Label	Telephone Number Label=[value]	
B.1.8	Telephone number			Text		May be repeated for multiple contacts	Telephone Number	Telephone Number=[value]	
B.1.9	Is telephone the preferred contact method?			Boolean		May be repeated for multiple contacts	NO MAPPING		
B.1.10	Telephone extension			Text		May be repeated for multiple contacts	Telephone Extension	Telephone Extension=[value]	
B.1.11	Email type			Enumeration	Personal, Work, Other	May be repeated for multiple contacts	Email Address Label	Email Address Label=[value]	
B.1.12	Email address			Text		May be repeated for multiple contacts	Email Address	Email address=[value]	
B.1.13	Is email the preferred contact method?			Boolean		May be repeated for multiple contacts	NO MAPPING		
B.1.14	Address type	Indicate if street or mailing address		Enumeration	Street, Mailing		Address Label	Address Label=[value]	
B.1.15	Address 1	Street or other address, including street number, street name, apartment number, and any other identifiers		Text			Address Line 1	Address 1=[value]	
B.1.16	Address 2	Street or other address, including street number, street name, apartment number, and any other identifiers		Text			Address Line 2	Address 2=[value]	
B.1.17	City or municipality	The city in which the site is located		Text			City	City=[value]	
B.1.18	State	2-letter state abbreviation. Entities designated can include a state, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Commonwealth of the North Mariana Islands, the United States Virgin Islands, or any other territory or possession of the United States.		State code			State	State=[value]	
B.1.19	Zip code	The United States Postal Service postal code where the property is located. This can be defined as the standard 5 number postal code, or it can have the additional 4 number code separated by a hyphen.		Number			ZIP Code	Zip Code=[value]	
B.1.20	USPS bar code	The United States Postal Service Intelligent Mail barcode		Number			NO MAPPING		

B.2 CONTRACTOR INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.2.1	Business name			Text		May be repeated for multiple contactors	Business Company Name	Contact Label="Business" Company Name=[value]	
B.2.2	Business type			Enumeration	Contractor, Auditor, Subcontractor, Property manager	May be repeated for multiple contactors	Business Contact Label	Contact Label="Business" Contact Label=[value]	
B.2.3	Business specialization			Enumeration	Energy audit, HVAC, Insulation, Carpentry, Plumbing, Electrical, Painting, Other	May be repeated for multiple contactors	NO MAPPING		
B.2.4	Certification			Enumeration	BPI, RESNET, Other	May be repeated for multiple contactors	Business Credential	Contact Label="Business" Credential=[value]	
B.2.5	Type of business contact			Enumeration	Owner, Auditor, Implementer, Other	May be repeated for multiple contactors	Business Contact Label	Contact Label="Business" Contact Label=[value]	
B.2.6	Auditor qualification			Enumeration	PE, CEM, BPI-BA, RESNET-Home Partner, RA, Other	May be repeated for multiple contactors	Auditor Credential	Contact Label="Auditor" Credential=[value]	
B.2.7	Implementer qualification			Enumeration	PE, CEM, BPI-BA, BPI-MFBA, RESNET-Home Partner, RA, Refrigerating system operating engineer, High pressure boiler operating engineer, HEP-EA, HEP-QCI, Other	May be repeated for multiple contactors	Implementer Credential	Contact Label="Implementer" Credential=[value]	
B.2.8	State where qualification held	2-letter state abbreviation. Entities designated can include a state, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Commonwealth of the North Mariana Islands, the United States Virgin Islands, or any other territory or possession of the United States.		State code		May be repeated for multiple contactors	Implementer Credential State	Contact Label="Implementer" Credential State=[value]	
B.2.9	Years of experience			Number		May be repeated for multiple contactors	Implementer Years Of Experience	Contact Label="Implementer" Years Of Experience=[value]	
B.2.10	Prefix			Text		May be repeated for multiple contactors	Implementer Full Name	Contact Label="Implementer" Full Name=[value]	
B.2.11	First name			Text		May be repeated for multiple contactors			
B.2.12	Middle name			Text		May be repeated for multiple contactors			
B.2.13	Last name			Text		May be repeated for multiple contactors			
B.2.14	Suffix			Text		May be repeated for multiple contactors			
B.2.15	Telephone type			Enumeration	Day, Evening, Mobile	May be repeated for multiple contactors	Telephone Number Label	Telephone Number Label=[value]	
B.2.16	Telephone number			Text		May be repeated for multiple contactors	Telephone Number	Telephone Number=[value]	
B.2.17	Is telephone the preferred contact method?			Boolean		May be repeated for multiple contactors	NO MAPPING		
B.2.18	Telephone extension			Text		May be repeated for multiple contactors	Telephone Extension	Telephone Extension=[value]	
B.2.19	Email type			Enumeration	Personal, Work, Other	May be repeated for multiple contactors	Email Address Label	Email Address Label=[value]	
B.2.20	Email address			Text		May be repeated for multiple contactors	Email Address	Email address=[value]	
B.2.21	Is email the preferred contact method?			Boolean		May be repeated for multiple contactors	NO MAPPING		
B.2.22	Address type	Indicate if street or mailing address		Enumeration	Street, Mailing	Indicate if street or mailing address	Address Label	Address Label=[value]	

B.2 CONTRACTOR INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.2.23	Address 1	Street or other address, including street number, street name, apartment number, and any other identifiers		Text			Address Line 1	Address 1=[value]	
B.2.24	Address 2	Street or other address, including street number, street name, apartment number, and any other identifiers		Text			Address Line 2	Address 2=[value]	
B.2.25	City or municipality	The city in which the site is located		Text			City	City=[value]	
B.2.26	State	2-letter state abbreviation. Entities designated can include a state, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Commonwealth of the North Mariana Islands, the United States Virgin Islands, or any other territory or possession of the United States.		State code			State	State=[value]	
B.2.27	Zip code	The United States Postal Service postal code where the Site is located. This can be defined as the standard 5 number postal code, or it can have the additional 4 number code separated by a hyphen.		Number			ZIP Code	Zip Code=[value]	

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.1.1	Site type	Rural is defined as a place having fewer than 2,500 inhabitants; or a county or parish with an urban population of 20,000 inhabitants or less; or any place with a population not in excess of 20,000 inhabitants and not located in a Metropolitan Statistical Area (Rural Housing and Economic Development, www.HUD.gov)		Enumeration	Rural, Suburban, Urban		Site Type	Site Type=[value]	
B.3.1.2	Surroundings			Enumeration	Stand-alone, Attached on one side, Attached on two sides, Attached on three sides		Vertical Surroundings	Vertical Surroundings=[value]	
B.3.1.3	Vertical Surroundings			Enumeration	Unit above, Unit below, unit above and below, No units above or below		Horizontal Surroundings	Horizontal Surroundings=[value]	
B.3.1.4	Shielding of home			Enumeration	Well-shielded, Normal, Exposed		NO MAPPING		
B.3.1.5	Orientation of the front of home			Enumeration	North, Northwest, West, Southwest, South, Southeast, East, Northeast		Cardinal Orientation	Cardinal Orientation=[value]	
B.3.1.6	Azimuth of front of home			Number			Azimuth	Azimuth=[value]	degree
B.3.1.7	Distance from subway		Linear feet	Number			Distance To Public Transportation Subway	Distance To Public Transportation=[value] Type of public transportation="Subway"	ft
B.3.1.8	Distance from bus		Linear feet	Number			Distance To Public Transportation Bus	Distance To Public Transportation=[value] Type of public transportation="Bus"	ft
B.3.1.9	Distance from train		Linear feet	Number			Distance To Public Transportation Train	Distance To Public Transportation=[value] Type of public transportation="Train"	ft
B.3.1.10	Walk score	A walkability index based on the time it takes to walk from the property to nearby essentials such as grocery stores, schools, churches, etc. See www.walkscore.com for more information and requirements for using Walk Score.		Number			Walking Score	Walking Score=[value]	
B.3.1.11	Walk score source			Text			Walking Score Source	Walking Score Source=[value]	
B.3.1.12	Household type			Enumeration	Family household, Married couple, no children, Male household, no spouse, Female household, no spouse, Nonfamily household, Single male, Single female, Other		Occupant Type	Occupant Type=[value]	
B.3.1.13	Year occupied	The year the current occupants moved into the building	Year	Number			Occupied Date	Occupied Status="Occupied" Date=[value] Date Format="Year"	Year
B.3.1.14	Resident population type			Enumeration	No specific resident population, Student, Military, Senior, Special accessibility needs, Young children, At risk, Other		Occupant Type	Occupant Type=[value]	

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.1.15	Building occupancy			Enumeration	Owner-occupied, Renter-occupied, Owner-and-renter-occupied		Occupant Type	Occupied Type=[value]	
B.3.1.16	Number of residents			Number		Supports a non-integer and zero number of residents	Peak Total Occupants Quantity	Occupant Quantity Type="Peak total occupants" Quantity=[value]	
B.3.1.17	Number of adults	Adults aged 18 or older		Number			Adults Quantity	Occupant Quantity Type="Adults" Quantity=[value]	
B.3.1.18	Number of children			Number			Children Quantity	Occupant Quantity Type="Children" Quantity=[value]	
B.3.1.19	Publicly subsidized	Housing that receives or has received public funding for construction or operations (this does not include Section 8 or similar vouchers received by individual tenants)		Boolean			Government subsidized community	Occupant Type="Government subsidized community"	
B.3.1.20	Low Income	Household at or below the federal poverty level http://www.liheap.ncat.org/profiles/povertytables/FY2013/popstate.htm)		Boolean			Lowest fifth	Occupant Income Range="Lowest fifth"	
B.3.1.21	Occupant income range			Fraction			Occupant Income Range	Occupant Income Range=[value]	
B.3.1.22	Percent area median income			Fraction			NO MAPPING		
B.3.1.23	Percent federal poverty level			Fraction			NO MAPPING		
B.3.1.24	Highest level of occupant education			Enumeration	No high school, Some high school, High school graduate, Some college, Vocational or technical or associates degree, Bachelor's degree, Some post graduate, Master's degree, Professional degree, Doctoral degree		Highest Level of Occupant Education	Highest Level of Occupant Education=[value]	
B.3.1.25	Year built		Year	Number			Completed Construction Status Date	Construction Status="Completed" Construction Status Date=[value]	Year
B.3.1.26	Year built known or estimated			Enumeration	Known, Estimated		Completed Construction Status Date Derivation Method	Construction Status="Completed" Derivation Method=[value]	
B.3.1.27	Year of last remodel	For a remodel to be considered major, the work undertaken must have required a permit from the building department, or an inspection by a governing authority	Year	Number			Major Remodel Implementation Status Date	Action Category="Major Remodel" Implementation Status Date=[value]	Year
B.3.1.28	Residential facility type			Enumeration	Single-family detached, Single-family attached, Manufactured home, 2-4 unit building, 5+ unit building, Multi-family - uncategorized, Multi-family - town homes, Multi-family condos, Apartment unit, Studio unit, Other, Unknown		Occupancy Classification	Occupancy Classification=[value]	

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.1.29	Passive solar	Passive solar design—also known as climatic design—involves using a building's windows, walls, and floors to collect, store, and distribute solar energy in the form of heat in the winter and reject solar heat in the summer. (http://www.eere.energy.gov/ basics/buildings/passive_solar _design.html)		Boolean			Passive Solar Design	Sustainable Practice="Passive solar design"	
B.3.1.30	Building height	Height above ground of a building	Linear feet	Number			Building Height	Premises Level="Building" Height=[value]	ft
B.3.1.31	Number of units			Number			Apartment Units Quantity	Number of Spatial Unit Type="Apartment units" Quantity=[value]	
B.3.1.32	Number of floors	Number of surfaces of a building that are horizontal or near horizontal and form the bottom surface of a space (conditioned or unconditioned)		Number			Floor Quantity	Spatial Unit Type="Floor" Quantity=[value]	
B.3.1.33	Number of conditioned floors	Number of floors that are heated or cooled, including the basement if heated or cooled (see conditioned floor area for definition)		Number			Conditioned Floor Quantity	Conditioning Status="Conditioned" Spatial Unit Type="Floor" Quantity=[value]	
B.3.1.34	Number of conditioned floors above grade	Number of floors above grade that are heated or cooled		Number			Conditioned Above Grade Floor Quantity	Conditioning Status="Conditioned" Location="Above grade" Spatial Unit Type="Floor" Quantity=[value]	
B.3.1.35	Average ceiling height	Distance between floor and ceiling	Linear feet	Number			Average Floor To Ceiling Height	Interval Measure="Average" Floor Height Measurement="Floor to ceiling height" Height=[value]	ft
B.3.1.36	Floor-to-floor height	Distance between floors	Linear feet	Number			Floor To Floor Height	Floor Height Measurement="Floor to floor height" Height=[value]	ft

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.1.37	Number of rooms	A room is a subdivision of a housing unit. Rooms include living rooms, dining rooms, bedrooms, kitchens, lodgers' rooms, finished basements or attic rooms, recreation rooms, and permanently enclosed sun porches that are used year round. Rooms used for offices by a person living in the unit are included. Bathrooms, halls, foyers or vestibules, balconies, closets, alcoves, pantries, strip or Pullman kitchens, laundry or furnace rooms, unfinished attics or basements, open porches, and unfinished space used for storage are NOT considered rooms. A partially divided room, such as a dinette next to a kitchen or a living room, is considered a separate room only if there is a partition from floor to ceiling, but not if the partition consists solely of shelves or cabinets. If occupants of more than one unit use a room, the room is included with the unit from which it is most easily reached.		Number			Room Quantity	Spatial Unit Type="Room" Quantity=[value]	
B.3.1.38	Number of bedrooms	A bedroom is a room that is intended for sleeping, even if not presently used for sleeping. A one-room efficiency or studio apartment has no bedrooms.		Number			Bedroom Quantity	Spatial Unit Type="Bedroom" Quantity=[value]	
B.3.1.39	Number of bathrooms			Number			Bathroom Quantity	Spatial Unit Type="Bathroom" Quantity=[value]	
B.3.1.40	Number of full bathrooms	Bathrooms that have a tub or shower		Number			NO MAPPING		
B.3.1.41	Building footprint area	Building footprint is the area on a project site used by the building structure, defined by the perimeter of the building plan. Parking lots, parking garages, landscapes, and other non-building facilities are not included in the building footprint (http://www.leeduser.com/glossary/term/4695).	Square feet	Number			Building Footprint Area	Premises Level="Building" Floor Area Qualifier="Footprint" Area=[value]	ft2
B.3.1.42	Footprint shape	General shape of the premises outlined by the exterior walls		Enumeration	Rectangular, Square, Circular, L-shaped, U-shaped, I-shaped, V-shaped, Other		Footprint Shape	Footprint Shape=[value]	

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.1.43	Gross floor area	Gross floor area is the sum of the floor areas of the spaces within the building, including basements, mezzanine and intermediate-floored tiers, and penthouses with the headroom height of 7.5 ft. (2.2 meters) or greater. Measurements must be taken from the exterior faces of exterior walls OR from the centerline of walls separating buildings, OR from the centerline of walls separating spaces. Excludes non-enclosed (or non-enclosable) roofed-over areas such as exterior covered walkways, porches, terraces or steps, roof overhangs, and similar features. Excludes airshafts, pipe trenches, and chimneys. Excludes floor area dedicated to the parking and circulation of motor vehicles (ASHRAE).	Square feet	Number			Gross Floor Area	Floor Area Qualifier="Gross" Spatial Unit Type="Floor" Area=[value]	ft2
B.3.1.44	Net floor area	Net occupiable floor area: the floor area of an occupiable space defined by the inside surfaces of its walls but excluding shafts, column enclosures, and other permanently enclosed, inaccessible, and un-occupiable areas. Obstructions in the space such as furnishings, display or storage racks, and other obstructions, whether temporary or permanent, may not be deducted from the space are considered to be part of the net occupiable area (ANSI/ASHRAE Standard 62.1-2007)	Square feet	Number			Net Floor Area	Floor Area Qualifier="Net" Spatial Unit Type="Floor" Area=[value]	ft2
B.3.1.45	Conditioned floor area	All finished space that is within the (insulated) conditioned space boundary (i.e., within the insulated envelope), regardless of HVAC configuration (RESNET Formal Interpretation 2010-02 http://www.resnet.us/standards/Floor_Area_Interpretation.pdf)	Square feet	Number			Conditioned Floor Area	Conditioning Status="Conditioned" Spatial Unit Type="Floor" Area=[value]	ft2

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.1.46	Finished floor area	An enclosed area in a house that is suitable for year-round use, embodying walls, floors, and ceilings that is similar to the rest of the house (RESNET Formal Interpretation 2010-02 http://www.resnet.us/standards/Floor_Area_Interpretation.pdf)	Square feet	Number			Finished Floor Area	Finished Status="Finished" Spatial Unit Type="Floor" Area=[value]	ft2
B.3.1.47	Number of stories above grade			Number			Floor Above Grade Quantity	Spatial Unit Type="Floor" Location="Above grade" Quantity=[value]	
B.3.1.48	Cooled floor area	The total area of all enclosed spaces measured to the internal face of the external walls. Included are areas of sloping surfaces such as staircases, galleries, raked auditoria, and tiered terraces where the area taken is from the area on the plan. Excluded are areas that are not enclosed such as open floors, covered ways and balconies.	Square feet	Number			Cooled Floor Area	Conditioning Status="Cooled" Spatial Unit Type="Floor" Area=[value]	ft2
B.3.1.49	Heated floor area	The total area of all enclosed spaces measured to the internal face of the external walls. Included are areas of sloping surfaces such as staircases, galleries, raked auditoria, and tiered terraces where the area taken is from the area on the plan. Excluded are areas that are not enclosed such as open floors, covered ways and balconies.	Square feet	Number			Heated Floor Area	Conditioning Status="Heated" Spatial Unit Type="Floor" Area=[value]	ft2

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.1.50	Unconditioned floor area	An enclosed space within a building that does not meet the requirements of a conditioned space. Spaces that have no control over thermal conditions but intentionally or unintentionally receive thermal energy from adjacent spaces are considered unconditioned spaces (such as an attached garage on a house or a vestibule with no thermal comfort criteria). Spaces that are ventilated only to maintain air quality are considered unconditioned spaces (such as a parking garage with no thermal comfort criteria) (Standard Definitions of Building Geometry for Energy Evaluation, http://www.nrel.gov/docs/fy06osti/38600.pdf).	Square feet	Number			Unconditioned Floor Area	Conditioning Status="Unconditioned" Spatial Unit Type="Floor" Area=[value]	ft2
B.3.1.51	Building volume	A volume of a building surrounded by solid surfaces such as walls, roofs, floors, fenestration, and doors where the total opening area to the outside can be reduced to less than 1% of the Gross Interior Floor Area of the space. Spaces that are temporarily enclosed, such as patios enclosed with tenting, are not considered Enclosed Spaces for annual building analysis. These spaces should be treated as exterior to the building (Standard Definitions of Building Geometry for Energy Evaluation, http://www.nrel.gov/docs/fy06osti/38600.pdf).	Cubic feet	Number			Building Volume	Premises Level="Building" Volume=[value]	ft3

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.1.52	Conditioned building volume	Volume inside the building envelope of the conditioned spaces. This metric can be calculated as the volume of the building if every space is conditioned or on a floor-by-floor basis. For spaces with vertical walls and horizontal ceilings and floors, this is calculated as the Gross Conditioned Floor Area times the height from the top surface of the finished floor to the top surface of the finished floor separating levels of the building or to the inside surface of the roof for the top floor. The volume of spaces that have non-vertical walls or non-horizontal ceilings of floors should be calculated separately to properly account for the non-rectangular geometry. This metric does include the volume of floor or ceiling return air plenums (Standard Definitions of Building Geometry for Energy Evaluation, http://www.nrel.gov/docs/fy06osti/38600.pdf).	Cubic feet	Number			Conditioned Building Volume	Conditioning Status="Conditioned" Premises Level="Building" Volume=[value]	ft3
B.3.1.53	Foundation type			Enumeration	Basement (Finished, Conditioned); Crawlspace (Vented or Conditioned); Slab on grade; Garage (Conditioned); Above apartment; Combination; Ambient; Rubble stone; Other)		Location Conditioning Status Foundation Ground Coupling	Location=[value] Conditioning Status=[value] Foundation Ground Coupling=[value]	
B.3.1.54	Thermal boundary			Enumeration	Frame floor, Foundation wall		Thermal Boundary Installation	Thermal Boundary Installation=[value]	
B.3.1.55	Attic type			Enumeration	Cape cod, Cathedral ceiling, Flat roof, Unvented attic, Vented attic, Venting unknown, Other		Ceiling Configuration	Ceiling Configuration=[value]	
B.3.1.56	Average attic R value			Number			Avearge Attic R Value	Interval Measure="Average" Ceiling Configuration="Attic" R Value=[value]	hr·ft2·°F/Btu
B.3.1.57	Average wall R value			Number			Avearge Wall R Value	Interval Measure="Average" Opaque Surface="Wall" R Value=[value]	hr·ft2·°F/Btu
B.3.1.58	Average floor R value			Number			Avearge Floor R Value	Interval Measure="Average" Opaque Surface="Floor" R Value=[value]	hr·ft2·°F/Btu
B.3.1.59	Average duct R value			Number			Avearge Duct R Value	Interval Measure="Average" Location="Duct" R Value=[value]	hr·ft2·°F/Btu
B.3.1.60	Garage present			Boolean			Garage	Location="Garage"	
B.3.1.61	Garage location			Enumeration	Basement, First floor, Detached		Garage Location	Location="Garage" Location=[value]	

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.1.62	Space above garage			Enumeration	Conditioned area, Unconditioned attic, Crawlspace		Above Garage Conditioning Status	Location="Above garage" Conditioning Status=[value]	
B.3.1.63	Energy score type	The Home Energy Rating System (HERS) index is a measure of a home's energy efficiency. It can also be used to inspect and calculate a home's energy performance. The lower a home's HERS Index Score, the greater its efficiency (RESNET). The Home Energy Score is an asset rating for homes, developed and administered by the U.S. Department of Energy. After conducting a brief walk thru of a home, a qualified assessor calculates a home's score on a 10 point scale using a standard scoring tool, with 10 reflecting homes that use the least amount of energy assuming standard operating conditions (US DOE).		Enumeration	RESNET, U.S. DOE, Other		Assessment Program	Assessment Program=[value]	
B.3.1.64	Other score type	Name of the score type if "other" is selected in Score Type		Text			Assessment Program	Assessment Program=[value]	
B.3.1.65	Score date			Date			Assessment Recognition Status Date	Assessment Recognition Status Date=[value]	
B.3.1.66	Energy score			Number			Assessment Value	Assessment Value=[value]	
B.3.1.67	Climate zone DOE			Enumeration	Subarctic, Marine, Hot-dry, Mixed-dry, Hot-humid, Mixed-humid, Cold, Very cold		DOE Climate Zone	Climate Zone Type="DOE" Climate Zone=[value]	
B.3.1.68	Climate zone IECC year			Enumeration	2012, 2009, 2006, 2003		IECC Year	IECC Year=[value]	
B.3.1.69	Climate zone IECC			Enumeration	1A, 1B, 1C, 2A, 2B, 2C, 3A, 3B, 3C, 4A, 4B, 4C, 5A, 5B, 5C, 6A, 6B, 6C, 7, 8		IECC Climate Zone	Climate Zone Type="IECC" Climate Zone=[value]	
B.3.1.70	Radon zone			Number			Radon Zone	Radon Zone=[value]	
B.3.1.71	Termite zone			Enumeration	None to slight, Slight to moderate, Moderate to heavy, Very heavy		Termite Zone	Termite Zone=[value]	
B.3.1.72	Hurricane zone			Boolean			Hurricane Zone	Hurricane Zone=[value]	
B.3.1.73	Flood zone			Boolean			Flood Zone	Flood Zone=[value]	
B.3.1.74	Earthquake zone			Boolean			Earthquake Zone	Earthquake Zone=[value]	
B.3.1.75	Weather station name			Text		Weather location used in model simulation and/or utility bill regression analysis	Weather Station Name	Weather Station Name=[value]	
B.3.1.76	Weather station city			Text		Weather location used in model simulation and/or utility bill regression analysis	Weather Station City	Weather Data Type="Weather station" City=[value]	
B.3.1.77	Weather station state			State code		Weather location used in model simulation and/or utility bill regression analysis	Weather Station State	Weather Data Type="Weather station" State=[value]	
B.3.1.78	WBAN			Text		Weather location used in model simulation and/or utility bill regression analysis	WBAN Full Name	Weather Station Category="WBAN" Full Name=[value]	

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.1.79	Weather station type			Enumeration	TMY, TMY2, TMY3, Other	Weather location used in model simulation and/or utility bill regression analysis	Weather Data Type	Weather Data Type=[value]	
B.3.1.80	Weather station use			Enumeration	Billing analysis, Energy modeling		NO MAPPING		
B.3.1.81	Zone name			Text			Thermal Zone Name Identifier	Premises Level="Thermal zone" Identifier Label="Name" Identifier=[value]	
B.3.1.82	Zone type			Enumeration	Conditioned, Unconditioned		Thermal Zone Conditioning Status	Premises Level="Thermal zone" Conditioning Status=[value]	
B.3.1.83	Space name			Text			Space Name Identifier	Premises Level="Space" Identifier Label="Name" Identifier=[value]	
B.3.1.84	Number of bedrooms			Number			Bedroom Quantity	Spatial Unit Type="Bedroom" Quantity=[value]	
B.3.1.85	Floor area		Square feet	Number			Floor Area	Opaque Surface="Floor" Area=[value]	ft2
B.3.1.86	Volume		Cubic feet	Number			Volume	Volume=[value]	ft3
B.3.1.87	Ceiling height		Linear feet	Number			Floor To Ceiling Height	Floor Height Measurement=" Floor to ceiling height " Height=[value]	ft

B.3.2 AIR INFILTRATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.2.1	Air infiltration measurement date			Date			Date	Date=[value]	Date
B.3.2.2	Business conducting infiltration test			System identifier			Evaluator Company Name	Contact Label="Evaluator" Company Name=[value]	
B.3.2.3	Individual conducting test			System identifier			Evaluator Full Name	Contact Label="Evaluator" Full Name=[value]	
B.3.2.4	Outside temperature		Degrees Fahrenheit	Number			Dry Bulb Temperature Weather Metric Value	Weather Metric="Dry bulb temperature" Weather Metric Value=[value] Unit Of Measure="F"	F
B.3.2.5	Wind conditions			Enumeration	Windy, Normal		NO MAPPING		
B.3.2.6	Type of infiltration measurement			Enumeration	Blower door, Tracer gas, Estimate, Checklist		Air Infiltration Test	Air Infiltration Test=[value]	
B.3.2.7	Type of blower door test			Enumeration	Pressurization, Depressurization		Air Infiltration Blower Door Test	Air Infiltration Blower Door Test=[value]	
B.3.2.8	House pressure	House pressure number must be positive.	Pa	Number			NO MAPPING		
B.3.2.9	Fan pressure		Pa	Number			NO MAPPING		
B.3.2.10	Fan ring used			Enumeration	Open, A, B		NO MAPPING		
B.3.2.11	Building leakiness description			Enumeration	Very tight, Tight, Average, Leaky, Very leaky		Air Infiltration Description	Air Infiltration Description=[value]	
B.3.2.12	Building air leakage unit			Enumeration	CFM, CFMnatural, ACH, ACHnatural		Air Infiltration Value Units	Air Infiltration Value Units=[value]	
B.3.2.13	Building air leakage			Number			Air Infiltration Value	Air Infiltration Value=[value]	
B.3.2.14	Effective leakage area		Square inches	Number			Effective Leakage Area	Effective Leakage Area=[value]	
B.3.2.15	Air sealing hours		Hours	Number			NO MAPPING		
B.3.2.16	Attic areas air sealed			Enumeration	Attic floor, top plates, attic kneewall transitions, plumbing wet walls, chimney/flue chases, recessed lights, attic access, dropped soffit, attic level transitions, mechanical chases, other		Weatherstripped Attic Component	Weatherstrip Status="Weatherstripped" Attic Component=[value]	

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.2.17	Basement/crawlspace areas air sealed			Enumeration	Plumbing penetrations, access, wiring penetrations, chimney/flue chase, mechanical chases, rim joists, windows and doors, foundation service penetrations, cantilevers, other		Weatherstripped Foundation Component	Weatherstrip Status="Weatherstripped" Foundation Component=[value]	
B.3.2.18	Living space areas air sealed			Enumeration	Home-garage connection, rim joists, baseboards, windows and doors, plumbing penetrations, HVAC registers, interior sheathing voids, cantilevers, other		Weatherstripped Opaque Surface Component	Weatherstrip Status="Weatherstripped" Opaque Surface Component=[value]	

B.3.3 ATTIC AND ROOF

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.3.1	Roof color			Enumeration	Light, Medium, Dark, Reflective		Roof Color	Opaque Surface="Roof" Color=[value]	
B.3.3.2	Roof type			Enumeration	Shingles, Slate or tile shingles, Wood shingles or shakes, Asphalt or fiberglass shingles, Metal surfacing, Expanded polystyrene sheathing, Plastic/rubber/synthetic sheeting, Concrete, Cool roof, Green roof, No one major type, Other		Roof Finish	Opaque Surface="Roof" Finish=[value]	
B.3.3.3	Deck type			Enumeration	Concrete, Metal, Wood, Other		Roof Deck Finish	Opaque Surface="Roof deck" Finish=[value]	
B.3.3.4	Roof pitch			Fraction			Roof Tilt Angle	Opaque Surface="Roof" Tilt Angle=[value]	degree
B.3.3.5	Roof area		Square feet	Number			Roof Area	Opaque Surface="Roof" Area=[value]	ft2
B.3.3.6	Radiant barrier			Boolean	Radiant barriers are installed in homes, usually in attics, to reduce summer heat gain and reduce cooling costs. The barriers consist of a highly reflective material that reflects radiant heat rather than absorbing it.		Radiant Barrier	Radiant Barrier=[value]	
B.3.3.7	Radiant barrier location			Enumeration	Top side of truss under sheathing, Below bottom cord of truss, Attic floor, Underside of rafters, Other		Radiant Barrier Installation	Radiant Barrier Installation=[value]	
B.3.3.8	Attached to space	Use to indicate space under the attic		System identifier			NO MAPPING		
B.3.3.9	Attached to roof			System identifier			NO MAPPING		
B.3.3.10	Attic exterior adjacent to			Enumeration	Ambient, Garage, Attic, Crawlspace, Ground, Living space, Unconditioned basement, Other		Attic Exterior Exposure	Ceiling Configuration="Attic" Location="Exterior" Exposure=[value]	

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.3.11	Attic interior adjacent to			Enumeration	Ambient, Garage, Attic, Crawlspace, Ground, Living space, Unconditioned basement, Other		Attic Interior Inposure	Ceiling Configuration="Attic" Location="Interior" Exposure=[value]	
B.3.3.12	Attic knee wall			Enumeration			NO MAPPING		
B.3.3.13	Attic type			Enumeration	Cape cod, Cathedral ceiling, Flat roof, Unvented attic, Vented attic, Venting unknown, Other		Ceiling Configuration	Ceiling Configuration=[value]	
B.3.3.14	Surface area		Square feet	Number			Area (of what?)	Area=[value]	ft2
B.3.3.15	Stud size (rafters)			Enumeration	2x2, 2x4, 2x6, 2x8, 2x10, 2x12, 2x14, 2x16, Other		NO MAPPING		
B.3.3.16	Spacing (rafters)		Inches	Number			Framing Spacing	Material Qualifier="Framing" Spacing=[value]	ft
B.3.3.17	Framing factor (rafters)			Fraction			Framing Factor	Framing Factor =[value]	
B.3.3.18	Stud material (rafters)			Enumeration	Wood, Metal		Framing Material	Material Qualifier="Framing" Material=[value]	

B.3.4 FOUNDATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.4.1	Foundation type			Enumeration	Basement (Finished, Conditioned); Crawlspace (Vented or Conditioned); Slab on grade; Garage (Conditioned); Above apartment; Combination; Ambient; Rubble stone; Other)		Location Conditioning Status Foundation Ground Coupling	Location=[value] Conditioning Status=[value] Foundation Ground Coupling=[value]	
B.3.4.2	Thermal boundary			Enumeration	Frame floor, Foundation wall		Thermal Boundary Installation	Thermal Boundary Installation=[value]	
B.3.4.3	Stud size			Enumeration	2x2, 2x4, 2x6, 2x8, 2x10, 2x12, 2x14, 2x16 Other	May be repeated for floor joists, floor trusses, and interior studs	NO MAPPING		
B.3.4.4	Spacing		Inches	Number		May be repeated for floor joists, floor trusses, and interior studs	Framing Spacing	Material Qualifier="Framing" Spacing=[value]	ft
B.3.4.5	Framing factor			Fraction		May be repeated for floor joists, floor trusses, and interior studs	Framing Factor	Framing Factor =[value]	
B.3.4.6	Stud material			Enumeration	Wood, metal	May be repeated for floor joists, floor trusses, and interior studs	Framing Material	Material Qualifier="Framing" Material=[value]	
B.3.4.7	Floor covering			Enumeration	Carpet, Tile, Hardwood, Vinyl	May be repeated for frame floor and slab	Floor Finish	Opaque Surface="Floor" Finish=[value]	
B.3.4.8	Area		Square feet	Number		May be repeated for frame floor, slab and foundation wall.	Area	Area=[value]	
B.3.4.9	Insulation grade			Number		May be repeated for frame floor, foundation wall, perimeter, and under slab insulation	NO MAPPING		
B.3.4.10	Insulation condition			Enumeration	Good, Fair, Poor	May be repeated for frame floor, foundation wall, perimeter, and under slab insulation	Insulation Condition	Material Qualifier="Insulation" Condition=[value]	
B.3.4.11	Insulation location			Enumeration	Interior, Exterior	May be repeated for frame floor, foundation wall, perimeter, and under slab insulation	Insulation Location	Material Qualifier="Insulation" Location=[value]	
B.3.4.12	Assembly effective R-value	Indicate the effective R-value of the complete assembly including any air films or other treatments	R-value	Number		May be repeated for frame floor, foundation wall, perimeter, and under slab insulation	Effective R Value	Effective R Value=[value]	hr·ft2·°F/Btu
B.3.4.13	Misaligned insulation			Boolean		May be repeated for frame floor, foundation wall, perimeter, and under slab insulation	NO MAPPING		

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.4.14	Insulation type			Enumeration	Cavity, Continuous	May be repeated for frame floor, foundation wall, perimeter, and under slab insulation	Insulation Continuity	Insulation Continuity=[value]	
B.3.4.15	Insulation material			Enumeration	Batt (Fiberglass, Rockwool, Recycled cotton, Loose fill, Unknown); Loose fill (Cellulose, Fiberglass, Rockwool, Vermiculite, Unknown); Rigid (Rigid Polyisocyanurate, XPS, Expanded Polystyrene, Unknown); Spray foam (Open Cell, Closed Cell, Unknown); Other (Describe); Unknown	May be repeated for frame floor, foundation wall, perimeter, and under slab insulation	Insulation Material	Material Qualifier="Insulation" Material=[value]	
B.3.4.16	Insulation nominal R-value			Number		May be repeated for frame floor, foundation wall, perimeter, and under slab insulation	Insulation R Value	Material Qualifier="Insulation" R Value=[value]	hr·ft2·°F/Btu
B.3.4.17	Insulation thickness		Inches	Number		May be repeated for frame floor, foundation wall, perimeter, and under slab insulation	Insulation Thickness	Material Qualifier="Insulation" Thickness=[value]	ft
B.3.4.18	Foundation wall type			Enumeration	Solid concrete, Concrete block, Concrete block foam core, Concrete block vermiculite core, Double brick, Wood		Foundation Wall Construction Method	Opaque Surface="Foundation wall" Construction Method=[value]	
B.3.4.19	Length	Length of foundation wall	Linear feet	Number			Length	Length=[value]	ft
B.3.4.20	Height	Height of foundation wall	Linear feet	Number			Height	Height=[value]	ft
B.3.4.21	Thickness	Thickness of foundation wall excluding interior framing	Inches	Number			Thickness	Thickness=[value]	ft
B.3.4.22	Below grade depth	Depth below grade of the foundation wall	Linear feet	Number			Below Grade Depth	Location="Below grade" Depth=[value]	ft
B.3.4.23	Adjacent to foundation					Use this system identifier to indicate if foundation wall is adjacent to another foundation	Exterior Exposure	Location="Exterior" Exposure=[value]	
B.3.4.24	Adjacent to			Enumeration	Ambient, Garage, Attic, Crawlspace, Ground, Living space, Unconditioned basement, Other housing unit, Other		Exterior Exposure	Location="Exterior" Exposure=[value]	
B.3.4.25	Perimeter	Length of slab perimeter	Linear feet	Number			Perimeter	Perimeter=[value]	ft
B.3.4.26	Exposed perimeter	Perimeter of the slab exposed to ambient conditions	Linear feet	Number			Exterior Perimeter	Location="Exterior" Perimeter=[value]	ft
B.3.4.27	Perimeter insulation depth	Depth from grade to bottom of vertical slab perimeter insulation	Linear feet	Number			Perimeter Insulation Depth	Thermal Zone Layout="Perimeter" Material Qualifier="Insulation" Depth=[value]	ft
B.3.4.28	Under slab insulation width		Inches	Number			Below Slab Insulation Width	Location="Below" Location="Slab" Material Qualifier="Insulation" Width=[value]	ft
B.3.4.29	On grade exposed perimeter	Perimeter of slab that is on-grade (2ft. Below grade or less) and exposed to ambient conditions	Linear feet	Number			On Grade Exterior Perimeter	Location="On grade" Location="Exterior" Perimeter=[value]	ft
B.3.4.30	Depth below grade	Depth from the top of the slab surface to grade	Linear feet	Number			Below Grade Depth	Location="Below grade" Depth=[value]	ft

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
					B.3.5 RIM JOISTS				
B.3.5.1	Attached to space			System identifier			NO MAPPING		
B.3.5.2	Exterior adjacent to			Enumeration	Ambient, Garage, Attic, Crawlspace, Ground, Living space, Unconditioned basement, Other housing unit, Other		Exterior Exposure	Location="Exterior" Exposure=[value]	
B.3.5.3	Interior adjacent to			Enumeration	Ambient, Garage, Attic, Crawlspace, Ground, Living space, Unconditioned basement, Other housing unit, Other		Interior Inposure	Location="Interior" Exposure=[value]	
B.3.5.4	Area		Square feet	Number			Area	Area=[value]	ft2
B.3.5.5	Insulation grade			Number			NO MAPPING		
B.3.5.6	Insulation condition			Enumeration	Good, Fair, Poor		Insulation Condition	Material Qualifier="Insulation" Condition=[value]	
B.3.5.7	Insulation location			Enumeration	Interior, Exterior		Insulation Location	Material Qualifier="Insulation" Location=[value]	
B.3.5.8	Assembly effective R-value	Indicate the effective R-value of the complete assembly including any air films or other treatments	R-value	Number			Effective R Value	Effective R Value=[value]	hr·ft2·°F/Btu
B.3.5.9	Misaligned insulation			Boolean			NO MAPPING		
B.3.5.10	Insulation type			Enumeration	Cavity, Continuous		Insulation Continuity	Insulation Continuity=[value]	
B.3.5.11	Insulation material			Enumeration	Batt (Fiberglass, Rockwool, Recycled cotton, Loose fill, Unknown); Loose fill (Cellulose, Fiberglass, Rockwool, Vermiculite, Unknown); Rigid (Rigid Polyisocyanurate, XPS, Expanded Polystyrene, Unknown); Spray foam (Open Cell, Closed Cell, Unknown); Other (Describe); Unknown		Insulation Material	Material Qualifier="Insulation" Material=[value]	
B.3.5.12	Insulation nominal R-value			Number			Insulation R Value	Material Qualifier="Insulation" R Value=[value]	hr·ft2·°F/Btu
B.3.5.13	Insulation thickness		Inches	Number			Insulation Thickness	Material Qualifier="Insulation" Thickness=[value]	ft
B.3.5.14	Size (floor joists)			Enumeration	2x2, 2x4, 2x6, 2x8, 2x10, 2x12, 2x14, 2x16, Other		NO MAPPING		
B.3.5.15	Spacing (floor joists)		Inches	Number			Framing Spacing	Material Qualifier="Framing" Spacing=[value]	ft
B.3.5.16	Framing factor (floor joists)			Fraction			Framing Factor	Framing Factor =[value]	
B.3.5.17	Stud material (floor joists)			Enumeration	Wood, metal		Framing Material	Material Qualifier="Framing" Material=[value]	
					B.3.6 WALLS				
B.3.6.1	Attached to space			System identifier			NO MAPPING		

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.6.2	Exterior adjacent to			Enumeration	Ambient, Garage, Attic, Crawlspace, Ground, Living space, Unconditioned basement, Other housing unit, Other		Exterior Exposure	Location="Exterior" Exposure=[value]	
B.3.6.3	Interior adjacent to			Enumeration	Ambient, Garage, Attic, Crawlspace, Ground, Living space, Unconditioned basement, Other housing unit, Other		Interior Inposure	Location="Interior" Exposure=[value]	
B.3.6.4	Wall type			Enumeration	Wood stud (Expanded Polystyrene Sheathing or Optimum value engineering); Double wood stud (Staggered); Concrete masonry unit; Structurally insulated panel; Insulated concrete forms; Steel frame; Solid concrete; Structural brick; Straw bale; Stone, Other		Wall Construction Method	Opaque Surface="Wall" Construction Method=[value]	
B.3.6.5	Thickness	Thickness of the wall assembly	Inches	Number			Thickness	Thickness=[value]	ft
B.3.6.6	Surface area	Gross wall area	Square feet	Number			Area	Area=[value]	ft2
B.3.6.7	Orientation			Enumeration	North, Northwest, West, Southwest, South, Southeast, East, Northeast		Cardinal Orientation	Cardinal Orientation=[value]	
B.3.6.8	Azimuth	Number between 0 and 360	Degrees	Number			Azimuth	Azimuth=[value]	degree
B.3.6.9	Size of studs			Enumeration	2x2, 2x4, 2x6, 2x8, 2x10, 2x12, 2x14, 2x16,Other		NO MAPPING		
B.3.6.10	Spacing		Inches	Number			Framing Spacing	Material Qualifier="Framing" Spacing=[value]	ft
B.3.6.11	Framing factor	Percent of the total wall area occupied by framing members		Fraction			Framing Factor	Framing Factor =[value]	
B.3.6.12	Material			Enumeration	Wood, metal		Framing Material	Material Qualifier="Framing" Material=[value]	
B.3.6.13	Siding	Material, such as boards or shingles, used for surfacing the outside walls of a frame building		Enumeration	Wood siding, Stucco, Synthetic stucco, Vinyl siding, Aluminum siding, Brick veneer, Asbestos siding, Fiber cement siding, Composite shingle siding, Masonite siding, Other		Finish	Finish=[value]	
B.3.6.14	Wall color			Enumeration	Light, Medium, Dark, Reflective		Wall Color	Opaque Surface="Wall" Color=[value]	
B.3.6.15	Insulation grade			Number			NO MAPPING		
B.3.6.16	Insulation condition			Enumeration	Good, Fair, Poor		Insulation Condition	Material Qualifier="Insulation" Condition=[value]	
B.3.6.17	Insulation location			Enumeration	Interior, Exterior		Insulation Location	Material Qualifier="Insulation" Location=[value]	
B.3.6.18	Assembly effective R-value	Indicate the effective R-value of the complete assembly including any air films or other treatments	R-value	Number			Effective R Value	Effective R Value=[value]	hr·ft2·°F/Btu
B.3.6.19	Misaligned insulation			Boolean			NO MAPPING		

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.6.20	Insulation type			Enumeration	Cavity, Continuous		Insulation Continuity	Insulation Continuity=[value]	
B.3.6.21	Insulation material			Enumeration	Batt (Fiberglass, Rockwool, Recycled cotton, Loose fill, Unknown); Loose fill (Cellulose, Fiberglass, Rockwool, Vermiculite, Unknown); Rigid (Rigid Polyisocyanurate, XPS, Expanded Polystyrene, Unknown); Spray foam (Open Cell, Closed Cell, Unknown); Other (Describe); Unknown		Insulation Material	Material Qualifier="Insulation" Material=[value]	
B.3.6.22	Insulation material			Enumeration	Unknown		Duplicate		
B.3.6.23	Insulation nominal R-value			Number			Insulation R Value	Material Qualifier="Insulation" R Value=[value]	hr·ft2·°F/Btu
B.3.6.24	Insulation thickness		Inches	Number			Insulation Thickness	Material Qualifier="Insulation" Thickness=[value]	ft

B.3.7 WINDOWS

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.7.1	Area	Total surface window area for this group of windows.	Square feet	Number		The Window element can be used to describe a single window or a group of windows with the same characteristics. For a group of windows, use the sum of the window areas in the Area sub-element.	Area	Area=[value]	ft2
B.3.7.2	Quantity	Number of windows in the group		Number			Quantity	Quantity=[value]	
B.3.7.3	Azimuth		Degrees	Number			Azimuth	Azimuth=[value]	degree
B.3.7.4	Orientation			Enumeration	North, Northwest, West, Southwest, South, Southeast, East, Northeast		Cardinal Orientation	Cardinal Orientation=[value]	
B.3.7.5	Frame type			Enumeration	Aluminum (Thermal break); Composite; Fiberglass; Metal; Vinyl; Wood; Other		Fenestration Frame Material	Fenestration Frame Material=[value]	
B.3.7.6	Glass layers			Enumeration	Single-pane, Double-pane, Triple-pane, Multi-layered, Single-paned with storms, Single-paned with low-e storms, Other		Fenestration Glass Layer Description	Fenestration Glass Layer Description=[value]	
B.3.7.7	Glass type			Enumeration	Low-e, Tinted, Reflective, Tinted/reflective, Other		Fenestration Glazing Type	Fenestration Glazing Type=[value]	
B.3.7.8	Gas fill			Enumeration	Air, Argon, Other		Fenestration Gas Fill	Fenestration Gas Fill=[value]	
B.3.7.9	Window treatments			Enumeration	Window film, Solar screen, Shading		Shading System	Shading System=[value]	
B.3.7.10	Window condition			Enumeration	Good, Moderate, Poor		Window Condition	Fenestration="Window" Condition=[value]	

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.7.11	U-factor	Rate of heat loss indicated in terms of the U-factor (U-value) of a window assembly. The lower the U-factor, the greater a window's resistance to heat flow and the better its insulating properties.		Number			U Factor	U Factor=[value]	Btu/hr·ft2·°F
B.3.7.12	Solar heat gain coefficient (SHGC)			Fraction			Solar Heat Gain Coefficient	Solar Heat Gain Coefficient=[value]	
B.3.7.13	NFRC-certified			Boolean			NFRC certification	Fenestration Certification="NFRC certification"	
B.3.7.14	Third party certification	Independent organization has verified that product or appliance meets or exceeds the standard in question (ENERGY STAR, CEE, or other)		Enumeration	ENERGY STAR, Other		Third party certification	Fenestration Certification="Third party certification"	
B.3.7.15	Visible transmittance	Optical property that indicates the amount of visible light transmitted		Fraction			Visible Transmittance	Visible Transmittance=[value]	
B.3.7.16	Interior shading			Enumeration	Light blinds, Dark blinds, Light shades, Dark shades, Light curtains, Dark curtains, None		Interior Shading System	Location="Interior" Shading System=[value]	
B.3.7.17	Interior shading factor	A measure of the ability of a window or skylight to transmit solar heat, relative to that ability for 3 mm (1/8-inch) clear, double-strength, single glass. Shading coefficient is being phased out in favor of the solar heat gain coefficient (SHGC), and is approximately equal to the SHGC multiplied by 1.15.		Fraction			NO MAPPING		
B.3.7.18	Exterior shading type			Enumeration	External overhangs, Awnings, Solar screens, Solar film, Deciduous tree, Evergreen tree, Building, Other, None		Exterior Shading System	Location="Exterior" Shading System=[value]	
B.3.7.19	Depth of overhangs		Inches	Number			Overhang Depth	Shading System="Overhang" Depth=[value]	ft
B.3.7.20	Distance to top of window (overhangs)	Vertical distance from overhang to top of window	Inches	Number			Overhang Window Offset	Shading System="Overhang" Fenestration="Window" Offset=[value]	ft
B.3.7.21	Distance to bottom of window (overhangs)	Vertical distance from overhang to bottom of window	Inches	Number			NO MAPPING		
B.3.7.22	Weather stripping			Boolean			Weatherstripped	Weatherstrip Status="Weatherstripped"	
B.3.7.23	Operable			Boolean			Operable	Fenestration Operation="Operable"	
B.3.7.24	Movable window insulation R-value	Rigid opaque foam panels (permanently installed or not) or cellular shades that provide insulation.	R-value	Number			Moveable Insulation R Value	Insulation Application="Moveable insulation" R Value=[value]	hr·ft2·°F/Btu
B.3.7.25	Solar tube			Boolean			Tubular Skylight	Fenestration="Tubular skylight"	
B.3.7.26	Pitch			Fraction			Tilt Angle (of what?)	Tilt Angle=[value]	degrees

B.3.8 SKYLIGHTS

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.8.1	Area		Square feet	Number		The Skylight element can be used to describe a single skylight or a group of skylights with the same characteristics. For a group of skylights, use the sum of the skylight areas in the Area sub-element.	Area	Area=[value]	ft2
B.3.8.2	Quantity			Number			Quantity	Quantity=[value]	
B.3.8.3	Azimuth	Number between 0 and 360	Degrees	Number			Azimuth	Azimuth=[value]	degree
B.3.8.4	Orientation			Enumeration	North, Northwest, West, Southwest, South, Southeast, East, Northeast		Cardinal Orientation	Cardinal Orientation=[value]	
B.3.8.5	Frame type			Enumeration	Aluminum (Thermal break); Composite; Fiberglass; Metal; Vinyl; Wood; Other		Fenestration Frame Material	Fenestration Frame Material=[value]	
B.3.8.6	Glass layers			Enumeration	Single-pane, Double-pane, Triple-pane, Multi-layered, Single-paned with storms, Single-paned with low-e storms, Other		Fenestration Glass Layer Description	Fenestration Glass Layer Description=[value]	
B.3.8.7	Glass type			Enumeration	Low-e, Tinted, Reflective, Tinted/reflective, Other		Fenestration Glazing Type	Fenestration Glazing Type=[value]	
B.3.8.8	Gas fill			Enumeration	Air, Argon, Other		Fenestration Gas Fill	Fenestration Gas Fill=[value]	
B.3.8.9	Window treatments			Enumeration	Window film, Solar screen, Shading		Shading System	Shading System=[value]	
B.3.8.10	Window condition			Enumeration	Good, Moderate, Poor		Skylight Condition	Fenestration="Skylight" Condition=[value]	
B.3.8.11	U-factor			Number			U Factor	U Factor=[value]	Btu/hr·ft2·°F
B.3.8.12	Solar heat gain coefficient (SHGC)	Fraction of incident solar radiation admitted through a window, both directly transmitted and absorbed and subsequently released inward		Fraction			Solar Heat Gain Coefficient	Solar Heat Gain Coefficient=[value]	
B.3.8.13	NFRC-certified			Boolean			NFRC certification	Fenestration Certification="NFRC certification"	
B.3.8.14	Third party certification	Independent organization has verified that product or appliance meets or exceeds the standard in question (ENERGY STAR, CEE, or other)		Enumeration	ENERGY STAR, Other		Third party certification	Fenestration Certification="Third party certification"	
B.3.8.15	Visible transmittance			Fraction			Visible Transmittance	Visible Transmittance=[value]	
B.3.8.16	Interior shading			Enumeration	Light blinds, Dark blinds, Light shades, Dark shades, Light curtains, Dark curtains, None		Interior Shading System	Location="Interior" Shading System=[value]	

B.3.1 SITE AND BUILDING ENVELOPE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.8.17	Interior shading factor			Fraction	A measure of the ability of a window or skylight to transmit solar heat, relative to that ability for 3 mm (1/8-inch) clear, double-strength, single glass. Shading coefficient is being phased out in favor of the solar heat gain coefficient (SHGC), and is approximately equal to the SHGC multiplied by 1.15.		NO MAPPING		
B.3.8.18	Exterior shading type			Enumeration	External overhangs, Awnings, Solar screens, Solar film, Deciduous tree, Evergreen tree, Other, Building, None		Exterior Shading System	Location="Exterior" Shading System=[value]	
B.3.8.19	Depth of overhangs		Inches	Number			Overhang Depth	Shading System="Overhang" Depth=[value]	ft
B.3.8.20	Distance to top of window (overhangs)	Vertical distance from overhang to top of window	Inches	Number			Overhang Window Offset	Shading System="Overhang" Fenestration="Window" Offset=[value]	ft
B.3.8.21	Distance to bottom of window (overhangs)	Vertical distance from overhang to bottom of window	Inches	Number			NO MAPPING		
B.3.8.22	Weather stripping			Boolean			Weatherstripped	Weatherstrip Status="Weatherstripped"	
B.3.8.23	Operable			Boolean			Operable	Fenestration Operation="Operable"	
B.3.8.24	Solar tube			Boolean			Tubular Skylight	Fenestration="Tubular skylight"	
B.3.8.25	Pitch			Fraction			Tilt Angle (of what?)	Tilt Angle=[value]	degrees

B.3.9 DOORS

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.3.9.1	Number of doors			Number			Quantity	Quantity=[value]	
B.3.9.2	Surface area		Square feet	Number			Area	Area=[value]	ft2
B.3.9.3	Azimuth		Degrees	Number			Azimuth	Azimuth=[value]	degree
B.3.9.4	Orientation			Enumeration	North, Northwest, West, Southwest, South, Southeast, East, Northeast		Cardinal Orientation	Cardinal Orientation=[value]	
B.3.9.5	Door type			Enumeration	Interior, Exterior, Storm		NO MAPPING		
B.3.9.6	Door material			Enumeration	Solid wood, Hollow wood, Non-insulated metal, Insulated metal, Glass		Door Construction	Door Construction=[value]	
B.3.9.7	Weather stripping			Boolean			Weatherstripped	Weatherstrip Status="Weatherstripped"	
B.3.9.8	Storm door			Boolean			NO MAPPING		
B.3.9.9	R-Value			Number			R Value	R Value=[value]	hr·ft2·°F/Btu
B.3.9.10	Third party certification	Independent organization has verified that product or appliance meets or exceeds the standard in question (ENERGY STAR, CEE, or other)		Enumeration	ENERGY STAR, Other		Fenestration Certification	Fenestration Certification=[value]	

B.4.1 HVAC SYSTEM INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.4.1.1	Primary heating system identifier			System identifier		May be used to reference the primary system	NO MAPPING		
B.4.1.2	Primary cooling system identifier			System identifier		May be used to reference the primary system	NO MAPPING		
B.4.1.3	Unit location			Enumeration	Conditioned attic, Unconditioned attic, Conditioned basement, Unconditioned basement, Conditioned space, Vented crawlspace, Unvented crawlspace, Conditioned garage, Unconditioned garage, Mechanical closet, Other interior, Other exterior, Roof deck	May be repeated for heating, cooling, and heat pump systems	Location	Location=[value]	
B.4.1.4	Year installed		Year	Number		May be repeated for heating, cooling, and heat pump systems	Installed Date	Date Status="Installed" Date=[value] Date Format="Year"	year
B.4.1.5	Model year		Year	Number		May be repeated for heating, cooling, and heat pump systems	Year of Manufacture	Year of Manufacture=[value]	year
B.4.1.6	Manufacturer			Text		May be repeated for heating, cooling, and heat pump systems	Manufacturer	Manufacturer=[value]	

B.4.2 HEATING SYSTEM

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.4.2.1	Heating system type			Enumeration	Furnace (Sealed combustion, Condensing system, Atmospheric burner, Power burner); Wall furnace (Sealed combustion, Atmospheric burner, Power burner); Boiler (Hot water, Steam, Sealed combustion, Condensing system, Atmospheric burner, Power burner, Rotary cup); Electric distribution (Baseboard, Radiant floor, Radiant ceiling); Fireplace; Stove; Portable heater; Solar thermal; District steam heat (1-pipe, 2-pipe, Other); Other		Heating Type	Heating Type=[value]	
B.4.2.2	Smoke emissions rate	From EPA label (for wood stoves and fireplaces)	Grams/hr	Number			Smoke Emissions Value	Emission Gas Type="Smoke" Emissions Value=[value]	gram/hr
B.4.2.3	Heating capacity		Btuh	Number			Heating Capacity	HVAC Category="Heating" Capacity=[value]	Btu/hr

B.4.1 HVAC SYSTEM INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.4.2.4	Fuel			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other		Resource	Resource=[value]	
B.4.2.5	Annual heating efficiency units			Enumeration	HSPF, COP, AFUE, Percent		Annual Heating Efficiency Metric Qualifie	Efficiency Qualifier="Annual heating" Efficiency Metric Qualifier=[value]	
B.4.2.6	Annual heating efficiency value			Number			Annual Heating Efficiency Value	Efficiency Qualifier="Annual heating" Efficiency Value=[value]	
B.4.2.7	Fraction of heating load served			Fraction			NO MAPPING		
B.4.2.8	Floor area served		Square feet	Number			Served Floor Area	Floor Area Qualifier="Served" Opaque Surface="Floor" Area=[value]	ft2

B.4.3 COOLING SYSTEM

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.4.3.1	Cooling system type			Enumeration	Central air conditioning, Mini-split, Room air conditioner, Evaporative cooler, Other		Cooling Type	Cooling Type=[value]	
B.4.3.2	Fuel			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other		Resource	Resource=[value]	
B.4.3.3	Capacity		Btuh	Number			Cooling Capacity	HVAC Category="Cooling" Capacity=[value]	Btu/hr
B.4.3.4	Fraction of cooling load served			Fraction			NO MAPPING		
B.4.3.5	Floor area served		Square feet	Number			Floor Area	Opaque Surface="Floor" Area=[value]	ft2
B.4.3.6	Annual cooling efficiency units			Enumeration	SEER, EER, COP, kW/ton		Annual Heating Efficiency Metric Qualifie	Efficiency Qualifier="Annual heating" Efficiency Metric Qualifier=[value]	
B.4.3.7	Annual cooling efficiency value			Number			Annual Heating Efficiency Value	Efficiency Qualifier="Annual heating" Efficiency Value=[value]	
B.4.3.8	Sensible heat fraction			Fraction			Rated Sensible Heat Ratio Efficiency Valu	Efficiency Qualifier="Rated sensible heat ratio" Efficiency Value=[value]	

B.4.4 HEAT PUMP

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.4.4.1	Heat pump type			Enumeration	Water-to-air, Water-to-water, Air-to-air, Mini-split, Ground-to-air		Heat Recovery Type	Heat Recovery Type=[value]	
B.4.4.2	Heating capacity		Btuh	Number			Heating Capacity	HVAC Category="Heating" Capacity=[value]	Btu/hr

B.4.1 HVAC SYSTEM INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.4.4.3	Heating capacity (17 degrees Fahrenheit)		Btuh	Number			NO MAPPING		
B.4.4.4	Cooling capacity		Btuh	Number			Cooling Capacity	HVAC Category="Cooling" Capacity=[value]	Btu/hr
B.4.4.5	Cooling sensible heat fraction			Fraction			NO MAPPING		
B.4.4.6	Geothermal loop			Enumeration	Open, Closed, Direct expansion		Geothermal Loop	Geothermal Loop=[value]	
B.4.4.7	Backup system fuel			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other		Heat Pump Backup System Fuel	Heat Pump Backup System Fuel=[value]	
B.4.4.8	Backup AFUE			Number			Heat Pump Backup AFUE	Heat Pump Backup AFUE=[value]	
B.4.4.9	Backup heating capacity		Btuh	Number			Backup Heating Capacity	Priority="Backup" HVAC Category="Heating" Capacity=[value]	Btu/hr
B.4.4.10	Backup heating switchover temperature		Degrees Fahrenheit	Number			Heat Pump Backup Heating Switchover T	Heat Pump Backup Heating Switchover Temperatu	F
B.4.4.11	Fraction heat load served			Fraction			NO MAPPING		
B.4.4.12	Fraction cool load served			Fraction			NO MAPPING		
B.4.4.13	Floor area served		Square feet	Number			NO MAPPING		
B.4.4.14	Annual cooling efficiency units			Enumeration	SEER, EER, COP, kW/ton		Annual Cooling Efficiency Metric Qualifier	Efficiency Qualifier="Annual cooling" Efficiency Metric Qualifier=[value]	
B.4.4.15	Annual cooling efficiency value			Number			Annual Cooling Efficiency Value	Efficiency Qualifier="Annual cooling" Efficiency Value=[value]	
B.4.4.16	Annual heating efficiency units			Enumeration	HSPF, COP, AFUE, Percent		Annual Heating Efficiency Metric Qualifier	Efficiency Qualifier="Annual heating" Efficiency Metric Qualifier=[value]	
B.4.4.17	Annual heating efficiency value			Number			Annual Heating Efficiency Value	Efficiency Qualifier="Annual heating" Efficiency Value=[value]	

B.4.5 HVAC CONTROLS

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.4.5.1	Control type			Enumeration	Programmable thermostat, Manual thermostat, Digital thermostat, Timer, EMCS, Other		Control Technology	Control Technology=[value]	
B.4.5.2	Setpoint temperature heating season		Degrees Fahrenheit	Number		Actual setting used in the space when heating is required.	Normal Heating Room Temperature Setpoint	Setpoint Setting Condition="Normal" HVAC Systems Controlled="Heating" Setpoint Type="Room temperature" Setpoint=[value]	F
B.4.5.3	Setback temperature heating season		Degrees Fahrenheit	Number		Temperature used at night, weekends and other holidays during the heating season.	Setback Heating Room Temperature Setpoint	Setpoint Setting Condition="Setback" HVAC Systems Controlled="Heating" Setpoint Type="Room temperature" Setpoint=[value]	F
B.4.5.4	Total setback hours per week during heating season		Hours	Number			Setback Heating Average Weekly Hours	Setpoint Setting Condition="Setback" HVAC Systems Controlled="Heating" Average Weekly Hours=[value]	hours/week

B.4.1 HVAC SYSTEM INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.4.5.5	Setup temperature cooling season		Degrees Fahrenheit	Number	Temperature used at night, weekends, and other holidays during the heating season.		Setback Cooling Room Temperature Setpoint	Setpoint Setting Condition="Setback" HVAC Systems Controlled="Cooling" Setpoint Type="Room temperature" Setpoint=[value]	F
B.4.5.6	Setpoint temperature cooling season		Degrees Fahrenheit	Number	Actual setting used in the space when cooling is required.		Normal Cooling Room Temperature Setpoint	Setpoint Setting Condition="Normal" HVAC Systems Controlled="Cooling" Setpoint Type="Room temperature" Setpoint=[value]	F
B.4.5.7	Total setup hours per week during cooling season		Hours	Number			Setback Cooling Average Weekly Hours	Setpoint Setting Condition="Setback" HVAC Systems Controlled="Cooling" Average Weekly Hours=[value]	hours/week
B.4.5.8	Hot water reset control			Enumeration	Seasonal, Other		Domestic Hot Water Reset Routine	Load Category="Domestic hot water" Reset Routine=[value]	
B.4.5.9	Heat lowered during day			Boolean			Heating Reset Routine	HVAC Systems Controlled="Heating" Reset Routine=[value]	
B.4.5.10	Heat lowered during night			Boolean			Heating Reset Routine	HVAC Systems Controlled="Heating" Reset Routine=[value]	
B.4.5.11	AC adjusted during day			Boolean			Cooling Reset Routine	HVAC Systems Controlled="Cooling" Reset Routine=[value]	
B.4.5.12	AC adjusted during night			Boolean			Cooling Reset Routine	HVAC Systems Controlled="Cooling" Reset Routine=[value]	
B.4.5.13	Percent of rooms controlled by thermostatic radiator valves			Fraction			Thermostatic Radiator Valve Percent Of Area Controlled	Control Technology="Thermostatic radiator valve" Percent of Area Controlled=[value]	
B.4.5.14	Percent of rooms controlled by electronic zone valves with thermostats			Fraction			Thermostatic Zone Valve Percent Of Area Controlled	Control Technology="Thermostatic zone valve" Percent of Area Controlled=[value]	

B.4.6 HVAC DISTRIBUTION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.4.6.1	Air distribution type			Enumeration	Regular velocity, High velocity, Gravity		Air Distribution Type	Air Distribution Type=[value]	
B.4.6.2	Air handler motor type			Enumeration	PSC single speed, PSC multi speed, ECM		NO MAPPING		
B.4.6.3	Air handler static pressure measurement	(Pa) Positive for supply side measurements, negative for return side	Pascals	Number			Static Pressure	Static Pressure=[value]	Pa
B.4.6.4	Static pressure measurement location			Enumeration	In ducts, At equipment		Measured Static Pressure Location	Derivation Method="Measured" Sensor Type="Static pressure" Location=[value]	
B.4.6.5	Static pressure source			Enumeration	As measured, Per design report, Per OEM documentation		NO MAPPING		
B.4.6.6	Leakiness observed through visual inspection			Enumeration	Connections sealed with mastic, No observable leaks, Some observable leaks, Significant leaks, Catastrophic leaks		Visual Inspection Duct Sealing	Duct Leakage Test Method="Visual inspection" Duct Sealing=[value]	
B.4.6.7	Duct leakage test method			Enumeration	Duct leakage tester, Blower door subtract, Pressure pan, Visual inspection		Duct Leakage Test Method	Duct Leakage Test Method=[value]	
B.4.6.8	Duct leakage test unit of measurement			Enumeration	CFM, CFM per Standard 152		[Duct Leakage Test Method] Unit Of Measure	Duct Leakage Test Method=[value] Unit Of Measure=[value]	
B.4.6.9	Measured duct leakage		CFM	Number			Duct Pressure Test Leakage Rate	Duct Pressure Test Leakage Rate=[value]	

B.4.1 HVAC SYSTEM INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.4.6.10	Duct leakage measured to the outside or total			Enumeration	To outside, total		NO MAPPING		
B.4.6.11	Effective leakage area	The Leakage Area is defined in TECBLAST as the size of a sharp edged orifice, which would leak at the same flow rate as the measured leakage, if the orifice were subjected to the Test Pressure. Leakage Area [sq in] = Duct System Leakage Rate [CFM] / (1.06 * (Test Pressure [Pa]) ^ 0.5)	Square inches	Number			Effective Leakage Area	Effective Leakage Area=[value]	
B.4.6.12	Duct system sizing appropriate			Boolean			NO MAPPING		
B.4.6.13	Duct type			Enumeration	Supply, Return		Fan Application	Fan Application=[value]	
B.4.6.14	Duct material			Enumeration	Duct board, Sheet metal, Galvanized, Flexible, Fiberboard, Other		Duct Type	Duct Type=[value]	
B.4.6.15	Duct insulation R value			Number			Duct Insulation R Value	Duct Insulation R Value=[value]	hr·ft2·°F/Btu
B.4.6.16	Duct insulation thickness		Inches	Number			Duct Insulation Thickness	HVAC Category="Duct" Material Qualifier="Insulation" Thickness=[value]	ft
B.4.6.17	Duct insulation condition			Enumeration	Good, Fair, Poor		Duct Insulation Condition	Duct Insulation Condition=[value]	
B.4.6.18	Duct surface area	If a Duct Type of supply or return is specified above, this is the fraction of the supply or return duct area. If Duct Type is omitted above, this is the fraction of the total duct area.		Number			Duct Surface Area	Duct Surface Area=[value]	ft2
B.4.6.19	Duct location			Enumeration	Conditioned space, Unconditioned space, Unconditioned basement, Unvented crawlspace, Vented crawlspace, Unconditioned attic, Interstitial space, Garage, Outside		Duct Location	HVAC Category="Duct" Location=[value]	
B.4.6.20	Number of return registers			Number			Return HVAC Register Quantity	Fan Application="Return" Opaque Surface Component="HVAC register" Quantity=[value]	
B.4.6.21	Percent of pipe insulated			Fraction			Insulated Pipe Percent Of Total	Pipe Characteristic="Insulated pipe" Percent of Total=[value]	%
B.4.6.22	Pipe R-value		R-value	Number			Insulated Pipe R Value	Pipe Characteristic="Insulated pipe" R Value=[value]	hr·ft2·°F/Btu
B.4.6.23	Hydronic distribution type			Enumeration	Radiator, Baseboard, Radiant floor, Radiant ceiling, Other		Heating Delivery Type	Heating Delivery Type=[value]	
B.4.6.24	System pump and zone valve corrections made			Boolean			NO MAPPING		
B.4.6.25	Thermostatic radiator valves			Boolean			Thermostatic Radiator Valve	Control Technology="Thermostatic radiator valve"	

B.4.1 HVAC SYSTEM INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.4.6.26	Variable speed pump			Boolean			NO MAPPING		
B.4.6.27	Other distribution type			Text			NO MAPPING		
B.4.6.28	Conditioned floor area served	Conditioned floor area that this distribution system serves	Square feet	Number			Served Conditioned Floor Area	Floor Area Qualifier="Served" Conditioning Status="Conditioned" Opaque Surface="Floor" Area=[value]	ft2
B.4.6.29	Annual heating distribution system efficiency	For software that does not calculate annual distribution system efficiency (DSE) for heating, the DSE may be approximated by equation 3.4.i in ANSI/BPI-2400-S-2012: Standard Practice for Standardized Qualification of Whole-House Energy Savings, Predictions by Calibration to Energy Use History.		Number			Annual Heating Air Distribution Efficiency	Efficiency Qualifier="Annual heating" HVAC Category="Air distribution" Efficiency Value=[value]	
B.4.6.30	Annual cooling distribution system efficiency	For software that does not calculate annual distribution system efficiency (DSE) for cooling, the DSE may be approximated by equation 3.4.i in ANSI/BPI-2400-S-2012: Standard Practice for Standardized Qualification of Whole-House Energy Savings Predictions by Calibration to Energy Use History.		Number			Annual Cooling Air Distribution Efficiency	Efficiency Qualifier="Annual cooling" HVAC Category="Air distribution" Efficiency Value=[value]	
B.4.6.31	Duct system sealed			Boolean			Duct Sealed	HVAC Category="Duct" Duct Sealing="Sealed"	
B.4.6.32	Duct system sealed year/month	The year and month the duct system was sealed		YearMonth			Duct Sealed Date	HVAC Category="Duct" Duct Sealing="Sealed" Date=[value] Date Format="MonthYear"	MonthYear
B.4.6.33	Duct outside envelope insulated as part of retrofit			Boolean			NO MAPPING		
B.4.6.34	Duct system replaced			Boolean			Duct Replacement	HVAC Category="Duct" Action Category="Replacement"	
B.4.6.35	System pump and zone valve corrections made			Boolean			NO MAPPING		
B.4.6.36									

B.4.7 HVAC MAINTENANCE

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.4.7.1	Tune and repair			Boolean		May be repeated for heating, cooling, and heat pump systems	Tune Repair	Maintenance Type="Tune" Maintenance Type="Repair"	
B.4.7.2	Tune and repair year/month	Year and month of the last HVAC tune-up and repair for this HVAC equipment		YearMonth			Tune Repair Date	Maintenance Type="Tune" Maintenance Type="Repair" Date=[value] Date Format="MonthYear"	MonthYear

B.4.1 HVAC SYSTEM INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.4.7.3	Schedule			Enumeration	None, Yes (Unspecified, As needed, Daily, Weekly, Bi-weekly, Monthly, Semi-quarterly, Quarterly, Semi-annually, Annually)		Frequency of Maintenance	Frequency of Maintenance=[value]	
B.4.7.4	AC replaced in last 10 years			Boolean			NO MAPPING		
B.4.7.5	Number of coils replaced			Number		May be repeated for heating, cooling, and heat pump systems	Replace Coil Quantity	Maintenance Type="Replace" Technology Component="Coil" Quantity=[value]	
B.4.7.6	Number of air handlers replaced			Number		May be repeated for heating, cooling, and heat pump systems	Replace Air Handler Quantity	Maintenance Type="Replace" Heating Delivery Type="Air handler" Quantity=[value]	
B.4.7.7	Air filter size (width)		Inches	Number			Air Filter Width	Thermal Medium="Air" Technology Component="Filter" Width=[value]	ft
B.4.7.8	Air filter size (length)		Inches	Number			Air Filter Length	Thermal Medium="Air" Technology Component="Filter" Length=[value]	ft
B.4.7.9	Air filter size (thickness)		Inches	Number			Air Filter Thickness	Thermal Medium="Air" Technology Component="Filter" Thickness=[value]	ft
B.4.7.10									
B.4.7.11	MERV rating	Minimum efficiency reporting value, commonly known as MERV rating, is a measurement scale designed in 1987 by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) to rate the effectiveness of air filters.		Number			NO MAPPING		
B.4.7.12	When was the filter last replaced?	The year and month the filter was last replaced		YearMonth			Air Filter Replace Date	Thermal Medium="Air" Technology Component="Filter" Maintenance Type="Replace" Date=[value]	Date

B.5 MECHANICAL AND COMBUSTION VENTILATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.5.1	Manufacturer			Text			Manufacturer	Manufacturer=[value]	
B.5.2	Serial number			Text			Serial Number	Serial Number=[value]	
B.5.3	Fan type			Enumeration	Exhaust only, Supply only, Heat recovery ventilator, Energy recovery ventilator		Ventilation Type	Ventilation Type=[value]	
B.5.4	Rated flow rate		CFM	Number			Rated Flow Rate Setpoint	Derivation Method="Rated" Setpoint Type="Flow rate" Setpoint=[value]	ft3/min
B.5.5	Calculated flow rate	Using a prescriptive approach to calculate duct size	CFM	Number			Calculated Flow Rate Setpoint	Derivation Method="Calculated" Setpoint Type="Flow rate" Setpoint=[value] Unit Of Measure="ft3/min"	ft3/min
B.5.6	Tested flow rate		CFM	Number			Tested Flow Rate Setpoint	Derivation Method="Tested" Setpoint Type="Flow rate" Setpoint=[value]	ft3/min
B.5.7	Hours in operation		Hours	Number			Operating Hour Quantity	Schedule Category="Operating" Interval Frequency="Hour" Quantity=[value] Unit Of Measure="hour"	hour
B.5.8	Delivered ventilation		CFM	Number			Delivered Ventilation Rate	Resource Generation="Delivered" Ventilation Rate=[value]	cfm
B.5.9	Fan control properly labeled			Enumeration	True, False, n/a		NO MAPPING		
B.5.10	Fan properly vented	Considers duct length, duct size, excessive duct turns, ducts vent to outdoors, and/or duct connections are well sealed and durable		Enumeration	True, False, n/a		NO MAPPING		
B.5.11	Fan location			Enumeration	Bath, Kitchen, Hallway, Garage, Other		Fan Location	Technology Component="Fan" Location=[value]	
B.5.12	Used for local ventilation			Boolean			NO MAPPING		
B.5.13	Used for whole building ventilation			Boolean			NO MAPPING		
B.5.14	Used for seasonal cooling load reduction			Boolean			NO MAPPING		
B.5.15	Used for garage ventilation			Boolean			NO MAPPING		
B.5.16	Rated noise	May be taken from manufacturer's information	Sones	Number			NO MAPPING		
B.5.17	Tested noise	As tested in the field	Sones	Number			NO MAPPING		

B.5 MECHANICAL AND COMBUSTION VENTILATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.5.18	Total recovery efficiency	The net total energy (sensible plus latent, also called enthalpy) recovered by the supply airstream adjusted by electric consumption, case heat loss or heat gain, air leakage and airflow mass imbalance between the two airstreams, as a percent of the potential total energy that could be recovered plus the exhaust fan energy. Values for some products can be found at the Home Ventilating Institute (hvi.org).		Fraction			Total Recovery Efficiency Value	Interval Measure="Total" Efficiency Qualifier="Recovery" Efficiency Value=[value]	
B.5.19	Sensible recovery efficiency	The net sensible energy recovered by the supply airstream as adjusted by electric consumption, case heat loss or heat gain, air leakage, airflow mass imbalance between the two airstreams and the energy used for defrost (when running the Very Low Temperature Test), as a percent of the potential sensible energy that could be recovered plus the exhaust fan energy. Values for some products can be found at the Home Ventilating Institute (hvi.org).		Fraction			Sensible Recovery Efficiency Value	Load Category="Sensible" Efficiency Qualifier="Recovery" Efficiency Value=[value]	
B.5.20	Fan power		Watts	Number			Maximum Fan Power	Maximum Fan Power=[value]	W
B.5.21	Venting system type			Enumeration	Atmospheric, Induced draft, Power vented (at unit), Power vented (at exterior), Direct vented, Sealed combustion		NO MAPPING		

B.6 WATER HEATING

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.6.1	Fuel type			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other		Input Resource Type	Input Resource Type=[value]	
B.6.2	Water heater type			Enumeration	Storage water heater, Dedicated boiler w storage tank, Instantaneous water heater, Heat pump water heater, Space-heating boiler with storage tank, Space-heating boiler with tankless coil		Domestic Hot Water Type	Domestic Hot Water Type=[value]	
B.6.3	Has geothermal desuperheater element	Indicates whether this water heater has a geothermal desuperheater. The attached heat pump can be referenced in the Related Heating System element.		Boolean			NO MAPPING		
B.6.4	Year installed			Number			Installed Date	Date Status="Installed" Date=[value] Date Format="Year"	year
B.6.5	Model year			Number			NO MAPPING		
B.6.6	Manufacturer			Text			Manufacturer	Manufacturer=[value]	
B.6.7	Model number			Text			Model Number	Model Number=[value]	
B.6.8	AHRI Number			Number			NO MAPPING		
B.6.9	Serial number			Text			Serial Number	Serial Number=[value]	
B.6.10	Location			Enumeration	Conditioned attic, Unconditioned attic, Conditioned basement, Unconditioned basement, Conditioned space, Vented crawlspace, Unvented crawlspace, Conditioned garage, Unconditioned garage, Mechanical closet, Other interior, Other exterior, Roof deck		Location	Location=[value]	
B.6.11	Performance adjustment			Fraction			NO MAPPING		

B.6 WATER HEATING

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.6.12	Third party certification	Independent organization has verified that product or appliance meets or exceeds the standard in question (ENERGY STAR, CEE, or other)		Enumeration	ENERGY STAR, CEE Tier 1, CEE Tier 2, CEE Tier 3, Other		Equipment Rating	Equipment Rating=[value]	
B.6.13	Tank volume		Gallons	Number			Storage Tank Volume Capacity	Domestic Hot Water Type="Storage tank" Capacity Qualifier="Volume" Capacity=[value] Unit Of Measure="gallons"	gallons
B.6.14	Fraction DHW load served			Fraction			NO MAPPING		
B.6.15	Heating capacity		Btuh	Number			Domestic Hot Water Heating Capacity	Load Category="Domestic hot water" HVAC Category="Heating" Capacity=[value] Unit of Measure="Btu/hr"	Btu/hr
B.6.16	Energy factor	The amount of energy delivered as heated water in a day divided by the total daily energy consumption of a residential water heater, as determined following standardized DOE testing procedure		Fraction			Energy Factor Efficiency Value	Efficiency Qualifier="Energy factor" Efficiency Value=[value]	
B.6.17	First hour rating	An estimate of the maximum volume of hot water in gallons that a storage water heater can supply within an hour that begins with the water heater fully heated.	Gal/minute	Number			NO MAPPING		
B.6.18	Gallons per minute	The amount of gallons per minute of hot water that can be supplied by an instantaneous water heater while maintaining a nominal temperature rise of 77°F during steady state operation.	Gal/minute	Number			Instantaneous Flow Rate Capacity	Domestic Hot Water Type="Instantaneous" Setpoint Type="Flow rate" Capacity=[value] Unit Of Measure="gpm"	gpm
B.6.19	Thermal efficiency	Ratio of square feet required for collector to heat water	Btu/(ft2day) rating	Number			NO MAPPING		
B.6.20	Recovery efficiency	The ratio of energy delivered to heat cold water compared to the energy consumed by the water heater, as determined following standardized DOE testing procedure		Fraction			Recovery Efficiency Value	Efficiency Qualifier="Recovery" Efficiency Value=[value]	
B.6.21	Jacket R value			Number			Insulation Jacket R Value	Insulation Application="Insulation jacket" R Value=[value]	hr·ft2·°F/Btu
B.6.22	Meets ACCA 5 QI HVAC specification			Boolean			NO MAPPING		
B.6.23	Hot water temperature		Degrees Fahrenheit	Number			Supply Water Temperature Setpoint	Setpoint Type="Supply water temperature" Setpoint=[value]	F
B.6.24	Has shared combustion ventilation			Boolean			NO MAPPING		
B.6.25	Combustion ventilation system orphaned			Boolean			NO MAPPING		
B.6.26	Installation standard			Enumeration	ACCA 5 QI HVAC, Other		NO MAPPING		
B.6.27	Jacket installed indicator			Boolean			NO MAPPING		

B.6 WATER HEATING

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.6.28	Existing system disposed			Boolean			NO MAPPING		
B.6.29	Description of repairs			Text			Repair Description	Maintenance Type="Repair" Description=[value]	
B.6.30	System replaced			Boolean			Replace	Maintenance Type="Replace"	
B.6.31	Distribution system type			Enumeration	Standard, recirculation	Distribution system type	NO MAPPING		
B.6.32	Standard system piping length	Length of measurement of piping in standard distribution systems	Feet	Number		Standard system piping length	Pipe Length	Technology Component="Pipe" Length=[value]	ft
B.6.33	Recirculation control type			Enumeration	No control, Timer, Temperature, Presence sensor demand control, manual demand control	Recirculation control type	Recirculation Control Strategy	Control Strategy="Recirculation" Control Strategy=[value]	
B.6.34	Recirculation piping loop length	Length of measurement	Feet	Number		Recirculation piping loop length	Recirculation Pipe Length	Control Strategy="Recirculation" Technology Component="Pipe" Length=[value]	ft
B.6.35	Branch piping loop length	Length of measurement	Feet	Number		Branch piping loop length	NO MAPPING		
B.6.36	Pump power		Watts	Number			Pump Rated Power Metric Value	Technology Component="Pump" Consumption Rate Type="Rated power" Power Metric Value=[value] Unit Of Measure="W"	W
B.6.37	Pipe insulated			Boolean			Pipe Insulated	Technology Component="Pipe" Insulation Application="Insulated"	
B.6.38	Pipe insulation R-value		R-value	Number			Insulated Pipe R Value	Pipe Characteristic="Insulated pipe" R Value=[value]	hr·ft2·°F/Btu
B.6.39	Length of pipe insulated		Feet	Number			Insulated Pipe Length	Pipe Characteristic="Insulated pipe" Length=[value]	
B.6.40	Fraction of pipe insulated		Feet	Percent			NO MAPPING		
B.6.41	Water fixture type			Enumeration	Faucet, Shower head, Other		Water Fixture Type	Water Fixture Type=[value]	
B.6.42	Attached to heating system			System identifier			NO MAPPING		
B.6.43	Flow rate	Flow rate of water	Gal/minute	Number			NO MAPPING		
B.6.44	Faucet aerator	Indicate if faucet has aerator		Boolean			NO MAPPING		
B.6.45	Temperature initiated shower flow restriction value			Boolean			NO MAPPING		
B.6.46	Third party certification	Independent organization has verified that product or appliance meets or exceeds the standard in question (ENERGY STAR, CEE, or other)		Enumeration	Energy star, Energy star most efficient, WaterSense, CEE tier 1, CEE tier 2, CEE tier 3, Other, Unknown		Equipment Rating	Equipment Rating=[value]	

B.7 SOLAR THERMAL

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.7.1	Manufacturer			Text			Manufacturer	Manufacturer=[value]	
B.7.2	Model number			Text			Model Number	Model Number=[value]	
B.7.3	System type			Enumeration	Hot water, Hot water and space heating, Space heating, Hybrid system		NO MAPPING		
B.7.4	Collector area		Square feet	Number			Collector Area	Technology Component="Collector" Area=[value]	ft2
B.7.5	Collector loop type			Enumeration	Air direct, Air indirect, Liquid direct, Liquid indirect, Passive thermosyphon		Thermal Loop Configuration	Thermal Loop Configuration=[value]	
B.7.6	Collector type			Enumeration	Single glazing black, Single glazing selective, Double glazing black, Double glazing selective, Evacuated tube, Integrated collector storage		Solar Thermal System Collector Type	Solar Thermal System Collector Type=[value]	
B.7.7	Collector orientation			Enumeration	North, Northwest, West, Southwest, South, Southeast, East, Northeast		Collector Cardinal Orientation	Technology Component="Collector" Cardinal Orientation=[value]	
B.7.8	Collector azimuth		Degrees	Number			Collector Azimuth	Technology Component="Collector" Azimuth=[value]	degrees
B.7.9	Collector tilt		Degrees	Number			Collector Tilt Angle	Technology Component="Collector" Tilt Angle=[value]	degrees
B.7.10	Storage volume		Gallons	Number			Storage Tank Volume Capacity	Domestic Hot Water Type="Storage tank" Capacity Qualifier="Volume" Capacity=[value]	gallons

B.8 PHOTOVOLTAIC

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.8.1	Location			Enumeration	Roof, Ground, Other		Location	Location = [value]	n/a
B.8.2	Ownership			Enumeration	Leased, Owned, Power purchase agreement, Utility owned, Other		Ownership Status	Ownership Status = [value]	n/a
B.8.3	Year installed		Year	Number			Installed Date	Date Status = "Installed" Date = [value]	Date Format = "Year"
B.8.4	Array orientation			Enumeration	North, Northwest, West, Southwest, South, Southeast, East, Northeast		Array Cardinal Orientation	Technology Component = "Array" Cardinal Orientation = [value]	n/a
B.8.5	Array azimuth		Degrees	Number			Array Azimuth	Technology Component = "Array" Azimuth = [value]	Degrees clockwise from North
B.8.6	Array tilt		Degrees	Number			Array Tilt Angle	Technology Component = "Array" Tilt Angle = [value]	Degrees from horizontal
B.8.7	Maximum power output	Peak power as supplied by the manufacturer	DC Watts	Number			Maximum Power Output Resource Value	Consumption Rate Type = "Maximum power output" Resource Value = [value] Unit Of Measure = "W"	W
B.8.8	Annual output	Projected Annual Output for a typical meteorological year as determined by PV Watts or similar.	kWh	Number			Annual Resource Value	Interval Measure = "Annual" Resource Value = [value] Unit Of Measure = "kWh"	kWh
B.8.9	Levelized cost of energy	The LCOE is the total cost of installing and operating a project expressed in dollars per kilowatt-hour of electricity generated by the system over its life. Can be calculated with System Advisor Model, similar software, or through a simplified calculation at http://www.nrel.gov/analysis/tech_lcoe.html.	Dollars	Number			Levelized Cost Of Energy	Cost Effectiveness Screening Method = "Levelized cost of energy" Cost = [value'	$
B.8.10	Collector area		Square feet	Number			Photovoltaic Array Area	Energy Generation Technology = "Photovoltaic" Technology Component = "Array"	ft2
B.8.11	Inverter efficiency	Percentage of power that is converted to usable AC efficiency		Text			Inverter Efficiency Value	Technology Component = "Inverter" Efficiency Qualifier = "Efficiency" Efficiency Value = [value]	%
B.8.12	Year inverter manufactured		Year	Number			Inverter Year Of Manufacture	Technology Component = "Inverter" Year Of Manufacture = [value]	Date Format = "Year"
B.8.13	Year module manufactured		Year	Number			Module Year Of Manufacture	Technology Component = "Module" Year Of Manufacture = [value]	Date Format = "Year"

B.9 WIND

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.9.1	Wind turbine model			Text			Turbine Model Number	Energy Generation Technology="Turbine" Model Number=[value]	
B.9.2	Year installed		Year	Number			Installed Date	Date Status="Installed" Date=[value] Date Format="Year"	year
B.9.3	Third party certification	Independent organization has verified that product or appliance meets or exceeds the standard in question (ENERGY STAR, CEE, or other)		Enumeration	AWEA 9.1-2009, Other		Equipment Rating	Equipment Rating=[value]	
B.9.4	AWEA rated annual energy	The calculated total energy that would be produced during a one-year period with an average wind speed of 5 m/s (11.2 mph)	kW	Number			NO MAPPING		
B.9.5	AWEA rated sound Level	The sound pressure level not exceeded by the wind turbine 95% of the time at a distance of 60 meters from the rotor with an average wind speed of 5 m/s (11.2 mph).		Number			NO MAPPING		
B.9.6	AWEA rated power	The wind turbine's power output at 11m/s (24.6 mph). Manufacturers may still describe or name their turbine models using a nominal power (e.g., 5 kW S-343).	kWh	Number			Rated Power Metric Value	Consumption Rate Type="Rated power" Power Metric Value=[value] Unit Of Measure="W"	W
B.9.7	Peak power	The highest point on the certified power curve.	kW	Number			Maximum Power Output Power Metric Value	Consumption Rate Type="Maximum power output" Power Metric Value=[value] Unit Of Measure="W"	W
B.9.8	Rotor diameter		Feet	Number			Rotor Diameter	Technology Component="Rotor" Diameter=[value]	ft
B.9.9	Hub height		Feet	Number			Hub Height	Technology Component="Hub" Height=[value]	ft

B.9 WIND

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.9.10	Levelized cost of energy	The LCOE is the total cost of installing and operating a project expressed in dollars per kilowatt-hour of electricity generated by the system over its life. Can be calculated with System Advisor Model, similar software, or through a simplified calculation at http://www.nrel.gov/analysis/tech_lcoe.html.	Dollars	Number			Levelized Cost Of Energy Cost Effectiveness Va	Cost Effectiveness Screening Method="Levelized cost of energy" Cost Effectiveness Value=[value] Unit Of Measure="$/kWh"	$/kWh

B.10 APPLIANCES

B.10.1 APPLIANCE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.10.1.1	Number of units			Number		May be repeated for all appliances	Quantity	Quantity=[value]	
B.10.1.2	Manufacturer			Text		May be repeated for all appliances	Manufacturer	Manufacturer=[value]	
B.10.1.3	Model number			Text		May be repeated for all appliances	Model Number	Model Number=[value]	
B.10.1.4	AHRI number			Text		May be repeated for all appliances	NO MAPPING		
B.10.1.5	Third party certification	Independent organization has verified that product or appliance meets or exceeds the standard in question (ENERGY STAR, CEE, or other)		Enumeration	ENERGY STAR, ENERGY STAR Most Efficient, CEE Tier 1, CEE Tier 2, CEE Tier 3	May be repeated for all appliances	Equipment Rating	Equipment Rating=[value]	

B.10.2 CLOTHES WASHER

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.10.2.1	Type			Enumeration	Top loader, Front loader, All-in-one combination washer/dryer, Unitized/stacked washer-dryer pair		Laundry Appliance Type And Configuration	Laundry Appliance Type=[value] Laundry Configuration=[value]	
B.10.2.2	Location			Enumeration	Laundry room, Living space, Basement, Other		Location	Location=[value]	
B.10.2.3	Modified energy factor	Considers the amount of dryer energy used to remove the remaining moisture content in washed items, in addition to the machine energy and water heating energy of the washer. Modified energy factor (MEF) is the energy performance metric for ENERGY STAR qualified clothes washers. The higher the MEF, the more efficient the clothes washer.		Number			Clothes Washer Modified Energy Factor	Clothes Washer Modified Energy Factor=[value]	ft3/kWh/cycle
B.10.2.4	Water factor	Number of gallons per cycle per cubic foot that the clothes washer uses		Number			Water Factor Efficiency Value	Efficiency Qualifier="Water factor" Efficiency Value=[value]	

B.10 APPLIANCES
B.10.1 APPLIANCE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.10.2.5	Usage		Loads/week	Number			Laundry Loads Quantity	Operation Event="Laundry loads" Quantity=[value] Unit Of Measure="loads/week"	loads/week
B.10.3 CLOTHES DRYER									
B.10.3.1	Type			Enumeration	Dryer, All-in-one combination washer/dryer, Unitized/stacked washer-dryer pair		Laundry Appliance Type And Configuration	Laundry Appliance Type=[value] Laundry Configuration=[value]	
B.10.3.2	Location			Enumeration	Laundry room, Living space, Basement, Other		Location	Location=[value]	
B.10.3.3	Fuel			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other		Resource	Resource=[value]	
B.10.3.4	Usage		Loads/week	Number			Laundry Loads Quantity	Operation Event="Laundry loads" Quantity=[value] Unit Of Measure="loads/week"	loads/week
B.10.4 DISHWASHER									
B.10.4.1	Type			Enumeration	Uncategorized, Built-in under counter, Portable, Counter-top, Single tank, Conveyor		Dishwasher Machine Type And Configuration	Dishwasher Machine Type=[value] Dishwasher Configuration=[value]	
B.10.4.2	Heat dry default off			Boolean			NO MAPPING		
B.10.4.3	Auxiliary water heater default off			Boolean			NO MAPPING		
B.10.4.4	Rated annual kWh		kWh	Number			Annual Rated Consumption Rate	Interval Measure = "Annual" Consumption Rate Type="Rated" Consumption Rate=[value] Unit Of Measure="kWh"	kWh
B.10.4.5	Energy factor			Number			Energy Factor Efficiency Value	Efficiency Qualifier="Energy factor" Efficiency Value=[value]	
B.10.4.6	Rated water gallons per cycle		Gallons	Number			Rated Water Cycle Draw Consumption Rate	Consumption Rate Type="Rated" Consumption Rate Type="Water cycle draw" Consumption Rate=[value] Unit Of Measure="gallons/cycle"	gallons/cycle

B.10 APPLIANCES

B.10.1 APPLIANCE INFORMATION

Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.10.4.7	Fuel			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other		Resource	Resource=[value]	

B.10.5 REFRIGERATOR

Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.10.5.1	Type			Enumeration	Side-by-side, Top freezer, Bottom freezer, Single door, Full-size one door, Full-size two doors, Half or quarter size, Walk-in, Open case, Closed case, Uncategorized		Refrigeration Type And Cabinet And Door Co	Refrigeration Type=[value] Cabinet Configuration=[value] Door Configuration=[value]	
B.10.5.2	Location			Enumeration	Kitchen, Living space, Basement, Garage, Other		Location	Location=[value]	
B.10.5.3	Rated annual kWh		kWh	Number			Annual Rated Consumption Rate	Interval Measure = "Annual" Consumption Rate Type="Rated" Consumption Rate=[value] Unit Of Measure="kWh"	kWh
B.10.5.4	Primary refrigerator	True if it is the primary refrigerator		Boolean			Priority	Priority=[value]	
B.10.5.5	Volume		Cubic feet	Number			Volume Capacity	Capacity Qualifier="Volume" Capacity=[value] Unit Of Measure="ft3"	ft3
B.10.5.6	Fresh volume	Volume of refrigerator for keeping food at less than freezing	Cubic feet	Number			NO MAPPING		
B.10.5.7	Frozen volume	Freezer volume	Cubic feet	Number			NO MAPPING		

B.10.6 FREEZER

Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.10.6.1	Location			Enumeration	Kitchen, Living space, Basement, Garage, Other		Location	Location=[value]	
B.10.6.2	Rated annual kWh		kWh	Number			Annual Rated Consumption Rate	Interval Measure = "Annual" Consumption Rate Type="Rated" Consumption Rate=[value] Unit Of Measure="kWh"	kWh
B.10.6.3	Configuration			Enumeration	Uncategorized, Manual defrost, Frost free, Walk-in, Case		Freezer Cabinet Configuration and Equipmen	Refrigeration Type="Freezer" Cabinet Configuration=[value] Equipment Features=[value]	
B.10.6.4	Volume		Cubic feet	Number			Volume Capacity	Capacity Qualifier="Volume" Capacity=[value] Unit Of Measure="ft3"	ft3

B.10.7 DEHUMIDIFIER

Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.10.7.1	Location			Enumeration	Living space, Basement, Other		Location	Location=[value]	
B.10.7.2	Efficiency		Liters/kWh	Number			Humidifier Efficiency Value	Other HVAC Type="Humidifier" Efficiency Value=[value] Unit Of Measure="Liters/kWh"	Liters/kWh

B.10.8 COOKING RANGE

B.10 APPLIANCES

B.10.1 APPLIANCE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.10.8.1	Fuel type			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other		Resource	Resource=[value]	

B.10.9 OVEN

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.10.9.1	Fuel type			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other		Resource	Resource=[value]	

B.11 LIGHTING

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.11.1	Location			Enumeration	Interior, Exterior, Common Area		Location	Location=[value]	
B.11.2	Number of units			Number			Quantity	Quantity=[value]	
B.11.3	Lighting Type			Enumeration	Incandescent (Halogen); Fluorescent tube; Compact Fluorescent; Light emitting diode; High intensity discharge (Mercury vapor, Sodium, Sodium - high pressure, Sodium - low pressure, Metal halide, Other - describe); Other (describe)		Lamp Type	Lamp Type=[value]	
B.11.4	Tube type			Enumeration	T5, T8, Super T8, T12		Lamp Label	Lamp Label=[value]	
B.11.5	Average lumens	Lumens are a measure of light output (brightness) as opposed to watts, which measures energy consumption. The EPA and DOE encourage people to determine the amount of light (or brightness) they need first before purchasing a light bulb. Once brightness is determined, you can look for the bulb with the lowest watts.		Number			Average Output Lighting Characteric Value	Interval Measure="Average" Lighting Characteristics="Output" Lighting Characteristic Value=[value] Unit Of Measure="lumens"	lumens
B.11.6	Average wattage	Wattage per unit		Number			Nominal Power Consumption Rate	Consumption Rate Type="Nominal power" Consumption Rate=[value] Unit Of Measure="W"	W
B.11.7	Third party certification	Independent organization has verified that product or appliance meets or exceeds the standard in question (ENERGY STAR, CEE, or other)		Enumeration	ENERGY STAR, Other		Equipment Rating	Equipment Rating=[value]	
B.11.8	Average hours per day			Number			Average Daily Hours	Average Daily Hours=[value]	
B.11.9	Lighting daily hours			Enumeration	1 to 4 hours per day, 4 to 12 hours per day, More than 12 hours per day, All day		NO MAPPING		
B.11.10	Total floor area served		Square feet	Number			Served Floor Area	Floor Area Qualifier="Served" Opaque Surface="Floor" Area=[value]	ft2

B.11 LIGHTING

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.11.11	Lighting control type	Bi-level controls are bi-level fixtures that operate at different levels of light output to meet the lighting need and are triggered by passive infrared (PIR) sensors, ultrasonic sensors, and photo-sensors		Enumeration	Daylight dimming, Occupancy sensors, Vacancy sensors, Manual dimming, Bi-level control, Timers, Manual, Advanced controls, Part of emcs		Control Strategy	Control Strategy=[value]	
B.11.12	Number of lighting controls installed			Number			NO MAPPING		
B.11.13	Location			Enumeration	Interior, Exterior, Common Area		Location	Location=[value]	
B.11.14	Incandescent	Fraction of lights that are incandescent		Fraction			Incandescent Percent Of Total	Lamp Type="Incandescent" Percent Of Total=[value]	Percent
B.11.15	Compact fluorescent light (CFL)	Fraction of lights that are CFLs		Fraction			Compact Fluorescent Percent Of Total	Lamp Type="Compact fluorescent" Percent Of Total=[value]	Percent
B.11.16	Linear fluorescent light (LFL)	Fraction of lights that are linear fluorescent		Fraction			Fluorescent Percent Of Total	Lamp Type="Fluorescent" Percent Of Total=[value]	Percent
B.11.17	Light-emitting diode (LED)	Fraction of lights that are LED		Fraction			Solid State Lighting Percent Of Total	Lamp Type="Solid state lighting" Percent Of Total=[value]	Percent
B.11.18	Lighting fixture third party certification			Enumeration	Energy star, Energy star most efficient, CEE tier 1, CEE tier 2, CEE tier 3, Other, Unknown		Equipment Rating	Equipment Rating=[value]	
B.11.19	Fan speed			Enumeration	Low, Medium, High		NO MAPPING		
B.11.20	Airflow		CFM	Number			Airflow of what?		
B.11.21	Efficiency	The efficiency rating of a ceiling fan as determined by the test procedure defined by the Environmental Protection Agency's ENERGY STAR Testing Facility Guidance Manual: Building a Testing Facility and Performing the Solid State Test Method for ENERGY STAR Qualified Ceiling Fans, Version 1.1, December 9, 2002. This is generally printed on the box in which the ceiling fan is shipped.	CFM/watt	Number			NO MAPPING		
B.11.22	Third party certification	Independent organization has verified that product or appliance meets or exceeds the standard in question (ENERGY STAR, CEE, or other)		Enumeration	ENERGY STAR, ENERGY STAR Most Efficient, CEE Tier 1, CEE Tier 2, CEE Tier 3		Equipment Rating	Equipment Rating=[value]	

B.12 MISCELLANEOUS LOADS

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.12.1	Number of plug load controls			Number			NO MAPPING		
B.12.2	Plug load control type			Enumeration	Advanced power strip for AV, Advanced power strip for IT, Whole-house energy management system, Other		Control Technology	Control Technology=[value]	
B.12.3	Plug load type			Enumeration	TV plasma, TV CRT, TV other, Computer, Space heater, Water bed, Aquarium, Electric vehicle charging, Sauna, Well pump, Other		NO MAPPING	Computer Type Display Type Electronic Equipment Type Network Equipment Type Television Type	
B.12.4	Plug load location			Enumeration	Interior, Exterior		Location	Location=[value]	
B.12.5	Number of plug loads			Number			Plug Load Quantity	End Use="Plug load" Quantity=[value]	
B.12.6	Units			Enumeration	kWh/year, W		Unit Of Measure	Unit Of Measure=[value]	
B.12.7	Value			Number			Value of what?		

B.13 POOLS

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.13.1	Type of pool			Enumeration	In ground, On ground, Above ground, Other, Unknown, None		Pool Location	Water Feature Type="Pool" Location=[value]	
B.13.2	Volume	Volume of pool in gallons	Gallons	Number			Volume Capacity	Capacity Qualifier="Volume" Capacity=[value]	
B.13.3	Months per year of operation		Months	Number			NO MAPPING		
B.13.4	Return pipe diameter		Inches	Number			Return Pipe Diameter	Pipe Application="Return" Technology Component="Pipe" Diameter=[value]	ft
B.13.5	Suction pipe diameter		Inches	Number			Suction Pipe Diameter	Pipe Application="Suction" Technology Component="Pipe" Diameter=[value]	ft
B.13.6	Filter type	Type of filter used, if any		Enumeration	Sand, DE, Cartridge, Other, Unknown, None		NO MAPPING		
B.13.7	Type	Pool pump is a mechanical assembly consisting of a "wet-end," which houses the impeller and a motor. The pump increases the "head" and "flow" of the water (ENERGY STAR, 2013).		Enumeration	Single-speed, Multi-speed, Variable-speed, Variable-flow, Other, Unknown, None		NO MAPPING		
B.13.8	Model number	Model number of pool pump		Text			Model Number	Model Number=[value]	
B.13.9	Third party certification	Independent organization has verified that product or appliance meets or exceeds the standard in question (ENERGY STAR, CEE, or other)		Enumeration	ENERGY STAR, ENERGY STAR Most Efficient, CEE Tier 1, CEE Tier 2, CEE Tier 3, Other, Unknown, None		Equipment Rating	Equipment Rating=[value]	
B.13.10	Energy factor	The measure of overall pool filter pump efficiency in units of gallons per watt-hour, as determined using the applicable test method in Section 4.1.2 ANSI/APSP/ICC-15 2011. Energy factor is analogous to other energy factors such as miles per gallon. Energy factor (EF) is calculated as: EF (gal/Wh) = flow rate (gpm) * 60 ÷ power (watts) (ANSI/APSP/ICC-15 2011).	gal/Wh	Number			Energy Factor Efficiency Value	Efficiency Qualifier="Energy factor" Efficiency Value=[value] Unit Of Measure="Custom" Custom Unit Of Measure="gallons per Wh"	gallons per Wh
B.13.11	Speed setting	The speed setting at which the Energy Factor was measured (ENERGY STAR, 2013)		Enumeration	Low, High, Most efficient, Other, Unknown, None		NO MAPPING		

B.13 POOLS

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.13.12	Rated horse power	The motor power output designed by the manufacturer for a rated RPM, voltage and frequency. May be less than total horsepower where the service factor is > 1.0, or equal to total horsepower where the service factor = 1.0 (ANSI/APSP/ICC-15 2011).	Horse power	Number			Rated Horsepower	Consumption Rate Type="Rated" Motor Characteristic="Horsepower" Unit Of Measure="hp"	hp
B.13.13	Total horse power	The total horsepower, or product of the rated horsepower and the service factor of a motor used on a pool pump (also known as SFHP) based on the maximum continuous duty motor power output rating allowable for the nameplate ambient rating and motor insulation class (e.g., total horsepower = rated horsepower * service factor) (ANSI/APSP/ICC-15 2011).	Horse power	Number			Total Horsepower	Interval Measure="Total" Motor Characteristic="Horsepower" Unit Of Measure="hp"	hp
B.13.14	Service factor	A multiplier applied to the rated horsepower of a pump motor to indicate the percent above nameplate horsepower at which the motor can operate continuously without exceeding its allowable insulation class temperature limit, provided that other design parameters, such rated voltage, frequency and ambient temperature, are within limits. A 1.5 hp pump with a 1.65 service factor produces 2.475 hp (total horsepower) at the maximum service factor point (ANSI/APSP/ICC-15 2011).		Number			NO MAPPING		
B.13.15	Hours per day pool pump operates	Number of hours per day a pool pump operates at a particular speed setting	Hours	Number			Average Daily Hours	Average Daily Hours=[value]	Hours/Day
B.13.16	Power		Watts	Number			Power Power Metric Value	Power Metric="Power" Power Metric Value=[value] Unit Of Measure="W"	W
B.13.17	Motor nominal speed	The number of revolutions of the motor shaft in a given unit of time, expressed as revolutions per minute (RPM) (ENERGY STAR, 2013)	Revolutions/minute	Number			NO MAPPING		

B.13 POOLS

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.13.18	Flow rate	The volume of water flowing through the filtration system in a given time, usually measured in gallons per minute (gpm) (ANSI/APSP/ICC-15 2011)	gal/minute	Number			Flow Rate Setpoint	Setpoint Type="Flow rate" Setpoint=[value] Unit Of Measure="gpm"	gpm
B.13.19	Cleaner type	Type of pool cleaner used, if any		Enumeration	Robotic, Suction side, Pressure side, Booster pump, Other, Unknown, None		NO MAPPING		
B.13.20	Hours per day cleaner is used		Hours/day	Number			NO MAPPING		
B.13.21	Heater type	Type of heater used to heat pool, if any		Enumeration	Gas-fired, Electric resistance, Heat pump, Solar, Other, Unknown, None		NO MAPPING		
B.13.22	Hours per day heater is used		Hours/day	Number			NO MAPPING		

B.14 HEALTH AND SAFETY
B.14.1 GENERAL

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.14.1.1	Tests completed			Boolean			NO MAPPING		
B.14.1.2	Tests passed			Boolean			NO MAPPING		

B.14.2 VENTILATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.14.2.1	Requirement method			Enumeration	ASHRAE 62.2-1989, ASHRAE 62.2-2007, ASHRAE 62.2-2010, ASHRAE 62.2-2013		Building Energy Code Or Standard	Building Energy Code Or Standard="ASHRAE" Building Energy Code Or Standard Version="62.2" Building Energy Code Year=[value]	
B.14.2.2	Infiltration credit applied	ASHRAE 62.2-2010 has an infiltration credit. ASHRAE 62-89 and 62.2-2013 do not have infiltration credits.		Boolean	True, False, NA		NO MAPPING		
B.14.2.3	Local weather factor			Number			Definition?		
B.14.2.4	N-Factor			Number			NO MAPPING		
B.14.2.5	Infiltration credit CFM-natural	The number of the calculated infiltration credit		Number			NO MAPPING		
B.14.2.6	Required ventilation rate	This is the net amount of continuous ventilation needed AFTER infiltration credit is applied (if any)		Number			Required Ventilation Rate	Required Ventilation Rate=[value]	cfm
B.14.2.7	Required ventilation rate units			Enumeration	ACH, CFMnat		Unit Of Measure	Unit Of Measure="cfm"	cfm
B.14.2.8	Ventilation fan – Third party certification			Enumeration	ENERGY STAR, Home Ventilation Institute, Other		Equipment Rating	Equipment Rating=[value]	
B.14.2.9	Ventilation improvement recommendation			Enumeration	Require, Recommend, No recommendation		NO MAPPING		
B.14.2.10	Location			Enumeration	Kitchen, Bath, Garage, Other		Location	Location=[value]	
B.14.2.11	Intermittent exhaust rate	This is amount without taking into consideration any infiltration credit		Number			NO MAPPING		
B.14.2.12	Continuous exhaust rate	This is amount without taking into consideration any infiltration credit		Number			NO MAPPING		
B.14.2.13	Window opening credit	Should be 20 cfm, if the local AHJ permits windows to be used for local exhaust	CFM	Number			NO MAPPING		
B.14.2.14	Required intermittent exhaust rate	This is the net amount of continuous ventilation needed AFTER window credit is applied (if any)		Number			NO MAPPING		
B.14.2.15	Required continuous exhaust rate	This is the net amount of continuous ventilation needed AFTER window credit is applied (if any)		Number			NO MAPPING		

B.14 HEALTH AND SAFETY

B.14.1 GENERAL

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.14.2.16	Initial airflow deficit	The airflow deficit for each bathroom or kitchen is the required airflow less the airflow rating of the exhaust equipment. If there is no exhaust device or if the existing device cannot be measured nor read, the exhaust device airflow is assumed to be zero.		Number			NO MAPPING		
B.14.2.17	Airflow rate units	Air changes per hour (ACH); cubic feet per minute (CFM).		Enumeration	CFM, ACH, L/s		Unit Of Measure	Unit Of Measure=[value]	
B.14.2.18	Does a proper air barrier separate the house from the garage?			Enumeration	Yes (installed); No (recommended); n/a		NO MAPPING		
B.14.2.19	Are the ducts and air handlers that are located in the garage properly air sealed?			Enumeration	Yes (installed); No (recommended); n/a		NO MAPPING		
B.14.2.20	Is the clothes dryer properly vented?			Enumeration	Yes (installed); No (recommended); n/a		NO MAPPING		
B.14.2.21	Other ventilation issues			Text			NO MAPPING		
B.14.2.22	Other ventilation issues			Enumeration	Yes (installed); No (recommended); n/a		NO MAPPING		
B.14.2.23	Garage ducts and air handlers air sealed			Boolean			Duct Sealing	Duct Sealing=[value]	
B.14.2.24	Mechanical ventilation system installed			Boolean			Conditioning Status	Conditioning Status=[value]	

B.14.3 MOISTURE CONTROL

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.14.3.1	Exterior locations of water intrusion damage			Enumeration	Roof, Interior ceiling, Foundation, Basement, Crawlspace, Walls, Around windows, Other		NO MAPPING		
B.14.3.2	Locations of interior water leaks or water damage			Enumeration	Kitchen, Bathroom, Basement, Other		NO MAPPING		
B.14.3.3	Vapor retarders installed			Boolean			NO MAPPING		
B.14.3.4	Gutters installed or repaired			Boolean			NO MAPPING		
B.14.3.5	Flashing installed or repaired			Boolean			NO MAPPING		
B.14.3.6	Foundation grading improved			Boolean			NO MAPPING		
B.14.3.7	Other measures implemented			Text			NO MAPPING		

B.14.4 COMBUSTION APPLIANCES

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.14.4.1	CAZ depressurization limit	Pulled from industry standards by users (e.g., BPI Gold Sheet) or via software program	Pa	Number			NO MAPPING		
B.14.4.2	Items running - Baseline test	Baseline pressure is read under the following conditions: no items running, all fans off, all exterior doors closed, and all interior doors are opened		Enumeration	Bath exhaust fan, Kitchen exhaust fan, Clothes dryer, Central vacuum, Air handler		NO MAPPING		
B.14.4.3	Doors opened - Baseline test			Enumeration	Basement doors, Other doors		NO MAPPING		
B.14.4.4	Doors closed - Baseline test			Enumeration	Basement doors, Other doors		NO MAPPING		
B.14.4.5	Baseline pressure		Pa	Number			NO MAPPING		

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.14.4.6	Items running - Poor case test	The poor case CAZ depressurization test is configured by determining the largest combustion appliance zone depressurization attainable at the time of testing due to the combined effects of door position; exhaust appliance operation, and air handler fan operation. A base pressure must be measured with all fans off and doors open. The poor case CAZ depressurization measurement is the pressure difference between the largest depressurization attained at the time of testing and the base pressure.			Bath exhaust fan, Kitchen exhaust fan, Clothes dryer, Central vacuum, Air handler		NO MAPPING		
B.14.4.7	Doors opened - Poor case test				Basement doors, Other doors		NO MAPPING		
B.14.4.8	Doors closed - Poor case test				Basement doors, Other doors		NO MAPPING		
B.14.4.9	Poor case pressure		Pa	Number			NO MAPPING		
B.14.4.10	Net pressure change		Pa	Number			NO MAPPING		
B.14.4.11	Depressurization finding poor case			Enumeration	Pass, Fail		NO MAPPING		
B.14.4.12	Amount ambient CO in CAZ during testing		ppm	Number			NO MAPPING		
B.14.4.13	Ambient CO in CAZ exceeded 35 ppm during testing			Boolean			NO MAPPING		
B.14.4.14	Flue visual condition			Enumeration	Pass, Fail		NO MAPPING		
B.14.4.15	Flue condition notes			Text			NO MAPPING		
B.14.4.16	Outside temperature at time of flue draft test		Degrees Fahrenheit	Number			NO MAPPING		
B.14.4.17	Poor scenario - Flue draft test		Pa	Number			NO MAPPING		
B.14.4.18	Current condition - Flue draft test	This element is formerly known as "spillage, draft, and CO readings under natural conditions" as explained in BPI's Gold Sheet "Combustion Safety Test Procedure for Vented Appliances."	Pa	Number			NO MAPPING		
B.14.4.19	Test result type - Flue draft test			Enumeration	Pass, Fail, Not tested		NO MAPPING		
B.14.4.20	Poor scenario - Spillage test		Seconds	Number			NO MAPPING		
B.14.4.21	Current condition - Spillage test		Seconds	Number			NO MAPPING		
B.14.4.22	Test result type - Spillage test			Enumeration	Pass, Fail, Not tested		NO MAPPING		
B.14.4.23	Poor scenario - Carbon monoxide test		ppm	Number			NO MAPPING		
B.14.4.24	Current condition - Carbon monoxide test		ppm	Number			NO MAPPING		
B.14.4.25	Test result type - Carbon monoxide test			Enumeration	Pass, Fail, Not tested		NO MAPPING		

B.14 HEALTH AND SAFETY

B.14.1 GENERAL

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.14.4.26	Max ambient CO in living space during audit	Monitored throughout assessment, not just appliance testing	ppm	Number			NO MAPPING		
B.14.4.27	Ambient CO action during CAZ testing	BPI Gold Sheet is one example that shows action levels based upon decision logic	ppm	Number			NO MAPPING		
B.14.4.28	Stack temperature		Degrees Fahrenheit	Number			NO MAPPING		
B.14.4.29	Fuel			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other		Resource	Resource=[value]	
B.14.4.30	Fuel leaks identified			Boolean			NO MAPPING		
B.14.4.31	Leaks addressed			Boolean			NO MAPPING		
B.14.4.32	Notes			Text			NO MAPPING		

B.14.5 STOVE TEST

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.14.5.1	Stove fuel			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other		NO MAPPING		
B.14.5.2	Heating stove properly vented			Boolean			NO MAPPING		
B.14.5.3	CO reading			Number			NO MAPPING		
B.14.5.4	Gas leaks identified			Boolean			NO MAPPING		
B.14.5.5	Actions taken			Text			NO MAPPING		

B.14.6 LEAD PAINT

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.14.6.1	Did the contracted scope of work disturb greater than 6 square feet of interior painted surfaces?			Boolean		Applies to homes built before 1978	NO MAPPING		
B.14.6.2	Did the contracted scope of work disturb greater than 20 square feet of exterior painted surfaces?			Boolean		Applies to homes built before 1978	NO MAPPING		
B.14.6.3	Did the contracted scope of work include window replacement?			Boolean			NO MAPPING		
B.14.6.4	EPA Lead-Safe Certification Number of firm that performed work			Text			NO MAPPING		

B.14.7 RADON

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.14.7.1	Radon tested			Boolean			NO MAPPING		

B.14 HEALTH AND SAFETY
B.14.1 GENERAL

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.14.7.2	Radon test	Start date time		DateTime			NO MAPPING		
B.14.7.3	Radon test	End date time		DateTime			NO MAPPING		
B.14.7.4	Radon test	Radon test location		Enumeration	Kitchen, Crawlspace, Basement, Bedroom, Living room, Other		NO MAPPING		
B.14.7.5	Radon test	Radon test results	pCi/L	Number			NO MAPPING		
B.14.7.6	Radon test	Radon test method		Enumeration	Activated charcoal absorption, Alpha-track detectors, Unfiltered track detection, Short term electret ion chamber, Long term electret ion chamber, Continuous radon monitoring		NO MAPPING		
B.14.7.7	Educational materials provided to homeowner?			Boolean			NO MAPPING		
B.14.7.8	Actions taken			Text			NO MAPPING		
B.14.7.9		If moisture management of a crawlspace (e.g., installation of polyethylene sheeting) or radon mitigation measures were a part of the scope of work, were measures installed to be compliant with one of the following:							
B.14.7.10	Actions meet industry specifications?	- Specifications of EPA's Indoor airPLUS program		Boolean			NO MAPPING		
B.14.7.11		- Techniques detailed in EPA's Radon-Resistant New Construction							
B.14.7.12		- ASTM E2121, Standard Practice for Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings (section 7.3)							
B.14.7.13	Result less than 4 pCi/L			Boolean			NO MAPPING		

B.14.8 SOURCE POLLUTANTS

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.14.8.1	Are there unvented combustion heating or hearth appliances present in the living area?			Boolean			NO MAPPING		
B.14.8.2	If yes, does the appliance conform to ANSI Z21.11.2?			Boolean			NO MAPPING		
B.14.8.3	If yes, is the appliance used as a primary source of heating?			Boolean			NO MAPPING		
B.14.8.4	Does home have attached garage?			Boolean			NO MAPPING		
B.14.8.5	If yes, is there a continuous air barrier between garage and living space?			Boolean			NO MAPPING		
B.14.8.6	If yes, is there an exhaust fan in garage?			Boolean			NO MAPPING		

B.14.9 PESTS

B.14 HEALTH AND SAFETY

B.14.1 GENERAL

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.19.9.1	Indications of pest entry or damage?			Boolean			NO MAPPING		
B.19.9.2	Evidence of pesticide or insecticide use?			Boolean			NO MAPPING		

B.14.910 ASBESTOS

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.14.10.1	Was asbestos suspected?			Boolean			NO MAPPING		
B.14.10.2	Was substance tested for asbestos?			Boolean			NO MAPPING		
B.14.10.3	Was asbestos found?			Boolean			NO MAPPING		
B.14.10.4	Type of blower door test			Enumeration	Pressurization, Depressurization		NO MAPPING		
B.14.10.5	Actions taken			Text			NO MAPPING		
B.14.10.6	Actions meet industry specifications?			Boolean			NO MAPPING		

B.14.11 SPRAY FOAM

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
b.14.11.1	Were spray foam, polyurethane foam and/or other potential sources of indoor pollutants installed or applied as part of the scope of work?			Boolean			NO MAPPING		

B.15 MODELED USAGE

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.15.1	Fuel			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other		Resource	Resource=[value]	
B.15.2	Unit of measure			Enumeration	cmh (cubic meters per hour), ccf (hundred cubic feet), kcf (thousand cubic feet), MCF (million cubic feet), cfh (cubic feet per hour), kWh (thousand Watt-hours), MWh (million Watt-hours), Btu, kBtu (thousand Btu), MBtu (million Btu)		Unit Of Measure	Unit Of Measure=[value]	
B.15.3	Annual consumption	Energy (kWh) consumed per year		Number			Annual Resource Value	Interval Frequency="Annual" Resource Value=[value]	
B.15.4	Annual fuel cost			Number			Annual Resource Cost	Interval Frequency="Annual" Resource Cost=[value]	
B.15.5	End use type			Enumeration	Heating, Cooling, Hot water, Appliance, Lighting, PV, Solar thermal, Other		End Use	End Use=[value]	
B.15.6	End use value	Energy use will be negative for energy producing end uses such as PV and Solar Thermal		Number			[End Use] Resource Value	End Use=[value] Resource Value=[value]	
B.15.7	Baseload	Baseload power is the energy consumed for the day-to-day operation of a home that is not used as a response to outside weather (i.e., excludes heating and cooling) (Krigger and Dorsi, 2009).		Number			Baseload Resource Value	End Use="Baseload" Resource Value=[value]	

B.16 .1 PROJECT INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.16.1.1	Program name			Text			Assessment Program	Assessment Program=[value]	
B.16.1.2	Program sponsor			Text			Assessment Program Organization	Assessment Program Organization=[value]	
B.16.1.3	Certifying organization			Enumeration	US Green Building Council (LEED Rating System), Home Innovation Research Labs, Local program, ENERGY STAR Certified New Home, Passive House Institute US (PHUIS)		Assessment Program Organization	Assessment Program Organization=[value]	
B.16.1.4	Certifying organization URL			Text			Assessment Program URL	Assessment Program URL=[value]	
B.16.1.5	Year certified		Year	Number			Assessment Year	Assessment Year=[value]	
B.16.1.6	Program certificate			Enumeration	Home Performance with ENERGY STAR, Certified, Silver, Bronze, Gold, Platinum, Emerald, 1-Star, 2-Star, 3-Star, 4-Star, 5-Star, Net-zero, PHIUS+		Assessment Level	Assessment Level=[value]	
B.16.1.7	ENERGY STAR Certified New Home Version			Text			NO MAPPING		
B.16.1.8	Project type			Text			Project Description	Action Category="Project" Description=[value]	
B.16.1.9	Title			Text			Project Name Identifier	Action Category="Project" Identifier Label="Name" Identifier=[value]	
B.16.1.10	Event type	Quality assurance: The observation techniques and activities used externally by an organization to evaluate the effectiveness of their quality management system and to provide feedback that may result in quality improvements (BPI, 2006).		Enumeration	Audit, Proposed work scope, Approved work scope, Construction period testing/daily test out, Job completion testing/final inspection, Quality assurance/monitoring, Supervised audit		Action Category	Action Category=[value]	
B.16.1.11	Date			Date			Date	Date=[value]	
B.16.1.12	Notes			Text			Notes	Notes=[value]	
B.16.1.13	Project start date	Start date of the project		Date			Project Interval Start Date	Action Category="Project" Interval Start Date=[value]	
B.16.1.14	Estimated project completion date	Estimated completion date		Date			Estimated Project Interval End Date	Derivation Method="Estimated" Action Category="Project" Interval End Date=[value]	
B.16.1.15	Actual project completion date	Actual project completion date		Date			Completed Project Interval End Date	Implementation Status="Completed" Action Category="Project" Interval End Date=[value]	

B.16 .1 PROJECT INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.16.1.16	Hours	Amount of time contractor spent on this stage of project.		Number			Labor Hours	Labor Hours=[value]	hrs
B.16.1.17	Fees associated with audit or other project activities		Dollars	Number			[Cost Attribution] Cost	Cost Attribution=[value] Cost=[value]	$
B.16.1.18	Cost of health and safety measures	Cost of all work performed or proposed	Dollars	Number			Health And Safety Cost	Cost Attribution="Health and safety" Cost=[value]	$
B.16.1.19	Cost of qualifying energy measures	Cost of all work performed or proposed	Dollars	Number			Total Cost	Cost Attribution="Total" Cost=[value]	$
B.16.1.20	Incentive type			System identifier		Element can be repeated for project and by measure	NO MAPPING		
B.16.1.21	Funding source code			Text		Element can be repeated for project and by measure	Funding Source	Funding Source=[value]	
B.16.1.22	Funding source name			Text		Element can be repeated for project and by measure	[Funding Source] Identifier	Funding Source=[value] Identifier=[value]	
B.16.1.23	Incentive amount		Dollars	Number			Incentive Funding Amount	Funding Source="Incentive" Funding Amount=[value]	$

B.16.2 MEAURE INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.16.2.1	Measure code			Text			Measure Identifier	Action Category="Measure" Identifier=[value]	
B.16.2.2	Measure description			Text			Measure Description	Action Category="Measure" Description=[value]	
B.16.2.3	Units	The number of measures installed or repaired as part of the program		Text			Quantity	Quantity=[value]	
B.16.2.4	Value			Value			Value of what?		
B.16.2.5	Unit location			Enumeration	Attic - conditioned, Attic - unconditioned, Basement - conditioned, Basement - unconditioned, Conditioned space, Crawlspace - vented, Crawlspace - unvented, Garage - conditioned, Garage - unconditioned, Mechanical closet, Other interior, Other exterior, Roof deck		Location	Location=[value]	
B.16.2.6	Estimated life			Number			Estimated Useful Life	Derivation Method="Estimated" Useful Life=[value]	
B.16.2.7	Installation date			Date			Installed Date	Date Status="Installed" Date=[value]	
B.16.2.8	Cost		Dollars	Number			Cost	Cost=[value]	
B.16.2.9	Unit pricing indicator			Boolean			NO MAPPING		
B.16.2.10	Resource type code			Number			NO MAPPING		
B.16.2.11	Load profile	A load profile is created using measurements of a customer's electricity use at regular intervals, typically one hour or less, and provides an accurate representation of a customer's usage pattern over time		Number			NO MAPPING		
B.16.2.12	Quantity			Number			Quantity	Quantity=[value]	

B.16 .1 PROJECT INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.16.2.13	Annual amount		Dollars	Number			Annual Cost	Interval Frequency="Annual" Cost=[value]	$
B.16.2.14	Customer notes			Text			Customer Notes	Contact Label="Customer" Notes=[value]	
B.16.2.15	Work scope notes			Text			NO MAPPING		
B.16.2.16	Work status			Enumeration	Installed, Not installed, Recommended		Installation Status	Installation Status=[value]	
B.16.2.17	Reason for not installing measure			Text			NO MAPPING		
B.16.2.18	Quality assurance test result	The observation techniques and activities used externally by an organization to evaluate the effectiveness of their quality management system and to provide feedback that may result in quality improvements (BPI, 2006)		Enumeration	Passed, Failed, Not tested		Quality	Quality=[value]	
B.16.2.19	Quality assurance notes			Text			Quality Assurance Notes	Assessment Recognition Status="Quality assurance" Notes=[value]	
B.16.2.20	Replaced component system identifier			System identifier			NO MAPPING		
B.16.2.21	Installed component system identifier			System identifier			NO MAPPING		

B.17 RESOURCE SAVINGS
B.17.1 ENERGY SAVINGS

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.17.1.1	Energy savings type			Enumeration	Estimated, Measured	Element can be repeated for project and by measure	Energy Derivation Method	Resource="Energy" Derivation Method=[value]	
B.17.1.2	Energy savings reported			Enumeration	Gross, Net	Element can be repeated for project and by measure	Energy Resource Boundary	Resource="Energy" Resource Boundary=[value]	
B.17.1.3	Fuel			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other	Element can be repeated for project and by measure	Resource	Resource=[value]	
B.17.1.4	Total savings			Number		Element can be repeated for project and by measure	Total Resource Savings	Interval Measure="Total" Resource Savings=[value]	
B.17.1.5	Total dollar savings		Dollars	Number		Element can be repeated for project and by measure	Total Cost Savings	Interval Measure="Total" Cost Savings=[value]	$
B.17.1.6	Percent reduction			Fraction		Element can be repeated for project and by measure	Percent Improvement	Percent Improvement=[value]	percent
B.17.1.7	Units			Enumeration	cmh (cubic meters per hour), ccf (hundred cubic feet), kcf (thousand cubic feet), MCF (million cubic feet), cfh (cubic feet per hour), kWh (thousand Watt-hours), MWh (million Watt-hours), Btu, kBtu (thousand Btu), MBtu (million Btu), therms, Lbs. (pounds), KLbs. (thousand pounds), MLbs. (million pounds), Tonnes, Cords (Full Cord), Gal, KGal (thousand gallons), ton hour	Element can be repeated for project and by measure	Unit Of Measure	Unit Of Measure=[value]	
B.17.1.8	End use			Enumeration	Heating, Cooling, Hot water, Appliance, Lighting, PV, Solar thermal, Other	Element can be repeated for project and by measure	End Use	End Use=[value]	
B.17.1.9	End use value			Number		Element can be repeated for project and by measure	[End Use] Resource Value	End Use=[value] Resource Value=[value]	

B.17 RESOURCE SAVINGS
B.17.1 ENERGY SAVINGS

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.17.1.10	Demand savings		kW or MW	Number		Element can be repeated for project and by measure	Demand Resource Savings	Interval Measure="Demand" Resource Savings=[value]	
B.17.1.11	Annual percent reduction			Fraction		Element can be repeated for project and by measure	Annual Percent Improvement	Interval Frequency="Annual" Percent Improvement=[value]	percent

B.17.2 WATER SAVINGS

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.17.2.1	Water savings type			Enumeration	Estimated, Measured	Element can be repeated for project and by measure	Water Derivation Method	Resource="Water" Derivation Method=[value]	
B.17.2.2	Units			Enumeration	Gallon, KGal (thousand Gallons), MGal (million Gallons), cf (cubic feet), ccf (hundred cubic feet), kcf (thousand cubic feet), MCF (million cubic feet)	Element can be repeated for project and by measure	Unit Of Measure	Unit Of Measure=[value]	
B.17.2.3	Total savings			Number		Element can be repeated for project and by measure	Total Resource Savings	Interval Measure="Total" Resource Savings=[value]	
B.17.2.4	Total dollar savings		Dollars	Number		Element can be repeated for project and by measure	Total Cost Savings	Interval Measure="Total" Cost Savings=[value]	$
B.17.2.5	Percent reduction			Fraction		Element can be repeated for project and by measure	Percent Improvement	Percent Improvement=[value]	percent
B.17.2.6	Rain barrels			Number		Element can be repeated for project and by measure	Rain Barrel Quantity	Water Storage Technology="Rain barrel" Quantity=[value]	
B.17.2.7	Reclaimed water system			Boolean		Element can be repeated for project and by measure	Reclaimed water system	Water Storage Technology="Reclaimed water system"	

B.18 CONSUMPTION INFORMATION
B.18.1 ENERGY CONSUMPTION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.18.1.1	Fuel			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other		Resource	Resource=[value]	
B.18.1.2	Unit of measurement			Enumeration	cmh (cubic meters per hour), ccf (hundred cubic feet), kcf (thousand cubic feet), MCF (million cubic feet), cfh (cubic feet per hour), kWh (thousand Watt-hours), MWh (million Watt-hours), Btu, kBtu (thousand Btu), MBtu (million Btu), therms, Lbs. (pounds), KLbs. (thousand pounds), MLbs. (million pounds), Tonnes, Cords (Full Cord), Gal, KGal (thousand gallons), ton hour		Unit Of Measure	Unit Of Measure=[value]	
B.18.1.3	Metering configuration	Direct metering = tenants directly metered; Master meter without sub-metering = tenants not sub-metered Master meter with sub-metering = tenant sub-metered by building owner			Enumeration	Direct metering, Master meter without sub-metering, Master meter with sub-metering	Metering Configuration	Metering Configuration=[value]	
B.18.1.4	Emissions type			Enumeration	Carbon dioxide (CO2), Methane (CH4), Nitrous Oxide (N2O), CO2 equivalent		Emission Gas Type	Emission Gas Type=[value]	
B.18.1.5	Emissions units			Enumeration	Kilograms (kg), Ton, Metric ton, Pound		Unit Of Measure	Unit Of Measure=[value]	
B.18.1.6	Emissions			Number			Emissions Value	Emissions Value=[value]	Dependent on (
B.18.1.7	Fuel interruptibility	Energy flow that can be reduced or completely stopped with little or no notice. Interruptible rate is the agreed-upon rate for energy sold as interruptible		Enumeration	Interruptible, Firm, n/a		Fuel Interruptibility	Fuel Interruptibility=[value]	
B.18.1.8	Shared energy system			Enumeration	Yes, No, Common meter		Shared Resource Configuration	Shared Resource Configuration=[value]	
B.18.1.9	Interval type	Indicates whether the reading is meant to be representative the data interval that's available. Data that's available can range from 15 minute interval to annual		Enumeration	15-minute, Hourly, Daily, Monthly, Annual		Interval Frequency	Interval Frequency=[value]	
B.18.1.10	Reading time zone			Text			Reading Time Zone Code	Reading Time Zone Code=[value]	
B.18.1.11	Marginal energy cost rate	The cost of providing an additional unit of output	$/energy unit	Number			Energy Average Marginal Buy Rate Charge Value	Resource="Energy" Charge Rate="Average marginal buy" Rate Charge Value=[value]	$/unit

B.18 CONSUMPTION INFORMATION

B.18.1 ENERGY CONSUMPTION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.18.1.12	Energy use intensity	Energy use intensity (EUI) is a unit of measurement that describes a building's energy use. EUI represents the energy consumed by a building relative to its size	kBtu/ft^2	Number			Energy Resource Intensity	Resource="Energy" Resource Intensity=[value] Unit of Measure="kBtu/ft2"	kBtu/ft2
B.18.1.13	Peak season	Period during which electrical power is expected to be provided at a significantly higher than average supply level		Enumeration	Summer, Winter		On Peak Schedule Period	Schedule Category="On peak" Schedule Period=[value]	
B.18.1.14	Consumption	The annual amount of all the energy the premises consumes on-site, as reported on the utility bills. A negative number should be used for renewable generation. Positive number indicates consumption.		Number			Annual Onsite Energy Resource Value	Interval Frequency="Annual" Resource Boundary="Onsite" Resource="Energy" Resource Value=[value]	Dependent on C
B.18.1.15	Start date time	Date/time stamp in the ISO 8601 format when the usage measured began		DateTime			Interval Start Date	Interval Start Date=[value] Date Format="DateTime"	DateTime
B.18.1.16	End date time	Date/time stamp of the meter reading		DateTime			Interval End Date	Interval End Date=[value] Date Format="DateTime"	DateTime
B.18.1.17	Meter reading type			Enumeration	Point, Median, Average, Total, Estimate, Other		Interval Measure	Interval Measure=[value]	
B.18.1.18	Consumption cost	The annual cost associated with the selected 12 month time period for a premise. It can be an individual value for different energy types, and can also be an aggregated value across all energy types.	Dollars	Number			Annual Onsite Energy Resource Cost	Interval Frequency="Annual" Resource Boundary="Onsite" Resource="Energy" Resource Cost=[value]	$
B.18.1.19	Marginal rate			Number			How different from B.18.1.11?		
B.18.1.20	Baseload			Number			Baseload Resource Value	End Use="Baseload" Resource Value=[value]	Dependent on C

B.18.2 WATER CONSUMPTION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.18.2.1	Water type			Enumeration	Indoor and outdoor water, Indoor water, Outdoor water, Wastewater/sewer		Resource	Resource=[value]	
B.18.2.2	Unit of measurement			Enumeration	Gallon, kGal (thousand Gallons), MGal (million Gallons), cf (cubic feet), ccf (hundred cubic feet), kcf (thousand cubic feet), MCF (million cubic feet)		Unit Of Measure	Unit Of Measure=[value]	
B.18.2.3	Marginal water cost rate	The cost of providing an additional unit of output		Number			Water Average Marginal Buy Rate Charge Value	Resource="Water" Charge Rate="Average marginal buy" Rate Charge Value=[value]	$/unit
B.18.2.4	Water use intensity units	Water use intensity is defined as annual water use divided by total gross square footage of facility space reported in gallons per square foot (DOE, 2013). This element may also be reported as gallons, per day, per person.		Enumeration	gal/sq.ft., gal/day/person		Unit Of Measure	Unit Of Measure=[value]	

B.18 CONSUMPTION INFORMATION
B.18.1 ENERGY CONSUMPTION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.18.2.5	Water use intensity value	Water use intensity is defined as annual water use divided by total gross square footage of facility space reported in gallons per square foot (DOE, 2013). This element may also be reported as gallons, per day, per person.		Number			Water Resource Intensity	Resource="Water" Resource Intensity=[value]	
B.18.2.6	Consumption	The annual amount of all the energy the premises consumes on-site, as reported on the utility bills. A negative number should be used for renewable generation. Positive number indicates consumption.		Number			Annual Onsite Water Resource Value	Interval Frequency="Annual" Resource Boundary="Onsite" Resource="Water" Resource Value=[value]	Dependent on C
B.18.2.7	Start date time	Date/time stamp in the ISO 8601 format when the usage measured began		DateTime			Interval Start Date	Interval Start Date=[value] Date Format="DateTime"	DateTime
B.18.2.8	End date time	Date/time stamp of the meter reading		DateTime			Interval End Date	Interval End Date=[value] Date Format="DateTime"	DateTime
B.18.2.9	Meter reading type			Enumeration	Point, Median, Average, Total, Estimate, Other		Interval Measure	Interval Measure=[value]	
B.18.2.10	Consumption cost	The annual cost associated with the selected 12 month time period for a premise. It can be an individual value for different energy types, and can also be an aggregated value across all energy types.	Dollars	Number			Annual Onsite Water Resource Cost	Interval Frequency="Annual" Resource Boundary="Onsite" Resource="Water" Resource Cost=[value]	$
B.18.2.11	Marginal rate			Number			How different from B.18.2.3?		
B.18.2.12	Baseload			Number			Baseload Resource Value	End Use="Baseload" Resource Value=[value]	Dependent on C

B.18.3 ANSI/BPI-2400 INPUTS

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.18.3.1	Weather regression start date			Date			NO MAPPING		
B.18.3.2	Weather regression end date			Date			NO MAPPING		
B.18.3.3	Calibration qualification			Enumeration	None, Detailed, Simple		NO MAPPING		
B.18.3.4	Calibration weather regression CV-RMSE	Detailed Calibration Baseload Weather Regression CV-RMSE. Eqn. 3.2.2.G.i of BPI-2400. Percentage expressed as a fraction (i.e., 10% = 0.1).		Fraction			NO MAPPING		
B.18.3.5	Weather normalized annual heating usage			Number			Annual Weather Normalized Heating Resource Value	Interval Frequency="Annual" Normalization="Weather normalized" End Use="Heating" Resource Value=[value] Unit of Measure=[value]	
B.18.3.6	Weather normalized annual cooling usage			Number			Annual Weather Normalized Cooling Resource Value	Interval Frequency="Annual" Normalization="Weather normalized" End Use="Cooling" Resource Value=[value] Unit of Measure=[value]	
B.18.3.7	Weather normalized annual baseload usage			Number			Annual Weather Normalized Baseload Resource Value	Interval Frequency="Annual" Normalization="Weather normalized" End Use="Baseload" Resource Value=[value] Unit of Measure=[value]	
B.18.3.8	Detailed model calibration heating bias error	Eqn. 3.2.3.A.i of BPI-2400		Fraction			NO MAPPING		

B.18 CONSUMPTION INFORMATION
B.18.1 ENERGY CONSUMPTION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.18.3.9	Detailed model calibration heating absolute error	Eqn. 3.2.3.A.ii of BPI-2400		Fraction			NO MAPPING		
B.18.3.10	Detailed model calibration cooling bias error			Fraction			NO MAPPING		
B.18.3.11	Detailed model calibration cooling absolute error			Fraction			NO MAPPING		
B.18.3.12	Detailed model calibration baseload bias error			Fraction			NO MAPPING		
B.18.3.13	Detailed model calibration baseload absolute error	Eqn. 3.2.3.A.i of BPI-2400		Fraction			NO MAPPING		
B.18.3.14	Simplified model calibration heating bias error	Used to determine model calibration acceptance when bills fail detailed criteria, but meet simple criteria. Percentage expressed as a fraction (i.e. 10% = 0.1).		Fraction			NO MAPPING		
B.18.3.15	Simplified model calibration cooling bias error	Used to determine model calibration acceptance when bills fail detailed criteria, but meet simple criteria. Percentage expressed as a fraction (i.e. 10% = 0.1).		Fraction			NO MAPPING		
B.18.3.16	Simplified model calibration total bias error	Used to determine model calibration acceptance when bills fail detailed criteria, but meet simple criteria. Percentage expressed as a fraction (i.e. 10% = 0.1).		Fraction			NO MAPPING		

B.19 UTILITY OR FUEL/RESOURCE SERVICE PROVIDER INFORMATION

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.19.1.	Utility name	Name of utility company billing this energy use		Text			Utility Company Name	Contact Label="Utility" Company Name=[value]	
B.19.2	Meter number	Unique identification number for the meter		Number			Meter Identifier	Identifier Label="Meter" Identifier=[value]	
B.19.3	Utility account number	Unique number designated by the utility		Number			Utility Account Identifier	Contact Label="Utility" Identifier Label="Account" Identifier=[value]	
B.19.4	Permission			Boolean			NO MAPPING		
B.19.5	Fuel			Enumeration	Electricity, Renewable electricity, Natural gas, Renewable natural gas, Fuel oil (1, 2, 4, 5/6), District steam, District hot water, District chilled water, Solar hot water, Propane, Kerosene, Diesel, Anthracite coal, Bituminous coal, Coke, Wood, Wood pellets, Combination, Other		Resource	Resource=[value]	

B.20 SOFTWARE USED

	Data element	Definition	Units	Data type	Enumeration	Notes	BEDES Term	BEDES Mapping	BEDES Units
B.20.1	Software program used			Text			Energy Software Tool	Energy Software Tool=[value]	
B.20.2	Software version			Text			Energy Software Tool Version	Energy Software Tool Version=[value]	