25 Adams Circle

Cover

Recipient:

Neil Angus
Director / Land Use Administrator
Devens Enterprise Commission
33 Andrews Parkway
Devens, MA 01434

Inclusions:

PDF delivery, via email, of the below PDF files.
Physical delivery, [4] copies each, of the below files.

Drawings, 24" x 36"

- 01_CIV
- 02_ARCH
- L1 Lotting Plan_DRAFT (Mass Development scope, provided for reference)

Renderings, 11" x 17"

- 25 Adams - L2 Submission Renderings (8 pages)

Supplemental Information - Architectural

- 00_L2 Application Form 25 Adams
- 01_25 Adams Project Summary
- 02_Abutters_100 Feet List & Map
- 03_LEED ND Checklist
- 04_Embodied Carbon Checklist
- 05_Industrial Perf Checklist
- 06_Proposed Const Schedule
- 07_Const Cost Estimate
- 08_HERS Report
- 09_Ext Equipment Specs

Supplemental Information - Civil

- Geotechnical Report
- Stormwater Report
- Traffic Memo

DEVENS ENTERPRISE COMMISSION

DEC NO. _____
DATE: _____
FEE: _____

DEVENS REGIONAL ENTERPRISE ZONE
PERMIT APPLICATION **LEVEL 2**

==========

ESTIMATED COST OF CONSTRUCTION / IMPROVEMENTS $4,726,149.06

OWNER ADAMS CIRCLE, LLC
ADDRESS 30 LOWELL JUNCTION ROAD
TOWN/STATE ANDOVER, MA 01810
PHONE 351.223.4884
FAX --

SIGNATURE Adams Circle LLC
By: Dinosaur Adams LLC, a Manager
By: Scott Oran, its Manager
Type or print name and title

APPLICANT REFRAME SYSTEMS
ADDRESS 30 LOWELL JUNCTION ROAD
TOWN/STATE ANDOVER, MA 01810
PHONE 703.625.0308
FAX --

Jillian Wahl Digitally signed by Jillian Wahl Date: 2025.08.04 17:53:23-04'00'
SIGNATURE
Jillian Wahl, Head of Product
Type or print name and title

If appropriate, attach a separate sheet with the name(s), address(es), and telephone/fax numbers for the project engineer, attorney, or other "development team" personnel.

SITE / LOCATION / STREET 25 ADAMS CIRCLE, LOTS 9, 10, 11, 12, 13, 14

LOT SIZE / TOTAL PARCEL / ZONING DISTRICT: 2.1 ACRES, Residential II. See draft Lotting Plan.

==========

STATEMENT OF PROPOSED WORK OR ACTIVITY
The proposed project is for [6] duplex lots, for a total of [12] dwellings. Each dwelling will have a dedicated driveway and carport. The proposed work encompasses installing volumetric modules on helical pier foundations for each home, a site-built carport and driveway for each home, and all associated grading and landscaping. Note that the public way improvements, including curb cuts, utilities, and streetscape will be performed by Mass Development and submitted under separate cover.

==========

SCOPE OF WORK (pick the actions that best fit your project or application)

X Site Plan
___ Reconsideration
___ Wetlands NOI
___ Zoning Variance
___ Minor amendment or modification of an approved plan
___ Historic District renovations/addition/alternations
___ Other (Specify) _____

Explain work to be performed: Helical pier foundations, [12] modular homes, [12] site-built carports, [12] new driveways, new stormwater management site elements. Corresponding roadway / public space work under separate cover.

Comments from Notifying Agencies: _____

25 Adams Circle

Project Narrative

Overview

This submission proposes the development of 12 new-construction single family homes, arranged as duplexes, at 25 Adams Circle in Devens, Massachusetts. Each duplex will occupy one subdivided lot; the subdivision is being coordinated with Mass Development. This application is being submitted for treatment under Innovative Development Residential II.

It is Reframe's mission to deliver high-quality, low-carbon housing through innovative construction techniques. By leveraging off-site manufacturing, we aim to streamline the building construction timeline on site, minimize waste, and create energy-efficient housing solutions that set a new industry standard.

This development has been conceived in close collaboration with Mass Development. The existing roadway will be improved by Mass Development, including but not limited to new utility lines, street lights, and street trees. The existing roadway width will be maintained; no change is proposed to existing fire truck access.

Waivers

No waivers are being requested for this project.

Reuse Plan

The proposed development is single-family use. A minimum of 25% of the units [3] will be provided at 100% AMI. The project contributes additional residential density to an underutilized but well-connected site in Devens. The proposed development is on a site without existing structures, and proposes to use the existing roadway infrastructure with improvements as proposed by Mass Development. Roadway and utility improvements will be submitted by Mass Development under separate cover. A draft lotting plan has been included with this submission. The development will preserve existing trees to the maximum extent possible, and install new trees as required. The proposed design includes a bioswale across the east side of the site to control stormwater runoff from the adjacent hill, and half of the main roof drainage from the new homes is directed into this bioswale. The carport and porch roof area runoff is directed into adjacent planted areas.

The landscape plan utilises native plantings, with variation across the site to create visual interest. (C700 series sheets).

Project Phasing

This project is divided into two phases:

- Phase 1: Lots 9 & 10
- Phase 2: Lots 11, 12, 13, 14

See sheet A110 for phasing plan, and schedule included with submission.

Energy

The homes have been designed to a very high energy standard, with a current HERS index score of 40 (included in this submission packet). Note that the HERS index score will be submitted for each home with the individual building permits.

R-Values for the primary components of each home are indicated on sheet A000. 1.5" of continuous rigid insulation is to be installed on all exterior walls, and 4.5" of continuous rigid insulation will be installed on the roof. The homes will be all electric, with energy efficient LED light fixtures and optional solar panel and battery systems designed to provide various levels of on-site energy generation for the future homeowners. The solar array, oriented on the south side of the sloped roofs, can be provided with up to [4] Enphase batteries which are capable

of providing backup power for all critical systems and appliances. The batteries will be installed on the south side elevation of each home. A minimum of [1] home in Phase 1 will include a solar array and battery.

DOSRP Compliance

Per Devens OSRP dated 1-23-08, figure 4-1, the property is in a conservation area identified as “Buena Vista Area.” The OSRP did not recommend additional permanent protection, and the area was re-zoned in 2015 to Residential II. A few hundred feet south of the site is the Robbins Pond conservation area.
Antietam Field and Rogers Field recreation areas are within ½ mile of the site, connected by Cavite Street, Jackson Road and Buena Vista Street. Jackson Road is also a primary bicycle route. There is a pocket park at Cavite Street, north of the site, that connects via crosswalk to the sidewalk on the south side of Cavite and then to a trail on the hill to our east. This trail reappears on the adjacent lot east of the site, very close to the SE corner of the proposed development, and continues south to the Robbins Pond trail network. The site does not impact these established trail connections.

Industrial Performance Standards Narrative

Note that the project is 100% residential, and will only include residential-scale utility equipment for each home. Any required larger utility installation will be under the scope of Mass Development.

Potential sources of sound related to the development include temporary construction and the homes’ outdoor HVAC equipment.
The outdoor HVAC unit has a sound rating dB of 57. The unit is set back from the front property line by > 60’.
The project consists of single family homes, arranged as duplexes, each of which is permitted a maximum of [2] automobiles. Per the included traffic memo, additional trip generation related to the development is minor and we do not anticipate significant noise related to everyday use and transportation.

The project does not propose to remove earth from the site. Minor regrading will be necessary for drainage. All on-site staff will complete the required UXO training, as well as comply with other requirements per DEC staff and/or applicable portions of CMR 974 section 4.07.

The homes are entirely electric. Air quality may be affected during construction, though the primary build strategy will reduce this dramatically:

- The foundations are helical piers, which require very minimal excavation. Each home will have grade beams poured once the helical piers are complete.
- The volumetric modular construction of the homes ensures that any noise and air quality impacts of framing, sheathing, roofing, finish and fixture installation are not present as these scopes are primarily executed offsite.
- The volumetric modular construction of the homes greatly reduces the on-site construction time, minimizing impact to surrounding residents and businesses.
- Roofing and solar panels, if a buyer elects to include the solar system, will be installed in the factory. Exterior cladding will be installed on site, which will include cutting the cementitious cladding material.

The project does not propose equipment that will produce electromagnetic interference. The Enphase battery is tested to comply with the requirements of FCC Part 15 B, which is the U.S. requirement for EMI radiated and conducted emissions for residential equipment.

The exterior lighting is proposed to be minimal. Each home will have [2] sconces which are concealed by the front porch, and [2] downward-facing sconces on the back facade.
Landscape uplighting is not proposed. Streetlights will be defined under Mass Development’s roadway improvement scope.

100 feet Abutters List Report

Devens, MA
July 29, 2025

Subject Property:

Parcel Number: 026.0-0010-0100.0
CAMA Number: 026.0-0010-0100.0
Property Address: 100 ADAMS CIRCLE

Mailing Address: MDFA / BV HSG CORNER OF JACKSON & CAVITE
99 HIGH STREET 11TH FLOOR
BOSTON, MA 02110

Abutters:

Parcel Number: 015.0-0099-0100.0
CAMA Number: 015.0-0099-0100.0
Property Address: 216 BARNUM ROAD

Mailing Address: MDFA
99 HIGH STREET 11TH FLOOR
BOSTON, MA 02110

1

Parcel Number: 020.0-0004-0400.0
CAMA Number: 020.0-0004-0400.0
Property Address: 14 ROBBINS POND ROAD

Mailing Address: PARKER-HANNIFIN CORPORATION
ATTN DON SECORD
14 ROBBINS POND RD
DEVENS, MA 01434

2

Parcel Number: 020.0-0013-1000.0
CAMA Number: 020.0-0013-1000.0
Property Address: 235 BARNUM ROAD

Mailing Address: EXETER 235 BARNUM, LLC
13155 NOEL ROAD SUITE 100
DALLAS, TX 75240

3

Parcel Number: 020.0-0013-2300.0
CAMA Number: 020.0-0013-2300.0
Property Address: 249 BARNUM ROAD

Mailing Address: 249 BARNUM ROAD LLC
PO BOX 543 248 MILL ROAD SUITE 2
CHELMSFORD, MA 01824

4

Parcel Number: 020.0-0099-1100.0
CAMA Number: 020.0-0099-1100.0
Property Address: 261 BARNUM ROAD

Mailing Address: MDFA
99 HIGH STREET 11TH FLOOR
BOSTON, MA 02110

5

Parcel Number: 026.0-0010-0101.0
CAMA Number: 026.0-0010-0101.0
Property Address: 89 ADAMS CIRCLE

Mailing Address: DION DAVID M & KEIKO
89 ADAMS CIRCLE
DEVENS, MA 01434

6

Parcel Number: 026.0-0010-0102.0
CAMA Number: 026.0-0010-0102.0
Property Address: 93 ADAMS CIRCLE

Mailing Address: LIN FRANK TETSUNG & YU CHI HSU
93 ADAMS CIRCLE
DEVENS, MA 01434

7

Parcel Number: 026.0-0010-0103.0
CAMA Number: 026.0-0010-0103.0
Property Address: 97 ADAMS CIRCLE

Mailing Address: DEMISSIE MESFIN B HAILEMARIAM HILINA T
97 ADAMS CIRCLE
DEVENS, MA 01434

8

Parcel Number: 026.0-0010-0104.0
CAMA Number: 026.0-0010-0104.0
Property Address: 14 ADAMS CIRCLE

Mailing Address: SENTHIL SURYA POORNAMACHARY
KABILGUNGAI THIMMA SUBRAMANIAN
14 ADAMS CIRCLE
DEVENS, MA 01434

9

Parcel Number: 026.0-0099-1600.0
CAMA Number: 026.0-0099-1600.0
Property Address: 24 CAVITE STREET

Mailing Address: MDFA / BOULDER HILL
99 HIGH STREET 11TH FLOOR
BOSTON, MA 02110

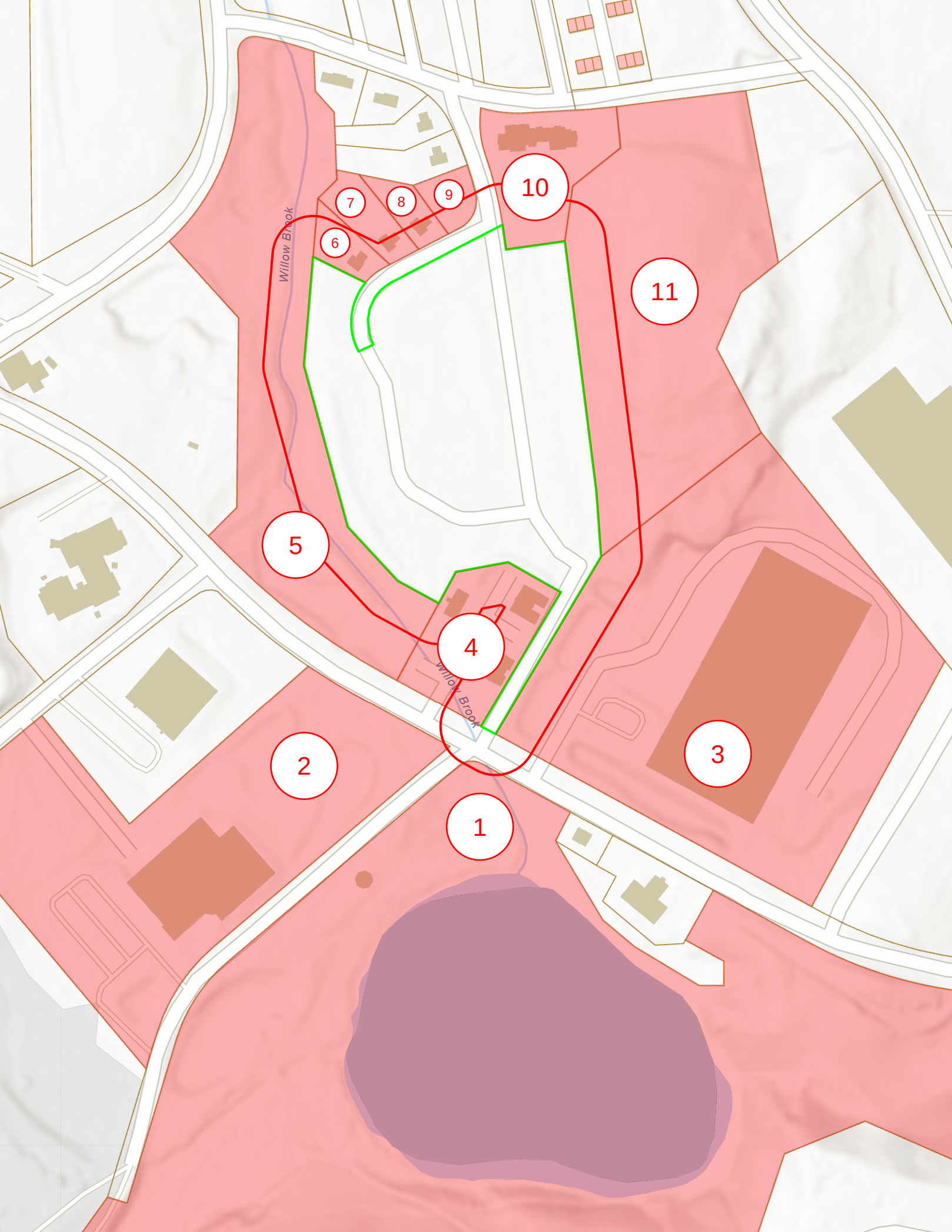
10

100 feet Abutters List Report

Devens, MA
July 29, 2025

Parcel Number:	026.0-0099-1601.0	Mailing Address:	MDFA
CAMA Number:	026.0-0099-1601.0		99 HIGH STREET 11TH FLOOR
Property Address:	18 CAVITE STREET		BOSTON, MA 02110

11


10
7
8
9
6
Willow Brook
11
5
4
Willow Brook
2
3
1

LEED v4 for Neighborhood Development Plan
Project Checklist

Project Name: Adams Circle Phase 1 and 2
Date: 7/31/2025

Yes	?	No				
6	**0**	**0**	**Smart Location & Linkage**			**28**
Y			Prereq	Smart Location		Required
Y			Prereq	Imperiled Species and Ecological Communities		Required
Y			Prereq	Wetland and Water Body Conservation		Required
Y			Prereq	Agricultural Land Conservation		Required
Y			Prereq	Floodplain Avoidance		Required
1			Credit	Preferred Locations		10
		X	Credit	Brownfield Remediation		2
		X	Credit	Access to Quality Transit		7
		X	Credit	Bicycle Facilities		2
3			Credit	Housing and Jobs Proximity		3
1			Credit	Steep Slope Protection		1
1			Credit	Site Design for Habitat or Wetland and Water Body Conservation		1
		X	Credit	Restoration of Habitat or Wetlands and Water Bodies		1
		X	Credit	Long-Term Conservation Management of Habitat or Wetlands and Water Bodies		1
9	**3**	**0**	**Neighborhood Pattern & Design**			**41**
Y			Prereq	Walkable Streets		Required
Y			Prereq	Compact Development		Required
Y			Prereq	Connected and Open Community		Required
2			Credit	Walkable Streets		9
		X	Credit	Compact Development		6
1			Credit	Mixed-Use Neighborhoods		4
3			Credit	Housing Types and Affordability		7
		X	Credit	Reduced Parking Footprint		1
		X	Credit	Connected and Open Community		2
		X	Credit	Transit Facilities		1
		X	Credit	Transportation Demand Management		2
	1		Credit	Access to Civic & Public Space		1
1			Credit	Access to Recreation Facilities		1
	1		Credit	Visitability and Universal Design		1
		X	Credit	Community Outreach and Involvement		2
1			Credit	Local Food Production		1
	1		Credit	Tree-Lined and Shaded Streetscapes		2
1			Credit	Neighborhood Schools		1

Yes	?	No				
6	**6**	**0**	**Green Infrastructure & Buildings**			**31**
Y			Prereq	Certified Green Building		Required
Y			Prereq	Minimum Building Energy Performance		Required
Y			Prereq	Indoor Water Use Reduction		Required
Y			Prereq	Construction Activity Pollution Prevention		Required
		X	Credit	Certified Green Buildings		5
2			Credit	Optimize Building Energy Performance		2
	1		Credit	Indoor Water Use Reduction		1
	1		Credit	Outdoor Water Use Reduction		2
		X	Credit	Building Reuse		1
		X	Credit	Historic Resource Preservation and Adaptive Reuse		2
	1		Credit	Minimized Site Disturbance		1
	1		Credit	Rainwater Management		4
1			Credit	Heat Island Reduction		1
		X	Credit	Solar Orientation		1
2	1		Credit	Renewable Energy Production		3
		X	Credit	District Heating and Cooling		2
	1		Credit	Infrastructure Energy Efficiency		1
		X	Credit	Wastewater Management		2
		X	Credit	Recycled and Reused Infrastructure		1
		X	Credit	Solid Waste Management		1
1			Credit	Light Pollution Reduction		1
3	**0**	**0**	**Innovation & Design Process**			**6**
2			Credit	Innovation		5
1			Credit	LEED® Accredited Professional		1
0	**0**	**0**	**Regional Priority Credits**			**4**
			Credit	Regional Priority Credit: Region Defined		1
			Credit	Regional Priority Credit: Region Defined		1
			Credit	Regional Priority Credit: Region Defined		1
			Credit	Regional Priority Credit: Region Defined		1
24	**9**	**0**	**PROJECT TOTALS (Certification estimates)**			110

Certified: 40-49 points, **Silver:** 50-59 points, **Gold:** 60-79 points, **Platinum:** 80+ points

Project Checklist for Reducing Embodied Carbon in Devens

A Worksheet for Project Teams

Embodied Carbon Reduction Strategy	Checklist for Schematic Design			Checklist Based on As-Builts		Get Started on Learning More (More to be added in v2!)
0 Process and Tools	*Already included*	*Will pursue?*		*Achieved?*		
1 Identify Embodied Carbon as a Priority Communicate early in the design process that reducing embodied carbon is a design and procurement priority for the whole team (e.g., structural engineer, architect, contractor, sustainability consultants, mechanical engineers, etc.)	Yes	SELECT	Reframe Systems has a long term goal of building carbon-neutral buildings. Our current design includes these carbon-reducing decisions: - Helical pile foundation - TimberBatt cavity insulation - High recycled content in rigid foam insulation and gypsum wall boards (Sheetrock Ecosmart)	SELECT	*Add a brief explanation as to whether and how the project incorporated this strategy. If the team intended to pursue this strategy but was not able to, provide insight as to why.*	WGBC Bringing Embodied Carbon Upfront
2 Set a Project Embodied Carbon Reduction Target Align the design and construction team around an embodied carbon reduction target. Consider targets from organizations around the globe (e.g., C40, Architecture 2030, WGBC, LETI) to understand what reductions we need now to reach 2030 and 2050 goals. Use life cycle assessment tools (see Sections 0.3 and 0.4 below) to track progress towards reduction goals. See Section "4.1 Integrate Carbon Intensity Limits into Specifications" for information about setting targets for multiple building products.	SELECT	No	Note: The usual target that the industry aligns on is <46 kgCO2eq per sqft (without biogenic carbon) put forth by International Living Future Institute since they are the sole certifying body for "net-zero carbon certification" in the U.S. as of today. Reframe is aligned on an overall goal of less than or equal to 28 kgCO2/sqft total carbon but does not have plans for a project-specific target.	SELECT		C40 Cities Clean Construction Declaration LETI Embodied Carbon Primer: Best Practice Targets Architecture 2030 2030 Challenge for Embodied Carbon
3 Commit to Using Whole Building (Whole Project) Life Cycle Assessment Perform a whole building life cycle assessment (WBLCA) early in design development to identify the largest opportunities ("hot spots") for emissions reductions. Use the results from WBLCA(s) done throughout design to compare design choices and identify which reduction strategies will have the largest impact. WBLCA can be used to analyze the whole building, tenant improvement projects, or portions of a building.	SELECT	No		SELECT		Carbon Leadership Forum LCA Practice Guide AIA-CLF Embodied Carbon Toolkit for Architects (particularly Part 2: Measuring Embodied Carbon)
4 Use Environmental Product Declarations (EPDs) During Procurement Once a product type has been selected, ask manufacturers (via specifications and the bidding and procurement processes) to provide environmental product declarations (EPDs) of their products to help select the lowest-carbon option.	SELECT	SELECT		SELECT		Embodied Carbon in Construction Calculator (EC3) AIA-CLF Embodied Carbon Toolkit for Architects (particularly Part 2: Measuring Embodied Carbon)
5 Discuss Whether to Integrate Carbon into the Bid Process Carbon can be evaluated alongside cost, schedule, and other criteria when selecting bids for materials to be used in construction. Alternatively, performance incentives can be provided to contractors who deliver low-embodied-carbon projects or suppliers that deliver materials below a certain carbon threshold. These strategies all require discussion early in the process between the owner, design team, and contractor.	Yes	SELECT	As a modular builder, the materials in our system have been pre-vetted for carbon impact as well as cost, lead time, installation process. We are vertically integrated and therefore do not have a typical bid process.	SELECT		Steps to Develop a Low Carbon Procurement Policy (Incentives) OwnersCAN Embodied Carbon Action Plan Microsoft Case Study
1 Build Less, Reuse More	*Already included*	*Will pursue?*		*Achieved?*		**Learn More**
1 Reuse/Retrofit Existing Buildings Re-use or retrofit existing buildings instead of constructing a completely new building. Reductions in new square footage or new structure will translate directly to reductions in embodied carbon.	SELECT	No	No existing buildings on the site.	SELECT	*Add a brief explanation as to whether and how the project incorporated this strategy. If the team intended to pursue this strategy but was not able to, provide insight as to why.*	
2 Design for Disassembly and Reuse Maximize the reuse potential of building components by detailing connections that can be easily disassembled and reused in future buildings. Avoid lamination and adhesion in assemblies (such as composite decks or hybrid mass timber/concrete assemblies) that prevent deconstruction and reuse. Avoid materials that are difficult to recycle, and avoid coatings that could prevent recycling.	SELECT	SELECT		SELECT		Zero Net Carbon Collaboration Resources AIA's Retrofitting Existing Buildings Guide
3 Select Salvaged or Refurbished Materials Reuse materials, such as those onsite or from other city properties, or purchase salvaged materials rather than new ones. Consider refurbishing items, such as furniture, instead of throwing them out and re-purchasing them.	SELECT	SELECT		SELECT		Where feasible, take advantage of past EC 'investments' by making use of previously-used building materials rather than newly-produced materials. (AIA, 2019; Carbon Leadership Forum Webinar Series, 2018)
2 Design Lighter and Smarter	*Already included*	*Will pursue?*		*Achieved?*		**Learn More**
1 Reduce [New] Floor Area Identify opportunities for design and programmatic flexibility to minimize the amount of new floor area. Similar to material and building reuse, reducing new floor area translates to material savings (as well as cost savings) and reduces embodied carbon.	Yes	SELECT	The floor plans of the homes are very efficient. They provide 4 bedrooms and 3 bathrooms in 2044 square feet. The layout also allows for user flexibility, including multi-generational living arrangements.	SELECT	*Add a brief explanation as to whether and how the project incorporated this strategy. If the team intended to pursue this strategy but was not able to, provide insight as to why.*	

2	**Reduce Below-Grade Construction** Reduce or eliminate below-grade parking or interior spaces. Subgrade construction requires a large amount of concrete (a carbon-intensive material) and releases soil carbon during excavation.		Yes	SELECT	We do not have below grade space. We will use a helical pile foundation and grade beam system, which vastly reduces the need for excavation. Site excavation will be limited to that necessary to provide access below the buildings, and for minor regrading to ensure proper drainage.		SELECT		Canadian Architect, 2021
3	**Select Lighter Materials and Assemblies** When possible, selecting lighter materials and assemblies for the structure and envelope systems can reduce the load on structural components (and therefore their size and embodied carbon). Consider lightening slabs through use of void systems, or using lighter structural materials like timber. In some cases, lighter structural loads may be decreased enough to allow for the preservation of an existing structure, unlocking additional carbon savings from building reuse.		SELECT	SELECT			SELECT		
4	**Design Structure for Material Efficiency** Using less of a material to do the same work results in large carbon and cost savings. Structural design choices -- such as bay sizing, column and beam spacing, and member cross sections, as well as avoiding structural gymnastics (like cantilevers and transfer beams) -- can all reduce carbon.		SELECT	SELECT			SELECT		SE2050 Structural Engineering Commitment case studies Additional strategies may include using braced frames instead of moment-resisting frames, using lighter shapes like joists/trusses, lightening concrete slabs by using void systems, and "right-sizing" each steel member.
5	**Choose Finishes Carefully** The total impact of interior finishes adds up significantly over time. Consider the expected turnover of the space you are designing and whether that matches up with the selected products. Architects and interior designers can collaborate to use salvaged materials and minimize the need for additional finishes where not required for functional performance, particularly in spaces with high occupant turnover and frequent interior fit-outs. These considerations should be included alongside toxicity, cost, and performance requirements when choosing finishes.		SELECT	SELECT			SELECT		Metropolis Magazine's Climate Toolkit for Interior Design CLF LCA of MEP Systems and Tenant Improvement
6	**Minimize Construction and Demolition Waste (Waste Prevention)** Before construction, design in modules to minimize waste. During construction, adopt sorting and waste diversion practices on-site to minimize construction waste.		SELECT	Yes	Most of our construction will be executed in our factory.		SELECT		AIA 10 Steps to Reducing Embodied Carbon

3	**Use Low-Carbon Alternatives:** Substitute Low-Carbon Materials/Systems for High-Carbon Ones		*Already included*	*Will pursue?*			*Achieved?*		**Learn More**
1	**Consider Total Carbon when Selecting Envelope Systems** Use WBLCA (alongside energy modeling) to help assess the trade-offs in embodied and operational carbon for different envelope options. Typically, lightweight envelope systems are likely to have the lowest embodied carbon (in addition to reducing the embodied carbon of the supporting structure).		SELECT	SELECT			SELECT	*Add a brief explanation as to whether and how the project incorporated this strategy. If the team intended to pursue this strategy but was not able to, provide insight as to why.*	
2	**Select Carbon-Storing Structural, Envelope, and Finish Materials** Bio-based materials typically have lower upfront carbon than non-bio-based products, with the added potential to store carbon over the life of the building. The availability of bio-based alternatives to conventional materials -- such as mass timber, laminated bamboo, wood fiberboard, straw, clay-straw, hempcrete, cork, wool, linoleum, cork, and more -- is increasing. Bio-based materials are also often significantly lighter than their alternatives, reducing the load and size of supporting structural members (and therefore reducing carbon).		SELECT	SELECT			SELECT		Builders for Climate Action's Zero Carbon Resources Buildings as Global Carbon Sinks WoodWorks Carbon Smart Materials Palette
3	**Select Lower-Carbon Refrigerants** Refrigerant leakage is one of the biggest contributors to climate change within the building industry. Architects can collaborate with engineers to use passive design strategies, select systems that use low-carbon refrigerants, and encourage clients to adopt building management practices to mitigate refrigerant leakage and ensure 100% refrigerant recovery.		SELECT	SELECT	Our HVAC product will utilize lower carbon refrigerant for phase II of the project, due to supply chain availability. Phase I will use 410 refrigerant, Phase II will use 454B refrigerant.		SELECT		Integral Group's Refrigerants & Environmental Impacts: A Best Practice Guide
4	**Eliminate HFC-Containing Insulation and Select Lower-Carbon Insulation** Selecting an insulation that balances operational and embodied carbon trade-offs is key to achieving a total carbon balance for building. Generally, plastic- and chemical-based insulation will have a much higher embodied carbon than bio-based materials. In particular, avoid specifying HFC-containing rigid polyurethane spray foam, sealants, and XPS products that are being banned or significantly restricted in Canada and a growing number of states in the US (including California).		SELECT	SELECT			SELECT		HFC bans by region and end-use product (including foams and refrigerants) US EPA Substitutes in Foam Blowing Agents Building Enclosure: "New Climate Regulations Spell Changes for Building Products" (2020)

4	**Procure Low(er)-Carbon Products:** Specify and Source the Lowest Carbon Product Available		*Already included*	*Will pursue?*			*Achieved?*		**Learn More**
1	**Integrate Carbon Intensity Limits into Specifications** At a minimum, architects can use template language to incorporate requests for EPDs into their specifications as a part of bid proposal submittals. For products where EPDs are more widely available, architects can integrate carbon intensity limits into performance requirements, requiring an EPD to document compliance with a global warming potential limit (e.g. XX kg CO2e / unit of material).		SELECT	No			SELECT		Carbon Leadership Forum Material Baselines ownersCAN Embodied Carbon Action Plan ownersCAN ECAP Specification Matrix and Language
2	**Use Performance-Based Concrete Specifications** Use performance-based (rather than prescriptive) requirements for concrete design that is appropriate for each component/mix. If CMU is used in construction, use a specified compressive stress method instead of a prescriptive method to proportion grout mix.		SELECT	No			SELECT		

3	**Optimize Concrete Mix Design** Work with structural engineers to optimize concrete design with strategies such as reducing cement volume, allowing for longer cure times by specifying strength at 56 days instead of 28 days to allow more time for strength gain, looking at carbon implications of higher-quality aggregate, or reducing strength requirements where feasible/appropriate. Minimizing portland cement and/or replacing portland cement with other materials -- such as Type 1L Cement or supplemental cementitious materials (fly ash, slag, etc.) -- also reduces embodied carbon.	SELECT	Yes	Our concrete mix specifications have been written to maximize the possible fly ash content without compromising strength. Ref structural specification section 7.2.4 on S002.	SELECT	RMI Concrete Solutions GuideNRMCA Guide to Specifying
4	**Source from Lower-Carbon Facilities and Products** Manufacturers vary in the sustainability of their facilities and sourcing practices. Two materials with the same performance may differ in their embodied carbon as a result of energy source (fuel type/electricity grid mix), plant energy efficiency, product design and material efficiency, or lower-carbon ingredient sourcing (through using recycled, bio-based, or local ingredients). Due to how products are specificed and selected, EPDs are typically the best or only option for a project team to differentiate the carbon intensity of products from different facilities and manufacturers.	SELECT	No		SELECT	Embodied Carbon in Construction Calculator (EC3) Energy Star Industrial Plant Efficiency Program Carbon Smart Materials Palette
5	**Source Climate-Smart Wood** The full life cycle embodied carbon impacts and benefits of wood are difficult to quantify (and therefore difficult to optimize) because of complex supply chains and differing methods for calculating carbon benefits. Current strategies for optimizing wood sourcing include using reclaimed/salvaged wood, asking for chain-of-custody certificates or other supply chain transparency information, asking for sustainable forest management certifications (such as FSC or SFI), and specifying wood that is locally-harvested or harvested from working (not primary) forests. *(Note: An agreed-upon definition for climate-smart wood that can be used in procurement is still in development and should be included once available).*	Yes	SELECT	We procure wood products with FSC label.	SELECT	Carbon Leadership Forum's Wood Carbon Seminars Climate-Smart Forestry.org
6	**Integrate Carbon into the Bid Process** Evaluate carbon -- in addition to cost, schedule, and other criteria -- as an awarding criteria when selecting bids for materials to be used in construction. If points are used to differentiate bids, award points for low-carbon procurement. When possible, provide performance incentives to contractors who deliver low-embodied-carbon projects.	SELECT	SELECT		SELECT	Steps to Develop a Low Carbon Procurement Policy (Incentives) OwnersCAN Embodied Carbon Action Plan Microsoft Case Study

Industrial Performance Standards Checklist for Newly Proposed Projects

All projects within the Devens Regional Enterprise Zone (DREZ) must comply with the Devens Enterprise Commission (DEC) Industrial Performance Standards (IPS) under 974 CMR 4.00. This checklist is intended to assist Applicants in determining at the time of submittal, or ideally before submittal, if their project may or may not involve development and/or activities that may impact sound, vibration, air quality, or lighting within the DREZ.

Site layout, building(s) design/orientation, traffic patterns, location of outdoor equipment and numerous other project components can impact sound, vibration, air quality, and lighting within the DREZ. By identifying any potential IPS concerns early on in the review process, Applicants can design their projects to ensure compliance with the IPS at all times and avoid potential future violations of the IPS and costly mitigation after the fact.

Please note, if a project requires an air permit from the Massachusetts Department of Environmental Protection (DEP), the Applicant will need to initiate permitting through the DEP office as well. Even if a project requires a DEP air permit, the proponent still must demonstrate compliance with the DEC IPS.

Please circle the correct answer to each question in this checklist. Please note that by circling "NO", the Applicant is not relieved of demonstrating compliance with the IPS requirements. If "NO" is circled and a potential concern is identified during the review process, it could temporarily suspend the approval process timeline until the concern is adequately addressed. If "YES" is answered, please explain and provide any supporting studies, modelling files, or information to aid the DEC in their evaluation of the project.

Project Name 100 ADAMS CIRCLE, LOTS 9, 10, 11, 12, 13, 14

Does the proposed project and associated activities involve any potential increases in sound, vibration, air quality, odor, dust, lighting and/or electromagnetic interference that are covered under the DEC Industrial Performance Standards?

YES	NO

If you answered yes, will the Applicant demonstrate compliance directly or will the project proponent employ an expert to demonstrate compliance? Please provide pertinent contact information of the responsible official:

_____

_____

_____

_____

Industrial Performance Standards Checklist for Newly Proposed Projects cont…

Noise

Does the proposed project have the ability to increase sound? YES NO

1. Will the increase in sound plus background sound exceed 974 CMR 4.05 (3)a? YES NO

2. Will the total sound plus background sound exceed 974 CMR 4.05 (3)b? YES NO

3. Will the increase in sound create pure tones that will exceed 974 CMR 4.05 (3)c and/or 974 CMR 4.05 (3)d7? YES NO

4. Will the increase in sound create impulsive sounds that will exceed 974 CMR 4.05 (3)d1-6 and/or 974 CMR 4.05 (3)d8? YES NO

5. Are there procedures and controls proposed to reduce sound during earth removal per 974 CMR 4.07(10)? YES NO

Checklist Options to Demonstrate Sound Compliance

6. Have all of your potential sound sources been identified? YES NO

See narrative. Sound is not anticipated to require mitigation due to development size and use group.

7. Will spreadsheet calculations of the potential increase in sound be provided? YES NO

8. Will sound modeling of the proposed project be provided? YES NO

9. Will the facility submit a protocol describing the potential sound monitoring, metrics, and modeling as required? YES NO

10. Does the project propose to collect background sound data (typically 7-days worth of valid data is sufficient)? YES NO

11. If the facility intends to collect background sound data will it include other qualifying weather data such as wind speed, wind direction, sky conditions, etc.? YES NO

12. Is mitigation to reduce the overall sound profile proposed? YES NO

13. Is sound mitigation to be assumed when calculations or modeling is performed? (modelling files are required to be submitted to the DEC) YES NO

14. Is compliance monitoring proposed to demonstrate that the project meets the estimated increases in sound? YES NO

15. Have increases in sound with respect to traffic been considered? YES NO

Industrial Performance Standards Checklist for Newly Proposed Projects cont…

Vibration

Does the proposed project have the ability to increase vibration?	**YES**	**NO**
16. Will the increase in vibration exceed 974 CMR 4.05 (4)a??	**YES**	**NO**
Checklist Options to Demonstrate Vibration Compliance		
17. Have all of the potential vibration sources been identified?	**YES**	**NO**
18. Will spreadsheet calculations of the potential increase in vibration be provided?	**YES**	**NO**
19. Will the proponent provide vibration modeling of the proposed project?	**YES**	**NO**
20. Does the project propose to collect background vibration data?	**YES**	**NO**
21. Is mitigation proposed to reduce the overall vibration profile?	**YES**	**NO**
22. Is vibration mitigation to be assumed when the calculations or modeling performed?	**YES**	**NO**
23. Is compliance monitoring proposed to demonstrate that the project meets the estimated increases in vibration as proposed?	**YES**	**NO**

Industrial Performance Standards Checklist for Newly Proposed Projects cont…

Air Quality

Does the proposed project have the ability to create air, visible, and/or odor emissions?

	YES	**NO**
24. Will the proposed project meet the air quality standards in 974 CMR 4.02(3)	**YES**	**NO**
25. Are there procedures and controls proposed to minimize impacts during earth removal per 974 CMR 4.07(7)? Earth removal is not proposed.	**YES**	**NO**
26. Will the proposed project require a MassDEP air quality permit per 974 CMR 4.02 (1)	**YES**	**NO**

If the project will require an air permit, then the proponent should set up a meeting with the regional MassDEP office to determine air permitting requirements, and answer the following:

27. Will the proposed project submit a Limited Plan Approval application?	**YES**	**NO**
28. Will the proposed project submit a Non-Major Comprehensive Plan Approval application?	**YES**	**NO**
29. Will the proposed project submit a Major Comprehensive Plan Approval application?	**YES**	**NO**
30. Will the proposed project be a Title V source?	**YES**	**NO**
31. Will the proposed project be a PSD source?	**YES**	**NO**

Checklist Options to Demonstrate Air Quality Compliance

32. Have you identified all of your potential air, visible and/or odor sources?	**YES**	**NO**
33. Will there be any visible emissions?	**YES**	**NO**
34. Will there be any dust emissions?	**YES**	**NO**
35. Will there be any odor emissions?	**YES**	**NO**
36. Will there be any potential increases in air, odor or dust emissions within the DREZ that will impact any internal or external receptors?	**YES**	**NO**
37. Will the project proponent provide spreadsheet calculations of the potential increase in air and/or odor emissions within the DREZ to demonstrate how the increase will not impact any internal or external receptors?	**YES**	**NO**

Industrial Performance Standards Checklist for Newly Proposed Projects cont…

Checklist Options to Demonstrate Air Quality Compliance (cont.)

38. Will the project proponent provide air and/or odor modeling of the proposed project within the DEC or into the neighborhood surrounding the DEC??	YES	NO
39. Is mitigation proposed to reduce the overall air and/or odor profile?	YES	NO
40. Is air pollution and/or odor control to be assumed when the calculations or modeling is performed?	YES	NO
41. Is compliance monitoring proposed to demonstrate that the project meets the estimated increases in air and/or odor as proposed?	YES	NO

Lighting/Illumination

Does the proposed project have the ability to create additional Illumination?

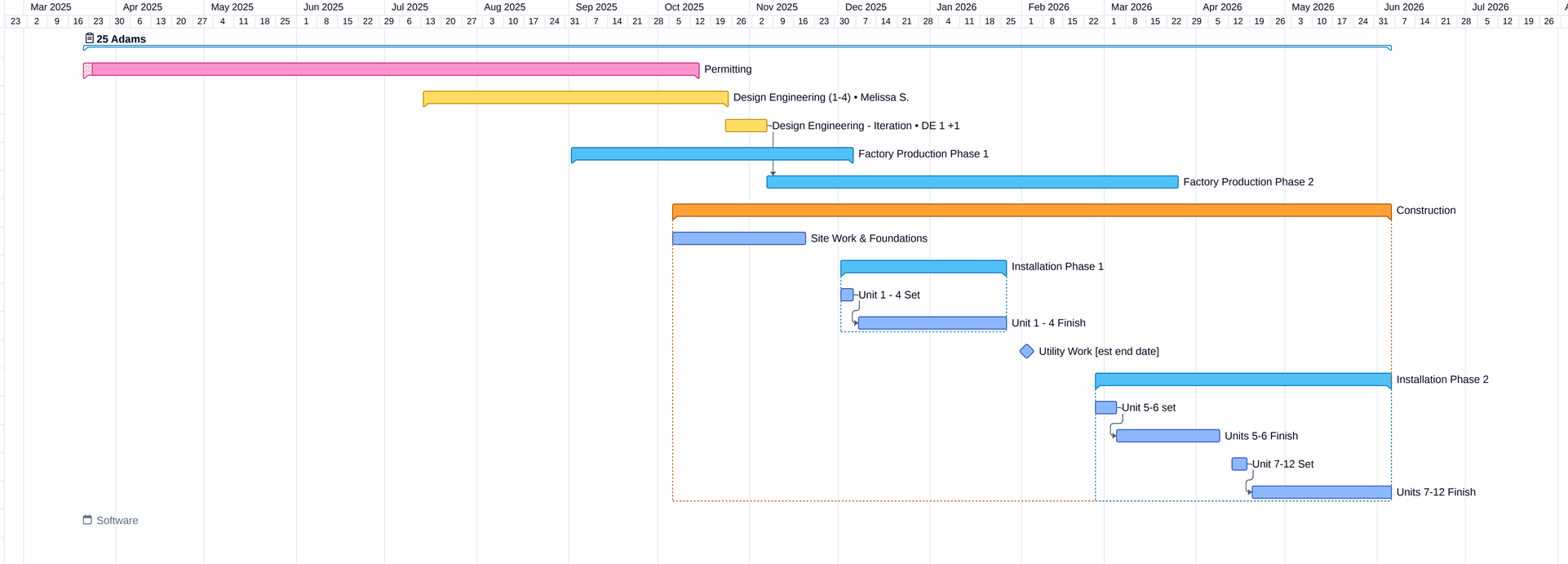
	YES	NO
42. Will lighting meet the illumination standards set forth in 974 CMR 4.04(3)?	YES	NO
43. Have all of the potential light sources been identified?	YES	NO
44. Will spreadsheet calculations of the potential increase in light and how it will not affect the Observatory outlined in 974 CMR 4.04(1) or any external or internal receptors be provided?	YES	NO
45. Is mitigation proposed to reduce the overall light profile?	YES	NO

Electromagnetic Interference

Does the proposed project have the ability to create electromagnetic interference?

	YES	NO
46. Have you identified all your potential electromagnetic sources?	YES	NO
47. Are you proposing to provide spreadsheet calculations of the potential increase in electromagnetic interference and how it will not affect any internal or external receptors as per 974 CMR 4.03(3)?	YES	NO
48. Are you proposing any mitigation to reduce your overall electromagnetic profile?	YES	NO
49. Will your project comply with all the electromagnetic requirements under 974 CMR 4.03?	YES	NO

	Name	Start date	Due date	Predecessors
1	**25 Adams**			
2	Permitting	03/24/2025	10/14/2025	
30	Design Engineering (1-4)	07/14/2025	10/24/2025	
79	Design Engineering - Iteratio	10/24/2025	11/06/2025	
80	Factory Production Phase 1	09/02/2025	12/05/2025	
121	Factory Production Phase 2	11/07/2025	03/25/2026	79FS
122	Construction	10/06/2025	06/05/2026	
123	Site Work & Foundations	10/06/2025	11/19/2025	
124	Installation Phase 1	12/02/2025	01/26/2026	
125	Unit 1 - 4 Set	12/02/2025	12/05/2025	109FS
126	Unit 1 - 4 Finish	12/08/2025	01/26/2026	125FS
127	Utility Work [est end date		02/02/2026	
128	Installation Phase 2	02/26/2026	06/05/2026	
129	Unit 5-6 set	02/26/2026	03/04/2026	
130	Units 5-6 Finish	03/05/2026	04/08/2026	129FS
131	Unit 7-12 Set	04/13/2026	04/17/2026	
132	Units 7-12 Finish	04/20/2026	06/05/2026	131FS
133	Software			
+	Item			



Reframe SYSTEMS

PROJECT INFORMATION	
Customer:	Reframe Systems
Project Name:	Adams Circle
Project Address:	25 Adams Circle, Devens, MA
Drawing Date:	03/28/25
Gross Living Area	24,000
Number of Home	12

INTERIOR & EXTERIOR MODULE COSTS			
CSI CODE	CSI DIVISION	TOTAL PRICE	$/SF
06 00 00	WOOD, PLASTICS, COMPOSITE	1,029,651.77	42.90
07 00 00	THERMAL & MOISTURE PROTECT	877,119.17	36.55
08 00 00	OPENINGS	356,880.00	14.87
09 00 00	FINISHES	400,487.66	16.69
10 00 00	SPECIALTIES	16,800.00	0.70
11 00 00	EQUIPMENT	72,000.00	3.00
12 00 00	FURNISHINGS	178,200.00	7.43
21 00 00	FIRE SUPPRESSION	143,244.00	5.97
22 00 00	PLUMBING	222,394.08	9.27
23 00 00	HVAC	270,000.00	11.25
26 00 00	ELECTRICAL	476,160.00	19.84
27 00 00	NETWORK & COMMS	15,600.00	0.65
TOTAL EXTERIOR & INTERIOR MODULE COST		**4,058,536.68**	**169.11**
SITE WORK COSTS*			
03 00 00	HELICAL PILE FOUNDATION & SOG	357,196.38	14.88
31 00 00	EARTHWORK	182,016.00	7.58
33 00 00	UTILITIES	128,400.00	5.35
TOTAL SITE WORK COST		**$ 667,612.38**	**$ 27.82**
INTERIOR & EXTERIOR MODULE COST		$ 4,058,536.68	$ 169.11
SITE WORK COST		667,612.38	27.82
GRAND TOTAL		**$ 4,726,149.06**	**$ 196.92**

Reframe Systems
30 Lowell Junction Rd.
Andover, MA 01810
sales@reframe.systems

Note: HERS report for each home will be submitted with each building permit, and may vary slightly from this baseline. Baseline is for [1] home on the site.

Home Energy Rating Certificate

Projected Report
Based on Plans

Rating Date:
Registry ID:
Ekotrope ID: dY7ybDn2

innova BUILDING ADVISORS

HERS® Index Score:

40

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit www.hersindex.com

Annual Savings

$4,841

*Relative to an average U.S. home

Home:

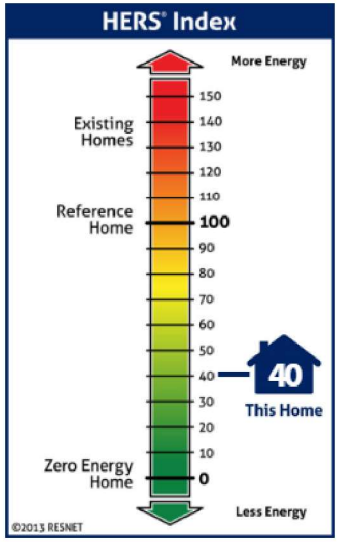
Devens, MA 01434

Builder:
Reframe

Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	18.0	$1,085
Cooling	0.9	$53
Hot Water	2.2	$131
Lights/Appliances	17.5	$1,055
Service Charges		$84
Generation (e.g. Solar)	0.0	$0
Total:	**38.5**	**$2,408**

This home meets or exceeds the criteria of the following:



Home Feature Summary:

Home Type:	Single family detached
Model:	N/A
Community:	SFH
Conditioned Floor Area:	2,020 ft²
Number of Bedrooms:	4
Primary Heating System:	Air Source Heat Pump • Electric • 9 HSPF2
Primary Cooling System:	Air Source Heat Pump • Electric • 17 SEER2
Primary Water Heating:	Residential Water Heater • Electric • 3.83 UEF
House Tightness:	2 ACH50
Ventilation:	65 CFM • 60 Watts • HRV
Duct Leakage to Outside:	0 CFM @ 25Pa (0 / 100 ft²)
Above Grade Walls:	R-32
Ceiling:	Attic, R-49
Window Type:	U-Value: 0.22, SHGC: 0.33
Foundation Walls:	N/A
Framed Floor:	R-36

Rating Completed by:

Energy Rater: Nicole Burger
RESNET ID: 5841944

Rating Company: Innova Building Advisors, LLC
1548 South 16th Street Philadelphia PA 19146
2154469945

Rating Provider: Performance Systems Development
950 Danby Rd, Ste 201P, Ithaca NY 14850
607-277-6240

National Mortgage Industry No. 1998-072 HERS Accreditation Registry

Nicole Burger, Certified Energy Rater
Date: 6/30/25 at 8:57 AM

ekotrope

Energy savings calculated without modifications to the energy model. (As Modeled)

Ekotrope RATER - Version:5.0.2.3659
The Energy Rating Disclosure for this home is available from the Approved Rating Provider.
This report does not constitute any warranty or guarantee.

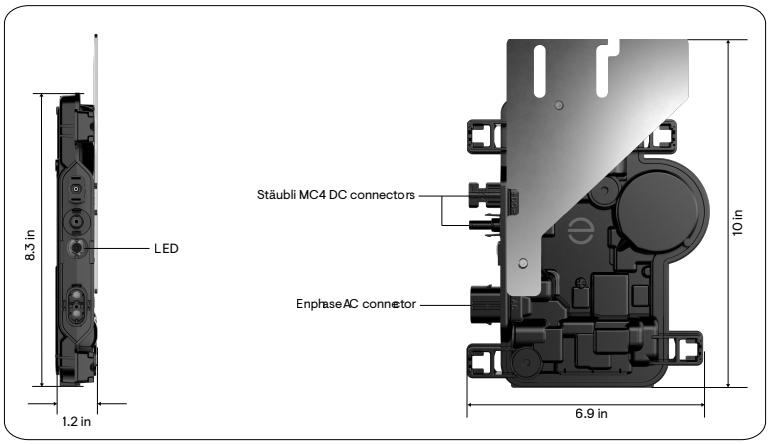
IQ8AC Microinverter

Our newest IQ8 Series Microinverters[1, 2, 3] are the industry's first microgrid-forming[4], software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently.

Enphase 25 year limited warranty

UL CERTIFIED

Key specifications	IQ8AC-72-M-US @240 VAC	IQ8AC-72-M-US @208 VAC
Peak output power	366 VA	350 VA
Nominal grid voltage (L-L)	240 V split-phase (L-L), 180°	208 V single-phase (L-L), 120°
Nominal frequency	60 Hz	60 Hz
CEC weighted efficiency	97.0%	96.5%
Maximum input DC voltage	60 V	60 V
MPPT voltage range	28–45 V	28–45 V
Maximum module I_{sc}	20 A	20 A
Ambient temperature range	–40°C to 65°C (–40°F to 149°F)	



Simple

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

Reliable

- Produces power even when the grid is down[4]
- More than one million cumulative hours of testing
- Industry-leading limited warranty of up to 25 years
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

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

[1] IQ8 Series Microinverters can be added to existing IQ7 systems on the same IQ Gateway only in the following grid-tied configurations: Solar Only or Solar + Battery (IQ Battery 3T/10T and IQ Battery 5P) without backup.
[2] IQ7 Series Microinverters cannot be added to a site with existing IQ8 Series Microinverters on the same gateway. Mixed system of IQ7 and IQ8 will not support IQ8-specific PCS features and grid-forming capabilities.
[3] IQ Microinverters ship with default settings that meet North America's IEEE 1547 interconnection standard requirements. Region-specific adjustments may be requested by an Authority Having Jurisdiction (AHJ) or utility representative, according to the IEEE 1547 interconnection standard. Use an IQ Gateway to make these changes during installation.
[4] Meets UL 1741 only when installed with IQ System Controller 2 or 3.

Input data (DC)	Units	IQ8AC-72-M-US
Commonly used module pairings[5]	W	295–500
Module compatibility	–	To meet compatibility, PV modules must be within the following maximum input DC voltage and maximum module I_{sc}. Module compatibility can be checked at https://enphase.com/installers/microinverters/calculator.
MPPT voltage range	V	28–45
Operating range	V	18–58
Minimum/Maximum start voltage	V	22/58
Maximum input DC voltage	V	60
Maximum continuous input DC current	A	14
Maximum input DC short-circuit current	A	25
Maximum module I_{sc}	A	20
Overvoltage class DC port	–	II
DC port backfeed current	mA	0
PV array configuration	–	Ungrounded array; no additional DC side protection required; AC side protection requires a maximum of 20 A per branch circuit

Output data (AC)	Units	IQ8AC-72-M-US @240 VAC	IQ8AC-72-M-US @208 VAC
Peak output power	VA	366	350
Maximum continuous output power	VA	349	345
Nominal grid voltage (L-L)	V	240, split-phase (L-L), 180°	208,single-phase (L-L), 120°
Minimum and maximum grid voltage[6]	V	211–264	183-229
Maximum continuous output current	A	1.45	1.66
Nominal frequency	Hz	60	
Extended frequency range	Hz	47–68	
AC short-circuit fault current over three cycles	A_{rms}	2.70	
Maximum units per 20 A (L-L) branch circuit [7]	–	11	9
Total harmonic distortion	%	<5	
Overvoltage class AC port	–	III	
AC port backfeed current	mA	18	
Power factor setting	–	1.0	
Grid-tied power factor (adjustable)	–	0.85 leading ... 0.85 lagging	
Peak efficiency	%	97.3	97.2
CEC weighted efficiency	%	97.0	96.5
Nighttime power consumption	mW	30	22

Mechanical data	IQ8AC-72-M-US
Ambient temperature range	–40°C to 65°C (–40°F to 149°F)
Relative humidity range	4% to 100% (condensing)
DC connector type	Stäubli MC4

[5] No enforced DC/AC ratio.
[6] Nominal voltage range can be extended beyond nominal if required by the utility.
[7] Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

Mechanical data	IQ8AC-72-M-US
Dimensions (H × W × D); Weight	212 mm (8.3") × 175 mm (6.9") × 30.2 mm (1.2"); 1.1 kg (2.43 lb)
Cooling	Natural convection – no fans
Approved for wet locations; pollution degree	Yes; PD3
Enclosure	Class II double-insulated, corrosion-resistant polymeric enclosure
Environmental category; UV exposure rating	NEMA Type 6; Outdoor

Compliance	IQ8AC-72-M-US
Certifications	CA Rule 21 (UL 1741-SA), UL 62109-1, IEEE 1547:2018 (UL 1741-SB 3rd Ed.), FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01. This product is UL Listed as PV rapid shutdown equipment and conforms with NEC 2014, NEC 2017, NEC 2020 and NEC 2023 section 690.12 and C22.1-2018 Rule 64-218 rapid shutdown of PV systems for AC and DC conductors when installed according to the manufacturer's instructions.

Components of the Enphase Energy System

IQ Battery

All-in-one AC-coupled storage solution that integrates seamlessly with your solar energy system, providing reliable backup power and intelligent energy management for maximum performance and energy savings.

IQ System Controller

The IQ System Controller connects the home to the grid power, IQ Batteries, generator and solar PV with microinverters.

IQ Combiner/IQ Gateway

The IQ Combiner/IQ Gateway is a device that performs energy management, provides internet connectivity, and integrates with the IQ Series Microinverters to provide complete control and insights into the Enphase Energy System.

IQ Cable

The IQ Cable is a continuous-length 12-AWG cable with pre-installed connectors for IQ Microinverters that support faster, simpler, and more reliable installations. The cable is handled like standard outdoor-rated electrical wire, allowing it to be cut, spliced, and extended as needed.

Revision history

Revision	Date	Description
DSH-00046-5.0	December 2024	Updated information on backward compatibility with IQ7 Series Microinverters.
DSH-00046-4.0	February 2024	Updated the information about IEEE 1547 interconnection standard requirements.
DSH-00046-3.0	October 2023	Included NEC 2023 specification in the "Compliance" section.
DSH-00046-2.0	September 2023	Updated module compatibility information.
DSH-00046-1.0	May 2023	Preliminary release.

Previous releases.

GE APPLIANCES

SUBMITTALS

Connect Series

Rev. May 2021

Outdoor	Indoor
AUH2436ZGDA	UUY24ZGDAA
AUH2436ZGDA	UUY36ZGDAA
AUH4860ZGDA	UUY48ZGDAA
AUH4860ZGDA	UUY60ZGDAA
AUH2436ZGDA	UUY24ZGDAB
AUH2436ZGDA	UUY36ZGDAB
AUH4860ZGDA	UUY48ZGDAB
AUH4860ZGDA	UUY60ZGDAB

AHRI CERTIFIED® www.ahridirectory.org Unitary Small HP AHRI Standard 210/240 Certification applies only when the complete system is listed with AHRI

C ETL LISTED US Intertek

GE APPLIANCES a Haier company

For more information visit us:
www.geappliances.com/ductless

GE APPLIANCES

CONNECT SERIES SUBMITTAL

24K SIDE DISCHARGE HIGH STATIC HEAT PUMP SYSTEM

AUH2436ZGDA / UUY24ZGDAB

Job Name:_____

Purchaser: _____

Submitted To: _____

Construction: _____

Reference:_____

Approval:_____

Date: _____

Submitted By: _____

Unit: _____

Drawing #:_____

Electrical Requirement	
Power Supply	208/230V, 1 Phase, 60 HZ
Operating Voltage Range	187~253 VAC
Control Voltage	24VAC
Recommended Fuse/Breaker Size	Indoor: 15A Electric Heaters: 5kW: 30A 8kW: 45A 10kW: 60A
Outdoor MCA/MOP	24A/35A

Operating Range	
Cooling	5~129°F (-5~54°C)
Heating	-22~75°F (-30~24°C)

ACCESSORIES

Electric Heat Kits

5kW Heater with 30A breaker (Model# UAZEH05A)
8kW Heater with 45A breaker (Model# UAZEH08A)
10kW Heater with 60A breaker (Model# UAZEH10A)

Cooling Performance	
Rated Cooling Capacity	24,000 BTU
SEER	20
EER	12.5
Moisture Removal	6.03 Pt./Hr

Heating Performance	
Rated Heating Capacity	24,000 BTU
HSPF	10.5
Supplemental Electric Heat (optional)	5kW, 8kW, 10kW

Piping	
Maximum Pipe Length	164 ft
Maximum Pipe Height Difference	50 ft
Connections The outdoor unit ships with flared soft copper adapters that are swaged for a brazed connection on the exterior of the outdoor unit.	3/8”(Discharge) 3/4”(Suction)

GE APPLIANCES
a Haier company

For more information visit us:
www.geappliances.com/ductless

Rev. May 2021

GE APPLIANCES

CONNECT SERIES SUBMITTAL

24K SIDE DISCHARGE HIGH STATIC HEAT PUMP SYSTEM

AUH2436ZGDA / UUY24ZGDAB

Outdoor Unit AUH2436ZGDA	
Compressor	DC Inverter Driven Rotary
Uncrated Dimension (HxWxD)	32 1/4 x 37 x 18 1/8 (820 x 940 x 460 mm)
Crated (HxWxD)	38 1/4 x 42 3/4 x 22 1/2 (972 x 1086 x 572 mm)
Outdoor Sound Rating dB	57
Weight (Ship/Net)	240.3/217.2 lbs
Factory Refrigerant Charge	R-410A (9.81 lbs)

Indoor Unit UUY24ZGDAB	
Uncrated Dimension (HxWxD)	48 1/4 x 21 1/4 x 21 1/4 (1226 x 540 x 540 mm)
Crated (HxWxD)	50 1/2 x 26 x 23 3/4 (1283 x 660 x 603 mm)
Airflow CFM	960
Maximum Static Pressure W.C.	1.0
Indoor Sound Level dB	47
Weight (Ship/Net)	169.8/156.5 lbs

HEATING CAPACITY DATA

Outdoor Air Temp DB	Indoor Set Temperature					
	60°F (15°C)		70°F (21°C)		80°F (27°C)	
	Maximum Heating Capacity (Btu/h)	Power Usage (w)	Max Heating Capacity (Btu/h)	Power Usage (w)	Max Heating Capacity (Btu/h)	Power Usage (w)
-22°F (-30°C)	18,900	3,800	18,700	3,920	18,300	3,960
-15°F (-26°C)	22,200	3,900	22,000	4,000	21,500	4,040
-5°F (-21°C)	24,200	4,000	24,000	4,200	23,500	4,240
5°F (-15°C)	24,200	3,000	24,000	3,350	23,500	3,380
17°F (-8°C)	25,000	2,700	24,000	2,900	23,500	3,460
32°F (0°C)	25,000	2,285	24,000	2,300	23,500	2,530
47°F (8°C)	27,000	1,930	26,000	1,980	24,500	2,100
60°F (15°C)	29,000	2,000	28,000	2,100	26,000	2,200

COOLING CAPACITY DATA

Outdoor Air Temp DB	Indoor Set Temperature								
	70°F (21°C)			75°F (24°C)			80°F (27°C)		
	Total Capacity (Btu/h)	Power Usage (w)	SHR	Total Capacity (Btu/h)	Power Usage (w)	SHR	Total Capacity (Btu/h)	Power Usage (w)	SHR
50°F (10°C)	17,600	1,250	79%	20,400	1,320	79%	24,000	1,370	79%
65°F (18°C)	17,600	1,300	80%	20,400	1,400	80%	24,000	1,450	80%
75°F (24°C)	17,600	1,350	80%	20,400	1,520	80%	24,000	1,530	80%
85°F (30°C)	17,600	1,520	80%	20,400	1,710	80%	25,000	1,870	80%
95°F (35°C)	17,600	1,900	80%	20,400	1,850	80%	25,000	2,150	80%
105°F (41°C)	17,600	2,280	79%	20,400	2,250	79%	24,000	2,340	79%
115°F (46°C)	17,600	2,500	81%	20,400	2,600	81%	24,000	2,700	81%

- Capacity output and power usage are measured approximately at 50% indoor RH.
- Capacities are obtained at standard piping length of each outdoor model

GE APPLIANCES

CONNECT SERIES SUBMITTAL

24K SIDE DISCHARGE HIGH STATIC HEAT PUMP SYSTEM

AUH2436ZGDA / UUY24ZGDAB