# BTF NET ZERO DESIGNS STOCK PLAN CATALOG

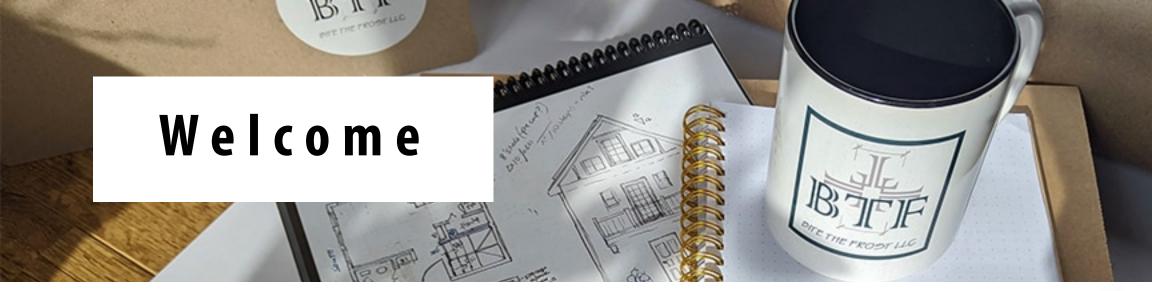


#### STOCK NET ZERO HOME PLANS, INCLUDING BOTH ARCHITECTURE & MECHANICAL IN ONE DRAWING SET

#### READY FOR CONSTRUCTION ON NEARLY ANY SITE IN 35 STATES

## PRE-DESIGNED TO MAKE FOSSIL FUEL FREE, NET ZERO CONSTRUCTION FAST, CHEAP & EASY!

## WWW.BITETHEFROST.COM



**Welcome** to BTF Net Zero Designs, BTF is a small Architectural & Mechanical HVAC design firm: Specializing in space, energy & resource efficient homes. Our customers are typically residential contractors and land owners. We currently offer custom design services and stock home plans of a new kind. As leaders in residential net-zero fossil fuel-free home design, we take pride in pioneering innovative solutions that redefine modern living. Our firm specializes in seamlessly blending architectural elegance with cutting-edge mechanical HVAC design to create homes that not only inspire but also lead the way towards a greener, more sustainable future. Through meticulous attention to detail and a deep commitment to environmental stewardship, we bring together a comprehensive range of design considerations to craft homes that are as functional and efficient as they are beautiful. Explore our designs and discover how we're shaping tomorrow's homes today.

"Each BTF plan honors the simplicity of historical homes, the energy efficiency needs of today & the small footprint of tomorrow."

- Gwendolen St.Sauveur, Founder



# Why We Do | What We Do

Net Zero Homes are quickly becoming the new norm, with
 cities, states, and jurisdictions nationwide setting goals and

requirements for 100% of new homes to be constructed as Net Zero Homes by 2030 or sooner.

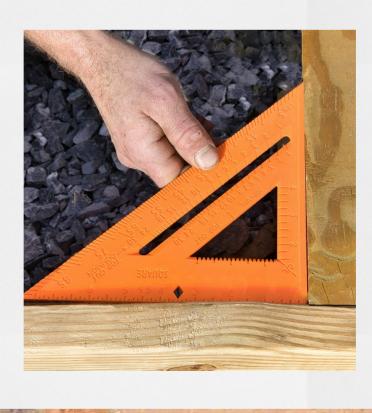
## What Net Zero Used to Mean

In recent years, for owners and builders, achieving net zero has often involved costly building materials, hiring architects and engineers for extensive site analysis, and using complex construction materials & methods. As a result, building net zero homes became cost prohibitive for many. Yet, our climate concerns require action!

### ) BTF Is The First Firm to Offer Net Zero Plans That:

- Work with common building materials, like 2x6 exterior walls & batt insulation
- Come with the mechanical calculations, energy analysis & HVAC system designs of an engineering firm, while using geographical data to work on almost most any building site in 35 States.
- Look & feel like normal homes, all while making Net Zero FAST, CHEAP & EASY!

# BTF MAKES NET ZERO FAST, CHEAP & EASY

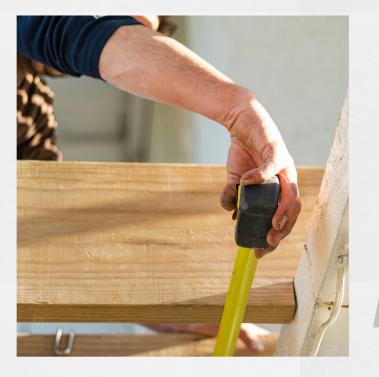


COMEHOME

**FAST** BTF Net Zero plans are integrated architectural & mechanical drawing packages. We are possibly the first in the country to offer this pioneering integrated solution. Providing Architectural, HVAC, Energy Analysis & Solar PV coordinated & within one drawing package. We've done the engineering for you.

**CHEAP** Our easy to build designs SAVE you time, money & resources in construction. No longer do you need to hire a mechanical design firm & architect, for months of site specific net zero design. We design around standard building materials too. From the quotes we've seen, our BTF Net Zero homes cost the same to build as a typical home.





**EASY** BTF plans are designed to make fossil fuel free net zero construction EASY. BTF plans are easy to read, easy to follow & easy to build from. Our plans are preferred by both for contractors experienced with net zero construction, as well as for those new to Net Zero & green building.



Our Ponderosa Pine Stock Plan, under construction on a beautiful site

# Our service offering continues to grow year after year

Pursuing the future of energy efficient home plans since our establishment in 2015





CUSTOMIZED DESIGNS

WASTEWATER DESIGNS



ENERGY MODELING, ENERGY STAR CERTIFICATION & HERS RATING



proud partners & members of industry leading organizations such as:





Efficiency Excellence Network



NESEA MEMBER NORTHEAST SUSTAINABLE ENERGY ASSOCIATION

# NET ZERO WITH BTF IS DIFFERENT

#### What Is A Net Zero Home?

It's a home that generates more electricity than it consumes annually, typically achieved with the use of solar arrays sized to match personal & HVAC energy usage. While some net zero homes may still rely on fossil fuel, ours utilize fossil fuel-free HVAC systems. And, by opting out of the optional wood pellet stove in our designs, BTF homes become carbon-free.

## Putting Your Mind at Ease

In our experience, we've encountered many flawed stock plans sold online. Some feature furniture drawn smaller to make rooms appear larger,

unconstructible roof lines, and misaligned stairways between floors. With us, you won't encounter those issues.

Our plans are contractor-friendly and meticulously designed to meet high standards beyond just the IRC.

ANSI/RESNET/ACCA std. 3.10
ASHRAE 62.2
CA Title 24
DOE NREL House Simulation Protocols
DOE ZERH
ENERGYSTAR Certified Homes
EPA AirPLUS • EPA WaterSense
EPA Solar Photovoltaic Specs
IECC
IRC
Pretty Good House
RBES & Others



# Get \$5,000 Federal Tax Credit For Building a BTF Home

As part of the Inflation Reduction Act, the Section 45L Tax Credit for Energy Efficient New Homes now provides a **\$5,000 tax credit** for those who build a home participating in the DOE Zero Energy Ready Home (ZERH)Program.

BTF is an OFFICAL PARTNER of the DOE ZERH program

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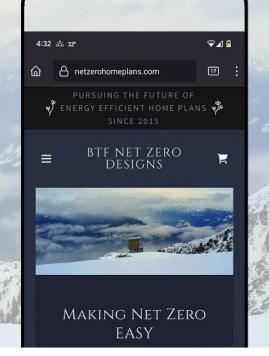
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It's easier than ever.

Simply choose a plan, purchase & build. BTF plans include easy-to-follow instructions for building a DOE Zero Energy Ready Home, meeting all codes, even for beginners in green building.







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# Let's Talk Shop

**Embark** on a journey to discover how BTF integrates sustainable design principles to create efficient, enduring homes.

Join us in exploring some of the strategies that enable us to craft homes that are as beautiful as they are sustainable.

#### New Does Not Always Equal Energy Efficient

A common misconception is that newly built homes must be energy efficient. In reality, energy efficiency starts with the building's shape and window and door placements. Followed by material selections. Optimal window sizes and placements offer benefits like air movement, passive cooling and solar gains for heating and cooling optimization. Building shapes matter; square, multistory homes are more energy-efficient. We prioritize factors such as these.

#### Historical Exterior, Today's Interior

In recent years, elaborate home designs with complicated roof lines, numerous bump-outs and dormers became common, despite being expensive to build and maintain. There is a growing trend to look back at historical homes & farmhouses. Historical homes used symmetry for efficient layouts and reduced material usage but lacked modern conveniences. Kitchens had large fireplaces instead of appliances, there was no plumbing, and closets were uncommon. BTF blends historical symmetry with today's needs!



**BTF Net Zero Designs** 









Open layouts are a timeless design trend, offering numerous benefits such as increased natural light, minimized footprints, and a sense of togetherness. However, not all open layouts are created equal. Advantages are most pronounced in living spaces like kitchens, living, and dining rooms, where clear lines of view create openness. Including entryways, laundry rooms, or bedrooms can compromise privacy. BTF prioritizes functionality and privacy for your family and guests in our open layout designs.

#### Entryways & Mud Rooms

**Open Layous** 

Embrace the importance of a well-designed entryway. Entryways play a crucial role in trapping dirt, snow, and pollen, preserving your home's environment by preventing damage to floors and minimizing allergens. In contrast, an absent entry space can lead to chaos. At BTF, we prioritize designing mud rooms & entry spaces for every home to ensure a clean, organized, and inviting environment.



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#### Aging in Place & Accessibility

Residential design often neglects crucial considerations for individuals with mobility challenges. It's vital homes welcome all family members, including older individuals with walkers and active kids on crutches. Our plans, reviewed by physical therapy experts, incorporate essential accessibility features like 36" doorways, ground-floor bedrooms, walk-in showers, and first-floor laundry rooms.



#### Noise Mitigation

In today's noisy world, our homes buzz with gadgets like laundry dryers, ovens, coffee makers, and electronics such as TVs, tablets, and cell phones. Noise often goes unaddressed. At BTF Designs, we prioritize noise mitigation using strategies such as locating noisy appliances away from bedrooms and using closets as buffers. Despite challenges in smaller layouts, we ensure your home remains a peaceful sanctuary.



#### Attached vs Detached Garages

Attached garages are convenient extensions connected to the home, while detached garages stand independently nearby. Detached garages offer numerous benefits such as noise reduction, and improved indoor air quality. They allow for better flow on tight lots, avoiding large foundation footprints, and reduced access points to the home, minimizing security risks. At BTF, we prioritize detached garage plans, however we do also offer several attached garage variations too!



#### **Energy Modeling**



We've revolutionized the fusion of architectural design and mechanical engineering by using 8760 energy models to craft our homes. 8760 models simulate a building's energy at the highest industry standard. These models are invaluable for correctly sizing HVAC systems. We discovered that historical architectural styles used remarkably efficient shapes & techniques. Considering the process of chopping wood by hand, to both build and heat, it's logical that they used efficient shapes!

#### Space Utilization

Space utilization, often overlooked, offers significant cost and energy savings in both commercial and residential settings. Balancing traffic flow and storage spaces is crucial. In residential design, this involves optimizing every corner and wall for maximum functionality. Our meticulous approach ensures efficient use of space, from adjusting door swings to creating extra storage areas. With attention to detail, we provide luxury amenities within a compact footprint.

# BTF Stock Plans Comparison Table

Plan Name	Finished SF	Bedrooms (note 1)	Bathrooms (note 2)	Solar PV ,	Solar PV ,	Solar PV
Amur Maple <i>Cape</i>	1400-1440*	3 Bed	2-1/2 Bath	798	12 kW	30 - 57 kW
Aspen Craftsman	1300	3 Bed	2 Bath	308	5 kW	11 - 22 kW
Balsam Fir Farmhouse	1300	3 Bed	2-1/2 Bath	527	8 kW	20 - 37 kW
Birch Farmhouse	1840	3 Bed	2-1/2 Bath	684	10 kW	25 - 49 kW
Black Spruce Cape	1560	3-4 Bed	2-1/2 Bath	890	13 kW	33 - 63 kW
Crabapple Carriage House	460	1 Bed	1 Bath	310	5 kW	11 - 22 kW
Elm Modern Contemporary	1580	3 Bed	2-1/2 Bath	462	7 kW	17 - 33 kW
Golden Beech Cape	1300-1340*	3 Bed	3 Bath	819	12 kW	30 - 58 kW
Gray Birch Cottage Ranch	890	2 Bed	1 Bath	315	5 kW	12 - 24 kW
Hemlock Victorian Farmhouse	1300	3 Bed	2 Bath	385	6 kW	14 - 27 kW
Maple Colonial	1750	3-4 Bed	3-1/2 Bath	630	9 kW	23 - 48 kW
Ponderosa Pine Contemporary	875	2 Bed	2 Bath	924	14 kW	34 - 66 kW
Scarlet Oak Ranch	1080	2 Bed	2 Bath	750	11 kW	28 - 53 kW
White Oak Craftsman	1550	3 Bed	2.5 Bath	833	12 kW	31 - 59 kW

rray Proposed kW Size (note 3)

Array Proposed SF (note 3)

Annual Production Average kWh/day (note 3)

\* Amur Maple & Golden Beech stock plans offer optional dormers at 2nd floor bedrooms, each dormer 20sf. Dormers not required should owner/builder choose to simplify construction.

#### Notes:

1. Bedrooms: We believe in smaller well thought-out bedrooms, designing for intuitive furniture placement and easy to access closets. We've found a well designed bedroom is more welcoming and open than a larger poorly designed room. Some jurisdictions do not require bedrooms to have closets, expecting occupants would use wardrobe cabinets or similar, as is common practice in many historical homes.

2. Bathrooms: Full baths refer to bathrooms with either/or both a tub & shower. Half baths have only a toilet and sink. ie. 2-1/2 refers to a home with 2 bathrooms having tubs or showers and a 3rd bathroom, which only has a sink and toilet.

3a Solar PV: Solar PV potential is based on a number of factors such as geographic location, landscape shading, solar equipment selections etc. Based on DOE Net Zero Energy Ready Home Program Solar PV design standards we can provide estimates on PV production based on available SF of roof space and geographic location. Proposed PV array SF does not include roof ridge or edge set-backs which may be required in your building location. Refer to your local building authority. Additional solar PV can often be added as needed on site ie. as ground mount systems or East/West facing roof space(s) as available.

3b. Net Zero / Net Positive: Electrical usage varies greatly based on a home's mechanical equipment needs and occupants habits. For instance, some homes may require a well pump and some families may choose to air dry all of their clothes out of the wash. Please calculate your approximate electrical needs regarding your own habits and preferences. There are a number of online calculators that can assist with this. We use national standard electrical usage rates & DOE provided recommendations, which suits most families needs.

For more plans, visit our website or drop us a note at info@bitethefrost.com

Ist Floor Master Bedroom/ Suite Ist Floor Guest Bedroom Slab on Grade (SOG) (note 4) Full Basement Option (note 4)	Walk-Out Basement Options (note 4)	Attached Garage Options (note 5)	Enclosed Office (note 6)	Open Office Area(s) (note 6)	Available in Post & Beam / Timber Frame (note 7)	
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<u>Every BTF Stock Home plan design also</u> <u>features:</u>

Luxurious Kitchens (Islands, pantries etc) Dedicated Mudroom / Entry Areas 1st Floor Laundry Rooms 1st Floor Walk-in Showers EV Charging / Net Zero / Net Positive Energy Designs All Electric HVAC System Sizing & Designs (note 8) Optional Wood Pellet Stoves (note 8)

<u>Plus:</u> Nearly all BTF plans include master suites with walk-in closets, and or private bathrooms, linen closets, lofts & cathedral ceilings in one or more rooms!

Notes Continued:

4. Basements & Slab on Grade (SOG): Slab on grade compatible designs are those that have a dedicated Mechanical room on the 1st floor of the home. Depending on your site, your home may lend itself to a full basement, or even a walk out basement. Some slab on grade designs lend themselves to having a full basement variation provided within the plan set, these are noted above. BTF plan sets come with elevations, schedules and layouts for basement & walk-out options as able. Exposures with an \* are not available walk-out options with attached garage options. ie. N, meaning a walk-out option on the North side of this home is provided.

**5. Garages:** Several of our plans are available in an attached garage option. Refer to our plan books for the two attached garage layouts we provide in the attached garage plan versions. All basic Net Zero plans come with complementary detached garage plans. Should you wish to finish off the 2nd floor of the garage designs we provide, see the Crabapple Carraige home plan for our proposed 1-bedroom fill in plan w/ shed dormer.

6. Offices & Lofts: Enclosed offices are small separate rooms with a door, often bigger than a walk-in closet but smaller than a bed room. Open offices are spaces open to the rest of the home, such as a loft or large corner where a desk may fit nicely. Loft spaces are referred to as extra living space at the top of a stairway. Often loft areas lend themselves to ideal open office areas.

7. Post & Beam / Timber Frame: Several of our BTF plans have been designed around standard timber frame post & beam methods. The plans noted above include design sheet(s) indicating post locations & design considerations for working with a professional timber frame/ post & beam contractor.

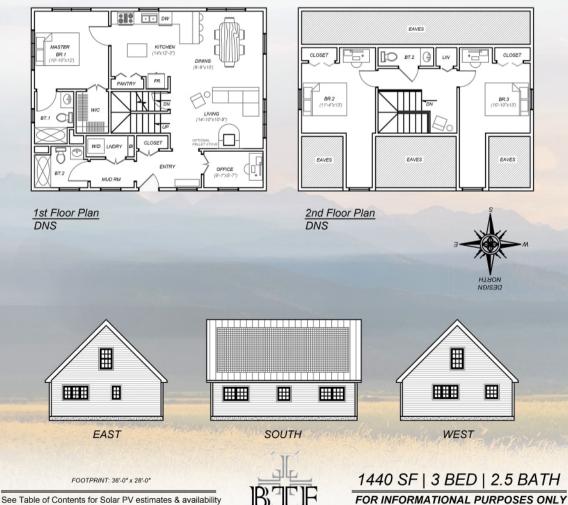
8. HVAC: BTF plans include system designs and sizing for Heat Pumps/ Electric Back-up/ Ventilation Air / Exhaust Air / Optional wood pellet stove back-up & Energy Recovery Units. All of our plans we provide Manual J, 8760 energy modeling analysis on a room by room basis. 8760 is an industry standard term that refers to modeling on an hour-by-hour basis, 24 hours a day, 365 days a year. Based on these energy models we provide HVAC equipment designs and sample selections for your home in IECC Climates 5-8. For more details refer to our FAQ website page: https://netzerohomeplans.com/faqs <u>Carbon Free:</u> Should you choose to build a Carbon Free home, simply skip the optional wood pellet stove.



NORTH ELEVATION

# AMUR MAPLE

MODEST, TIMELESS, INSPIRED, CAPE STYLE HOME



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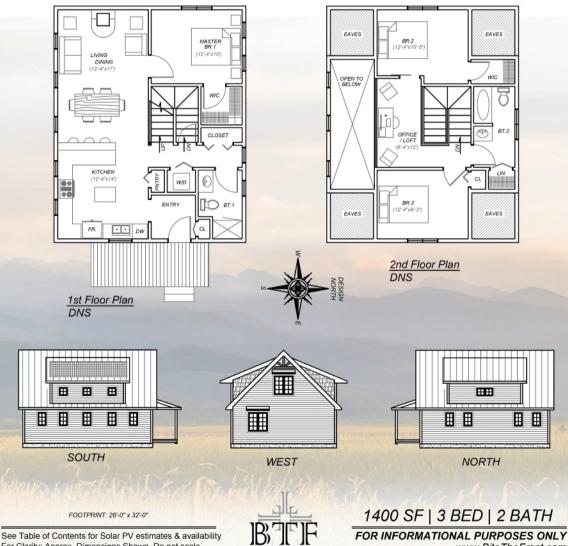
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# ASPEN

COZY, HUMBLE, WELCOMING, CRAFTSMAN STYLE HOME



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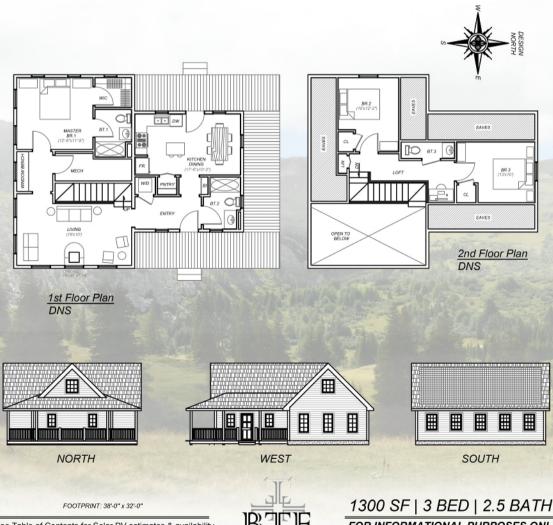
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BALSAM FIR

WELCOMING, COMFORTABLE, FARMHOUSE STYLE HOME



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WEST ELEVATION

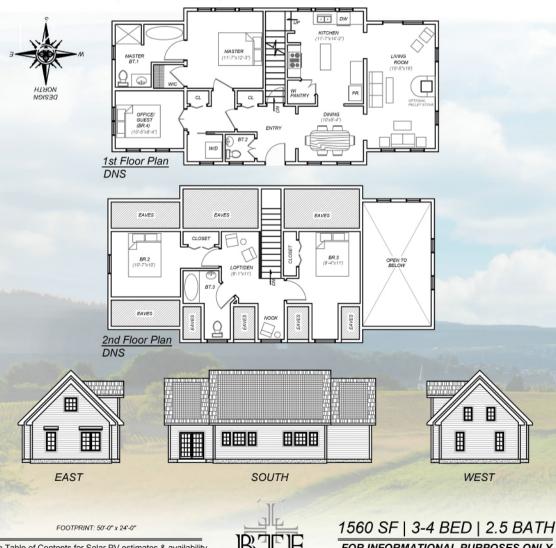
# BIRCH

#### SPACIOUS, ATTRACTIVE, EFFICIENT, FARMHOUSE





#### ELEGANT, LUXURIOUS, TRADITIONAL, CAPE STYLE HOME



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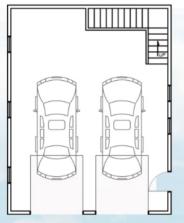
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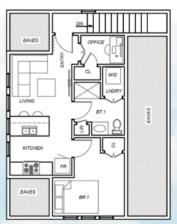
EAST ELEVATION

# CRABAPPLE

SIMPLE, CHARMING, CARRIAGE STYLE STUDIO ABOVE GARAGE



<u>1st Floor Plan - VERSION A</u> DNS



2nd Floor Plan - BOTH VERSIONS DNS







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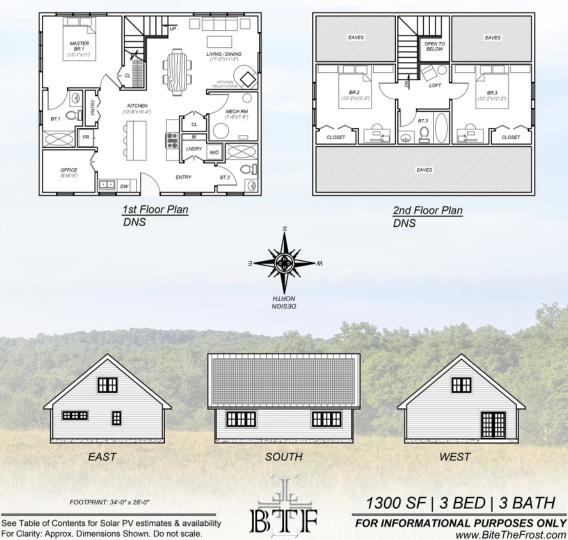
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NORTH ELEVATION

# GOLDEN BEECH

TIMELESS, EFFICIENT, CREATIVE, CAPE STYLE HOME



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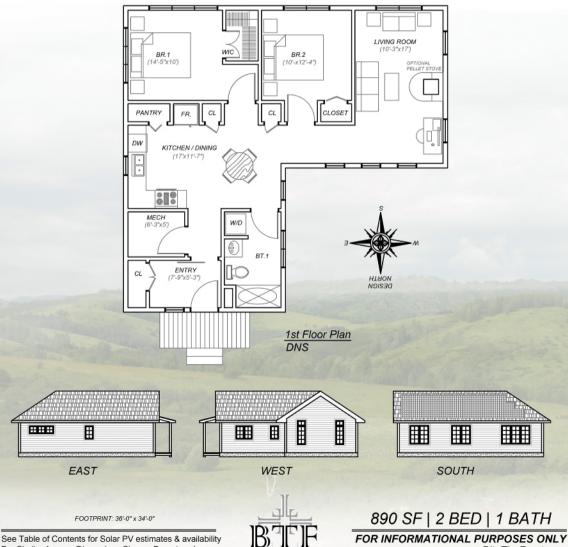
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NORTH ELEVATION

# GRAY BIRCH

#### TINY, EFFICIENT, PRACTICAL, RANCH STYLE COTTAGE



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WEST ELEVATION

# HEMLOCK

INVITING, PRACTICAL, CLASSIC, COLONIAL STYLE HOME



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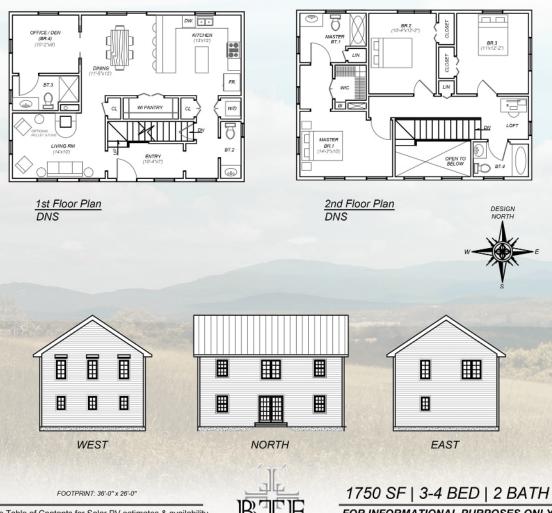
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# MAPLE

AGELESS, ATTRACTIVE, ELEGANT, COLONIAL STYLE HOME



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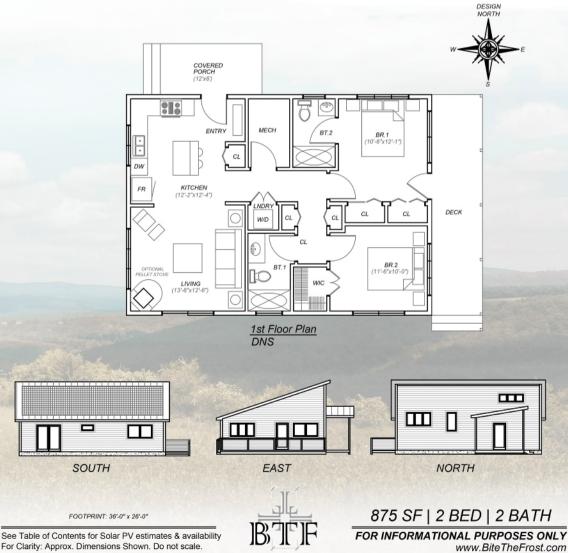


WEST ELEVATION

EDITION 6

# PONDEROSA PINE

SIMPLE, MODEST, MODERN, CONTEMPORARY STYLE HOME



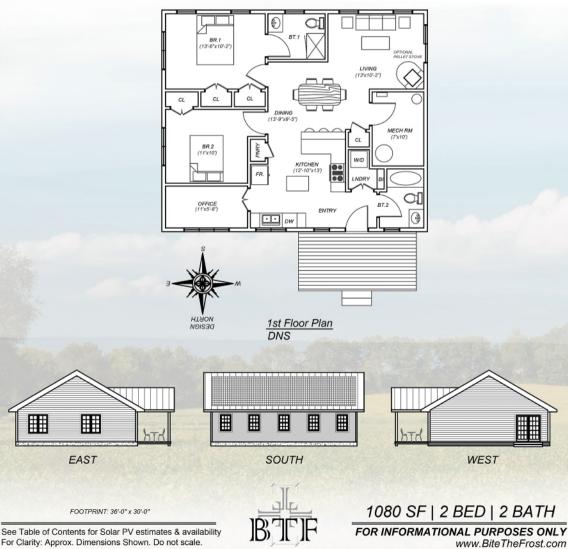
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NORTH ELEVATION

# SCARLET OAK

#### MODEST, SENSIBLE, EFFICIENT, RANCH STYLE COTTAGE



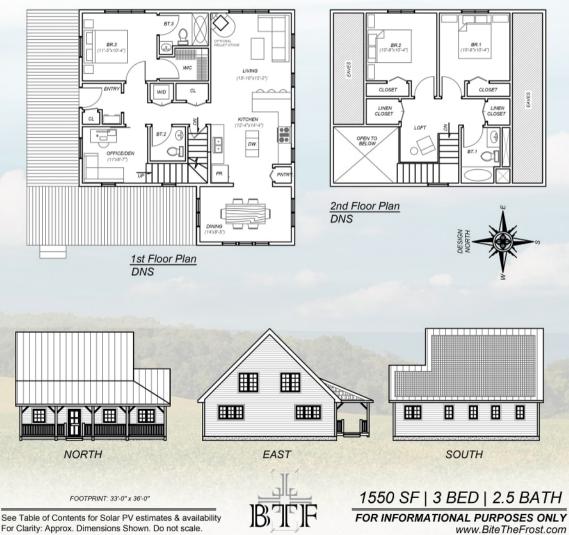
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# WHITE OAK

CALMING, HUMBLE, CHARMING, CRAFTSMAN STYLE HOME



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A Place Called Home The home is shelter, stable and warm A place to gather in snow & storm To relax and play in grass & moss In cozy warmth, that bites the frost