

ENERGYWISE LLC			REVISION: 12/3/15**
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OUTLINE WORK SCOPE: FALMOUTH TOWN HALL INSULATION UPGRADE			
LINE ITEM #	WORK ITEM	LOCATION	RELATED WORK
AREA "A": ROOF DECK, SLOPED CEILINGS			
1	Insulate the interior surface of the open roof deck with R-35 closed cell, high-density, urethane spray insulation, on the surface of the roof deck between the rafters. Include the open-roof deck area behind the knee walls. Fire rate the spray-foam insulation material to conform to the Maine State Fire Code.	Open area, plus behind the knee walls of both sides of the open area, plus the roof deck of the mechanical room located in the NW corner of the space. See reference Drawings "A-1" & "A-2".	Ceiling removal, staging and protection of stored materials. The building must be vacated for 24 hours and during spray foam installation operations. Note: The GWB of the knee walls provides a fire barrier for areas behind the knee walls; the main room area must be fire rated. Create access openings in the knee walls, each side, as needed; replace the GWB, or cover the openings with fastened plywood.
2	Alternate #1: Install one and one-half (1 1/2) inches of urethane, sprayed foam insulation on the roof rafters of the roof deck, incl fire rating to conform to the Maine fire code.	Open area, plus behind the knee walls of both sides of the main area, plus the roof deck of the mechanical room located in the NW corner of the space. See reference Drawings "A-1" & "A-2".	Added measure to reduce the "thermal-bridging" heat loss, through the roof frame, to the roof deck.

3	Install R-21, dense pack cellulose insulation in the enclosed ceiling rafter bays, completely filling the rafter bays.	Enclosed ceiling areas, located between the open, high roof and open knee wall roof areas. See reference Drawings "A-1" & "A-2".	Removal the existing fiberglass insulation and rafter vent material from rafter bays or the enclosed ceiling.
4	Install high-density spray foam on the roof deck of the west-side and east-side Mechanical Rooms and fire rate per code.	West side Mechanical Rm is accessible. The East side mechanical Rm roof deck accessibility is limited to area above the air-handler mechanical unit. See reference Drawings "A-1" & "A-2".	Remove the existing fiberglass insulation located in areas to be spray-foam insulated.
AREA "B": ATTIC FLAT, SLOPED CEILINGS, KNEE WALL, ROOF DECK			
5	Install R-45 (twelve (12) inches) cellulose, loose-fill insulation in the attic flat area.	The high-area, flat ceiling above the main mechanical room of Area B. Refer to Drawing "B-1" & "B-2".	Hinge or reconstruct the attic hatch, insulate and air seal the access hatch cover. Air seal penetrations in the attic floor. Install a plywood insulation dam around the attic hatch.
6	Install R-40 (6 3/4 inches) of urethane, high-density spray foam dense in the enclosed, east and west side rafter bays.	Enclosed, sloped-ceiling areas located at the interior knee wall connections, on each side of the attic flat. Refer to Drawing "B-1 & B-2".	Remove the fiberglass insulation from the enclosed ceiling; the rafter vents & soffit vents on the east side are to remain active. The rafter vents on the west side are to be removed; the rafter vents on the east side remain in place.

7	East & west Side Crawl Space roof decks: Insulate the roof decks, with R-35 urethane, high density spray insulation and fire rate per code.	East & west side knee wall roof deck areas. Refer to Drawings "B-1" & B-2".	Air seal MEP penetrations in the floor deck of the knee wall area. Close off proper vents at the soffit and air seal all outside-air points of entry into the soffit areas. Fire rating behind knee walls is not required.
AREA "C": ATTIC FLAT, WALLS, SLOPED CEILINGS, ROOF DECK			
8	Install R-44 (twelve (12) inches) of cellulose, loose-fill insulation in the attic flat areas.	The high, flat ceiling area above the main room of Area C. Refer to Drawing "C-1" & "C-2".	Hinge or reconstruct the attic hatch; insulate and air seal the access hatch cover. Air seal penetrations in the attic floor, including the chimney bypass; install a plywood insulation dams around the attic hatch and Roxul insulation around the chimney; construct a 2" polyisocyanurate foam board insulation between the east end of the high-attic area: air seal the partition to construct an air-tight barrier.
8	Air seal the mechanical penetrations in the open areas.	Open, lower attic space at the tie-in to Area B. Refer to Drawings "C-1" & "C-2".	Adjust and distribute the existing fiberglass insulation.
9	Air seal the roof deck area above the knww wall to completely isolate the flat attic area from the knee wall areas.	Enclosed ceiling space at the top of the knee walls.	Remove the existing fiberglass insulation prior to sprayfoaming the enclosed section of roof rafter.
10	Install R-35 closed cell foam on the roof deck of the roof areas north, south and east of the attic flat area.	Areas outside of the flat-attic area. Refer to Drawings "C-1" & "C-2".	Enclose the top of the east wall, located at the intersection of Areas "B" and Area "C", with 2" polyisocyanurate insulation and air seal to provide a an air-tight barrier between Area "B" and Area "C".

**CRAWL SPACE: INSULATE FOUNDATION
WALLS & PERIMETER JOIST**

11	Remove the wire mesh and rigid foam board from the knee walls; install two (2) inches of urethane sprayed foam insulation on the knee walls, the perimeter joist areas and overlap the ground vapor barrier (V.B.) by a minimum of three (3) inches min.	All exposed wood, concrete and rubble foundation surfaces in the south section of the crawl space. Refer to Drawing "A-3".	Secure and air seal the top of the floor vapor barrier with spray foam, overlap a min. of 3". Note: Re-use the removed polyisocyanurate insulation for the required rigid insulation purposes of the project identified in Items 5, 8, 10 & 17.
12	Air seal the MEP penetrations in the first floor deck.	First floor deck, where visible through the rodent screen. Refer to Drawing "A-3".	Removal of the rodent screen required.
13	Insulate and air seal the crawl space door	Crawl Space entrance at the bulk head. Refer to Drawing "A-3".	2" polyisocyanurate foam board, plus door gasket kit & door latch hardware.
14	Infill four (4) holes in the vapor barrier. Clean and seal the poly terminations with 10 mil poly and poly tape, overlapped onto adjacent surfaces. Secure and air seal the poly terminations.	Crawl space floor. Refer to Drawing "A-3".	Suggested methods of securing and air sealing the poly terminations: Concrete, mortar, strapping/mechanical fastening. Other recommended solutions will be considered.