Design for UAF Sustainable Village: TAMARACK HOUSE
REMOTE wall with piling foundation

NOTE: The information contained in these documents was developed and published as a reference for specific climatic and site conditions. These documents are not a substitute for a detailed architectural plan set or site-specific engineering.

Any application of knowledge contained in this manual will need to consider site-specific issues including but not limited to applicable codes and structural design considerations for soil type, weather, and wind and snow load conditions. It is essential that a structural engineer review the plans to ensure they meet design criteria appropriate to the site.

This home has many elements that require specialized knowledge. We strongly recommend that skilled tasks, plumbing and electric work be done by professionals.
Sustainable Village at UAF North East Home
FS441

HRV EXHAUST AIR
HRV INTAKE AIR

NORTH ELEVATION

Tashina Duttle

1/15/13

REVISION NOTES

32'

29'-5"
### WINDOW SCHEDULE

<table>
<thead>
<tr>
<th>LABEL</th>
<th>TYPE</th>
<th>WIDTH</th>
<th>HEIGHT</th>
<th>HINGE</th>
<th>3D Front View</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>EGRESS</td>
<td>2'-6&quot;</td>
<td>3'-8&quot;</td>
<td>RIGHT</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>02</td>
<td>EGRESS</td>
<td>2'-6&quot;</td>
<td>3'-8&quot;</td>
<td>RIGHT</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>03</td>
<td>EGRESS</td>
<td>2'-6&quot;</td>
<td>3'-8&quot;</td>
<td>RIGHT</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>04</td>
<td>EGRESS</td>
<td>2'-6&quot;</td>
<td>3'-8&quot;</td>
<td>RIGHT</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>05</td>
<td>FIXED</td>
<td>5'</td>
<td>4'</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>06</td>
<td>EGRESS</td>
<td>2'-6&quot;</td>
<td>3'-8&quot;</td>
<td>RIGHT</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>07</td>
<td>EGRESS</td>
<td>2'-6&quot;</td>
<td>3'-8&quot;</td>
<td>FIXED</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>08</td>
<td>EGRESS</td>
<td>2'-6&quot;</td>
<td>3'-8&quot;</td>
<td>RIGHT</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

### DOOR SCHEDULE

<table>
<thead>
<tr>
<th>DOOR NO.</th>
<th>TYPE</th>
<th>WIDTH</th>
<th>HEIGHT</th>
<th>SWING</th>
<th>Quantity</th>
<th>3D Front View</th>
</tr>
</thead>
<tbody>
<tr>
<td>08</td>
<td></td>
<td>5'-11&quot;</td>
<td>6'-9 3/4&quot;</td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

### SPECIFICATIONS

PVC, CASEMENT, TRIPLE-GLAZE WITH ARGON GAS

TOTAL THICKNESS 15-3/8" WITH 8-3/4" DISTANCE FROM FLANGE TO OUTSIDE AND 6-1/2" DISTANCE FROM FLANGE TO INSIDE

INTERIOR RETURN AND EXTERIOR BOX-OUT TO BE PROVIDED

ROUGH OPENINGS 1/2" AROUND ENTIRE WINDOW FOR A TOTAL OF 1" IN BOTH DIMENSIONS

ROUGH OPENING ON GLASS DOOR IS 72" BY 82-1/4"
### Door Schedule

<table>
<thead>
<tr>
<th>Door No.</th>
<th>Type</th>
<th>Width</th>
<th>Height</th>
<th>Swing</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Fiberglass Insulated</td>
<td>3'</td>
<td>6'-8&quot;</td>
<td>RHIS</td>
<td>1</td>
</tr>
<tr>
<td>02</td>
<td>Solid Core Interior Door</td>
<td>2'-6&quot;</td>
<td>6'-8&quot;</td>
<td>LHIS</td>
<td>1</td>
</tr>
<tr>
<td>03</td>
<td>Solid Core Interior Door</td>
<td>2'-6&quot;</td>
<td>6'-8&quot;</td>
<td>RHIS</td>
<td>1</td>
</tr>
<tr>
<td>04</td>
<td>Solid Core Interior Door</td>
<td>2'-6&quot;</td>
<td>6'-8&quot;</td>
<td>RHIS</td>
<td>1</td>
</tr>
<tr>
<td>05</td>
<td>Pocket Door Leaf</td>
<td>2'-6&quot;</td>
<td>6'-8&quot;</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

#### NORTHEAST DOOR SCHEDULE

<table>
<thead>
<tr>
<th>06</th>
<th>Solid Core Interior Door</th>
<th>2'-6&quot;</th>
<th>6'-8&quot;</th>
<th>LHIS</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>09</td>
<td>Solid Core Interior Door</td>
<td>2'-6&quot;</td>
<td>6'-8&quot;</td>
<td>RHIS</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Solid Core Interior Door</td>
<td>2'-6&quot;</td>
<td>6'-8&quot;</td>
<td>LHIS</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Bifold Closet Doors</td>
<td>5'</td>
<td>6'-8&quot;</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

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**Design Development**

**Date:**

**Issued:** 03/08/2012

**Designed by:**

**Drawn by:**

**CCHRC**

**Sustainable Village at UAF North East Home**

**FS441**
EPS BEDDED IN URETHANE APPLIED TO HOUSE WRAP
1/4" STRAPPING ACROSS STUD
1X4 COMMON PINE FURRING STRIPS (AIRSPACE)
8" RIGID FOAM BOARD, LAPPED AND STAGGERED
NOR-CLAD TYPE CORRUGATED METAL ROOFING
DOUBLE 2X6 BLOCKING
2X6 STUD, 2'-0" O.C.
R-21 BATT INSULATION
1/2" OSB TAPED AT SEAMS WITH SIGA RISSAN
INTERIOR AIR SEALING (60) TAPE
5/8" GWB

2" AIRSPACE
+20" BLOWN IN CELLULOSE INSULATION
6 MIL POLY VAPOR BARRIER
2X4 STRAPPING
1/2" BIRCH PLYWOOD

2X6 DOUBLE BOTTOM PLATE
PEX TUBING
1 1/2" COLOR EMBEDDED CONCRETE
3/4" T&G OSB UNDERLAYMENT
10" (R-60) URETHANE SPRAY FOAM INSULATION
16" BCI - WOOD COMPOSITE JOIST

DRIVEN PILE

SHINGLES
GRACE ICE & WATER SHIELD
5/8" OSB PLYWOOD
TRUSS
TYVEK
STP

To Utility

Mechanical

Bedroom

Bedroom

Bedroom

Bathroom

Bathroom

KEY

RECEPTACLE
GFI RECEPTACLE
SWITCH
3-WAY SWITCH
SMOKE DETECTOR
TELEVISION
TELEPHONE
OUTDOOR LIGHT
SCONCE LIGHT
DOORBELL
T8 FIXTURE
EMERGENCY EXIT LIGHT
CAN LIGHT

PANEL

1 DOWNSTAIRS LIGHTS & PLUGS
3 BEDROOM PLUGS & LIGHTS
5 BEDROOM PLUGS & LIGHTS
7 UPSTAIRS PLUGS & LIGHTS
9 UPSTAIRS PLUGS & LIGHTS
11 KITCHEN PLUGS
13 KITCHEN PLUGS
15 HRV, PUMPS, SOLAR
17 TOYO HEAT
19 STPP
21
23

2 MAIN
4 MAIN
6 BATHROOM PLUGS & LIGHTS
8 FRONT EXTERIOR PLUG
10 TOILET MASERATOR
12 COMM PLUG/FIRE ALARM
14 HWH
16 HWH
18 OVEN
20 OVEN
22 PRESSURE
24 TANK

1st FLOOR ELECTRICAL PLAN

NE PANEL SCHEDULE

WATER
**Sustainable Village at UAF North West Home**

**FS440**

**ELECTRICAL SERVICE**

- **400 AMP 4 METER SERVICE**
- **250 VOLT 1 Ø**
- **3" GRC W/3-350 MCM**
- **OVERHEAD TO GVEA**
- **GUY WIRE**
- **2 - 8' 5/8" GROUND RODS**
- **#2 COPPER GROUND**
- **1/4 c. W/3 # 4 XHHW**
- **1 # 6 GROUND**

**SITE PLAN**

- **100 A**
- **100 A**
- **100 A**
- **100 A**

**DESIGNED BY:**

CCHRC

**DRAWN BY:**

Aa

**PROJECT ISSUED:**

03/08/2012

**Design Development**

**REV./ISSUE NO.:**

E1.2

**TOTAL:**

34
PLUMBING PLAN

1st FLOOR PLAN

1. Mechanical
2. Bedroom
3. Bedroom
4. Bedroom
5. Bedroom
6. Bathroom

PLUMBING DWV

1" PVC FULLPORT BALL VALVE
1" PVC UNION
3" V.T.R.
2" K/S
1 1/2" DRAIN
2" TO SEWAGE TREATMENT PLAN
2" SANI-PLUS

2" SHOWER
2" LAV
2" WC
2" 1 1/2" NEW DRAIN
Multipurpose Fire Safety Systems

What to do if Changes are Required

If any features or obstructions require the addition or deletion of sprinkler heads, or significant relocation of sprinkler heads, contact the Uponor Design Department to determine if observed changes require a redesign.

Note: All revisions must be reviewed by Uponor Technical Services – Design Department.

Add Coupling
Add Elbow
Add Line
Add Tee
Delete Line
Delete Head
Move Head
Add Coupling
Add Elbow
Add Line
Add Tee
Delete Line
Delete Head
Move Head

Sprinkler head demand: 13 gpm @ 7.04
Sprinkler head demand: 17 gpm @ 12.03

HEAD SYMBOL (TYP)
SPRINKLER MODEL (TYP)
SPRINKLER SYMBOL DEFINITION
MAXIMUM SPACING (TYP)
(18.4°) PITCH (MAY NOT APPLY)
(33.7°) PITCH (MAY NOT APPLY)
SLOPED CEILING MAX. SLOPE OF 4:12
SLOPED CEILING MAX. SLOPE OF 8:12
RELIABLE Model RFC49RFC49 Concealed Pendent Sprinkler
RELIABLE Model RFC49RFC49 Concealed Pendent Sprinkler

PRESSURE REQUIRED:
PUMP:
GPM REQUIRED:
PI
45psi
26gpm
PRESSURE REQ'D AT STREET
STORAGE TANK
260 GALLON STORAGE TANK
WATER SERVICE DETAIL
1/4" = 1'-0"

2 1/4" FULL PORT BALL VALVE
10' OF 1" COPPER

STEET
SECOND LEVEL
FIRST LEVEL
1" INTERLEVEL CONNECTIONS BETWEEN FLOORS
1" AquaPEX TO SYSTEM
P.1 MAIN SHUT-OFF VALVE LOCATION
F100
F100
1" SUBLOOP
F100
BLACK LINES= SPRINKLER HEAD TO SPRINKLER HEAD.
GREEN LINES= INTERLEVEL CONNECTIONS.
BLUE LINES= FEED TO FIXTURES (BATH, SHOWER, ETC.).

Note: All revisions must be reviewed by Uponor Technical Services – Design Department.
1. **AquaSAFE™ GENERAL NOTES:**

   1. This system is designed as per NFPA 13D 2010 Edition as a residential multipurpose system.
   2. This system is not designed as a fire sprinkler system as defined in NFPA 13D and manufacturer's guidelines. A fire sprinkler system should follow the guidance of its respective manufacturer. See Section 8.3.1 for additional information.
   3. Uponor highly recommends that you protect the tubing with adequate insulation to prevent freeze damage. See Section 8.3.1 for additional information.
   4. In areas subject to freezing, care should be taken in unheated attic spaces to prevent freeze damage. See Section 8.3.1 for additional information.

2. **NFPA 13D 8.6 LOCATION OF SPRINKLERS.**

   1. This system is designed as per NFPA 13D 2010 Edition as a residential multipurpose system.
   2. Minimum spacing between sprinklers is 8'-0". Refer to Spacing Charts for maximum spacing.
   3. Uponor "AquaPEX®" tubing to be supported per NFPA 13D and manufacturer's recommendations.
   4. All interior piping to be Uponor "AquaPEX®" unless noted. See General Notes 8.6.3 for Closet Requirements.
   5. Minimum bend radius of Uponor PEX tubing in any direction is six times the outside diameter (D) of the tubing to facilitate 90-degree rigid bends.
   6. Uponor highly recommends that you protect the tubing with adequate insulation to prevent freeze damage. See Section 8.3.1 for additional information.
   7. Water shut-off value is not permitted.
   8. Owners manual must be provided to the owner.
   10. In-line flow test must be performed after all risers and lateral run piping is installed. See General Notes 8.6.3 for Closet Requirements.
   11. Additional layers of batt insulation.
   12. Tenting over the fire sprinkler piping.
   13. In-line flow test must be performed after all risers and lateral run piping is installed. See General Notes 8.6.3 for Closet Requirements.
   15. Before performing an in-line flow test, confirm the water pressure by checking the water pressure on the shut-off valve. See General Notes 8.6.3 for additional information.
   16. The sprinkler plan indicates the most hydraulically remote sprinkler. See General Notes 8.6.3 for Closet Requirements.
   17. Uponor AquaPEX tubing is protected per NFPA 13D and manufacturer's guidelines. See General Notes 8.6.3 for Closet Requirements.
   19. Shut-off valve is not permitted. See General Notes 8.6.3 for Closet Requirements.
   20. Flexible PEX piping to be supported per NFPA 13D and manufacturer's guidelines. See General Notes 8.6.3 for Closet Requirements.
   21. Minimum bend radius of Uponor PEX tubing in any direction is six times the outside diameter (D) of the tubing to facilitate 90-degree rigid bends.
   22. Uponor highly recommends that you protect the tubing with adequate insulation to prevent freeze damage. See Section 8.3.1 for additional information.

3. **Sprinkler Systems.**

   1. The design of this system is dictated by specific ceiling heights and room sizes. It is the responsibility of the installing contractor to ensure that the conditions shown on the fire sprinkler plan are exactly as they exist in the field. Deviations from the design may cause serious problems.
   2. The pressure at each sprinkler must be monitored. See General Notes 8.6.3 for Closet Requirements.
   3. This system is not designed as a fire sprinkler system as defined in NFPA 13D and manufacturer's guidelines. A fire sprinkler system should follow the guidance of its respective manufacturer. See Section 8.3.1 for additional information.
   4. The minimum bend radius of Uponor PEX tubing in any direction is six times the outside diameter (D) of the tubing to facilitate 90-degree rigid bends.
   5. Uponor highly recommends that you protect the tubing with adequate insulation to prevent freeze damage. See Section 8.3.1 for additional information.
   6. In-line flow test must be performed after all risers and lateral run piping is installed. See General Notes 8.6.3 for Closet Requirements.
   7. Minimum bend radius of Uponor PEX tubing in any direction is six times the outside diameter (D) of the tubing to facilitate 90-degree rigid bends.
   8. Uponor highly recommends that you protect the tubing with adequate insulation to prevent freeze damage. See Section 8.3.1 for additional information.
   9. In-line flow test must be performed after all risers and lateral run piping is installed. See General Notes 8.6.3 for Closet Requirements.
   10. The sprinkler plan indicates the most hydraulically remote sprinkler. See General Notes 8.6.3 for Closet Requirements.
   11. Flexible PEX piping to be supported per NFPA 13D and manufacturer's guidelines. See General Notes 8.6.3 for Closet Requirements.
   12. Minimum bend radius of Uponor PEX tubing in any direction is six times the outside diameter (D) of the tubing to facilitate 90-degree rigid bends.
   13. Uponor highly recommends that you protect the tubing with adequate insulation to prevent freeze damage. See Section 8.3.1 for additional information.
   14. In-line flow test must be performed after all risers and lateral run piping is installed. See General Notes 8.6.3 for Closet Requirements.

4. **NFPA 13D 8.6.4* SPRINKLERS SHALL NOT BE REQUIRED IN GARAGES, OPEN ATTACHED PORCHES, CARPORTS, AND OTHER OPEN CONSTRUCTIONS.**

5. **NFPA 13D 8.6.1**

   1. This system is not designed as a fire sprinkler system as defined in NFPA 13D and manufacturer's guidelines. A fire sprinkler system should follow the guidance of its respective manufacturer. See Section 8.3.1 for additional information.
   2. The sprinkler plan indicates the most hydraulically remote sprinkler. See General Notes 8.6.3 for Closet Requirements.
   3. The pressure at each sprinkler must be monitored. See General Notes 8.6.3 for Closet Requirements.
   4. In-line flow test must be performed after all risers and lateral run piping is installed. See General Notes 8.6.3 for Closet Requirements.
   5. Minimum bend radius of Uponor PEX tubing in any direction is six times the outside diameter (D) of the tubing to facilitate 90-degree rigid bends.
   6. Uponor highly recommends that you protect the tubing with adequate insulation to prevent freeze damage. See Section 8.3.1 for additional information.
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   14. The sprinkler plan indicates the most hydraulically remote sprinkler. See General Notes 8.6.3 for Closet Requirements.
   15. The pressure at each sprinkler must be monitored. See General Notes 8.6.3 for Closet Requirements.
   16. In-line flow test must be performed after all risers and lateral run piping is installed. See General Notes 8.6.3 for Closet Requirements.

6. **NFPA 13D 8.3.1* WET PIPE SYSTEMS.**

   1. A wet pipe system shall be permitted to be used where all of the following conditions are met:
   2. In areas subject to freezing, care should be taken in unheated attic spaces to prevent freeze damage. See Section 8.3.1 for additional information.
   3. Uponor highly recommends that you protect the tubing with adequate insulation to prevent freeze damage. See Section 8.3.1 for additional information.
   4. In-line flow test must be performed after all risers and lateral run piping is installed. See General Notes 8.6.3 for Closet Requirements.

7. **General Notes 8.6.3 for Closet Requirements.**

   1. The sprinkler plan indicates the most hydraulically remote sprinkler. See General Notes 8.6.3 for Closet Requirements.
   2. The pressure at each sprinkler must be monitored. See General Notes 8.6.3 for Closet Requirements.
   3. In-line flow test must be performed after all risers and lateral run piping is installed. See General Notes 8.6.3 for Closet Requirements.
   4. Minimum bend radius of Uponor PEX tubing in any direction is six times the outside diameter (D) of the tubing to facilitate 90-degree rigid bends.
   5. Uponor highly recommends that you protect the tubing with adequate insulation to prevent freeze damage. See Section 8.3.1 for additional information.
   6. In-line flow test must be performed after all risers and lateral run piping is installed. See General Notes 8.6.3 for Closet Requirements.
   7. The sprinkler plan indicates the most hydraulically remote sprinkler. See General Notes 8.6.3 for Closet Requirements.
   8. The pressure at each sprinkler must be monitored. See General Notes 8.6.3 for Closet Requirements.
   9. In-line flow test must be performed after all risers and lateral run piping is installed. See General Notes 8.6.3 for Closet Requirements.
NOTES

1. VENMAR EKO ERV
2. UNDERCUT ALL BEDROOM DOORS 2"
3. ALL SUPPLY REGISTERS 12" FROM FLOOR
4. MAXIMUM DUCT HANGER SPACING: 8'

KEY

- RETURN AIR DIFFUSER
- SUPPLY AIR
- GRILLE DIRECTION

SUPPLY TO UPSTAIRS

SCALE: 1/2" = 1'-0"

1st FLOOR