Design for Anaktuvuk Pass, Alaska
spray foam envelope on foam insulated raft 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.
LIST OF DRAWINGS
A0.0 COVER SHEET
A1.1 GENERAL NOTES, SPECIFICATIONS
A1.2 FIRST FLOOR PLAN
A2.1 BUILDING ELEVATIONS
A3.1 BUILDING ELEVATIONS, WALL SECTIONS, AND DETAILS
A3.2 WALL SECTIONS AND DETAILS
A3.3 EARTH BERM DETAILS
A3.4 EARTH BERM DETAILS
C1.1 ELECTRICAL LIGHTING LAYOUT
M1 MECHANICAL VENTILATION PLAN
M2 MECHANICAL VENTILATION ELEVATION

TOPOGRAPHIC MAP OF ANAKTUVUK PASS
SATELLITE VIEW OF ANAKTUVUK PASS
NORTH AERIAL VIEW OF PROTOTYPE HOUSE
SOUTH AERIAL VIEW OF PROTOTYPE HOUSE

ANKTUVUK PASS PROTOTYPE HOUSE
**SCHEDULES**

### Door Schedule

<table>
<thead>
<tr>
<th>Door No.</th>
<th>Elevation</th>
<th>Type</th>
<th>Width</th>
<th>Height</th>
<th>Frame Type</th>
<th>Hinge</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Fiber</td>
<td>3'-0&quot;</td>
<td>6'-8&quot;</td>
<td>Left</td>
<td></td>
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<tr>
<td>2</td>
<td></td>
<td>Steel</td>
<td>3'-0&quot;</td>
<td>6'-8&quot;</td>
<td>Left</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Wood</td>
<td>2'-6&quot;</td>
<td>6'-8&quot;</td>
<td>Right</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Wood</td>
<td>2'-8&quot;</td>
<td>6'-8&quot;</td>
<td>Left</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Wood</td>
<td>2'-8&quot;</td>
<td>6'-8&quot;</td>
<td>Right</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Wood</td>
<td>2'-8&quot;</td>
<td>6'-8&quot;</td>
<td>Right</td>
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### Window Schedule

<table>
<thead>
<tr>
<th>Label</th>
<th>Type</th>
<th>Width</th>
<th>Height</th>
<th>Frame Type</th>
<th>Hinge</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Vinyl</td>
<td>2'-6&quot;</td>
<td>3'-6&quot;</td>
<td>Casement</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Vinyl</td>
<td>7'-6&quot;</td>
<td>3'-6&quot;</td>
<td>Casement/</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Picture</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Vinyl</td>
<td>2'-6&quot;</td>
<td>2'-6&quot;</td>
<td>Casement</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Vinyl</td>
<td>1'-6&quot;</td>
<td>2'-6&quot;</td>
<td>Casement</td>
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</table>

### Plumbing Fixture Schedule

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<thead>
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<th>Fixture</th>
<th>Manufacturer</th>
<th>Product No.</th>
<th>Finish</th>
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<tbody>
<tr>
<td>Toilet</td>
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<td></td>
</tr>
<tr>
<td>Urinal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lavatory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lav. Faucet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bath</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shower Head</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dryer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitchen Sink</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K. Faucet</td>
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</tr>
</tbody>
</table>

### Toilet Accessory Schedule

<table>
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<tr>
<th>Item</th>
<th>Manufacturer</th>
<th>Finish</th>
</tr>
</thead>
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<tr>
<td>TP Dispenser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mirror</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24&quot; Towel Rod</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shower Rod</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Finish Schedule

<table>
<thead>
<tr>
<th>Room Name &amp; No.</th>
<th>Floor</th>
<th>Base Board</th>
<th>Walls</th>
<th>Ceiling</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Window Elevations**

- 3/8 AC Plywood
- DCY Based Spray Foam/Insulation
- 4" Metal Stud
- 3/8 AC Plywood

**Electrical Symbols**

- Electrical Outlet
- Electrical GFCI Outlet
- Electrical Outlet
- Light Switch
- 3-Way Light Switch
- Smoke Detector
- Surface Mount Light Fixture
- Recessed Light Fixture
- LED Tube Surface Mounted Light Fixture
- 2 ft. Cloud Light Fixture
- 4 ft. Cloud Light Fixture
- Halogen Single LED Tube Light Fixture

**Wall Types**

- 3/8 AC Plywood
- R11 Batt Insulation for Sound Proofing
- 4" Metal Stud

**Construction Documents**

- Sustainable Northern Shelter
- Anaktuvik Pass Prototype House
- Anaktuvuk Pass, Alaska
- June 14, 2009
ANAKTUVIK PASS PROTOTYPE HOUSE
ANAKTUVUK PASS, ALASKA
SUSTAINABLE NORTHERN SHELTER
14 JUNE 2009
CONSTRUCTION DOCUMENTS

SCALE: 1'-0" = 1/4"

APPROX. 4" SOD
R60 SOY FOAM INSULATION WITH SPRAY APPLIED ELASTOMER FINISH
PHOTOVOLTAIC ARRAY
COLD STORAGE
ENTRY

NORTH ELEVATION

SOUTH ELEVATION
SUSTAINABLE NORTHERN SHELTER
ANAKTUVUK PASS Prototype House
ANAKTUVUK PASS, ALASKA
SUSTAINABLE NORTHERN SHELTER PROJECT
ISSUE DATE 05 MAY 2009
DESIGN DEVELOPMENT PROGRESS SET

TYPICAL WALL SECTION

BUILDING ELEVATION

BUILDING SECTION

SECTION 4
E:\IMPERVIOUS LINER, OR EQUAL, TO ELIMINATE WATER PRESSURE
4" COVER OVER FABRIC FOAM

APPX. 1 SPRAY FOAM INS

E:\IMPERVIOUS LINER, OR EQUAL, TO ELIMINATE WATER PRESSURE

RETAINED HEAT (FT)  SPACING S (FT)  FABRIC LENGTH (FT)

*H1 = 13' ±  S1 = 18" MAX L1 = 13'

**H2 = 9' ±  S2 = 24" MAX L2 = 9'

*H1 IS @ BEDROOM END OF SHELTER

**H2 IS @ COLD STORAGE END OF SHELTER

= 120 pcf
Ø = 32°
C¹= 0
u, PORE PRESSURE = 0

GEOTEXTILE WRAPPED-FACE
RETAINED SOIL

FABRIC SPEC:
STRATAGRID,
MICROGRID

T    = 2000 lb/ft
LTDS = 871 lb/ft
ULT

1000 FAIRBANKS STREET
P.O. BOX 82489
FAIRBANKS, AK 99708-2489
(907) 457-3454
www.cchrc.org

ANAKTUVIK PASS PROTOTYPE HOUSE
ANAKTUVUK PASS, ALASKA
SUSTAINABLE NORTHERN SHELTER
14 JUNE 2009
CONSTRUCTION DOCUMENTS

Scale: 1'-0"= 1/4"

BUILDING SECTION

PRODUCT DATA

STRATAGRID®

Material:
- 0.75" CDPE
- 1.5" PE

Design Data:
- Snow Load: 65 psf
- Wind Load: 100 mph
- Ice Load: 50 psf

Load and Water Resistance:
- 162,200 lb

Specifications:
- Certified by UL 2249

Structural Details

Scale: 1'-0"= 1/4"

BUILDING SECTION 2
<table>
<thead>
<tr>
<th>ITEM</th>
<th>MATERIALS LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 1/4&quot; x 0.065&quot; WALL STACK</td>
</tr>
</tbody>
</table>

**SHOP BUILT FITTINGS**

- 8" WALL CAP
- 500 SHORT 50 LONG
- EAVES - (1) WALL CAP (W/ALGAE STRIPS)
- FACEPLATE (3) 1/2" DIA. HOLE
- PANASONIC FAN
- FAN GRILLE (2) 36" X 12"
- HONEY-TUBE GRILLET
- AIR FILTER
- 4" BOOTS (2)
- 6" BOOTS (2)
- 1" MVA PEEL (2)
- 0.95" MVA PEEL (2)
- 0.85" MVA PEEL (2)
- 0.01" MVA PEEL (2)

**DESCRIPTION**

- 10/01 WALL CAP (W/ALGAE STRIPS)
- 15/18 90° FAN INLET REDUCER
- 18/21 SOUND-REDUCED FILTER ELBOW
- 12/21 180° SOUN/LNE FILTER ELBOW (TRANSFER AIR CEILING (GRILLE))