Overview

Inspired by the iconic New England farmhouse, Self-Reliance is an environmentally-friendly, net-zero energy home for a family of four. Farmhouses have always been rooted in place and history. They were designed to be durable, easily constructable, and made of local, natural materials. We have adopted and modernized these most defining qualities to create a contemporary house that is still recognizable as "home." The timeless gable form maximizes space while shedding rain and snow and providing an ideal angle for a solar array. Self-Reliance renewably produces all of the energy it uses while providing all the comforts and conveniences for 21st century living.

Public / Private Divide

While Self-Reliance is smaller than the average American home, its design maximizes square footage and provides a comfortable functional space that fosters community. The open kitchen, dining, and living spaces are designed to encourage a family to make dinner, do homework, and spend time together. The public space visually and literally opens up to the natural landscape, extending onto the deck during the warmer months. A central bathroom and mechanical closet separate the public zone from the two private bedrooms. A continuous floor wraps up the gable walls to bridge the gap between public and private spaces, creating a unified home with distinct zones.

Local Materials

From our floors to our finishes, Self-Reliance makes use of locally harvested natural materials whenever possible. Our sugar maple hardwood flooring was sustainably harvested from College-owned forests. White oak, known for its natural rot-resistant properties and longevity, was harvested less than a mile away from the College for our outdoor decking. The kitchen countertop and flooring, as well as the bathroom and mudroom flooring, consist of naturally finished heathermore slate, quarried in southern Vermont.

Modularity

Self-Reliance splits into two floor modules and six roof modules so that it can be transported from Middlebury, Vermont to Washington D.C. Each house module is structurally independent of the others, minimizing the risk of damage during disassembly and reassembly. We intentionally accentuate the seams between modules to convey how our home is assembled. We’ve also introduced a conceptual wrapper, or continuous floor, that runs up the east and west gable walls to bridge the gaps between modules and create a visually unified interior space.
GENERAL SHEET NOTES
1. COMPLIANT WITH ANSI Z765-2003
2. ALL DIMENSIONS SHOWN ARE TO THE FINISHED FACE OF EXTERIOR WALLS
3. SHOWN IS SQUARE FOOTAGE OF FINISHED AREA
4. MECHANICAL ROOM FINISHED WITH 3/4" PLYWOOD, NOT INCLUDED IN THIS CALCULATION
5. THE POINT AT WHICH THE CEILING BEGINS TO SLOPE IS 7' 3 5/16" ABOVE THE FINISHED FLOOR LEVEL, THUS WITHIN THE ANSI CEILING HEIGHT REQUIREMENTS
6. REFER TO SHEET L-502 FOR WATER TANK Details
7. NOTE THAT AS BUILT DIMENSIONS ADD EXTRA 2.5SF TO THE TOTAL SQUARE FOOTAGE, MEANING THAT THE TOTAL SQUARE FOOTAGE OF FINISHED AREA IS JUST UNDER 1000SF REQUIRED BY THE RULE 6.2 AS BUILT:

AS BUILT:
22' 3 1/8"
13' 10 3/4"
8' 3 3/8"
5' 11"

SHEET KEYNOTES

REFERENCE KEYNOTES

A1

GROSS BUILDING SQUARE FOOTAGE

1/4" = 1'-0"

TEAM MIDDLEBURY
HOMEWORK FARMHOUSE
802 COLLEGE STREET
MIDDLEBURY, VT 05753

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G-101

FINISHED SQUARE FOOTAGE

COMPLIANCE PLAN

LOT NUMBER: 107
DESIGNER: K. FLANAL
CHECKED BY:
COPYRIGHT: HOME PROJECT 6 PUBLIC DOMAIN

NON-CONSTRUCTION SHEET
WEST RAMP WITH PREDICTED TOPOGRAPHY

SCENARIO 1: LANDING POINT IS 2" HIGHER THAN PREDICTED BY TOPOGRAPHY  RAMP SLOPE 1:16

WEST RAMP WITH TOPOGRAPHIC VARIATIONS

SCENARIO 2: LANDING POINT IS 2" LOWER THAN PREDICTED BY TOPOGRAPHY  RAMP SLOPE 1:15

GENERAL SHEET NOTES
1. ALL RAMPS EQUAL TO OR GREATER THAN 36" WIDE
2. RAMP SLOPE DOES NOT EXCEED 1:12
3. OAK HANDRAIL EXTENDS UNBROKEN
4. LEVEL LANDINGS USED AT START AND END OF PUBLIC RAMP
1. A valve in the solar HW system will protrude above the solar envelope <2". Email to follow.
GENERAL SHEET NOTES

1. REFER TO SHEET G-101 FOR THE LOCATION OF POTABLE AND NON-POTABLE WATER CONTAINERS.

2. REFER TO SHEET G-102 FOR WATER TANK DETAILS.

REFERENCE KEYNOTES

SHEET TITLE

SHADING - WASHINGTON D.C. 0900 9/20

SHADING - WASHINGTON D.C. 1700 9/20

PLAN - WASHINGTON D.C. 0900 9/20

PLAN - WASHINGTON D.C. 1700 9/20

CLIENT

U.S. DEPARTMENT OF ENERGY
SOLAR DECATHLON 2011
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SUNSPACE DESIGN

MARK DATE DESCRIPTION

G-601

SHADING DIAGRAMS

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2. REFER TO SHEET G-102 FOR WATER TANK DETAILS.
GENERAL SHEET NOTES

1. REFER TO STRUCTURAL DRAWINGS FOR LOADS AND FURTHER INFORMATION.
2. REFER TO SHEET L-502 FOR CRIBBING DETAILS BENEATH ELEVATED WATER TANKS.

REFERENCE KEYNOTES

- 05 59 00.A6 12" X 12" STEEL FOOTING
- 05 59 00.A7 5" X 5" STEEL FOOTING
- 06 11 00.H1 2X10 WOOD FRAMING
- 06 14 03 2'x2' WOODEN FOUNDATION PLATE
- 06 40 13.A3 DESIGNATED SPACE FOR REMOVABLE SLATS
- 09 63 40.A1 12" x 12" HEATHERMORE SLATE TILES
- 12 58 29.A2 BED BY MAPLE CORNER
- 22 11 23 DOMESTIC WATER PUMPS
- 22 13 16 SANITARY WASTE AND VENT PIPING
- 23 23 00 REFRIGERANT PIPING
- 31 40 00.A2.2 2x4 WATER STORAGE CRIBBING
- 33 16 00 WATER UTILITY STORAGE TANKS

SHEET KEYNOTES

1. SEE STRUCTURAL DRAWINGS

GENERAL SHEET NOTES

1. REFER TO STRUCTURAL DRAWINGS FOR LOADS AND FURTHER INFORMATION.
2. REFER TO SHEET L-502 FOR CRIBBING DETAILS BENEATH ELEVATED WATER TANKS.
WATER TANKS ARE ENCASED IN WEATHER PROOF CANVAS SHELLS DURING THE COMPETITION.

POTABLE WATER TANKS ARE SHADED BY A BUILT COVER DURING THE COMPETITION. TANK LIDS ACCESSIBLE THROUGH HATCH IN CRIBBING.

THE MANWAY IS 24".

ALL TANKS ARE MORE THAN 3.5" OFF THE GROUND.

1. WATER TANKS ARE USED IN LEATHER ROOF CONSTRUCTION DURING THE COMPETITION.

2. POTABLE WATER TANKS ARE SHADED BY A BUILT COVER DURING THE COMPETITION. TANK LIDS ACCESSIBLE THROUGH HATCH IN CRIBBING.

3. THE MANWAY IS 24".

4. ALL TANKS ARE MORE THAN 3.5" OFF THE GROUND.

OUTDOOR TABLE

CRIBBING PLAN VIEW

CRIBBING ELEV 1

CRIBBING ELEV 2

OUTDOOR TABLE

CRIBBING PLAN VIEW

CRIBBING ELEV 1

CRIBBING ELEV 2

OUTDOOR TABLE

CRIBBING PLAN VIEW

CRIBBING ELEV 1

CRIBBING ELEV 2

OUTDOOR TABLE

CRIBBING PLAN VIEW

CRIBBING ELEV 1

CRIBBING ELEV 2

OUTDOOR TABLE

CRIBBING PLAN VIEW

CRIBBING ELEV 1

CRIBBING ELEV 2

OUTDOOR TABLE
GENERAL SHEET NOTES

1. A RAMP MOD JOINTS USED PER RAMP. SECURE ACCORDINGLY. REFER TO L-102 FOR LAYOUT DETAILS.

2. REFER TO G-104 FOR RAMP VARIATIONS.

REFERENCE KEYNOTES

05 52 00.A1 FABRICATED METAL RAILING, TYPE A1
05 52 00.A2 FABRICATED METAL RAILING, TYPE A2
05 52 00.B1 FABRICATED METAL RAILING, TYPE B1
05 52 00.B2 FABRICATED METAL RAILING, TYPE B2
05 52 00.F1 FABRICATED METAL RAILING, TYPE F1
05 52 00.F2 FABRICATED METAL RAILING, TYPE F2
05 52 00.R1 FABRICATED METAL RAILING, TYPE R1
05 52 00.R2 FABRICATED METAL RAILING, TYPE R2
05 59 00.A5 RAILING RECEPTACLES SECURED TO DECK

SHEET KEYNOTES

1. 8 RAMP MOD JOINTS USED PER RAMP. SECURE ACCORDINGLY, USING A1 AND A2 TO RECEIVE TWO RAILING LEGS AND B1 AND B2 TO RECEIVE 1 RAILING LEG.

2. GATE HINGE FABRICATIONS SITUATED 3 WIDE BETWEEN DECK MOD AND RAMP MOD.

3. DECK MOD JOINTS PLACED ON CONNECTING ENDS OF DECK MODS. A1 AND A2 RECEIVE LOAD FROM B1 AND B2. THREE JOINTS PER SIDE OF EACH CONNECTING MOD. REFER TO L-102 FOR LAYOUT DETAILS.

4. RAILINGS AT BOTTOM OF RAMP ARE MOUNTED TO RAMP WITH CROSS BRACING INSTEAD OF RAILING MOUNTS.

5. REFER TO G-104 FOR RAMP VARIATIONS.
<table>
<thead>
<tr>
<th>Plant Variety</th>
<th>Source</th>
<th>Variety</th>
<th>Source Will Depend On Nurseries We Sign On With</th>
<th>Seed</th>
<th>Days To Maturity</th>
<th>Start Date</th>
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<tbody>
<tr>
<td>BASIL</td>
<td>SEED</td>
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<td>C</td>
<td>4</td>
<td>60-75</td>
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<td>BEANS</td>
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<td>34</td>
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<td>BEETS</td>
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<td>CORN</td>
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<td>ORANGE AND LEMON JEM MARIGOLD</td>
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<td>PEPPERS</td>
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<td>7</td>
<td>65 (PURPLE) 85 (RED RIPE)</td>
<td>7/23</td>
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<tr>
<td>POTATOES</td>
<td>TUBERS</td>
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<td>RADISHES</td>
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<td>ROSEMARY</td>
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<td>ROSEMARY STAND ALONE POT</td>
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<td>STRAWBERRIES</td>
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<td>SWISS CHARD</td>
<td>SEED</td>
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<td>20</td>
<td>28 (BABY) 55 (BUNCHING)</td>
<td>8/7 (BABY) 8/31 (BUNCHING)</td>
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<td>THYME</td>
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<td>TOMATOES</td>
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<td>TOMATOES (CHERRY)</td>
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</tbody>
</table>
Foundation Plan

1. Points located at bottomless supports (c.f. Points of the Edge wall, post, & Ill's)
2. Points for the Edge wall, post, & Ill's
3. Points located at supports, see Build on the sketch
T.O. FINISHED FLOOR 1'-7 3/4" GRADE LEVEL 0"
B.O. ROOF HEADER 8'-10"
GENERAL SHEET NOTES

1. SCALE IN DRAWINGS VARY AND ARE SHOWN AS GUIDELINES FOR REPRODUCTION PURPOSES.
2. FOR MORE DETAILS REFER TO SHEET A-311.

B.O. TRUSSES
B.O. ROOF PLATE
B.O. WALL PLATE
B.O. ROOF HEADER
B.O. WINDOW HEADERS
B.O. WINDOW FRAMING
B.O. DECK FRAMING
9'-10 3/4"
1'-7 3/4"
8'-8 3/4"
8'-10"

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KAREN MAXON

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1 See Structural Drawings

REFERENCE KEYNOTES

B.O. WALL PLATE
B.O. STRUCTURAL FLOOR
T.O. STRUCTURAL FLOOR
T.O. FINISHED FLOOR
T.O. FINISHED FLOOR
GRADE LEVEL
GRADE LEVEL
GRADE LEVEL

SHEET KEYNOTES

1. SEE STRUCTURAL DRAWINGS

SHEET TITLE
WALL SECTIONS AND DETAILS

A311
INT/EXT WALL JOINT

CORNER FRAMING, TYP.

PV MOUNTING DETAIL 1

SW CORNER AT GREENHOUSE

NORTH PORCH SOFFIT

PV MOUNTING DETAIL 2

NORTH ENTRY CORNER

PORCH POST NORTH

SECT. DET. - WALL / SOFFIT JOIN AT ENTRY
**B.O. WINDOW HEADERS**

- 8'-8 3/4"

**B.O. WINDOW FRAMING**

- 4'-6 1/4"

**A-531**

**B3**

- INT. REVEAL AT SILL, TYP.

**C1**

- WIN. DET. - TYPICAL OPERABLE SASH

**C4**

- WIN. DET. - TYPICAL FIXED SASH

**A4**

- DOOR DET. -- TYPICAL JAMB AT INT. DOOR

**A3**

- INT. REVEAL AT HEAD, TYP.

**A2**

- SCT. DET. - TYPICAL SKYLIGHT

**D3**

- 06 11 00.D3 2X4 FRAMING

**F1**

- 06 11 00.F1 2X6

**G1**

- 06 11 00.G1 2X8

**D6**

- 06 16 00.D6 1/2" PLYWOOD

**D8**

- 06 16 00.D8 3/8" PLYWOOD

**A2**

- 07 61 13 STANDING SEAM SHEET METAL ROOFING

**A1**

- 07 21 01 CELLULOSE INSULATION

**A3**

- 07 27 00.A1 HOME SLICKER

**A4**

- 07 62 00 SHEET METAL FLASHING AND TRIM

**A3**

- 08 14 00.C3 WOOD BASEIAS

**A1**

- 08 14 00.A1 FRAMING

**A1**

- 08 61 00 ROOF WINDOWS

**A3**

- 09 29 00.B6 5/8" J CASING BEAD

**A1**

- 09 29 00.C1 1/2" GYPSUM WALLBOARD

**A1**

- 09 29 00.D1 5/8" GYPSUM WALLBOARD

**A4**

- 09 30 33 STONE TILING

- **C1**

- 3/8" GLASS WINDOW UNIT

- **C1**

- 3" = 1'-0"

- **C4**

- 3" = 1'-0"

- **A1**

- 3" = 1'-0"
### Window Schedule

<table>
<thead>
<tr>
<th>Mark</th>
<th>Manufacturer</th>
<th>Model</th>
<th>Operation</th>
<th>Width</th>
<th>Height</th>
<th>R.O. Width</th>
<th>R.O. Height</th>
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<td>2'-0&quot;</td>
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<td>2'-1&quot;</td>
<td>4'-1&quot;</td>
<td>7'-0 1/4&quot;</td>
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<tr>
<td>B</td>
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<td></td>
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<td>4'-0&quot;</td>
<td>5'-5&quot;</td>
<td>4'-1&quot;</td>
<td>7'-0 1/4&quot;</td>
<td>2</td>
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<tr>
<td>C</td>
<td>R.O.</td>
<td></td>
<td>FIXED</td>
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<td>7'-0&quot;</td>
<td>5'-8 1/2&quot;</td>
<td>7'-1&quot;</td>
<td>6'-11 1/2&quot;</td>
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<td>R.O.</td>
<td></td>
<td>HOPPER</td>
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<td>4'-1&quot;</td>
<td>7'-0 1/4&quot;</td>
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<tr>
<td>E</td>
<td>VELUX</td>
<td>D06</td>
<td>FIXED</td>
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<td>3'-10 1/4&quot;</td>
<td>1'-10 1/2&quot;</td>
<td>3'-9 3/4&quot;</td>
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### Wall Types

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Plumbing ISOMETRIC SW
## Mechanical Equipment Schedule

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## Other Equipment

- **Condenser - Air Cooled**
  - Mitsubishi 22 PUZ-HA30NHA
  - 22 31 13.16 1'-1" 42 6" DIAMETER
  - Efficiency: Standard

- **Fan Coil Unit with Plenum**
  - 200 CFM
  - 23 31 13.16 1'-1" 42 6" DIAMETER

- **Water Heater**
  - Vaillant 3 auroTANK Hydronic Supply 80 Gallon
  - Model: 22 33 30.26

- **Round Mitered Elbow - DTL**
  - Standard
  - 6"ø-6"ø

- **Rectangular Duct: Mitered Elbows / Tees**
  - 10"x12" 8 23/32"
  - 14"x12" 4'-11 51/128"
  - 14"x12" 5 83/128"
  - 14"x12" 7 59/128"

- **Round Endcap**
  - Standard
  - 12"ø

- **Rectangular Transition - Angle**
  - 45 Degree, shorter
  - 43"x10"-14"x12"

- **Round Elbow - Pleated**
  - Standard
  - 12"ø-12"ø

- **Round Elbow - Mitered**
  - Standard
  - 12"ø-12"ø

- **Round Cross**
  - Standard
  - 6"ø-6"ø-6"ø-5"ø

- **Rectangular Duct: Mitered Elbows / Tees**
  - 10"x12" 1'-0 9/16"
  - 10"x12" 1'-2"
  - 10"x12" 7'-10 3/16"

- **Rectangular Elbow - Mitered**
  - Standard
  - 12"ø-12"ø

- **Rectangular to Round Takeoff**
  - High Efficiency: Standard
  - 6"ø-6"ø

- **Rectangular to Round Transition**
  - Angle: 45 Degree
  - 6"ø-6"ø

- **Round Mitered Elbow - DTL**
  - Standard
  - 6"ø-6"ø

- **Rectangular Elbow - Radius**
  - Standard
  - 10"x12"-10"x12"-10"x12"

- **Rectangular Duct: Mitered Elbows / Tees**
  - 14"x12" 23 31 13.16 1'-5" 54 6" DIAMETER
  - 14"x12" 1'-0 9/16" 23 31 13.16 1'-1" 42 6" DIAMETER
  - 14"x12" 1'-10" 37 6" DIAMETER

- **Water Heater**
  - Vaillant 3 auroTANK Hydronic Supply 80 Gallon
  - Model: 22 33 30.26

- **Spiral_Duct_-_Parametric_5318**
  - Option 2
  - Diameter: 6" DIAMETER

- **Rectangular Duct: Mitered Elbows / Tees**
  - 10"x12" 1'-0 9/16" 23 31 13.16 1'-1" 42 6" DIAMETER
  - 14'-0" 14 6" DIAMETER

- **Rectangular to Round Takeoff**
  - High Efficiency: Standard
  - 6"ø-6"ø

- **Rectangular to Round Transition**
  - Angle: 45 Degree
  - 6"ø-6"ø

- **Rectangular to Round Transition**
  - Angle: 60 Degree
  - 6"ø-6"ø
GENERAL SHEET NOTES

1. CH 5 TO HEAT PUMP IN ATTIC
2. GROUNDING ELECTRODE IS NEAR MECHANICAL ROOM AS INDICATED
3. ALL OUTLETS ARE TAMPER-RESISTANT
4. ALL OUTSIDE RECEPTACLES ARE WEATHER-RESISTANT
5. ALL KITCHEN, BATHROOM, AND OUTDOOR OUTLETS ARE GFCI PROTECTED (SEE LEGEND)
6. ALL OUTLETS ARE AFCI PROTECTED
7. REFER TO SHEET E-103 FOR LIGHTING CIRCUIT PLAN
8. REFER TO SHEET E-603 FOR SCHEDULE OF CIRCUITS

REFERENCE KEYNOTES

CH #1 - PV PANELS
CH #2 - INDUCTION COOKTOP
CH #3 - OVEN
CH #4 - DRYER
CH #5 - HEAT PUMP (OUTDOOR UNIT POWERS INDOOR)
CH #6 - DOMESTIC WATER PUMP
CH #7 - H20 HEATER
CH #8 - ERV
CH #9 - SOLAR THERMAL PUMP
CH #10 - SEWAGE PUMP
CH #11 - DISHWASHER
CH #12 - WASHER
CH #13 - KITCHEN RECEPTACLES 1
CH #14 - KITCHEN RECEPTACLES 2
CH #15 - SECOND BEDROOM RECEPTACLES
CH #16 - MASTER BEDROOM RECEPTACLES
CH #17 - LIVING-ROOM RECEPTACLES
CH #18 - BATHROOM RECEPTACLES
CH #19 - OUTDOOR RECEPTACLES
CH #20 - LIGHTING CIRCUIT 1
CH #21 - LIGHTING CIRCUIT 2
CH #22 - LIGHTING CIRCUIT 3
CH #23 - RANGE HOOD
CH #24 - REFRIGERATOR
CH #25 - LANDSCAPING LIGHTS
CH #26 - MECHANICAL LIGHT/SMOKE DETECTORS
CH #27 - DINING RECEPTACLES
CH #28 - FIRE PUMP
CH #29 - FIRE BELL/LIGHT
GENERAL SHEET NOTES
1. URL: CIRCUIT FOR UNDERRAIL LIGHTING
2. REFER TO SHEET L-103 FOR EXTERIOR UNDERRAIL LIGHTING PLAN
3. REFER TO SHEET E-604 FOR LIGHT FIXTURE SCHEDULE

REFERENCE KEYNOTES

SHEET KEYNOTES

LIGHTING CIRCUIT PLAN
**LIGHTING PLAN**

**LIGHTING SCHEDULE**

<table>
<thead>
<tr>
<th>Type</th>
<th>Mark COUNT</th>
<th>Model</th>
<th>Wattage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>10</td>
<td>COLOR KINETICS # 523-000050-06</td>
<td>13 W</td>
<td>Surface mounted, 12 inch linear fixture with wide beam distribution and 3000K color temperature at 12 watts per foot.</td>
</tr>
<tr>
<td>C2</td>
<td>10</td>
<td>SAME AS C1</td>
<td>13 W</td>
<td>SAME AS C1</td>
</tr>
<tr>
<td>D1</td>
<td>7</td>
<td>HALO RECESSED CAN 4 W</td>
<td>7 W</td>
<td>Recessed, wet location LED downlight fixture with 5 inch diameter faceplate, medium flood optics and integral driver for use with one (1) 13 watt LED at 3000K CCT. Satin Chrome finish.</td>
</tr>
<tr>
<td>D2</td>
<td>2</td>
<td>LIGHTING SCIENCE GROUP LED BULB 4 W</td>
<td>8.5 W</td>
<td>13.5 WATTS</td>
</tr>
<tr>
<td>P1</td>
<td>1</td>
<td>POULSEN # PH5-1/23/CF</td>
<td>13.5 W</td>
<td>Pendant (white cord) mounted decorative fixture with spun aluminum components for use with one (1) 23 watt self-ballasted compact fluorescent lamp with medium base. White finish. 13.5 WATTS</td>
</tr>
<tr>
<td>P2</td>
<td>1</td>
<td>CARAVAGIO PENDANT</td>
<td>12 W</td>
<td>40 WATTS</td>
</tr>
<tr>
<td>P3</td>
<td>1</td>
<td>100 W</td>
<td>100 W</td>
<td>100 W</td>
</tr>
<tr>
<td>T1</td>
<td>1</td>
<td>ARTEMIDE 'Tolomeo Micro LED Floor'</td>
<td>60 W</td>
<td>Floor lamp with adjustable arm and task light for use with five (5) 2 watt LEDs. Chromed steel finish. LEDs are included in fixture part number.</td>
</tr>
<tr>
<td>T2</td>
<td>1</td>
<td>ARTEMIDE 'Itis Table'</td>
<td>60 W</td>
<td>Desk lamp with adjustable arm and task light for use with seven (7) .57 watt LEDs. Gloss White finish. Integral dimmer switch at base.</td>
</tr>
<tr>
<td>W3</td>
<td>1</td>
<td>FLOS MINI BALL</td>
<td>16 W</td>
<td>35 WATTS</td>
</tr>
</tbody>
</table>

**REFERENCES**

- **05 12 00.A1 STEEL BRACING WITH WOOD CROSS TIES**
- **06 01 10.A1 1X3R**

**REFERENCE KEYNOTES**

**SHEET KEYNOTES**

**LIGHTING SCHEDULE**

<table>
<thead>
<tr>
<th>Type</th>
<th>Mark COUNT</th>
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<tbody>
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<tr>
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<td>10</td>
<td>SAME AS C1</td>
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<tr>
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<td>2</td>
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<td>13.5 WATTS</td>
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<td>12 W</td>
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<td>100 W</td>
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<td>W3</td>
<td>1</td>
<td>FLOS MINI BALL</td>
<td>16 W</td>
<td>35 WATTS</td>
</tr>
</tbody>
</table>
### Service Entrance Calculations - Standard Method

<table>
<thead>
<tr>
<th>Description</th>
<th>Voltage</th>
<th>Amp (Brake)</th>
<th>Amp (Max)</th>
<th>VA (Kilo-volts)</th>
<th>Model</th>
<th>Wire Specification</th>
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</thead>
<tbody>
<tr>
<td>2. 230 VAC Kitchen Appliance Circuits @ 1500VA</td>
<td>120</td>
<td>110</td>
<td>170</td>
<td>20,400</td>
<td>240</td>
<td>#8-5-6/0-GG</td>
</tr>
<tr>
<td>3. Oven</td>
<td>220</td>
<td>30</td>
<td>45</td>
<td>7,200</td>
<td>Bosch - MT330UC 30&quot;</td>
<td>#8-6/0-GG</td>
</tr>
<tr>
<td>4. Dryer</td>
<td>240</td>
<td>40</td>
<td>60</td>
<td>12,000</td>
<td>LG DUE3351 Dryer</td>
<td>#8-6/0-GG</td>
</tr>
<tr>
<td>5. Heat Pump Indoor Unit</td>
<td>277.5</td>
<td>15</td>
<td>23</td>
<td>6,975</td>
<td>Mitsubishi Mr. Slim PK-53 AXQG</td>
<td>#8-6/0-GG</td>
</tr>
<tr>
<td>6. Domestic Water Pump</td>
<td>240</td>
<td>30</td>
<td>40</td>
<td>6,650</td>
<td>Grundfos MQ</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>7. H2O Heater</td>
<td>240</td>
<td>40</td>
<td>60</td>
<td>20,000</td>
<td>Vaillant Kombi 80</td>
<td>#8-6/0-GG</td>
</tr>
<tr>
<td>8. ERV</td>
<td>200</td>
<td>40</td>
<td>60</td>
<td>12,000</td>
<td>Zehnder Condor 200</td>
<td>#10-6/0-GG</td>
</tr>
<tr>
<td>9. Solar Thermal Pump (STP)</td>
<td>115</td>
<td>20</td>
<td>30</td>
<td>3,850</td>
<td>Sunch Air SE1</td>
<td>#8-6/0-GG</td>
</tr>
<tr>
<td>10. Sewage Pump (WPD)</td>
<td>140</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Liberty 341A/FL</td>
<td>#8-6/0-GG</td>
</tr>
<tr>
<td>11. Dishwasher</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>LG WM3000HW</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>12. Washer</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>LG WM3000HW</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>13. Refrigerator</td>
<td>160</td>
<td>20</td>
<td>30</td>
<td>7,000</td>
<td>French Door 18.5 cu.ft.</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>14. Microwave</td>
<td>1500</td>
<td>20</td>
<td>30</td>
<td>60,000</td>
<td>Sharp</td>
<td>#10-2/0-GG</td>
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<tr>
<td>15. Range Hood</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Dacor DM480S</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>16. Lighting Circuit 1</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Dacor DM480S</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>17. Lighting Circuit 2</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Dacor DM480S</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>18. Lighting Circuit 3</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Dacor DM480S</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>19. Lighting Circuit 4</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Dacor DM480S</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>20. Landscape Lighting</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Dacor DM480S</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>21. Lighting Branch Choker</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Dacor DM480S</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>22. Lighting Branch Choker</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Dacor DM480S</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>23. Lighting Branch Choker</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Dacor DM480S</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>24. Lighting Branch Choker</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Dacor DM480S</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>25. Lighting Branch Choker</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Dacor DM480S</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>26. Lighting Branch Choker</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Dacor DM480S</td>
<td>#10-2/0-GG</td>
</tr>
<tr>
<td>27. Lighting Branch Choker</td>
<td>120</td>
<td>20</td>
<td>30</td>
<td>3,600</td>
<td>Dacor DM480S</td>
<td>#10-2/0-GG</td>
</tr>
</tbody>
</table>

### Minimum Ampacity Required for Ungrounded SE Conductors

<table>
<thead>
<tr>
<th>Description</th>
<th>Ampacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 Service Entrance</td>
<td>156.2 A</td>
</tr>
</tbody>
</table>

### Electrical Equipment Schedule

#### Schedule E-603

**HOMER HARRIS FARMHOUSE**

802 COLLEGE STREET

MIDDLEBURY, VT 05753

**E. FENDIK, A. KELLY**

**E. FENDIK, A. KELLY**

**TEAM MIDDLEBURY**

**MIDDSD@MIDDLEBURY.EDU**

**HTTP://SOLARDECATHLON.MIDDLEBURY.EDU**

**TABLE E-603**

**SCHEDULES AND SERVICE ENTRANCE SIZING**

**PROJECT IS PUBLIC DOMAIN**

**N. D. PERRY, A. KELLY**

**S. KREIS, K. ZELLER**
GENERAL SHEET NOTES

1. ALL RAMPS EQUAL TO OR GREATER THAN 36" WIDE
2. RAMP SLOPE DOES NOT EXCEED 1:12
3. DOOR PARTS OF ACCESSIBLE ROUTE HAVE 32" MIN CLEARANCE
4. ROUTE AT POINT 'A' WILL BE DIRECTED BY A PERSONNEL IN INTERVALS

REFERENCE KEYNOTES

1. 4' WIDE DISPLAY BOARDS

SHEET KEYNOTES

1. ALL RAMPS EQUAL TO OR GREATER THAN 36" WIDE
2. RAMP SLOPE DOES NOT EXCEED 1:12
3. DOOR PARTS OF ACCESSIBLE ROUTE HAVE 32" MIN CLEARANCE
4. ROUTE AT POINT 'A' WILL BE DIRECTED BY A PERSONNEL IN INTERVALS
GENERAL SHEET NOTES

1. The number of "rounds" necessary to fill/drain depends on how much water the truck(s) can provide. The two potable tanks will hold a total of 1500 gallons, so both tanks must be filled to capacity.

2. Water delivery to both potable water tanks is required. Water will be removed from two potable tanks and two wastewater tanks at the end of the competition.

3. Proper protective mats will be put down if the forklift needs to move on the grass.

4. Refer to sheet L-502 for water tank details.

5. There will be six Decathletes available at water delivery and removal times to assist in moving the hose to the proper fill and removal locations.

6. Water tanks are temporary for competition purposes.

REFERENCE KEYNOTES

01 50 00 Temporary facilities and controls
01 55 29 Staging areas
01 55 30 Entering staging area
05 12 01 Steel foundation channels
06 15 00 Wood decking
06 17 54 10' x 14' x 3' Portal Frame
22 12 01 6' diameter, 3'8" height water tank
22 12 16 Facility elevated, potable-water storage tanks
34 71 01 53' flat truck bed
34 71 02 60' oversized and step deck truck bed
41 22 01 Grove TMS 900E crane
41 22 01.A1 Min boom length
41 22 01.A2 Max boom length

SHEET NOTES

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5. There will be six Decathletes available at water delivery and removal times to assist in moving the hose to the proper fill and removal locations.

6. Water tanks are temporary for competition purposes.
1. ASSEMBLE FOUNDATION (CHANNEL A-D) RUNNING NORTH/SOUTH (STARTING WITH WESTERN MOST CHANNEL A AND WORKING EAST TO CHANNEL D) WITH JACKS AND CRIBBING.

2. USING CRANE, PLACE AND SECURE SOUTHERN MODULE (A) ON FOUNDATION, FOLLOWED BY NORTHERN MODULE (B) AND FASTEN TOGETHER. THEN SECURE WATER TANKS AND SHED ON THE NORTHERN SIDE OF HOUSE (C).

3. USING CRANE, PLACE AND SECURE ROOF TRUSSES (A-F) TO MODULES STARTING ON EAST END OF HOUSE (A) AND INSTALL MECHANICS AFTER INSTALLATION OF TRUSS B.

4. BEGIN TO INSTALL PV PANELS FROM EAST (WATER PV PANELS FIRST) END AFTER SECOND TRUSS IS SECURED TO ALLOW FOR SAFETY OF INSTALLERS.

5. INSTALL DECKING AND LANDSCAPING.

ASSEMBLY

1. UNINSTALL ALL MECHANICS.

2. DISASSEMBLE ALL LANDSCAPING AND DECKING USING FORKLIFT

3. TAKE OFF PV PANELS STARTING FROM WEST END.

4. WHEN PV PANELS ARE REMOVED, BEGIN REMOVING TRESSES WITH E AND WORKING TO A

5. REMOVE WATER TANKS AND SHED FROM SITE, FOLLOWED BY NORTHERN MODULE, FOLLOWED BY SOUTHERN MODULE

6. DISASSEMBLE FOUNDATION BEGINNING WITH CHANNEL E.
**General Sheet Notes**

**Sheet Title:** Truck Loading Diagram

**Truck Loading**

**Mark Date Description:**

- PRODUCED BY AN AUTODESK STUDENT PRODUCT

**Reference Keynotes**

- 05 12 01 Steel Foundation Channels
- 06 15 00 Wood Decking
- 06 17 54 10' 11 3/4" Wide Truss
- 06 17 55 6' 10 3/8" Wide Truss
- 06 17 56 11' 1 3/4" Wide Truss
- 06 17 57 6' Module
- 13 42 01 Northern Middle Module
- 13 42 02 Southern Middle Module
- 22 12 01 6' Diameter, 3'8" Height Water Tank
- 34 71 01 53' Flat Truck Bed
- 34 71 02 60' Oversized and Step Deck Truck Bed

**Sheet Keynotes**

**General Sheet Notes:**

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