A 14.83 X 49.83 FOOT ONE-STORY DETACHED SINGLE-FAMILY HOUSE WITH 739 ABOVE-GRADE FINISHED SQUARE FEET.

GENERAL SHEET NOTES
2. FINISHED SQUARE FOOTAGE ON CALIFORNIA ONLY WAS BASED ON PLAN DIMENSIONS ONLY; SQUARE FOOTAGE OF THE HOUSE AS BUILT MAY VARY FROM THE FINISHED SQUARE FOOTAGE OF THE HOUSE AS SHOWN ON THIS PLAN.

REFERENCE KEYNOTES

SHEET KEYNOTES

FINISHED SQUARE FOOTAGE COMPLIANCE PLAN

A1

G-101
GENERAL SHEET NOTES
1. THE HOUSE AND ALL ASSOCIATED COMPONENTS HAVE BEEN DESIGNED TO FIT WITHIN THE REQUIRED SOLAR ENVELOPE. IF ELEMENTS ARE EXPECTED TO EXCEED SHOWN DIMENSIONS OF SOLAR ENVELOPE, CONTRACTOR TO CONTACT ARCHITECT PRIOR TO PROCEEDING WITH WORK.

REFERENCE KEYNOTES

SHEET KEYNOTES
1. SOLAR ENVELOPE

PROJECT IS PUBLIC DOMAIN

1/8" = 1'-0"
C1 DECK FOOTING LOWEST POSITION

C4 DECK FOOTING HIGHEST POSITION

A1 BUILDING FOOTING LOWEST POSITION

A4 BUILDING FOOTING HIGHEST POSITION

REFERENCE KEYNOTES

01 53 00.A1 ADJUSTABLE DECK SUPPORT

SHEET KEYNOTES

49 STEEL CRIBBING CONSISTING OF TWO CROSS STACKED LAYERS. THE BOTTOM LAYER CONSISTS OF (11) HSS 2" X 2" X 1/4" X 3'-6" SANDWICHED BETWEEN (2) 1/8" X 3'-6" X 3'-6" STEEL PLATES. THE TOP LAYER CONSISTS OF (6) HSS 2" X 2" X 1/4" X 3'-6" SANDWICHED BETWEEN (2) 1/8" X 12" X 3'-6" STEEL PLATES.

147 STEEL CRIBBING, SIMILAR TO CRIBBING SHOWN ON SHEET S-101

177 WOOD CRIBBING CONSISTING OF (2) LAYERS OF (10) 4 X 4'S SANDWICHED BETWEEN (2) LAYERS OF 3/4" PLYWOOD, CROSS STACKED.

GENERAL SHEET NOTES

PRODUCED BY AN AUTODESK STUDENT PRODUCT

SHIMMING METHOD

G-501
GENERAL SHEET NOTES

1. In accordance with Rule 4-7, the footings and foundations have been designed to accommodate up to 18" of grade change. All footings have adjustable screws which accommodate the elevation change by lowering the connector without compromising the structural design. Any minor adjustments can be accommodated using wooden shims and a thin sand bed on geotextile fabric to level the ground surface.

2. For house foundation underlayment information, see details on S-101 and specification section 01 53 00.
REFERENCE KEYNOTES

- 05 52 00.A1 1-1/2" ALUMINUM HANDRAIL
- 06 20 13.B2 HIGH BACK BENCH
- 06 20 13.B3 STORAGE CABINET
- 12 93 00.A1 BICYCLE RACK
- 22 14 00.B1 HAND PUMP
- 26 27 29.A1 ELECTRICAL VEHICLE CHARGING STATION
- 26 50 00.A1 SOLAR POWERED LED SITE LIGHTING
- 30 40 00.A1 LANDSCAPE PLANTER
- 30 40 00.A2 ARTIFICIAL HEDGE
- 30 40 00.A3 LANDSCAPE STRUCTURE

SHEET KEYNOTES

- 60 REFERENCE SHEET L-105 FOR PLANTER PLAN
- 120 WATER STORAGE TANK SHADE STRUCTURE, CONSTRUCT IN 4' MODULES.

GENERAL SHEET NOTES

- SHEET TITLE: LANDSCAPE PLAN
- LOT NUMBER: L-101
- DRAWN BY: JAMES DYER
- CHECKED BY: MAURICE MALLIA
- COPYRIGHT: UNIVERSITY OF TENNESSEE
- CLIENT: U.S. DEPARTMENT OF ENERGY
- PROJECT TITLE: SOLAR DECATHLON 2011
- WWW.SOLARDECATHLON.GOV
DECK MODULE SCHEDULE

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SKIRT BOARD SCHEDULE

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GENERAL NOTES:
1. THE BOTTOM OF ALL SKIRT BOARD TO BE 2" ABOVE ANTICIPATED GRADE LEVEL.
2. REFERENCE SHEET L-501 FOR DECK MODULE SCHEDULE
3. REFERENCE SHEET L-505 FOR DECK CORNERS
4. CUT TOP OF SKIRT BOARD TO EXTEND 4" ABOVE WALKING SURFACE AND RUN PARALLEL WITH RAMP ANGLE PRIOR TO INSTALLATION.
5.センター化THE BOTTOM OF ALL SKIRT BOARD TO BE 2" ABOVE ANTICIPATED GRADE LEVEL.
6. 1 X 12 WOOD TRIM SKIRT BOARD

REFERENCE KEYNOTES
6 STEEL TREAD PLATE RAMP NOSING, REFERENCE A1/506

SHEET KEYNOTES
6 STEEL TREAD PLATE RAMP NOSING, REFERENCE A1/506

GENERAL NOTES:
1. THE BOTTOM OF ALL SKIRT BOARD TO BE 2" ABOVE ANTICIPATED GRADE LEVEL.
2. REFERENCE SHEET L-501 FOR DECK MODULE SCHEDULE
3. REFERENCE SHEET L-505 FOR DECK CORNERS
4. CUT TOP OF SKIRT BOARD TO EXTEND 4" ABOVE WALKING SURFACE AND RUN PARALLEL WITH RAMP ANGLE PRIOR TO INSTALLATION.
5. CENTER化THE BOTTOM OF ALL SKIRT BOARD TO BE 2" ABOVE ANTICIPATED GRADE LEVEL.
6. 1 X 12 WOOD TRIM SKIRT BOARD

REFERENCE KEYNOTES
6 STEEL TREAD PLATE RAMP NOSING, REFERENCE A1/506

SHEET KEYNOTES
6 STEEL TREAD PLATE RAMP NOSING, REFERENCE A1/506
NOTE: PLANTER TRAYS TO BE PROVIDED BY OTHERS

PERENNIAL SEDUM
1'-0" X 2'-0"

LOW SEDUM GRASS
1'-0" X 2'-0"

PLANTER SCHEDULE

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NOTE: PLANTER TRAYS TO BE PROVIDED BY OTHERS

1" = 1'-0"
A1 TYPICAL LOW PLANTING PLAN
A4 TYPICAL HIGH PLANTING PLAN

REFERENCE KEYNOTES

SHEET KEYNOTES

GENERAL SHEET NOTES

PLANTER PLAN AND SCHEDULE

L-105
**GENERAL SHEET NOTES**

1. Reference Sheet L-506 for guardrail detail to be provided at handrail and ramp if changes in elevation result in deck floor height being greater than 30" above grade.

**REFERENCE KEYNOTES**

- 12 93 00.A1 Bicycle rack
- 26 27 13.A1 Electrical meter housing
- 26 27 29.A1 Electrical vehicle charging station

**SHEET KEYNOTES**

160 Mount electrical vehicle charger to back of cabinet, provide additional blocking as needed. Reference Sheet E-101 for wiring.

**GENERAL SHEET NOTES**

- Mark date description
- 1. Reference Sheet L-506 for guardrail detail to be provided at handrail and ramp if changes in elevation result in deck floor height being greater than 30" above grade.
1. REFERENCE SHEET L-104 FOR DECK MODULE PLAN.
2. 1/4" GAP TYPICAL AT DECK BOARDS. NO GAP TO EXCEED 1/2".

DECK MODULE DETAILS

A1 DECK MODULE 1

A4 DECK MODULE 4

C1 DECK MODULE 2

D1 DECK MODULE 3

REFERENCE KEYNOTES

06 10 00.A2 SIMPSON STRONG TIE LUS210
06 10 00.A6 SIMPSON STRONG TIE ML26Z06 10 00.H1 2X10 TREATED WOOD FRAMING
06 15 33.A1 1 X 4 WOOD DECKING

SHEET KEYNOTES

124 ALIGN DECK BOARDS WITH THIS EDGE OF FRAME
125 FRAMING MEMBER TRIMMED DOWN AT (2) LOWER MODULES ONLY.

1/4" = 1'-0"
**RAMP AND PLANTER MODULE DETAILS**

**E1**
RAMP MODULE 2 ELEVATION

**C1**
RAMP MODULE 2

**B1**
RAMP MODULE 1 ELEVATION

**B4**
PLANTER MODULE 2

**A1**
RAMP MODULE 1

**A4**
PLANTER MODULE 1

**REFERENCE KEYNOTES**

- **06 10 00.A2** SIMPSON STRONG TIE LUS210
- **06 10 00.A5** SIMPSON STRONG TIE LUS260
- **06 10 00.A6** SIMPSON STRONG TIE ML26Z
- **06 10 00.A7** SIMPSON STRONG TIE LUC26Z
- **06 10 00.D3** 2 X 2 FURRING
- **06 10 00.F1** 2X6 TREATED WOOD FRAMING
- **06 10 00.H1** 2X10 TREATED WOOD FRAMING
- **06 11 00.G1** 2X8 TREATED WOOD FRAMING
- **06 15 33.A1** 1 X 4 WOOD DECKING

**SHEET KEYNOTES**

- **45** TYPICAL PLANTER TRAY. REFERENCE SHEET L-104 FOR PLANTER PLAN AND SCHEDULE
- **124** ALIGN DECK BOARDS WITH THIS EDGE OF FRAME
- **125** FRAMING MEMBER TRIMMED DOWN AT (2) LOWER MODULES ONLY.

**GENERAL SHEET NOTES**

1. REFERENCE SHEET L-104 FOR DECK MODULE PLAN.
2. 1/4" GAP TYPICAL AT DECK BOARDS. NO GAP TO EXCEED 1/2".
SHADE STRUCTURE DETAILS

E1 SHADE STRUCTURE PLAN DETAIL
E3 SHADE STRUCTURE PLAN DETAIL
C1 SHADE STRUCTURE FRAMING PLAN
C4 SHADE STRUCTURE SECTION
A1 SHADE STRUCTURE PLAN
A4 SHADE STRUCTURE SECTION

REFERENCE KEYNOTES
06 10 00.D3 2 X 2 FURRING
06 10 00.D5 1 X 2 FURRING
06 10 00.K1 1 X 2 FURRING ATTACHED TO SKIRT BOARD
06 15 33.A1 1 X 4 WOOD DECKING
06 20 13.A2 1 X 4 CYPRESS SKIRT BOARD

GENERAL SHEET NOTES

SHEET KEYNOTES
120 WATER STORAGE TANK SHADE STRUCTURE, CONSTRUCT IN 4' MODULES.
121 (2) 2 X 4 FRAMING SET INTO GROOVES OF TANK.
131 FRAMED HINGED OPENING TO ACCESS TANK FILL POINT BELOW

JAMES ROSE ARCHITECT CONSULTANTS
MALLIA ENGINEERING
ROSS BRYAN ASSOCIATES
RICHARD KELSO

FINISHED FLOOR GRADE
FINISHED FLOOR GRADE
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REMARK:
- OFFSET CONNECTION PLATE
- SHORT CONNECTION PLATE
- REF. D5/L-503
- REF. A5/L-503
- REF. B5/L-503

MARK DATE DESCRIPTION

PRODUCED BY AN AUTODESK STUDENT PRODUCT
GENERAL SHEET NOTES
1. REFERENCE SHEET G-501 FOR SHIMMING METHODS TO ACCOMMODATE GRADE CHANGE.

REFERENCE KEYNOTES
01 53 00.A2 ADJUSTABLE BUILDING FOOTING
05 12 00.A2 HSS12X8X5/8 BEAM
05 12 00.M43 W12X19 COLUMN
05 12 00.M70 W14X22 BEAM

SHEET KEYNOTES
47 STEEL CRIBBING CONSISTING OF TWO CROSS STACKED LAYERS. THE BOTTOM LAYER CONTAINS (11) HSS 2" X 2" X 1/4" X 2'-11" SANDWICHED BETWEEN (2) 1/8" X 2'-11" X 2'-11" STEEL PLATES. THE TOP LAYER CONTAINS (6) HSS 2" X 2" X 1/4" X 3'-6" SANDWICHED BETWEEN (2) 1/8" X 12" X 3'-6" STEEL PLATES.

49 STEEL CRIBBING CONSISTING OF TWO CROSS STACKED LAYERS. THE BOTTOM LAYER CONTAINS (11) HSS 2" X 2" X 1/4" X 3'-6" SANDWICHED BETWEEN (2) 1/8" X 3'-6" X 3'-6" STEEL PLATES. THE TOP LAYER CONTAINS (6) HSS 2" X 2" X 1/4" X 3'-6" SANDWICHED BETWEEN (2) 1/8" X 12" X 3'-6" STEEL PLATES.

127 OFFSET CRIBBING FROM CENTER OF BUILDING FOOTING 2" TOWARDS UNDERSIDE OF BUILDING TO ALLOW ROOM FOR DECK FOOTING.

FOOTING SECTION DETAIL

FOOTING SECTION DETAIL

D5 FOOTING SECTION DETAIL

S-101
FOUNDATION PLAN

SHEET TYPE

A1
FOUNDATION PLAN

1'-0" = 1/4"
## Structural Steel Schedule

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PHOTOVOLTAIC RACK PLAN

ROOF FOOTING PLAN
A-312

CORE WALL SECTION AT WEST WALL (EAST SIM)

FINISHED FLOOR
2'-6" T.O. STRUCTURE
12'-4 1/2" B.O. STRUCT.
1'-2 1/2"

FINISHED CEILING
10'-7"

S.17 S.18 S.19

T.O. PV PANELS
13'-7 1/2"

FINISHED FLOOR
2'-6" T.O. STRUCTURE
12'-4 1/2" B.O. STRUCT.
1'-2 1/2"

FINISHED CEILING
10'-7"

SHEET KEYNOTES
14 WOOD DECK, REFERENCE SHEET L-101
15 INTERIOR DRAINAGE FLOOR, REFERENCE P-501

REFERENCE KEYNOTES
05 40 00.A5 3-5/8" METAL STUD
05 40 00.F1 2" Z-CHANNEL
06 10 00.D7 1/2" EXTERIOR GRADE PLYWOOD
06 10 00.D11 3/4" PLYWOOD
06 41 00.A2 1/4" FINISHED PLYWOOD
06 60 00.A1 1-1/4" ACRYLIC AWNING, FROSTED
06 60 00.B1 1/4" ACRYLIC PANEL, FROSTED
07 21 00.A10 BATT INSULATION
07 27 00 WATER RESISTIVE WEATHER BARRIER
07 42 23.A1 COMPOSITE WOOD WALL PANEL
08 42 00.A1 ENTRANCE
09 54 00.A1 SUSPENDED PLANK ACOUSTICAL WOOD CEILING
23 23 00.A2 REFRIGERANT PIPING CONNECTOR BOX
26 31 00.A1 PHOTOVOLTAIC COLLECTORS

WALL SECTIONS

A1 WALL SECTION AT WEST WALL (EAST SIM)

A4 WALL SECTION AT ENTRANCE
1. Provide similar flashing detail at roof anchor points. Reference A1/S-103 for locations.

3. Roof membrane to wrap over roof footing and up vertical arm. Slope membrane away from footing on all sides.

**REFERENCE KEYNOTES**

1. Provide similar flashing detail at roof anchor points. Reference A1/S-103 for locations.

**SHEET KEYNOTES**

7. Roof membrane to wrap over roof footing and up vertical arm. Slope membrane away from footing on all sides.
### APPLIANCE SCHEDULE

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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NOTE: ALL LOOSE FURNITURE TO BE PROVIDED BY OTHERS*

*NOTE: ALL INTERIOR FINISHES TO HAVE A FLAME SPREAD OF LESS THAN 200.*
REFERENCE KEYNOTES

21 13 00.A1 CONCEALED SPRINKLER HEAD, 180 DEGREE SPREAD

21 13 00.B1 FIRE-SUPPRESSION SPRINKLER SYSTEM PIPING

SHEET KEYNOTES

34 FIRE-EXTINGUISHER, LOCATED IN CABINET UNDER SINK. PROVIDE ADDITIONAL FIRE-EXTINGUISHER IN CABINET UNDER EXTERIOR SINK.

86 REFERENCE SHEET P-101 FOR FIRE TANK AND FIRE PUMP

181 SPARE SPRINKLER HEADS IN BOX

GENERAL SHEET NOTES

PRODUCED BY AN AUTODESK STUDENT PRODUCT

LIVING LIGHT

FIRE PROTECTION PLAN

F-101
PLUMBING LEGEND

V1 SHUT OFF VALVE
WT1 WATER TANK
WT2 PUMP
WT3 CHECK VALVE
WT4 ELBOW TURNED DOWN
WT5 ELBOW TURNED UP
WT6 PIPE TURN
WT7 SUPPLY TANK
WT8 WASTE TANK
WT9 RAIN CATCHMENT TANK
WT10 FIRE TANK

REFERENCE KEYNOTES

21 30 00 FIRE PUMPS
22 11 16.B1 SHUT OFF VALVE
22 11 23.13 DOMESTIC WATER PACKAGE BOOSTER
22 13 36.A1 WASTE WATER PUMP
22 14 00.A1 RAIN CISTERN
22 14 00.B1 HAND PUMP

SHEET KEYNOTES

21 3" OPENING IN TANK TO RECEIVE WATER LINE
155 1" OPENING IN TANK TO RECEIVE WATER LINE
156 1 1/2" OPENING IN TANK TO RECEIVE WATER LINE
157 1 1/4" OPENING IN TANK TO RECEIVE WATER LINE

GENERAL SHEET NOTES

1. PRIMARY SUPPLY TANKS ARE FULLY SHADED FROM DIRECT SOLAR RADIATION BY DECK AND SKIRT BOARD.
2. ALL WATER TANKS ARE RAISED 3 1/2" OFF THE GROUND USING (2) 4X4 DIMENSIONAL LUMBER MEMBERS.
3. REFERENCE SHEET O-105 FOR WATER DELIVERY AND REMOVAL DETAILS.
REFERENCE KEYNOTES

- 11 31 00.A7 DISHWASHER
- 11 31 00.B1 CLOTHES WASHER
- 22 11 16.B1 SHUT OFF VALVE
- 22 13 16.A2 FLOOR DRAIN
- 22 13 16.B1 VENT STACK
- 22 13 36.A1 WASTE WATER PUMP
- 22 41 00.A1 WATER CLOSET
- 22 41 00.A5 UNDER COUNTER SINK
- 22 41 00.A7 WALL MOUNT SINK
- 22 41 00.B1 SHOWER
- 22 41 00.C1 WATER CLOSET TANK

SHEET KEYNOTES

- 21 3" OPENING IN TANK TO RECEIVE WATER LINE
- 85 TOILET NOT PLUMBED DURING COMPETITION
- 149 3" DIA. WASTE LINE TO DROP BELOW HOUSE
- At this point, reference sheet P-201.
- 150 1 1/2" DIA. WASTE LINE TO DROP BELOW HOUSE AT THIS POINT AND CONNECT TO 3" DIA. WASTE LINE, REFERENCE SHEET P-201.

GENERAL SHEET NOTES

3/8" = 1'-0"
REFERENCE KEYNOTES
11 31 00.B1 CLOTHES WASHER
22 13 16.A2 FLOOR DRAIN
22 13 16.B1 VENT STACK
22 13 36.A1 WASTE WATER PUMP
22 33 00.A1 HEAT PUMP ELECTRIC WATER HEATER
22 41 00.A1 WATER CLOSET
22 41 00.A5 UNDER COUNTER SINK
22 41 00.A7 WALL MOUNT SINK
22 41 00.C1 WATER CLOSET TANK

SHEET KEYNOTES
85 TOILET NOT PLUMBED DURING COMPETITION

GENERAL SHEET NOTES
3/8" = 1'-0" A1 WASTE PLUMBING ELEVATION EAST CORE
3/8" = 1'-0" C1 WASTE PLUMBING ELEVATION WEST CORE
REMovable Drainage Floor Module

DRAINAGE FLOOR ASSEMBLY

WEST CORE DRAINAGE FLOOR

EAST CORE DRAINAGE FLOOR

GENERAL SHEET NOTES

COORDINATE REMOVABLE DRAINAGE FLOOR UNIT Dimensions with as-built conditions.

REFERENCE KEYNOTES

178 Removable Drainage Floor Module.

REFERENCE D1/P-501.

REFERENCE KEYNOTES

1. Coordinate Removable Drainage Floor Unit Dimensions with as-built conditions.

SHEET KEYNOTES

1/2" = 1'-0"

A1 West Core Drainage Floor

A4 East Core Drainage Floor

D1 West Core Drainage Floor

D4 East Core Drainage Floor

06 15 33.A1
05 40 00.A7
06 10 00.D11
07 22 00.A2
22 13 16.A2

### WATER TANK SCHEDULE

<table>
<thead>
<tr>
<th>Tank</th>
<th>WT1</th>
<th>WT2</th>
<th>WT3</th>
<th>WT4</th>
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</thead>
<tbody>
<tr>
<td>Mark</td>
<td>ACE/DENHARTOG</td>
<td>ACE/DENHARTOG</td>
<td>ACE/DENHARTOG</td>
<td>ACE/DENHARTOG</td>
</tr>
<tr>
<td>Count</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Capacity</td>
<td>500 GALLONS</td>
<td>500 GALLONS</td>
<td>45 GALLONS</td>
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### WATER FILL AND REMOVAL SCHEDULE

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<thead>
<tr>
<th>Valve</th>
<th>Fill</th>
<th>Remove</th>
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<tbody>
<tr>
<td>V1</td>
<td>OPEN</td>
<td>CLOSED</td>
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<tr>
<td>V2</td>
<td>OPEN</td>
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<td>V3</td>
<td>OPEN</td>
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<td>V4</td>
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</tr>
<tr>
<td>V5</td>
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<tr>
<td>V6</td>
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</tr>
<tr>
<td>V7</td>
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<td>OPEN</td>
</tr>
<tr>
<td>V8</td>
<td>OPEN</td>
<td>OPEN</td>
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### THERMOSTATIC VALVE SCHEDULE

<table>
<thead>
<tr>
<th>Model</th>
<th>MIRWH35852SNW</th>
<th>MIRABELLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>1/2&quot; PEX</td>
<td>SATIN NICKLE</td>
</tr>
<tr>
<td>Temperature and Volume Control</td>
<td>NA</td>
<td>1</td>
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</tbody>
</table>

### SHOWERHEAD SCHEDULE

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<thead>
<tr>
<th>Model</th>
<th>MIRWHSHWRHDSN</th>
<th>MIRABELLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>1/2&quot; PEX</td>
<td>SATIN NICKLE</td>
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### SHORT FAUCET SCHEDULE

<table>
<thead>
<tr>
<th>Model</th>
<th>MIRWSED100PBN</th>
<th>MIRABELLE</th>
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<tbody>
<tr>
<td>Description</td>
<td>1/2&quot; PEX</td>
<td>STAINLESS STEEL</td>
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<tr>
<td>Length</td>
<td>6&quot;</td>
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### KITCHEN FAUCET SCHEDULE

<table>
<thead>
<tr>
<th>Model</th>
<th>RAVENEL</th>
<th>MIRABELLE</th>
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<td>Description</td>
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<td>STAINLESS STEEL</td>
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<tr>
<td>Length</td>
<td>8&quot;</td>
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### TOILET TANK SCHEDULE

<table>
<thead>
<tr>
<th>Model</th>
<th>WT151M</th>
<th>MIRABELLE</th>
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</thead>
<tbody>
<tr>
<td>Description</td>
<td>1/2&quot; PEX</td>
<td>HIDDEN IN WALL</td>
</tr>
</tbody>
</table>
CONNECTION TO BE MADE DURING ON-SITE CONSTRUCTION
SUPPLY WATER STORAGE TANKS
SUPPLY WATER PUMP
1" ø MAIN SUPPLY LINE INTO HOUSE
1/2" ø HOT SUPPLY PEX TYP.
1/2" ø COLD SUPPLY PEX TYP.
MANIFOLD TO HOT LINES: 5 OUTLETS
MANIFOLD TO COLD LINES: 6 OUTLETS
INDIVIDUAL 1/2"ø PEX LINES TO EACH FIXTURE
1" ø PVC OUTSIDE TO 3/4" ø PEX INSIDE

REFERENCE KEYNOTES

A1 SUPPLY ISOMETRIC

1. 3/4" PEX HOT AND COLD SUPPLY LINES TO MANIFOLDS. 1/2" PEX LINES FROM MANIFOLDS:
   (6) HOT LINES AND (5) COLD LINES. EACH FIXTURE RECEIVES ITS OWN HOT AND COLD SUPPLY LINES, EXCEPT FOR THE TOILET, WHICH RECEIVES ONLY COLD.
CONNECTION TO BE MADE DURING ON-SITE CONSTRUCTION

CUSTOM SHEET METAL DOWNSPOUT, 1-3/4" X 3"

1 1/4"ø PVC TYP.

ROOF MEMBRANE

ROOF RACK FOOTING LOCATIONS

HAN Pump

RAINWATER CISTERN

REFERENCE KEYNOTES

SHEET KEYNOTES

GENERAL SHEET NOTES

PRODUCED BY AN AUTODESK STUDENT PRODUCT
HEAT PUMP REFLECTED CEILING PLAN

REFERENCE KEYNOTES

1. USE SHEET METAL DUCT WHERE POSSIBLE, USE FLEXIBLE DUCT WHEN NECESSARY.
2. REFERENCE SHEET A-501 FOR TRANSMITTER SCHEDULE.

SHEET KEYNOTES

1. EXHAUST/OUTSIDE AIR THROUGH BOTTOM OF FACADE CAVITY, REFERENCE C1/A-502 FOR INTAKE/EXHAUST DETAIL AND A1/A-502 FOR EXTERIOR LOUVER.
2. EXHAUST GRILLE ABOVE MECHANICAL ROOM DOOR.
3. VENTILATION EXHAUST, REFERENCE SECTION 25 11 00.
4. PROVIDE CUSTOM GREASE FILTER SIZED TO MATCH GRILLE AT EXHAUST GRILLE.
5. VARIABLE SLOTTED OPENING ALONG DUCT, REFERENCE SHEET A-311. SIZE OF OPENINGS TO COORDINATE WITH PROJECT ENGINEER.
6. NO INSULATION AT SUPPLY AND RETURN DUCTS TO AND FROM CONDITIONED SPACE. ALL REMAINING DUCTS TO BE INSULATED.
1. Dashed lines represent required clearances at mechanical equipment.
2. Reference sheet E-201 for electrical equipment located in mechanical room.
# Air Distribution Equipment Schedule

<table>
<thead>
<tr>
<th>NAME</th>
<th>MATERIAL</th>
<th>MANUFACTURER</th>
<th>MODEL NO</th>
<th>LINEAR LOUVER DIFFUSER</th>
<th>CUSTOM WOOD PANEL GRILLE</th>
<th>AEROBLADE SUPPLY GRILLE</th>
<th>HEAT PUMP GRILLE COVER</th>
<th>HEAT PUMP GRILLE COVER</th>
<th>HEAT PUMP GRILLE COVER</th>
</tr>
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</table>

# Fan Schedule

<table>
<thead>
<tr>
<th>NAME</th>
<th>TYPE</th>
<th>CFM</th>
<th>RPM</th>
<th>WATTS</th>
<th>CONTROL</th>
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<tbody>
<tr>
<td>F-1</td>
<td>SP.</td>
<td>156</td>
<td>172</td>
<td>0.14</td>
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# Fan Schedule

<table>
<thead>
<tr>
<th>NAME</th>
<th>TYPE</th>
<th>CFM</th>
<th>RPM</th>
<th>WATTS</th>
<th>CONTROL</th>
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</thead>
<tbody>
<tr>
<td>F-1</td>
<td>SP.</td>
<td>156</td>
<td>172</td>
<td>0.14</td>
<td>FAN</td>
</tr>
</tbody>
</table>

# Equipment Schedule

| NAME | MANUFACTURER | MODEL NO | VOLTAGE / PHASE / Hz. | FUSE  | RUNNING CURRENT | MINIMUM CIRCUIT AMPS (MCA) | MAXIMUM FUSE AMPS (MFA) | STARTING CURRENT | NET MOISTURE TRANSFER | ELECTRICAL CHARACTERISTICS | ELECTRICAL | DESIGN MANUFACTURER NAME | OUTDOOR MODEL NO. | DESIGN MANUFACTURER MODEL NO | CONTROLS |
|------|--------------|----------|-----------------------|-------|----------------|-----------------------------|--------------------------|-------------------|----------------------|--------------------------|-------------|---------------------------|-------------------|--------------------------------|---------|-----------------------------|---------|
| RecoupAerator 200DX | FANTECH | FTXG12HVJU | 208-230/1/60 | 0.25 A/0.25 A | 0.30 A/0.30 A | 208-230/1/60 | 0.25 A/0.25 A | 3.6 AMPS | 15 AMPS | 14.5 AMPS | | | | | | | | |
VENTILATION EXHAUST FACADE PANELS ARE PERFORATED IN FRONT OF EXHAUST. SEE A-201 FOR MORE INFORMATION.

MECHANICAL OVERALL

MECHANICAL ROOM ISOMETRIC FROM BELOW

DRYER EXHAUST ISOMETRIC
1. All receptacles shall be tamper-resistant.

2. WP indicates that exterior receptacle shall be provided with a waterproof in-use cover.

3. Be provided with a water-resistant cover for electrical equipment within mechanical room.


5. Be provided with a waterproof in-use cover.


7. Contact:

   Solyndra Solar Panel. Viewed from below with solar tubes omitted for clarity.

   James Rose Architects
   Ross Bryan Associates
   Richard Kelso
   Leon Tolbert

   1715 Volunteer Blvd., RM 313
   Knoxville, TN 37996
   http://livinglightutk.com

   Produced by an Autodesk student product.
GENERAL SHEET NOTES

1. Dashed lines represent assumed interior clearances and equipment placement. Actual equipment placement and clearances should be determined prior to construction.
2. Dimensions are approximate and should be verified.

REFERENCE KEYNOTES

26 24 16.A1 DISTRIBUTION PANEL
26 24 16.B1 SOLAR LOAD CENTER
26 24 16.C1 DC DISCONNECT COMBINER
26 27 13.B1 ENERGY METER
48 19 16.A1 INVERTER

SHEET KEYNOTES

36 12" x 24" CLEAR SPACE FOR ORGANIZERS
ENCLOSURE FOR NET PV PRODUCTION
METAL PANEL BUILD OUT TO EXTEND FROM DISTRIBUTION PANEL TO FLOOR

MARK DATE DESCRIPTION
1. DASHED LINES REPRESENT CLEARANCES AROUND EQUIPMENT. ALL ELECTRICAL EQUIPMENT REQUIRE A WORKING CLEARANCE OF 30" WIDE x 36" DEEP. 30" WIDTH NOT REQUIRED TO BE CENTERED ON EQUIPMENT.
2. REFERENCE M-201 FOR MECHANICAL EQUIPMENT AND T-501 FOR CONTROL EQUIPMENT.

ELECTRICAL CLOSET ELEVATIONS

C1 SOUTH INTERIOR ELEVATION

CA NORTH INTERIOR ELEVATION

A1 WEST INTERIOR ELEVATION
### Electrical Schedules

#### Panel and Electrical Schedules

<table>
<thead>
<tr>
<th>Panel</th>
<th>Voltage</th>
<th>Phase</th>
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<th>Load</th>
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<td></td>
<td>240v L</td>
<td>120v L</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 @ 1200 VA = 1500 VA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 @ 1500 VA = 3000 VA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 @ 7680 VA = 7680 VA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>120/240V</td>
<td>3 Wires</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20 SPACE</td>
<td></td>
</tr>
</tbody>
</table>

#### Description of Electrical Connections

- **Air Conditioner**
- **Water Heater**
- **Range**
- **Range Exhaust Fan**
- **Washer**
- **Ventilation**
- **Kitchen Fixture**
- **Living Room**
- **Lighting**
- **Control**
- **Space**
- **Solar Load**
- **Grounding Panel**

#### Breakdown of Electrical Load

- **Total Connected Load**: 11,272 VA
- **Total Harmonic Content**: 4.20%
- **Total Factor**: 0.88

#### Calculation of Neutral Currents

- **K.W.H. Load**: 20.8 K.W.H.
- **K.A. Load**: 12 K.A.
- **Total Neutral Current**: 22.6 A
- **Current per Circuit**: 7.56 A

#### Electrical Instructions

- **Wiring**: Use Type THWN-2, 75 degrees C.
- **Conduit Trade Size**: Select from 310.16, use Type 'MC' cable with green insulated equipment grounding conductor.
- **Branch Circuits Rated 30A and Less**: Type 'MC' cable shall contain green insulated equipment grounding conductor.
- **Water Pump**: Select #6 Copper Ground.
- **Exterior Awning Light**: Use Type #6 Copper Ground.
- **Cooking Unit**: Select #6 Copper Ground.
- **HVAC Dampers**: Use Type #6 Copper Ground.
- **Calculations of Neutral Currents**: Use the method under 215.2(J) for calculations of neutral current.

#### Design Details

- **Panel**: 30 A
- **Space**: 12
- **Washer**: 33
- **Washing Machine**: 35
- **Washer Pumps**: 37
- **Space**: 36
- **Washing Machine**: 38
- **Washer Pumps**: 39
- **Space**: 40
- **Washer**: 6
- **Washing Machine**: 60
- **Washer Pumps**: 61
- **Space**: 62
- **Washing Machine**: 63
- **Washer Pumps**: 64
- **Space**: 66
- **Washing Machine**: 67
- **Washer Pumps**: 68
- **Space**: 69
- **Washing Machine**: 70
- **Washer Pumps**: 71
- **Space**: 72
- **Washing Machine**: 73
- **Washer Pumps**: 74
- **Space**: 75
- **Washing Machine**: 76
- **Washer Pumps**: 77
- **Space**: 78
- **Washing Machine**: 79
- **Washer Pumps**: 80
- **Space**: 81
- **Washing Machine**: 82
- **Washer Pumps**: 83
- **Space**: 84
- **Washing Machine**: 85
- **Washer Pumps**: 86
- **Space**: 87
- **Washing Machine**: 88
- **Washer Pumps**: 89
- **Space**: 90
- **Washing Machine**: 91
- **Washer Pumps**: 92
- **Space**: 93

---

**Notes**

- **Conduit Trade Size**
- **Wiring Instructions**
- **Neutral Currents**
- **Equipment Specifications**
### Transmitter Schedule

<table>
<thead>
<tr>
<th>MAIN</th>
<th>MEASUREMENT</th>
<th>LOCATION</th>
<th>MAKE</th>
<th>MODEL</th>
<th>USE</th>
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<tbody>
<tr>
<td>RTD TRANSMITTER 1</td>
<td>TEMPERATURE</td>
<td>TR-NTR</td>
<td>SCHNEIDER</td>
<td>PM300</td>
<td>POSTCOMPETITION/RESARCH</td>
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<tr>
<td>RTD TRANSMITTER 2</td>
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<td>TR-NTR</td>
<td>SCHNEIDER</td>
<td>PM300</td>
<td>POSTCOMPETITION/RESARCH</td>
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<tr>
<td>HT 1</td>
<td>RELATIVE HUMIDITY</td>
<td>SHT</td>
<td>SCHNEIDER</td>
<td>DPM100A</td>
<td>POSTCOMPETITION/RESARCH</td>
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### Sensor Schedule

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<th>LOCATION</th>
<th>QUANTITY</th>
<th>MAKE</th>
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<tbody>
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<td>HT 1</td>
<td>TEMPERATURE</td>
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<td>HFT</td>
<td>OC</td>
<td>LIGHT LEVEL/OCCUPANCY</td>
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<tr>
<td>HT 1</td>
<td>HEAT FLUX</td>
<td>T-501</td>
<td>2</td>
<td>OC</td>
<td>MS</td>
<td>OCCUPANCY</td>
</tr>
</tbody>
</table>

### General Sheet Notes

- **3" = 1'-0"**
- **1" = 0'-0"**

### Reference Keynotes

- **36**: 12' X 20' CLEAR SPACE FOR ORGANIZERS
- **146**: COMPETITION ORGANIZER DATALOGGER AND ENCLOSURE
- **158**: 1" CONDUIT THROUGH EXTERIOR WALL TO ALLOW FOR ORGANIZER'S CABLE. ACCESSIBLE PRIOR TO EXTERIOR FACADE PANEL INSTALLATION. REFERENCE A5/T-501.
- **165**: ADJUSTABLE SHELVES

### Sheet Notes

- **3" = 1'-0"** BUILDING SENSORS (ROOF)
- **0" = 0'-0"** POWER ARM RAIL SECTION
- **6" = 1'-0"** SOUTH INTERIOR ELEVATION
- **3/4" = 1'-0"** DIN RAIL LAYOUT
**STEP 1: TOOL ARRIVAL**
- Tool truck arrives
- Scissor lift arrives
- Bobcat arrives
- Survey site for footing locations
- Unload cribbing
- Layout padding for trucks to drive

**STEP 2: HOUSE ARRIVAL**
- Truck arrives with house and moves into place
- Truck airbag system plus hydraulic jacks raise and level house to desired finish floor height based on low point on site

**STEP 3: FOUNDATION SYSTEM**
- Place sand, geotextile, cribbing under house jacks
- Adjust jacks to height of leveled house
- Truck cab with gooseneck detaches from house. Truck detaches from gooseneck in front of house and turns around to pick up bogey at opposite end of the house
- Truck backs up to connect to bogey

**STEP 4: TRUCK DEPARTURE**
- Truck cab with bogey detaches from house. Truck connects bogey to gooseneck in front of the house
- Truck detaches from bogey and turns around reattach to gooseneck
- Truck departs site with gooseneck and bogey
- Remove house cover
- Remove temporary cross bracing
- Unload PV modules from inside the house

**STEP 5: INSTALL PHOTOVOLTAICS**
- Second truck arrives
- Deck modules, and jacks are removed from truck bed
- Photovoltaics are attached to the outer perimeter of the solar array
- Scissor lift departs
- Groundrods are installed and hammered into the ground

**STEP 6: UTILITY CONNECTIONS**
- Layout and connect exterior HVAC units
- Layout water storage tanks
- Connect to distribution panel and run electrical wires for final grid connection
- Organizers run their controls wires to house
- Set up sand, plywood, and jacks for modular decking
**FIRE SUPPRESSION FILL**

**SUPPLY FILL**

**NOTE:** REFERENCE SHEET O-105 FOR WATER DELIVERY DETAILS

---

**SHEET TITLE**

**LOT NUMBER:**

**DRAWN BY:**

**CHECKED BY:**

**COPYRIGHT:**

**CLIENT**

**U.S. DEPARTMENT OF ENERGY**

**WWW.SOLARDECATHLON.GOV**

---

**TEAM NAME:** JAMES ROSE ARCHITECT CONSULTANTS MALLIA ENGINEERING RICHARD BRYAN ASSOCIATES LEON TOLBERT

**ADDRESS:** UNIVERSITY OF TENNESSEE 1715 VOLUNTEER BLVD., RM 313 KNOXVILLE, TN 37996

**CONTACT:** HTTP://LIVINGLIGHTUTK.COM

---

**MARK DATE DESCRIPTION**

**D1 STEP 7: INSTALL DECKING**

- PLACE AND CONNECT MODULAR DECKING
- BEGIN TO PLACE PLANTING

**D3 STEP 8: FINISH DECKING**

- ADD STAIRS AND RAMP TO DECKING
- INSTALL RAILINGS
- INSTALL DECK LIGHTING
- INSTALL AWNINGS
- FILL SUPPLY AND FIRE SUPPRESSION TANKS

**D5 STEP 9: INTERIOR SET UP**

- FURNITURE PLACED
- KITCHENWARE AND ELECTRONICS PLACED
- FINAL GRID CONNECTION
- TESTING

**A1 STEP 10: TOOL DEPARTURE**

- TOOLS DEPART

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**O-102**

**ARRIVAL SEQUENCE**

**PHASE 2**

- PLACE AND CONNECT MODULAR DECKING
- BEGIN TO PLACE PLANTING

- ADD STAIRS AND RAMP TO DECKING
- INSTALL RAILINGS
- INSTALL DECK LIGHTING
- INSTALL AWNINGS
- FILL SUPPLY AND FIRE SUPPRESSION TANKS

- FURNITURE PLACED
- KITCHENWARE AND ELECTRONICS PLACED
- FINAL GRID CONNECTION
- TESTING

- TOOLS DEPART
**STEP 3: BEGIN TAKING APART DECKING**

- REMOVE AWNINGS
- DETACH STAIRS AND RAMP FROM DECKING
- TAKE OUT RAILINGS
- UNINSTALL DECK LIGHTING

**STEP 5: UTILITIES DISCONNECT**

- DISCONNECT EXTERIOR HVAC UNIT
- WATER REMOVAL FOR FIRE SUPPRESSION, AND WASTE WATER
- DETACH CISTERNS FOR RAINWATER CAPTURE, INTERIOR WASTE WATER, AND DISTRIBUTED WATER FROM MALL SITE
- PICK UP SAND, PLYWOOD, AND JACKS FOR MODULAR DECKING

**STEP 6: REMOVE PHOTOVOLTAICS**

- USE SCISSOR LIFT TO UNINSTALL POWER ARMS AND PHOTOVOLTAIC PANELS
- LOAD SOLAR PANELS IN THE HOUSE
- COVER HOUSE
- REMOVE TEMPORARY CROSS BRACING
- SCISSOR LIFT DEPARTS SITE
1/32" = 1'-0" 1 STEP 7: FOUNDATION SYSTEM

- Truck arrives to site and disconnects from bogey in front of the house
- Truck backs onto west side of the structure to attach the gooseneck to the house

1/32" = 1'-0" 3 STEP 8: TRUCK CONNECTION

- Truck turns around to connect to bogey
- Truck backs onto east side of the house to attach bogey
- Screw jacks adjusted to transportation height
- Pick up sand, geotextile, and cribbing for foundation on lawn

1/32" = 1'-0" 2 STEP 9: TRUCK DEPARTURE

- Truck reconnects to gooseneck and departs with house

1/32" = 1'-0" 4 STEP 10: TOOL DEPARTURE

- Tool trailer is removed from site
- Bobcat leaves site
- Remove padding for trucks to drive on lawn
- Site completely cleaned
- Crew departs

- Truck arrives to site and disconnects from bogey in front of the house
- Truck backs onto west side of the structure to attach the gooseneck to the house
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- Tool trailer is removed from site
- Bobcat leaves site
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- Site completely cleaned
- Crew departs
WATER DELIVERY:

- 500 gallons to each supply tank
- 400 gallons to fire-suppression tank

WATER DELIVERY TOTAL: 1400 gallons

WATER REMOVAL:

- 450-500 gallons from each waste tank (use hand pump to pump remaining water from rain cistern into waste tanks)
- 400 gallons from fire-suppression tank

RUN SINK PRIOR TO WATER REMOVAL TO EMPTY SUPPLY TANKS INTO WASTE TANKS. ANY REMAINING WATER WILL BE Poured directly INTO WASTE TANKS.