CASA DEL SOL DESIGN INTENT AND TARGET MARKET

The Casa Del Sol house is thoughtfully designed to reflect Southern California's Spanish heritage, gracious Mediterranean climate, desert landscape, and dynamic position between the ocean and mountains of Orange County. After the Solar Decathlon 2015 competition, Casa Del Sol will move in various parts of the community as a template for the Boomerang Generation, allowing for future Great Park Housing developments.

When approaching Casa Del Sol, one enters through the semi-private great outdoor room framed by a halo. Beyond the great outdoor room are pivot panels, wheeling features inspired by the native California poppy flower. Adapted to our home, the Southern California climate, similar to the California poppy flowers, vertical-like tongue and groove structures accompany our pivot panels to open, shut, rotate, and redirect the wind and sunlight, allowing the residents to define and adjust their environment.

The health of the occupants is nurtured with beautiful aesthetics, abundant natural light and colors, and exceptional environmental features. Outdoor living spaces to indoor living areas with natural vegetation and landscaping. A breezeway in the studio softens boundaries, improves the microclimate, and promotes the interriorization of the exterior.

The cooling effect includes beautiful aesthetics, abundant natural light and colors, and exceptional environmental features. Outdoor living spaces to indoor living areas with natural vegetation and landscaping. A breezeway in the studio softens boundaries, improves the microclimate, and promotes the interriorization of the exterior.

The Casa Del Sol house is designed for efficient energy use through sustainable materials, green building practices, and passive solar design elements. The design of the home is inspired by the Southern California poppy flower, with vertical-like tongue and groove structures accompanying our pivot panels to open, shut, rotate, and redirect the wind and sunlight, allowing the residents to define and adjust their environment.

The solar energy collection system is integrated with the roof for passive solar design elements. The roof of the home is the tech deck, providing a large area for solar energy collection for a net zero energy home with integrated cooling and heating systems and thermal envelope systems. Respect the regional solar path, we use wind-catchers and a passive envelope design solutions. Passive techniques include shade and vegetation features immediately outside windows or in outdoor living areas to pre-cool air entering the house.

Casa Del Sol personifies the cultural shift to a sustainable Southern California lifestyle, living lightly on the land, affordably, using fewer resources, while embracing current technology, allowing for future technology, supporting advanced human factors design, and allowing effortless socialization in the community. Our home supports the demands on health families and thriving communities. In master-planned Irvine, it provides a pathway for the future and mirrors upon the urban design of the past fifty years.

The健康 of the occupants is nurtured with beautiful aesthetics, abundant natural light and colors, and exceptional environmental features. Outdoor living spaces to indoor living areas with natural vegetation and landscaping. A breezeway in the studio softens boundaries, improves the microclimate, and promotes the interriorization of the exterior.

The health of the occupants is nurtured with beautiful aesthetics, abundant natural light and colors, and exceptional environmental features. Outdoor living spaces to indoor living areas with natural vegetation and landscaping. A breezeway in the studio softens boundaries, improves the microclimate, and promotes the interriorization of the exterior.

THE HEALTH OF THE OCCUPANTS IS NURTURED WITH BEAUTIFUL AESTHETICS, ABUNDANT NATURAL LIGHT AND COLORS, AND EXCEPTIONAL ENVIRONMENTAL FEATURES. NATURAL FORMS, PATTERNS AND PROCESSES WILL INSPIRE OUR HUMAN SCALED ERGONOMIC INTERIOR AND EXTERIOR DESIGN ELEMENTS. THE USE OF RAPID PROTOTYPING TECHNOLOGIES LIKE INDUSTRIAL GRADE 3D PRINTERS WILL CREATE NUMEROUS PARTS OF THE HOME LIKE 3D PRINTED FURNITURE, LIGHTING FIXTURES, NON-STRUCTURAL 'LIGHT DIRECTING' UNITS FOR THE BRISE SOLEIL, ALONG WITH OTHER CODE COMPLIANT DESIGN ELEMENTS.
MAIN HOUSE: 729.50 S.F.
STUDIO: 255.27 S.F.
TOTAL LIVING AREA: 984.77 S.F.
UNCONDITIONED SPACE: 285.77 S.F.
1. Face coverings to be worn. No exceptions.
2. No food or drinks allowed.
3. No pets allowed.
4. No loud noise.
5. No smoking.
6. No alcohol.
7. No drinking.

GENERAL NOTES

1. Finish deck height is 2'-0" from grade. Guardrails not required.
2. Egress door in accordance with IRC 311.2 and meet 32" minimum clearance in the 90-degree open position.
3. Ramp transition plate to be installed.

FIRE PROTECTION SYMBOLS

- Direction of Exit
- Fire Extinguisher
- Minimum UL 2A-10BC
- Smoke Detector
- Meeting Zone

FINISH DECK HEIGHT IS 2'-0" FROM GRADE.

GUARDRAILS NOT REQUIRED.

EGRESS DOOR IN ACCORDANCE WITH IRC 311.2 AND MEET 32" MINIMUM CLEARANCE IN THE 90-DEGREE OPEN POSITION.

RAMP TRANSITION PLATE TO BE INSTALLED.

500 ENGINEERING HALL
IRVINE, CA 92697-2700
gregory.washington@uci.edu

TEAM NAME:
TEAM ORANGE COUNTY
UNIVERSITY OF CALIFORNIA, IRVINE

ADDRESS:

CONTACT:

WWW.SOLARDECATHLON.GOV

#203
02/12/2015
95% DOE

G-102
IRRIGATION MATERIAL LEGEND

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>MANUFACT.</th>
<th>MODEL NO. / DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO SYMBOL</td>
<td>HUNTER</td>
<td>HE-10-B SELF-PIERCING BARB POINT SOURCE EMITTERS. INSTALL ON 1/2&quot; BLANK DRIPLINE TUBING. INSTALL WITH 1/4&quot; DISTRIBUTION TUBING FROM Emitter TO PLANTING.</td>
</tr>
<tr>
<td>NO SYMBOL</td>
<td>HUNTER</td>
<td>PDL-BLANK 1/2&quot; DIA. BLANK DRIPLINE TUBING. USE HUNTER PDL BARB FITTINGS</td>
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<tr>
<td>NO SYMBOL</td>
<td>NIBCO</td>
<td>T-S85-80-LF BRONZE GATE VALVE, LINE SIZE, WITH STAINLESS STEEL HANDLE</td>
</tr>
<tr>
<td>NO SYMBOL</td>
<td>HUNTER</td>
<td>PCZ-101 DRIP CONTROL ZONE KIT. INSTALL ON FINISHED SURFACE</td>
</tr>
<tr>
<td>NO SYMBOL</td>
<td>aMAINT.</td>
<td>X-CORE AUTOMATIC OUTDOOR CONTROLLER. INSTALL ON WALL AT APPROXIMATE LOCATION SHOWN</td>
</tr>
<tr>
<td>NO SYMBOL</td>
<td>N.A.</td>
<td>120 VAC ELECTRICAL POWER SOURCE</td>
</tr>
<tr>
<td>AS APPROVED</td>
<td>3M</td>
<td>PVC PIPE 3/4&quot; SCHEDULE 40 AS LATERAL LINES. FASTEN TO BUILDING STRUCTURE PER DETAIL</td>
</tr>
<tr>
<td>AS APPROVED</td>
<td>3M</td>
<td>IRRIGATION CONTROL WIRE #14 UF AWG DIRECT BURIAL (U.L. APPROVED)</td>
</tr>
<tr>
<td>AS APPROVED</td>
<td>3M</td>
<td>DEBY DIRECT BURIAL WATER-PROOF WIRE CONNECTORS FOR USE ON ALL WIRE CONNECTIONS</td>
</tr>
</tbody>
</table>
1. 2 SQ. TUBULAR STEEL FRAME
2. 6'x6" WOOD PALLET
   HINGE FROM FRAME WITH
   STAINLESS STEEL EYE BOLTS
   AND HOOKS
3. VERTICAL GARDEN TUBED
   BETWEEN WOOD PALLET
   MEMBERS, BOLT TO TOP WOOD
   MEMBER. 2" X 1/8" TUBULAR
   STEEL RAIL.
4. 2' WOOD DECK
5. PLANter OR FISH TANK
   ON CASTERS
6. HANDRAIL
7. PLANTER OR FISH TANK
   ON CASTERS
8. WINGE

9. 1 2"X4" METAL FRAME
10. 2 5/8" DIA. GALV. MACHINE BOLTS
    W/ MALLEABLE IRON WASHERS
11. 3 4X4 DOUGLAS FIR POST
12. FINISH SURFACE
13. XXX
14. LIGHT WEIGHT SOIL MIX
15. PLANT MATERIAL REFER TO PLANTING
    PLAN
16. HEAVY PLASTIC LINER
17. 2X4 SUPPORT BEAM
18. 2X4 CAP - ALL AROUND
19. VENEER TO MATCH HOUSE
    SIDING

20. 3' SQ. TUBULAR STEEL FRAME
21. 6'x6" WOOD PALLET
   HINGE FROM FRAME WITH
   STAINLESS STEEL EYE BOLTS
   AND HOOKS
22. VERTICAL GARDEN TUBED
   BETWEEN WOOD PALLET
   MEMBERS, BOLT TO TOP WOOD
   MEMBER. 2" X 1/8" TUBULAR
   STEEL RAIL.
23. 2' WOOD DECK
24. PLANter OR FISH TANK
   ON CASTERS
25. HANDRAIL
26. PLANTER OR FISH TANK
   ON CASTERS
27. WINGE

28. 1 2"X4" DOUGLAS FIR
29. 5/8" DIA. GALV. MACHINE BOLTS
   W/ MALLEABLE IRON WASHERS
30. 4X4 DOUGLAS FIR POST
31. FINISH SURFACE
32. XXX
33. LIGHT WEIGHT SOIL MIX
34. PLANT MATERIAL REFER TO PLANTING
    PLAN
35. HEAVY PLASTIC LINER
36. 2X4 SUPPORT BEAM
37. 2X4 CAP - ALL AROUND
38. VENEER TO MATCH HOUSE
    SIDING

39. 3' SQ. TUBULAR STEEL FRAME
40. 6'x6" WOOD PALLET
   HINGE FROM FRAME WITH
   STAINLESS STEEL EYE BOLTS
   AND HOOKS
41. VERTICAL GARDEN TUBED
   BETWEEN WOOD PALLET
   MEMBERS, BOLT TO TOP WOOD
   MEMBER. 2" X 1/8" TUBULAR
   STEEL RAIL.
42. 2' WOOD DECK
43. PLANter OR FISH TANK
   ON CASTERS
44. HANDRAIL
45. PLANTER OR FISH TANK
   ON CASTERS
46. WINGE

47. 1 2"X4" DOUGLAS FIR
48. 5/8" DIA. GALV. MACHINE BOLTS
   W/ MALLEABLE IRON WASHERS
49. 4X4 DOUGLAS FIR POST
50. FINISH SURFACE
51. XXX
52. LIGHT WEIGHT SOIL MIX
53. PLANT MATERIAL REFER TO PLANTING
    PLAN
54. HEAVY PLASTIC LINER
55. 2X4 SUPPORT BEAM
56. 2X4 CAP - ALL AROUND
57. VENEER TO MATCH HOUSE
    SIDING

58. 3' SQ. TUBULAR STEEL FRAME
59. 6'x6" WOOD PALLET
   HINGE FROM FRAME WITH
   STAINLESS STEEL EYE BOLTS
   AND HOOKS
60. VERTICAL GARDEN TUBED
   BETWEEN WOOD PALLET
   MEMBERS, BOLT TO TOP WOOD
   MEMBER. 2" X 1/8" TUBULAR
   STEEL RAIL.
61. 2' WOOD DECK
62. PLANter OR FISH TANK
   ON CASTERS
63. HANDRAIL
64. PLANTER OR FISH TANK
   ON CASTERS
65. WINGE

66. 1 2"X4" METAL Frame
67. 2 5/8" DIA. GALV. MACHINE BOLTS
   W/ MALLEABLE IRON WASHERS
68. 3 4X4 DOUGLAS FIR POST
69. FINISH SURFACE
70. XXX
71. LIGHT WEIGHT SOIL MIX
72. PLANT MATERIAL REFER TO PLANTING
    PLAN
73. HEAVY PLASTIC LINER
74. 2X4 SUPPORT BEAM
75. 2X4 CAP - ALL AROUND
76. VENEER TO MATCH HOUSE
    SIDING

77. 3' SQ. TUBULAR STEEL Frame
78. 6'x6" WOOD PALLET
   HINGE FROM FRAME WITH
   STAINLESS STEEL EYE BOLTS
   AND HOOKS
79. VERTICAL GARDEN TUBED
   BETWEEN WOOD PALLET
   MEMBERS, BOLT TO TOP WOOD
   MEMBER. 2" X 1/8" TUBULAR
   STEEL RAIL.
80. 2' WOOD DECK
81. PLANter OR FISH TANK
   ON CASTERS
82. HANDRAIL
83. PLANTER OR FISH TANK
   ON CASTERS
84. WINGE

85. 1 2"X4" METAL FRAME
86. 2 5/8" DIA. GALV. MACHINE BOLTS
   W/ MALLEABLE IRON WASHERS
87. 3 4X4 DOUGLAS FIR POST
88. FINISH SURFACE
89. XXX
90. LIGHT WEIGHT SOIL MIX
91. PLANT MATERIAL REFER TO PLANTING
    PLAN
92. HEAVY PLASTIC LINER
93. 2X4 SUPPORT BEAM
94. 2X4 CAP - ALL AROUND
95. VENEER TO MATCH HOUSE
    SIDING
RAISED PLANTER

VERTICAL VEGETABLE GARDEN

SCALE: 1/4" = 1'-0"
<table>
<thead>
<tr>
<th>AMBIGUOUS</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
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<tbody>
<tr>
<td>TREES</td>
<td>PLA-RAC PLATANUS RACEMOSA</td>
<td>CALIFORNIA</td>
<td>48&quot; BOX</td>
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<tr>
<td>SHRUBS</td>
<td>ARC-MAN ARCTOSTAPHYLOS MANZANTA</td>
<td>DR. HURD MANZANTA</td>
<td>48&quot; BOX</td>
</tr>
<tr>
<td></td>
<td>PHO-SUF PHORMIUM 'SURFER'</td>
<td>NEW ZEALAND FLAX</td>
<td>5 GAL.</td>
</tr>
<tr>
<td></td>
<td>DIA-CAE DIANELLA CAERULEA</td>
<td>LITTLE JESS</td>
<td>5 GAL.</td>
</tr>
<tr>
<td></td>
<td>SAL-CLE SALVIA CLEVLANDII</td>
<td>CLEVELAND SAGE</td>
<td>5 GAL.</td>
</tr>
<tr>
<td></td>
<td>AGA-DES AGAVE DESERTI</td>
<td>DESERT AGAVE</td>
<td>5 GAL.</td>
</tr>
<tr>
<td>GROUND COVER</td>
<td>SEN-SER SENECEO SERPENS</td>
<td>BLUE CHALKSTICKS</td>
<td>1 GAL.</td>
</tr>
<tr>
<td></td>
<td>ROS-OFF ROSMARINUS OFFICINALIS</td>
<td>'HUNTINGTON CARPET'</td>
<td>1 GAL.</td>
</tr>
</tbody>
</table>

APPLY A 2" LAYER OF MULCH IN ALL SHRUB AND GROUND COVER AREAS.
A. ABBREVIATIONS
- AC - Appendix
- AS - American Society of Testing Materials
- C - Conducted
- CIP - Cast In Place
- IC - Incurred
- IAS - International Association of Structural Engineers
- IBC - International Building Code
- IL - Illinois
- IS - Illinois State
- IAS - Illinois State Architect
- LEED - Leadership in Energy and Environmental Design
- M - Measured
- NFPA - National Fire Protection Association
- NFEC - National Fire Protection Engineering Code
- OSHA - Occupational Safety and Health Administration
- T - Tested
- UL - Underwriter Laboratories
- US - United States
- USC - University of Southern California
- USF - University of Southern Florida
- V - Vertical
- W - Welsh
- WP - Written
- WSDOT - Washington State Department of Transportation
- X - Horizontal
- Z - Z-Section

B. MISC.
- A - All
- A.S.I. - American Standard for Welding and Allied Processes
- B - Both
- C - Center
- CH - Centerline
- CTR - Control
- D - Dimensions
- DC - Drafting Center
- DI - Done in Kind
- E - Erection
- EL - Elevation
- F - Footing
- FL - Floor
- FO - Foundation
- FR - Frame
- G - Ground
- GF - Grade Floor
- H - Height
- H/S - Horsepower
- I - Inch
- IC - Incurred
- IAS - International Association of Structural Engineers
- J - Joint
- K - Kind
- L - Location
- M - Measurement
- M.R.C. - Measurement of Right of Center
- M.T. - Machine Tool
- M.W. - Machine Weight
- N - Note
- N.C. - No Code
- N.S. - Not Shown
- O - Opening
- P - Protection
- P.O. - Post Office
- R - Reference
- S - Size
- SC - Structural Committee
- SD - Structural Design
- S.E. - South East
- S.W. - South West
- T - Test
- TCA - Test Compendium and Acceptance
- T.D. - Top Of Deck
- T.W. - Top Of Wall
- U - Unit
- V - Vertical
- W - Weld
- W.S. - West Side
- W.T. - Width

C. REVISIONS
- 0 - Original
- A - A
- B - B
- C - C
- D - D
- E - E
- F - F
- G - G
- H - H
- I - I
- J - J
- K - K
- L - L
- M - M
- N - N
- O - O
- P - P
- Q - Q
- R - R
- S - S
- T - T
- U - U
- V - V
- W - W
- X - X
- Y - Y
- Z - Z

D. CONSTRUCTION
- A - A
- B - B
- C - C
- D - D
- E - E
- F - F
- G - G
- H - H
- I - I
- J - J
- K - K
- L - L
- M - M
- N - N
- O - O
- P - P
- Q - Q
- R - R
- S - S
- T - T
- U - U
- V - V
- W - W
- X - X
- Y - Y
- Z - Z

E. MATERIALS
- A - A
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- C - C
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- G - G
- H - H
- I - I
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- W - W
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- Y - Y
- Z - Z

F. UNITS
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- Z - Z

G. TOPICS
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- T - T
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- V - V
- W - W
- X - X
- Y - Y
- Z - Z

H. REFERENCES
- A - A
- B - B
- C - C
- D - D
- E - E
- F - F
- G - G
- H - H
- I - I
- J - J
- K - K
- L - L
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- P - P
- Q - Q
- R - R
- S - S
- T - T
- U - U
- V - V
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- X - X
- Y - Y
- Z - Z

I. PAGES
- A - A
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- C - C
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- X - X
- Y - Y
- Z - Z

J. PLANS
- A - A
- B - B
- C - C
- D - D
- E - E
- F - F
- G - G
- H - H
- I - I
- J - J
- K - K
- L - L
- M - M
- N - N
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- P - P
- Q - Q
- R - R
- S - S
- T - T
- U - U
- V - V
- W - W
- X - X
- Y - Y
- Z - Z
B. STRUCTURAL STEEL - CONTINUED

B. Horizontal Members: Place natural camber up.

C. Filler Plates: Provide at splices of parts having more than 1/8-inch difference in thickness. Filler plates to match grade of material spliced.

Oversized Holes for Anchor Bolts in Base Plates: Where oversized holes occur, provide 3-1/2-inch exposed to soil. Exposure to Weather: All structural steel (including connection elements) exposed to weather should be beveled washers where joint face slope is greater than 1:20.

5. Voltage (for all processes).
6. Actual field condition travel speed and manufacturer’s data for travel speed.
7. Electrode manufacturer’s technical information, with identification number listed, and welding procedure specification.
8. Top plate to stud, end nail
9. Stud to sole plate
10. Double studs, face nail
11. Doubled top plates, typical face nail
12. Doubled top plates, lap splice
13. Blocking between joists or rafters to top plate, toe nail
14. Rim joist to top plate, toe nail
15. Top plates, laps and intersections, face nail
16. Continuous header, two pieces...to plate, toe nail
17. 1" brace to each stud and plate, face nail
18. 1"x8" sheathing or less to each bearing, face nail
19. Above Grade, AISC Table J2.4, exceeds fillet weld size indicated on structural drawings, use AISC stipulated size.
20. Lateral Support for Beams, Rafters and Joists: CBC Section 2320.8.3.
EDGE NAILING (E.N.)

BOUNDARY NAILING (B.N.)

JOINTS 4'-0" TYP.
STAGGER END 2'-0" MIN.

PLYWOOD SHEATHING PER PLAN W/ FACE GRAIN RUNNING PERPENDICULAR TO SUPPORTS

2x4 FLAT BLOCKING W/ (2) 8d TOE NAILS OR SIMPSON "Z2" CLIP EACH END

FIELD NAILING (F.N.)

PLYWOOD PANEL JOINT

ISOMETRIC VIEW

DETAIL

EDGE NAILING (E.N.) PROVIDE 2x BLOCKING PER DETAIL TYP JOIST OR RAFTER PER PLAN

PLYWOOD JOINT

2x4 CONTINUOUS W/ 16d FACE NAILS @ 8" O/C

EDGE NAILING (E.N.)

LAPPING JOIST OR RAFTER AT SPLICE BYD.

NOTES:
1. RUN LONG DIMENSION OF PLYWOOD PANELS PERPENDICULAR TO JOIST OR RAFTER.
2. NAILING SIZE AND SPACING AS NOTED ON PLAN.
3. NAILS SHALL HAVE A MINIMUM 3/8" EDGE DISTANCE.
4. LAY OUT JOISTS IN A 4 FOOT MODULE TO COINCIDE WITH PLYWOOD PATTERN.
5. WHERE NAILS ARE SPACED @ 3" O/C OR LESS AT ADJOINING PANEL EDGES, SEE DETAIL 6/S-0X.
6. WHERE JOIST OR RAFTER LAP SPLICE OCCURS AND PLYWOOD JOINT IS CONTINUOUS, PROVIDE 2x4 CONTINUOUS PER.

JOIST SPACING PER PLAN 4'-0" MAX.

OFFICE JOIST 3 BAYS 2x4 FLAT BLOCKING AS REQUIRED UNDER STRAPS W/ SIMPSON Z2 CLIPS BOTH ENDS TO JOIST

SIMPSON MSTI60 STRAP W/ NAILS IN EVERY OTHER HOLE

SIMPSON MST48 FULLY NAILED AT EACH CORNER OF OPENING GREATER THAN 1'-6" SQUARE (4 TOTAL PER OPENING)

3x BLOCKING MATCHING JOIST DEPTH AS REQUIRED UNDER STRAPS W/ SIMPSON U HANGER BOTH ENDS TO DOUBLE JOISTS

4x HEADER MATCHING JOIST DEPTH W/ SIMPSON HU EACH END TO DOUBLE JOISTS

TYPICAL WOOD FRAMING DETAILS

PLAN VIEW AT SMALL OPENINGS AND PENETRATIONS

PLAN VIEW AT LARGER OPENINGS

ISOMETRIC VIEW

TYPICAL PLYWOOD ROOF DIAPHRAGM CONSTRUCTION

TYPICAL OPENINGS IN ROOF DECK

S-042
NOTES:

1. NOTCH and BORING NOT TO OCCUR IN SAME STUD SECTION. DO NOT OVERCUT STUDS AT NOTCHES.

2. NO MORE THAN 2 SUCCESSIVE DOUBLE STUDS MAY HAVE 60% MAX. BORED HOLES.

<table>
<thead>
<tr>
<th>NOTCH/BORE</th>
<th>% OF STUD</th>
</tr>
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<tbody>
<tr>
<td>25%</td>
<td>40%</td>
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<tr>
<td>60%</td>
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</table>

<table>
<thead>
<tr>
<th>6&quot; NOMINAL STUD SIZE</th>
<th>4&quot; NOMINAL STUD SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/8&quot;</td>
<td>1 3/8&quot;</td>
</tr>
<tr>
<td>1 3/8&quot;</td>
<td>2 1/8&quot;</td>
</tr>
</tbody>
</table>

5/8" MINIMUM EDGE DISTANCE - TYPICAL ALL STUDS

33% MAXIMUM DIAMETER OF STUD WIDTH

40% MAXIMUM STUD WIDTH NOTCH

60% MAXIMUM STUD WIDTH BORE

STUDS OR WOOD POST DOUBLE BEARING (NO NOTCHING IS ALLOWED IN DOUBLE STUDS OR POST)

PLYWOOD SHEATHING PER PLAN

DOUBLE TOP PLATE SPLICE SCHD. and DTLS.

TYPICAL WOOD FRAMING DETAILS

S-043
FOUNDATION PLAN NOTES

1. FOR GENERAL NOTES AND TYPICAL DETAILS SEE DETAIL SHEETS.

2. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR TOP OF FINISH FLOOR ELEVATIONS, DEPRESSIONS, DIMENSIONS, ELEVATIONS, LEVELS, AND LOCATIONS OF OPENINGS IN WALLS, FLOORS, ROOFS.

3. CENTER Columns, POST and STUD WALLS ON GRID LINES U.N.O.

4. DIMENSIONS ARE TO CENTER OF POSTS, COLUMNS AND STUD WALLS U.N.O. - COORDINATE W/ ARCH'L DWGS

CENTER COLUMNS, POST and STUD WALLS ON GRID LINES U.N.O.
DIMENSIONS ARE TO CENTER OF POSTS, COLUMNS and STUD WALLS
U.N.O. - COORDINATE W/ ARCH'L DWGS

1' - 10 1/2" 2' - 8 1/2"
4x6 4x6 4x6
HSS2X10 HSS2X10 HSS2X10
7'-0" 7'-0"
1/4" = 1'-0"

S-600 S-600 S-600
6x6 6x6 6x6

2x10 @ 1'-4" O.C. 2x10 @ 1'-4" O.C. 2x10 @ 1'-4" O.C.
HSS4X4X1/4 HSS4X4X1/4 HSS4X4X1/4

4x10 4x10 4x10

C10X15.3 C10X15.3 C10X15.3

6x6 6x6 6x6
Z7x2x11GA @ 1' - 4" O/C Z7x2x11GA @ 1' - 4" O/C Z7x2x11GA @ 1' - 4" O/C

1' - 10 1/2"
SOLAR DECATHLON 2015
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ROOF FRAMING PLAN NOTES

1. FOR GENERAL NOTES AND TYPICAL DETAILS SEE SHEETS.
2. INDICATES CHANGE IN ELEVATION OR CHANGE OF SLOPE AT ROOF SHEATHING.
3. ADDED ONLY AT LOCATIONS WHERE INTENT REQUIRES CLARIFICATION - SEE LOWER LEVEL PLANS OR ELEVATIONS.
4. CLARIFICATION - SEE FOUNDATION PLAN FOR SIZE.
5. INDICATES FULL HEIGHT POST OR STEEL COLUMN CONTINUING PAST MECH'L/ROOF LEVELS UNINTERRUPTED TO TOP OF PARAPET ABOVE - SEE...
6. SHEAR STUD WALL BELOW (NON-BEARING WALLS NOT SHOWN FOR CLARITY).
8. ADD SIMPSON MST60 U.N.O. WHERE TOP PLATES ARE INTERRUPTED AT POSTS/COLUMNS and PROVIDE BENT SIMPSON MST60 AT WALL CORNERS.
9. INDICATES HEADER OVER OPENING IN STUD WALL BELOW - FOR JAMB and HEADER SIZE and CONSTRUCTION SEE 1/S0.41.
10. UNLESS INDICATED OTHERWISE - PROVIDE JAMB POST OF MATERIAL SCHEDULED EVEN IF NOT SHOWN ON PLANS.
11. DENOTES AREA STRUCTURALLY DESIGNED AND PLANTED BY MODULAR CONTRACTOR (DESIGN SPECIFIED IN OWNER'S CONTRACT). 
12. ADD CLOSED AREA STRUCTURALLY DESIGNED AND PLANTED BY MODULAR CONTRACTOR (DESIGN SPECIFIED IN OWNER'S CONTRACT)
13. SHEAR STUD WALL BELOW (NON-BEARING WALLS NOT SHOWN FOR CLARITY).
14. INDICATES HEADER OVER OPENING IN STUD WALL ABOVE - FOR JAMB and HEADER SIZE and CONSTRUCTION SEE 1/S0.41.
15. UNLESS INDICATED OTHERWISE - PROVIDE JAMB POST OF MATERIAL SCHEDULED EVEN IF NOT SHOWN ON PLANS.
16. PROVIDE 2 ROWS PLYWOOD B.N. TO BEAMS, GLB'S, TRUSS TOP CHORDS, DOUBLE JOISTS, and DOUBLE RAFTERS.

ROOF FRAMING PLAN LEGEND

- SIMPSON CTC COLUMN CONNECTOR, TYP.
- 9' - 5 1/4" 13' - 5 1/2" 21' - 5 3/4" 6' - 6 3/4" 6' - 7" 6' - 10 1/2" 11' - 5 1/4"
- 9' - 9 1/4" 2' - 8 1/2" 4' - 4" 5' - 5" 1' - 10"
- 1' - 10 1/2" 4' - 3" 6' - 2" 5" 5' - 8"
- SIMPSON CCT COLUMN CONNECTOR, TYP.
- 9' - 5 1/4" 13' - 5 1/2" 21' - 5 3/4" 6' - 6 3/4" 6' - 7" 6' - 10 1/2" 11' - 5 1/4"
- 9' - 9 1/4" 2' - 8 1/2" 4' - 4" 5' - 5" 1' - 10"
- 1' - 10 1/2" 4' - 3" 6' - 2" 5" 5' - 8"
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- 9' - 5 1/4" 13' - 5 1/2" 21' - 5 3/4" 6' - 6 3/4" 6' - 7" 6' - 10 1/2" 11' - 5 1/4"
- 9' - 9 1/4" 2' - 8 1/2" 4' - 4" 5' - 5" 1' - 10"
- 1' - 10 1/2" 4' - 3" 6' - 2" 5" 5' - 8"
ROOF FRAMING PLAN NOTES

1. ROOF FRAMING PLAN LEGEND
2. ROOF FRAMING PLAN NOTES
3. ROOF SHEATHING CONSTRUCTION UNLESS INDICATED OTHERWISE - 15/32" APA RATED DOC PS1 PLYWOOD WITH 10d @ 6" O/C B.N. AND 6" E.N. - 10d @ 12" O/C F.N. - BLOCK ALL EDGES - SEE DETAIL 1/S042 PROVIDE 2 ROWS PLYWOOD B.N. TO BEAMS, GLB's, TRUSS TOP CHORDS, DOUBLE JOISTS, AND DOUBLE RAFTERS PROVIDE OPENINGS IN ROOF UP TO 4'-0" SQUARE PER DETAIL 2/S-042 SEE ARCHITECTURAL DRAWINGS FOR EXTENT OF CRICKET CONSTRUCTION ON FLAT ROOF - IN NO CASE SHALL ROOF MOUNTED EQUIPMENT PLATFORMS BEAR ON CRICKETS SEE SHEETS S-205, S-206 AND S-207 FOR MODULAR MANUFACTURER'S DESIGN DRAWINGS.
STUDIO CANOPY - SECTION 1
1/2" = 1'-0"

STUDIO CANOPY - SECTION 2
1/2" = 1'-0"

ENLARGED SECTIONS - STUDIO CANOPY

S-205
<table>
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<tr>
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<td>TYP. EXT. WALL CONN. TO (E) GRADE @ MODULAR FLOOR</td>
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<tr>
<td>08/17/2015</td>
<td>TYP. EXT. WALL CONN. TO (E) GRADE @ MODULAR FLOOR</td>
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<tr>
<td>08/17/2015</td>
<td>TYP. WOOD POST TO (E) GRADE CONN.</td>
</tr>
<tr>
<td>08/17/2015</td>
<td>TYP. WOOD POST TO (E) GRADE CONN.</td>
</tr>
</tbody>
</table>

**Typical Exterior Patio Floor Detail**

- 2x6 Studs @ 16" O/C
- Plywood sheathing, per plan
- Plywood shim as req'd

**Typical Exterior Wall Conn. On Modular Floor**

- 2x6 Studs @ 16" O/C
- Plywood sheathing, per plan
- Plywood shim as req'd

**Typical Wood Post To (E) Grade Conn.**

- 2x6 Studs @ 16" O/C
- Plywood sheathing, per plan
- Plywood shim as req'd

**Details**

- Double Post
- Single Post

**Dimensions**

- 1 1/2" = 1'-0"
ROOF PLAN NOTES

ROOF INSULATION:
10" MINERAL WOOL

ROOF SLOPE:
TYPICAL ROOF SLOPE IS 1/4":12" (2%) SLOPE MINIMUM U.O.N.

TOP OF PLATE:
TYPICAL TOP OF PLATE HEIGHT IS +9'-0" U.O.N. AT LOW ROOF
TYPICAL TOP OF PLATE HEIGHT IS +12'-0" U.O.N. AT HIGH ROOF

FLASHING LOCATIONS:
AT THE JUNCTURE OF THE ROOF AND VERTICAL SURFACES, ROOF EDGES, ROOF PENETRATIONS, ETC., FLASHING AND COUNTERFLASHING SHALL BE PROVIDED PER THE ROOF MANUFACTURER'S RECOMMENDATIONS AND, WHEN OF METAL, SHALL NOT BE LESS THAN NO. 26 GALVANIZED SHEET GAGE CORROSION-RESISTANT METAL. (CBC 1503) ALL ROOF FLASHINGS SHALL CONFORM TO SMACNA AND NRCA STANDARDS. FLASHING AND COUNTERFLASHING SHALL BE PAINTED U.O.N.
RCP PLAN NOTES

- All ceiling to be hung from underside of roof joists, below radiant cooling system, nailed into 1X6 furring strips between radiant system piping.

- Light fixtures: Refer to electrical drawings for light fixture legend and specifications.

- Sprinkler heads: Refer to fire sprinkler plans for coordination of sprinkler heads. Provide concealed heads at gypsum board ceilings, white finish typical.

RCP PLAN LEGEND

- Light fixture - pendant
- Light fixture - surface mount
- Light fixture - recessed
- Light fixture - wall mount
- Smoke detector
- Fire sprinkler
- Occupancy sensor

GYP-1: 5/8" GYP board, painted P-3
WD-2: Exterior soffit with wood slats, painted P-9

LIGHT FIXTURE - PENDANT
LIGHT FIXTURE - SURFACE MOUNT
LIGHT FIXTURE - RECESSED
LIGHT FIXTURE - WALL MOUNT
SMOKE DETECTOR
FIRE SPRINKLER
OCCUPANCY SENSOR

RCP PLAN LEGEND

- Light fixture - pendant
- Light fixture - surface mount
- Light fixture - recessed
- Light fixture - wall mount
- Smoke detector
- Fire sprinkler
- Occupancy sensor

GYP-1: 5/8" GYP board, painted P-3
WD-2: Exterior soffit with wood slats, painted P-9

RCP PLAN LEGEND

- Light fixture - pendant
- Light fixture - surface mount
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- Smoke detector
- Fire sprinkler
- Occupancy sensor

GYP-1: 5/8" GYP board, painted P-3
WD-2: Exterior soffit with wood slats, painted P-9

RCP PLAN LEGEND

- Light fixture - pendant
- Light fixture - surface mount
- Light fixture - recessed
- Light fixture - wall mount
- Smoke detector
- Fire sprinkler
- Occupancy sensor

GYP-1: 5/8" GYP board, painted P-3
WD-2: Exterior soffit with wood slats, painted P-9
A-201

SITE ELEVATIONS

W3RFR 2015 01 20 12 26 40

C1 WEST ELEVATION - SITE
SCALE: 1/4" = 1' - 0"

A1 NORTH ELEVATION - SITE
SCALE: 1/4" = 1' - 0"

CLIENT
U.S. DEPARTMENT OF ENERGY
SOLAR DECATHLON 2015
WWW.SOLARDECATHLON.GOV

TEAM NAME:
TEAM ORANGE COUNTY

ADDRESS:
UNIVERSITY OF CALIFORNIA, IRVINE
500 ENGINEERING HALL
IRVINE, CA 92697-2700

CONTACT:
gregory.washington@uci.edu

COPYRIGHT:

LOT NUMBER:
#203

DRAWN BY:

CHECKED BY:

MARK DATE DESCRIPTION
08/17/2015
AS-BUILT SET

SCALE: 1/4" = 1'-0"
FIRST FLOOR
2' - 0"

UPPER ROOF
15' - 6"

MIDDLE ROOF
13' - 0"

LOWER ROOF
11' - 0"

OPEN TO BEYOND
2' - 7 1/2"
5' - 0" R.O.
2' - 0" R.O.
6' - 0"

FIRST FLOOR
2' - 0"

UPPER ROOF
15' - 6"

MIDDLE ROOF
13' - 0"

LOWER ROOF
11' - 0"

OPEN TO BEYOND
2' - 7 1/2"
5' - 0" R.O.
2' - 0" R.O.
6' - 0"
ALL FRAMING MEMBERS TO BE 2X6 D.F., TYP.
ALL POSTS TO BE 4X4 D.F., TYP.

NOTE: SECTION DIMENSIONS INDICATE POST LENGTHS, TYP.

SLOPE: MAX 1:20

THRU-BOLT FRAMING TO POST WITH 1/2" BOLT, TYP., COUNTER SINK BOLTS WHERE MODULES MEET

2'-0 3/4"
2'-1"
2'-1"
1'-9 1/2"
1'-9"
1'-5 1/4"
1. 12" MIN. HANDRAIL EXTENSION
2. 2" X 8" FLOOR JOISTS
3. 4 X 10 BEAM (TAPERED TO GROUND)
4. ANCHOR BOLT (PER STRUCTURAL SPEC)
5. 2" X 6 WOOD DECKING
6. 2 X 4 WOOD GUIDE RAIL
7. 8" X 6" X 1/4" STEEL 'L' PLATE
8. 1:12 MAX. SLOPE RAMP
9. 8 GA STEEL TEXTURED SURFACE @ RAMP BASE
10. 3 1/2" SCREWS PER STRUCTURAL SPEC
11. 2 X 6 JOIST
12. 4 X 10 BEAM (TAPERED TO GROUND)
13. ANCHOR BOLT (PER STRUCTURAL SPEC)
14. 2 X 6 WOOD PLATE GROUND SUPPORT
15. DOUBLE 2 X 6 TRIMMED TO 1:12 SLOPE
16. 4 X 4 POST FOR HANDRAIL & GUARDRAIL SUPPORT
17. 1 1/4"-1 1/2" DIAMETER METAL HANDRAIL (CONTINUOUS)
18. HANDRAIL WALL BRACKET
19. 2 X 6 FLOOR JOISTS
20. 2 X 6 WALL BRACKET
21. 3/4"=1'-0" SCALE: 1/2" = 1'-0"
22. NORTH RAMP PLAN
23. NORTH RAMP SECTION
24. NORTH RAMP @ GROUND SURFACE
25. NORTH RAMP @ GROUND SURFACE
26. WIRE MESH FILL NOT SHOWN FOR CLARITY, TYP. MESH OPENING TO BE LESS THAN 4" IN EACH DIRECTION
27. MARK DATE DESCRIPTION
28. NORTH RAMP SET
29. AS-BUILT SET
1/4" MAX

2"

6'-8" (80") ROUGH OPENING FROM T.O. STEEL

T.O. STEEL

+0"

1/2"

FACE OF

STUD

EXTERIOR

INTERIOR

SHEET METAL FLASHING

4X4 BLOCKING TO SUPPORT DOOR TRACK

1/2" GYP. BD., PAINTED

RIGID INSULATION

2X WOOD HEADER

2X8 WOOD NAILER

PLYWOOD SHEATHING

2 LAYERS BUILDING PAPER

5/16" HARDI-PANEL, PAINTED

BACKER ROD AND SEALANT

ALUMINUM BI-FOLD DOOR SYSTEM WITH FLUSH SILL (MILGARD ALUMINUM IN BROWNSTONE)

FINISH FLOOR PER FINISH SCHEDULE

1 1/8" T&G PLYWOOD SUBSTRATE

FLOOR JOIST PER SHEET S1

CHANNEL PER SHEET S1

EXTERIOR DECKING MODULE

2X6 WOOD DECKING

FLOOR JOIST PER SHEET S1

NOTE: INSTALL DOOR PER MANUFACTURER'S DETAILS

1/4" 1/4" 5/8" 2"

FACE OF

STUD

INTERIOR

EXTERIOR

NOTE: INSTALL DOOR PER MANUFACTURER'S DETAILS

1/2" GYP. BD., PAINTED

MINERAL WOOL INSULATION

2X8 FRAMING

PLYWOOD SHEATHING

2 LAYERS BUILDING PAPER

5/16" HARDI-PANEL, PAINTED

MINERAL WOOL INSULATION

2" RIGID INSULATION

SHEET METAL FLASHING

WITH DRIP EDGE

NOTE: INSTALL DOOR PER MANUFACTURER'S DETAILS

ALIGN FACE OF DOOR FRAME WITH FACE OF STUD/MODULE LINE

FIBERGLASS OUT-SWING FRENCH DOOR W/ ADA ACCEPTABLE LOW SILL (MILGARD ULTRA SERIES IN BARK)

EXTERIOR

INTERIOR

SHEET METAL FLASHING

WITH DRIP EDGE

"A" "B" "C" "D" "E" "F" "G"

SCALE:  3" = 1'-0"

C2 BI-FOLD DOOR - HEAD AND SILL

SCALE:  3" = 1'-0"

E4 BI-FOLD DOOR - JAMB DETAIL

SCALE:  3" = 1'-0"

C4 FRENCH DOOR - HEAD AND THRESHOLD

SCALE:  3" = 1'-0"

B6 FRENCH DOOR - JAMB
ENLARGED CARPORT PLANS AND ELEVATIONS

C4 CARPORT FLOOR PLAN

E7 INTERIOR CARPORT ELEVATION 1

E8 INTERIOR CARPORT ELEVATION 2
FAUCET: SHALL NOT REQUIRE TIGHT GRASping, PINCHING, OR TWISTING OF THE WRIST. MAX. 5 LB. FORCE TO OPERATE.

WOOD CLEAT - SECURE TO BACKING IN WALL WITH (2) #10 2 1/4" LONG SHEET METAL SCREWS @ 16" O.C. AND 2" FROM EACH CORNER OF CABINET (TYP.).

CABINET INTERIOR: WHITE

PLASTIC LAMINATE FIXED PANEL AND DOOR

1/2" THICK SOLID SURFACE COUNTERTOP AND BACKSPLASH - COLOR PER ELEVATION

1 1/2" RADIUS

PLASTIC LAMINATE FRONT AND BASE

DRAWER WITH FULL EXTENSION DRAWER SLIDES

DRAWER INTERIOR: MELAMINE; COLOR: WHITE

WOOD CLEAT - SECURE TO BACKING IN WALL

1/2" 2 1/2" LONG SHEET METAL SCREWS @ 16" O.C. AND 2" FROM EACH CORNER OF CABINET (TYP.)

PLASTIC CARRIERS fixed PANEL AND DOOR

PLASTIC CARRIERS fixed PANEL AND DOOR

CASEWORK DETAILS

SCALE: 1 1/2" = 1'-0"
FIRE SPRINKLER GENERAL NOTES AND DETAILS

1. FIRE SPRINKLER GENERAL NOTES AND DETAILS

   1. FIRE SPRINKLER GENERAL NOTES AND DETAILS

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   1. FIRE SPRINKLER GENERAL NOTES AND DETAILS

   1. FIRE SPRINKLER GENERAL NOTES AND DETAILS
### Fixure Connection Schedule

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<th>MATERIAL</th>
<th>N.</th>
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<td>Plastic</td>
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<td>Floor Drain</td>
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<td>1/2</td>
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<td>L-1</td>
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<td>Bathtub</td>
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<td>WC-1</td>
<td>Water Closet</td>
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<td>Plastic</td>
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**Remarks:**
- TOTO AQUIA WALL HUNG DUAL FLUSH MODEL #CT418FG
- SCHON CENTER DRAIN PRB STRAMING MODEL #60201T
- DREAMLINE 32"x60" SINGLE THRESHOLD MODEL #DLT-1132600
- MARANELLA DANDRIGO MODEL #10025WBNS
- KRAUS KHU-101-23
- OATEY 2" ABS LOW PROFILE SHOWER DRAIN WITH 4-1/4" STRAINER MODEL #42210
- SCHON CENTER DRAIN FREE STANDING MODEL #SC70017
- INT. SCHON CENTER DRAIN FREE STANDING MODEL #SC70017
- H.V.A. MULTIPLEX MUCATION DRAIN "A" MODEL #MFC1000

### Plumbing Symbol & Abbreviations

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<td>SH</td>
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<td>FD</td>
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<td>Kitchen sink</td>
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<td>BT</td>
<td>Bathtub</td>
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<tr>
<td>WC</td>
<td>Water closet</td>
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**Equipment Schedule**

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<td>P</td>
<td>Pump</td>
<td>110</td>
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**Remarks:**
- TANK TYPE WATER-METER
- SIEMENS 2 STAGE HYDRO-PRANDITION PUMP

### Electrical Data

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<th>EQUIPMENT</th>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
<th>CAPACITY</th>
<th>VOLT</th>
<th>PHASE</th>
<th>HP</th>
<th>CYCLE</th>
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<td>WHA-'A'</td>
<td>208</td>
<td>120</td>
<td>1</td>
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</tr>
</tbody>
</table>

**Remarks:**
- WATER HAMMER ARRESTOR TYPE 'A'
UC SOLAR HOUSE
Irvine, CA 92612

M-1

M-2

230'

245'

285'

230'

MAIN LEVEL

1/4" = 1'-0"

1. Ceiling Joist Track

2. EP Heating Manifold

M100 Refer to Material List

3. Radiant Ceiling

M100 Joist Trak

MAP SERVICES
5925 148th Street West, Apple Valley, MN 55124
888.594.7726
952.997.1731
TECHNICAL.SERVICES@UPONOR.COM
WWW.UPONOR-USA.COM

DISCLAIMER
This series of drawings has been prepared by Uponor, Inc. Technical Services - Design Department as an initial design for plumbing, heating and 13d fire suppression systems for your use in the specification, bidding and six.$/(2)68&+6<67(067+(<+$9(%((135(3$5('72352)(66,21$/67$1'$5'6
2)'(6,*1$1'&216758&7,21%$6('8321,1)250$7,213529,'('%<<28
BEFORE STARTING ANY WORK ASSOCIATED WITH THIS DESIGN, IT IS MANDATORY
THAT YOU (A) MAKE A CAREFUL CHECK OF PIPE SIZE, CALCULATIONS, MATERIALS,
PLUMBING AND/OR FIRE CODES USED AND (B) HAVE THE INITIAL DESIGN REVIEWED BY
ST UPONOR, INC. TECHNICAL SERVICES - DESIGN DEPARTMENT TO DETERMINE IF THE
RESPONSIBILITY FOR THE DESIGN AND SPECIFICALLY DISCLAIMS ANY WARRANTIES
6+$//%(<28562/(5(63216,%,/,7<72(1685(7+(6<67(0:,//)81&7,21,1
$&&25'$1&(:,7+$//$33/,&$%/(&2'(6$1'7263(&,),&$7,216
9. ELECTRICAL CONTRACTOR SHALL PROVIDE LIGHTING FIXTURE MOUNTING KITS AS REQUIRED TO SUIT THE EXACT TYPE OF CEILING TO WHICH THEY ARE MOUNTED. PROVIDE GREEN EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDER AND BRANCH CIRCUIT CONDUITS SIZED SHEET E-601 FOR TYPICAL REQUIREMENTS. PER NEC 250-122.

10. PROVIDE ALL MATERIALS AND LABOR AS REQUIRED TO ACHIEVE A COMPLETE AND OPERATIONAL SYSTEM.

11. ALL EQUIPMENT SHALL BE NEW AND BEAR A "UL" LABEL - U.O.N. ELECTRICAL CONTRACTOR SHALL SECURE AND PAY FOR ALL NECESSARY BUILDING PERMITS.

12. COMPLETE ELECTRICAL INSTALLATION SHALL BE GUARANTEED IN WRITING FOR A PERIOD OF (1) YEAR - U.O.N.

13. MECHANICAL DRAWINGS, DIAGRAMS AND SPECS FOR THOSE ITEMS REQUIRED UNDER THE ELECTRICAL ENCOUNTERED IN THE INSTALLATION OF ALL NEW EQUIPMENT, FIXTURES, DEVICES, FEEDERS, ETC. EXACT INSTALLATION METHOD AND REQUIREMENTS SHALL BE VERIFIED AND DETERMINED PRIOR TO BID DATE.

14. VERIFY PRIOR TO ANY ROUGH-IN WORK. ELECTRICAL CONTRACTOR SHALL FURNISH THE FOLLOWING SHOP DRAWINGS FOR PRIOR APPROVAL:

15. ALL DISCONNECT SWITCHES TO BE PROVIDED WITH REJECTION TYPE FUSE HOLDERS. PERFORMING ANY ROUGH-IN WORK. COMPLETE ELECTRICAL SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH THE PRESENTLY ADOPTED EDITION OF THE NEC ARTICLE 250. PENETRATIONS OF ALL FIRE RATED WALLS OR CEILINGS SHALL BE FIRE RATED IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES. PROVIDE ENGRAVED PLASTIC NAMEPLATES FOR ALL MAJOR ELECTRICAL EQUIPMENT.

16. PROVIDE THE OWNER AND THIS ENGINEER WITH ONE SET OF ELECTRICAL "AS-BUILTS" AT THE COMPLETION OF JOB.

17. PROVIDE ALL 120V SINGLE PHASE, 15 AND 20 AMP BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILAR ROOM OR AREA SHALL BE PROTECTED BY A LISTED ARC-Fault Circuit Interrupter (RCD) SUCH AS A CIRCUIT BREAKER WITH CURRENTLY ADOPTED EDITION WOMEN'S BATHROOMS, KITCHENS, OR SIMILAR AREAS ON WHICH SMALL, A.C. OR D.C. POWER SOURCES ARE LOCATED. PROVIDE ENGRAVED PLASTIC NAMEPLATES FOR ALL MAJOR ELECTRICAL EQUIPMENT.

18. PROVIDE ALL MATERIALS AND LABOR AS REQUIRED TO ACHIEVE A COMPLETE AND OPERATIONAL SYSTEM.

19. ELECTRICAL SERVICES TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT. [NEC 210.12(A)]

20. PROVIDE THE OWNER AND THIS ENGINEER WITH ONE SET OF ELECTRICAL "AS-BUILTS" AT THE COMPLETION OF JOB.

21. PROVIDE THE OWNER AND THIS ENGINEER WITH ONE SET OF ELECTRICAL "AS-BUILTS" AT THE COMPLETION OF JOB.

22. PROVIDE THE OWNER AND THIS ENGINEER WITH ONE SET OF ELECTRICAL "AS-BUILTS" AT THE COMPLETION OF JOB.

23. PROVIDE THE OWNER AND THIS ENGINEER WITH ONE SET OF ELECTRICAL "AS-BUILTS" AT THE COMPLETION OF JOB.
ALL SWITCHGEAR, PANELBOARDS, ETC. ARE TO BE UL LISTED FOR THEIR LOCATION AND
HEREINUNDER. ALL EQUIPMENT SHALL MOLD-OUT SIDE OF PANELS. TIGHTEN ALL BOLTS
AND SCREWS PROPERLY. NO SELF ADHESIVE NAMEPLATES ARE ALLOWED.

ALL FEEDERS ARE BASED ON COPPER CONDUCTORS AND SHALL CARRY A SEPARATE
GROUNDING CONDUCTOR.

ALL SWITCHBOARDS SHALL BE OF SWITCHBOARD CONSTRUCTION WITH TIN PLATED
COPPER BUSSING AND ALL SECTIONS SHALL ALIGN IN FRONT. MAIN SWITCHBOARDS
SHALL CONTAIN CUSTOMER METERING FOR VOLTAGE, AMPACITY, DEMAND AND PEAK
DEMAND PER PHASE.

SURGE PROTECTION. COORDINATE WITH LOCAL UTILITY COMPANY.

ALL DISTRIBUTION BOARDS SHALL BE OF SWITCHBOARD CONSTRUCTION WITH TIN
PLATED COPPER BUSSING WITH A DEPTH OF LESS THAN 14" AND ALL SECTIONS SHALL
ALIGN IN FRONT. ALL PANELBOARDS SHALL BE OF PANELBOARD CONSTRUCTION WITH TIN PLATED
COPPER BUSSING, BOLT-IN BREAKERS, FACTORY INSTALLED MAINS, DEAD FRONT
COVERS WITH LOCKABLE DOOR, AND PANEL DIRECTORY PER PANEL SCHEDULE WHICH
IS PART OF THESE CONSTRUCTION DOCUMENTS.

511, AND/OR 514 SHALL BE INSTALLED 18" ABOVE FLOOR LINE TO BOTTOM OF PANEL AND
STARTERS, ETC.) SHALL HAVE A NAMEPLATE. THE NAMEPLATE SHALL BE PHENOLIC WITH
PANELBOARDS, MOTOR CONTROL CENTERS, DISCONNECTS, STARTERS, ETC:

* LINE 1 = 3/8" LETTERS, LINES 2, 3, & 4 = 1/4" LETTERS

ALL NAMEPLATES SHALL BE FASTENED WITH A MINIMUM OF TWO (2) SCREWS. NO SELF
ADHESIVE NAMEPLATES ARE ALLOWED. ALL CONDUCTORS HAVE BEEN REVIEWED FOR VOLTAGE DROP. CONTRACTOR IS TO

LENGTH. ALL FLOOR-STANDING EQUIPMENT LOCATED AT GRADE OR BELOW SHALL HAVE A
MINIMUM 4" HIGH HOUSEKEEPING PAD INSTALLED UNDER THEM. PAD SHALL EXTEND 4"
BEYOND EQUIPMENT FOOTPRINT IN ALL DIRECTIONS. THE INSTALLATION OF A PAD
SHALL ALSO APPLY TO EQUIPMENT THAT MIGHT BE SUSCEPTIBLE TO WATER DAMAGE
THAT IS LOCATED IN AREAS OTHER THAN AT GRADE. PROVIDE ALL ASSOCIATED COSTS FOR THIRD PARTY TESTING FOR ALL EQUIPMENT,

ALL NEW TRANSFORMERS SHALL BE OF COPPER CORE WINDINGS WITH MINIMUM 105°
TEMPERATURE RISE, U.O.M.

1. ALL SWITCHGEAR, PANELBOARDS, ETC. ARE TO BE UL LISTED FOR THEIR LOCATION AND
HEREINUNDER. ALL EQUIPMENT SHALL MOLD-OUT SIDE OF PANELS. TIGHTEN ALL BOLTS
AND SCREWS PROPERLY. NO SELF ADHESIVE NAMEPLATES ARE ALLOWED.

2. ALL FEEDERS ARE BASED ON COPPER CONDUCTORS AND SHALL CARRY A SEPARATE
GROUNDING CONDUCTOR.

3. ALL SWITCHBOARDS SHALL BE OF SWITCHBOARD CONSTRUCTION WITH TIN PLATED
COPPER BUSSING AND ALL SECTIONS SHALL ALIGN IN FRONT. MAIN SWITCHBOARDS
SHALL CONTAIN CUSTOMER METERING FOR VOLTAGE, AMPACITY, DEMAND AND PEAK
DEMAND PER PHASE.

4. SURGE PROTECTION. COORDINATE WITH LOCAL UTILITY COMPANY.

5. ALL DISTRIBUTION BOARDS SHALL BE OF SWITCHBOARD CONSTRUCTION WITH TIN
PLATED COPPER BUSSING WITH A DEPTH OF LESS THAN 14" AND ALL SECTIONS SHALL
ALIGN IN FRONT. ALL PANELBOARDS SHALL BE OF PANELBOARD CONSTRUCTION WITH TIN PLATED
COPPER BUSSING, BOLT-IN BREAKERS, FACTORY INSTALLED MAINS, DEAD FRONT
COVERS WITH LOCKABLE DOOR, AND PANEL DIRECTORY PER PANEL SCHEDULE WHICH
IS PART OF THESE CONSTRUCTION DOCUMENTS.
Panel "AC" shall be located in Utility Room 114

Panel "DC" shall be located in Utility Room 114

Provide Square D UL489 60VDC-rated Multi 9 C60 Circuit Breakers in Multi 9 Mounting Base/Panel
GENERAL NOTES
1. FOR LIGHTING FIXTURE SCHEDULE, SEE E-301.
2. FOR PANEL "DC" SEE SCHEDULE ON E-102.
3. FOR LIGHTING CONTROL SCHEMATIC DETAIL 1/E-603
4. FOR LIGHTING CONTROL STATIONS/ZONES SEE SCHEDULE ON E-102.

LIGHTING CONTROLS
1. WALL ENTER SIGNAL SENSOR - HAND PULL
2. S-CHANNEL SWITCH - OPTUM SP 2X
3. C-CHANNEL SWITCH - OPTUM HP 2X
4. SWITCH MOUNTED SENSOR - LIGHTING fix
5. OCCUPANCY SENSOR - LIGHTING fix
6. OCCUPANCY SENSOR - MP-12
7. OCCUPANCY SENSOR - MP-9/13
8. ENTRANCE SENSOR - LCH-4000-DE

LIGHTING PLAN AND DETAILS
E-301
<table>
<thead>
<tr>
<th>TYPE</th>
<th>MANUFACTURER</th>
<th>LAMP TYPE &amp; TYPE</th>
<th>BALLAST</th>
<th>WATTAGE</th>
<th>VOLTS</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>SUPER BRIGHT LEDS #GLUX SERIES</td>
<td>3W LED</td>
<td>NONE</td>
<td>3 W</td>
<td>12 V</td>
<td>LED LANDSCAPE SPOT LIGHT FIXTURE. 12VDC POWER.</td>
</tr>
<tr>
<td>B</td>
<td>SUPER BRIGHT LEDS #GLUX SERIES</td>
<td>3W LED</td>
<td>NONE</td>
<td>3 W</td>
<td>12 V</td>
<td>LED LANDSCAPE UPLIGHT FIXTURE. 12V DC POWER.</td>
</tr>
<tr>
<td>C</td>
<td>ECOLOCITYLED #RL-SC-RSX-RGB-10</td>
<td>1.7W PER FT. LED</td>
<td>NONE</td>
<td>2 W</td>
<td>24 V</td>
<td>LED LINEAR STRIP LIGHTS. 24VDC POWER.</td>
</tr>
<tr>
<td>D</td>
<td>THELEDLIGHTING #LED PUCK LIGHTS</td>
<td>2 W</td>
<td>12 V</td>
<td>INDOOR RECESSED DOWNLIGHT. 12VDC RGB COLOR POWER.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>EUROFASE #26231-013</td>
<td>3W LED</td>
<td>NONE</td>
<td>3 W</td>
<td>120 V</td>
<td>PEARL COLLECTION 1-LIGHT CHROME LED PENDANT.</td>
</tr>
<tr>
<td>F</td>
<td>MINKA LAVERY #72501-615B-L</td>
<td>10W LED</td>
<td>NONE</td>
<td>10 W</td>
<td>120 V</td>
<td>OUTDOOR SKYLINE LED WALL SCONCE.</td>
</tr>
<tr>
<td>G</td>
<td>AQLIGHTING ROPE LIGHT</td>
<td>10W LED</td>
<td>PER STRING</td>
<td>NONE</td>
<td>10 W</td>
<td>OUTDOOR SWAG ROPE LIGHTS. 12V 15FT LED FILAMENT GLOBE LIGHT STRING.</td>
</tr>
</tbody>
</table>

**LIGHTING FIXTURE SCHEDULE**

<table>
<thead>
<tr>
<th>MARK DATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/17/2015</td>
<td>AS-BUILT SET</td>
</tr>
<tr>
<td>08/17/2015</td>
<td>AS-BUILT SET</td>
</tr>
</tbody>
</table>
CEILING MOUNTED NON-SYSTEM TYPE 120 VOLT COMBO SMOKE/CO DETECTOR WITH 9 VOLT BATTERY BACK UP - KIDDE/FIREX #21007624 MODEL KN-COPE-I

CEILING MOUNTED NON-SYSTEM TYPE 120 VOLT SMOKE DETECTOR WITH 9 VOLT BATTERY BACK UP.
POURED-IN-PLACE CONCRETE OUTLET BOX INTERIOR FACEPLATE CONDUIT(S) PER PLAN

CONCRETE INTERIOR BARRIER BEHIND INTERIOR FACEPLATE. KEYED LOCK. INTERIOR FACEPLATE OPENING(S) PER PLANS. MFGR - PROVIDED CORD 

SIDE VIEW

FRONT VIEW

1 # cu., 3/4"C. TO METAL UNDERGROUND WATER PIPE

AND/OR INTERIOR METAL WATER PIPE WITHIN 5' OF POINT OF ENTRANCE INTO THE BUILDING PER ART. 250.52(A)(1).

FINISHED FLOOR

MAIN BONDING JUMPER SHALL BE SIZED AS FOLLOWS: GROUNDING ELECTRODE CONDUCTOR SHALL BE SIZED AS FOLLOWS:

2,000A

0-200A

201-400A

OVER 401A

2,500A

4,000A

3,000A SERVICE SIZE

SERVICE SIZE

0-1,000A

1,600A

1,200A

#300KCMIL

#4

#3/0

G.E.C. SIZE

#500KCMIL

#600KCMIL

#500KCMIL

M.B.J. SIZE

#250KCMIL

#3/0

#4/0

0-200 FT. OVER 200 FT. #3/0

#1/0

TELECOMMUNICATIONS GROUND CONDUCTOR MINIMUM SIZE SHALL BE BASED ON DISTANCE BETWEEN TELECOMMUNICATIONS ROOM AND SYSTEM GROUNDING BUS BAR AS FOLLOWS:

1 # cu., 3/4"C. TO TELECOMMUNICATIONS ROOM BACKBOARDS & GROUNDING BUS BARS. IF PROVIDED IN PROJECT DRAWINGS, SEE TELECOM PATHWAYS & GROUNDING RISER FOR ADDITIONAL REQUIREMENTS.

1 # cu. TO GROUNDED CONDUCTOR PER ART. 250.102. PROTECTED WITH CODE-SIZED EMT, IMC, OR RIGID CONDUIT AS CONDITIONS DICTATE.

1 # cu., 3/4"C. TO EFFECTIVELY GROUNDED METAL FRAME OF THE BLDG. PER ART. 250.52(A)(2).

(1) MINIMUM 20 FT. LENGTH OF #4 MINIMUM/ 1# BARE COPPER ENCASED IN MINIMUM 2" OF CONCRETE ALL AROUND PER ART. 250.52(A)(3). WHEN A GROUND RING IS REQUIRED ELSEWHERE IN THESE DRAWINGS, PROVIDE BARE cu CONDUCTOR CONNECTION EQUAL IN ... (A)(6), (A)(7) & 250.53 WHERE NONE OF THE ELECTRODES IN ART. 250.52 (A)(1), (A)(2), (A)(3) & (A)(4) ARE AVAILABLE.

PROVIDE CONNECTION OF GROUNDING CONDUCTORS/ BONDING JUMPERS PER ART.250.8 (TYPICAL) USING 2-HOLE CONNECTORS.

1 # cu., 3/4"C. TO UTILITY CO. TELEPHONE/CATV BACKBOARD. (3) SPARE DRILLED CONNECTION POINTS TO GROUND BUS LOCATED WITHIN BUILDING SERVICE SWITCHGEAR. PROVIDE PERMANENT TAG TO IDENTIFY EACH CONDUCTOR. 1/4"x3"x LENGTH AS REQUIRED. COPPER GROUND BUS OUTSIDE SWITCHBOARD, DRILLED AND TAPPED AS REQUIRED. PROVIDE PHENOLIC LABEL INDICATING "MAIN ELECTRICAL SERVICE GROUND". SEE ELECTRICAL SPECIFICATIONS FOR MORE INFORMATION.

PROVIDE BONDING WITH 1 # cu., 1 1/4"C. TO NEAREST METAL, WATER PIPE (HOT, COLD, SPRINKLER, SEWER, BUILDING MOUNTED - ETC), UNINTENTIONALLY UNGROUNDED BUILDING STEEL, GAS PIPE, HVAC DUCTS IN THE BUILDING PER ART. 250.104 (A), (B), & (C)

1#6 CU TO RAISED FLOOR PEDESTALS PER NEC ART. 645.15. SEE DETAIL 10 THIS SHEET FOR ADDITIONAL GROUNDING INFORMATION AND REQUIREMENTS.

NOTE: CONTRACTOR TO VERIFY/RECONCILE APPLICABLE CODE REQUIREMENTS AND ANY DEVICE HEIGHT REQUIREMENTS DEPICTED ON ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS PRIOR TO DEVICE ROUGH-IN. CONFLICTS OR LACK OF MOUNTING HEIGHT SPECIFICITY ON THE ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS SHALL BE ISSUED AS FORMAL WRITTEN RFI. DEVICE MOUNTING HEIGHT CLARIFICATIONS/SPECIFICATIONS SHALL NOT RESULT IN AN ADDITIONAL COST TO THE OWNER. MOUNTING HEIGHT INDICATED ARE IN COMPLIANCE WITH CBC SECTION 1117B.6.5 AND FIGURES 11B-5C AND 11B-5D.

MASONRY MOUNTING

MASONRY WALL

METAL MOUNTING

METAL STUD WALL

3/8" DIA. x 2 1/2" HILTI KB3 ANCHOR (ICC ESR-1385) TYPICAL ONE EACH CORNER PANEL (MAX WEIGHT 200 LBS)

#12 SMS (TYPICAL - MIN 4 PER PANEL) 16GA STUD BACKING PANEL (MAX WEIGHT 200 LBS)

48" MAX. TO TOP 15" FINISHED FLOOR WALL RECEPTACLE THERMOSTAT, SWITCH, OUTLET, CONTROL 24" MAX. TOP OF THERMOSTAT, SWITCH, OUTLET, CONTROL 34" MAX. TOP OF 

PER 1117B6.5

TOP OF

NOTE:

DETAILS

SCALE: N.T.S.

2 FLUSH EXTERIOR OUTLET BOX "WP-R" DETAIL

SCALE: N.T.S.

3 SURFACE MOUNTED PANEL DETAILS

SCALE: 12" = 1'-0"

1 MOUNTING HEIGHT OVER OBSTRUCTION

FLUSH EXTERIOR OUTLET BOX "WP-R" DETAIL

SCALE: N.T.S.

SURFACE MOUNTED PANEL DETAILS

SCALE: N.T.S.

MAIN GROUNDING BUSBAR "MGB-114" [LOCATED IN UTILITY ROOM 114]
POWER CONVERTER CABINET "PCC"

SCALE: 3" = 1'-0"

MANUFACTURER DATA FOR 780-24Vdc POWER CONVERTERS [MEAN WELL TDR-960]

MANUFACTURERS DATA FOR LED DRIVER, 24-12Vdc [MEAN WELL LDD-L]
### TYPE A
- **Manufacturer**: B SUPER BRIGHT LEDS
- **Catalog**: #GLUX SERIES
- **Wattage**: 3W
- **Volts**: 12V
- **Type**: LED Landscape Spot Light Fixture
- **Remarks**: 12VDC Power.

### TYPE B
- **Manufacturer**: C SUPER BRIGHT LEDS
- **Catalog**: #GLUX SERIES
- **Wattage**: 3W
- **Volts**: 12V
- **Type**: LED Landscape Uplight Fixture
- **Remarks**: 12V DC Power.

### TYPE C
- **Manufacturer**: ECOLOCITYLED
- **Catalog**: #RL-SC-RSX-RGB-10
- **Wattage**: 1.7W per ft.
- **Volts**: 24V
- **Type**: LED Linear Strip Lights
- **Remarks**: 24VDC Power.

### TYPE D
- **Manufacturer**: THELEDLIGHTING
- **Catalog**: #LED PUCK LIGHTS
- **Wattage**: 2W
- **Volts**: 12V
- **Type**: Indoor Recessed Downlight
- **Remarks**: 12VDC RGB Color Power.

### TYPE E
- **Manufacturer**: EUROFASE
- **Catalog**: #26231-013
- **Wattage**: 3W
- **Volts**: 120V
- **Type**: LED Pendant
- **Remarks**: Pearl Collection 1-light Chrome LED Pendant.

### TYPE F
- **Manufacturer**: MINKA LAVERY
- **Catalog**: #72501-615B-L
- **Wattage**: 10W
- **Volts**: 120V
- **Type**: Outdoor Skyline Wall Sconce
- **Remarks**: Outdoor Skyline LED.

### TYPE G
- **Manufacturer**: AQLIGHTING
- **Catalog**: ROPE LIGHT
- **Wattage**: 10W
- **Volts**: 12V
- **Type**: Outdoor Swag Rope Lights

### TYPE H
- **Manufacturer**: LIGHTING CONTROL SCHEMATIC
- **Catalog**: (REFERENCE E-301 LIGHTING PLAN)
- **Wattage**: NA
- **Volts**: NA
- **Type**: Lighting Control System
- **Remarks**: NA

---

**Lighting Control Schematic**

- **nLIGHT**: nLIGHT Gateway, nLIGHT Bridge, nLIGHT nPDM-DBX
- **nAHM**: nLIGHT nAM-AM
- **nO D**: nLIGHT nO D
- **nCM-PDT-9**: Motion Sensor
- **LDD-L**: Mean Well LDD-L
- **Solid Apollo Touch**: White fixtures, RGB fixtures

**Network Connections**
- **LAN CAT5**: EMCS
- **EMCS**: Lighting Control System

---

**Details**

- **Client**: U.S. DEPARTMENT OF ENERGY
- **Solar Decathlon 2015**: WWW.SOLARDECATHLON.GOV
- **Team Name**: TEAM ORANGE COUNTY
- **Address**: UNIVERSITY OF CALIFORNIA, IRVINE
  500 ENGINEERING HALL
  IRVINE, CA 92697-2700
- **Contact**: gregory.washington@uci.edu
- **Copyright**: TEAM ORANGE COUNTY
- **Lot Number**: #203
- **Drawn By**: 10/09/2014
- **Copyright**: 80% DOE
- **Checked By**: 10/26/2015
- **Copyright**: 95% DOE
- **Mark Date**: 08/17/2015
- **Description**: AS-BUILT SET
- **Mark Date**: 08/17/2015
  AS-BUILT SET
DEPARTURE SEQUENCE

1. INITIAL SITE LAYOUT
2. POSITION VEHICLES AND REMOVE MODULES AND PREFABRICATED ACCESSORY COMPONENTS (2 HOURS)
3. REMOVE MODULES C AND ITS PIERS (2 HOURS)
4. REMOVE MODULE B AND ITS PIERS (45 MINUTES)
5. REMOVE MODULE A AND ITS PIERS (45 MINUTES)
6. POSITION VEHICLES (15 MINUTES)
7. FINAL SITE LAYOUT

TOTAL DURATION: 4 HOURS 45 MINUTES

DECATHLETE WAY
PEDESTRIAN PATH

TRUCK TURN
RADIUS

SCALE 1/24" = 1'-0"
SEQUENCE OF THERMAL MASS DELIVERY (AND REMOVAL, IF EXCESS WATER AFTER COMPETITION)

THERMAL MASS DELIVERY AND REMOVAL

1/8" = 1'-0"