D7. CONSTRUCTION DRAWINGS SET
March 2nd, 2021
# DRAWING INDEX

1/8" = 1'-0"
ARCHITECTURAL

A. FIRE RESISTANCE COMPLIANCE

A.01 SEE CODE COMPLIANCE PLANS IN A-SERIES FOR DETAILED CODE REQUIREMENTS.

A.02 ALL UNASSOCIATED MATERIALS SHOWN BETWEEN THE FIRE RATING REQUIREMENTS SHOWN HEREIN WILL BE CLEARLY LABELED WITH A CERTIFIED ASSEMBLY TO SATISFY THE FIRE RATING.

A.03 ALL SHEETING, JOIST, AND ALL STRUCTURAL ELEMENTS TO BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FIRE RESISTANCE ASSEMBLIES SHOWN HEREIN.

A.04 BARRIERS TO FIRE RATING REQUIREMENTS SHOULD BE SEPARATED BY NOT LESS THAN 1/2" OF MATERIAL TO SATISFY THE FIRE RATING REQUIREMENTS. MATERIALS WITH LESS THAN THE RATING SHOWN WILL BE PROTECTED WITH APPROPRIATE FIRE PROTECTION WHEN NOT SHOWN IN THE DRAWINGS.

A.05 ALL DETAILS TO BE CONCEALED BETWEEN UNASSOCIATED ELEMENTS SHOULD BE CLEARLY LABELED WITH A CERTIFIED ASSEMBLY TO SATISFY THE FIRE RATING.

B. DIMENSIONING

B.01 UNLESS NOTED OTHERWISE, DIMENSIONS ARE TO SCALE OF THE FACADE OF THE WALL.

B.02 ALL DIMENSIONS ARE IN METRIC UNITS; UNLESS OTHERWISE SPECIFIED.

B.03 ALL DIMENSIONS SHOWN IN STANDARDS ARE DIMENSIONS TO THE FACE OF THE STRUCTURE.

B.04 ALL RED LINE ARE TO BE CONSIDERED PRELIMINARY AND MAY BE MODIFIED UPON RECEIPT OF ENGINEERING AND/or DRAWING CHANGES.

B.05 ALL DIMENSIONS SHALL BE VERIFIED AND COORDINATED WITH THE WORK OF ALL TRADES.

C. ADA COMPLIANCE

C.01 BASED ON U.S. ADA REQUIREMENTS, DOOR OPENINGS SHALL BE 36".

C.02 BASED ON U.S. ADA REQUIREMENTS, ALL COUNTER HEIGHTS COMPILLED ARE 34" TO THE FLOOR FINISH.

C.03 BASED ON U.S. ADA REQUIREMENTS, ALL ABOVE COUNTER CABINETS BEGIN AT 48" ABOVE FINISHED FLOOR LEVELS.

C.04 BASED ON U.S. ADA REQUIREMENTS, ALL FLOORING TRANSITIONS STRIPS AND DOOR SEALS ARE COMPLIANT.

C.05 THE HOUSE IS DESIGNED AS PER ADA GUIDELINES ISSUED BY UNITED STATES ACCESS BOARD. SPECIAL CARE NEEDS TO BE GIVEN TO THE EXECUTION OF DOORS AND OPENINGS, PASSAGEWAY CLEARANCE AND FLOOR TRANSITIONS BASED ON THE DRAWINGS.

D. INSULATION

D.01 WALLS TO ROOF OPENING, WALL TO ROOF AND WALL TO ROOF ESSENTIAL TO GENERAL ARCHITECTURAL AND ENGINEERING FACTORS.

D.02 WALLS TO ROOF OPENING, WALL TO ROOF, WALL TO ROOF ESSENTIAL TO GENERAL ARCHITECTURAL AND ENGINEERING FACTORS.

D.03 ALL JOINTS AND PENETRATIONS IN INSULATION BARRIER SHALL PROVIDE A CONTINUOUS AIR/VAPOR TIGHT ENVELOPE.

D.04 THE EXTERIOR CLADDING WILL SERVE AS RAIN SCREEN AND NOT AS AN INSULATION MATERIAL. OTHER INSULATION MATERIALS MAY BE REQUIRED TO MEET THE REQUIREMENTS OF THE CODE.

E. MECHANICAL AND ELECTRICAL AREAS

E.01 THE CONSTRUCTION METHODS SHOWN FOR THE FOLLOWING THERMAL RESISTANCE VALUES (IN #). # 36: 3/2 X 2 X 2 FOR ROOF CONSTRUCTION. # 36: 3/2 FOR FOUNDATION WALL CONSTRUCTION. # 36: 3/2 FOR WALL CONSTRUCTION. THERMAL ANALYSIS PERFORMED ON WUFI PLUSHYDROTHERMAL SIMULATION SOFTWARE.

F. EXTERIOR WALLS

F.01 THE EXTERIOR WALL AS SHOWN SHALL BE A COMPLETE SYSTEM INCLUDING ALL COMPONENTS: FIBERGLASS, FOAMBOARD, WOOD FRAMING, ACCENT WALLS, WOOD PANELS, AND ALL MOUNTING BRACKETS.

F.02 ALL EXTERIOR WALLS SHALL BE COMPLETED WITH A COMPLETE SYSTEM INCLUDING ALL COMPONENTS: FIBERGLASS, FOAMBOARD, WOOD FRAMING, ACCENT WALLS, WOOD PANELS, AND ALL MOUNTING BRACKETS.

F.03 ALL EXTERIOR WALLS SHOWN SHALL BE COMPLETE SYSTEM INCLUDING ALL COMPONENTS: FIBERGLASS, FOAMBOARD, WOOD FRAMING, ACCENT WALLS, WOOD PANELS, AND ALL MOUNTING BRACKETS.

F.04 THE EXTERIOR WALLS AS SHOWN SHALL BE COMPLETE SYSTEM INCLUDING ALL COMPONENTS: FIBERGLASS, FOAMBOARD, WOOD FRAMING, ACCENT WALLS, WOOD PANELS, AND ALL MOUNTING BRACKETS.

F.05 ALL EXTERIOR WALLS SHOWN SHALL BE COMPLETE SYSTEM INCLUDING ALL COMPONENTS: FIBERGLASS, FOAMBOARD, WOOD FRAMING, ACCENT WALLS, WOOD PANELS, AND ALL MOUNTING BRACKETS.
FINISHED SQUARE FOOTAGE

1/4" = 1'-0"

GENERAL NOTES
1. SQUARE FOOTAGE MEASUREMENT CALCULATION VERIFIED WITH ANSI Z765-2003
2. FINISHED AREA IS MEASURED AT THE FLOOR LEVEL TO THE EXTERIOR FINISHED SURFACE OF OUTSIDE WALLS
1. Ceiling height is 7'-8".
2. Slip-resistant and securely attached walking surface along entire means of egress.
3. Longest egress between A and B = 35' 6".
4. All doors are 36" wide.
5. Dimensions specified in the drawing indicate the longest egress distances traveled in the house.

**EGRESS PLAN**

1/4" = 1'-0"
UNDISTURBED SUBGRADE

#12 GALVANIZED GUY WIRES

SET ROOT CROWN AT 1" ABOVE FINISH GRADE

- 6' DIAM. MULCH AREA CLEAR OF GRASSES, WEEDS ETC., MIN 2'-3' OF MULCH

REMOVE BULB FROM TOP OF ROOT BALL
REMOVE ALL WIRE AND STRING

TREE TIE MATERIAL: SET LOOSE TO ALLOW FOR DIAMETER GROWTH

NATIVE BACKFILL SOIL
STAKES BURIED 3" BELOW FINISH GRADE

6' DIA. MULCH AREA CLEAR OF GRASSES, WEEDS ETC., MIN 2'-3' OF MULCH

SET ROOT CROWN AT 1" ABOVE FINISH GRADE

REFERENCE SHEET L000 FOR LANDSCAPE PLANT SCHEDULE

SEEDLING

FINISHED GRADE

STAKES BURIED 3" BELOW FINISH GRADE

MODULAR BOX - SECTION

1 ½ x 24
2 x 6

2 x 4 (4" raised)

PLANTING BED - SECTION

SEE SHEET L000 FOR LANDSCAPE PLANT SCHEDULE

FINISHED GRADE

STAKES BURIED 3" BELOW FINISH GRADE

MODULAR BOX - SECTION

1 ½ x 24
2 x 6

2 x 4 (4" raised)
ADA ACCESS PLAN

GENERAL NOTES
1. IN REFERENCE TO 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN, SECTION 207: WHERE MEANS OF EGRESS ARE PERMITTED BY LOCAL BUILDING OR LIFE SAFETY CODES TO SHARE A COMMON PATH OF EGRESS TRAVEL, ACCESSIBLE MEANS OF EGRESS SHALL BE PERMITTED TO SHARE A COMMON PATH OF TRAVEL.
2. CEILING HEIGHT IS STANDARD 7'-7".
3. SLIP-RESISTANT AND SECURLY ATTACHED WALKING SURFACE ALONG ENTIRE MEANS OF EGRESS.
4. ALL DOORS IN ADA ACCESS PLAN ARE AT LEAST 36" WIDE AND WHEELCHAIR ACCESSIBLE.
5. EXIT DOORS IDENTIFIED BY TACTILE SIGNS.
GENERAL STRUCTURAL NOTES

1. GENERAL NOTE:
   b. Structural Steel, Vertical, and Horizontal Design.
   c. Project Manager.
   d. Structural Engineer.

2. GENERAL REQUIREMENTS:
   a. Foundation System
   b. Structural Steel
   c. Structural Concrete
   d. Architectural Cast-in-Place
   e. Exterior Cladding Systems
   f. Interior Finish Systems

3. PLAN DIMENSIONS AND PROJECT DATUM:
   a. Plan Dimensions
   b. Project Datum
   c. Building Levels

4. GENERAL STRUCTURAL NOTES:
   a. Plan Dimensions
   b. Project Datum
   c. Building Levels

5. GENERAL REQUIREMENTS:
   a. Foundation System
   b. Structural Steel
   c. Structural Concrete
   d. Exterior Cladding Systems
   e. Interior Finish Systems

6. GENERAL STRUCTURAL NOTES:
   a. Plan Dimensions
   b. Project Datum
   c. Building Levels

7. GENERAL STRUCTURAL NOTES:
   a. Plan Dimensions
   b. Project Datum
   c. Building Levels

8. GENERAL STRUCTURAL NOTES:
   a. Plan Dimensions
   b. Project Datum
   c. Building Levels

9. GENERAL STRUCTURAL NOTES:
   a. Plan Dimensions
   b. Project Datum
   c. Building Levels

10. GENERAL STRUCTURAL NOTES:
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    b. Project Datum
    c. Building Levels

11. GENERAL STRUCTURAL NOTES:
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12. GENERAL STRUCTURAL NOTES:
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    c. Building Levels

13. GENERAL STRUCTURAL NOTES:
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    b. Project Datum
    c. Building Levels

14. GENERAL STRUCTURAL NOTES:
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    c. Building Levels

15. GENERAL STRUCTURAL NOTES:
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    b. Project Datum
    c. Building Levels

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    c. Building Levels

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21. GENERAL STRUCTURAL NOTES:
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    b. Project Datum
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25. GENERAL STRUCTURAL NOTES:
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    c. Building Levels

26. GENERAL STRUCTURAL NOTES:
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    b. Project Datum
    c. Building Levels

27. GENERAL STRUCTURAL NOTES:
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    c. Building Levels

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    c. Building Levels

31. GENERAL STRUCTURAL NOTES:
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    c. Building Levels

32. GENERAL STRUCTURAL NOTES:
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    c. Building Levels

33. GENERAL STRUCTURAL NOTES:
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    b. Project Datum
    c. Building Levels

34. GENERAL STRUCTURAL NOTES:
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    b. Project Datum
    c. Building Levels

35. GENERAL STRUCTURAL NOTES:
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    b. Project Datum
    c. Building Levels

36. GENERAL STRUCTURAL NOTES:
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    c. Building Levels

37. GENERAL STRUCTURAL NOTES:
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38. GENERAL STRUCTURAL NOTES:
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39. GENERAL STRUCTURAL NOTES:
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40. GENERAL STRUCTURAL NOTES:
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41. GENERAL STRUCTURAL NOTES:
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42. GENERAL STRUCTURAL NOTES:
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    c. Building Levels

51. GENERAL STRUCTURAL NOTES:
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59. GENERAL STRUCTURAL NOTES:
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60. GENERAL STRUCTURAL NOTES:
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CONCRETE MATERIALS

C6R.1 Specified Strength must meet the following minimum compressive strength (f_c'): 5,000 psi.
C6R.2 Provide normal weight concrete with a slump of 6-8". All centrally-placed reinforcement must be located at least 2" from the formwork.

C6R.3 Provide reinforced concrete with a slump of 6-8". All centrally-placed reinforcement must be located at least 2" from the formwork.

C6R.4 C6R.5 All concrete shall be placed in accordance with the American Concrete Institute (ACI) specifications. All concrete shall be placed in accordance with the American Concrete Institute (ACI) specifications.

CONCRETE REINFORCEMENT

C8R.1 All cold-formed steel elements shall be reinforced in accordance with the following:

C8R.2 Provide minimum reinforcement for cold-formed steel members in accordance with the following specifications:

C8R.3 Provide minimum reinforcement for cold-formed steel members in accordance with the following specifications:

C8R.4 All cold-formed steel members shall be reinforced in accordance with the following specifications:

ARCHITECTURAL CLADDING

AC1.1 Typical design notes shall be included for all structural connections of architectural cladding. A listing of connections is provided in the architectural cladding section of the drawings.

AC1.2 The use of calcium chloride and other chloride-containing agents is prohibited in the use of calcium chloride and other chloride-containing agents.

AC1.3 Provide a regular maintenance program and submit it to the owner.

AC1.4 Provide a regular maintenance program and submit it to the owner.

AC1.5 Provide a regular maintenance program and submit it to the owner.

AC1.6 All cold-formed steel framing shall be reinforced in accordance with the American Iron and Steel Institute (AISI) specifications. A listing of connections is provided in the architectural cladding section of the drawings.
SUPERIMPOSED LOAD SCHEDULE

<table>
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<tr>
<th>DESCRIPTION</th>
<th>DESIGNATION MARK</th>
<th>UNFACTORED DEAD LOAD (PSF UON)</th>
<th>UNFACTORED LIVE LOAD (PSF UON)</th>
<th>UNFACTORED SNOW LOAD (PSF UON)</th>
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<td>DECK</td>
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<td>10</td>
<td>100</td>
<td>20</td>
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<td>ROOF</td>
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<td>CANOPY</td>
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LOADING SCHEDULE

1. FIRST FLOOR

2. ROOF

3. LOADING SCHEDULE

4. OVERHANG SNOW DRIFT

5. WOOD DECK SNOW DRIFT

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LOADING DIAGRAM
FOUNDATION PLAN

1. **CONTINUOUS FROST WALL ELEVATION** = 0' - 6"
2. **ISOLATED FOOTING ELEVATION** = 0' - 0"
3. **DECK ELEVATION** = 1' - 4"
4. **INDICATES 14"X6" VENT OPENINGS ON TOP OF THE CONCRETE STEM WALL WITHIN 3' FROM CORNERS.**
FIRST FLOOR FRAMING PLAN

1. Indicates 1st floor shear wall with concrete sheathing on exterior of stud. Provide hold-down at each end of shear wall per detail 8/S502. See detail 2/S502 for fastener pattern.
2. Indicates non-structural wall for future removal.
3. Indicates flat strap x bracing on 350S200-54 studs. Provide hold-down at each end of wall panel per detail 5/S502. Provide HSS9X5X5/16 as floor joist. See S505 for fastener pattern.
4. Indicates HSS9X5X5/16
5. Indicates 7/16" wood planks
6. Indicates 3/4" thick structural 1 wood panel. See detail 1/S502 for fastener pattern.
7. Indicates 8" concrete ramp
8. Indicates 800S200-68 joists @ 24" O.C. Provide 2 rows of bridging at 1/4 points with 600S300-68 blocking. See 7/S502 for bridging detail. Rim joists shall be HSS9X5X5/16.
9. Indicates 2X8 joists @ 12" O.C. Rim joists shall be (2) 2X8.
10. Indicates (2) 2X8 girders aligned with foundation. Provide strapping points with min 3.1k load connected to outer face of rim joist where HSS floor joist is connected to inner face of rim joists.

DECK EDGE, TYP

SEE NOTE 4. ON THIS SHEET FOR IDENTITY

1/4" = 1'-0"

INDICATES 6FT SHEAR WALL WITH CONCRETE SHEATHING ON EXTERIOR OF STUD. PROVIDE HOLD-DOWN AT EACH END OF SHEAR WALL PER DETAIL 8/S502. SEE DETAIL 2/S502 FOR FASTENER PATTERN.

1. Indicates 7/16" wood planks
2. Indicates 3/4" thick structural 1 wood panel. See detail 1/S502 for fastener pattern.
3. Indicates HSS9X5X5/16

SHEET NOTES:
T/JOIST ELEVATION = 1'-0" - 3 1/2"
T/DECK ELEVATION = 1'-0" - 4 1/2"

SHEAR WALL BRACING ELEVATION, TYP

FLOOR BRACING EDGE, TYP
SEE NOTE 4 ON THE SHEET FOR IDENTITY
1. ROOF FRAMING PLAN

**Sheet Notes:**

1. ROOF JOIST ELEVATION = 10' - 6 3/4"
2. DROP CEILING ASSEMBLY BY OTHERS
3. SHEET NOTES:
   - 1/4" = 1'-0"

**Annotations:**

- **C1:** Indicates 2X8 JOISTS @ 40" O.C. W/ (2) 2X8 GIRDERS AT PERIMETER.
- **C2:** Indicates 2X8 JOISTS @ 43" O.C. W/ (2) 2X8 GIRDERS AT PERIMETER.
- **C3:** Drop Ceiling Assembly By Others
KEY PLAN

SHEET NOTES:
1. T / DECK ELEVATION = 1' - 4 1/2"
2. T / ROOF DECK ELEVATION = 10' - 7 1/2"

FIRST MODULE (WEST VIEW)
3/8" = 1'-0"

FIRST MODULE (NORTH VIEW)
3/8" = 1'-0"

FIRST MODULE (SOUTH VIEW)
3/8" = 1'-0"

FIRST MODULE (EAST VIEW)
3/8" = 1'-0"
1. FOUNDATION DETAIL

2. DECK FOUNDATION AND FRAMING CONNECTION DETAIL AT EDGE FOOTING

3. TYP DECK FOUNDATION AND FRAMING CONNECTION DETAIL

4. RAMP DETAIL
FIRST FLOOR PLAN

1/4" = 1'-0"
**General Notes and Specs:**

1. **Drawing Not to Be Scaled.** Refer to Measurements for Construction.
2. **Furniture Shown is Representative of Chosen Type.**
3. **Make Special Note of Transition of the Flooring Pattern Between Module A and Module B, Between Module C and North Deck.**
4. **Flooring Pattern Transition Between Module A and South Deck Is the Same as Shown Between Modules A and North Deck.**
5. **Flooring Pattern Stays the Same Between Modules A and C.**
6. **Refer to Sheet A607 and A608 for Exterior Wall Cladding Details.**

**FLOOR TRANSITION**

1. Floor Transition Strip by Smart Plank, Same Material and Pattern as the General Flooring by Smart Plank. Refer to 2/A305 for Details.
2. TOILET FLOORING PATTERN FOR TOILET FLOORING PATTERN.
3. Module C Wooden Flooring

**Dimensions:**

- **1/2" = 1'-0"**
- **3/4" = 1'-0"**

**Location:**
- **To Module A**
- **Module B**
- **Module C Wooden Flooring**
- **Floor Transition**

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**University of Illinois Urbana-Champaign**

**1202 N WALNUT STREET, CHAMPAIGN, IL - 61820**

**ILLINOIS SOLAR DECATHLON 2018 - TEAM NAME ADAPTHAUS**

**DRAWN BY:**

**CHECKED BY:**
A105

**ROOF PLAN**

1/4" = 1'-0"

1. DRAWING NOT TO BE SCALED, REFER TO MEASUREMENTS FOR CONSTRUCTION
2. TRANSITIONS FROM OUTDOORS TO INDOORS, GENERAL AREAS TO TOILETS, AND FROM MODULE A TO MODULE C ARE DESIGNED AS ADA ACCESSIBILITY CODES. REFER TO THE RESPECTIVE TRANSITION DETAILS.
3. 15LB OF FELT PAPER OVER ROOF SHEATHING

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**CONSULTANTS:**
- DARCY BEAN CONSTRUCTION
- THORNTON TOMASETTI
- AFFILIATED ENGINEERS INC

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**ILINOIS SOLAR DECATHLON 2018**

**TEAM NAME:** ADAPTHAUS

**DRAWN BY:**

**CHECKED BY:**

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**CANOPY OVER SOUTH DECK**

**BASEMENT DUCT:**

**ROOF SUCTION DUCTS AT 2% TOWARDS DRAINPIPES LOCATED ALONG CANOPY SIDES**

**8" DIA HVAC DUCT OUTLET**

**ROOF GUTTER SLOPED AT 2% TOWARDS DRAINPIPES LOCATED ALONG CANOPY SIDES**

**DIRECTION OF SLOPE (HIGH TO LOW, AT 2%) SOUTH TO NORTH**

**CREST OF THE SLOPE AT 4" ABOVE ROOF ENVELOPE BASE OF THE SLOPE. TOP OF BASEBOARD AT 3/4" ABOVE RIGID INSULATION**

**31.3" X 41.2" PV PANELS PLACED 1" APART E-W AND 14.1" APART N-S**

**Crest of the slope at 2’ above roof elevation**

**2’ WIDE PARKLEX OVERHANG**

**RANDON PIPE**

**HYPER HEATING OUTDOOR UNIT**

**OUTDOOR UNIT**

**NO.** | **DESCRIPTION** | **DATE**
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REFLECTED CEILING PLAN

1/4" = 1'-0"

GENERAL NOTES AND SPECs:
1. UNIFORM DROP CEILING OF 9' - 5"
2. 24-IN X 24-IN DROP CEILING CUTOUT FOR ACCESSING SERVICES (PUMPING)
3. NO CEILING IN MECHANICAL ROOM

CONTACT
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ILLINOIS SOLAR DECATHLON 2018 - 21

TEAM NAME
ADAPTHAUS

CHECKED BY:

DRAWN BY:

GENERAL NOTES AND SPECs:

1. DRAWING NOT TO BE SCALED, REFER TO MEASUREMENTS FOR CONSTRUCTION
2. FOR EXTERIOR CLADDING DETAILS, REFER TO A606 AND A607
3. LIST OF TAGS USED:
   - 1:HINGED 3/4 LIGHT ENTRY GLASS DOOR 1
   - 1B:HINGED 3/4 LIGHT ENTRY GLASS DOOR 2
   - 1C:HINGED 3/4 LIGHT ENTRY GLASS DOOR 3
   - 3:SINGLE-HUNG WINDOW
   - 4:SLIDING WINDOW
   - 6:FIXED WINDOW 1
   - 7:FIXED WINDOW 2

61.3" X 41.2" PV PANELS PLACED 1" APART E-W AND 14.1" APART N-S
2' DEEP WOODEN LOUVERED OVERHANG
CLADDING BY THERMORY
INTERIOR ELEVATIONS
MODULE A

1. DRAWING NOT TO BE SCALING, REFER TO MEASUREMENTS FOR CONSTRUCTION
2. DOOR OPENINGS ARE DIMENSIONED TO CENTERLINE OF OPENING. THOSE THAT ARE NOT DIMENSIONALLY LOCATED ARE TO BE CENTERED BETWEEN WALLS OR POSITIONED WITH ONE JAMB AGAINST AN ADJACENT WALL OR COLUMN AS SHOWN ON THE DRAWINGS.
3. ALL DOOR AND WINDOW EXTERIOR FRAMES WILL BE ALIGNED TO THE EXTERIOR CLADDING AND SERVE AS RAIN SCREENS.

LIVING-EAST VIEW
1/2" = 1'-0"

LIVING/UTILITY-SOUTH VIEW
1/2" = 1'-0"

LIVING-NORTH VIEW
1/2" = 1'-0"
WALL SECTION THROUGH CANOPY

1 1/2" = 1'-0"

GENERAL NOTES AND SPECS:
1. OSB OR CONCRETE SHEATHING WILL RUN CONTINUOUSLY FROM ROOF TO WALLS TO FLOOR. REFER TO STRUCTURE DRAWING FOR DETAILS ABOUT CONNECTION AND LOCATION.
2. 15LB OF FELT PAPER OVER ROOF SHEATHING VAPOR BARRIER AND 15LB FELT PAPER 8" x 2" WOODEN BLOCKING TO SUPPORT FLASHING AND GUTTER, FASTENED TO SHEATHING WITH SS PLATE FLASHING FIXED WITH SEALANTS AT BOTH ENDS VAPOR BARRIER WRAPPED INTO TRACK BEFORE SPRAY FOAM IS APPLIED 2" XPS INSULATION BY KINGSPAN, R-12.5, 1.5 PERM WITH USG GYPSUM PANEL FLUSHED WITH EXTERIOR CLADDING WATERPROOFING 2" EPS INSULATION BY KINGSPAN R-15 PERM SHEET FLUSHED WITH EXTERIOR CLADDING WATERPROOFING
WALL SECTION BETWEEN MODULES A AND C

1 1/2" = 1'-0"

OPENING SECTION BETWEEN MODULES A AND C

1 1/2" = 1'-0"
**WALL SECTIONS**

**SECTION THROUGH MECH. SHAFT**

1 1/2" = 1'-0"

**SECTION THROUGH UTILITY**

1 1/2" = 1'-0"

---

**CONTACT:**
Mayur Mistry (mmistry2@illinois.edu)

**CONSULTANTS:**
- DARCY BEAN CONSTRUCTION
- THORNTON TOMASETTI
- AFFILIATED ENGINEERS INC

**UNIVERSITY OF ILLINOIS URBANA- CHAMPAIGN**

**1202 N WALNUT STREET, CHAMPAIGN, IL - 61820**

**GENERAL NOTES AND SPECS:**

1. OSB OR CONCRETE SHEATHING WILL RUN CONTINUOUSLY FROM ROOF TO WALLS TO FLOOR. REFER TO STRUCTURE DRAWING FOR DETAILS ABOUT CONNECTION AND LOCATION.

2. 15LB OF FELT PAPER OVER ROOF SHEATHING

---

**FIRESTONE RUBBERGARD EPDM ROOFING MEMBRANE - BLACK COLOR**

**1' 7" CLOSED CELL SPRAYED FOAM BY BIOFOAM, R41**

**FIRESTONE ISOGARD HD COMPOSITE PANEL - 1/2" COVERBOARD LAMINATED TO POLYISO INSULATION TAPERED AT 2% SLOPE W/ LOW POINT AT 2"**

**3/4" OSB BOARD. SEE NOTES**

**WOOD TRUSS AS/STRUCTURAL DETAIL**

**VAPOR BARRIER**

**2" XPS INSULATION BY KINGSPAN, R-26.4, 1.5 PERM**

**MECHANICAL DUCT OUTLETS IN THE TRUSS AS/MECHANICAL DRAWING.**

**1 1/2" CLOSED CEL SPRAYED FOAM IN DRYWALL. SEE NOTES**

**5/8" ECOSMART GYPSUM BOARD BY USG FASTENED TO WOOD STUDS**

---

**COARSE GRAVEL**

**6-MIL PLASTIC SHEETING**

---

**8" DIAMETER CUTOUT FOR HVAC DUCT OUTLET WITH ROOF CAP**

**8" DIAMETER CUTOUT FOR RADON SYSTEM WITH ROOF CAP**

**4" PVC PIPE TERMINATED 12" ABOVE THE ROOF**

**4" PERFORATED PVC PIPE EXTENDED 5' FROM TEE**

---

**TABLE NO. DESCRIPTION DATE**

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**PLAN切れ**

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**A306**
**GENERAL NOTES AND SPECIFICATIONS:***

1. **DRAWING NOT TO BE SCALED, REFER TO MEASUREMENTS FOR CONSTRUCTION.**

2. **CLEARANCE FROM THE FURTHERST PROJECTING FACE OF OPPOSING BASE CABINETS, COUNTER TOPS, APPLIANCES AND WALLS, EXCLUDING HARDWARE EXCEEDS 40 INCH MIN AT NORTH ENTRANCE TO KITCHEN. EAST CABINET IS MOVEABLE AND ALLOWS FOR 40 INCH MIN CLEARANCE.**

3. **THE KITCHEN ISLAND AND COUNTER ON THE SOUTH WALL ARE 30 INCH WIDE TO ACCOMMODATE ADA COMPLIANT COUNTER SURFACE REQUIREMENTS.**

4. **ALL WORK SURFACES ARE 34 INCH MAX ABOVE THE FINISHED FLOOR.**

5. **HARDWARE ITEMS SHOWN ARE INDICATIVE. DETAILS PROVIDED BY MARFA CABINETS ARE ACCURATE AND NEED TO BE CONSIDERED.**

6. **POSITION AND INSTALLATION OF CANCELO BAR90 TO BE COORDINATED BETWEEN MARFA CABINETS AND RESOURCE FURNITURE.**

7. **AT LEAST ONE 30 INCH WIDE MINIMUM SECTION OF COUNTER PROVIDES A KITCHEN WORK SURFACE.**

---

**KITCHEN ENLARGED DRAWING**

**A501**
TOILET COUNTERLEVEL PLAN 1
3/4" = 1'-0"

TOILET FLOORING PLAN 1
3/4" = 1'-0"

TOILET ELEVATION 1
3/4" = 1'-0"

TOILET ELEVATION 2
3/4" = 1'-0"

TOILET ELEVATION 3
3/4" = 1'-0"

TOILET ELEVATION 4
3/4" = 1'-0"

GENERAL NOTES AND SPECS:
1. BASED ON U.S ADA REQUIREMENTS, ALL ABOVE COUNTER CABINETS BEGIN AT 48" ABOVE FINISHED FLOOR LEVELS.
2. BASED ON U.S ADA REQUIREMENTS, ALL FLOORING TRANSITION STRIPS AND DOOR SEALS ARE COMPLIANT.
3. THE HOUSE IS DESIGNED AS PER ADA GUIDELINES ISSUED BY UNITED STATES ACCESS BOARD. SPECIAL CARE NEEDS TO BE GIVEN TO THE EXECUTION OF DOORS AND OPENINGS, PASSAGEWAY CLEARANCE AND FLOOR TRANSITIONS BASED ON THE DRAWINGS.
4. TOILET SEAT HEIGHT IS 17 INCH MIN.
5. SINK KNEE CLEARANCE IS 27 INCH MIN.

NO. DESCRIPTION DATE

A502
1. CANOPY STRUCTURE IS INDEPENDENT OF THE HOUSE STRUCTURE.

GENERAL NOTES AND SPECS:
1. BECAUSE OF THE ADJUSTABLE DESIGN, SEVERAL JUNCTIONS CAN BE IMPLEMENTED IN DIFFERENT AREAS TO CREATE DIFFERENT PURPOSES.

CANOPY DETAILS

<table>
<thead>
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<th>NO.</th>
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A601
1. BECAUSE OF THE ADJUSTABLE DESIGN, SEVERAL JUNCTIONS CAN BE IMPLEMENTED IN DIFFERENT AREAS TO CREATE DIFFERENT PURPOSES.

2. REFER TO S504 DETAIL 2

GENERAL NOTES AND SPECS:

1. NO. DESCRIPTION DATE

CANOPY DETAILS

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>DATE</th>
</tr>
</thead>
</table>

CANOPY COLUMN-DECK JUNCTION 1
3" = 1'-0"

CANOPY COLUMN-DECK JUNCTION 2
3" = 1'-0"

WALL-CANOPY BEAM JUNCTION
3" = 1'-0"

CANOPY BEAM-EDGE COLUMN JUNCTION
3" = 1'-0"

DARCY BEAN CONSTRUCTION
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MAYUR MISTRY (mmistry2@illinois.edu)

ILINOIS SOLAR DECATHLON 2018
TEAM NAME: ADAPTHAUS
CONSULTANTS:
- DARCY BEAN CONSTRUCTION
- THORNTON TOMASETTI
- AFFILIATED ENGINEERS INC

CONTACT:
MAYUR MISTRY (mmistry2@illinois.edu)
1. Plan with Inter-Module Junction Fillers

1/4" = 1'-0"

2. Module A-Module C Junction

3. RAW Elevation of Module C South Wall

1/2" = 1'-0"

General Notes and Specs:

1. Raw elevation refers to elevation of the wall without cladding, considered before attachment of two modules to each other.

2. Emseal Colorseal and Quickcover to be finished in black or dark brown color, whichever is available.

3. Emseal Universal and Custom 90' to be applied on edges of horizontal and vertical expansion foams.

Emseal Colorseal applied in the 2" gap along the jamb and header of the opening between modules.

Emseal Quickcover applied at the floor transition between the modules.

Emseal Colorseal applied in the 2" gap along the jamb and header of the opening between modules.

Emseal Colorseal applied in the 2" gap along the jamb and header of the opening between modules.

Emseal Quickcover applied in conjunction with Smartplank molding strip at the floor transition between the modules.

2 1/2" XPS Insulation by Kingspan, R-12.5, 1.5 perm

Emseal Quickcover applied in the 2" gap along the jamb and header of the opening between modules.

Emseal Roofjoint capping the opening between the two modules.

Emseal Quickcover applied at the floor transition between the modules.

Emseal Roofjoint capping the opening between the two modules.

Emseal Quickcover applied at the floor transition between the modules.

Emseal Quickcover applied at the floor transition between the modules.

Emseal Roofjoint capping the opening between the two modules.

Emseal Quickcover applied at the floor transition between the modules.
1. **Fixing Detail Between Modules A & C**

   3" = 1'-0"

2. **Fixing Detail Between Modules A & C1**

   3" = 1'-0"

3. **Opening Detail Between Modules A and C**

   3" = 1'-0"

4. **Opening Detail Between Modules A and C-2**

   3" = 1'-0"

---

**General Notes and Specs:**

1. OSB or concrete sheathing will run continuously from roof to wall to floor. Refer to structure drawing for details about connection and location.

2. Refer to electrical drawings for wiring.

3. Final provider design will have the last word.

---

**Consultants:**

- Darcy Bean Construction
- Thornton Tomasetti
- Affiliated Engineers Inc

**University of Illinois Urbana-Champaign**

1202 N Walnut Street, Champaign, IL - 61820

---

**Vapor Barrier:**

- 2" X 4" wooden truss
- 5/8" Ecosmart gypsum board by USG fastened to 1.5" X 1.5" CFS frame

**Fluid Applied Air & Water Barrier:**

- Emseal Horizontal Colorseal
- Refer to A603 for details

**Closed Cell Sprayed Foam:**

- 7 1/4" by Biofoam, R45.5

**Smart Plank Composite Wooden Flooring:**

- Composite wooden flooring by Smart Plank
- Fluid-applied air & water barrier by Movabase

**Firestone Metal Flashing:**

- Firestone EPDM roofing membrane - black color
- Firestone Metal Flashing as per manufacturer details

**7 1/4" Closed Cell Sprayed Foam:**

- By Biofoam, R45.5

**Emseal Roofboard Capping:**

- Emseal Colorseal and wooden blocking

**Emseal Horizontal Columnal:**

- Refer to A603 for details

**Emseal Horizontal Columnal:**

- Refer to A603 for details

---

**Contact:**

Mayur Mistry (mmistry2@illinois.edu)
EDGE CONDITION 1 BETWEEN MODULES A & C

1. 3" = 1'-0"

EDGE CONDITION 2 BETWEEN MODULES A & C

2. 3" = 1'-0"
1. Do not measure drawings. Refer to scales and dimensions specified.

2. Wall Type B is clad over a 46-in wide opening for windows. Variations of this include the following:
   A. For edge conditions, Wall Type B covers 46-in wide opening + part of the wall between the window and the building edge.
   B. For 24-in wide windows, Wall Type B begins along an edge of the window and extends 48-in to the left/right based on the drawing.

3. The exact dimension of Wall Type B may vary marginally, based on window frame sizes. To be verified during construction.

4. Wall Type A is clad over all other surfaces, which do not have an opening.

5. In order to minimize thermal bridging as much as possible, cladding fabrication requires detailed consideration.

---

DETAILED CLADDING PLAN

1/4" = 1'-0"
1. DO NOT MEASURE DRAWINGS. REFER TO SCALES AND DIMENSIONS SPECIFIED.

2. WALL TYPE-B IS CLAD OVER A 46-IN WIDE OPENING FOR WINDOWS. VARIATIONS OF THIS INCLUDE THE FOLLOWING:
   A. FOR EDGE CONDITIONS, WALL TYPE-B COVERS 46-IN WIDE OPENING AND PART OF THE WALL BETWEEN THE WINDOW AND THE BUILDING EDGE
   B. FOR 24-IN WIDE WINDOWS, WALL TYPE-B BEGINS ALONG THE RIGHT EDGE OF THE WINDOW AND EXTENDS 46-IN TO THE LEFT.

2. EXACT DIMENSION OF WALL TYPE-B MAY VARY MARGINALLY, BASED ON WINDOW FRAME SIZES. TO BE VERIFIED DURING CONSTRUCTION.

3. WALL TYPE-A IS CLAD OVER ALL OTHER SURFACES, ONES THAT DO NOT HAVE AN OPENING.

4. EXACT CLADDING PRODUCT TO BE DETERMINED BASED ON SPONSORSHIP, BUT THE DETAIL USED IS TYPICAL AND IS EASILY AVAILABLE WITH OTHER MANUFACTURERS.

5. IN ORDER TO MINIMIZE THERMAL BRIDGING AS MUCH AS POSSIBLE, CLADDING FABRICATION MUST BE DONE WITH EXTRA DETAIL AND CONSIDERATION.
1. WINDOW HEADER AND SILL DETAIL
   6" = 1'-0"

2. EXTERIOR INSWING DOOR HEADER AND SILL DETAIL
   6" = 1'-0"

3. INTERIOR DOOR HEADER AND SILL DETAIL
   6" = 1'-0"

GENERAL NOTES AND SPECS:
1. DRAWING NOT TO BE SCALED, REFER TO MEASUREMENTS FOR CONSTRUCTION.
2. UNLESS NOTED OTHERWISE, PARTITIONS ARE DIMENSIONED TO THE FACE OF THE WALL.
3. DOOR OPENINGS ARE GENERALLY DIMENSIONED TO CENTERLINE OF OPENING. THOSE THAT ARE NOT DIMENSIONALLY LOCATED ARE TO BE CENTERED BETWEEN WALLS OR POSITIONED WITH ONE JAMB AGAINST AN ADJACENT WALL OR COLUMN AS SHOWN ON THE DRAWINGS.
4. BASED ON U.S ADA REQUIREMENTS, DOOR OPENINGS HAVE 36".
5. ALL DOOR AND WINDOW EXTERIOR FRAMES WILL BE ALIGNED TO THE EXTERIOR CLADDING AND SERVE AS RAIN SCREENS.
I. EXTERIOR INSWING DOOR JAMB DETAIL

6" = 1'-0"

1. FLUSHING TAP
2. 2" X 8" WOODEN BLOCKING
3. Fluid Applied Water Barrier by Momentives
4. Interior Perimeter Sealant
5. Pella Impervia Extension Cap provided and specified by the manufacturer
6. Birch Wood Door Frame out of 5" X 3" Section, provided and specified by National Door Trim
7. 2 1/2" Take Exterior Partition dry wall 1/2"
8. C-grip Fastened on 1/2" CTS Slatics
9. WP200 Exterior Jamb provided by National Door Trim, finished with White Alpim Wall Edge Sealed
10. 3/4" Birch Wood Door Panel provided and specified by National Door Trim

II. WINDOW JAMB DETAIL

6" = 1'-0"

1. Flashing Tape
2. SS Wall Flashing
3. Exterior Perimeter Sealsant
4. Pella Impervia Extension Joint provided and specified by the manufacturer
5. Pella Impervia Fiberglass Window Frame as/manufacturer specs
6. Pella Impervia Fiberglass Window Shutter as/manufacturer specs
7. Pella Impervia Fiberglass Window Frame as/manufacturer specs

III. INTERIOR DOOR JAMB DETAIL

6" = 1'-0"

1. Flashing Tape
2. SS Wall Flashing
3. Interior Perimeter Sealant
4. Pella Impervia Extension Cap provided and specified by the manufacturer
5. Pella Impervia Fiberglass Door Frame as/manufacturer specs
6. Pella Impervia Fiberglass Door Panel as/manufacturer specs
7. Pella Impervia Fiberglass Door Hinge as/design provided and specified by National Door Trim
8. Softwood Casing provided by National Door Trim, painted Eggshell White as/per wall shade selected
9. 4 3/4" Thick Interior Partition Drywall: 5/8" Gypboard wrapped on 3 1/2" CFS Studs
10. 1 3/4" Deep Solid Core Stained Birch Wood Door Panel provided and specified by National Door Trim

GENERAL NOTES AND Specs:
1. Drawing not to be scaled, refer to measurements for construction.
2. Unless noted otherwise, partitions are dimensioned to the face of the wall.
3. Door openings are generally dimensioned to centerline of opening. Those that are not dimensionally located are to be centered between walls or positioned with one jamb against an adjacent wall or column as shown on the drawings.
4. Based on U.S. ADA requirements, door openings are 36"
5. All door and window exterior frames are aligned to the exterior cladding and serve as rain screens.

CONSULTANTS:
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• AFFILIATED ENGINEERS INC

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ILINOIS SOLAR DECATHLON 2018
TEAM NAME: ADAPTHAUS

DOOR WINDOW DETAILS

A608A
OVERHANG DETAILS

1. THERMORY PANELS:
   i. TYPE A: CREAM COLORED PANELS, 12MM THICK
   ii. TYPE B: COLORED PANELS, 8MM THICK

2. REFER TO STRUCTURAL PLANS TO SEE THE RESPECTIVE CALCULATION OF THE OVERHANG.

GENERAL NOTES AND SPECS:

1" = 1'-0"

OVERHANG PLAN

1" = 1'-0"

OVERHANG ELEVATION

1 1/2" = 1'-0"

OVERHANG SECTION DETAIL

3" = 1'-0"

A609
KEY PLAN FOR FLOOR ACCESS PANEL

1/2" = 1'-0"

FLOOR ACCESS PANEL-PLAN

3" = 1'-0"

FLOOR ACCESS PANEL CUTOUT DETAIL

3" = 1'-0"
DROP CEILING PLAN
3/16" = 1'-0"

DROP CEILING DETAIL
3" = 1'-0"

DROP CEILING SECTION 1
1/2" = 1'-0"

DROP CEILING SECTION 2
1/2" = 1'-0"

GENERAL NOTES AND SPECS:
1. SUBJECT TO APPROVAL FROM TT.
2. DRAWING DETAILS BASED ON USG ENSEMBLE ACOUSTIC PANEL DETAILS SUBJECT TO CONFIRMATION OF PRODUCT AVAILABILITY BY USG.
3. THE FREE HEIGHT BETWEEN THE FLOOR AND DROP CEILING IS 7' 8 1/2".
4. DROP CEILING STRUCTURE GRID HAS BEEN CHECKED WITH PROVIDER FOR MINIMUM REQUIREMENT.
FUTURE WALL - SUBSTITUTE WALL PLAN

3" = 1'-0"

FUTURE WALL ELEVATION

1 1/2" = 1'-0"

GENERAL NOTES AND SPECS:
1. Dummy wall is a prop wall installed with the exterior wall to cover the 6-ft wide opening when modules A and C are placed isolated from each other.
2. The detail for the wall will be the same as the exterior wall, including the cladding panels, and will remain the same for the wall on module A and module C.
3. Parts indicated in blue shall be installed after installation of the dummy panel structure.
4. Refer to structure drawings for stud placement.
The supply of CERV will not be connected with ducts. Air is released in the Mech. room.

Exhaust fan roof-connected (locally installed; bottom elevation: 8'1''). Flow rate: 80 CFM.

Plumbing exhaust fan cap, roof-connected (locally installed).

A transition for duct is needed to fit the size of supply duct.

The supply of CFM will not be connected with interior unit, and air exhausted in Mech. room.

**ABBREVIATION**

- **SD**: Supply Diffuser
- **RD**: Return Diffuser
- **SA**: Supply Air
- **RA**: Return Air
- **CFM**: Cubic Feet Per Minute
- **ERV**: Energy Recovery Ventilation
- **IAU**: Indoor Air Unit
- **OAU**: Outdoor Air Unit

**Floor Plan Drawing**

3/8" = 1'-0"
North Ele. Mech. Room Details
3/4" = 1'-0"
**ELECTRICAL NOTES AND COMPLIANCES**

**FCSP  FIRE CODE COMPLIANCE AND SAFETY PRECAUTIONS**

**FCSP-1**

THIS STRUCTURE WAS DESIGNED TO ADHERE TO ALL NECESSARY FIRE CODES FOR A RESIDENTIAL HOME.

**FCSP-2**

ALL STANDARD 120V RECEPTACLE OUTLETS LOCATED IN THE KITCHEN, BATHROOMS, GARAGE, OUTSIDE, OR MECHANICAL ROOM MUST BE GROUND FAULT CIRCUIT INTERRUPTED (GFCI).

**FCSP-3**

ALL STANDARD 120V RECEPTACLE OUTLETS LOCATED OUTSIDE OF THE STRUCTURE MUST BE WEATHERPROOFED GROUND FAULT CIRCUIT INTERRUPTING (GFCI WP).

**FCSP-4**

ALL STANDARD 120V RECEPTACLE OUTLETS LOCATED IN THE LIVING AREAS, INCLUDING BEDROOMS, LIVING ROOM, FAMILY ROOMS, ENTRYWAYS, AND WALK-IN CLOSETS, MUST BE ARC FAULT CIRCUIT INTERRUPTING (AFCI).

**FCSP-5**

PHOTOVOLTAIC (PV) ARRAY SPACING MUST BE IN COMPLIANCE WITH SECTION 605.11.1.2.3 OF THE ILLINOIS RESIDENTIAL FIRE CODE. FIREFIGHTERS MUST BE ABLE TO GET AROUND STRINGS OF PANELS IN THE CASE OF A ROOFTOP FIRE.

**FCSP-6**

THE ABILITY TO CUT OFF THE FLOW OF ELECTRICITY FROM THE ROOF MOUNTED SOLAR ARRAY MUST BE AVAILABLE THROUGH THE USE OF A DC DISCONNECT SWITCH. AN AC DISCONNECT SWITCH MUST ALSO BE EMPLOYED WHETHER MADE AVAILABLE ON THE EXTERIOR OF THE BUILDING Or BUILT INTO THE MAIN BREAKER PANEL.

**FCSP-7**

TO REDUCE THE RISK OF ELECTRIC SHOCK, ALL HIGH VOLTAGE EQUIPMENT INCLUDING THE BIG BATTERY STORAGE, SOLAR EDGE STOREDGE SE10000H INVERTER, LG CHEM RESU10H BATTERY STORAGE, ELECTRIC CAR CHARGER, AND DC DISCONNECT BOX, WILL BE LOCATED ON THE EXTERIOR OF THE HOUSE.

**GE  GENERAL ELECTRICAL NOTES**

**GE-1**

ALL 120V RECEPTACLE OUTLETS MUST HAVE THEIR OWN RESPECTIVE SWITCH ON THE MAIN BREAKER PANEL.

**GE-2**

ANY RECEPTACLE OUTLETS LOCATED ON THE EXTERIOR OF THE BUILDING MUST BE WEATHERPROOFED AND GROUND FAULT CIRCUIT INTERRUPTING (GFCI WP).

**GE-3**

GFCI AND AFCI RECEPTACLE OUTLETS MAY BE SUPPLIED BY THE SAME CONDUIT, BUT NEITHER CAN BE LOCATED IN THE SAME CONDUIT THAT SUPPLIES A 240V RECEPTACLE OUTLET.

**GE-4**

ALL 240V RECEPTACLE OUTLETS REQUIRE THE USE OF 10 TO 8 GAUGE WIRE DEPENDING ON OPERATING CURRENTS OF 30 TO 40 AMPS, RESPECTIVELY.

**GE-5**

ELECTRICAL CONNECTORS OF THE ROOF MOUNTED SOLAR ARRAY MUST BE WEATHERPROOFED GROUND FAULT CIRCUIT INTERRUPTING (GFCI WP) CONNECTORS TO REDUCE THE RISK OF HEAT BUILDUP AS WELL AS SPACIAL ISSUES.

**GE-6**

ALL AFCI RECEPTACLE OUTLETS REQUIRE THE USE OF 14 GAUGE WIRING RATED FOR 15 AMPS OF CURRENT.

**GE-7**

ALL GFCI RECEPTACLE OUTLETS, INSIDE OR OUTSIDE, REQUIRE THE USE OF 12 GAUGE WIRING RATED FOR 20 AMPS OF CURRENT.

**GE-8**

ALL GFCI RECEPTACLE OUTLETS, INSIDE OR OUTSIDE, REQUIRE THE USE OF 14 GAUGE WIRING RATED FOR 15 AMPS OF CURRENT.

**GE-9**

ALL AFCI RECEPTACLE OUTLETS REQUIRE 14 GAUGE WIRING RATED FOR 15 AMPS OF CURRENT.

**GE-10**

ALL AFCI RECEPTACLE OUTLETS REQUIRE THE USE OF 14 GAUGE WIRING RATED FOR 15 AMPS OF CURRENT.
Mission Solar PERC 60 MSE320SR8T Solar Panels
65.98 in. x 39.68 in. x 1.58 in.
2 parallel strings of 12 panels

Critical Loads Panel Next
Two 5.3 kWh 48 V HSKY LiFePO4 Battery Storage

SolarEdge Inverter with inbuild DC Disconnect SE3800H-US

OutBack SkyBox Inverter SBX5048

AC Disconnect
Main Panel

SolarEdge Inverter with inbuild DC Disconnect SE3800H-US

SolarEdge P370 Optimizers

AC Disconnect
Utility Meter

Battery: 48 V HSKY - LiFePO4
Module: MIS PERC 60 MSE320SR8T

Inverter 1: Solar Edge SE3800H-US
Type: Transformerless, Ungrounded
Max AC Power Rating: 3.8 kW
Max Continous Output Current: 15.5 A
Max Short Circuit Current: 24 A

Inverter 2: OutBack Skybox SBX5048-120/240
Type: Transformerless, Ungrounded
Rated Input DC Power: 370 W
Max String Length: 25

Optimizers: Solar Edge P370
Type: Transformerless, Ungrounded
Max AC Power Rating: 5 kW
Max Continous Output Current: 13 A
Max Short Circuit Current: 24 A

To Home

Battery Capacity: 5.3 kWh / 103 Ah
Max Discharge Peak Current: 350 A (6 Seconds)
Max Continous Discharge Current: 130 A
Max Continuous Power: 6.7 kW

Module: MSE PERC 60 MSE320SR8T
Pmax: 320 W
Isc: 10.028 A
Voc: 40.80 V
Imp: 9.351 A
Vmp: 34.22 V

Inverter Type: Transformerless, Ungrounded
Max AC Power Rating: 3.8 kW
AC Output Voltage Range: 211-264 V
Max Input Voltage: 480 V
Max Continuous Output Current: 15.5 A
Min Input Current: 16 A
Max Short Circuit Current: 24 A

Optimizers Type: Transformerless, Ungrounded
Max AC Power Rating: 5 kW
MPPT Voltage Range: 250-600 V
Max Input Current: 32 A
Max Continuous Output Current: 13 A
Max Short Circuit Current: 24 A

SINGLE LINE

1/2" = 1'-0"

Contact: MAYUR MISTRY (mmistry2@illinois.edu)
Consultants:
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Mission Solar PERC 60 MSE320SR8T Solar Panels

Critical Loads Panel

OutBack SkyBox Inverter SBX5048

Two 5.3 kWh 48 V HSKY LiFePO4 Battery Storage

SolarEdge Inverter with inbuilt DC Disconnect SE3800H-US

AC Disconnect

Main Panel

Critical Loads

Utility Meter

Grid

To Home

1/2" = 1'-0"
### Main Panel: 200 Amps 120/240V, 1 PHASE, 3 WIRE W/ GRND

<table>
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<th>DESCRIPTION</th>
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<th>CB TYPE A</th>
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#### Critical Loads Panel: 125Amps, 120/240V, 1 PHASE, 3 WIRE W/ GRND

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<th>CB TYPE B</th>
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<td>15A 1P</td>
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<td>South Modular Lights (x2)</td>
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<td>20A 2P</td>
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* The Outback SkyBox inverter and Solar Edge Inverter are connected to the meter main panel so it is not included in the calculations.

**Rounded up to 200 A**

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**Main Panel Sizing**

- 100% Minisplit: 1543.8 VA (1543.8 x 1.15 = 1794.13 VA)
- 40% remaining loads: 84.328333 VA (84.328333 x 1.15 = 96.19963 VA)
- Total Loads: 2753.8 VA (2753.8 x 1.15 = 3156.77 VA)

---

**Panel Schedule**

**Panel TOTAL AMPS**: 212 A

---

**E006**
POWER DISTRIBUTION PLAN AND RECEPTACLE LAYOUT

1/4" = 1'-0"
GENERAL NOTES

1. ALL WORK, METHODS, AND INSTALLATIONS INVOLVED IN THE PLUMBING DESIGN SHALL BE IN ACCORDANCE WITH THE BUILDING AND INSPECTION REGULATIONS OF ALL OFFICIALS HAVING JURISDICTION.

2. DRAWINGS ARE DIAGRAMMATIC IN NATURE, CONTAINING INFORMATION TO A DEGREE OF DETAIL CONSISTENT WITH THEIR SCALE AND ADEQUATE TO CONVEY DESIGN INTENT.

3. SLOPES AND PITCHES OF PIPING INSTALLED ARE TO COMPLY WITH THE LOCAL CODE.

4. CONTRACTOR SHALL PROVIDE LABOR AND MATERIALS AS REQUIRED TO MAKE FINAL CONNECTIONS FOR ALL PLUMBING FIXTURES, EQUIPMENT, OR RELATED ITEMS PROVIDED UNDER SEPARATE DIVISIONS.

5. PROVIDE CLEANEOUTS AT EACH CHANGE OF DRAINLINE CONNECTION GREATER THAN 45 DEGREES. PROVIDE CLEANEOUTS AT THE BASE OF ALL RISERS AND IN COMPLIANCE WITH PLUMBING CODE.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD COORDINATING LOCATIONS OF SANITARY VENTS UP THROUGH ROOF.

7. ALL DHW AND DCW LINES ARE PEX PIPING. ALL SANITARY AND VENT PIPES ARE PVC SCHEDULE 40 PIPING.

8. ALL DW PIPES 3/4" AND ABOVE ARE TO BE INSULATED PER BUILDING CODE.

9. ALL RELEVANT SPECIFICATIONS ARE FOUND IN SECTION 22 (PLUMBING).

10. COORDINATE THE PIPES IN THE WALLS TO GO THROUGH HOLES IN THE JOISTS.

11. ENSURE THE PIPES IN THE WALLS ARE INSTALLED ON THE RIGHT SIDE OF THE BUILDING INSULATION TO PREVENT FREEZING.

12. EQUIPMENT/MATERIAL SHOWN ON DRAWINGS ARE BASED ON MANUFACTURER'S PUBLISHED DATA, AND ARE ASSUMED TO BE REPRESENTATIVE OF TYPICAL SIZES. ALL EQUIPMENT, FIXTURES, AND SERVICEABLE DEVICES SHALL BE INSTALLED WITH ADEQUATE ACCESS AND CLEARANCE FOR MAINTENANCE AND OPERATIONS. COORDINATE WITH OTHER TRADES TO PROVIDE ACCESS AND CLEARANCE. INSTALL ALL EQUIPMENT AND MATERIALS PER MANUFACTURER'S INSTRUCTIONS.

13. IF EQUIPMENT, FIXTURES OR MATERIAL OTHER THAN THOSE SCHEDULED OR SPECIFIED, IS APPROVED AND ACQUIRED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO coordinate AND PROVIDE REVISED UTILITIES AND SERVICE CONNECTIONS, AND TO VERIFY THE SPACE ALLOTTED FOR ADEQUACY AND CLEARANCE REQUIREMENTS.

14. COORDINATE ALL LOCATIONS AND SIZES OF STRUCTURAL FLOOR AND WALL PENETRATIONS WITH GENERAL CONTRACTOR, AND PROVIDE CODE-COMPLIANT SEALS AT ALL FIRE-RATED WALL, CEILING, ROOF AND FLOOR PENETRATIONS.

15. ACCESS DOORS/PANELS SHALL BE PROVIDED AT ALL MAINTENANCE AND SERVICE LOCATIONS FOR CONCEALED CONTROL DEVICES, VALVES AND PLUMBING EQUIPMENT/DEVICES/FIXTURES. UNLESS A SIZE IS SPECIFICALLY NOTED, PANELS SHALL BE AN APPROPRIATE SIZE TO ALLOW EASY SERVICE AND MAINTENANCE. DOORS AND PANELS SHALL HAVE THE SAME FIRE RATING AS THE WALL OR CEILING IN WHICH THEY ARE INSTALLED.

PLUMBING NOTES

1. FURNISH THERMOSTATIC MIXING VALVES, IF NECESSARY, TO PREVENT ANY SCALDING TO ANYONE USING THE PLUMBING FIXTURE. INSTALLATION OF THE TMV SHALL BE IN ACCORDANCE WITH THE BUILDING AND INSPECTION REGULATIONS OF ALL OFFICIALS HAVING JURISDICTION.

2. SANITARY PIPES SHALL BE INSTALLED AT A SLOPE OF 1/4" PER 1'.

3. VENTING PIPES SHALL BE INSTALLED AT A SLOPE OF 1/8" PER 1'.

4. VENT PIPE IN THE ROOF MUST BE REACH A MINIMUM OF 3" ABOVE ROOF.

5. VENT PIPE IN THE ROOF MUST BE INSTALLED TO MINIMIZE VIEWING FROM THE GROUND.

6. INSULATE DOMESTIC HOT WATER PEX PIPES 3/4" AND ABOVE.

7. COORDINATE PIPE LINES TO GO THROUGH THE HOLES IN THE WALL JOISTS.

8. PIPES IN THE CEILING SHALL BE ATTACHED TO THE CEILING JOISTS.

9. INSTALL SHUT-OFF VALVES AT EACH FIXTURE. INSTALL BRANCH SHUTOFF VALVES WHERE NECESSARY FOR EASE OF MAINTENANCE OR REQUIRED BY CODE. LOCATE AND ORIENT VALVE OPERATORS FOR EASE OF ACCESS AND FULL LIMITS OF OPERATION.

10. INSULATION AND VAPOR BARRIER SHALL BE PROVIDED ON ALL PIPING/EQUIPMENT SUBJECT TO HEAT LOSS, CONDENSATION, OR POSING A POTENTIAL BURN HAZARD.

11. INSULATION SHALL NOT BE CRUSHED OR COMPRESSED BY INTERFERENCE WITH SYSTEMS INSTALLED BY OTHER TRADES OR BUILDING CONSTRUCTION.

12. ALL PIPING SHALL BE INSTALLED TO AVOID FREEZING. NO PIPING SHALL BE INSTALLED WITHIN EXTERIOR WALLS, IF ABSOLUTELY NECESSARY, PIPING SHALL BE INSULATED PROPERLY TO AVOID FREEZING. THE INSTALLATION OF PLUMBING SYSTEMS SHALL NOT CRUSH OR COMPROMISE BUILDING INSULATION. ALL BELOWGRADE WATER PIPING SHALL BE INSTALLED NO LESS THAN 3 FEET BELOW GROUND.

13. FOLLOWING COMPLETION OF THE WORK AND PRIOR TO FINAL ACCEPTANCE, ALL PARTS SHALL BE THOROUGHLY CLEANED.

14. PIPING SHALL BE CONCEALED IN WALLS OR BEHIND FIXED FURNISHINGS UNLESS OTHERWISE INDICATED.

15. ALL PIPING SHALL RUN PARALLEL TO BUILDING LINES AND BE ANCHORED AND SUPPORTED AS REQUIRED FOR EXPANSION AND CONTRACTION. ALL PIPING SHALL BE CONCEALED EXCEPT IN UNFINISHED SPACES OR THE CRAWL SPACE. INSTALL AS REQUIRED TO MEET CODE AS NECESSARY.

16. PLUMBING CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL WORK UNDER HIS/HER CONTRACT WITH ALL OTHER BUILDING TRADES, AS NECESSARY. NOTIFY THE ENGINEER/DESIGNER OF ALL DISCREPANCIES OR QUESTIONS PERTAINING TO EXTENT OF WORK PRIOR TO BUILDING, WHEN POSSIBLE.
PLUMBING SITE PLAN

1/4" = 1'-0"

CONTACT
MAYUR MISTRY (mmistry2@illinois.edu)

CONSULTANTS:
- DARCY BEAN CONSTRUCTION
- THORNTON TOMASETTI
- AFFILIATED ENGINEERS INC

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN
1202 N WALNUT STREET, CHAMPAIGN, IL 61820

LLINOIS SOLAR DECATHLON 2018 - 21

TEAM NAME
ADAPTHAUS

PLUMBING SITE PLAN

WILL CONNECT TO CITY WATER MAIN, WATER METER LOCATED AROUND HERE

APPROXIMATE LOCATION OF GREYWATER OUTLET

SANITARY SEWER DRAIN

SANITARY SEWER CLEANOUT

GUTTER DOWNSPOUT AND RAIN BARREL HERE

KITCHEN DOUBLE SINK

SHOWER

SDOH COMES UP THROUGH FOUNDATION

LAVATORY SINK

WASHER

CONNECTION TO FREEZE

ELECTRIC CONCRETE VACUUM MASTER

EXTERNAL HOSE HERE

WATER CONNECTION TO FRIDGE

TOILET

ELECTRIC TANKLESS WATER HEATER

WATER CONNECTION TO FRIDGE

WASHER

KITCHEN DOUBLE SINK

DISHWASHER

LAVATORY SINK

SHOWER
PLUMBING WATER SUPPLY PLAN

1/2" = 1'-0"
3" MAIN VENT FROM TOILET SANITARY DRAIN IN THE FOUNDATION

1 1/4" VENT FROM LAUNDRY STANDPIPE

LAUNDRY STANDPIPE VIEW 1/2" = 1'-0"

COLD WATER TO TOILET CARRYING STANDPIPE

SANITARY DRAIN LINE FROM TOILET COLD WATER TO TOILET

BACK VENT FROM BATHROOM SHOWER AND SINK

DISHWASHER DRAIN HOSE (COMES WITH IT, NOT PVC); Connects To Sink Drain

1/2" DCW TO KITCHEN SINK AND DISHWASHER

1 1/2" LOOP VENT

2" SHOWER VENT

BATHROOM GREYWATER DRAINAGE VIEW 1/2" = 1'-0"

WHERE SHOWER WATER DRAIN MERGES WITH LAUNDRY DRAIN

WHERE SHOWER WATER DRAIN MERGES WITH LAUNDRY DRAIN

MECHANICAL WEST FACING VIEW 1/2" = 1'-0"

DISHWASHER TO SINK DRAINAGE VIEW 1/2" = 1'-0"

LAUNDRY'S STANDPIPE

ECOSMART ELECTRIC TANKLESS WATER HEATER

CONTACT MAYUR MISTRY (mmistry2@illinois.edu)

CONSULTANTS:

- DARCY BEAN CONSTRUCTION
- THORNTON TOMASETTI
- AFFILIATED ENGINEERS INC

UNIVERSITY OF ILLINOIS URBANA - CHAMPAIGN

1202 N WALNUT STREET, CHAMPAIGN, IL - 61820

ILLINOIS SOLAR DECATHLON 2018 - 21
Proposed Greywater (Yard)

1/4" = 1'-0"

TO LEVEL 3" PERFORATED ABS AQUIFER PIPE
(1.5' BELOW GRADE)

3" ABS AT 1% SLOPE

1% SLOPE

4" SANITARY SEWER TO SEWER MAIN

BACKWATER VALVE

4" PVC

SETTLING TANK
(INLET IS HIGHER THAN OUTLET)

3" ABS

4" PVC

4" PVC LEAVES FOUNDATION AT 1% SLOPE

TO LEVEL 3" PERFORATED ABS AQUIFER PIPE
(1.5' BELOW GRADE)

3" ABS AT 1% SLOPE

CHECK VALVE TO BE INSTALLED DOWNSTREAM
OF DIVERTER VALVE, IN CRAWL SPACE

3-WAY DIVERTER VALVE
Greywater Isometric

Proposed Greywater (Crawl Space)

3/4" = 1'-0"
*PLUMBING IS CONSOLIDATED IN ONE CORNER OF THE HOME AND TO BE ACCESSED THROUGH 2 KEY WET WALLS AND CRAWL SPACE

- PROPOSED GREYWATER
- SANITARY
- DOMESTIC COLD WATER

PLUMBING ISOMETRIC

1
### LIGHTING SCHEDULE

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<th>DIMMABILITY</th>
<th>APP CONTROL</th>
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<td>WAC LIGHTING</td>
<td>BRUSHED NICKEL</td>
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**TOTAL QUANTITY:** 35
**APPLIANCES PLAN**

1/4" = 1'-0"

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### APPLIANCE SCHEDULE

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<td>24&quot; SLIDE-IN ELECTRIC RANGE</td>
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<td>24&quot; FRONT-LOAD HEAT PUMP VENTLESS DRYER</td>
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APPLIANCES PLAN

1/8" = 1'-0"
1. All fixtures shall be operated through home automation system. Switches are not the primary source of operation and are provided as a backup.