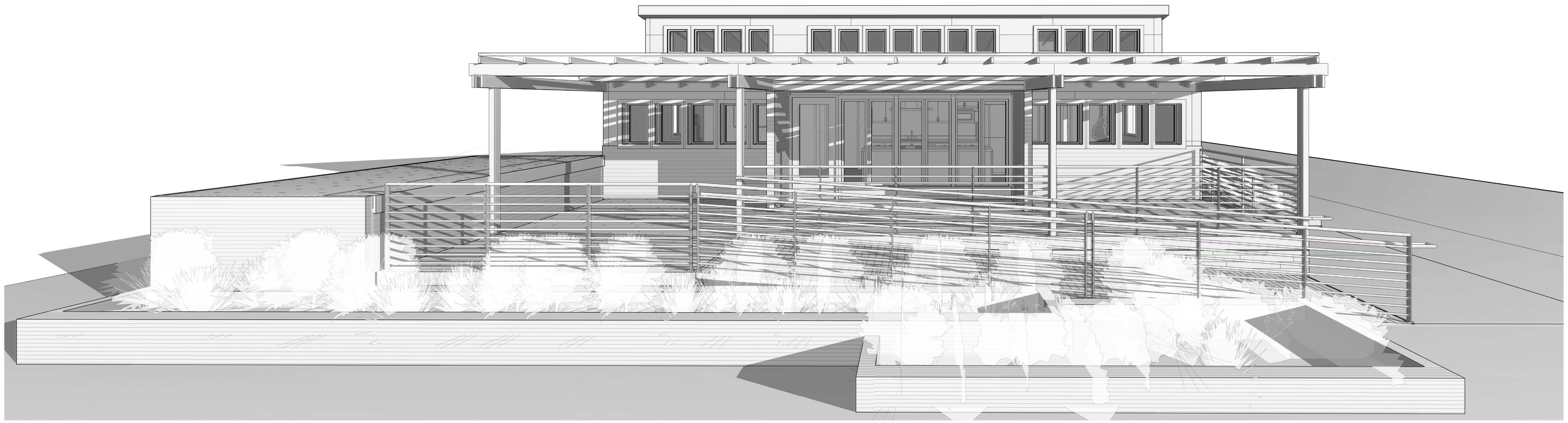

surviv(AL) house

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

U.S. DEPARTMENT OF ENERGY

U.S. DEPARTMENT OF ENERGY SOLAR DECATHLON

ENERGETICS A Subsidiary of VSE Corporation

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TEAM ALABAMA

The University of Alabama at Birmingham

The University of Alabama at Huntsville

CONSULTANTS

Williams Blackstock Architects

Structural Design Group

Edmonds Engineering

Client

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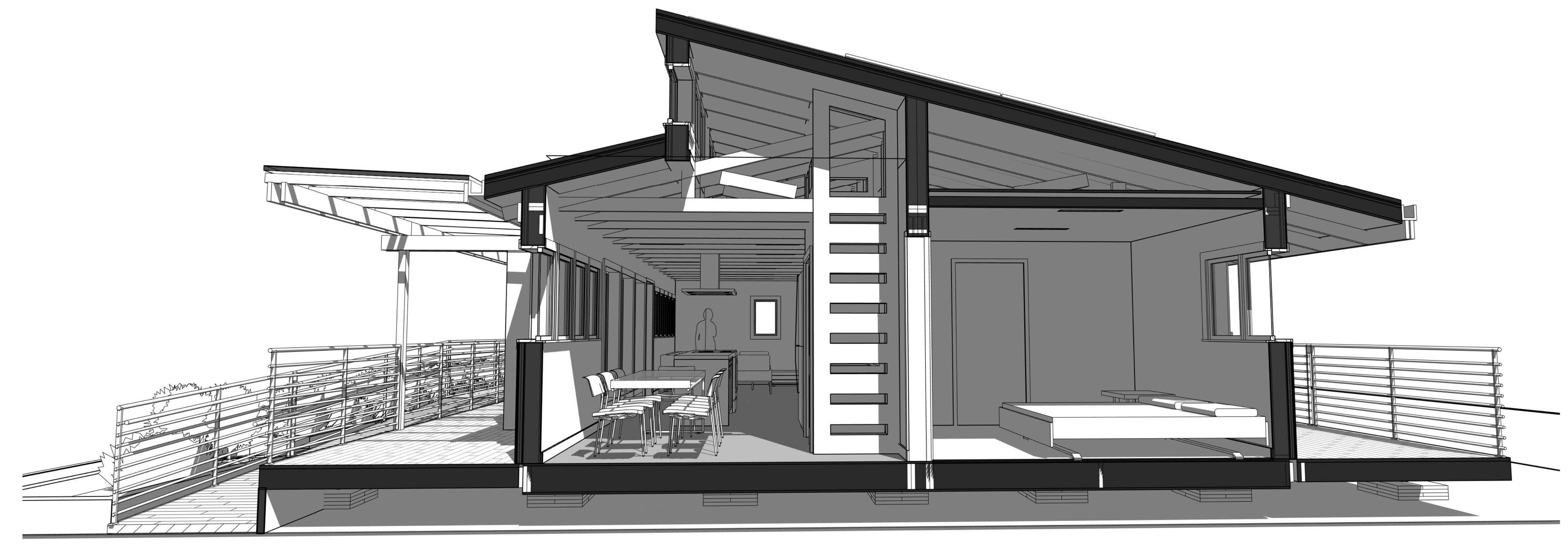
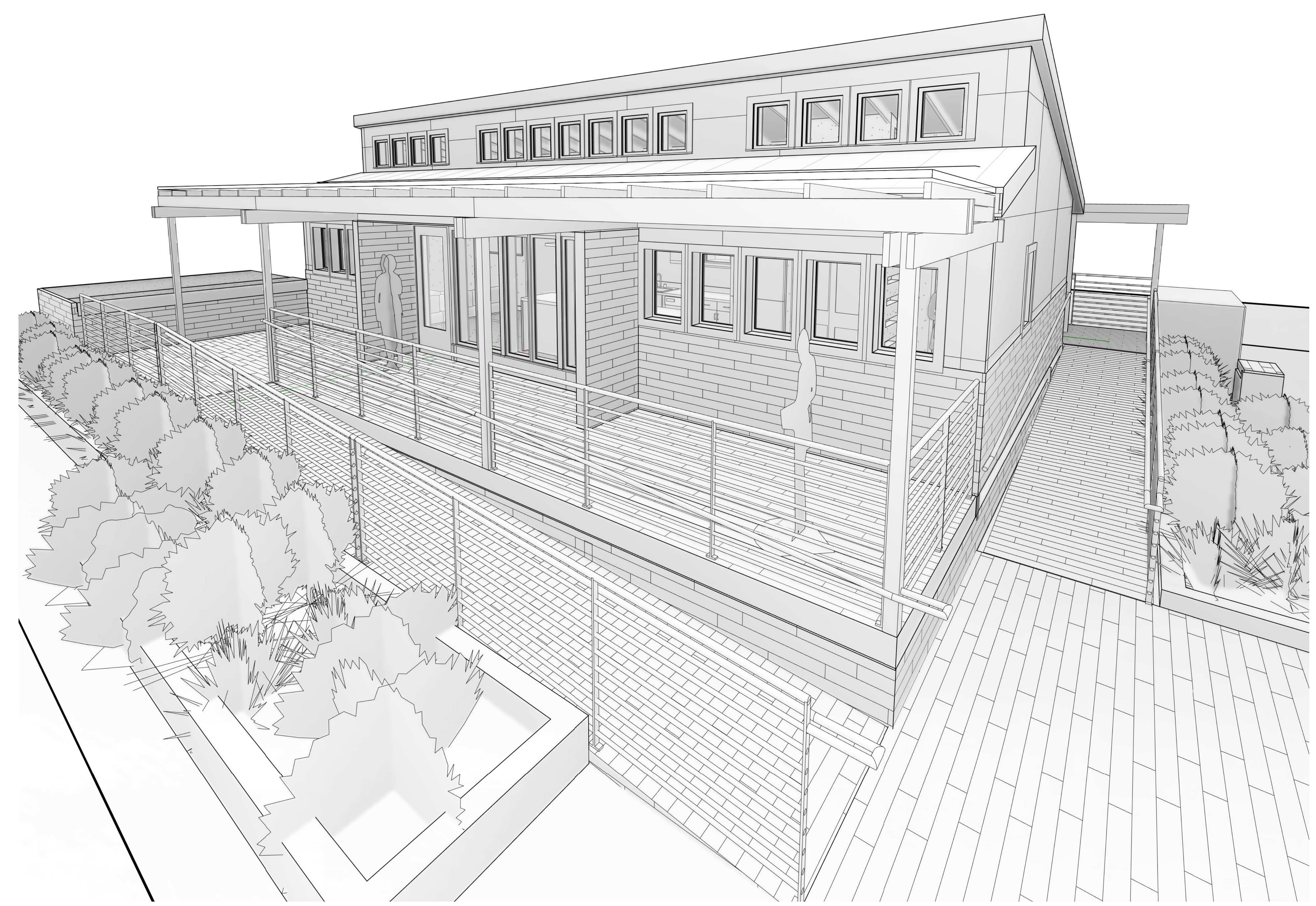
4 AC.02 Interior Perspective



2 AC.02 SECTION PERSPECTIVE looking west

1 AC.02 Perspective looking east



3 AC.02 Exterior Perspective

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GENERAL PROJECT RENDERINGS

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GENERAL NOTES

1. SCOPE: THE PROJECT INCLUDES THE CONSTRUCTION OF A NEW SINGLE FAMILY WOOD-FRAMED RESIDENCE WITH TWO BEDROOMS AND TWO CONNECTED BATHROOMS FOR COMPETITION IN DENVER, COLORADO AND ULTIMATELY FOR PERMANENT DISPLAY IN BIRMINGHAM, ALABAMA. THE HOUSE IS DESIGNED FOR TWO TRANSPORTABLE MODULES TO BE CONNECTED ON SITE AND THEN COMPLETED WITH A SHOP-FABRICATED SAFE ROOM, FRONT AND BACK PORCHES, RAMPS, AND RAILINGS, A CANOPY AND PLANTERS, AND CONTAINMENT FOR WATER TANKS AND PUMPS THAT FIT WITHIN A PRESCRIBED SOLAR ENVELOPE. THE HOUSE WILL BE TIED TO A COMPETITION POWER GRID, BUT WILL SELF-GENERATE ENERGY FROM A ROOF-TOP SOLAR ARRAY.

3. CODE: THE PROJECT HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILIDING CODE AND OTHER ASSOCIATED ICC CODES AMONG RESPECTIVE DISCIPLINES, THE 2015 INTERNATIONAL RESIDENTIAL CODE, AND THE 2017 SOLAR DECATHLON BUILDING CODE. THE AUTHORITIES HAVING JURISDICTION ARE THE U.S. DEPARTMENT OF ENERGY AND THE CITY OF BIRMINGHAM, ALABAMA, WHICH WILL BE ENFORCING THE PROJECT UNDER THE 2015 IBC.

4. COMPLIANCE: THE CONTRACTOR IS TO COMPLY WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL LAWS AND CODES. THE CONTRACTOR TO COORDINATE ALL UTILITY WORK WITH RESPECTED UTILITY COMPANIES PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL REQUIRED BUILDING PERMITS AND INSPECTIONS. SEE THE LIFE SAFETY PLANS FOR APPLICABLE CODES.

5. PROJECT SITE LIMITS: THE PROJECT SITE LIMITS ARE SHOWN ON THE ARCHITECTURAL SITE PLAN. THE CONTRACTOR IS TO CAREFULLY REVIEW THIS INFORMATION, INCLUDING OWNER RESTRICTIONS, FOR INCORPORATION OF COORDINATION AND OVERHEAD REQUIREMENTS INTO THE CONTRACTOR'S BID NECESSARY TO MEET THESE REQUIREMENTS.

6. SAFETY: THE CONTRACTOR IS RESPONSIBLE FOR SAFETY OF THE PUBLIC AND THE PROPERTY WITHIN THE CONTRACTOR'S SITE LIMITS DURING CONSTRUCTION.

7. DIMENSIONS: THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS OF THE JOB SITE.
a. DATA HAS BEEN OBTAINED FROM SOURCES THE ARCHITECT BELIEVES ARE RELIABLE, BUT THE ACCURACY OF SUCH DATA IS NOT GUARANTEED.
b. THE CONTRACTOR SHALL VERIFY DIMENSIONS WITH THE FIELD CONDITIONS. UPON DISCOVERY OF ANY DISCREPANCIES BETWEEN DRAWINGS & THE FIELD CONDITIONS OR UPON DISCOVERY OF UNKNOWN CONDITIONS DETRIMENTAL TO THE COMPLETION OF THE WORK AS INDICATED IN THE DOCUMENTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF THE CONDITION IN QUESTION BEFORE PROCEEDING WITH THE WORK IN THAT AREA.
c. DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN. LARGE SCALE DETAILS GOVERN OVER SMALL SCALE DETAILS.
d. EXTERIOR DIMENSIONS ARE SHOWN FROM CENTERLINE OF COLUMNS TO FACE OF EXTERIOR STUD OR IN THE CASE OF MASONRY OPENINGS, FROM FACE OF FINISH VENEER TO FACE OF VENEER MATERIAL. INTERIOR DIMENSIONS ARE FROM FACE OF FINISH TO FACE OF FINISH AND TO COLUMN CENTERLINES AS SHOWN.

8. COORDINATION:
a. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE C, A, S, MEP, & FP SYSTEMS WITH EXISTING SITE AND INFRASTRUCTURE AND NEW CONSTRUCTION. THE CONTRACTOR IS TO NOTIFY THE ARCHITECT OF ANY CONFLICTS PRIOR TO PROCEEDING WITH THE WORK. ALL TRADE CONTRACTORS ARE TO REFERENCE ARCHITECTURAL DRAWINGS FOR ANY SPECIFIC REQUIREMENTS THAT MAY AFFECT THEIR WORK, INCLUDING LOCATIONS, PLACEMENT, HEIGHTS, ETC. OF EQUIPMENT, FIXTURES, ETC.
b. ANY AUTOMATIC SPRINKLER HEADS SHOWN ON REFLECTED CEILING PLANS INDICATE DESIRED LOCATIONS. CONTRACTOR SHALL INCLUDE SUFFICIENT HEADS TO PROVIDE A TOTALLY 100% AUTOMATIC SPRINKLER SYSTEM THROUGHOUT THE NEW CONSTRUCTION AREA PER NFPA CHAPTER 13. SPRINKLER HEAD LOCATIONS ARE SUBJECT TO ARCHITECT COORDINATION AND ADJUSTMENT DURING SHOP DRAWING SUBMITTAL PROCESS AS REQUIRED TO COORDINATE WITH OTHER TRADES.
c. THE INSTALLATION OF EQUIPMENT, HARDWARE, PIPING, CONDUIT, ETC. THAT OBSTRUCTS ACCESSIBILITY FOR NEW OR EXISTING EQUIPMENT IS NOT ACCEPTABLE.
d. THE CONTRACTOR SHALL VERIFY LOCATIONS AND REQUIREMENTS FOR ALL OWNER SUPPLIED FIXED EQUIPMENT AND COORDINATE WITH CONSULTANTS DRAWINGS AND THE CONTRACT DOCUMENTS.
e. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL SIGNAGE AND BARRICADES FOR SIDEWALK AND STREET CLOSING.
f. SEE DRAWINGS FOR FINISH SCHEDULE, TOILET ACCESSORY SCHEDULE, DOOR AND FRAME SCHEDULE, VIEW WINDOWS SCHEDULE AND FIXED EQUIPMENT SCHEDULE.
g. ALL PIPING SHALL BE INSTALLED IN AREAS WHERE IT WILL BE CONCEALED WITH THE EXCEPTION OF MECHANICAL ROOMS OR AS NOTED. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO PROVIDE FURRING FOR PIPING INSTALLED IN FINISH AREAS.
h. ALL CONTRACTORS ARE TO REFERENCE ARCHITECTURAL PLANS FOR ROOM NAMES AND NUMBERS.

9. GYPSUM BOARD ASSEMBLIES:
a. TOILET AND BATHROOM WALLS SHALL HAVE 5/8" MOISTURE RESISTANT TYPE 'X' GYPSUM BOARD TO ABOVE CEILING.
b. PROVIDE 20 GAUGE, 6" OR 8" METAL RUNNER TYPE BLOCKING IN WALLS FOR DOOR STOPS AND STOPS AND CASEWORK. PROVIDE WOOD BLOCKING AT ALL TOILET ACCESSORIES, AND ALL OTHER WALL-MOUNTED ITEMS.
c. PROVIDE SOUND ATTENUATION BATTS AS PER MANUFACTURER'S RECOMMENDATION AND ARCHITECTS APPROVAL AS INDICATED ON THE PLANS.

10. CORRIDOR ACCESS DURING DEMOLITION & CONSTRUCTION: MAINTAIN CORRIDORS CLEAN, FREE AND CLEAR OF DEBRIS AT ALL TIMES. MAINTAIN EGRESS WIDTHS AND ACCESS TO ALL FIRE EXITS/STAIRS DURING CONSTRUCTION.

11. ROOFING INSTALLATION: THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL NEW ROOFING IS INSTALLED WITH POSITIVE DRAINAGE TO GUTTERS & ROOF DRAINS.

20. BUILDING ENVELOPE: THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL ENVELOPE SYSTEMS INCLUDING AIR BARRIER, FLASHING SYSTEMS, SEALANTS, WINDOWS, DOORS, ETC ARE COMPLETELY WATERTIGHT.

GENERAL

ARCHITECTURAL

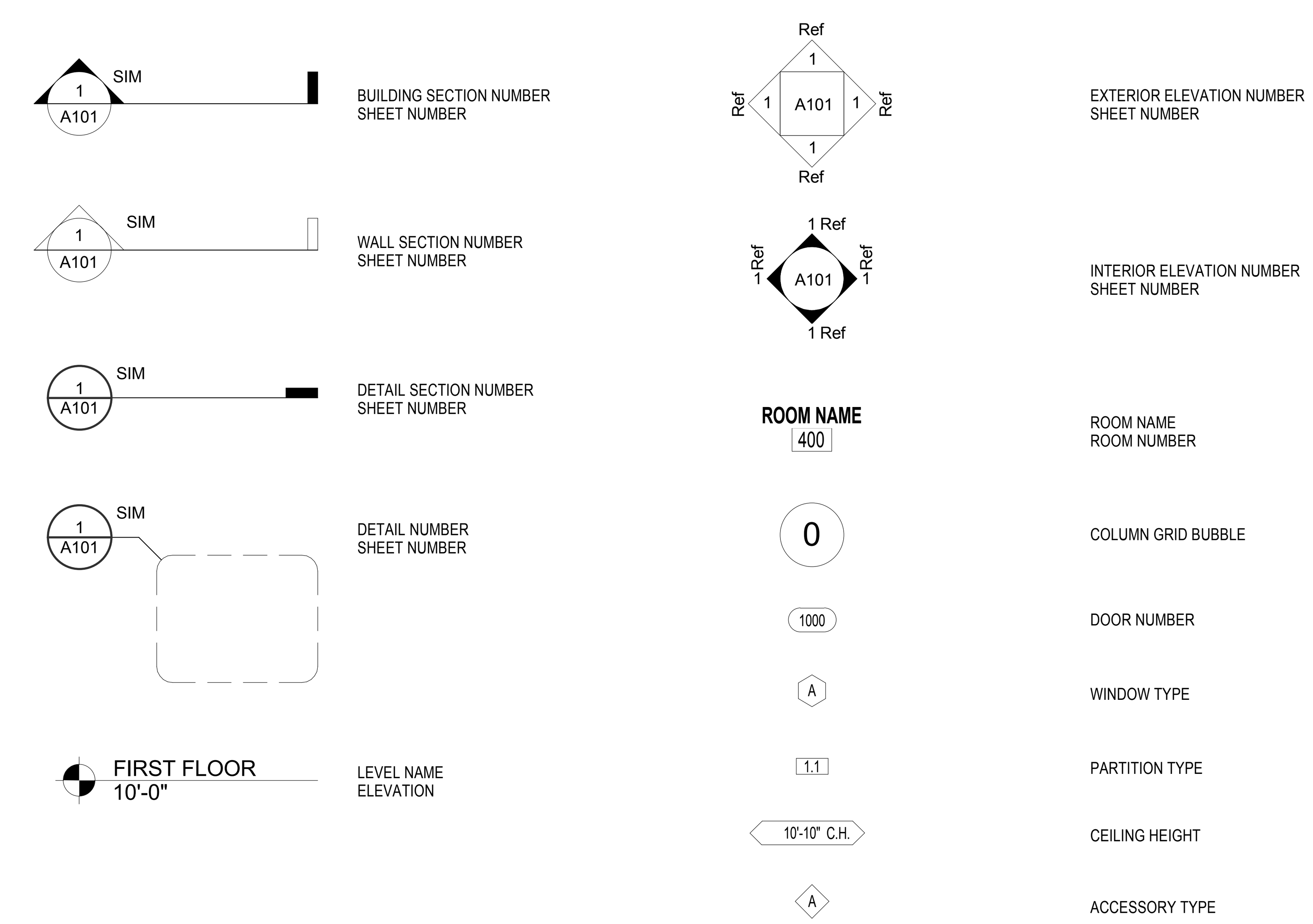
STRUCTURAL

PLUMBING

MECHANICAL

ELECTRICAL

SYMBOLS



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GENERAL NOTES AND SHEET INDEX

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GOVERNING CODES:

Exhibit Site: (Denver, CO)
2017 Solar Decathlon Building Code
2017 Solar Decathlon Rules
2015 international residential code
2015 international building code
2014 national electric code
2010 ADA Standards for Accessible Design
2009 ICC/ANSI 117.1

Permenant Site: (Birmingham, AL)
2015 international building code
2015 international fire code
2015 international plumbing code
2015 international mechanical code
2014 national electrical code
2015 NFPA 101 - life safety code
2015 international fuel gas code
2010 ADA Standards for Accessible Design
2009 ICC/ANSI 117.1

AUTHORITIES HAVING JURISDICTION:

Alabama Building Commission
2015 IBC

BUILDING CODE DATA

chapter 3

BUILDING PLANNING

R302 - FIRE-RESISTANT CONSTRUCTION

R302.9.1 FLAME SPREAD INDEX: WALL AND CEILING FINISHES SHALL HAVE A FLAME SPREAD INDEX OF NOT GREATER THAN 200.
EXCEPTION: FLAME SPREAD INDEX REQUIREMENTS FOR FINISHES SHALL NOT APPLY TO TRIM DEFINED AS PICTURE MOLDS, CHAIR RAILS, BASEBOOARDS, AND HANDRAILS; TO DOOR AND WINOWS OR THEIR FRAMES; OR TO MATERIALS THAT ARE LESS THAN 1/28 INCH IN THCKNESS CEMENTED TO THE SURFACE OF WALLS OR CEILINGS IF THESE MATERIALS EXHIBIT FLAME SPREAD INDEX VALUES NOT GREATER THAN THOSE OF PAPER OF THIS THICKNESS CEMENTED TO A NONCOMBUSTIBLE BACKING.

R302.9.2 SMOKE-DEVELOPED INDEX: WALL AND CEILING FINISHES SHALL HAVE A SMOKE-DEVELOPED INDEX OF NOT GREATER THAN 450.

R302.10.1 INSULATION: INSULATION MATERIALS, INCLUDING FACINGS, SUCH AS VAPOR RETARDERS AND VAPOR PERMEABLE MEMBRANES INSTALLED WITHIN FLOOR-CEILING ASSEMBLIES, ROOF-CEILING ASSEMBLIES, WALL ASSEMBLIES, CRAWL SPACES AND ATTICS SHALL HAVE A FLAME SPREAD INDEX NOT TO EXCEED 25 WITH AN ACCOMPANYING SMOKE-DEVELOPED INDEX NOT TO EXCEED 450 WHERE TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723.
EXC.1: WHERE SUCH MATERIALS ARE INSTALLED IN CONCEALED SPACES, THE FLAME SPREAD INDEX AND SMOKE-DEVELOPED INDEX LIMITATIONS DO NOT APPLY TO THE FACINGS, PROVIDED THAT THE FACING IS INSTALLED IN SUBSTANTIAL CONTACT WITH THE UNEXPOSED SURFACE OF THE CEILING, FLOOR OR WALL FINISH.
EXC.2: CELLULOSE FIBER LOOS-FILL INSULATION, THAT IS NOT SPRAY APPLIED, COMPLYING WITH THE REQUIREMENTS OF SECTION R302.10.3, SHALL NOT BE REQUIRED TO MEET THE SMOKE-DEVELOPED INDEX OF NOT MORE THAN 450 AND SHALL BE REQUIRED TO MEET A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 450 WHERE TESTED IN ACCORDANCE WITH CAN/ULC S102.2.
EXC.3: FOAM PLASTIC INSULATION SHALL COMPLY WITH SECTION R316.

R302.10.2 LOOSE-FILL INSULATION: LOOS-FILL INSULATION MATERIALS THAT CANNOT BE MOUNTED IN THE ASTM E84 OR UL 723 APPARATUS WITHOUT A SCREEN OR ARTIFICIAL SUPPORTS SHALL COMPLY WITH THE FLAME SPREAD AND SMOKE-DEVELOPED LIMITS OF SECTION 302.10.1 WHERE TESTED IN ACCORDANCE WITH CAN/ULC S102.3.
EXCEPTION: CELLULOSIC FIBER LOOSE-FILL INSULATION SHALL NOT BE REQUIRED TO BE TESTED IN ACCORDANCE WITH CAN/ULC S102.2, PROVIDED SUCH INSULATION COMPLIES WITH THE REQUIREMENTS OF SECTIONS R302.10.1 AND R302.10.3.

R302.10.3 CELLULOSIC FIBER LOOSE-FILL INSULATION: CELLULOSIC FIBER LOOSE-FILL INSULATION SHALL COMPLY WITH CPSC 16 CFR, PARTS 1209 AND 1404. EACH PACKAGE OF SUCH INSULATING MATERIAL SHALL BE CLEARLY LABELED IN ACCORDANCE WITH CPSC 16, PARTS 1209 AND 1404.

R302.10.4 EXPOSED ATTIC INSULATION: EXPOSED INSULATION MATERIALS INSTALLED ON ATTIC FLOORS SHALL HAVE A CRITICAL RADIANT FLUX NOT LESS THAN 0.12 WATT PER SQUARE CENTIMETER.

R305 - CEILING HEIGHT

R305.1 MINIMUM HEIGHT: HABITABLE SPACE, HALLWAYS, AND PORTIONS OF BASEMENTS CONTAINING THESE SPACES SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 7 FEET. BATHROOMS, TOILET ROOMS AND LAUNDRY ROOMS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 6 FEET 8 INCHES.

R308 - GLAZING

R308.1 INDENTIFICATION: EXCEPT AS INDICATED IN R308.1.1 EACH PANE OF GLAZING INSTALLED IN HAZARDOUS LOCATIONS AS DEFINED IN SECTION R308.4 SHALL BE PROVIDED WITH A MANUFACTURER'S DESIGNATION SPECIFYING WHO APPLIED THE DESIGNATION, DESIGNATING THE TYPE OF GLASS AND THE SAFETY GLAING STANDARD WITH WHICH IT COMPLIES, WHICH IS VISIBLE IN THE FINAL INSTALLATION. THE DESIGNATION SHALL BE ACID ETCHED, SANDBLASTED, CERAMIC-FIRED, LASER ETCHED, EMBOSSED, OR BE OF A TYPE THAT ONE APPLIED CANNOT BE REMOVED WITHOUT BEING DESTROYED. A LABLEL SHALL BE PERMITTED IN LIEU OF THE MANUFACTURER'S DESIGNATION.

R308.3 HUMAN IMPACT LOADS: INDIVIDUAL GLAZED AREAS, INCLUDING GLASS MIRRORS IN HAZARDOUS LOCATIONS SUCH AS THOSE INDICATED AS DEFINED IN SECTION R308.4, SHALL PASS THE TEST REQUIREMENTS OF SECTION R308.3.1.
EXC.2: MIRRORS AND OTHER GLASS PANELS MOUNTED OR HUNG ON A SURFACE THAT PROVIDED A CONTINUOUS BACKING SUPPORT.

R308.4.1 GLAZING IN DOORS: GLAZING IN FIXED AND OPERABLE PANELS OF SWINGING, SLIDING AND BIFOLD DOORS SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

R308.4.2 GLAZING ADJACENT TO DOORS: GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL ADJACENT TO A DOOR SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION WHERE THE BOTTOM EXPOSED SDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE THE FLOOR OR WALKING SURFACE AND IT MEETS EITHER OF THE FOLLOWING CONDITIONS:
1. WHERE THE GLAZING IS WITHIN 24 INCHES OF EITHER SIDE OF THE DOOR IN THE PLANE OF THE DOOR IN A CLOSED POSITION.
2. WHERE THE GLAZING IS ON A WALL PERPENDICULAR TO THE PLANE OF THE DOOR IN A CLOSED POSITION AND WITHIN 24 INCHES OF THE HINGE SIDE OF AN IN-SWINGING DOOR.

R308.4.3 GLAZING IN WINDOWS: GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL THAT MEETS ALL OF THE FOLLOWING CONDITIONS SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION:
1. THE EXPOSED AREA OF AN INDIVIDUAL PANE IS LARGER THAN 9 SQUARE FEET.
2. THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18 INCHES ABOVE THE FLOOR.
3. THE TOP EDGE OF THE GLAZING IS MORE THAN 36 INCHES ABOVE THE FLOOR; AND
4. ONE OR MORE WALKING SURFACES ARE WITHIN 36 INCHES MEASURED HORIZONTALLY AND IN A STRAIGHT LINE, OF THE GLAZING.

R308.4.5 GLAZING AND WET SURFACES: GLAZING IN WALLS, ENCLOSURES OR FENCES CONTAINING OR FACING HOT TUBS, SPAS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS, SHOWERS AND INDOOR OR OUTDOOR SWIMMING POOLS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES MEASURED VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION. THIS SHALL APPLY TO SINGLE GLAZING AND EACH PANE IN MULTIPLE GLAZING.

R310 - EMERGENCY ESCAPE AND RESCUE OPENINGS

R310.1 EMERGENCY ESCAPE AND RESCUE OPENING REQUIRED: BASEMENTS, HABITABLE ATTICS AND EVERY SLEEPING ROOM SHALL HAVE NOT LESS THAN ONE OPERABLE EMERGENCY ESCAPE AND RESCUE OPENING. WHERE BASEMENTS CONTAIN ONE OF MORE SLEEPING ROOMS, AN EMERGENCY ESCAPE AND RESCUE OPENING SHALL BE REQUIRED IN EACH SLEEPING ROOM. EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL OPEN DIRECTLY INTO A PUBLIC WAY, OR TO A YARD OR COURT THAT OPENS TO A PUBLIC WAY.

R310.1.1 OPERATIONAL CONSTRAINTS AND OPENING CONTROL DEVICES: EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL BE OPERATIONAL FROM THE INSIDE OF THE ROOM WITHOUT THE USE OF KEYS, TOOLS OR SPECIAL KNOWLEDGE. WINDOW OPENING CONTROL DEVICES COMPLYING WITH ASTM F2090 SHALL BE PERMITTED FOR USE ON WINDOWS SERVING AS A REQUIRED EMERGENCY ESCAPE AND RESCUE OPENING.

R310.2.1 MINIMUM OPENING AREA: EMERGENCY AND ESCAPE RESCUE OPENINGS SHALL HAVE A NET CLEAR OPENING OF NOT LESS THAN 5.7 SQUARE FEET. THE NET CLEAR OPENING DIMENSIONS REQUIRED BY THIS SECTION SHALL BE OBTAINED BY THE NORMAL OPERATION OF THE EMERGENCY ESCAPE AND RESCUE OPENING FROM THE INSIDE. THE NET CLEAR HEIGHT OPENING SHALL BE NOT LESS THAN 24 INCHES AND THE NET CLEAR WIDTH SHALL BE NOT LESS THAN 20 INCHES.
EXCEPTION: GRADE FLOOR OR BELOW GRADE OPENINGS SHALL HAVE A NET CLEAR OPENING OF NOT LESS THAN 5 SQUARE FEET.

R310.2.2 WINDOW SILL HEIGHT: WHERE A WINDOW IS PROVIDED AS THE EMERGENCY ESCAPE AND RESCUE OPENING, IT SHALL HAVE A SILL HEIGHT OF NOT MORE THAN 44 INCHES ABOVE THE FLOOR; WHERE THE SILL HEIGHT IS BELOW GRADE, IT SHALL BE PROVIDED WITH A WINDOW WELL IN ACCORDANCE WITH SECTION R310.2.3.

R310.3 EMERGENCY ESCAPE AND RESCUE DOORS: WHERE A DOOR IS PROVIDED AS THE REQUIRED EMERGENCY ESCAPE AND RESCUE OPENING, IT SHALL BE PERMITTED TO BE A SIDE-HINGED DOOR OR A SLIDER. WHERE THE OPENING IS BELOW THE ADJACENT GROUND ELEVATION, IT SHALL BE PROVIDED WITH A BULKHEAD ENCLOSURE.

R310.3.1 MINIMUM DOOR OPENING SIZE: THE MINIMUM NET CLEAR HEIGHT OPENING FOR ANY DOOR THAT SERVES AS AN EMERGENCY AND ESCAPE RESCUE OPENING SHALL BE IN ACCORDANCE WITH SECTION R310.2.1.

R311 - MEANS OF EGRESS

R311.1 MEANS OF EGRESS: DWELLINGS SHALL BE PROVIDED WITH A MEANS OF EGRESS IN ACCORDANCE WITH THIS SECTION. THE MEANS OF EGRESS SHALL PROVIDE A CONTINUOUS AND UNOBSTRUCTED PATH OF VERTICAL AND HORZONTAL EGRESS TRAVEL FROM ALL PORTIONS OF THE DWELLING TO THE REQUIRED EGRESS DOOR WITHOUT REQUIRING TRAVEL THROUGH A GARAGE. THE REQUIRED EGRESS DOOR SHALL OPEN DIRECTLY INTO A PUBLIC WAY OR TO A YARD OR COURT THAT OPENS TO A PUBLIC WAY.

R311.2 EGRESS DOOR: NOT LESS THAN ONE EGRESS DOOR SHALL BE PROVIDED FOR EACH DWELLING UNIT. THE EGRESS DOOR SHALL BE SIDE-HINGED, AND SHALL PROVIDE A CLEAR WIDTH OF NOT LESS THAN 32 INCHES WHERE MEASURED BETWEEN THE FACE OF THE DOOR AND THE STOP, WITH THE DOOR OPEN 90 DEGREES. THE CLEAR HEIGHT OF THE DOOR OPENING SHALL BE NOT LESS THAN 78 INCHES IN HEIGHT MEASURED FROM THE TOP OF THE THRESHOLD TO THE BOTTOM OF THE STOP. OTHER DOOR SHALL NOT BE REQUIRED TO COMPLY WITH THESE MINIMUM DIMENSIONS. EGRESS DOORS SHALL BE READILY OPENABLE FROM INSIDE THE DWELLING WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.

R311.3 FLOORS AND LANDINGS AT EXTERIOR DOORS: THERE SHALL BE A LANDING OR FLOOR ON EACH SIDE OF EACH EXTRIOR DOOR. THE WIDTH OF EACH LANDING SHALL BE NOT LESS THAN THE DOOR SERVED. EVERY LANDING SHALL HAVE A DIMENSION OF NOT LESS THAN 36 INCHES MEASURED IN THE DIRECTION OF TRAVEL. THE SLOPE AT EXTERIOR LANDINGS SHALL NOT EXCEED 1/4 UNIT VERTICAL IN 12 UNITS HORIZONTAL.

R311 - CONT'D

R311.3.1 FLOOR ELEVATIONS A THE REQUIRED EGRESS DOORS: LANDINGS OR FINISHED FLOORS AT THE REQUIRED EGRESS DOOR SHALL BE NOT MORE THAN 1 1/2 INCHES LOWER THAN THE TOP OF THE THRESHOLD.
WHERE EXTERIOR LANDINGS OR FLOORS SERVING THE REQUIRED DOOR ARE NOT AT GRADE, THEY SHALL BE PROVIDED WITH ACCESS TO GRADE BY MEANS OF A RAMP IN ACCORDANCE WITH SECTION R311.8.

R311.6 HALLWAYS: THE WIDTH OF A HALLWAY SHALL BE NOT LESS THAN 3 FEET.

R311.8 RAMPS
R311.8.1 MAXIMUM SLOPE: RAMPS SERVING THE EGRESS DOOR REQUIRED BY SECTION R311.2 SHALL HAVE A SLOPE OF NOT MORE THAN 1 UNIT VERTICAL IN 12 UNITS HORIZONTAL (8.3-PERCENT SLOPE). ALL OTHER RAMPS SHALL HAVE A MAXIMUM SLOPE OF 1 UNIT VERTICAL IN 8 UNITS HORIZONTAL (12.5-PERCENT SLOPE).

R311.8.2 LANDGINS REQUIRED: THERE SHALL BE A FLOOR OR LANDING AT THE TOP AND BOTTOM OF EACH RAMP, WHERE DOORS OPEN ONTO RAMPS AND WHERE RAMPS CHANGE DIRECTIONS. THE WIDTH OF THE LANDING PERPENDICULAR TO THE RAMP SLOPE SHALL BE NOT LESS THAN 36 INCHES.

R311.8.3 HANDRAILS REQUIRED: HANDRAILS SHALL BE PROVIDED ON NOT LESS THAN ONE SIDE OF RAMPS EXCEEDING A SLOPE OF ONE UNIT VERTICAL IN 12 UNITS HORIZONTAL (8.33-PERCENT SLOPE).

R311.8.3.1 HEIGHT: HANDRAIL HEIGHT, MEASURED ABOVE THE FINISHED SURFACE OF THE RAMP SLOPE, SHALL BE NOT LESS THAN 34 INCHES AND NOT MORE THAN 38 INCHES.

R311.8.3.2 GRIP SIZE: HANDRAILS ON RAMPS SHALL COMPLY WITH SECTION R311.7.8.3.

R311.8.3.3 CONTINUITY: HANDRAILS WHERE REQUIRED ON RAMPS SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE RAMP. HANDRAIL ENDS SHALL BE RETURNED OR SHALL TERMINATE IN NEWEL POSTS OR SAFETY TERMINALS. HANDRAILS ADJACENT TO A WALL SHALL HAVE A SPACE OF NOT LESS THAN 1 1/2 INCHES BETWEEN THE WALL AND THE HANDRAILS.

R312 - GUARDS AND WINDOW FALL PROTECTION

R312.1 GUARDS: GUARDS SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS R312.1.1 THROUGH R312.1.4.

R312.1.1 WHERE REQUIRED: GUARDS SHALL BE LOCATED ALONG OPEN-SIDED WALKING SURFACES, INCLUDING STAIRS, RAMPS AND LANDINGS, THAT ARE LOCATED MORE THAN 30 INCHES MEASURED VERTICALLY TO THE FLOOR OR DRADE BELOW AT ANY POINT WITHIN 36 INCHES HORIZONTALLY TO THE EDGE OF THE OPEN SIDE. INSECT SCREENING SHALL NOT BE CONSIDERED AS A GUARD.

R312.1.2 HEIGHT: REQUIRED GUARDS AT OPEN-SIDED WALKING SURFACES, INCLUDING STAIRS, PORCHES, BALCONIES OR LANDINGS, SHALL BE NOT LESS THAN36 INCHES IN HEIGHT AS MEASURED VERTICALLY ABOVE THE ADJACENT WALKING SURFACE OR THE LINE CONNECTING THE LEADING EDGES OF THE TREADS.

R312.1.3 OPENING LIMITATIONS: REQUIRED GUARDS SHALL NOT HAVE OPENINGS FROM THE WALKING SURFACE TO THE REQUIRED GUARD HEIGHT THAT ALLOW PASSAGE OF A SPHERE 4 INCHES IN DIAMETER.

R312.2 WINDOW FALL PROTECTION: WINDOW FALL PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS R312.2.1 AND R312.2.2.

R312.2.1 WINDOW SILLS: IN DWELLING UNITS, WHERE THE TOP OF THE SILL OF AN OPERABLE WINDOW OPENING IS LOCATED LESS THAN 24 INCHES ABOVE THE FINISHED FLOOR AND GREATER THAN 72 ABOVE THE FINISHED GRADE OR OTHER SURFACE BELOW ON THE EXTERIOR OF THE BUILDING, THE OPERABLE WINDOW SHALL COMPLY WITH ON OF THE FOLLWING:
1. OPERABLE WINDOW WITH OPENINGS THAT WILL NOT ALLOW A 4-INCH-DIAMETER SPHERE TO PASS THROUGH THE OPENING WHERE THE OPENING IS IN ITS LARGEST OPENED POSITION.
2. OPERABLE WINDOWS THAT ARE PROVIDED WITH WINDOW FALL PREVENTION DEVICES THAT COMPLY WITH ASTM F2090.
3. OPERABLE WINDOWS THAT ARE PROVIDED WITH WINDOW OPENING CONTROL DEVICES THAT COMPLY WITH SECTION R312.2.2.

R312.2.2 WINDOW OPENING CONTROL DEVICES: WINDOW OPENING CONTROL DEVICES SHALL COMPLY WITH ASTM F2090. THE WINDOW OPENING CONTROL DEVICE, AFTER OPERATION TO RELEASE THE CONTROL DEVICE ALLOWING THE WINDOW TO FULLY OPEN, SHALL NOT REDUCE THE NET CLEAR OPENING AREA OF THE WINDOW UNIT TO LESS THAN THE AREA REQUIRED BY SECTION R310.2.1.

R313 - AUTOMATIC FIRE SPRINKLER SYSTEMS

R313.2 ONE- AND TWO-FAMILY DWELLINGS WITH AUTOMATIC FIRE SYSTEMS: AN AUTOMATIC RESIDENTIAL FIRE SPRINKLER SYSTEM SHALL BE INSTALLED IN ONE- AND TWO-FAMILY DWELLINGS.

R313.2.1 DESIGN AND INSTALLATION: AUTOMATIC RESIDENTIAL FIRE SPRINKLER SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SECTION P2904 OR NFPA 13D.

R314 - SMOKE ALARMS

R314.1 GENERAL: SMOKE ALARMS SHALL COMPLY WITH NFPA 72 AND SECTION R314.

R314.1.1 LISTINGS: SMOKE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217. COMBINATION SMOKE AND CARBON MONOIDE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217 AND UL 2034.

R314.2 WHERE REQUIRED: SMOKE ALARMS SHALL BE PROVIDED IN ACCORDANCE WITH THIS SECTION.

R314.2.1 NEW CONSTRUCTION: SMOKE ALARMS SHALL BE PROVIDED IN DWELLING UNITS.

R314.3 LOCATION: SMOKE ALARMS SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:
1. IN EACH SLEEPING ROOM.
2. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
3. N/A
4. SMOKE ALARMS SHALL BE INSTALLED NOT LESS THAN 3 FEET HORIZONTALLY FROM THE DOOR OR OPENING OF A BATHROOM THAT CONTAINS A BATHTUB OR SHOWER UNLESS THIS WOULD PREVENT PLACEMENT OF A SMOKE ALARM REQUIRED BY SECTION R314.3.

R314.3.1 INSTALLATION NEAR COOKING APPLIANCES: SMOKE ALARMS SHALL NOT BE INSTALLED IN THE FOLLOWING LOCATIONS UNLESS THIS WOULD PREVENT PLACEMENT OF A SMOKE ALARM IN A LOCATION REQUIRED BY SECTION R314.3.
1. IONIZATION SMOKE ALARMS SHALL NOT BE INSTALLED 20 FEET HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.
2. IONIZATION SMOKE ALARMS WITH AN ALARM-SILENCING SWITCH SHALL NOT BE INSTALLED LESS THAN 10 FEET HORIZONTALLY FROM A PERMANENTYLY INSTALLED COOKING APPLIANCE.
3. PHOTOELECTRIC SMOKE ALARMS SHALL NOT BE INSTALLED LESS THAN 6 FEET HORIZONTALLY FROM PERMANENTLY INSTALLED COOKING APPLIANCE.

R314.4 INTERCONNECTION: WHERE MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT IN ACCORDANCE WITH SECTION R314.3, THE ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACUATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL DWELLING UNIT. PHYSICAL INTERCONNECTION OF SMOKE ALARMS SHALL NOT BE REQUIRED WHERE LISTED WIRELESS ALARMS ARE INSTALLED AND ALL ALARMS SOUND UPON ACTIVATION OF ONE ALARM.

R314.6 POWER SOURCE: SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE, AND WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVERCURRENT PROTECTION.
EXC.1 SMOKE ALARMS SHALL BE PERMITTED TO BE BATTERY OPERATED WHERE INSTALLED IN BUILDINGS WITHOUT COMMERCIAL POWER.

R314.7 FIRE ALARM SYSTEMS: FIRE ALARM SYSTEMS SHALL BE PERMITTED TO BE USED IN LIEU OF SMOKE ALARMS AND SHALL COMPLY WITH SECTIONS R314.7.1 THROUGH R314.7.4.

R314.7.1 GENERAL: FIRE ALARM SYSTEMS SHALL COMPLY WITH THE PROVISIONS OF THIS CODE AND THE HOUSEHOLD FIRE WARNING EQUIPMENT PROVISIONS OF NFPA 72. SMOKE DECTECTORS SHLL BE LISTED IN ACCORDANCE WITH UL 268.

R314.7.2 LOCATION: SMOKE DETECTORS SHALL BE INSTALLED IN THE LOCATIONS SPECIFIED IN SECTION R314.3.

R314.7.3 PERMANENT FIXTURE: WHERE A HOUSEHOLD FIRE ALARM SYSTEM IS INSTALLED, IT SHALL BECOME A PERMANENT FIXTURE OF THE OCCUPANCY, OWNED BY THE HOMEOWNER.

R324 - SOLAR ENERGY SYSTEMS

R324.1 GENERAL: SOLAR ENERGY SYSTEMS SHALL COMPLY WITH THE PROVISIONS OF THIS SECTION.

R324.3 PHOTOVOLTAIC SYSTEMS: PHOTOVOLTAIC SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SECTIONS R324.3.1 THROUGH R324.6.1 AND NFPA 70. INVERTERS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 1741. SYSTEMS CONNECTED TO THE UTILITY GRID SHALL USE INVERTERS LISTED FOR UTILITY INTERACTION.

R324.3.1 EQUIPMENT LISTINGS: PHOTOVOLTAIC PANELS AND MODULES SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 1703.

R324.4 ROOFTOP-MOUNTED PHOTOVOLTAIC SYSTEMS: ROOFTOP-MOUNTED PHOTOVOLTAIC PANEL SYSTEMS INSTALLED ON OR ABOVE THE ROOF COVERING SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SECTION R907.

R324.5 BUILDING-INTEGRATED PHOTOVOLTAIC SYSTEMS: BUILDING-INTEGRATED PHOTOVOLTAIC SYSTEMS THAT SERVE AS ROOF COVERINGS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SECTION 905.

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BUILDING CODE

AC.04

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BUILDING CODE DATA CONT'D

RAMPS & ACCESSIBILITY

RAMPS

RAMPS: A "RAMP" IS ANY SLOPING SURFACE USED AS PART OF THE CIRCULATION PATH THAT HAS A SLOPE IN EXCESS OF 1:20 SLOPING SURFACES LESS THAN 1:20 SHALL COMPLY WITH 2010 STANDARD FOR ACCESSIBILE DESIGN SECTION 403.

SD BUILDING CODE 4-3: SOLAR DECATHLON TEAMS MUST DESIGN AND PROVIDE A METAL PLATE TRANSITION COMPONENT BETWEEN THE ACCESS RAMP AND THE WALKING SURFACE OF THE COMPETITION SITE. SUCH PLATE SHALL BE NO GREATER THAN 1/2 INCH THICK AT THE EDGE CONTRACTING THE WALKING SURFACE OF THE COMPETITION SITE. IF THE EDGE EXCEEDS 1/4 INCH THICKNESS, IT SHALL BE PROVIDED WITH A 1:2 BEVEL, IF THE CONNECTED RAMP EXCEEDS 5% SLOPE, THE TRANSITION PLATE AND THE RAMP MUST BE PROVIDED WITH HANDRAILS AND EDGE PROTECTION, BOTH SHALL EXTEND ONTO THE TRANSITION PLATE WITH THE HANDRAILS EXTENDING 12 INCHES BEYOND THE TERMINATION OF THE TRANSITION PLATE. THE DESIGN OF THE TRANSITION PLATE SHALL ACCOMMODATE THE LATERAL LOADS PLACED ON THE HANDRAILS AND EXTENSIONS WITHOUT RELYING ON GROUND EMBEDMENT FOR SUPPORT.

ADA2010 405.2 SLOPE: RAMP RUNS SHALL HAVE A RUNNING SLOPE NOT STEEPER THAN 1:12 (8.3-PERCENT SLOPE).

ADA2010 405.4 FLOOR OR GROUND SURFACES: FLOOR OR GROUND SURFACES OF RAMP RUNS SHALL COMPLY WITH 302 CHANGES IN LEVEL OTHER THAN THE RUNNING SLOPE AND CROSS SLOPE ARE NOT PERMITTED ON RAMP RUNS.

ADA2010 405.5 CLEAR WIDTH: THE CLEAR WIDTH OF A RAMP RUN AND WHERE HANDRAILS ARE PROVIDED, THE CLEAR WIDTH BETWEEN HANDRAILS SHALL BE 36 INCHES MINIMUM.

ADA2010 405.6 RISE: THE RISE FOR ANY RAMP RUN SHALL BE 30 INCHES MAXIMUM.

ADA2010 405.7 LANDINGS: RAMPS SHALL HAVE LANDINGS AT THE TOP AND THE BOTTOM OF EACH RAMP RUN. LANDINGS SHALL COMPLY WITH FIGURE 405.7.

ADA2010 405.7.2 WIDTH: THE LANDING CLEAR WIDTH SHALL BE AT LEAST AS WIDE AS THE WIDEST RAMP RUN LEADING TO THE LANDING.

ADA2010 405.7.3 LENGTH: THE LANDING CLEAR LENGTH SHALL BE 60 INCHES LONG MINIMUM.

ADA2010 405.7.4 CHANGE IN DIRECTION: RAMPS THAT CHANGE DIRECTION BETWEEN RUNS AT LANDINGS SHALL HAVE A CLEAR LANDING 60 INCHES MINIMUM BY 60 INCHES MINIMUM.

ACCESSIBLE ROUTES

SD BUILDING CODE 4-1: AN ACCESSIBLE ROUTE SHALL BE PROVIDED WITHIN THE UNIT TO ALL SPACES ACCESSIBLE TO THE PUBLIC AS PART OF THE TOUR. COMPONENTS OF THE ACCESSIBILE ROUTE USED BY THE TOURING PUBLIC MUST COMPLY WITH 2010 STANDARD FOR ACCESSIBLE DESIGN. IF ANY OF THE FEATURES ARE AVAILABLE AND INTENDED FOR USE BY THE PUBLIC, THEY SHALL BE ACCESSIBLE IN ACCORDANCE WITH THE 2010 STANDARD FOR ACCESSIBLE DESIGN.

ADA2010 402.2 COMPONENTS: ACCESSIBLE ROUTES SHALL CONSIST OF ONE OR MORE OF THE FOLLOWING COMPONENTS: WALKING SURFACES WITH A RUNNING SLOPE NOT STEEPER THAN 1:20, DOORWAYS, RAMPS, CURB RAMPS EXLCUDING THE FLARED SIDES, ELEVATORS, AND PLATFORM LIFTS.

ADA2010 403.3 SLOPE: THE RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20. THE CROSS SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:48.

ADA2010 303.2 VERTICAL CHANGE IN LEVEL: CHANGES IN LEVEL OF 1/4 INCH HIGH MAXIMUM SHALL BE PERMITTED TO BE VERTICAL.

ADA2010 303.3 BEVELED: CHANGES IN LEVEL BETWEEN 1/4 INCH HIGH MINIMUM AND 1/2 INCH HIGH MAXIMUM SHALL BE BEVELED WITH A SLOPE NOT STEEPER THAN 1:2.

ADA2010 303.4 RAMPS: CHANGES IN LEVEL GREATER THAN 1/2 INCH HIGH SHALL BE RAMPED, AND SHALL COMPLY WITH 405 OR 406.

ADA2010 403.5.1 CLEAR WIDTH: THE CLEAR WIDTH OF WALKING SURFACES SHALL BE 36 INCHES MINIMUM.
EXCEPTION: THE CLEAR WIDTH SHALL BE PERMITTED TO BE REDUCED TO 32 INCHES MINIMUM FOR A LENGTH OF 24 INCHES MAXIMUM PROVIDED THAT REDUCED WIDTH SEGMENTS ARE SEPARATED BY SEGMENTS THAT ARE 48 INCHES LONG MINIMUM AND 36 INCHES WIDE MINIMUM.

ADA2010 404.1 GENERAL: DOORS, DOORWAYS, AND GATES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH SECTION 404.

SD BUILDING CODE 4-5: A. DOORS THAT CAN BE FIXED IN AN OPEN POSITION MAY BE ACCEPTED AS PART OF THE ACCESSIBLE ROUTE IF 32 IN. MINIMUM CLEARANCE IS PROVIDED THROUGH THE DOOR OPENING WITH THE DOOR SECURED IN THE FULLY OPEN POSITION.
B. DOORS WITHOUT REQUIRED MANEUVERING CLEARANCES THAT ARE INTENDED TO REMAIN OPEN DURING THE PUBLIC TOUR MUST BE CLEARLY IDENTIFIED ON THE PLANS AND APPROVED BY THE SOLAR DECATHLON BUILDING OFFICIAL.

ADA2010 404.2.3 DOORWAY CLEAR WIDTH: DOOR OPENINGS SHALL PROVIDE A CLEAR WIDTH OF 32 INCHES MINIMUM. CLEAR OPENINGS OF DOORWAYS WITH SWINGING DOORS SHALL BE MEASURED BETWEEN THE FACE OF THE DOOR AND THE STOP, WITH THE DOOR OPEN 90 DEGREES. OPENINGS MORE THAN 24 INCHES DEEP SHALL PROVIDE A CLEAR OPENING OF 36 INCHES MINIMUM. THERE SHALL BE NO PROJECTIONS INTO THE REQUIRED CLEAR OPENING WIDTH LOWER THAN 34 INCHES ABOVE THE FINISH FLOOR OR GROUND. PROJECTIONS INTO THE CLEAR OPENING WIDTH BETWEEN 34 INCHES AND 80 INCHES ABOVE THE FINISH FLOOR OR GROUND SHALL NOT EXCEED 4 INCHES.

ADA2010 405.8 HANDRAILS: RAMP RUNS WITH A RISE GREATER THAN 6 INCHES SHALL HAVE HANDRAILS COMPLYING WITH ADA2010 SECTION 505. ADA2010 405.9.2 EDGE PROTECTION CURB OR BARRIER. A CURB OR BARRIER SHALL BE PROVIDED THAT PREVENTS THE PASSAGE OF A 4 INCH DIAMETER SPHERE, WHERE ANY PORTION OF THE SPHERE IS WITHIN 4 INCHES OF THE FINISH FLOOR OR GROUND SURFACE

HANDRAILS

ADA2010 505.1 GENERAL: HANDRAILS PROVIDED ALONG WALKING SURFACES COMPLYING WITH 403, REQUIRED AT RAMPS COMPLYING WITH 405, AND REQUIRED AT STAIRS COMPLYING WITH 504 SHALL COMPLY WITH 505.

ADA2010 505.2 WHERE REQUIRED: HANDRAILS SHALL BE PROVIDED ON BOTH SIDES OF STAIRS AND RAMPS.

ADA2010 505.3 CONTINUITY: HANDRAILS SHALL BE CONTINUOUS WITHIN THE FULL LENGTH OF EACH STAIR FLIGHT OR RAMP RUN. INSIDE HANDRAILS ON SWITCHBACK OR DOGLEG STAIRS AND RAMPS SHALL BE CONTINUOUS BETWEEN FLIGHTS OR RUNS.

ADA2010 505.4 HEIGHT: TOP OF GRIPPING SURFACES OF HANDRAILS SHALL BE 34 INCHES MINIMUM AND 38 INCHES MAXIMUM VERTICALLY ABOVE RAMP SURFACES. HANDRAILS SHALL BE AT A CONSISTENT HEIGHT ABOVE RAMP SURFACES.

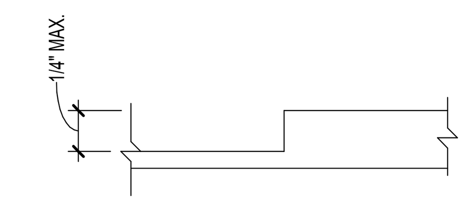
ADA2010 505.5 CLEARANCE: CLEARANCE BETWEEN HANDRAIL GRIPPING SURFACES AND ADJACENT SURFACES SHALL BE 1½ MINIMUM.

ADA2010 505.6 GRIPPING SURFACE: HANDRAIL GRIPPING SURFACES SHALL BE CONTINUOUS ALONG THEIR LENGTH AND SHALL NOT BE OBSTRUCTED ALONG THEIR TOPS OR SIDES. THE BOTTOMS OF HANDRAIL GRIPPING SURFACES SHALL NOT BE OBSTRUCTED FOR MORE THAN 20 PERCENT OF THEIR LENGTH. WHERE PROVIDED, HORIZONTAL PROJECTIONS SHALL OCCUR 1½ MINIMUM BELOW THE BOTTOM OF THE HANDRAIL GRIPPING SURFACE.

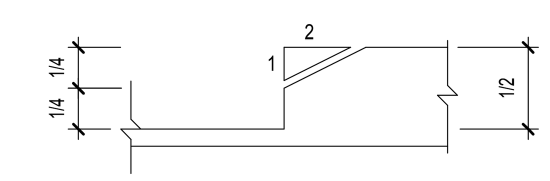
ADA2010 505.7.1 CIRCULAR CROSS SECTION: HANDRAIL GRIPPING SURFACES WITH A CIRCULAR CROSS SECTION SHALL HAVE AN OUTSIDE DIAMETER OF 1¼ INCHES MINIMUM AND 2 INCHES MAXIMUM.

ADA2010 505.7.2 NON-CIRCULAR CROSS SECTIONS: HANDRAIL GRIPPING SURFACES WITH A NON-CIRCULAR CROSS SECTION SHALL HAVE A PERIMETER DIMENSION OF 4 INCHES MINIMUM AND 6¼ INCHES MAXIMUM, AND A CROSS-SECTION DIMENSION OF 2¼ INCHES MAXIMUM.

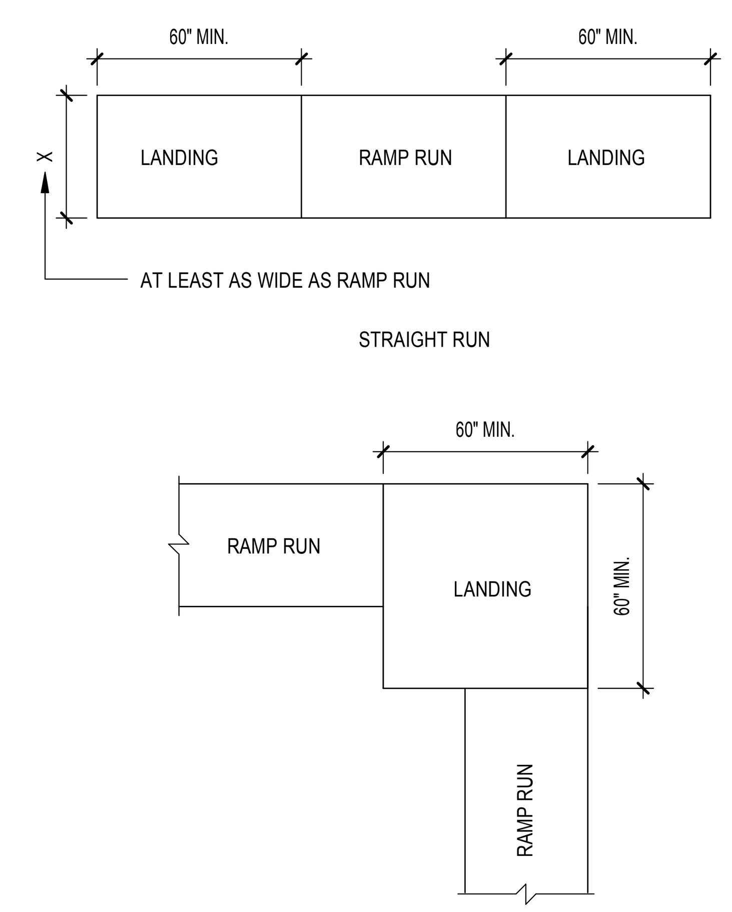
ADA2010 505.10.1 TOP AND BOTTOM EXTENSION AT RAMPS: RAMP HANDRAILS SHALL EXTEND HORIZONTALLY ABOVE THE LANDING FOR 12 INCHES MINIMUM BEYOND THE TOP AND BOTTOM OF RAMP RUNS. EXTENSIONS SHALL RETURN TO A WALL, GUARD, OR THE LANDING SURFACE, OR SHALL BE CONTINUOUS TO THE HANDRAIL OF AN ADJACENT RAMP RUN.



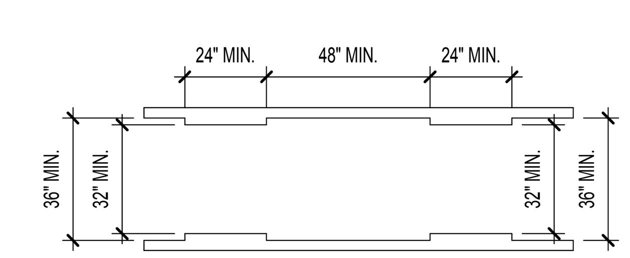
303.2 VERTICAL CHANGE IN LEVEL



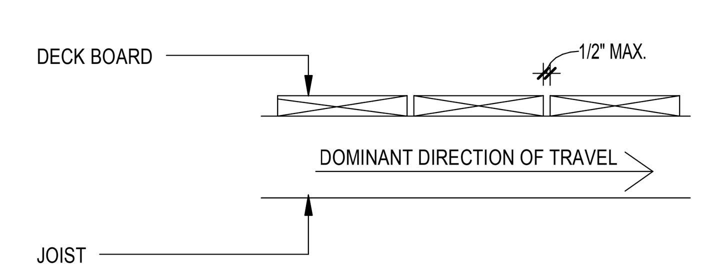
303.3 BEVELED CHANGE IN LEVEL

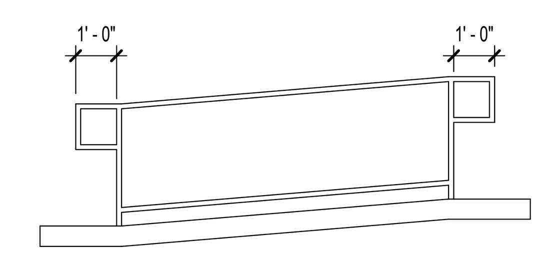


405.7 RAMP LANDINGS

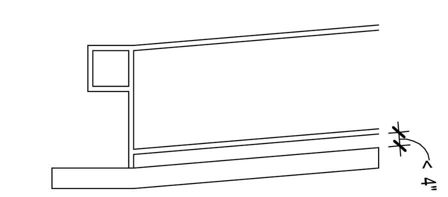


403.5.1 CLEAR WIDTH OF AN ACCESSIBLE ROUTE

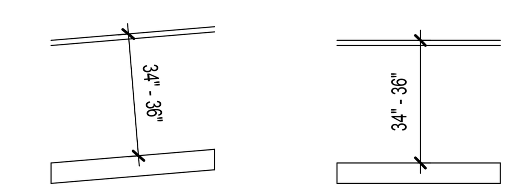




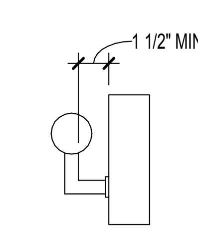
505.10.1 TOP AND BOTTOM HANDRAIL EXTENSION AT RAMPS



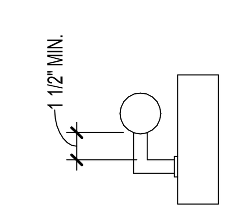
405.9.2 CURB OR BARRIER EDGE PROTECTION



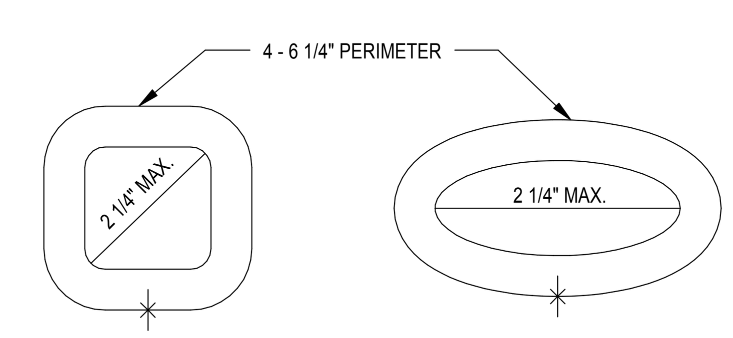
505.4 HANDRAIL HEIGHT



505.5 HANDRAIL CLEARANCE



505.6 HORIZONTAL PROJECTIONS BELOW GRIPPING SURFACE



505.7.2 HANDRAIL NON-CIRCULAR CROSS SECTION

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RAMPS & ACCESSIBILTY

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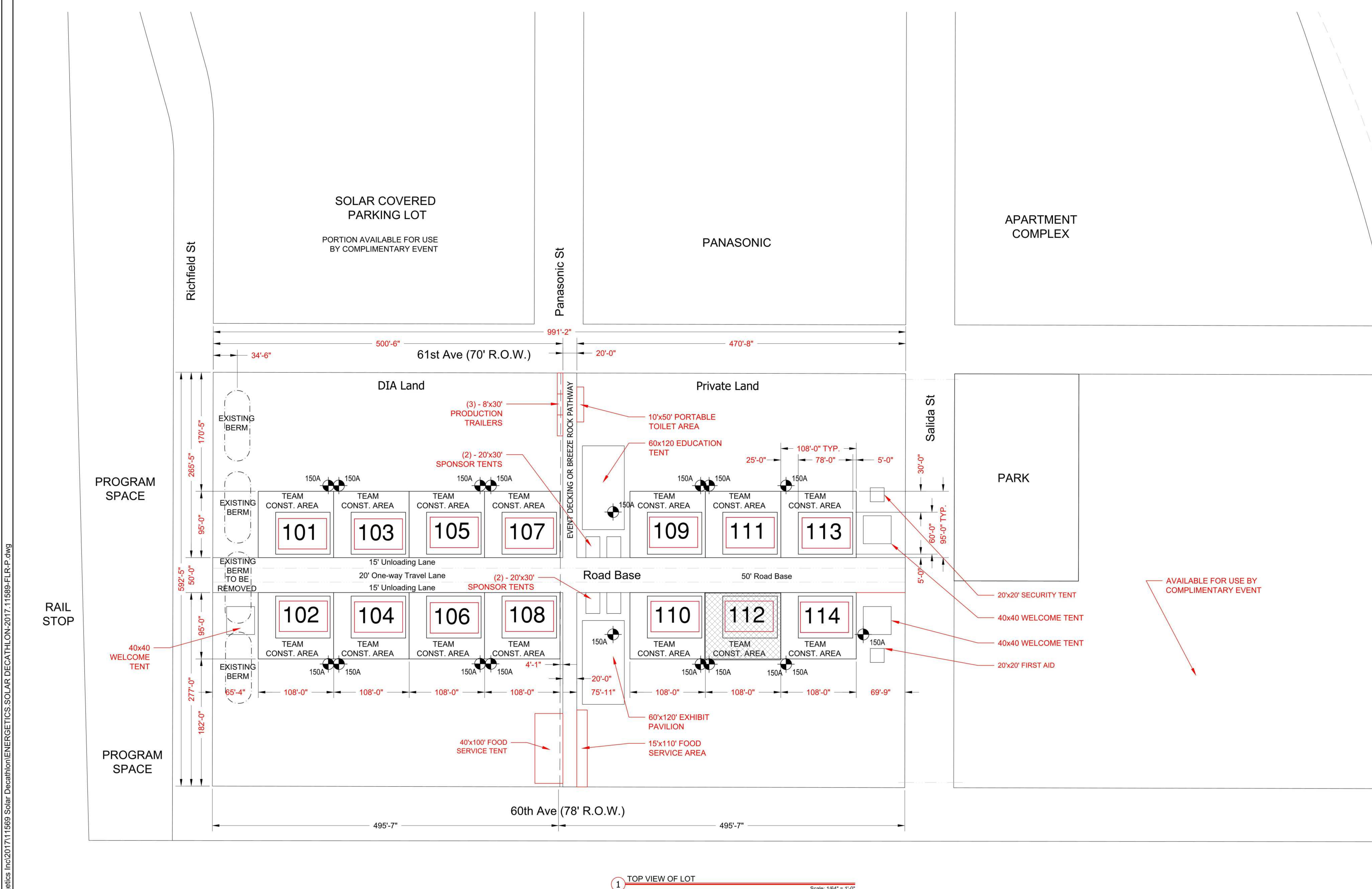

1 AC.06 COMPETITION SITE PLAN
1/64" = 1'-0"

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Account Executive:	DC
Account Manager:	HH
Project Manager:	SW
Detailer:	FS

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Job Number:	002-011569
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Show Name:	SOLAR DECATHLON 2017
Show Dates:	10/05/2017
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Booth Number:	----
Booth Size:	----
Title:	COVER SHEET
Drawing Number:	1 OF 2

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COMPETITION SITE PLAN

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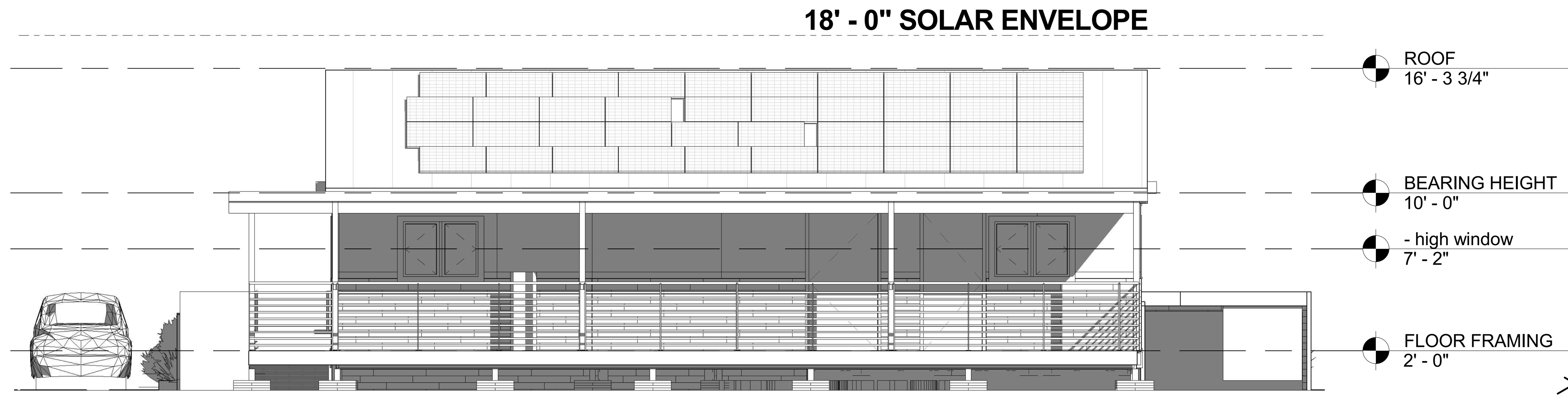
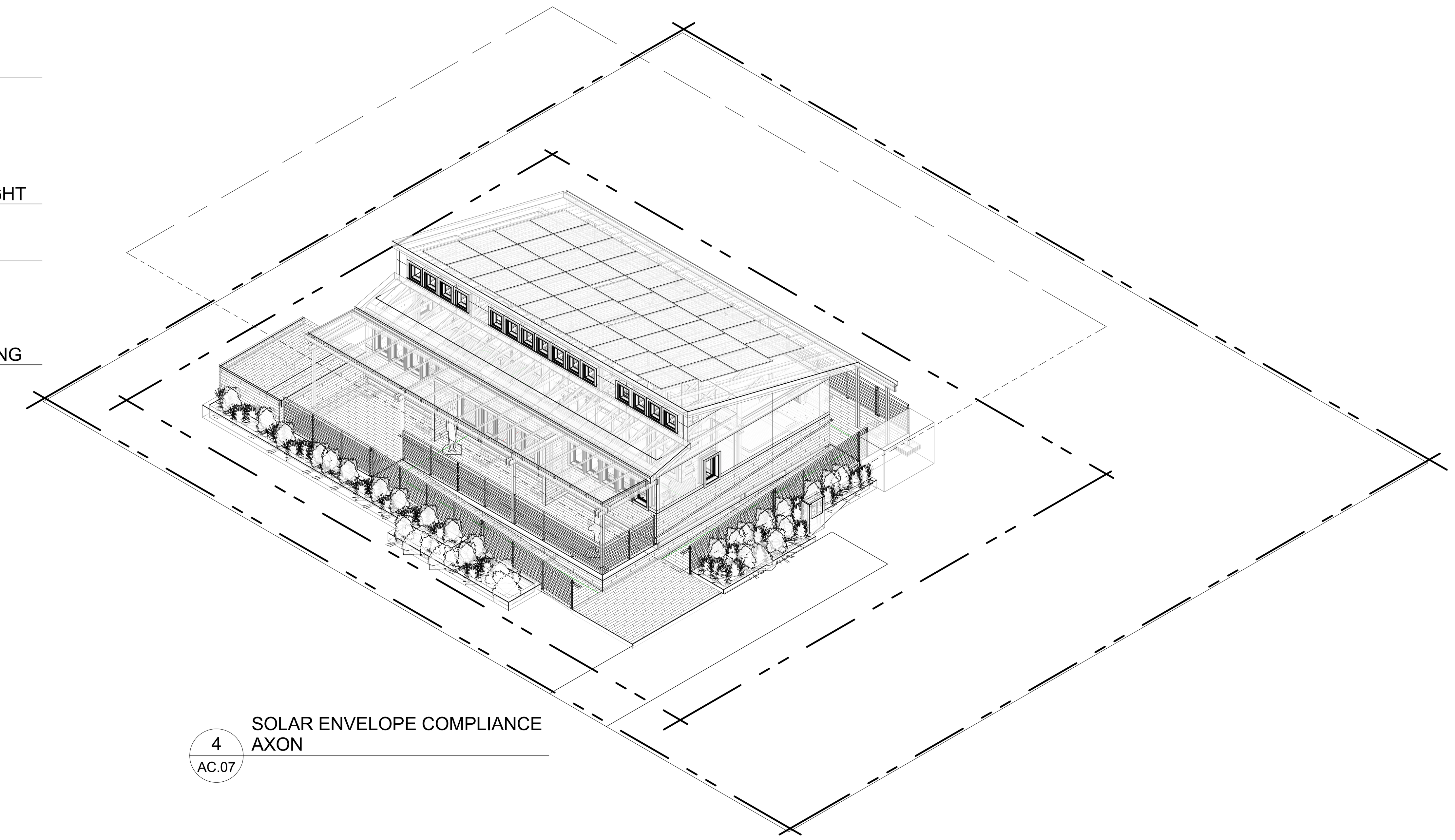
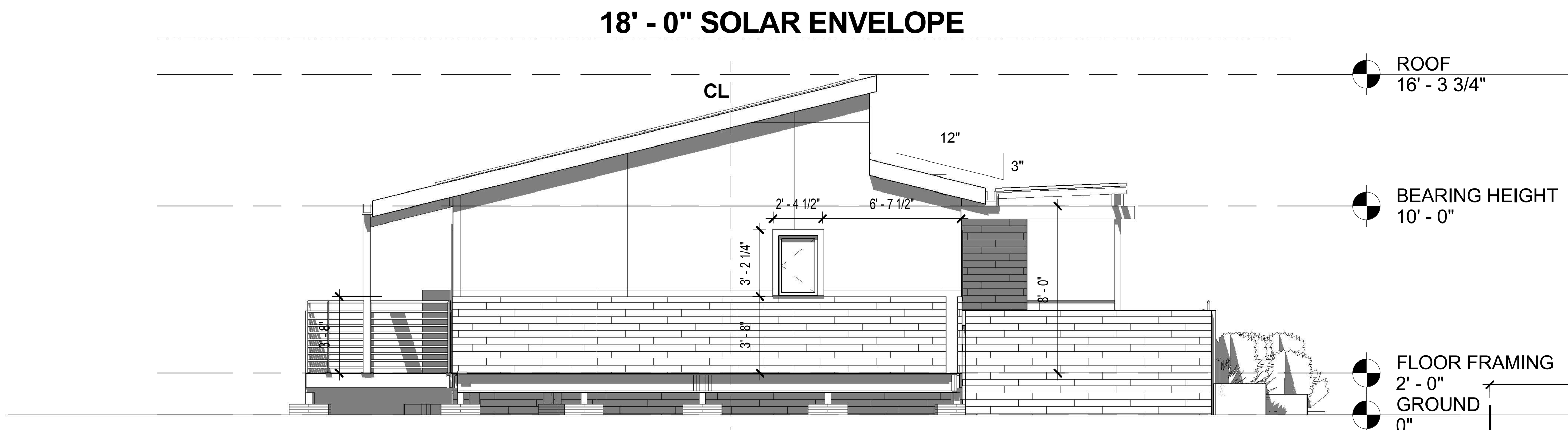


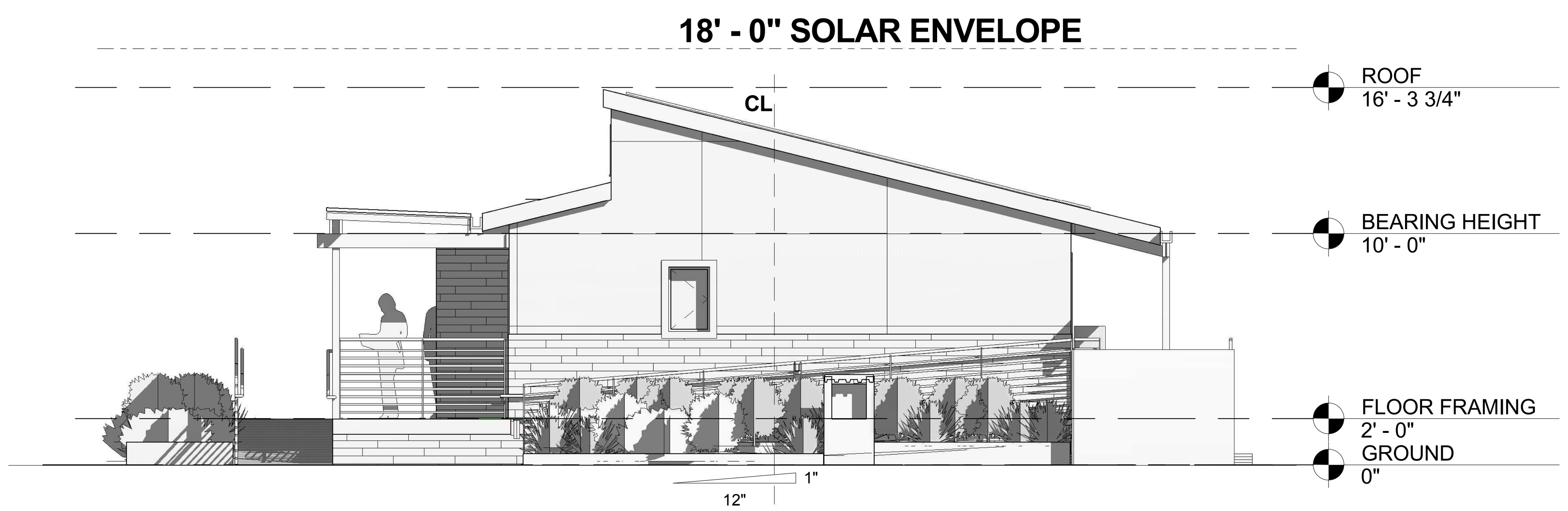
5 AC.07 SOLAR ENVELOPE COMPLIANCE
SOUTH ELEVATION
3/16" = 1'-0"



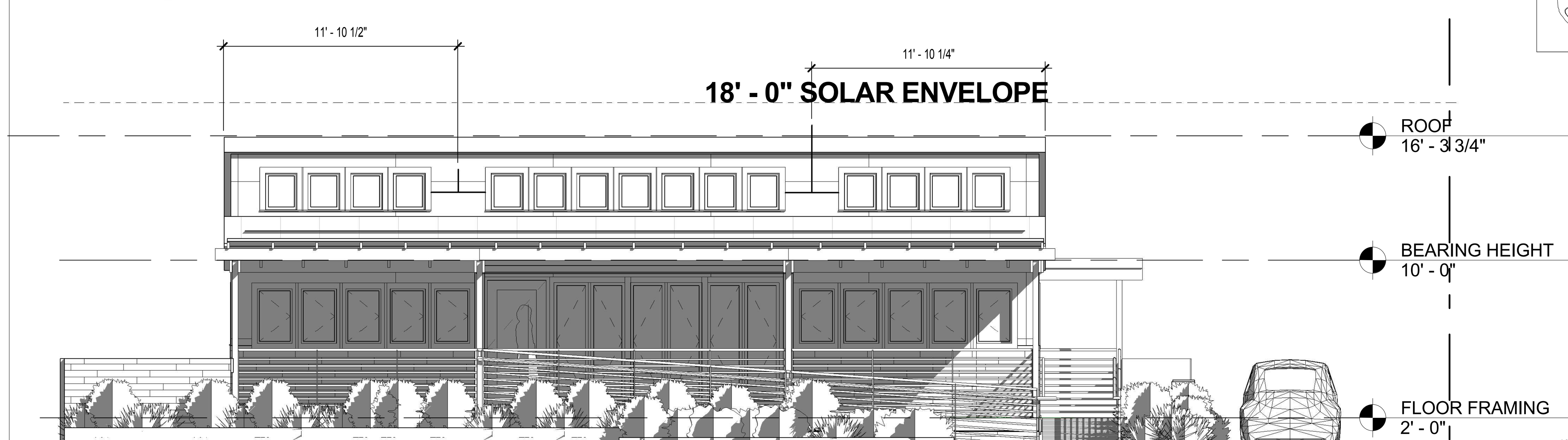
4 AC.07 SOLAR ENVELOPE COMPLIANCE
AXON



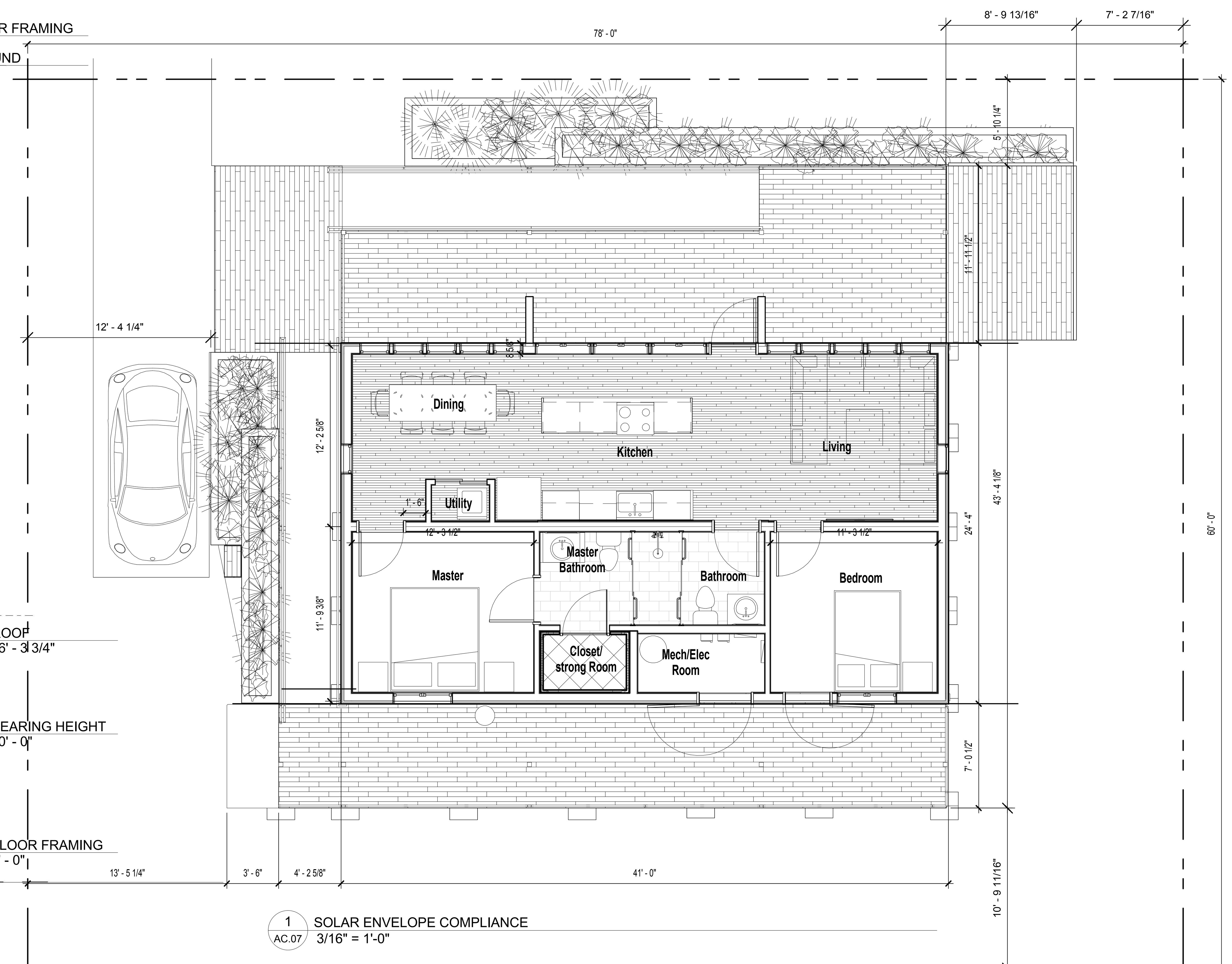
3 AC.07 SOLAR ENVELOPE COMPLIANCE
EAST ELEVATION
3/16" = 1'-0"



6 AC.07 SOLAR ENVELOPE COMPLIANCE
WEST ELEVATION
3/16" = 1'-0"



2 AC.07 SOLAR ENVELOPE COMPLIANCE
NORTH ELEVATION
3/16" = 1'-0"



1 AC.07 SOLAR ENVELOPE COMPLIANCE
3/16" = 1'-0"

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SOLAR ENVELOPE COMPLIANCE

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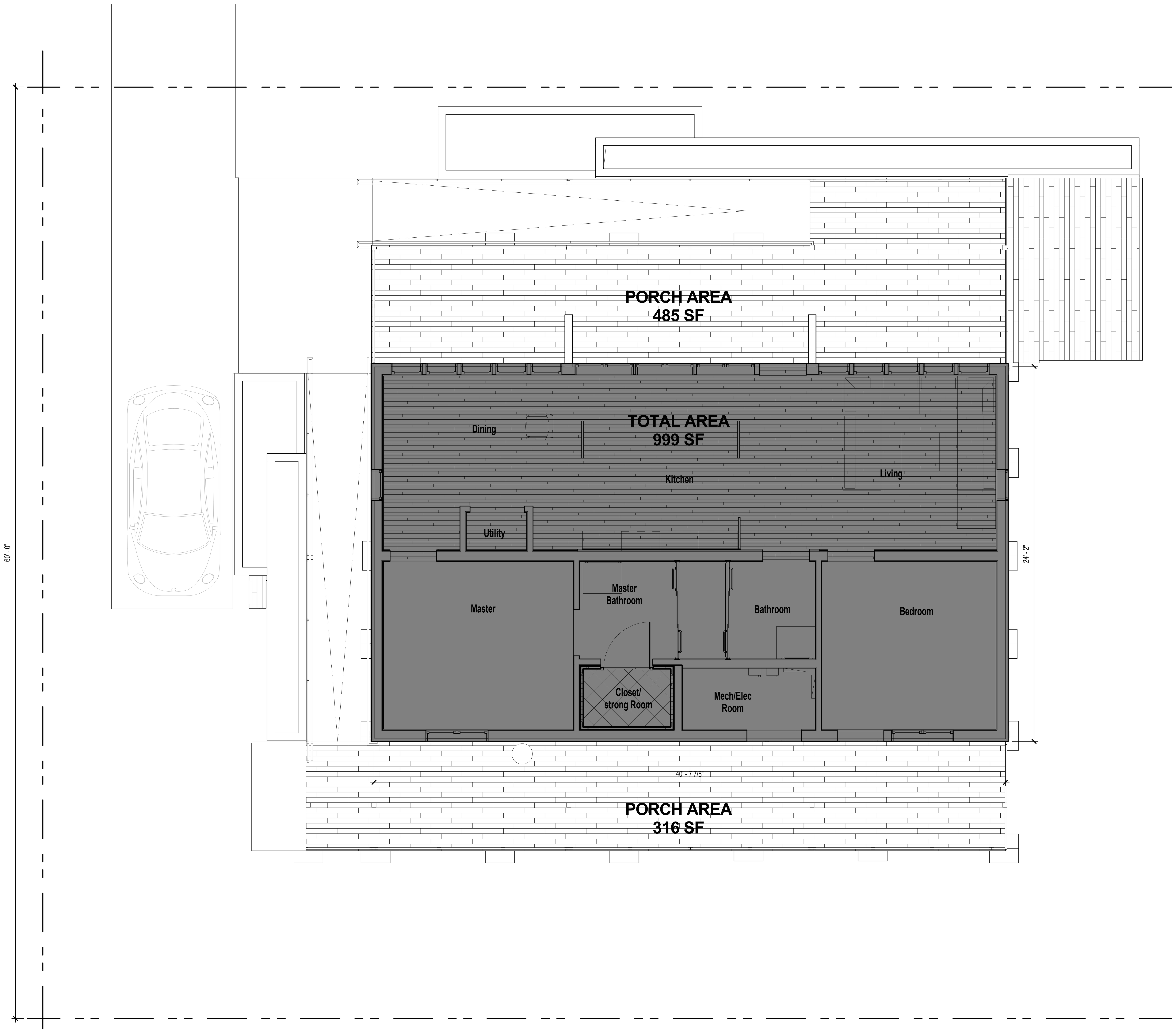

1 AC.08 FINISHED SQUARE FOOTAGE COMPLIANCE PLAN
1/4" = 1'-0"

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FINISHED SQUARE FOOTAGE COMPLIANCE PLAN

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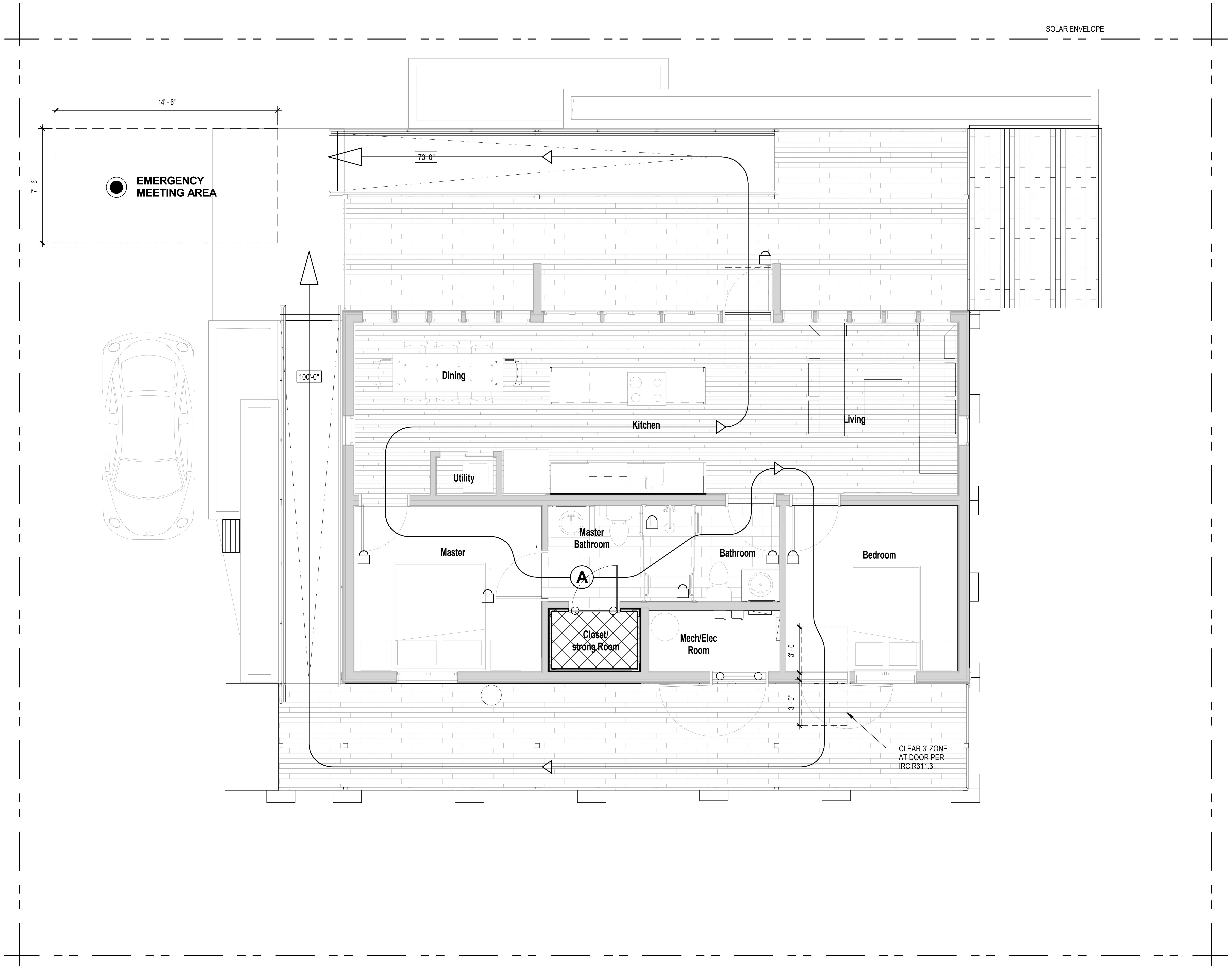

1 AC.09 EMERGENCY EGRESS PLAN
1/4" = 1'-0"

ENTRANCE NOT OPEN TO PUBLIC

DOOR TO BE SECURED IN FULLY OPEN POSITION FOR DURATION OF PUBLIC EXHIBIT

EMERGENCY MEETING AREA

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EMERGENCY EGRESS PLAN

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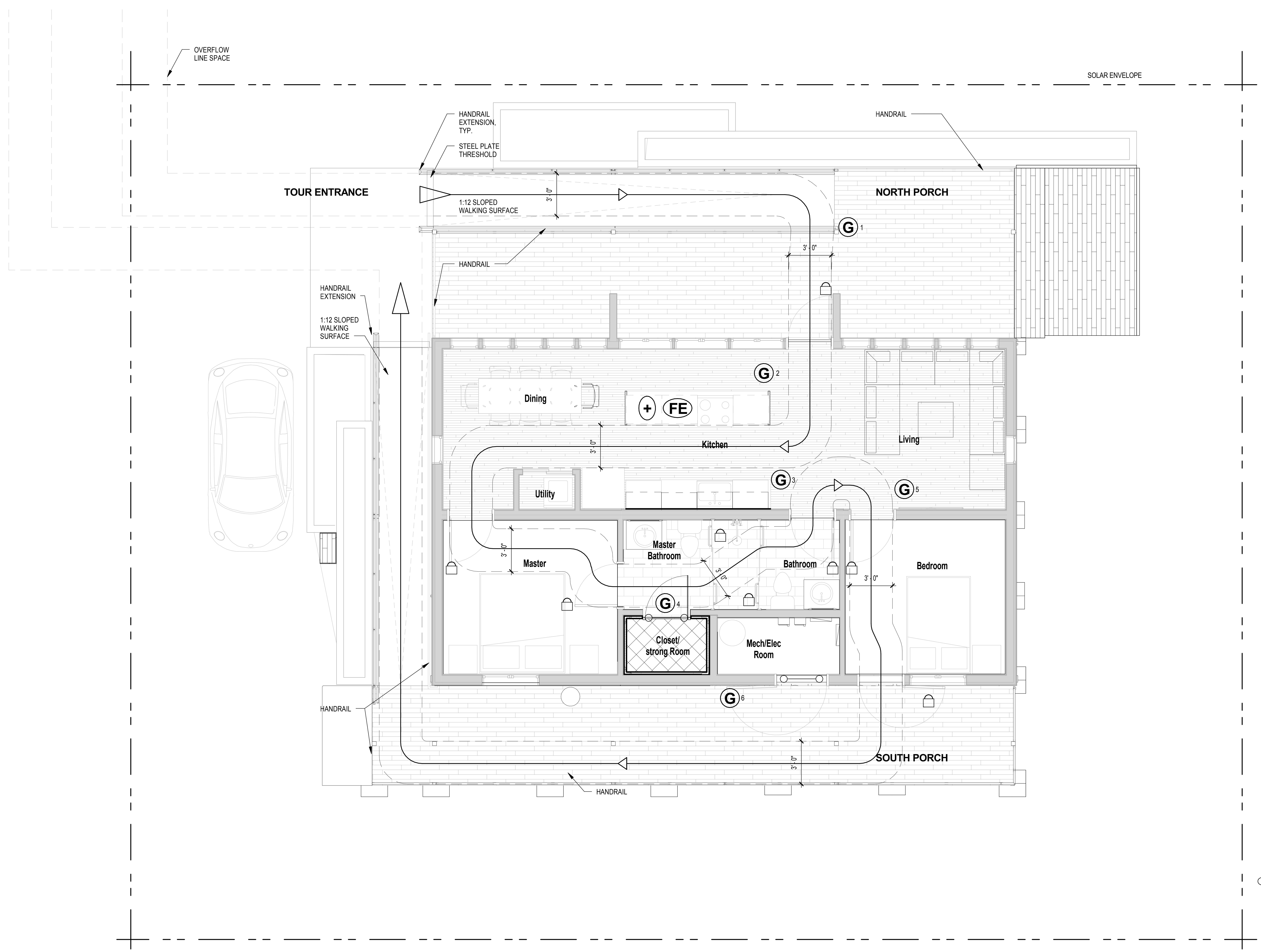

1 AC.10 ADA TOUR ROUTE COMPLIANCE PLAN
1/4" = 1'-0"

G	TOUR GUIDE LOCATION
FE	FIRE EXTINGUISHER LOCATION
+	FIRST AID KIT LOCATION
	ENTRANCE NOT OPEN TO PUBLIC
	DOOR TO BE SECURED IN FULLY OPEN POSITION FOR DURATION OF PUBLIC EXHIBIT

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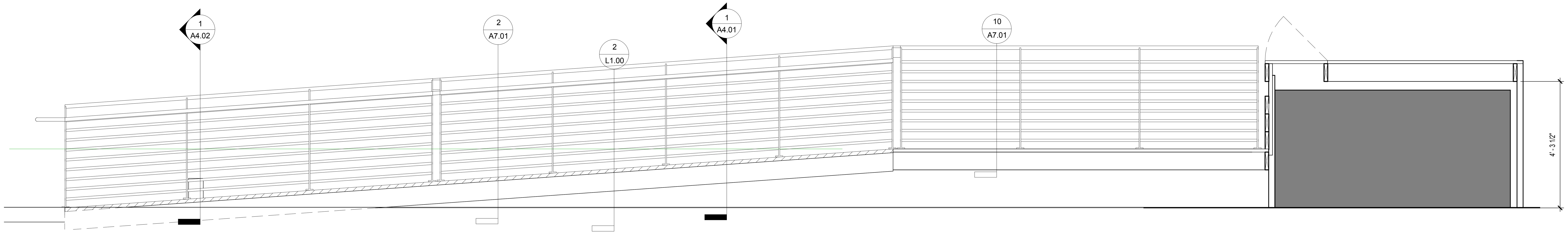
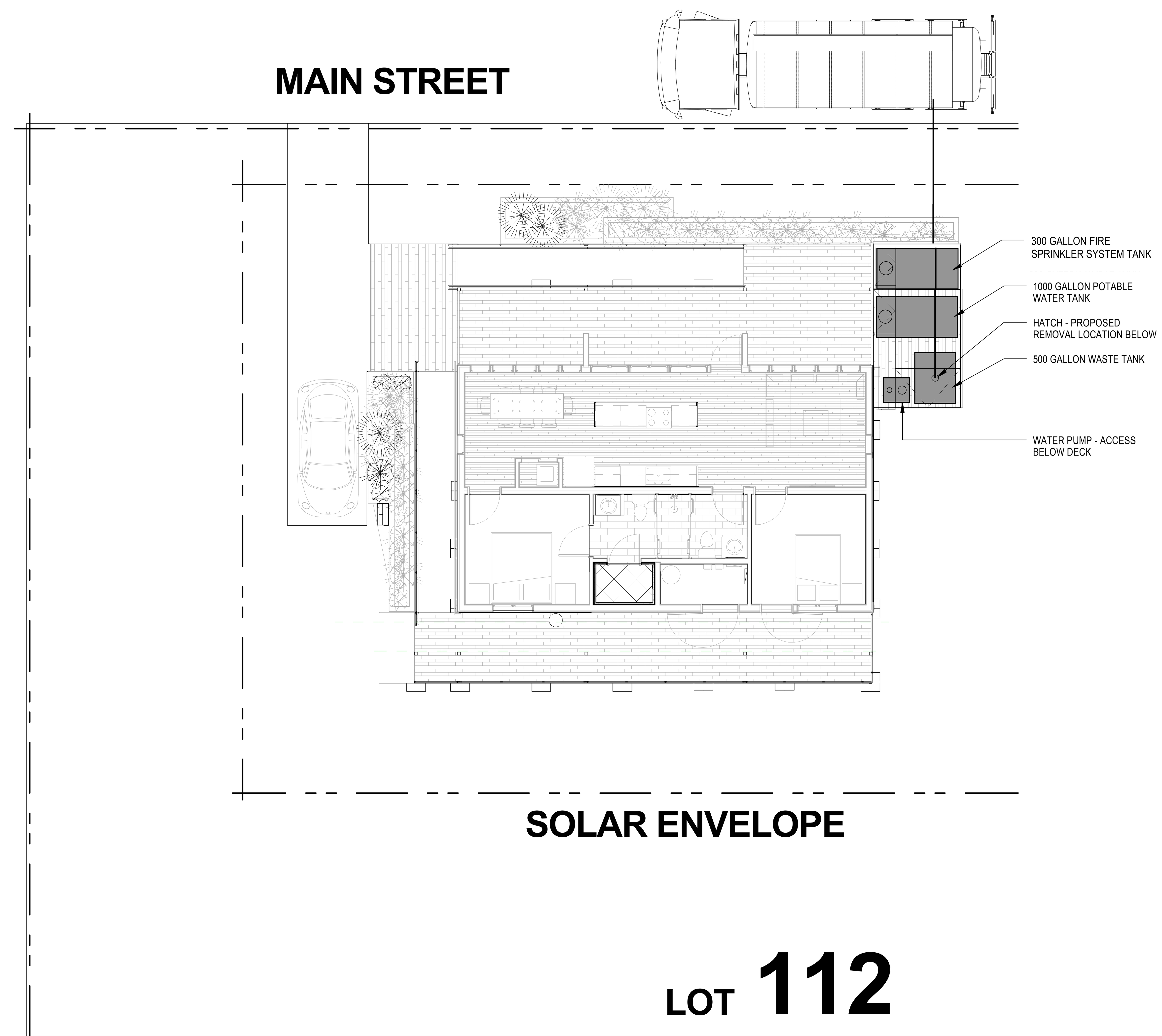
ADA TOUR ROUTE
COMPLIANCE PLAN

AC.10

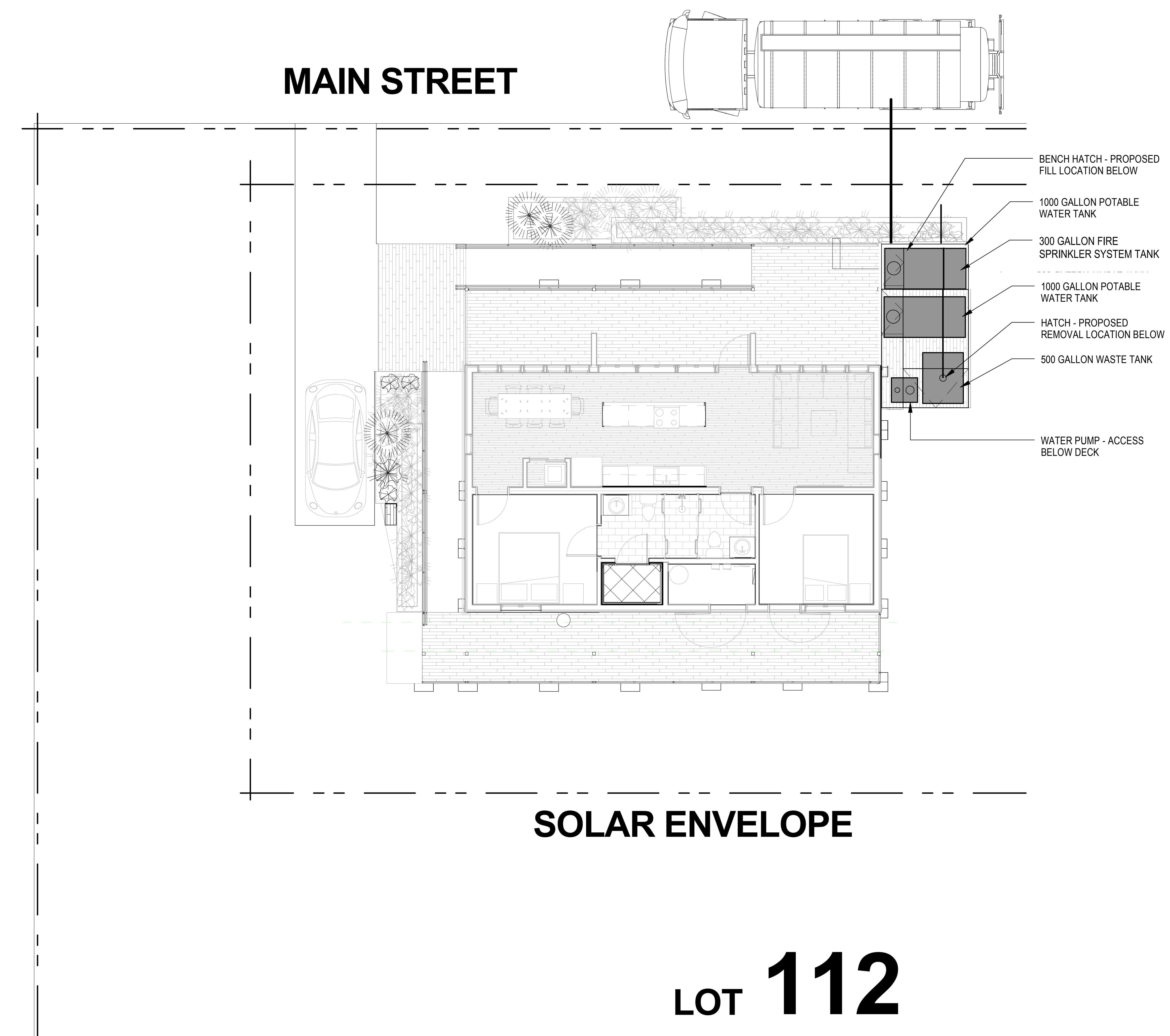
2/23/2017 7:57:10 AM



3 SECTION AT WATER TANK
AC.11 1/2" = 1'-0"



2 WATER TRUCK EMPTYING LOCATION
AC.11 1/8" = 1'-0"



1 WATER TRUCK FILL LOCATION
AC.11 1/8" = 1'-0"

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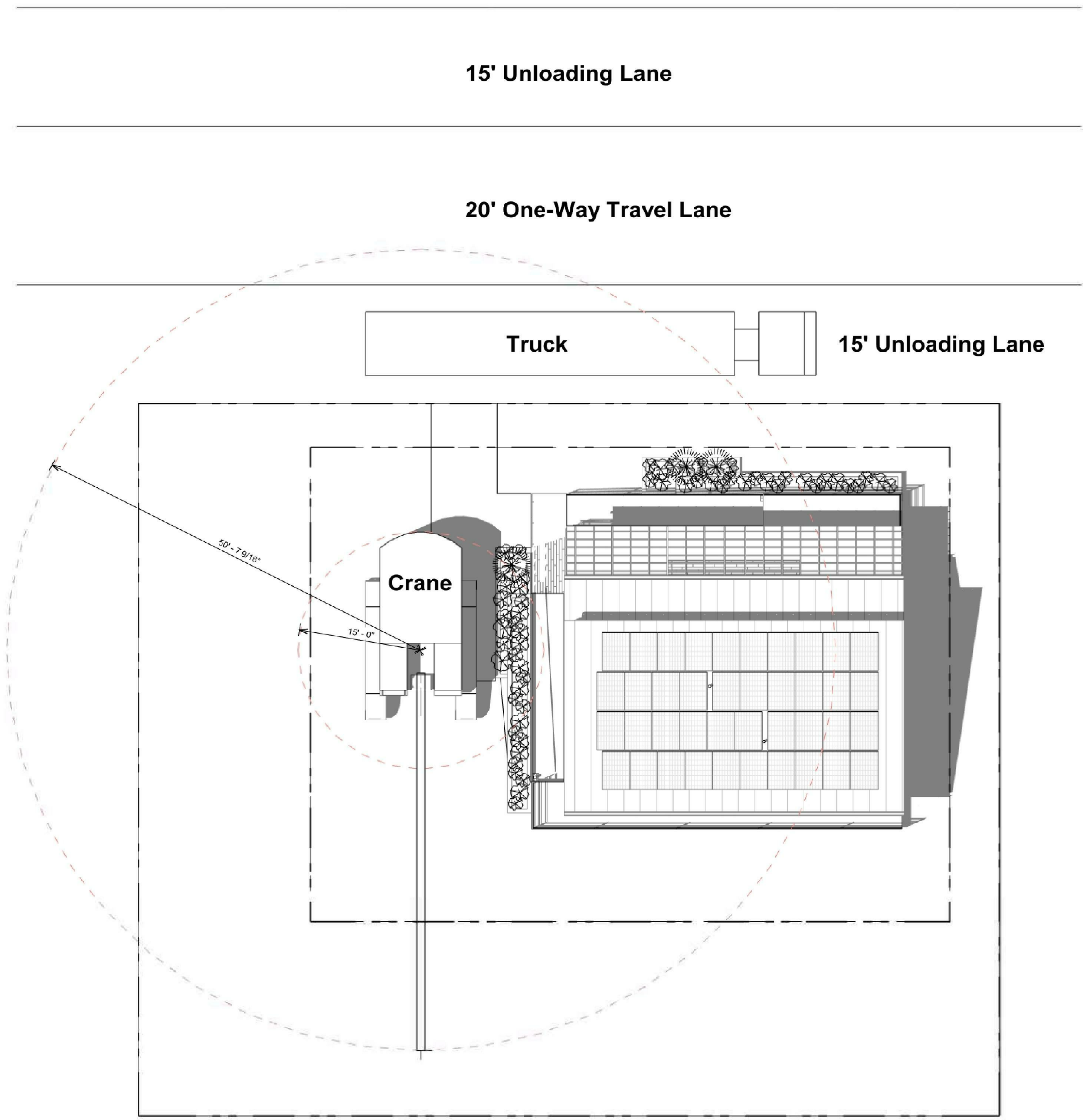
MARK	DATE	DESCRIPTION

WATER TRUCK FILL AND EMPTYING LOCATIONS

AC.11

2/23/2017 9:24:18 AM



1 CRANE LOADING RADIUS
AC.07 1/8" = 1'-0"

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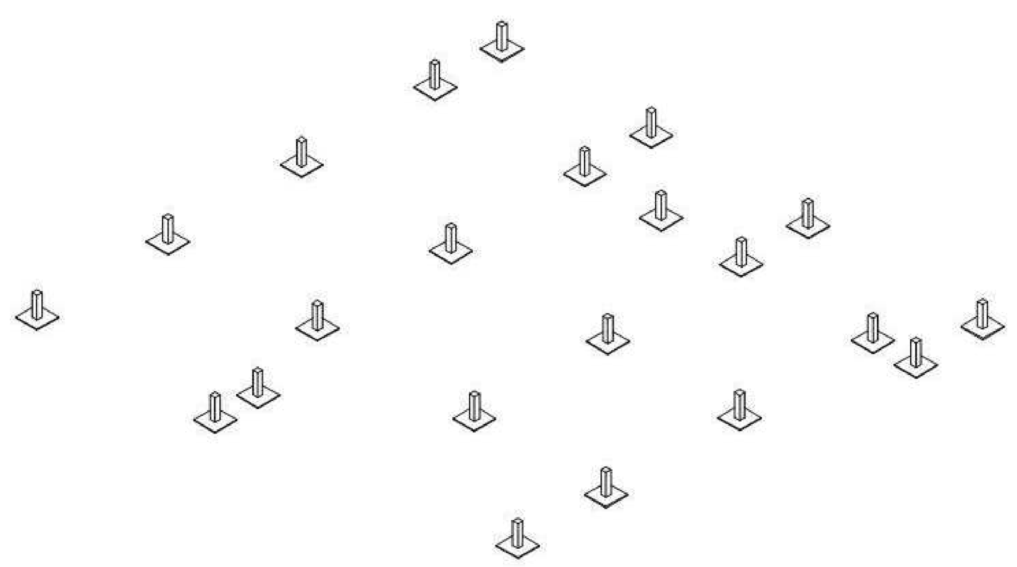
MARK	DATE	DESCRIPTION

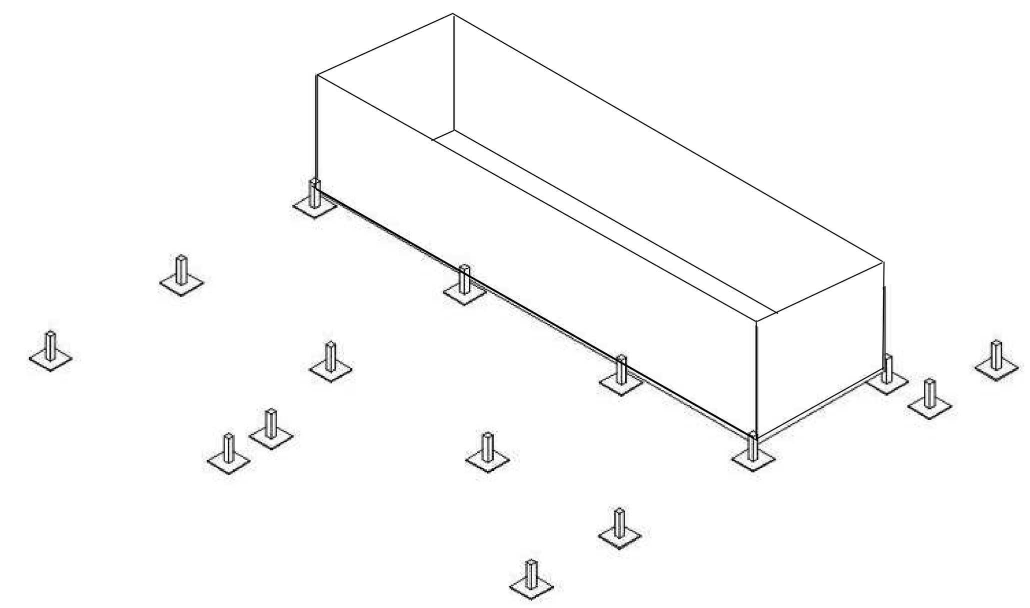
CRANE LOGISTICS

AC.12

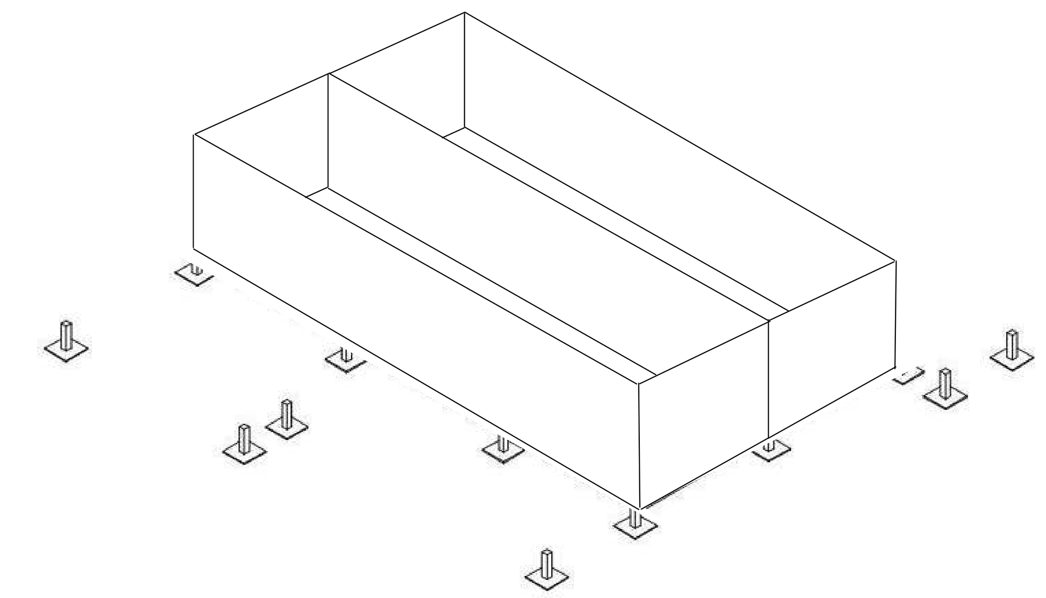
2/23/2017 9:38:58 AM



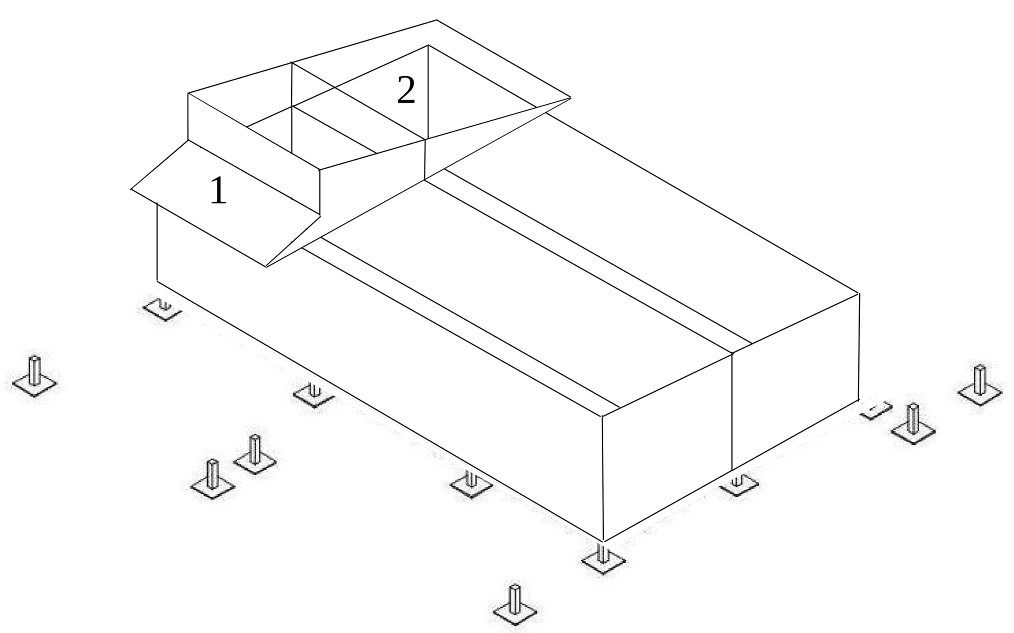
1 Footings



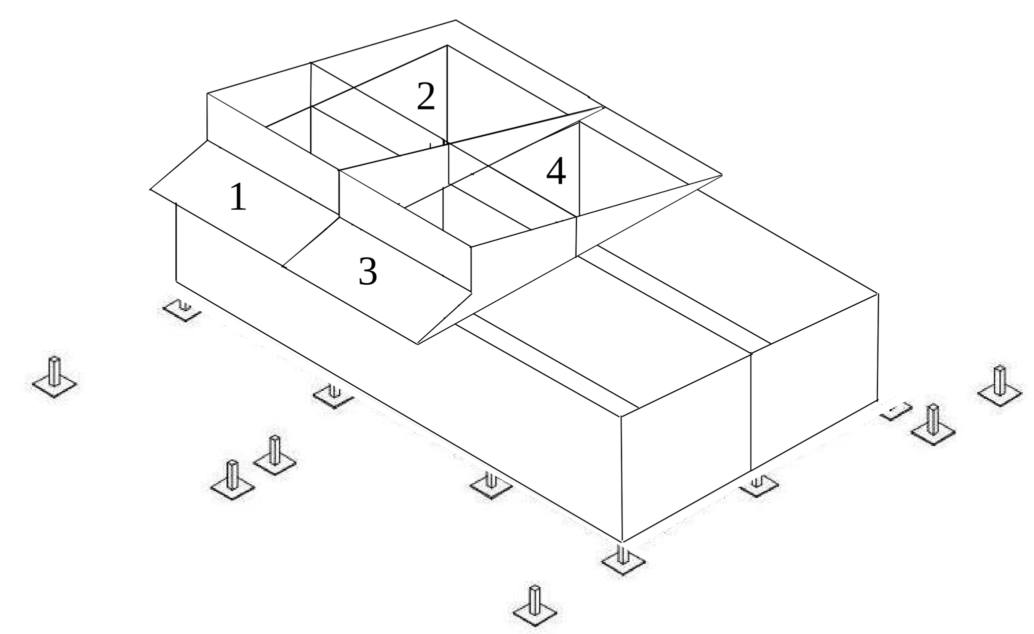
2 South Module



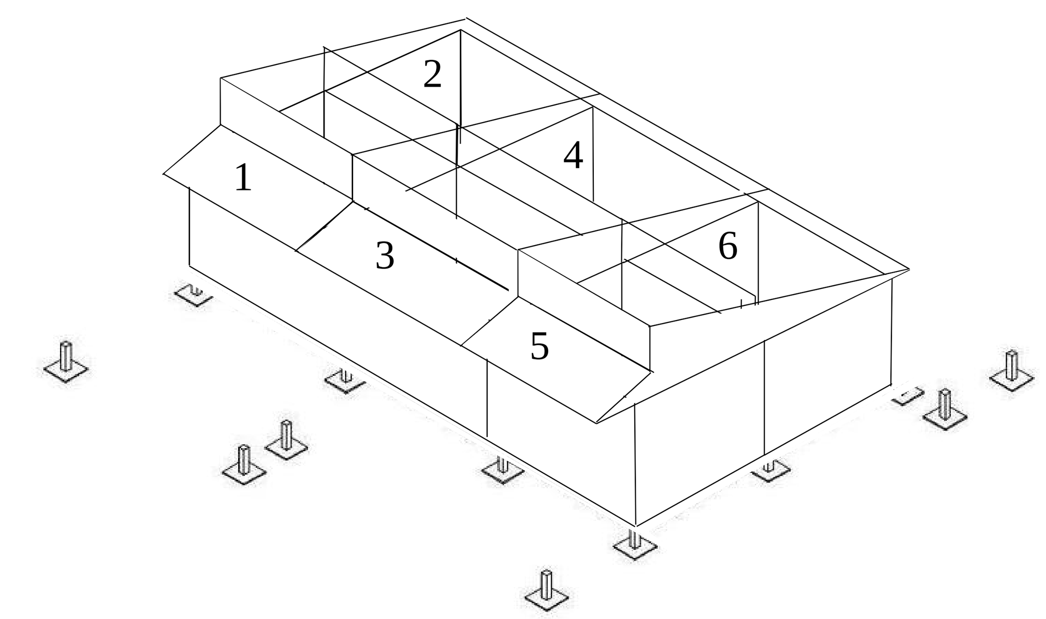
3 North Module



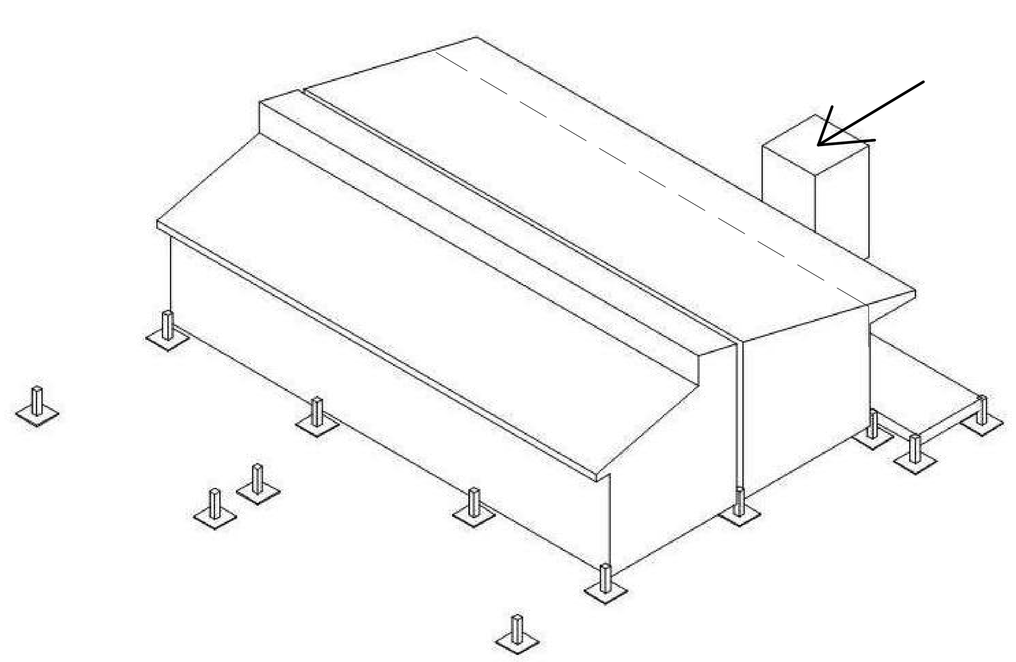
3A Roof Modules 1-2



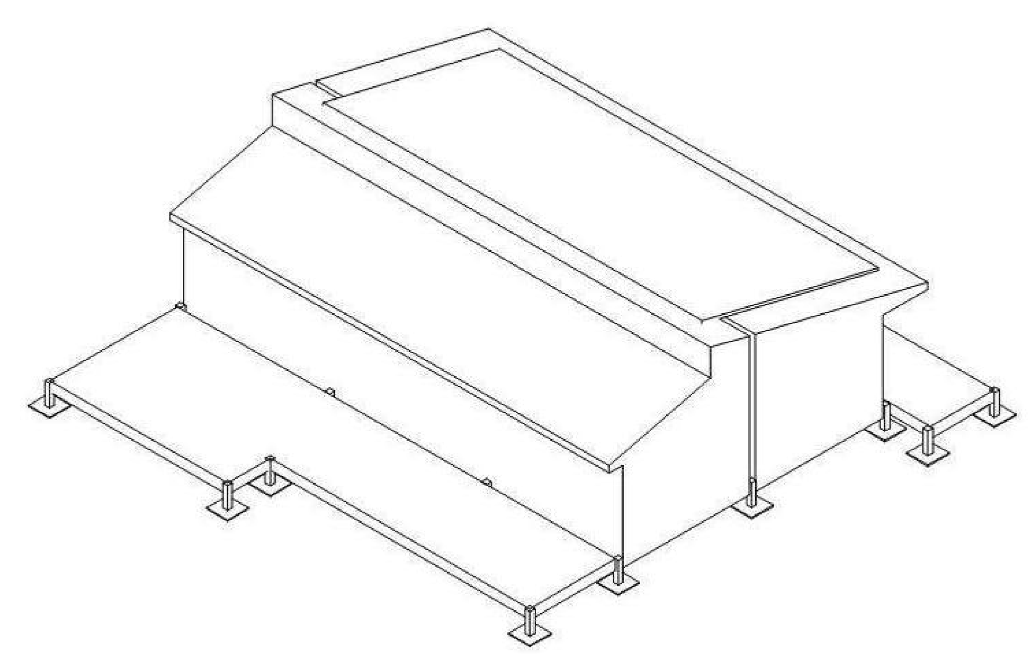
3B Roof Modules 3-4



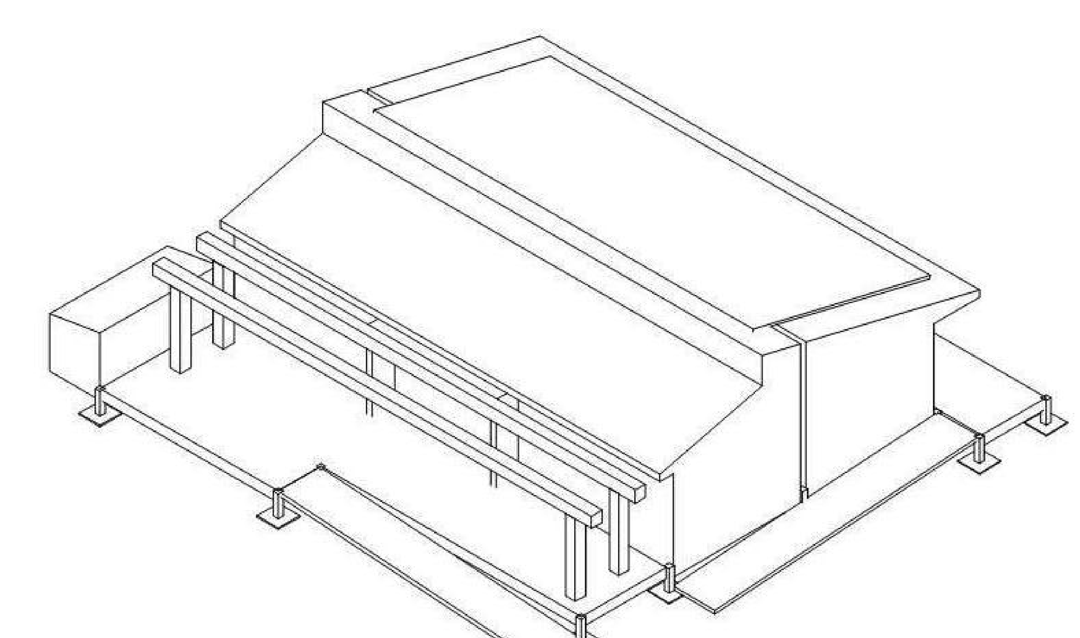
3A Roof Modules 5-6



4 Slide in Safe Room Then Add South Deck



5 North Deck, South Roofing, & Solar Array



6 Ramps, Portal, Canopy, & Water Tank Enclosure

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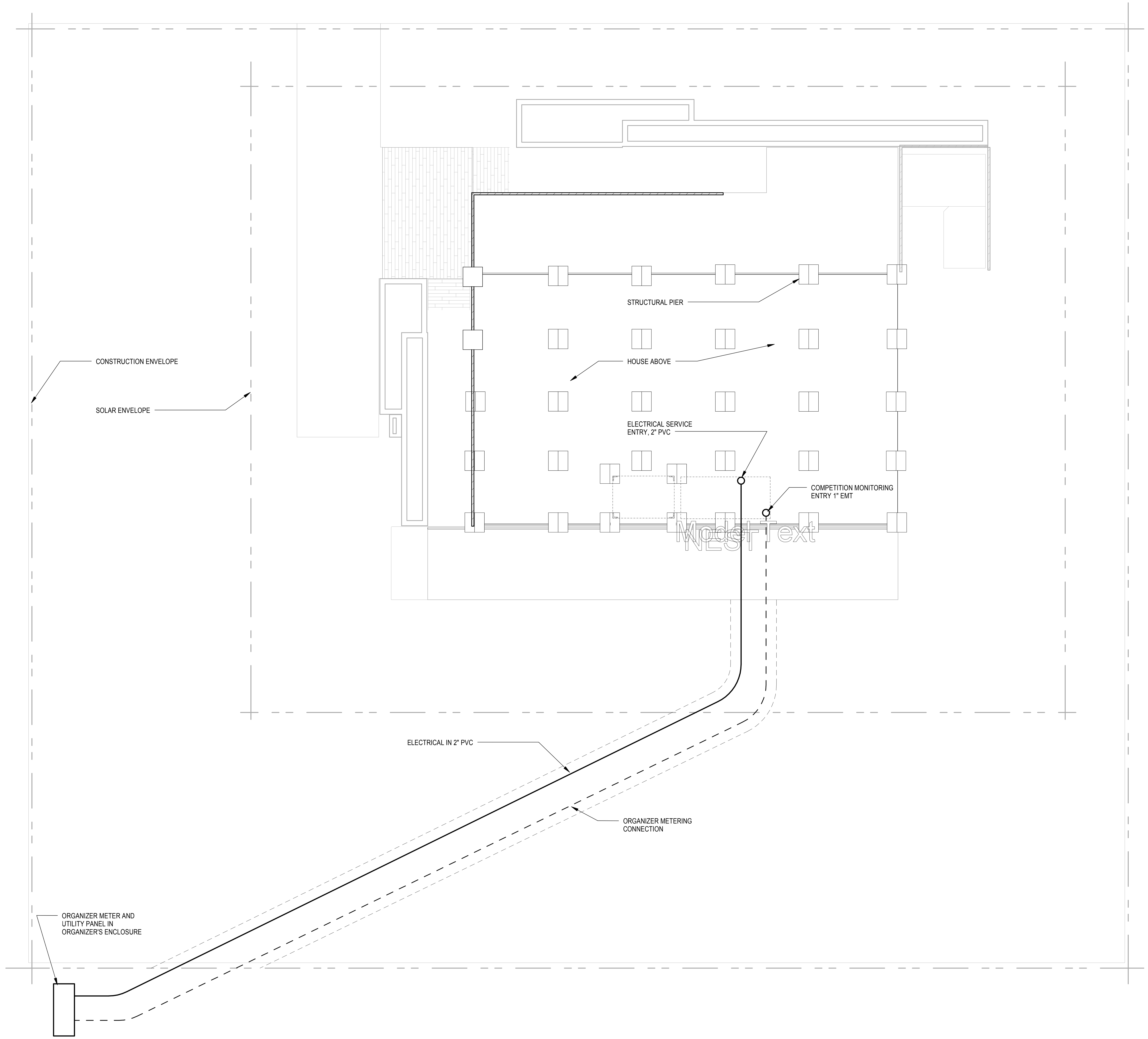
MARK	DATE	DESCRIPTION

CONSTRUCTION ASSEMBLY

AC.13

2/23/2017 7:57:21 AM



1 AC.14 INTERCONNECTION PLAN
3/16" = 1'-0"

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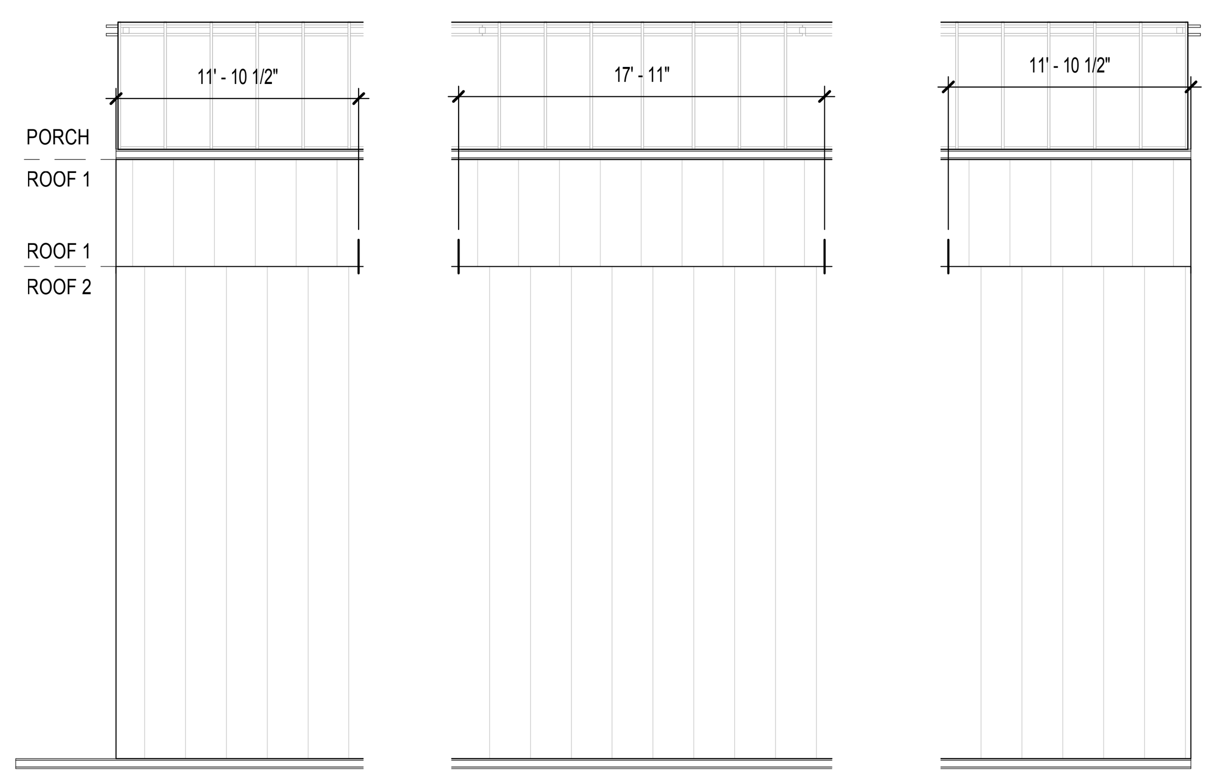
MARK	DATE	DESCRIPTION

INTERCONNECTION PLAN

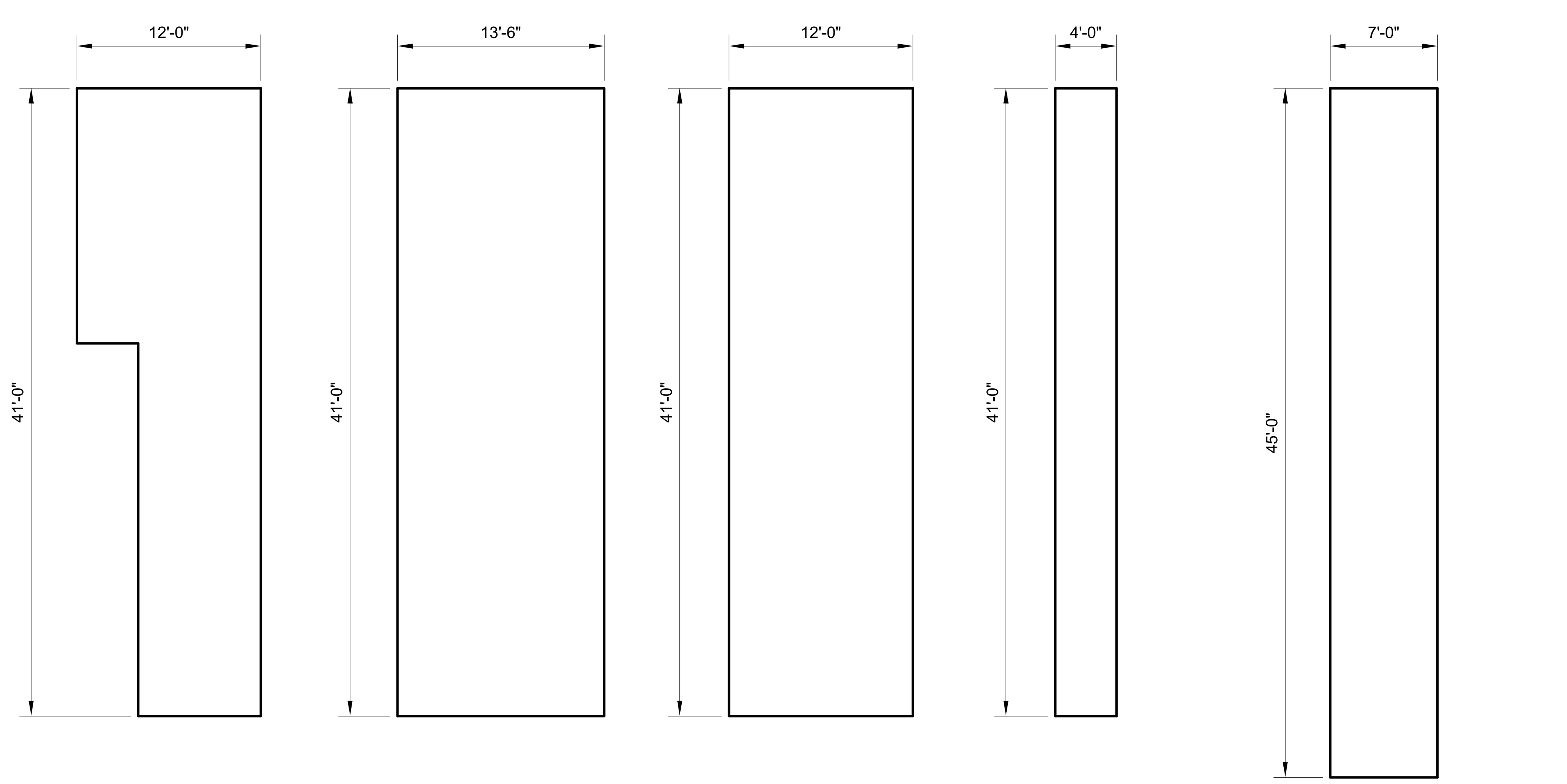
AC.14

2/23/2017 7:57:22 AM



2 Module Roof Sections
AC.15 1/8" = 1'-0"

North Deck | North Module | South Module | South Overhang | South Deck



1 Transportation Logistics
AC.15 1/8" = 1'-0"

Transportation Notes

DEPARTURE POINT: BIRMINGHAM, AL

DESTINATION: DENVER, CO

DISTANCE: 1,100 MILES

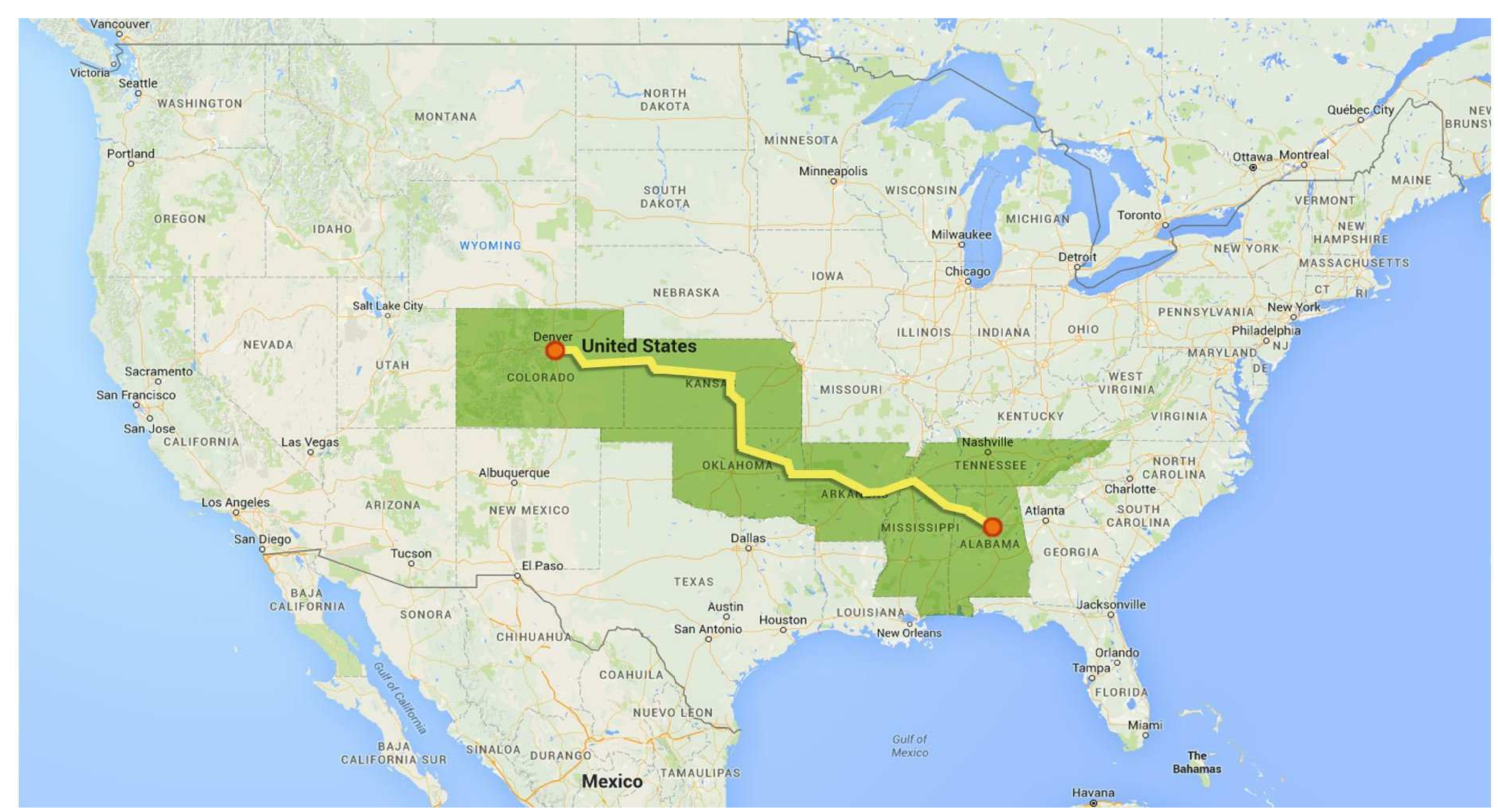
TRAVEL TIME: 4-5 DAYS

TRUCKS:

(2) FLATBEDS FOR HOUSE MODULES

(1) FLATBED FOR NORTH DECK, SOUTH DECK, RAMPS, PLANTERS, WATER TANK ENCLOSURE

(1) FLATBED FOR TWO STORAGE CONTAINERS (MEP EQUIPMENT, FURNITURE, APPLIANCES, STORM ROOM, TOOLS)



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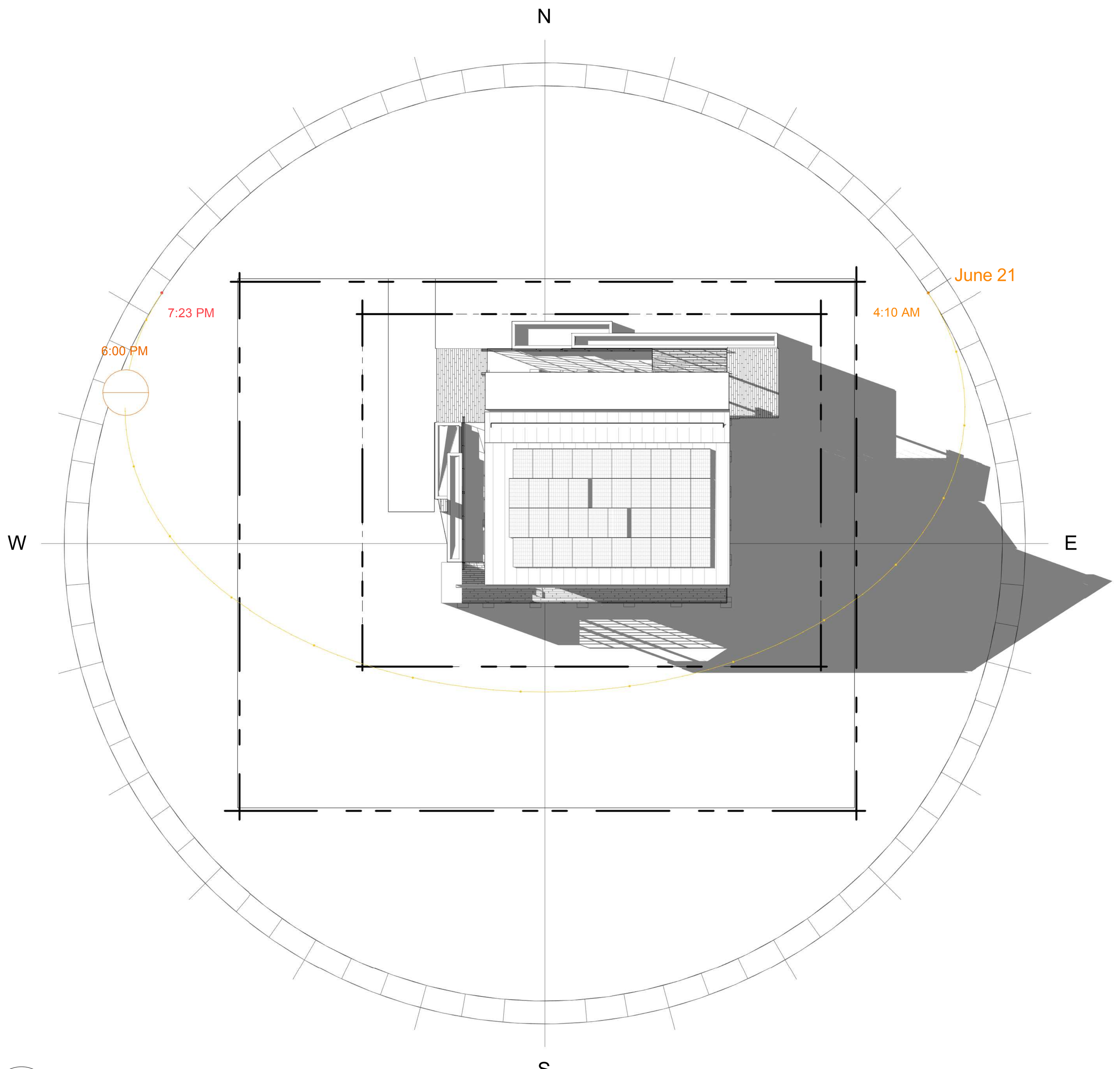
MARK	DATE	DESCRIPTION

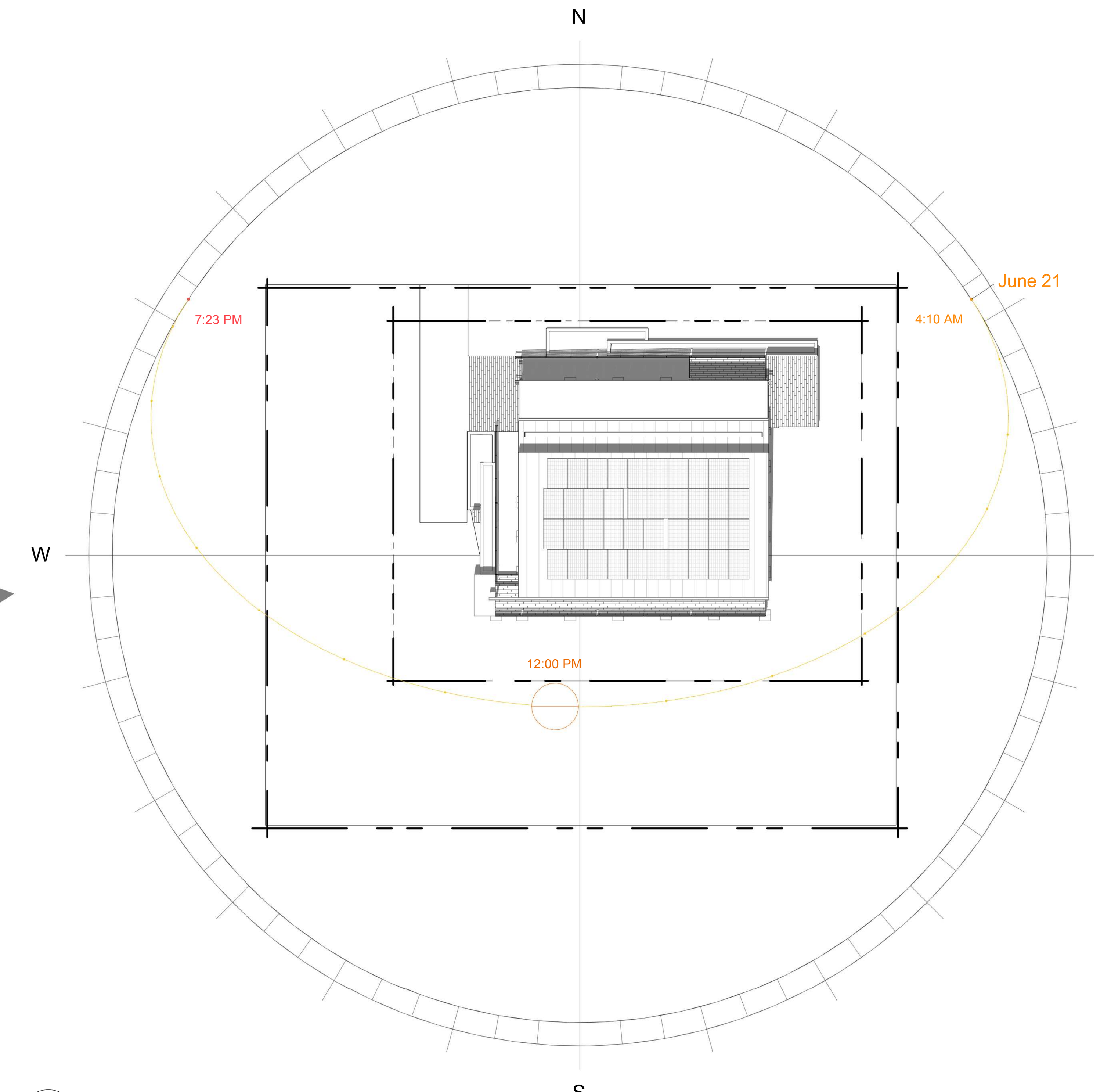
TRANSPORTATION LOGISTICS

AC.15

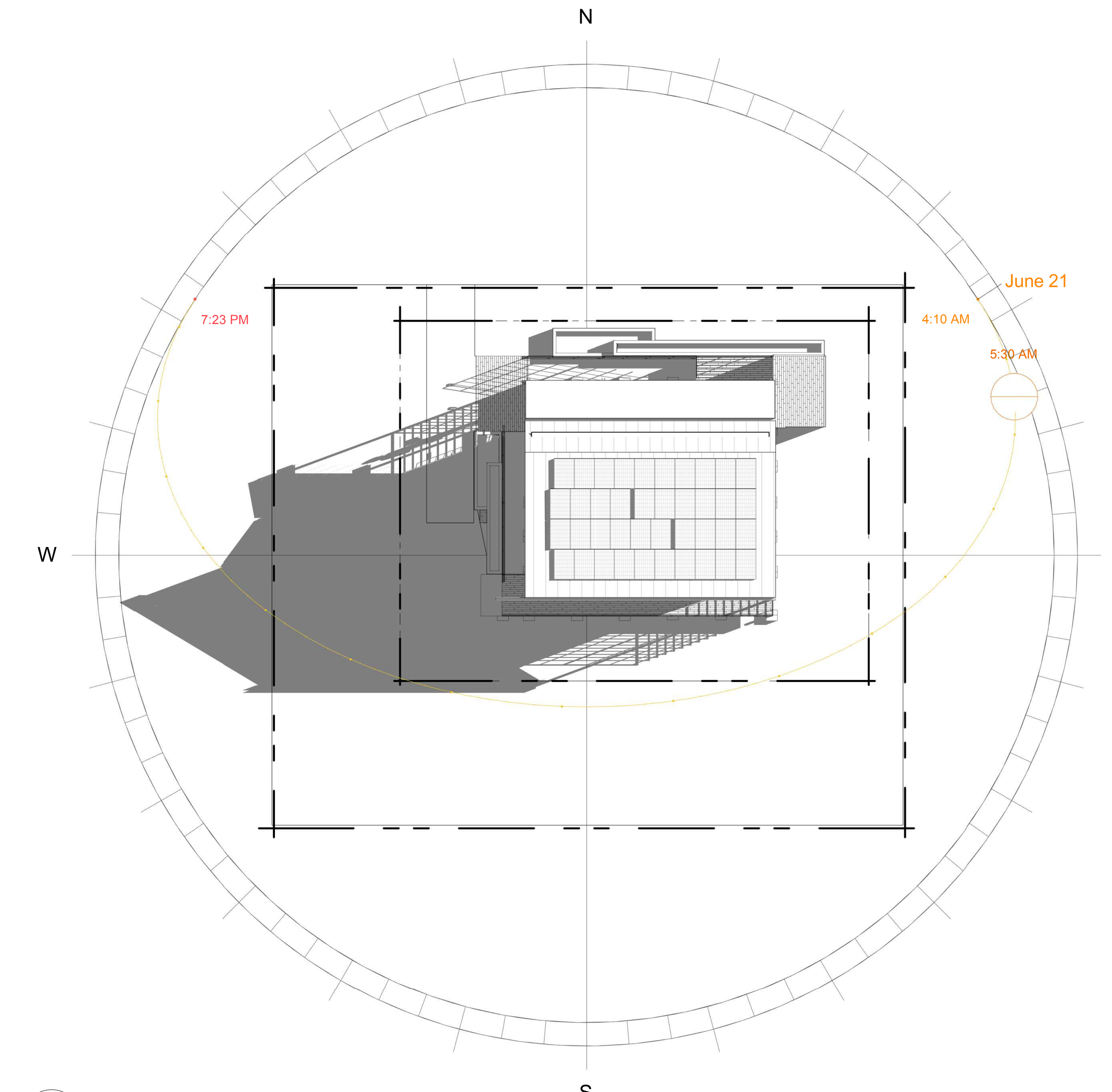
2/23/2017 7:57:23 AM



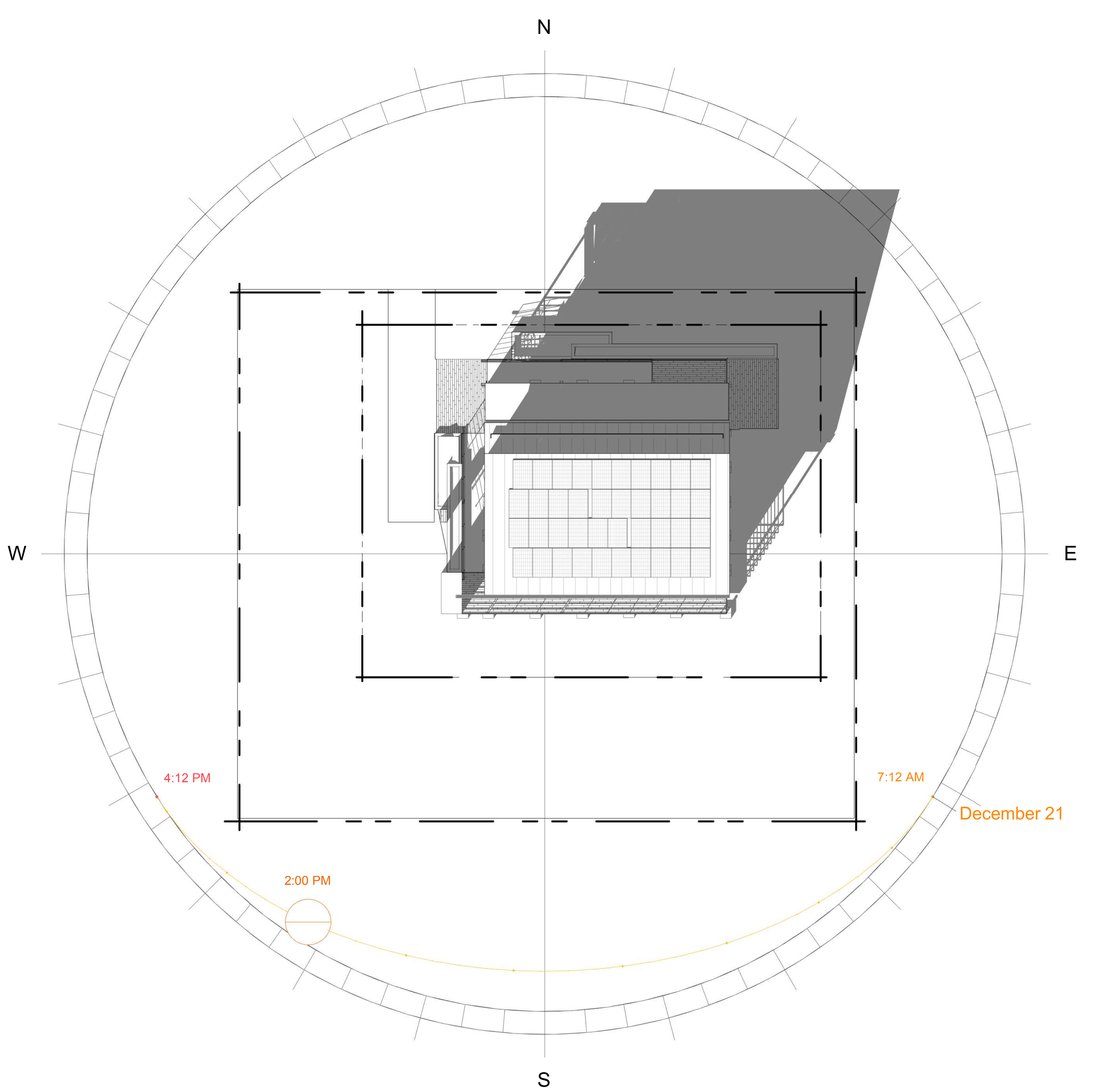
6 SOLAR 0621 AT 2PM
AC.16 1" = 20'-0"



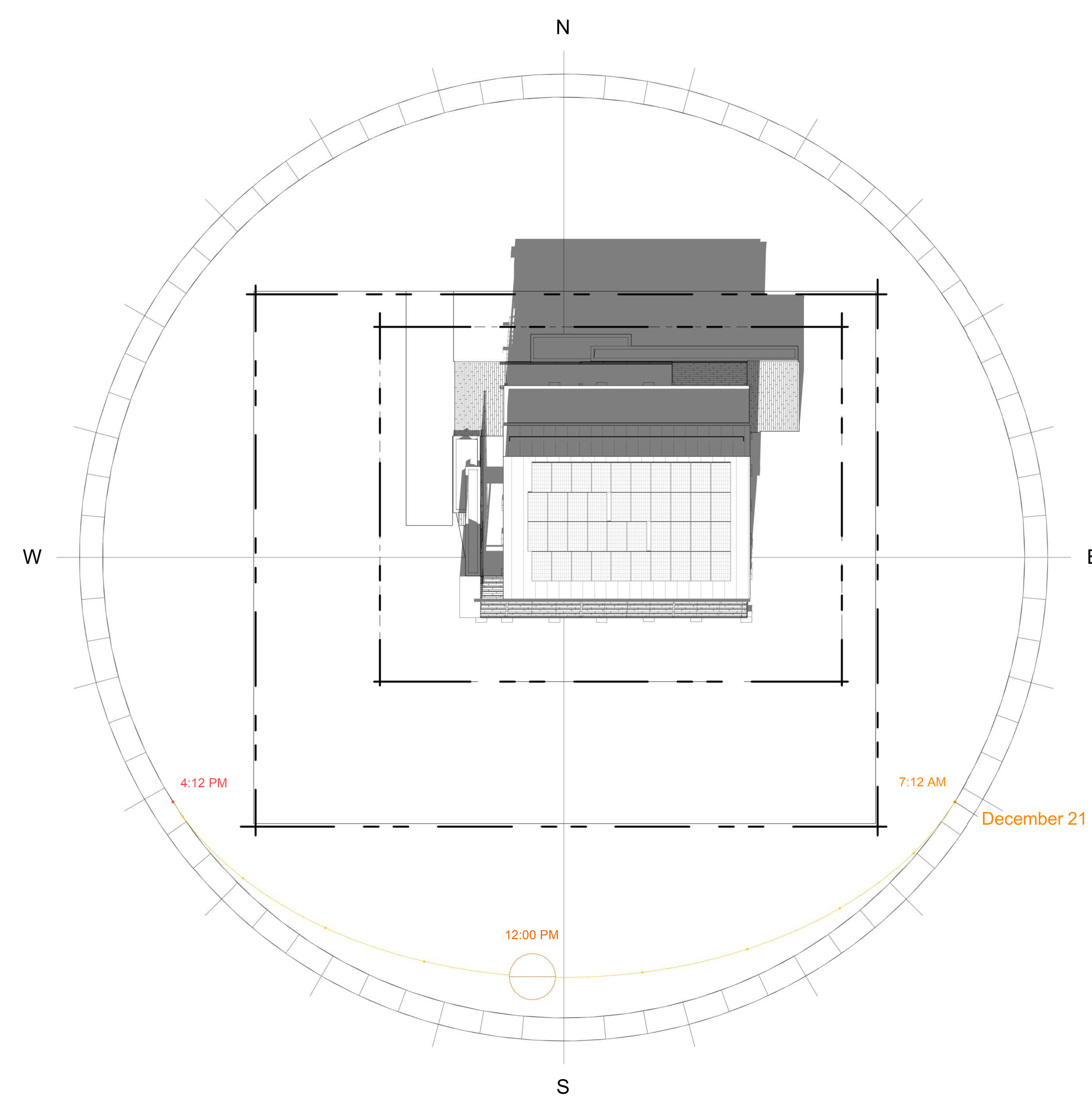
5 SOLAR 0621 AT NOON
AC.16 1" = 20'-0"



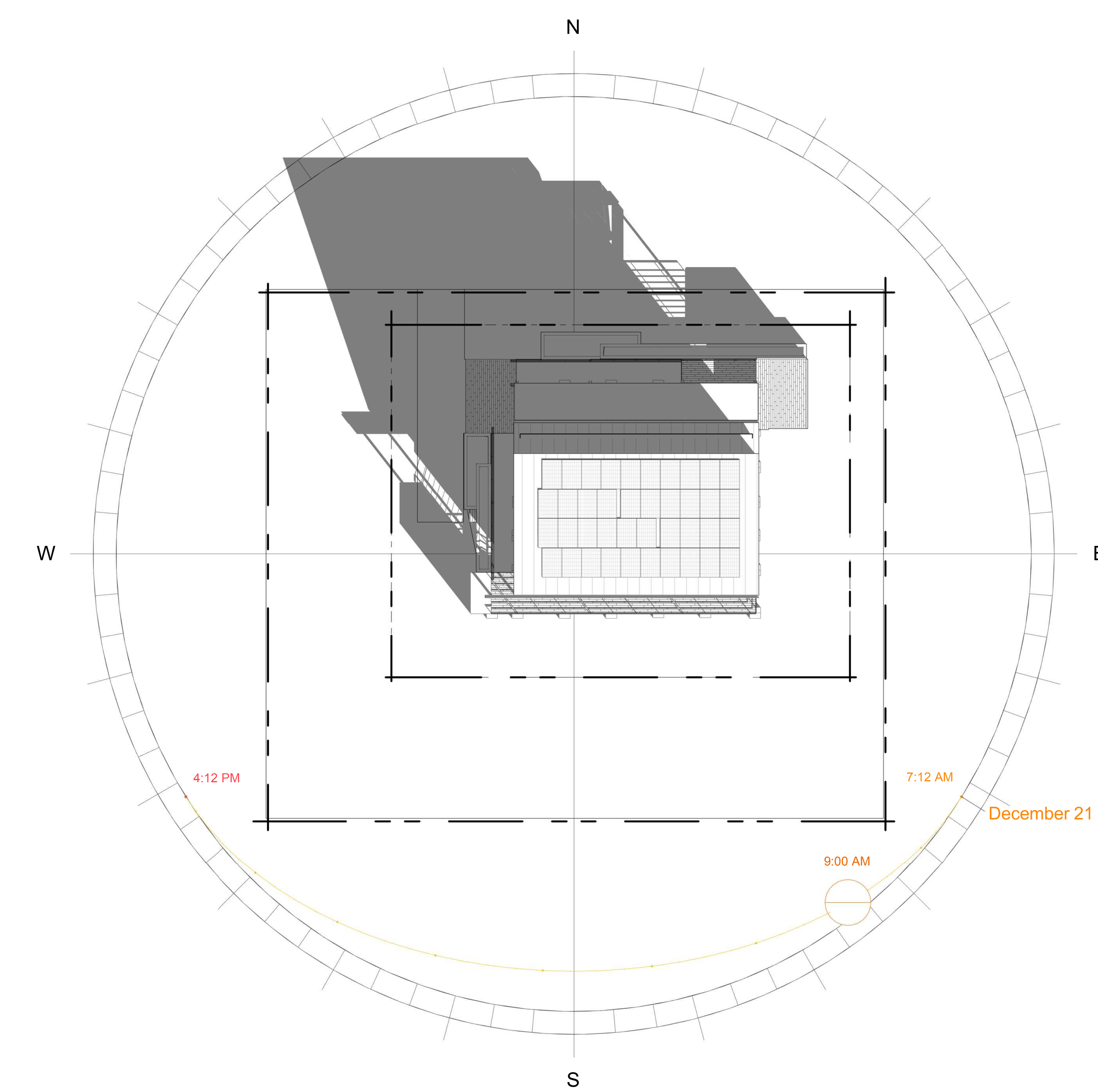
4 JUNE 21 AT 5 30AM
AC.16 1" = 20'-0"



3 SOLAR 1221 AT 2PM
AC.16 1" = 20'-0"



2 SOLAR 1221 AT NOON
AC.16 1" = 20'-0"



1 SOLAR 1221 AT 9AM
AC.16 1" = 20'-0"

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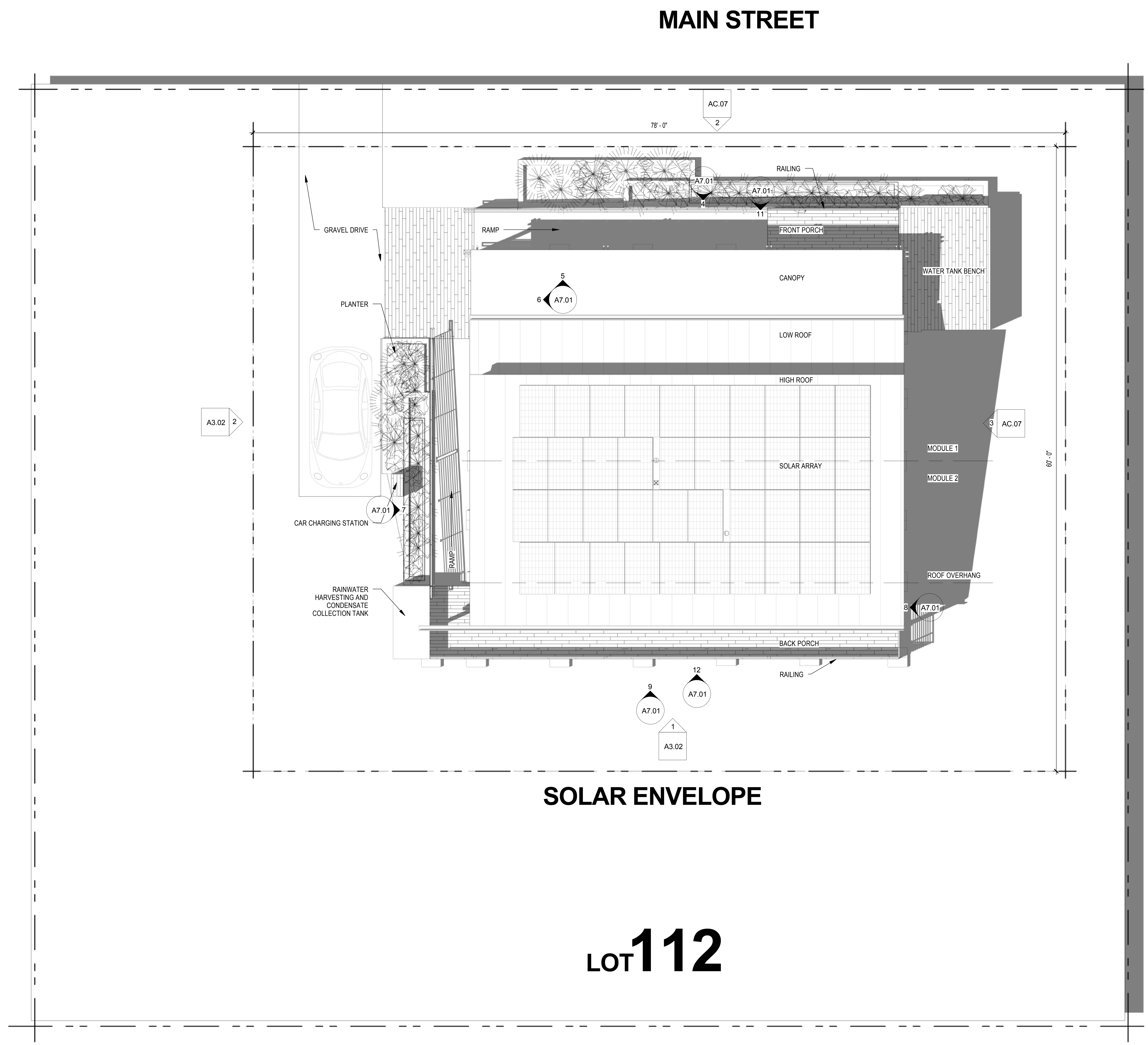
MARK	DATE	DESCRIPTION

SOLAR STUDIES

AC.16

2/23/2017 7:58:10 AM



1 FULL SITE PLAN
A1.00 3/16" = 1'-0"

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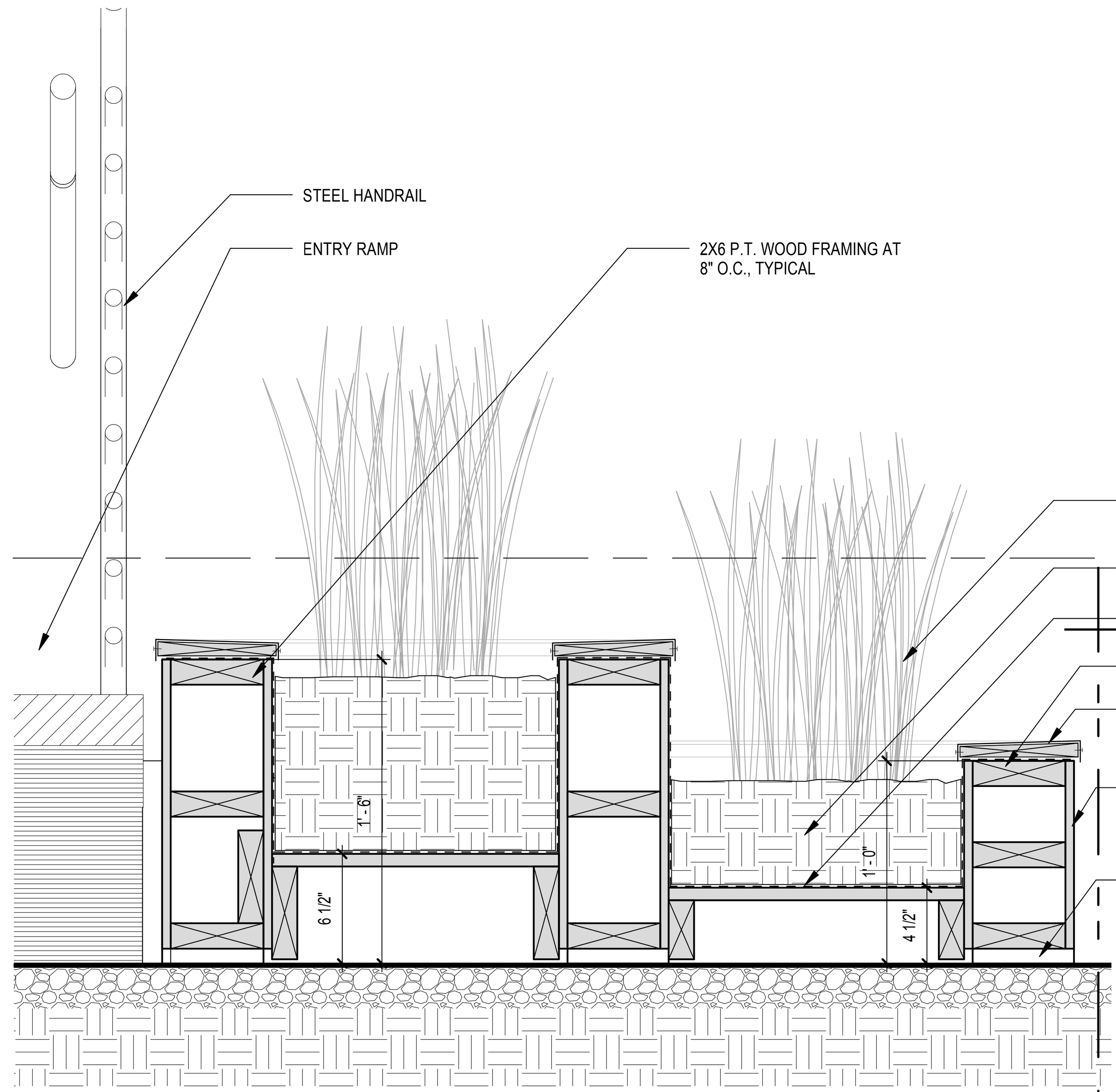
Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

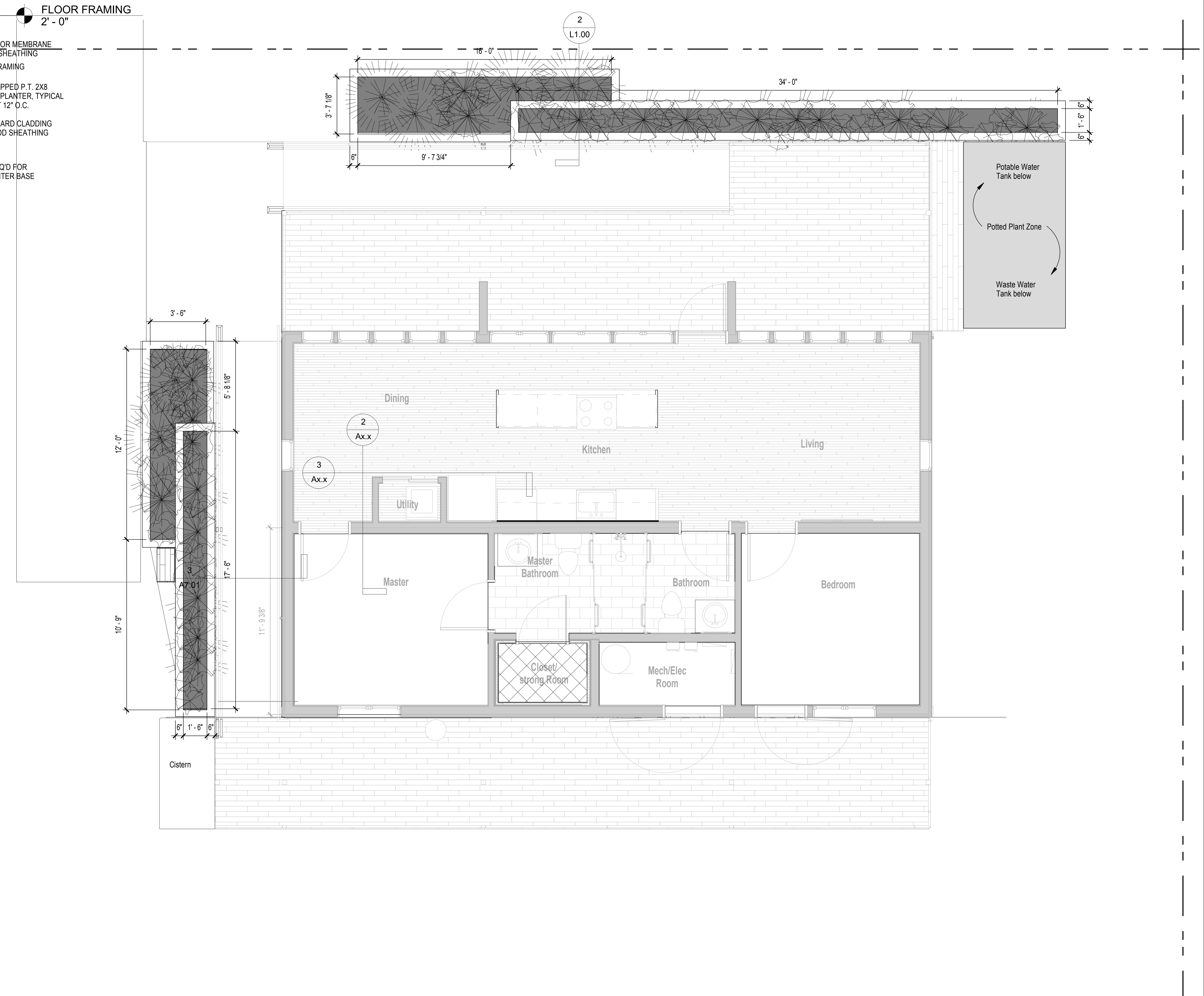
SITE PLAN

A1.00

2/23/2017 7:52:33 AM

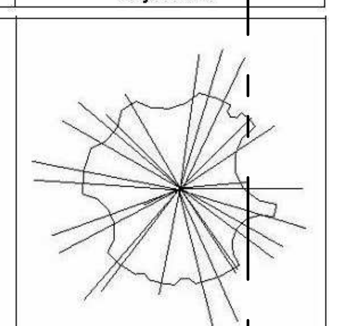
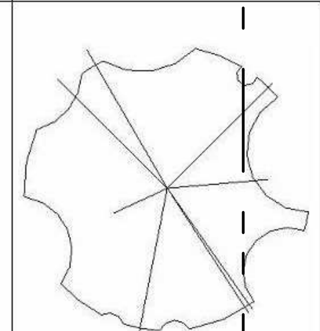
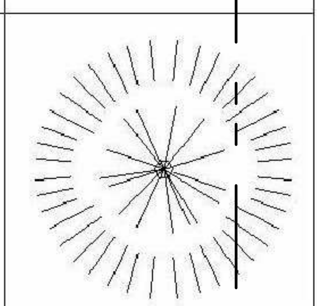


2 L1.00 PLANTER SECTION
1 1/2" = 1'-0"



1 L1.00 LANDSCAPE PLAN
1/4" = 1'-0"

Planting Schedule

Image	Common Name	Botanical Name	Plant Type	Symbol
	Little Bluestem	Schizachyrium scoparium	Grass	
	Meuhly Grass	Meuhlembergia capilaris	Grass	
	Varigated Sweet Flag	Acorus gramineus 'Ogon'	Grass	

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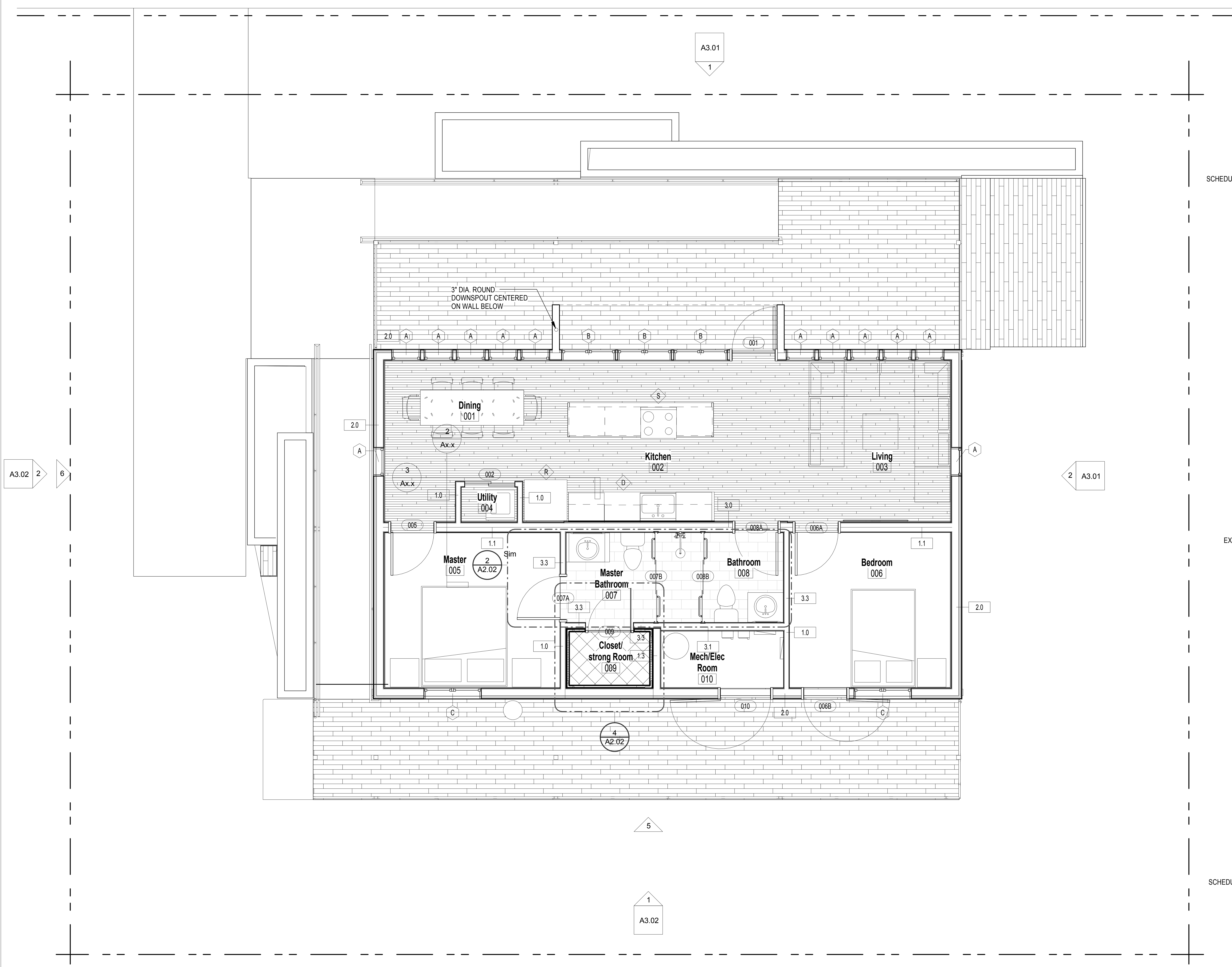
MARK	DATE	DESCRIPTION

LANDSCAPE PLAN

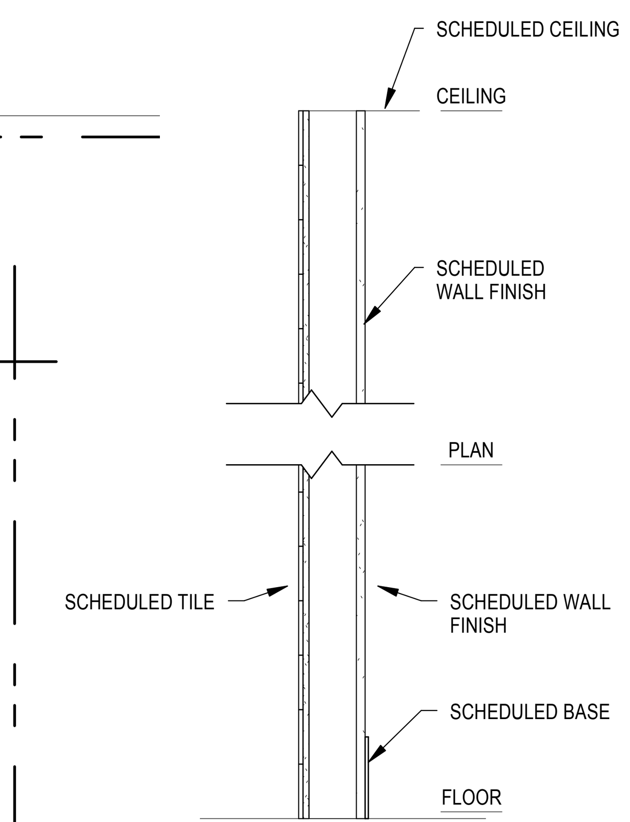
L1.00

2/23/2017 7:58:14 AM



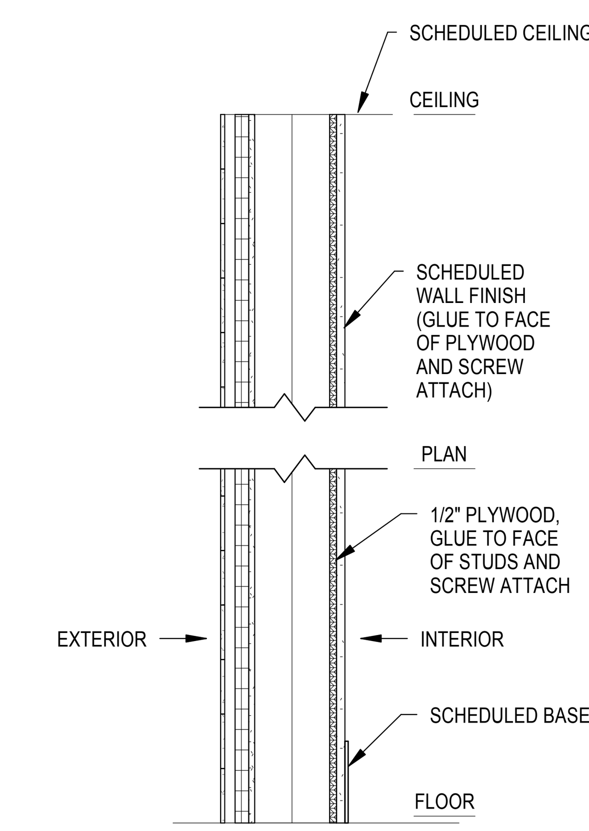
1 A2.01 ANNOTATION PLAN
1/4" = 1'-0"

PARTITION LEGEND



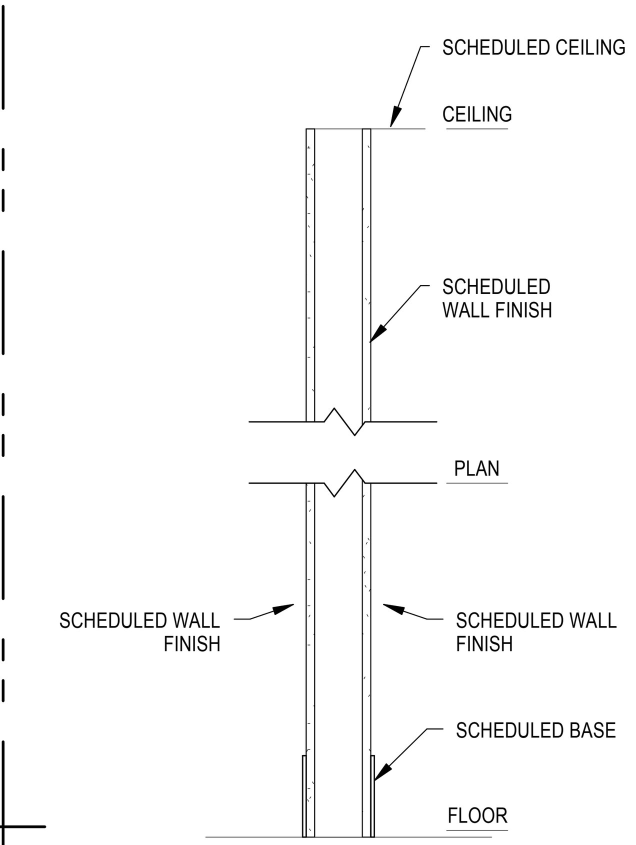
PARTITION TYPE 3

TYPE	DESCRIPTION	WIDTH	RATING	UL #	STC #
3.0	ONE LAYER OF 5/8" GYP. ON ONE SIDE (2) 3 1/2" WOOD STUDS AND ONE LAYER OF 1/2" CEMENT BOARD WITH SCHEDULED TILE ON OPPOSITE SIDE	8 7/8"			
3.1	ONE LAYER OF 3/4" SHEATHING ON ONE SIDE OF 5 1/2" WOOD STUD WITH ONE LAYER OF 1/2" CEMENT BOARD WITH SCHEDULED TILE ON THE OPPOSITE SIDE	7"			
3.3	ONE LAYER OF 5/8" GYP. ON ONE SIDE OF 3 1/2" WOOD STUD AND ONE LAYER OF 1/2" CEMENT BOARD WITH SCHEDULED TILE ON OPPOSITE SIDE	4 7/8"			



PARTITION TYPE 2

TYPE	DESCRIPTION	WIDTH	RATING	UL #	STC #
2.0	ONE LAYER OF 5/8" GYP. SCREW ATTACHED TO GLUE-COATED FACE OF 1/2" PLYWOOD ON INTERIOR SIDE OF (2) GLUE-COATED 3 1/2" WOOD STUDS WITH ONE LAYER OF 5/16" CEMENT BOARD SIDING ON EXTERIOR SIDE	8 5/8"			



PARTITION TYPE 1

TYPE	DESCRIPTION	WIDTH	RATING	UL #	STC #
1.0	ONE LAYER OF 5/8" GYP. BOARD ON BOTH SIDES OF 3 1/2" WOOD STUD	4 3/4"			
1.1	ONE LAYER OF 5/8" GYP. ON BOTH SIDES OF (2) 3 1/2" WOOD STUDS	8 1/4"			
1.3	ONE LAYER OF 3/4" SHEATHING ON ONE SIDE OF 5 1/2" WOOD STUD	6 1/4"			

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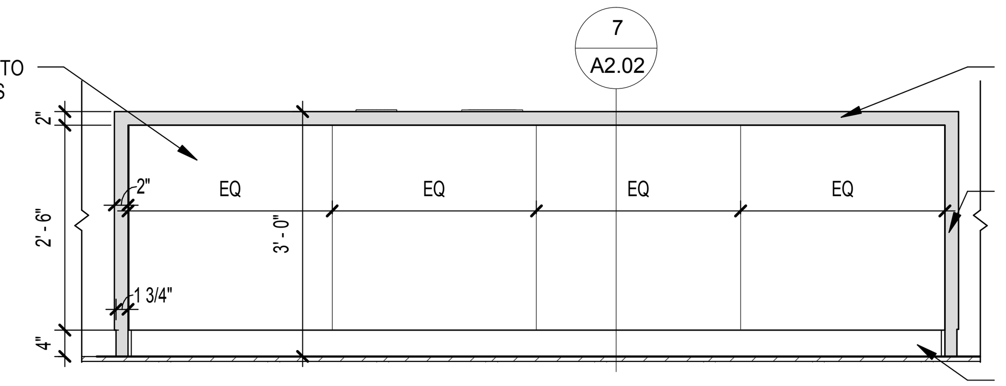
MARK	DATE	DESCRIPTION

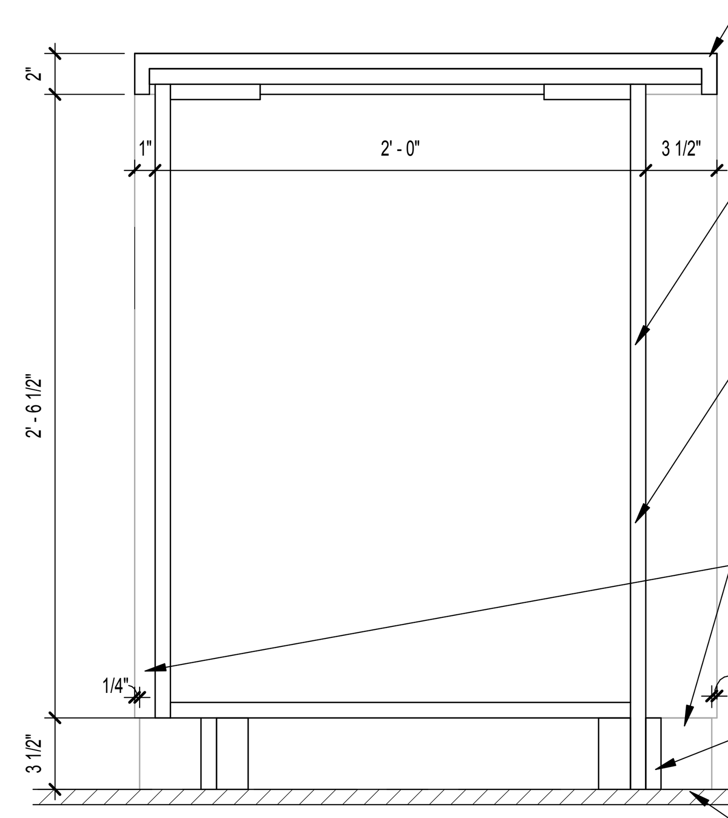
FLOOR PLAN

A2.01

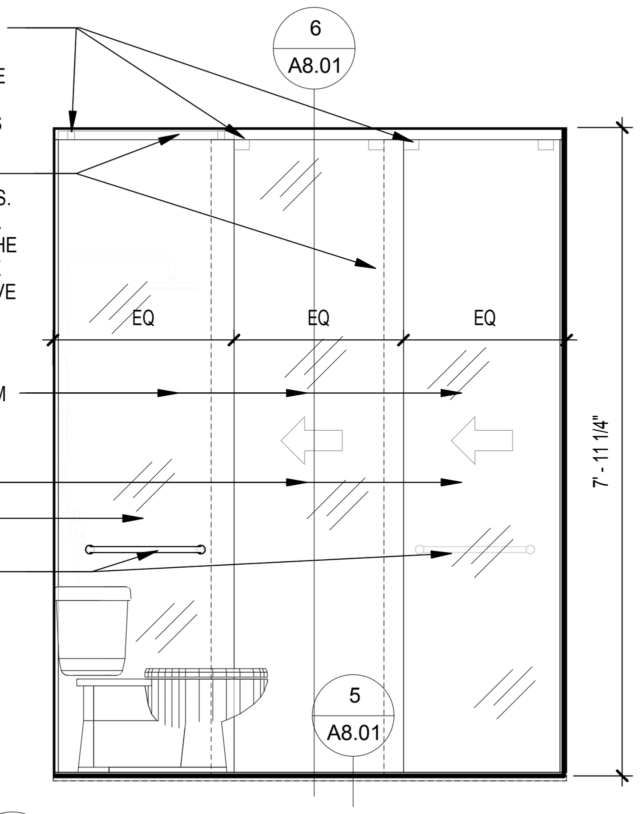
2/23/2017 7:52:35 AM



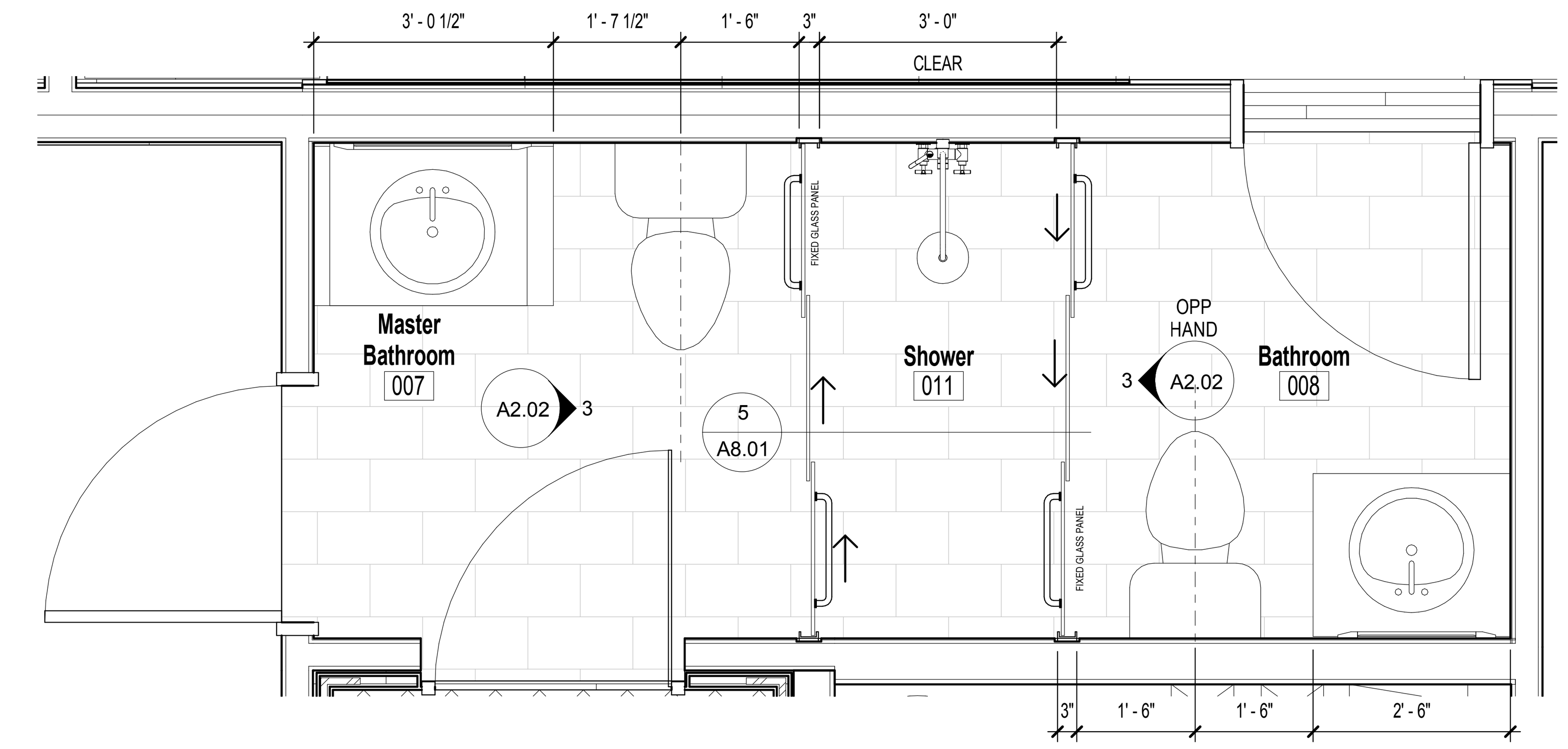
6 ELEVATION @ KITCHEN 1
A2.02 1/2" = 1'-0"



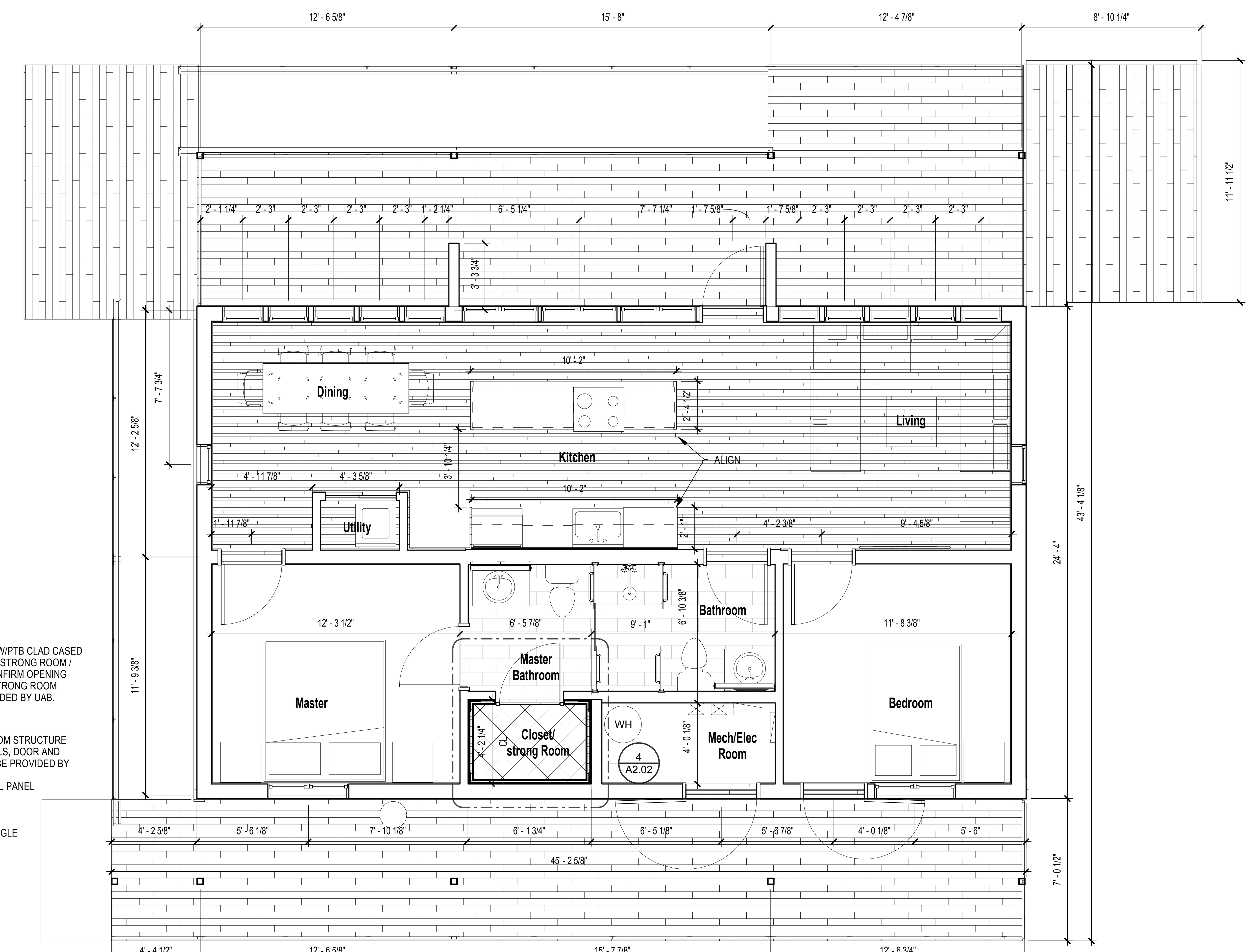
7 SECTION @ KITCHEN ISLAND
A2.02 1 1/2" = 1'-0"



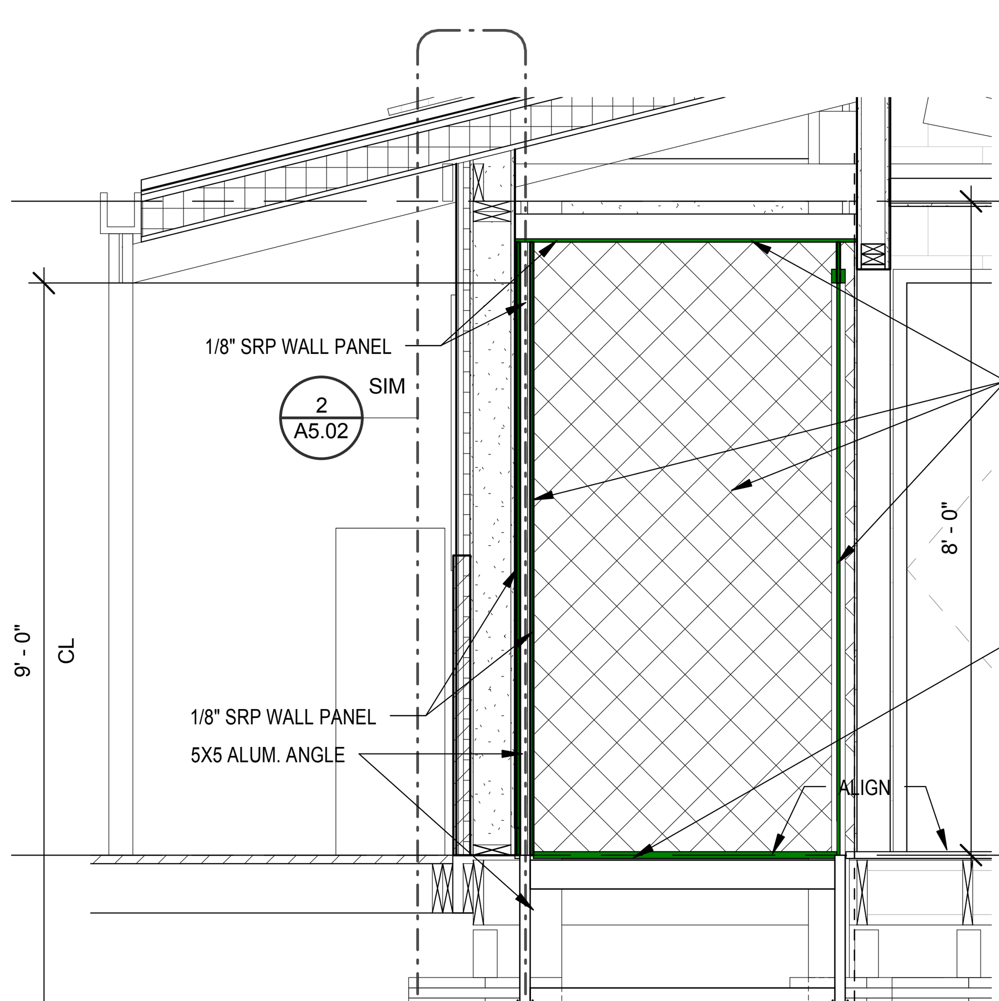
3 ELEVATION @ SHOWER DOOR
A2.02 1/2" = 1'-0"



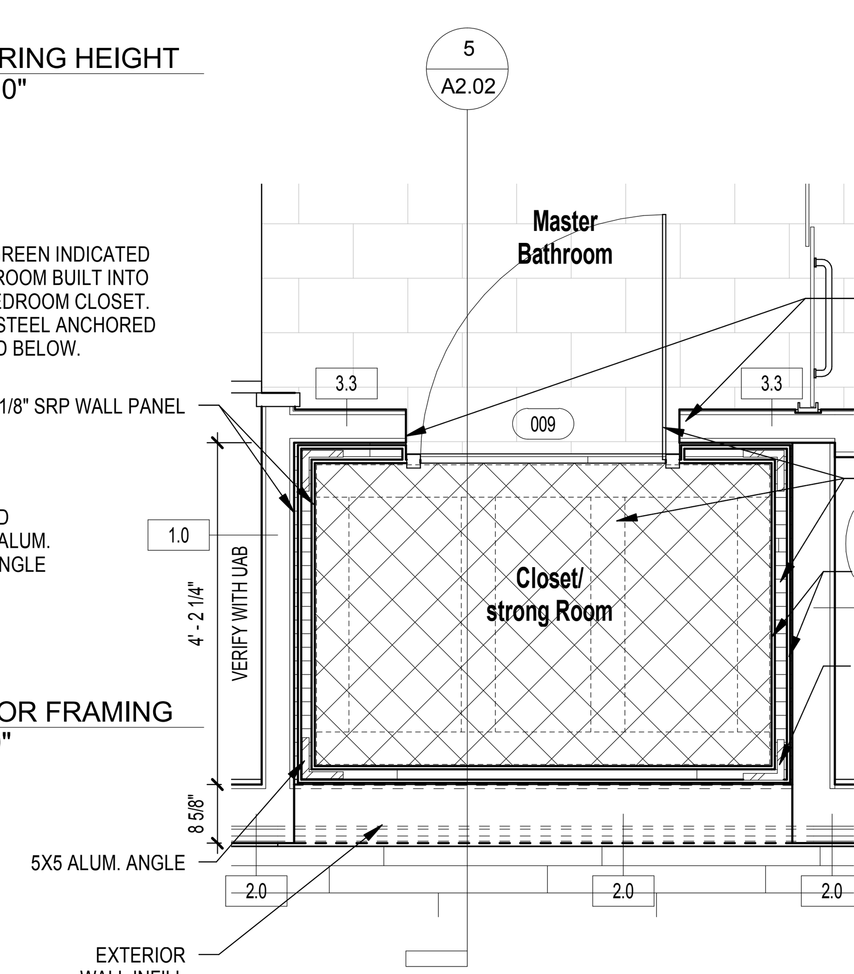
2 ENLARGED PLAN @ TOILETS
A2.02 1/2" = 1'-0"



1 DIMENSION FLOOR PLAN
A2.02 1/4" = 1'-0"



5 SECTION @ CLOSET/STRONG ROOM
A2.02 1/2" = 1'-0"



4 ENLARGED PLAN @CLOSET/ STRONG ROOM
A2.02 1/2" = 1'-0"

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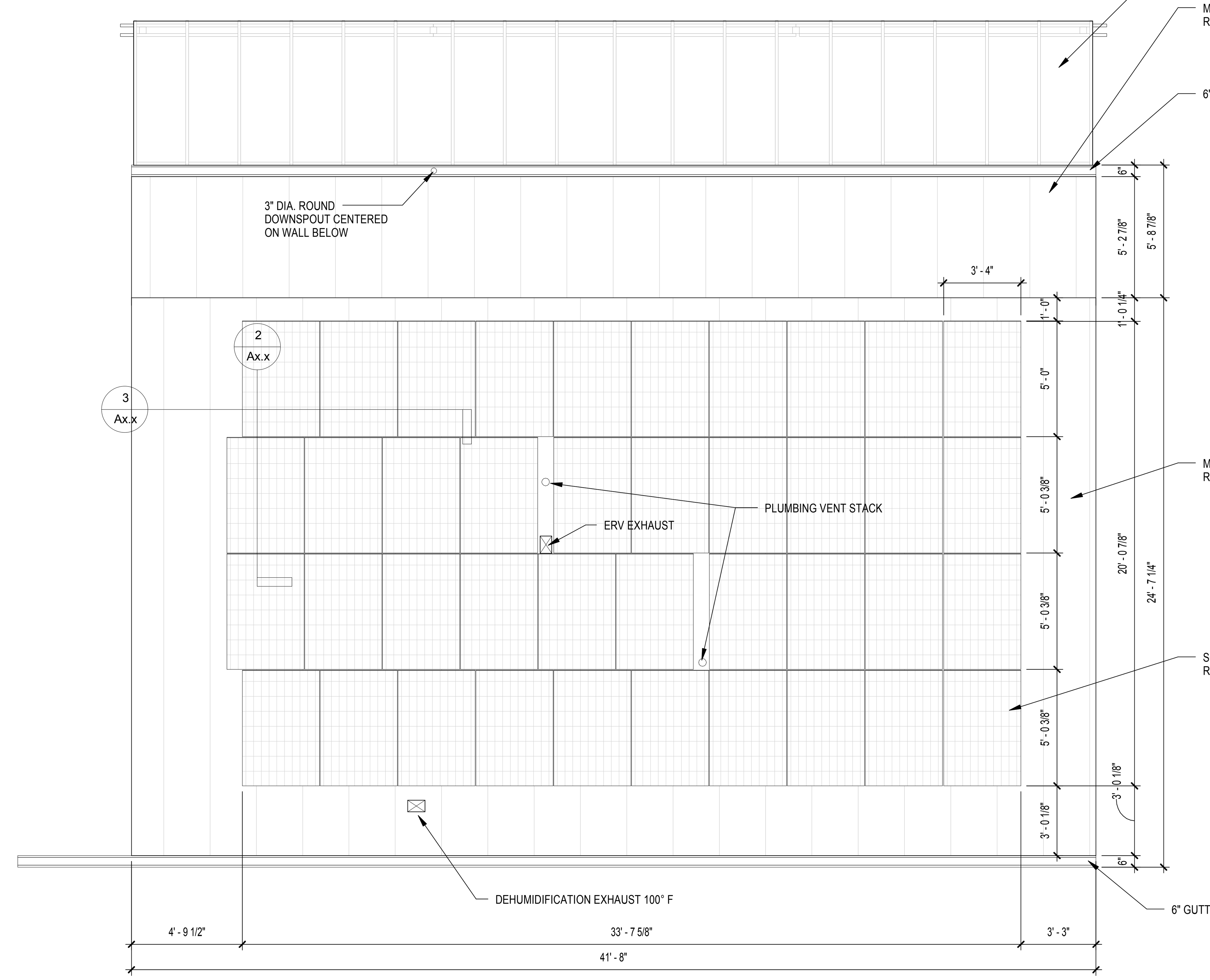
MARK	DATE	DESCRIPTION

DIMENSIONED PLAN

A2.02

2/23/2017 7:52:42 AM



1 ROOF PLAN
A2.03 1/4" = 1'-0"

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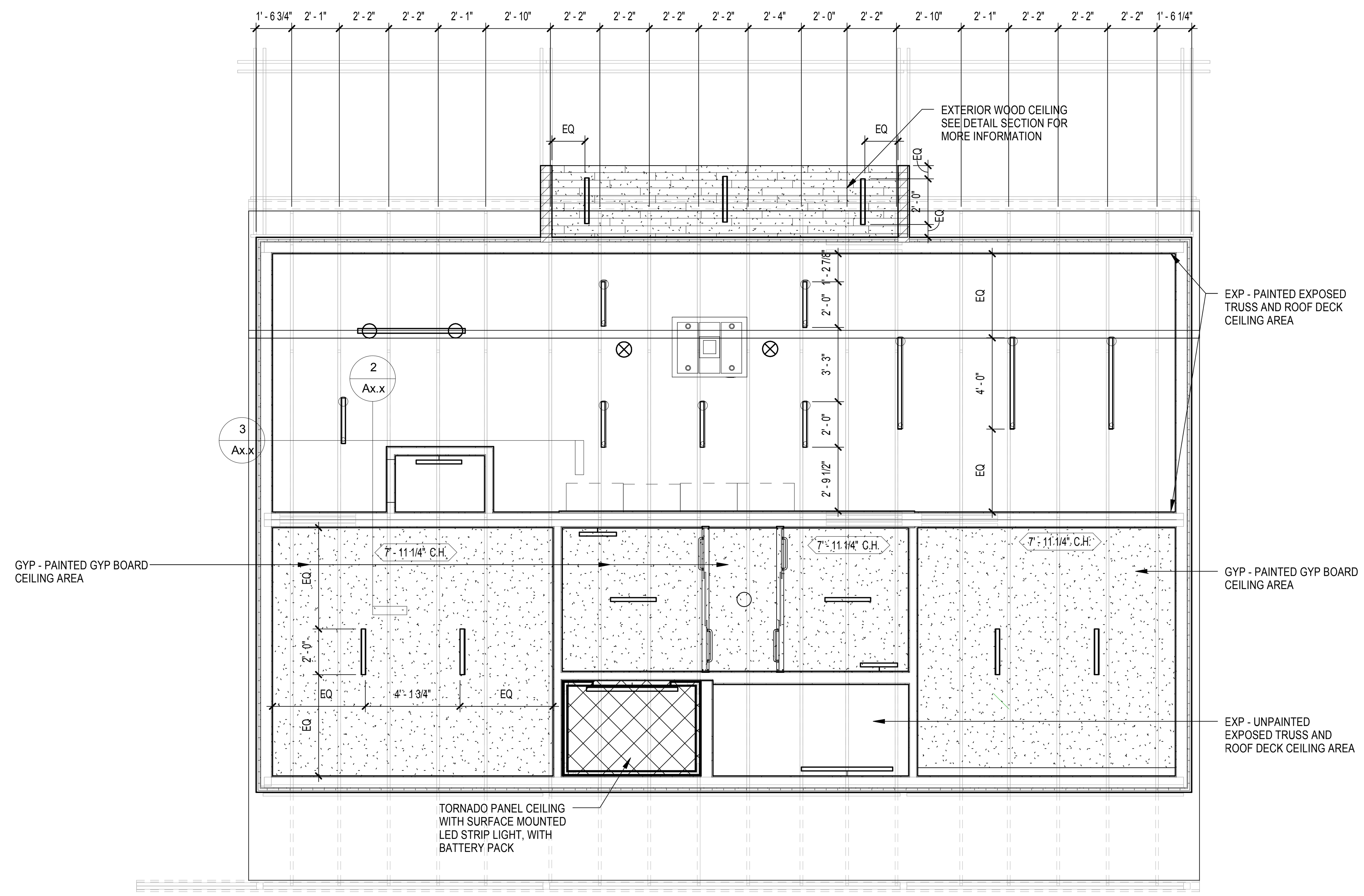
MARK	DATE	DESCRIPTION

ROOF PLAN

A2.03

2/23/2017 7:52:43 AM



1 A2.04 REFLECTED CEILING PLAN
1/4" = 1'-0"

LIGHTING LEGEND:

	DECORATIVE LINEAR PENDANT FIXTURE: BASIS OF DESIGN FLUXWERX; VIEW; BEAM; TEMP: 3500 K; CLEAR ANODIZED
24" LONG	WALL MOUNTED DIRECT / INDIRECT LINEAR FIXTURE: BASIS OF DESIGN: Lumenpulse; Lumenline Surface Wall Mount Direct/Indirect ; TEMP: 3500 K; CLEAR ANODIZED
48" LONG	RECESSED DIRECT LINEAR FIXTURE: BASIS OF DESIGN: Lumenpulse; Lumenline Recessed ; TEMP: 3500 K; CLEAR ANODIZED
48" LONG / 24" LONG	WALL MOUNTED DIRECT / INDIRECT LINEAR FIXTURE: BASIS OF DESIGN: Lumenpulse; Lumenline Surface Wall Mount Direct/Indirect ; TEMP: 3500 K; CLEAR ANODIZED
⊗	DECORATIVE PENDANT FIXTURE: BASIS OF DESIGN: Neidhardt Inc, RPD14, LED - 2700K, T10-FROSTED, FINISH: PAINTED SILVER WITH MATCHING CORD

LIGHTING NOTES:

1. SEE ELECTRICAL DRAWING FOR MORE SPECIFIC INFORMATION ON LIGHTING SPECIFICATIONS

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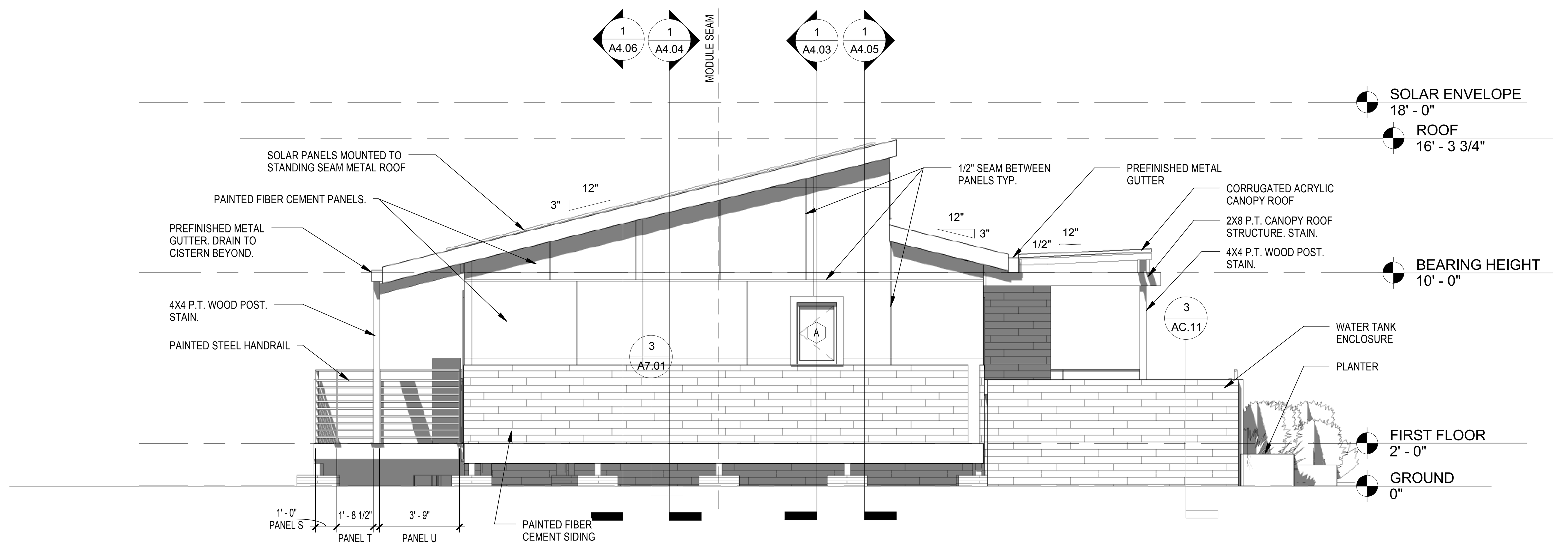
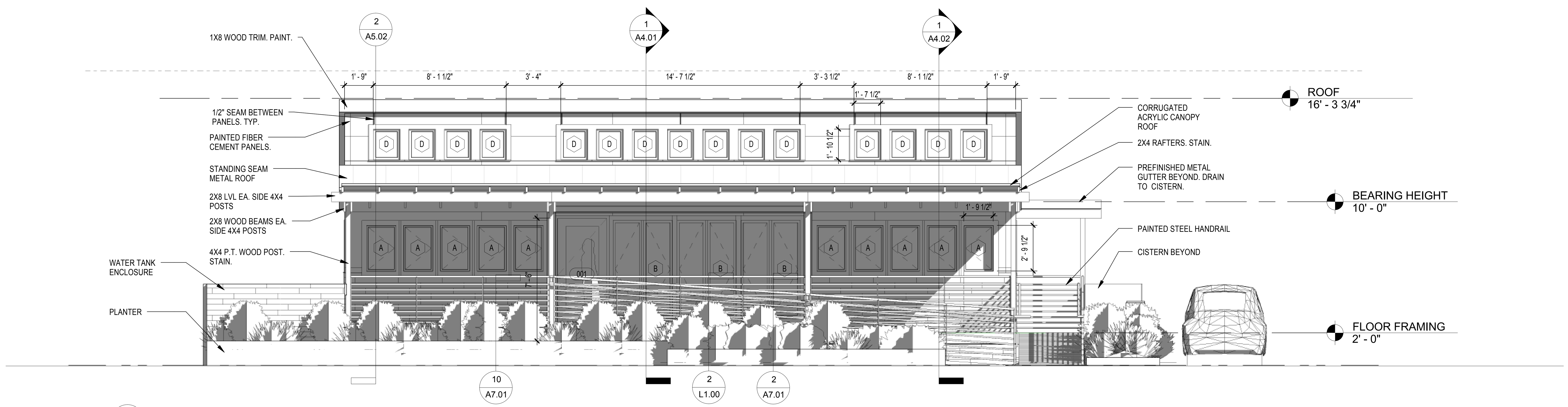
REFLECTED CEILING PLAN

A2.04

2/23/2017 7:52:44 AM



2 A3.01 EAST ELEVATION
1/4" = 1'-0"



1 A3.01 NORTH ELEVATION
1/4" = 1'-0"

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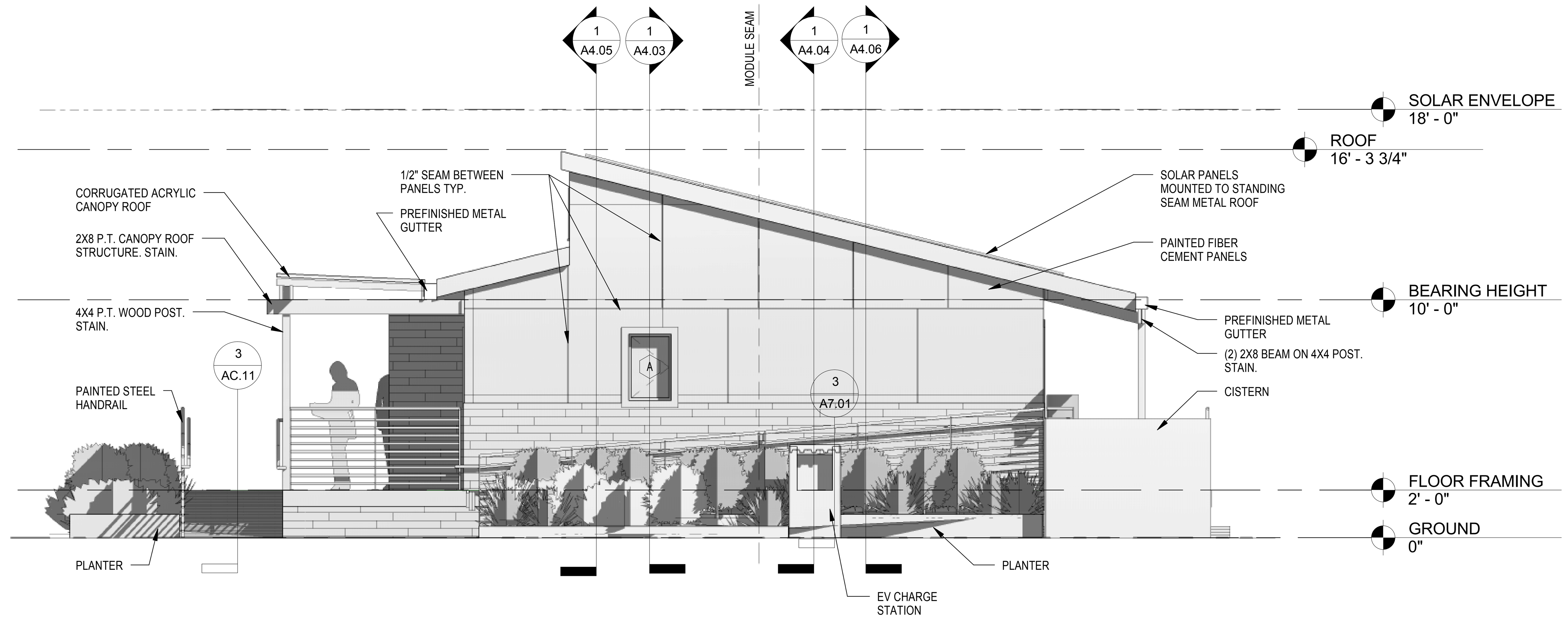
Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

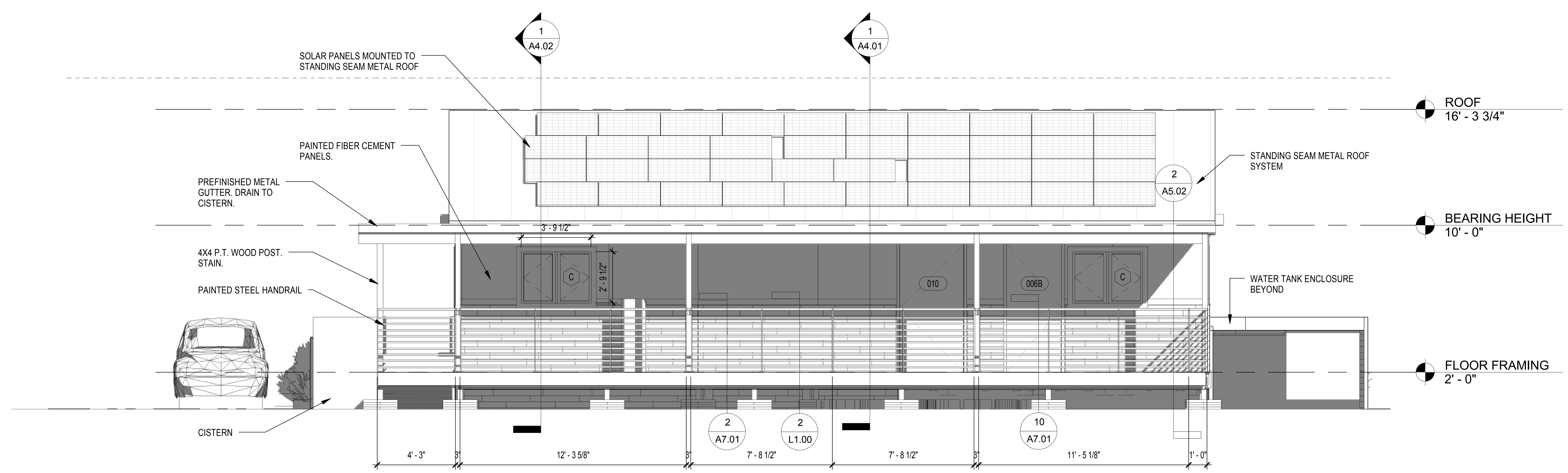
EXTERIOR ELEVATIONS

A3.01

2/23/2017 9:31:20 AM



2 A3.02 WEST ELEVATION
1/4" = 1'-0"



1 A3.02 SOUTH ELEVATION
1/4" = 1'-0"

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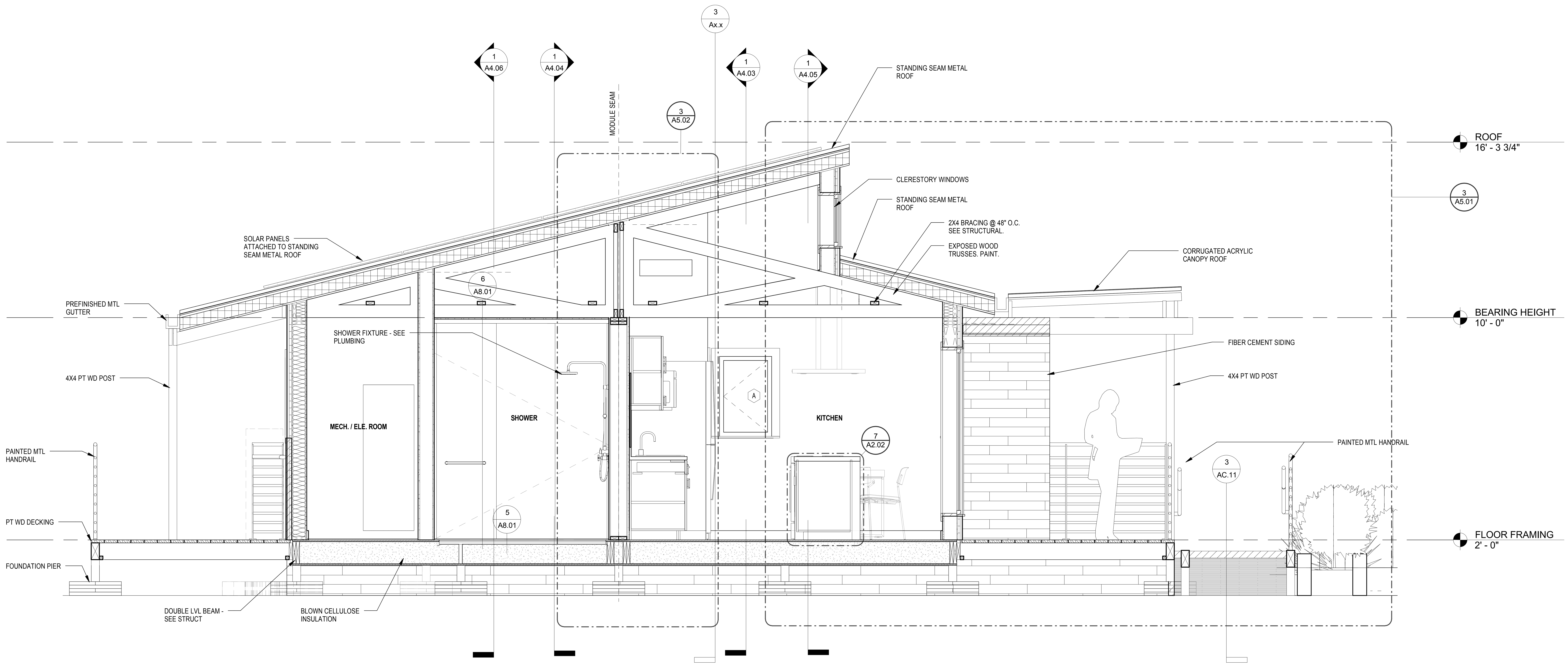
Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

EXTERIOR ELEVATIONS

A3.02

2/23/2017 9:45:54 AM



1 A4.01 BLDG SECTION 1
1/2" = 1'-0"

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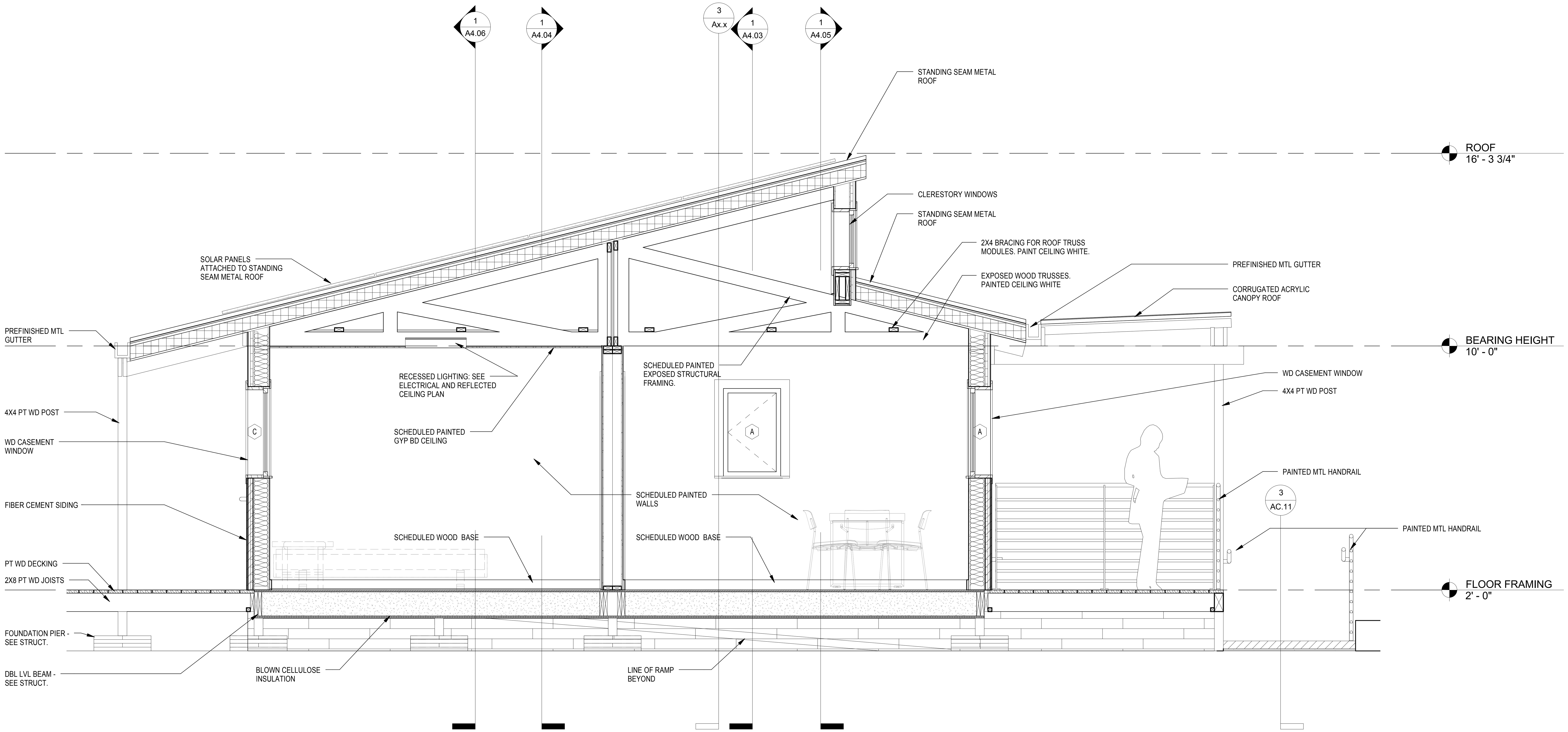
Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

BUILDING SECTION

A4.01

2/23/2017 7:52:59 AM



1
A4.02
BLDG SECTION 2
1/2" = 1'-0"

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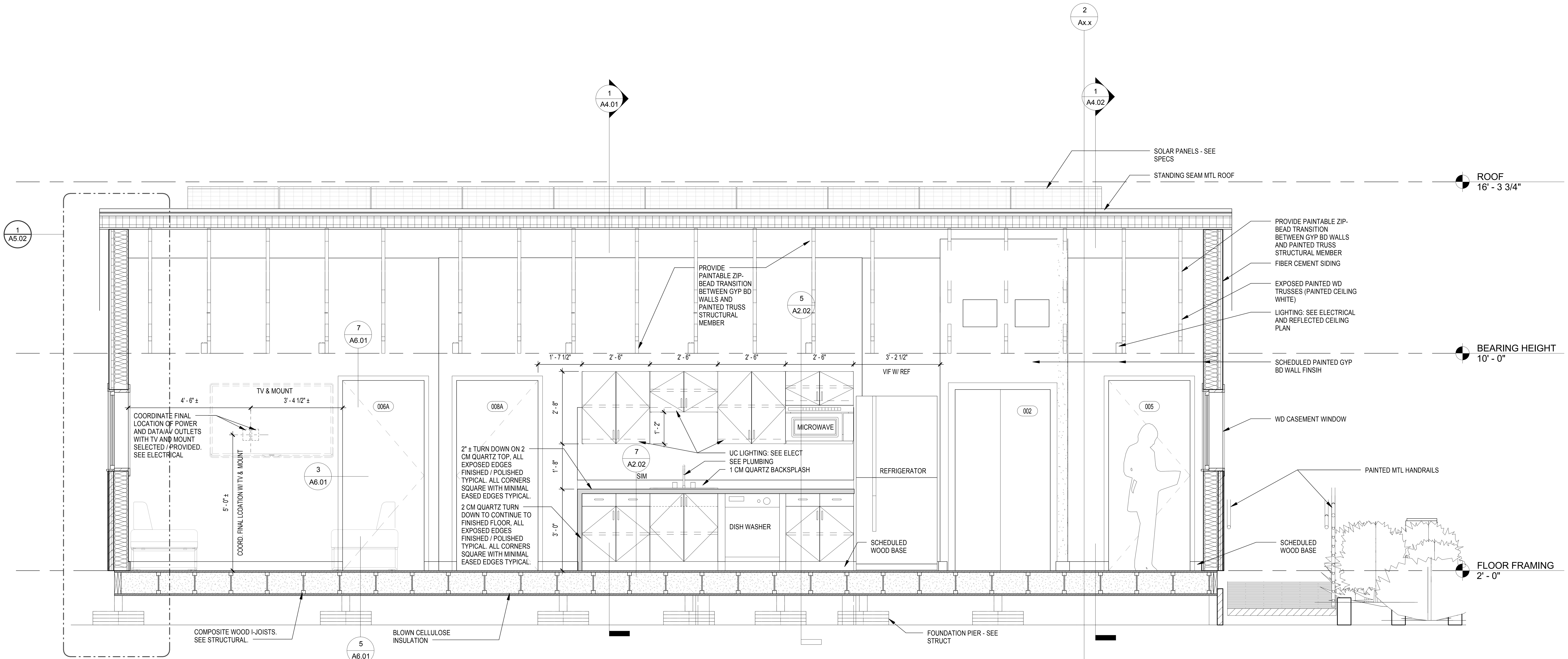
Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

BUILDING SECTION

A4.02

2/23/2017 7:53:00 AM



1 A4.03 BLDG SECTION 3
1/2" = 1'-0"

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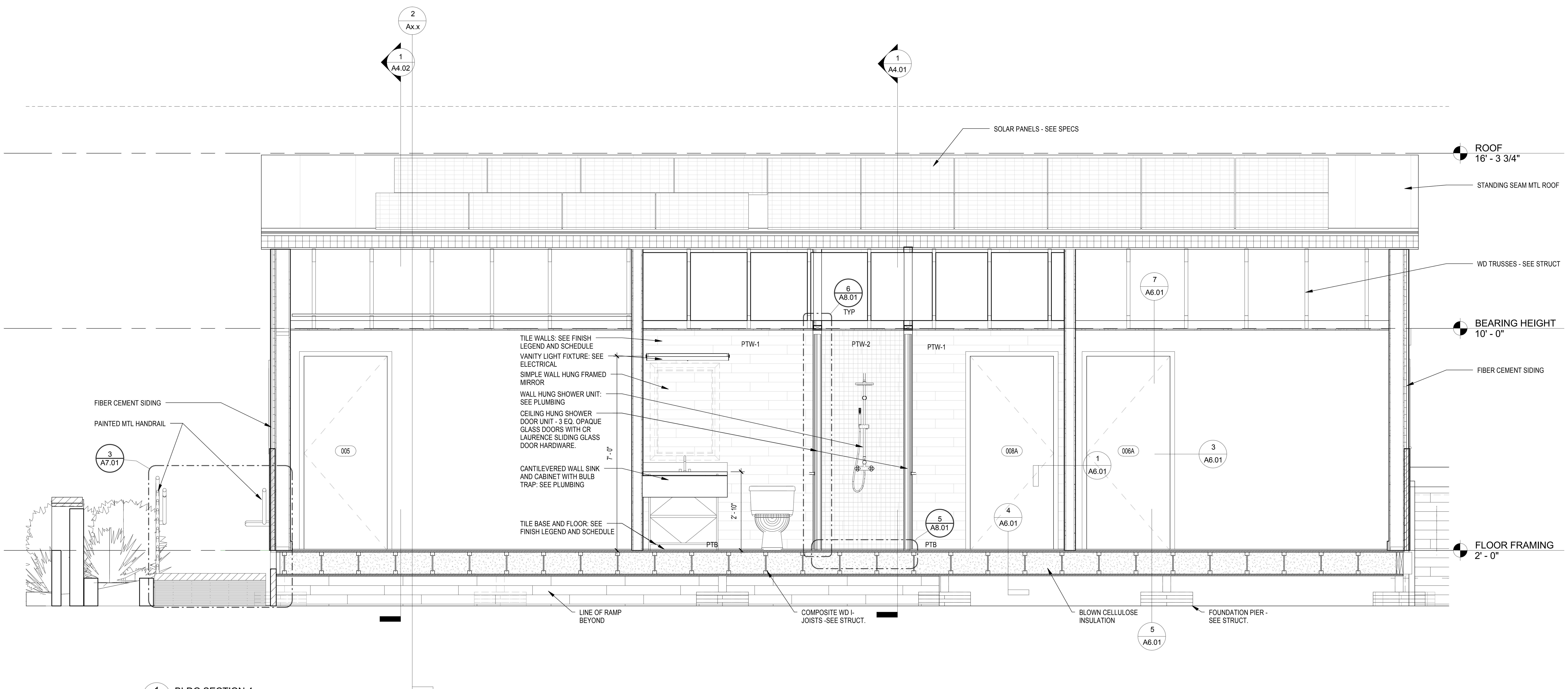
Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

BUILDING SECTON

A4.03

2/23/2017 7:53:01 AM



1
A4.04
BLDG SECTION 4
1/2" = 1'-0"

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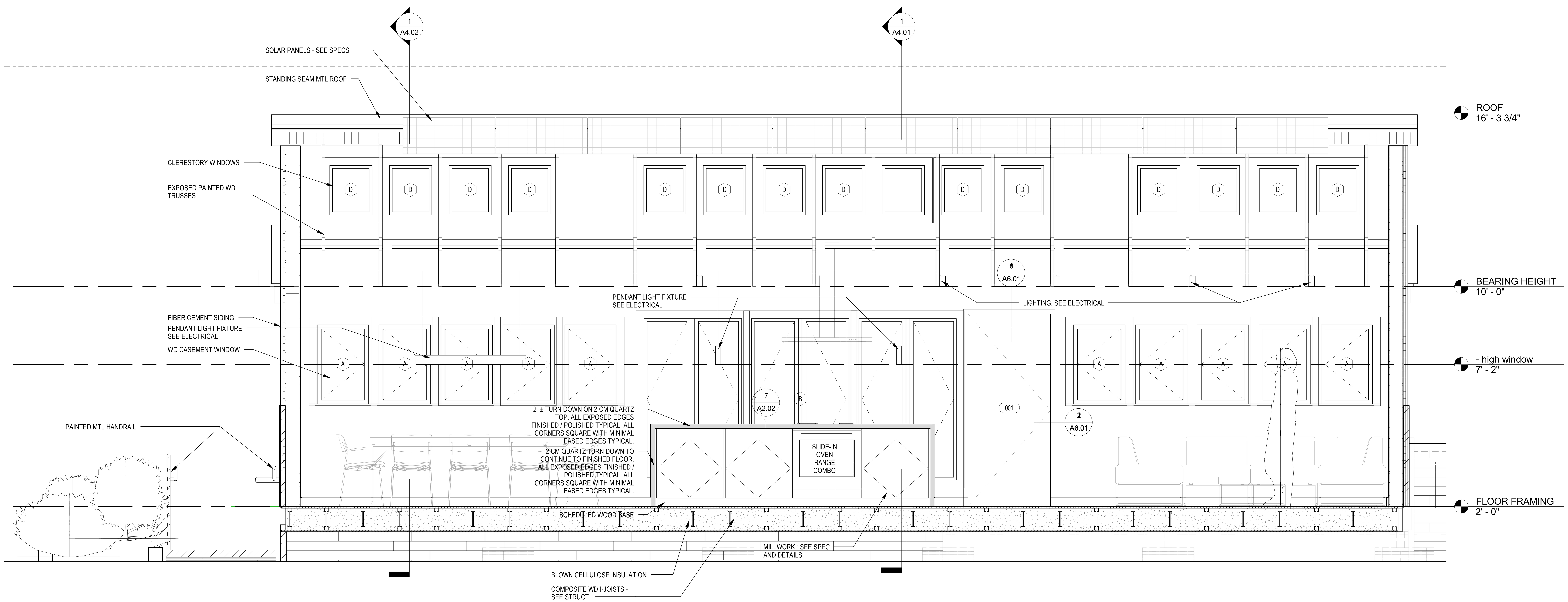
Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

BUILDING SECTION

A4.04

2/23/2017 7:53:04 AM



1 A4.05 BLDG SECTION 6
1/2" = 1'-0"

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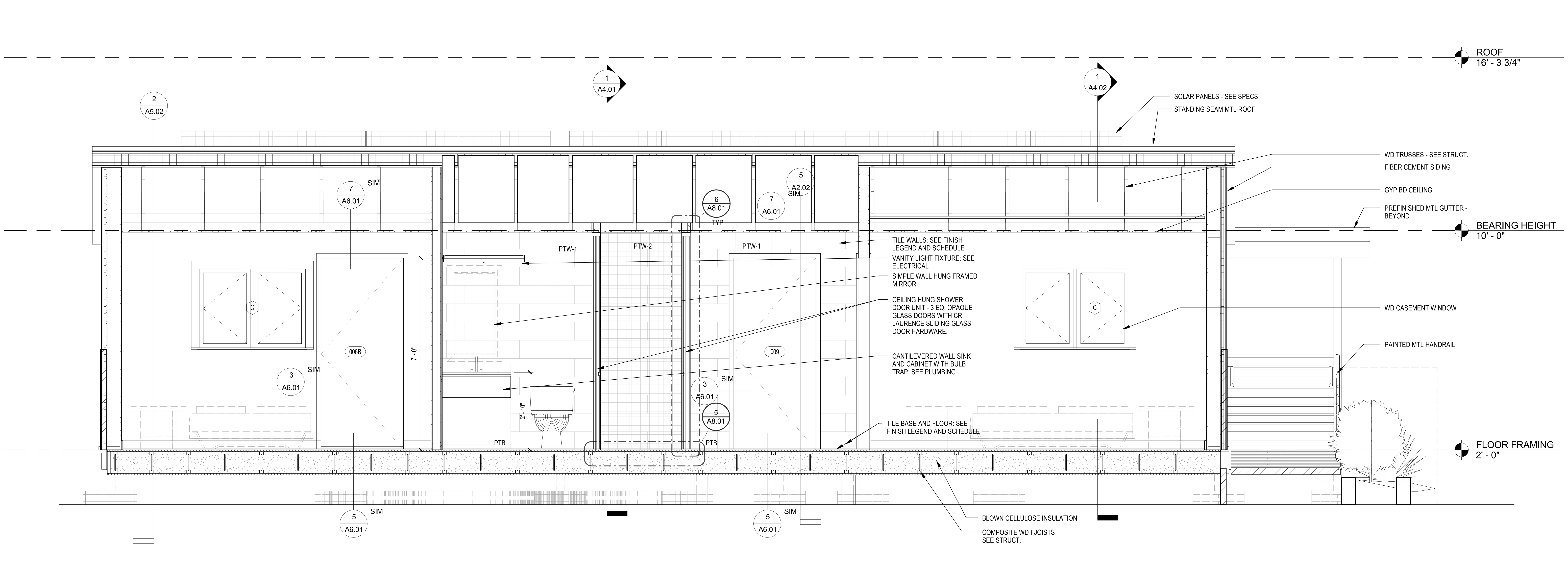
Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

BUILDING SECTION

A4.05

2/23/2017 7:53:05 AM



1
A4.06
BLDG SECTION 7
1/2" = 1'-0"

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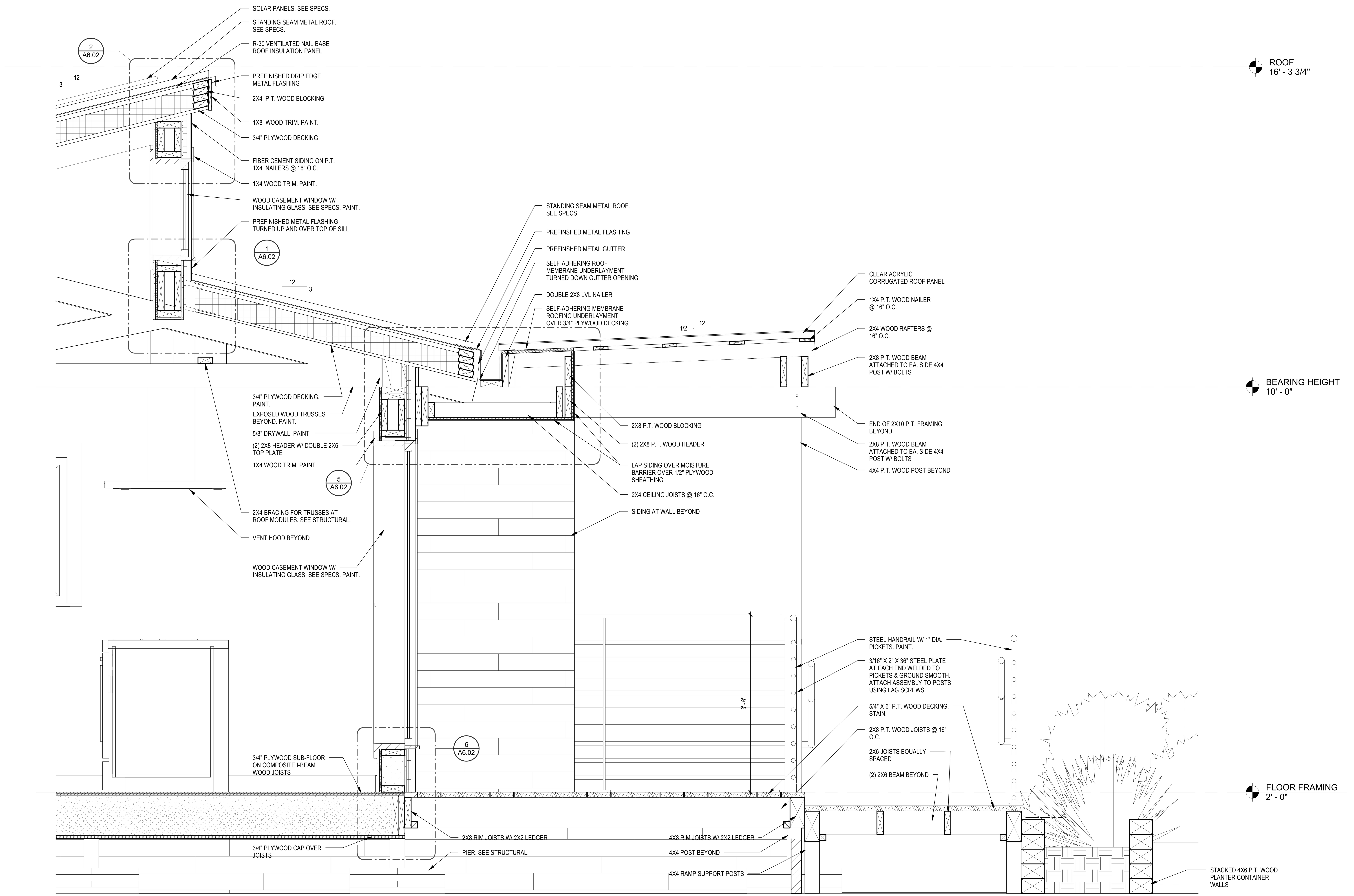
Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

BUILDING SECTION

A4.06

2/23/2017 7:53:08 AM



3
A5.01
WALL SECTION 1
1" = 1'-0"

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Lot Number

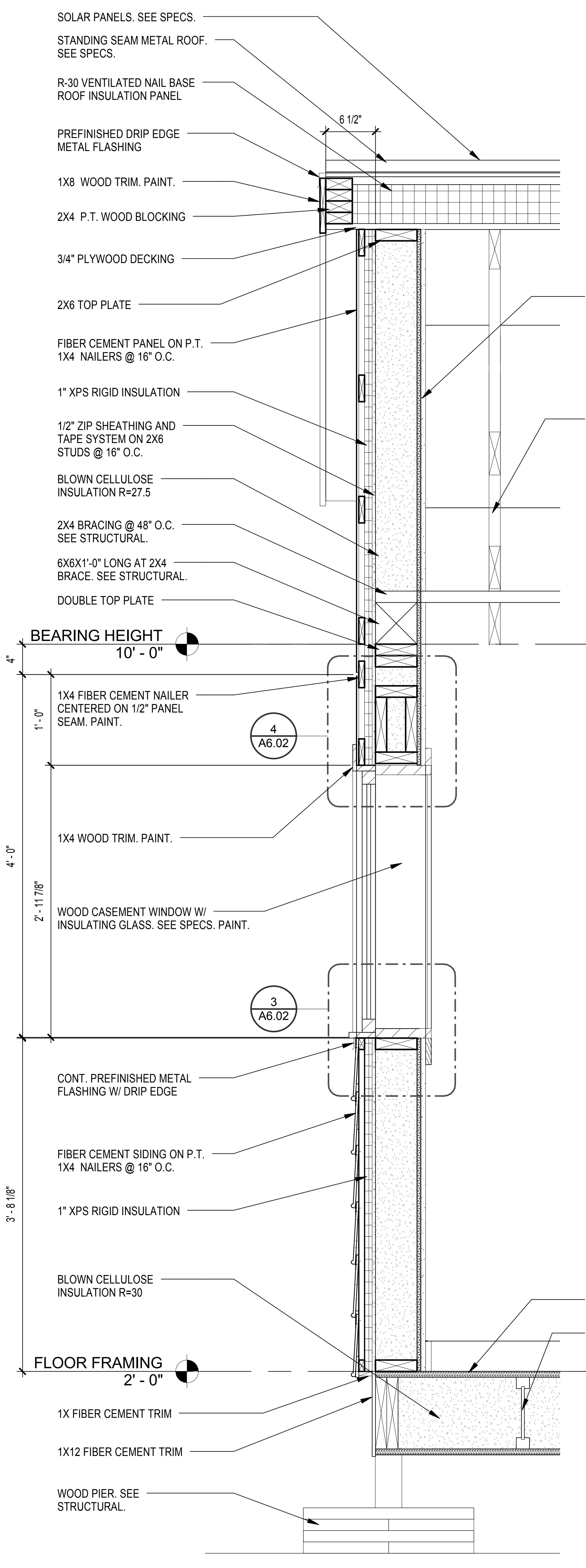
LOT NO. 112

MARK	DATE	DESCRIPTION

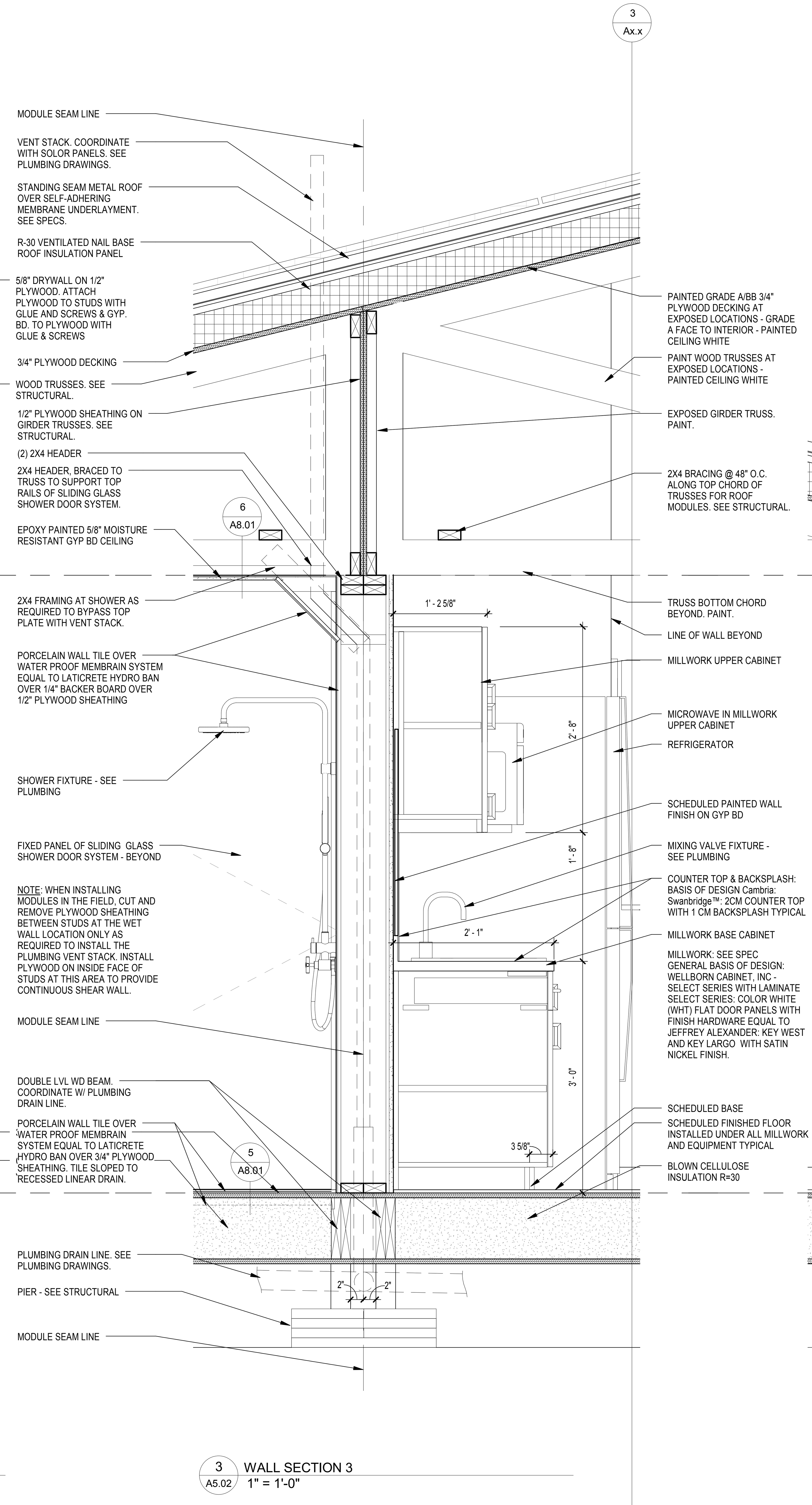
WALL SECTIONS

A5.01

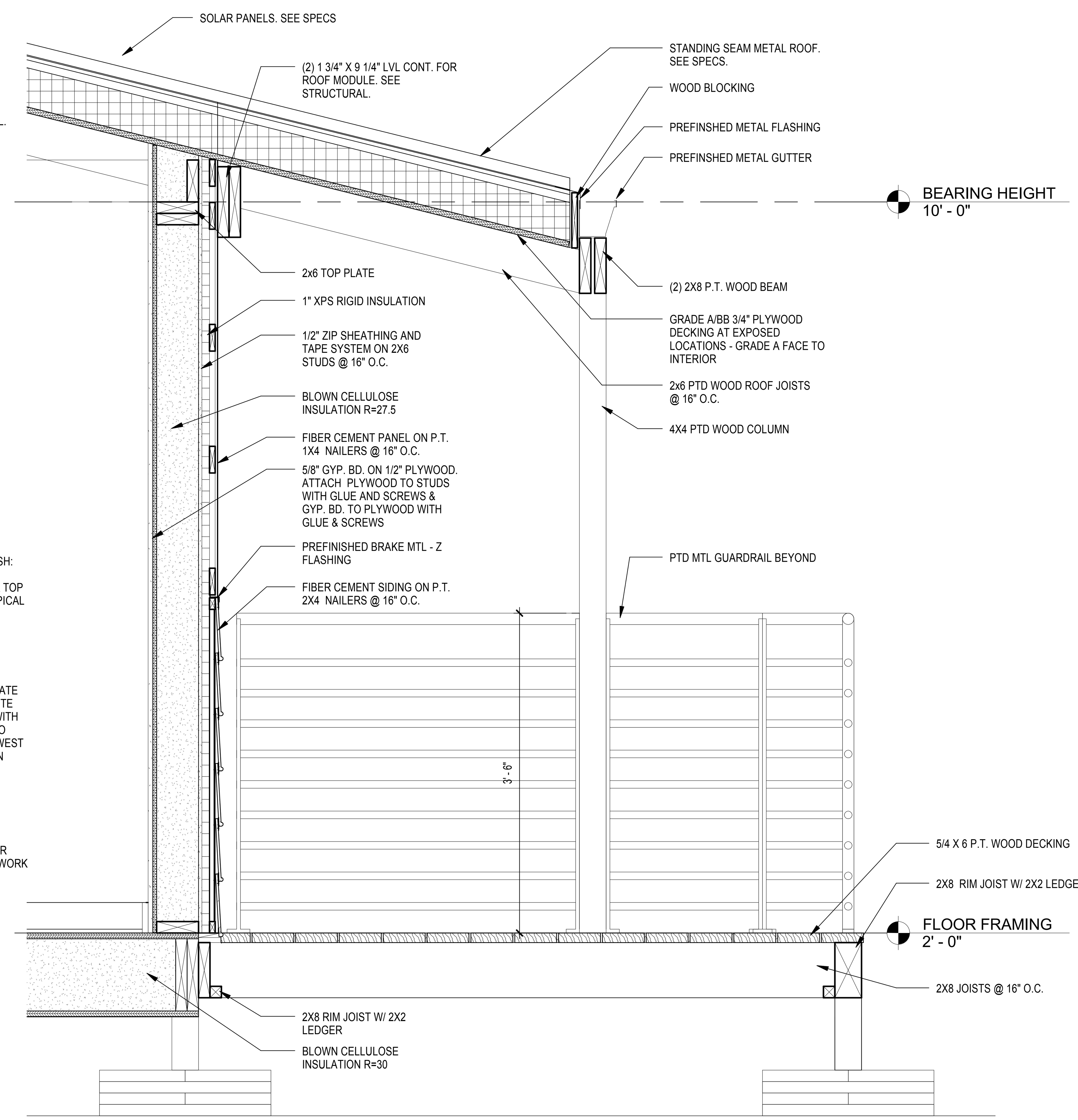
2/23/2017 7:53:08 AM



1 WALL SECTION 4
A5.02 1" = 1'-0"



3 WALL SECTION 3
A5.02 1" = 1'-0"



2 WALL SECTION 2
A5.02 1" = 1'-0"

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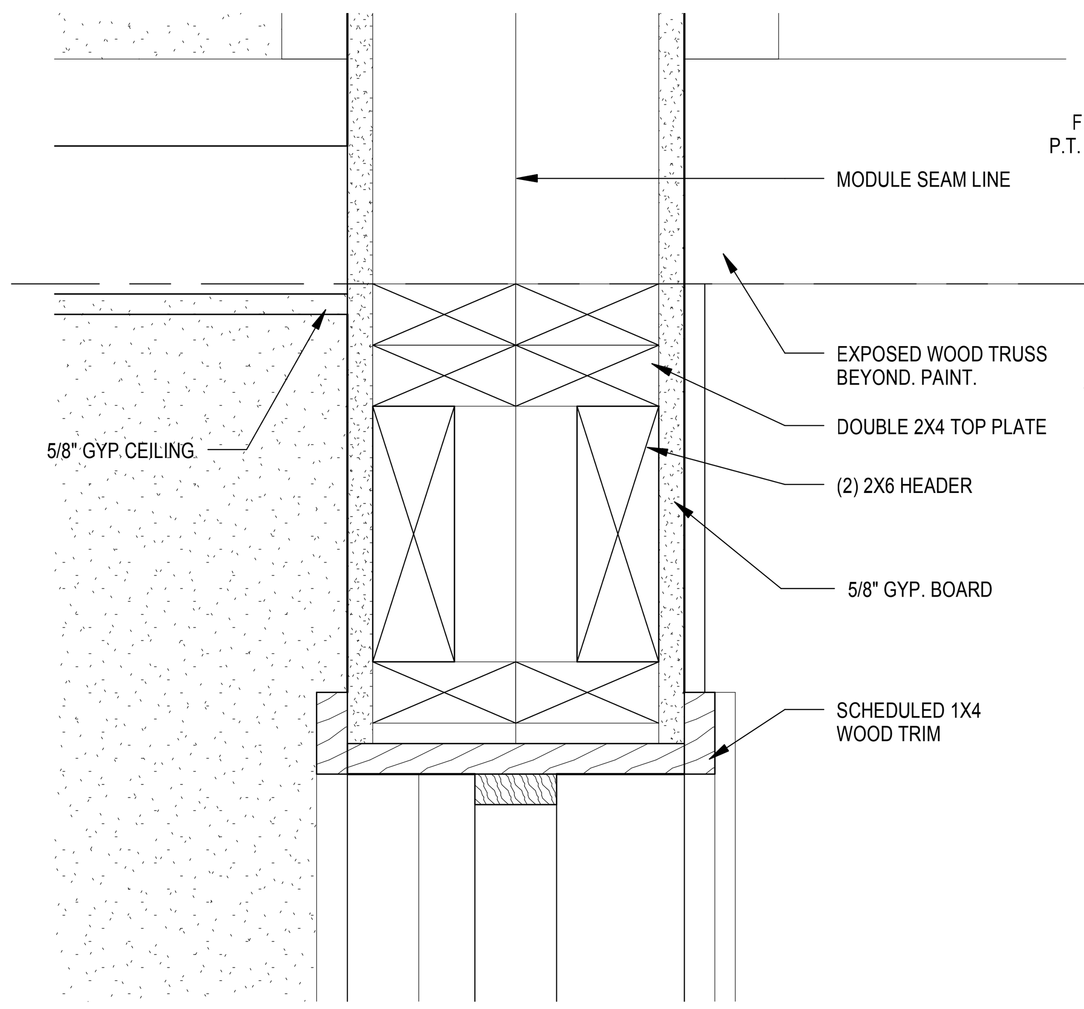
Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

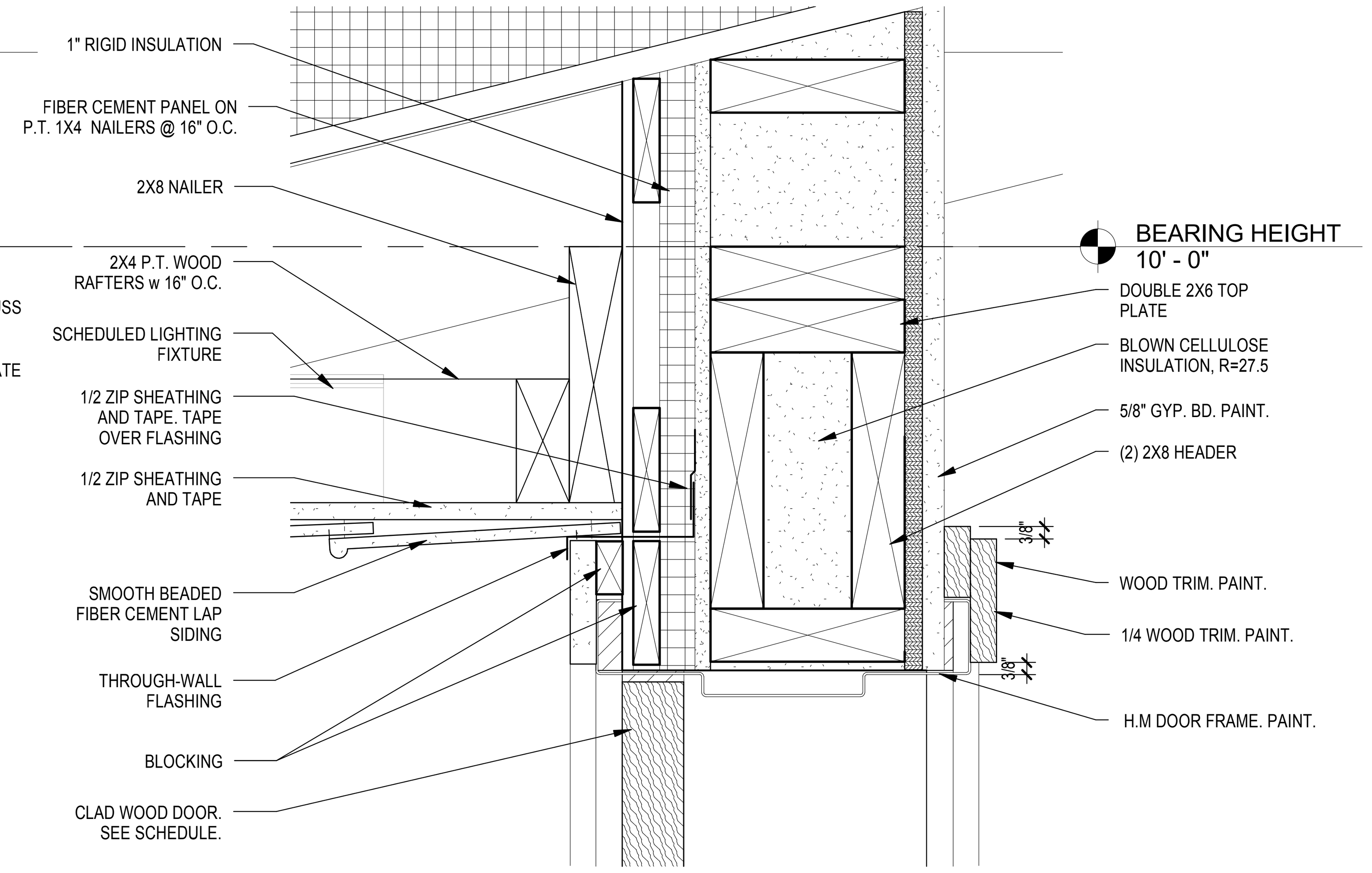
WALL SECTIONS

A5.02

2/23/2017 9:29:34 AM



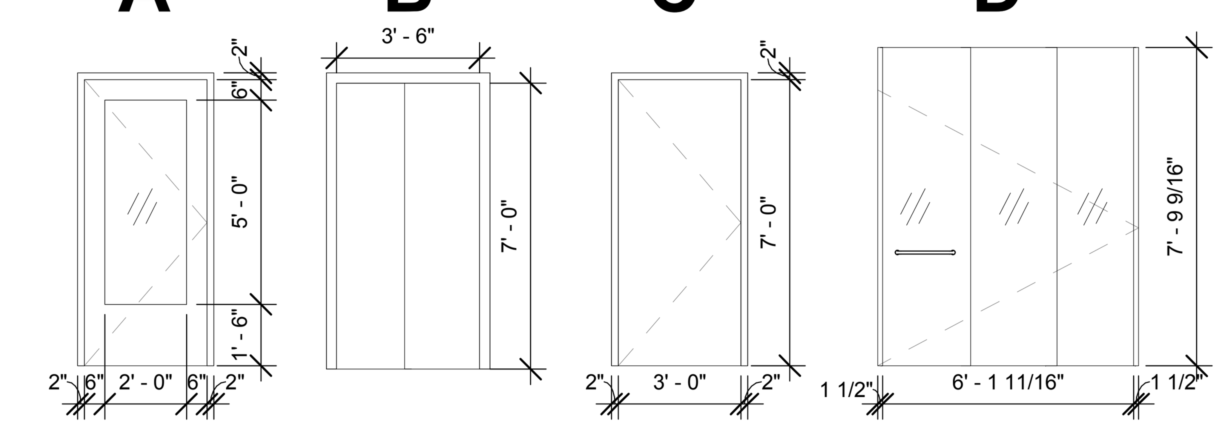
7 DOOR HEAD DETAIL @ INTERIOR DOOR
A6.01 3" = 1'-0"

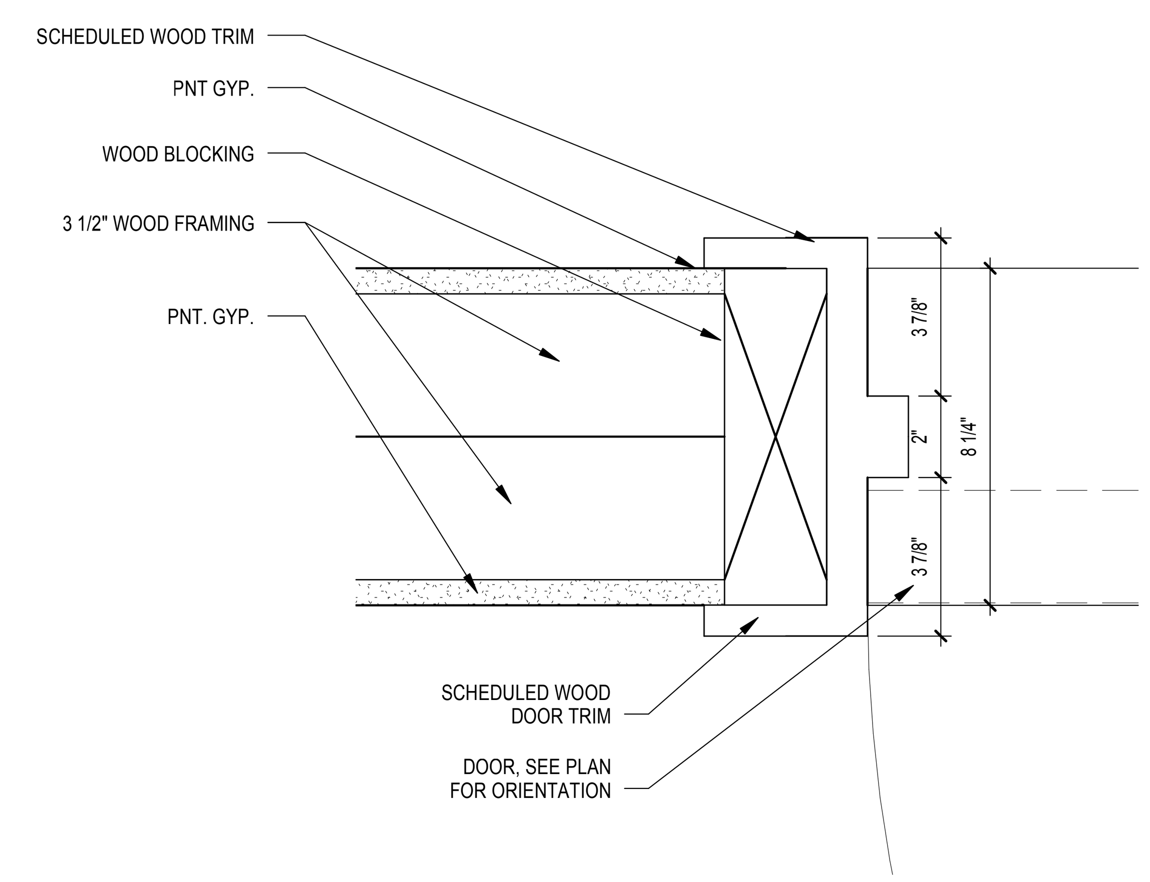


6 DOOR HEADER DETAIL @ EXTERIOR DOOR
A6.01 3" = 1'-0"

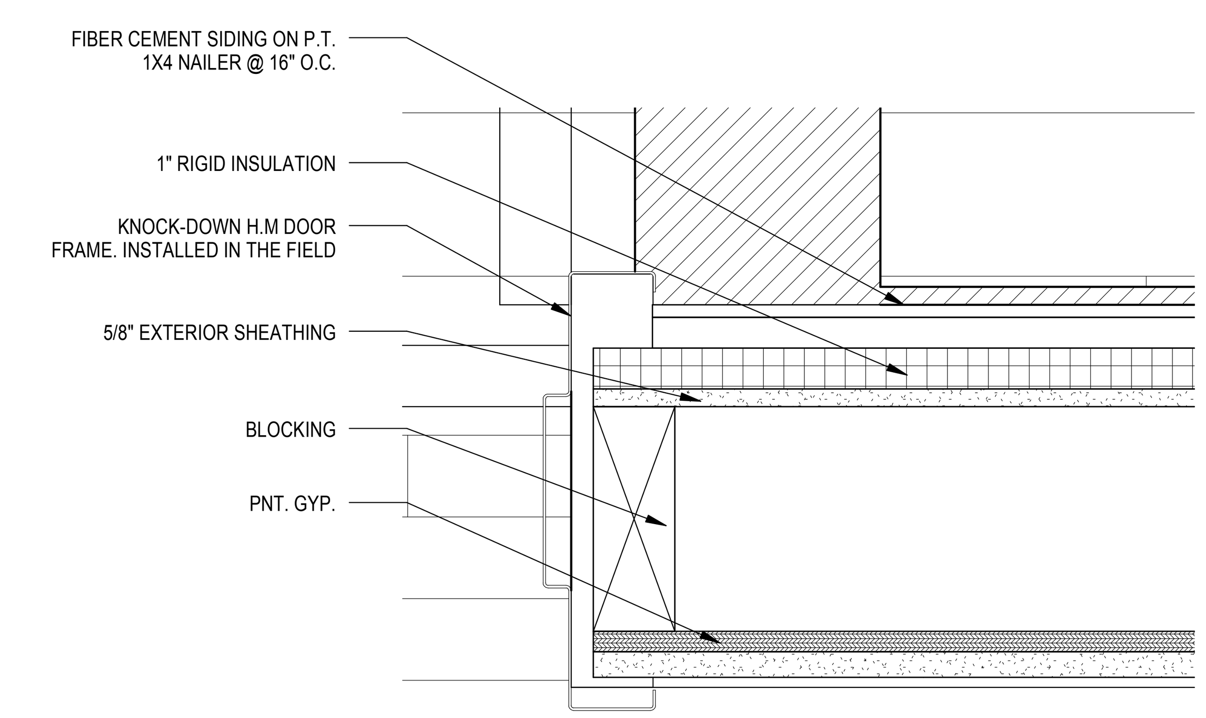
DOOR SCHEDULE											
DOOR NO.	DOOR					FRAME		DETAILS			COMMENTS
	WIDTH	HEIGHT	TYPE	MATERIAL	FINISH	MATERIAL	FINISH	HEAD	JAMB	SILL	
001	3' - 0"	7' - 0"	A	SC WD	STAIN	HM	PNT				
002	3' - 6"	6' - 8"	VV		STAIN	WD	STAIN				
005	3' - 0"	7' - 0"	C	SC WD	STAIN	WD	STAIN				
006A	3' - 0"	7' - 0"	C	SC WD	STAIN	WD	STAIN				
006B	3' - 0"	7' - 0"	C	SC WD	STAIN	WD	PNT				
007A	3' - 0"	7' - 0"	C	SC WD	STAIN	WD	STAIN				
007B	6' - 4 5/8"	7' - 0"	C	GLASS	FROSTED	ALUM	ANOD.				
008A	3' - 0"	7' - 0"	C	SC WD	PNT	WD	STAIN				
008B	6' - 4 5/8"	7' - 0"	CCC		FROSTED	ALUM	ANOD.				
009	3' - 0"	7' - 0"	D	SRP	-	ALUM	ANOD.				
010	3' - 6"	7' - 0"	C	SC WD	PNT	HM	PNT				

A B C D

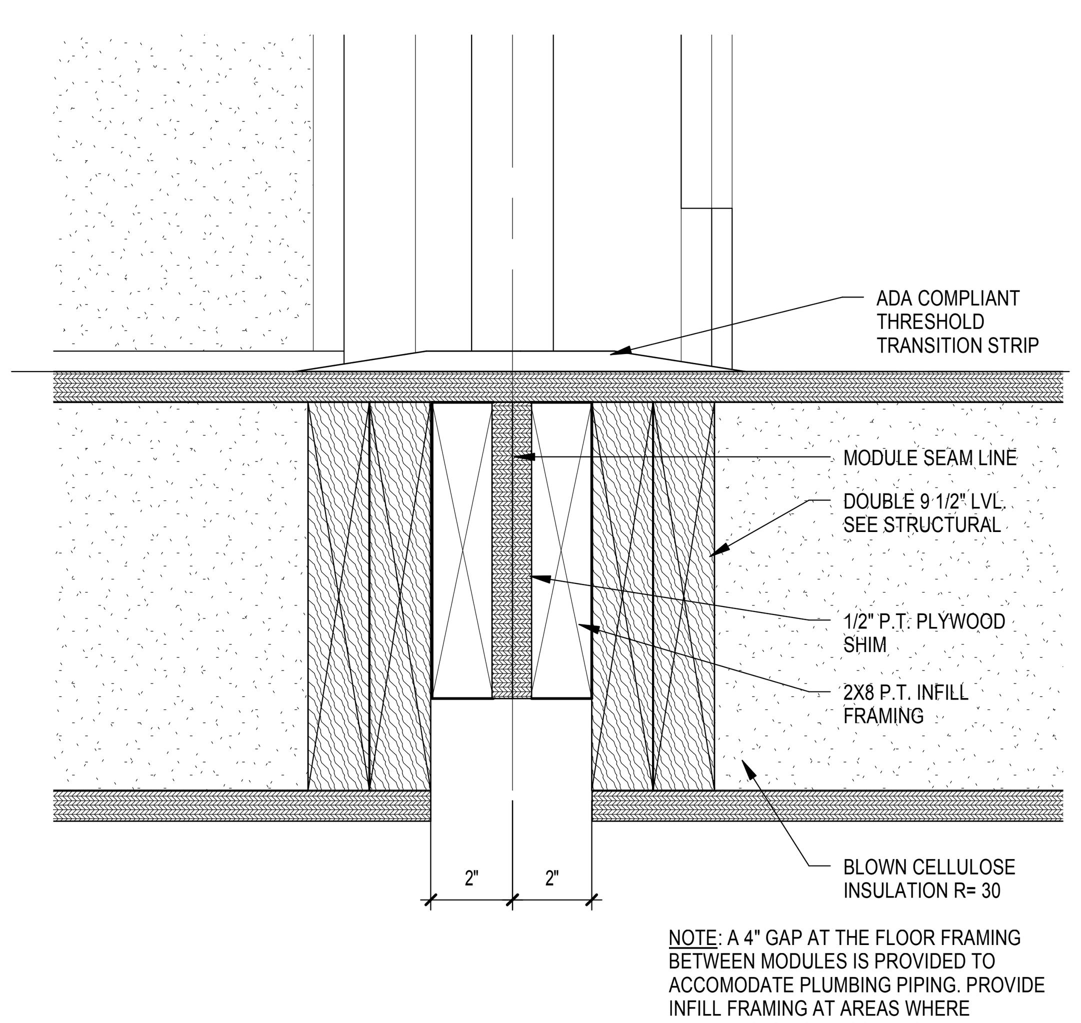




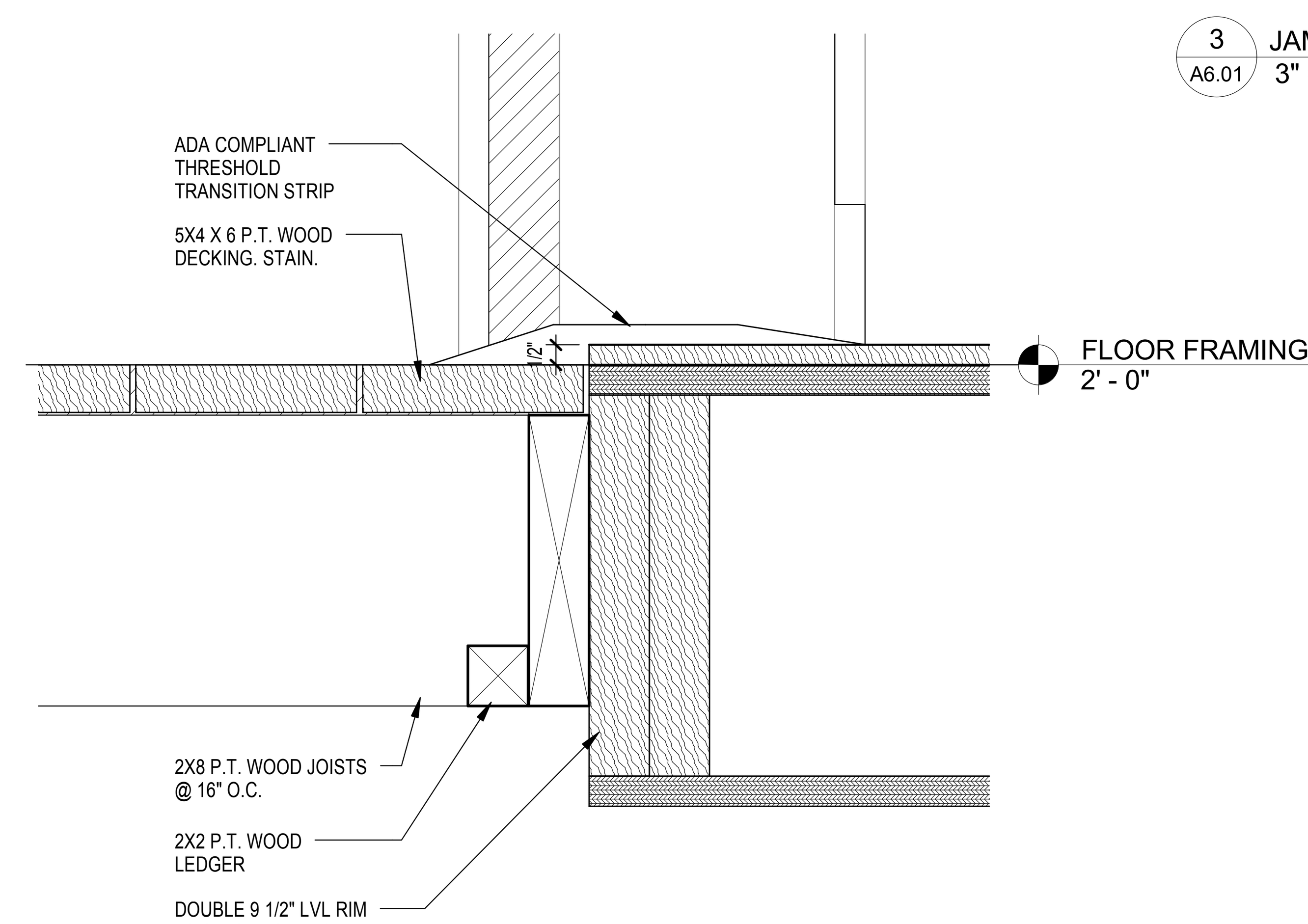
3 JAMB DETAIL @ INTERIOR DOOR
A6.01 3" = 1'-0"



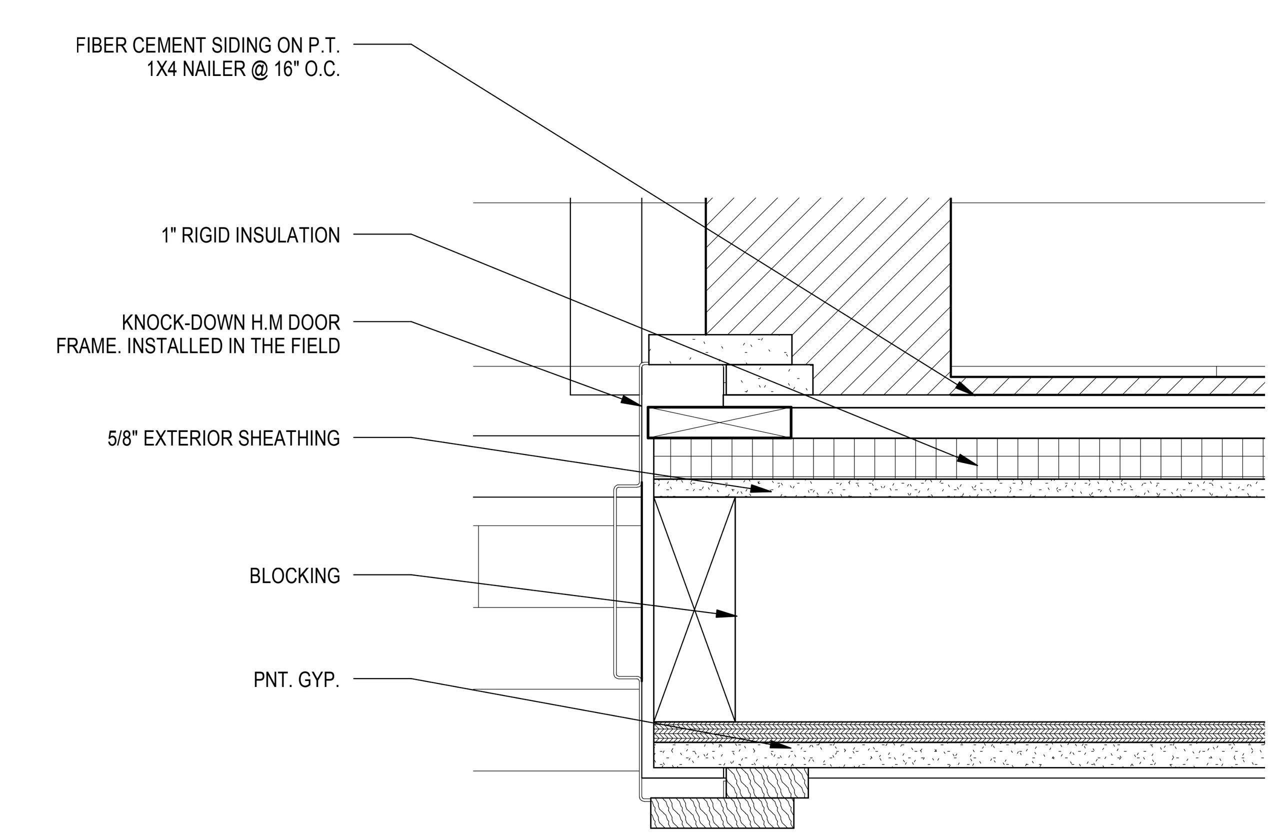
2 JAMB DETAIL @ EXTERIOR DOOR - HIGH
A6.01 3" = 1'-0"



5 SECTION @ LOWER SECTION OF INTERIOR DOOR
A6.01 3" = 1'-0"



4 DOOR SILL DETAIL @ EXTERIOR DOOR
A6.01 3" = 1'-0"



1 JAMB DETAIL @ EXTERIOR DOOR - LOW
A6.01 3" = 1'-0"

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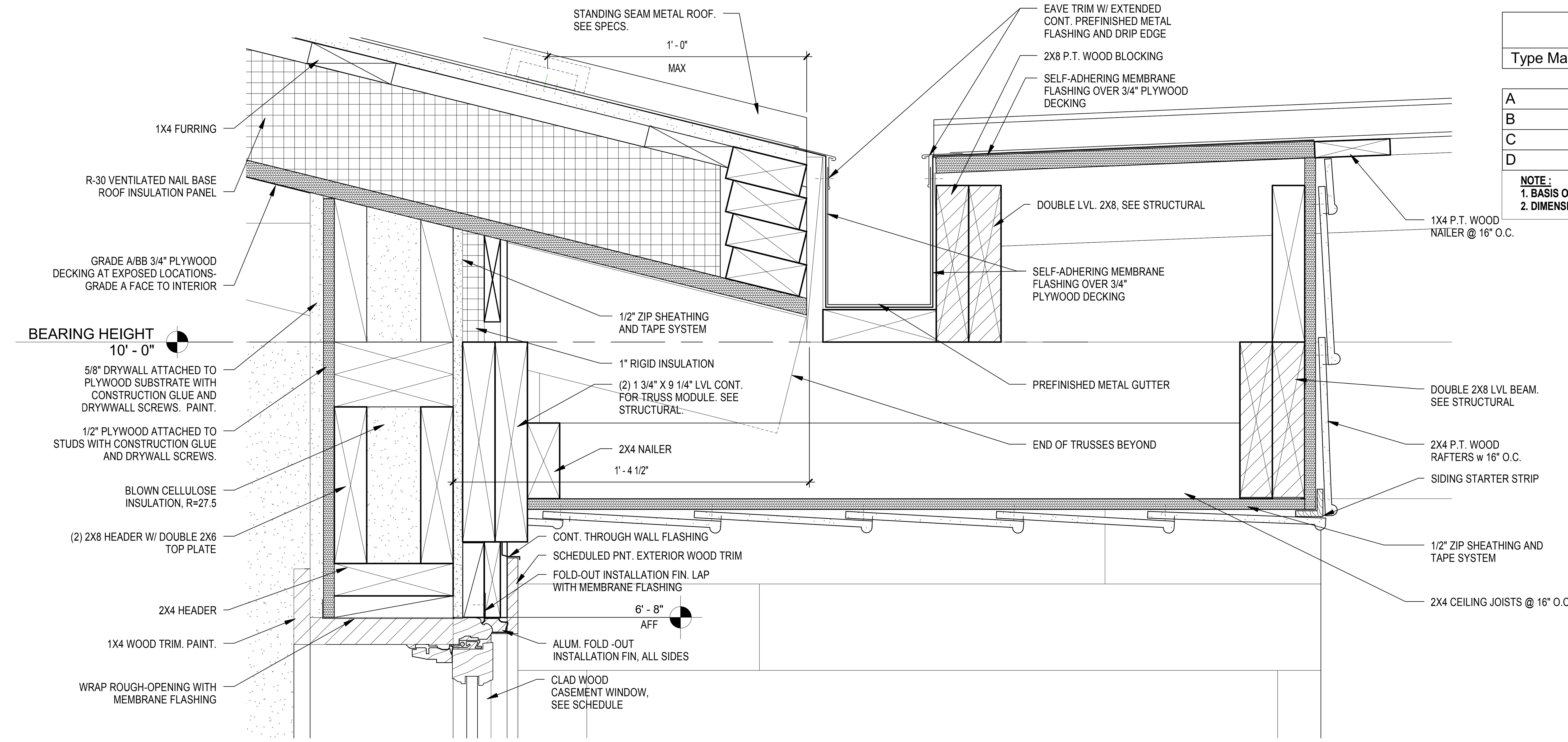
Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

DOOR SCHEDULE, ELEVATIONS & DETAILS

A6.01

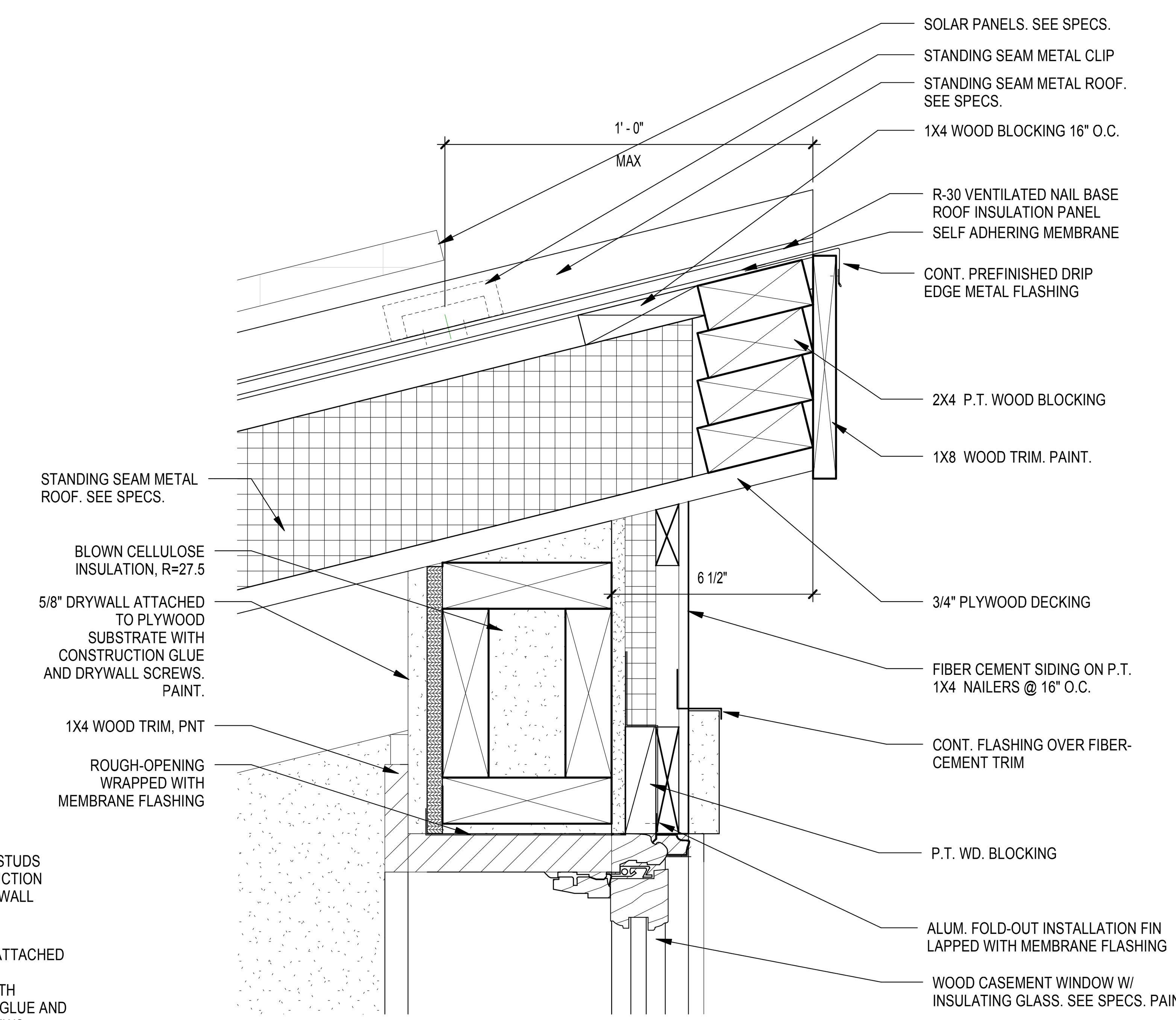
2/23/2017 7:53:11 AM



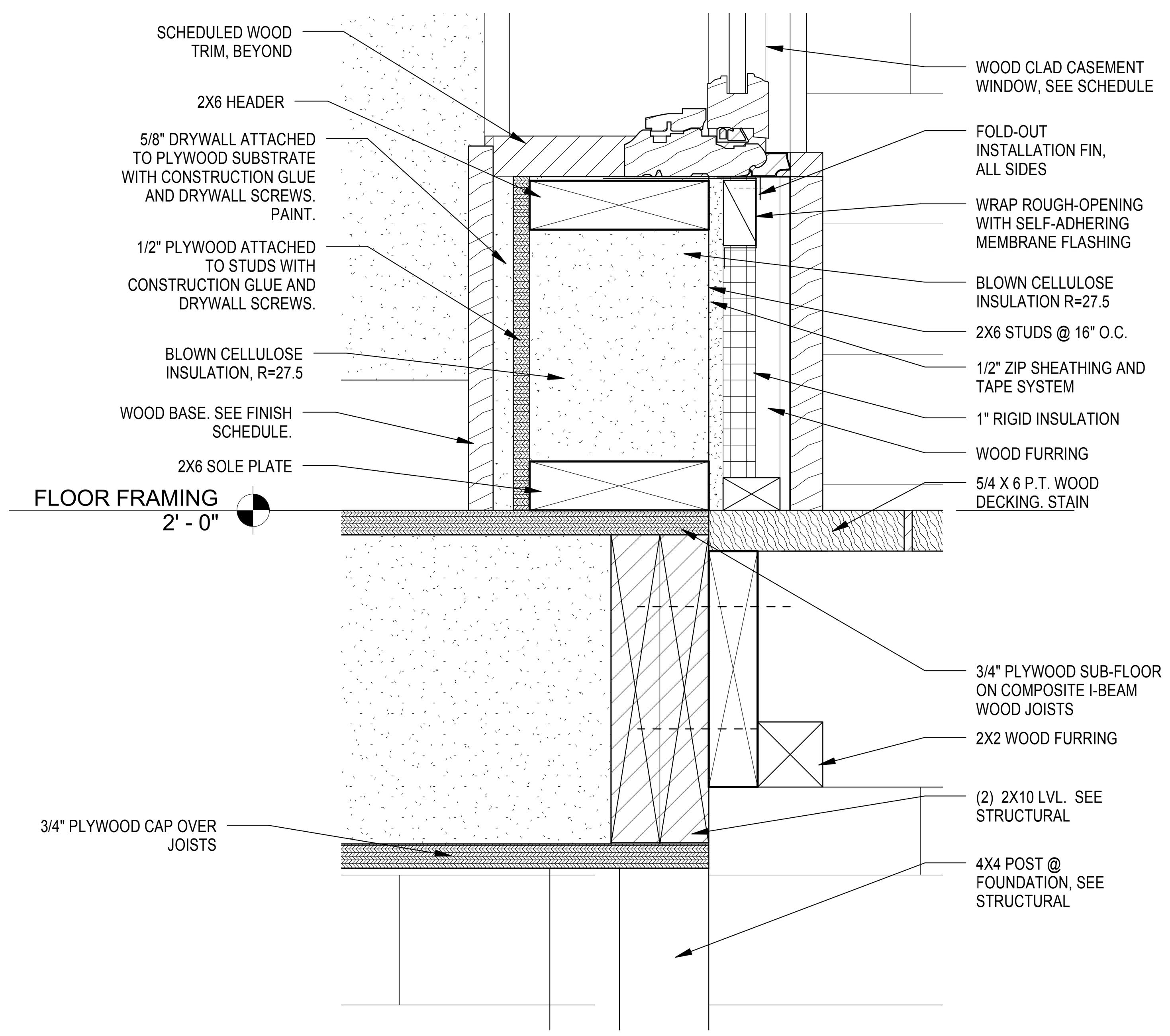
5 SECTION DETAIL @ ENTRY WINDOW HEAD
A6.02 3" = 1'-0"

WINDOW SCHEDULE				
Type Mark	Width	Height	Sill Height	Type Comments
A	2' - 9"	2' - 10"	3' 3'8"8"AFF	PELLA #2135 OPERABLE OUTSWINGING CASEMENT WINDOW
B	4' - 9"	6' - 1"	10 10'41"/4AFF	CUSTOM OUTSWINGING FRENCH CASEMENT WINDOW
C	3' - 10"	2' - 01"	3' 3'8"8"AFF	PELLA #4635 OPERABLE OUTSWINGING FRENCH CASEMENT EGRESS WINDOW
D	1' - 9"	2' - 9"	12' - 6" AFF	PELLA #2121 OPERABLE OUTSWINGING CASEMENT WINDOW

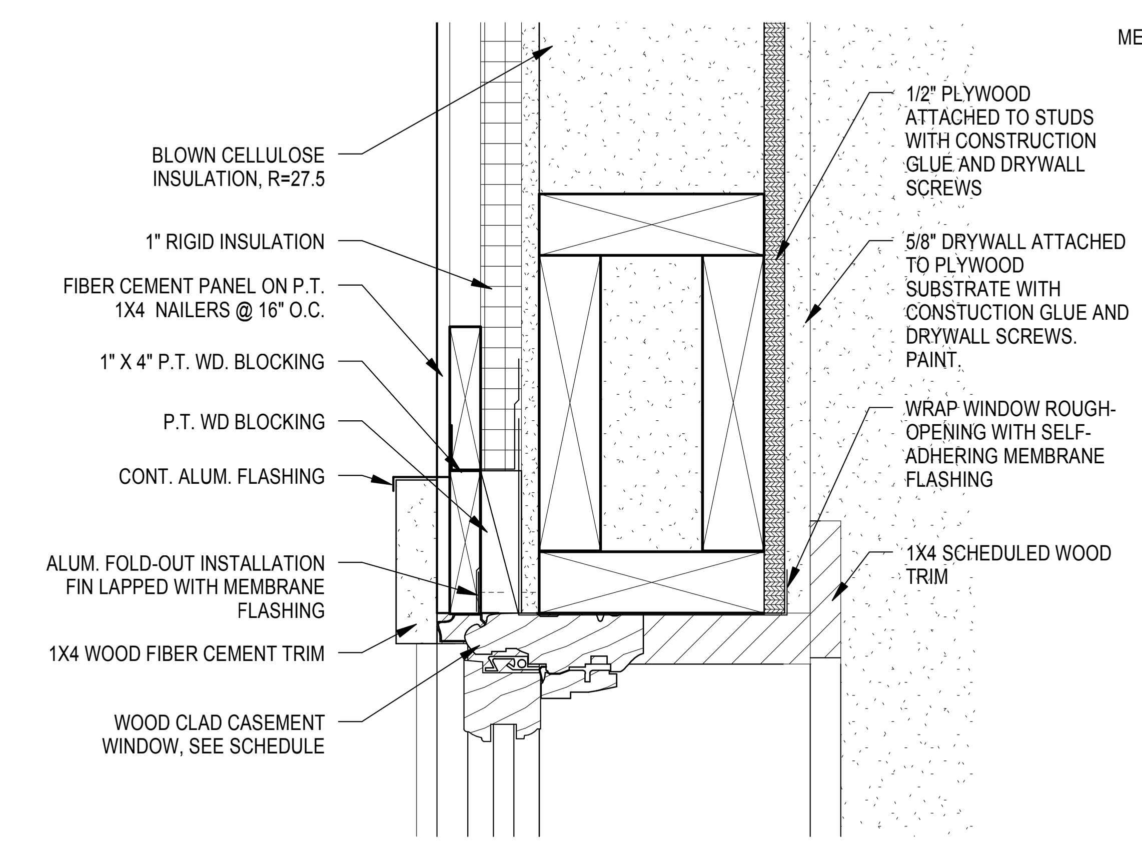
NOTE :
1. BASIS OF DESIGN: PELLA ARCHITECT SERIES - CLAD WOOD WINDOWS. WWW.PELLA.COM
2. DIMENSIONS ARE TO WINDOW FRAMES. ADD 3/4" TO PELLA'S FRAME DIMENSIONS TO DETERMINE THE ROUGH OPENING SIZE. COORDINATE WITH FINAL WINDOW SELECTION IF ANOTHER MFG. IS USED.



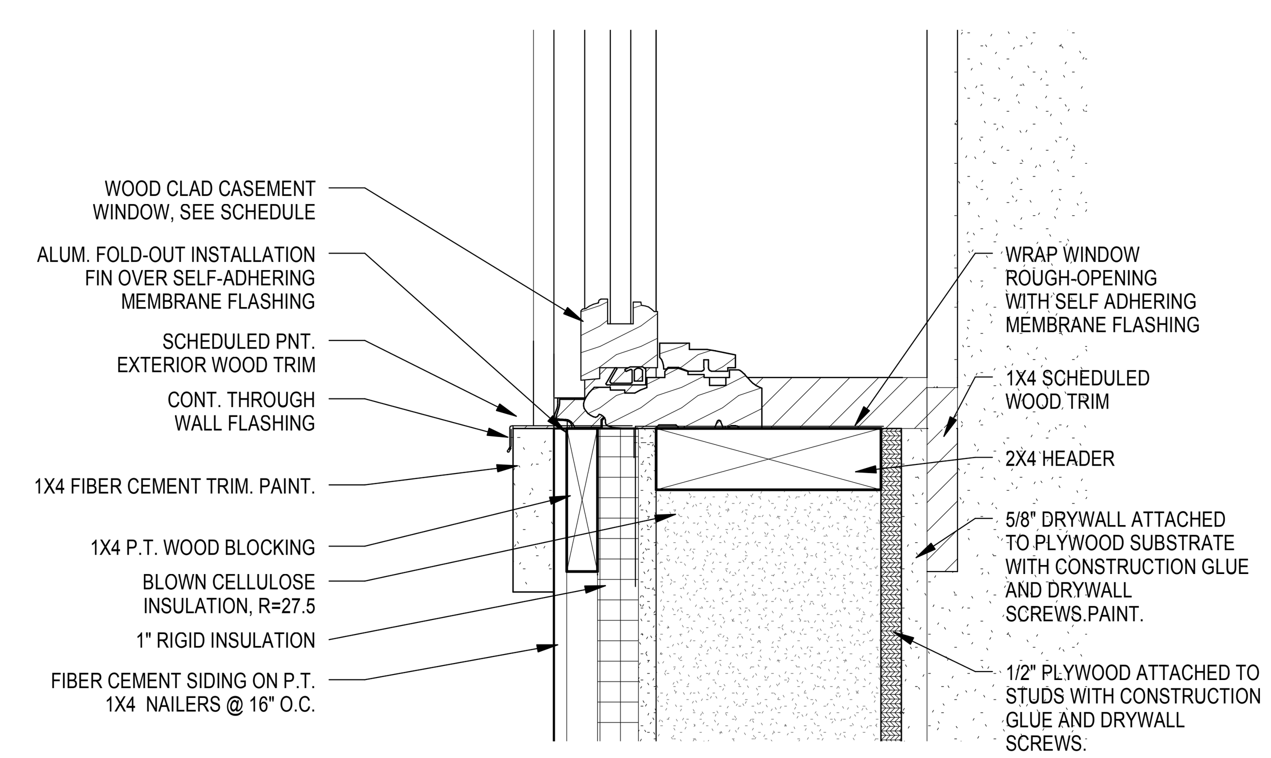
2 SECTION DETAIL @ CLERESTORY HEAD
A6.02 3" = 1'-0"



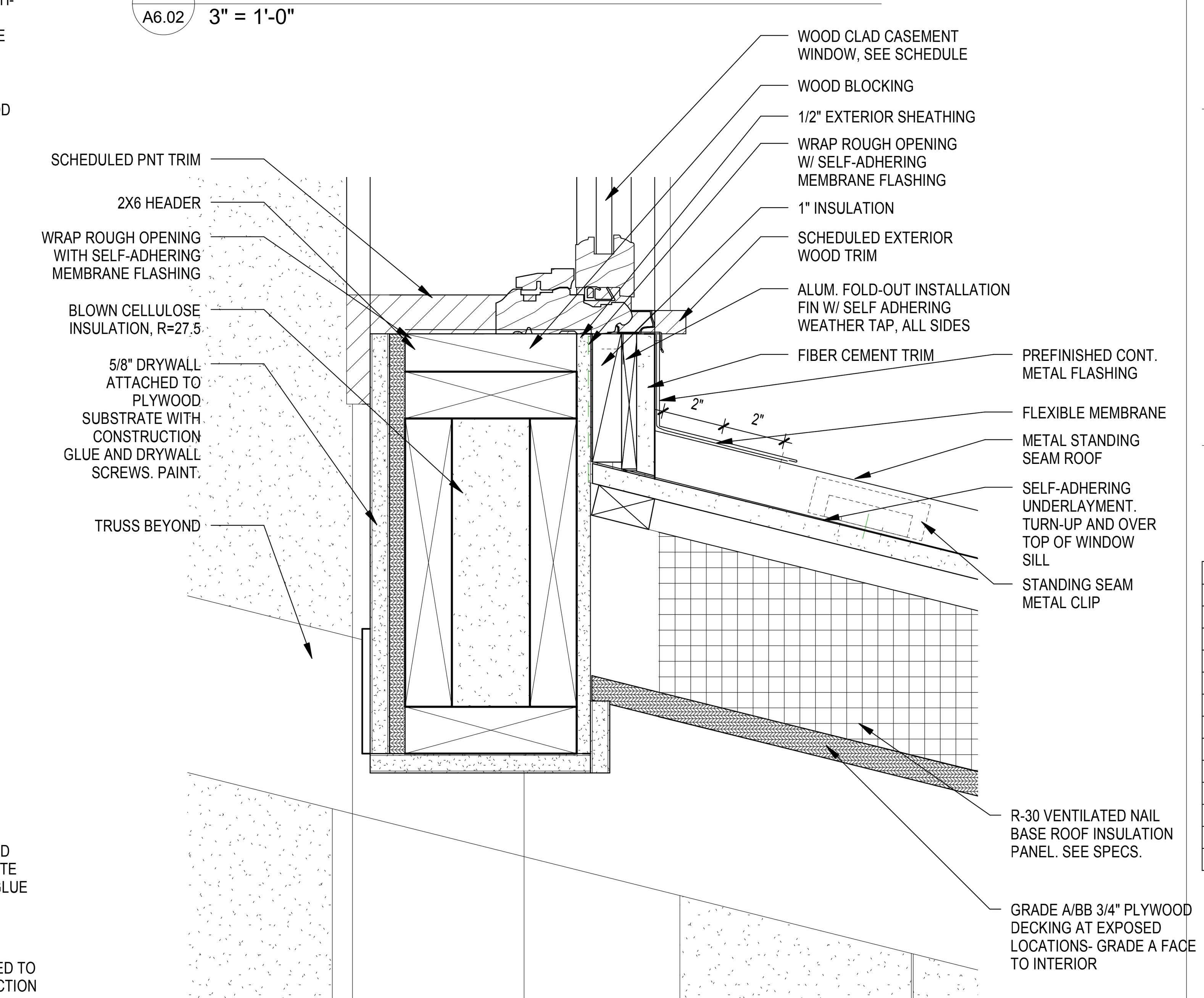
6 SECTION DETAIL @ ENTRY - WINDOW SILL
A6.02 3" = 1'-0"



4 SECTION DETAIL @ WINDOW HEAD
A6.02 3" = 1'-0"



3 SECTION DETAIL @ WINDOW SILL
A6.02 3" = 1'-0"



1 SECTION DETAIL @ CLERESTORY SILL
A6.02 3" = 1'-0"

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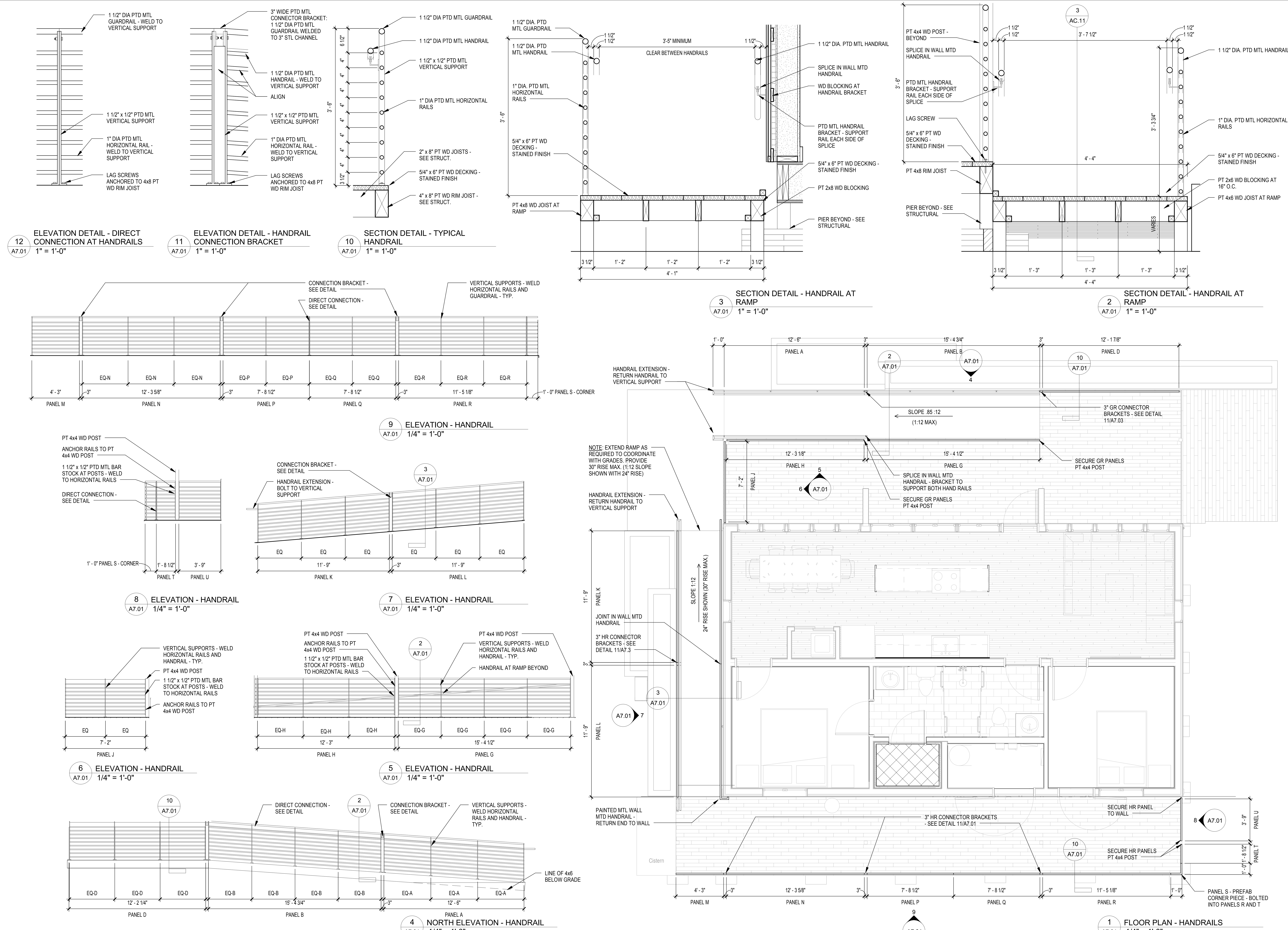
Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

WINDOW SCHEDULE & DETAILS

A6.02

2/23/2017 7:53:12 AM



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Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

HANDRAIL DETAILS

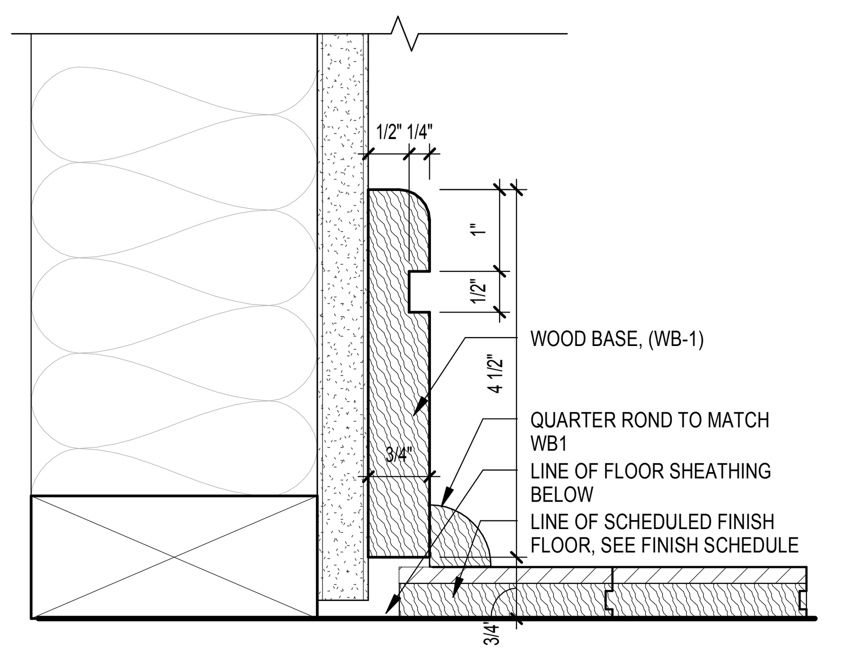
A7.01

2/23/2017 7:53:18 AM

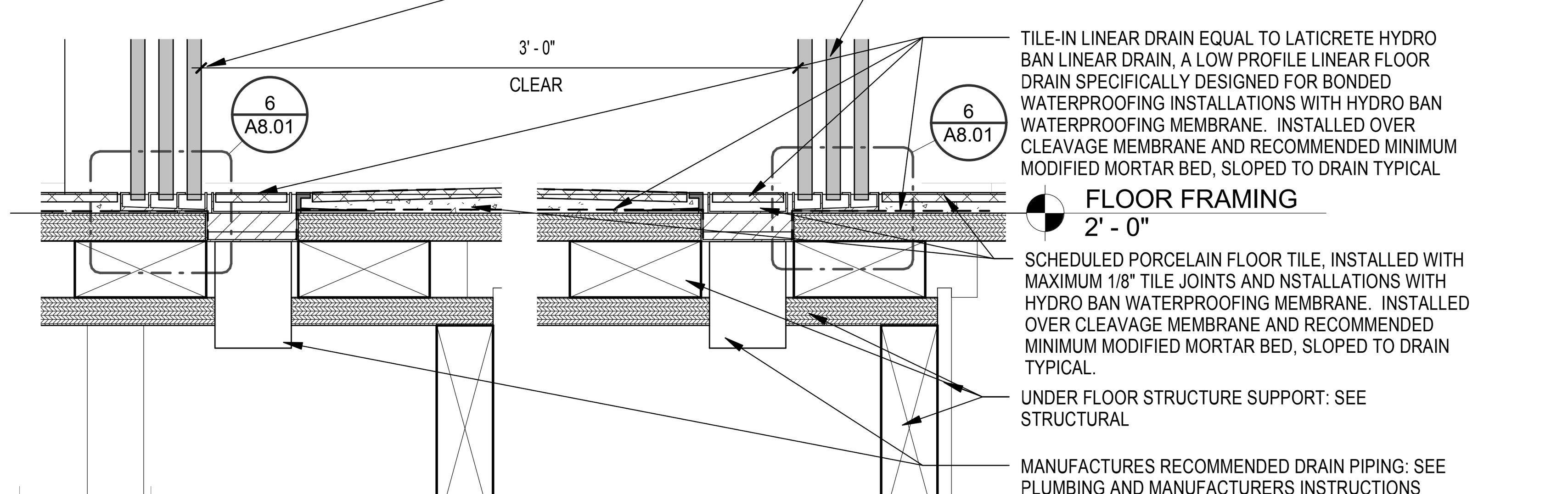
FINISH LEGEND

FLOOR FINISHES		
CODE	PRODUCT	DESCRIPTION
CPT	CARPET TILE	MANUFACTURER: INTERFACE, Human Nature Collection, STYLE: HN830™ COLOR: TBD INSTALLATION: ASHLAR - FLOATING FLOOR USING TacTiles
BFF	BANBOO FLOATING FLOOR	MANUFACTURER: USFloors Inc, STYLE: BAMBOO BASIC SL - Moso6" Solid Locking Strand Woven Bamboo, COLOR: TBD, SIZE: 5 1/4 x 72 x 1/2; INSTALLATION: Glue-less Floating; Profile: Drop and Lock; Edge: Micro-beveled edge slight .2mm eased edge; Finish: Endura AR+" Commercial wear layer Sealed and cured backs of the plank
PTF1	PORCELAIN TILE FLOOR	MANUFACTURER: CROSSVILLE STYLE: Bluestone, COLOR: AV204 Vermont Black UPS, FINISH: UPS, SIZE: 12 x 24
PTF2	PORCELAIN TILE FLOOR	MANUFACTURER: CROSSVILLE STYLE: Bluestone, COLOR: AV204 Vermont Black UPS, FINISH: UPS, SIZE: 2 x 2 Mosaics (Mounted on a 297mm x 297mm sheet.)
SF	SEALED FLOORING	CLEAR SEALED
BASE FINISHES		
CODE	PRODUCT	DESCRIPTION
PTB	PORCELAIN TILE BASE	MANUFACTURER: CROSSVILLE, STYLE: Bluestone, COLOR: AV204 Vermont Black UPS, FINISH: UPS, SIZE: 6" X 12"
WD	WOOD BASE	INTERLAM: FORESCOLOR, COLOR: TBD, 4" HIGH, SEE BASE PROFILE IN DRAWING 7/A8.01
WALL FINISHES		
CODE	PRODUCT	DESCRIPTION
PTW-1	PORCELAIN TILE WALL	MANUFACTURER: CROSSVILLE, STYLE: Shades by Crossville™, COLOR: AV245 Clay UPS, SIZE: 6" X 24"
PTW-2	PORCELAIN TILE WALL	MANUFACTURER: CROSSVILLE, STYLE: Shades by Crossville™, COLOR: SBC1/.10103HMOS Warm Grays, SIZE: 12" X 12" MESH MOUNTED
PNT1	PAINT (GENERAL)	MANUFACTURER: BENJAMIN MOORE COLOR: DECORATORS WHITE I-04, EGG SHELL FINISH
PNT2	PAINT (DOOR FRAMES)	MANUFACTURER: BENJAMIN MOORE COLOR: DECORATORS WHITE I-04, SEMI-GLOSS FINISH
PNT3	PAINT (ACCENT)	MANUFACTURER: BENJAMIN MOORE COLOR: TBD
PNT4	PAINT (ACCENT)	MANUFACTURER: BENJAMIN MOORE COLOR: TBD
CEILING FINISHES		
CODE	PRODUCT	DESCRIPTION
EXP1	EXPOSED- PAINTED	COLOR: CEILING WHITE, FINISH: FLAT
EXP2	EXPOSED- UNFINISHED	
GWB	GYPSUM BOARD	PAINTED GYP BOARD CEILINGS - COLOR: CEILING WHITE, FINISH: FLAT
MISCELLANEOUS FINISHES		
CODE	PRODUCT	DESCRIPTION
QS1	QUARTZ SURFACE	MANUFACTURER: CAMBRIA, SERIES: Swanbridge™ - STANDARD SLAB SIZE 55 1/2 in x 122 in COUNTER TOP - 2 CM THICK MATERIAL & BACKSPLASH - 1 CM THICK MATERIAL TYPICAL

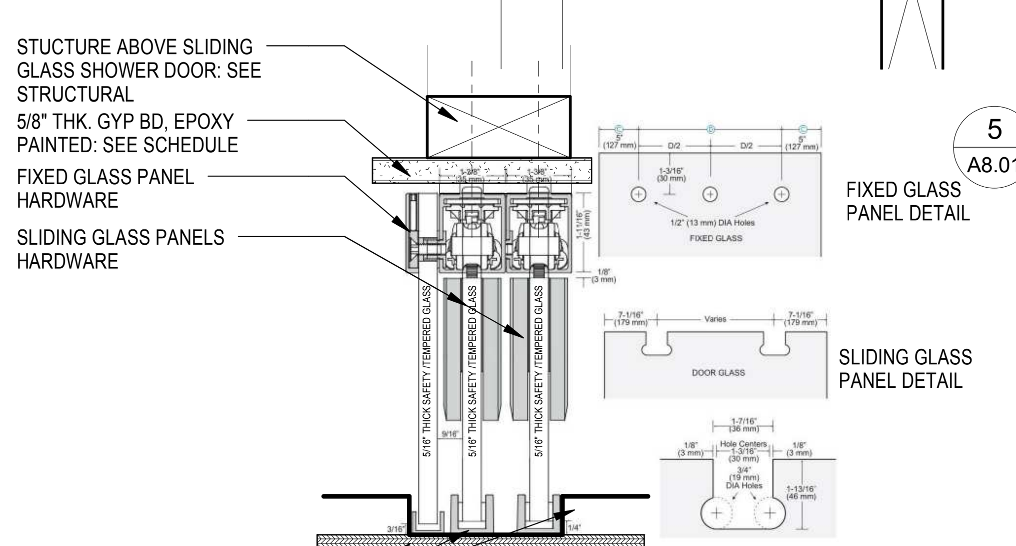
NUMBER	LOCATION / ROOM NAME	FLOOR	BASE	WALLS NORTH	WALLS EAST	WALLS SOUTH	WALLS WEST	CEILING	REMARKS
FIRST FLOOR									
001	Dining	BFF	WB	PNT	PNT	PNT	PNT	EXP1	
002	Kitchen	BFF	WB	PNT	PNT	PNT	PNT	EXP1	
003	Living	BFF	WB	PNT	PNT	PNT	PNT	EXP1	
004	Utility	BFF	WB	PNT	PNT	PNT	PNT	EXP1	
005	Master	CPT	WD	PNT	PNT	PNT	PNT	GYP-1	
006	Bedroom	CPT	WD	PNT	PNT	PNT	PNT	GYP-1	
007	Master Bathroom	PTF1	PTB	PTW1	PTW1	PTW1	PTW1	GYP-2	
008	Bathroom	PTF1	PTB	PTW1	PTW1	PTW1	PTW1	GYP-2	
009	Closet/ strong Room	CPT	WD	PNT	PNT	PNT	PNT	EXP2	
010	Mech/Elec Room	SF	WD	PNT	PNT	PNT	PNT	EXP2	
011	Shower	PTF2	PTB	PTW2	-	-	PTW2	GYP-2	



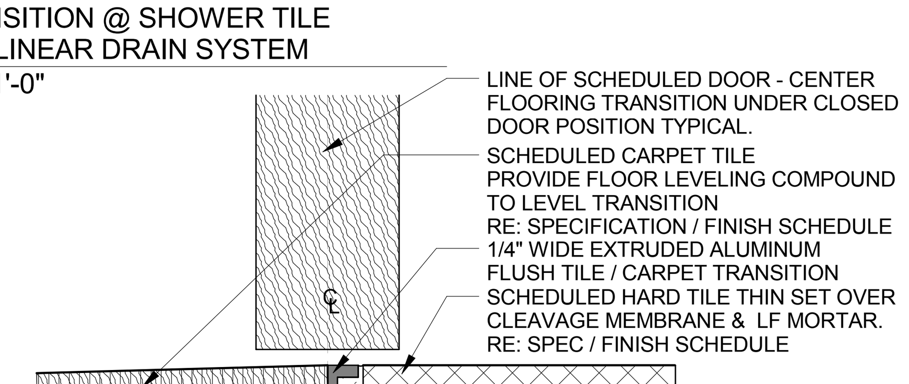
7 A8.01 DETAIL @ WOOD BASE
6" = 1'-0"



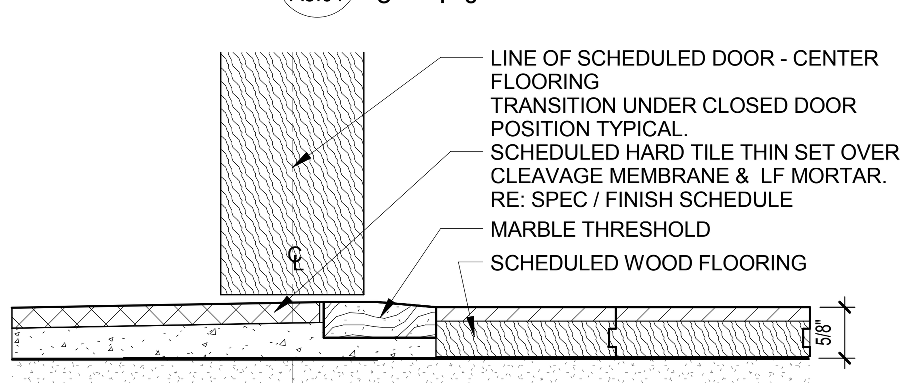
5 A8.01 TRANSITION @ SHOWER TILE AND LINEAR DRAIN SYSTEM
3" = 1'-0"



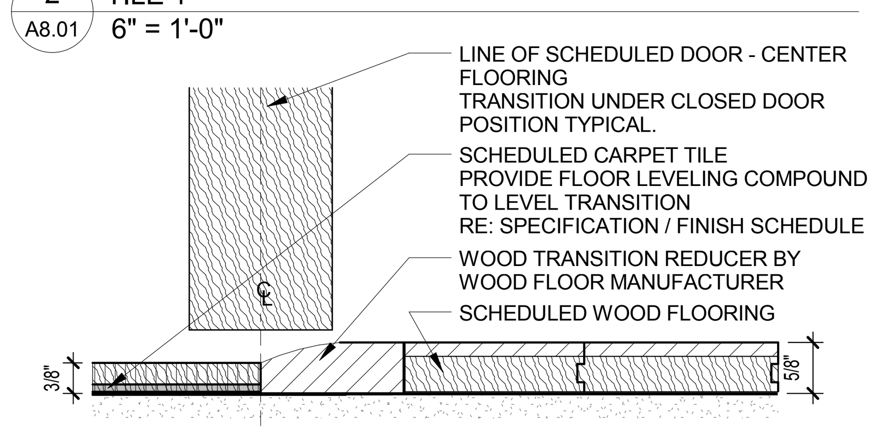
6 A8.01 SECTION @ SHOWER DOOR
3" = 1'-0"



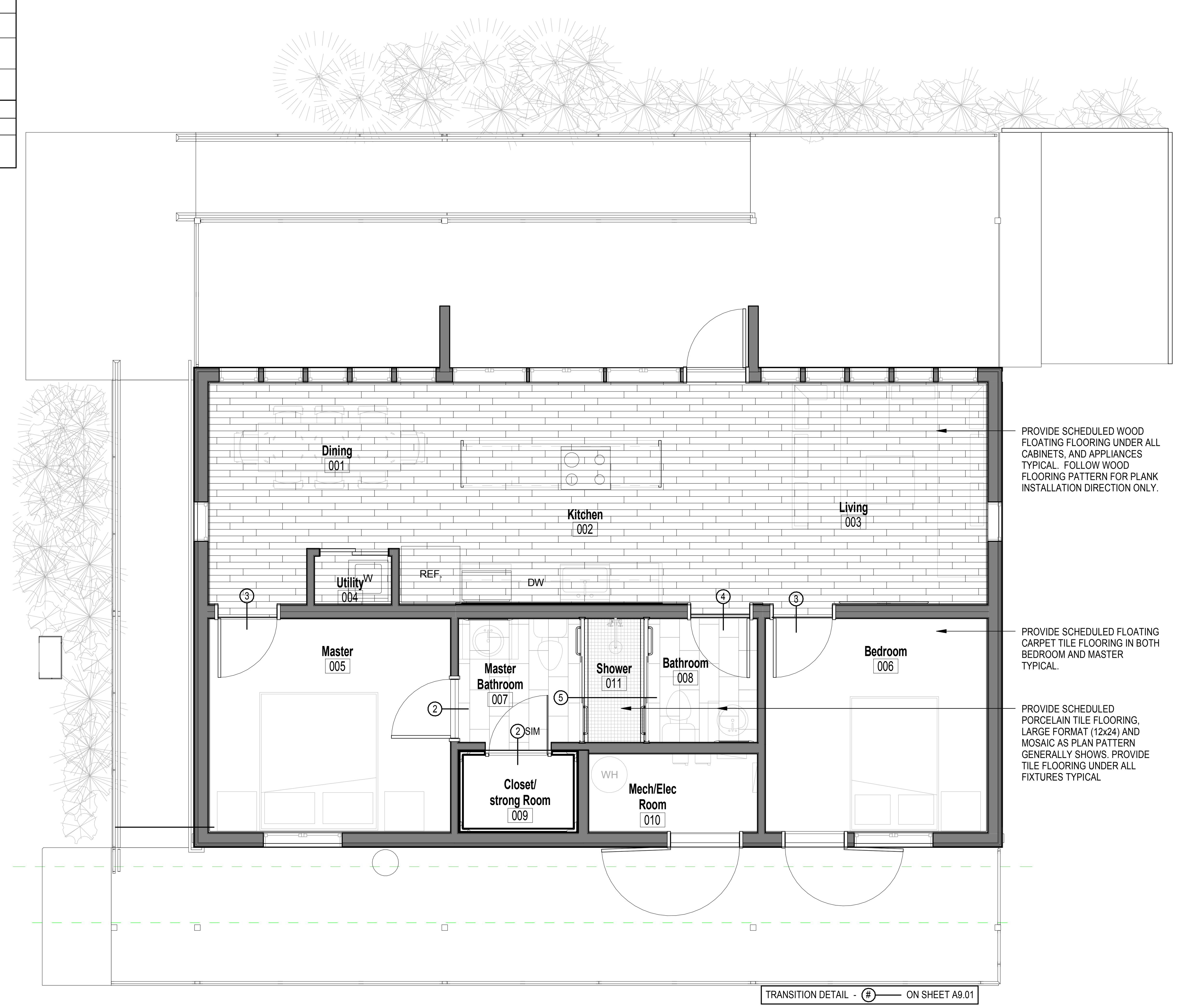
2 A8.01 TRANSITION @ CARPET AND TILE 1
6" = 1'-0"



4 A8.01 TRANSITION @ WOOD AND TILE
6" = 1'-0"



3 A8.01 TRANSITION @ CARPET AND WOOD
6" = 1'-0"



1 A8.01 FIRST FLOOR - FINISH PLAN
1/4" = 1'-0"

surviv(AL) house

TEAM ALABAMA

The University of Alabama at Birmingham

The University of Alabama at Huntsville

CONSULTANTS

Williams Blackstock Architects

Structural Design Group

Edmonds Engineering

Client

U.S. DEPARTMENT OF ENERGY SOLAR DECATHLON

US DEPARTMENT OF ENERGY
SOLAR DECATHLON 2017
WWW.SOLARDECATHLON.GOV

Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

FINISH PLAN, LEGEND, SCHEDULE AND DETAILS

A8.01

2/23/2017 7:53:22 AM

SDG
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700 Century Park South, Suite 114
Birmingham, AL 35226
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Job Number 16-182

GENERAL NOTES

1.0 DESIGN CRITERIA

1.1 CODES AND SPECIFICATIONS:

A. GENERAL BUILDING CODE:
INTERNATIONAL BUILDING CODE, 2015 EDITION.

B. STRUCTURAL STEEL:
SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, AMERICAN INSTITUTE OF STEEL CONSTRUCTION (ANSI/AISC 360-10)

C. TIMBER:
NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION, AMERICAN FOREST AND PAPER ASSOCIATION, LATEST EDITION.

1.2 DESIGN GRAVITY LOADS (PSF):

A. DEAD LOADS:
ANY CHANGES IN CONSTRUCTION MATERIALS FROM THOSE SHOWN ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS SHALL BE REPORTED BY THE GENERAL CONTRACTOR TO THE STRUCTURAL ENGINEER FOR VERIFICATION OF LOAD-CARRYING CAPACITY OF THE STRUCTURE.

B. FLOOR LIVE LOADS:

DECK, EXTERIOR--100
FLOOR--50

C. ROOF LIVE LOADS:

ROOF---30

1.3 DESIGN LATERAL LOADS:

A. WIND LOADS:
ULTIMATE DESIGN WIND SPEED (3-SECOND GUST)-----------115 MPH
NOMINAL WIND SPEED (3-SECOND GUST)---------------------90 MPH
RISK CATEGORY---II
WIND IMPORTANCE FACTOR (I)------------------------------1.0
WIND EXPOSURE CATEGORY-----------------------------------C
ENCLOSURE CATEGORY------------------------------ENCLOSED
INTERNAL PRESSURE COEFFICIENTS-------------------- +/- 0.18

B. SEISMIC LOADS:
SEISMIC IMPORTANCE FACTOR-------------------------------1.0
MAPPED SPECTRAL RESPONSE ACCELERATIONS:
SS--0.220
S1--0.057
SITE CLASS---D
SPECTRAL RESPONSE COEFFICIENTS:
SDS---0.234
SD1---0.091
SEISMIC DESIGN CATEGORY-------------------------------B
BASIC SEISMIC-FORCE-RESISTING SYSTEM: PLYWOOD SHEAR WALLS
DESIGN BASE SHEAR-------------------------------3 KIPS
SEISMIC RESPONSE COEFFICIENT, Cs----------------------0.036
RESPONSE MODIFICATION FACTOR, R-----------------------6.5
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE

2.0 GENERAL CONDITIONS

2.1 THE STRUCTURAL DRAWINGS AND SPECIFICATIONS ARE A PORTION OF THE CONSTRUCTION DOCUMENTS. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL REFERENCE AND COORDINATE WITH OTHER DISCIPLINE'S DRAWINGS. ANY DISCREPANCIES OR OMISSIONS SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT AND STRUCTURAL DESIGN GROUP.

2.2 ALL REPORTS, PLANS, SPECIFICATIONS, COMPUTER FILES, FIELD DATA, NOTES, AND OTHER DOCUMENTS AND INSTRUMENTS PREPARED BY STRUCTURAL DESIGN GROUP AS INSTRUMENTS OF SERVICE SHALL REMAIN THE PROPERTY OF STRUCTURAL DESIGN GROUP. STRUCTURAL DESIGN GROUP SHALL RETAIN ALL COMMON LAW, STATUTORY, AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT THERETO.

2.3 ALL DETAILS SHOWN ARE TYPICAL. SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS, UNLESS NOTED.

2.4 VERIFY ALL DIMENSIONS AND DETAILS SHOWN ON THESE DRAWINGS. ANY DISCREPANCIES OR OMISSIONS FOUND SHALL BE REPORTED TO THE ENGINEER AND OTHER DESIGN PROFESSIONALS AS APPROPRIATE FOR RESOLUTION PRIOR TO PROCEEDING WITH ANY RELATED WORK.

2.5 STRUCTURAL DESIGN GROUP IS NOT RESPONSIBLE FOR CONSTRUCTION MEANS AND METHODS, SAFTEY PROCEEDURES, CONSTRUCTION SUPERVISION OR SITE SAFETY, AND DOES NOT HAVE THE AUTHORITY TO STOP WORK FOR THESE ITEMS.

2.6 THE STRUCTURAL INTEGRITY OF THE BUILDING IS DEPENDENT UPON COMPLETION ACCORDING TO THE PLANS AND SPECIFICATIONS. THE STRUCTURAL ENGINEER OF RECORD ASSUMES NO LIABILITY FOR THE STRUCTURE DURING CONSTRUCTION. THE METHOD OF CONSTRUCTION AND SEQUENCE OF OPERATIONS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL SUPPLY ANY NECESSARY BRACING, GUYS, ETC. TO PROPERLY BRACE THE STRUCTURE AGAINST WIND, DEAD AND LIVE LOADS UNTIL THE BUILDING IS COMPLETED ACCORDING TO THE PLANS AND SPECIFICATIONS. ANY QUESTIONS REGARDING TEMPORARY BRACING REQUIREMENTS SHOULD BE FORWARDED TO A STRUCTURAL ENGINEER FOR REVIEW.

2.7 WHERE NOTED IN DRAWINGS AND SPECIFICATIONS TO INSTALL PRODUCTS PER THE MANUFACTURER'S RECOMMENDATIONS IT SHALL BE REQUIRED THAT THE CONTRACTOR FOLLOWS THE MANUFACTURER'S RECOMMENDATIONS.

3.0 FOUNDATIONS

3.1 MAXIMUM ALLOWABLE BEARING PRESSURE IS 2000 PSF.

4.0 STRUCTURAL STEEL

4.1 THREADED AND PLAIN STEEL RODS: ASTM A36

4.2 ALL STRUCTURAL STEEL, INCLUDING EXPOSED BOLTS, NUTS, WASHERS OR ANCHOR RODS, EXPOSED TO WEATHER IN THE FINAL CONFIGURATION OF THE STRUCTURE SHALL BE HOT-DIP GALVANIZED,UNLESS NOTED, PER ASTM A 123/A 123M. DAMAGE TO GALVANIZING SHALL BE PAINTED WITH GALVANIZING REPAIR PAINT, SSPC-PAINT 20.

4.3 ALL HANDRAILS AND GUARDRAILS NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE DESIGNED IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE NOTED ABOVE, BY THE CONTRACTOR, UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED. CALCULATIONS SHALL BEAR THE SEAL OF THE PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED AND SHALL BE SUBMITTED FOR THE FILES OF THE ARCHITECT AND SHALL BE INCLUDED WITH THE SHOP DRAWINGS.

5.0 WOOD CONSTRUCTION

5.1 ALL SAWN LUMBER IN CONTACT WITH SOIL, MASONRY OR CONCRETE, OR EXPOSED TO WEATHER TO HAVE A PRESERVATIVE PRESSURE TREATMENT IN ACCORDANCE WITH AMERICAN WOOD PROTECTION ASSOCIATIONS (AWPA) STANDARD U1 (CURRENT EDITION).

5.2 CUT ENDS OR ALL TREATED LUMBER SHALL BE FIELD TREATED WITH AN APPROVED PRESERVATIVE IN ACCORDANCE WITH THE TREATMENT MANUFACTURERS INSTRUCTIONS AND AWPA STANDARD M4-08.

5.3 ALL LUMBER SHALL BE KILN DRIED TO A MAXIMUM MOISTURE CONTENT OF 19 PERCENT, INCLUDING PRESERVATIVE TREATED LUMBER.

5.4 ALL SCREWS, BOLTS, AND NAILS FOR USE WITH PRESERVATIVE TREATED WOOD SHALL BE HOT-DIPPED ZINC-COATED GALVANIZED STEEL OR STAINLESS STEEL. FASTENERS TO BE HOT-DIPPED GALVANIZED SHALL MEET THE REQUIREMENTS OF ASTM A 153, CLASS D FOR 3/8" DIAMETER OR SMALLER AND CLASS C FOR FASTENERS WITH DAIMETERS OVER 3/8".

5.5 FASTENERS OTHER THAN NAILS AND TIMBER RIVETS SHALL BE PERMITTED TO BE OF MECHANICALLY DEPOSITED ZINC-COATED STEEL WITH COATING WEIGHTS IN ACCORDANCE WITH ASTM B 695, CLASS 55, MINIMUM.

5.6 METAL CONNECTORS SHOWN IN DOCUMENTS ARE SIMPSON STRONG TIE CONNECTORS. SUBSTITUTION WITH EQUAL CONNECTORS BY OTHER MANUFACTURERS IS ACCEPTABLE.

5.7 ALL HARDWARE (JOIST HANGERS, ETC.) FOR USE WITH PRESERVATIVE TREATED WOOD SHALL BE GALVANIZED OR SHALL BE STAINLESS STEEL. HARDWARE TO BE HOT-DIPPED PRIOR TO FABRICATION SHALL MEET ASTM A 653, G-185 COATING. HARDWARE TO BE HOT-DIPPED AFTER FABRICATION SHALL MEET ASTM A 123.

5.8 FASTENER AND HARDWARE SELECTION: HOT-DIPPED GALVANIZED MATERIAL SHALL NOT BE USED IN CONTACT WITH STAINLESS STEEL MATERIAL.

5.9 ALL NAIL SIZES INDICATED IN DOCUMENTS ARE BASED ON COMMON WIRE NAILS. SUBSTITUTION OF DIFFERENT STYLE NAILS IS ACCEPTABLE BASED ON ACTUAL DIAMETER ONLY.

5.10 AT A MINIMUM, ALL WOOD FRAMING CONNECTIONS TO COMPLY WITH "TABLE 2304.9.1- FASTENING SCHEDULE" OF THE INTERNATIONAL BUILDING CODE.

5.11 LEAD HOLES FOR LAG SCREWS

A. CLEARANCE HOLE FOR SHANK WILL BE SAME DIAMETER AS SHANK AND HAVE THE SAME DEPTH OF PENETRATION AS THE LENGTH OF THE UNTHREADED SHANK.
B. LEAD HOLE FOR THREADED PORTION SHALL HAVE A DIAMETER OF 66% OF SHANK AND A LENGTH EQUAL TO OR GREATER THAN THE LENGTH OF THE THREADED PORTION.
C. THE THREADED PORTION OF THE LAG SCREW SHALL BE INSERTED BY TURNING WITH A WRENCH, NOT BY DRIVING WITH A HAMMER. SOAP OR OTHER LUBRICANT SHALL BE USED ON THE LAG SCREW IN THE LEAD HOLES TO FACILITATE INSERTION AND PREVENT DAMAGE OF THE LAG SCREW.

5.12 DESIGN, FABRICATE AND ERECT WOOD TRUSSES IN ACCORDANCE WITH THE "DESIGN SPECIFICATION FOR METAL PLATE CONNECTED WOOD TRUSSES" OF THE TRUSS PLATE INSTITUTE. TRUSS ERECTION PLANS AND CALCULATIONS DESIGNED BY THE CONTRACTOR SHALL BE SUBMITTED FOR THE REVIEW OF THE STRUCTURAL ENGINEER. CALCULATIONS SHALL BEAR THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED.

5.13 TRUSS MANUFACTURER SHALL DESIGN FOR THE FOLLOWING SUPERIMPOSED LOADS:
A. ROOF TOP CHORD DEAD LOAD------------------------------10 PSF
B. ROOF BOTTOM CHORD DEAD LOAD---------------------------10 PSF
C. ROOF TOP CHORD LIVE LOAD------------------------------30 PSF

5.14 DESIGN WOOD TRUSSES TO RESIST 15 PSF NET THE WIND UPLIFT LOADING.

5.15 IN ADDITION TO THE ABOVE LOADS, WOOD TRUSSES SHALL BE DESIGNED FOR CONCENTRATED LOADS HUNG FROM OR SUPPORTED ON TRUSSES. REFER TO MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS AND SPECIFICATIONS FOR LOADING INFORMATION AND LOCATION. MAXIMUM LOAD IS 200 LBS PER CONNECTION ACCORDING TO NOTE BELOW. SUBCONTRACTOR SHALL PROVIDE HANGER SPACINGS TO NOT EXCEED 200 LBS LOAD TO TRUSS.

5.16 ALL TRUSS TO TRUSS CONNECTIONS SHALL BE DESIGNED BY THE TRUSS MANUFACTURER FOR THE LOADS INDICATED.

5.17 ALL TEMPORARY AND PERMANENT BRACING MEMBERS AND CONNECTIONS REQUIRED FOR WOOD TRUSSES SHALL BE DESIGNED AND DETAILED ON THE WOOD TRUSS MANUFACTURER'S ERECTION PLANS. BRACING MEMBERS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR ACCORDING TO THE TRUSS MANUFACTURER'S ERECTION PLANS AND "GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING, AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES" BY BCSI, LATEST EDITION.

5.18 TEMPORARY BRACING SHALL NOT IMPOSE ANY FORCE ON THE SUPPORTING STRUCTURE. PERMANENT BRACING FORCES SHALL BE TRANSFERRED TO THE ROOF DIAPHRAGM BY THE BRACING DESIGN PROVIDED BY THE TRUSS MANUFACTURER.

5.19 ROOF SHEATHING: 3/4" PLYWOOD, APA RATED SHEATHING EXPOSURE 1, WITH PLY CLIPS AT ALL UNSUPPORTED EDGES. PANEL IDENTIFICATION INDEX 48/24. LONG DIMENSION OF PANEL PERPENDICULAR TO SUPPORTS. GLUE AND SCREW TO ALL SUPPORTING MEMBERS.

5.20 ROOF SHEATHING ATTACHMENT, UNLESS NOTED: #8 SCREW x 2 ½" LONG AT 6 INCHES AT ALL FOUR PANEL EDGES AND 12 INCHES AT INTERMEDIATE SUPPORTS.

5.21 FLOOR SHEATHING: 3/4" PLYWOOD APA STRUCTURAL I RATED SHEATHING EXPOSURE I, TONGUE AND GROOVE EDGES. PANEL IDENTIFICATION INDEX 48/24. LONG DIMENSION OF PANEL PERPENDICULAR TO SUPPORTS. GLUE AND SCREW TO SUPPORTING MEMBERS, #10 SCREW x 3" LONG AT 6 INCHES AT ALL FOUR PANEL EDGES AND 12 INCHES AT INTERMEDIATE SUPPORTS. GLUE AND SCREW TO ALL SUPPORTING MEMBERS.

5.22 WOOD PANEL SHEAR WALLS: 15/32" PLYWOOD, UNLESS NOTED, APA RATED SHEATHING EXPOSURE 1. LONG DIMENSION OF PANEL PARALLEL TO STUDS. ALL PLYWOOD EDGES SHALL BE BACKED WITH TWO-INCH NOMINAL OR WIDER FRAMING.

5.23 WOOD PANEL SHEAR WALL ATTACHMENT, UNLESS NOTED: #8 SCREWS x 2 ½" LONG AT 6 INCHES AT ALL FOUR PANEL EDGES AND 12 INCHES AT INTERMEDIATE MEMBERS. GLUE AND SCREW TO ALL SUPPORTING MEMBERS.

5.24 PLYWOOD, GYPSUM SHEATHING AND WALLBOARD, NOT PART OF SHEAR WALLS, SHALL BE ATTACHED TO STUDS IN ACCORDANCE WITH "TABLE 2304.9.1- FASTENING SCHEDULE" OF THE INTERNATIONAL BUILDING CODE.

5.25 WOOD I JOISTS TO BE AS MANUFACTURED BY LOUISIANA PACIFIC OR APPROVED EQUAL. CONTRACTOR SHALL OBTAIN THE TECHNICAL DATA FROM THE MANUFACTURER AND FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION, BRACING, WEB HOLES, BLOCKING, WEB STIFFENERS, ETC. CONTAINED IN THE TECHNICAL DATA. TECHNICAL DATA SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO START OF FRAMING.

5.26 MANUFACTURED WOOD BEAMS - INTERIOR AREAS: MICRO-LAMINATED WOOD BEAMS TO BE AS MANUFACTURED BY iLEVEL OF BOISE, IDAHO, OR APPROVED EQUAL, AND HAVE AN ALLOWABLE BENDING STRESS: (Fb) = 2600 PSI OR GREATER FOR 12 INCH DEPTH, AN ALLOWABLE SHEAR PARALLEL TO GRAIN (Fv) = 285 PSI OR GREATER AND A MODULUS OF ELASTICITY (E) = 1,900,000 PSI OR GREATER. FOR DEPTHS GREATER THAN 12 INCHES, ADJUST (Fb) BY (12/d)^0.136. SIZES ARE SHOWN ON THE PLANS AND DETAILS.

5.27 BUILT UP BEAMS (MANUFACTURED WOOD BEAMS): MULTIPLE MICROLAMS ARE TO BE FASTENED TOGETHER WITH A MINIMUM OF 2 ROWS OF SDS25300 SCREWS AT 12 INCHES (STAGGERED) FOR LVL DEPTHS OF 11 7/8" OR LESS. SCREWS TO BE SPACED 3 INCHES FROM THE TOP AND BOTTOM OF BEAMS.

5.28 AT ALL ROOF MICROLAM AND 2x HEADER BEARINGS, PROVIDE 2x STUD DIRECTLY UNDER BEARING.

5.29 WINDOW AND DOOR HEADERS ARE TO BE (3) 2x8 UNLESS NOTED.

5.30 BUILT UP BEAMS (DIMENSIONED LUMBER): SCREW INDIVIDUAL PLIES TOGETHER WITH TWO ROWS OF #10 SCREWS x 3" LONG AT 16" STAGGERED.

5.31 WOOD STUDS FOR WALLS: #2 SPRUCE PINE FIR. SPACING SHALL BE AT 16" ON CENTER FOR EXTERIOR 2x6 STUD WALLS AND AT 16" ON CENTER FOR INTERIOR 2x4 STUD WALLS.

5.32 WOOD FRAMING MEMBERS: #2 SOUTHERN PINE UNLESS NOTED.

5.33 VERTICAL STUDS INTERRUPTED BY WALL OPENINGS SHALL BE LOCATED EQUALLY ON EACH SIDE OF THE OPENING. SIMILAR STUDS SHALL BE LOCATED BETWEEN THE DOUBLE TOP PLATE AND BOTTOM PLATE AT THE FLOOR FRAMING LEVEL.

5.34 SHEETS OF DRYWALL SHOULD BE LAID FLAT ON THE FLOOR. MAXIMUM HEIGHT OF DRYWALL SHOULD BE 10". SHOULD DRYWALL SLEEPERS BE USED TO KEEP THE DRYWALL OFF THE FLOOR SHEATHING, A MINIMUM OF FOUR SETS OF SLEEPERS SHOULD BE USED. LONG DIRECTION OF DRYWALL MUST BE PARALLEL TO THE TRUSSES WITH SLEEPERS BEING PLACED PERPENDICULAR TO THE TRUSSES.

6.0 SHOP DRAWINGS (SUBMITTALS)

6.1 SUBMIT ONLY THREE COPIES OF SHOP DRAWINGS TO STRUCTURAL DESIGN GROUP UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS. TWO PRINTS WILL BE RETURNED. ALL ADDITIONAL PRINTS REQUIRED BY THE CONTRACTOR ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHOULD BE MADE AFTER THE PRINTS ARE RETURNED. IF ADDITIONAL SETS ARE SUBMITTED, THEY WILL BE RETURNED UNMARKED. SUBMITTALS MAY BE SUBMITTED BY THE CONTRACTOR ELECTRONICALLY IF PERMITTED BY THE ARCHITECT. ELECTRONIC COPIES OF THE REVIEWED SUBMITTAL WILL BE RETURNED TO THE ARCHITECT.

6.2 WHERE SHOP DRAWINGS, CALCULATIONS, OR SUBMITTALS ARE CALLED FOR IN THE PROJECT DOCUMENTS (DRAWINGS AND SPECIFICATIONS) AND ARE NOT PROVIDED BY THE CONTRACTOR, THE CONTRACTOR ASSUMES TOTAL RESPONSIBILITY FOR THE DESIGN AND ASSOCIATED WORK.

6.3 ENGINEER'S SHOP DRAWING REVIEW IS LIMITED TO REVIEW FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT REFLECTED IN THE STRUCTURAL PORTION OF THE CONTRACT DOCUMENTS. THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE DRAWINGS, SPECIFICATIONS OR OTHER PROJECT CONTRACT DOCUMENTS. NO RESPONSIBILITY IS ASSUMED OR IMPLIED FOR THE CORRECTNESS OF DIMENSIONS OR DETAILS. THIS REVIEW DOES NOT AUTHORIZE CHANGES TO THE CONTRACT SUM UNLESS STATED IN A SEPARATE WRITTEN FORM OR CHANGE ORDER. CONTRACTOR SHALL CONFIRM AND CORRELATE ALL QUANTITIES AND DIMENSIONS, SELECT FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATE HIS WORK WITH THAT OF OTHER TRADES, AND PERFORM HIS WORK IN A SAFE AND SATISFACTORY MANNER. CONTRACTOR SHALL ALSO REFER TO THE REQUIREMENTS OF THE GENERAL AND SUPPLEMENTARY GENERAL CONDITIONS.

6.4 ALL SUBMITTALS: IF THERE ARE QUESTIONS, CLARIFICATIONS, MODIFICATIONS, OR ITEMS WHERE INFORMATION, A RESPONSE, OR APPROVAL IS REQUESTED, SUCH ITEMS SHALL BE WRITTEN ON THE TRANSMITTAL OR COVER SHEET. WHERE SUBMITTAL CHECKLISTS ARE REQUIRED BY THE RELEVANT SPECIFICATION, THE AFOREMENTIONED INFORMATION MUST BE INDICATED ON THE SUBMITTAL CHECKLIST IN ACCORDANCE WITH THE RELEVANT SPECIFICATION. INDICATING SUCH ITEMS ON THE SHOP DRAWINGS, WITHIN ANY CALCULATIONS, OR PRODUCT DATA IS NOT SUFFICIENT. WHERE SUCH ITEMS ARE NOT SPECIFICALLY LISTED ON THE TRANSMITTAL, COVER SHEET, OR CHECKLIST IN ACCORDANCE WITH THESE GENERAL NOTES AND THE SPECIFICATIONS, SUCH ITEMS ARE NOT TO BE CONSIDERED APPROVED OR CONSIDERED. IF A QUESTION, CLARIFICATION, MODIFICATION, OR REQUEST FOR INFORMATION IS MADE AND NOT SPECIFICALLY RESPONDED TO BY STRUCTURAL DESIGN GROUP, NO APPROVAL OR CONSENT SHALL BE ASSUMED. THE CONTRACTOR SHALL ASSUME TOTAL LIABILITY AND RESPONSIBILITY IN ALL CASES WHERE SPECIFIC WRITTEN RESPONSE FROM STRUCTURAL DESIGN GROUP IS NOT OBTAINED, REGARDLESS OF ANY OTHER ACTIONS TAKEN BY STRUCTURAL DESIGN GROUP.

6.5 SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS MUST BE SUBMITTED BY THE GENERAL CONTACTOR AND REVIEWED BY THE S.E.R. SHOULD THE OWNER OR CONTRACTOR FAIL TO OBTAIN THE S.E.R'S REVIEW OF THE SHOP DRAWINGS, THE S.E.R. WILL NOT ACCEPT RESPONSIBILITY FOR THE DESIGN AND CERTIFICATION OF THIS PROJECT. PRIOR TO SUBMISSION, THE CONTRACTOR SHALL REVIEW SHOP DRAWINGS FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS. SHOP DRAWINGS SHALL NOT BE PRODUCED PRIOR TO FINAL CONSTRUCTION SET.

6.6 DO NOT FABRICATE PRIOR TO SHOP DRAWINGS REVIEW.

surviv(AL) house

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Client

U.S. DEPARTMENT OF ENERGY
SOLAR DECATHLON

US DEPARTMENT OF ENERGY
SOLAR DECATHLON 2017
WWW.SOLARDECATHLON.GOV

Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

GENERAL NOTES

S1.1

11/13/2016 4:26:45 PM

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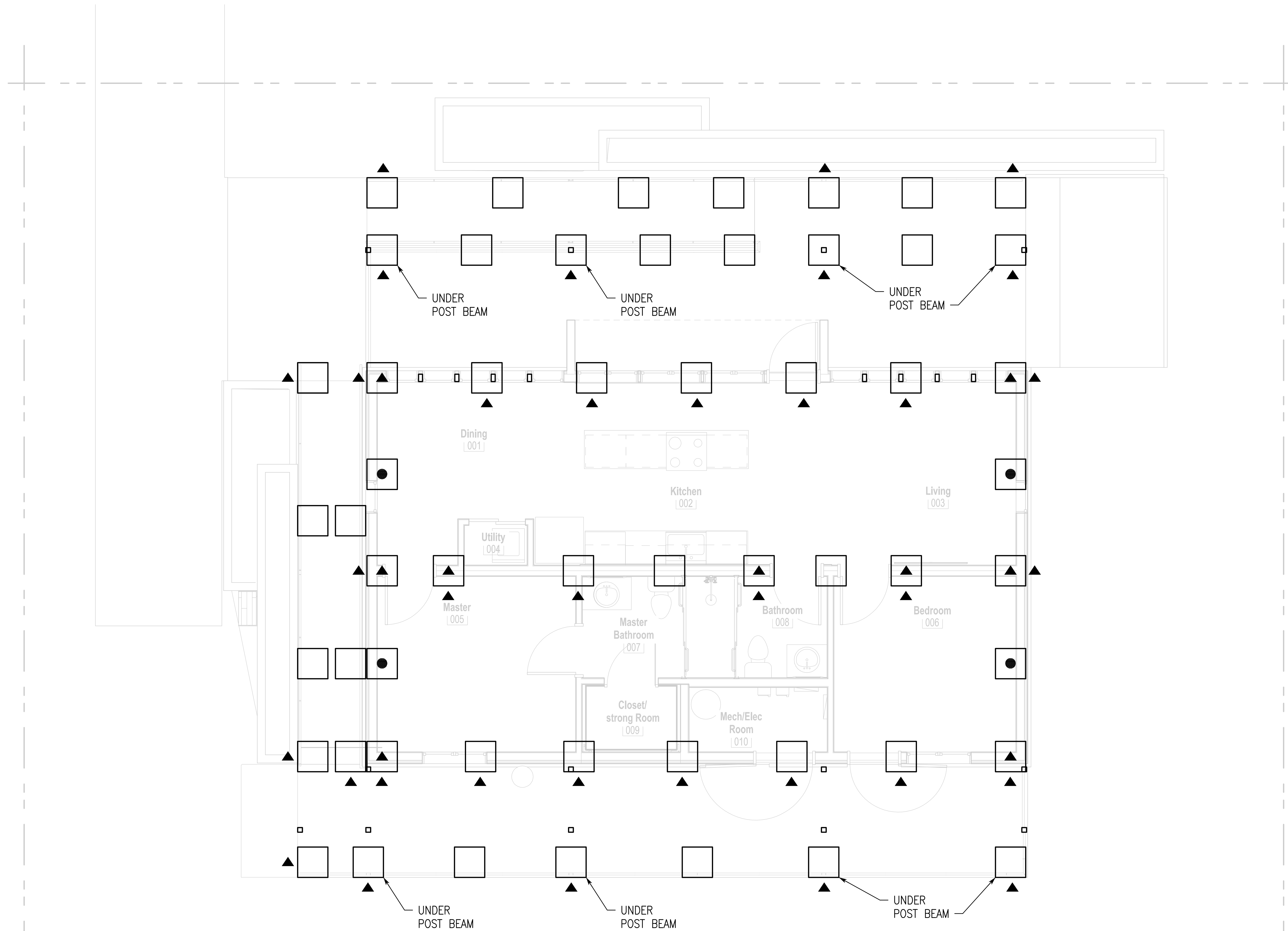

PROJECT NORTH

FOUNDATION PLAN

1/4"=1'-0"

1. FOOTINGS TO BEAR ON 2500 PSF SOIL.
2. ☐ INDICATES APPROXIMATE FOOTING LOCATION. FOOTING IS 22.5"x22.5". FIELD VERIFY HEIGHT REQUIRED. FOOTINGS TO BE MADE WITH PT 2x12'S. ALTERNATE 2x12 DIRECTION WITH EACH LAYER. NAIL LAYERS TOGETHER WITH 6 NAILS.
3. ⊡ INDICATES FOOTING UNDER MSTC STRAP LOCATION.
4. ⊡ INDICATES 45' TIE DOWN ANCHOR AT FOOTING. DIAGONAL ARE TO EXTEND IN BOTH DIRECTIONS.
5. ▲ INDICATES VERTICAL TIE DOWN ANCHOR.
6. TIE DOWNS TO BE 36" LONG (MINIMUM) AND CAPABLE OF RESISTING A WORKING LOAD OF 3000 LBS OF UPLIFT. TIE DOWNS SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. USE CS14 COIL STRAP BY SIMPSON STRONG TIE. STRAP IS TO GO ON THE OUTSIDE OF THE SHEATHING, ACROSS THE TOP OF THE (2) LVL AND DOWN THE OTHER SIDE (INSIDE). FILL ALL HOLES IN STRAP AT LVL WITH 8d OR 10d NAILS. SIMILAR CONDITION AT 4x8 BEAMS. SLOT VERTICAL SHEATHING AS REQUIRED. AT INTERIOR BEAMS, STRAP TO GO FROM OUTSIDE TO OUTSIDE OF LVL'S. CONTRACTOR TO SUBMIT PRODUCTS FOR REVIEW.

surviv(AL) house

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U.S. DEPARTMENT OF ENERGY SOLAR DECATHLON

US DEPARTMENT OF ENERGY
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Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

FOUNDATION PLAN

S2.0

11/13/2016 4:26:45 PM

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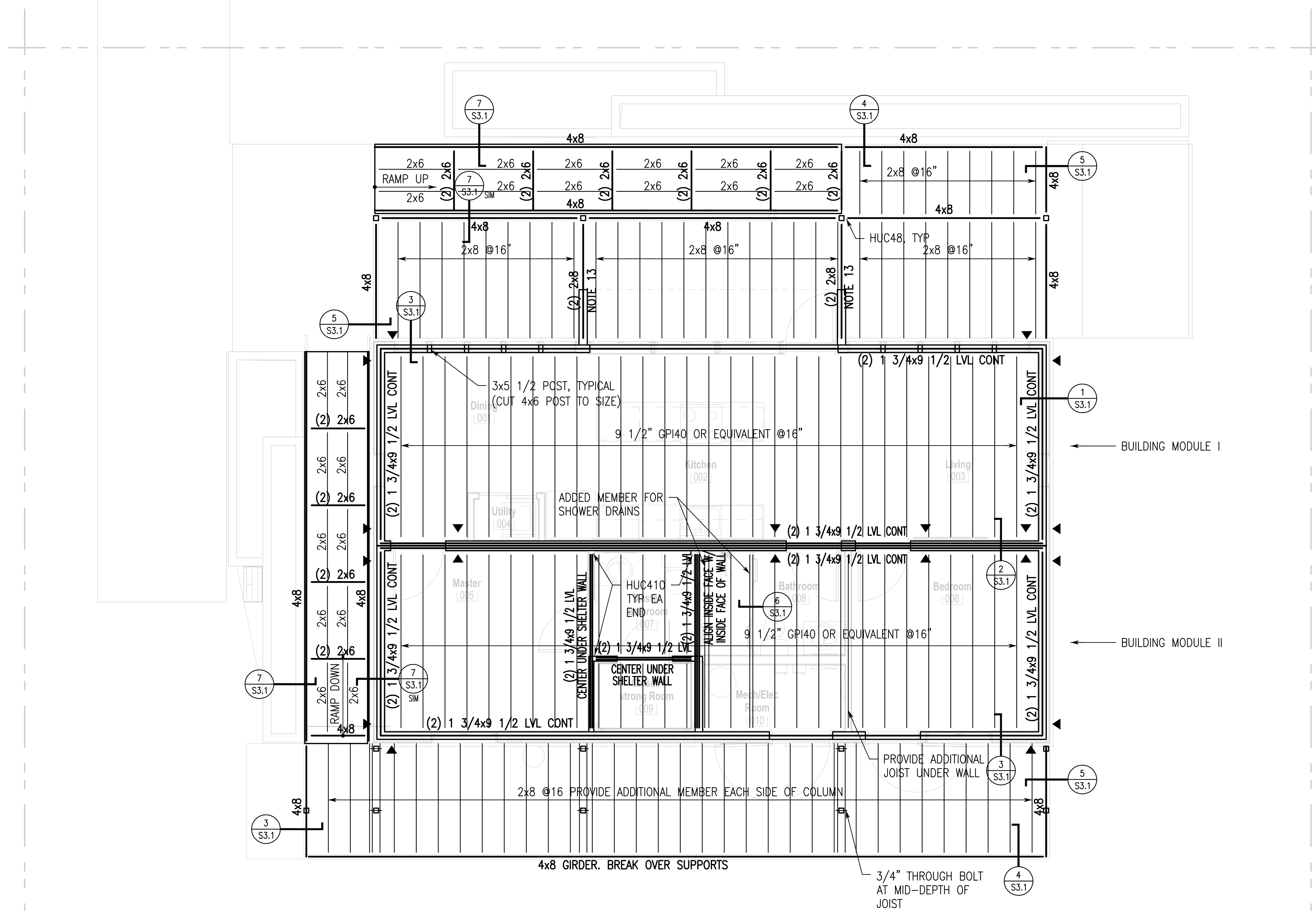
Job Number 16-182



PROJECT NORTH

FLOOR FRAMING PLAN

1/4"=1'-0"

1. FLOOR SYSTEM: 9 1/2" WOOD I's AT 16".
2. FLOOR SHEATHING: 3/4" PLYWOOD, SEE GENERAL NOTES. GLUE AND SCREW TO JOISTS.
3. FINISHED FLOOR ELEVATION 2'-0".
4. DECK ELEVATION 2'-0".
5. POSITION JOISTS TO AVOID DRAINS AND PLUMBING PIPES. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR EXACT LOCATIONS.
6. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
7. APPLY PLYWOOD SHEATHING TO ALL EXTERIOR WALLS AND DEMISING WALLS.
8. DETAILS SHOWN ARE TYPICAL FOR THE ENTIRE BUILDING.
9. AT STRONG ROOM PROVIDE DOUBLE STUDS @12 AND 12 GAGE STEEL PLATE ON OUTSIDE OF WALL. ATTACH PLATE WITH #8 x 1 1/2" LONG SCREWS @6 TO STUDS. PROVIDE 3/4" PLYWOOD SHEATHING ON INSIDE OF WALL. ATTACH WITH #10 x 2 1/2" LONG SCREWS @6. PROVIDE 3/4" PLYWOOD SHEATHING TO CEILING OF STRONG ROOM. ATTACH WITH #10 SCREWS @6.
10. ALL EXTERIOR AND DEMISING WALLS ARE SHEAR WALLS.
11. 4x8 DECK MEMBERS TO BE CONTINUOUS BETWEEN SUPPORTS. BEAR OVER INTERMEDIATE SUPPORTS. MAXIMUM SUPPORT DISTANCE IS 5'-6".
12. ▲ DENOTES MSTC28 HOLD DOWN STRAP AND DOUBLE STUD.
13. SPREAD (2) 2x TO ALLOW PASSAGE OF DOWNSPOUT.
14. AT PIPES IN DEMISING WALLS, RUN IN WALL STUD SPACE. AT BOTTOM 12", OFFSET TO GET INTO 4" SPACE BETWEEN DOUBLE LVL'S.
15. FOR SHIPPING PURPOSES, PROVIDE BUILDING MODULES WITH A TEMPORARY ROOF CONSISTING OF 2x6 AT 16" JOISTS AND 15/32" SHEATHING. ATTACH JOISTS WITH H2.5A ANCHORS.

surviv(AL) house

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WILLIAMS BLACKSTOCK ARCHITECTS
STRUCTURAL DESIGN GROUP
EDMONDS ENGINEERING

Client

U.S. DEPARTMENT OF ENERGY SOLAR DECATHLON

US DEPARTMENT OF ENERGY
SOLAR DECATHLON 2017
WWW.SOLARDECATHLON.GOV

Lot Number LOT NO. 112

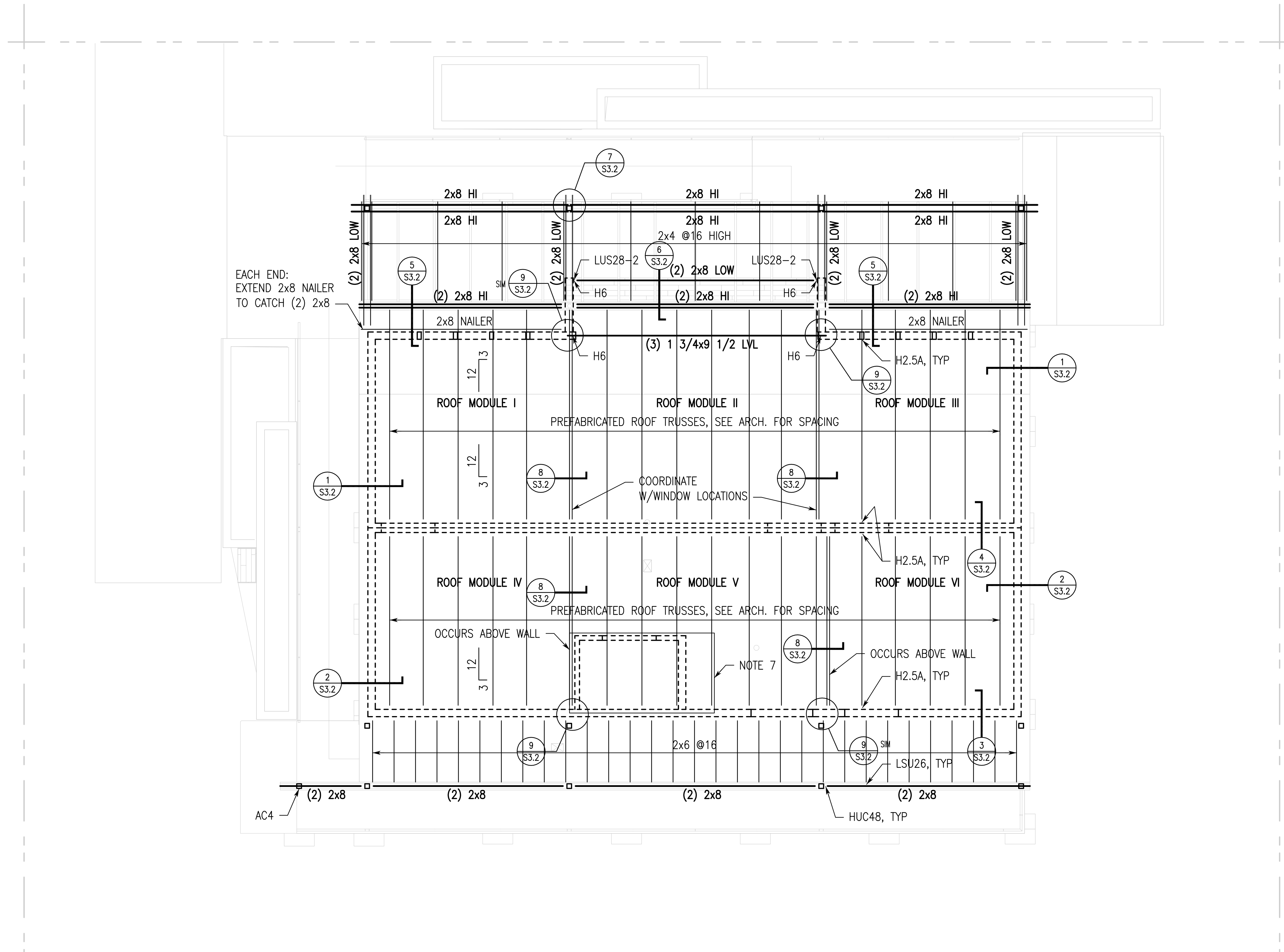
MARK	DATE	DESCRIPTION

FLOOR FRAMING PLAN

S2.1

11/13/2016 4:26:45 PM

SDG
STRUCTURAL DESIGN GROUP
700 Century Park South, Suite 114
Birmingham, AL 35226
tel 205-824-5200
fax 205-824-5280
Job Number 16-182



PROJECT
NORTH

ROOF FRAMING PLAN

1/4"=1'-0"

1. ROOF SYSTEM: PREFABRICATED ROOF TRUSSES. SEE ARCHITECTURAL DRAWINGS FOR SPACING, SLOPE, DIMENSIONS AND TRUSS CONFIGURATION. CHORD AND WEB MEMBERS TO BE 2x6. FOR ADDITIONAL INFORMATION, SEE GENERAL NOTES.
2. ROOF SHEATHING: 3/4" PLYWOOD, SEE GENERAL NOTES.
3. ROOF TRUSS BEARING ELEVATION 10'-0".
4. TRUSSES BEAR ON ALL WALLS AND BEAMS AS SHOWN.
5. DETAILS SHOWN ARE TYPICAL FOR THE ENTIRE BUILDING.
6. NOTE IRREGULAR TRUSS SPACING. CUT SHEATHING AS REQUIRED.
7. ABOVE STRONG ROOM, PROVIDE 12 GAGE STEEL PLATE ON TOP OF ROOF SHEATHING. ATTACH WITH #8 SCREWS @6 TO TRUSSES.
8. DESIGN TRUSS BOTTOM CHORD TO BE UNBRACED. NO CEILING IS PRESENT IN FRONT HALF OF STRUCTURE.
9. AT CLERESTORY WINDOWS, COVER OUTSIDE FACE OF ROOF MODULE WITH 15/32" PLYWOOD FOR SHIPPING PURPOSES. ATTACH WITH #8 SCREWS AT 12".

surviv(AL) house

TEAM ALABAMA
The University of Alabama at Birmingham
Calhoun Community College
The University of Alabama at Huntsville

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ROOF FRAMING PLAN

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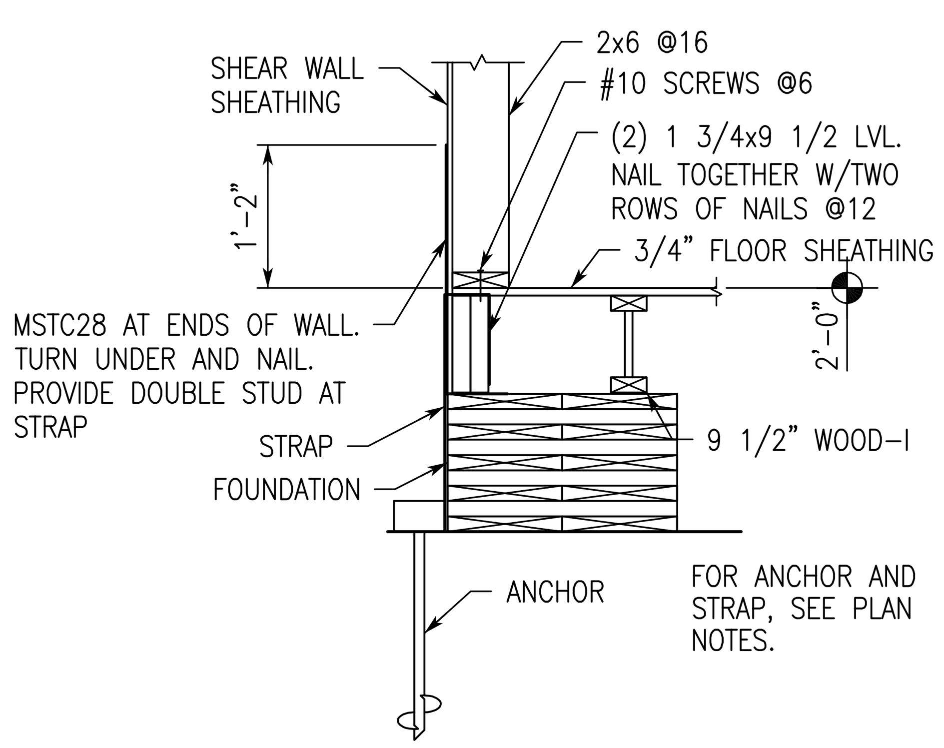
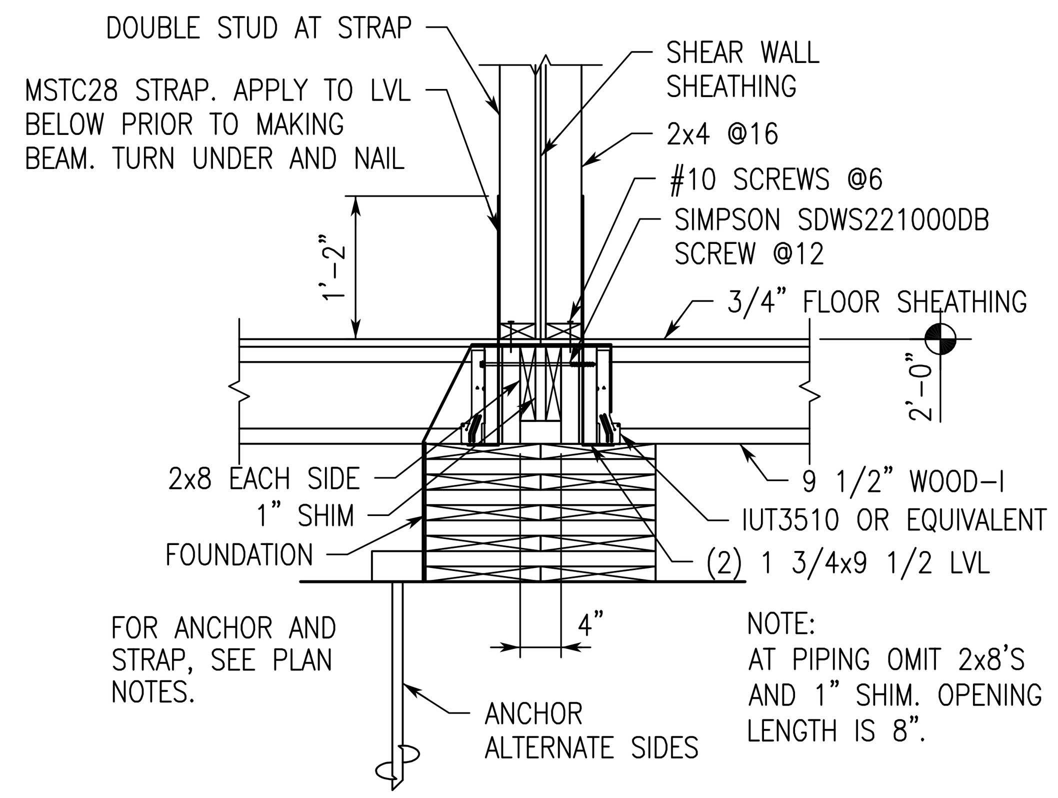


SECTION 1 S3.1
3/4"=1'-0"



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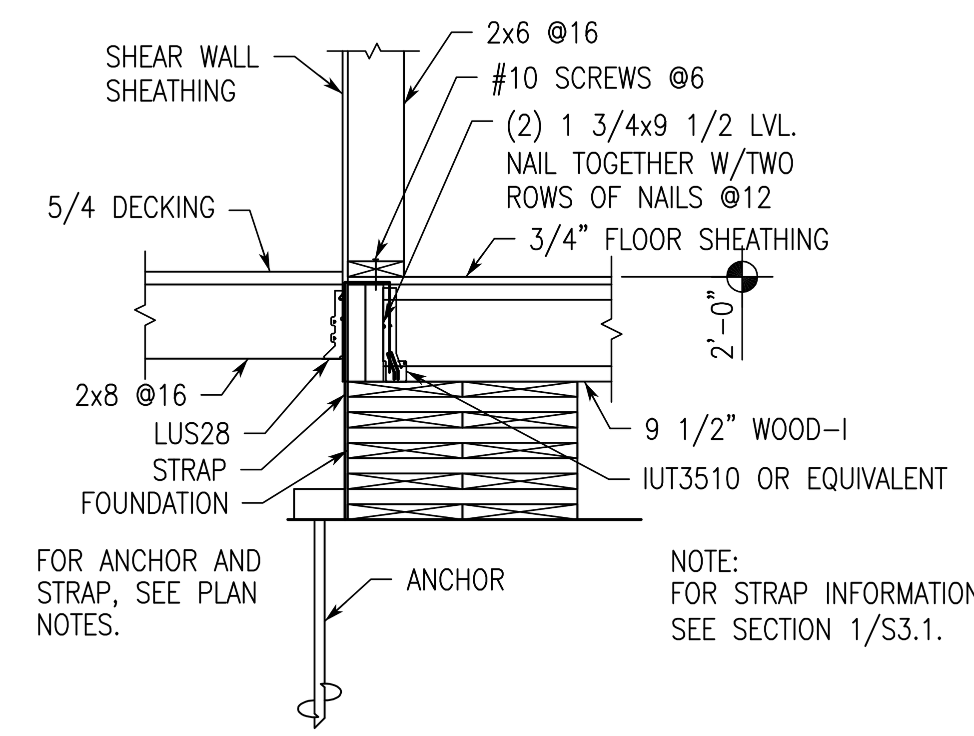

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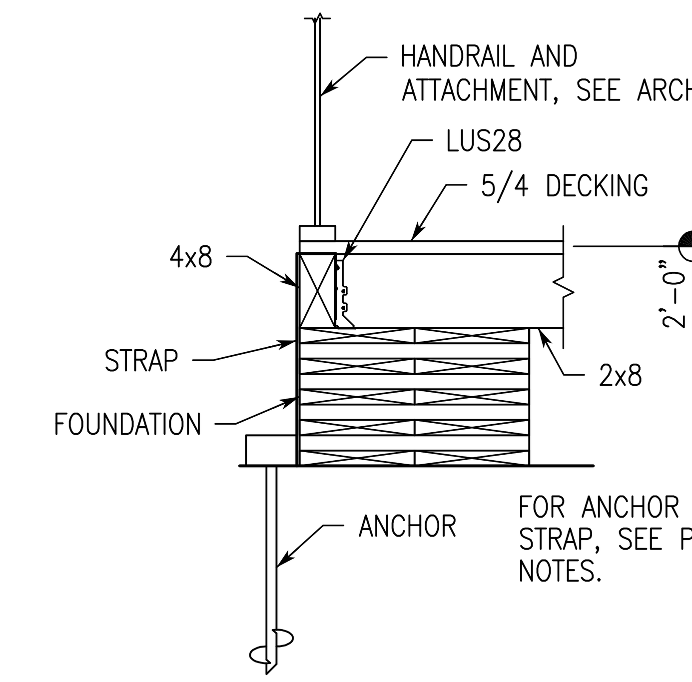
3/4"=1'-0"



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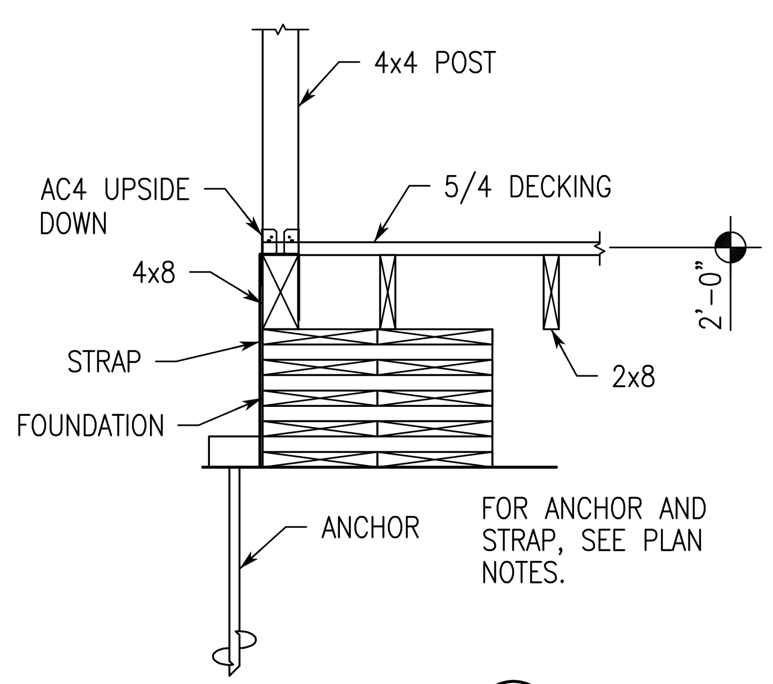
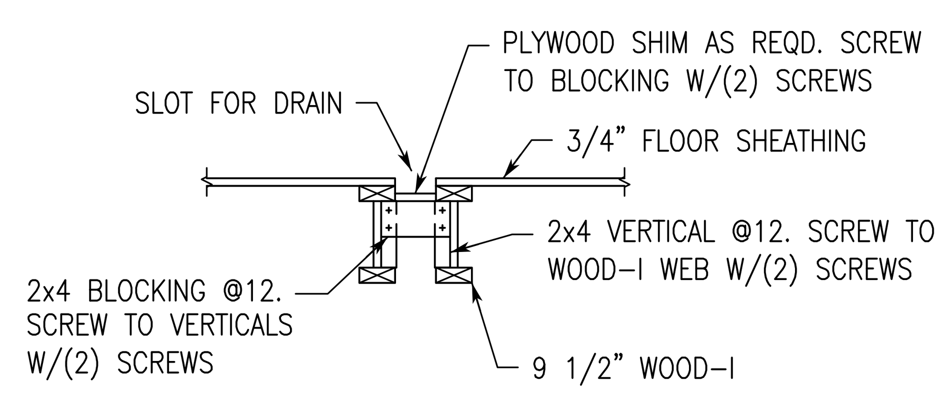
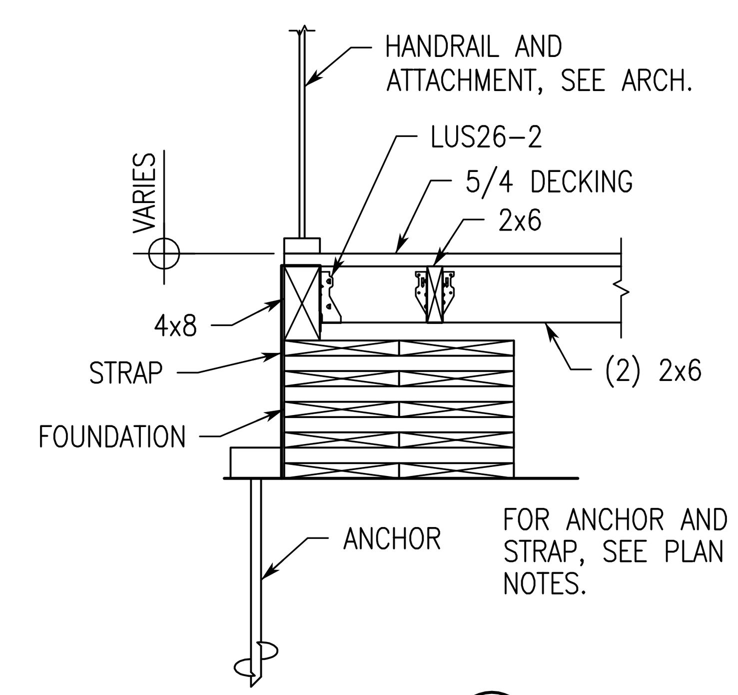
3/4"=1'-0"



SECTION 5 S3.1
3/4"=1'-0"



SECTION 6 S3.1
3/4"=1'-0"



SECTION 7 S3.1
3/4"=1'-0"

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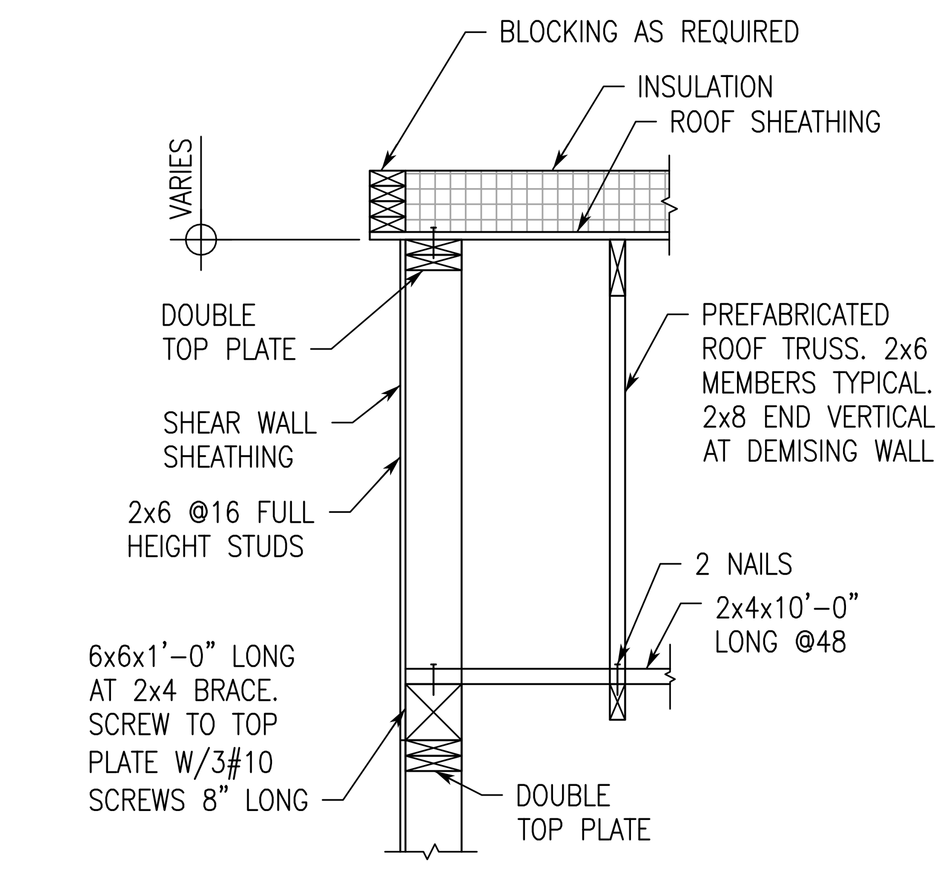
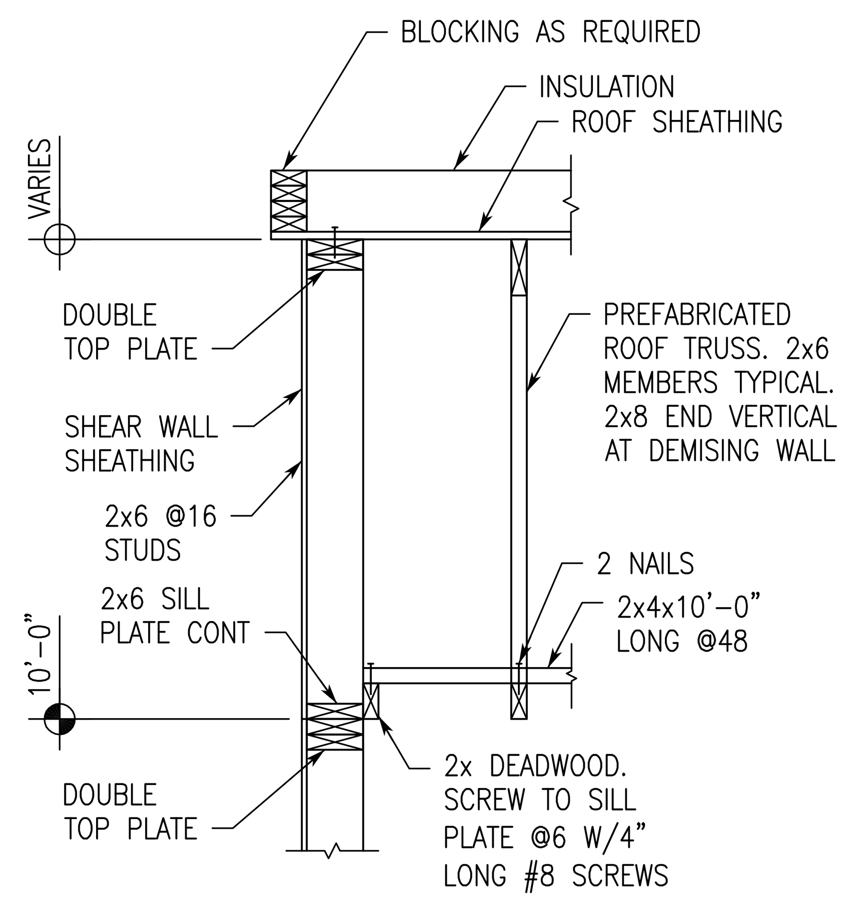


SECTION 1 S3.2
3/4"=1'-0"



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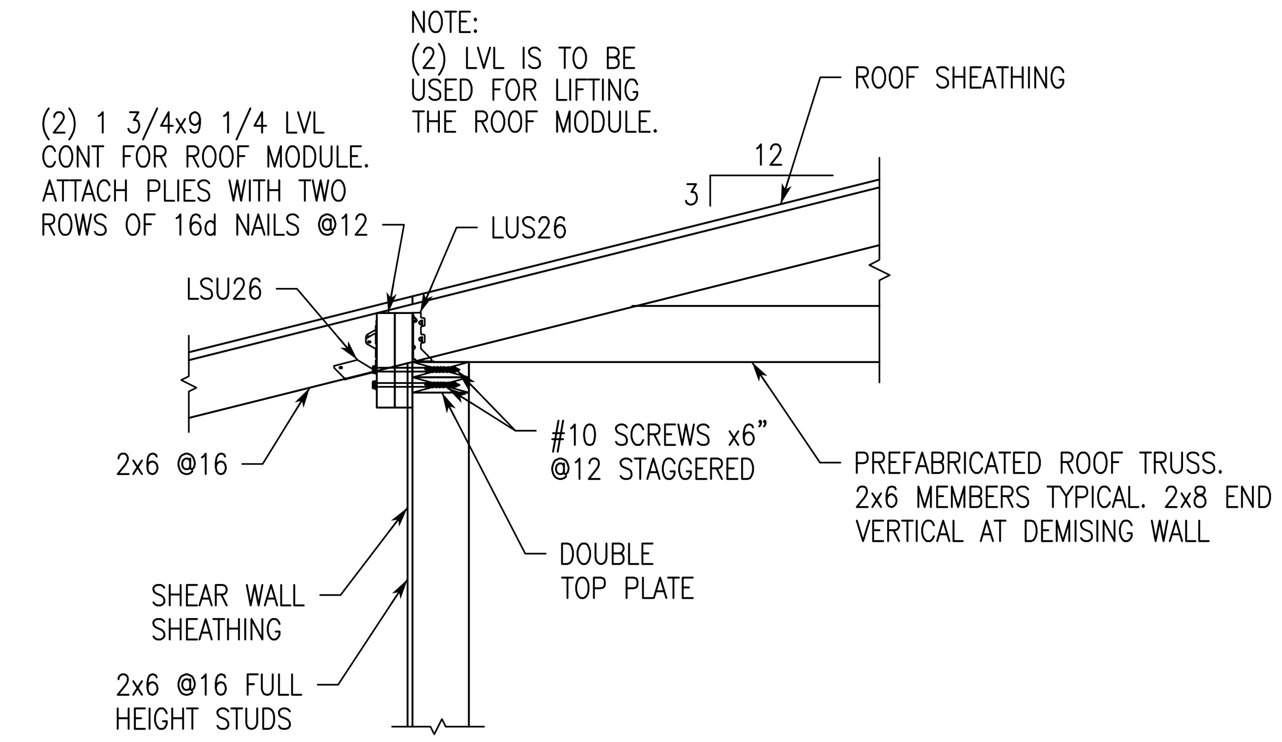
3/4"=1'-0"



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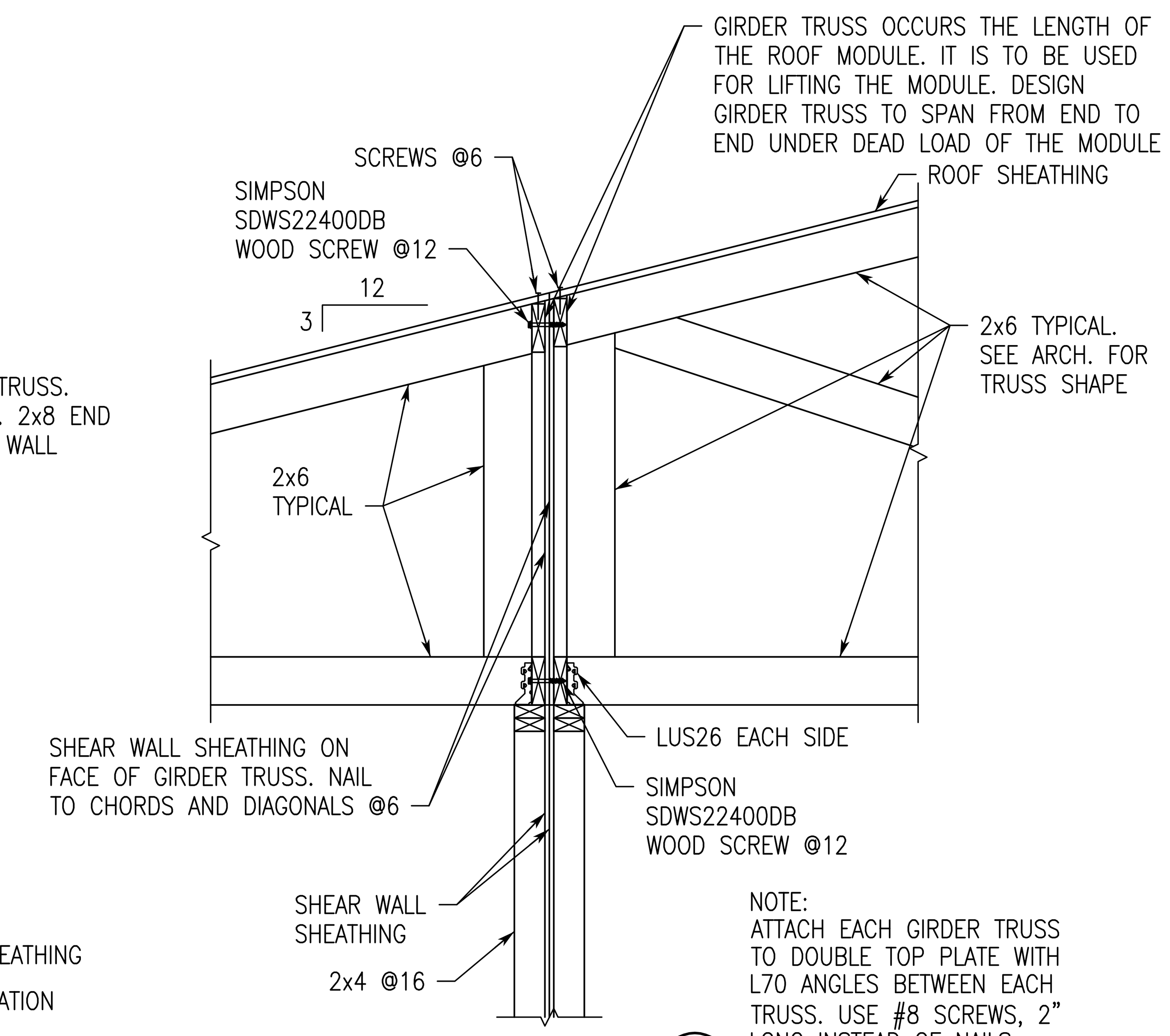
3/4"=1'-0"



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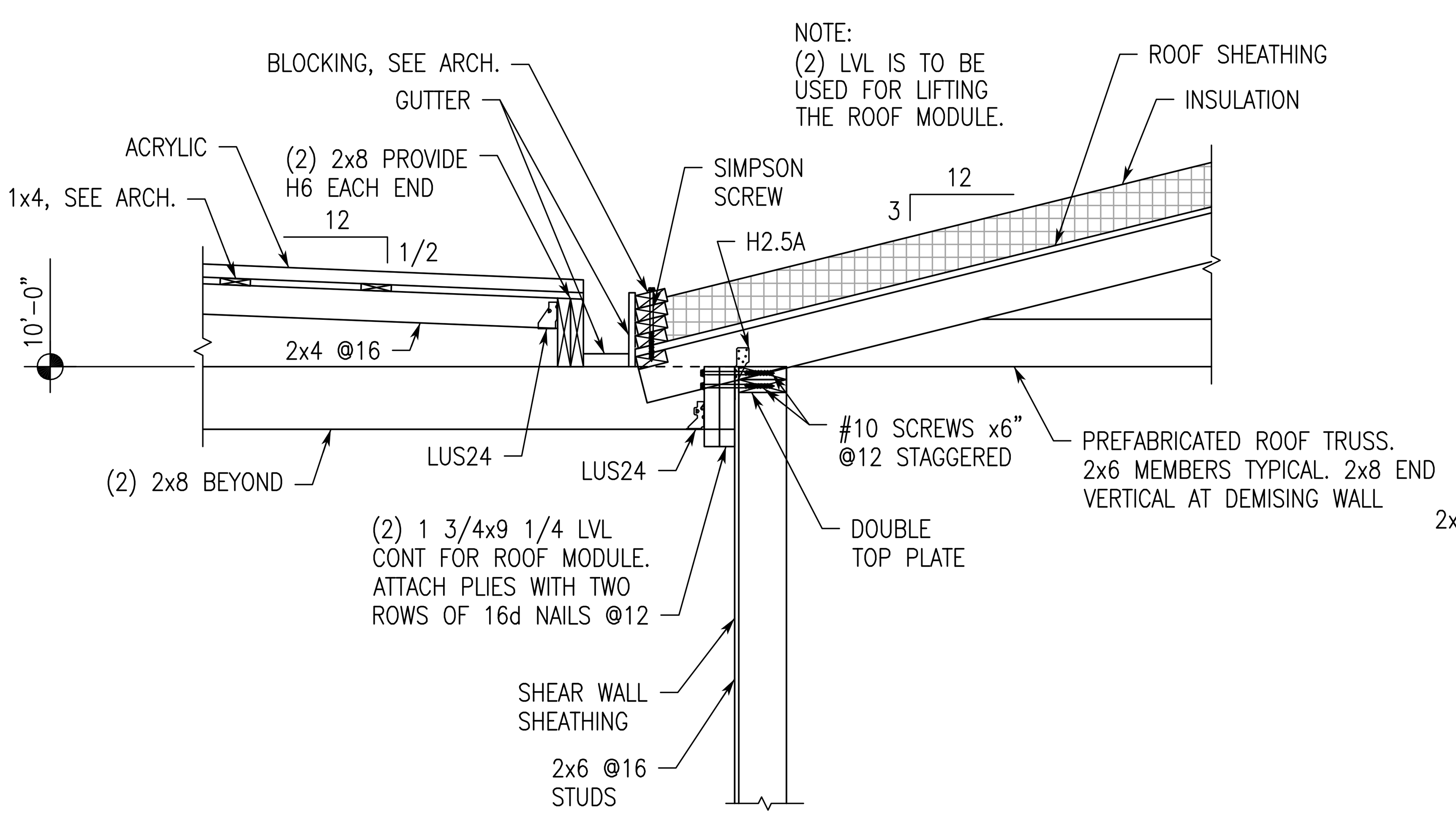
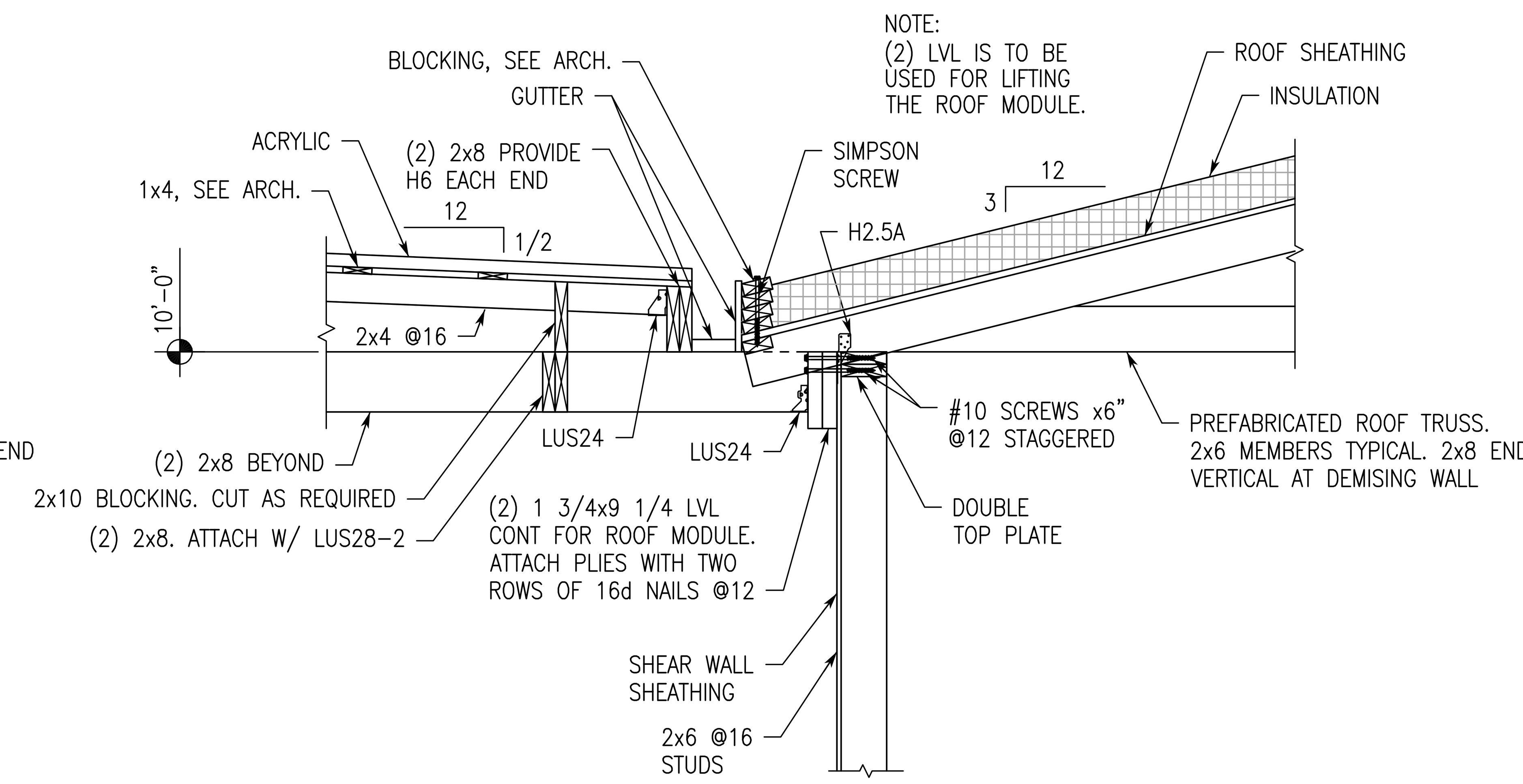
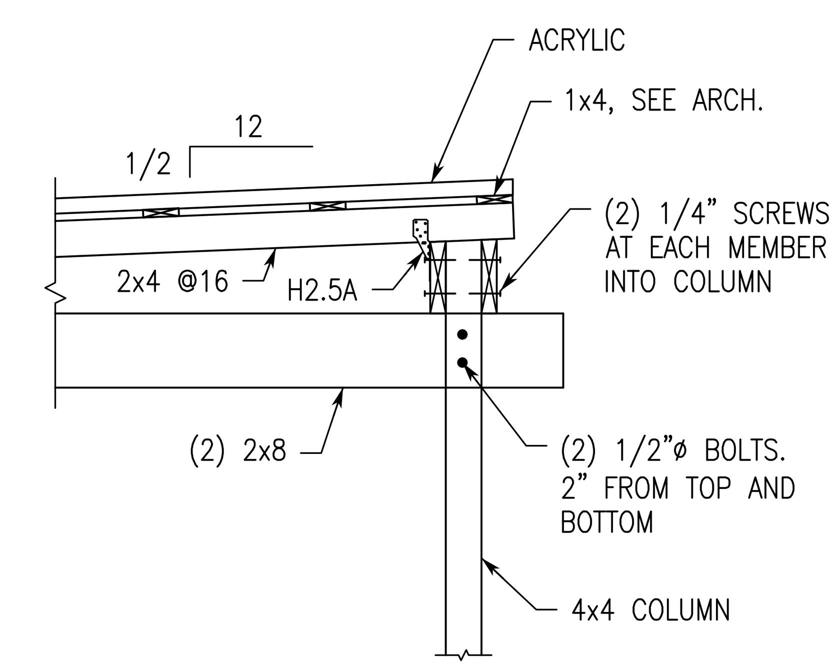
3/4"=1'-0"



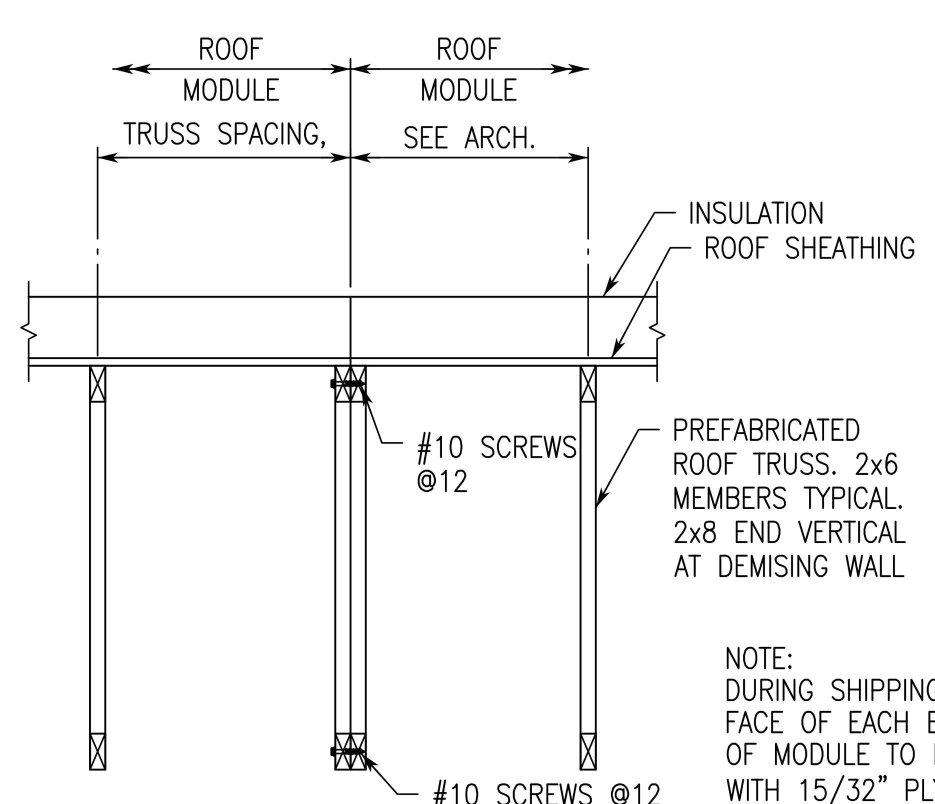
SECTION 5 S3.2
3/4"=1'-0"



SECTION 6 S3.2
3/4"=1'-0"

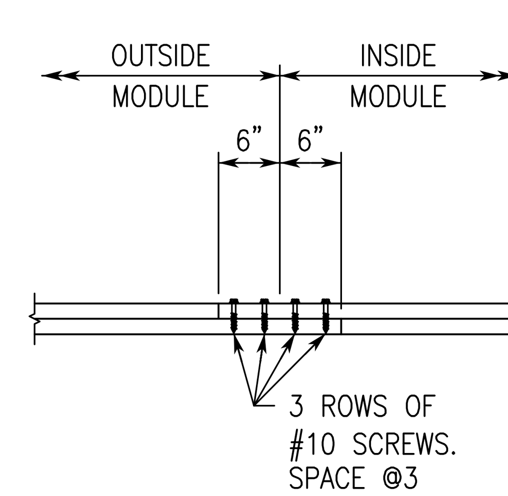


SECTION 7 S3.2
3/4"=1'-0"



NOTE:
DURING SHIPPING, OUTSIDE FACE OF EACH END TRUSS OF MODULE TO BE COVERED WITH 15/32" PLYWOOD. ATTACH PLYWOOD TO TRUSS CHORDS AND WEB MEMBERS WITH #10 SCREWS @12.

SECTION 8 S3.2
3/4"=1'-0"



NOTE:
PLAN VIEW OF (2) LVL TO BE USED FOR LIFTING.

DETAIL 9 S3.2
3/4"=1'-0"

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PLUMBING AND FIRE PROTECTION SPECIFICATIONS

SECTION 15410-GENERAL PROVISIONS

GENERAL REQUIREMENTS : PROVISIONS OF THIS SECTION APPLY TO ALL PLUMBING AND FIRE PROTECTION WORK. INCLUDE THE PROVISIONS OF GENERAL, SUPPLEMENTARY, SPECIAL CONDITIONS, AND PROVISIONS OF THE SPECIFICATIONS SHALL APPLY TO AND FORM A PART OF THIS SECTION.

SCOPE : PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY FOR THE COMPLETION OF ALL WORK SHOWN OR SPECIFIED, EXCEPT WORK SPECIFICALLY SPECIFIED TO BE DONE OR FURNISHED UNDER OTHER SECTIONS OF THE SPECIFICATIONS. INCLUDE PERFORMING ALL OPERATIONS IN CONNECTION WITH THE COMPLETE INSTALLATION IN STRICT ACCORDANCE WITH THE SPECIFICATION AND APPLICABLE DRAWINGS SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT FOR A SYSTEM OF SANITARY WASTE AND VENT PIPING, A SYSTEM OF DOMESTIC WATER PIPING, AND A SYSTEM OF FIRE PROTECTION PIPING.

QUALIFICATIONS OF PLUMBING SUBCONTRACTOR : SUBCONTRACTOR SHALL BE AN ESTABLISHED LICENSED PLUMBER WITH SATISFACTORY EXPERIENCE IN AT LEAST 3 EQUIVALENT PROJECTS WITHIN THE LAST FIVE YEARS.

QUALIFICATIONS OF THE FIRE PROTECTION SUBCONTRACTOR : SUBCONTRACTOR SHALL BE ESTABLISHED FIRE PROTECTION CONTRACTOR REGISTERED WITH THE STATE OF TENNESEE. CONTRACTOR TO HAVE SATISFACTORY EXPERIENCE IN AT LEAST 3 EQUIVALENT PROJECTS WITHIN THE LAST FIVE YEARS. CONTRACTOR SHALL HAVE A NICET LEVEL 3 OR GREATER DESIGNER. DESIGNER SHALL BE AN EMPLOYEE OF THE FIRE PROTECTION CONTRACTOR.

PERMITS : GIVE REQUIRED NOTICES, FILE DRAWINGS OBTAIN AND PAY FOR PERMITS, DEPOSITS AND FEES NECESSARY FOR THE INSTALLATION OF THE WORK. OBTAIN AND PAY FOR INSPECTIONS REQUIRED BY LAWS, ORDINANCES, RULES REGULATIONS OR PUBLIC AUTHORITY HAVING JURISDICTION. OBTAIN AND PAY FOR CERTIFICATES OF SUCH INSPECTIONS, AND FILE SUCH CERTIFICATES WITH OWNER.

DRAWINGS : DRAWINGS ARE DIAGRAMMATIC AND SUBJECT TO REQUIREMENTS OF ARCHITECTURAL DRAWINGS. DRAWINGS INDICATE GENERALLY THE LOCATION OF COMPONENTS AND ARE NOT INTENDED TO SHOW ALL FITTINGS OR ALL DETAILS OF THE WORK. COORDINATE WITH ARCHITECTURAL, STRUCTURAL, ELECTRICAL, HVAC, FIRE PROTECTION AND OTHER BUILDING DRAWINGS. FOLLOW THE DRAWINGS CLOSELY, CHECK DIMENSIONS WITH ARCHITECTURAL DRAWINGS AND FIELD CONDITIONS. DO NOT SCALE DRAWINGS FOR LOCATION OF SYSTEM COMPONENTS. MAKE NO CHANGES WITHOUT ARCHITECT'S WRITTEN PERMISSION. IN CASE OF DOUBT, OBTAIN ARCHITECT'S DECISION BEFORE PROCEEDING WITH WORK. FAILURE TO FOLLOW THESE INSTRUCTIONS SHALL MAKE THE CONTRACTOR LIABLE FOR DAMAGE TO OTHER WORK AND RESPONSIBLE FOR REMOVING AND REPAIRING DEFECTIVE OR MISLOCATED WORK.

APPLICABLE CODES AND STANDARDS : COMPLY WITH THE CURRENT EDITIONS OF ANSI/ASHRAE 15, NFPA 70, INTERNATIONAL LOCAL BUILDING CODE (INTERNATIONAL BUILDING CODE IF NO LOCAL BUILDING CODE IS IN EFFECT. LOCAL PLUMBING CODE (INTERNATIONAL PLUMBING CODE IF NO LOCAL PLUMBING CODE IS IN EFFECT. NFPA 130 AND OTHER STANDARDS AS REFERENCED IN OTHER SECTIONS OF DIVISION 15. REFER TO ARCHITECTURAL DRAWINGS FOR APPLICABLE CODES AND STANDARDS.

WORKMANSHIP : DO ALL WORK IN A NEAT AND FIRST-CLASS MANNER. PIPE SHALL BE CUT CLEAN, PLUMB AND SECURE. MAKE CHANGES IN PIPE SIZE WITH REDUCING FITTINGS WITHOUT THE USE OF BUSHINGS. WORK SHALL BE EXECUTED BY EXPERIENCE MECHANICS AND SHALL PRESENT A NEAT APPEARANCE. INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

EXISTING CONDITIONS : BIDDER'S SHALL VISIT SITE AND BECOME FAMILIAR WITH LOCATION AND VARIOUS CONDITIONS AFFECTING WORK. NO CONSIDERATION WILL BE GIVEN AFTER BID OPENING FOR ALLEGED MISUNDERSTANDING REGARDING UTILITY CONNECTIONS, PERMITS, FEES, ETC.

WARRANTY AND INSTRUCTIONS : GUARANTEE IN WRITING TO MAKE GOOD WITHOUT COST TO OWNER ANY DEFECTS IN MATERIALS AND WORKMANSHIP ON ALL NEW MATERIAL AND EQUIPMENT WITHIN ONE YEAR FROM THE DATE OF ACCEPTANCE OF PROJECT. PROVIDE FREE MAINTENANCE AND SERVICE DURING

THE GUARANTEE PERIOD.

MATERIALS AND EQUIPMENT : NEW AND OF BEST QUALITY IN EVERY RESPECT. PIPE AND FITTINGS SHALL CONFORM TO ASTM STANDARD DESIGNATED FOR PIPE OF EACH MATERIAL.

SUBMITTALS : WITHIN 25 DAYS AFTER AWARD OF CONTRACT, SUBMIT FOR APPROVAL A COMPLETE SCHEDULE OF MATERIAL AND EQUIPMENT PROPOSED. THE CONTRACTOR SHALL REVIEW AND APPROVE, OR MAKE APPROPRIATE NOTATIONS ON EACH ITEM PRIOR TO SUBMITTAL TO ARCHITECT. PARTIAL SUBMITTALS OR SUBMITTALS WITHOUT CONTRACTOR'S APPROVAL WILL BE REJECTED. EACH COPY OF THE SUBMITTAL DATA SHALL BE PRESENTED IN A SINGLE BINDER, INDEXED AND TABBED. SUBMIT FIXTURES AND EQUIPMENT IN SAME FORMAT AS THE SCHEDULED ON THE DRAWINGS. FIRE PROTECTION CONTRACTOR SHALL SUBMIT EQUIPMENT DATA IN CONJUNCTION WITH FIRE PROTECTION SHOP DRAWINGS PRIOR TO CONSTRUCTION.

COOPERATION : COOPERATE WITH ALL OTHER CRAFTS. PERFORM WORK IN A TIMELY MANNER. DO NOT DELAY THE EXECUTION OF OTHER WORK. IF SYSTEMS INTERFERE OR CONFLICTS, THE ARCHITECT SHALL DECIDE WHICH EQUIPMENT TO RELOCATE REGARDLESS OF WHICH WAS FIRST INSTALLED.

ELECTRICAL EQUIPMENT : PROVIDE ELECTRICAL EQUIPMENT COMPATIBLE WITH THE CURRENT SHOWN ON ELECTRICAL DRAWINGS. VERIFY CURRENT CHARACTERISTICS BEFORE ORDERING EQUIPMENT. SHOULD THE CONTRACTOR WITH THE ARCHITECT'S/ENGINEER'S APPROVAL MAKE CHANGES IN ELECTRICAL EQUIPMENT FROM THOSE SHOWN ON THE ELECTRICAL DRAWINGS, HE SHALL BE RESPONSIBLE FOR THE COORDINATION AND COST OF REQUIRED CHANGES. PROVIDE FACTORY INSTALLED FUSES IN ALL EQUIPMENT REQUIRING FUSING FOR BRANCH CIRCUIT PROTECTION . VERIFY ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT AND VOLTAGES AVAILIBLE WITH ELECTRICAL SECTION PRIOR TO ORDERING ANY ELECTRICAL EQUIPMENT.

SLEEVES : FIT ALL PIPES PASSING THROUGH WALLS AND PARTITIONS WITH PIPE SLEEVES. PROVIDE STEEL SLEEVES AT EXTERIOR WALL PENETRATIONS. CLOSE OPENINGS AROUND PIPE SLEEVES AND PIPES USING 3M OR EQUAL FIRE RESISTANT SEALER MATERIAL.

FIRESTOPPING : WHEREVER PIPES PENETRATE FIRE RATED WALLS, FLOOR, PARTITIONS, ETC., THE METHOD OF FIRESTOPPING SHALL BE BY APPROVED UL LISTED THROUGH-PENETRATION ASSEMBLY. FIRESTOPPING SHALL BE IN STRICT ACCORDANCE WITH THE LOCAL AUTHORITIES HAVING JURISDICTION, THE INTERNATIONAL BUILDING CODE, AND APPLICABLE NFPA CODES AND STANDARDS.

PROTECTION OF EQUIPMENT : DURING CONSTRUCTION ALL FIXTURES AND EQUIPMENT SHALL BE PROTECTED FROM DAMAGE CAUSED BY WEATHER, MASONRY, PLASTER, PAINT AND JOB ACCIDENTS. WHEN INSTALLATION IS COMPLETE, CLEAN EQUIPMENT AND MAKE READY FOR PAINTING. ADJUST ALL FLUSH VALVES.

INSTALLATION OF FIXTURES AND EQUIPMENT : INSTALL FIXTURES AND EQUIPMENT TO PROVIDE NORMAL SERVICE ACCESS TO ALL COMPONENTS. PROVIDE SUFFICIENT SPACE FOR REMOVING COMPONENTS; INSTALL FIXTURES AND EQUIPMENT TO PROVIDE SUCH CLEARANCE. INSTALL FIXTURES AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. IF MANUFACTURER'S INSTRUCTIONS CONFLICT WITH CONTRACT DOCUMENTS, OBTAIN ARCHITECT'S DECISION BEFORE PROCEEDING. ALL FIXTURES AND EQUIPMENT SHALL BE FIRMLY FASTENED IN PLACE. ALL WALL HUNG FIXTURES SHALL BE INSTALLED ON A FLOOR MOUNTED FIXTURE SUPPORT WITH ANCHORING BOLTS IN ALL HOLES OF EACH LEG. BOLTS SHALL BE SIZED AS PER MANUFACTURER'S RECOMENDATION.

CUTTING AND PATCHING : SET SLEEVES AND INSERTS AND LAYOUT AND FORM OPENINGS IN WALLS, BEAMS, GIRDERS AND STRUCTURAL FLOORS IN THIS SECTION. FURNISH DETAILED LAYOUT DRAWINGS TO OTHER

TRADES IN ADVANCE OF THEIR WORK. CUT, PATCH AND REPAIR AS REQUIRED TO ACCOMPLISH WORK AND FINISH TO MATCH ADJACENT WORK. ARCHITECT'S APPROVAL REQUIRED BEFORE CUTTING ANY PART WHERE STRENGTH OR APPEARANCE OF FINISHED WORK IS INVOLVED. CUTTING, PATCHING AND REPAIRING OF WALLS, FLOORS, ETC.

CONNECTIONS TO EXISTING SYSTEMS : MAKE CONNECTIONS TO EXISTING SYSTEMS ONLY AT TIME AUTHORIZED, IN WRITING, BY OWNER. DO NOT TAKE SYSTEM OUT OF SERVICE DURING OCCUPIED WORKING HOURS UNLESS APPROVED BY BUILDING OWNER. DRAIN EXISTING SYSTEMS AND FILL, VENT, TEST, BALANCE AND PUT EXISTING SYSTEMS INTO OPERATION AFTER CONNECTIONS HAVE BEEN MADE. REPAIR EXISTING INSULATION AT POINTS OF CONNECTION TO EXISTING WORK.

PAINTING : REFINISH EQUIPMENT DAMAGED DURING CONSTRUCTION TO NEW CONDITION. PAINT ANY EXPOSED PIPE AS DIRECTED BY ARCHITECT, TO MATCH EXISTING FINISH. REFERENCE ARCHITECTURAL FOR PAINT, PRIME AND PREPARE SURFACE AS REQUIRED BY PRODUCT.

END OF SECTION 15410

SECTION 15420 : TESTING, CLEANING, AND ADJUSTING

GENERAL : ALL TESTS SHALL BE WITNESSED BY THE ARCHITECT IN ADDITION TO AUTHORITIES HAVING JURISDICTION. A MINIMUM OF 48 HOUR NOTICE IS REQUIRED PRIOR TO PERFORMANCE OF TEST. AFTER SYSTEM HAVE BEEN INSTALLED, TEST, BALANCE AND ADJUST SYSTEM FOR PROPER OPERATION, FLOW RATES,PRESSURES AND TEMPERATURES. CORRECT ANY NOISE AND/OR VIBARTION CONDITIONS. PERFORM ALL TESTS AS REQUIRED BY LOCAL CODES. CONTRACTOR SHALL FURNISH TESTING EQUIPMENT. KEEP A RECORD OF ALL TESTS INDICATING DATES OF TESTS, THOSE PERSONS WITNESSING TESTS AND RESULTS OF TESTS. IF LOCAL CODES ARE MORE STRINGENT, LOCAL CODES SHALL GOVERN.

SANITARY SYSTEMS : TEST PIPING BY STOPPING LOWER OUTLETS AND FILLING WITH WATER TO 10' HYDROSTATIC STOP LEAKS AND REPEAT UNTIL WEATERTIGHT. ALL JOINTS SHALL BE EXPOSED THROUGHOUT TEST. PROVIDE "BALL TEST" ON ALL PIPING 3" AND LARGER WITH BALL 1/2" SMALLER THAN PIPE DIAMETER. PROVIDE VISUAL INSPECTION OF ALL BUILDING DRAIN PIPING BELOW VISUAL INSPECTION SHALL BE BY MEANS OF A VIDEO CAMERA ROUTED THROUGH THE DRAIN SYSTEM. DRAIN PIPING, THE VISUAL INSPECTION SHALL INCLUDE THE EXISTING DRAIN PIPING FORM THE POINT OF CONNECTION, DOWNSTREAM TO THE POINT OF CONNECTION TO THE PUBLIC UTILITY. A VIDEO TAPE AND FINDINGS OF THE VISUAL INSPECTION SHALL BE PROVIDED TO THE OWNER WITH THE CLOSE-OUT DOCUMENTS. THE PLUMBING CONTRACTOR SHALL PROVIDE PERSONNEL AND EQUIPMENT REQUIRED FOR THE VISUAL INSPECTION.

DOMESTIC WATER PIPING : ON COMPLETION OF ROUGHING-IN, CAP ALL OUTLETS, MAKE CONNECTIONS WITH HOUSE SUPPLY LINE, AND PUT UNDER FULL WATER PRESSURE. TEST BY APPLYING ADDITIONAL PRESSURE (BY TEMPORARY PUMP OR COMPRESSED AIR CONNECTION) TO TOTAL HYDROSTATIC PRESSURE 1-1/2 TIMES STREET PRESSURE BUT NOT LESS THAN 150 PSIG FOR NOT LESS THAN 4 HOURS. IMMEDIATELY AND COMPLETELY STOP ALL LEAKS AND RETEST UNTIL SYSTEM IS WATERTIGHT. AFTER TESTING, LEAVE GENERAL PRESSURE ON UNTIL READY TO INSTALL FIXTURE (EXCEPT WHEN NECESSARY TO DRAIN TO AVOID FREEZING DURING CONSTRUCTION). AFTER COMPLETION OF ALL TESTS, REPAIRS AND INSTALLATION OF FIXTURES, FLUSH ALL DOMESTIC HOT AND COLD WATER PIPING WITH WATER TO REMOVE ALL SEDIMENT SCALE AND UNTIL WATER RUNS CLEAR, THEN DISINFECT. DISINFECT PIPING WITH HYPO-CHLORITE SOLUTION OF CHLORINE OR COMPRESSED CHLORINE GAS APPLIED THROUGH ON APPROVED CHLORINATOR. OPERATOR ALL VALVES AND FAUCETS SEVERAL TIMES TO INSURE THE CHLORINE REACHES ALL PARTS OF THE SYSTEM. FEED WATER AND CHLORINATION AGENT INTO THE SYSTEM AT RATES THAT WILL PROVIDE A RESIDUAL CHLORINE CONTENTS OF NOT LESS THAN 50 PPM AFTER A RETENTION PERIOD OF 6 HOURS AND 10 PPM AFTER A RETENTION PERIOD OF 24 HOURS. UPON COMPLETION OF TREATMENT, FLUSH TREATED WATER FROM EACH SYSTEM UNTIL THE WATER SUPPLY IS SATISFACTORY TO THE PUBLIC HEALTH AUTHORITY HAVING JURISDICTION. PROVIDE ARCHITECT A CERTIFICATE OF COMPLIANCE FROM THE LOCAL HEALTH DEPARTMENT. CLEAN AIR AERATORS, HOSE SPRAYS, FLUSH VALVES, ETC. AND ADJUST TO PROPER FLOW RATES.

FIRE PROTECTION PIPING TEST : TEST IN ACCORDANCE WITH NFPA PAMPHLETS 130 AND 101. ARCHITECTS, OWNER'S, UNDERWRITERS AND LOCAL FIRE MARSHALL SHALL WITNESS TEST. PROVIDE CERTIFICATE OF INSPECTION TO THE ARCHITECT/ENGINEER INCLUDING THE NAME OF THOSE WITNESSING THE TEST. ON COMPLETION OF ROUGHING-IN AND BEFORE CONNECTION TO EXISTING PIPING, CAP ALL OUTLETS, MAKE CONNECTIONS WITH HOUSE SUPPLY LINE, AND PUT UNDER FULL WATER PRESSURE. TEST BY APPLYING ADDITIONAL PRESSURE, BY TEMPORARY PUMP PRESSURE 1 1/2 TIMES STREET PRESSURE, BUT NOT LESS THAN 200 PSIG FOR A PERIOD OF NOT LESS THAN FOUR (4) IMMEDIATELY AND COMPLETELY STOP ALL LEAKS. RETEST WHEN SYSTEM IS WATERTIGHT. AFTER TESTING LEAVE GENERAL PRESSURE ON UNTIL READY TO INSTALL SPRINKLER HEADS AND FIRE DEPARTMENT VALVES, ETC. EXCEPT WHEN NECESSARY TO DRAIN TO AVOID FREEZING DURING CONSTRUCTION.

COMPLETION OF TEST : UPON COMPLETION OF ALL TESTING, CONTRACTOR SHALL PROVIDE TO THE ARCHITECT COPIES OF TEST RESULTS AND INCLUDE A LISTING OF ALL PERSONNEL WITNESS TO THE TESTS.

END OF SECTION 15420

SECTION 15450 -MATERIALS AND METHODS

GENERAL : INSTALL PIPING, SUPPORTS, HANGERS, VALVES,FOR ALL PIPING SYSTEM PER THIS SECTION. CONTRACTOR TO MEET FEDERAL LEAD FREE ACT WITH ALL WETTED DOMESTIC FITTINGS, VALVES, FAUCETS, AND ANCILLARY ITEMS.

SANITARY- WASTE AND VENT SYSTEM : CONNECT TO EXISTING SANITARY AND VENT PIPING AS SHOWN ON DRAWINGS. CONTRACTOR SHALL CONFIRM EXACT LOCATION, SIZE INVERT, AND DIRECTION OF FLOW OF EXISTING PIPING PRIOR TO INSTALLING ANY NEW PIPING. SANITARY WASTE AND VENT PIPING:ALL WASTE AND VENT PIPING SHALL NO-HUB CAST IRON WITH CISPI 301 FITTINGS AND COUPLINGS. SLOPE PIPING AND PROVIDE CLEANOUTS PER MINIMUM CODE REQUIREMENTS.

DOMESTIC WATER SYSTEM : INSTALL PIPING AS SHOWN ON DRAWINGS. CAP PIPING FOR FUTURE CONNECTION AS SHOWN ON DRAWINGS. DOMESTIC WATER PIPING: COPPER TUBE: ASTM C-88, COPPER WATER TUBE, TYPE "L" HARD TEMPER. FITTINGS, CAST BRASS OR WROUGHT COPPER WATER TUBE FITTINGS, ASNI B-16.18 OR B-16.22. JOINTS ON COPPER TUBE: PROPERLY CLEANED FLUXED AND SOLDERED AS RECOMMENDED BY MANUFACTURER, USING 95-5 SOLDER AND 100% LEAD FREE FLUX.

VALVES : BALL VALVES: ALL SHUT-OFF VALVES SHALL BE BALL VALVES WITH BRONZE BODY, CHROME PLATED BRASS BALL, AND TEFLON SEAT AND PACKING; OR MILWAUKEE "BUTTERBALL" WITH BRONZE BODY, STAINLESS STEEL DISK, AND VITON DISK SEAT. PROVIDE SHUT-OFF VALVES AND UNIONS AT ALL EQUIPMENT CONNECTIONS (STORAGE TYPE WATER HEATERS, PUMPS, ETC.) LEAD FREE VALVES REQUIRED.

INSTALLATION OF VALVES : PROVIDE SHUT-OFF VALVES WHERE SHOWN ON DRAWINGS. LOCATE VALVES TO ISOLATE EACH ITEM TO FACILITATE MAINTENANCE AND/OR REMOVAL. LOCATE VALVES IN PIPING CONNECTIONS TO WATER HEATERS, SO HEADS AND TUBE BUNDLES CAN BE REMOVED WITHOUT DISCONNECTING EQUIPMENT.

PIPE INSTALLATION : ALL PIPING SHALL BE SECURELY ANCHORED IN PLACE TO THE BUILDING STRUCTURE . CUT PIPE SQUARE AND REAM FULL SIZE AFTER CUTTING CLEAN PIPE. MAKE THREADED JOINTS WITH TEFLON TAPE. DO NOT SPRING PIPE INTO PLACE. INSTALL PIPING TO ALLOW FOR EXPANSION. MAKE CONNECTIONS TO ALL EQUIPMENT TO ELIMINATE UNDUE STAINS IN PIPING AND EQUIPMENT . FURNISH NECESSARY FITTINGS AND BENDS TO AVOID SPRING OF PIPES DURING ASSEMBLY. INSTALL CHROME PLATED FLOOR AND CEILINGS PLATES ON PIPE PASSING THROUGH FINISHED SURFACES IN FINISHED MAKE PIPE SIZE REDUCTIONS USING REDUCING FITTINGS. BUSHINGS ARE PROHIBITED. INSTALL 3/4" BALL WITH HOSE ADAPTERS AT LOW POINTS OF WATER PIPING AND AT BASES OF ALL RISERS OR WHERE SHOWN PROVIDE LARGE DRAINS. MAKE CONNECTIONS TO EQUIPMENT USING SCREWED UNIONS IN SIZES 2" AND SMALLER AND FLANGED UNIONS IN SIZES 2-1/2" AND LARGER. INSTALL UNIONS IN ALL PIPING CONNECTIONS TO EACH PIECE OF EQUIPMENT. WHEREVER FERROUS PIPES OR TANKS AND COPPER TUBING CONNECT, PROVIDE DIELECTRIC INSULATION UNIONS OR COUPLINGS, EQUAL TO EPCO. RUN PIPING CONCEALED. EXCEPT WHERE SPECIFICALLY SHOWN OR SPECIFIED EXPOSED. PLUMB ALL VERTICAL LINES AND RUN MAINS PARALLEL TO BUILDING WALLS UNLESS SPECIFICALLY SHOWN OTHERWISE. LAY UNDERGROUND PRESSURE PIPING SO TOP OF PIPE IS AT LEAST 18" BELOW FINISHED GRADE. PROVIDE DEEPER BURY IF REQUIRED BY LOCAL REGULATIONS. SUPPORT ALL UNDERGROUND PIPING SOLIDLY ALONG BODY OF PIPE. STRONGLY SUSPEND OTHER PIPING FROM BUILDING CONTACT WITH SLAG FILL. WHERE NECESSARY TO PASS THROUGH SLAG, PROTECT PIPING WITH NO LESS THAN TWO (2) WRAPPINGS OF POLYVINYL CHLORIDE TAPE OR EQUIVALENT PROTECTION APPROVED BY ARCHITECT.

END OF SECTIN 15450

SECTION 15480 - INSULATION

GENERAL : INSULATE ALL HOT AND COLD WATER PIPING REPAIR EXISTING INSULATION AT POINTS OF CONNECTION TO EXISTING WORK. "EXPOSED" ARE "CONCEALED". INSULATE ALL ITEMS SUBJECT TO SEATING OR LOSS OF HEAT. ALL INSULATION SHALL BE INSTALLED BY LICENSED APPLICATOR AND APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. COMPLY WITH NFPA 90A. PIPE HANGER SADDLES ARE SPECIFIED IN SECTION 15450 "MATERIALS AND METHODS". USE INSULATION AND ADHESIVES WITH UNDERWRITER'S LABORATORIES FLAME SPREAD RATING NOT OVER 25 WITHOUT EVIDENCE OF CONTINUED PROGRESSIVE COMBUSTION, AND SMOKE DEVELOPED RATING NOT EXCEEDING; 50 FOR PIPE COVERING LOCATED IN AIR DUCTS, PLENUM OR CASING. 150 FOR ALL OTHER PIPE, AND EQUIPMENT INSULATION.

FIBERGLASS PIPE COVERING : SNAP-ON GLASS FIBER INSULATION MINIMUM DENSITY 5#/CU.FT. MAXIMUM THERMAL CONDUCTIVITY AT 75EF MEAN TEMPERATURE 0.25 BTU/ 9HR) (SQ.FT.) WITH UL RATED VINYL COATED AND EMBOSSED VAPOR BARRIER LAMINATE OF ALUMINUM FOIL AND KRAFT REINFORCED WITH GLASS FIBER YARNS (ASJ). FOR ALL LINES SEAL JACKET WITH SELF SEALING LAP AND STAPLE WITH OUTWARD CLINCHING STAPLES 3" O.C. BUTT ADJOINING SECTIONS OF INSULATION TIGHTLY AND SEAL WITH SELF-ADHEARING BUTT JOINT STRIPS. COVER FITTINGS TO THICKNESS OF ADJACENT COVERING WITH FACTORY PRE-MOLDED FITTING COVERS. CONCEALED TEES MAY BE INSULATED WITH FIELD FABRICATED TEE COVERS CONSISTING OF STRAIGHT PIPE COVERING ON RUN OF TEE WITH NOTCH AT BRANCH TOGETHER WITH PIPE COVERING ON BRANCH CONTOURED TO FIT NOTCH. GLASS FAB SHALL BE APPLIED AROUND MAIN, LAPPING CONTOURED JOINT AT BRANCH BY 1" MINIMUM FOR THE FULL CIRCUMFERENCE OF JOINT. COVER ENTIRE FITTING COVERING WITH VINYL-ACRYLIC MASTIC OVER GLASS FAB, 1/8" THICK (DRY) COAT.

PIPING INSULATION : COLD WATER PIPING, INTERIOR, ABOVE GRADE: "FIBERGLASS PIPE COVERING", THICK. PIPE INSULATION IN PARTITIONS AND CHASES MAY BE 1/2" THICK" ARMA-CELL" OR APPROVED EQUAL HOT WATER PIPING, INTERIOR, ABOVE GRADE: "FIBERGLASS PIPE COVERING", 1" THICKNESS. PIPE INSULATION IN PARTITIONS AND CHASES MAY BE 1/2" THICK" ARMA-CELL" OR APPROVED EQUAL. EXPOSED P-TRAPS, STOPS AND SUPPLIES ON HANDICAPPED LAVATORIES, AND SINKS. EQUAL TO "PRO-WRAP" BY MCGUIRE.

END OF SECTION 15480

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PLUMBING - SPECIFICATIONS

P001

2/22/2017 10:21:39 PM

PLUMBING AND FIRE PROTECTION SPECIFICATIONS (CONT.)

SECTION 15490 -FIXTURES AND EQUIPMENT

GENERAL : PLUMBING FIXTURES AND EQUIPMENT SHALL BE INSTALLED PER THIS SECTION.
INSTALLATION OF FIXTURES AND EQUIPMENT: EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. SEE DETAILS FOR MOUNTING INSTRUCTION AND ACCESSORIES. STOPS AND SUPPLIES ARE TO BE INSTALLED WITH CHROME PLATED BRASS NIPPLES PENETRATING WALL WITH DEEP ESCUTCHEON AT WALL. COMPRESSION TYPE STOPS ARE NOT ACCEPTABLE. ALL FLOOR MOUNTED FIXTURES
SUPPORTS ARE TO BE SECURELY ATTACHED TO THE FLOOR USING ANCHORS IN ALL MOUNTING HOLE OF SIZE AS RECOMMENDED BY MANUFACTURER. PROVIDE WOOD BACKING IN WALL AT ALL FLUSH VALVE BRACKETS AND FAUCET SUPPORTS AND ANCHOR BRACKETS AND SUPPORTS TO WOOD BACKING WITH ANCHORS OF SUFFICIENT LENGTH TO PENETRATE BACKING.

CLEANOUTS : FURNISH AND INSTALL CLEANOUTS WHERE INDICATED ON DRAWINGS AND AT ALL 90-DEGREE BENDS, ANGLE, OVER TERMINALS AND NOT OVER 50 FEET APART ON STRAIGHT RUNS. ALL CLEANOUTS TO HAVE BRONZE COUNTERSUNK TAPERED SLOTTED PLUGS WHICH SHALL BE STANDARD OF PIPING SYSTEM USED. FLUSH-WITH-FLOOR CLEANOUT ACCESS COVERS ACCESS COVERS SHALL HAVE POLISHED SATIN FINISH. ALL CLEANOUTS SHALL BE FULL SIZE OF PIPE, PIPING LARGER THAN 6" SHALL HAVE MINIMUM 6" CLEANOUT COVERS. EXPOSED CLEANOUTS: CAST BRASS PLUG TYPE, J.R. SMITH 4470. WALL TYPE CLEANOUT PLUG AND ACCESS COVERS, J.R. SMITH #4472. CLEANOUT PLUG MUST BE WITHIN 1" OF FINISH WALL AND MUST BE TAPPED FOR ACCESS COVER. INSTALL CLEANOUTS 12" ABOVE FINISH FLOOR ON SINKS. LOCATE CLEANOUTS TO CLEAR BASEBOARD AT FLOOR.

STOPS AND SUPPLIES :ALL SUPPLY ANGLE STOP VALVES SHALL BE CHROME PLATED BRASS BODY, WHEEL HANDLE, AND ESCUTCHEON PLATE. PROVIDE ANGLE STOP VALVES AT CW AND HW SUPPLY CONNECTIONS AT ALL FIXTURES (INSTANTANEOUS TYPE WATER HEATERS, SINKS AND
LAVATORIES, ETC.) WITH FLEXIBLE RISERS; AND AT ALL APPLIANCES (DISHWASHERS, ICE MAKERS, COFFEE MAKERS, VENDING MACHINES, ETC.)

PLUMBING FIXTURES AND EQUIPMENT : UNLESS OTHERWISE SPECIFIED, ALL FIXTURES COMPLETE AS CATALOGUED, COMMERCIAL GRADE, WHITE COLOR, EXPOSED METAL TRIM CHROMIUM PLATED. FIXTURES AND BRASS SHALL BE SECURELY ANCHORED. CARRIERS SHALL BE SECURELY ANCHORED TO FLOOR WITH LUG BOLTS IN ALL HOLES AS RECOMMENDED BY THE MANUFACTURER. SEAL FIXTURES
AT WALL AND FLOOR WITH WHITE SILICONE SEALANT. SEAL COUNTERTOP FIXTURES WITH CLEAR SILICONE SEALANT. MOUNT AL FIXTURES AT STANDARD MOUNTING HEIGHT UNLESS OTHERWISE NOTED. COORDINATE WITH ARCHITECTURAL DRAWINGS. FURNISH SINKS AND LAVATORIES WITH CORRECT NUMBER OF DRILLING REQUIRED BY THE FAUCET AND ACCESSORIES. COCK HOLE COVERS ARE NOT ACCEPTABLE ALL ITEMS COMPLETE AS LISTED IN PLUMBING FIXTURE SCHEDULE.

SUBSTITUTE MANUFACTURERS : ALL SUBSTITUTES SHALL BE SUBMITTED IN WRITING FOR APPROVAL BY ARCHITECT.

END OF SECTION 15490

SECTION 15500 - FIRE PROTECTION

PART 1-GENERAL:

SCOPE : THE ENTIRE BUILDING IS PRESENTLY SPRINKLED WITH A WET PIPE SPRINKLER SYSTEM. CONTRACTOR SHALL VERIFY EXACT REQUIREMENTS WITH LOCAL AUTHORITY AND PROVIDE ADDITIONAL CONTROL VALVE(S), FLOW SWITCHE(S), PIPING, ETC. RENOVATED AREA TO BE FULLY SPRINKLED IN ACCORDANCE WITH NFPA 130 AND LOCAL AUTHORITY.

SHOP DRAWINGS : PREPARE HYDRAULIC CALCULATIONS AND A WORKING PIPE SHOP DRAWING LAYOUT SHOWING PRECISE LOCATIONS, ELEVATIONS AND SIZES OF SPRINKLER PIPING. IN HARD CEILINGS, HEADS SHALL WHEN SUBMITTED TO ARCHITECT, DRAWINGS AND CALCULATIONS SHALL BEAR THE STAMPS OF NICET III DESIGNER AND LOCAL FIRE MARSHAL'S OFFICE AND ANY AUTHORITIES HAVING JURISDICTION. HYDRAULIC CALCULATIONS SHALL BE MADE TO THE STREET. HYDRAULIC CALCULATION ARE TO BE PREPARED. UTILIZING A CURRENT WATER FLOW TEST (MAXIMUM 90 CALCULATION AND MAKE ANY MODIFICATIONS TO THE
SYSTEM AS MAY BE REQUIRED.)

CODES : PROVIDE ALL EQUIPMENT, PIPING, VALVES, SWITCHES AND COMPLETE OPERATING SYSTEM TO STANDARD OF NFPA 13, 14, 20, 101, INTERNATIONAL FIRE CODE, AND IN COMPLIANCE WITH LOCAL, COUNTY AND STATE AUTHORITIES, OWNER'S UNDERWRITER, AND THESE SPECIFICATIONS.

PRODUCTS : REFER TO ARCHITECTURAL DRAWINGS FOR AREA(S) TO BE SPRINKLED. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR WIRING ALARMS OF SUPERVISORY SWITCHES AND RELATED EQUIPMENT. ALL WIRING OTHER THAN POWER WIRING, SUPERVISORY SWITCHES, FLOW
SWITCHES AND ALARM WIRING SHALL BE THERE RESPONSIBILITY OF THIS SECTION. WIRING SHALL CONFORM TO THE REQUIREMENTS OF THE ELECTRICAL SECTION . PROVIDE ONE (1) WALL MOUNTED SPRINKLER HEAD CABINET WITH 12 HEADS OF EACH TYPE UTILIZED TOGETHER WITH REQUIRED WRENCHES.

FIRE PROTECTION PIPING :
ABOVE CEILING - BLAZEMASTER OR EXPOSED BELOW BUILDING/ IN LIVING SPACE. PROVIDE GALVANIZED FITTINGS ON GALVANIZED PIPE. SCHEDULE 10 LIGHT WALL PIPE ASTM A-135 WITH JOINTS OF ROLL GROOVING USING FITTINGS OF MALLEABLE IRON CONFORMING TO ASTM A-536 IN CLASS 125, CLASS 150 OR CLASS 300 AS APPLICABLE. JOINTS ON GALVANIZED OR BLACK STEEL SCREWED PIPING. MAKE UP WITH TEFLON TAPE APPLIED TO MALE THREADS ONLY.

SPRINKLER HEADS : SPRINKLER HEADS SHALL BE UL APPROVED GLASS, CONCEALED, QUICK RESPONE TYPE WITH A RATING OF 155 DEG. F UNLESS NOTED FOR HIGH TEMPERATURE WHICH SHALL BE 212 DEG. F. VIKING MODEL VK 460 SERIES FOR STANDARD SPRAY AND VK 630 SERIES FOR EXTENDED COVERAGE WITH FACTORY PAINTED COVER PLATE IN COLOR SELECTED BY ARCHITECT FOR CONCEALED APPLICATIONS. INSTALL IN CENTER OF LIFT-OUT CEILING TILES. PROVIDE PROTECTING GUARDS
FOR ALL UPRIGHT SPRINKLERS IN MECHANICAL ROOMS, ELECTRICAL ROOMS, TELEPHONE EQUIPMENT ROOMS AND OTHER LOCATION WITHOUT CEILINGS. PROVIDE DEFLECTOR SHIELDS AS MAY BE REQUIRED WHEN SPRINKLER HEADS ARE INSTALLED OVER ELECTRICAL SWITCHGEAR. ARCHITECT SHALL APPROVE SPRINKLER HEAD TYPE.

SUBSTITUTE MANUFACTURERS : WHERE GLOBE IS LISTED FOR SPRINKLER HEADS, VIKING, CENTRAL, TYCO, AND RELIABLE MAY BE SUBSTITUTED.
WHERE VIKING IS LISTED FOR MISCELLANEOUS SPRINKLER EQUIPMENT, STAR, CENTRAL, TYCO, VICTAULIC, AND RELIABLE MAY BE SUBSTITUTED.

INSTALLATION :
INSTALLATION OF SPRINKLER HEADS SHALL BE MADE USING FACTORY RECOMMENDED AND APPROVED WRENCHES ONLY. INSTALL SPRINKLER HEADS IN THE CENTER OF LIFT-OUT CEILING TILES. ALL PIPING 2" AND SMALLER, ALL PIPING THAT IS THREADED OR CUT GROOVED SHALL BE SCHEDULED 40. PIPING 2-1/2" AND LARGER NOT CUT GROOVED OR THREADED MAY BE SCHEDULE 10 ONLY IF ROLL GROOVING IS USED AS OTHER JOINING METHOD. PROVIDE DRAIN PIPING TO APPROVED LOCATIONS FOR ALL LOW POINTS. PROVIDE INSPECTORS TEST PIPING TO THE BUILDING EXTERIOR AT APPROVED LOCATIONS. INSTALL USING TRADESMEN REGULARLY ENGAGED IN FIRE PROTECTION PIPING. FIRE PROTECTION PIPING MAY BE FACTORY CUT TO LENGTHS, BUT FIELD
MODIFICATIONS WILL BE REQUIRED TO COORDINATE WITH OTHER TRADES. ALL PIPING AND DROPS TO BE FIRMLY ATTACHED AND ANCHORED TO STRUCTURE. ALL DROPS TO FIRE DEPARTMENT VALVES, FIRE HOSE CABINETS AND ARE TO BE ANCHORED TO STRUCTURE AT TOP AND BOTTOM OF DROP TO PREVENT MOVEMENT OF PIPING IN WALL AND PROVIDE A SECURELY SUPPORTED MOUNTED CONTRACTOR SHALL VERIFY EXACT LOCATION OF SPRINKLER HEAD WITH ARCHITECT.

PERIODIC INSPECTION :
MAKE TWO (2) PERIODIC INSPECTIONS WITHIN THE FIRST YEAR AFTER COMPLETION AND ACCEPTANCE OF THE FURNISH A COMPLETE WRITTEN REPORT OF EACH INSPECTION TO THE ARCHITECT AND THE UNDERWRITER.

END OF SECTION 15500

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MARK	DATE	DESCRIPTION

PLUMBING - SPECIFICATIONS CONTINUED

P002

2/22/2017 10:21:39 PM

PLUMBING LEGEND

SOIL OR WASTE LINE	
VENT LINE	
COLD WATER LINE	
HOT WATER LINE	
BALL VALVE	
UNION	
PIPE TURNING UP	
PIPE TURNING DOWN	
MFD	MECH. FLOOR DRAIN W/TRAP PRIMER

P-#	PLUMBING FIXTURE NUMBER
AFF	ABOVE FINISH FLOOR
CO	CLEAN OUT
ABV	ABOVE
WS	WASTE STACK
VS	VENT STACK
WH	WALL HYDRANT
BFF	BELOW FINISH FLOOR
VSTR	VENT STACK THRU ROOF
TP	TRAP PRIMER
BFF	BELOW FINISH FLOOR
SD	SLOT DRAIN

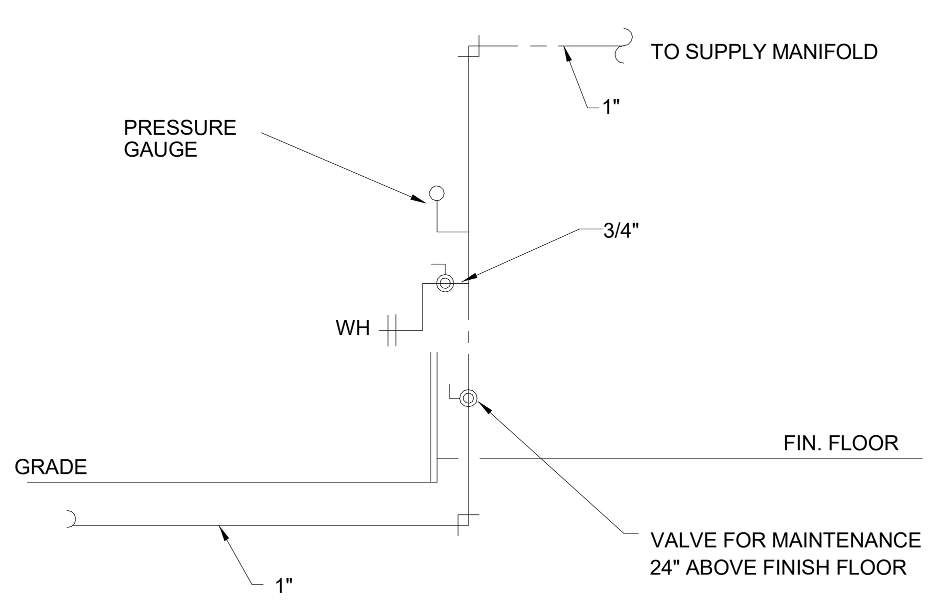
GENERAL NOTES

1. LOCATIONS OF UTILITIES SHOWN ON PLANS ARE APPROXIMATE, VERIFY WITH LOCAL UTILITY PRIOR TO BIDDING.
2. CONTRACTOR SHALL VERIFY EXACT LOCATION, SIZE AND ELEVATION OF ALL EXISTING SERVICES PRIOR TO INSTALLING ANY NEW PIPE.
3. ALL OUTSIDE CLEANOUTS SHALL BE BROUGHT TO GRADE AND EMBEDDED IN 18"x18"x6" THICK CONCRETE PAD. (J.R. SMITH 4258 OR EQUAL.)
4. WHEREVER DISSIMILAR METALS ARE CONNECTED ON WATER LINES, A DIELECTRIC UNION SHALL BE USED.
5. ALL HORIZONTAL WATER AND VENT PIPING SHALL BE RUN ABOVE CEILING ON PLAN WHICH SHOWN UNLESS ONLESS OTHERWISE NOTED.
6. ALL HORIZONTAL SANITARY PIPING IS RUN BELOW FLOOR ON PLAN WHICH SHOWN UNLESS OTHERWISE NOTED.
7. ALL WATER PIPING BELOW SLAB ON GRADE SHALL BE BENT UP AT ENDS SO THAT NO JOINTS OCCUR BELOW FLOOR.
8. COORDINATE ALL PIPE ROUTING TO AVOID CONFLICTS WITH STRUCTURAL, MECHANICAL, AND ELECTRICAL FEATURES OF BUILDING.
9. ALL WALL HYDRANTS AND HOSE BIBBS SHALL BE MOUNTED 24" ABOVE FINISH GRADE OR FINISH FLOOR UNLESS OTHERWISE NOTED.
10. ALL WATER PIPING INSTALLED IN EXTERIOR WALLS SHALL BE LOCATED ON THE INTERIOR SIDE OF THE EXTERIOR WALL INSULATION.
11. NO VENT THRU ROOF IS TO BE LOCATED WITHIN 10 FEET OF ANY BUILDING AIR INTAKES, PER CODE. COORDINATE WITH MECHANICAL AND GENERAL CONTRACTORS.
12. DOMESTIC WATER PIPING LOCATED ABOVE THE CEILING, SHALL BE INSTALLED BELOW CEILING INSTULATION.
13. CONTRACTOR SHALL COORDINATE MECHANICAL FLOOR DRAIN LOCATIONS WITH MECHANICAL EQUIPMENT PRIOR INSTALLATION.

PLUMBING FIXTURE CONNECTION SCHEDULE

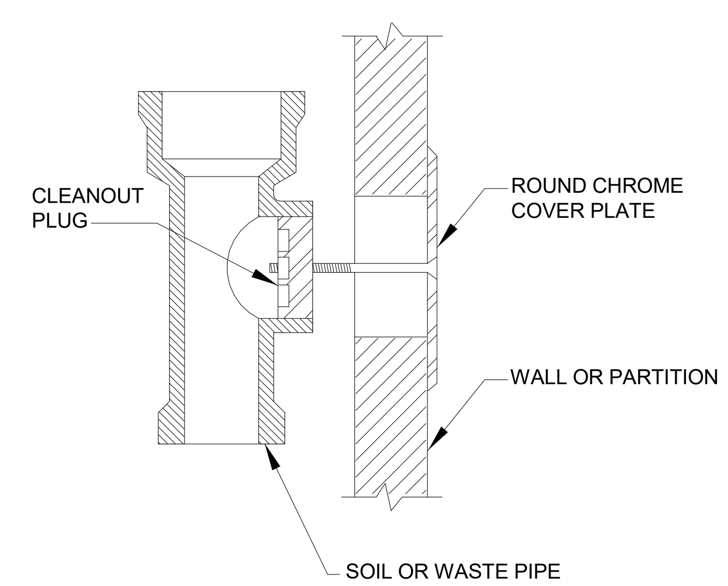
MARK	FIXTURE	WASTE	CW	HW	REMARKS
P-1	WATER CLOSET	4"	1"	-	FLOOR MTD. TANK TYPE. REFERENCE ARCH.
P-2	LAVATORY	1 1/4"	1/2"	1/2"	COUNTER TOP; REFERENCE ARCH.
P-3	SINK	1 1/2"	1/2"	1/2"	DOUBLE BOWL; S/S, REFERENCE ARCH.
P-4	REF. ICE MAKER BOX	-	1/2"	-	PROVIDE SIOUX CHIEF OX BOX WITH ICE MAKER CONNECTION
P-5	DISHWASHER	1"	-	1/2"	PROVIDE OX BOX SUPPLY BOX WITH SHOCK ARRESTORS AND LEVER SUPPLIES.
P-6	SHOWER	2"	1/2"	1/2"	PROVIDE COMPLETE, REFERENCE ARCH.
P-7	WASHING MACHINE BOX	2"	1/2"	1/2"	PROVIDE GUY GREY WASHING MACHINE BOX.
PM-1	PIPING MANIFOLD	-	1"	1"	PROVIDE SIOX MANIBLOC MANIFOLD WITH 8 - 1/2" CONNECTIONS.
WH-1	WATER HEATER	-	1"	1"	PROVIDE A.O. SMITH FHPT - 50 - HEAT PUMP 40 GALLON WATER HEATER COMPLETE WITH HEAT LOOP, EXPANSION TANK AMTROL ST-5 SEE DETAILS.
DP-1	CIRCULATION PUMP DOMESTIC WATER	-	-	-	DAVEY 14-45, 0.86KW, 1201/1/60 PUMP . COMPLETE WITH PRESSURE TANK, AND 1" QUICK CONNECT MANIFOLD.
FP-1	FIRE SUPPLY PUMP	-	-	-	GENERAL XPS-11-3/4HP, 115/1/60. PROVIDE WITH CONTROL PANEL. SEE DETAIL.
WP-1	WASTE WATER PUMP	-	-	-	LIBERTY PUMP SBX35 - 1/3HP BOX PUMP COMPLETE. SEE DETAIL.
PWT-1	WATER TANK 1000GL DOMESTIC WATER	-	-	-	CUSTOM NORWESCO 1000 RECTANGULAR TANK 44045, PROVIDE GREEN COLOR TO REDUCE BACTERIA GROWTH, SOLAR DECATHLON WHITE COLOR.
PWT-2	WATER TANK 300GL DOMESTIC WATER	-	-	-	CUSTOM NORWESCO 300 RECTANGULAR TANK 44030, PROVIDE GREEN COLOR TO REDUCE BACTERIA GROWTH, SOLAR DECATHLON WHITE COLOR
WT-1	WASTE WATER TANK 400GL WASTE	-	-	-	CUSTOM ROTO-MOLD 500 RECTANGULAR TANK 4'-5'-42" HIGH, PROVIDE BLACK COLOR FINAL INSTALL, SOLAR DECATHLON WHITE COLOR.

NOTE:
CONTRACTOR TO MEET FEDERAL LEAD FREE ACT WITH ALL WETTED DOMESTIC FITTINGS, VALVES, FAUCETS, AND ANCILLARY ITEMS.



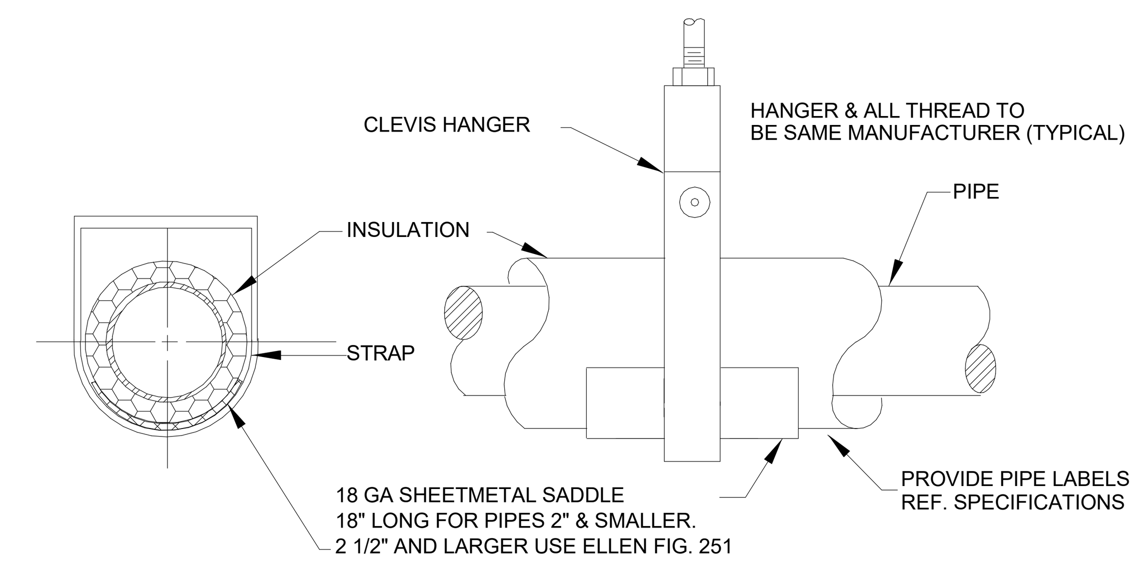
DETAIL OF WATER ENTRY

NO SCALE



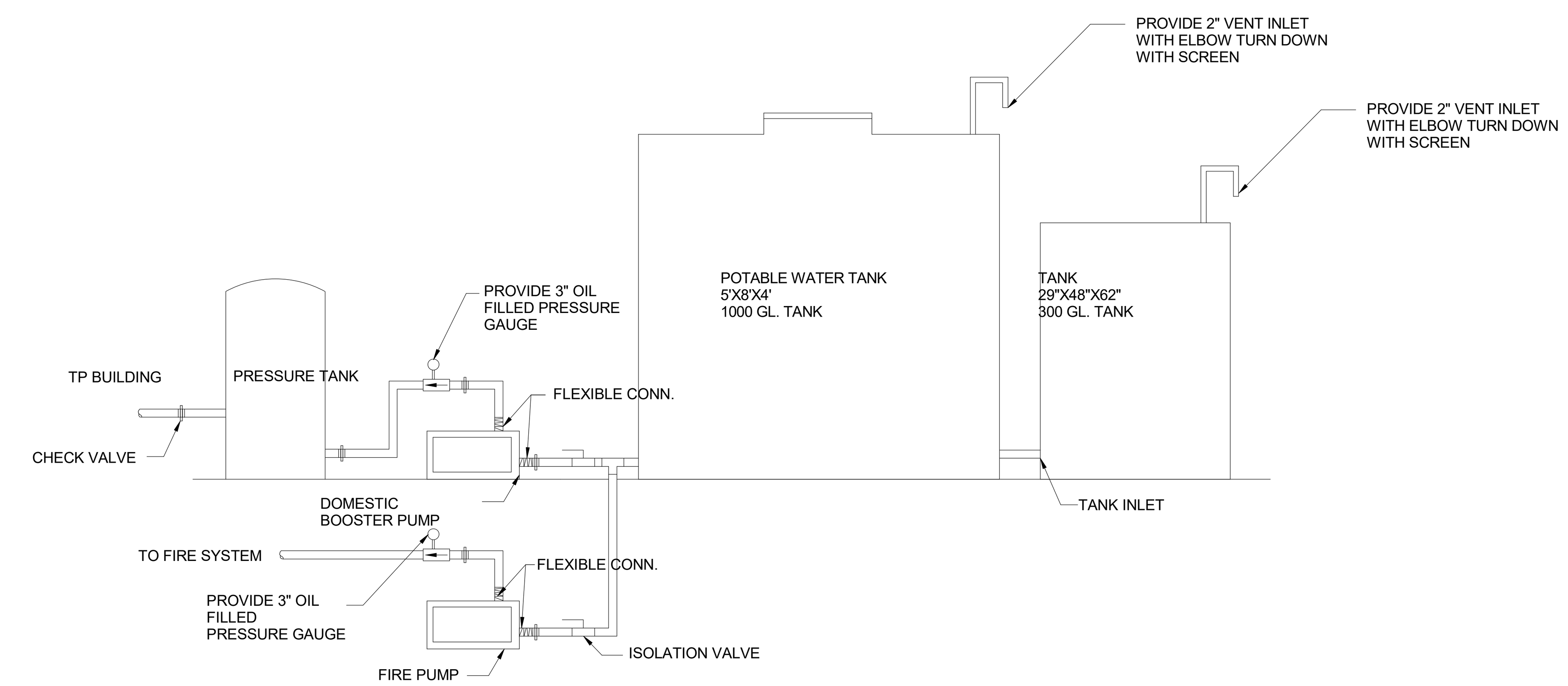
WALL CLEANOUT

NO SCALE



SUSPENDED PIPE SUPPORT

NO SCALE



DOMESTIC WATER AND FIRE PUMP DETAIL

NO SCALE

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PLUMBING - SCHEDULES, NOTES, LEGENDS, & DETAILS

P003

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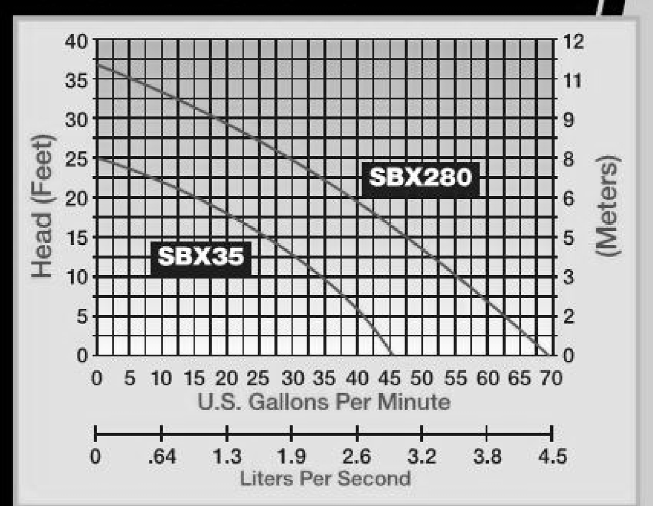
SumpBox by Liberty Pumps

With debris filter technology

Performance Curve



SBX-Series Specifications

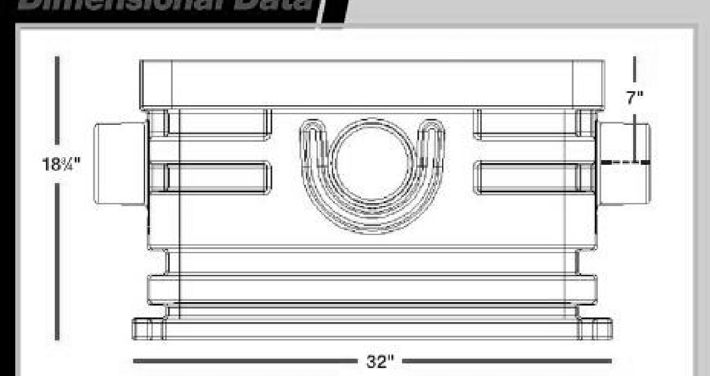
Basin Material	Rotationally molded polyethylene
Covers and Filter Tray	Structural Foam
Total basin capacity	41 US Gallons
Capacity per pump cycle	9.3 US Gallons
Filter tray capacity	15 US Quarts
Filter tray flow rates	up to 125 GPM
Straining	3/16"
Height	18-3/4"
Width	24"
Length	32"
Inlets	(3) integrally molded. 4"
Access Cover	Sealed, hand tighten fasteners
Pump Cover	Sealed, bolted stainless fasteners
Discharge	1-1/2" female NPT
Vent	(Optional) 3" grommet seal, uninstalled
Pump options	S35 1/3hp, 115V 280 1/2hp, 115V
Anti-float collar	Yes
Alarm	(Optional) ALM-2 with vertical float
Construction cover	Clear, disposable

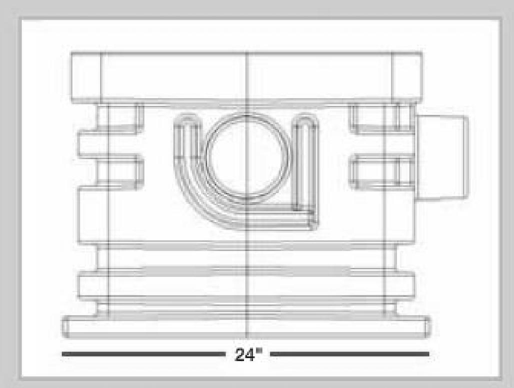
Pre-Assembled Systems

Model	Pump	HP	Volts	ALM-2 Alarm	GPM@10'	Maximum (shut-Off) Head	Weight
SBX35-Series							
SBX35	S35	1/3	115V	No	35	25'	50
SBX35A	S35	1/3	115V	Yes	35	25'	50
SBX280-Series High-Output							
SBX280	280	1/2	115V	No	56	37'	67
SBX280A	280	1/2	115V	Yes	56	37'	67

See S35 or 280-Series literature for complete pump specifications.

Dimensional Data





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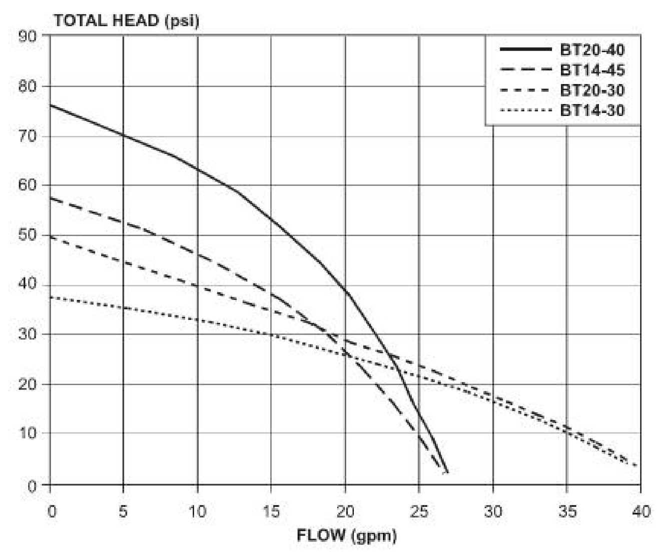
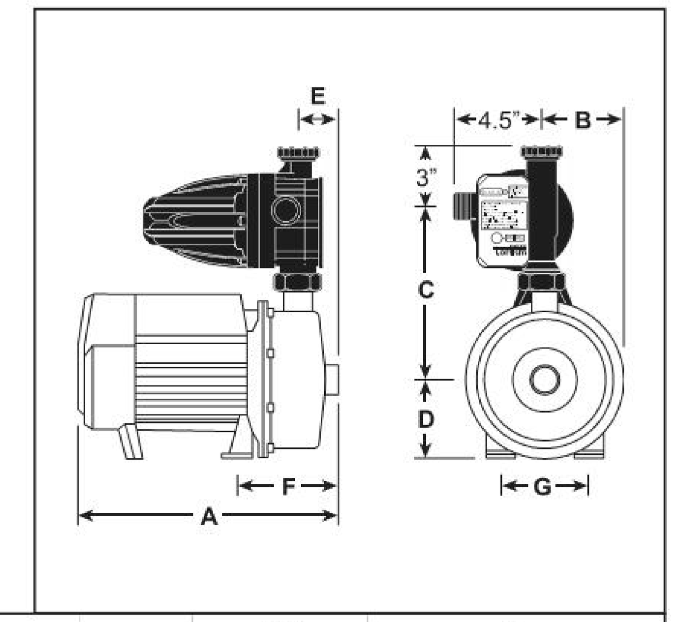
1 WASTE PUMP AND TANK DETAIL

TECHNICAL SPECIFICATIONS

HYDRAULIC PERFORMANCE



DIMENSIONS



Model	A	B	C	D	E	F	Inlet	Outlet	Net Weight (lbs)	G Hole Diameter@	Centres
BT14-30	13.8″	4.33″	12.2″	4.33″	2.4″	5.7″	1¼″ F	1″ M	26.5	0.35″	4.72″
BT20-30	17.4″	3.35″	8″	3.54″	5.31″	8.85″	1¼″ F	1″ M	27.3	0.27″	3.93″
BT14-45	15.35″	3.35″	8″	3.54″	2.95″	6.81″	1″ F	1″ M	25.4	0.27″	3.93″
BT20-40	17.4″	3.35″	8″	3.54″	5.31″	8.85″	1″ F	1″ M	27.3	0.27″	3.93″

All dimensions in inches unless otherwise stated.

PERFORMANCE TABLE

	Discharge Pressure in psi	Capacity in US Gallons per Minute Suction Lift in Feet 0	5	10	15	20	25	Maximum Pressure in psi
BT14-30 Small homes to weekenders	25	21.0	18.0	15.0	12.0	8.0	3.0	38
	30	15.0	11.5	7.0	2.0	-	-	
BT20-30 Large homes	30	19.0	18.0	16.0	13.0	11.0	10.0	50
	40	10.0	9.0	6.0	2.0	1.0	-	
BT14-45 Small homes with double storeys or long runs of plumbing	30	18.0	18.0	16.5	16.0	14.0	13.0	58
	40	13.0	12.5	11.5	9.5	8.0	7.0	
	50	7.0	5.5	3.0	1.0	-	-	
BT20-40 Average to large homes with double storeys or long runs of plumbing	40	19.5	18.5	17.5	17.0	16.5	16.0	76
	50	16.0	15.5	14.5	13.5	12.5	11.5	
	60	12.0	10.5	9.5	8.0	6.0	4.0	

To make selecting your Davey pressure booster system easier, Davey provide a guide to the number of taps that can be operated at the same time without substantially reducing performance, assuming an average delivery of three gallons per minute per tap and a 5ft suction lift.

2 DOMESTIC BOOSTER PUMP

BOOSTER SYSTEMS WITH TORRIUM®
Models: BT14-30, BT20-30, BT14-45 & BT20-40

DEPEND ON DAVEY

WATER PRODUCTS

BT STAINLESS STEEL BOOSTER SYSTEMS

PRODUCT DESCRIPTION

Economical, compact, booster systems driven by quiet, efficient, stainless steel pumps.

The Torrium® control module replaces the conventional pressure switch and provides constant pressure without cycling. This feature also provides loss of prime protection and over-temperature cut out. The Torrium® includes an built-in accumulator.

APPLICATIONS

Ideal for boosting water pressure in :-
- Homes where the incoming municipal water supply pressure is inadequate
- From underground or surface water supplies
- Automatic water transfer
- Applications where pressure "cycling" must be avoided or where the pump may have interrupted water supply
- Domestic & light industrial irrigation

DESIGN FEATURES

PUMP
Single impeller or multistage centrifugal.

Closed vane impellers.

Unique floating impeller neckrings.

High grade stainless steel pump shaft, impeller/s, diffuser/s & casing.

Rotatable discharge through 360°.

Mechanical shaft seal.

Oring casing seals.

Torrium® control with adaptive cut-in pressure.

MOTOR
Davey designed.

2 pole, 3420rpm, 60Hz.

TEFC with IP55 enclosure.

Class F insulation.

Permanently split capacitor design.

Heavy duty cast aluminum lantern bracket and drive end endshield.

Protected against both high operating temperatures and high current by a built-in automatically resetting thermal overload.

BENEFITS

- Manufactured from highest quality corrosion resistant materials - meets ANSI/NSF61 and CSA-C/US.
- Torrium® offers even pressure without cycling
- Adaptive cut-in pressure on Torrium® allows for installation on higher static head installations
- Pump protected from damage caused by dry running
- TEFC motor is corrosion resistant and excludes dust and dirt
- Motor and pump designed for frequent starts
- Discharge may be rotated through 360°, plus 12", high quality, 304 stainless steel braided discharge hose included - reduces noise transmission through household plumbing and makes plumbing easier
- Quick and easy installation
- Low maintenance
- Easy to service if required
- Compact design
- Unique floating neckrings provide outstanding efficiency without compromising grit handling
- Low pressure loss through removable in-built check valve in Torrium®

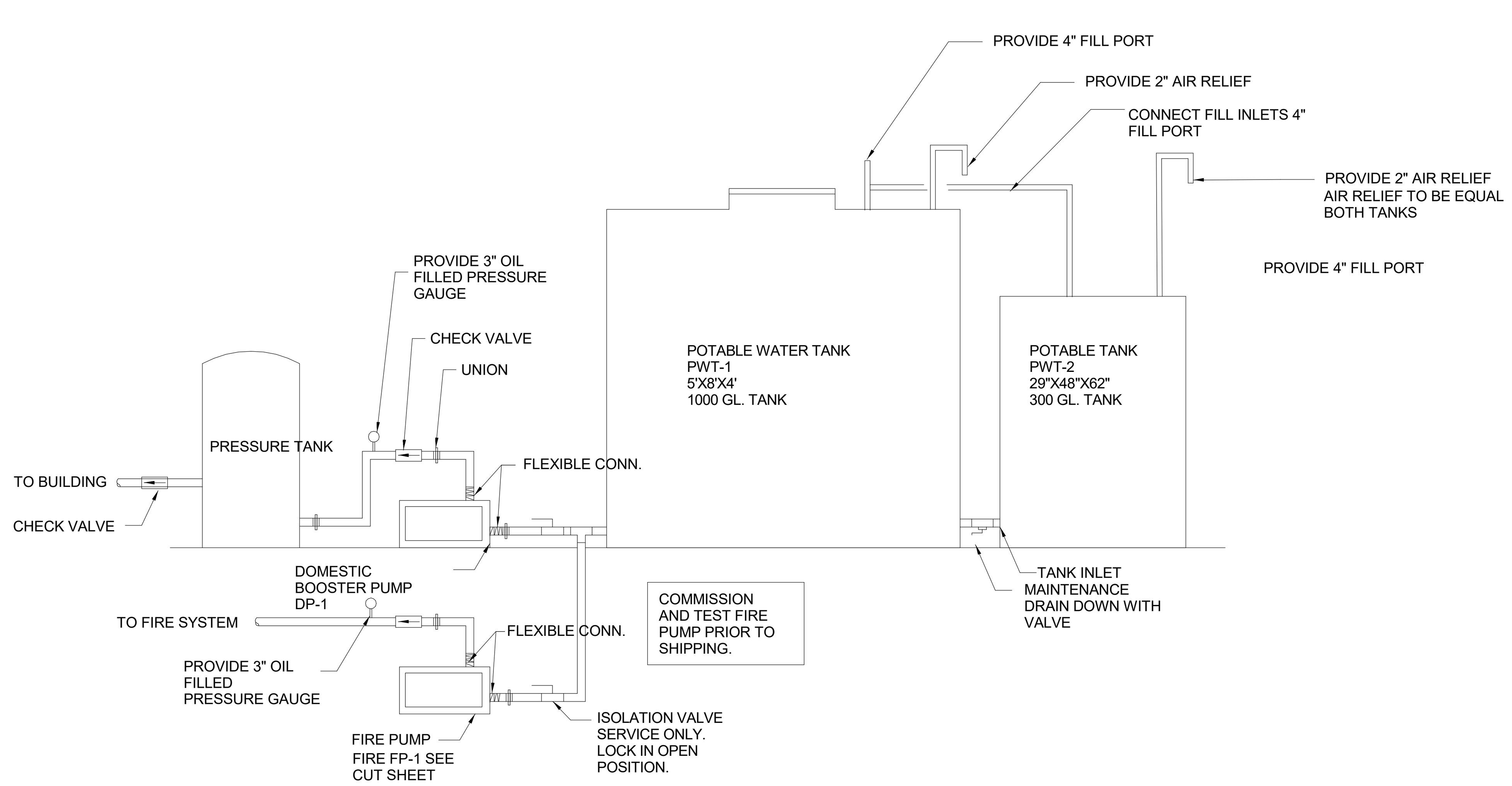
OPERATING LIMITS

Capacities to	30 gpm
Max. total head to	76 psi
Cut-in pressure	Adapts to 80% of last shut-off head pressure
Min. setting	15 psi
Max. setting	80 psi
Cut-out flow rate	½ GPM
Max. liquid temperate	150° F
Max. ambient temperature	120° F
Max. suction lift	25′
Inlet size	1¼″ F
Outlet size	1″ F
Max. pump casing pressure	116 psi
Max. system pressure	100 psi

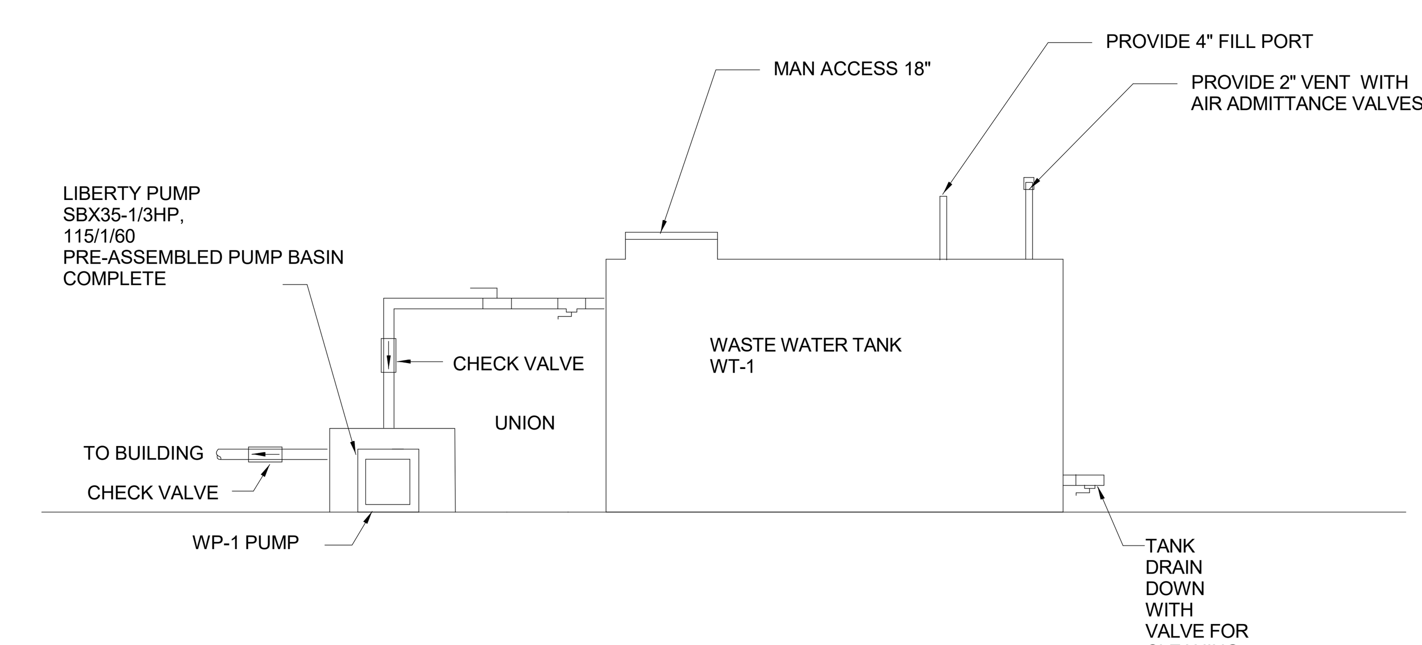
H/O & MFG SCORESBY Quality System

Quality Endorsed Company ISO 9001 Lic 10636

3 DOMESTIC BOOSTER PUMP



4 DOMESTIC WATER AND FIRE PUMP DETAIL



5 WASTE PUMP AND TANK DETAIL

surviv(AL) house

TEAM ALABAMA
The University of Alabama at Birmingham
Calhoun Community College
The University of Alabama at Huntsville

Team
Address
Address
Phone
Fax
e-mail

Consultants

WILLIAMS BLACKSTOCK ARCHITECTS
STRUCTURAL DESIGN GROUP
EDMONDS ENGINEERING
MACKNALLY LAND DESIGN

Client

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PLUMBING - DETAILS

P004

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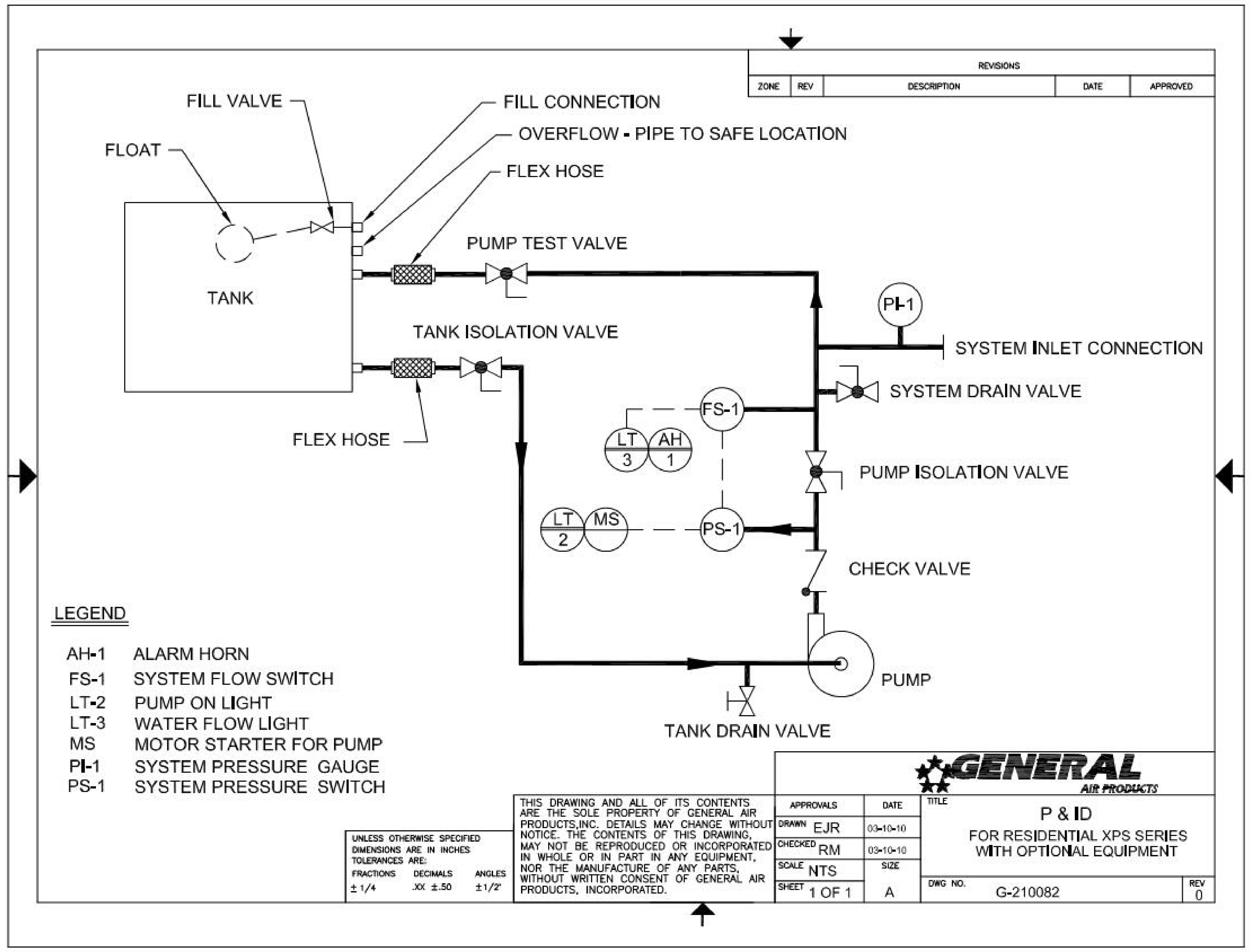
Section 8 - Process & Instrumentation Diagrams (P&ID)

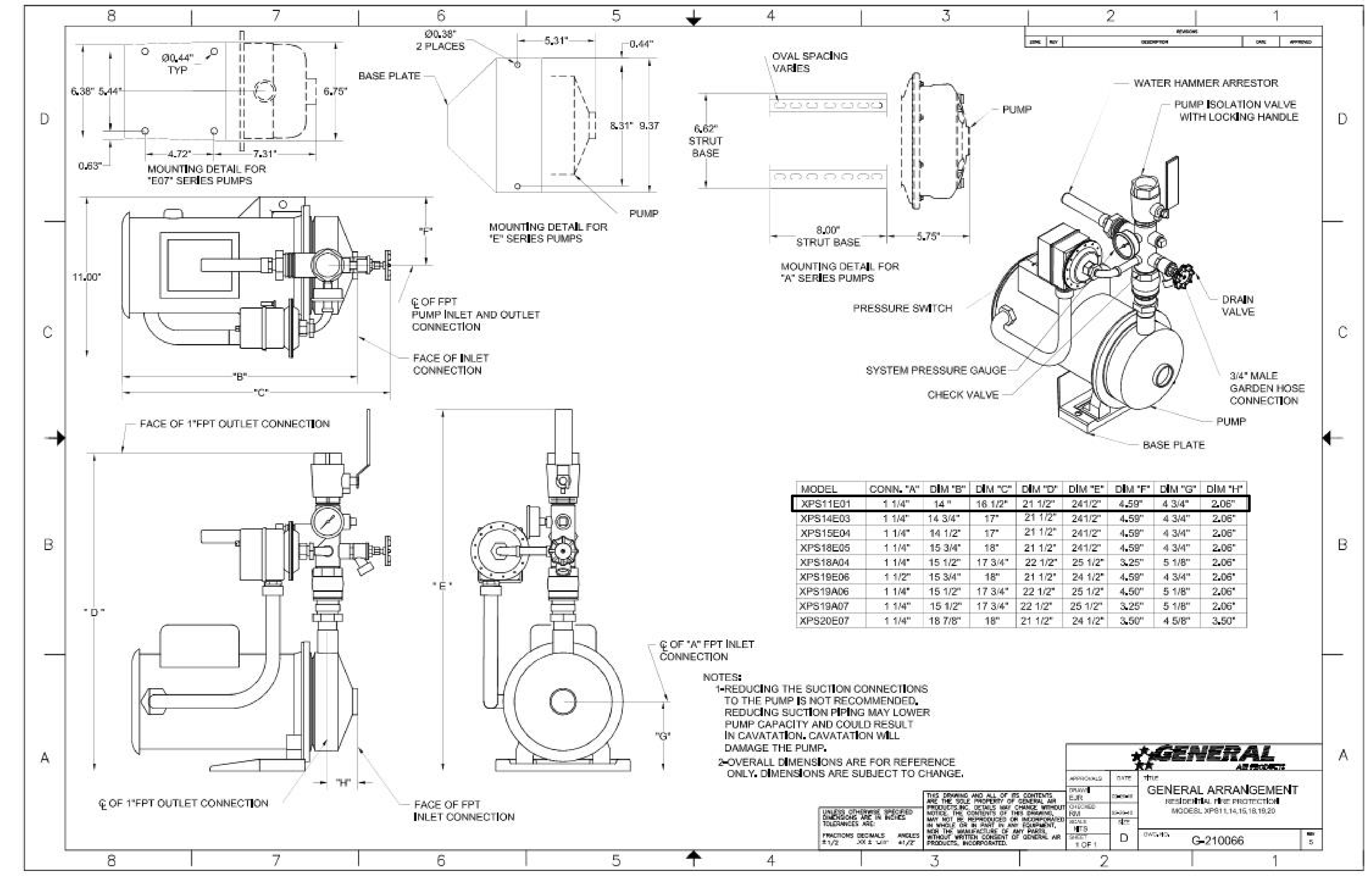
8.2 P&ID for Standard Econo RFP System with Optional Equipment



1 FIRE PUMP DETAIL

Section 9 - Master Electrical & GA Drawing

9.2 General Arrangement Drawing for Standard Econo RFP System



MODEL	CONN. "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"	DIM "F"	DIM "G"	DIM "H"
XPS11E01	1 1/4"	14 "	16 1/2"	21 1/2"	241/2"	4.59"	4 3/4"	2.06"
XPS14E03	1 1/4"	14 3/4"	17"	21 1/2"	241/2"	4.59"	4 3/4"	2.06"
XPS15E04	1 1/4"	14 1/2"	17"	21 1/2"	241/2"	4.59"	4 3/4"	2.06"
XPS18E05	1 1/4"	15 3/4"	18"	21 1/2"	241/2"	4.59"	4 3/4"	2.06"
XPS18A04	1 1/4"	15 1/2"	17 3/4"	22 1/2"	25 1/2"	3.25"	5 1/8"	2.06"
XPS19E06	1 1/2"	15 3/4"	18"	21 1/2"	24 1/2"	4.59"	4 3/4"	2.06"
XPS19A06	1 1/4"	15 1/2"	17 3/4"	22 1/2"	25 1/2"	4.50"	5 1/8"	2.06"
XPS19A07	1 1/4"	15 1/2"	17 3/4"	22 1/2"	25 1/2"	3.25"	5 1/8"	2.06"
XPS20E07	1 1/4"	18 7/8"	18"	21 1/2"	24 1/2"	3.50"	4 5/8"	3.50"

2 FIRE PUMP DETAIL

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P005

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Water System Piping

Piping, fittings, and valves should be installed according to the installation drawing (Figure 4). If the indoor installation area is subject to freezing temperatures, the water piping must be properly insulated.

Water supply pressure should be 50-60 PSIG and not exceed the maximum 80 PSIG. If the supply line pressure exceeds 80 PSIG, a pressure reducing valve (PRV) with a bypass should be installed in the cold water supply line. This should be placed on the supply to the entire house in order to maintain equal hot and cold water pressures.

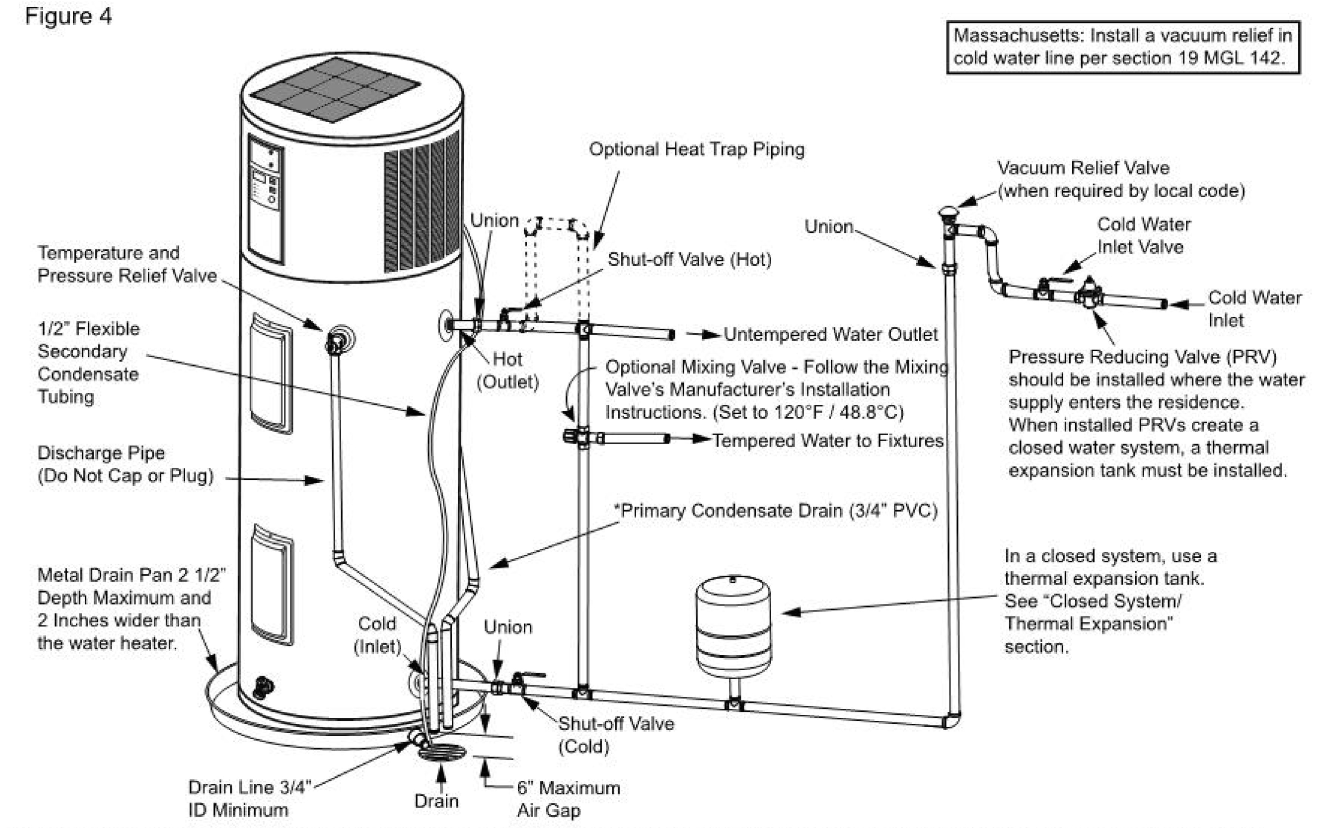
IMPORTANT:

- **Heat must not be applied to the water fittings on the heater as they may contain nonmetallic parts. If solder connections are used, solder the pipe to the adapter before attaching the adapter to the hot and cold water fittings.**
- Always use a good grade of joint compound or Teflon® tape and be certain that all fittings are tight. **IMPORTANT:** DO NOT over apply joint compound.

Piping Installation

1. Install the water piping and fittings as shown in Figure 4. Connect the cold water supply (3/4" NPT) to the fitting marked "Cold". Connect the hot water supply (3/4" NPT) to the fitting marked "Hot".
2. The installation of unions in both the hot and cold water supply lines are recommended for ease of removing the water heater for service or replacement.
3. Some local codes may require, and the manufacturer of this water heater recommends, installing a mixing valve or an anti-scald device in the domestic hot water line as shown in Figure 4. These valves reduce the point-of-use temperature of the hot water by mixing cold and hot water and are readily available. Contact a licensed plumber or the local plumbing authority for more information.
4. Some local codes may require, and the manufacturer of this water heater recommends, installing a pressure reducing valve (PRV) in the cold water inlet line where it enters the residence as shown in Figure 4.
5. If installing the water heater in a closed water system, install an expansion tank in the cold water line as specified under "Closed System/Thermal Expansion."
6. Install a shut off valve in the cold water inlet line. It should be located close to the water heater and be easily accessible. Know the location of this valve and how to shut off the water to the heater.
7. Install a discharge line from the temperature and pressure relief valve in the opening marked "T & P RELIEF VALVE". (see Figure 4 and the "Temperature and Pressure Relief Valve" section.)
8. After piping has been properly connected to the water heater, open the nearest hot water faucet. Then open the cold water shut off valve and allow the tank to completely fill with water. To purge the lines of any excess air and sediment, keep the hot water faucet open for 3 minutes after a constant flow of water is obtained. Close the faucet and check all connections for leaks.

Figure 4



* If an adequate drain is not available for the condensate drain lines then a condensate pump must be used. DO NOT discharge the condensate drain lines into the metal drain pan.

5

Please note the following:

- The system should be installed only with piping that is suitable for potable (drinkable) water such as copper, CPVC, PEX or polybutylene. This water heater must not be installed using iron piping or PVC water piping.
- Use only pumps, valves, or fittings that are compatible with potable water.
- Use only full flow ball or gate valves. The use of valves that may cause excessive restriction to water flow is not recommended.
- Use only 95/5 tin-antimony or other equivalent solder. Any lead based solder must not be used.
- Piping that has been treated with chromates, boiler seal, or other chemicals must not be used.
- Chemicals that may contaminate the potable water supply must not be added to the piping system.

Connecting the Condensate Pump Optional Overflow Shut Off Switch

1. Determine if you have a floor drain, if not a condensate pump will be required.
2. Turn off power to the electrical wiring for the water heater at the circuit breaker/fuse box.
3. Locate the white 18 AWG wire loop close to the drain connections (Figure 5).
4. Cut the loop and strip insulation off of the two ends.

Figure 5
Condensate Pump Wiring

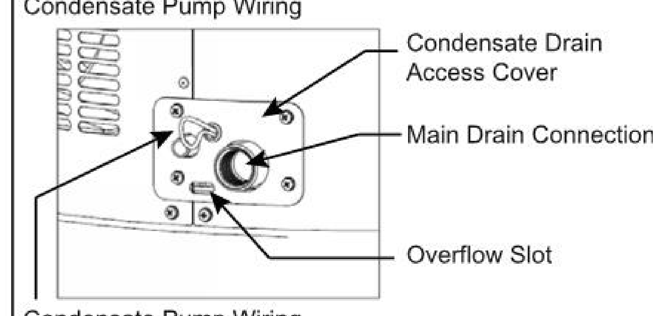
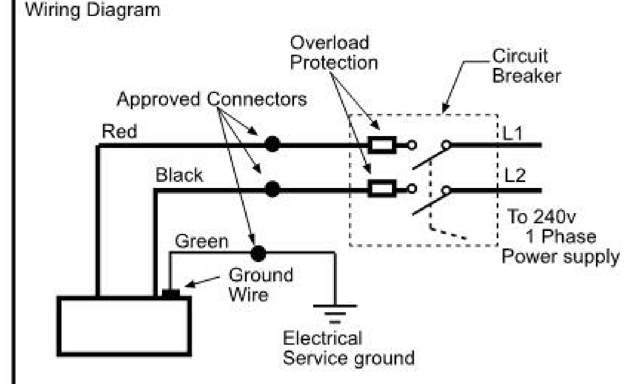


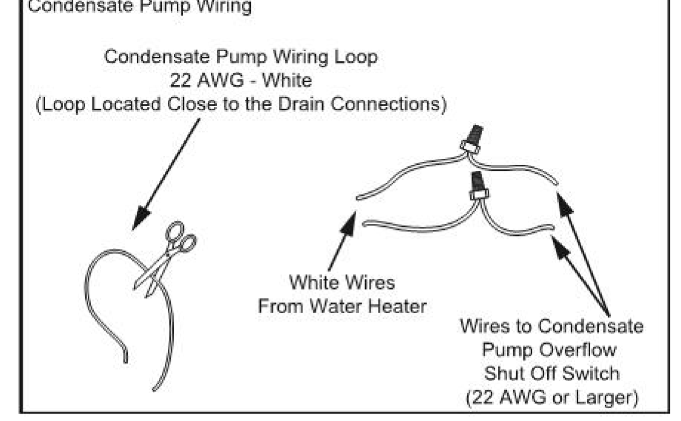
Figure 6
Wiring Diagram



6

5. Measure the distance from the condensate drain pan cover to the condensate pump, and cut two 18 AWG or larger wires to correct length and strip the insulation at both ends of each wire (Figure 7).
6. Remove the condensate drain pan cover by removing the four screws, pull these two wires through the grommet on the drain pan cover. Connect these two wires to the two wires on the water heater using wire nuts or other connectors. Reinstall the drain pan cover and keep the connection joint inside of the cover.
7. Connect the free ends of the two wires to the shut off switch on the condensate pump in accordance with the condensate pump manufacturers recommendations (Figure 7).
8. Turn on electrical power to the water heater.
9. Select the efficiency mode. After about 8 minutes (the user interface module will display "-", "--", "---" repetitively during this period), the heat pump will turn on if the ambient temperature and water temperature meet the heat pump requirement.
10. Test the operation of the shut off switch by unplugging the condensate pump and filling the condensate reservoir with water until the float switch opens the circuit.
11. The heat pump should turn off and the error code "EoF" will appear on the display screen.
12. Plug the condensate pump in and verify that the pump operates and pumps the water out of the condensate reservoir.
13. The error code on the display should clear and the heat pump should operate after 8 minutes.

Figure 7
Condensate Pump Wiring



Condensate Drain Line Installation

The condensate drain lines consist of one 3/4" PVC line as the primary condensate drain line and one 1/2" clear rubber tubing for the condensate over flow. These condensate lines are located on the upper right rear section of your water heater. The lines should terminate a maximum of six inches above an adequate drain. Do not discharge the condensate drain lines into the metal drain pan. If no floor drain is available or the drain is above the level of the condensate line, a condensate pump should be installed. These pumps are available from local distributors.

IMPORTANT: When making condensation connections to the primary connection DO NOT over tighten. These connections should be HAND TIGHTENED ONLY. Overtightening could crack or damage the condensate drain pan.

- Plastic pipe or tubing must be used to connect the condensate drain to a suitable drain or condensate pump.
- Condensate drain lines should be installed in conditioned areas only. Install approved insulation on the condensate drain lines to prevent condensation from forming on the outside of the drain lines. Condensation drain lines installed in areas that are subject to freezing temperatures should be wrapped with a nationally recognized/listed heat tape. Install per manufacturer's instructions.
- Do not connect condensate drain lines with other drain or discharge lines into a single (common) pipe or line. Each line (condensate drain line, temperature and pressure relief valve discharge pipe, etc) should be independently run to an adequate drain.
- Slope the condensate drain lines toward the inside floor drain or condensate pump.
- The condensate drain lines and connections to the drain piping must comply with all local codes.
- Use appropriate fittings, primer and glue to cement the condensate drain lines to the heat pump drain pan.
- If a condensate pump is installed it should shut off the heat pump in the event the condensate pump fails or the float switch in the pump activates. (See section on Condensate Pump Overflow Shut Off Switch in the Electrical Requirements section.)

Closed System/Thermal Expansion

⚠WARNING

Explosion Hazard

If the temperature and pressure relief valve is dripping or leaking, have a qualified person replace it.

Examples of a qualified person include: licensed plumbers, authorized electric company personnel, and authorized service personnel.

Do not plug valve.

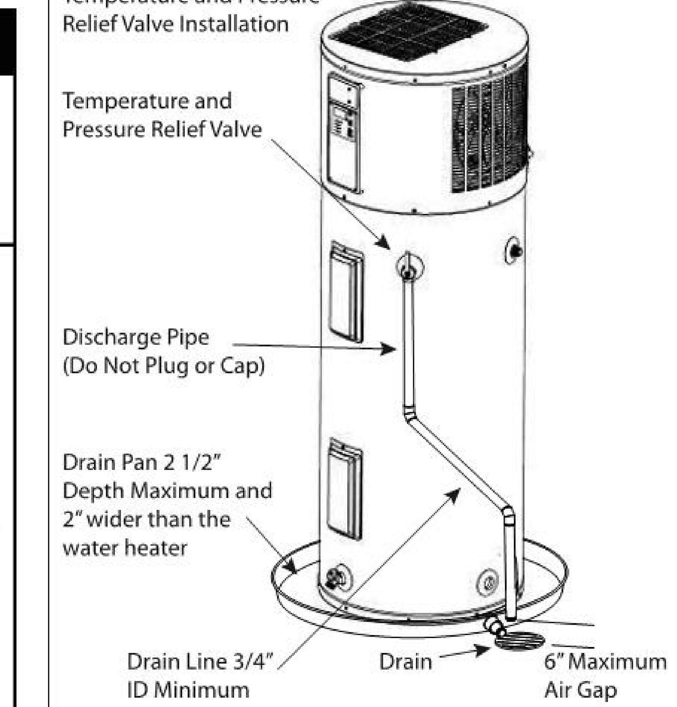
Do not remove valve.

Failure to follow these instructions can result in death or explosion.

Most public water systems in North America are required to prevent water flowing from points of use (residences, businesses, etc.) back into the supply system in order to maintain water quality. To accomplish this, back flow preventers such as check valves, are installed in the water line going to each point of use. Typically the back flow preventer will be installed at the water meter or inside a building where the supply line enters the building. This device allows water to flow into the residence but does not allow it to flow back into the water supply. This creates what is known as a "Closed System". As water is heated by the water heater, the water in the system attempts to expand, but has nowhere to go resulting in an increase in pressure. This increase in pressure in the system may cause the temperature-pressure relief valve to open to relieve the pressure. Water will drip from the temperature and pressure relief valve. Premature tank failure will result if this condition is not corrected. To prevent this condition, a properly-sized thermal expansion tank should be installed in the cold water supply to the water heater as shown in Figure 4. Failure to install a properly sized expansion tank in a closed system will void the warranty on the water heater in the event of tank failure. It is important to follow the thermal expansion tank manufacturers' installation instructions and to adjust the expansion tank pressure to match the water supply pressure. Contact a plumbing service agency or your retail supplier regarding the installation of a thermal expansion tank.

Temperature and Pressure Relief Valve

Figure 8
Temperature and Pressure Relief Valve Installation



7

1 WASTE HEATER DETAIL

2 WASTE HEATER DETAIL

3 WASTE HEATER DETAIL

surviv(AL) house

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The University of Alabama at Birmingham
Calhoun Community College
The University of Alabama at Huntsville

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e-mail

Consultants

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P006

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IMPORTANT: When making condensation connections to the primary connection DO NOT over tighten. These connections should be HAND TIGHTENED ONLY. Overtightening could crack or damage the condensate drain pan.

- Plastic pipe or tubing must be used to connect the condensate drain to a suitable drain or condensate pump.
- Condensate drain lines should be installed in conditioned areas only. Install approved insulation on the condensate drain lines to prevent condensation from forming on the outside of the drain lines. Condensation drain lines installed in areas that are subject to freezing temperatures should be wrapped with a nationally recognized/listed heat tape. Install per manufacturer's instructions.
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Closed System/Thermal Expansion

⚠WARNING

Explosion Hazard

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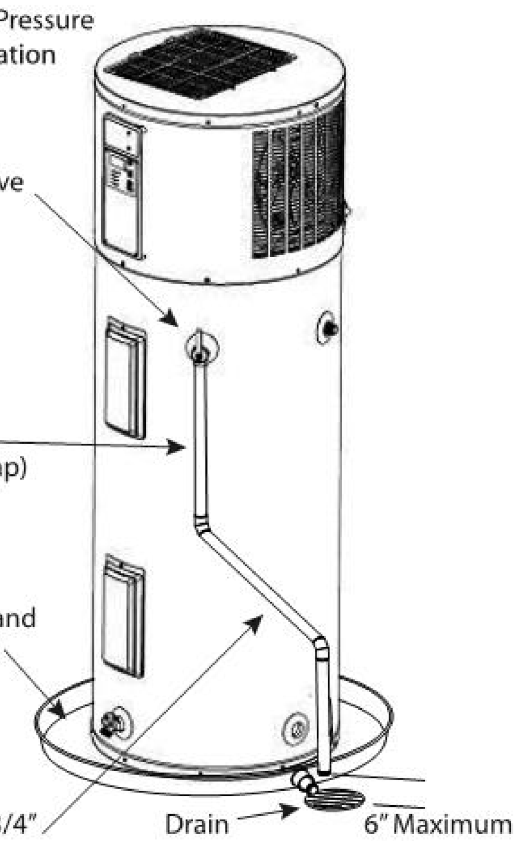
Temperature and Pressure Relief Valve

Figure 8
Temperature and Pressure Relief Valve Installation



1 WATER HEATER DETAIL

A.O.Smith® | Residential Electric Water Heater

VOLTEX® HYBRID ELECTRIC HEAT PUMP WATER HEATER

The Voltex Hybrid Electric heat pump water heater from A. O. Smith is the most cost effective energy-efficient option available for consumers who want to save money on their utility bills. Voltex can reduce water heating costs up to 66% and provide payback in 2-3 years. With annual savings of $419 or more, there is no better way to go green than Voltex.

HOW DO THEY WORK?

Absorb ambient heat from the surrounding air to heat water using a compressor and "Environmentally-Friendly" R134a refrigerant

- Self-contained heat pump unit is integrated into the top of the tank
- Multiple operating modes to maximize efficiency and performance

QUALIFIES FOR MANY STATE AND LOCAL UTILITY REBATES - CHECK WWW.DSIREUSA.ORG

INCREASED ENERGY EFFICIENCY

- Improved efficiency designed in, to ensure available hot water at the lowest possible cost. Up to a 2.75 Energy Factor (EF) Rating conserves energy and meets ENERGY STAR® qualifications

CHOICE OF OPERATING MODES

- Select from Efficiency, Hybrid, or Electric modes to match heating requirements to environmental conditions.
- Hybrid mode automatically adjusts between compressor and element, depending upon heat requirements.
- Vacation mode reduces operating costs and provides freeze protection during extended absence

BACKUP ELECTRIC ELEMENTS

- Long-lasting backup heating elements help heat water according to environmental conditions, demand, and the chosen operating mode

COREGARD™ ANODE ROD

- Our anode rods have a stainless steel core that extends the life of the anode rod allowing superior tank protection far longer than standard anode rods

DRY FIRE PROTECTION

- Control system checks to ensure the tank is full of water during start up to prevent dry firing the heating elements

ELECTRONIC USER INTERFACE

- User-friendly electronic interface allows easy control of temperature setting, operating mode, and communicates diagnostics
- Easy to read temperature display (see back) shows temperature in °F or °C
- Advanced diagnostics convey error messages for service purposes. The last four error messages are saved in the control system memory.

OTHER FEATURES

- Ideal for basements or garage installations; the compressor transfers heat to the water while dehumidifying and cooling the ambient air
- Washable air filter is easily removed for routine cleaning

SIX YEAR LIMITED WARRANTY

- For complete information, consult written warranty or go to hotwater.com

AHRI CERTIFIED® www.ahridirectory.org

2 WATER HEATER DETAIL

surviv(AL) house

TEAM ALABAMA
The University of Alabama at Birmingham
Calhoun Community College
The University of Alabama at Huntsville

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PLUMBING - DETAILS

P007

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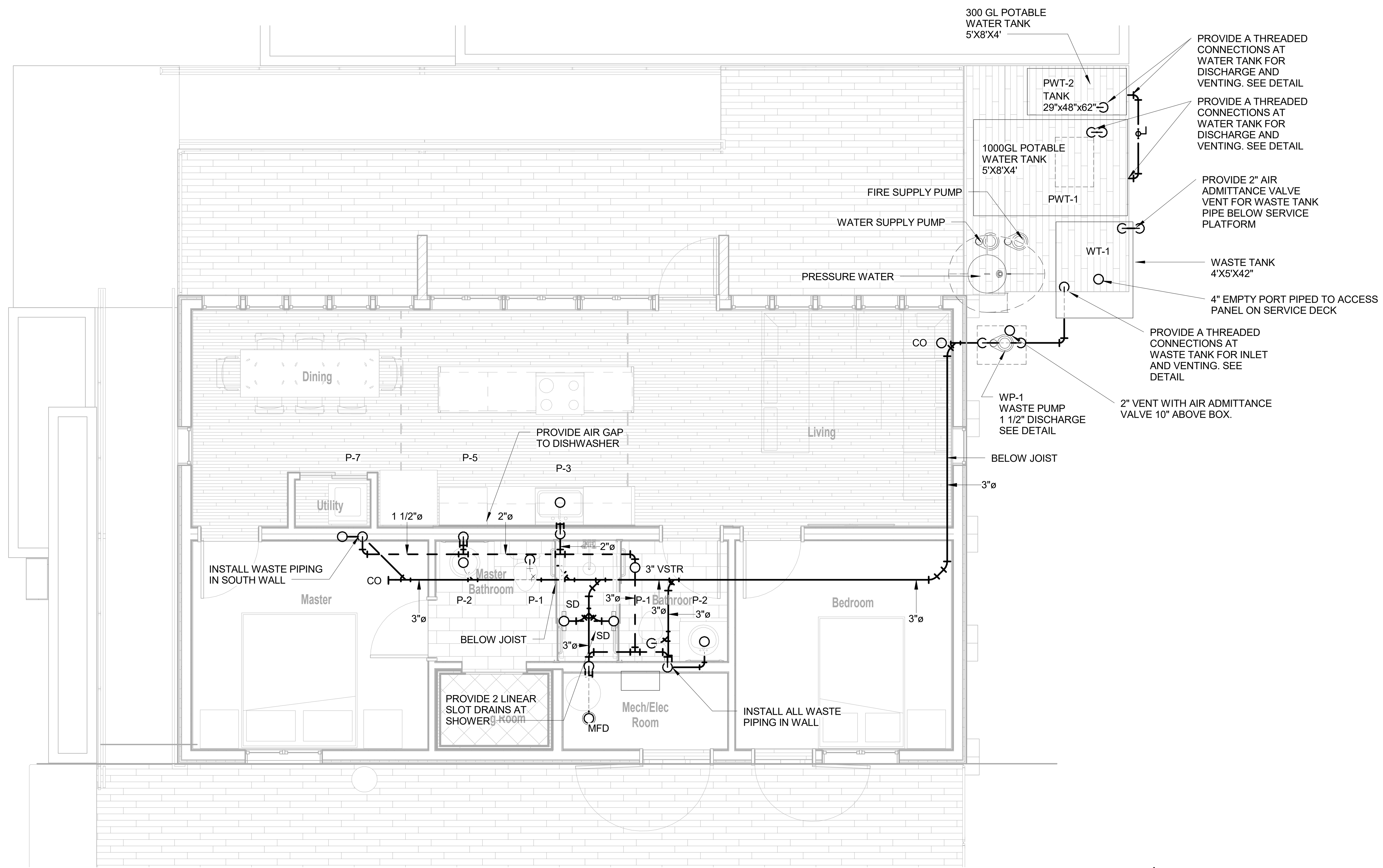
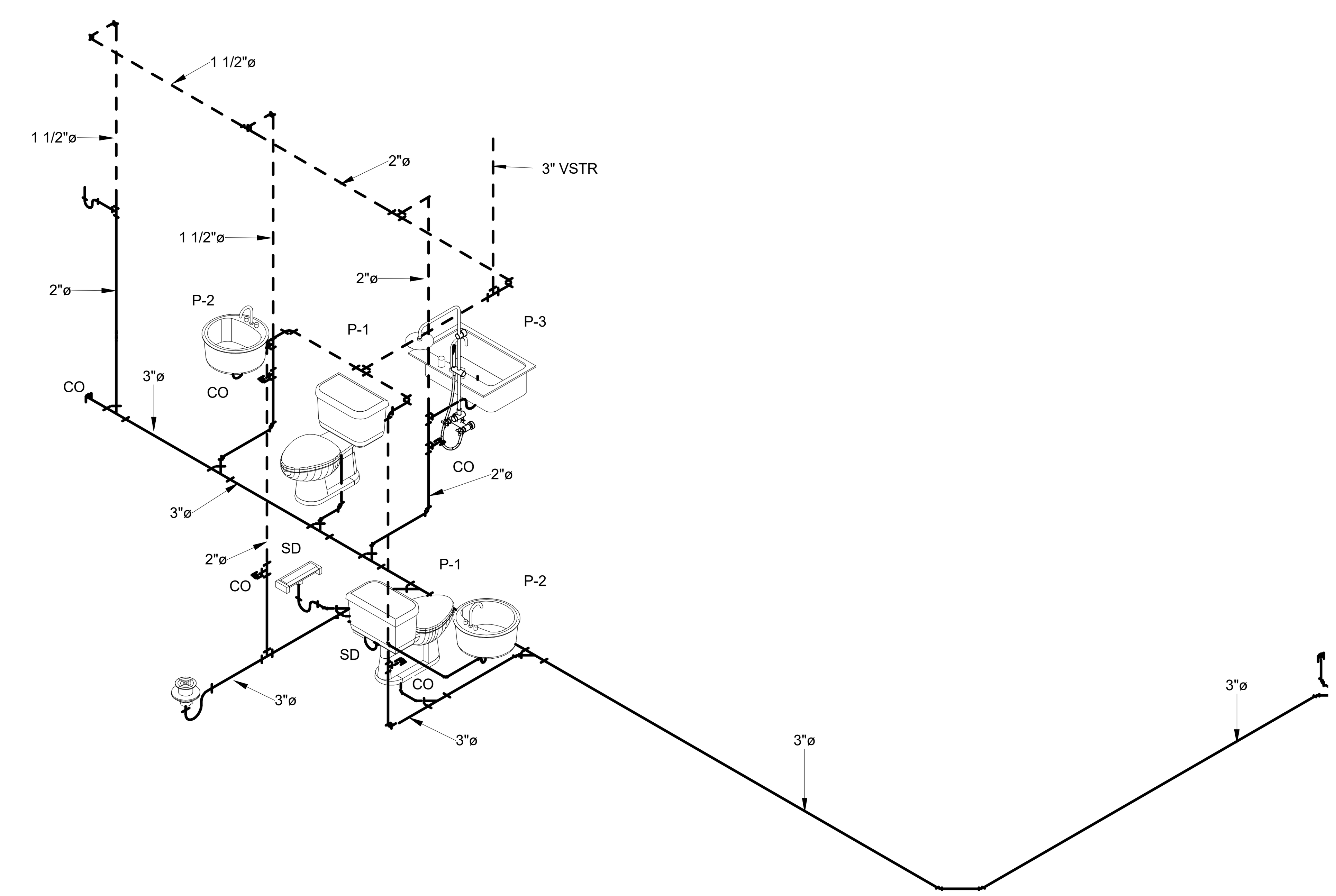


1 PLUMBING - FIRST FLOOR NON-PRESSURE PIPING PLAN
1/4" = 1'-0"

PLUMBING NOTES

1. INSTALL ALL WASTE PIPING IN WALL PRIOR TO MOVE.
2. INSTALL ALL HORIZONTAL PIPE BELOW JOIST DURING FINE CONNECTION.



2 NON-PRESSURE - RISER

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MARK	DATE	DESCRIPTION

PLUMBING -
NON-PRESSURE PIPING
PLAN

P100

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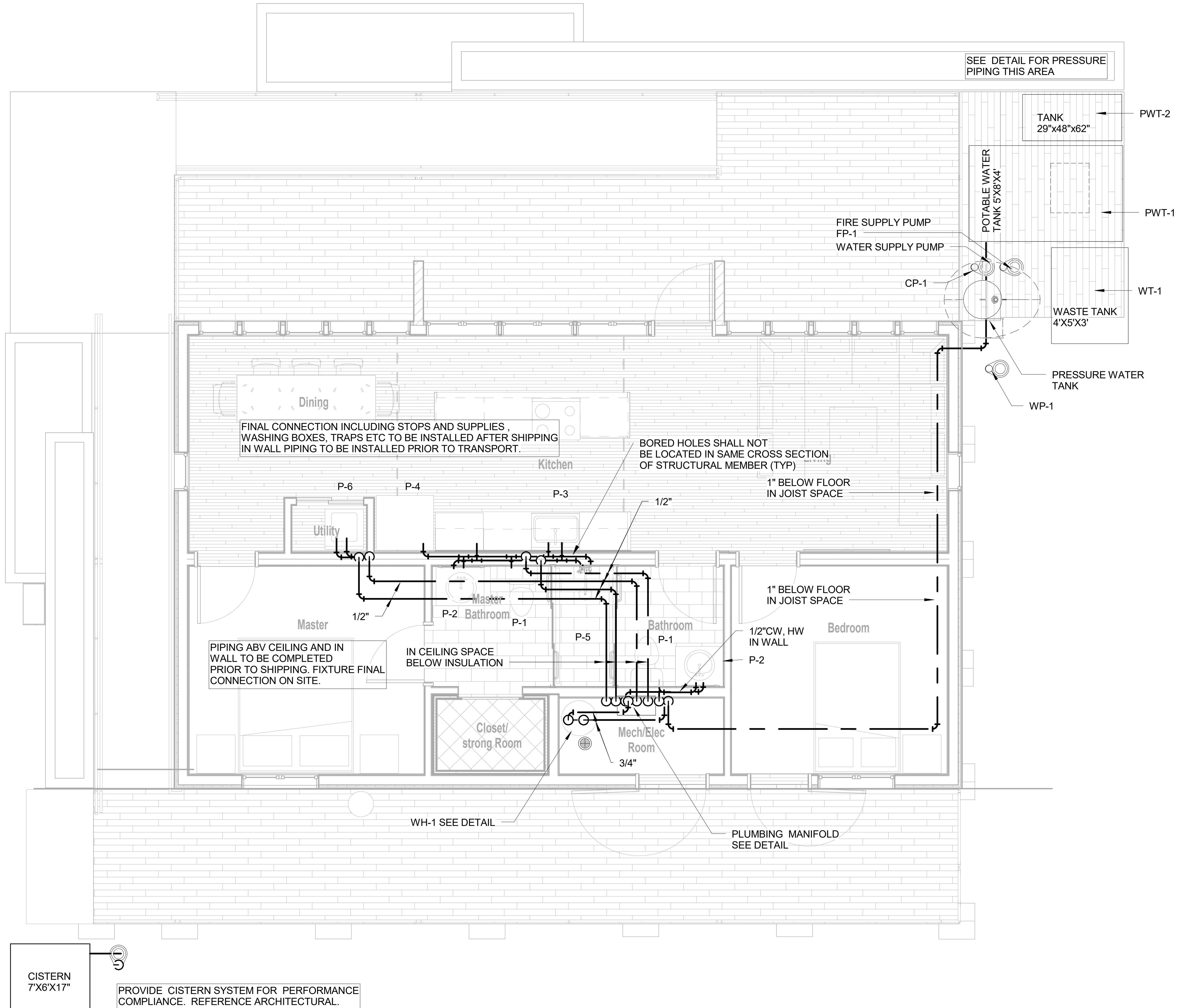
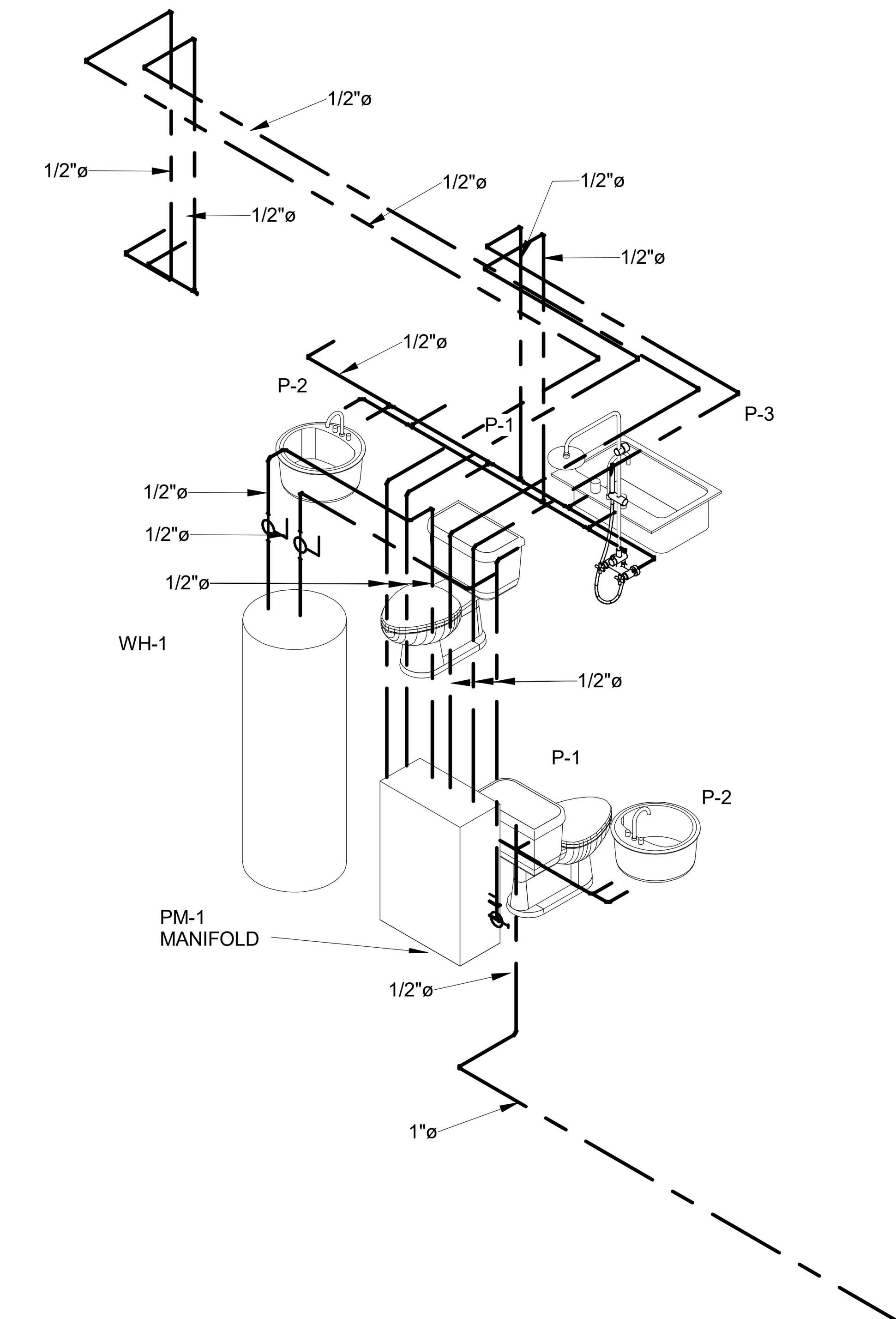


1 PLUMBING - FIRST FLOOR PRESSURE PIPING PLAN
1/4" = 1'-0"



2 PRESSURE - ISOMETRIC

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Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

PLUMBING - PRESSURE PIPING PLAN

P200

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DUCTWORK LEGEND

(CFM) S	SUPPLY DIFFUSER
(CFM) R	RETURN GRILLE
(CFM) E	EXHAUST GRILLE
(CFM) T	TRANSFER AIR GRILLE
(CFM) SR	SIDEWALL REGISTER
	ROUND DUCT SYMBOL
W x H	RECTANGULAR DUCT
T	THERMOSTAT
O	OCCUPANCY SENSOR
	RECTANGULAR SUPPLY DUCT TURNING UP
	RECTANGULAR SUPPLY AIR DUCT TURNING DOWN
	RECTANGULAR RETURN AIR OR EXHAUST DUCT TURNING UP
	RECTANGULAR RETURN AIR OR EXHAUST DUCT TURNING DOWN
	FLAT OVAL TURNING UP.
	FLAT OVAL TURNING DOWN.
	ROUND DUCT TURNING UP
	ROUND DUCT TURNING DOWN
	MAXIMUM 5' FLEXIBLE DUCT ALL BRANCH DUCTS
	RECTANGULAR 90° ELBOW WITH TURNING VANES FOR SUPPLY. FLAT OVAL SQUARE ELBOWS ONLY WHERE REQUIRED AND SHOWN.
	ROUND AND FLAT OVAL ELBOWS. DIE CAST THROUGH 5" ROUND, 5 PIECE 6" ROUND AND ABOVE
	RISE OR DROP IN DUCT
	RECTANGULAR BRANCH OFF OF RECTANGULAR DUCT WITH MANUAL DAMPER
	SPIN-IN WITH MANUAL DAMPER
	MANUAL DAMPER
FD	FIRE DAMPER (PROVIDE ACCESS DOOR)
AD	AUTOMATIC DAMPER

ENERGY RECOVERY VENTILATOR

MARK	SUPPLY FAN		EXHAUST FAN		WINTER/SUMMER EFF%	ELECTRICAL			WEIGHT LBS	MAX. DIMENSIONS	EQUAL TO
	CFM	"W.G. E.S.P.	CFM	"W.G. E.S.P.		(V/Φ/Hz)	FLA	WATTS			
ERV-1	50	0.5"	40	0.5"	70/51	120/1/60	0.35	46	55 LBS.	23" X 26" X 12"	RENEWAIRE EV90

ENERGY RECOVERY UNIT GENERAL NOTES:

ENERGY RECOVERY UNIT WITH ENTHALPY WHEEL WITH OUTSIDE AIR SUPPLY FAN AND EXHAUST AIR FAN. PROVIDE FILTER RACK FOR OUTSIDE AIR AND RETURN AIR WITH 2"- MERV 8 FILTERS. PROVIDE BACKDRAFT DAMPERS. ENERGY WHEEL CERTIFIED TO HVI. UNIT SHALL BE UL LISTED. PROVIDE SINGLE POWER CONNECTION WITH LINE-CORD POWER SUPPLY AND LOW VOLTAGE CIRCUIT FOR CONTROLS.

INDOOR HEAT PUMPS - MINI SPLIT

MARK	TYPE	TOTAL CFM	COOLING CAP.(MBH)	HEATING CAPACITY (MBH)	UNIT DIMENSIONS WxDxH	ELECTRICAL			BASIS OF DESIGN: CARRIER	WEIGHT (LBS)	ACCESSORIES
						V/Φ/Hz	MCA	MOCP			
AC-1	A	470	12	13	38"x8"x13"	230/1/60	1	15	40GRQB12H--3	40	1,2,3,4
AC-2	A	420	9	9	38"x8"x13"	230/1/60	1	15	40GRQB09H--3	40	1,2,3,4
AC-3	A	420	9	9	38"x8"x13"	230/1/60	1	15	40GRQB09H--3	40	1,2,3,4
AC-4	A	470	12	13	38"x8"x13"	230/1/60	1	15	40GRQB12H--3	40	1,2,3,4

TYPE:

A WALL MOUNT. (HEAT PUMP)

ACCESSORIES:

1. WALL MOUNTED THERMOSTATS.
2. BACNET INTERFACE.
3. WASHABLE AIR FILTER. (PROVIDE (1) EXTRA FILTER PER INDOOR UNIT).
4. SCHRADER VALVES W/ FLARE CONNECTIONS. (AT EACH INDOOR UNIT)

NOTES:

1. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.
2. AIRFLOW RATED AT HIGH SPEED.
3. CAPACITY BASED ON 75°F / 62.5°F ENTERING AIR TEMPERATURE.

OUTDOOR HEAT PUMP-MINI SPLIT

MARK	COOLING CAP.		HEATING CAP.		ELECTRICAL			SEER	WEIGHT LBS	BASIS OF DESIGN: CARRIER
	MBH	AMB. (°F)	MBH	AMB. (°F)	MCA	MOCP	(V/Φ/Hz)	HPSF		
HP-1	34	95°	42.5	47°	21	35	208/1/60	21 10.2	200	38GJQG36--3

NOTES:

1. REFRIGERANT PIPING SHALL BE SIZED AND ROUTED PER MANUFACTURER'S RECOMMENDATIONS.
2. HVAC CONTROLS COMMUNICATIONS TO INDOOR UNITS IS PROVIDED THRU OUTDOOR UNITS.
3. REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE FITTED WITH LOCKING-TYPE TAMPER-RESISTANT CAPS.
4. PROVIDE PHASE PROTECTION WITH AUTO RE-START.

AIR DEVICE LEGEND

MARK	DESCRIPTION	(X)	MODEL
SR	SIDE WALL SUPPLY REGISTER	SIZE (WxH) AND CFM SHOWN	TITUS 272FS
WRG	SIDE WALL RETURN GRILLE (35° FIXED BLADE DEFLECTION)	SIZE (WxH) AND CFM SHOWN	TITUS 350FL

CEILING RETURN, EXHAUST AND TRANSFER AIR GRILLE SCHEDULE

(R, E, T)

ALL CEILING GRILLES TO BE TITUS MODEL 50F SIZE AS INDICATED BELOW.

CFM	NECK SIZE
0-100	6x6
100-200	8x8
201-350	10x10
351-500	12x12
501-750	14x14
751-950	16x16
951-1200	18x18
1201-1500	20x20
1501-2000	24x24

CONDENSATE PUMP

MARK	ELECT. (V/Φ/Hz)	HP	GPH	HEAD (FT.)	RESERVOUR TANK (GAL)	DESIGN BASIS
CP-1	115/1/60	1/30	48	10	1/2	LITTLE GIANT VCMA-20ULS

ACCESSORIES:

A SAFETY SWITCH B PROVIDE HIGH WATER ALARM SENSOR

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Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

HVAC SCHEDULES

M001

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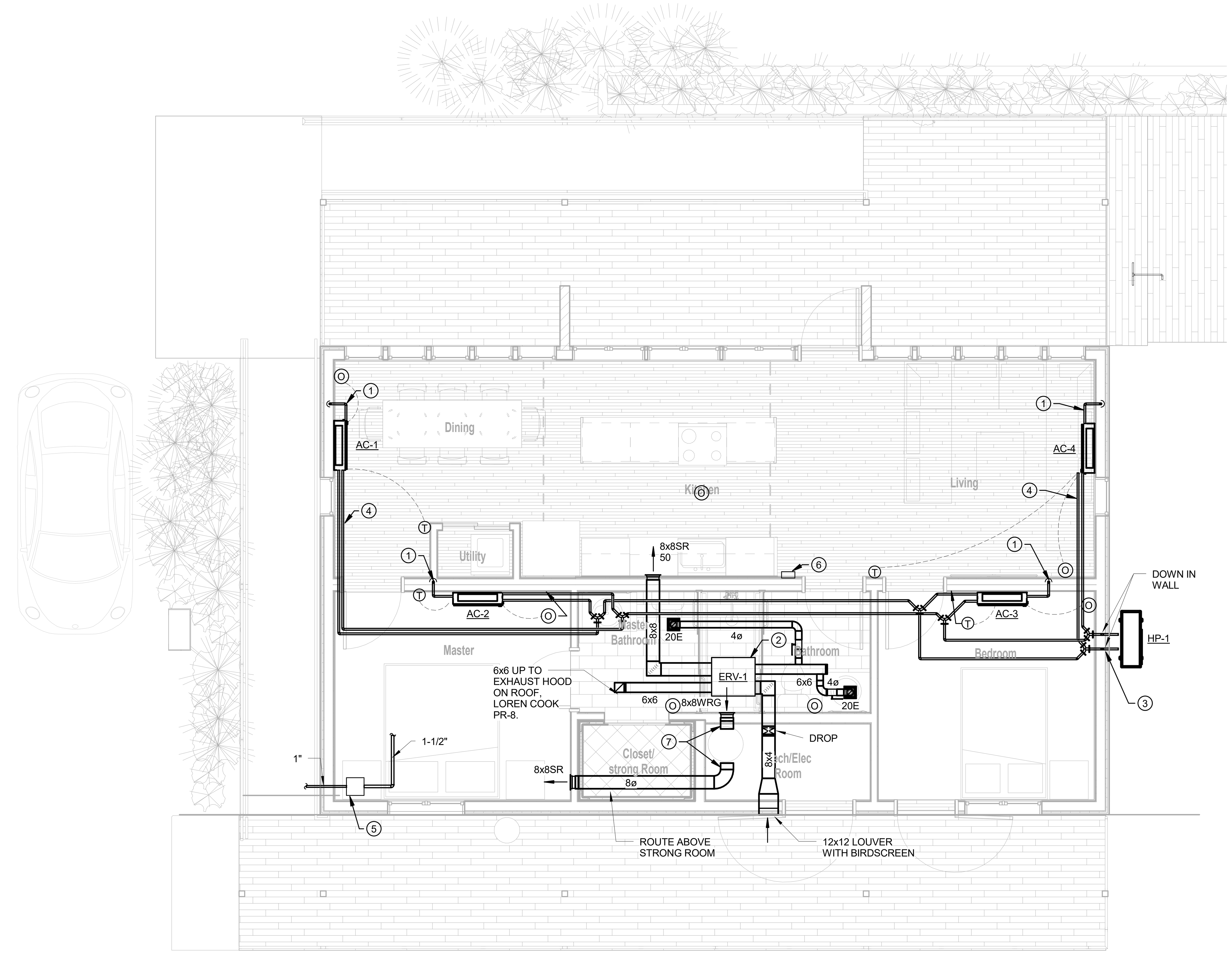

1 HVAC FIRST FLOOR
1/4" = 1'-0"

KEYED NOTES
1 ROUTE 3/4" CONDENSATE DRAIN PIPING DOWN IN WALL TO 1-1/2" CONDENSATE MAIN UNDER HOUSE AND ROUTE CONDENSATE MAIN TO CP-1.
2 ALL DUCTWORK CONNECTIONS TO ERV-1 SHALL BE FLEXIBLE CONNECTIONS. HANG UNIT FROM STRUCTURE WITH ISOLATORS. HANG FROM STRUCTURE WITH SPRING VIBRATION ISOLATORS.
3 ROUTE REFRIGERANT LINES TO INDOOR UNITS. SIZE AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
4 ROUTE REFRIGERANT LINES UP IN JOIST SPACE TO UNIT.
5 CONDENSATE PUMP MOUNTED UNDER HOUSE. ROUTE 1" PUMPED DISCHARGE LINE TO CISTERN-SEE PLUMBING.
6 WALL MOUNTED TOUCH SCREEN DISPLAY.
7 ATTACH 8"Ø TO HEAT PUMP WATER HEATER DUCT KIT. MAXIMUM TOTAL DUCTWORK DISTANCE: 10'-0". RAISE WATER HEATER HEIGHT USING STAND AS REQUIRED TO MEET DUCTWORK MAXIMUM LIMIT.

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MARK	DATE	DESCRIPTION

HVAC FIRST FLOOR PLAN

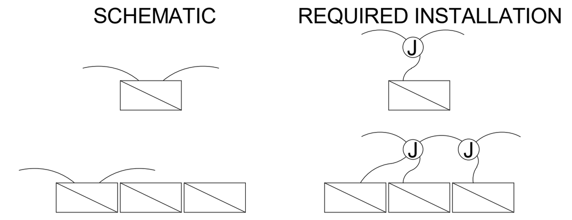
M200

2/23/2017 10:00:04 AM

BRANCH CIRCUITS

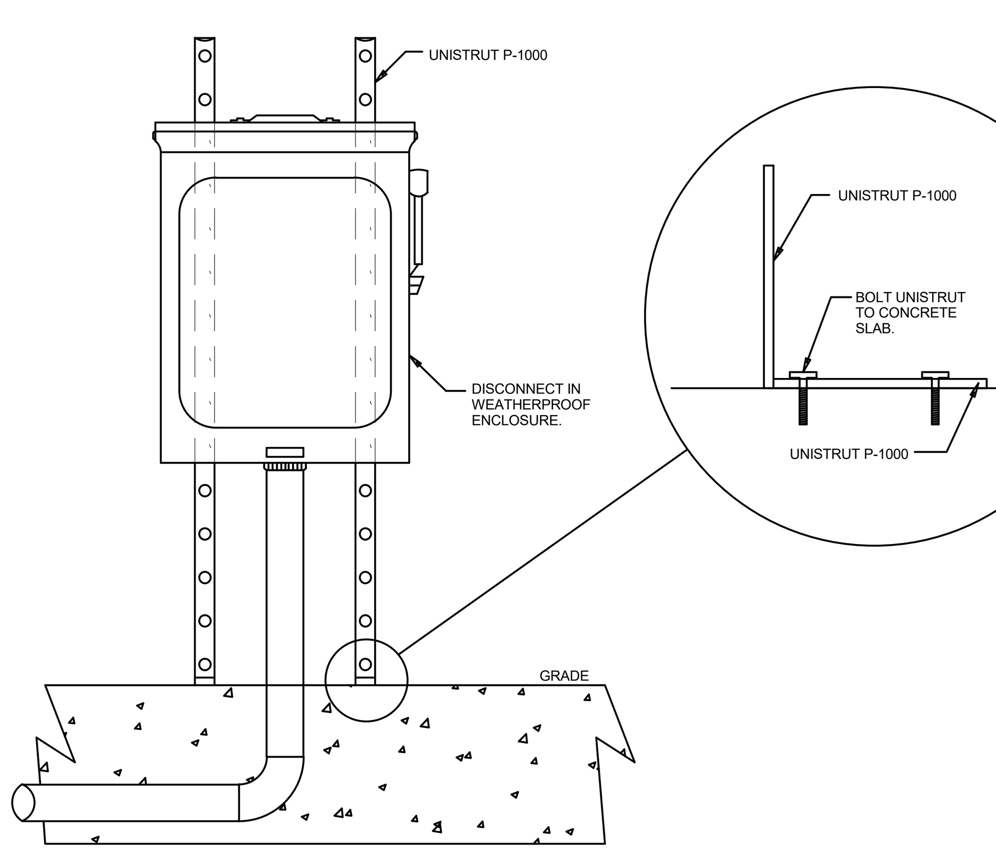
CONCEALED IN CEILING, WALL, OR IN CEILING SLAB.
CONCEALED IN OR BELOW FLOOR OR UNDERGROUND.
EXPOSED.
E EMERGENCY.
RUN IN FLEXIBLE METAL CONDUIT.
EMPTY CONDUIT, 3/4" UNLESS OTHERWISE NOTED WITH NYLON PULL CORD.
CONDUIT SEAL FITTING: CROUSE-HINDS #EYS OR APPROVED EQUIVALENT.
HOMERUN TO PANELBOARD AND 20A, 1P BREAKER, UON.
NOTE: SHOWN 2#12 AND 1#12(G)-1/2"C,
3#12 AND 1#12(G)-3/4"C
4#12 AND 1#12(G)-3/4"C
10 2#10 AND 1#10(G)-3/4"C
10 3#10 AND 1#10(G)-3/4"C
SIZE CONDUIT PER NEC FOR GREATER NUMBER OF CONDUCTORS OR AS NOTED. THE NUMBER IN THE CIRCUIT INDICATES AWG WIRE SIZE AND HASHMARKS INDICATE NUMBER OF WIRES REQUIRED. GROUND WIRE SHALL BE SIZED IN ACCORDANCE WITH NEC TABLE 250-95. NUMBER OF HASHMARKS DO NOT INCLUDE GROUND WIRE.
RISER: UP, RUNNING TO SOURCE.
RISER: DOWN, RUNNING TO SOURCE.

BRANCH CIRCUIT WIRING FOR LIGHTING IS SHOWN SCHEMATICALLY. EACH LUMINAIRE IS TO BE INSTALLED WITH AN INDIVIDUAL FLEXIBLE CONNECTION. FOR EXAMPLE:

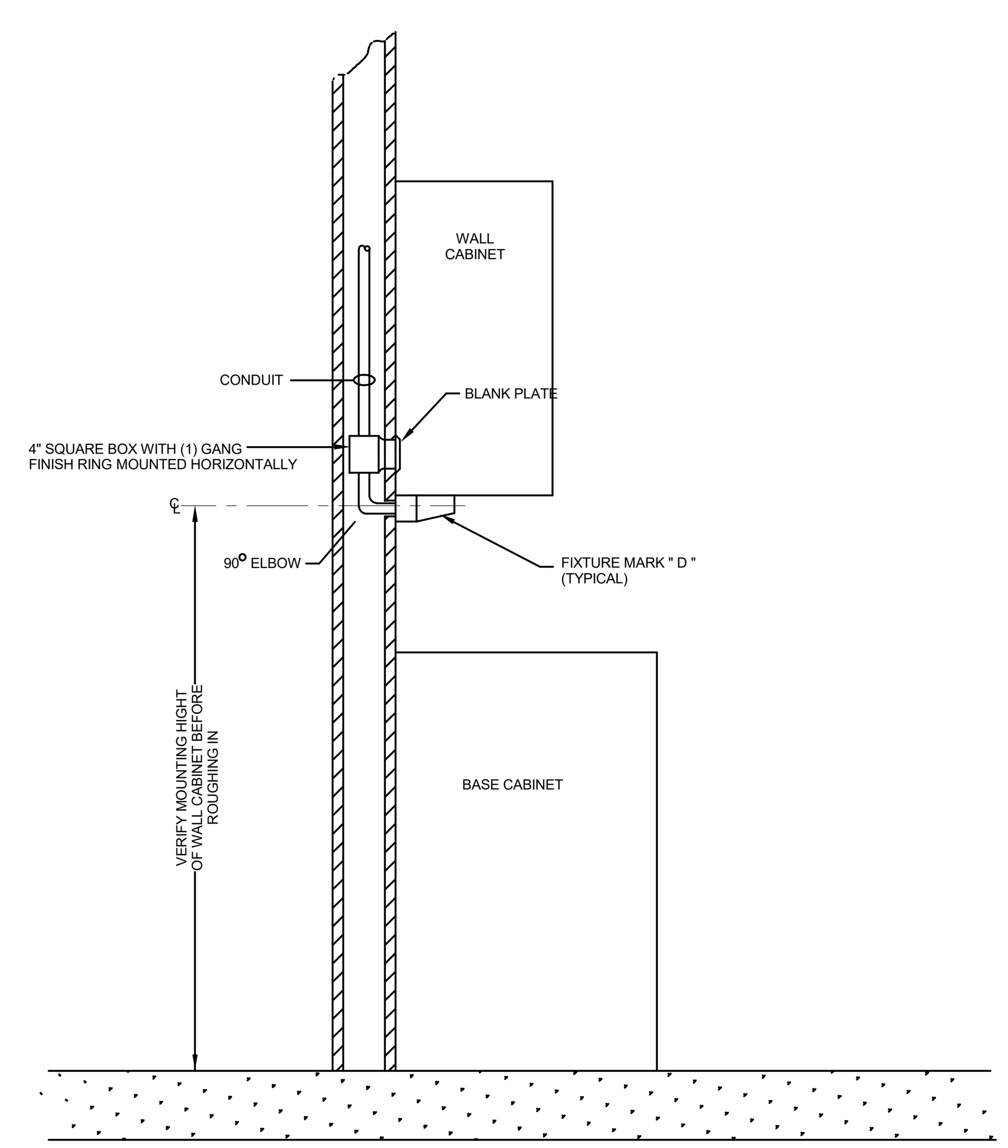


ABBREVIATIONS

A	AMPERES
AA	AMBIENT AIR COOLED
AIC	AMPERES INTERUPTING CAPACITY
AFF	ABOVE FINISHED FLOOR
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT RACEWAY
CU	COPPER
CKTS	CIRCUITS
CTTS	CLOSED TRANSITION TRANSFER SWITCH
DIA	DIAMETER
EC	ELECTRICAL CONTRACTOR
EM	EMERGENCY
EP	EXPLOSION PROOF
FA	FORCED AIR COOLED
FMC	FLEXIBLE METAL CONDUIT
G	GROUND
H	MOUNTING HEIGHT TO CENTERLINE
HID	HIGH INTENSITY DISCHARGE
HP	HORSE POWER
IG	ISOLATED GROUND
KVA	KILOVOLT-AMPERES
KW	KILOWATT
LT	LIQUID TIGHT FLEXIBLE METAL CONDUIT
KCMIL	THOUSAND CIRCULAR MILS
MV	MEDIUM VOLTAGE
N	NEUTRAL
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED OWNER INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OC	ON CENTER
P	POLES
PF	POWER FACTOR
PH	PHASES
PVC	POLYVINYL CHLORIDE RACEWAY
RGS	RIGID GALVANIZED STEEL
UON	UNLESS OTHERWISE NOTED
V	VOLTS
W	WIRES
WP	WEATHERPROOF, NEMA 3R.
EX	EXISTING TO REMAIN
XR	EXISTING, REMOVE
XRR	EXISTING, REMOVE & RELOCATE
XRL	EXISTING, RELOCATED
XRB	EXISTING, REMOVE DEVICE AND INSTALL BLANK COVER.
XRP	EXISTING, REMOVE AND REPLACE W/ NEW



DETAIL
MOUNTING OF DISCONNECT
FOR " HP-1 "
NO SCALE



DETAIL
INSTALLATION OF UNDERSHELF LIGHT
NO SCALE

FIRE ALARM

DETECTION

FS FIRE ALARM FLOW
TS FIRE ALARM TAMPER
SMOKE DETECTOR
CM CONTROL MODULE WITH RELAY
MM MONITOR MODULE

POWER

R RELAY
ELECTRIC MOTOR
DISCONNECT SWITCH, UNFUSED, 30A, 3P UNLESS OTHERWISE NOTED.
DISCONNECT SWITCH, FUSED, 30A, 3P UNLESS OTHERWISE NOTED.
M METER (WITH SOCKET ASSSEMBLY)

RECEPTACLES

WALL MOUNTED

DUPLEX RECEPTACLE - NEMA 5-20R
DUPLEX RECEPTACLE - NEMA 5-20R, DEDICATED SERVICE/CIRCUIT
GFI GROUND FAULT RECEPTACLE - NEMA 5-20R GF
RECEPTACLE - MTD ABOVE COUNTER - NEMA 5-20R
SIMPLEX RECEPTACLE - NEMA 5-20R
SPLIT WIRED RECEPTACLE - NEMA 5-20R
WP WEATHER PROOF RECEPTACLE - NEMA 5-20R GFCI W/ WET LOCATION COVER
QUADRUPLEX RECEPTACLE - NEMA 5-20R
SIMPLEX RECEPTACLE - NEMA 5-20R, DEDICATED SERVICE/CIRCUIT
QUADRUPLEX RECEPTACLE - MTD ABOVE COUNTER - NEMA 5-20R
SINGLE RECEPTACLE - EQUIPMENT CONNECTION OR PROVISION
SINGLE RECEPTACLE - SPECIAL PURPOSE
SINGLE RECEPTACLE - A=NEMA 5-30R; B=NEMA 6-30R; C=NEMA 14-30R
X SINGLE RECEPTACLE - A=NEMA 5-50R; B=NEMA 6-50R; C=NEMA 14-50R
USB DUPLEX RECEPTACLE - NEMA 5-20R WITH TWO FULL OUTPUT USB PORTS

SWITCHES

$ SINGLE POLE SWITCH, 20A, 125/277V.
3$ THREE WAY SWITCH, 20A, 125/277V.
LV$ LOW VOLTAGE SWITCH
M$ MOTOR SWITCH, 1-POLE, 20A, 125/277V.
D DIMMER SWITCH
OCCUPANCY SENSOR, WALL MTD
OCCUPANCY SENSOR, CEILING MTD
CM CONTROL MODULE (LIGHTING) - ROOM LIGHTING CONTROLLER RATED FOR 120/277V, 20A MINIMUM, AND 0-10V DIMMING. WATTSTOPPER LMRC-210 OR APPROVED EQUAL.

LIGHTING (SEE LUMINAIRE SCHEDULE)

CEILING-RECESSED

RECESSED LED LUMINAIRE - SINGLE OR CONTINUOUS LENGTHS AS SHOWN

CEILING-SURFACE/PENDANT

SURFACE OR STEM MOUNTED LED STRIP LUMINAIRE - SINGLE OR CONTINUOUS LENGTHS AS SHOWN.
SURFACE OR PENDANT MOUNTED LUMINAIRE

WALL

WALL MOUNTED LUMINAIRE
WALL MOUNTED LINEAR LED LUMINAIRE
WALL MOUNTED LED STRIP LUMINAIRE - SINGLE OR CONTINUOUS LENGTHS AS SHOWN. LIFE SAFETY EMERGENCY EGRESS LIGHTING.

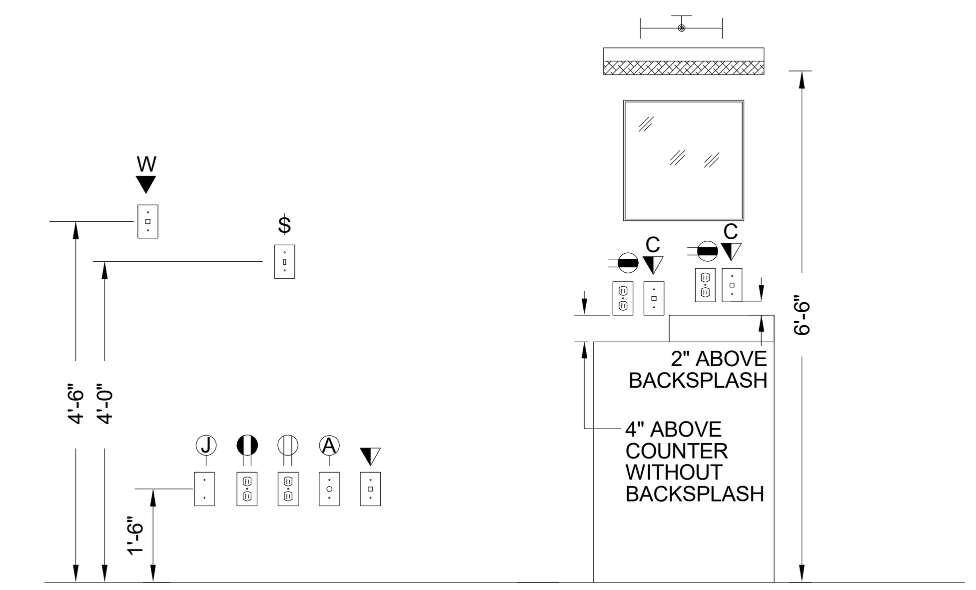
AUDIO - VISUAL

TV TV / MONITOR

PANELBOARDS

POWER PANEL: SEE PANELBOARD SCHEDULE AND SPECIFICATIONS.

STANDARD MOUNTING HEIGHTS



NOTES:

1. MOUNTING HEIGHTS SHOWN ARE FROM FINISHED FLOOR TO CENTERLINE OF OUTLET, UNLESS OTHERWISE NOTED.
2. LOCATIONS OF OUTLETS SHOWN ON ARCHITECTURAL ELEVATIONS SHALL TAKE PRECEDENCE OVER THESE MOUNTING HEIGHTS. FIELD LOCATE OUTLETS WITH ARCHITECT DURING ROUGH-IN.
3. INSTALL OUTLETS THAT ARE IN CLOSE PROXIMITY ON THE SAME CENTERLINE. OUTLETS THAT ARE WITHIN 2'-0" HORIZONTALLY AND WITHIN 1'-0" VERTICALLY SHALL BE INSTALLED ON THE SAME HORIZONTAL CENTERLINE LOCATED HALF WAY BETWEEN THE HEIGHTS SHOWN. OUTLETS THAT ARE MORE THAN 1'-0" APART VERTICALLY SHALL BE INSTALLED ON THE SAME VERTICAL CENTERLINE.

ELECTRICAL NOTES

1. THESE DRAWINGS ARE A PART OF A COMPLETE SET OF ARCHITECTURAL/ENGINEERING CONTRACT DOCUMENTS. ELECTRICAL CONTRACTOR SHOULD REFER TO THE ARCHITECTURAL DRAWINGS FOR ACTUAL LOCATION OF ITEMS WHERE SPECIFIED. SEE SAID CONFIGURATIONS FOR WALL DEFINITIONS, ELEVATIONS, CASEWORK, REFLECTED CEILING PLAN, ETC. ROUGH-IN INSTALLATIONS WHICH ARE NOT LOCATED ACCORDING TO THE ARCHITECTURAL ELEVATIONS SHALL BE RELOCATED AT NO ADDITIONAL COST.
2. CEILING CLEARANCES ARE CRITICAL FOR THIS PROJECT. GENERAL CONTRACTOR MUST COORDINATE ALL TRADES TO AVOID POTENTIAL INTERFERENCES. CONFLICTS BETWEEN TRADES SHALL BE REFERRED TO THE ARCHITECT FOR RESOLUTION.
3. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH THE NEC AND LOCAL ORDINANCES. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS.
4. ALL SYMBOLS SHOWN ON THIS LEGEND MAY NOT BE USED.
5. ALL PANELBOARDS ARE 1Ø 3W UNLESS OTHERWISE NOTED.
6. ALL BRANCH CIRCUIT CONDUIT SHALL BE GALVANIZED EMT. 1/2" CONDUIT MINIMUM.
7. ALL CIRCUITS SHOWN CONCEALED SHALL BE RUN IN FURRED CEILING SPACES AND SHALL BE CONCEALED IN CONCRETE SLAB ONLY WHEN NO FURRED CEILING SPACE IS PROVIDED.
8. ALL CONDUITS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION TYPE FITTINGS.
9. ALL OUTLET BOXES MOUNTED BACK-TO-BACK IN WALLS SHALL HAVE FIREPROOF SOUND INSULATING MATERIAL INSTALLED BETWEEN THE BOXES TO PREVENT SOUND TRANSMISSION FROM ONE ROOM TO THE OTHER.
10. ALL FLUSH MOUNTED PANELS SHALL HAVE 3-1" EMPTY CONDUITS STUBBED OUT ABOVE CEILING FOR FUTURE CIRCUITS.
11. ALL WALL OUTLETS NOT PROVIDED WITH A DEVICE BY THIS CONTRACTOR SHALL BE PROVIDED WITH BLANK WALL PLATES.
12. ALL BRANCH CIRCUITS SHALL INCLUDE A GREEN COVERED GROUND WIRE SIZED PER NEC OR AS SHOWN. CONNECT TO EACH DEVICE AND OUTLET BOX ON THE CIRCUIT AND TO THE PANELBOARD GROUND BUS. MULTIPLE WIRE BRANCH CIRCUITS WITH COMMON NEUTRAL REQUIRE ONLY ONE GROUND WIRE. NUMBER OF WIRES SHOWN ON DRAWINGS DOES NOT INCLUDE GROUND WIRE.
13. FINAL EQUIPMENT CONNECTIONS - THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR & MATERIALS REQUIRED TO MAKE FINAL CONNECTIONS TO ALL EQUIPMENT FURNISHED BY THIS CONTRACTOR AND/OR EQUIPMENT FURNISHED BY OTHERS. VERIFY ALL REQUIREMENTS, CONDUCTOR SIZE, OVERCURRENT PROTECTION, PHASE, VOLTAGE, MOTOR ROTATION, ETC., WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN. PROVIDE FUSED DISCONNECT IF REQUIRED BY MANUFACTURER.
14. FURNISH & INSTALL FIRE ALARM SYSTEM WHICH CONFORMS T0 ALL NATIONAL, STATE, & LOCAL CODES. PROVIDE ADDITIONAL DEVICES AS REQUIRED. PROVIDE TO ARCHITECT A COMPLETE SET OF MANUFACTURER'S SYSTEM INSTALLATION PLANS INCLUDING RISER DIAGRAM, CONDUIT & WIRING, INTERCONNECTION DIAGRAMS, DEVICE LOCATIONS AND ALL REQUIRED CONNECTIONS TO EQUIPMENT FURNISHED BY OTHERS. PROVIDE CONDUIT & WIRING AS DIRECTED BY SYSTEM SUPPLIER. FIRE ALARM CONTRACTOR TO HOLD A CURRENT LICENSE TO CONDUCT BUSINESS ISSUED BY THE STATE OF ALABAMA FIRE MARSHAL'S OFFICE.
15. CONTRACTOR SHALL PROVIDE ARC-FLASH WARNING LABELS COMPLYING WITH NEC ARTICLE 110.16 ON NEW ELECTRICAL EQUIPMENT OR EXISTING EQUIPMENT THAT IS MODIFIED.
16. NEW PANELBOARDS SHALL BE IDENTIFIED TO INDICATE THE DEVICE OR EQUIPMENT WHERE THE POWER SUPPLY ORIGINATES.
17. FOR 120 OR 208V CIRCUITS, CONTRACTOR SHALL INCREASE WIRE SIZE FROM THAT SHOWN ONE SIZE A.W.G. FOR EVERY 100' HOMERUN LENGTH, AND ONE SIZE EVERY 200' FOR 277V OR 480V CIRCUITS.
18. CONTRACTOR SHALL LABEL ELECTRICAL SERVICE EQUIPMENT WITH AVAILABLE FAULT CURRENT IN ACCORDANCE WITH NEC 110.24.
19. CONTRACTOR SHALL LABEL ELECTRICAL PANELBOARDS WITH EQUIPMENT WHERE FEEDER ORIGINATES IN ACCORDANCE WITH NEC 408.4(B).

JUNCTION & OUTLET BOXES

J JUNCTION BOX - CEILING MOUNTED
C J POWER JUNCTION BOX - CEILING MOUNTED
J JUNCTION BOX - WALL MOUNTED
J OUTLET BOX - WALL MOUNTED, WITH FLEXIBLE HARD WIRED CONNECTION TO EQUIPMENT

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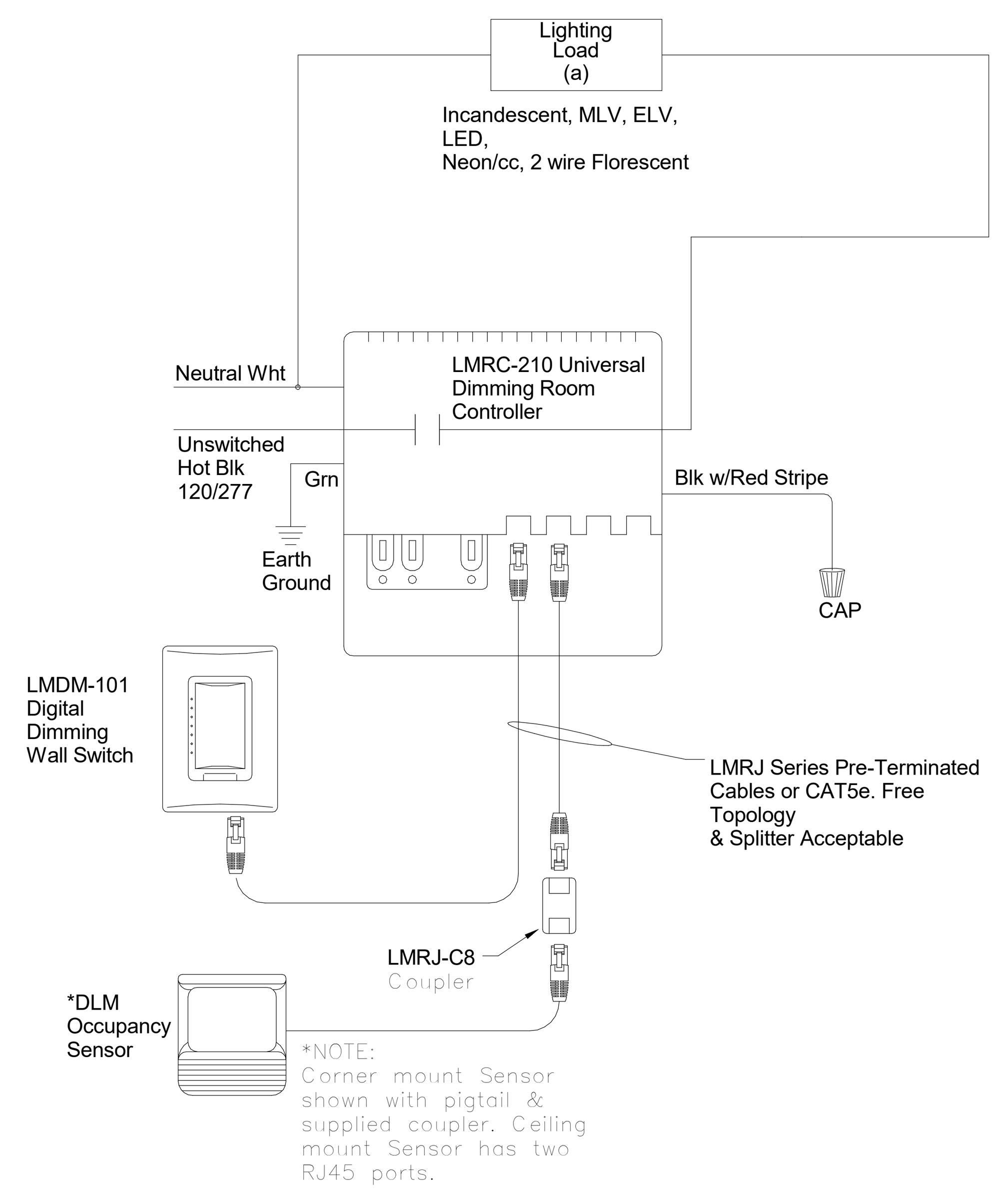
MARK	DATE	DESCRIPTION

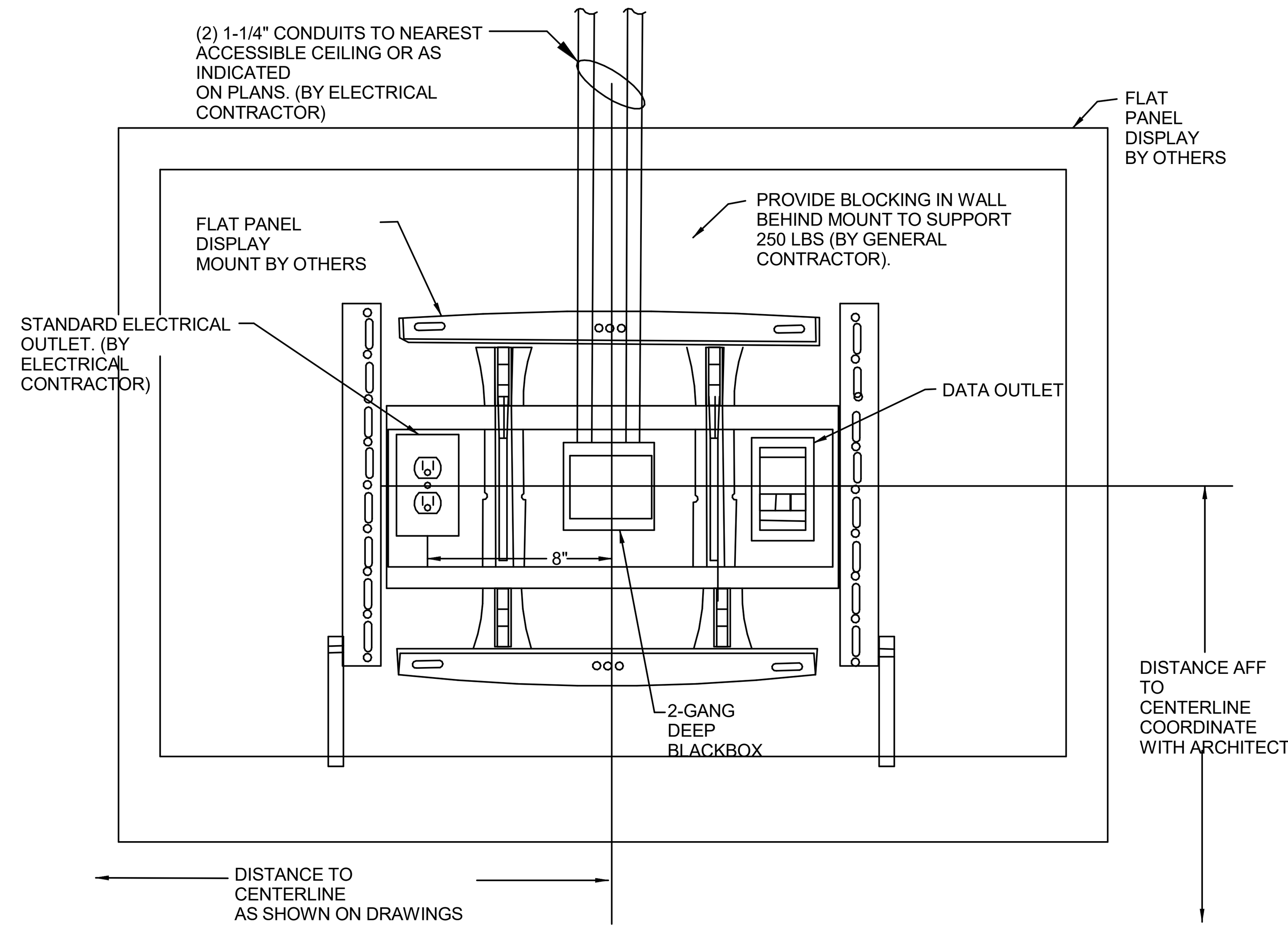
ELECTRICAL - LEGEND

E001

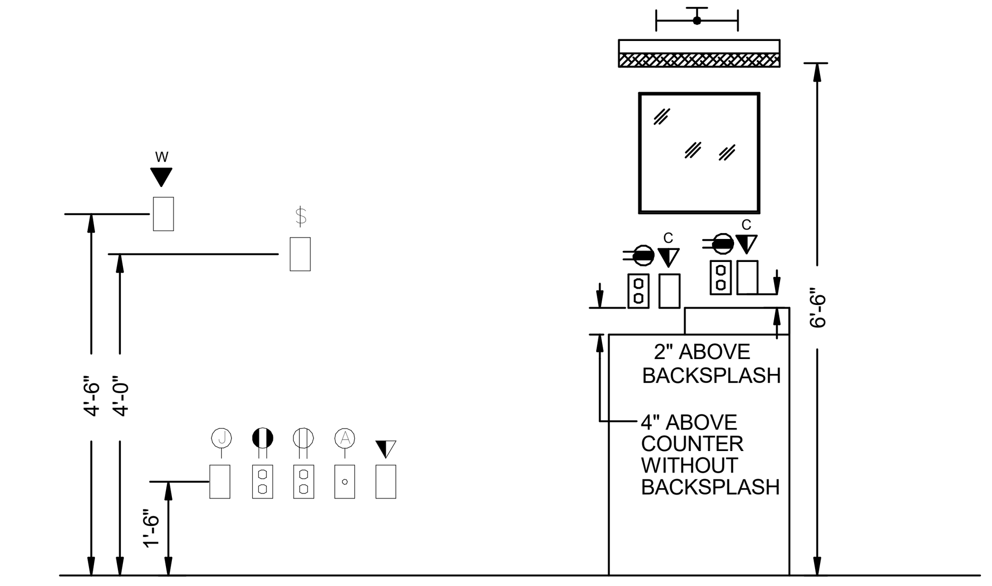
2/23/2017 2:52:34 AM



6 DETAIL - ROOM CONTROLLER W/ 0-10V DIMMING
E-002 NOT TO SCALE



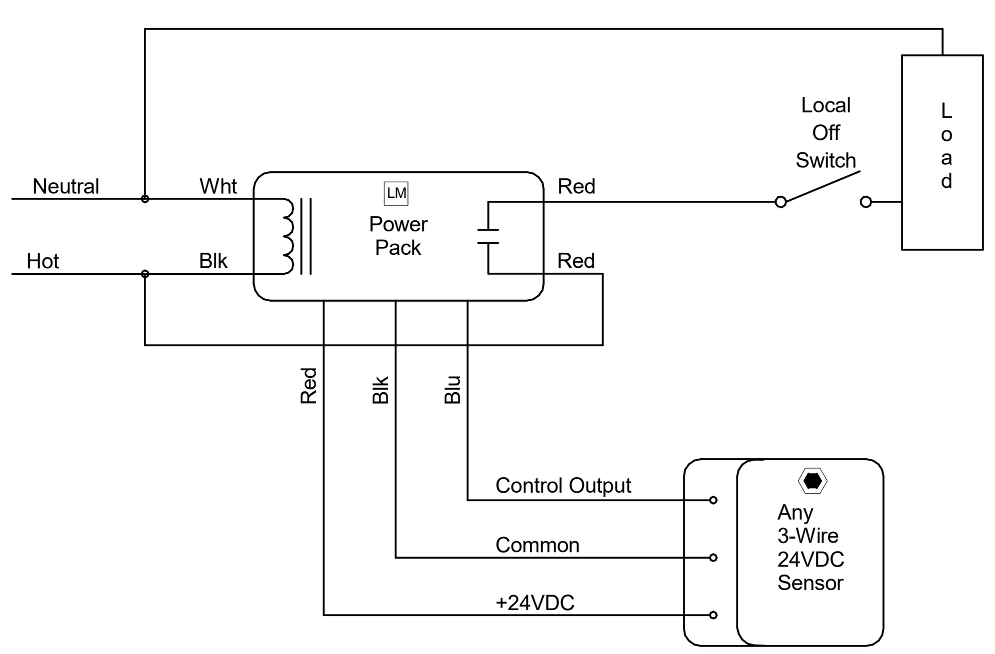
4 DETAIL - WALL MOUNTED FLAT PANEL DISPLAY
E-002 NOT TO SCALE



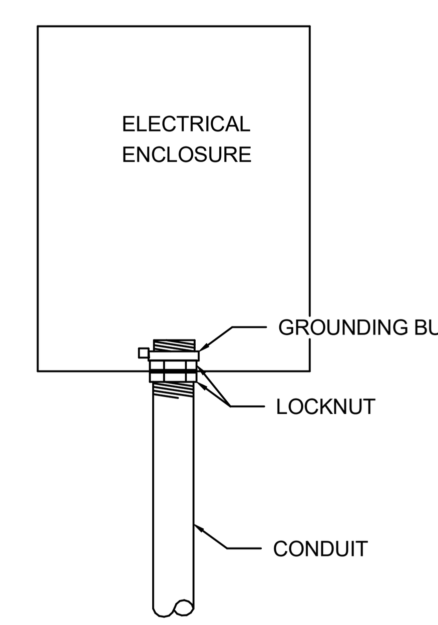
NOTES:

1. MOUNTING HEIGHTS SHOWN ARE FROM FINISHED FLOOR TO CENTERLINE OF OUTLET, UNLESS OTHERWISE NOTED.
2. LOCATIONS OF OUTLETS SHOWN ON ARCHITECTURAL ELEVATIONS SHALL TAKE PRECEDENCE OVER THESE MOUNTING HEIGHTS. FIELD LOCATE OUTLETS WITH ARCHITECT DURING ROUGH-IN.
3. INSTALL OUTLETS THAT ARE IN CLOSE PROXIMITY ON THE SAME CENTERLINE. OUTLETS THAT ARE WITHIN 2'-0" HORIZONTALLY AND WITHIN 1'-0" VERTICALLY SHALL BE INSTALLED ON THE SAME HORIZONTAL CENTERLINE LOCATED HALF WAY BETWEEN THE HEIGHTS SHOWN. OUTLETS THAT ARE MORE THAN 1'-0" APART VERTICALLY SHALL BE INSTALLED ON THE SAME VERTICAL CENTERLINE.

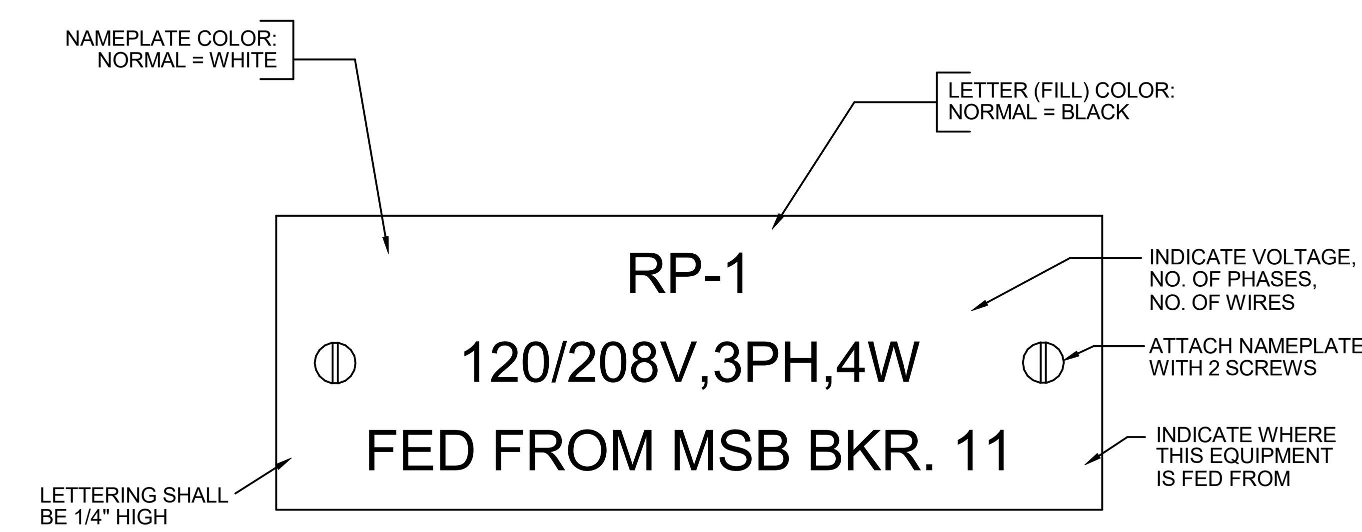
1 STANDARD MOUNTING HEIGHTS
E-002 NOT TO SCALE



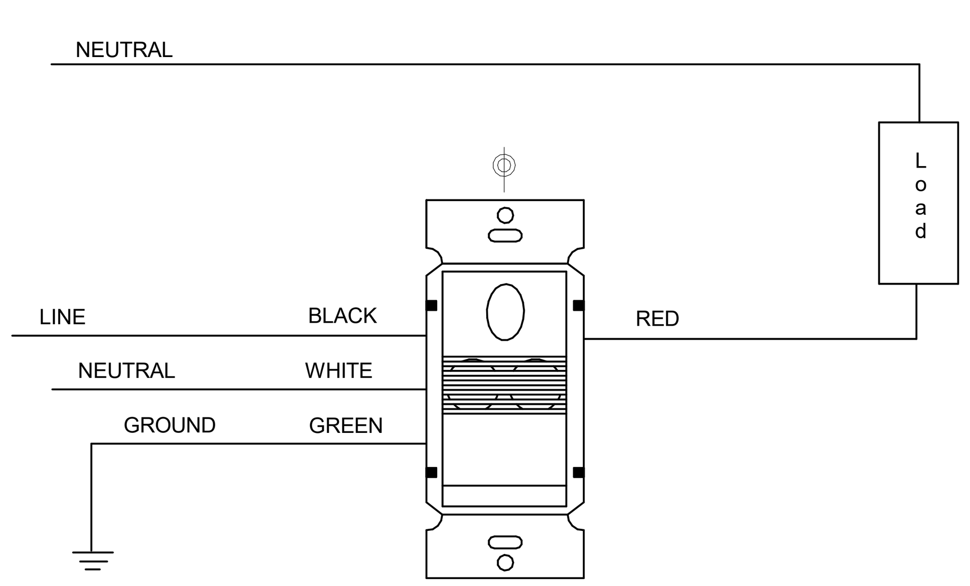
7 DETAIL - CEILING OCCUPANCY SENSOR
E-002 NOT TO SCALE



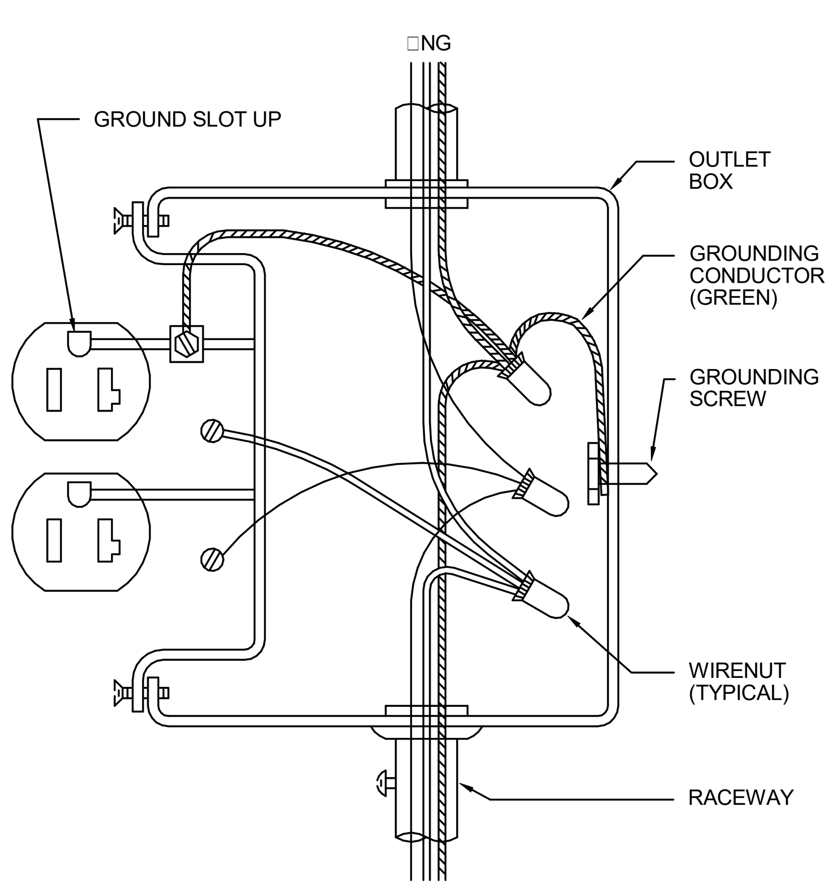
5 DETAIL - CONDUIT TERMINATION
E-002 NOT TO SCALE



2 DETAIL - ELECTRICAL NAMEPLATE
E-002 NOT TO SCALE



8 DETAIL - WALL SWITCH SENSOR
E-002 NOT TO SCALE



3 DETAIL - TYPICAL RECEPTACLE INSTALLATION
E-002 NOT TO SCALE

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Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

ELEC - DETAILS

E002

2/23/2017 2:52:35 AM

LUMINAIRE SCHEDULE									
Quantity	TYPE MARK	LAMP	WATTAGE	LAMP COLOR TEMP	VOLT	DESCRIPTION	COMMENTS / OPTIONS	MANUFACTURER	MODEL
6	A2	LED	20 W	3500 K	120	Surface Mounted LED Linear Pendant w/ Direct/Indirect Light Output (2 ft)	Include Up/Down 0-10V Dimming	Mark Arch Lighting	S2WID-2-1-N-35-ZB-SCT-120-SLV-LMES20-2-N-35-DC
3	A4	LED	27 W	3500 K	120	Surface Mounted LED Linear Pendant w/ Direct/Indirect Light Output (4 ft)	Include Up/Down 0-10V Dimming	Mark Arch Lighting	S2WID-4-1-N-35-ZB-SCT-120-SLV-LMES20-2-N-35-DC
1	B2	LED	22 W	3500 K	120	Wall Mounted LED Wrap Fixture (2ft)		Lithonia	WL2-22L-LP835
1	B4	LED	40 W	3500 K	120	Wall Mounted LED Wrap Fixture (4ft)		Lithonia	WL4-40L-LP835
1	B4E	LED	40 W	3500 K	120	Wall Mounted LED Wrap Fixture (4ft)	Provide Battery Backup	Lithonia	WL4-40L-LP835-EL14L
1	P1	LED	48 W	3500 K	120	Linear Pendant with Acrylic Lens And Remote Driver Junction Box	Provide All Necessary Hardware And Accessories For Installation	Fluxwerx	VU1-B-A-D-35-A-04-S-E1-M-06
2	P2	LED	42 W	3500 K	120	Single Decorative LED Pendant	0-10V Dimming	Winona	POPS01-INT-CYL-M-4FT-LSR1-350MA-30K-DMD-BA
4	R2	LED	22 W	3500 K	120	Recessed Linear LED with Lens	0-10V Dimming	Mark Arch Lighting	SL2L-LOP-2FT-FLP-FL-90-35K-1100LMF-MIN1-120-ZT
1	S	LED	20 W	3500 K	120	Recessed LED 7" Lensed Shower Downlight. Gasketed Drop Opal Reflector.		Atlantic Lighting	LED7-DLM20-35K-U / 7LEDDO-CL
5	S2	LED	9 W	3500 K	120	Recessed Linear LED w/ Lens, Rated for Damp Locations.		Mark Arch Lighting	SL2L-2-FLP-FL-90-35K-800LMF-NODIM-120-WL
2	UC	LED	13 W	3500 K	120	LED Undercounter Light w/ On/Off Switch		Lithonia	UCLD-24-35K-90-SWR-BN
2	V	LED	12 W	4000 K	120	Wall Mounted Vanity With Arclylic Diffuser		Arch Lighting Works	CLAW-2-LED-35K-0-10-CLR-AL
4	W2	LED	9 W	3500 K	120	Wall Mounted LED Linear Pendant w/ Direct Only Light Output (2 ft)	Outdoor Rated	Arch Lighting Works	S2WD-2-1-N-35-ZB-SCT-120-SLV-LMES20-DC

LUMINAIRE SCHEDULE NOTES

1. MANUFACTURER CATALOG NUMBERS ARE SHOWN FOR GENERAL DESCRIPTIVE PURPOSES AND TO ESTABLISH STANDARD OF QUALITY ONLY. ACCUSERV SHALL PROVIDE LUMINAIRES COMPLETE WITH ALL OPTIONS AND ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION. ALL PRODUCTS SHALL BE UL LISTED.

2. PROVIDE PROPER LAMP FOR REFLECTOR ASSEMBLY SPECIFIED AND AS RECOMMENDED BY LUMINAIRE MANUFACTURER.

3. ACCEPTABLE LAMP MANUFACTURERS:
FLUORESCENT & INCANDESCENT: GE, OSRAM/SYLVANIA, PHILIPS HID AND QUARTZ-HALOGEN LAMPS:
G.E., OSRAM/SYLVANIA, PHILIPS, VENTURE, USHIO

4. VERIFY CONSTRUCTION OF CEILINGS BEING INSTALLED AND PROVIDE THE LUMINAIRES SPECIFIED IN APPROPRIATE CONFIGURATION WITH ALL HARDWARE AND ACCESSORIES REQUIRED FOR COMPATIBLE INSTALLATION.

5. PROVIDE LUMINAIRES WITH JOINING PLATES, END CAPS, CANOPIES, MOUNTING HARDWARE, ETC., AS REQUIRED FOR COMPLETE INSTALLATION.

6. FURNISH WALL/SLOT LUMINAIRE WITH NECESSARY CORNERS AND END PLATES, MOUNTING HARDWARE, ETC., FOR A COMPLETE INSTALLATION OF CONTINUOUS LIGHTED SLOT FITTING WALL TO WALL OR RUN CONTINUOUS AS SHOWN ON DRAWINGS.

7. FURNISH LINEAR LUMINAIRES IN CONTINUOUS ROWS OR PATTERNS AS INDICATED ON DRAWINGS. PROVIDE WITH CORNER, ANGLE, AND END PIECES AS REQUIRED FOR A COMPLETE FINISHED INSTALLATION.

8. FURNISH LUMINAIRES IN MECHANICAL SPACES COMPLETE WITH PENDANT STEMS OR CHAIN HANGERS AS REQUIRED TO MOUNT BELOW PIPING, DUCT, CONDUIT, ETC., MAINTAIN MINIMUM 7'-6"H. UNIFORM MOUNTING HEIGHT FOR ALL LUMINAIRES THROUGHOUT EACH AREA.

9. PENDANT-MTD LUMINAIRES WITH AIRCRAFT CABLE SUSPENSION SYSTEMS SHALL BE FURNISHED WITH ADJUSTABLE CABLE GRIP HARDWARE. CABLE SIZE SHALL BE SELECTED BY MANUFACTURER TO PROVIDE ADEQUATE SUPPORT OF LUMINAIRE SPECIFIED.

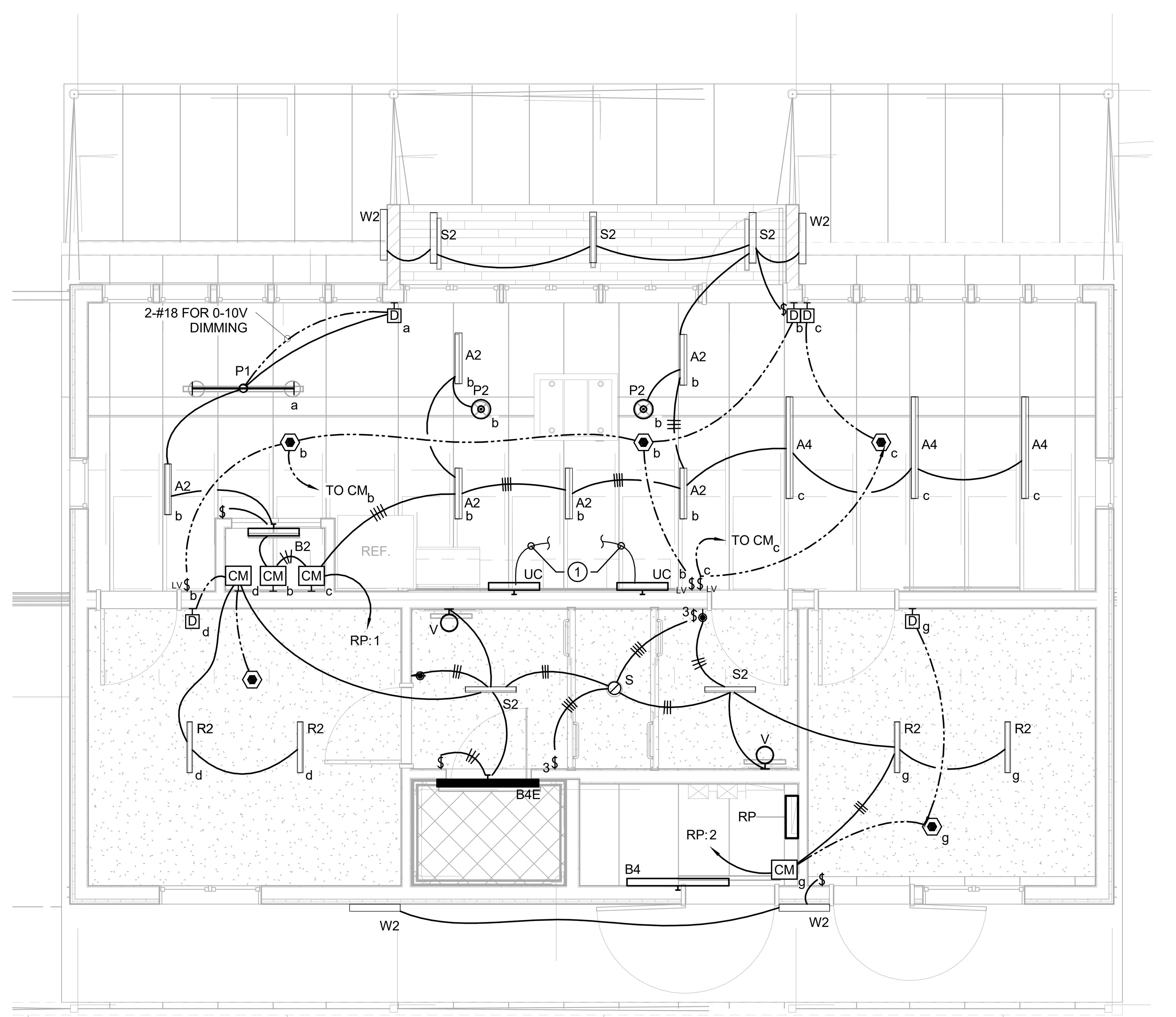
EMERGENCY BATTERY BALLASTS FOR LINEAR LUMINAIRES SHALL PRODUCE 1350 LUMENS FOR 120 MINUTES MINIMUM. BODINE #B50 OR EQUAL.

10. POLE MANUFACTURER SHALL COORDINATE WITH LUMINAIRE MANUFACTURER TO PROVIDE ADEQUATE STRENGTH TO SUPPORT THE FIXTURE. PROVIDE APPROPRIATE MOUNTING HARDWARE, ANCHOR BOLTS, BOLT/BASEPLATE COVERS, AND GROUNDING LUG. MANUFACTURER SHALL FURNISH A ANCHOR BOLT

11. TEMPLATE TO ENSURE PROPER MOUNTING AND LUMINAIRE ORIENTATION FOR CORRECT LIGHT DISTRIBUTION.

12. LED FIXTURES: TO INSURE A FIXTURE WILL PERFORM "AS ADVERTISED" ON A CUT SHEET, THE PUBLISHED SPECIFICATION SHALL BE SUPPORTED BY LM-79 TEST RESULTS. LED FIXTURES WHICH ARE BUILT USING LED'S SHALL HAVE SUCCESSFULLY PASSED LM-80. LED'S SHALL YIELD A LM-80 RESULT OF A MINIMUM OF

13. 70% OF THE ORIGINAL LIGHT OUTPUT OF THE LED STILL BEING DELIVERED AFTER 50,000 HOURS OF OPERATION. THE POWER SUPPLY UNIT (DRIVER) SHALL HAVE 150,000 HOURS MTBF (MEAN TIME BETWEEN FAILURES). AN INTEGRATED BATTERY BACKUP SOLUTION FOR THE LED FIXTURE IS REQUIRED. REPLACEABLE LED BOARDS TO ALLOW FIXTURE UPGRADE.



1 ELEC - Lighting
1/4" = 1'-0"

SHEET NOTES:

1. UNDERCOUNTER LIGHTING.CONNECT TO UNSWITCHED RECEPTACLE CIRCUIT. SEE POWER SHEET.

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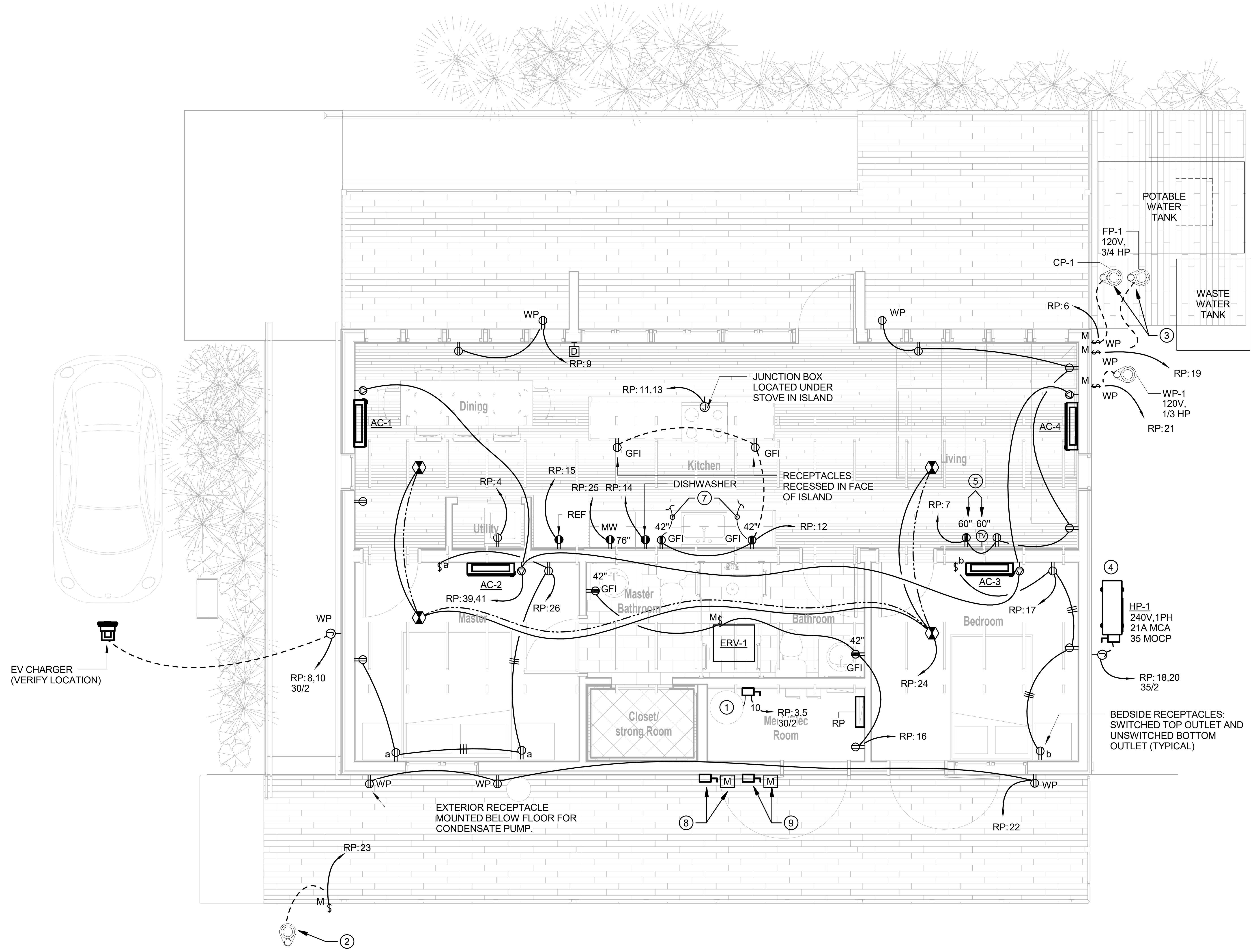
Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

ELECTRICAL - LIGHTING

E101

2/23/2017 10:42:32 AM



1 ELEC - Power & Aux
1/4" = 1'-0"

SHEET NOTES:

1. WH-1: WATER HEATER, 240V, 1PH, 2KW.
2. CISTERN WATER PUMPS, 120V, 1/6 HP.
3. WATER PUMPS, 120V, 1/6 HP.
4. HP-1: HEAT PUMP, 240V, 1PH,
5. RECESSED TV JUNCTION BOX. ARLINGTON MODEL NO. TVB712GC
6. WASHER, 120V.
7. CIRCUIT TO UNDERCOUNTER LIGHTS. SEE LIGHTING SHEET.
8. PV PANEL DISCONNECT AND POWER MONITOR. SEE SINGLE LINE DIAGRAM. VERIFY LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
9. UTILITY POWER DISCONNECT AND POWER METER. SEE SINGLE LINE DIAGRAM. VERIFY LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.

GENERAL NOTES:

1. PROVIDE WEATHERPROOF JUNCTION BOXES FOR ALL CONNECTIONS LEAVING THE HOUSE. FLEXIBLE CONDUIT SHALL BE INSTALLED OUT TO EACH DEVICE.

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Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

ELECTRICAL - POWER

E102

2/23/2017 9:59:59 AM

Branch Panel: RP

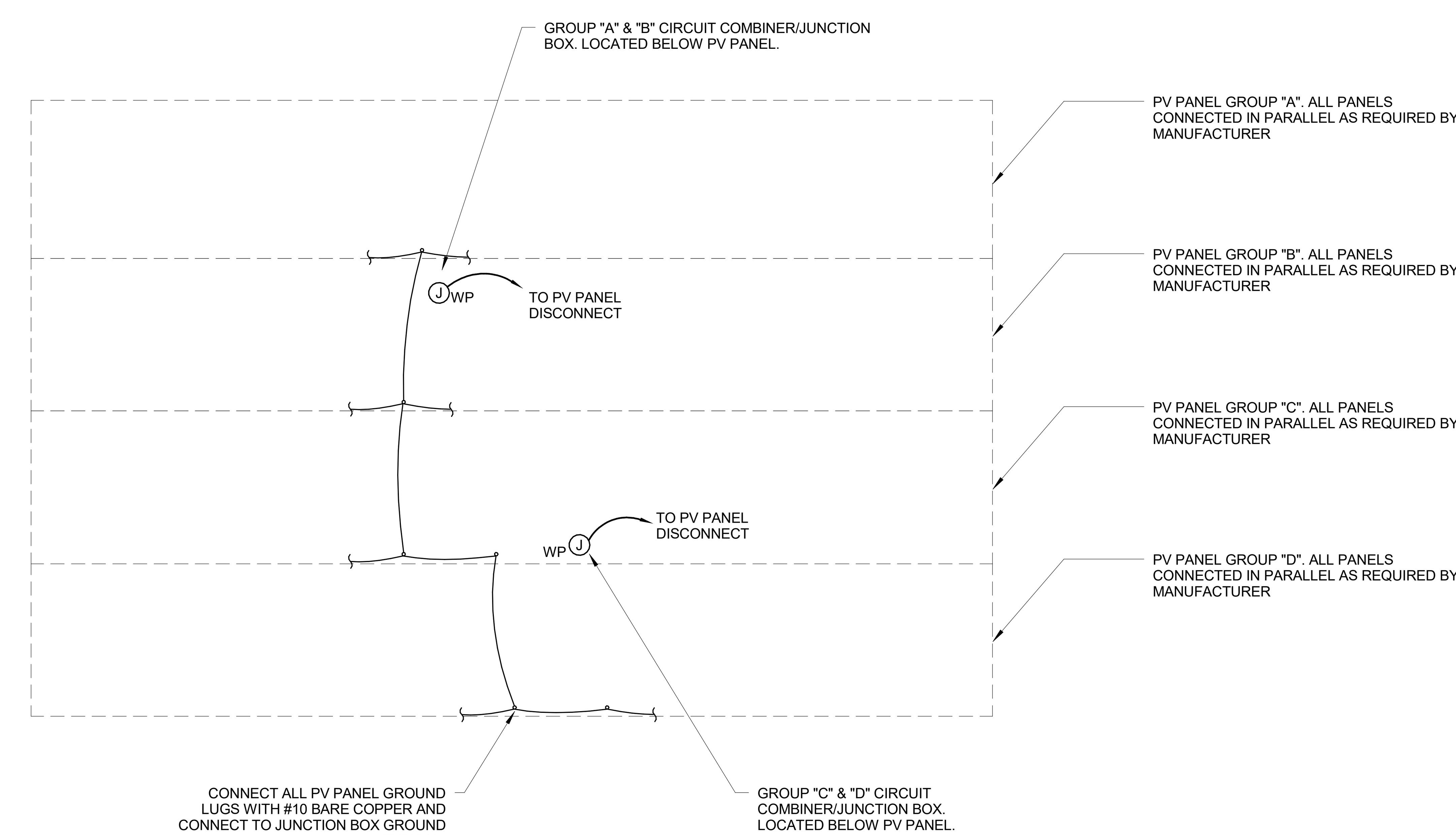
Location:		**Volts:** 120/240 Single	**A.I.C. Rating:** 10000
Supply From:		**Phases:** 1	**Mains Type:** MCB
Mounting: Surface		**Wires:** 3	**Mains Rating:** 225 A
Enclosure:			**MCB Rating:** 200 A

Notes:

Circuit Number	Circuit Description	Trip	Poles	Wire Size	A		B		Wire Size	Poles	Trip	Circuit Description	Circuit Number
1	Lighting	20 A	1	1-#12, 1-#12, 1-#12	431 VA	475 VA			1-#12, 1-#12, 1-#12	1	20 A	Lighting	2
3	WH-1 (Water Heater)	30 A	2	2-#10, 1-#10, 1-#10			1000 VA	1200 VA	1-#12, 1-#12, 1-#12	1	20 A	Clothes Washer	4
5	--	--	--	--	1000 VA	800 VA			1-#12, 1-#12, 1-#12	1	20 A	Water Pump	6
7	Receptacle	20 A	1	1-#12, 1-#12, 1-#12			1080 VA	500 VA	2-#10, 1-#10, 1-#10	2	30 A	EV Charger	8
9	Receptacle	20 A	1	1-#12, 1-#12, 1-#12	540 VA	750 VA			--	--	--	--	10
11	Stove	30 A	2	2-#10, 1-#10, 1-#10			750 VA	720 VA	1-#12, 1-#12, 1-#12	1	20 A	Receptacle	12
13	--	--	--	--	750 VA	1200 VA			1-#12, 1-#12, 1-#12	1	20 A	Dish Washer	14
15	Refrigerator	20 A	1	1-#12, 1-#12, 1-#12			1200 VA	540 VA	1-#12, 1-#12, 1-#12	1	20 A	Receptacle & ERV-1	16
17	Receptacle	20 A	1	1-#12, 1-#12, 1-#12	540 VA	2200 VA			2-#8, 1-#8, 1-#10	2	35 A	HP-1 (HVAC)	18
19	Fire & Circulation Pumps	20 A	1	1-#12, 1-#12, 1-#12			1500 VA	2950 VA	--	--	--	--	20
21	Water Pump	20 A	1	1-#12, 1-#12, 1-#12	800 VA	540 VA			1-#12, 1-#12, 1-#12	1	20 A	Receptacle	22
23	Water Pump	20 A	1	1-#12, 1-#12, 1-#12			800 VA	200 VA	1-#12, 1-#12, 1-#12	1	20 A	Smoke Detectors	24
25	Microwave	20 A	1	1-#12, 1-#12, 1-#12	1500 VA	720 VA			1-#12, 1-#12, 1-#12	1	20 A	Receptacle	26
27	PV Panels	60 A	2	2-#6, 1-#6, 1-#10			0 VA	0 VA	--	1	20 A	Spare	28
29	--	--	--	--	0 VA	0 VA			--	1	20 A	Spare	30
31	Space	--	--	--			0 VA	0 VA	--	1	0 A	Spare	32
33	Space	--	--	--	0 VA	0 VA			--	1	0 A	Spare	34
35	Space	--	--	--			0 VA	0 VA	--	1	0 A	Spare	36
37	Space	--	--	--	0 VA	0 VA			--	1	0 A	Spare	38
39	AC-1,2,3,4	15 A	2	2-#14, 1-#14, 1-#14			480 VA	0 VA	--	1	0 A	Spare	40
41	--	--	--	--	480 VA	0 VA			--	1	0 A	Spare	42
				Total Load:	12726 VA		12920 VA						
				Total Amps:	106 A		108 A						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	4400 VA	100.00%	4400 VA		
Heating	2000 VA	100.00%	2000 VA	**Total Conn. Load:**	25652 VA
Motor	3900 VA	109.62%	4275 VA	**Total Est. Demand:**	23807 VA
Other	400 VA	100.00%	400 VA	**Total Conn.:**	107 A
Receptacle	14440 VA	84.63%	12220 VA	**Total Est. Demand:**	99 A
Power	0 VA	0.00%	0 VA		
Lighting	512 VA	100.00%	512 VA		

Notes:



1 ELEC - ROOF
1/4" = 1'-0"

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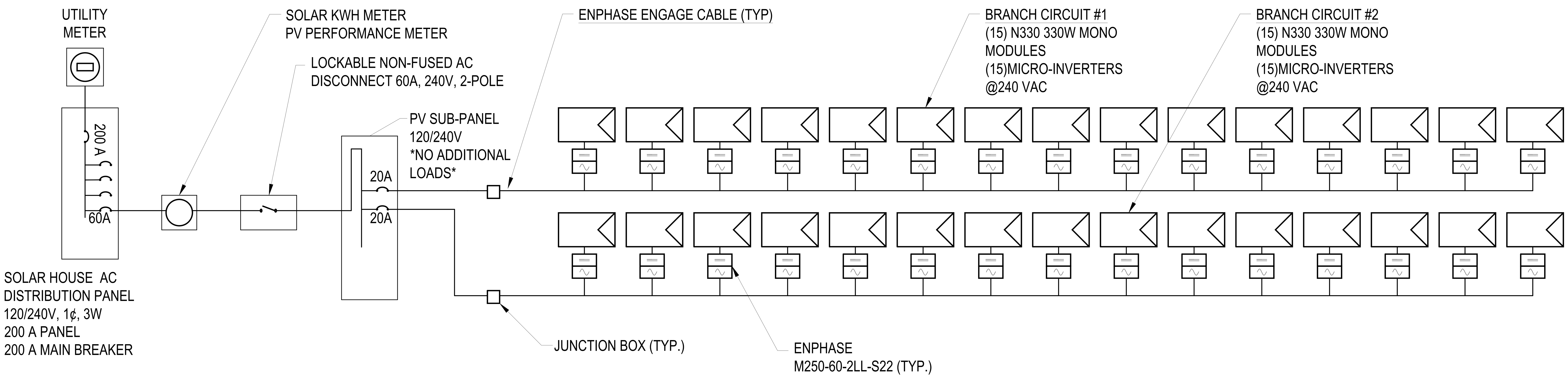
MARK	DATE	DESCRIPTION

ELECTRICAL - ROOF PLAN & CONTROLS

E103

2/23/2017 2:52:37 AM



UAB SOLAR HOUSE
1 LINE DIAGRAM

SCALE: NONE

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. ALL DIMENSIONS ARE CONSIDERED TRUE AND REFLECT MANUFACTURER'S SPECIFICATIONS.
3. THESE DRAWINGS ARE NOT FOR CONSTRUCTION PURPOSES AND ARE FOR INFORMATION PURPOSES ONLY. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.

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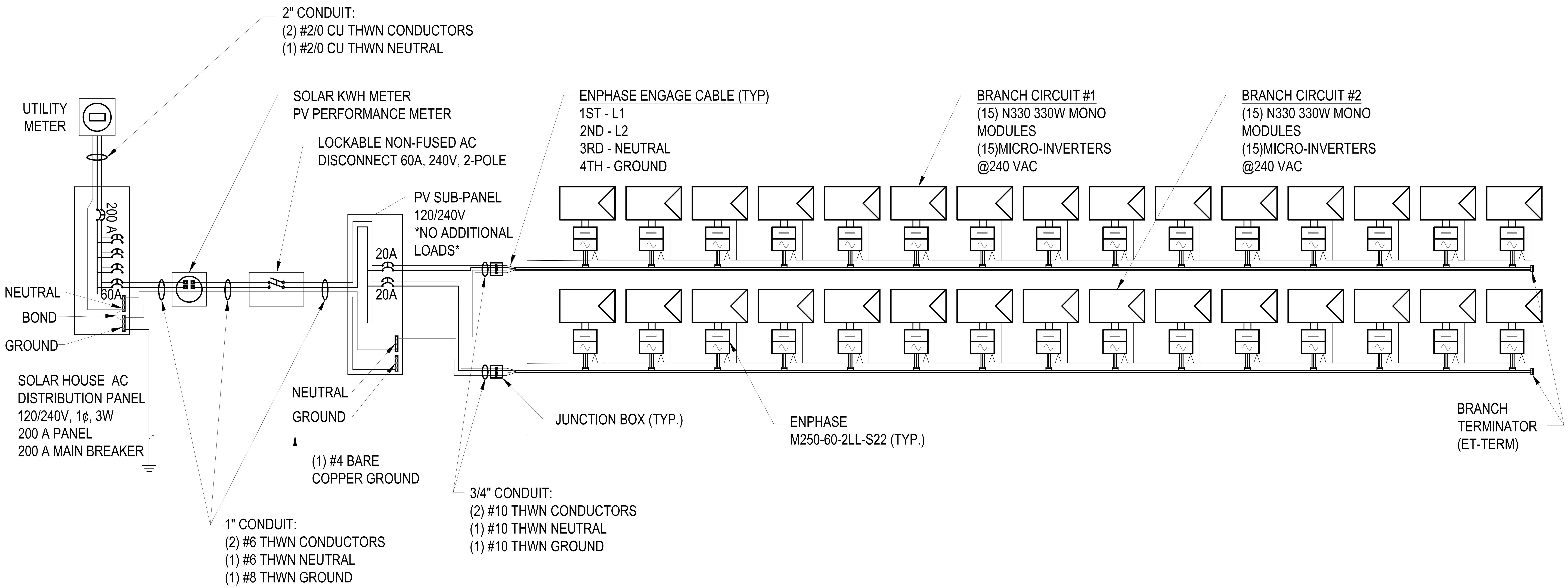
MARK	DATE	DESCRIPTION

SINGLE LINE DIAGRAM

E1.04

11/16/2016 1:24:21 PM



UAB SOLAR HOUSE
3 LINE DIAGRAM

SCALE: NONE

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. ALL DIMENSIONS ARE CONSIDERED TRUE AND REFLECT MANUFACTURER'S SPECIFICATIONS.
3. THESE DRAWINGS ARE NOT FOR CONSTRUCTION PURPOSES AND ARE FOR INFORMATION PURPOSES ONLY. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.

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Lot Number LOT NO. 112

MARK	DATE	DESCRIPTION

THREE LINE DIAGRAM

E1.05

11/16/2016 1:24:22 PM

FIRE PROTECTION LEGENDS, SCHEDULES AND DETAILS

FIRE PROTECTION GENERAL NOTES

1. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BID. CONTRACTOR SHALL VERIFY EXACT SIZE, LOCATION, ELEVATION OF EXISTING STRUCTURE, CEILINGS, MECHANICAL, AND ELECTRICAL PRIOR TO INSTALLING ANY NEW PIPE.
2. CONTRACTOR SHALL COORDINATE ALL PIPE ROUTING TO AVOID CONFLICTS WITH ALL STRUCTURAL, ELECTRICAL AND MECHANICAL FEATURES OF THE BUILDING.
3. ALL HORIZONTAL PIPING IS RUN ABOVE THE CEILING OR IN JOIST SPACE. ALL PIPING SHALL DRAIN DOWN AS REQUIRED BY NFPA 130. SEE DETAIL.
4. INSTALL ALL FIRE PROTECTION MATERIALS IN AREAS WITH EXPOSED CEILINGS IN A NEAT FIRST CLASS MANNER. ALL WORKMANSHIP SHALL BE IN ACCORDANCE WITH INDUSTRY BEST PRACTICES. PIPING SHALL BE INSTALLED PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE UNLESS INDICATED OTHERWISE.
5. CONTRACTOR IS RESPONSIBLE FOR NOTIFYING FIRE MARSHALL FOR INSPECTIONS AND TESTING. PROVIDE A MINIMUM OF A WEEK NOTICE.
6. CONTRACTOR TO REFER TO ARCHITECTURAL DRAWINGS FOR NEW WORK AREAS, CEILING HEIGHTS, SECTIONS AND RATED WALLS.
7. CONTRACTOR RESPONSIBLE FOR COORDINATION OF PIPING WEIGHT AND LOCATION PRIOR TO INSTALLATION OF ANY PIPE.
8. PIPING LAYOUT AND SIZING SHOWN ON PLANS IS DIAGRAMMATIC AND SHOWN FOR SPACE REQUIREMENTS. CONTRACTOR IS RESPONSIBLE FOR LAYOUT SHOP DRAWINGS, CALCULATIONS, SUBMITTAL DATA, TESTING , OWNER TRAINING AND CERTIFYING SYSTEM MEETS NFPA 130 AND CONTRACT DOCUMENTS.
9. ALL EXPOSED, ALL INTERIOR AND EXTERIOR PIPE SYSTEM PIPING SHALL BE GALVANIZED PIPE, SLOPED TO DRAIN DOWN.
10. SPRINKLER SYSTEM TO BE INSTALLED PER NFPA 13D & I.R.C..
11. MAX SPACING OF SPRINKLERS IS 16FT. X 16FT..
12. MAX DISTANCE FROM WALLS IS 8FT..
13. MAX DISTANCE BETWEEN SPRINKLERS IS 8FT..
14. SPRINKLERS SHALL BE A MIN. OF 3'-0" AWAY FORM THE CENTER OF SURFACE MOUNTED LIGHTS AND CEILING PLANS.
15. SPRINKLERS SHALL BE INT. TEMP. IF CLOSER THAN 18" FROM KITCHEN.
16. SPRINKLERS SHALL BE INT. TEMP. IF CLOSER THAN 24" FROM A CEILING MOUNTED HEAT DIFFUSER OR 36" FROM A WALL MOUNTED HEAT DIFFUSER.
17. SPRINKLERS SHALL BE INT. TEMP. IF CLOSER THAN 6" FROM A 250 WATT OR LESS LIGHT FIXTURE.
18. ALL PIPING AND FITTINGS ABOVE CEILING TO BE CPVC LISTED FOR FIRE SPRINKLER SYSTEMS. PIPING MEETS ASTM F 442. ALL EXPOSED PIPING TO BE GALVANIZED.
19. HANGERS TO BE INSTALLED IN ACCORDANCE WITH NFPA 13D.
20. WIRING OF ALARM DEVICES TO BE PROVIDED.

FIRE PROTECTION SHOP DRAWINGS AND SUBMITTALS

1. PROVIDE A NFPA 130 COMPLIANT SYSTEM TO PROVIDE COVERAGE TO NEW WORK AREA. CONTRACTOR RESPONSIBLE TO PROVIDE DETAILED SHOP DRAWINGS AND CALCULATIONS COMPLETE.
2. SHOP DRAWINGS SHALL INCLUDE:

A. A REFLECTED CEILING PLAN INDICATING LOCATION OF SPRINKLER HEADS, LIGHTS, CEILING DEVICES, GRILLES, AUDIO VISUAL AND ANY DEVICES ATTACHED TO LIFT OUT CEILINGS. ALL SPRINKLER HEADS IN LAYIN CEILINGS TO BE CENTERED IN TILES.
B. PREPARE A WORKING PIPE SHOP DRAWING BASED ON HYDRAULIC CALCULATIONS OR PIPE SCHEDULE. THE PIPING DRAWINGS SHALL INDICATE THE ELEVATION OF THE PIPE, THE CONFIGURATION OF THE PIPING AND HANGERS, SIZE OF THE PIPE AND COORDINATION OF PIPING WITH OTHER DISCIPLINES, STRUCTURE AND DUCTWORK.
C. HYDRAULIC CALCULATIONS ARE TO BE PREPARED USING A FLOW TEST WITHIN 90 DAYS.
D. THE CONTRACTOR IS RESPONSIBLE FOR INCORPORATING LOCAL AUTHORITY HAVING JURISDICTION COMMENTS FOR COMPLIANCE.
E. ALL ADDITIONAL MATERIALS TO BE INDICATED ON SHOP DRAWINGS.
F. ALL LOW-POINT DRAIN DOWN LOCATION AND PENETRATIONS OF BUILDING STRUCTURE TO BE INDICATED ON SHOP DRAWINGS.

3. CONTRACTOR SHALL BE LICENSED, CERTIFIED IN THE STATE IN WHICH THE WORK IS PREFORMED. THE CONTRACTOR SHALL BE A NICET LEVEL III OR LEVEL IV OR FIRE SUPPRESSION SYSTEMS.
4. ALL ELECTRICAL FIRE ALARM REQUIREMENTS TO BE COORDINATED WITH THE ELECTRICAL. THE FLOW AND TAMPER SWITCHES TO BE PROVIDED UNDER FIRE PROTECTION CONTRACT. CONDUIT, ALARM WIRING AND PROGRAMMING THE RESPONSIBILITY OF THE FIRE ALARM CONTRACT AND SHALL BE COORDINATED WITH ELECTRICAL.
5. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS WITHIN 60 DAYS PRIOR TO THE START OF THE SPRINKLER SYSTEM INSTALLATION.
6. CONTRACTOR SHALL SUBMIT DRAWINGS TO PROJECT ARCHITECT AHJ, & ENGINEER FOR REVIEW AND APPROVAL.
7. CONTRACTOR SHALL COORDINATE WITH CITY OF BIRMINGHAM FOR INSPECTIONS.
8. HYDRAULIC CALCULATIONS AND SPRINKLER SHOP DRAWINGS FOR THE BUILDING FIRE PROTECTION MUST BE PREPARED UNDER THE SUPERVISION OF AN ENGINEER LICENSED IN THE STATE AND BEAR HIS/HER SEAL WITH SIGNATURE AND DATE.

DRAWING ARE DIAGRAMMATIC , THE SPRINKLER CONTRACTOR IS RESPONSIBLE FOR LAYOUT AND HYDRAULIC CALCULATIONS IN COMPLIANCE WITH NFPA 13.

FIRE PROTECTION LEGEND

FIRE MAIN (F)	F F
BALL VALVE	
OS&Y VALVE (WITH TAMPER SWITCH)	TS COORDINATE WITH ELECTRICAL FIRE ALARM SIGNAL TO BUILDING ALARM PANEL
	CONNECT TO EXISTING, FIELD VERIFY EXACT LOCATION, SIZE AND INVERT
FLOW SWITCH	FS COORDINATE WITH ELECTRICAL FIRE ALARM SIGNAL TO BUILDING ALARM PANEL
GPM	GALLONS PER MINUTE
PSI	POUNDS PER SQUARE INCH
	PIPE DOWN
	PIPE UP
QR C	QUICK RESPONSE, CONCEALED HEAD WITH FLUSH COVERPLATE
QR P	QUICK RESPONSE, SIDEWALL PENDANT
	ARCH TO SELECT COLORS ON ALL HEADS

CONTRACTOR TO PROVIDE CONCEALED HEADS IN ALL AREAS WITH CEILINGS.

WATER FLOW TEST INFO

STATIC =	90 PSI
RESIDUAL =	80 PSI
FLOW RATE =	992 GPM
DATE:	-
INFO BY:	-
LOCATION:	-

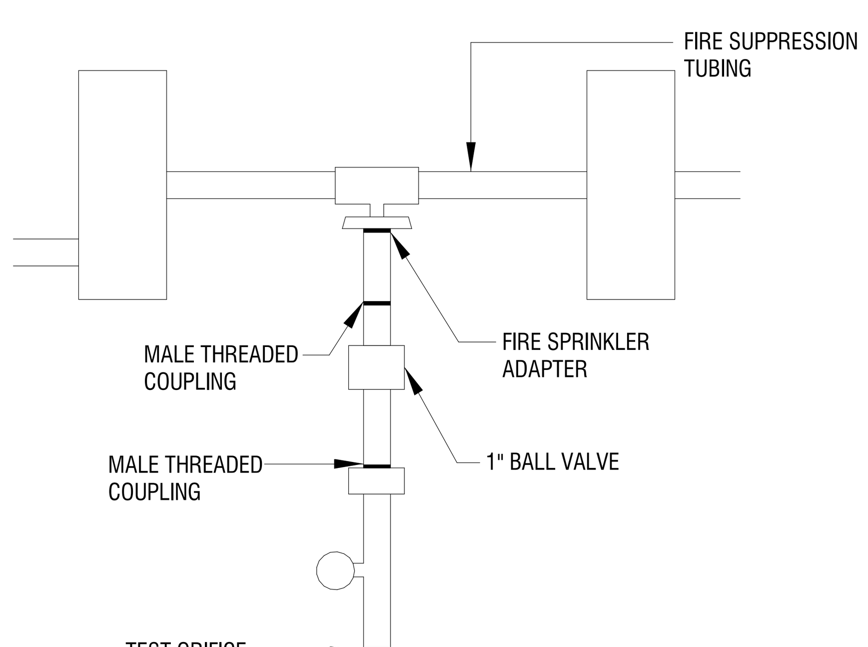
SPRINKLER SCHEDULE

COUNT	DIAMETER	MANUFACTURER	MODEL	K-FACTOR	ORIFICE	DESCRIPTION
1	1"	AMES	2000B	N/A	N/A	DOUBLE CHECK BACKFLOW ASSEMBLY
1	1"	VIKING	EASYPAC RISER	N/A	N/A	RESIDENTIAL RISER MANIFOLD
1	1"	RELIABLE	F1RES44 HSW RECESSED SIDEWALL	4.9	STANDARD	SPRINKLER HEAD
8	1/2"	RELIABLE	F1RFC49 WHITE CONCEALED PENDENT	4.9	STANDARD	SPRINKLER HEAD
1	1/2"	VIKING	FREEDOM RESIDENTIAL UPRIGHT LEAD FREE SPRINKLER VK4670	4.9	STANDARD	SPRINKLER HEAD
N/A	N/A	VIKING	BLAZEMASTER CPVC FIRE SPRINKLER PIPE	N/A	N/A	CPVC PIPE

HEAT SOURCE	ORDINARY TEMP. 135-170	INTERMEDIATE TEMP. 175-225
KITCHEN RANGE	18"	9"
HOT AIR FLUES	18"	9"
UNINSULATED HEAT DUCTS	18"	9"
UNINSULATED HOT WATER PIPES	12"	6"
SIDE OF HOT AIR DIFFUSER	24"	12"
FRONT OF HOT AIR DIFFUSER	36"	18"
HOT WATER HEATER	6"	3"
50W-250W LIGHT FIXTURE	6"	3"
250W-499W LIGHT FIXTURE	12"	6"

WATER FLOW TEST

THE INLINE FLOW TEST CAN BE CONSTRUCTED ON SITE. IT PERFORMS A FLOW TEST TO ENSURE PROPER SYSTEM OPERATION AND FLOW



FLOW TEST
TO ENSURE THE SYSTEM PROVIDES ENOUGH WATER FOR PROPER FIRE SPRINKLER PERFORMANCE, YOU SHOULD CONDUCT A FLOW VERIFICATION TEST.

NOTE: THE NFPA 13D INSTALLATION STANDARD DOES NOT REQUIRE FLOW VERIFICATION.

BEFORE PERFORMING A FLOW VERIFICATION TEST, CONFIRM THE WATER PRESSURES BY CONTACTING THE WATER AND SEWER DEPARTMENT OF YOUR LOCAL CITY. ENSURE THE AVAILABLE WATER PRESSURE MATCHES THE PRESSURE USED IN THE SYSTEM DESIGN.

NOTE: THE SPRINKLER PLAN INDICATES THE MOST HYDRAULICALLY REMOTE SPRINKLER (OR PAIR OF SPRINKLERS). FOR TEST REQUIREMENT ON OTHER SPRINKLERS, CONSULT TOUR LOCAL CODE.

FIRE PROTECTION DESIGN ANALYSIS

REFER TO ARCHITECTURAL PLANS FOR COMPLIANCE NFPA 101, 130
TYPE OF CONSTRUCTION: IV
OCCUPANCY: REFERENCE ARCHITECTURAL

FIRE PROTECTION DESIGN CODES AND STANDARDS

APPLICABLE CODES AND STANDARDS: (REFERENCE ARCHITECTURAL SECTION)

INTERNATIONAL BUILDING CODE (IBC)
INTERNATIONAL FIRE CODE (IFC)
INTERNATIONAL PLUMBING CODE (IPC)
NATIONAL ELECTRIC CODE (NEC)
NATIONAL ENERGY CODE -ASHRAE STANDARD
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 130
INSURANCE UNDERWRITER REQUIREMENTS

FIRE PROTECTION HYDRAULIC DEMANDS

HAZARD CLASS	NFPA-13D
SYSTEM AREA	2 HDS
DENISITY	0.05 GPM
AREA PER SPRK	18X18 SPRK COVERAGE
PLUMB. DEMAND	0 GPM (SEPARATE SUPPLY)

TOTAL SYSTEM REQUIREMENTS

GALLON PER MINUTE	35 GPM
WATER PSI	48 PSI
AT	STREET CONNECTION (TEST)

1. HYDRAULIC CALCULATIONS SHALL BE CALCULATED WITH A 10% SAFETY FACTOR.
2. FLOW DATA IS THE RESPONSIBILITY OF THE CONTRACTOR.

surviv(AL) house

TEAM ALABAMA

The University of Alabama at Birmingham
Calhoun Community College
The University of Alabama at Huntsville

CONSULTANTS

Williams Blackstock Architects
Structural Design Group
Edmonds Engineering

Client

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MARK	DATE	DESCRIPTION

FIRE PROTECTION - SCHEDULES, NOTES, & LEGENDS

FP001

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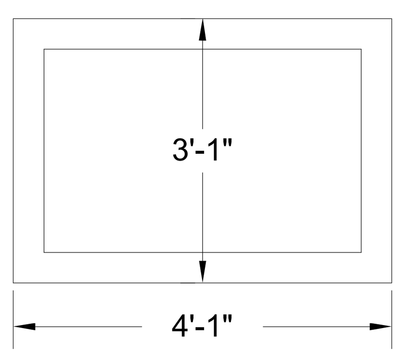
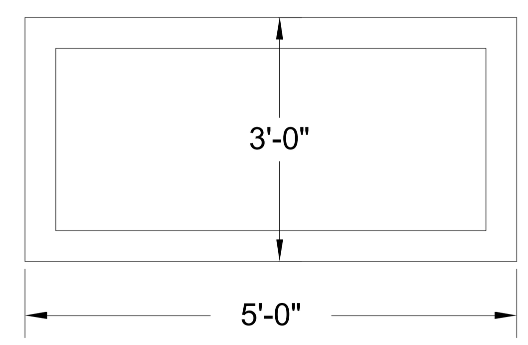
FIRE PROTECTION - DETAILS

SEE GENERAL NOTES 8.6.3 FOR CLOSET REQUIREMENTS

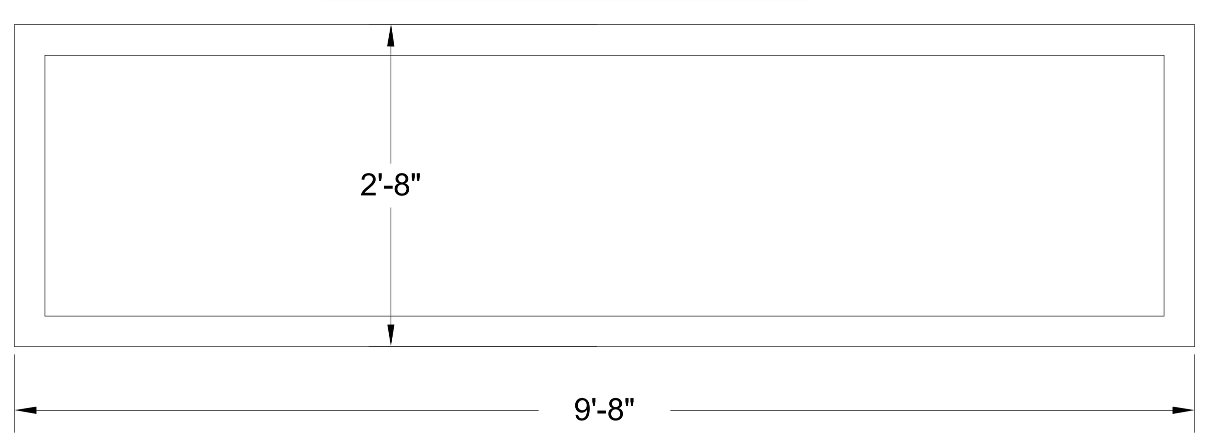
THE LEAST DIMENSION
EXCEEDS 3FT (0.9M)
SPRINKLER REQUIRED

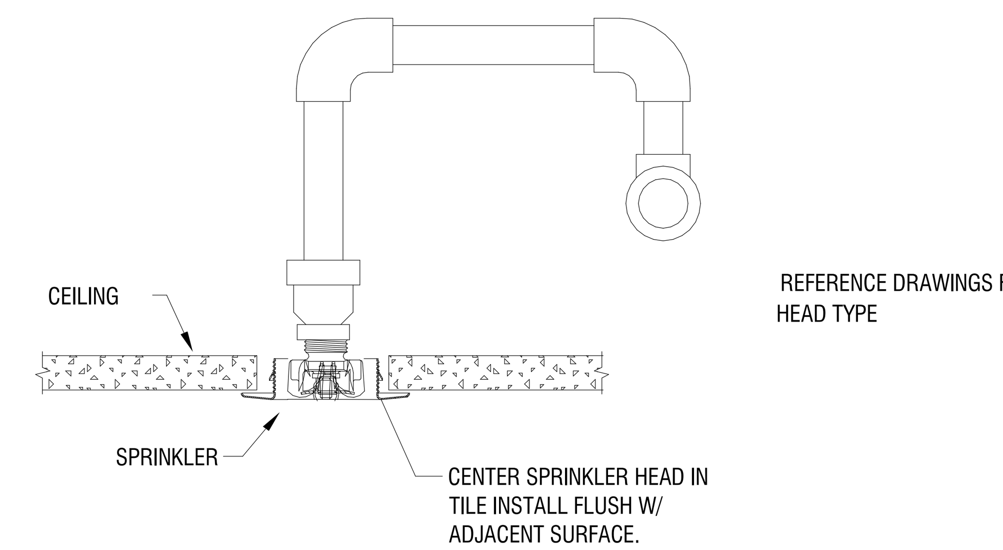


SQUARE FOOTAGE DOES NOT
EXCEED 24 FT2 (2.2 M2)
SPRINKLER REQUIRED



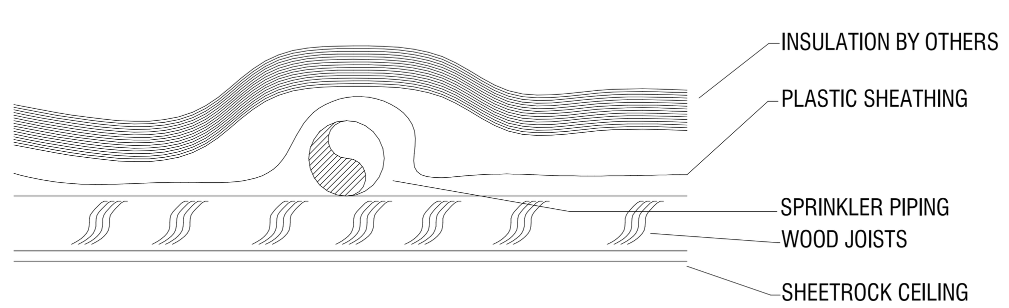
SQUARE FOOTAGE EXCEEDS
24FT2 (2.2M2)
SPRINKLER REQUIRED





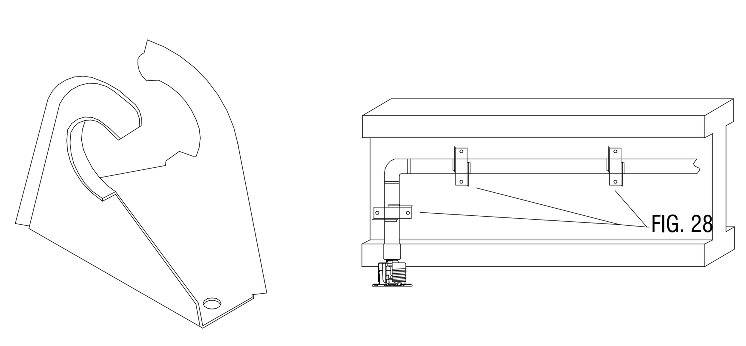
CENTER OF TILE FABRICATION AND INSTALLATION

NO SCALE



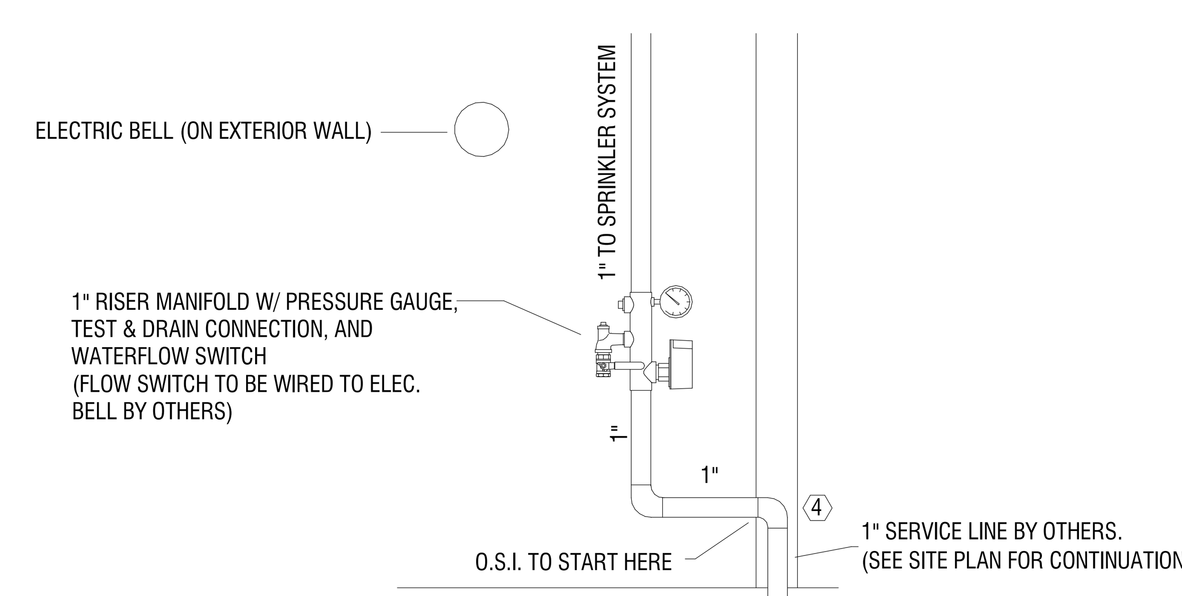
ABOVE CEILING PIPING FREEZE PROTECTION DETAIL

N.T.S.



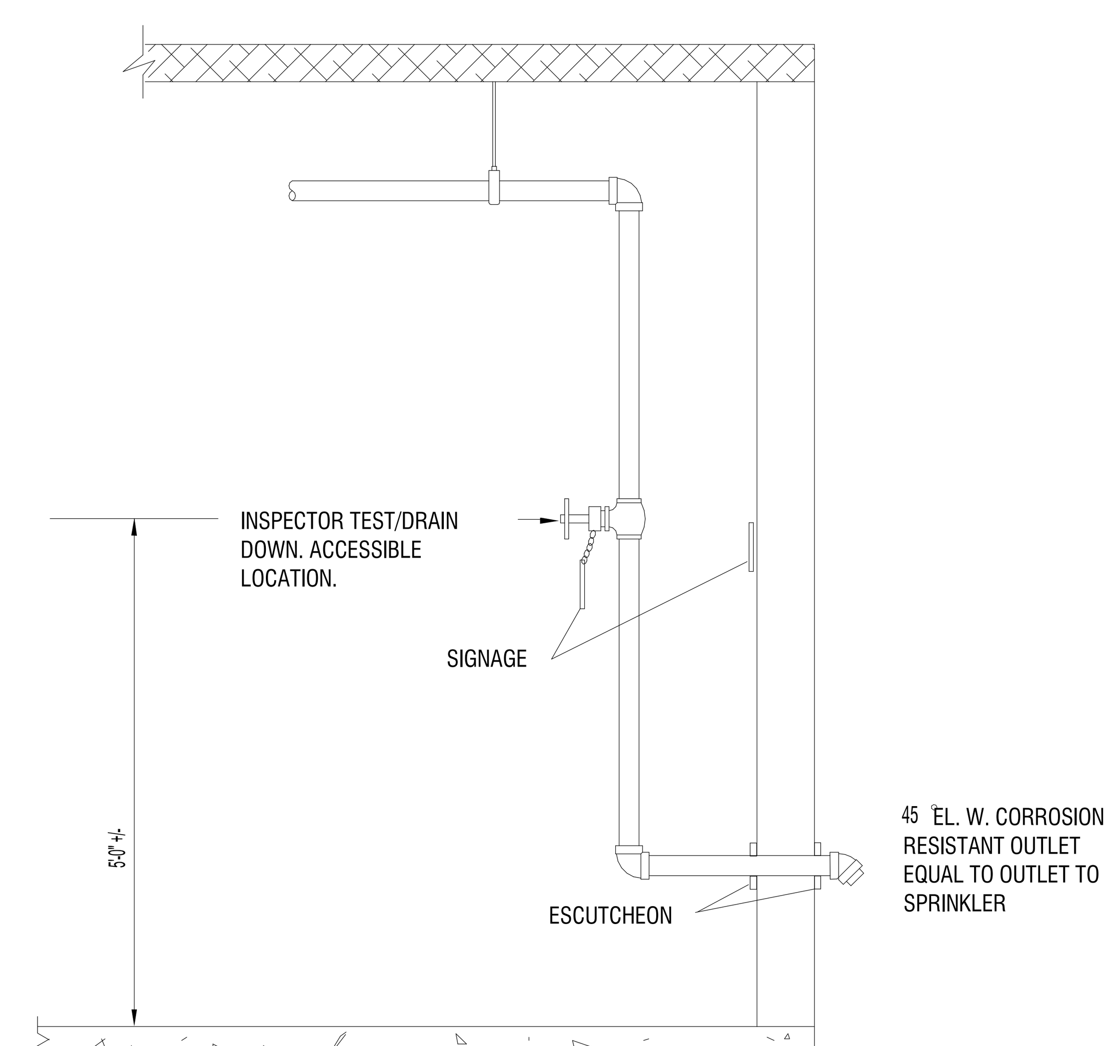
HANGER DETAIL

N.T.S.



SPRINKLER RISER DETAIL

N.T.S.



LOW POINT DRAIN DOWN DETAIL

NO SCALE

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FIRE PROTECTION -
DETAILS

FP002

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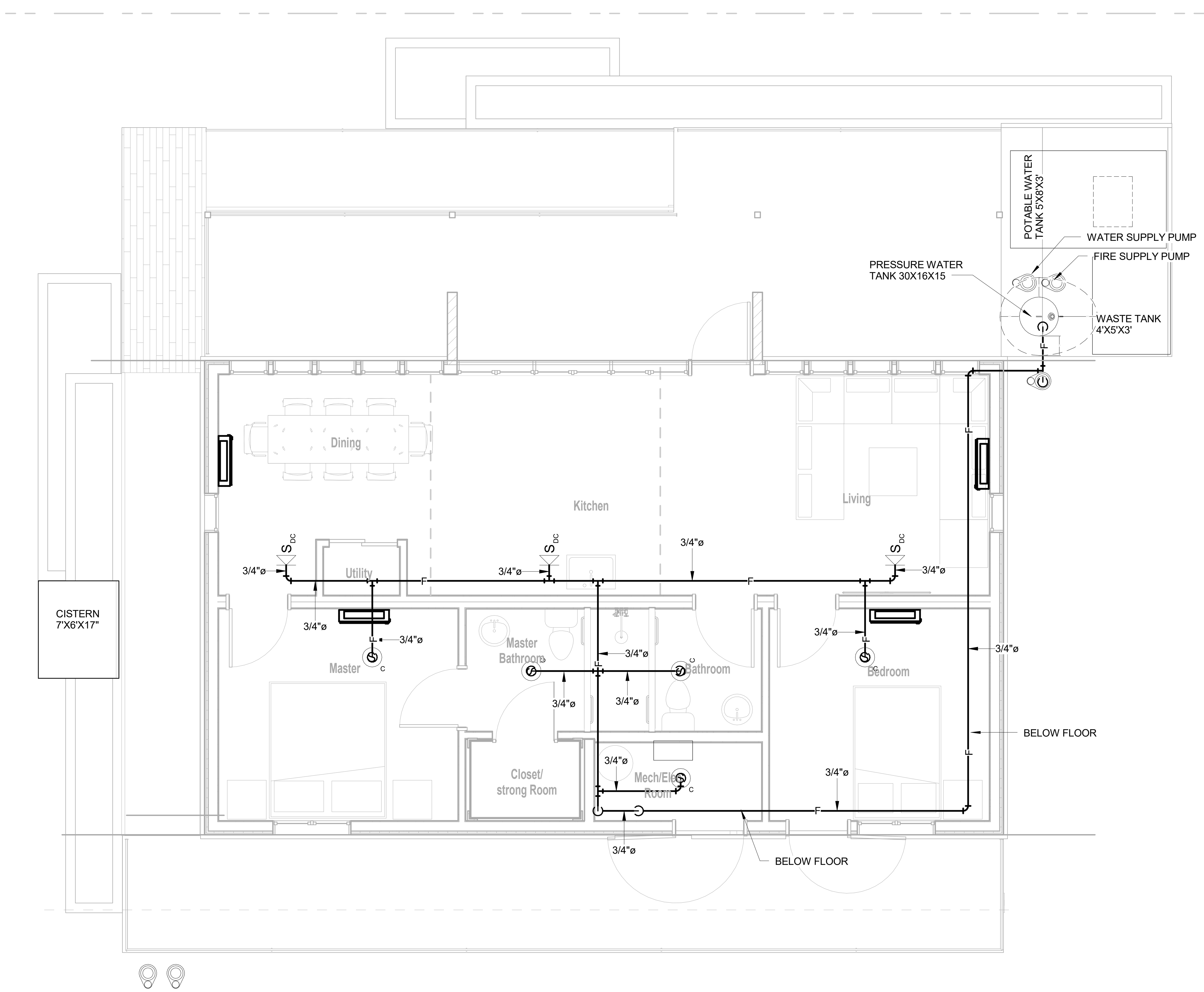
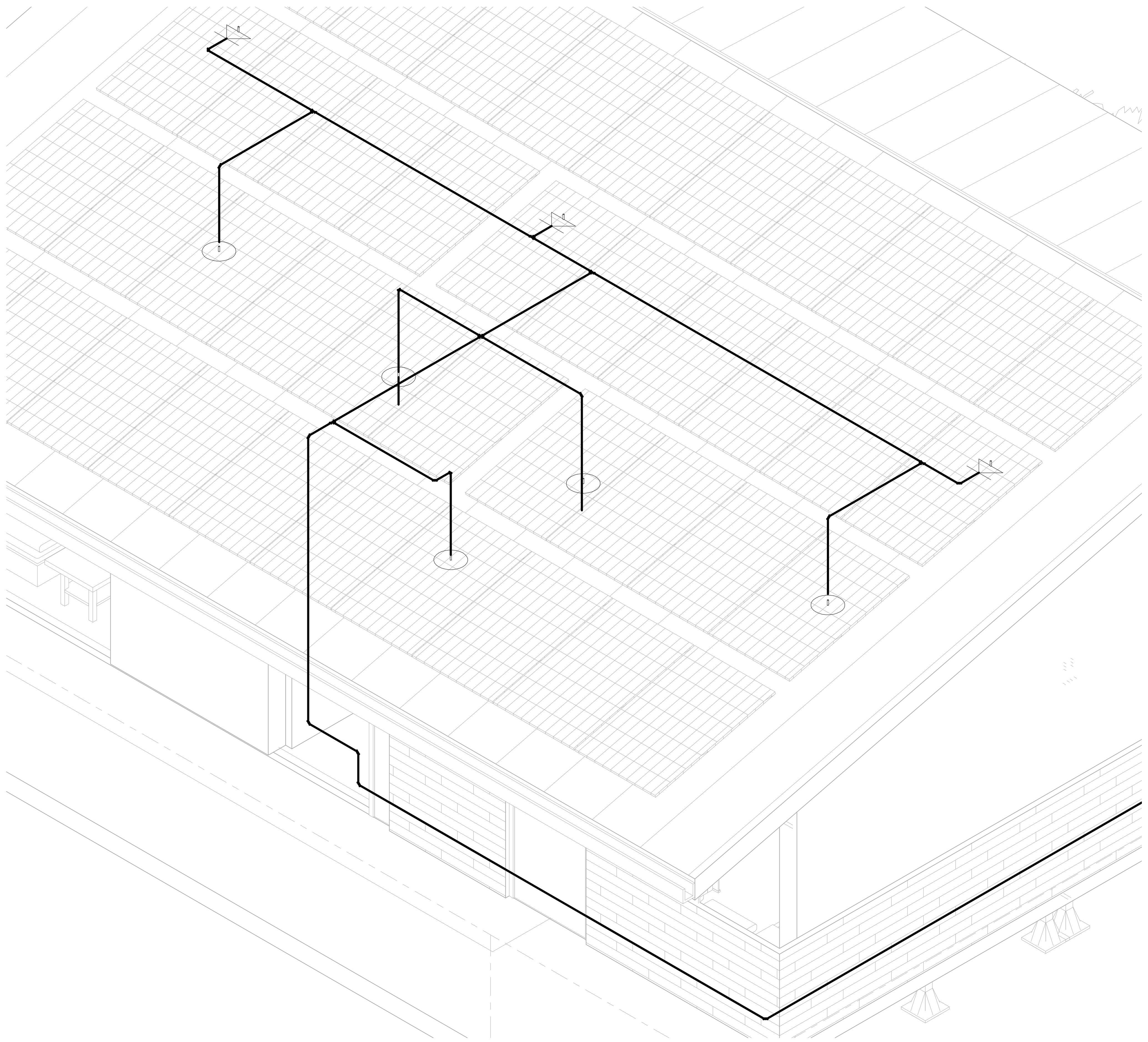


1 FIRE PROTECTION - FLOOR PLAN
1/4" = 1'-0"



2 FIRE PROTECTION - ISOMETRTIC

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FIRE PROTECTION FIRST FLOOR PLAN

FP101

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