

TEAM NAME: STANFORD UNIVERSITY
 ADDRESS: Y2E2 BUILDING RM 254
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 STANFORD, CA 94305
 CONTACT: STANFORDSD@GMAIL.COM
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03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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SHEET TITLE

COVER PAGE

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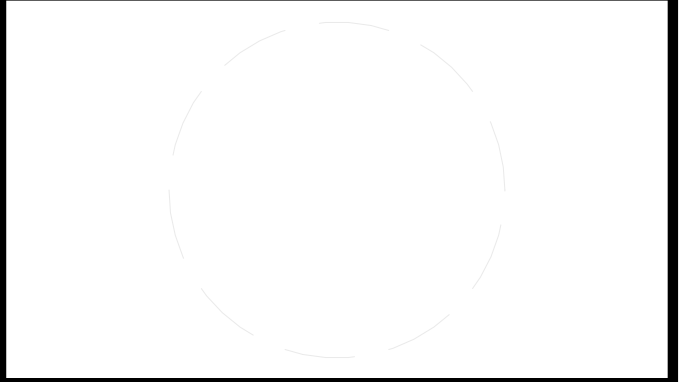
GENERAL SHEET NOTES

1. THE LOCATION OF EXISTING UNDERGROUND UTILITIES, SUCH AS WATER MAINS, SEWERS, GAS LINES, ETC. HAS NOT BEEN DETERMINED AND HAS NOT BEEN SHOWN ON THE PLANS. BEFORE CONSTRUCTION, OWNER SHOULD HIRE A LICENSED CIVIL ENGINEER TO DETERMINE LOCATION BASED ON THE BEST AVAILABLE INFORMATION. ALL INFORMATION SHOWN IS GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE OWNER AND THE ENGINEER DO NOT ASSUME RESPONSIBILITY IN THE EVENT THAT DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED AND THAT THE ACTUAL LOCATION OF THOSE WHICH EXIST MAY BE DIFFERENT FROM THE LOCATION ASSUMED.
2. CONTRACTOR SHALL NOTIFY THE OWNER, ENGINEER AND THE LOCAL PRESIDING MUNICIPALITY A MINIMUM OF 48 HOURS IN ADVANCE OF PERFORMING ANY WORK.
3. ALL AREAS, ON OR OFF SITE, DISTURBED DURING CONSTRUCTION OPERATIONS AND NOT PART OF THE WORK AS SHOWN HEREON SHALL BE RESTORED TO ORIGINAL CONDITION TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER. IT IS INCUMBENT UPON CONTRACTOR TO SHOW THAT DAMAGED AREAS WERE NOT DISTURBED BY CONSTRUCTION OPERATIONS.
4. THESE DRAWINGS ASSUME THAT THE CONTRACTOR WILL UTILIZE AN ELECTRONIC BUILDING INFORMATION MODEL FILE AND STAKE ALL SITE IMPROVEMENTS USING COORDINATES TIED TO THE CONTROL POINTS. THE DIMENSIONS INDICATED ON THE DRAWINGS ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY.
5. IN THE CASE OF CONFLICT BETWEEN THESE DRAWINGS, THE FOUNDATION DRAWINGS AND THE ARCHITECTURAL SITE PLAN, THE USER OF THIS INFORMATION SHALL CONTACT THE ENGINEER IMMEDIATELY.
6. OWNER TO COORDINATE THE EXACT LOCATIONS OF ALL UTILITY SERVICE LINES WITH PLUMBING DRAWINGS. REFER TO PLUMBING DRAWINGS FOR CONTINUATION OF ALL UTILITIES WITHIN 5 FEET OF BUILDING AREA.
7. CONTRACTOR SHALL FIELD VERIFY INVERT AND LOCATIONS OF EXISTING UTILITY MAINS PRIOR TO INSTALLING ANY ON-SITE UTILITIES OR STRUCTURES.
8. SEPARATION OF WATER AND SEWER LINES SHALL BE 10' MINIMUM HORIZONTALLY. IF 10' IS NOT POSSIBLE, SEWER SHALL BE OF WATER MAIN QUALITY MATERIAL AND CONSTRUCTION.
9. CLEAN OUT ALL EXISTING AND PROPOSED STORM INLETS AND CATCH BASINS AT THE COMPLETION OF CONSTRUCTION.
10. ADDITIONAL GUIDELINES AND SPECIFICATIONS ON WATER AND SEWER MAIN CONSTRUCTION FROM STANFORD UNIVERSITY SHALL PROVIDE ADDITIONAL GOVERNANCE WHERE APPLICABLE.



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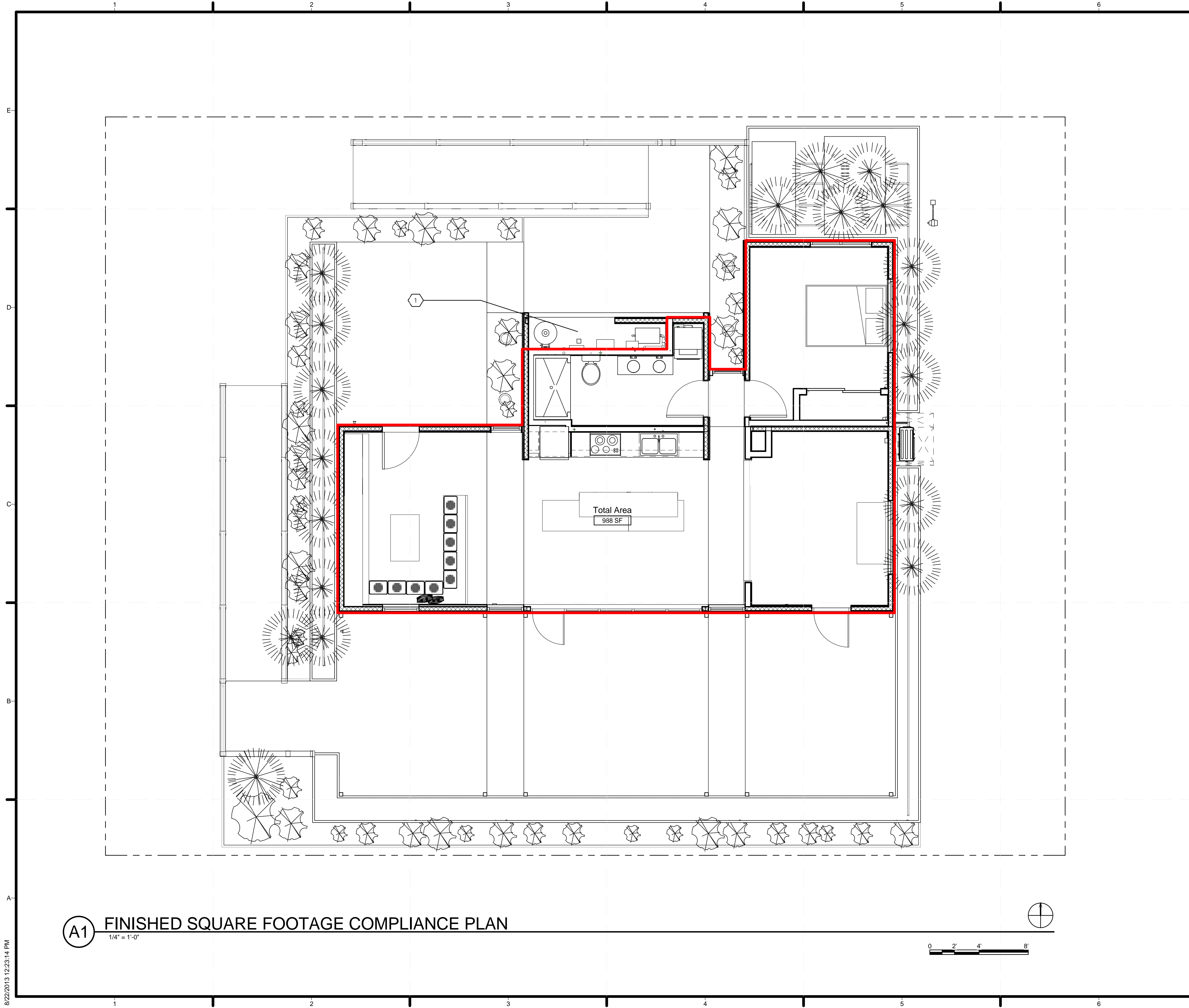
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GENERAL SHEET NOTES

1. AREAS WERE CALCULATED FOLLOWING THE ANSI Z765-2003 STANDARD. FINISHED SQUARE FOOTAGE CALCULATIONS FOR THIS HOUSE WERE MADE BASED ON PLAN DIMENSIONS AND MAY VARY FROM THE FINISHED SQUARE FOOTAGE OF THE HOUSE AS BUILT.

REFERENCE KEYNOTES

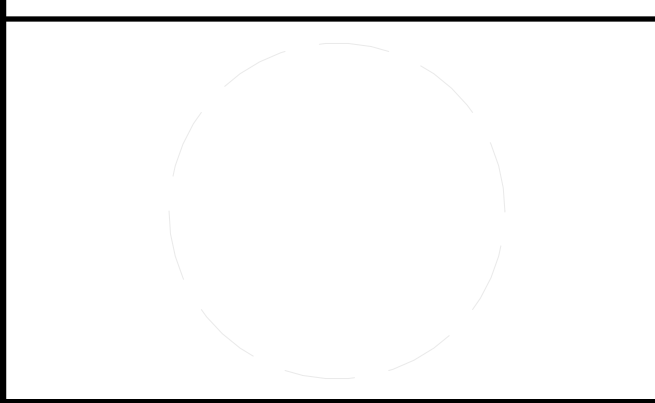
SHEET KEYNOTES

1. MECHANICAL ROOM WILL BE UNCONDITIONED AND IS NOT COUNTED AS PART OF FINISHED SQUARE FOOTAGE.



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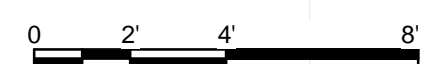
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SHEET TITLE
FINISHED SQUARE FOOTAGE COMPLIANCE PLAN

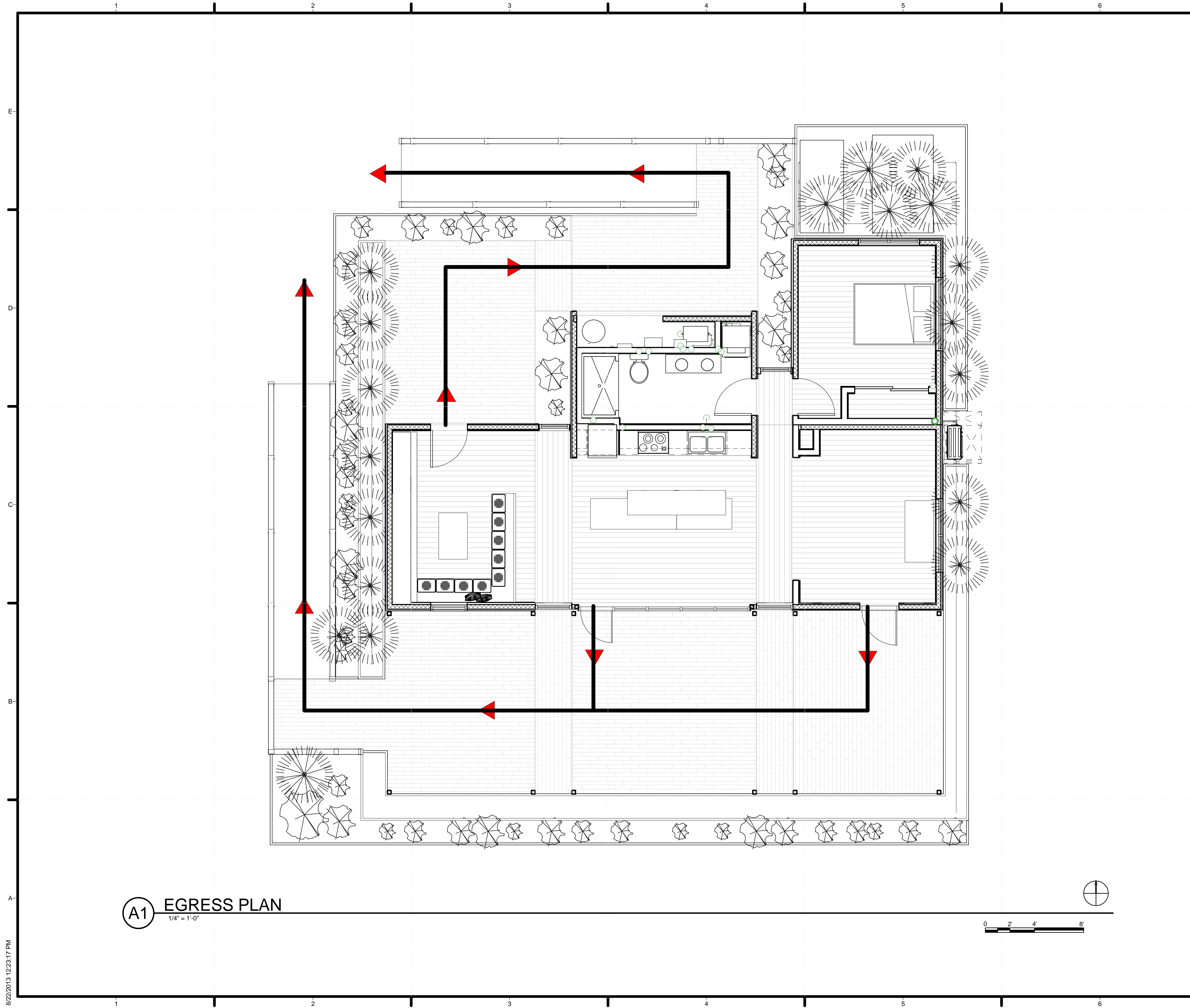
G-101

A1 FINISHED SQUARE FOOTAGE COMPLIANCE PLAN

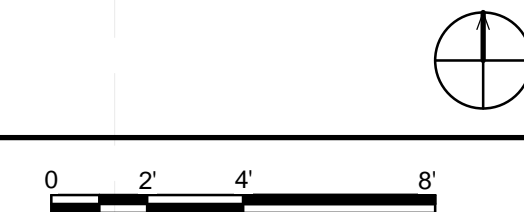
1/4" = 1'-0"



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A1 EGRESS PLAN
1/4" = 1'-0"



GENERAL SHEET NOTES

REFERENCE KEYNOTES

SHEET KEYNOTES



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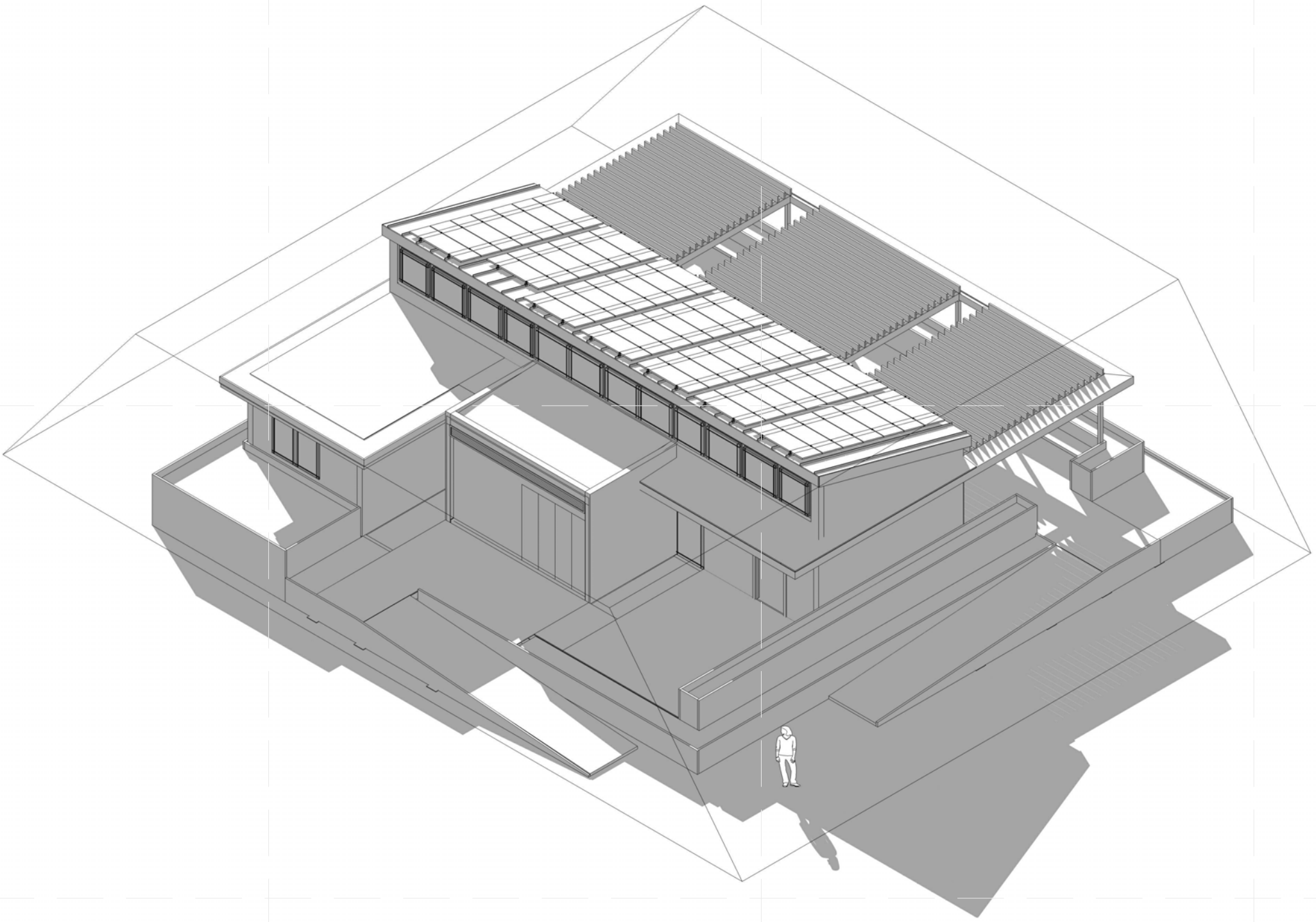
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SHEET TITLE
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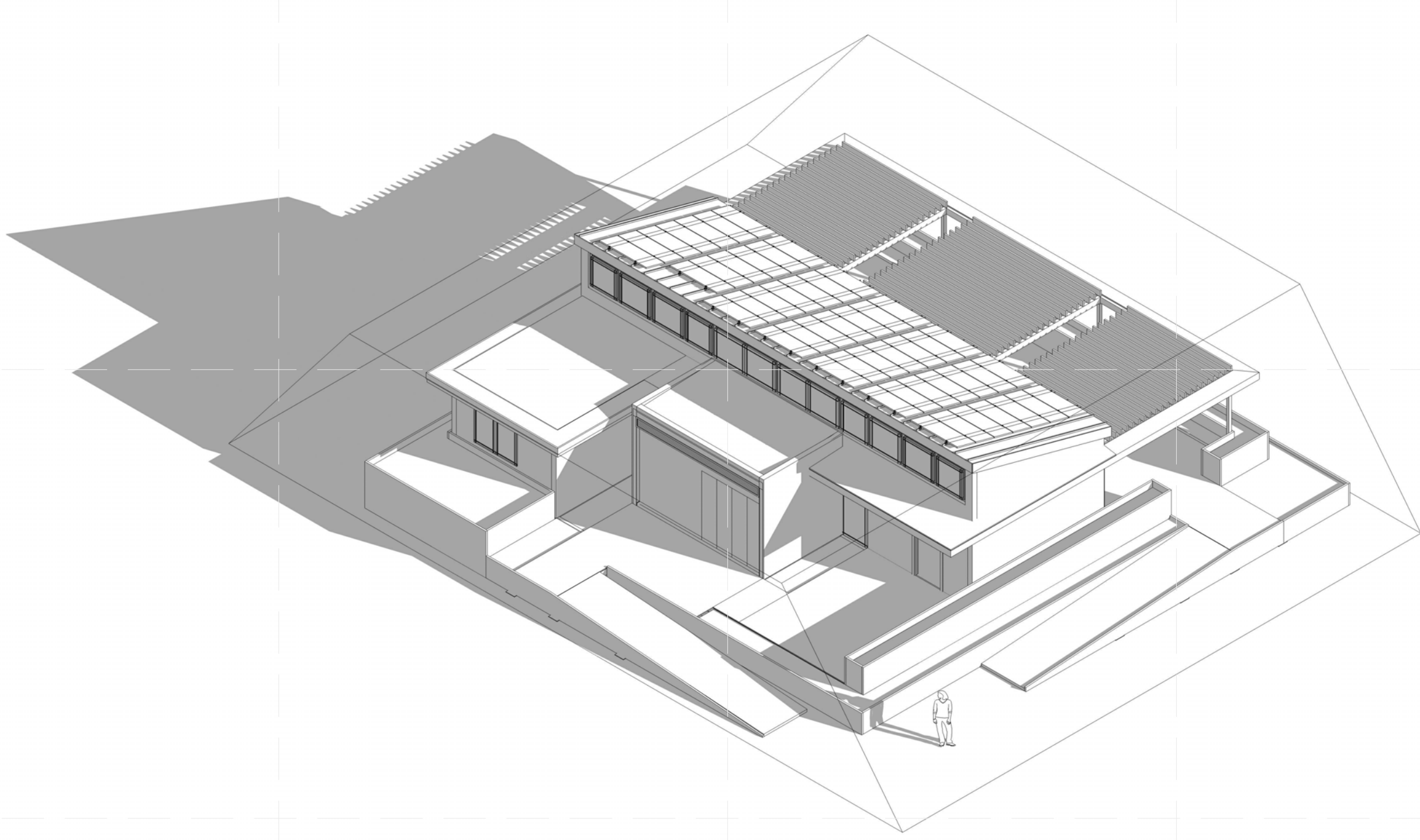
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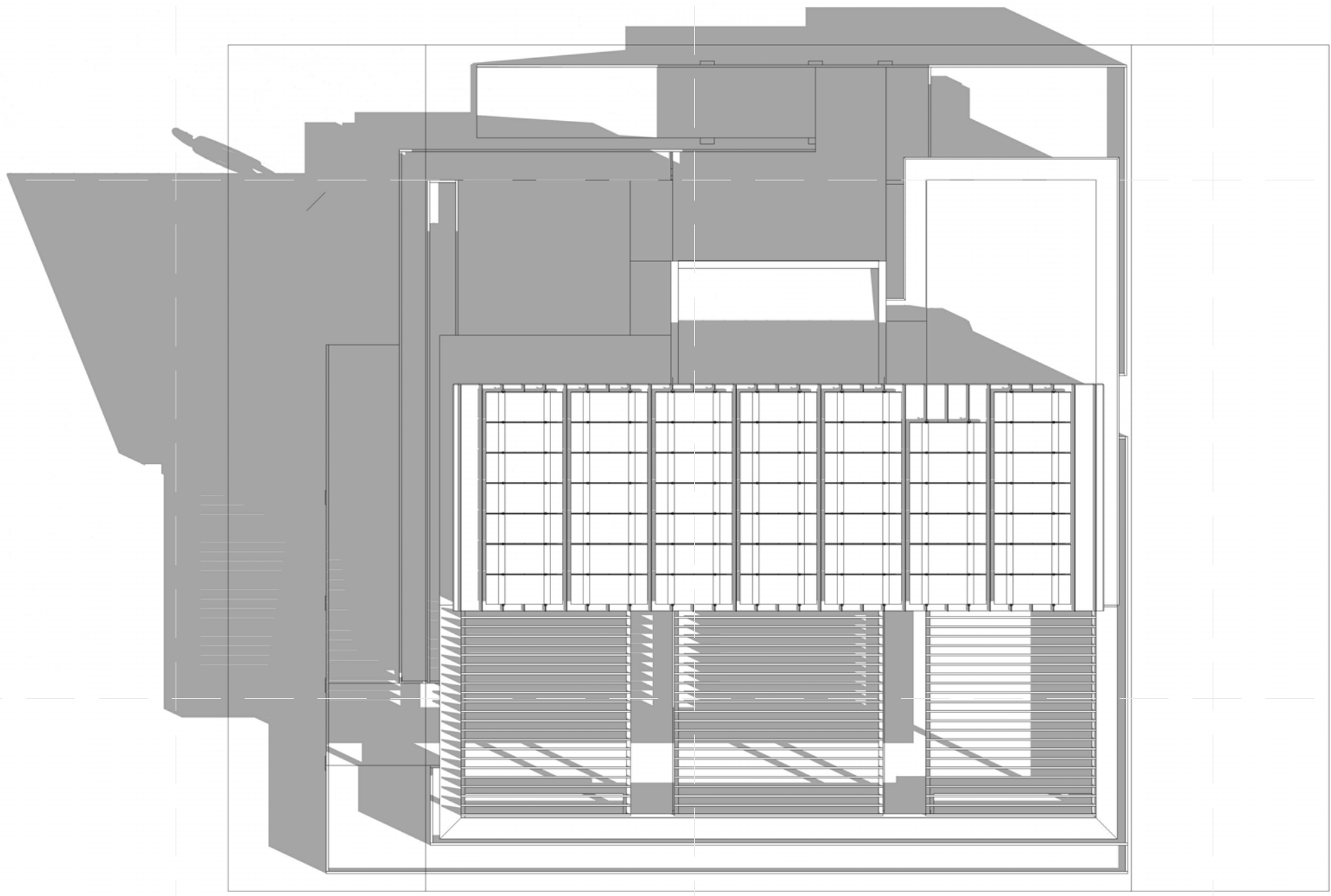
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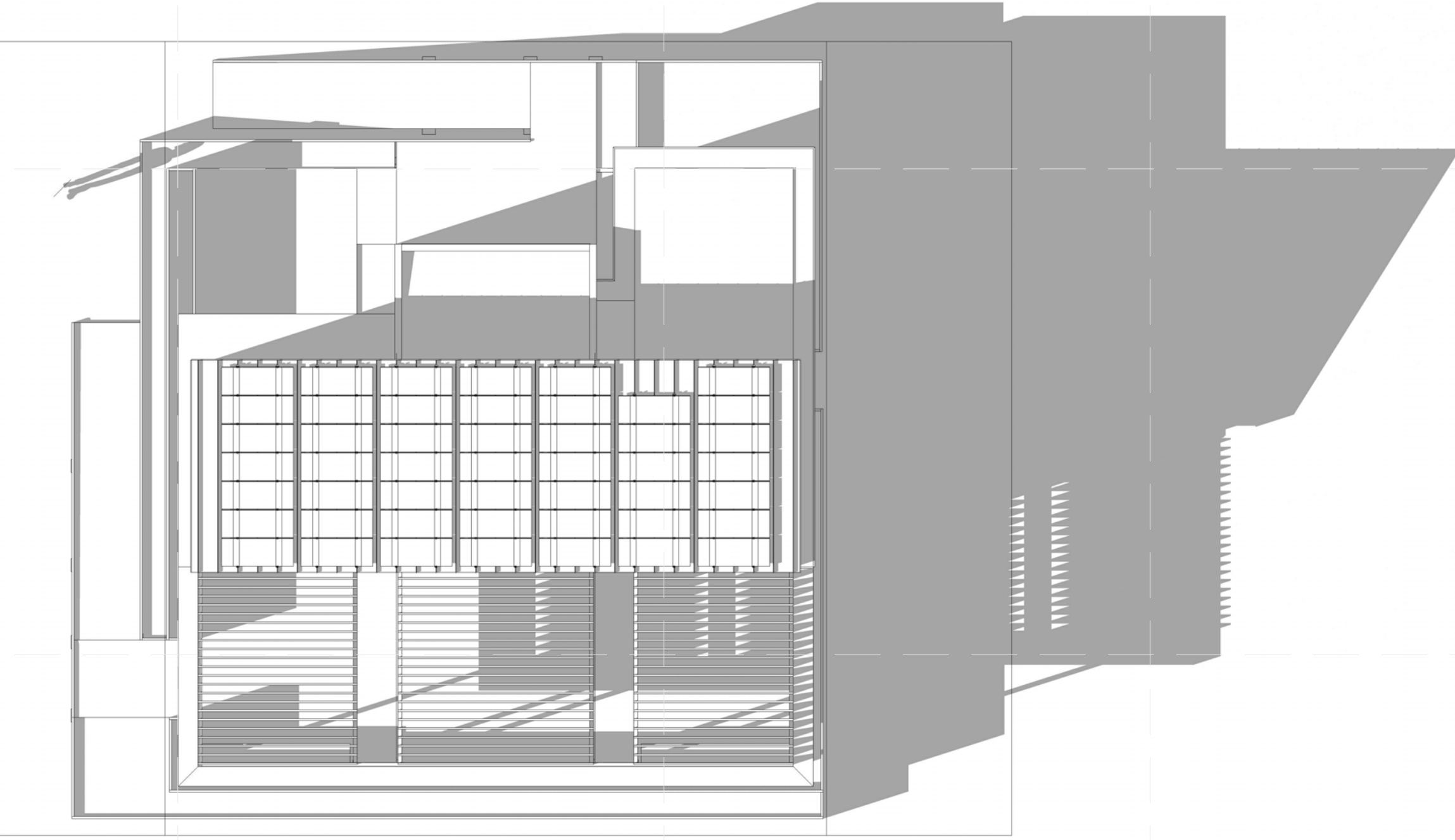
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SHADE AT 4PM - PERSPECTIVE



SHADE AT 8AM - PLAN



SHADE AT 4PM - PLAN

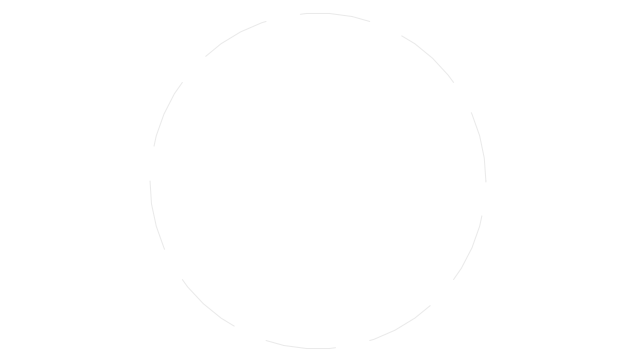
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1 2 3 4 5 6 7



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SHADING DIAGRAMS

G-601



(A1) INTERIOR GREAT ROOM LOOKING WEST
1/4" = 1'-0"



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GENERAL PROJECT RENDERINGS

G-901



(A1) INTERIOR GREAT ROOM LOOKING EAST
1/4" = 1'-0"

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GENERAL PROJECT RENDERINGS

G-902



A1 INTERIOR LIVING ROOM
 1/4" = 1'-0"

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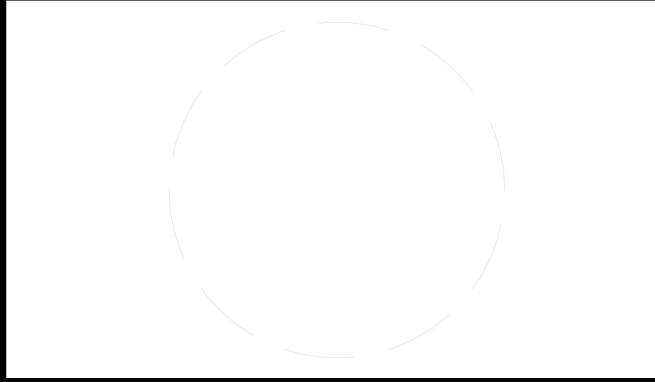
GENERAL PROJECT RENDERINGS

G-903



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G-904

(A1) INTERIOR OFFICE
 1/4" = 1'-0"

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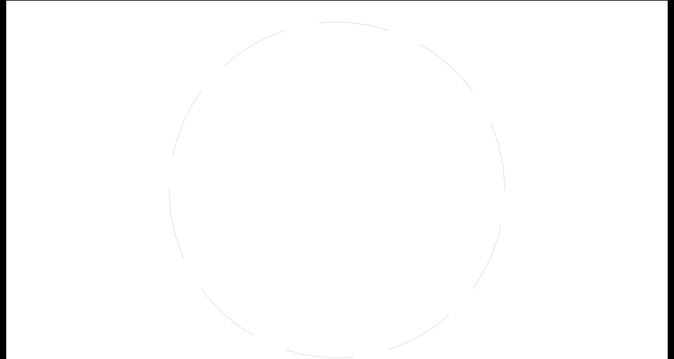
G-905

(A1) INTERIOR KITCHEN
1/4" = 1'-0"



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(A1) INTERIOR BATHROOM
 1/4" = 1'-0"

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 GENERAL PROJECT RENDERINGS

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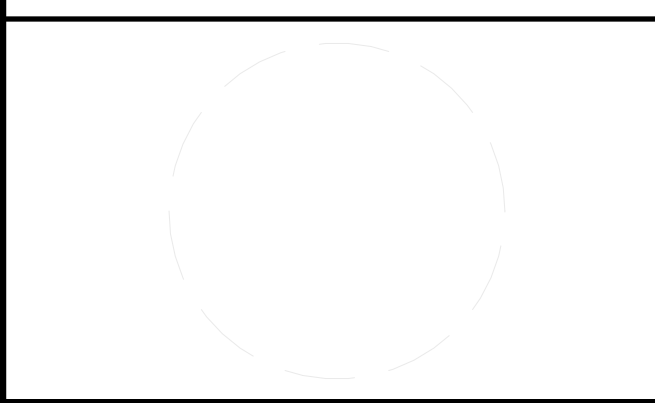
A1 EXTERIOR BIRD'S EYE NORTH
 1/4" = 1'-0"

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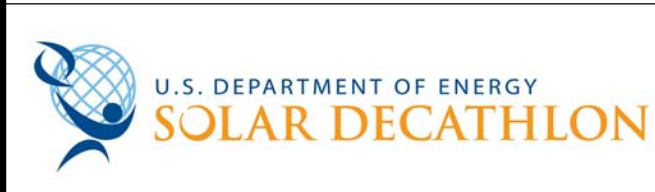


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05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION

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SHEET TITLE
 GENERAL PROJECT RENDERINGS

G-908

A1 EXTERIOR BIRD'S EYE SOUTH
 1/4" = 1'-0"

8/22/2013 12:24:03 PM



A1 EXTERIOR SOUTH
1/4" = 1'-0"



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03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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G-910

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A1 EXTERIOR NORTH
1/4" = 1'-0"



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05	08/22/2013	100% AS-BUILT SUBMISSION

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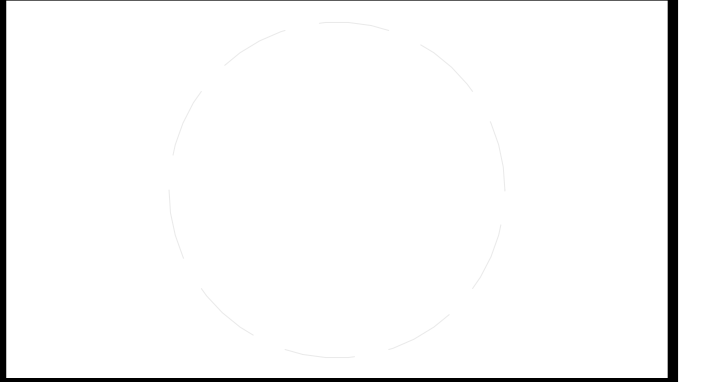
G-911

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05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION

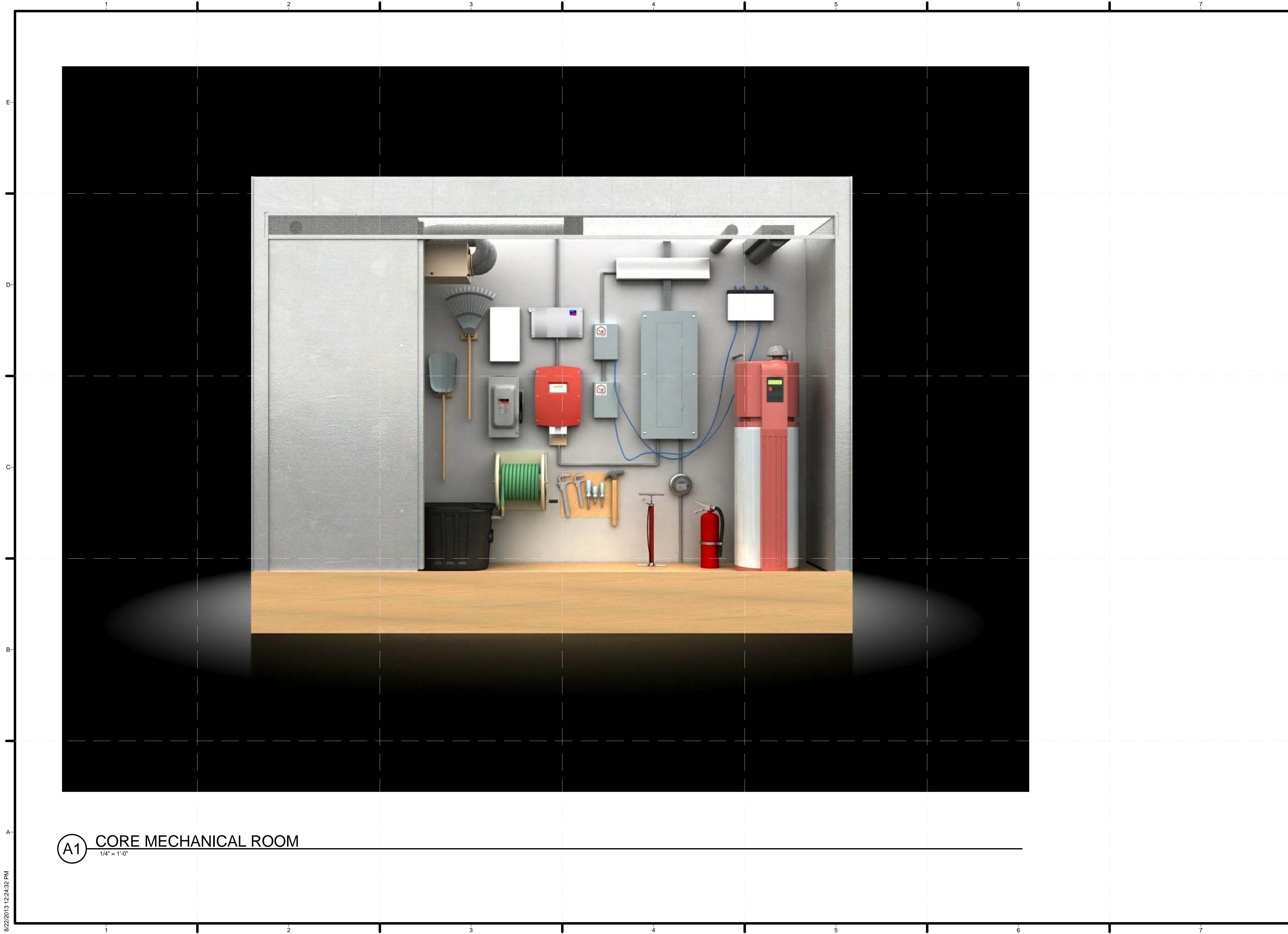
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G-912

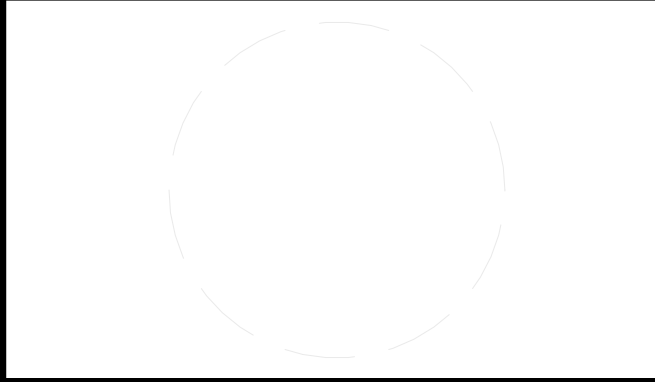


(A1) CORE PERSPECTIVE
 1/4" = 1'-0"



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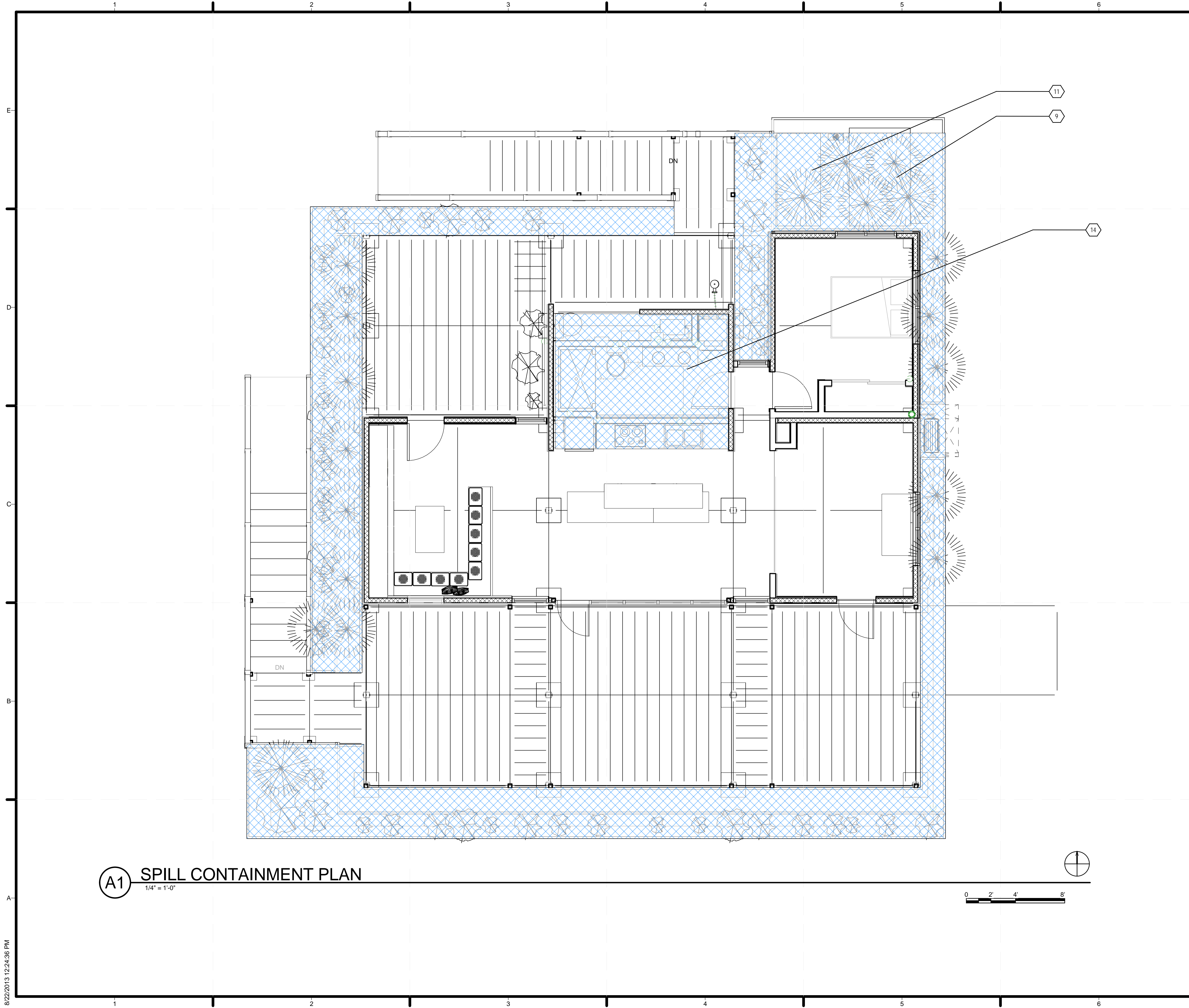
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SHEET TITLE
 GENERAL PROJECT RENDERINGS

G-913

A1 CORE MECHANICAL ROOM
 1/4" = 1'-0"

8/22/2013 12:24:32 PM



A1 SPILL CONTAINMENT PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

1. HATCH PATTERN INDICATES ALL CONTAINERS, EQUIPMENT, AND FIXTURES THAT WILL CONTAIN LIQUID ON SITE AT ANY POINT DURING COMPETITION. IN COMPLIANCE WITH RULE 4-6 SPILL CONTAINMENT
2. ALL PRESSURIZED WATER SYSTEMS SHALL HAVE PROPER CONTAINMENT AND SHALL BE EQUIPPED WITH AN OVERFLOW PAN OR VALVE AND DRAIN BELOW UNIT
3. IN THE EVENT OF A SPILL, TEAM TO CONSULT SAFETY PLAN AND CONTACT EVENT ORGANIZERS FOR A SCHEDULE OF LIQUID CONTAINMENT DEVICES AND FIXTURES REFER TO P-SERIES
- 4.

REFERENCE KEYNOTES

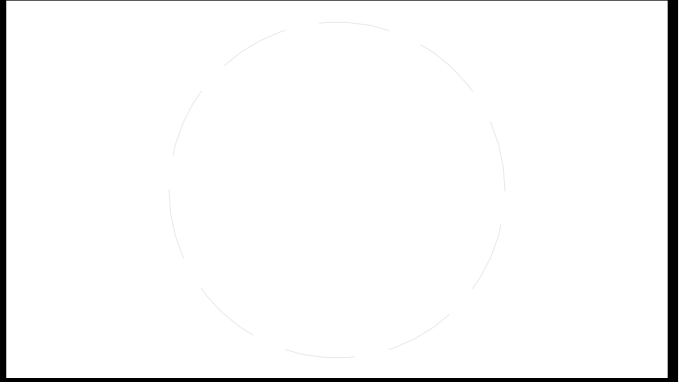
SHEET KEYNOTES

9. DOMESTIC COLD WATER TANK TO BE FILLED AT START OF COMPETITION AND DRAINED AT END OF COMPETITION
11. BLACKWATER TANK TO ACCUMULATE BLACKWATER OVER COURSE OF COMPETITION AND DRAINED AT END OF COMPETITION
14. CORE CONTAINS ENTIRETY OF INTERIOR PLUMBING SYSTEM



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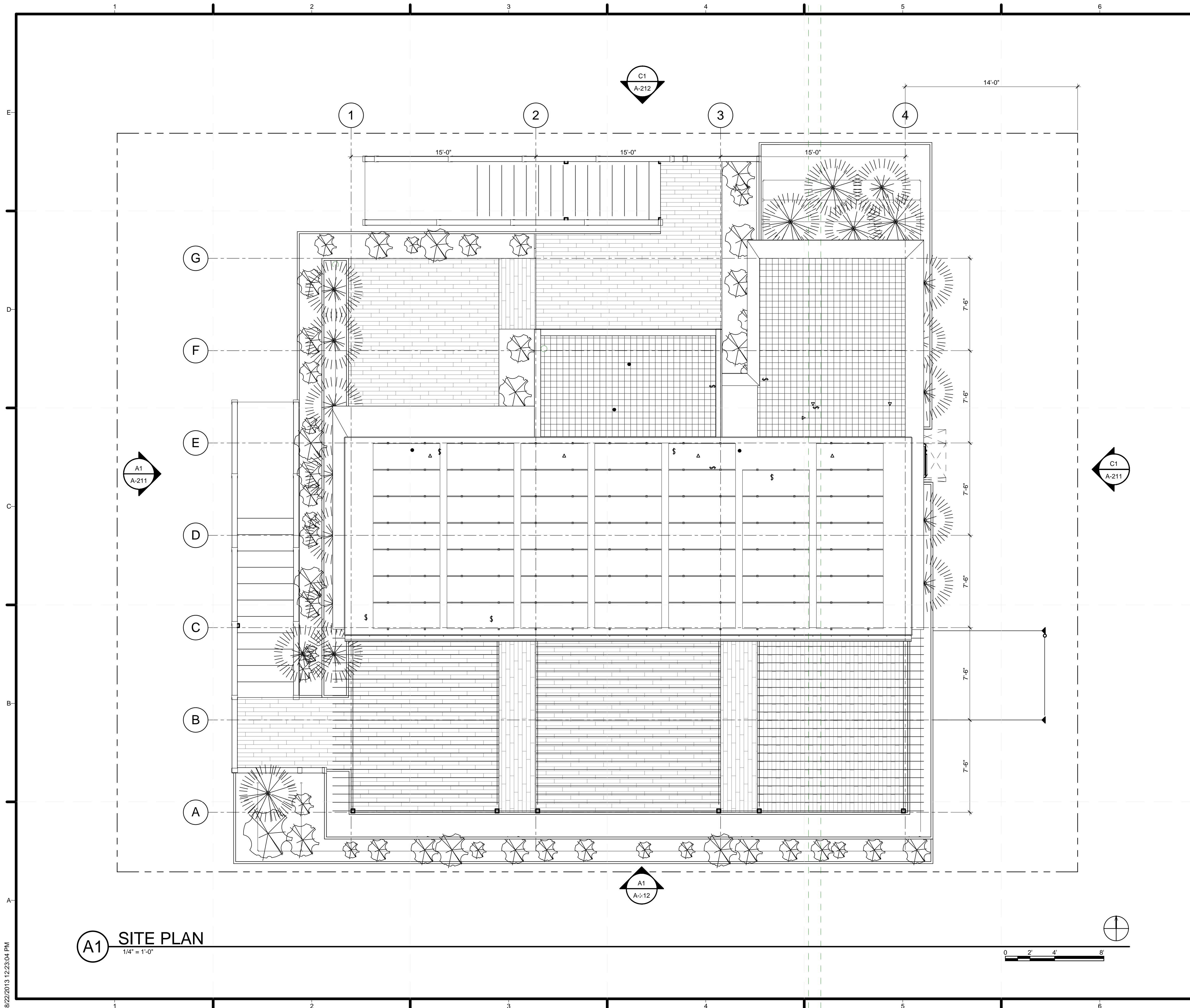


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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
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SHEET TITLE
 LIQUID LOCATION AND
 SPILL CONTAINMENT
 PLAN

H-101



GENERAL SHEET NOTES

REFERENCE KEYNOTES

SHEET KEYNOTES



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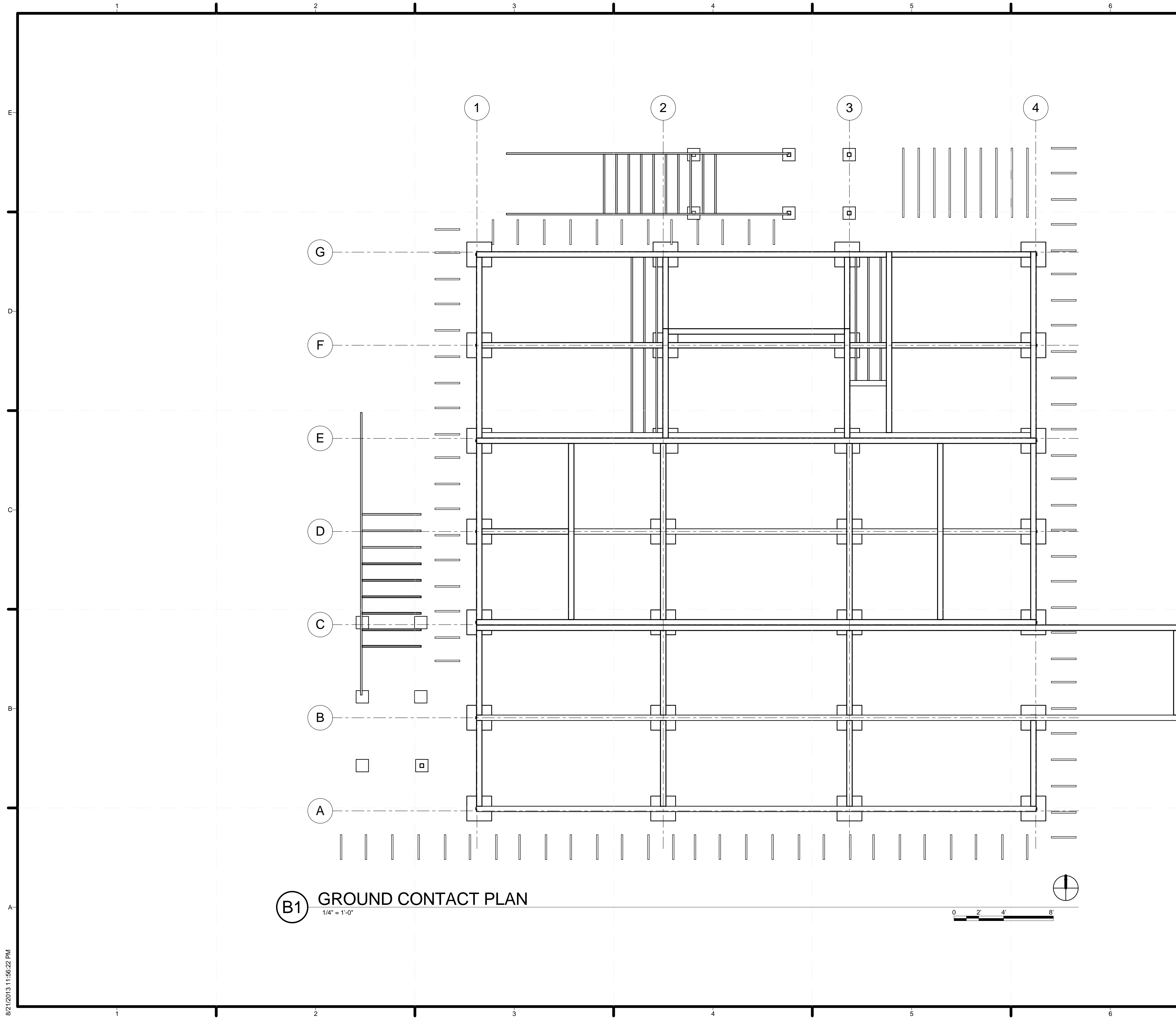
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SHEET TITLE
 SITE PLAN

C-101

A1 SITE PLAN
 1/4" = 1'-0"

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(B1) GROUND CONTACT PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

1. OUTSIDE OF STRUCTURAL FOUNDATION, PLANTERS, TANKS, AND PUMPS WILL REST ON 2X4 SLEEPERS

SHEET LEGEND



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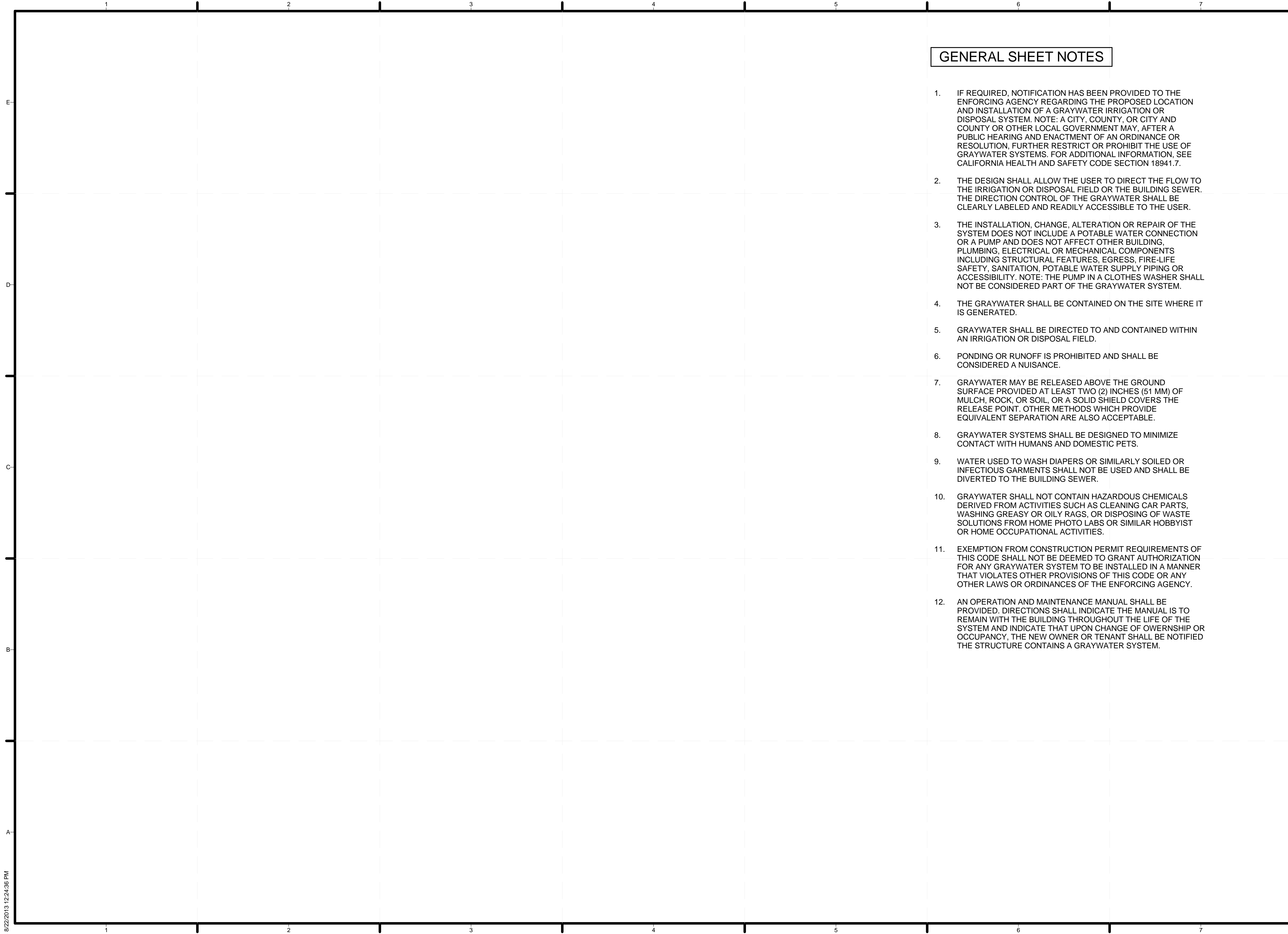
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03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION

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SHEET TITLE
GROUND CONTACT PLAN

C-102



GENERAL SHEET NOTES

1. IF REQUIRED, NOTIFICATION HAS BEEN PROVIDED TO THE ENFORCING AGENCY REGARDING THE PROPOSED LOCATION AND INSTALLATION OF A GRAYWATER IRRIGATION OR DISPOSAL SYSTEM. NOTE: A CITY, COUNTY, OR CITY AND COUNTY OR OTHER LOCAL GOVERNMENT MAY, AFTER A PUBLIC HEARING AND ENACTMENT OF AN ORDINANCE OR RESOLUTION, FURTHER RESTRICT OR PROHIBIT THE USE OF GRAYWATER SYSTEMS. FOR ADDITIONAL INFORMATION, SEE CALIFORNIA HEALTH AND SAFETY CODE SECTION 18941.7.
2. THE DESIGN SHALL ALLOW THE USER TO DIRECT THE FLOW TO THE IRRIGATION OR DISPOSAL FIELD OR THE BUILDING SEWER. THE DIRECTION CONTROL OF THE GRAYWATER SHALL BE CLEARLY LABELED AND READILY ACCESSIBLE TO THE USER.
3. THE INSTALLATION, CHANGE, ALTERATION OR REPAIR OF THE SYSTEM DOES NOT INCLUDE A POTABLE WATER CONNECTION OR A PUMP AND DOES NOT AFFECT OTHER BUILDING, PLUMBING, ELECTRICAL OR MECHANICAL COMPONENTS INCLUDING STRUCTURAL FEATURES, EGRESS, FIRE-LIFE SAFETY, SANITATION, POTABLE WATER SUPPLY PIPING OR ACCESSIBILITY. NOTE: THE PUMP IN A CLOTHES WASHER SHALL NOT BE CONSIDERED PART OF THE GRAYWATER SYSTEM.
4. THE GRAYWATER SHALL BE CONTAINED ON THE SITE WHERE IT IS GENERATED.
5. GRAYWATER SHALL BE DIRECTED TO AND CONTAINED WITHIN AN IRRIGATION OR DISPOSAL FIELD.
6. PONDING OR RUNOFF IS PROHIBITED AND SHALL BE CONSIDERED A NUISANCE.
7. GRAYWATER MAY BE RELEASED ABOVE THE GROUND SURFACE PROVIDED AT LEAST TWO (2) INCHES (51 MM) OF MULCH, ROCK, OR SOIL, OR A SOLID SHIELD COVERS THE RELEASE POINT. OTHER METHODS WHICH PROVIDE EQUIVALENT SEPARATION ARE ALSO ACCEPTABLE.
8. GRAYWATER SYSTEMS SHALL BE DESIGNED TO MINIMIZE CONTACT WITH HUMANS AND DOMESTIC PETS.
9. WATER USED TO WASH DIAPERS OR SIMILARLY SOILED OR INFECTIOUS GARMENTS SHALL NOT BE USED AND SHALL BE DIVERTED TO THE BUILDING SEWER.
10. GRAYWATER SHALL NOT CONTAIN HAZARDOUS CHEMICALS DERIVED FROM ACTIVITIES SUCH AS CLEANING CAR PARTS, WASHING GREASY OR OILY RAGS, OR DISPOSING OF WASTE SOLUTIONS FROM HOME PHOTO LABS OR SIMILAR HOBBYIST OR HOME OCCUPATIONAL ACTIVITIES.
11. EXEMPTION FROM CONSTRUCTION PERMIT REQUIREMENTS OF THIS CODE SHALL NOT BE DEEMED TO GRANT AUTHORIZATION FOR ANY GRAYWATER SYSTEM TO BE INSTALLED IN A MANNER THAT VIOLATES OTHER PROVISIONS OF THIS CODE OR ANY OTHER LAWS OR ORDINANCES OF THE ENFORCING AGENCY.
12. AN OPERATION AND MAINTENANCE MANUAL SHALL BE PROVIDED. DIRECTIONS SHALL INDICATE THE MANUAL IS TO REMAIN WITH THE BUILDING THROUGHOUT THE LIFE OF THE SYSTEM AND INDICATE THAT UPON CHANGE OF OWERSHIP OR OCCUPANCY, THE NEW OWNER OR TENANT SHALL BE NOTIFIED THE STRUCTURE CONTAINS A GRAYWATER SYSTEM.



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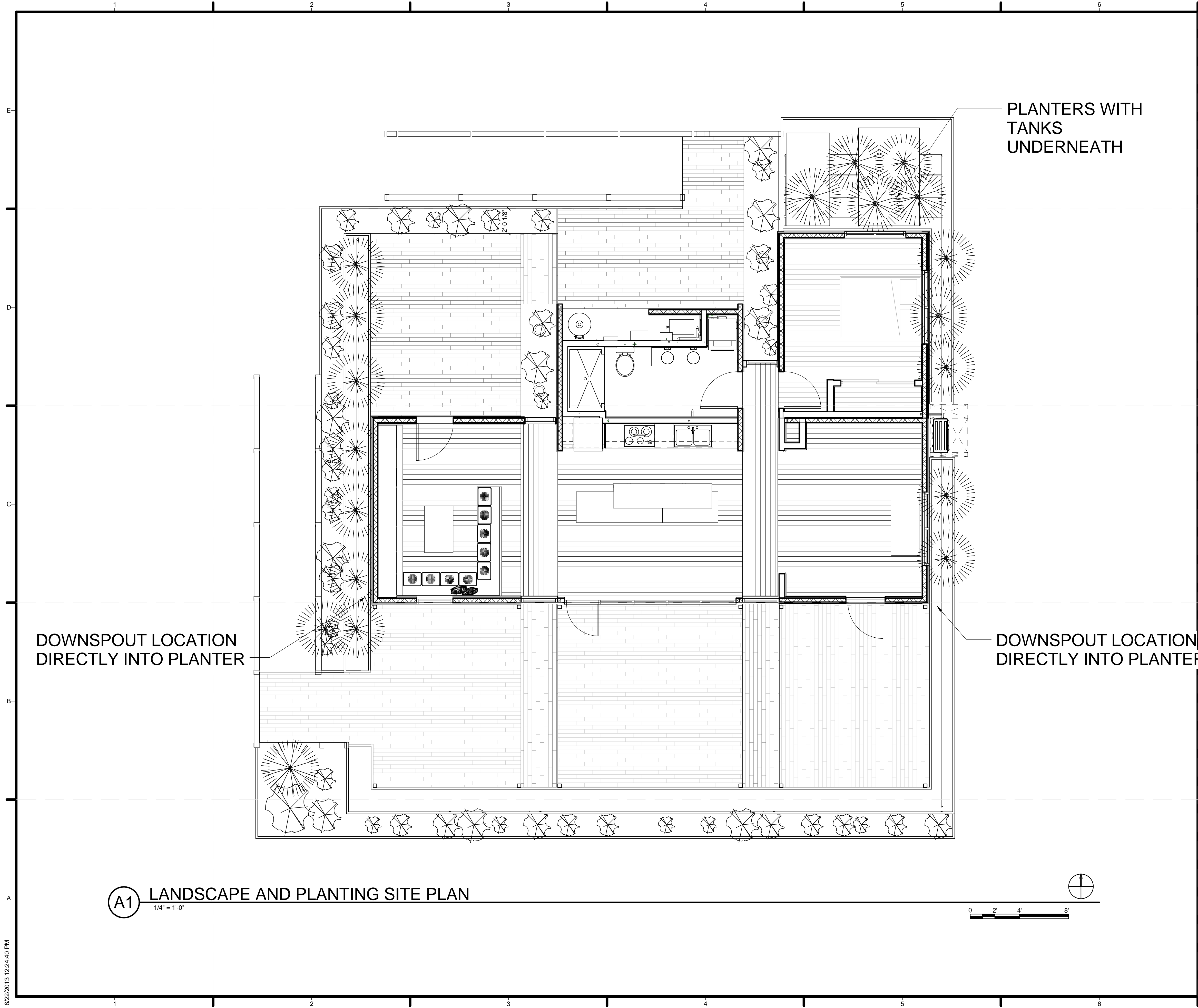
01	10/11/2012	80% DOE/NREL DD SUBMISSION
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SHEET TITLE
 LANDSCAPE NOTES AND SYMBOLS

L-001



GENERAL SHEET NOTES

REFERENCE KEYNOTES

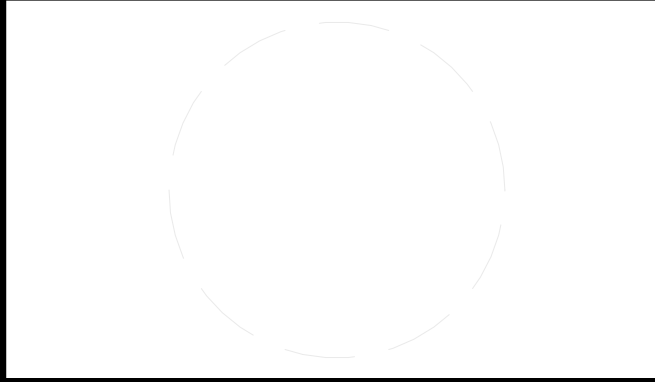
SHEET KEYNOTES



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SHEET TITLE
 LANDSCAPE AND PLANTING SITE PLAN

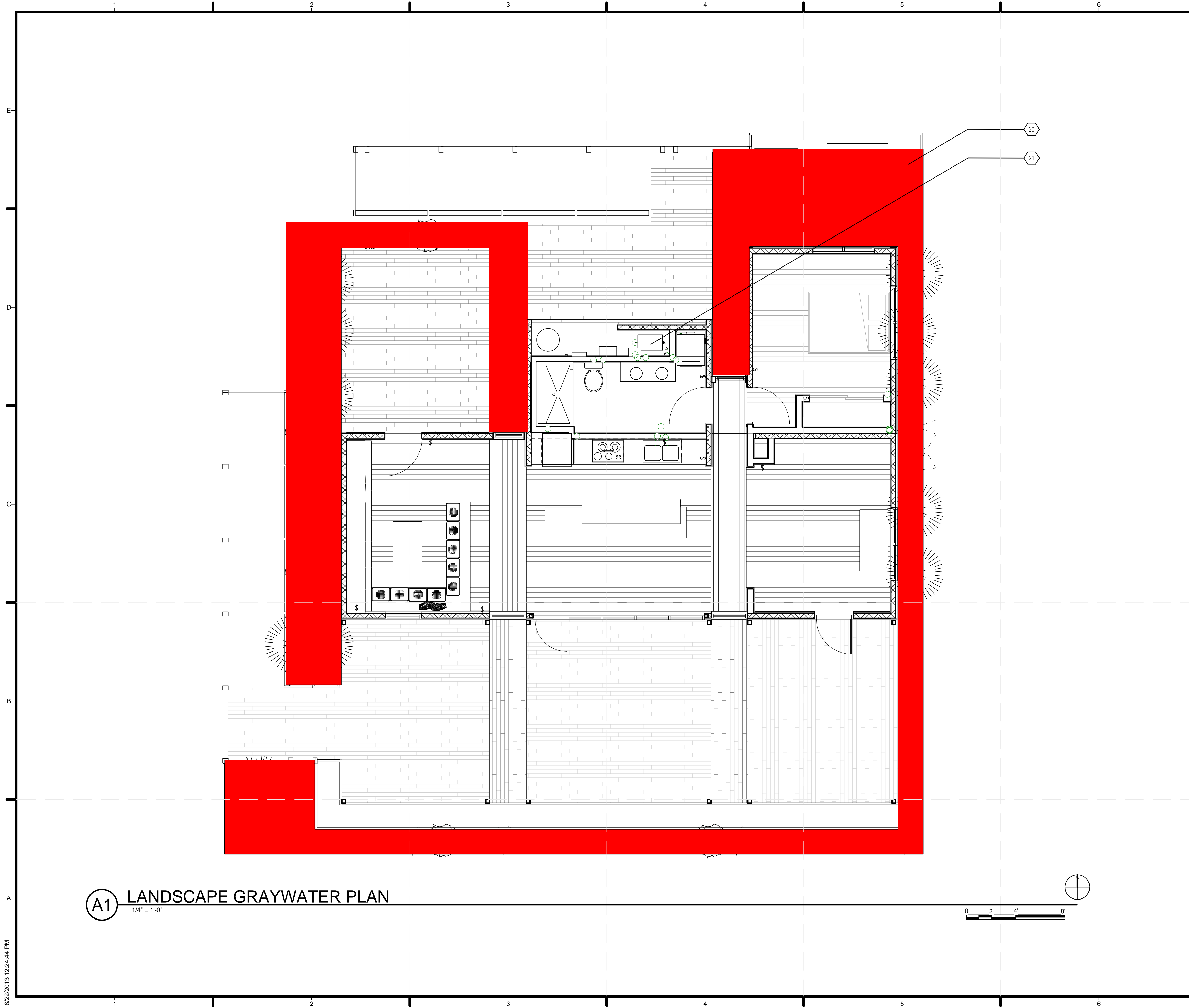
L-101

A1 LANDSCAPE AND PLANTING SITE PLAN

1/4" = 1'-0"



8/22/2013 12:24:40 PM



(A1) LANDSCAPE GRAYWATER PLAN
 1/4" = 1'-0"

GENERAL SHEET NOTES

REFERENCE KEYNOTES

SHEET KEYNOTES

- 20 FILLED REGION TO BE IRRIGATED BY GRAYWATER 1/2" DRIP LINES
- 21 AQUAZUSE GRAYWATER SYSTEM TO FILTER WASHING MACHINE AND BATHROOM SINK WATER AND PUMP THROUGH DRIP LINE TO PLANTERS



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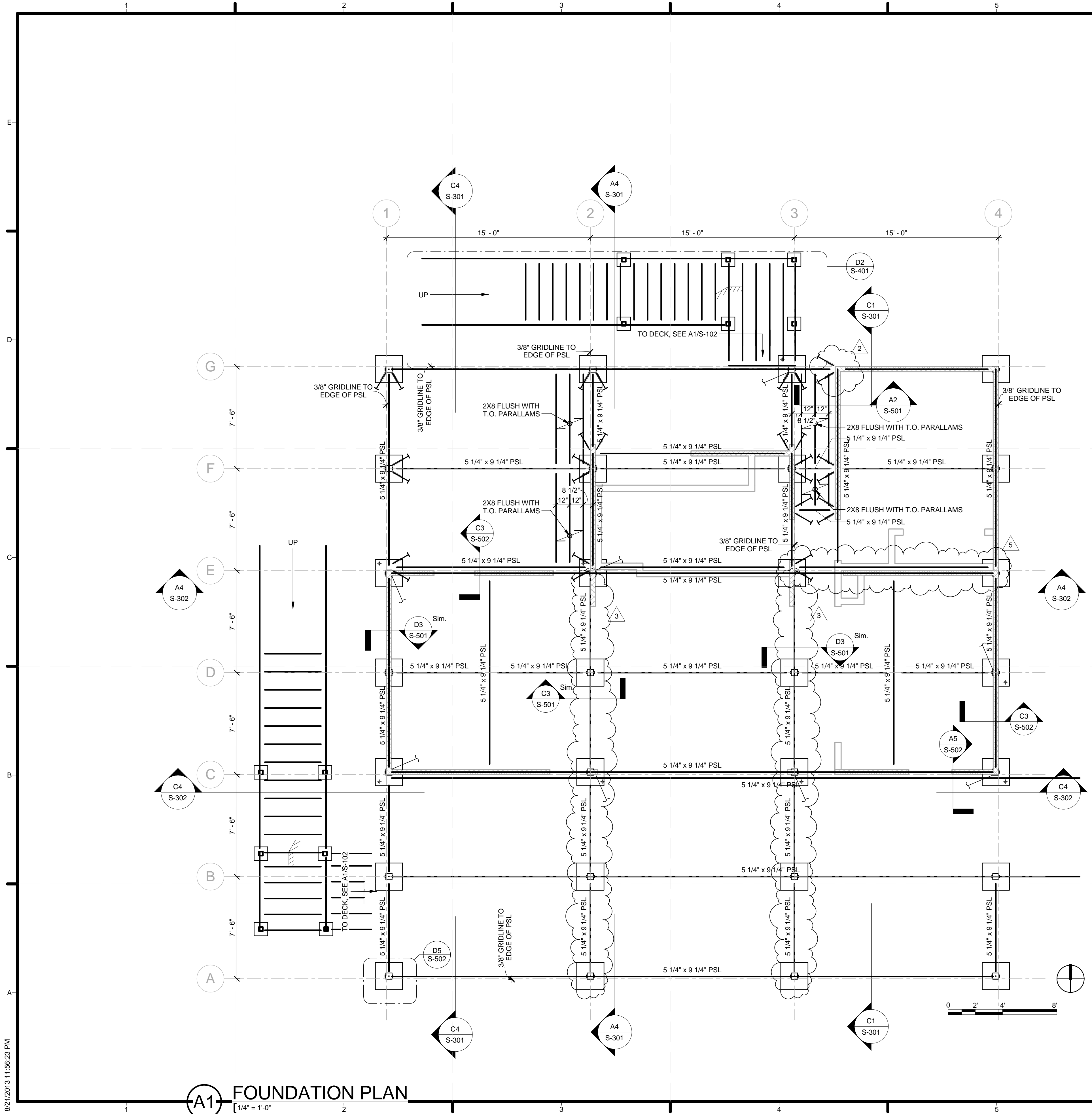
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SHEET TITLE
 LANDSCAPE GRAYWATER PLAN

L-102



GENERAL SHEET NOTES

1. ALL FOOTINGS ARE ELLIS TJ-4 JACKS
2. T.O. DECK = 0' - 0"
3. REFERENCE ELEVATION: 0' - 0" = VARIES 1' - 6" TO 2' - 0" ABOVE GRADE
4. 24" X 24" FOOTING BASE, TYP. U.N.O.
5. 30" X 30" FOOTING BASE AT STRUTS

SHEET LEGEND

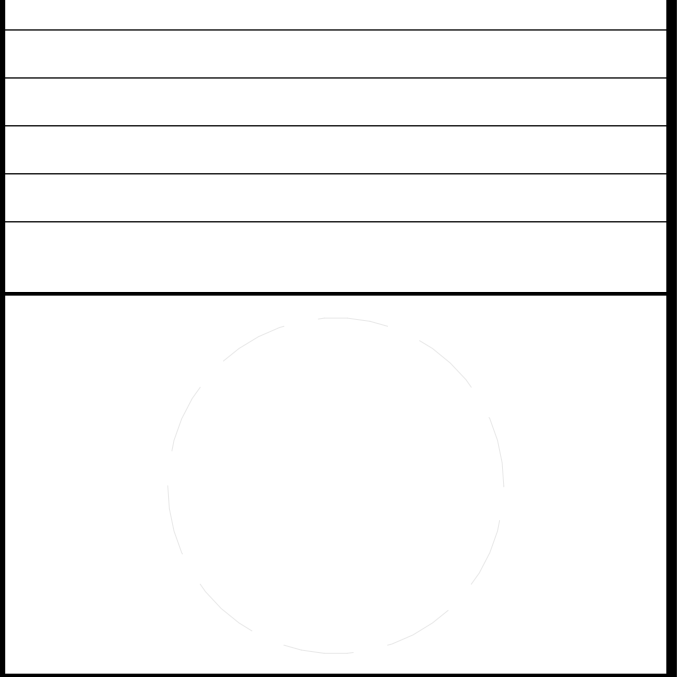
- 8 1/4" SIP WALL ABOVE
- 2X6 STUD WALL ABOVE
- ELLIS TJ-4 FOUNDATION JACK OVER FOOTING BASE
- FOUNDATION STRUT PER DETAIL B6/S-501
- ANCHOR BOLT AT EACH FOUNDATION STRUT
- BEARING PRESSURE (PSF)
(4) NO. OF ANCHOR BOLTS
- SCREW PSL INTO HANGER WITH SD#10X2 1/2 SCREWS

MEMBER	CONNECTOR	FACE FASTENERS	JOIST FASTENERS
5-1/4X9-1/4 PSL	HGUS5.50/10	46 - 16dx3-1/2	16 - 16dx3-1/2
5-1/4X9-1/4 EDGE PSL	HUC0610-SDS	12-SDS 1/4"x2-1/2"	6-SDS 1/4"x2-1/2"
2X8 JOIST	HU28	4 - 10dx1-1/2	2 - 10dx1-1/2
2X6 DECK JOIST	A34 CLIP	4 - 8dx1-1/2	4 - 8dx1-1/2
4X8 OVERHANG	HU48	14 - 16d	14 - 16d

NOTE:
 1. NAILS: 16dx3-1/2 = 0.162" DIA. x 3-1/2" LONG
 2. SDS SCREWS: 1/4"x2-1/2" = 1/4" DIA. x 2-1/2" LONG
 3. NAILS: 10dx1-1/2 = 0.148" DIA. x 1-1/2" LONG
 4. NAILS: 8dx1-1/2 = 0.131" DIA. x 1-1/2" LONG



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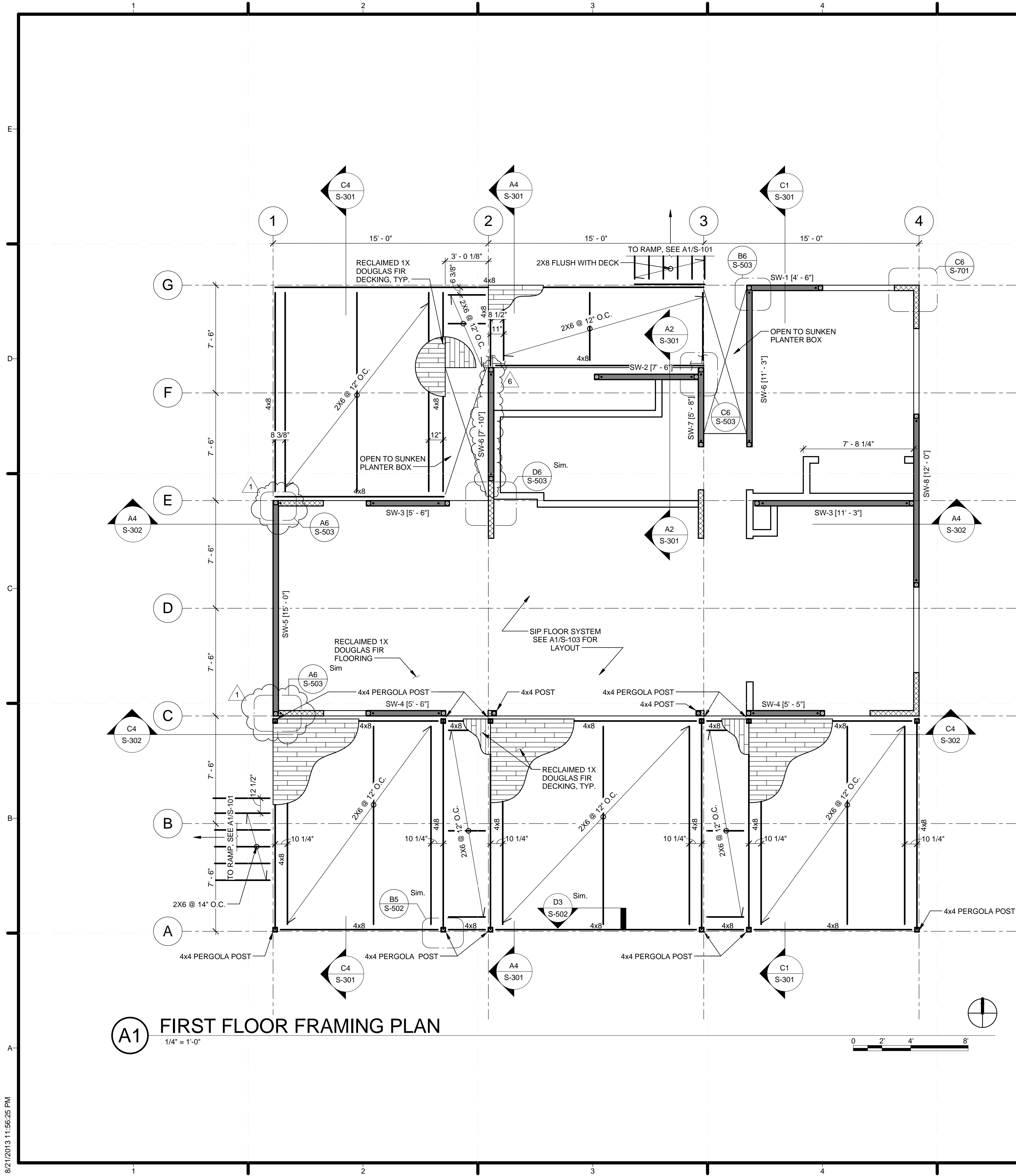
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5	12 May 2013	S005 - Bedroom South Parallam
	08 April 2013	

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SHEET TITLE

FOUNDATION PLAN

S-101



(A1) FIRST FLOOR FRAMING PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

1. DECKING IS 1X RECLAIMED DOUGLAS FIR
2. ALL FRAMING IS DF-L NO. 1 U.N.O.
3. PERGOLA POSTS ARE REDWOOD
4. T.O. SIP FLOOR = 0' - 0"
5. SIP SHOP DRAWINGS SUPERCEDE WALL, SHEARWALL, AND HOLDOWN DIMENSIONS AND PLACEMENT

SHEET LEGEND

- 4 1/2" SIP SHEAR WALL
- 4 1/2" SIP WALL
- 2X6 STUD WALL
- 4X4 SHEAR WALL POST WITH SIMPSON HTT4 HOLDOWN, SEE C6/S-501

DIAPHRAGM	SPLINE NAILING	INTERIOR BOUNDARY	PERIMETER BOUNDARY
ALL FLOOR	8d @ 6" O.C.	10" R-CONTROL W.S. @ 12" O.C.	10" R-CONTROL W.S. @ 6" O.C.
ALL ROOF	8d @ 6" O.C.	10" R-CONTROL W.S. @ 12" O.C.	10" R-CONTROL W.S. @ 6" O.C.

- NOTE:
 1. NAILS: 8d x 1-1/2" = 0.131" DIA. x 1-1/2" LONG
 2. BOUNDARY ELEMENTS ARE PARALLAMS OR SHEAR WALLS BELOW DIAPHRAGM
 3. MINIMUM 1 5/8" PENETRATION FOR R-CONTROL W.S. INTO BOUNDARY ELEMENTS

SW MARK	SILL PLATE	SILL CONNECTION	SILL BOLTING	TOP PLATE	TOP CONNECTION	ROOF BOUNDARY
SW-1	2X	8d @ 6" O.C., E.S.	5/8" A.B. @ 24" O.C.	2X	R-CONTROL W.S. @ 6" O.C.	8d @ 6" O.C., E.S.
SW-2	2X	8d @ 6" O.C., E.S.	5/8" A.B. @ 42" O.C.	2X	R-CONTROL W.S. @ 6" O.C.	8d @ 6" O.C., E.S.
SW-3	2X	8d @ 6" O.C., E.S.	5/8" A.B. @ 36" O.C.	2X	R-CONTROL W.S. @ 6" O.C.	8d @ 6" O.C., E.S.
SW-4	2X	8d @ 6" O.C., E.S.	5/8" A.B. @ 36" O.C.	2X	R-CONTROL W.S. @ 6" O.C.	8d @ 6" O.C., E.S.
SW-5	2X	8d @ 6" O.C., E.S.	5/8" A.B. @ 42" O.C.	2X	R-CONTROL W.S. @ 6" O.C.	8d @ 6" O.C., E.S.
SW-6	2X	8d @ 6" O.C., E.S.	5/8" A.B. @ 60" O.C.	2X	R-CONTROL W.S. @ 6" O.C.	8d @ 6" O.C., E.S.
SW-7	2X	8d @ 6" O.C., E.S.	5/8" A.B. @ 36" O.C.	2X	R-CONTROL W.S. @ 6" O.C.	8d @ 6" O.C., E.S.
SW-8	2X	8d @ 6" O.C., E.S.	5/8" A.B. @ 30" O.C.	2X	R-CONTROL W.S. @ 6" O.C.	8d @ 6" O.C., E.S.

- NOTE:
 1. ENSURE MIN. EMBED OF 1-5/8" FOR R-CONTROL WOOD SCREWS
 2. ALL SHEAR WALL TYPES USE SIMPSON HTT4 WITH 18-10d X 1 1/2"
 3. ALL SIP SHEAR WALLS 4 1/2" THICK
 4. ALL SPLINES CONNECTIONS: 2 STAGGERED ROWS 8d 4" O.C.



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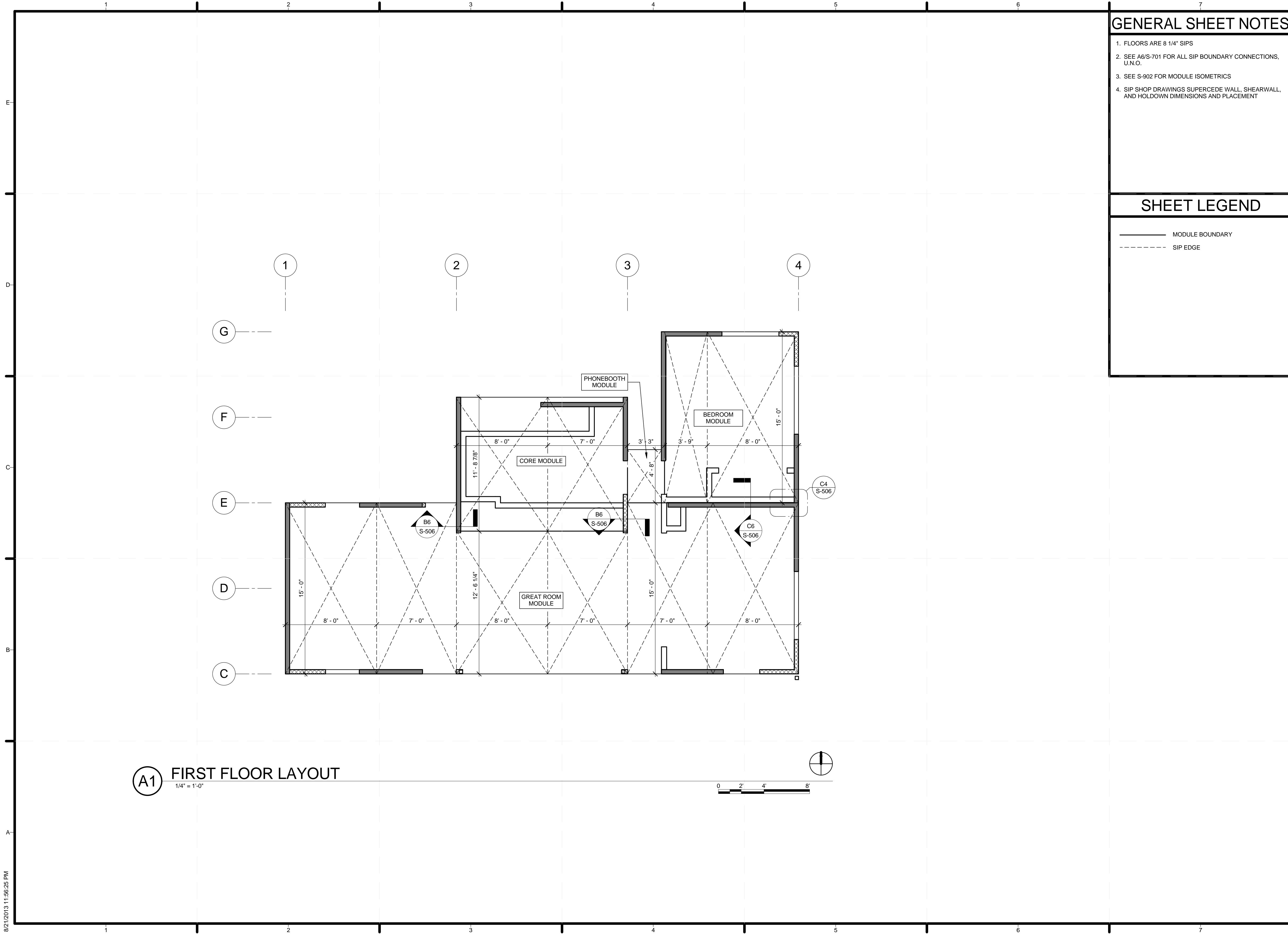
01	10/11/2012	80% DOE/NREL DD SUBMISSION
02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION
6	12 May 2013	S006 - SW6 Length
1	08 April 2013	S001 - Turned Holdowns

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SHEET TITLE
FLOOR PLAN

S-102



GENERAL SHEET NOTES

1. FLOORS ARE 8 1/4" SIPS
2. SEE A6/S-701 FOR ALL SIP BOUNDARY CONNECTIONS, U.N.O.
3. SEE S-902 FOR MODULE ISOMETRICS
4. SIP SHOP DRAWINGS SUPERCEDE WALL, SHEARWALL, AND HOLDOWN DIMENSIONS AND PLACEMENT

SHEET LEGEND

- MODULE BOUNDARY
- - - - SIP EDGE



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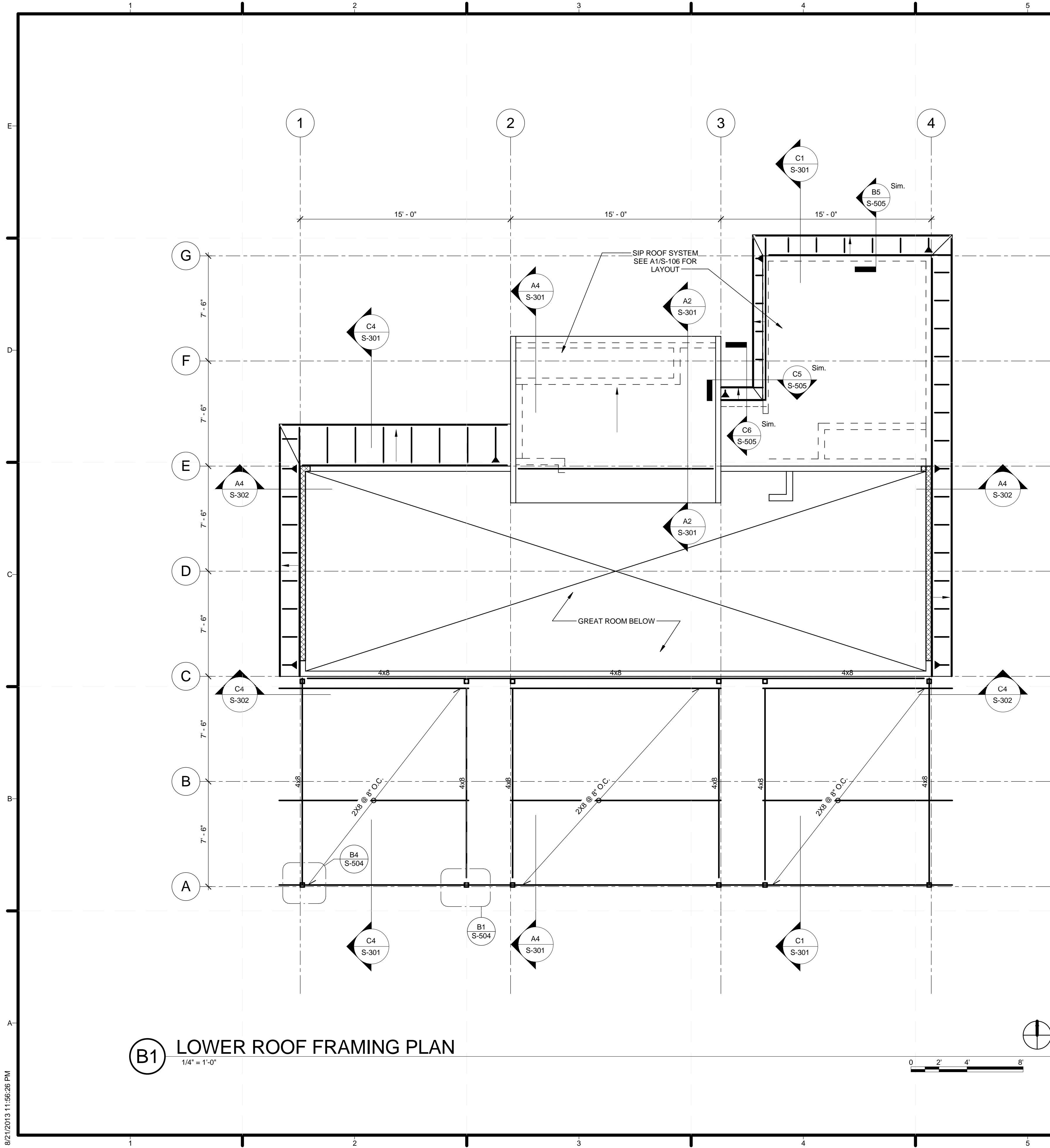
01	10/11/2012	80% DOE/NREL DD SUBMISSION
02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION
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SHEET TITLE
FLOOR MODULE BOUNDARIES

S-103



(B1) LOWER ROOF FRAMING PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

1. DECKING IS 1X RECLAIMED DOUGLAS FIR
2. ALL FRAMING IS DF-L NO. 1 U.N.O.
3. PERGOLA POSTS ARE REDWOOD
4. T.O. SIP FLOOR = 0' - 0"
5. SIP SHOP DRAWINGS SUPERCEDE WALL, SHEARWALL, AND HOLDDOWN DIMENSIONS AND PLACEMENT

SHEET LEGEND

--- WALL BELOW

ORIENTATION	CONNECTOR	BEAM FASTENERS	POST FASTENERS
"T"	CCTQ-SDS2.5	16 - SDS 1/4"-2-1/2"	14 - SDS 1/4"-2-1/2"
"LEFT END"	ECCLQ-SDS2.5	14 - SDS 1/4"-2-1/2"	14 - SDS 1/4"-2-1/2"
"RIGHT END"	ECCRQ-SDS2.5	14 - SDS 1/4"-2-1/2"	14 - SDS 1/4"-2-1/2"
"ALIGNED"	CCQ-SDS2.5	16 - SDS 1/4"-2-1/2"	14 - SDS 1/4"-2-1/2"

NOTE:
1. SDS SCREWS: SDS 1/4"x2-1/2" = 1/4" DIA. x 2-1/2" LONG
2. SDS SCREWS SHOULD BE PROVIDED WITH COLUMN CAP/BASE FROM SIMPSON



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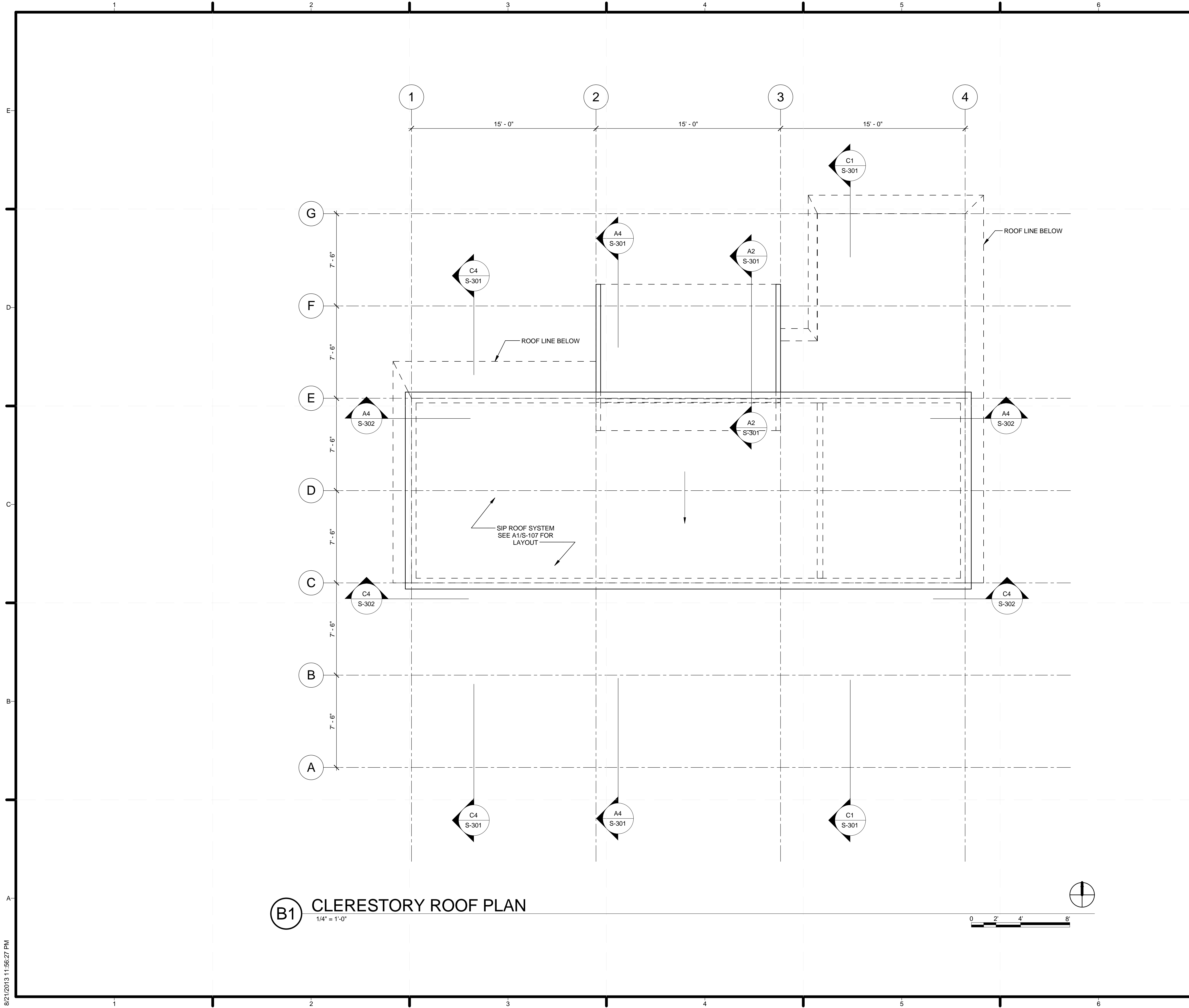
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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK DATE DESCRIPTION

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SHEET TITLE
LOWER ROOF PLAN

S-104



(B1) CLERESTORY ROOF PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

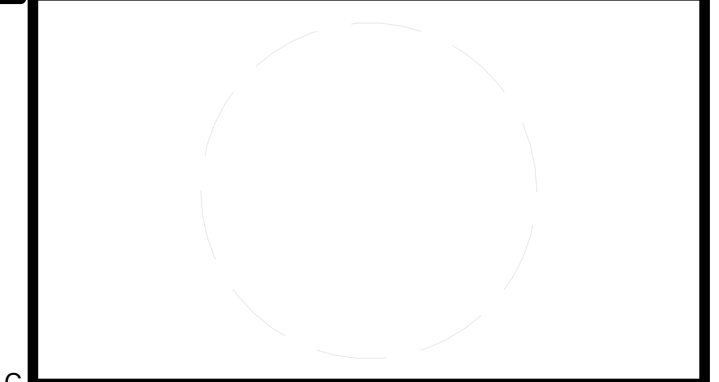
1. ALL FRAMING DF-L NO. 1 U.N.O.
2. SIP SHOP DRAWINGS SUPERCEDE WALL, SHEARWALL, AND HOLDOWN DIMENSIONS AND PLACEMENT

SHEET LEGEND

--- WALL BELOW



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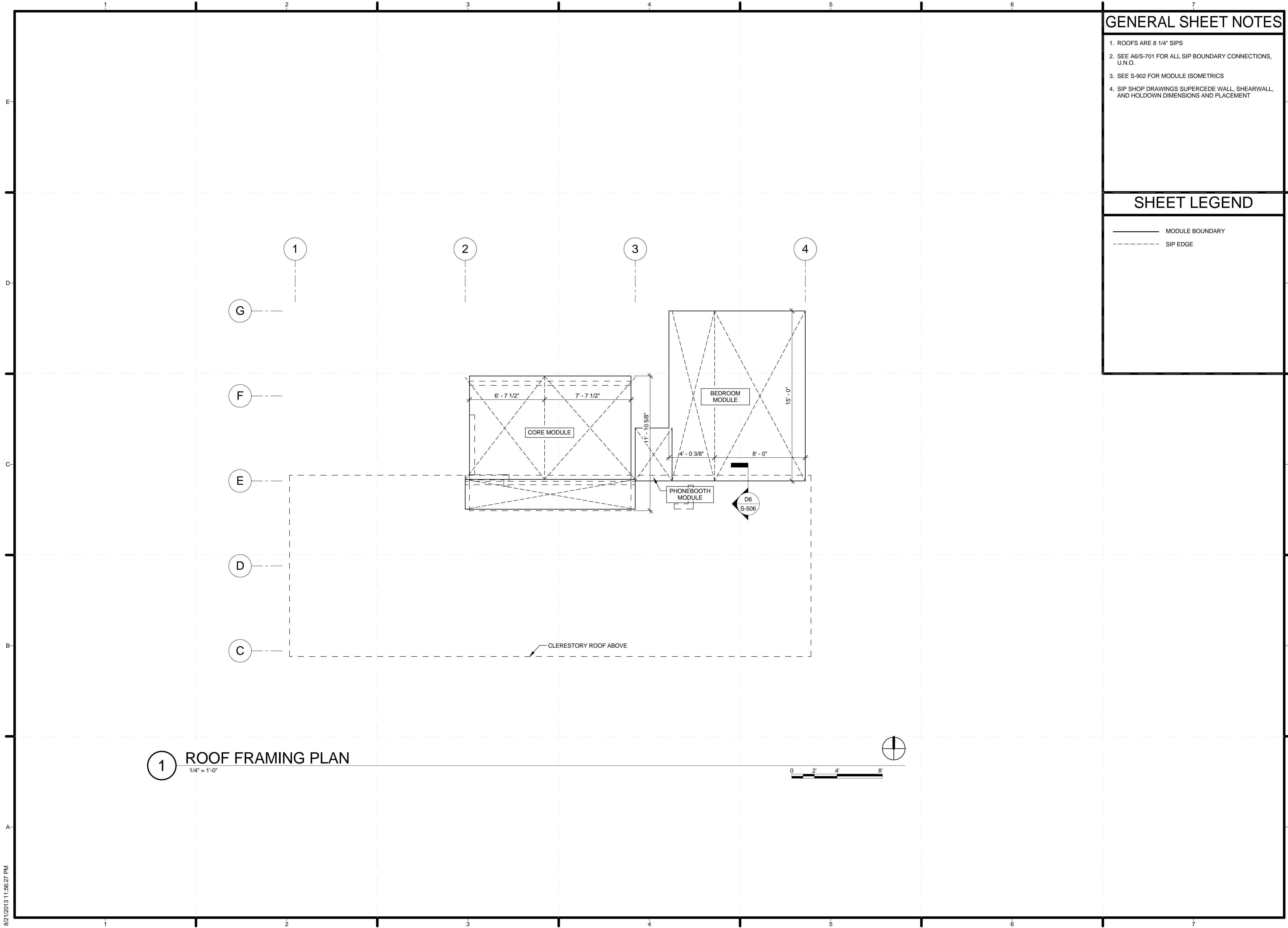
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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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SHEET TITLE
CLERESTORY ROOF PLAN

S-105



1 ROOF FRAMING PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

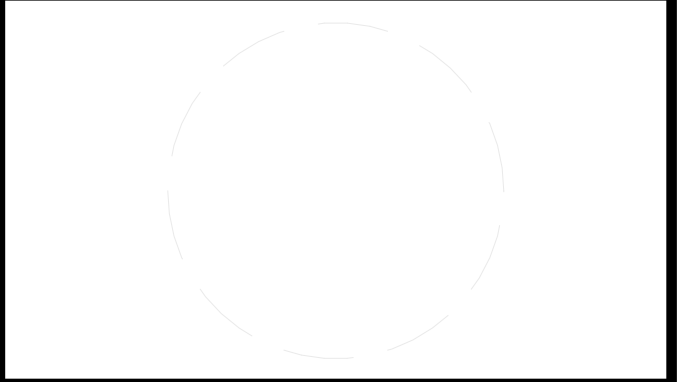
1. ROOFS ARE 8 1/4" SIPS
2. SEE A6/S-701 FOR ALL SIP BOUNDARY CONNECTIONS, U.N.O.
3. SEE S-902 FOR MODULE ISOMETRICS
4. SIP SHOP DRAWINGS SUPERCEDE WALL, SHEARWALL, AND HOLDOWN DIMENSIONS AND PLACEMENT

SHEET LEGEND

- MODULE BOUNDARY
- - - - SIP EDGE



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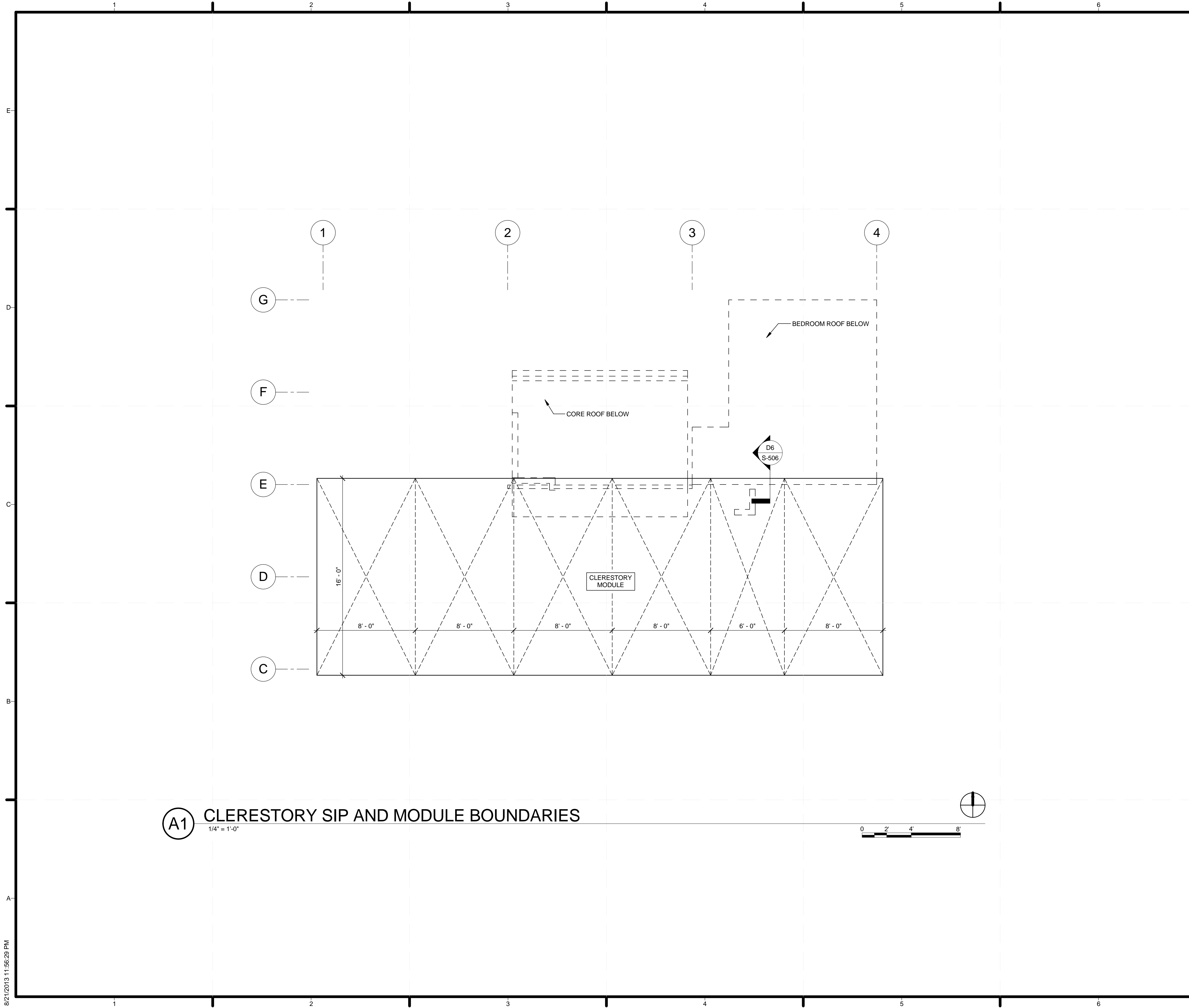
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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION
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SHEET TITLE
LOWER ROOF MODULE BOUNDARIES

S-106



GENERAL SHEET NOTES

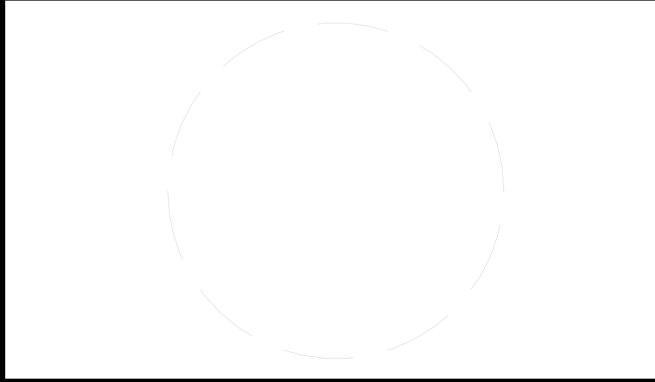
1. ROOFS ARE 8 1/4" SIPS
2. SEE A6/S-701 FOR ALL SIP BOUNDARY CONNECTIONS, U.N.O.
3. SEE S-902 FOR MODULE ISOMETRICS
4. SIP SHOP DRAWINGS SUPERCEDE WALL, SHEARWALL, AND HOLDOWN DIMENSIONS AND PLACEMENT

SHEET LEGEND

- MODULE BOUNDARY
- - - - SIP EDGE



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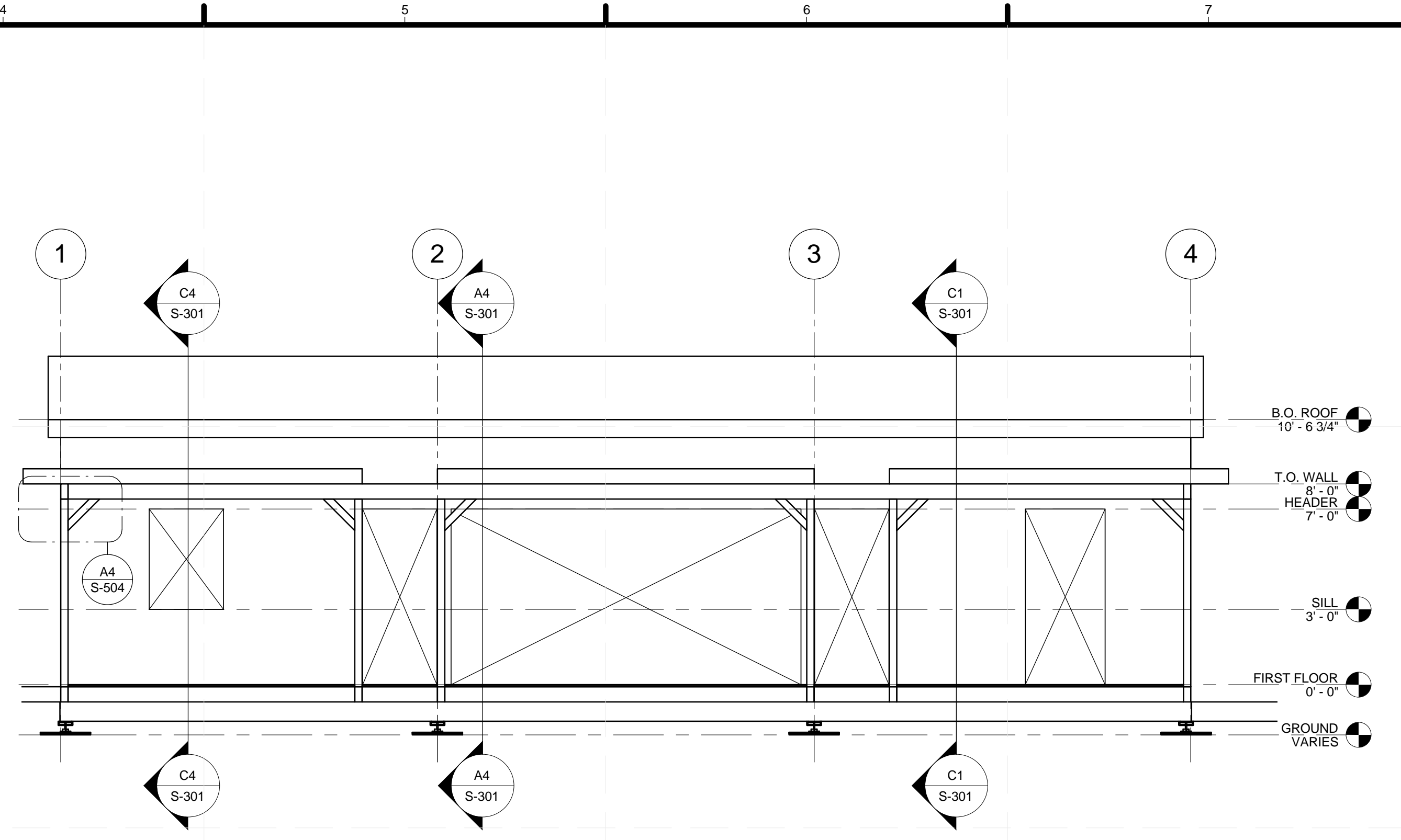
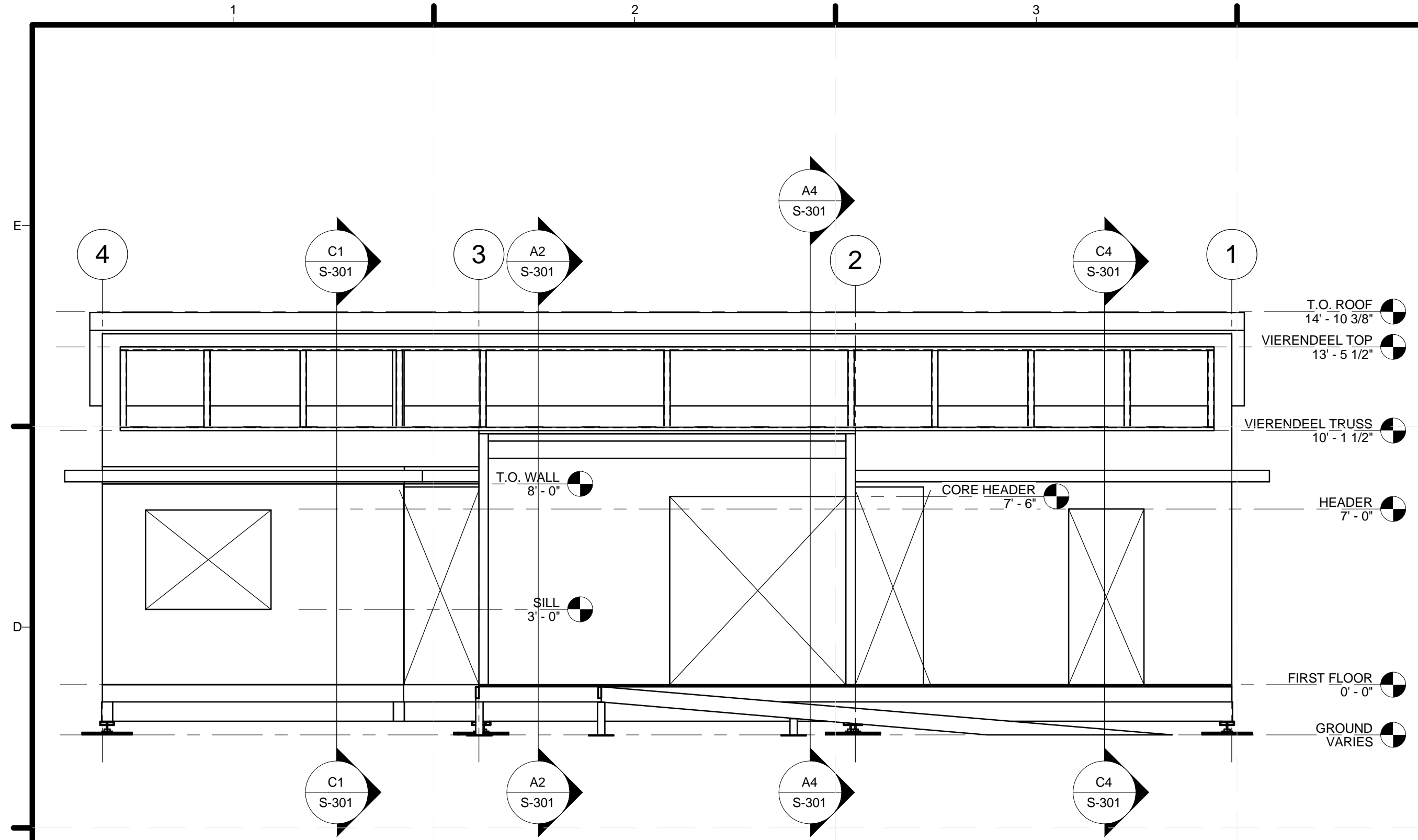
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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION

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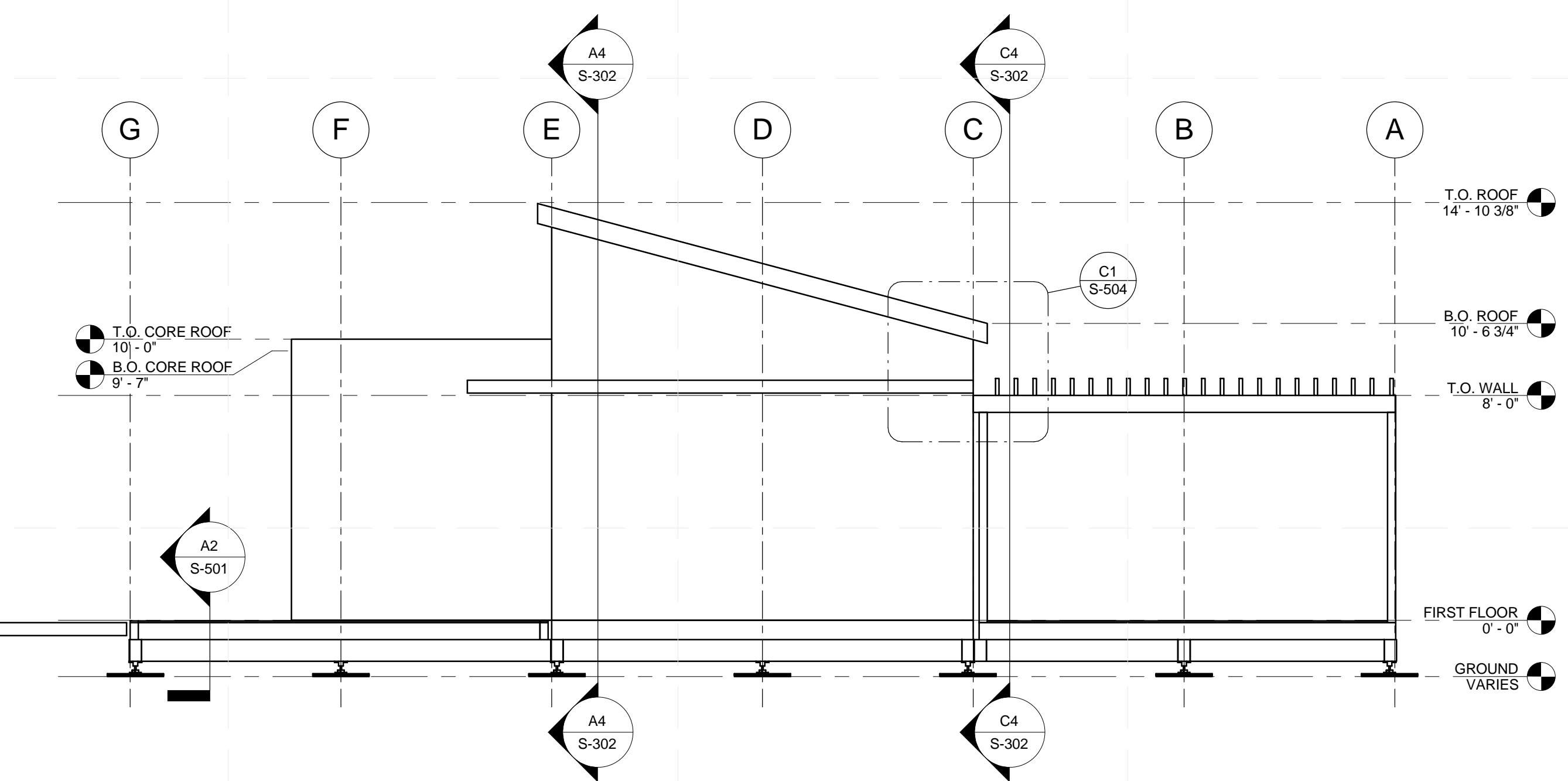
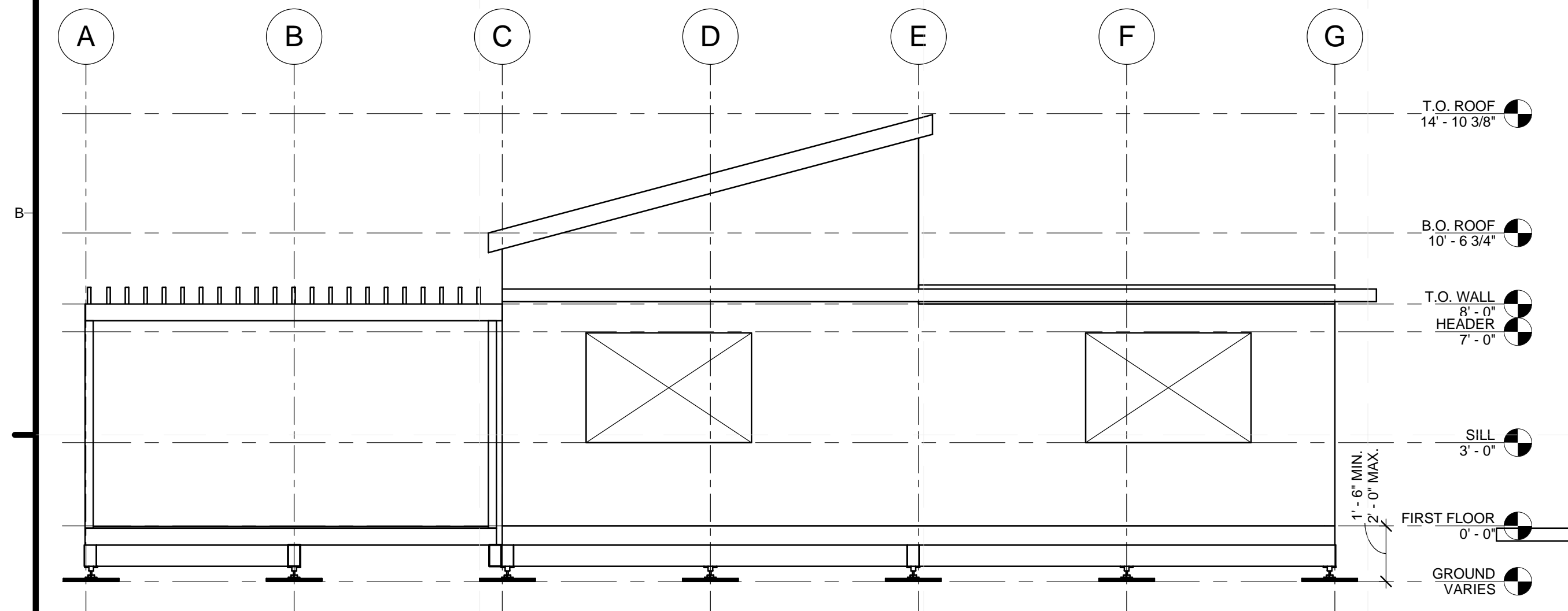
SHEET TITLE
**CLERESTORY ROOF
 MODULE BOUNDARIES**

S-107



C1 NORTH STRUCTURAL ELEVATION
1/4" = 1'-0"

C4 SOUTH STRUCTURAL ELEVATION
1/4" = 1'-0"

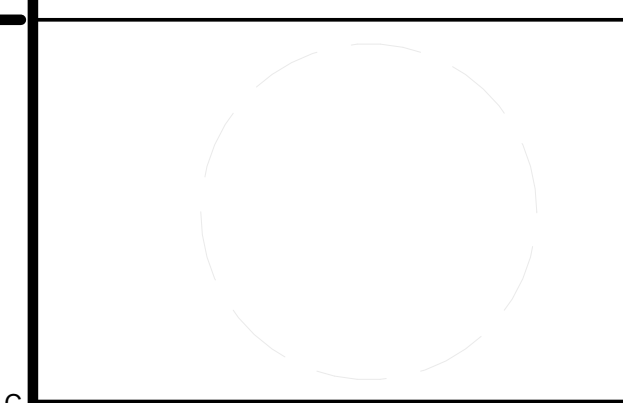


A1 EAST STRUCTURAL ELEVATION
1/4" = 1'-0"

A4 WEST STRUCTURAL ELEVATION
1/4" = 1'-0"



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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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SHEET TITLE

STRUCTURAL ELEVATIONS

S-201

8/21/2013 11:56:30 PM



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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
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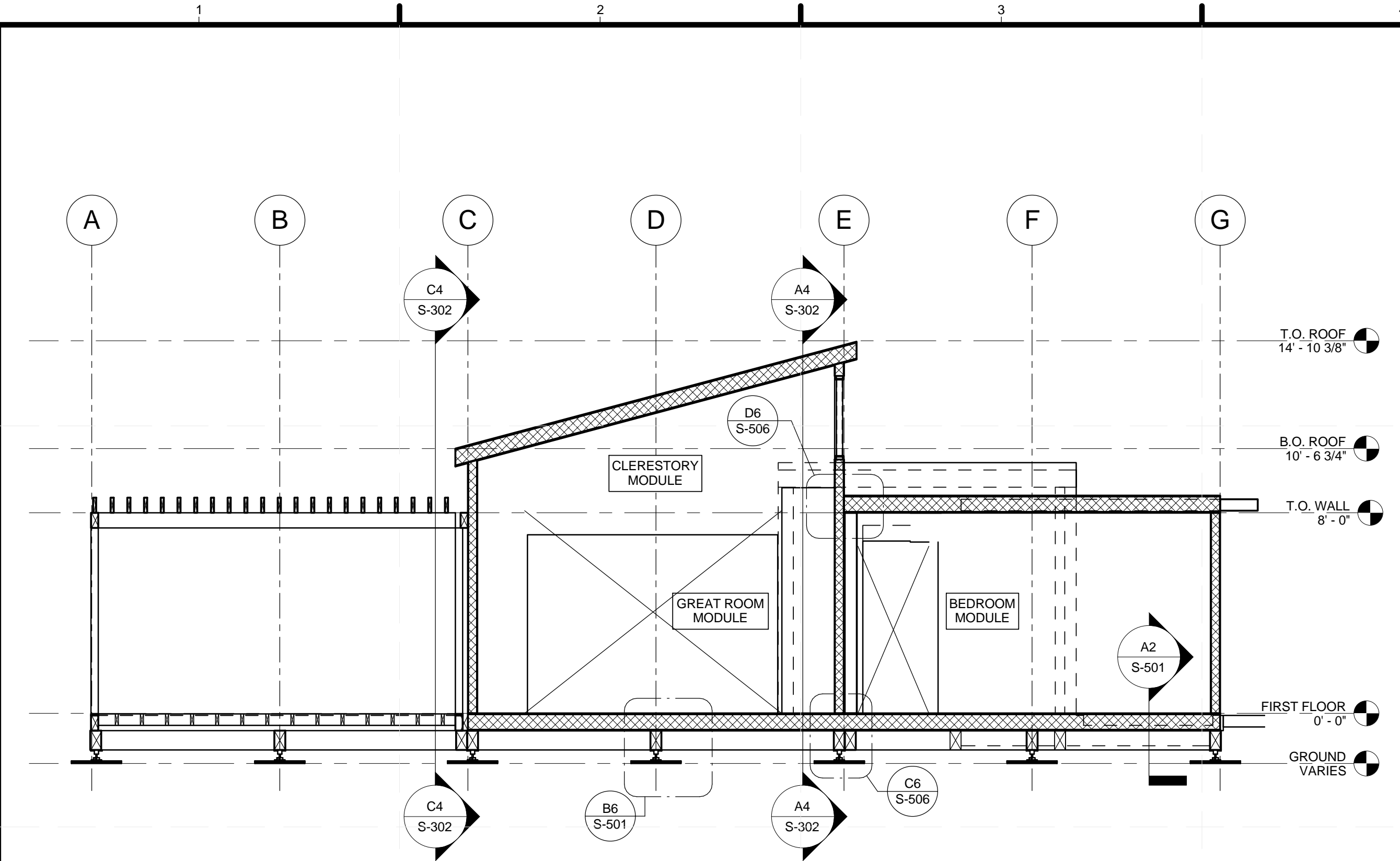
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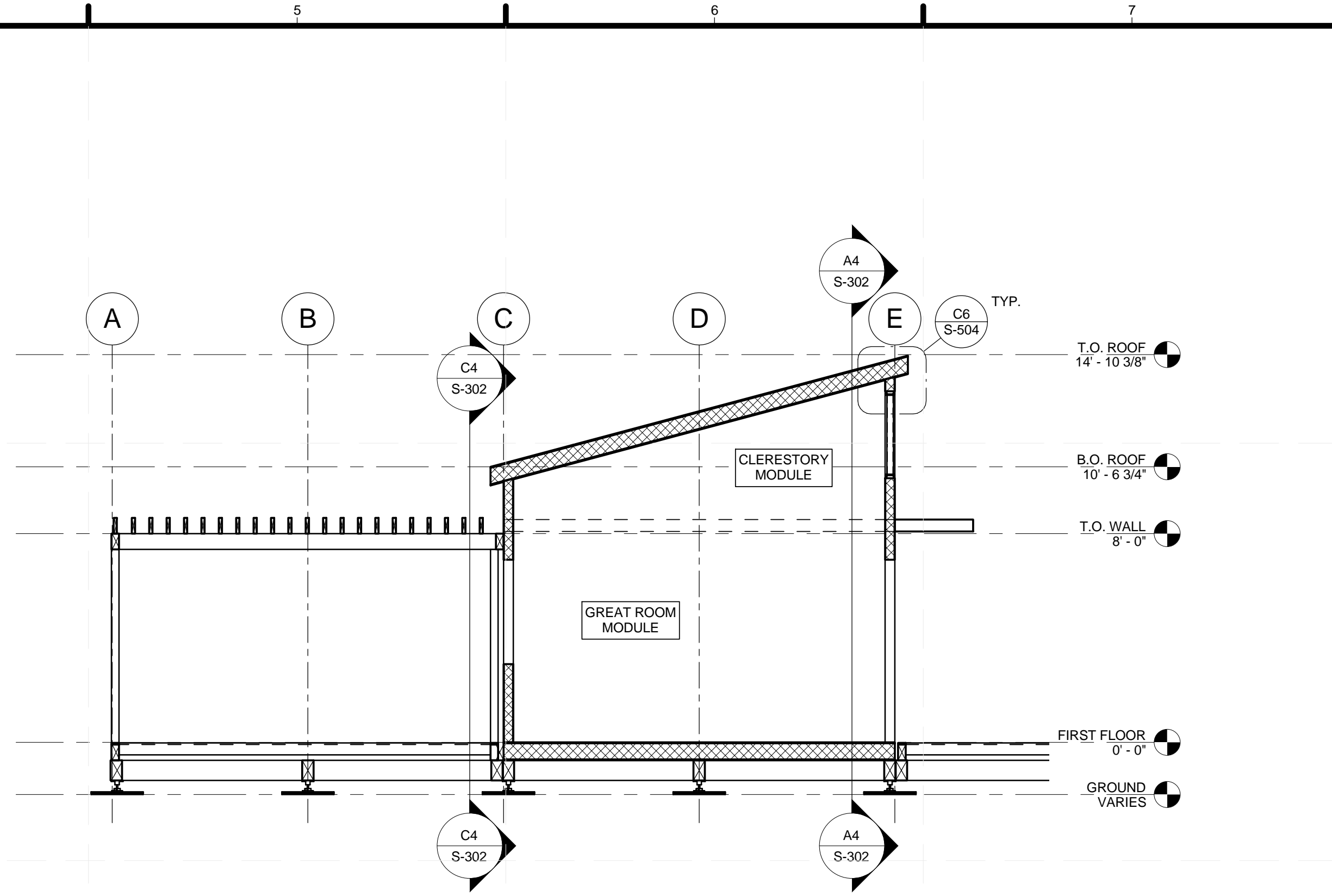
SHEET TITLE

STRUCTURAL SECTIONS

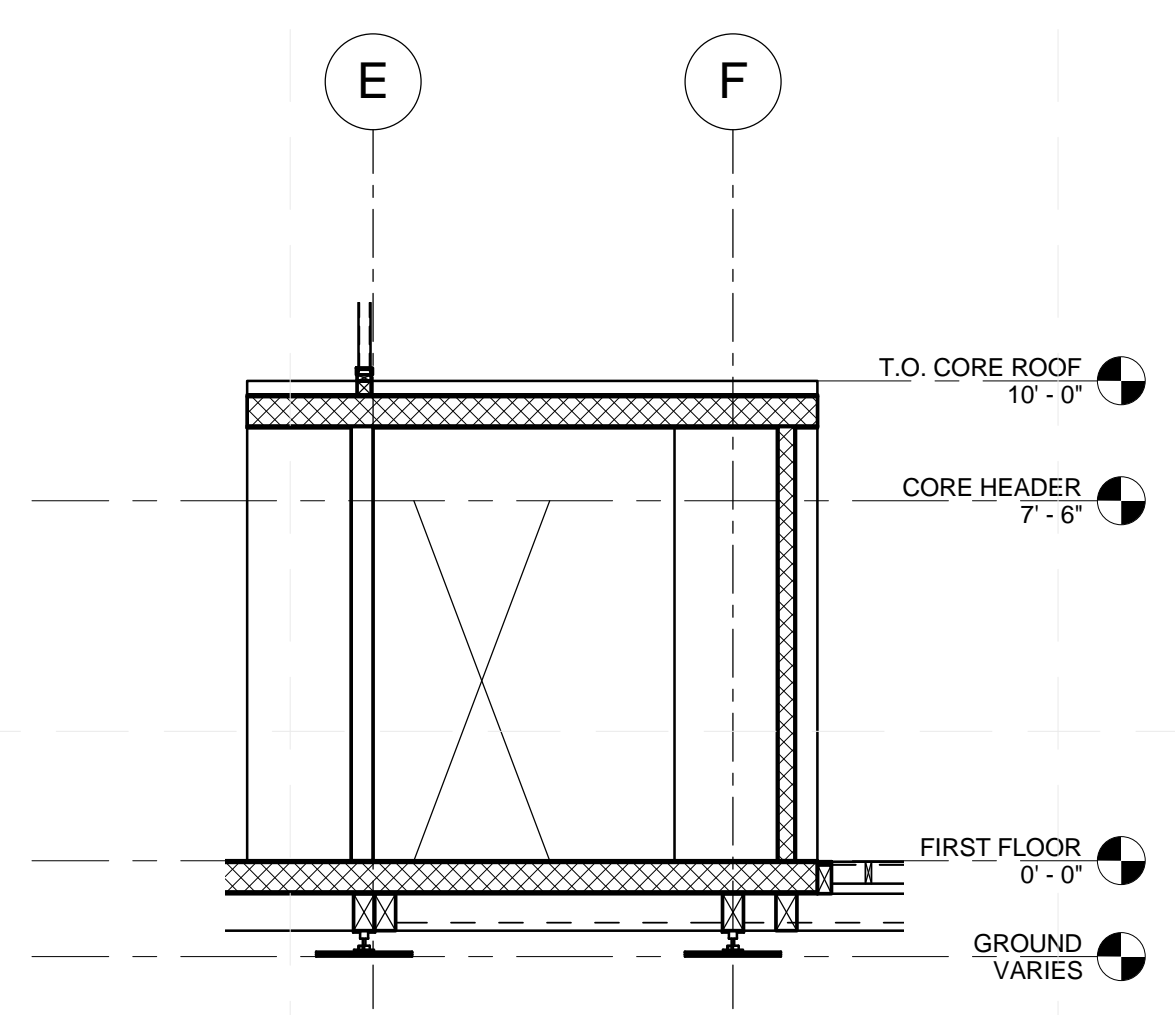
S-301



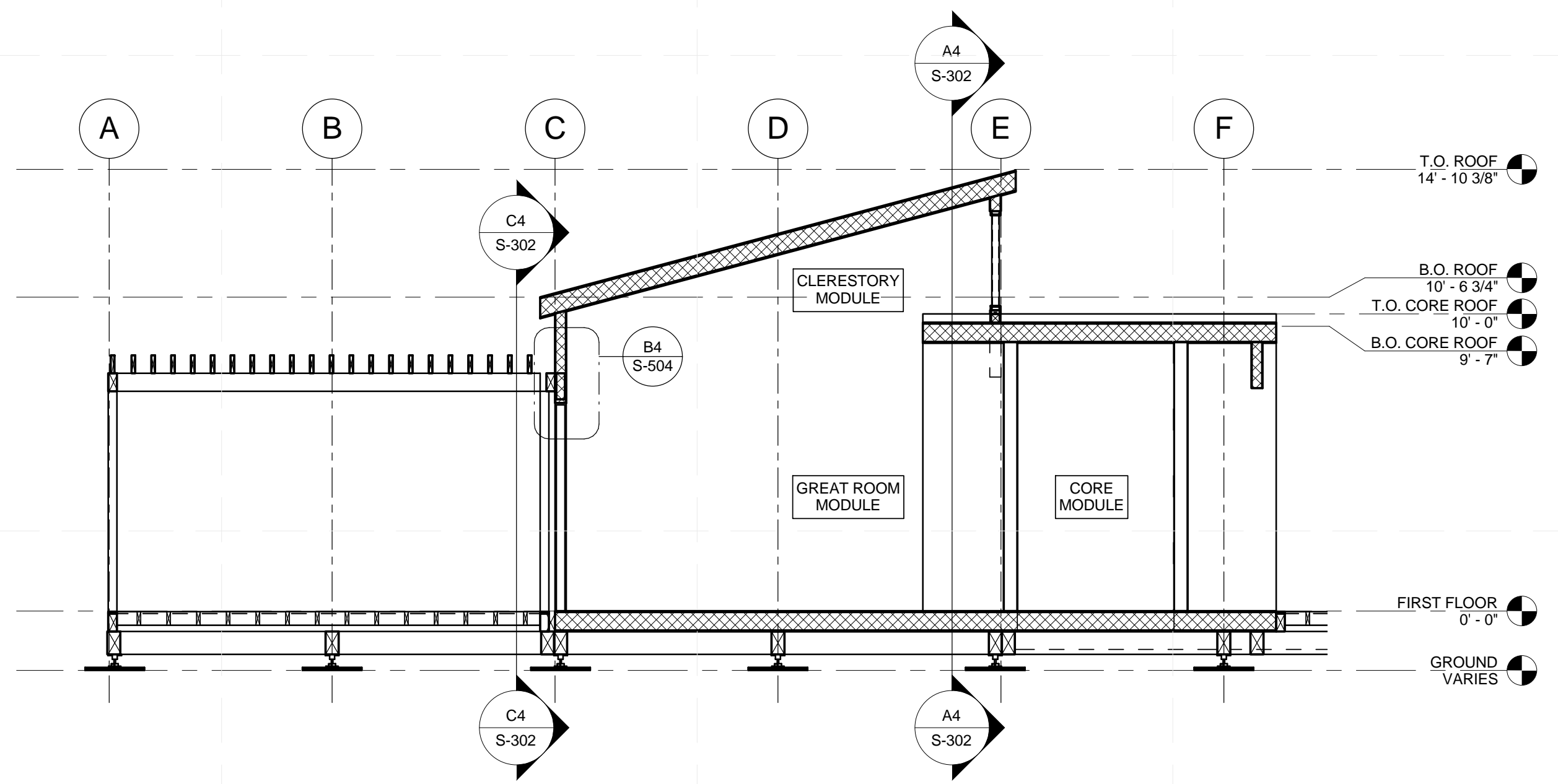
C1 GRIDLINE 3 SECTION
1/4" = 1'-0"



C4 GRIDLINE 1 SECTION
1/4" = 1'-0"



A2 SECTION THRU CORE
1/4" = 1'-0"

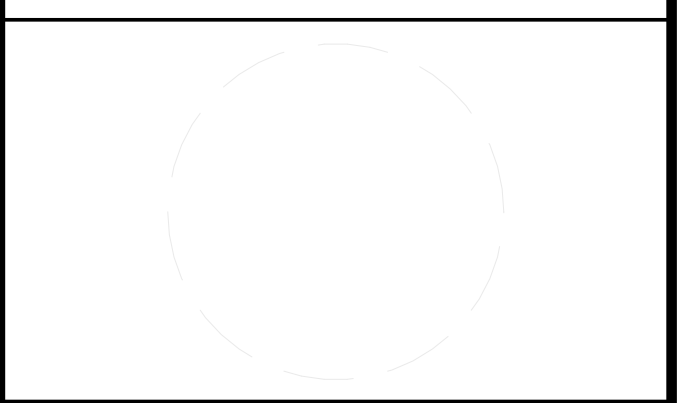


A4 GRIDLINE 2 SECTION
1/4" = 1'-0"

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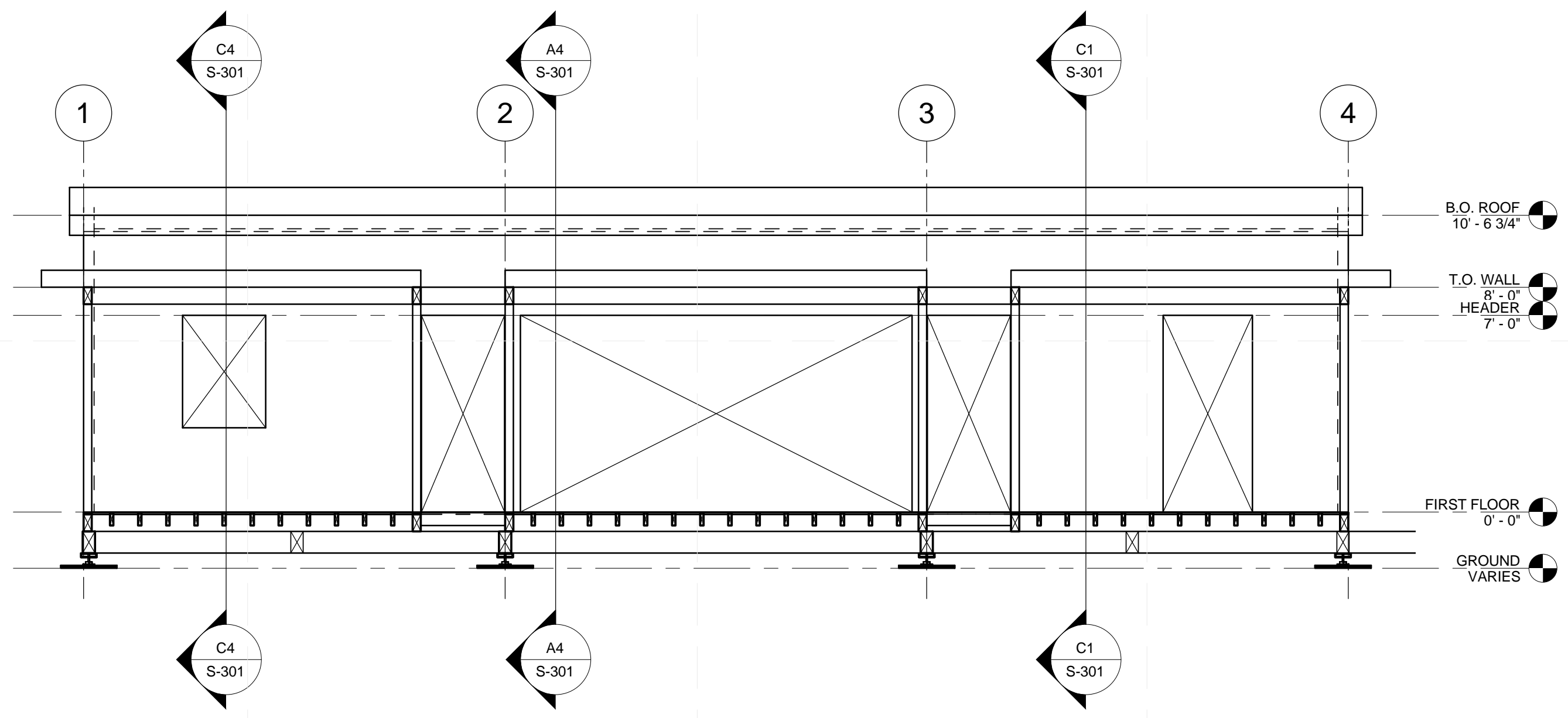
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03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION

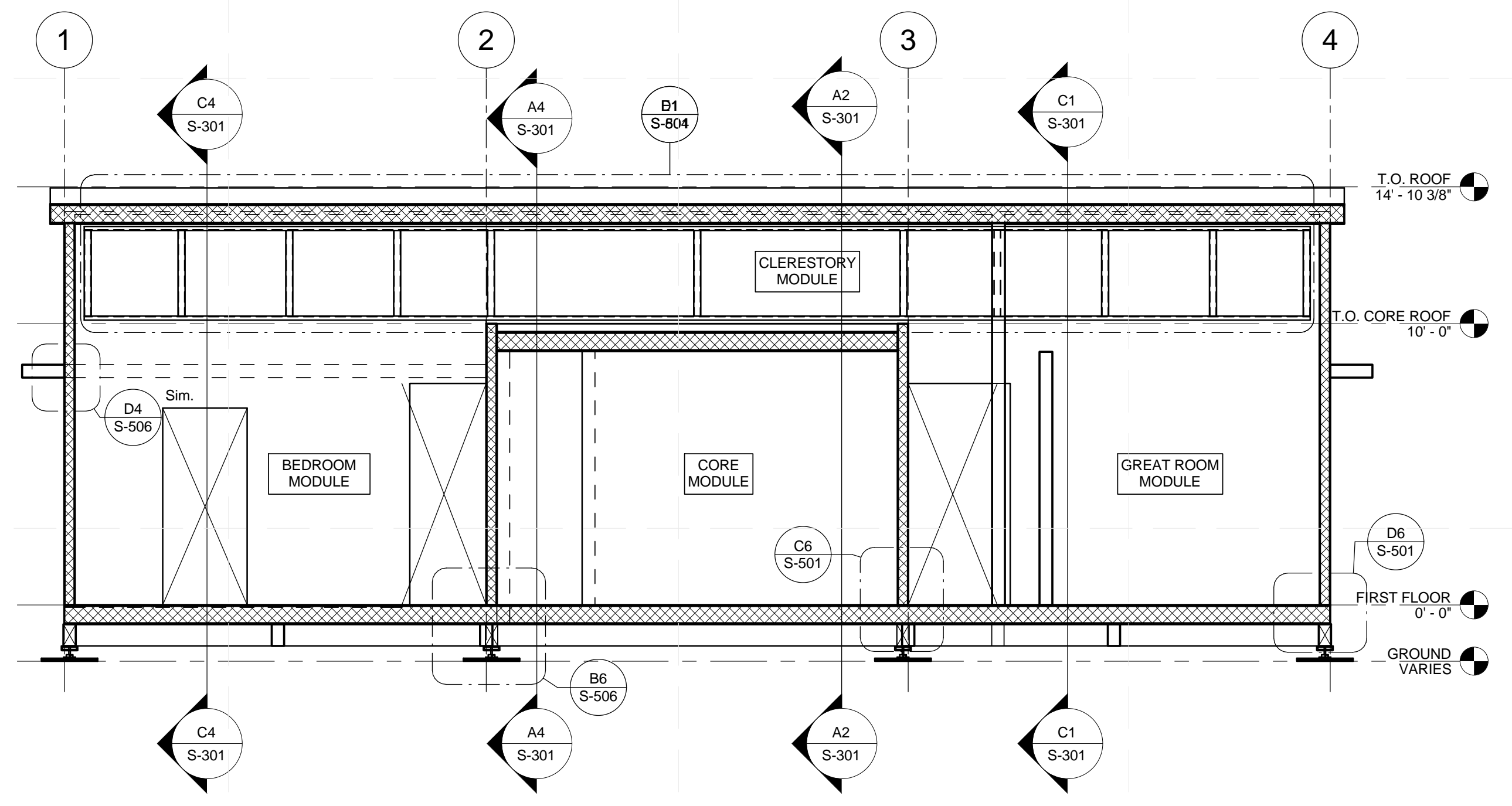
LOT NUMBER: 104
 DRAWN BY: KEVIN CHEN
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SHEET TITLE
STRUCTURAL SECTIONS

S-302

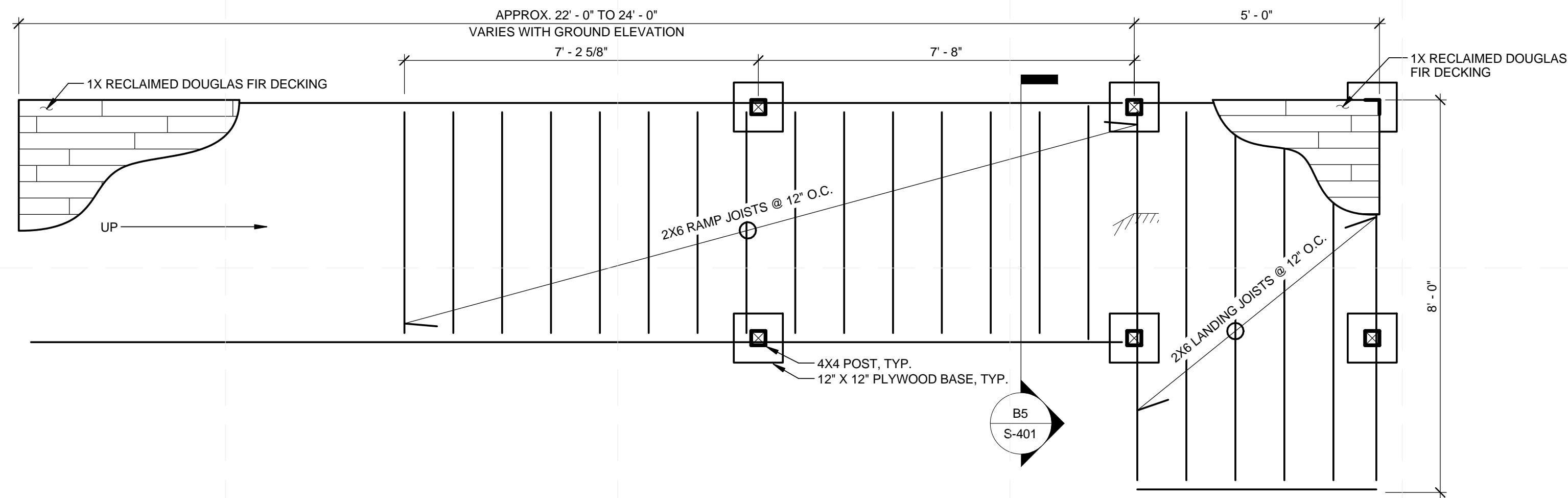


C4 GRIDLINE C SECTION
 1/4" = 1'-0"

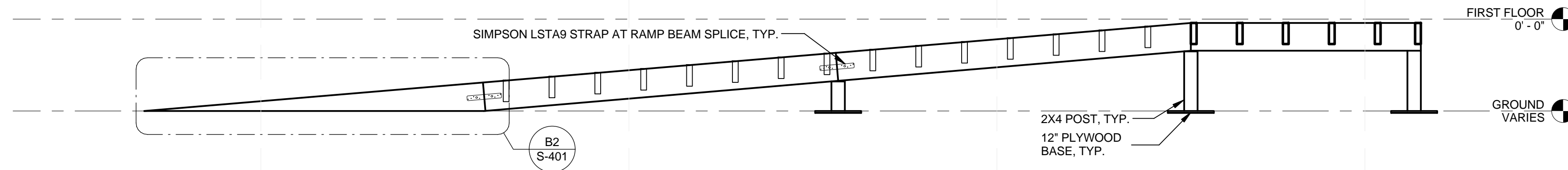


A4 GRIDLINE E SECTION
 1/4" = 1'-0"

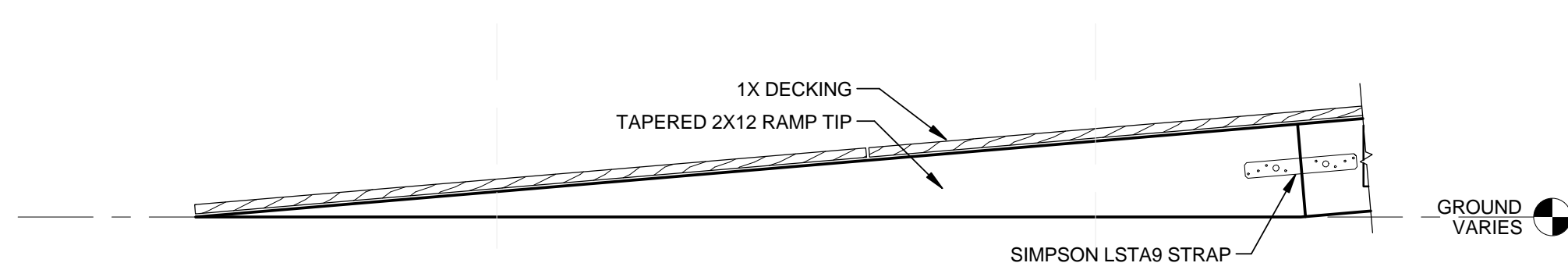
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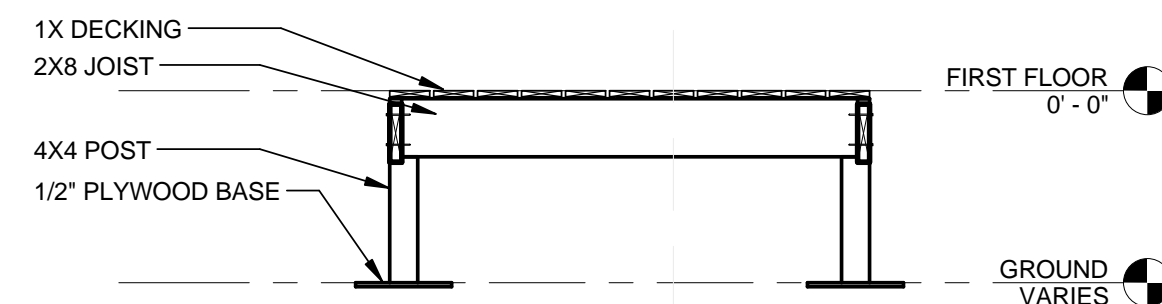
D2 TYPICAL RAMP PLAN
1/2" = 1'-0"



C2 TYPICAL RAMP ELEVATION
1/2" = 1'-0"



B2 RAMP TIP DETAIL
1" = 1'-0"



B5 TYPICAL RAMP SECTION
1/2" = 1'-0"

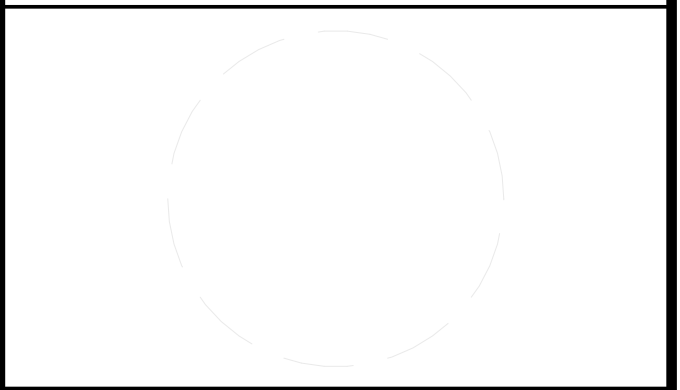
GENERAL SHEET NOTES

- DECK IS 1" RECLAIMED WOOD
- ADJUST HEIGHT OF RAMP WITH ADDITIONAL PLYWOOD SHEETS AS NECESSARY. FOR ELEVATION CHANGES ON SITE OF MORE THAN 2 INCHES, TEAM WILL PROVIDE MODULAR RAMP ADDITIONS (1' HIGH BY 1' LONG) WHICH CAN BE ADDED TO THE BOTTOM OF THE EXISTING RAMP, WITH PLYWOOD SHIMMING UNDER ALL RAISED FOOTINGS. AS A FINAL PRECAUTION, EXTRA LUMBER WILL BE BROUGHT TO SITE SHOULD THE RAMP NEED TO BE REBUILT AS A FIELD CONDITION.
- ALL JOISTS 2X8 DF-L NO.1

SHEET LEGEND



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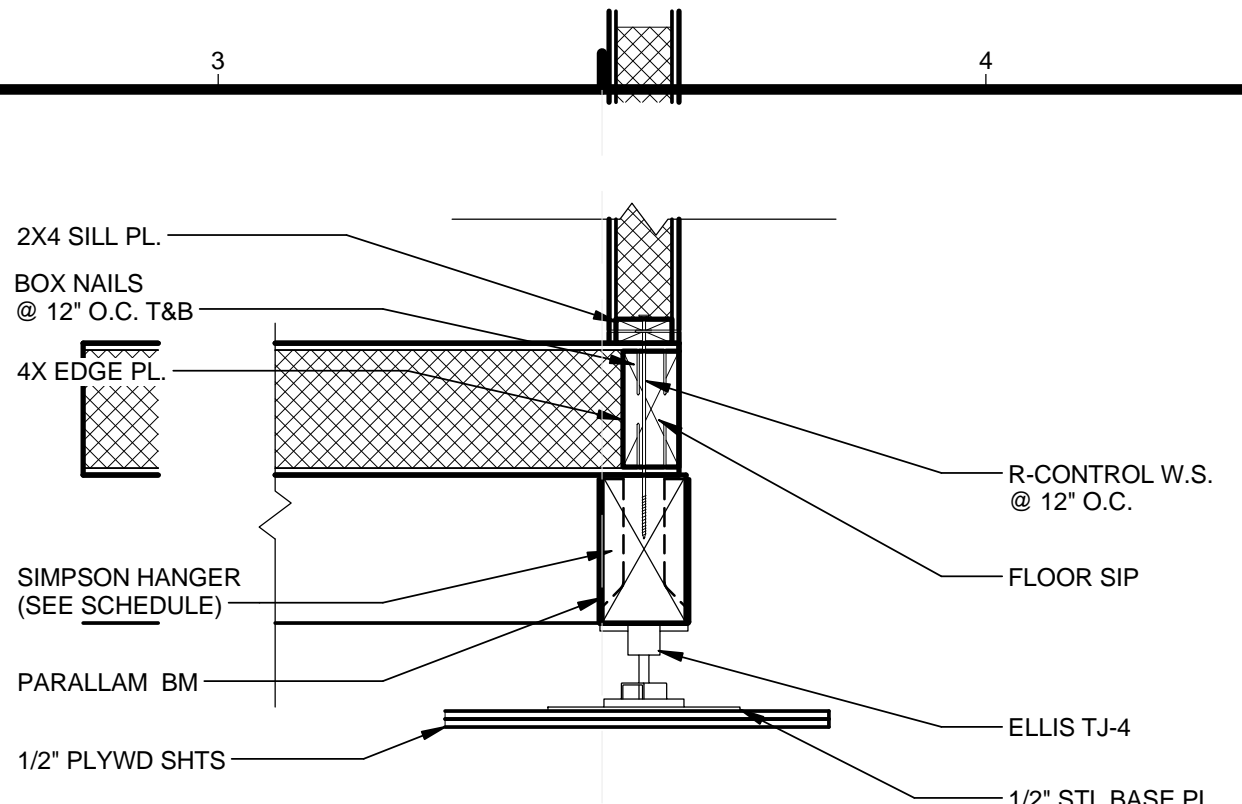
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05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION
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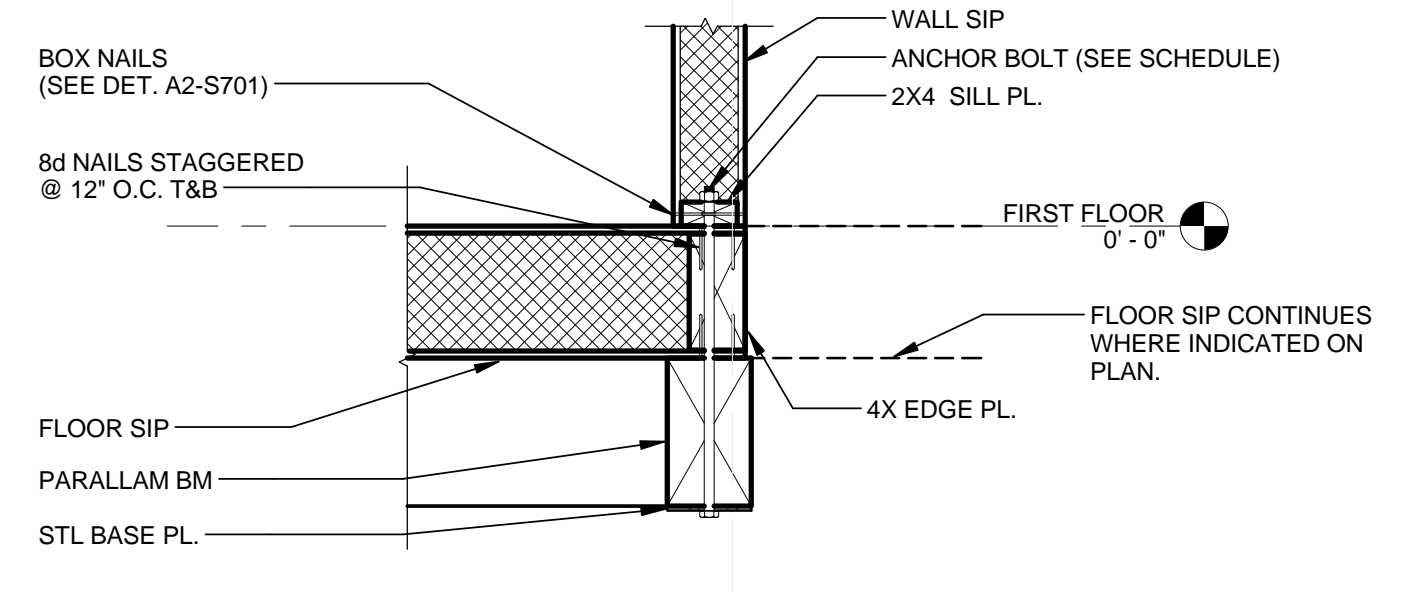
LOT NUMBER: 104
DRAWN BY: KEVIN CHEN
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SHEET TITLE
RAMP DETAILS

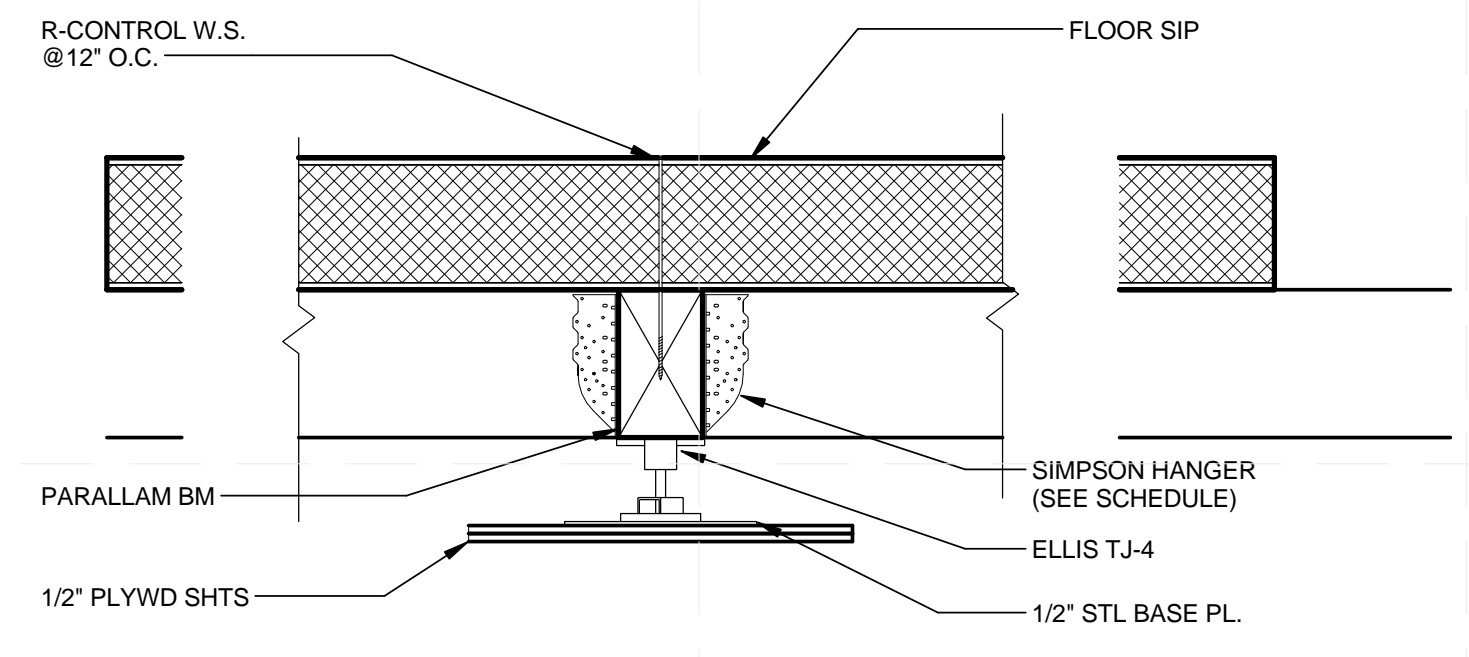
S-401



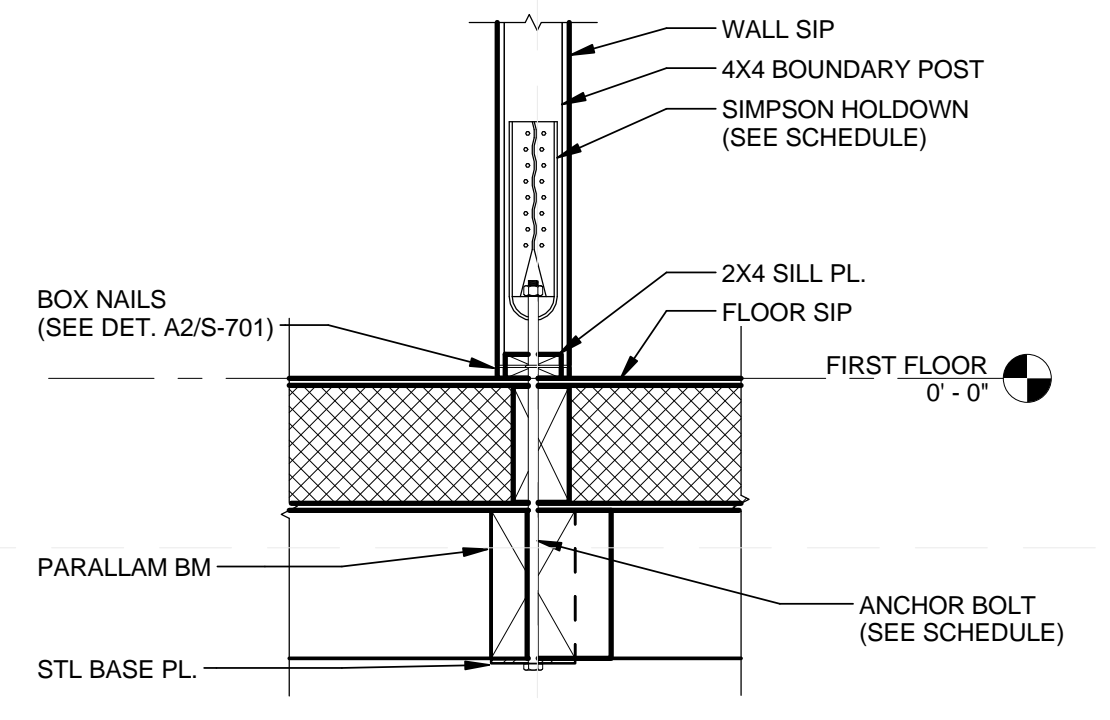
D3 TYPICAL EXTERIOR SIP TO FOUNDATION
1" = 1'-0"



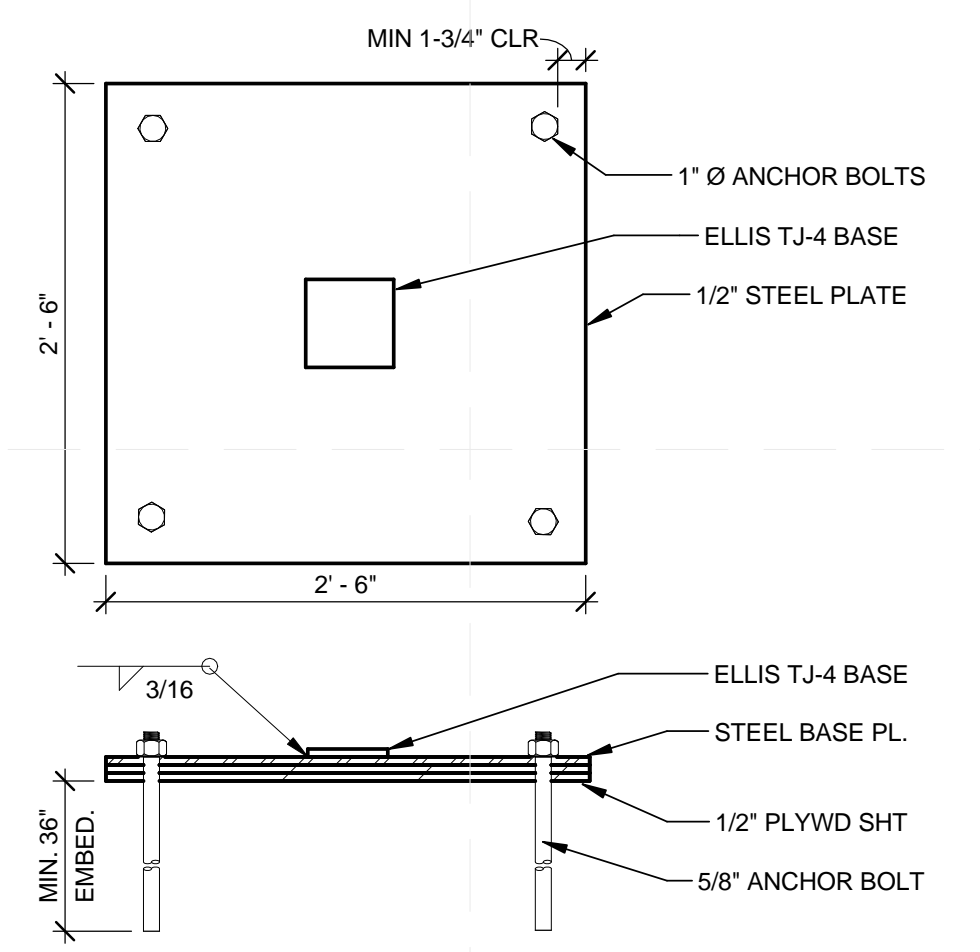
D6 TYPICAL ANCHOR BOLT DETAIL
1" = 1'-0"



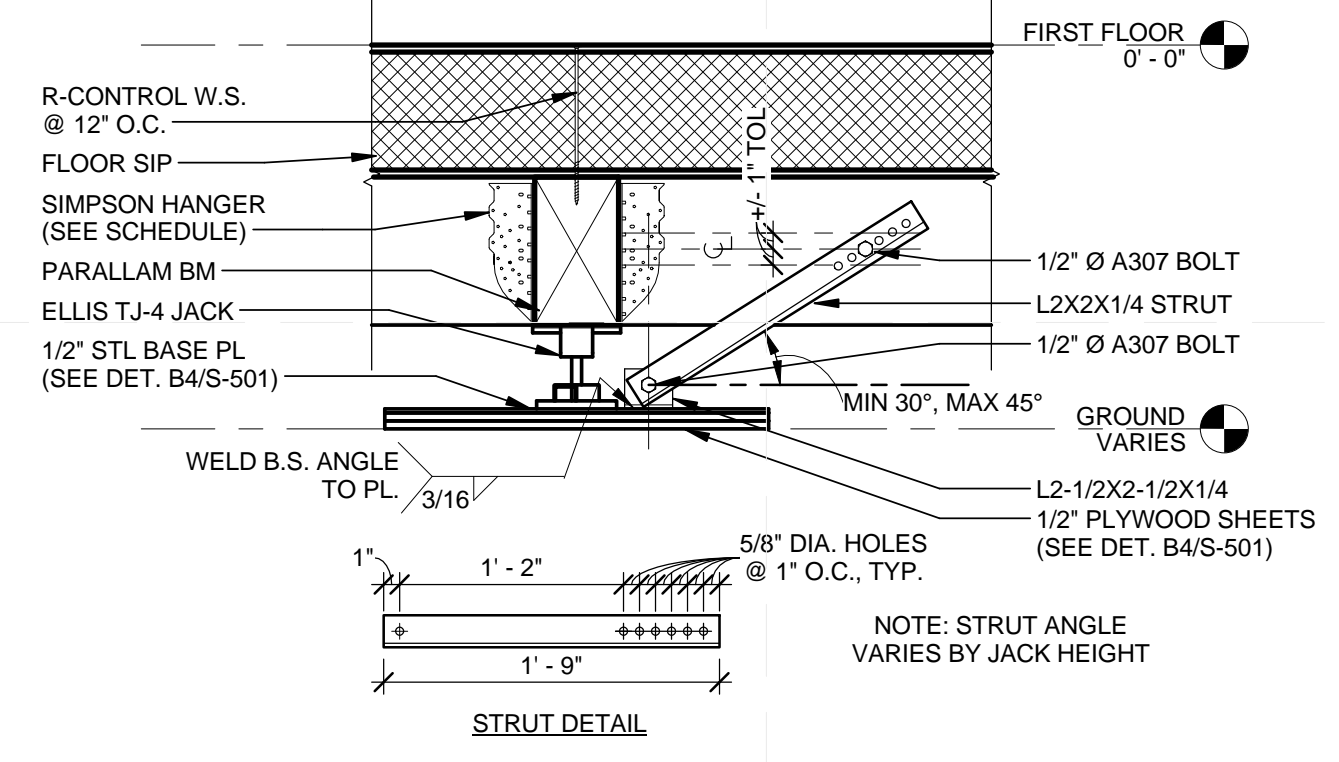
C3 TYPICAL INTERIOR SIP TO FOUNDATION
1" = 1'-0"



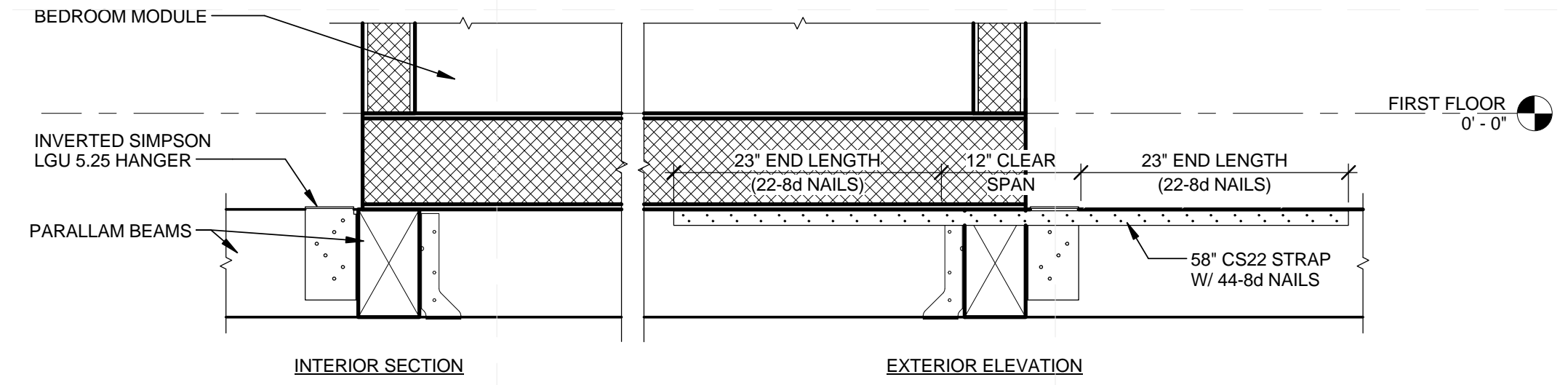
C6 TYPICAL HOLDOWN DETAIL
1" = 1'-0"



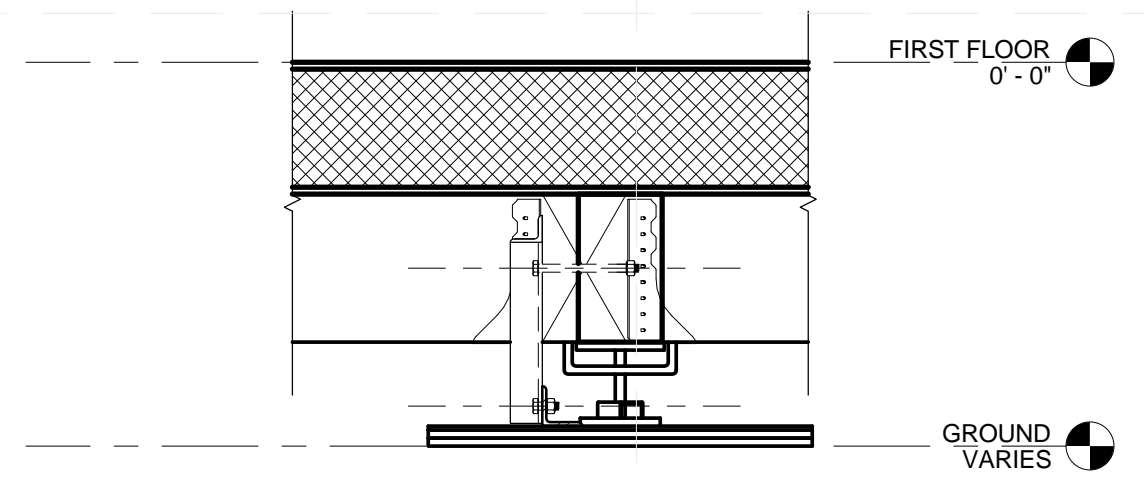
B3 FOOTING ANCHORAGE
1" = 1'-0"



B6 TYPICAL STRUT CONNECTION
1" = 1'-0"



A2 INVERTED HANGER DETAIL
1" = 1'-0"



A6 TYPICAL STRUT PERPENDICULAR
1" = 1'-0"

GENERAL SHEET NOTES

1. TO ADJUST FOR A POTENTIAL ELEVATION CHANGE OF 18" FROM ONE FOOTING TO ANOTHER ON SITE, THE TEAM WILL PROVIDE TIERED MEANS OF ACCOMMODATION. THE FIRST TIER IS PLYWOOD BUILD UP. PER CALCULATIONS, ONLY 4" OF THE BOLT CAN BE SUPPORTED THROUGH PLYWOOD, AND SO THE NEXT TIER, IF NECESSARY, IS THE USE OF SHRINK-PROOF GROUT, POURED LEVEL AND SET TO DRY ON SITE USING FORMWORK. PRECAUTIONS MUST BE TAKEN TO ENSURE GROUT REACHES APPROPRIATE STRENGTH BEFORE SETTING FOOTINGS DOWN ON SURFACE. THE NEXT TIER OF ACCOMMODATION IS THE FABRICATION OF TUBE STEEL ROUGHLY 13" IN HEIGHT TO STRENGTHEN ANCHORING BOLT.

SHEET LEGEND



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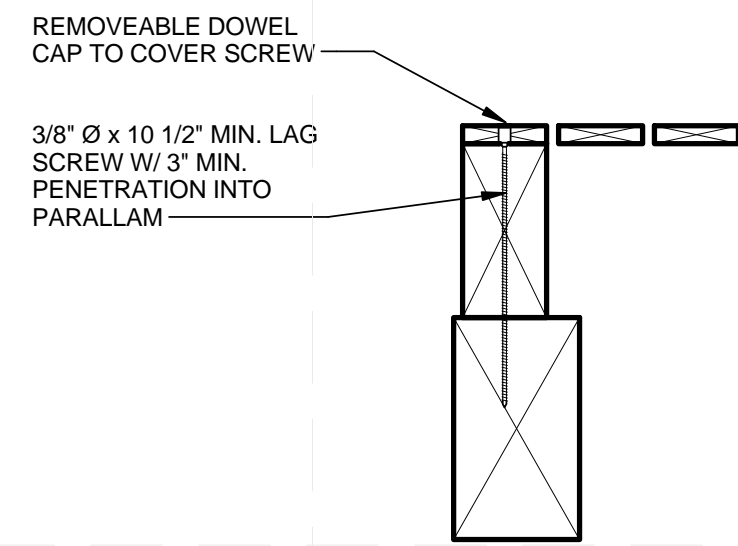
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03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
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MK	DATE	DESCRIPTION
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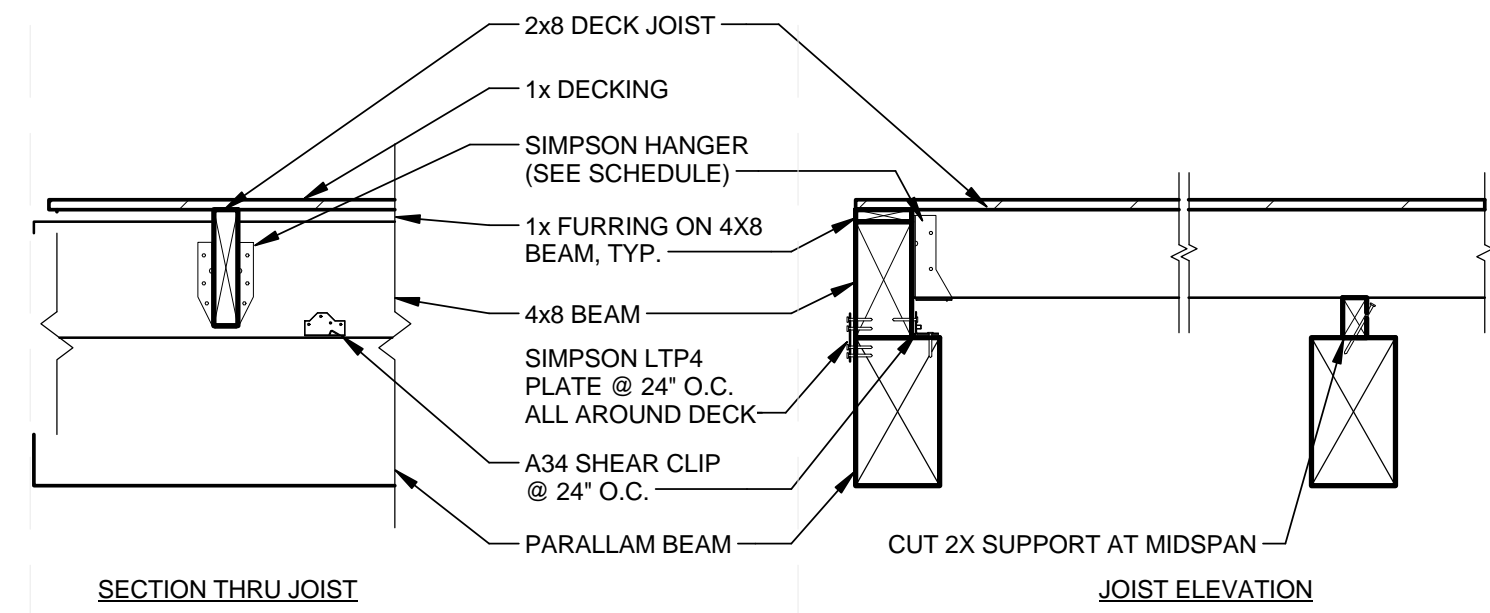
LOT NUMBER: 104
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SHEET TITLE
FOUNDATION DETAILS

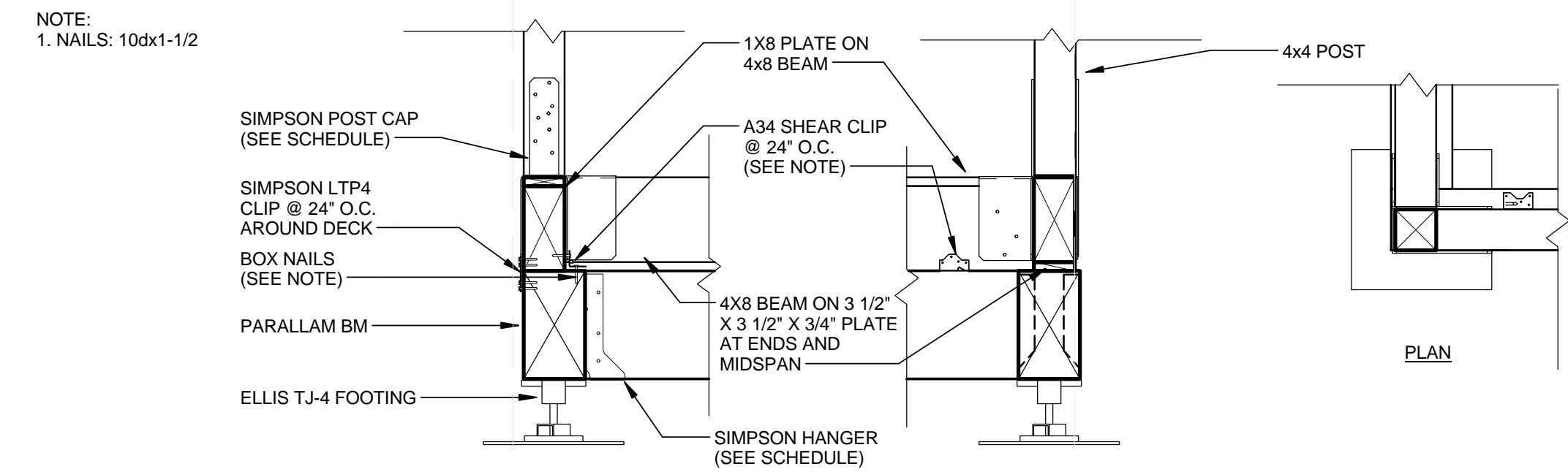
S-501



D1 SCREWED DECK CONN
1 1/2" = 1'-0"



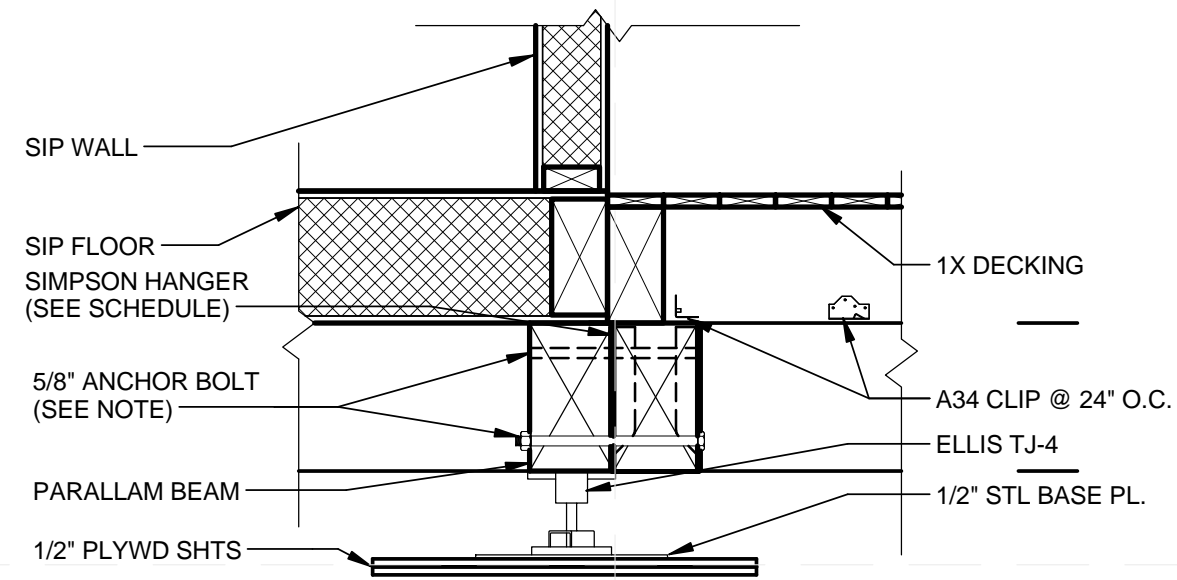
D3 TYPICAL DECK JOIST CONNECTION
1" = 1'-0"



D5 DECK TO FOUNDATION - CORNER CONDITION
1" = 1'-0"

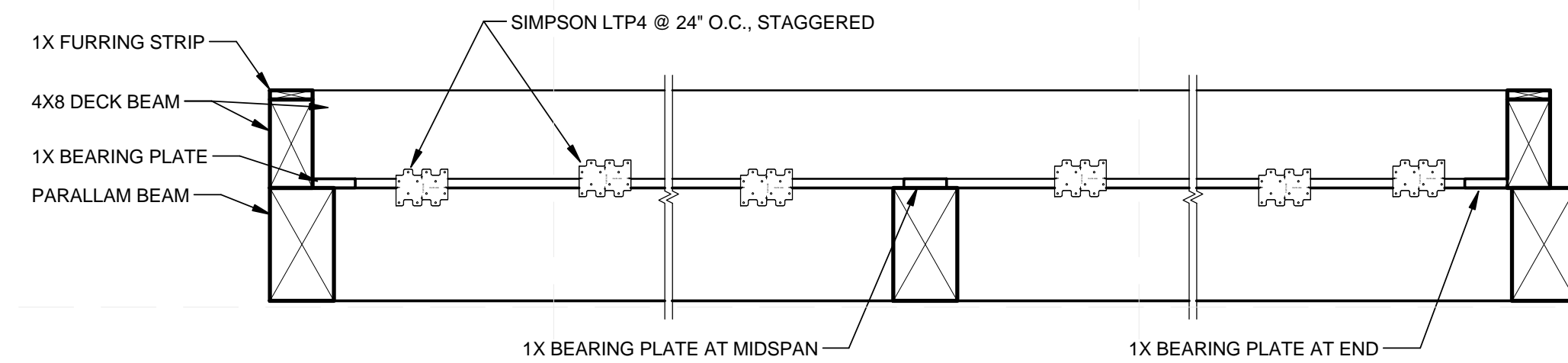
- NOTES:
1. SIMPSON A34 SHEAR CLIP IS PLACED 24" O.C. ON INTERIOR OF 4X8 PERIMETER DECK BEAMS
2. SIMPSON A34 - USE 8 - 8dx1-1/2 NAILS
3. SIMPSON LTP4 PLATE IS PLACED 24" O.C. ON EXTERIOR OF 4X8 PERIMETER DECK BEAMS
4. SIMPSON LTP4 - USE 12 - 8dx1-1/2 NAILS

C2 DECK NOTES
N.T.S.

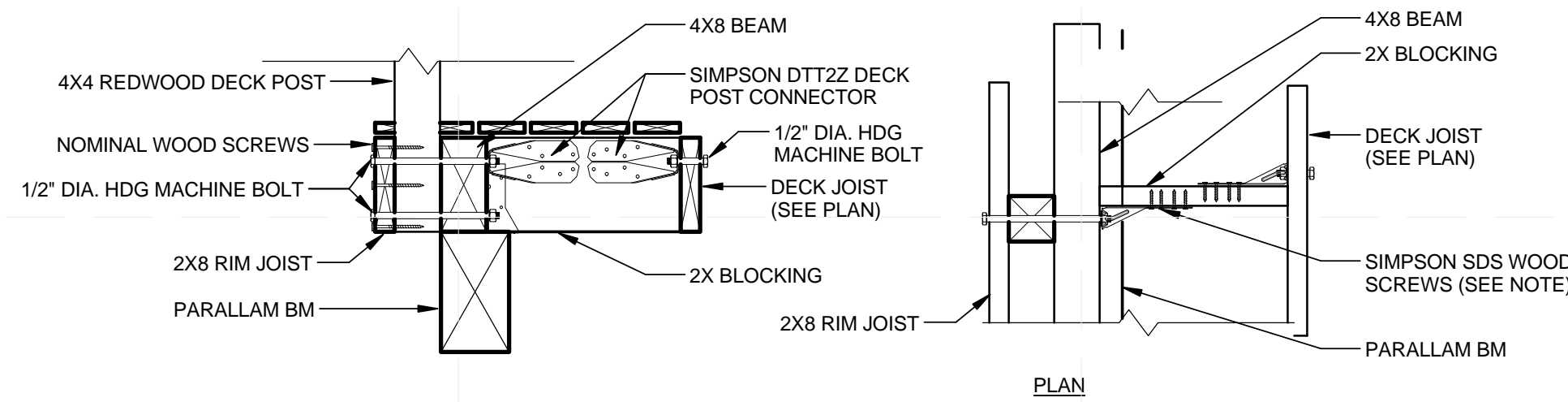


- NOTES:
1. PLACE 5/8" ANCHOR BOLTS @ 5' O.C., ALTERNATING TOP AND BOT., ALONG LENGTH OF PARALLAM BEAMS
2. ENSURE MINIMUM 1-1/2" EDGE DISTANCE BETWEEN BOLT AND TOP/BOT. OF PARALLAM BEAMS
3. NAILS: 8dx1-1/2 = 0.131" DIA. x 1-1/2" LONG

C3 TYPICAL SIP TO FRONT DECK
1" = 1'-0"

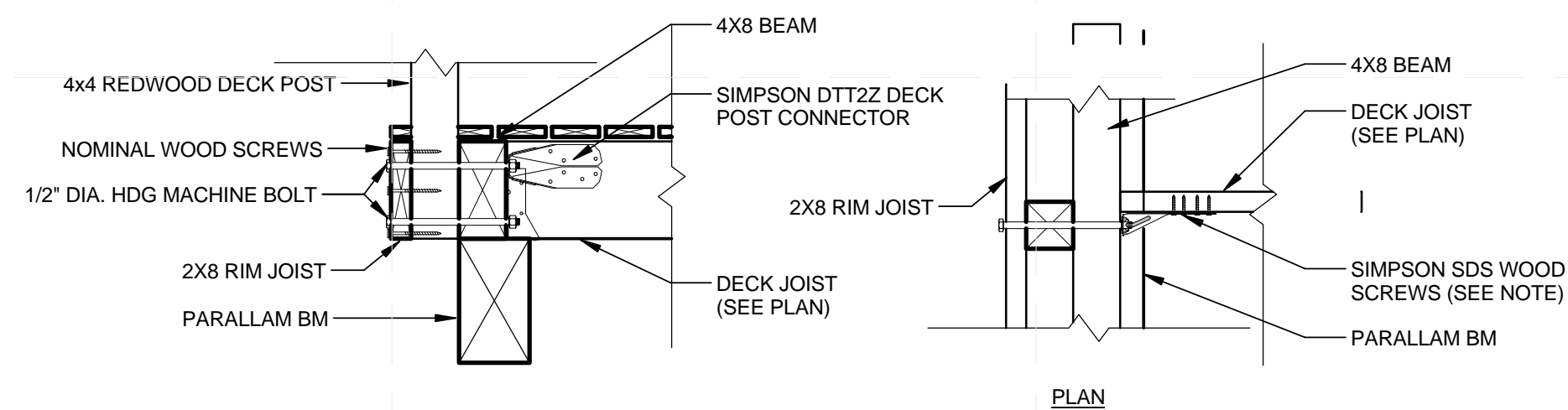


C5 N/S BEAM DECK ELEVATION
1" = 1'-0"



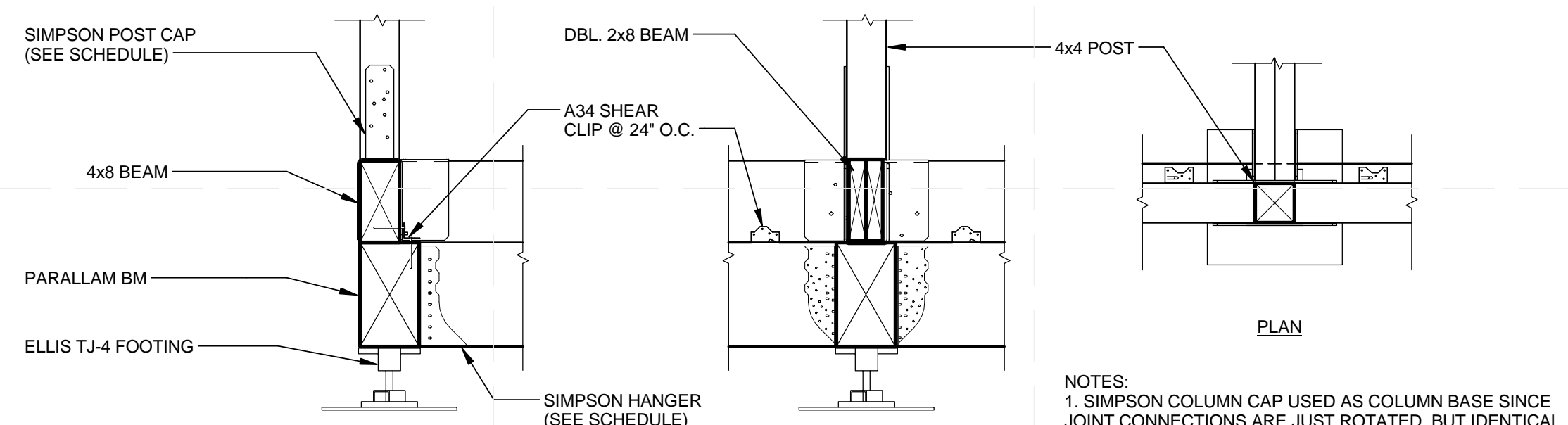
- NOTE:
1. 4x4 DECK POST IS PLACED SUCH THAT ANCHOR BOLT RUNS THRU CENTER OF POST
2. SIMPSON DTTZZ DECK POST CONNECTOR - USE 8-SDS 1/4"x1 1/2" SCREWS

B2 RAILING POST TO BLOCKING
1" = 1'-0"



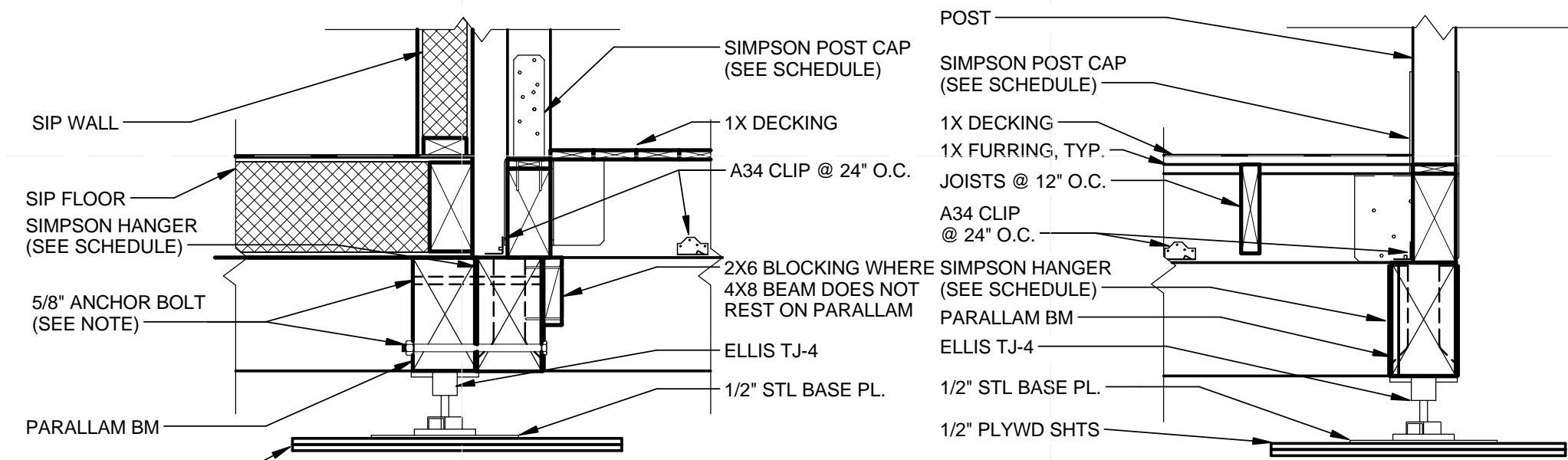
- NOTE:
1. 4x4 DECK POST IS PLACED SUCH THAT ANCHOR BOLT RUNS THRU CENTER OF POST
2. SIMPSON DTTZZ DECK POST CONNECTOR - USE 8-SDS 1/4"x1 1/2" SCREWS

A2 RAILING POST TO JOIST
1" = 1'-0"



- NOTES:
1. SIMPSON COLUMN CAP USED AS COLUMN BASE SINCE JOINT CONNECTIONS ARE JUST ROTATED, BUT IDENTICAL
2. NAILS: 8dx1-1/2 = 0.131" DIA. x 1-1/2" LONG

B5 TYPICAL POST BASE - T CONFIGURATION
1" = 1'-0"



- NOTES:
1. PLACE 5/8" ANCHOR BOLTS @ 5' O.C., ALTERNATING TOP AND BOT., ALONG LENGTH OF PARALLAM BEAMS
2. ENSURE MINIMUM 1-1/2" EDGE DISTANCE BETWEEN BOLT AND TOP/BOT. OF PARALLAM BEAMS
3. NAILS: 8dx1-1/2 = 0.131" DIA. x 1-1/2" LONG
4. NOTCH PARALLAM FACE 1/4" AT LOCATION OF ADJACENT FACE HANGER TO ACCOUNT FOR SCREWS

A5 TYPICAL SIP TO BACK DECK
1" = 1'-0"



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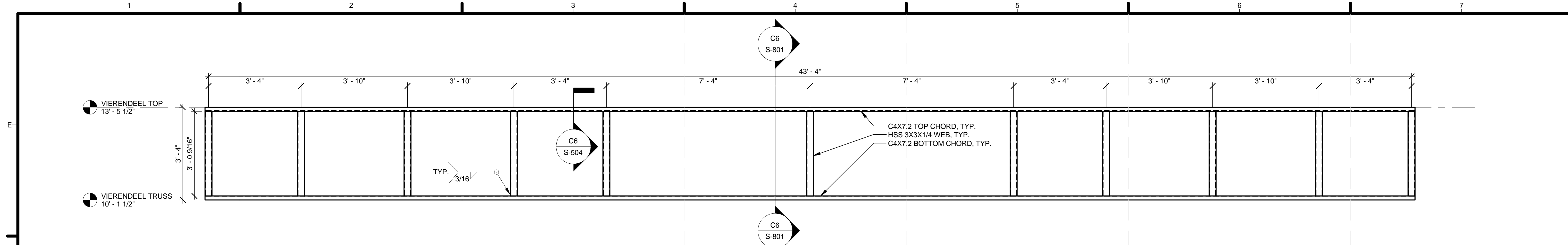


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03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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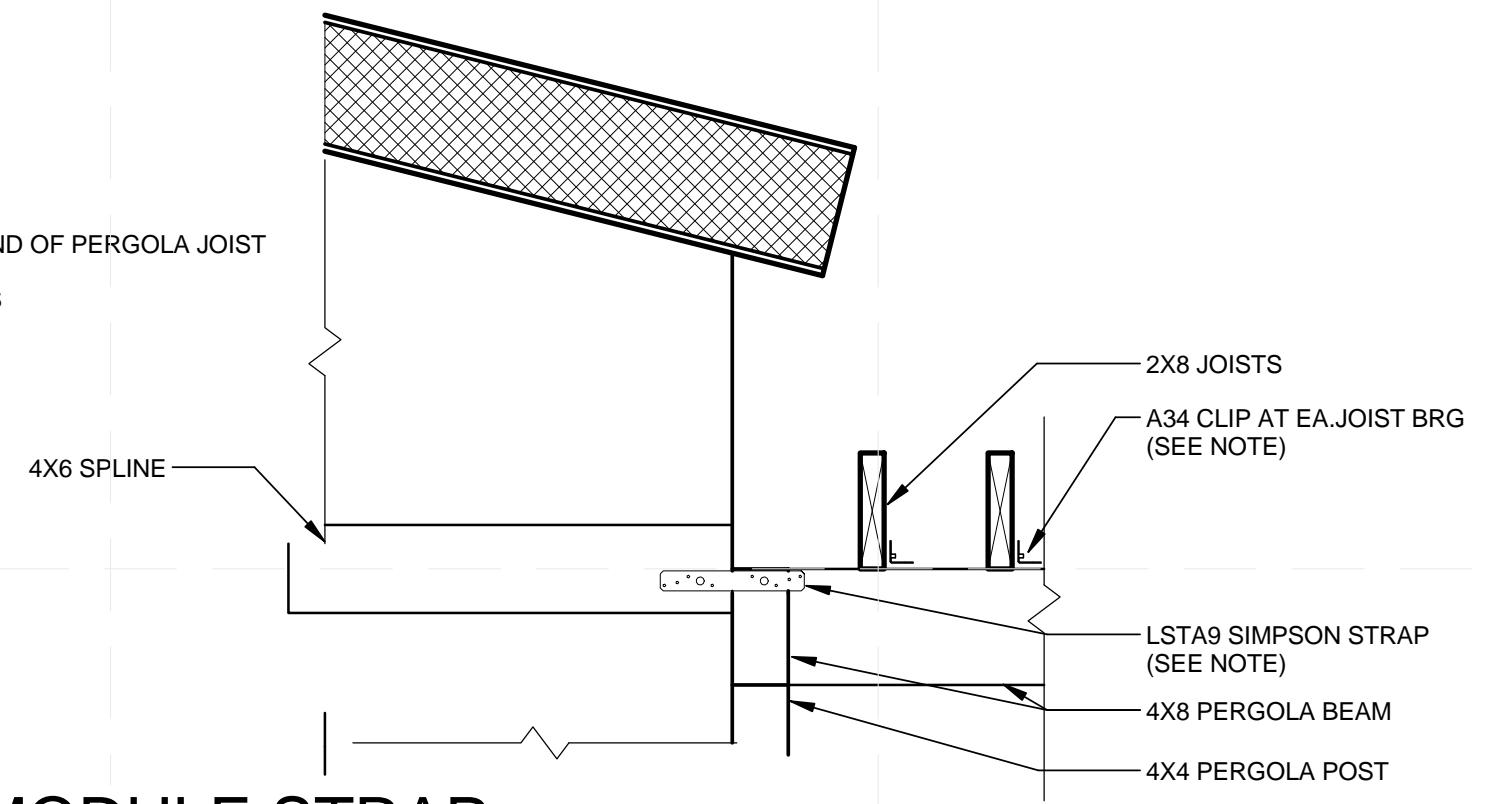
SHEET TITLE
DECK DETAILS

S-502

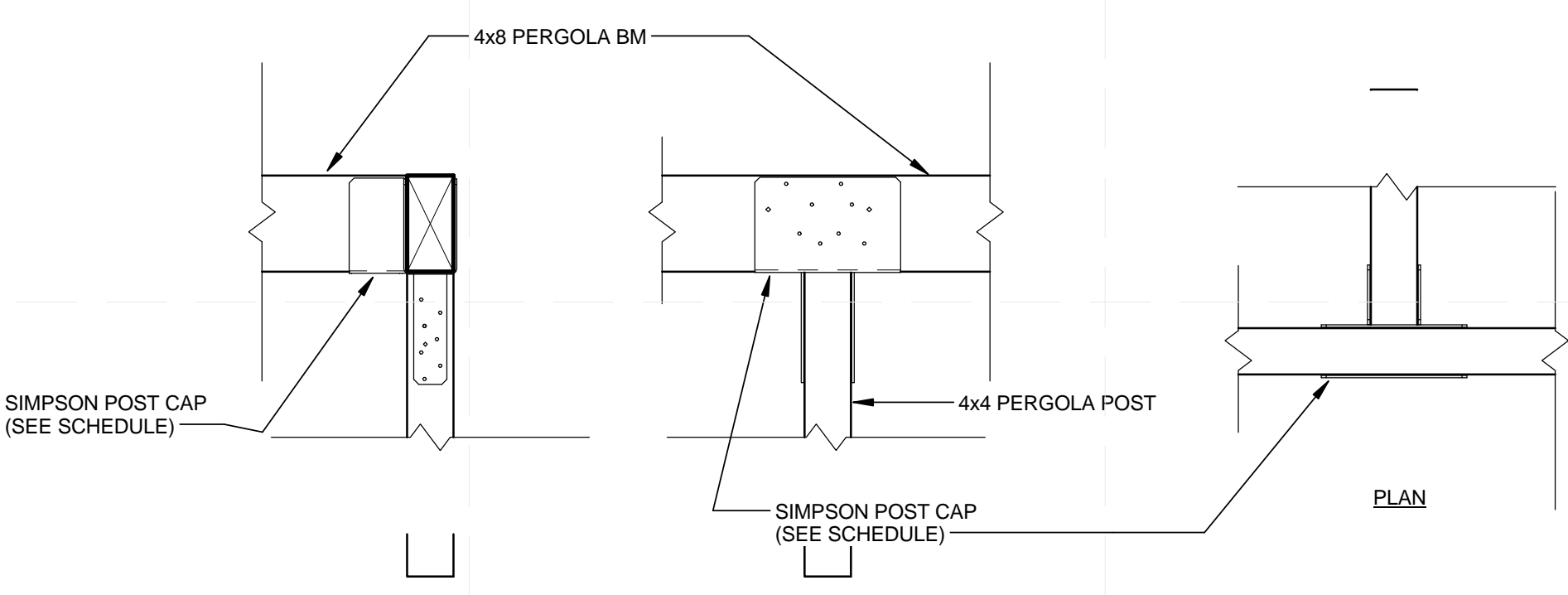


E1 VIERENDEEL TRUSS ELEVATION
1/2" = 1'-0"

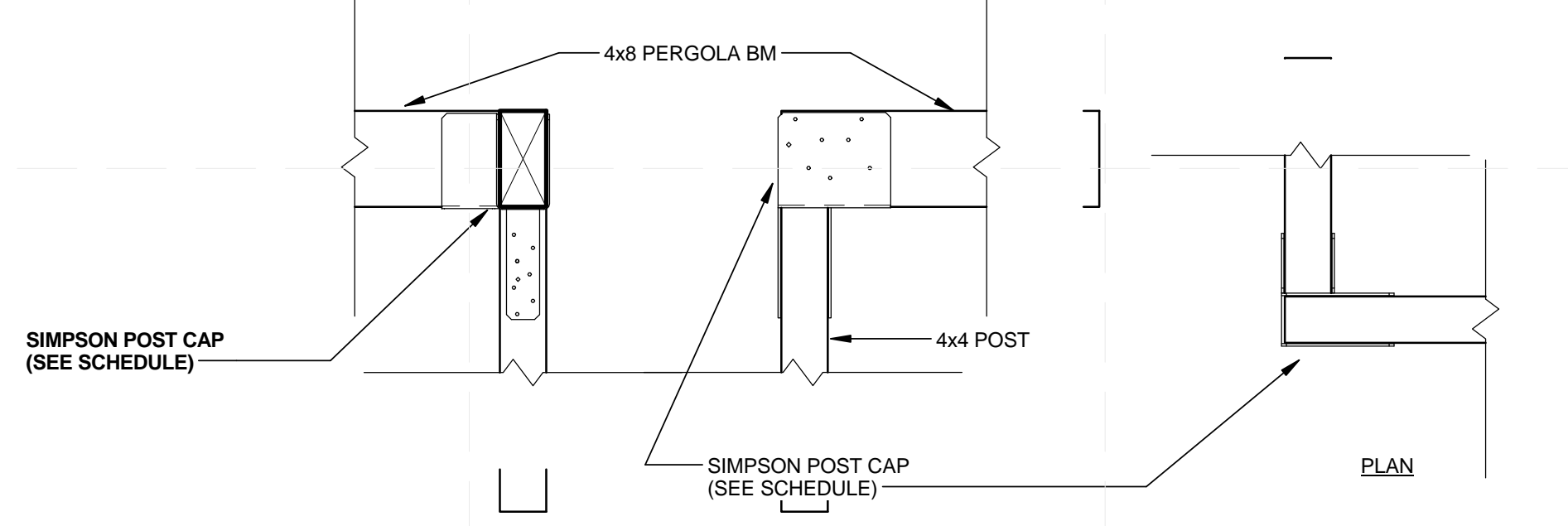
NOTES:
1. SIMPSON A34 SHEAR CLIP PLACED AT EACH END OF PERGOLA JOIST
2. SIMPSON A34 - USE 8 - 8dx1-1/2 NAILS
3. SIMPSON LSTA9 STRAP - USE 8-10dx1-1/2 NAILS
4. SIMPSON LSTA9 STRAP - USE 8-10dx1-1/2 NAILS
5. NAILS: 8dx1-1/2 = 0.131" DIA. x 1-1/2" LONG
6. NAILS: 10dx1-1/2 = 0.148" DIA. x 1-1/2" LONG



C1 PERGOLA TO MODULE STRAP
1" = 1'-0"

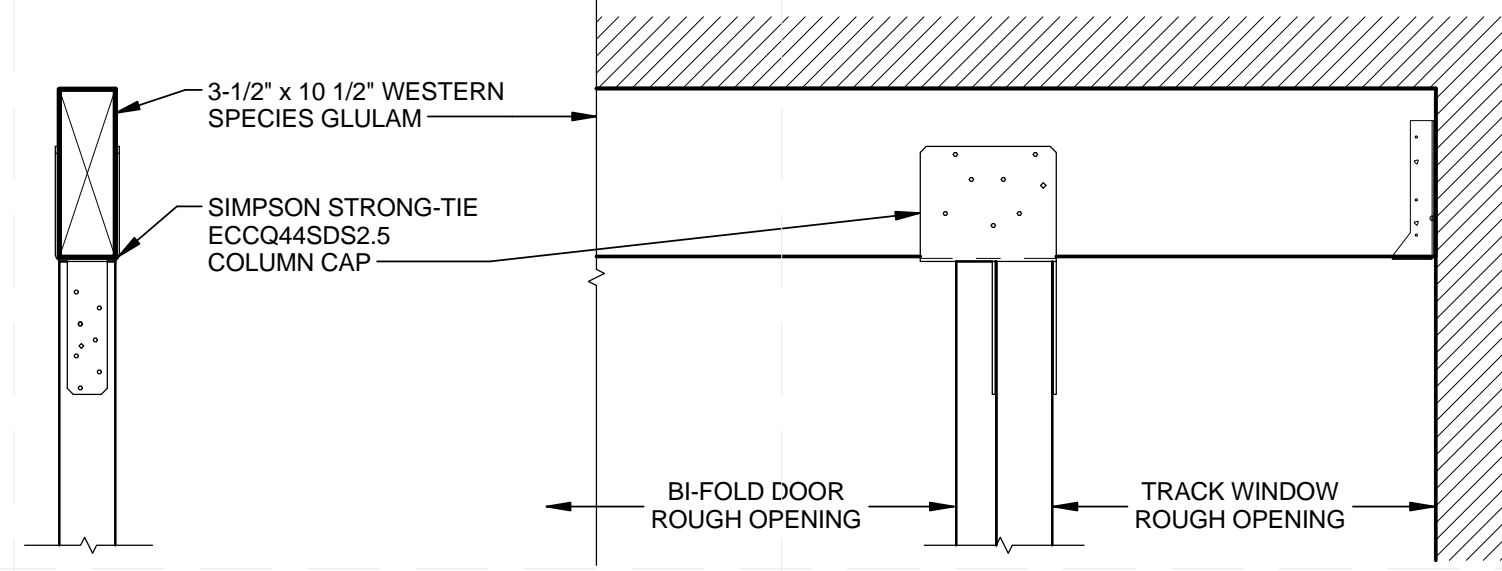


B1 PERGOLA T CONDITION
1" = 1'-0"

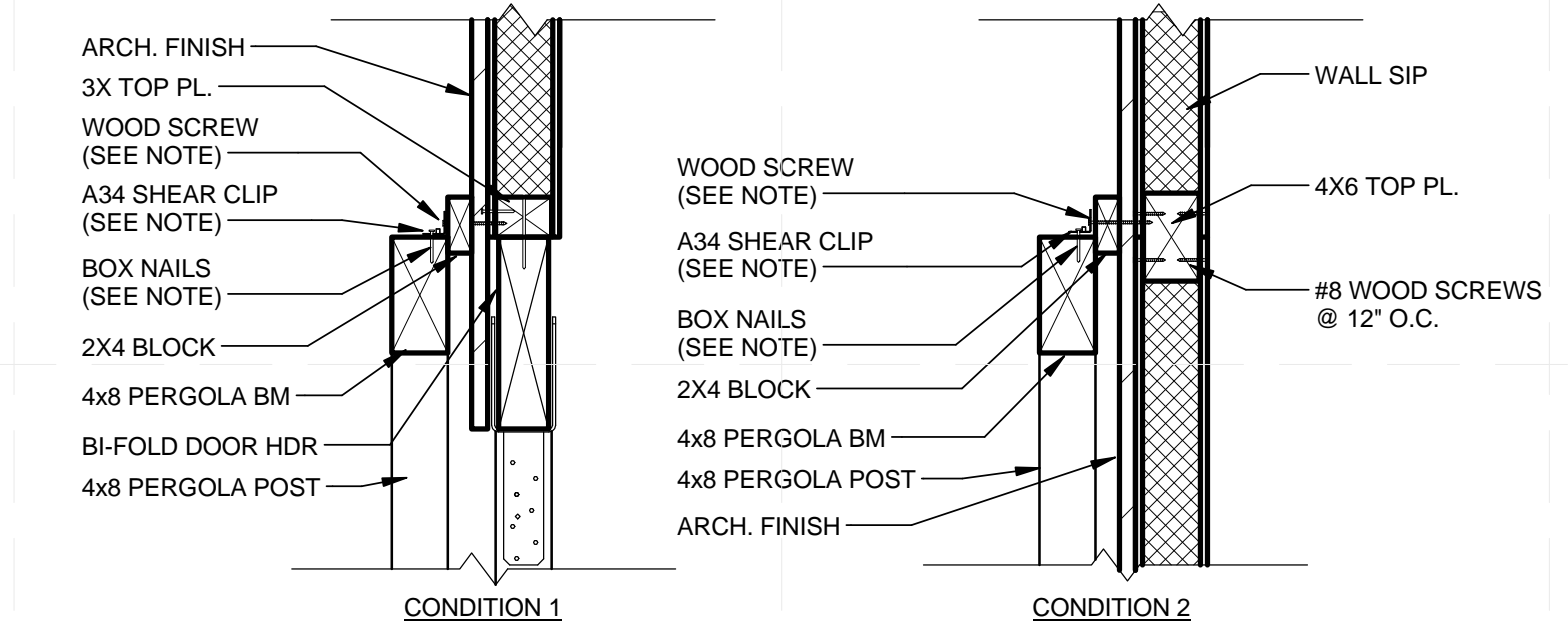


A1 PERGOLA CORNER CONDITION
1" = 1'-0"

NOTE:
1. ABOVE CONDITION IS CONSIDERED AS A "RIGHT CORNER" OR "RIGHT END" CONDITION

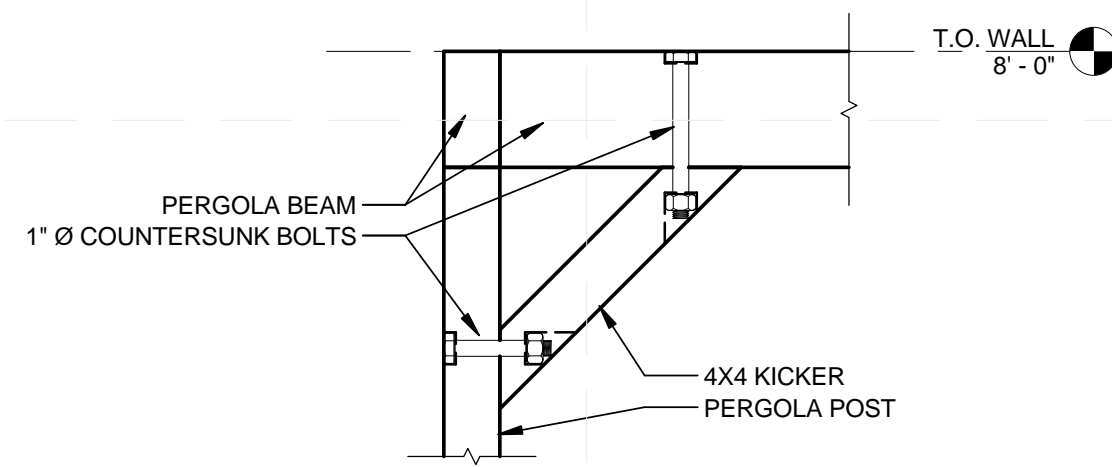


C4 PATIO DOOR HEADER TO POST
1" = 1'-0"

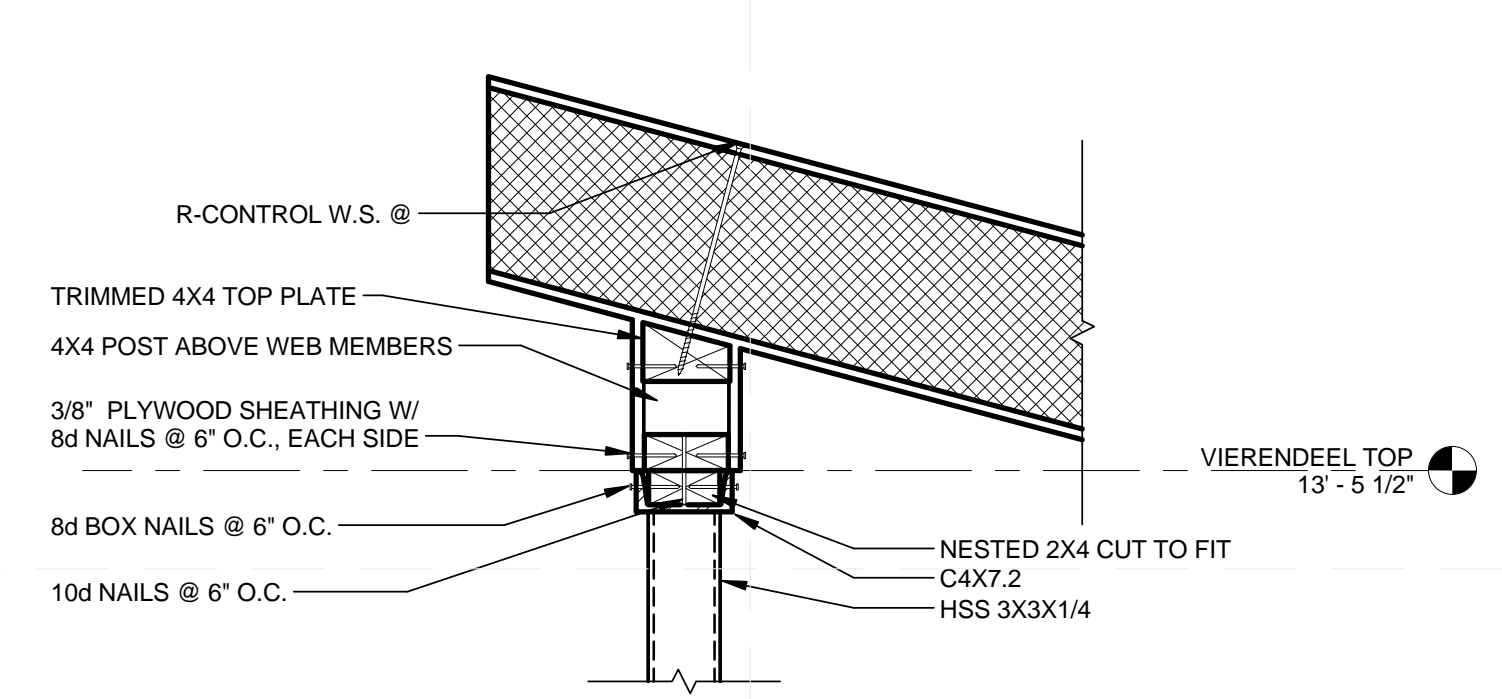


B4 PERGOLA BEAM TO MAIN WALL
1" = 1'-0"

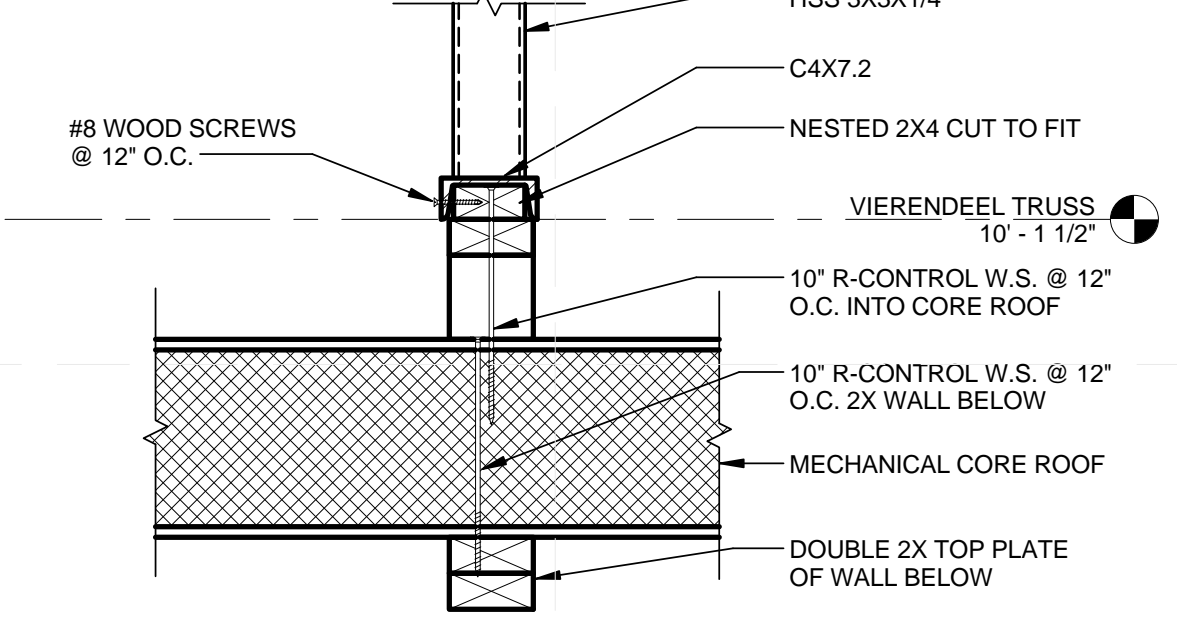
NOTES:
1. SIMPSON A34 SHEAR CLIP IS PLACED 24" O.C.
2. SIMPSON A34 - USE 4 - 8dx1-1/2 NAILS AND 4 - #8x3-1/2 WOOD SCREWS
3. NAILS: 8dx1-1/2 = 0.131" DIA. x 1-1/2" LONG
4. WOOD SCREWS: #8x3-1/2 = 0.164" DIA. x 3-1/2" LONG



A4 PERGOLA KICKER CONNECTION
1" = 1'-0"



C6 TOP CHORD TO SIP CONNECTION
1 1/2" = 1'-0"



B6 BOTTOM CHORD TO SIP CONNECTION
1 1/2" = 1'-0"



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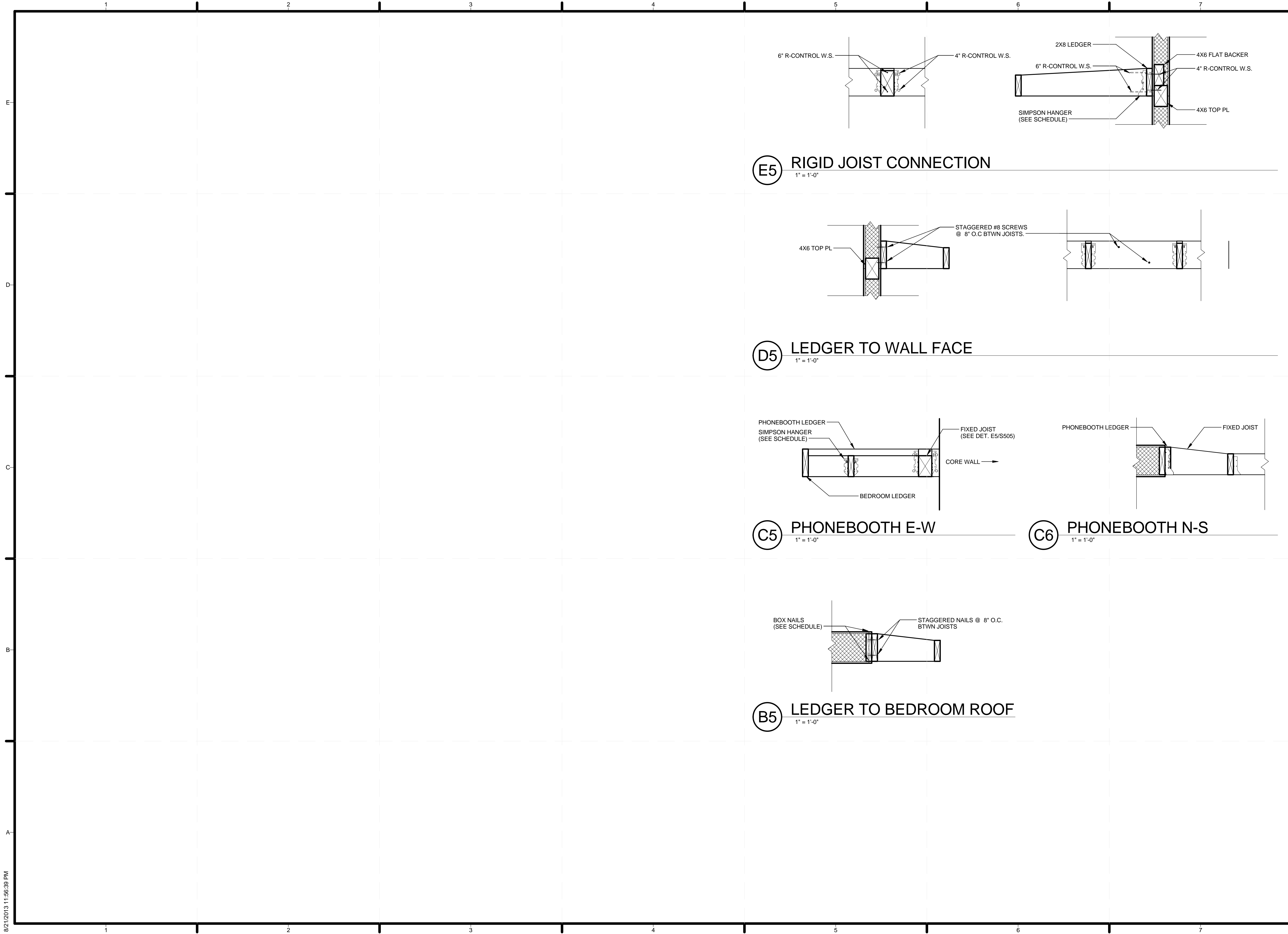
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03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
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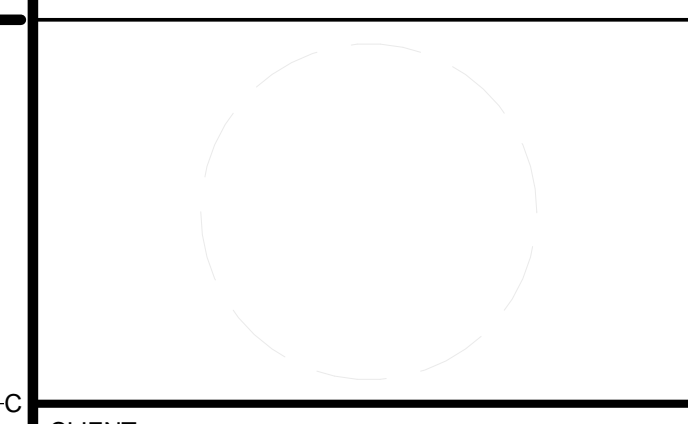
SHEET TITLE
ROOF DETAILS

S-504

8/21/2013 11:56:38 PM



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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

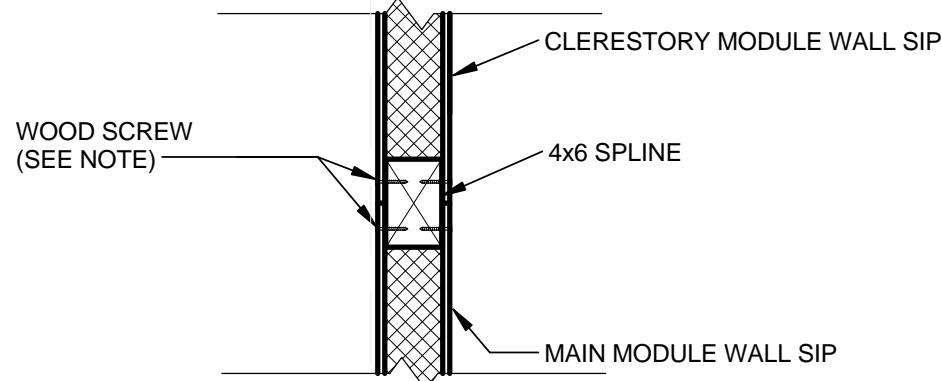
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SHEET TITLE
OVERHANG DETAILS

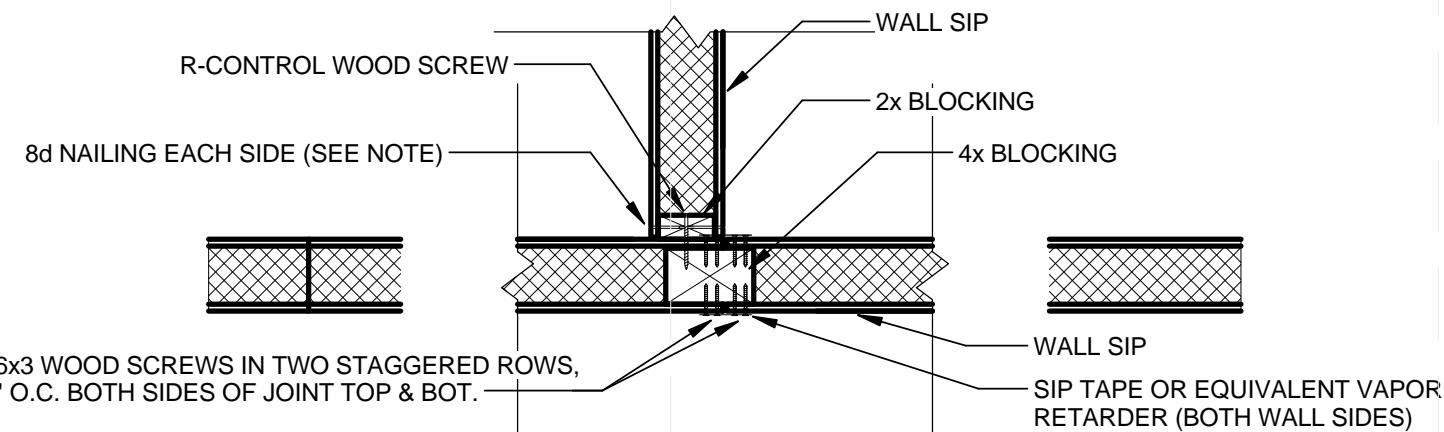
S-505

8/21/2013 11:56:39 PM



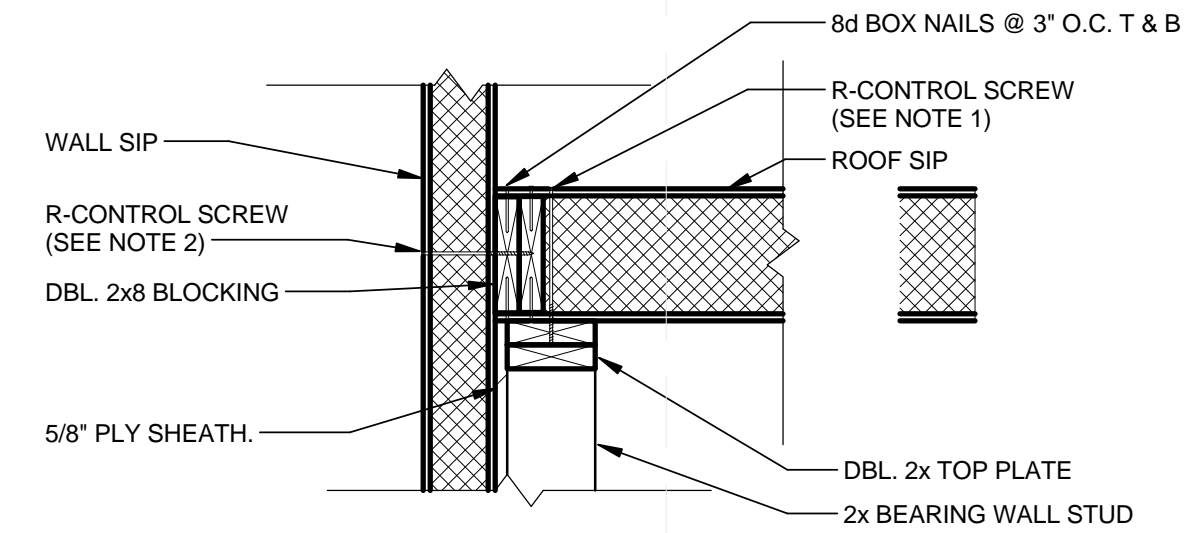
NOTES:
 1. USE WOOD SCREWS TO ALLOW FOR EASE OF ASSEMBLY AND DIS-ASSEMBLY
 2. PLACE 3-1/2" WOOD SCREW STAGGERED @ 6" O.C.

(D4) MAIN MODULE TO CLERESTORY
 1" = 1'-0"



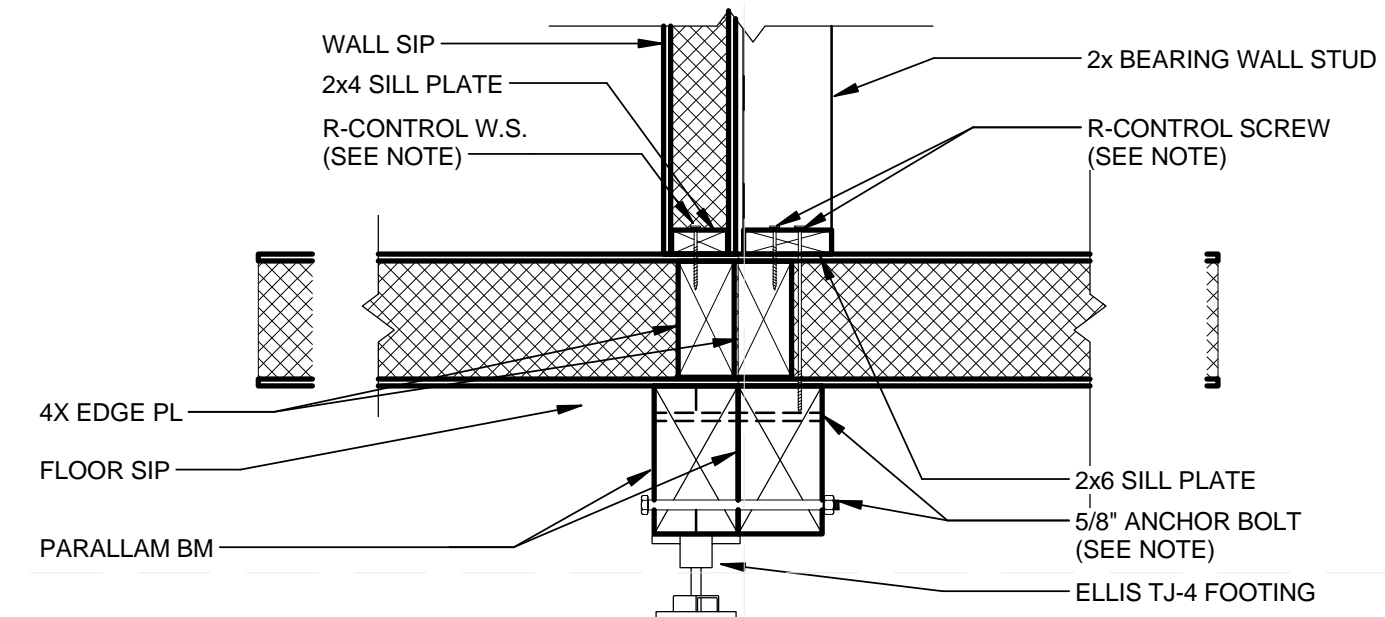
NOTE:
 1. SEE TYPICAL R-CONTROL WALL-WALL SPLINE DETAILS FOR DIMENSIONING OF STAGGERED NAILS/SCREWS
 2. DURING CONSTRUCTION AND TRANSPORTATION, LEAVE 4X BLOCKING ATTACHED TO BEDROOM MODULE
 3. STUD WALL OMITTED FOR CLARITY
 4. WOOD SCREWS: #6x3 = 0.138" DIA. x 3" LONG W.S.
 5. PLACE 8d x 1-1/2" NAILS @ 12" O.C. ALONG HEIGHT OF WALL
 6. PLACE 4" LONG R-CONTROL SCREW @ 12" O.C. ALONG HEIGHT OF WALL INTO 4X SPLINE

(C4) BEDROOM TO MAIN MODULE - PLAN
 1" = 1'-0"



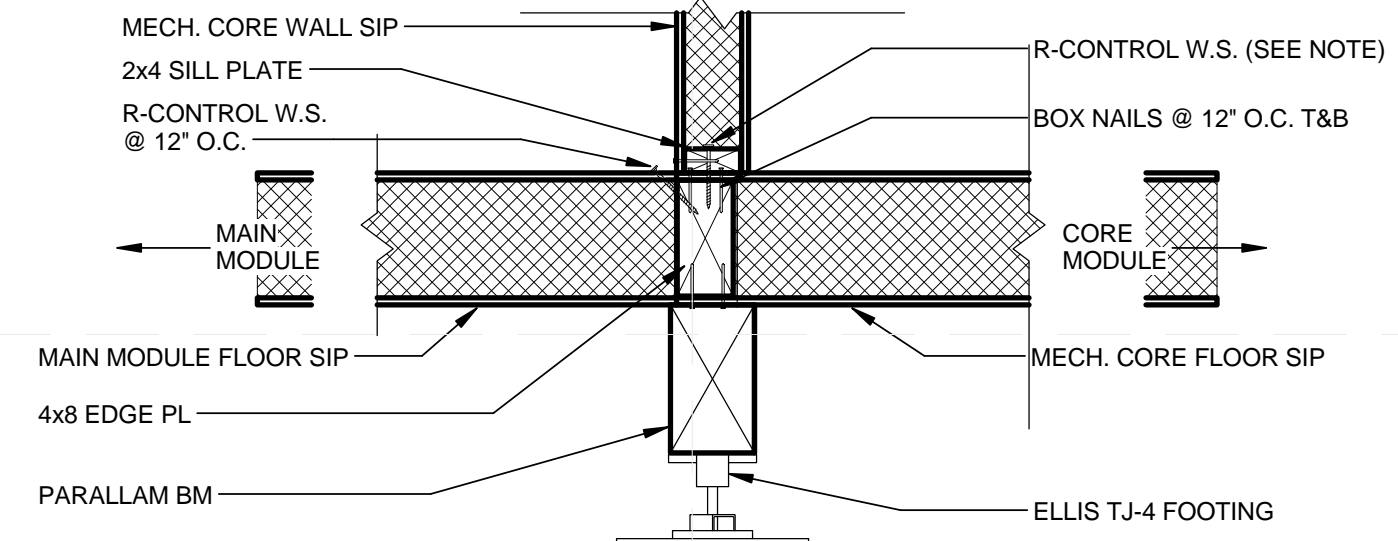
NOTES:
 1. PLACE 10" LONG R-CONTROL SCREW @ 6" O.C. ALONG BOUNDARY OF ROOF SIP INTO 2X TOP PL
 2. PLACE 6-1/2" LONG R-CONTROL SCREW @ 6" O.C. ALONG WALL SIP INTO 2X BLOCKING

(D6) BEDROOM TO MAIN MODULE - ROOF
 1" = 1'-0"



NOTES:
 1. PLACE 5/8" ANCHOR BOLTS @ 5' O.C. ALTERNATING TOP AND BOT. ALONG LENGTH OF PARALLAM BEAMS
 2. ENSURE MINIMUM 1-1/2" EDGE DISTANCE BETWEEN BOLT AND TOP/BOT. OF PARALLAM BEAMS
 3. PLACE 4-1/2" LONG R-CONTROL SCREW @ 12" O.C. ALONG LENGTH OF SILL PLATE INTO 4X EDGE PL
 4. PLACE 10-1/2" LONG R-CONTROL SCREW @ 12" O.C. ALONG LENGTH OF SILL PLATE INTO PSL BEAM

(C6) BEDROOM TO MAIN MODULE - FLOOR
 1" = 1'-0"



NOTES:
 1. ANCHOR BOLTS ALONG WALL ATTACH WALL TO PSL FOUNDATION, BUT AREN'T SHOWN IN THIS SECTION
 2. PLACE 4" LONG R-CONTROL W.S. @ 6" O.C. ALONG SILL PLATE INTO 4X BLOCKING

(B6) CORE TO MAIN MODULE - FLOOR
 1" = 1'-0"



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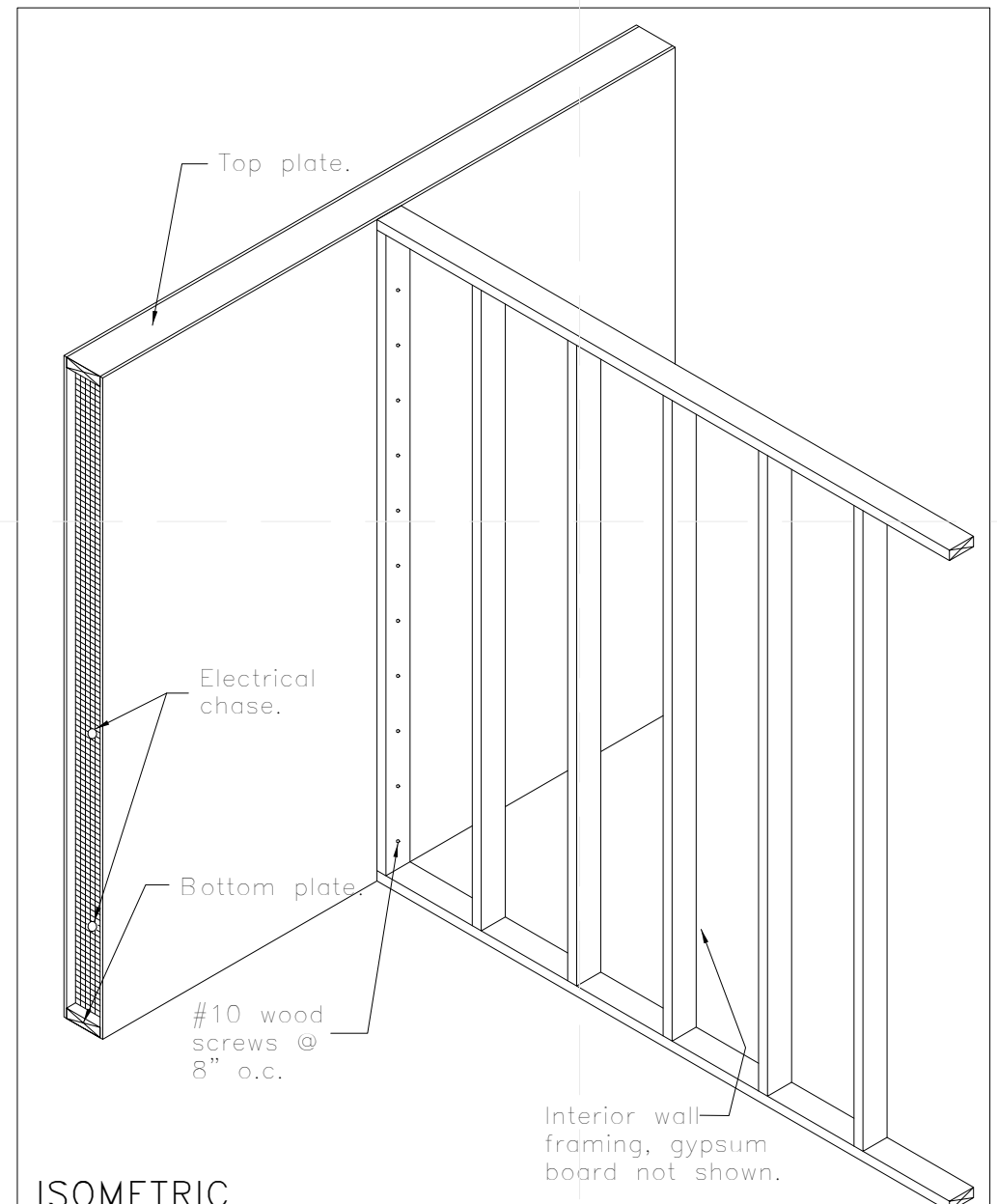
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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
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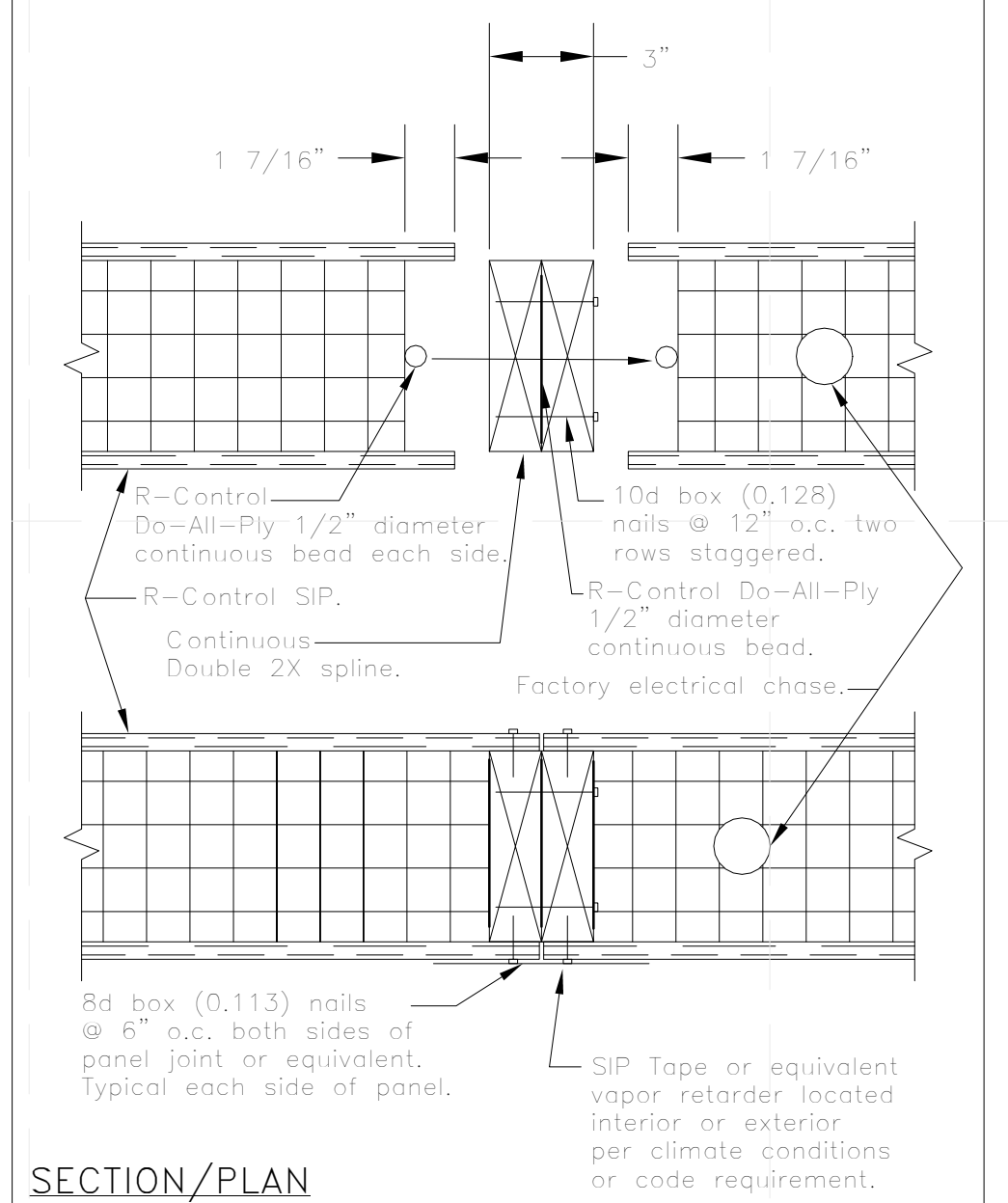
SHEET TITLE
 MODULE CONNECTION DETAILS

S-506



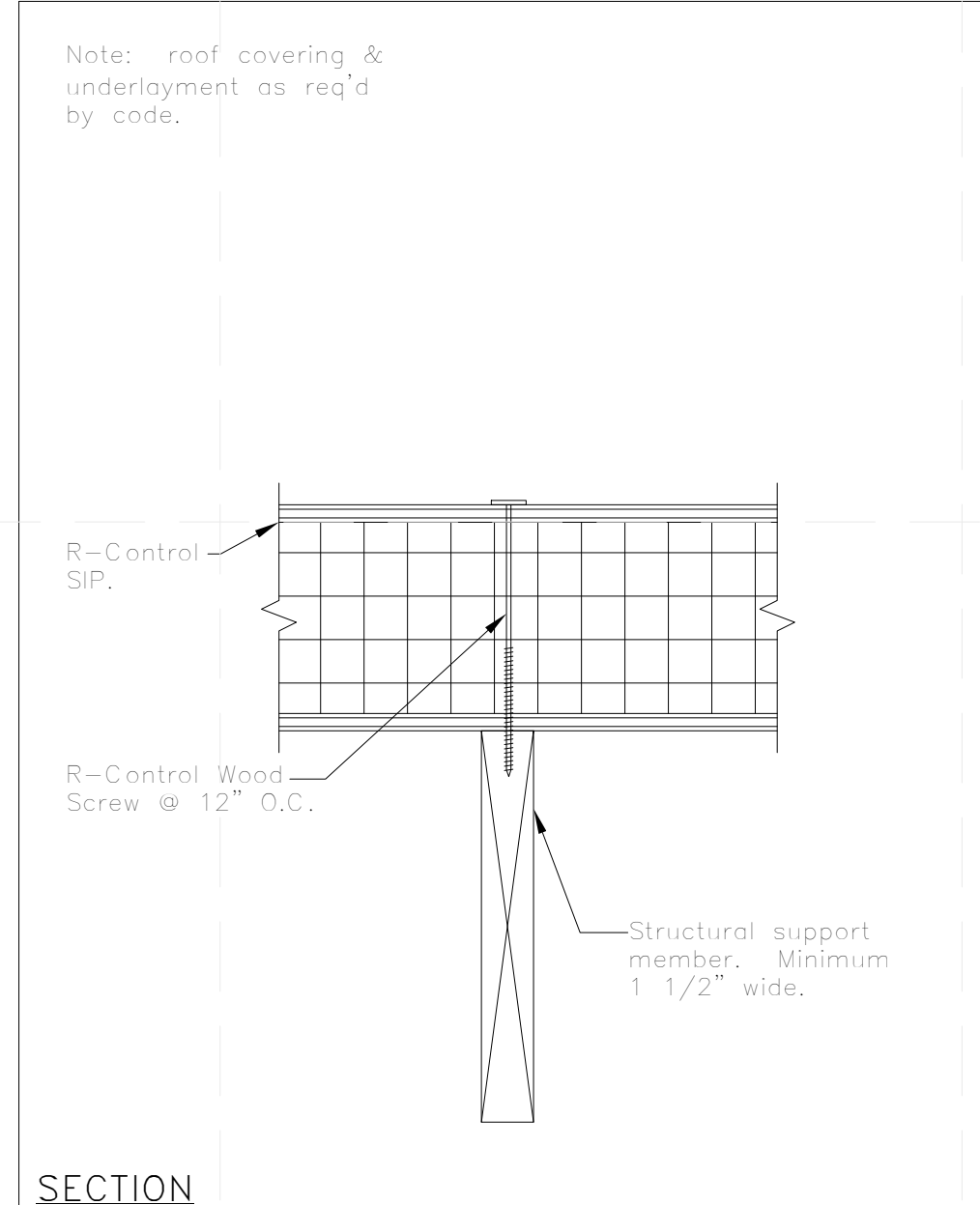
R-Control® SIP
TITLE: Interior Wall Connection NO. SIP-111

C1 STUD WALL CONNECTION ISO
N.T.S.



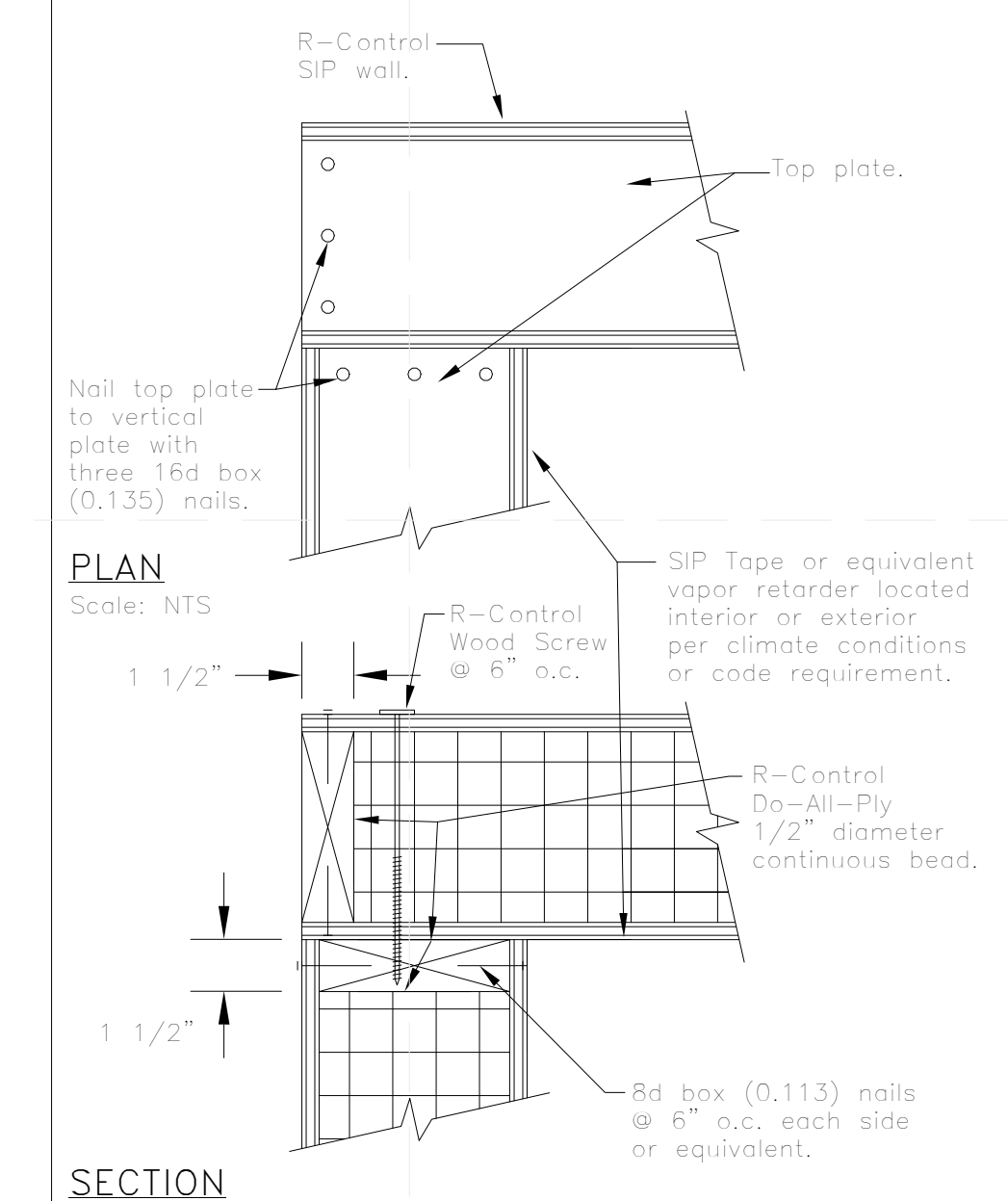
R-Control® SIP
TITLE: Spline Connection Double 2X NO. SIP-102d

C2 TYPICAL FLOOR/ROOF SPLINE
N.T.S.



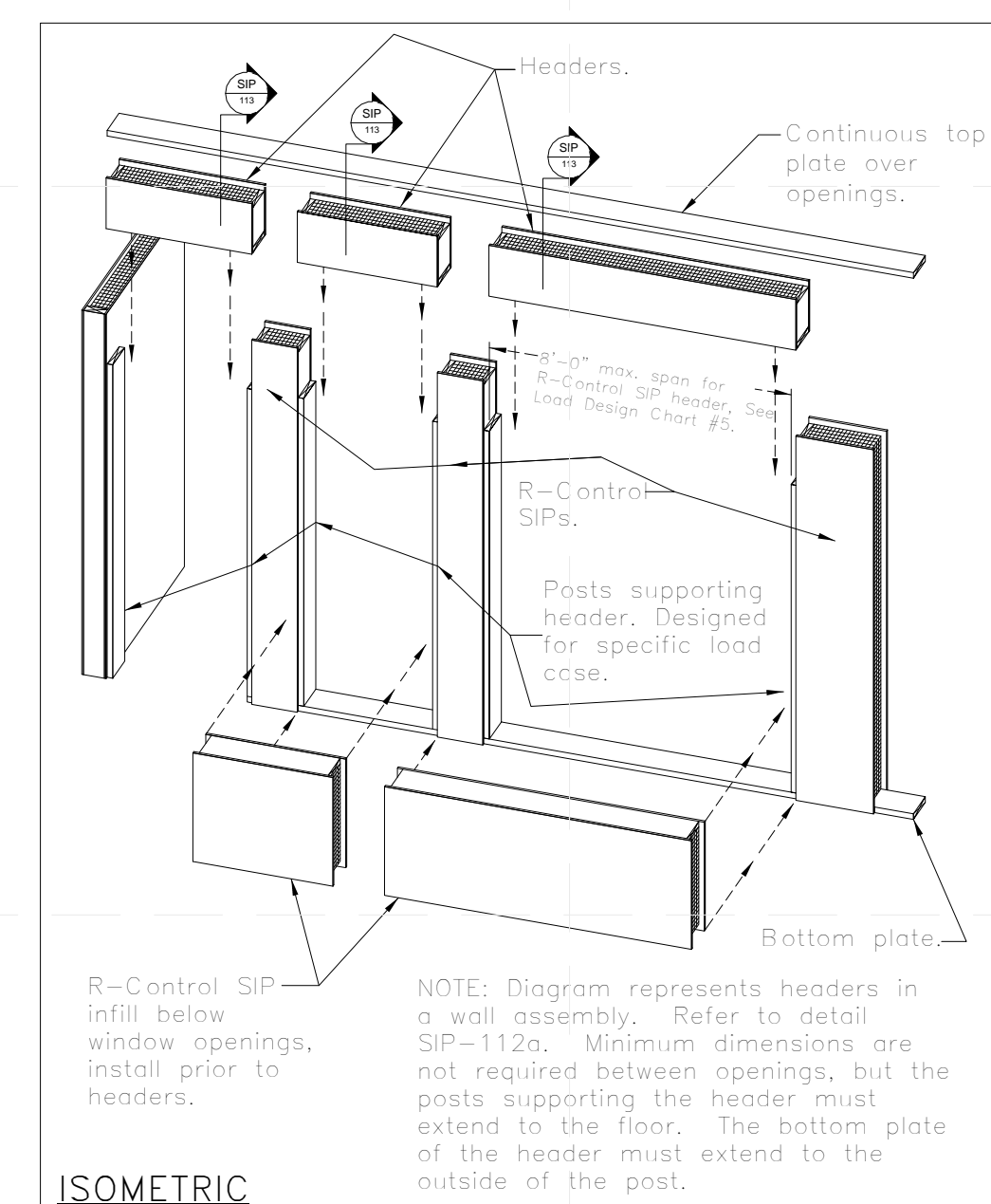
R-Control® SIP
TITLE: Continuous SIP at Dimensional Lumber NO. SIP-134a

C4 TYPICAL SIP OVER JOIST
N.T.S.



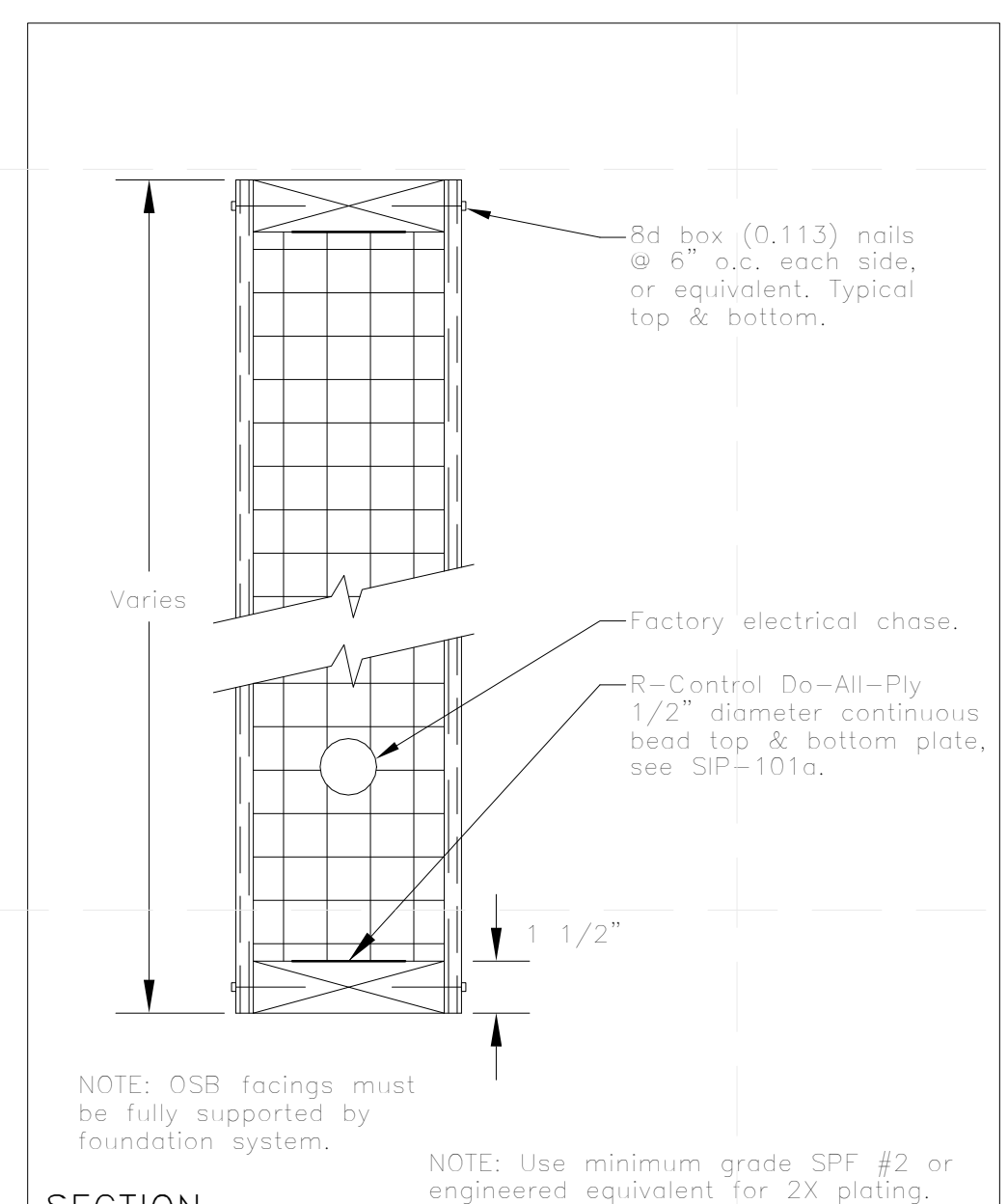
R-Control® SIP
TITLE: Corner Connection NO. SIP-103

C6 TYPICAL CORNER CONNECTION
N.T.S.



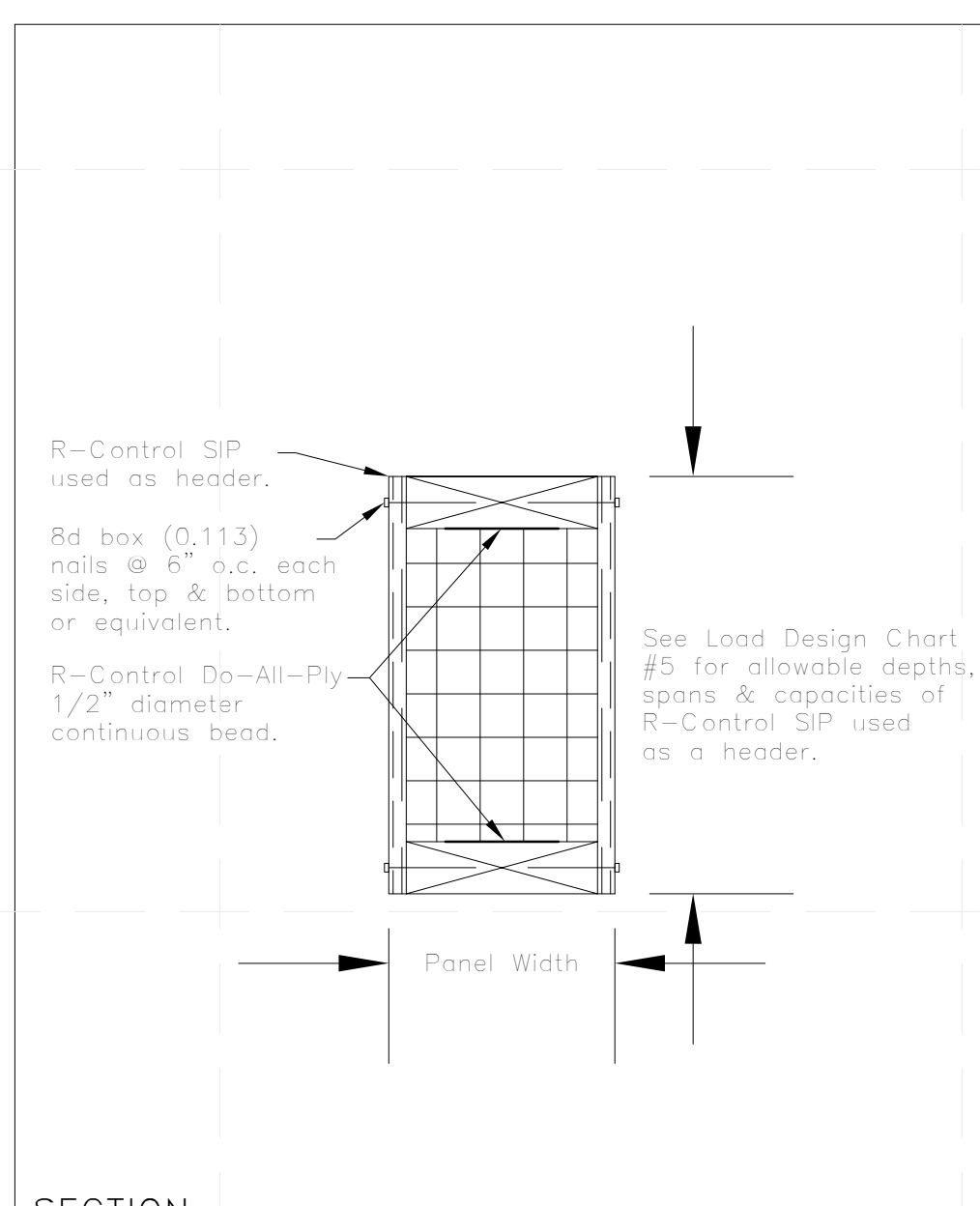
R-Control® SIP
TITLE: Headers NO. SIP-112

A1 WALL OPENINGS ISO
N.T.S.



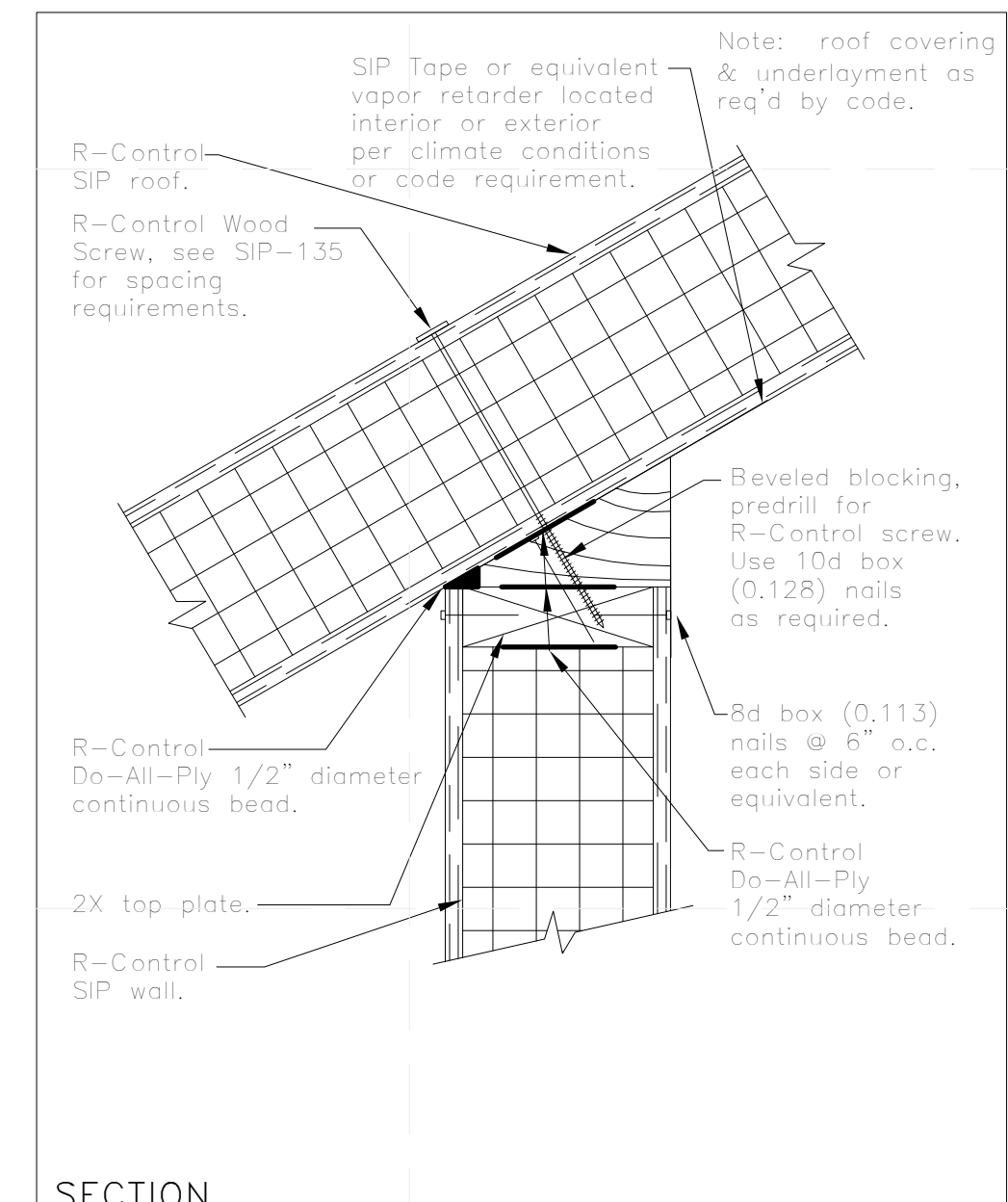
R-Control® SIP
TITLE: Plate Connections NO. SIP-101c

A2 BOTTOM PLATE CONNECTION
N.T.S.



R-Control® SIP
TITLE: SIP Header Plates NO. SIP-113

A4 TYPICAL SIP HEADER
N.T.S.

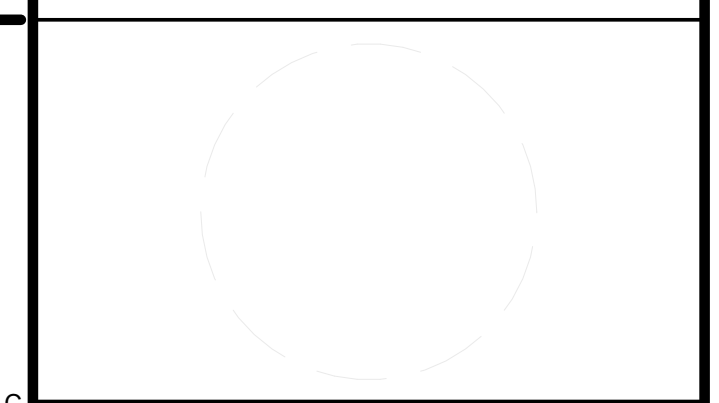


R-Control® SIP
TITLE: Beveled Wedge Blocking NO. SIP-122b

A6 TYPICAL ROOF CONNECTION
N.T.S.



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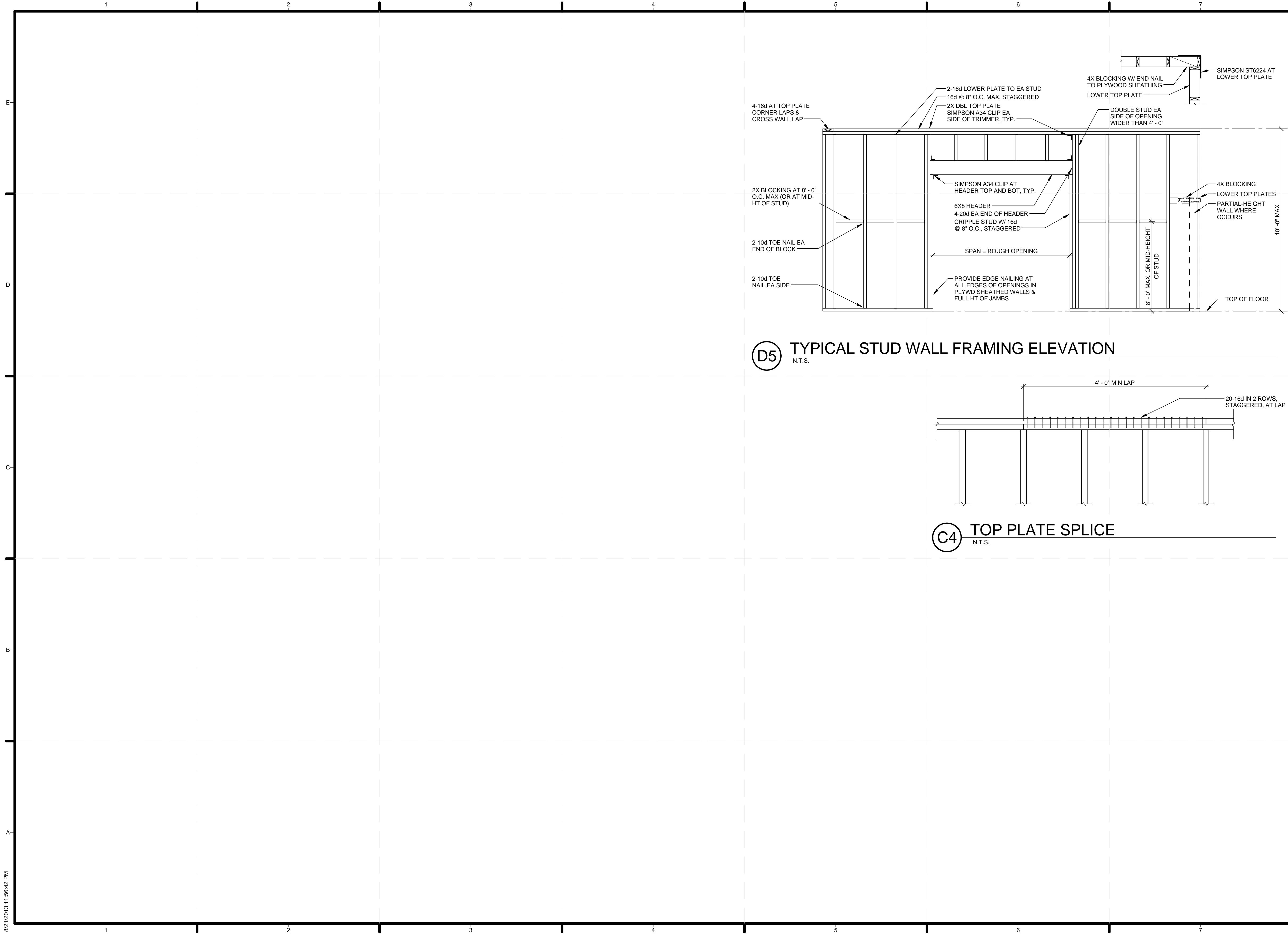
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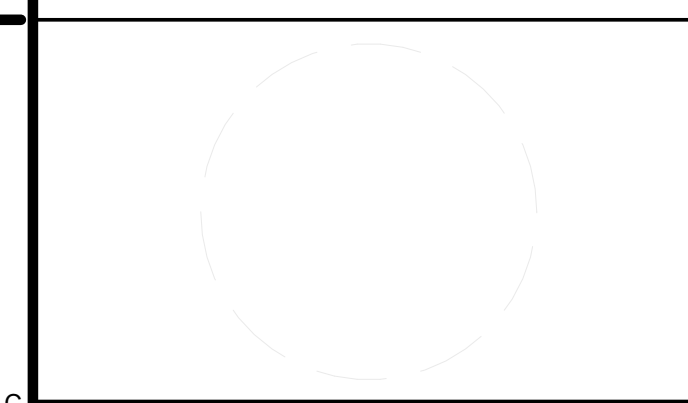
SHEET TITLE
TYPICAL SIP DETAILS

S-701

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05	08/22/2013	100% AS-BUILT SUBMISSION

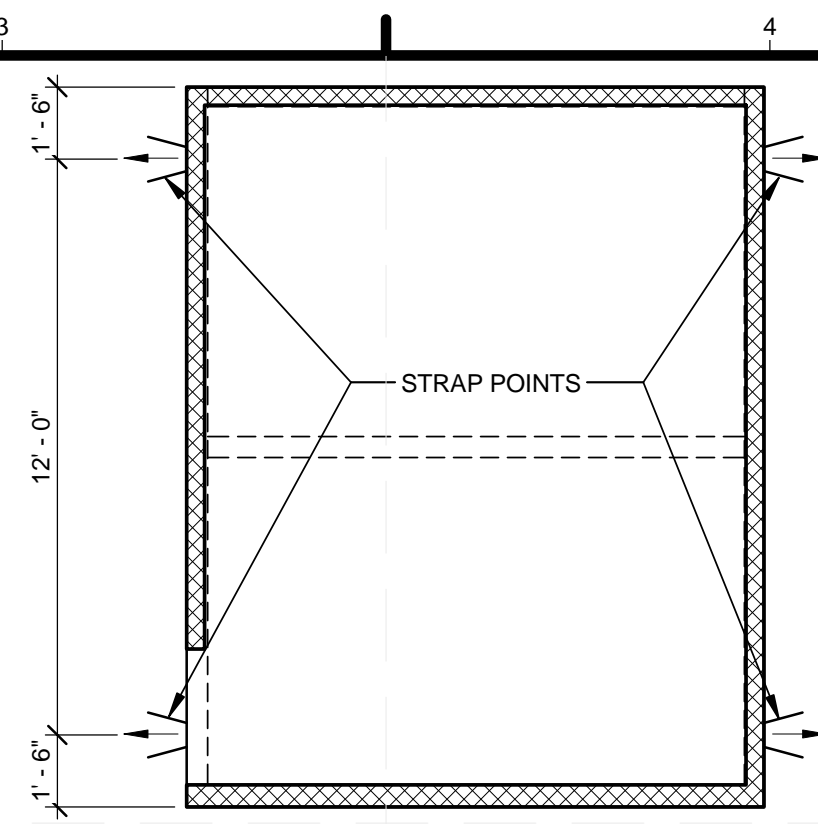
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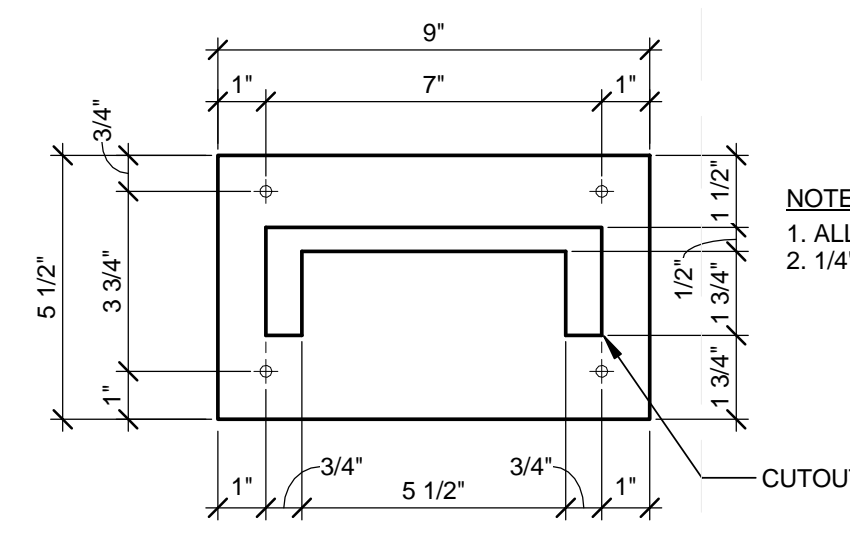
SHEET TITLE
TYPICAL STUD DETAILS

S-702

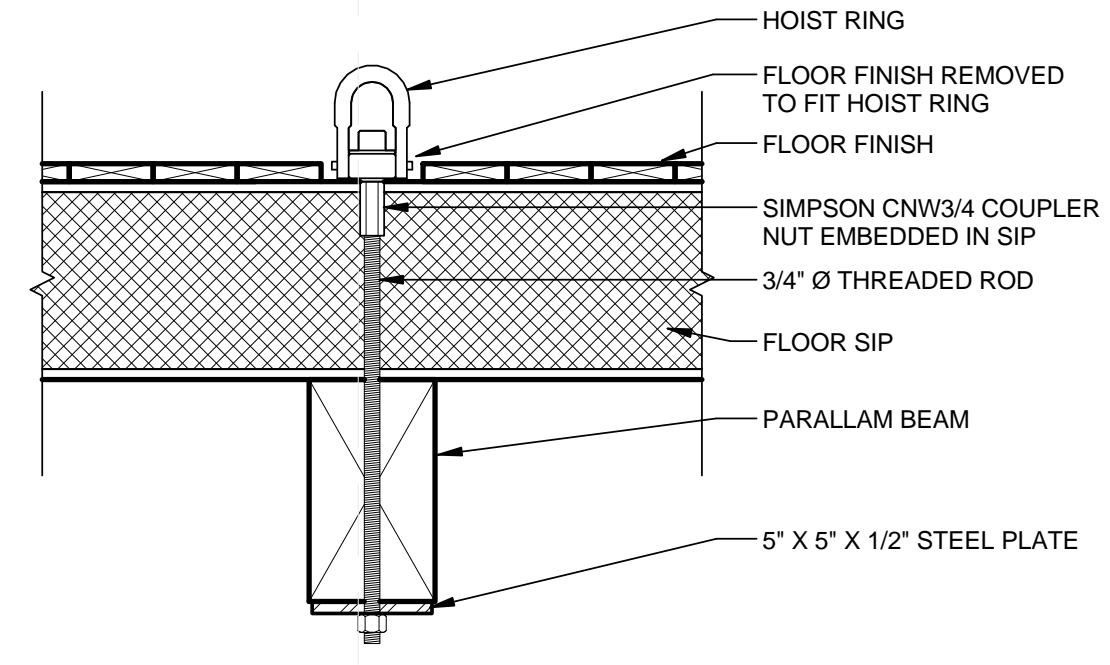
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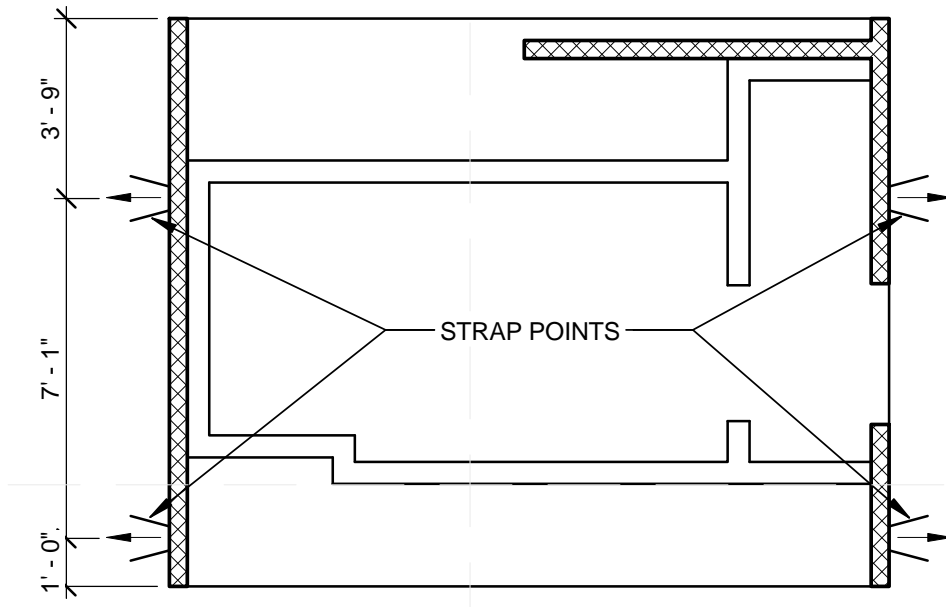
D3 BEDROOM KEY PLAN
1/4" = 1'-0"



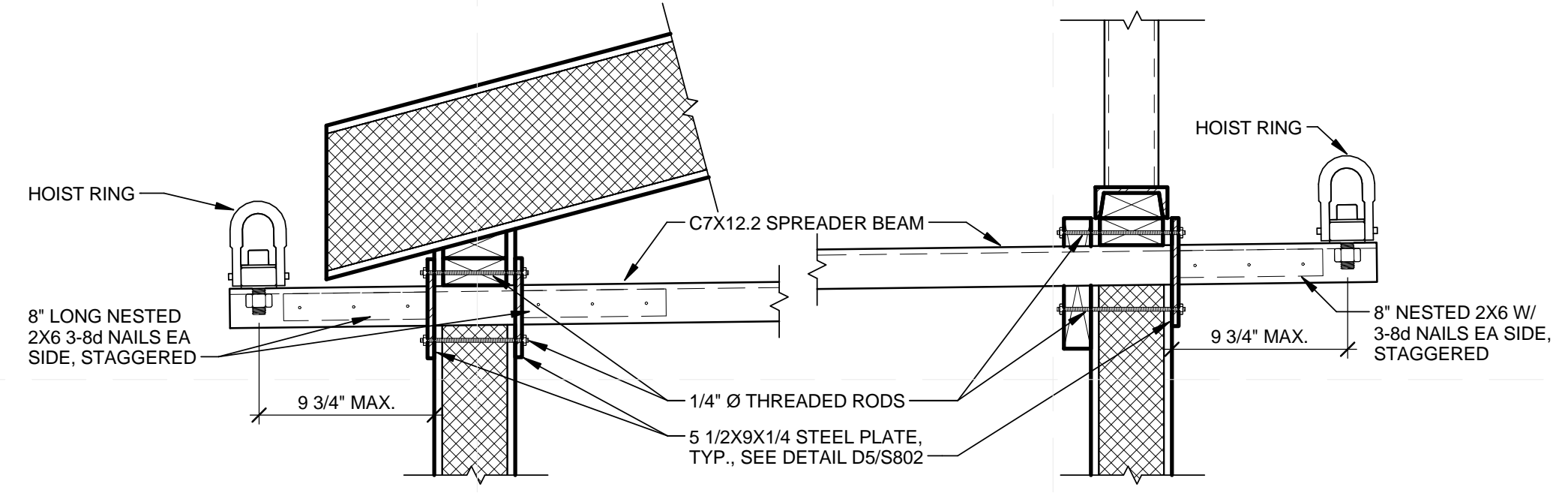
D5 SPREADER BEAM PLATE
3" = 1'-0"



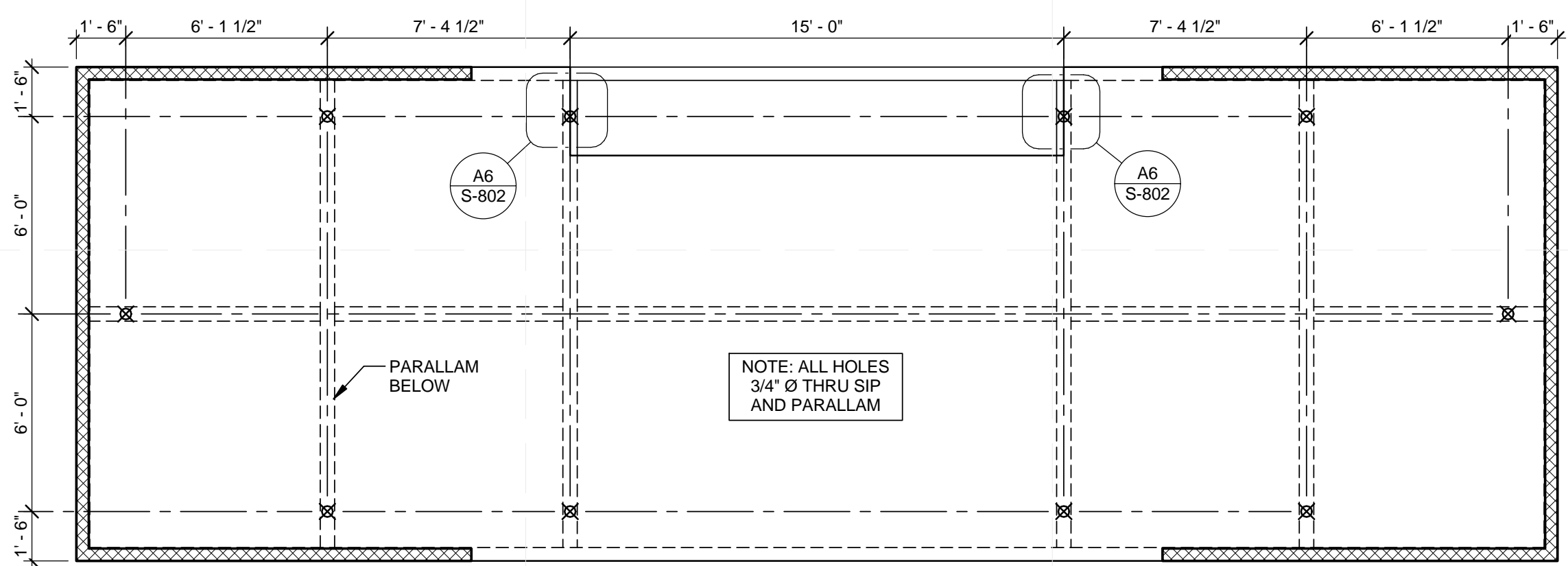
D6 GREATROOM RIGGING
1 1/2" = 1'-0"



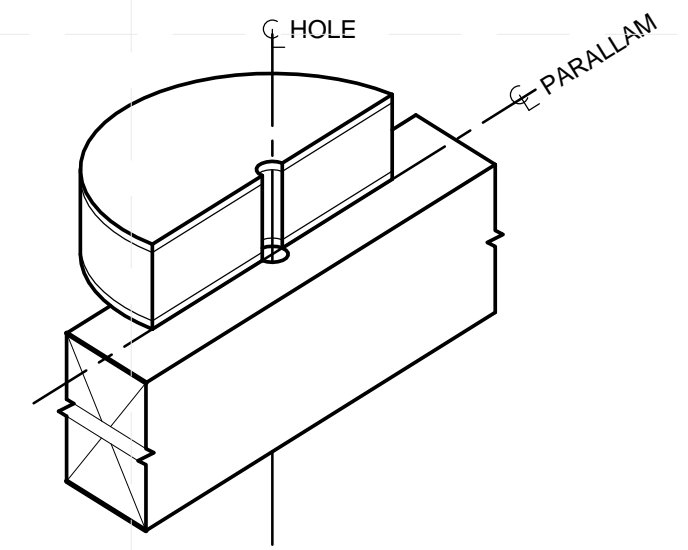
C3 CORE MODULE KEY PLAN
1/4" = 1'-0"



C5 CLERESTORY SPREADER BEAM DETAIL
1 1/2" = 1'-0"



B5 GREATROOM KEY PLAN
1/4" = 1'-0"



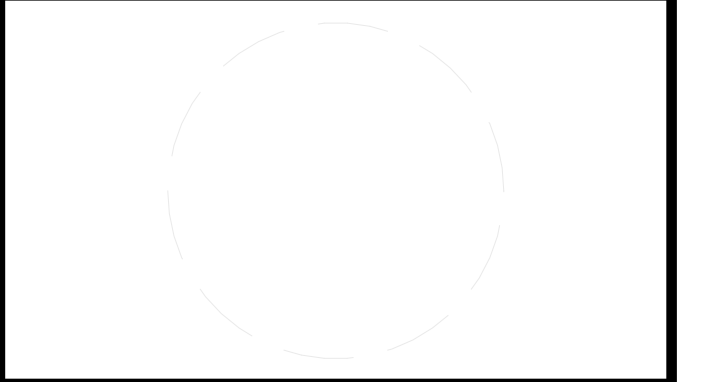
A6 GREATROOM EDGE
1" = 1'-0"



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05	08/22/2013	100% AS-BUILT SUBMISSION

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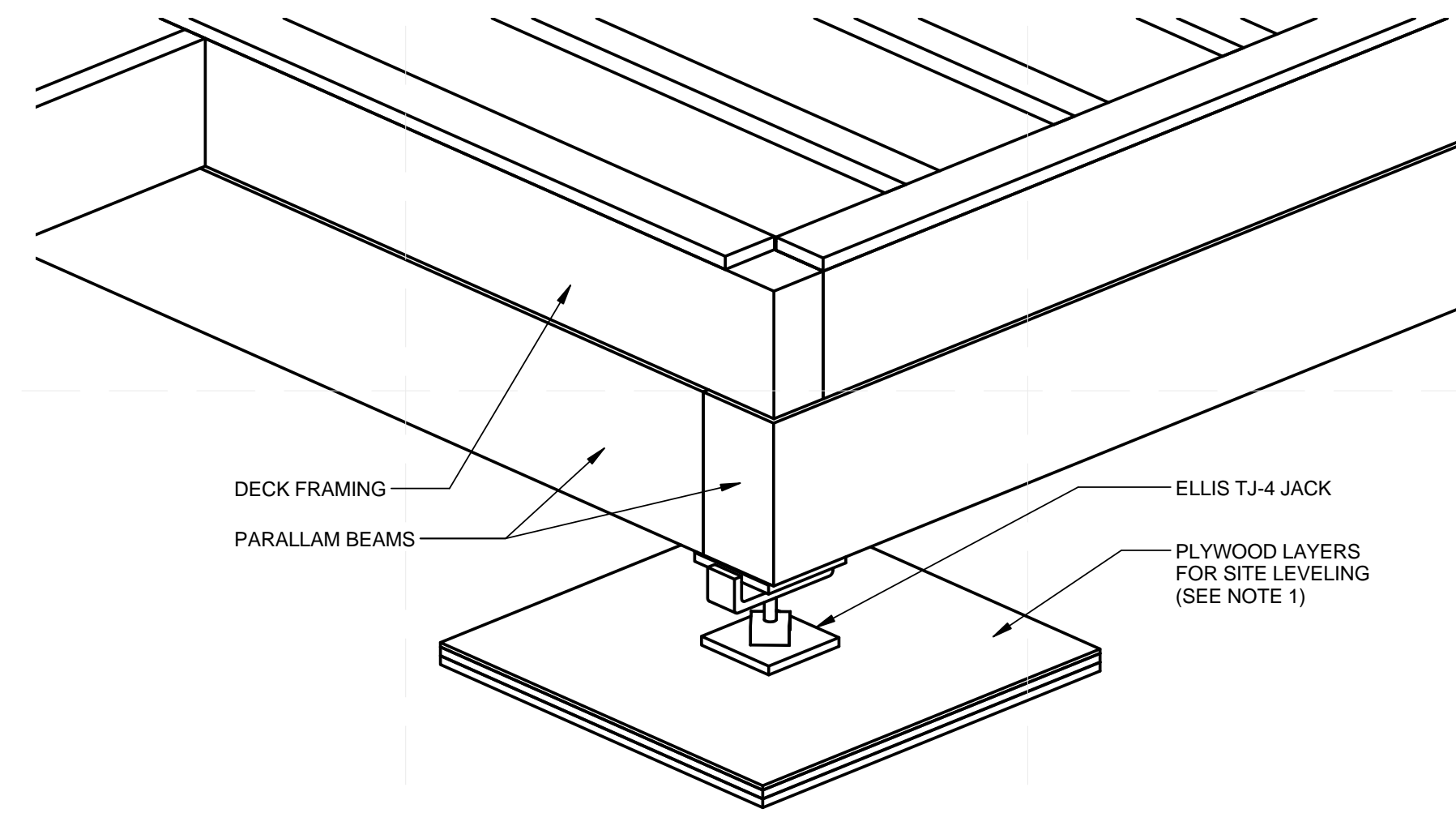
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RIGGING DETAILS

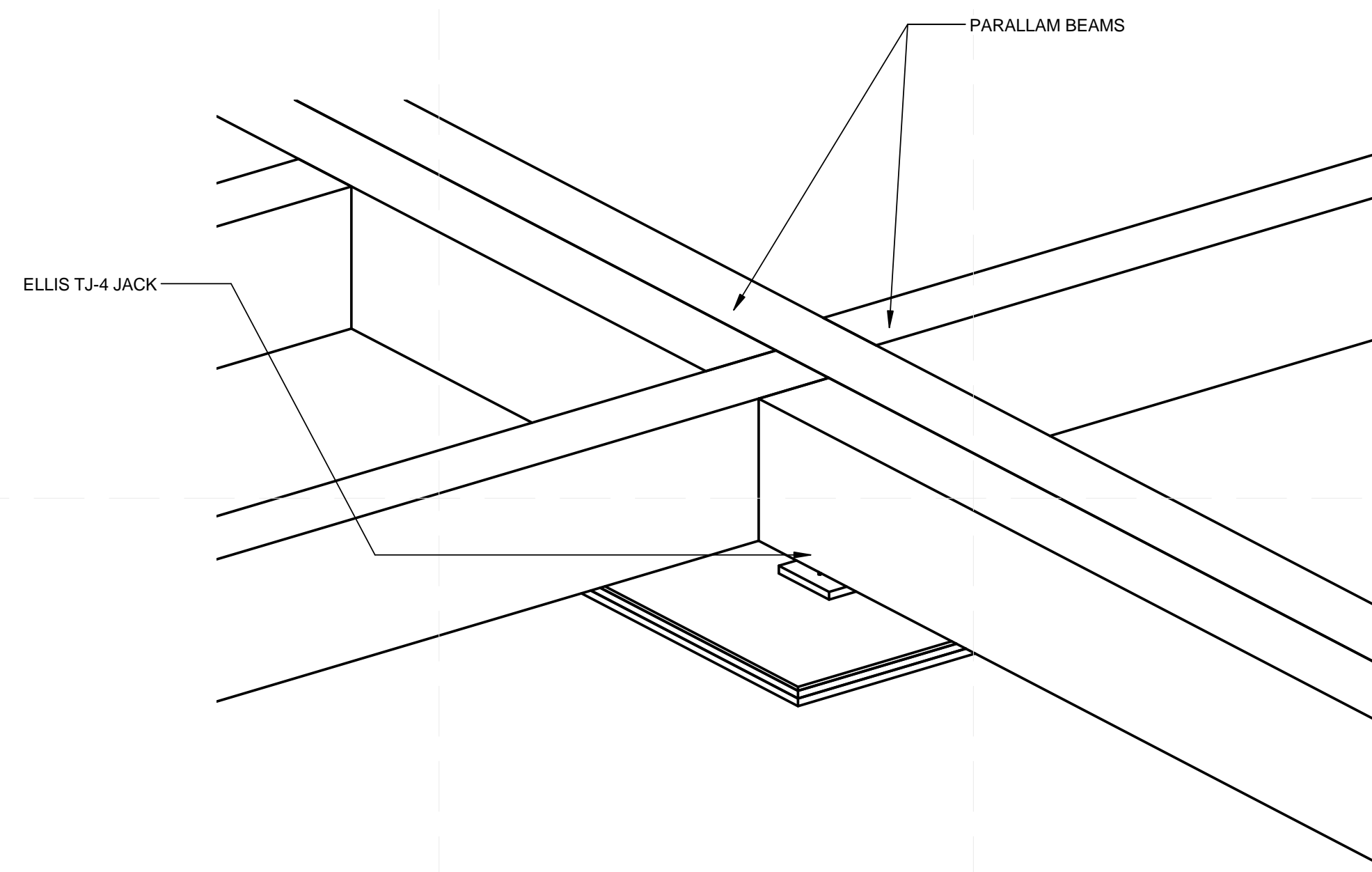
S-802

GENERAL SHEET NOTES

1. VARIATIONS IN ACTUAL SITE ELEVATION WILL BE TAKEN INTO ACCOUNT BY STACKING SHEETS OF PLYWOOD BENEATH EACH ISOLATOR AS NECESSARY.



D5 EXTERIOR CONNECTION ISOMETRIC



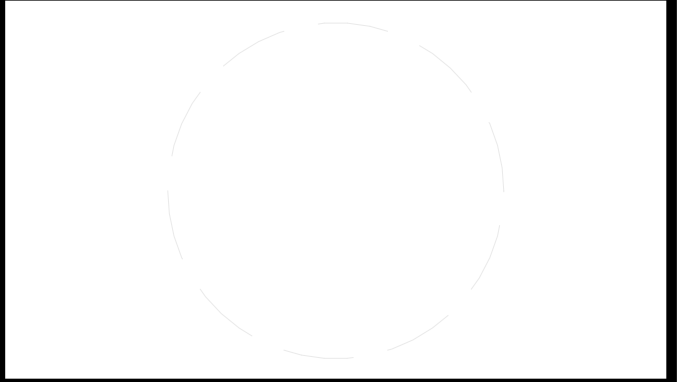
A5 INTERIOR CONNECTION ISOMETRIC

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05	08/22/2013	100% AS-BUILT SUBMISSION

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SHEET TITLE

FOUNDATION ISOMETRICS

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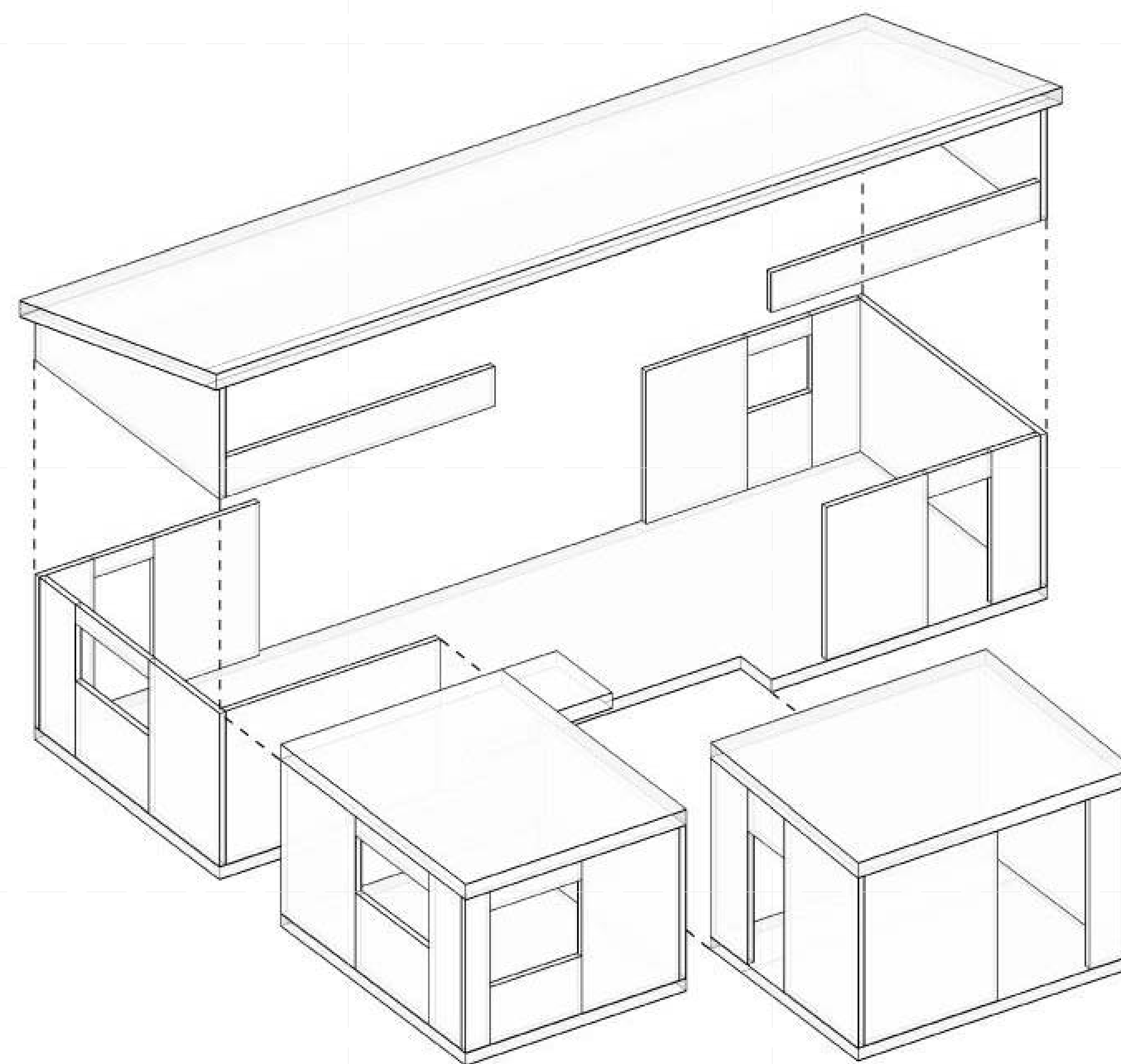
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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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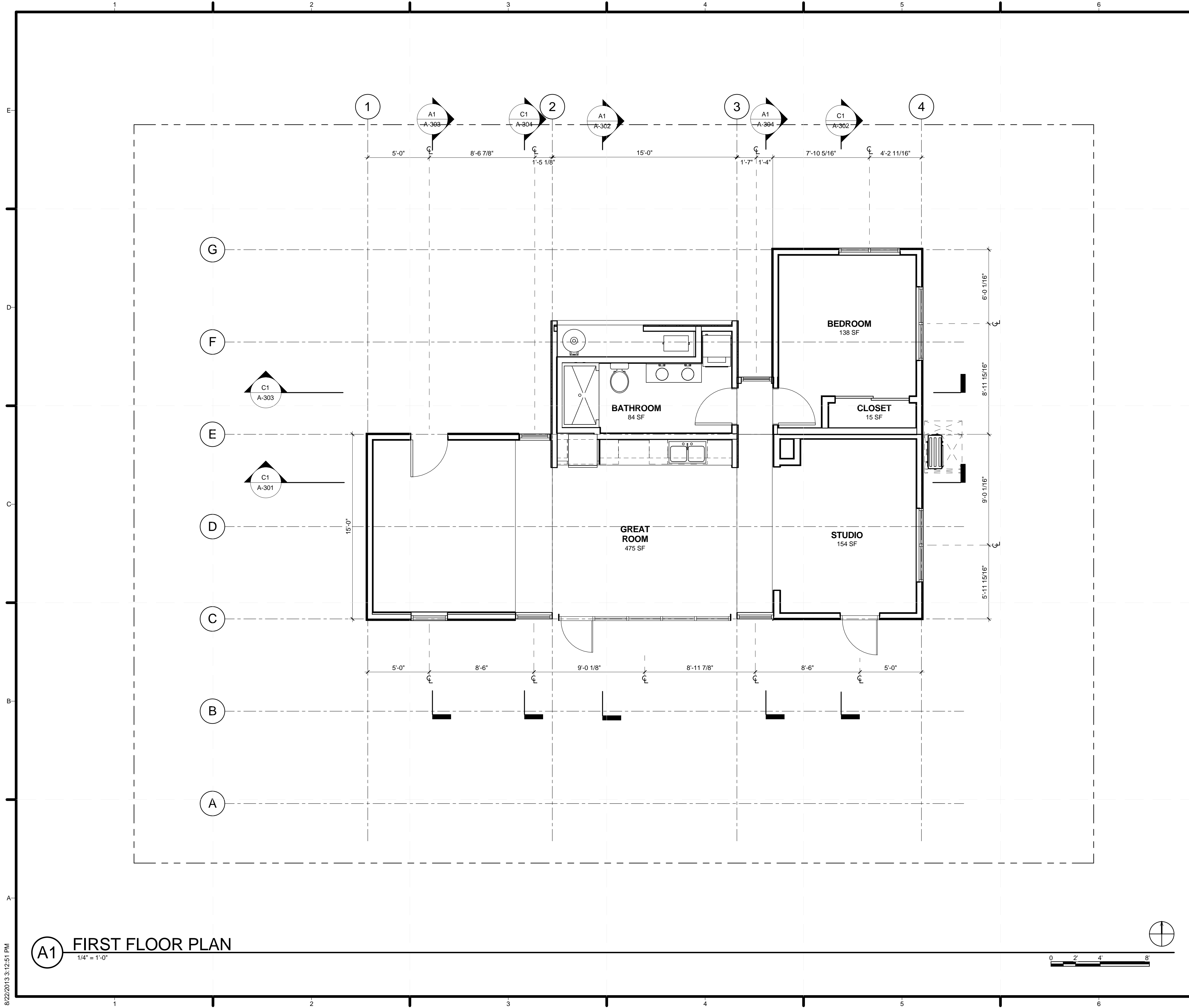
LOT NUMBER:	104
DRAWN BY:	KEVIN CHEN
CHECKED BY:	DEREK OUYANG
COPYRIGHT:	NONE; PROJECT IS PUBLIC DOMAIN

SHEET TITLE
MODULE ISOMETRICS

S-902



B3 MODULE ISOMETRIC EXPLOSION
1 1/2" = 1'-0"



GENERAL SHEET NOTES

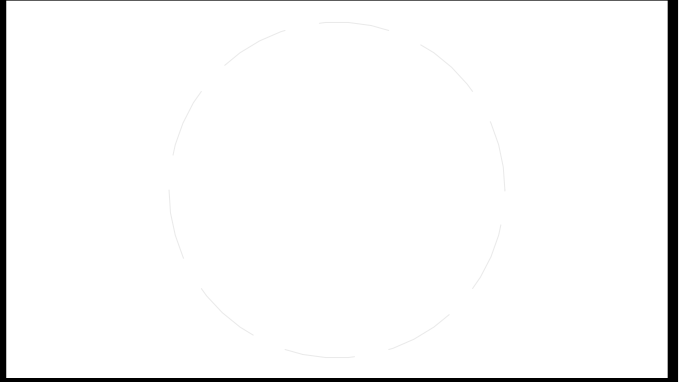
REFERENCE KEYNOTES

SHEET KEYNOTES



TEAM NAME: STANFORD UNIVERSITY
 ADDRESS: Y2E2 BUILDING RM 254
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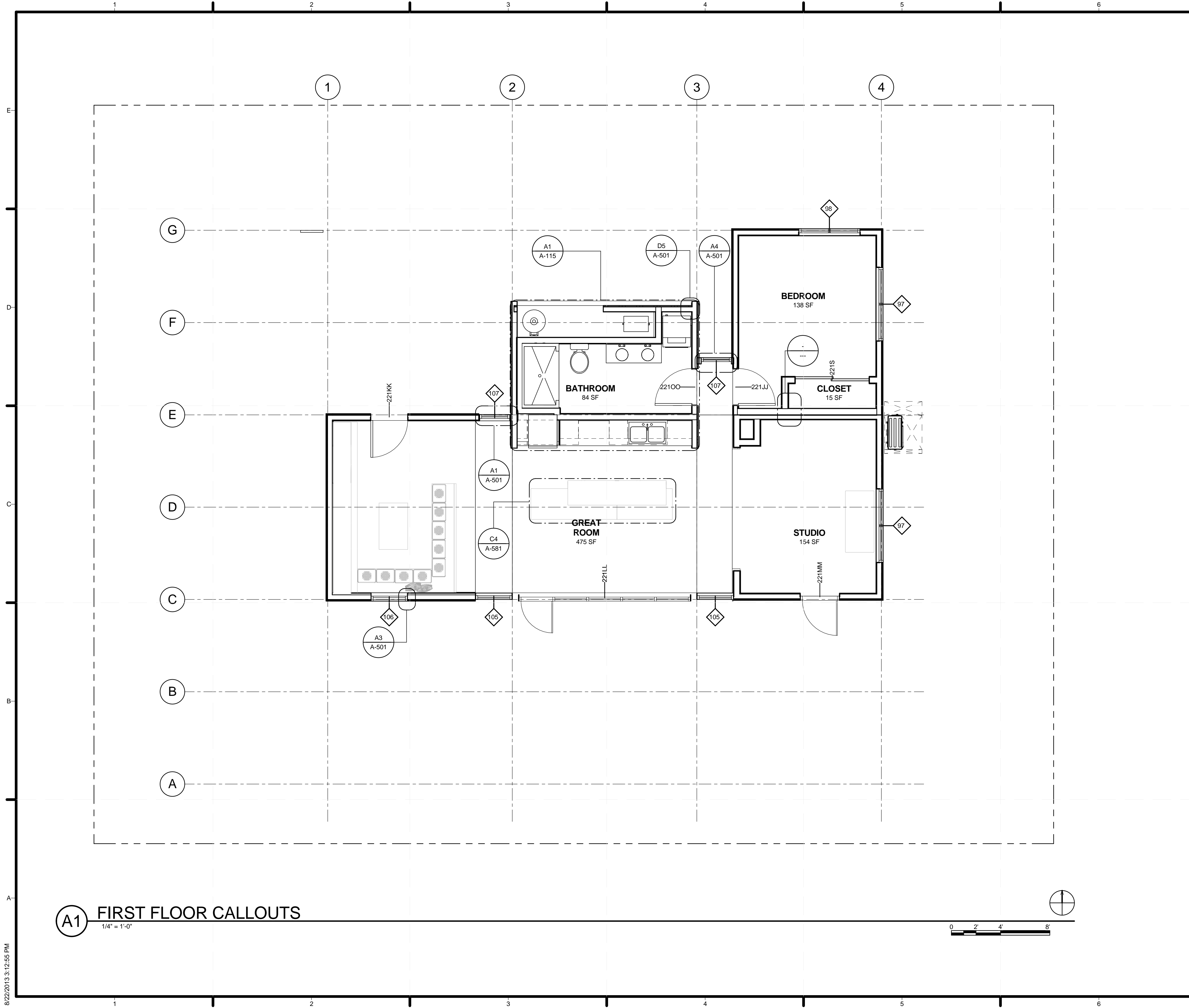
LOT NUMBER: 104
 DRAWN BY: JACOB SCHAFFERT
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SHEET TITLE
FIRST FLOOR PLAN

A-101

(A1) FIRST FLOOR PLAN
 1/4" = 1'-0"

8/22/2013 3:12:51 PM



A1 FIRST FLOOR CALLOUTS
1/4" = 1'-0"



8/22/2013 3:12:55 PM

GENERAL SHEET NOTES

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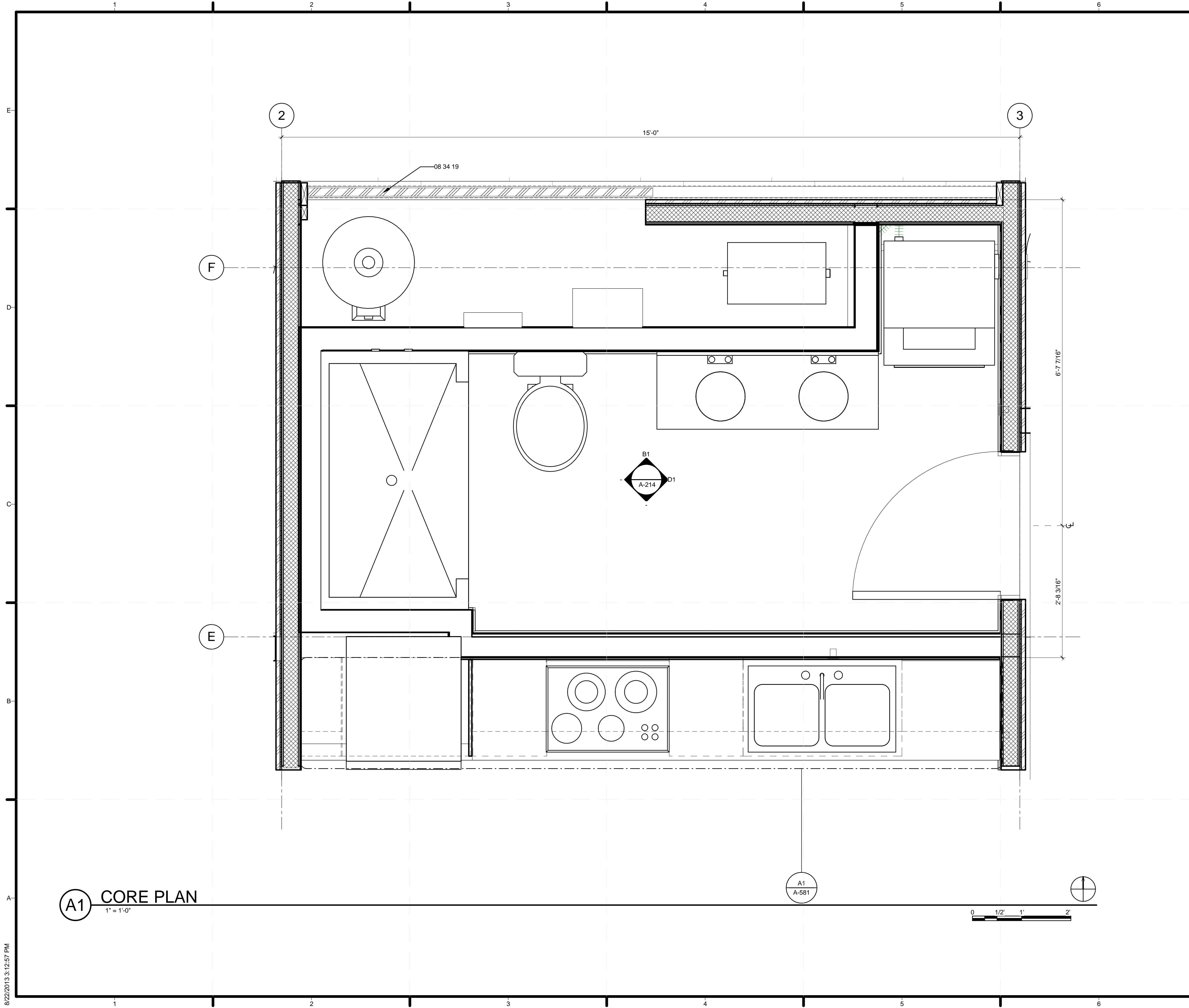
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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION

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 DRAWN BY: JACOB SCHAFFERT
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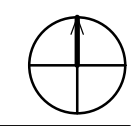
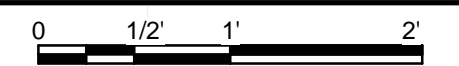
SHEET TITLE
FLOOR PLAN CALLOUTS

A-102



A1 CORE PLAN
1" = 1'-0"

A1
A-581



GENERAL SHEET NOTES

REFERENCE KEYNOTES

08 34 19 INDUSTRIAL DOORS

SHEET KEYNOTES



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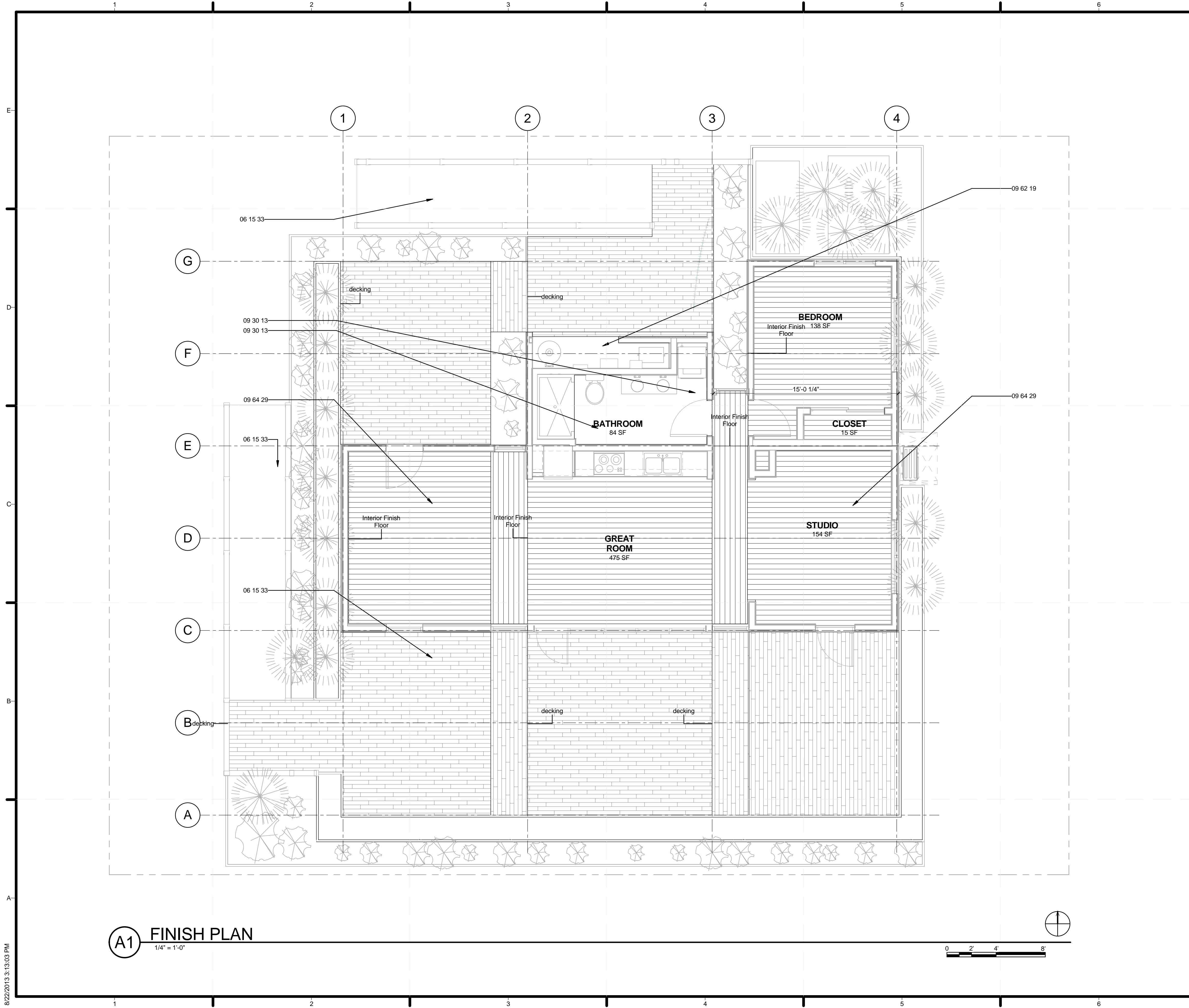
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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION

SHEET TITLE
CORE PLAN

A-115

8/22/2013 3:12:57 PM



A1 FINISH PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

REFERENCE KEYNOTES

- 06 15 33 WOOD PATIO DECKING
- 09 30 13 CERAMIC TILING
- 09 62 19 LAMINATE FLOORING
- 09 64 29 WOOD STRIP AND PLANK FLOORING

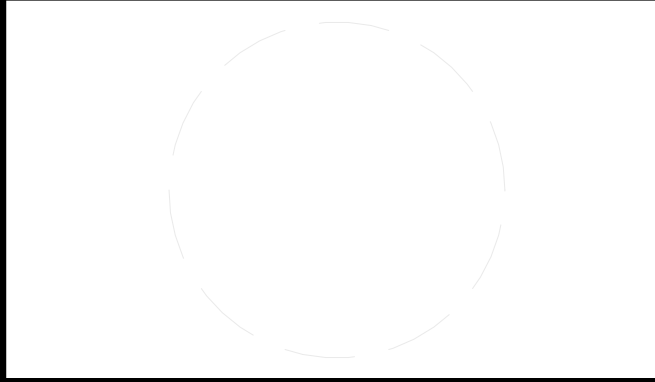
SHEET KEYNOTES



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MK	DATE	DESCRIPTION

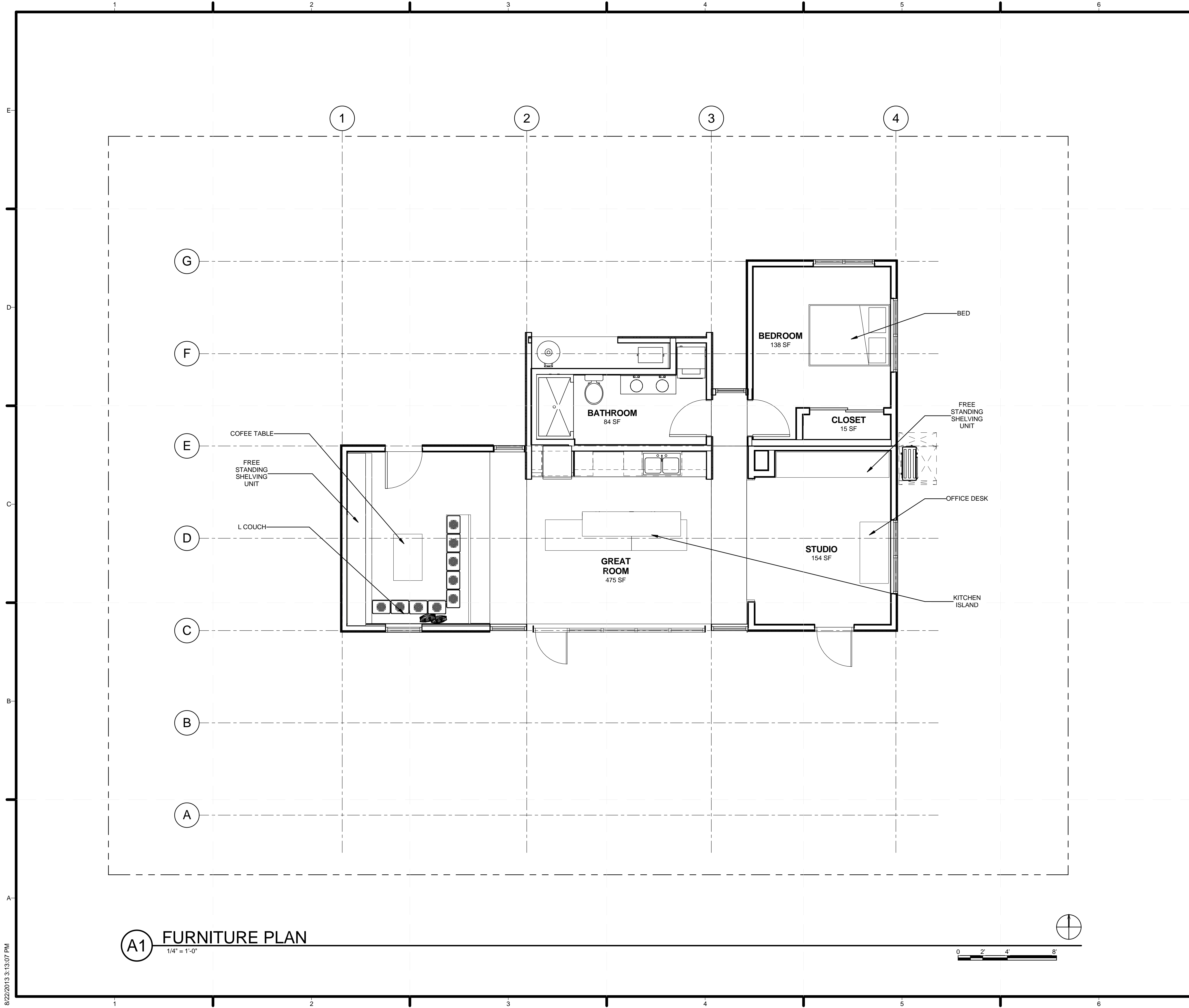
LOT NUMBER: 104
 DRAWN BY: JACOB SCHAFFERT
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SHEET TITLE

FINISH PLAN

A-119

8/22/2013 3:13:03 PM



A1 FURNITURE PLAN
1/4" = 1'-0"

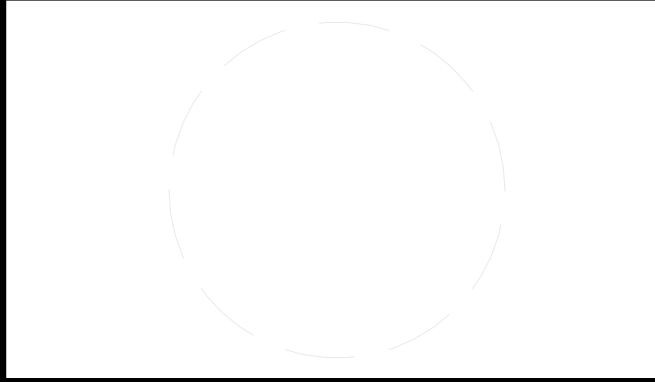


GENERAL SHEET NOTES



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03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

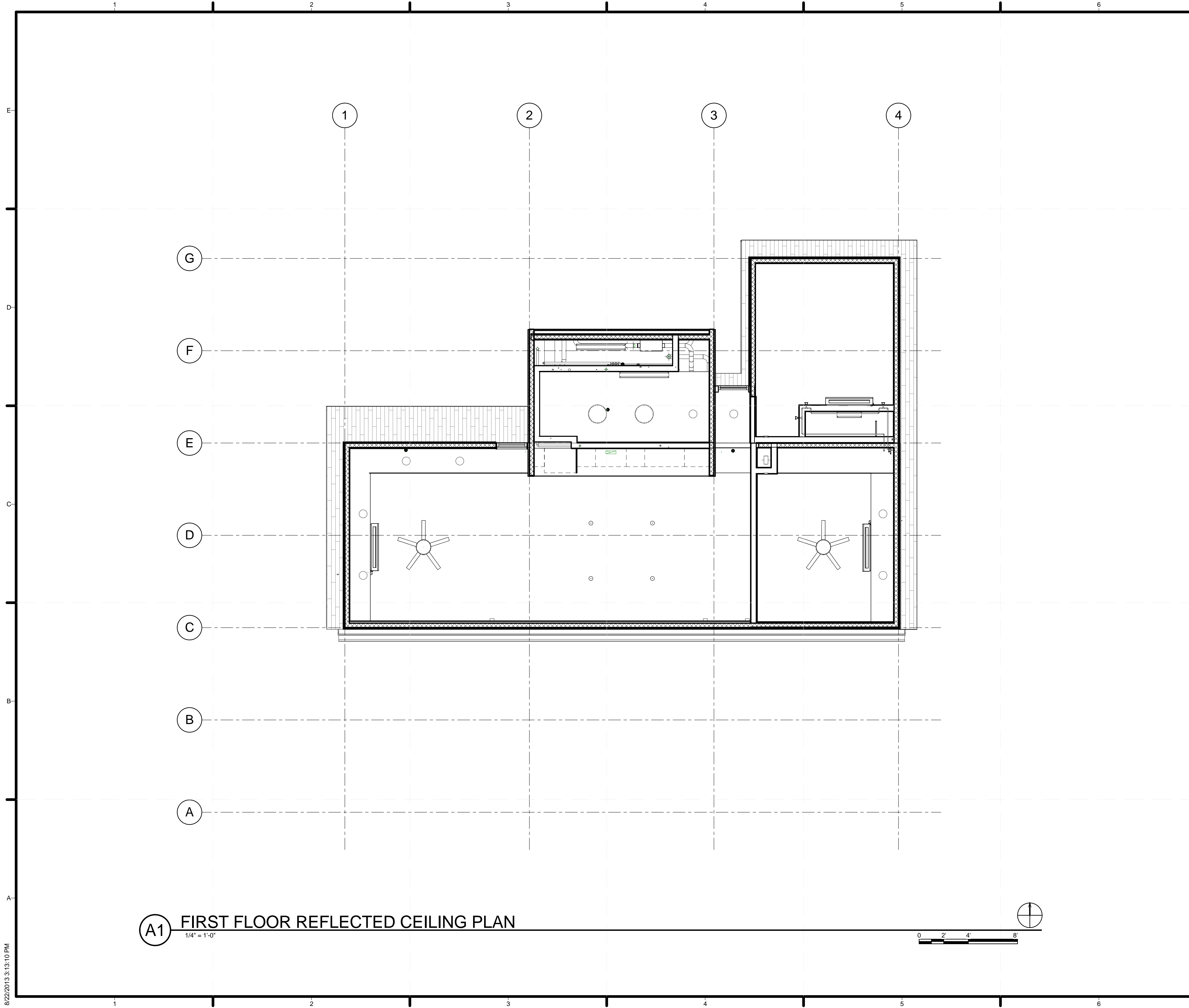
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LOT NUMBER: 104
 DRAWN BY: JACOB SCHAFFERT
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SHEET TITLE
FURNITURE PLAN

A-120

8/22/2013 3:13:07 PM



(A1) FIRST FLOOR REFLECTED CEILING PLAN
 1/4" = 1'-0"

GENERAL SHEET NOTES

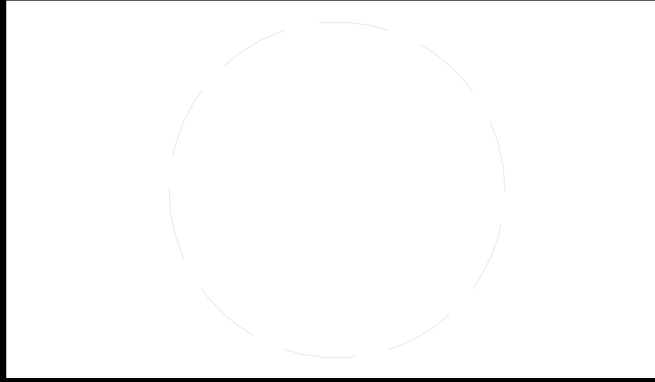
REFERENCE KEYNOTES

SHEET KEYNOTES



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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

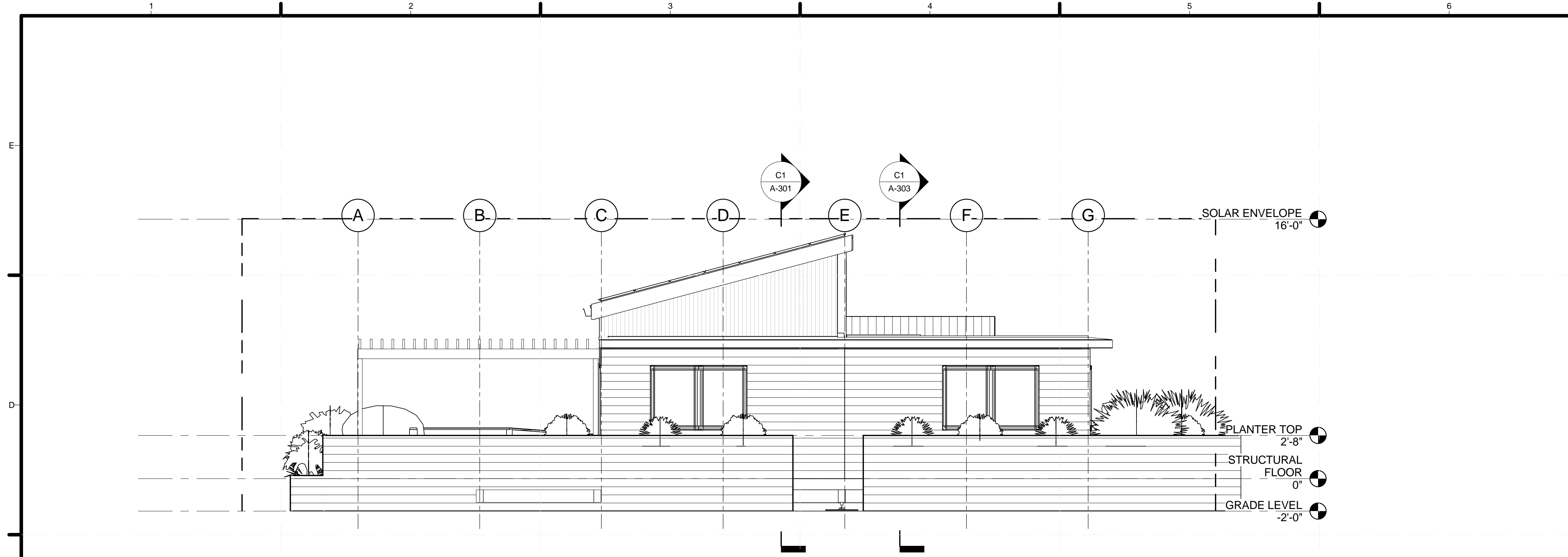
MK	DATE	DESCRIPTION
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LOT NUMBER: 104
 DRAWN BY: JACOB SCHAFFERT
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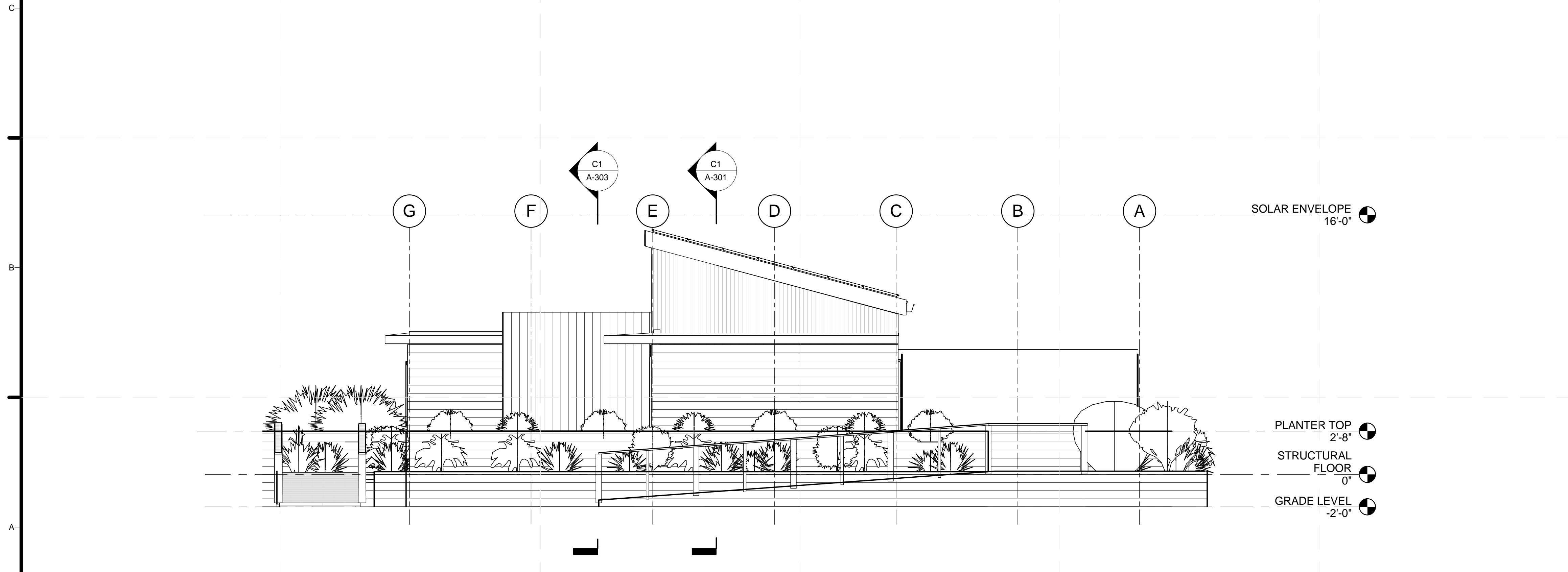
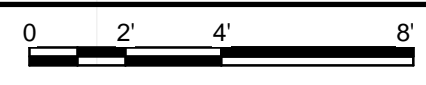
SHEET TITLE
FIRST FLOOR REFLECTED CEILING PLAN

A-121

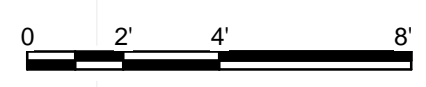
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C1 EAST SITE ELEVATION
1/4" = 1'-0"



A1 WEST SITE ELEVATION
1/4" = 1'-0"



GENERAL SHEET NOTES

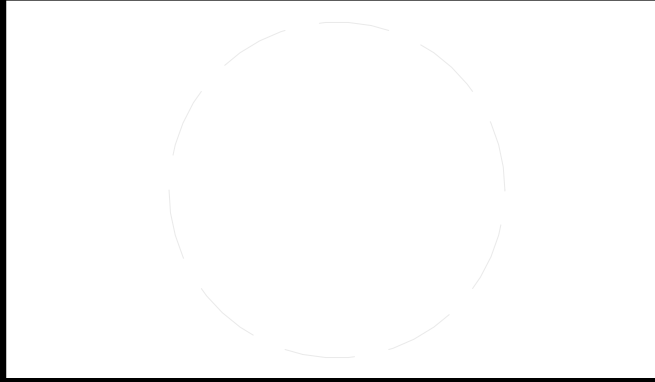
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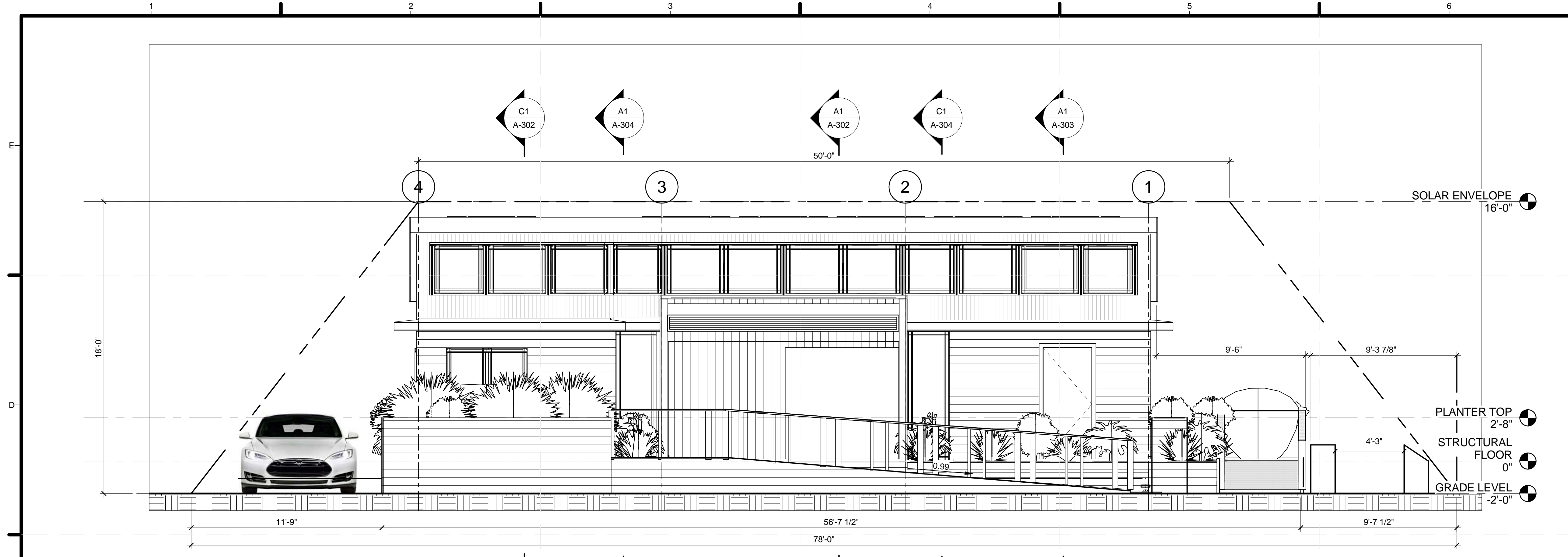
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05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION

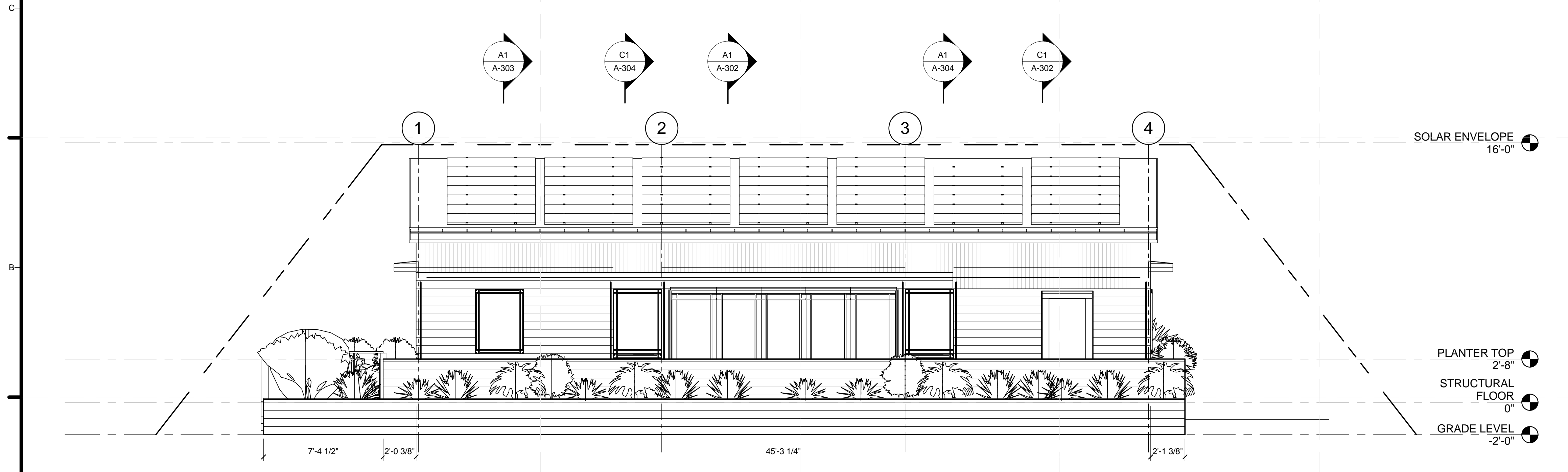
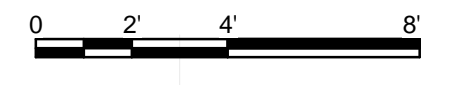
SHEET TITLE

SITE ELEVATIONS

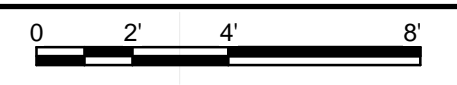
A-201



C1 NORTH SITE ELEVATION
1/4" = 1'-0"



A1 SOUTH SITE ELEVATION
1/4" = 1'-0"



GENERAL SHEET NOTES

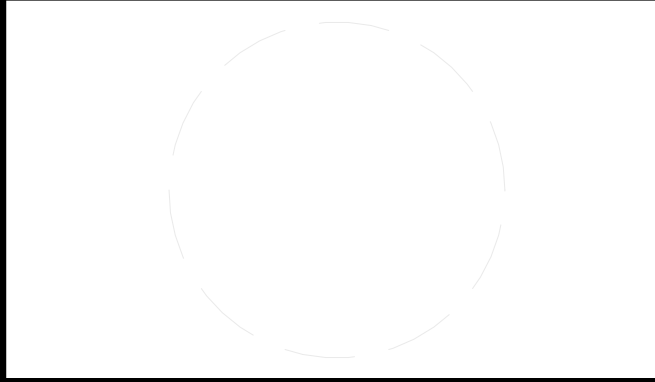
REFERENCE KEYNOTES

SHEET KEYNOTES



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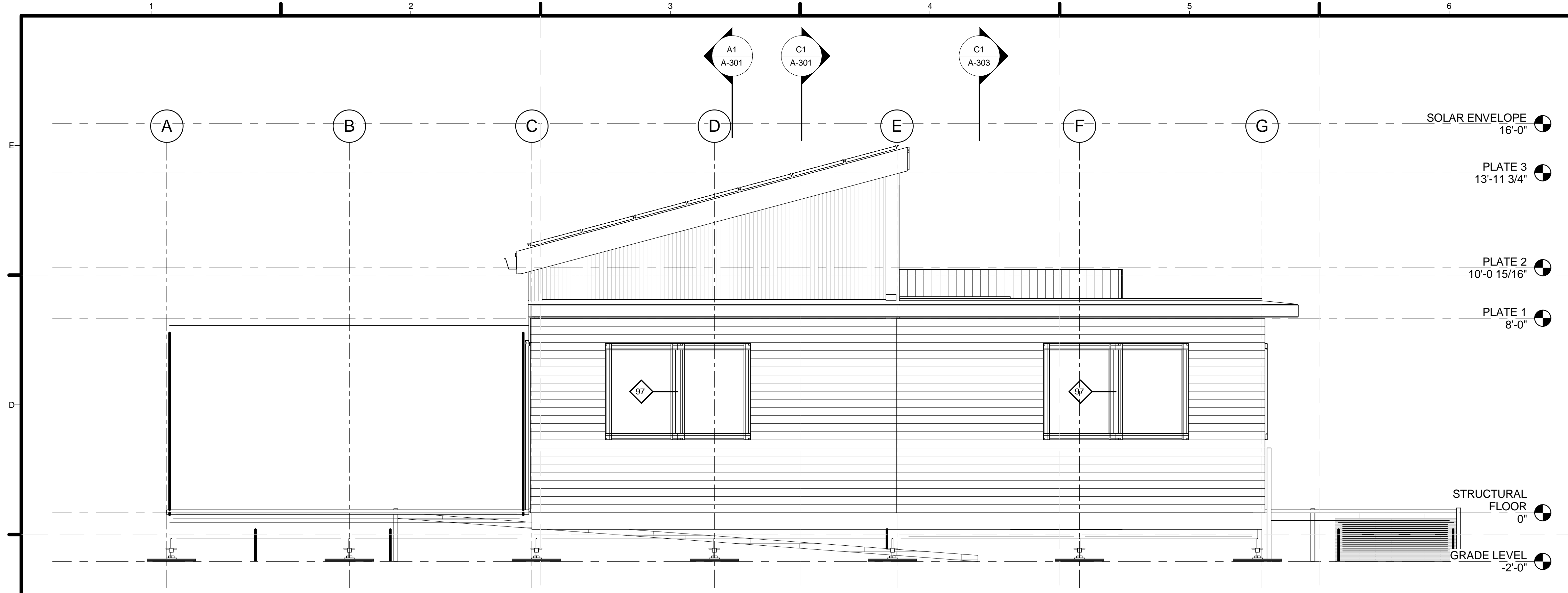
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05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION
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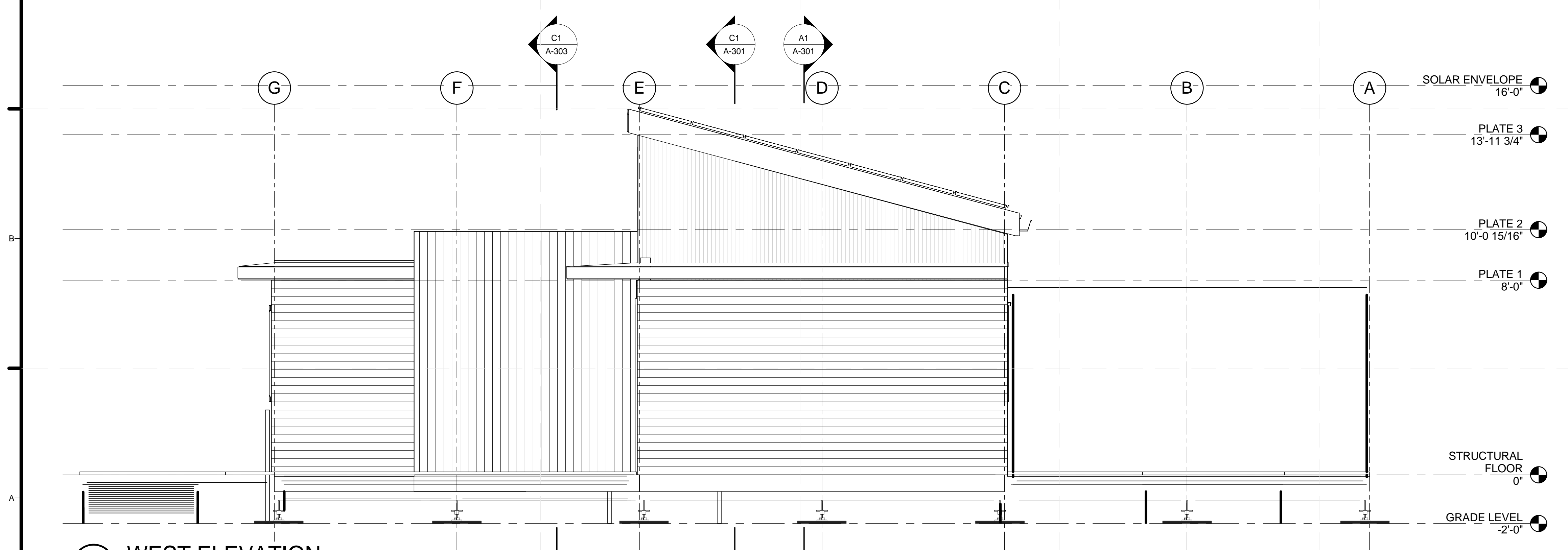
LOT NUMBER: 104
 DRAWN BY: JACOB SCHAFFERT
 CHECKED BY: DEREK OUYANG
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SHEET TITLE
SITE ELEVATIONS

A-202



C1 EAST ELEVATION
3/8" = 1'-0"



A1 WEST ELEVATION
3/8" = 1'-0"

GENERAL SHEET NOTES

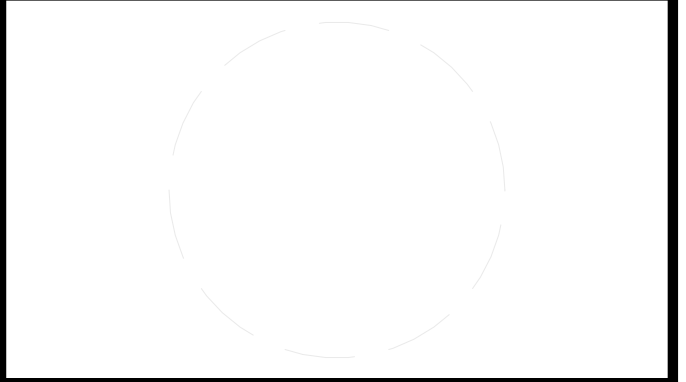
REFERENCE KEYNOTES

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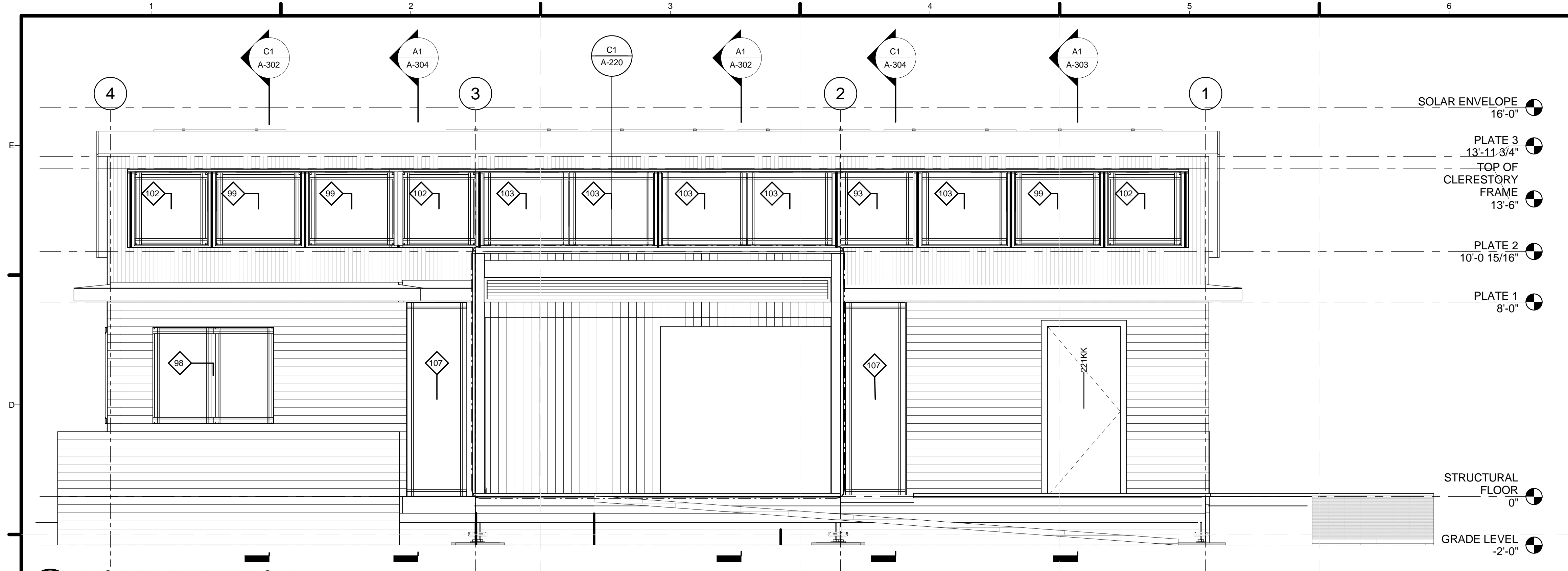
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05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION

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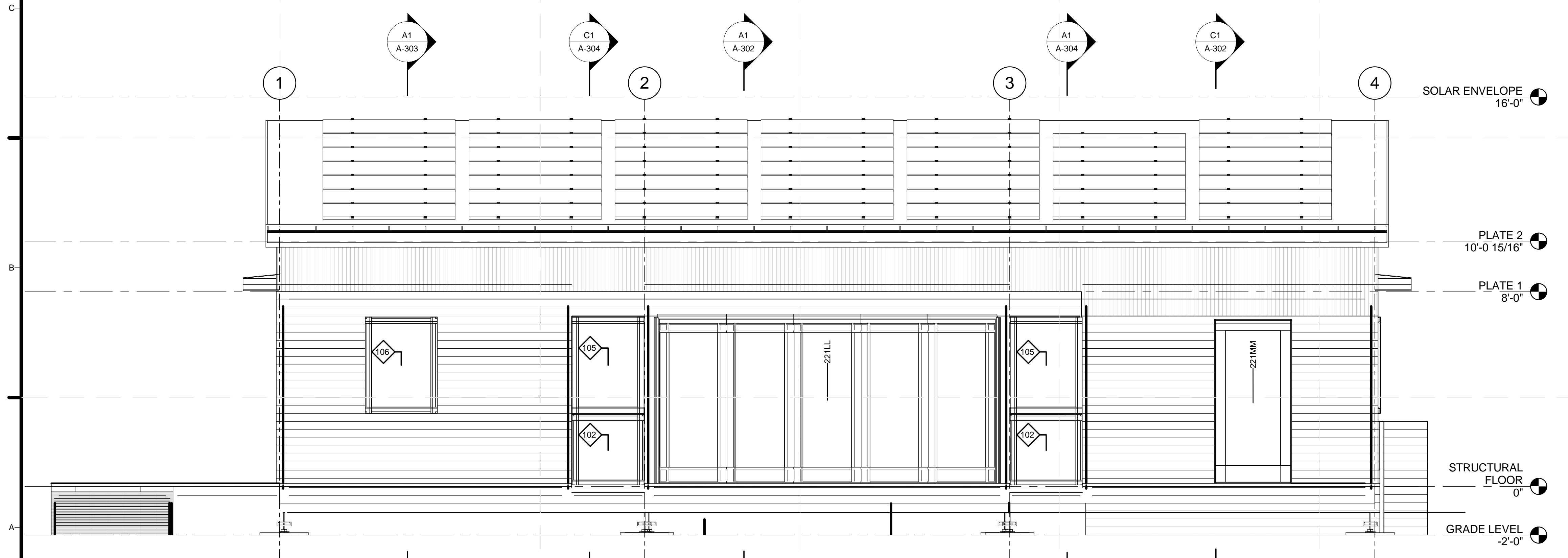
SHEET TITLE
ELEVATIONS

A-211



C1 NORTH ELEVATION
3/8" = 1'-0"

- SOLAR ENVELOPE 16'-0"
- PLATE 3 13'-11 3/4"
- TOP OF CLERESTORY FRAME 13'-6"
- PLATE 2 10'-0 15/16"
- PLATE 1 8'-0"
- STRUCTURAL FLOOR 0"
- GRADE LEVEL -2'-0"



A1 SOUTH ELEVATION
3/8" = 1'-0"

- SOLAR ENVELOPE 16'-0"
- PLATE 2 10'-0 15/16"
- PLATE 1 8'-0"
- STRUCTURAL FLOOR 0"
- GRADE LEVEL -2'-0"

GENERAL SHEET NOTES

REFERENCE KEYNOTES

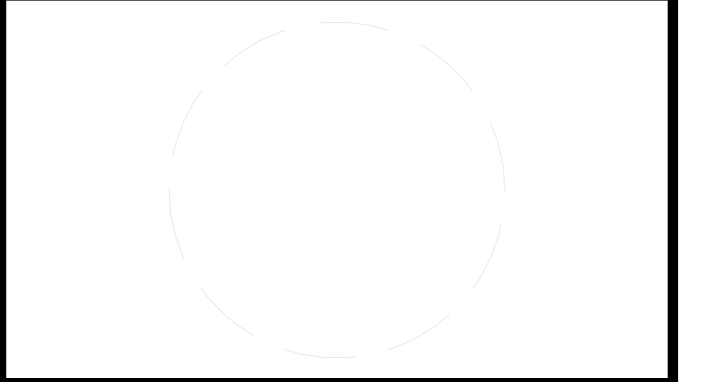
SHEET KEYNOTES

ELEVATIONS



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MK	DATE	DESCRIPTION

SHEET TITLE

ELEVATIONS

A-212



GENERAL SHEET NOTES

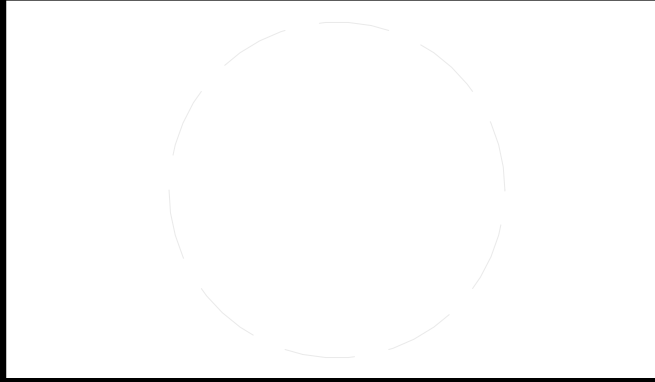
REFERENCE KEYNOTES

SHEET KEYNOTES



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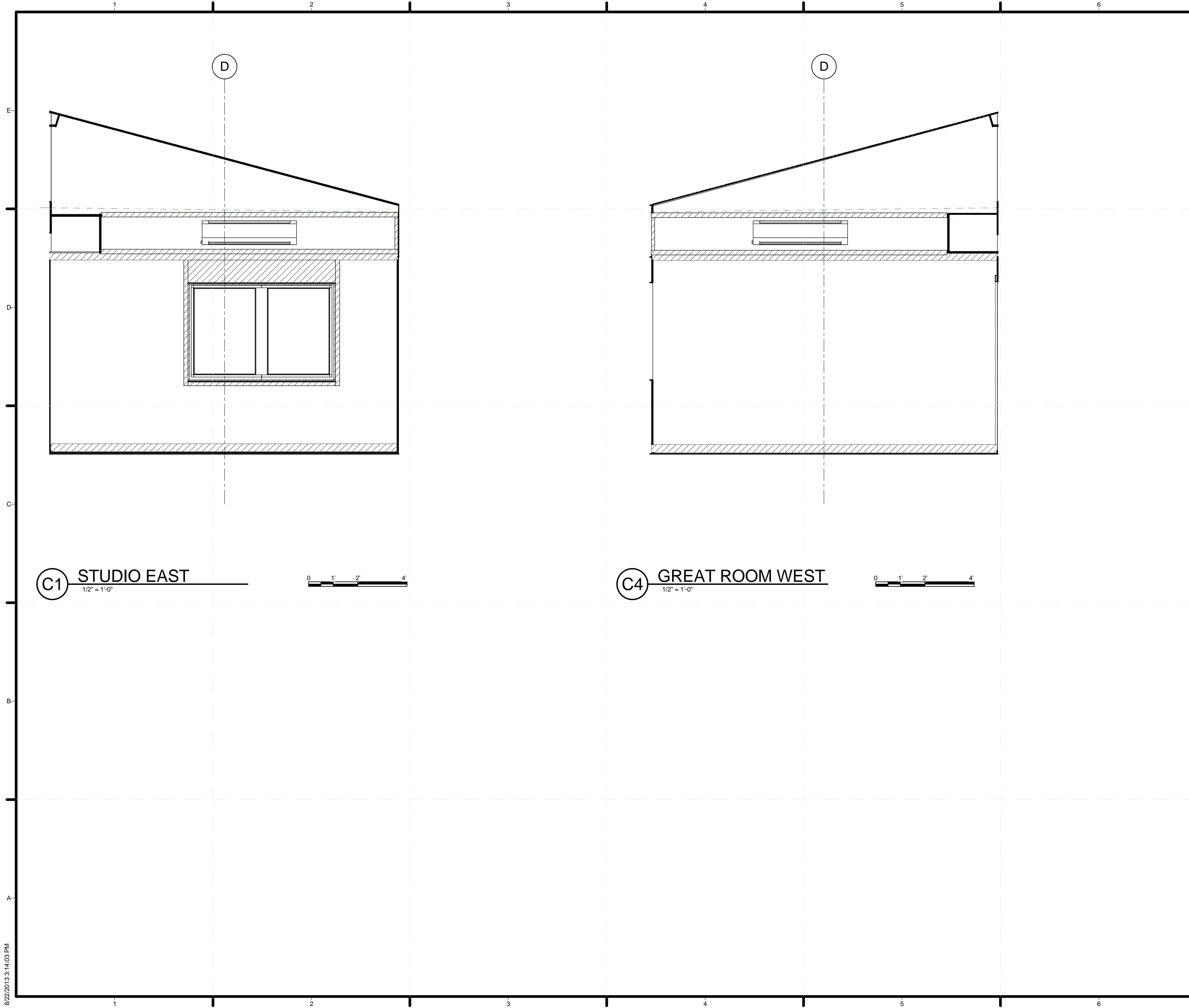
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 DRAWN BY: JACOB SCHAFFERT
 CHECKED BY: DEREK OUYANG
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SHEET TITLE
 INTERIOR ELEVATIONS

A-214

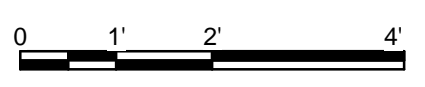
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C1 STUDIO EAST
1/2" = 1'-0"



C4 GREAT ROOM WEST
1/2" = 1'-0"



GENERAL SHEET NOTES

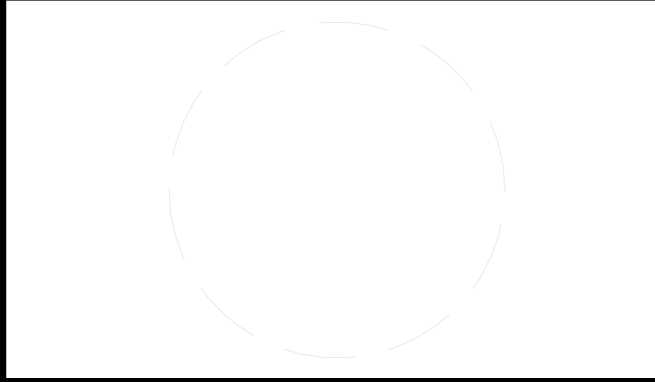
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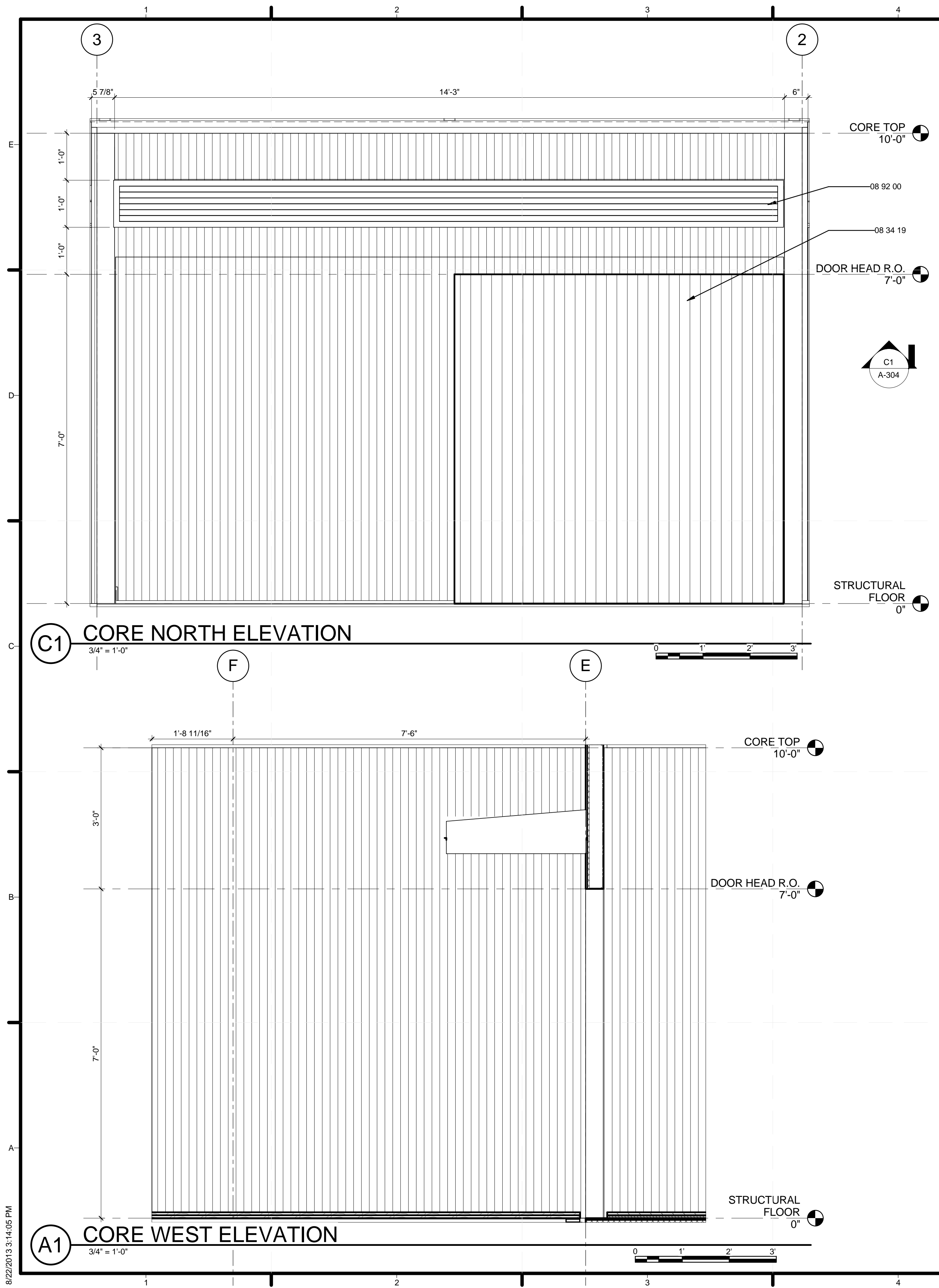
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05	08/22/2013	100% AS-BUILT SUBMISSION

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LOT NUMBER: 104
 DRAWN BY: Author
 CHECKED BY: Checker
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SHEET TITLE
 INTERIOR ELEVATIONS

A-215



GENERAL SHEET NOTES

REFERENCE KEYNOTES

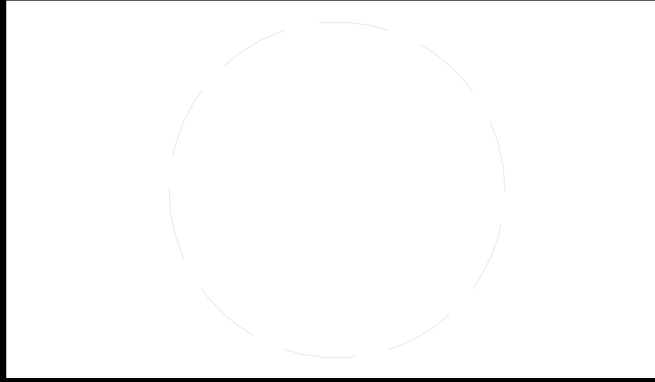
08 34 19 INDUSTRIAL DOORS
 08 92 00 LOUVERED EQUIPMENT ENCLOSURES

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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

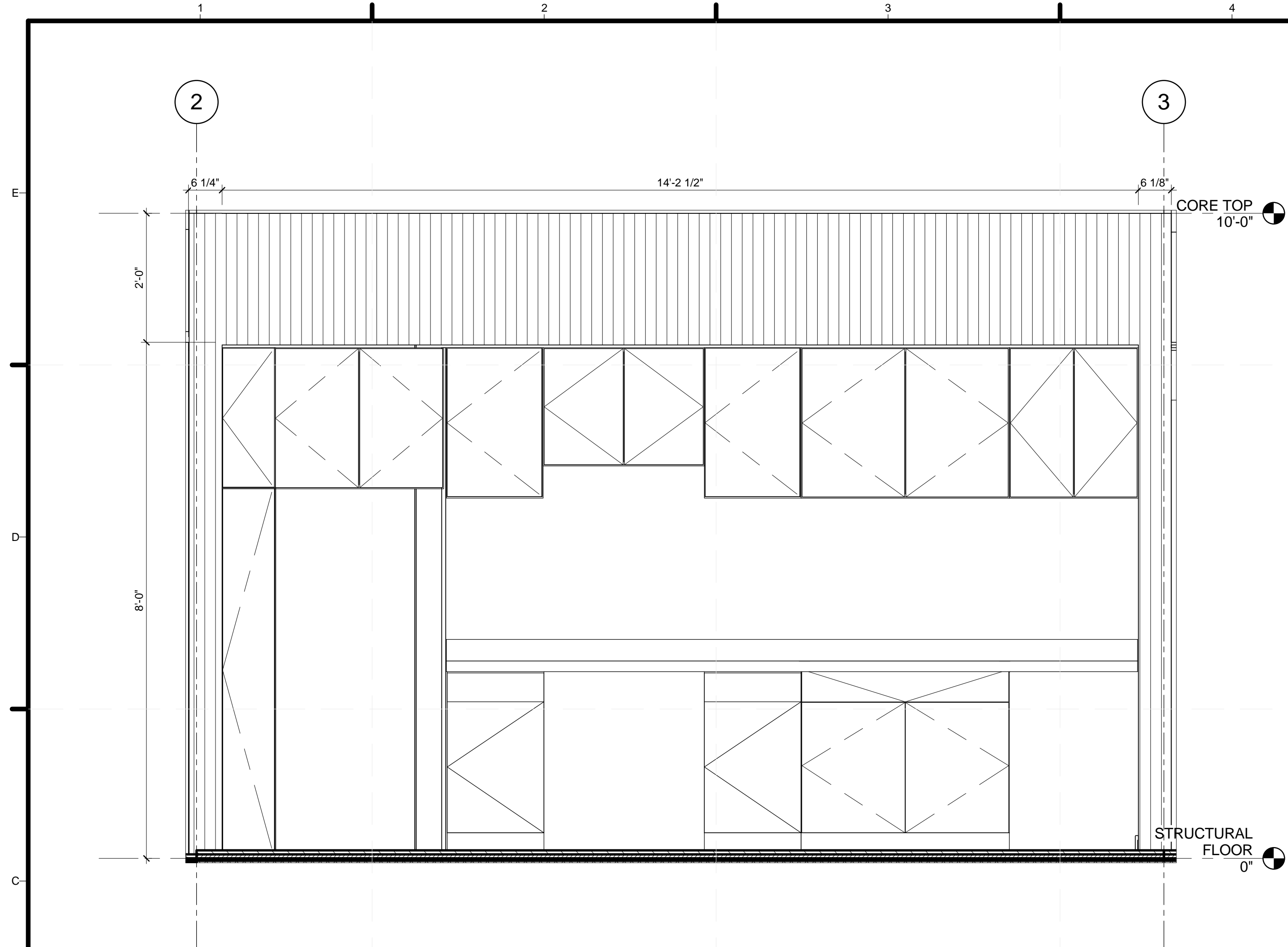
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LOT NUMBER: 104
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SHEET TITLE
 CORE ELEVATIONS

A-220

8/22/2013 3:14:05 PM



C1 CORE SOUTH ELEVATION
3/4" = 1'-0"



GENERAL SHEET NOTES

REFERENCE KEYNOTES

SHEET KEYNOTES



TEAM NAME: STANFORD UNIVERSITY
 ADDRESS: Y2E2 BUILDING RM 254
 273 VIA ORTEGA
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01	10/11/2012	80% DOE/NREL DD SUBMISSION
02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

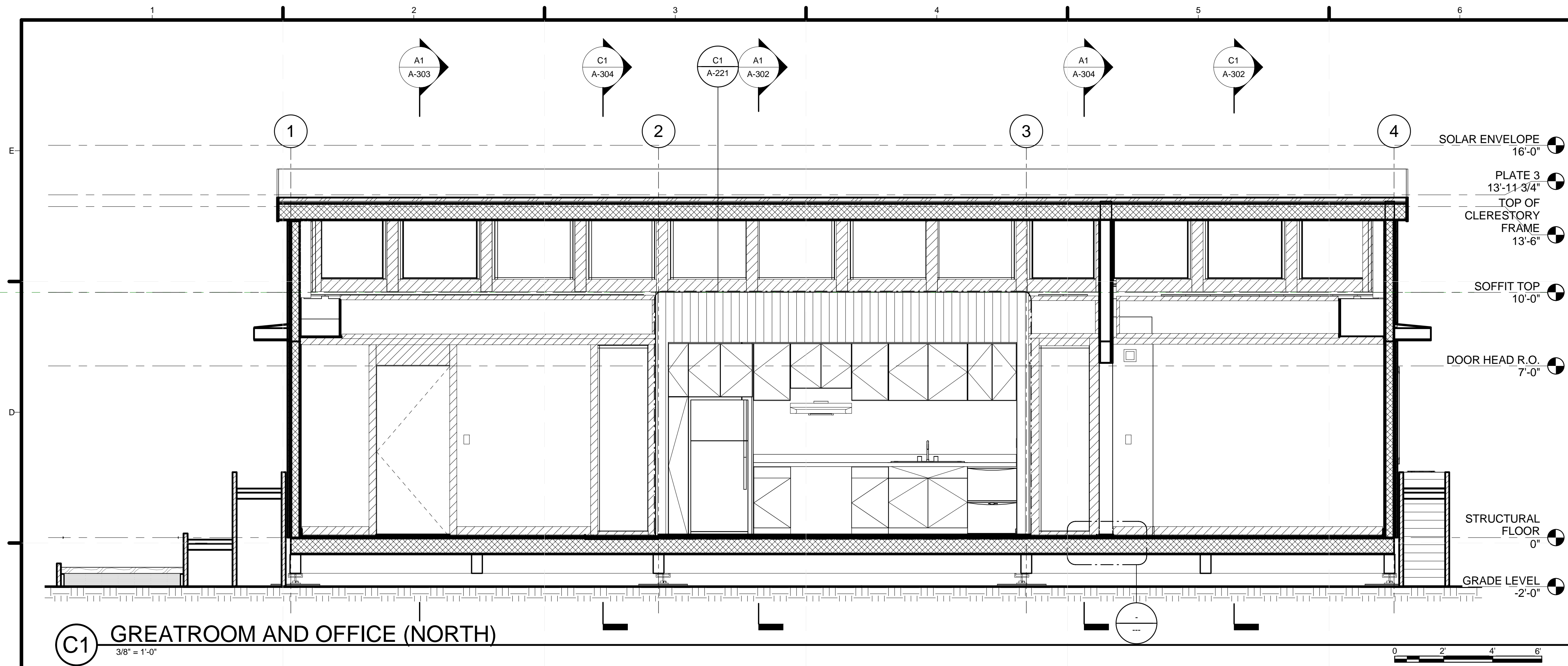
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LOT NUMBER: 104
 DRAWN BY: JACOB SCHAFFERT
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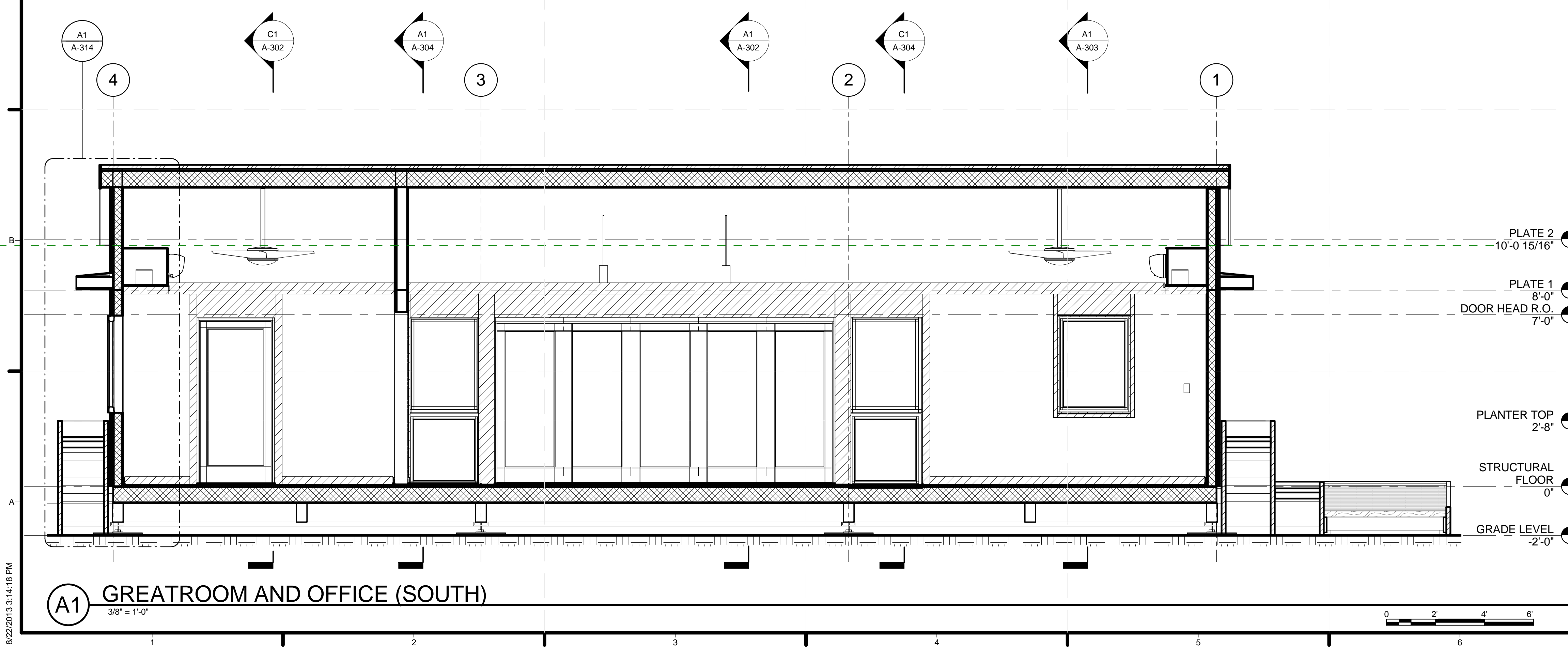
SHEET TITLE
CORE ELEVATIONS

A-221

8/22/2013 3:14:07 PM



C1 GREATROOM AND OFFICE (NORTH)
3/8" = 1'-0"



A1 GREATROOM AND OFFICE (SOUTH)
3/8" = 1'-0"

GENERAL SHEET NOTES

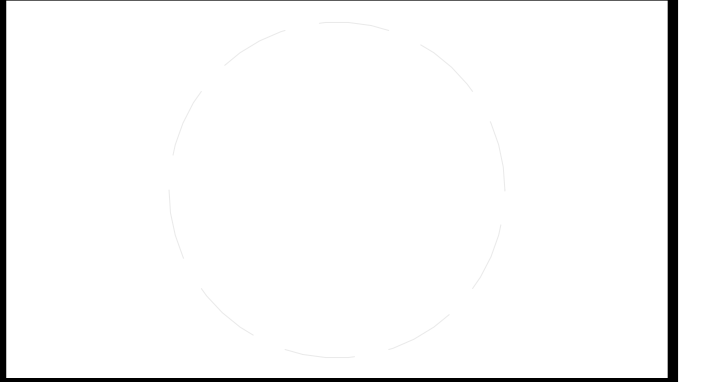
REFERENCE KEYNOTES

SHEET KEYNOTES



TEAM NAME: STANFORD UNIVERSITY
 ADDRESS: Y2E2 BUILDING RM 254
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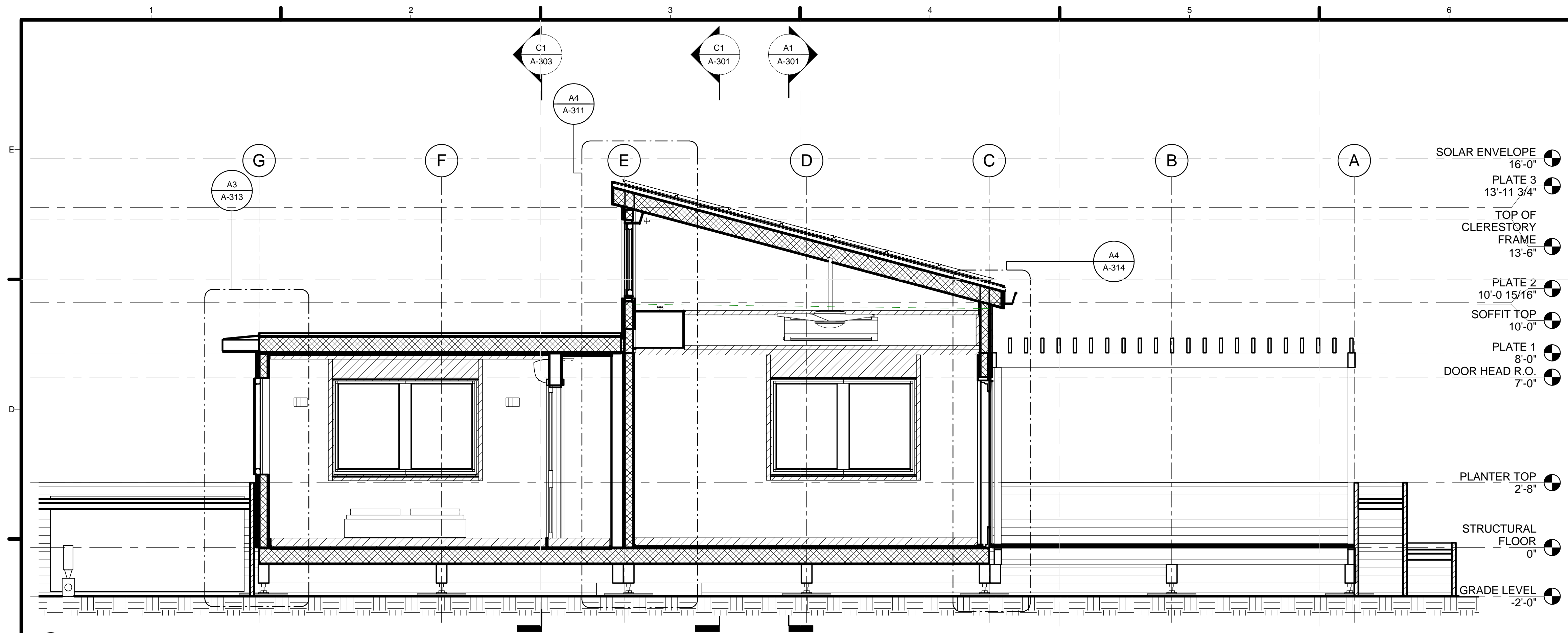


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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

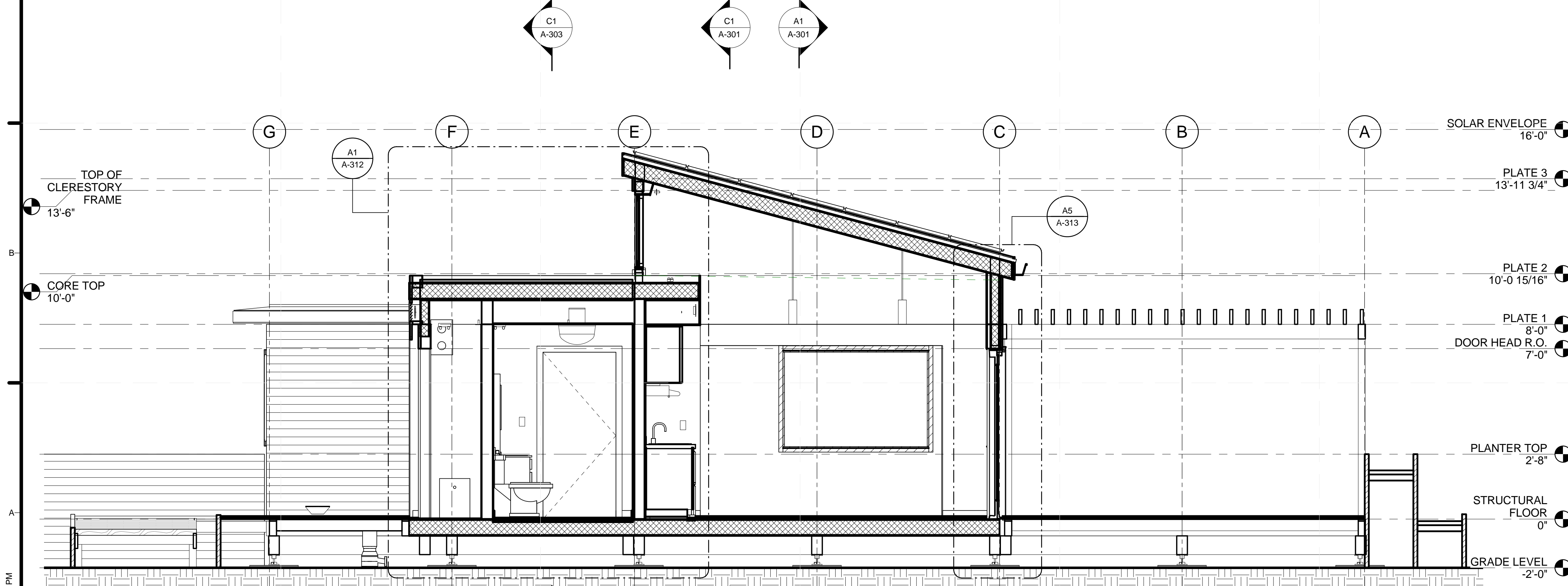
MK	DATE	DESCRIPTION

SHEET TITLE
BUILDING SECTIONS

A-301



C1 BEDROOM AND OFFICE SECTION
3/8" = 1'-0"



A1 CORE GREATROOM (EAST)
3/8" = 1'-0"

GENERAL SHEET NOTES

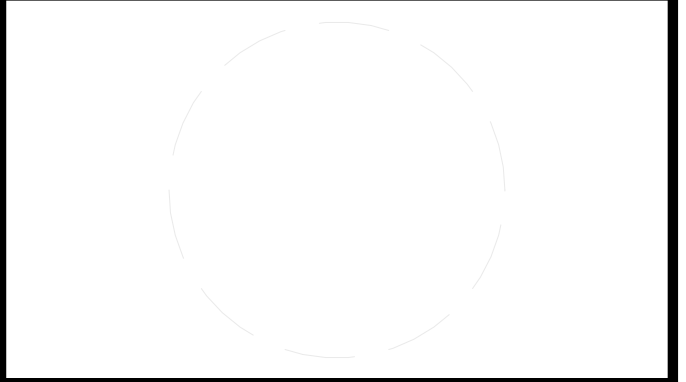
REFERENCE KEYNOTES

SHEET KEYNOTES



TEAM NAME: STANFORD UNIVERSITY
 ADDRESS: Y2E2 BUILDING RM 254
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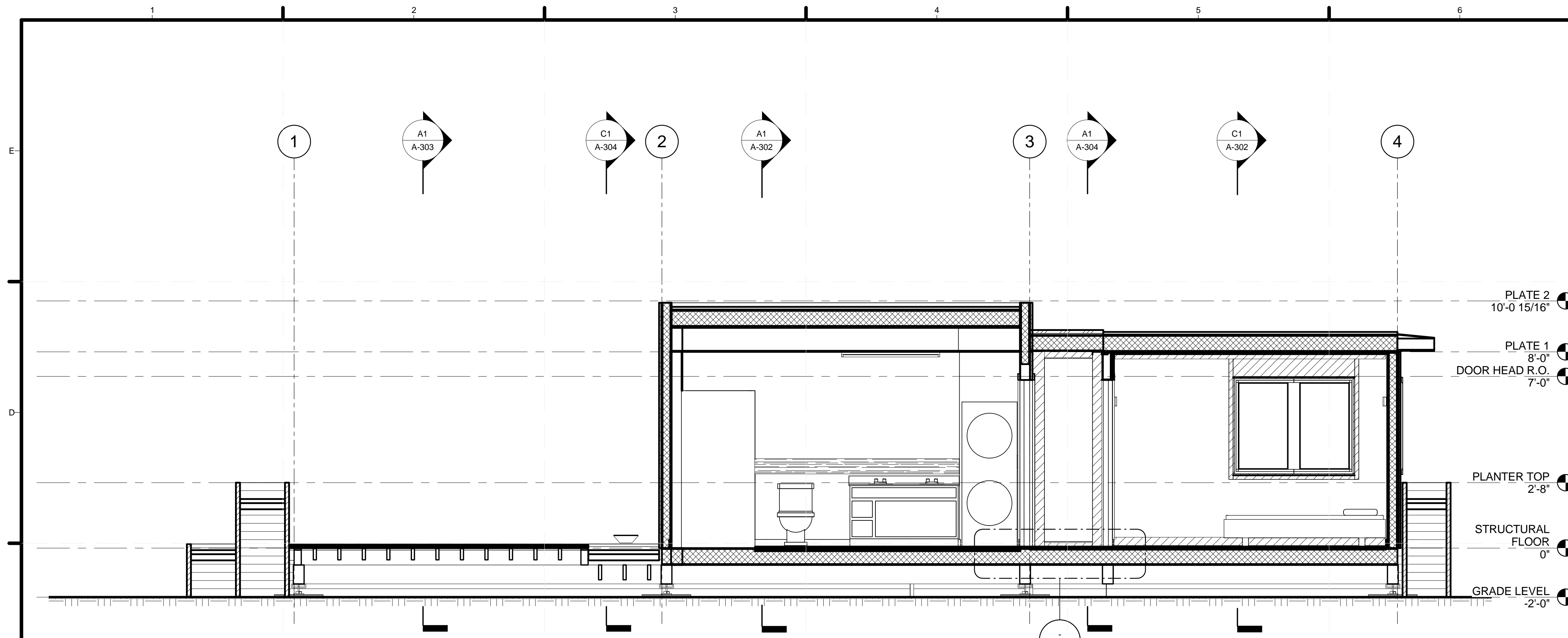
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03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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LOT NUMBER:	104	
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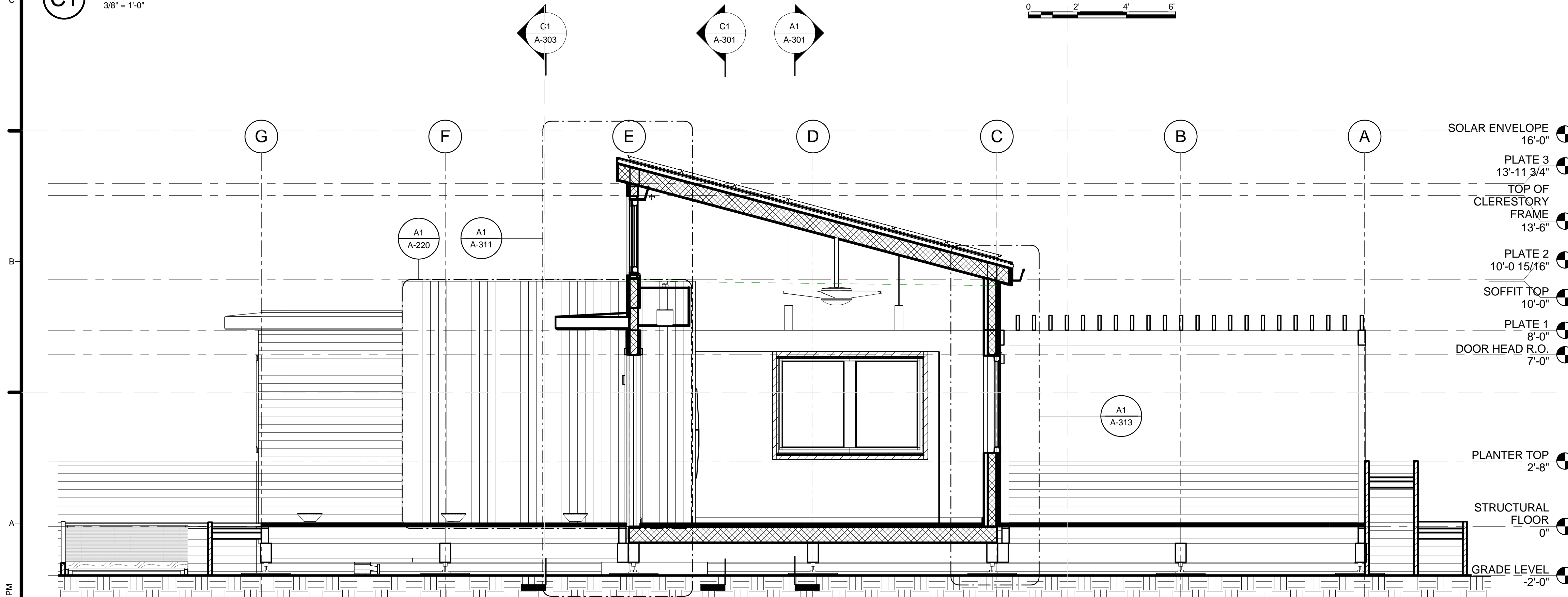
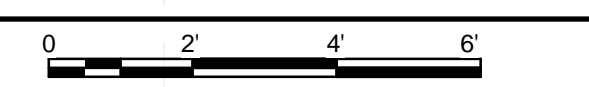
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 BUILDING SECTIONS

A-302

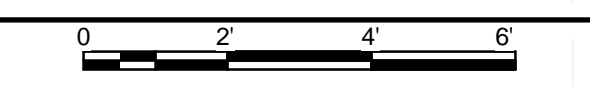
8/22/2013 3:14:31 PM



(C1) BEDROOM AND CORE (NORTH)
3/8" = 1'-0"



(A1) ENTRANCE GREATROOM AND SOUTH DECK
3/8" = 1'-0"



GENERAL SHEET NOTES

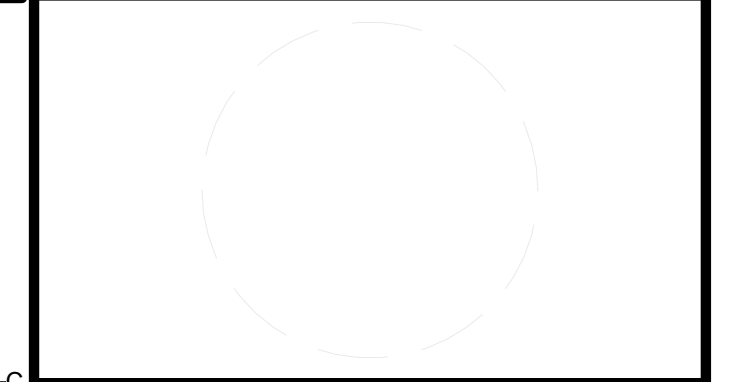
REFERENCE KEYNOTES

SHEET KEYNOTES



TEAM NAME: STANFORD UNIVERSITY
 ADDRESS: Y2E2 BUILDING RM 254
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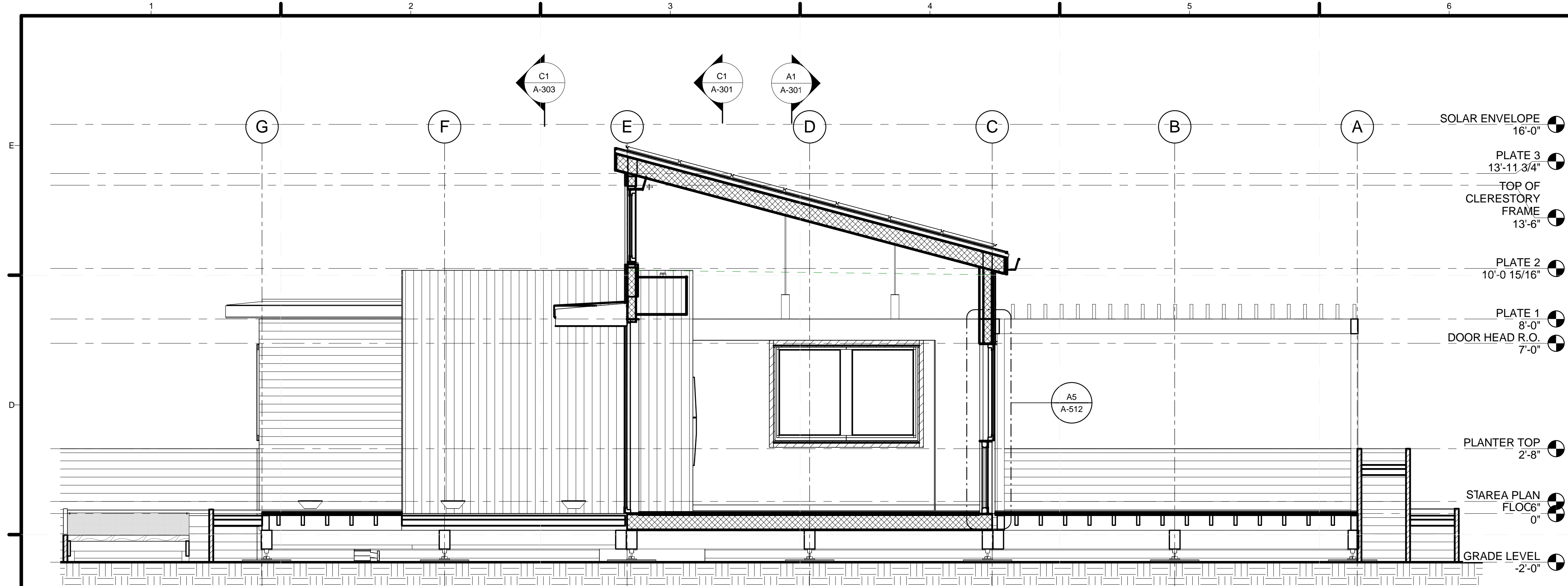
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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION
LOT NUMBER:	104	
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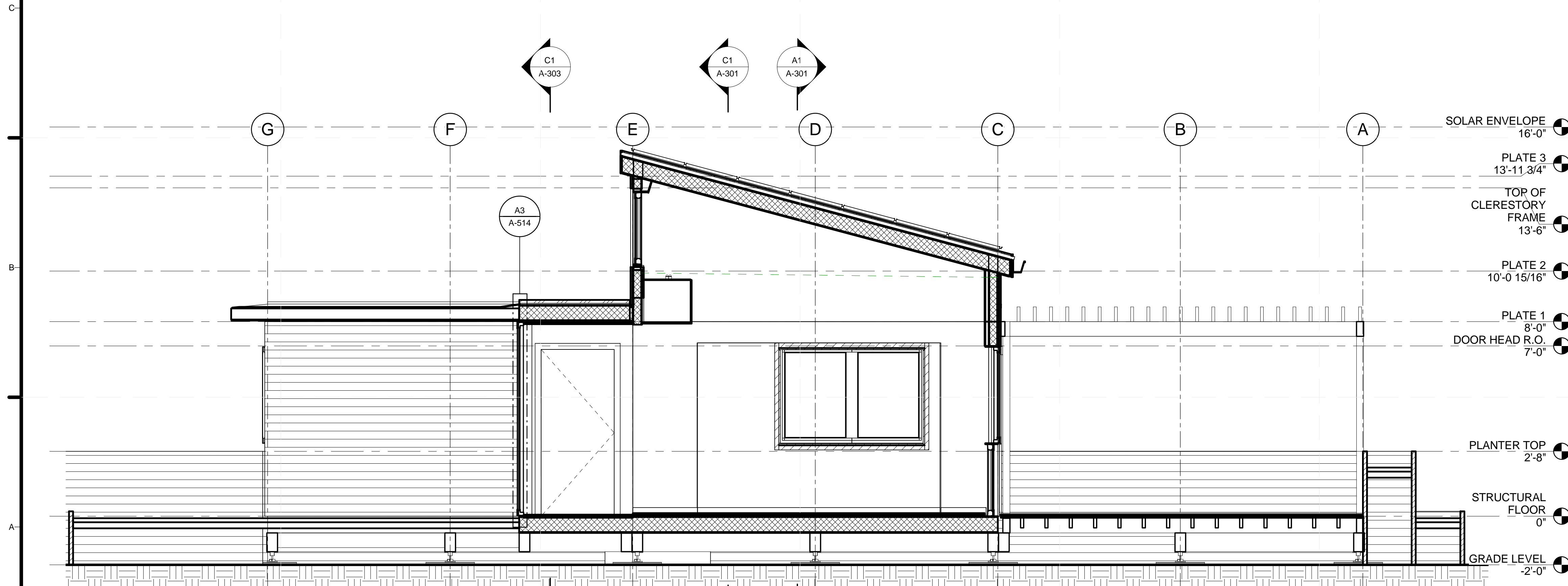
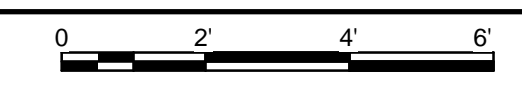
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BUILDING SECTIONS

A-303

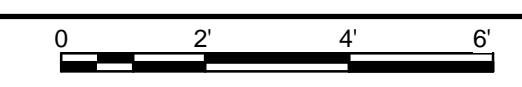
8/22/2013 3:14:39 PM



C1 WEST TRACK SECTION
3/8" = 1'-0"



A1 EAST TRACK SECTION
3/8" = 1'-0"



GENERAL SHEET NOTES

REFERENCE KEYNOTES

SHEET KEYNOTES



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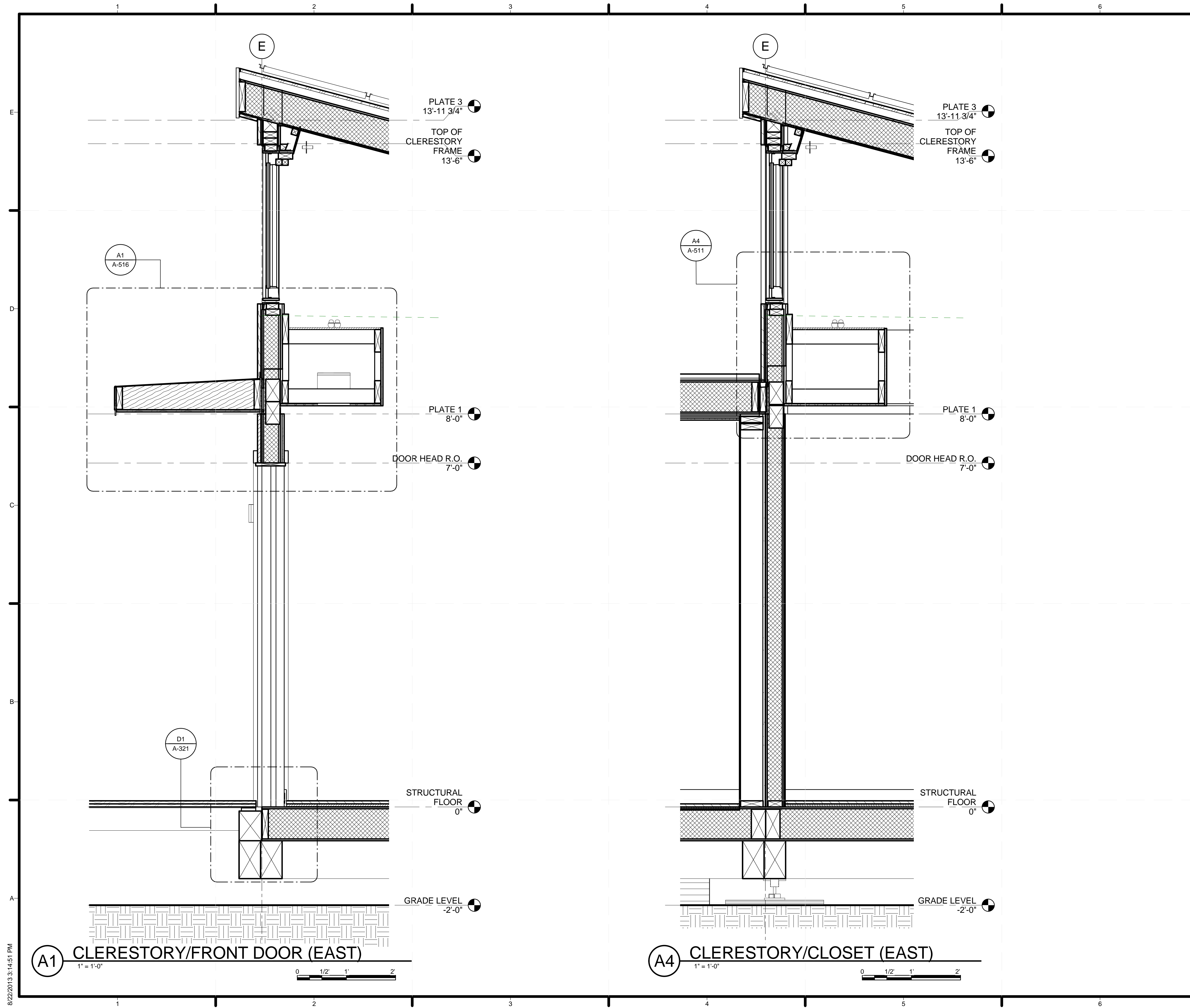


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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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SHEET TITLE
BUILDING SECTIONS

A-304



GENERAL SHEET NOTES

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SHEET KEYNOTES



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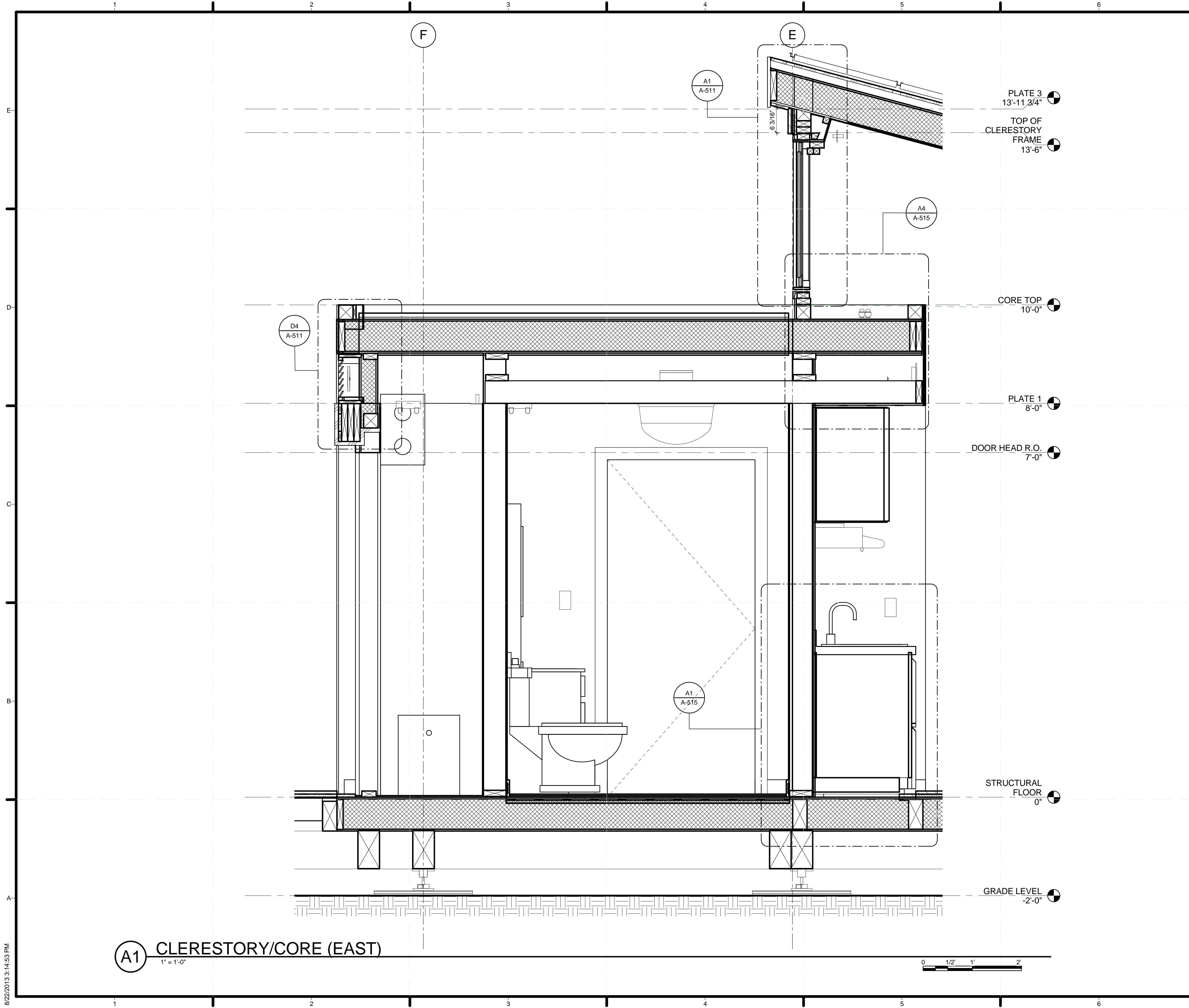
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05	08/22/2013	100% AS-BUILT SUBMISSION

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SHEET TITLE

WALL SECTIONS

A-311



GENERAL SHEET NOTES

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 CONTACT: STANFORDSD@GMAIL.COM
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01	10/11/2012	80% DOE/NREL DD SUBMISSION
02	11/20/2012	80% DOE/NREL RE-SUBMISSION
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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION
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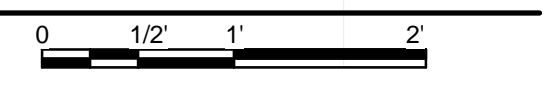
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 DRAWN BY: JACOB SCHAFFERT
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SHEET TITLE

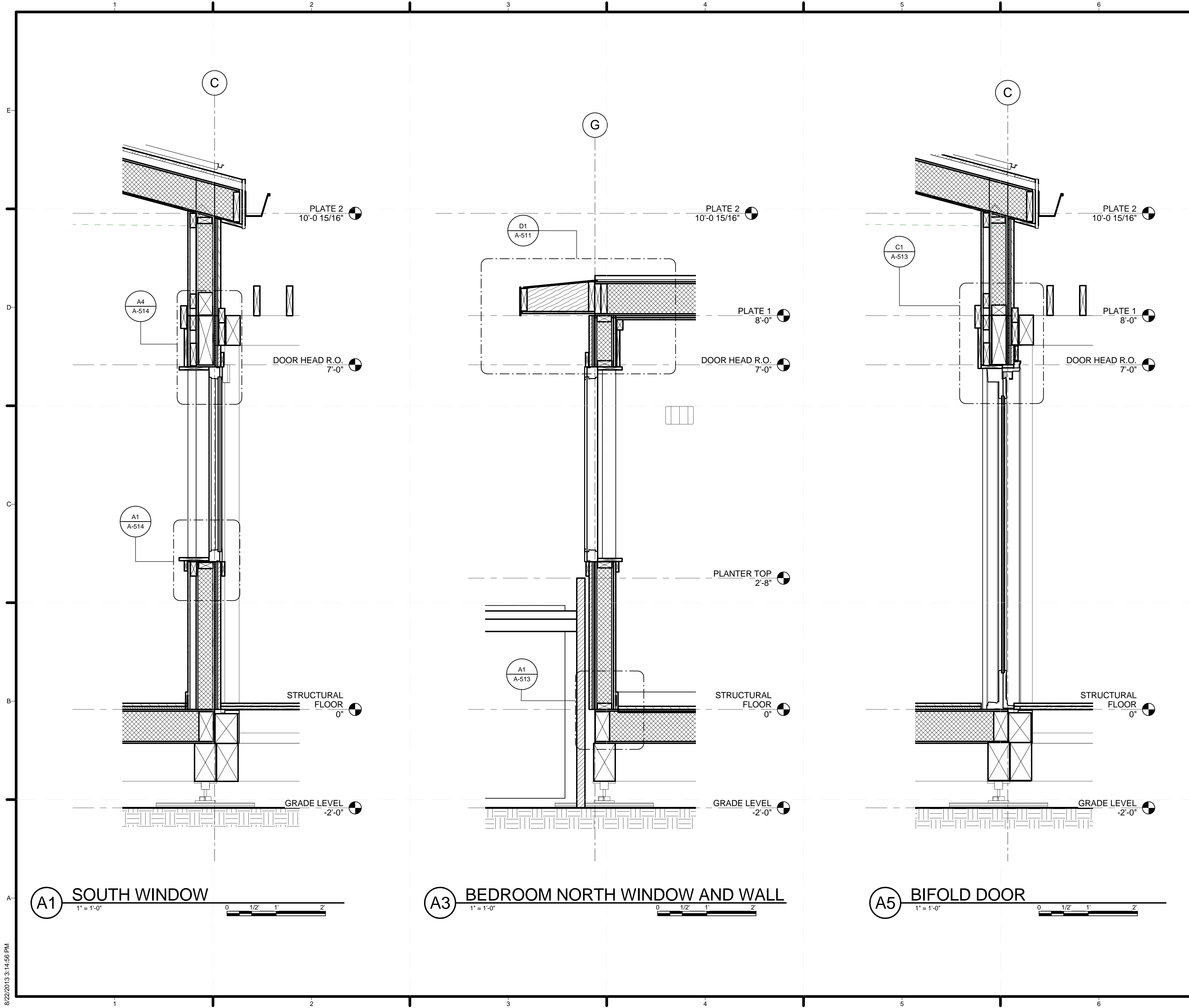
WALL SECTIONS

A-312

A1 CLERESTORY/CORE (EAST)
 1" = 1'-0"



8/22/2013 3:14:53 PM



GENERAL SHEET NOTES																			
REFERENCE KEYNOTES																			
SHEET KEYNOTES																			
<table border="1"> <tr> <th>MK</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>		MK	DATE	DESCRIPTION															
MK	DATE	DESCRIPTION																	
<table border="1"> <tr> <td>CLIENT</td> <td>U.S. DEPARTMENT OF ENERGY SOLAR DECATHLON 2013 WWW.SOLARDECATHLON.GOV</td> </tr> <tr> <td>U.S. DEPARTMENT OF ENERGY</td> <td></td> </tr> <tr> <td>01</td> <td>10/11/2012 80% DOE/NREL DD SUBMISSION</td> </tr> <tr> <td>02</td> <td>11/20/2012 80% DOE/NREL RE-SUBMISSION</td> </tr> <tr> <td>03</td> <td>02/14/2013 100% DOE/NREL CD SUBMISSION</td> </tr> <tr> <td>04</td> <td>04/05/2013 100% DOE/NREL CD RE-SUBMISSION</td> </tr> <tr> <td>05</td> <td>08/22/2013 100% AS-BUILT SUBMISSION</td> </tr> </table>		CLIENT	U.S. DEPARTMENT OF ENERGY SOLAR DECATHLON 2013 WWW.SOLARDECATHLON.GOV	U.S. DEPARTMENT OF ENERGY		01	10/11/2012 80% DOE/NREL DD SUBMISSION	02	11/20/2012 80% DOE/NREL RE-SUBMISSION	03	02/14/2013 100% DOE/NREL CD SUBMISSION	04	04/05/2013 100% DOE/NREL CD RE-SUBMISSION	05	08/22/2013 100% AS-BUILT SUBMISSION				
CLIENT	U.S. DEPARTMENT OF ENERGY SOLAR DECATHLON 2013 WWW.SOLARDECATHLON.GOV																		
U.S. DEPARTMENT OF ENERGY																			
01	10/11/2012 80% DOE/NREL DD SUBMISSION																		
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04	04/05/2013 100% DOE/NREL CD RE-SUBMISSION																		
05	08/22/2013 100% AS-BUILT SUBMISSION																		
<table border="1"> <tr> <td>LOT NUMBER:</td> <td>104</td> </tr> <tr> <td>DRAWN BY:</td> <td>JACOB SCHAFFERT</td> </tr> <tr> <td>CHECKED BY:</td> <td>DEREK OUYANG</td> </tr> <tr> <td>COPYRIGHT:</td> <td>NONE: PROJECT IS PUBLIC DOMAIN</td> </tr> </table>		LOT NUMBER:	104	DRAWN BY:	JACOB SCHAFFERT	CHECKED BY:	DEREK OUYANG	COPYRIGHT:	NONE: PROJECT IS PUBLIC DOMAIN										
LOT NUMBER:	104																		
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SHEET TITLE																			
WALL SECTIONS																			
A-313																			

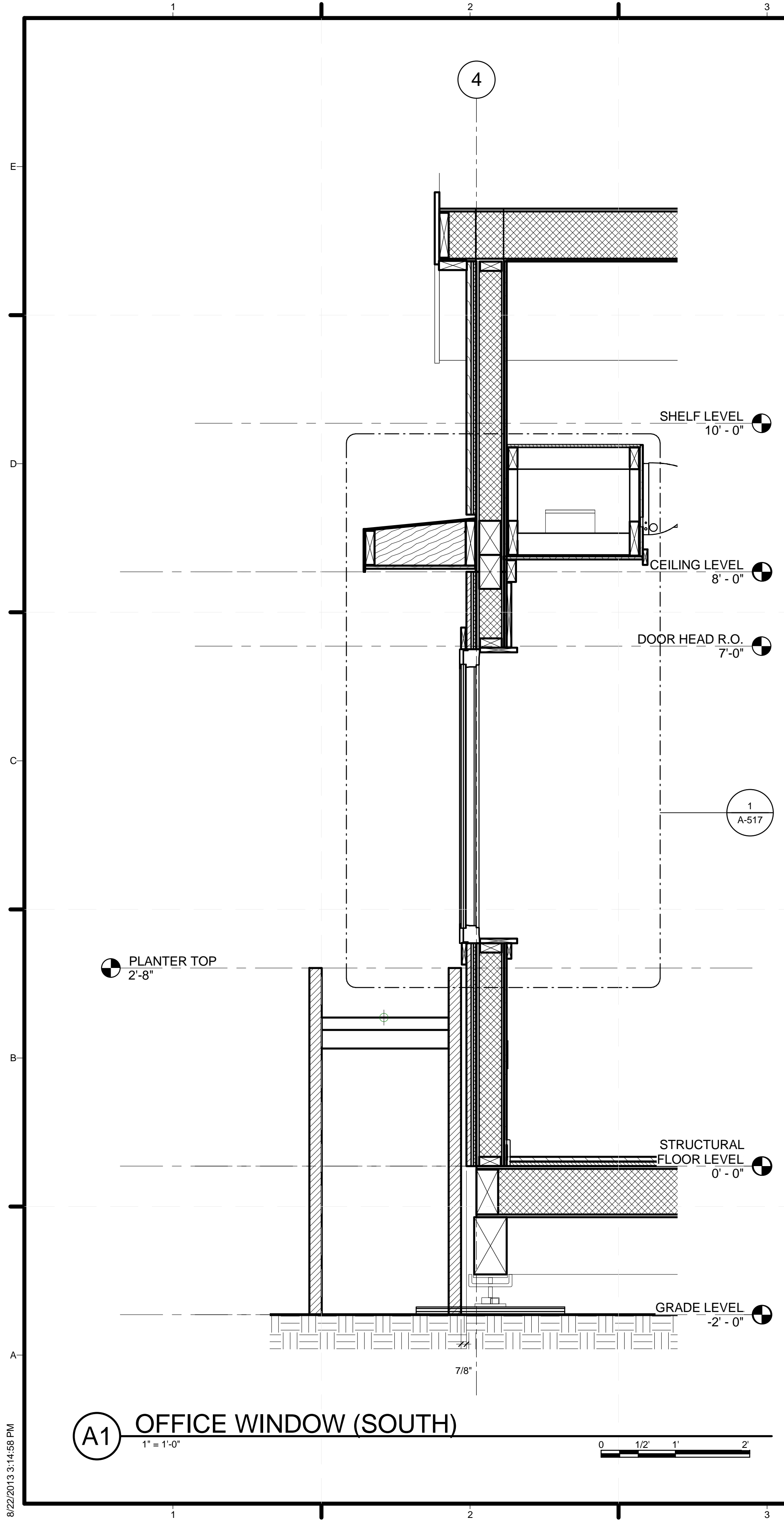


TEAM NAME: STANFORD UNIVERSITY
 ADDRESS: Y2E2 BUILDING RM 254
 273 VIA ORTEGA
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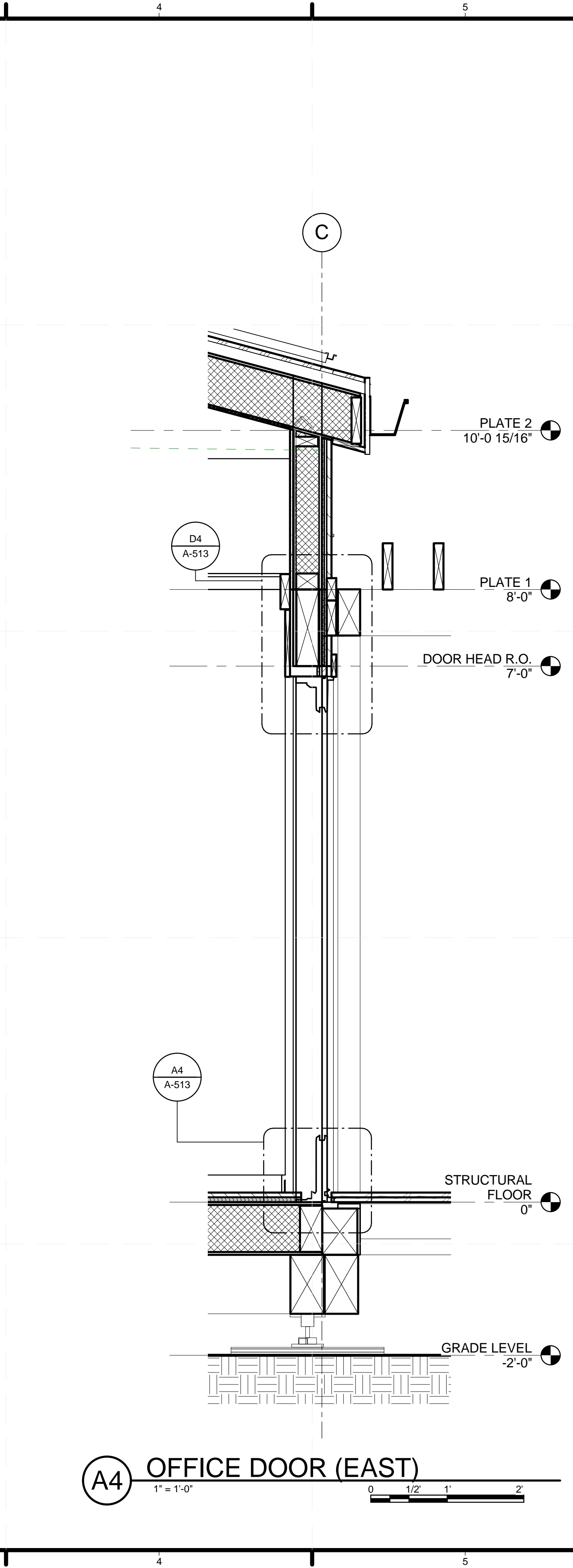
U.S. DEPARTMENT OF ENERGY
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(A1) OFFICE WINDOW (SOUTH)
1" = 1'-0"

8/22/2013 3:14:58 PM



(A4) OFFICE DOOR (EAST)
1" = 1'-0"

GENERAL SHEET NOTES

REFERENCE KEYNOTES

SHEET KEYNOTES



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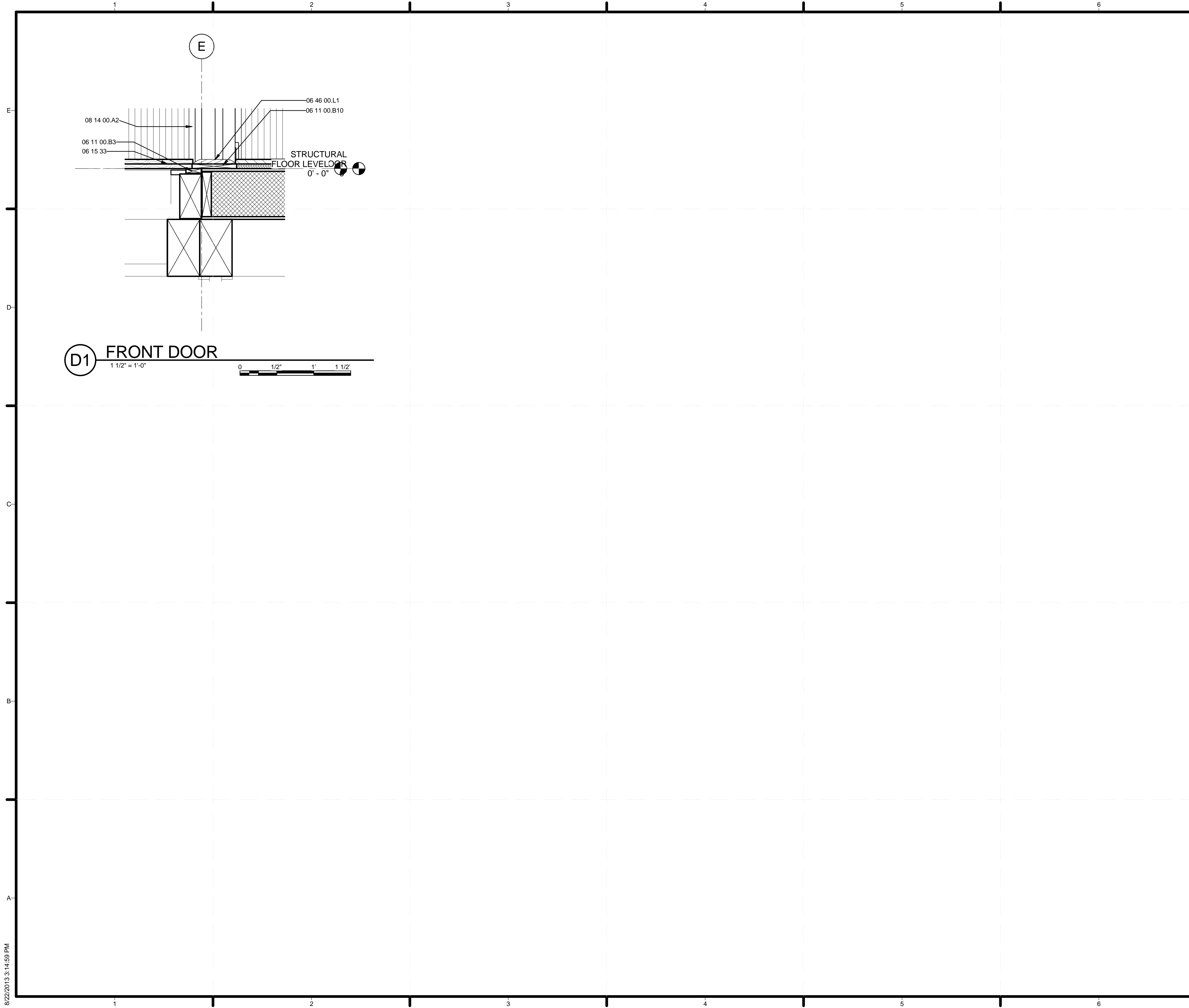
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03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
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MK	DATE	DESCRIPTION

SHEET TITLE

WALL SECTIONS

A-314



GENERAL SHEET NOTES

REFERENCE KEYNOTES

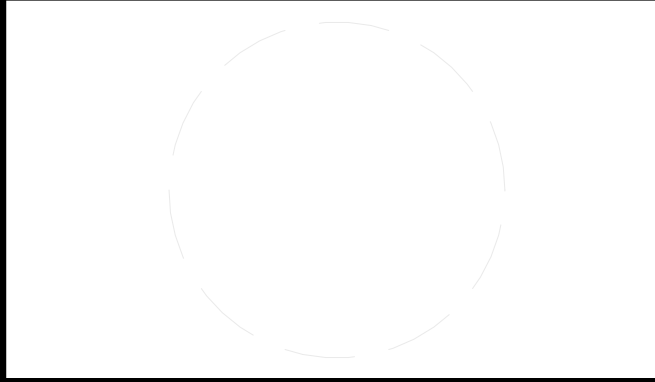
06 11 00.B3	1X3
06 11 00.B10	1X8
06 15 33	WOOD PATIO DECKING
06 46 00.L1	5/8" X 3 5/8" THRESHOLD
08 14 00.A2	1 3/4" SOLID CORE DOOR

SHEET KEYNOTES



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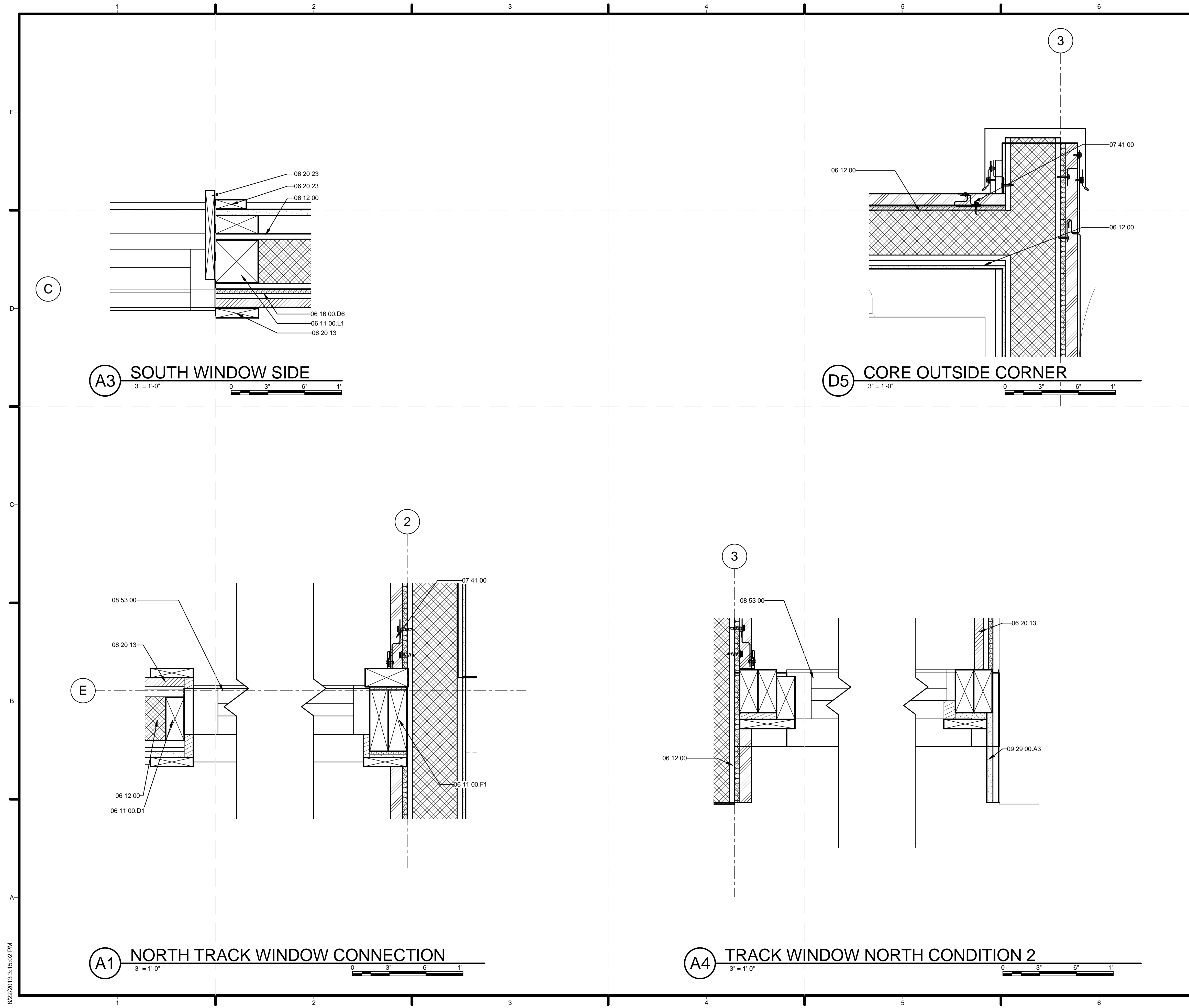
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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION
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SHEET TITLE
FLOOR SECTIONS

A-321



GENERAL SHEET NOTES

REFERENCE KEYNOTES

06 05 23	WOOD, PLASTIC, AND COMPOSITE FASTENINGS
06 11 00.D1	2X4
06 11 00.F1	2X6
06 11 00.L1	4X4
06 12 00	STRUCTURAL PANELS
06 16 00.D6	1/2" PLYWOOD
06 20 13	EXTERIOR FINISH CARPENTRY
06 20 23	INTERIOR FINISH CARPENTRY
07 41 00	ROOF PANELS
08 53 00	PLASTIC WINDOWS
09 29 00.A3	1/2" GYPSUM WALLBOARD

SHEET KEYNOTES



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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

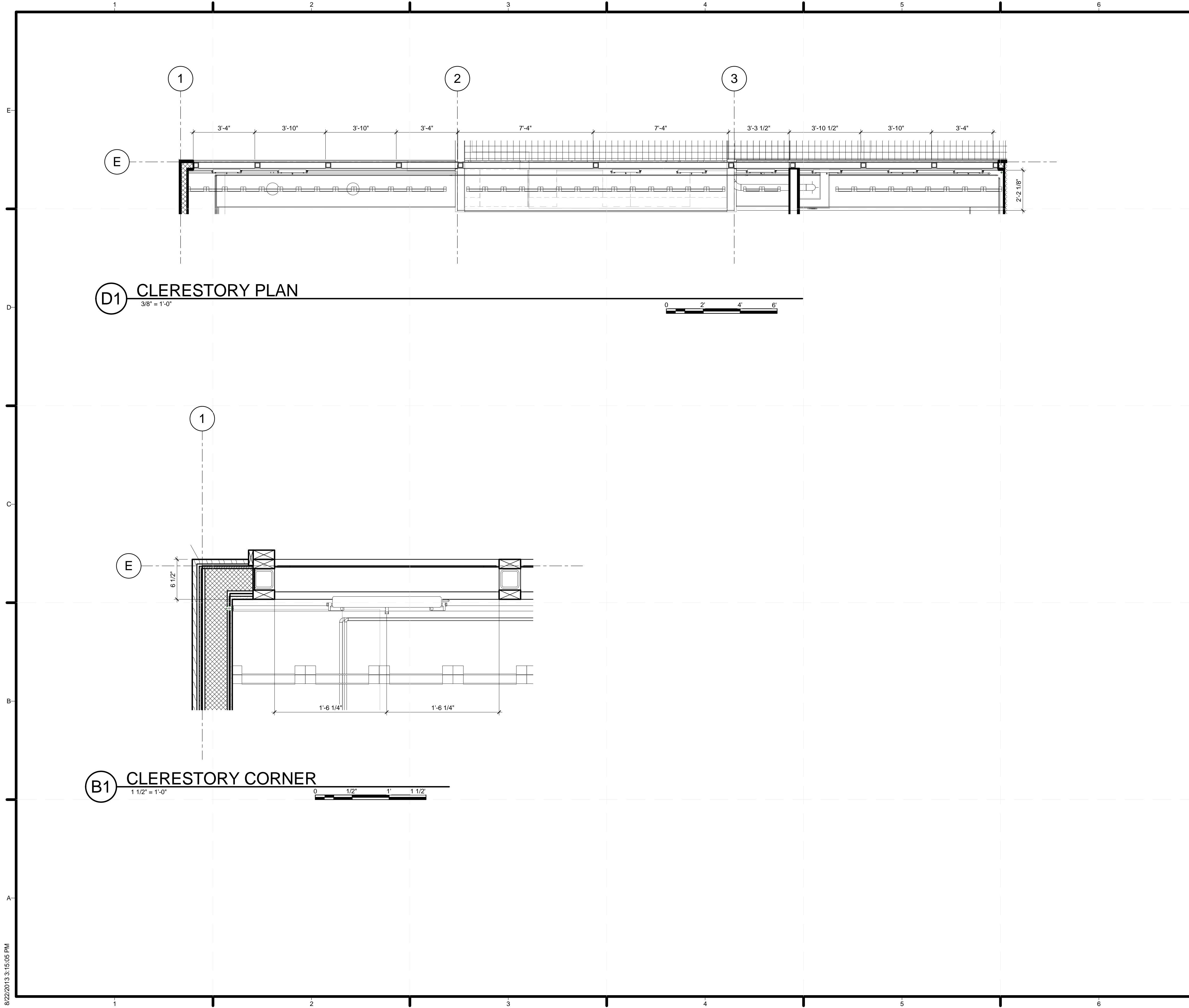
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LOT NUMBER: 104
 DRAWN BY: JACOB SCHAFFERT
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SHEET TITLE
 PLAN DETAILS

A-501

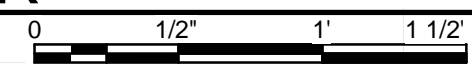
8/22/2013 3:15:02 PM



D1 CLERESTORY PLAN
3/8" = 1'-0"



B1 CLERESTORY CORNER
1 1/2" = 1'-0"



GENERAL SHEET NOTES

REFERENCE KEYNOTES

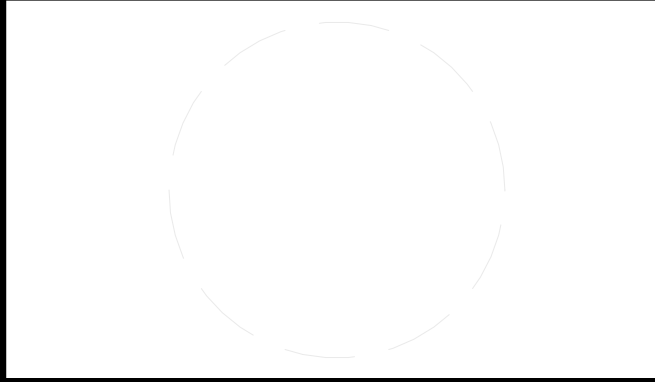
06 11 00.B3 1X3

SHEET KEYNOTES



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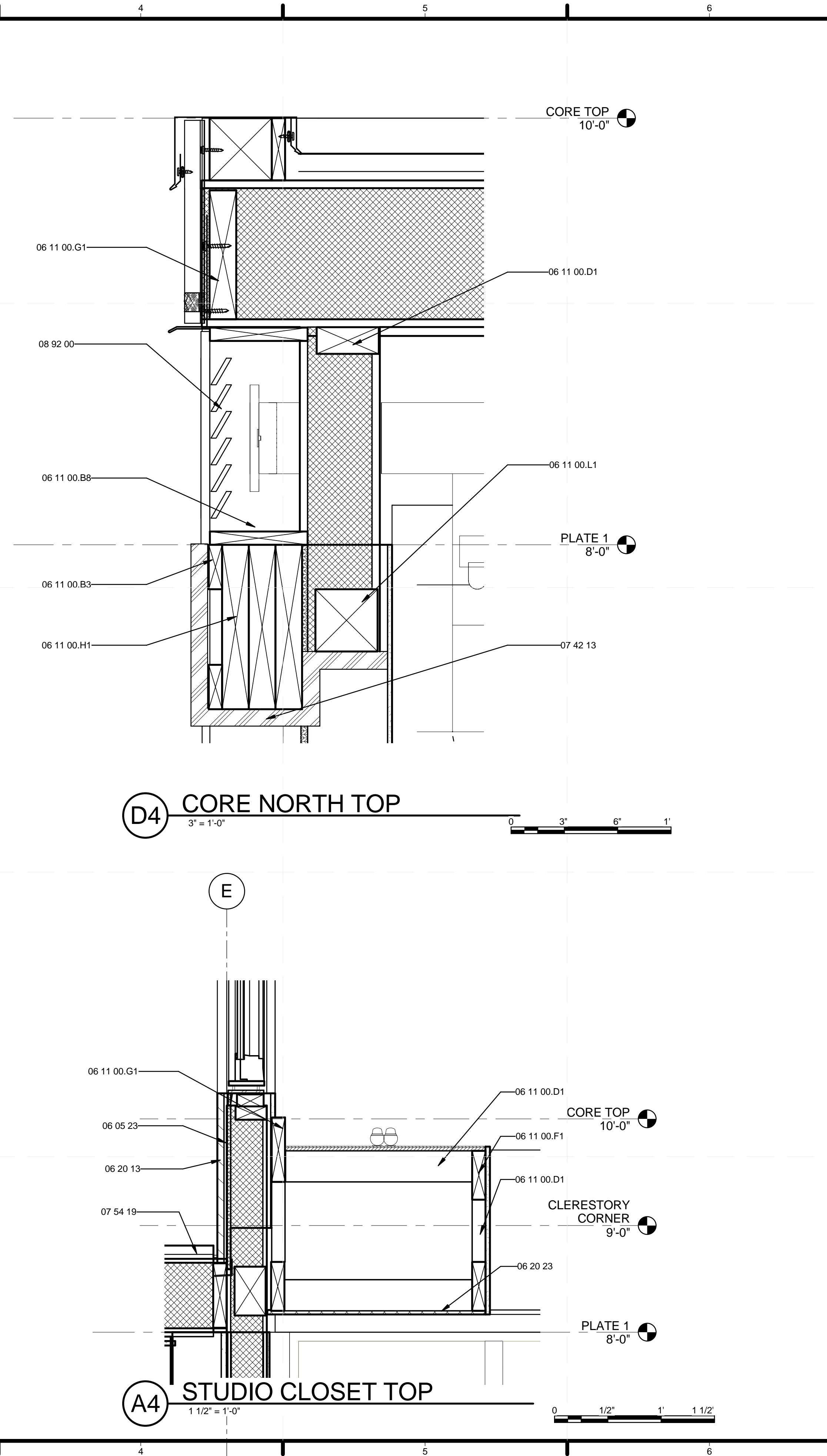
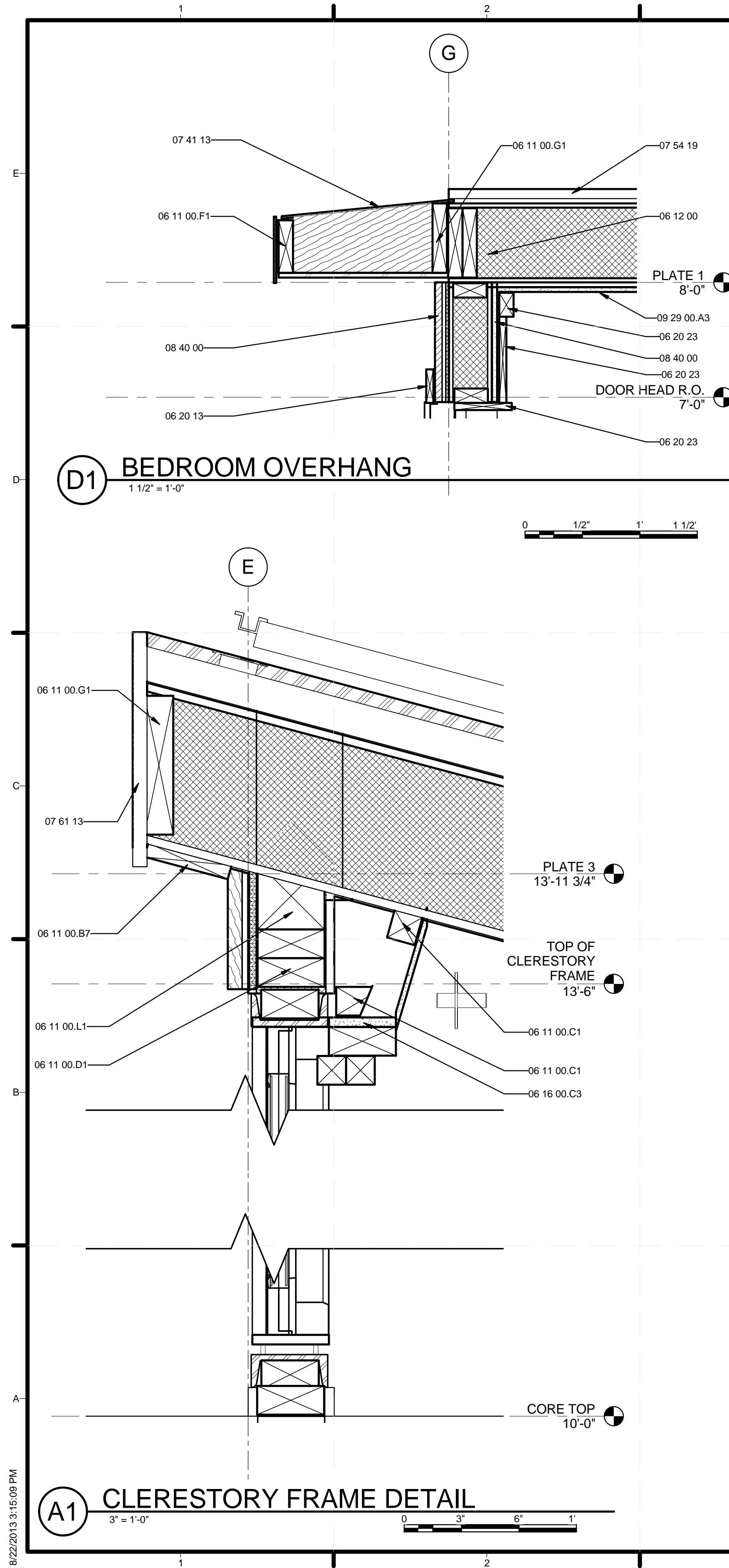
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MK	DATE	DESCRIPTION
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SHEET TITLE
 CLERESTORY PLAN
 DETAILS

A-503



GENERAL SHEET NOTES

REFERENCE KEYNOTES

06 05 23	WOOD, PLASTIC, AND COMPOSITE FASTENINGS
06 11 00.B3	1X3
06 11 00.B7	1X5
06 11 00.B8	1X6
06 11 00.C1	2X3
06 11 00.D1	2X4
06 11 00.F1	2X6
06 11 00.G1	2X8
06 11 00.H1	2X10
06 11 00.L1	4X4
06 12 00	STRUCTURAL PANELS
06 16 00.C3	1/2" PARTICLEBOARD
06 20 13	EXTERIOR FINISH CARPENTRY
06 20 23	INTERIOR FINISH CARPENTRY
07 41 13	METAL ROOF PANELS
07 42 13	METAL WALL PANELS
07 54 19	POLYVINYL-CHLORIDE ROOFING
07 61 13	STANDING SEAM SHEET METAL ROOFING
08 40 00	ENTRANCES, STOREFRONTS, AND CURTAIN WALLS
08 92 00	LOUVERED EQUIPMENT ENCLOSURES
09 29 00.A3	1/2" GYPSUM WALLBOARD

SHEET KEYNOTES

TEAM NAME: STANFORD UNIVERSITY
 ADDRESS: Y2E2 BUILDING RM 254
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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

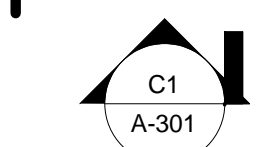
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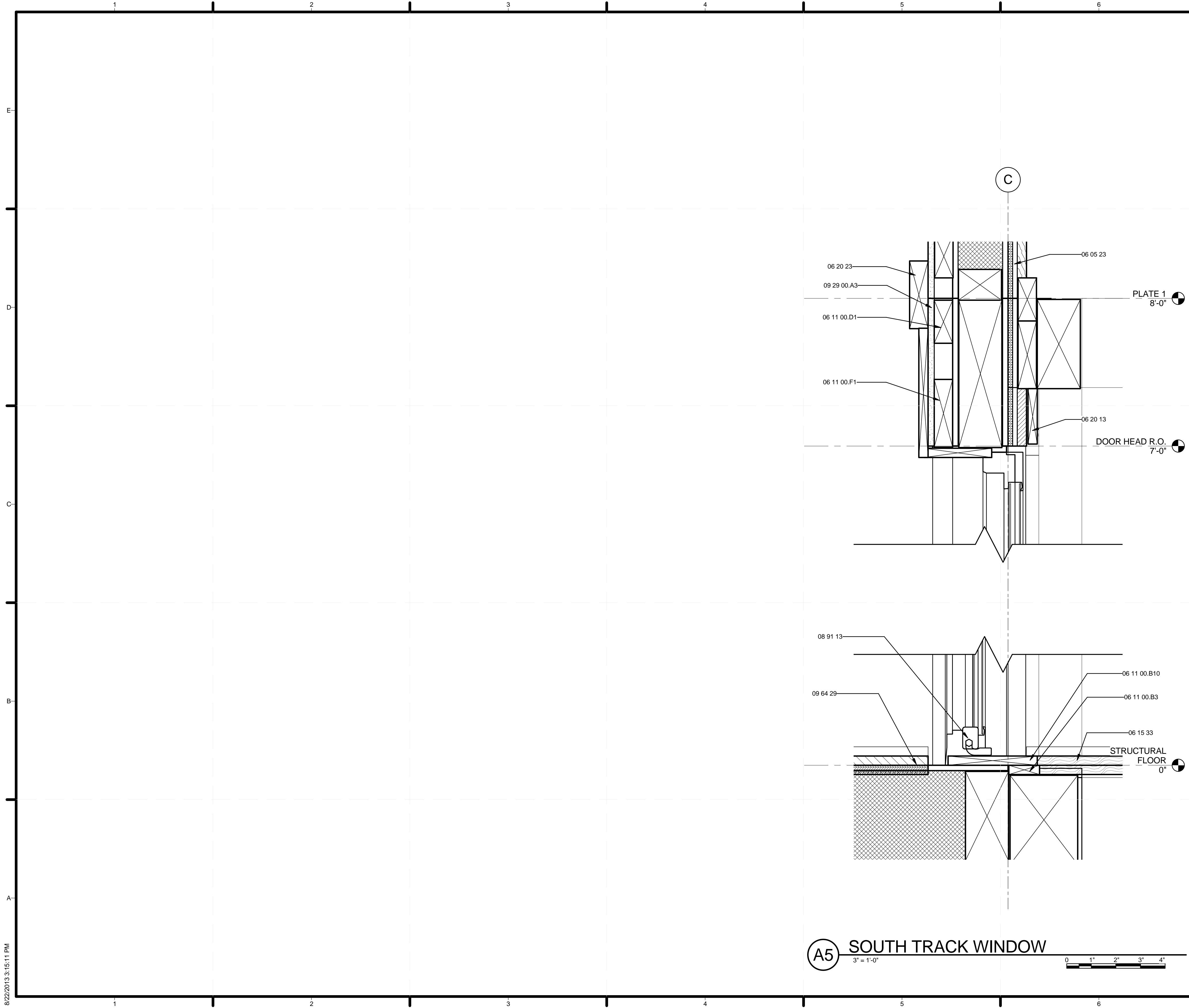
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A-511

8/22/2013 3:15:09 PM





GENERAL SHEET NOTES

REFERENCE KEYNOTES

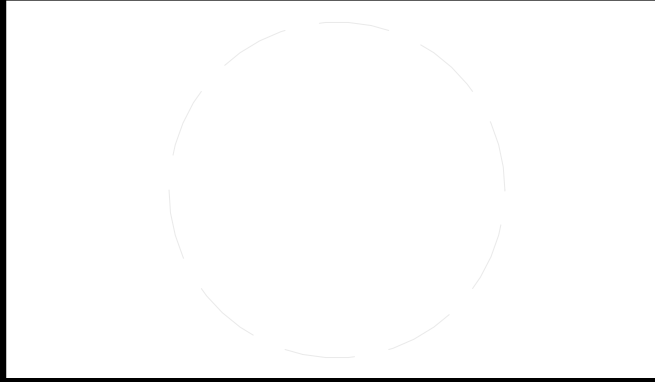
06 05 23	WOOD, PLASTIC, AND COMPOSITE FASTENINGS
06 11 00.B3	1X3
06 11 00.B10	1X8
06 11 00.D1	2X4
06 11 00.F1	2X6
06 15 33	WOOD PATIO DECKING
06 20 13	EXTERIOR FINISH CARPENTRY
06 20 23	INTERIOR FINISH CARPENTRY
08 91 13	MOTORIZED WALL LOUVERS
09 29 00.A3	1/2" GYPSUM WALLBOARD
09 64 29	WOOD STRIP AND PLANK FLOORING

SHEET KEYNOTES



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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

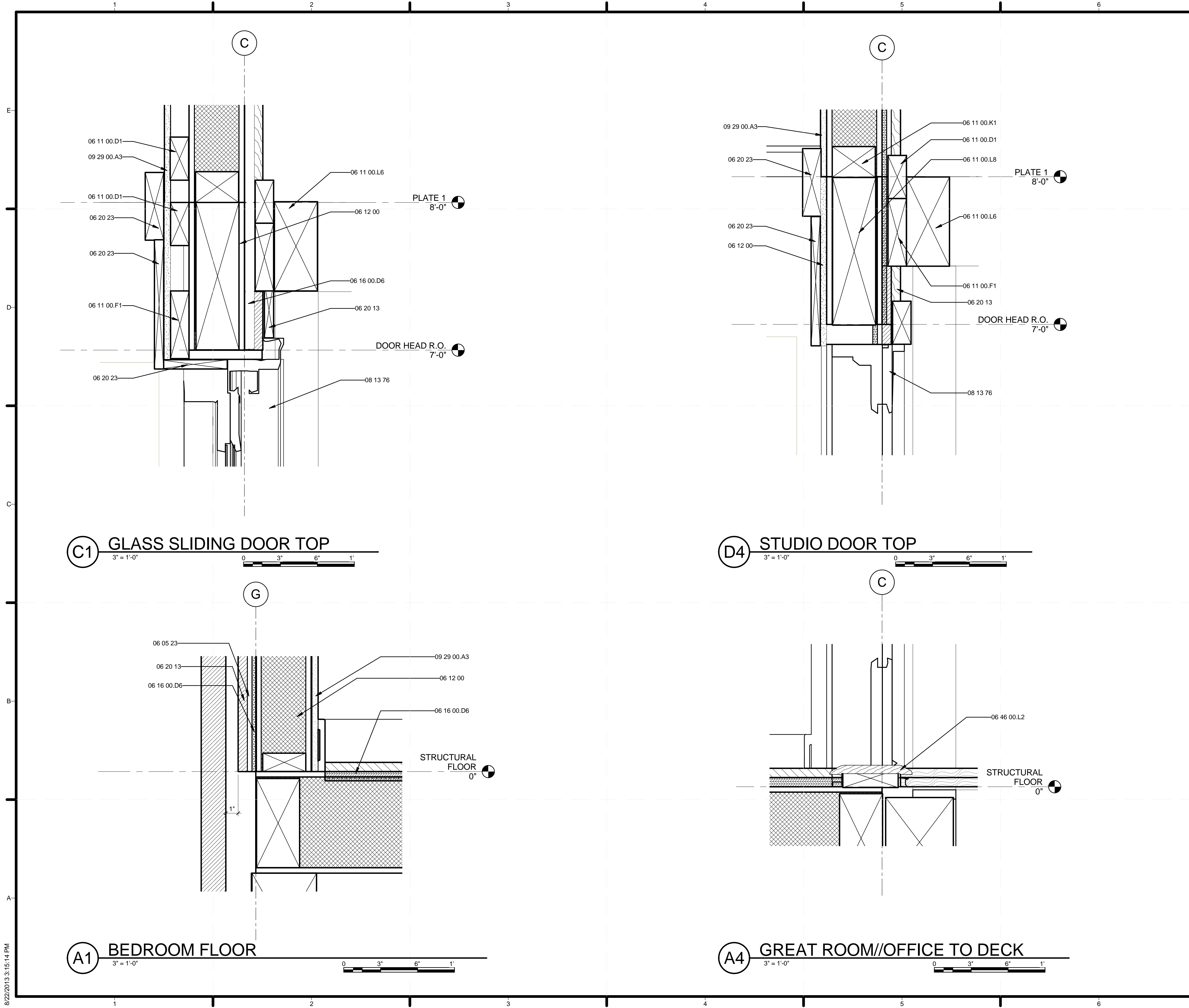
MK	DATE	DESCRIPTION

SHEET TITLE
 SECTION DETAILS

A-512

(A5) SOUTH TRACK WINDOW
 3" = 1'-0"

8/22/2013 3:15:11 PM



GENERAL SHEET NOTES

REFERENCE KEYNOTES

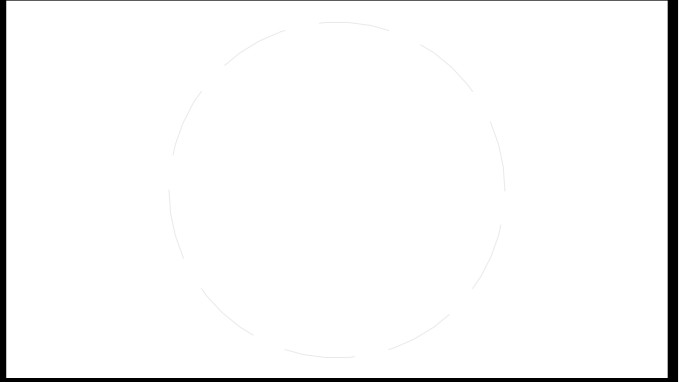
06 05 23	WOOD, PLASTIC, AND COMPOSITE FASTENINGS
06 11 00.D1	2X4
06 11 00.F1	2X6
06 11 00.K1	3X4
06 11 00.L6	4X8 BEAM
06 11 00.L8	4X12 BEAM
06 12 00	STRUCTURAL PANELS
06 16 00.D6	1/2" PLYWOOD
06 20 13	EXTERIOR FINISH CARPENTRY
06 20 23	INTERIOR FINISH CARPENTRY
06 46 00.J0	BASE
06 46 00.L2	5/8" X 4 5/8" THRESHOLD
08 13 76	BIFOLDING METAL DOORS
09 29 00.A3	1/2" GYPSUM WALLBOARD

SHEET KEYNOTES



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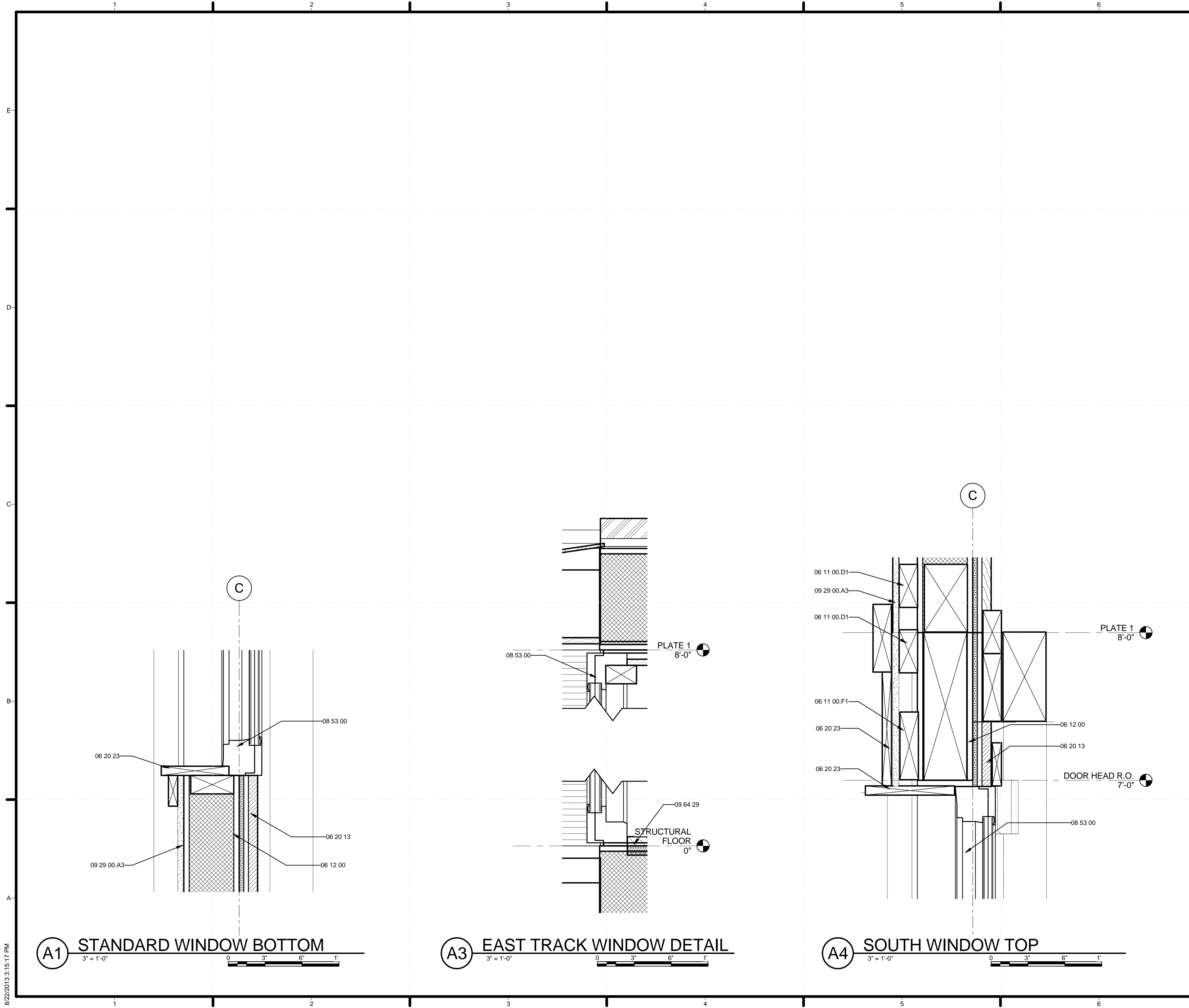
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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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A-513



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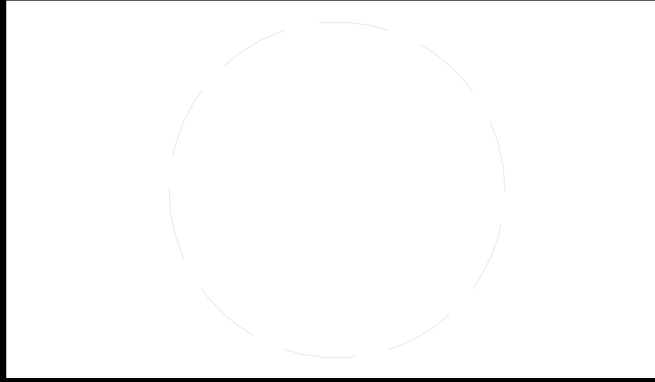
06 11 00.D1	2X4
06 11 00.F1	2X6
06 12 00	STRUCTURAL PANELS
06 20 13	EXTERIOR FINISH CARPENTRY
06 20 23	INTERIOR FINISH CARPENTRY
08 53 00	PLASTIC WINDOWS
09 29 00.A3	1/2" GYPSUM WALLBOARD
09 64 29	WOOD STRIP AND PLANK FLOORING

SHEET KEYNOTES



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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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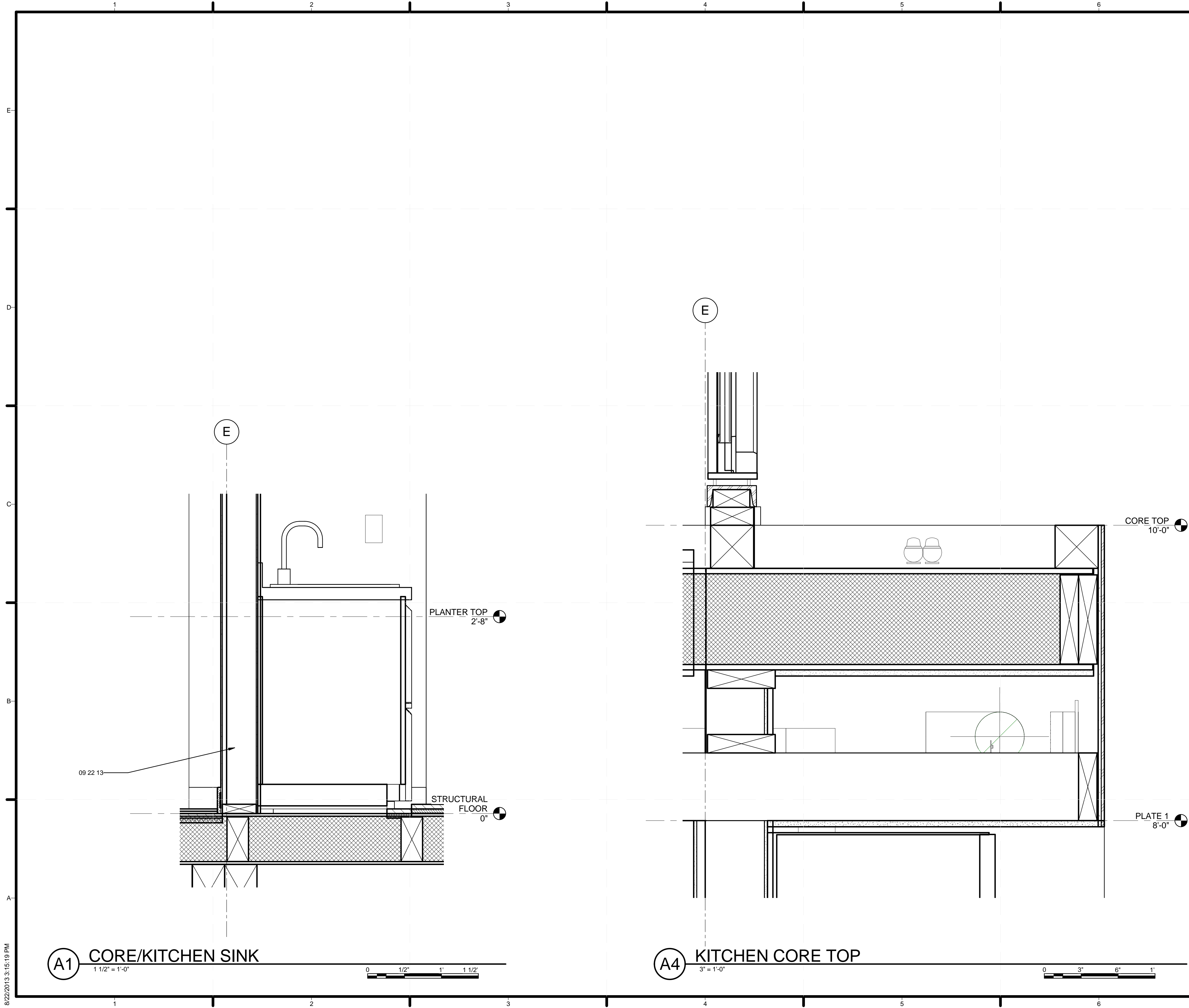
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A-514

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GENERAL SHEET NOTES

REFERENCE KEYNOTES

09 22 13 METAL FURRING

SHEET KEYNOTES



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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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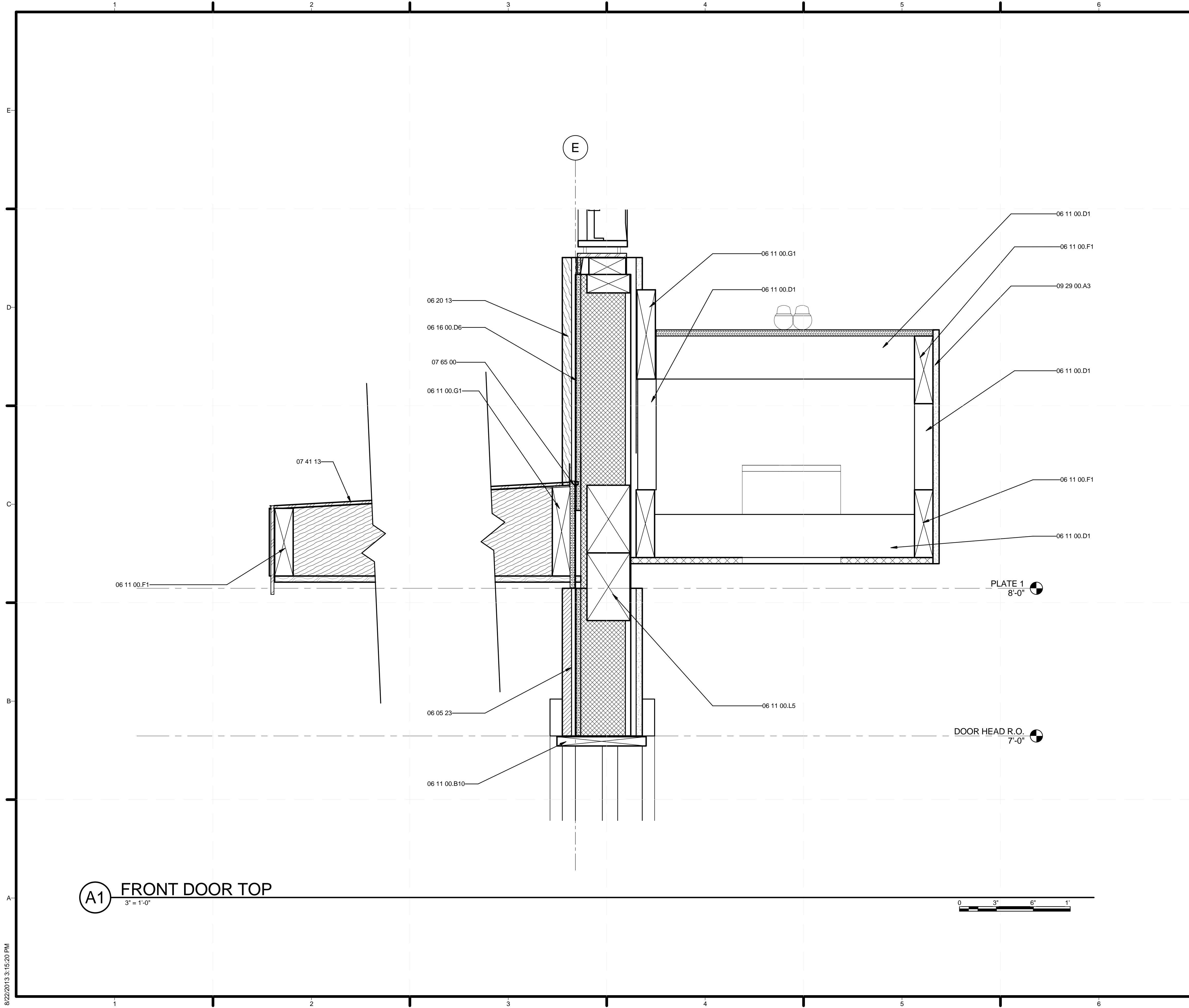
SECTION DETAILS

A-515

8/22/2013 3:15:19 PM

A1 CORE/KITCHEN SINK
 1 1/2" = 1'-0"
 0 1/2" 1' 1 1/2"

A4 KITCHEN CORE TOP
 3" = 1'-0"
 0 3' 6" 1'



GENERAL SHEET NOTES

REFERENCE KEYNOTES

06 05 23	WOOD, PLASTIC, AND COMPOSITE FASTENINGS
06 11 00.B10	1X8
06 11 00.D1	2X4
06 11 00.F1	2X6
06 11 00.G1	2X8
06 11 00.L5	4X6 BEAM
06 16 00.D6	1/2" PLYWOOD
06 20 13	EXTERIOR FINISH CARPENTRY
07 41 00	ROOF PANELS
07 41 13	METAL ROOF PANELS
07 65 00	FLEXIBLE FLASHING
09 29 00.A3	1/2" GYPSUM WALLBOARD

SHEET KEYNOTES



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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
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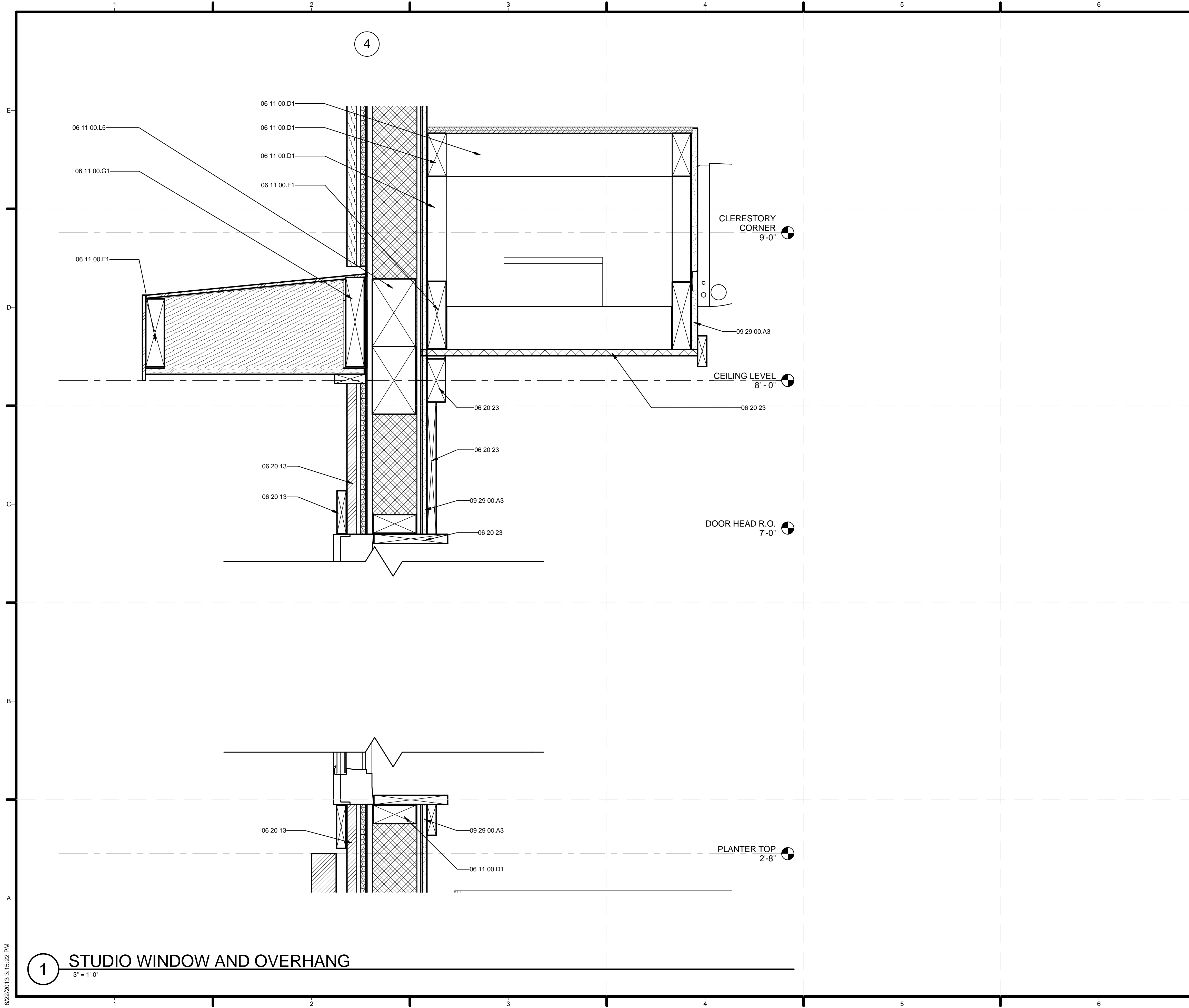
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SHEET TITLE
 SECTION DETAILS

A-516

8/22/2013 3:15:20 PM




GENERAL SHEET NOTES

REFERENCE KEYNOTES

06 11 00.D1	2X4
06 11 00.F1	2X6
06 11 00.G1	2X8
06 11 00.L5	4X6 BEAM
06 20 13	EXTERIOR FINISH CARPENTRY
06 20 23	INTERIOR FINISH CARPENTRY
09 29 00.A3	1/2" GYPSUM WALLBOARD

SHEET KEYNOTES




start.home

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03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION

LOT NUMBER: 104
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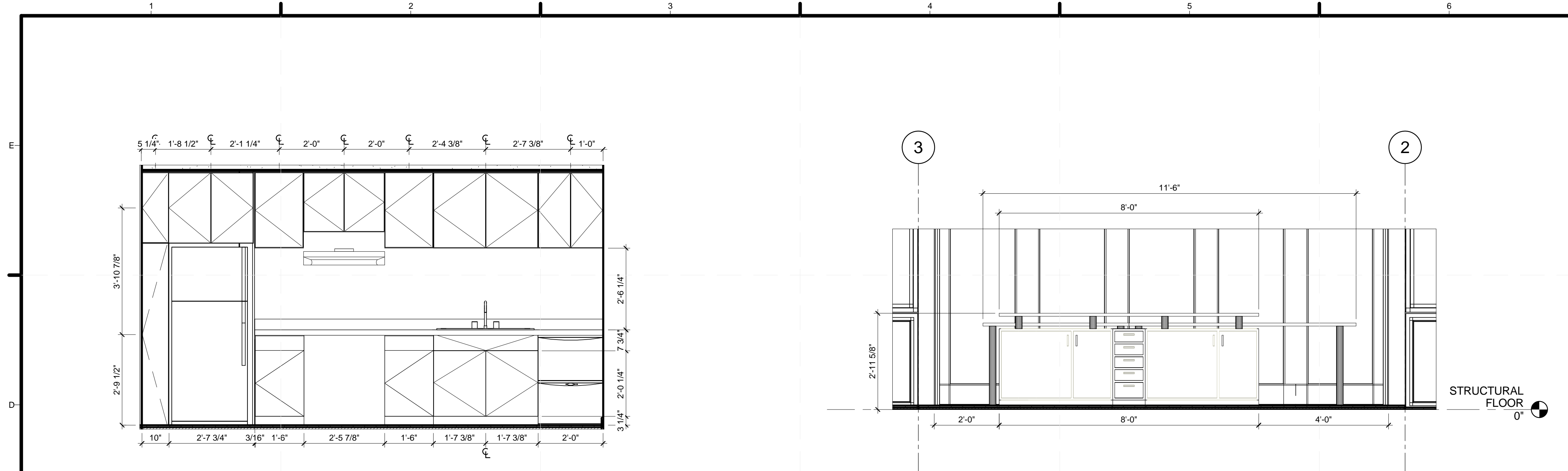
SHEET TITLE

SECTION DETAILS

A-517

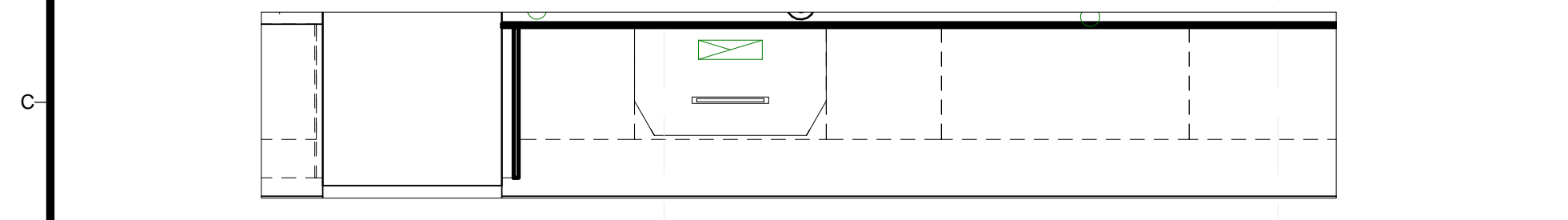
1 STUDIO WINDOW AND OVERHANG
 3" = 1'-0"

8/22/2013 3:15:22 PM

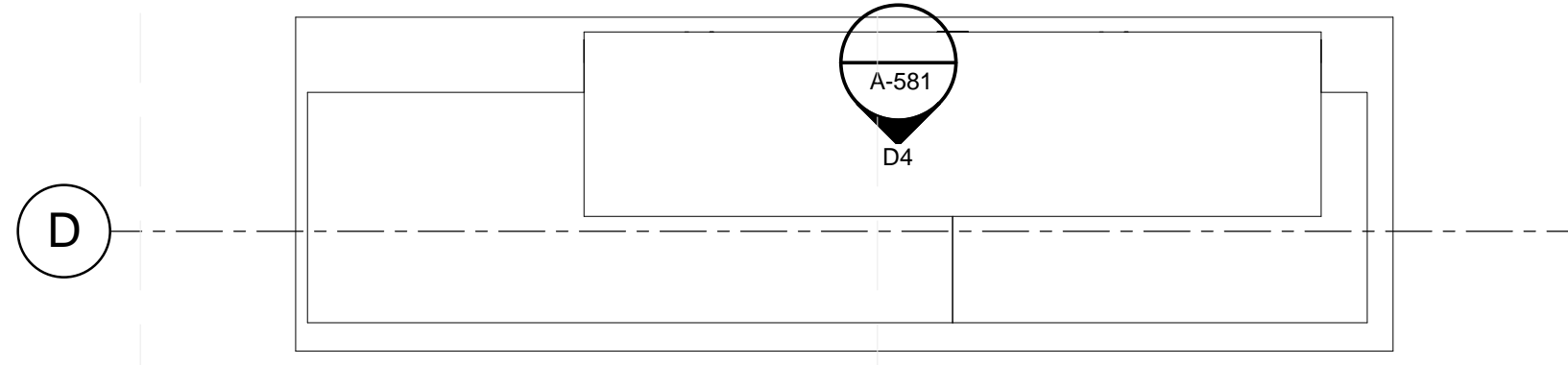


D1 CALLOUT OF KITCHEN CABINETS
1/2" = 1'-0"

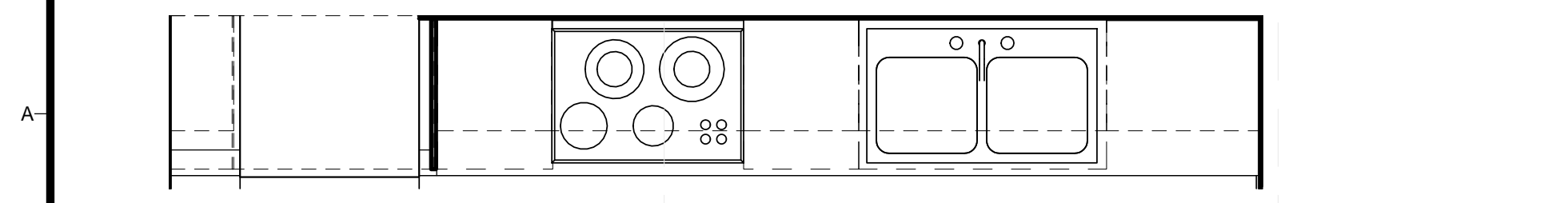
D4 ISLAND ELEVATION
1/2" = 1'-0"



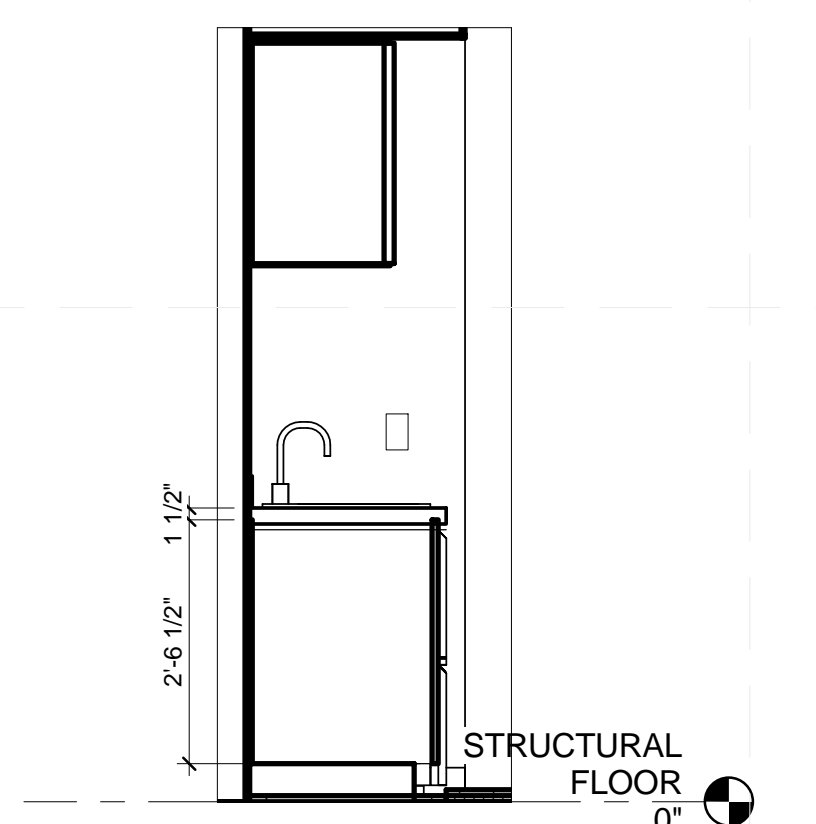
C1 UPPER CASEWORK PLAN
1/2" = 1'-0"



C4 ISLAND PLAN
1/2" = 1'-0"



A1 BASE CASEWORK PLAN
1/2" = 1'-0"



A4 CASEWORK SECTION
1/2" = 1'-0"

GENERAL SHEET NOTES

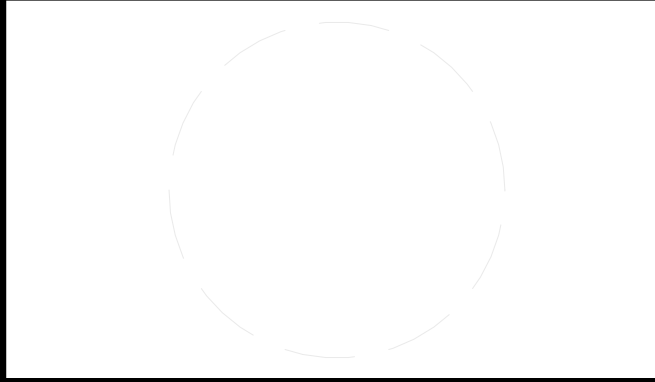
REFERENCE KEYNOTES

SHEET KEYNOTES



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03	02/14/2013	100% DOE/NREL CD SUBMISSION
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CASEWORK DETAILS

A-581

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DOOR SCHEDULE																	
MARK	DR TYPE	DR SIZE	MANUFACTURER	MODEL	Count	Area	FRAME TYPE	FIRE RATING	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	DESCRIPTI ON	FINISH DOOR	FINISH FRAME	FINISH COMPONENTS	Width	Height
221JJ	69	34" x 80"			1	21 SF										3'-0"	6'-10 1/4"
221KK	68	36" x 80"			1	21 SF										3'-0"	7'-0"
221LL	101	Andersen Type	Andersen Windows	Outswing Folding Patio Door - Arc Basic Unit	1	97 SF										13'-11 1/4"	6'-11 1/4"
221MM	102	Andersen Type	Andersen Windows	A Series Door - A Outswing Unit	1	22 SF										3'-2 1/8"	6'-10 3/8"
221OO	69	34" x 80"			1	21 SF										3'-0"	6'-10 1/4"
221S	73	72" x 80"			1	40 SF										6'-0"	6'-8"

INTERIOR FLOOR SCHEDULE	
Name	Area
BATHROOM	84 SF
BEDROOM	138 SF
CLOSET	15 SF
STUDIO	154 SF
GREAT ROOM	475 SF
Grand total: 5	865 SF

WINDOW SCHEDULE				
MARK	ROUGH OPENING		TYPE	Count
	WIDTH	HEIGHT		
93	2'-11 1/2"	2'-11 1/2"	AW-100-OW-RC001-3030	1
97	5'-11 1/2"	3'-11 1/2"	AW-100-OW-CW001-3040-2	2
98	4'-11 1/2"	3'-11 1/2"	AW-100-OW-CW001-2640-2	1
99	3'-5 1/2"	2'-11 1/2"	AW-100-OW-AN001-3630	3
102	2'-11 1/2"	2'-11 1/2"	AW-100-OW-AN001-3030	5
103	3'-5 1/2"	2'-11 1/2"	AW-100-OW-RC001-3630	5
105	2'-11 1/2"	3'-11 1/2"	AW-100-OW-RC001-3040	2
106	2'-11 1/2"	3'-11 1/2"	AW-100-OW-CW001-3040	1
107	2'-5 1/2"	7'-11 1/2"	AW-100-OW-RC001-2680	2

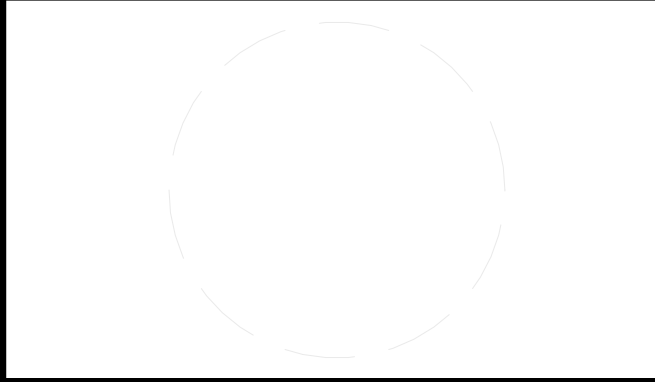
FLOOR SCHEDULE						
Family and Type	Count	MANUFACTURER	COMMENTS	Area	MARK	DESCRIPTI ON
Floor: core deck threshold				5 SF		
Floor: core deck threshold	1					
Floor: core deck threshold: 1						
Floor: decking				639 SF		
Floor: decking	1					
Floor: decking	1			329 SF		
Floor: decking	1			17 SF		
Floor: decking	1			45 SF		
Floor: decking	1			45 SF		
Floor: decking: 5						
Floor: Fire Suppression Eyebrow				21 SF		
Floor: Fire Suppression Eyebrow	1					
Floor: Fire Suppression Eyebrow: 1						
Floor: FLOORING INTERIOR SIPS CORE Mech and Other MODULE 8 1/4" 3				27 SF		
Floor: FLOORING INTERIOR SIPS CORE Mech and Other MODULE 8 1/4" 3	1					
Floor: FLOORING INTERIOR SIPS CORE Mech and Other MODULE 8 1/4" 3: 1						
Floor: FLOORING INTERIOR SIPS CORE MODULE 8 1/4" 2				67 SF		
Floor: FLOORING INTERIOR SIPS CORE MODULE 8 1/4" 2	1					
Floor: FLOORING INTERIOR SIPS CORE MODULE 8 1/4" 2: 1						
Floor: grass				326 SF		
Floor: grass	1					
Floor: grass	1			287 SF		
Floor: grass	1			65 SF		
Floor: grass: 3						
Floor: Interior Finish Floor				156 SF		
Floor: Interior Finish Floor	1					
Floor: Interior Finish Floor	1			5 SF		
Floor: Interior Finish Floor	1			502 SF		
Floor: Interior Finish Floor	1			13 SF		
Floor: Interior Finish Floor	1			42 SF		
Floor: Interior Finish Floor	1			42 SF		
Floor: Interior Finish Floor	1			69 SF		
Floor: Interior Finish Floor: 7						
Floor: Underhang Underside				149 SF		
Floor: Underhang Underside	1					
Floor: Underhang Underside: 1						
Grand total: 20						

DOCUMENTATION DOOR SCHEDULE													
MARK	DR TYPE	DR SIZE	MANUFACTURER	MODEL	Count	Area	DETAILS JAMB	DETAILS SILL	FINISH DOOR	Width	Height		
221JJ	69	34" x 80"			1	21 SF				3'-0"	6'-10 1/4"		
221JJ					1								
221KK	68	36" x 80"			1	21 SF				3'-0"	7'-0"		
221KK					1								
221LL	101	Andersen Type	Andersen Windows	Outswing Folding Patio Door - Arc Basic Unit	1	97 SF				13'-11 1/4"	6'-11 1/4"		
221LL					1								
221MM	102	Andersen Type	Andersen Windows	A Series Door - A Outswing Unit	1	22 SF				3'-2 1/8"	6'-10 3/8"		
221MM					1								
221OO	69	34" x 80"			1	21 SF				3'-0"	6'-10 1/4"		
221OO					1								
221S	73	72" x 80"			1	40 SF				6'-0"	6'-8"		
221S					1								
Grand total: 6													



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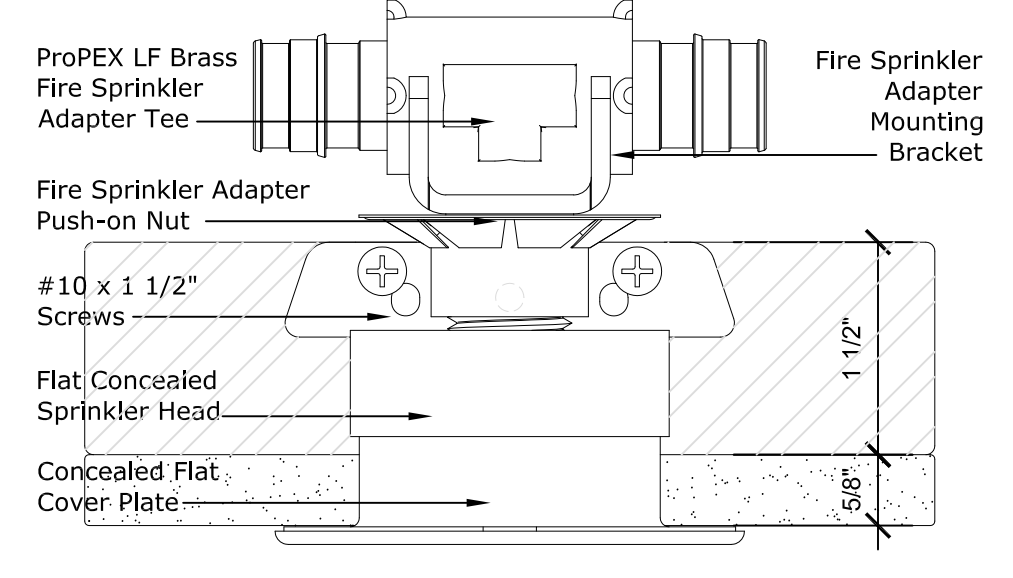
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- THE DESIGN OF THIS SYSTEM IS DICTATED BY SPECIFIC CEILING HEIGHTS AND ROOM SIZES. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT THE CONDITIONS SHOWN ON THESE PLANS ARE EXACTLY AS THEY EXIST IN THE FIELD. DEVIATIONS FROM THE DESIGN MAY CAUSE THE SYSTEM TO BE UNABLE TO CONTROL A FIRE. IF THE BUILDING CONSTRUCTION DIFFERS FROM THE FIRE SPRINKLER PLAN, CONTACT THE SYSTEM DESIGNER IMMEDIATELY.
- ALL PIPING, FIXTURES, FITTINGS AND SPRINKLER HEADS MUST COMPLY WITH THE LEAD FREE REQUIREMENTS OF AB1953. ALL OF THE ABOVE NOTED ITEMS ARE NOT PERMITTED TO EXCEED 0.25% LEAD CONTENT. IF THESE REQUIREMENTS ARE NOT ABLE TO BE MET WITH THE CURRENTLY UTILIZED MATERIAL A SEPARATE PIPE FEEDING ALL POTABLE WATER FIXTURES MUST BE INSTALLED AND SEPARATED FROM THE NON AB1953 COMPLIANT MATERIAL.
- "STAND ALONE" OR "MULTI-PURPOSE, WET PIPE" SYSTEMS ARE NOT PERMITTED TO USE ANTI-FREEZE, 2010 CRC R313.3.1
- THE SYSTEM DESIGNED FOR THIS HOUSE IS A WET-TYPE MULTI-PURPOSE FIRE SPRINKLER SYSTEM.
- SYSTEM MUST COMPLY WITH NFPA 13D, OR R313.3, WHICH IS CONSIDERED TO BE EQUIVALENT.
- MODIFICATIONS ARE PROHIBITED. SPRINKLERS THAT HAVE BEEN PAINTED, CAULKED, MODIFIED OR DAMAGED MUST BE REPLACED, 2010 CRC R313.3.2.6
- WATER SHUT OFF VALVE IS NOT PERMITTED, 2010 CRC R313.3.3.2
- OWNERS MANUAL MUST BE PROVIDED TO THE OWNER, 2010 CRC R313.3.7
- AT THE MAIN SHUT OFF VALVE, A TAG OR A SIGN STATING THE FOLLOWING IS REQUIRED; "WARNING, THE WATER SYSTEM FOR THIS HOME SUPPLIES FIRE SPRINKLERS THAT REQUIRE CERTAIN FLOWS AND PRESSURES TO FIGHT A FIRE. DEVICES THAT RESTRICT THE FLOW OR DECREASE THE PRESSURE OR AUTOMATICALLY SHUT OFF THE WATER TO THE FIRE SPRINKLER SYSTEM, SUCH AS WATER SOFTENERS, FILTRATION SYSTEMS AND AUTOMATIC SHUT OFF VALVES, **SHALL NOT** BE ADDED TO THIS SYSTEM WITHOUT REVIEW OF THE FIRE SPRINKLER SYSTEM BY A FIRE PROTECTION SPECIALIST. **DO NOT REMOVE THIS SIGN**" 2010 CRC R313.3.7
- ALL INTERIOR PIPING TO BE UPONOR WIRSB0 "AQUAPEX" UNLESS NOTED.
- UPONOR WIRSB0 "AQUAPEX" TUBING TO BE SUPPORTED PER NFPA 13D AND MANUFACTURER'S RECOMMENDATIONS.
- MINIMUM SPACING BETWEEN SPRINKLERS IS 8'-0" REFER TO SPACING CHARTS FOR MAXIMUM SPACING BETWEEN SPRINKLERS AND FROM WALLS.
- SPRINKLERS ARE NOT NECESSARILY CENTERED IN ROOMS DUE TO LIGHT FIXTURES OR OTHER CEILING MOUNTED OBSTRUCTIONS.
- THE PLUMBING TIE IN CONNECTIONS ARE SCHEMATIC IN NATURE AND CAN BE INSTALLED OFF THE SPRINKLER LOOP ANYWHERE BETWEEN SPRINKLER TO SPRINKLER CONNECTION.
- THIS SUGGESTED LAYOUT IS BASED UPON INFORMATION PROVIDED BY OTHERS. CHANGES IN CONSTRUCTION OR FIELD CONDITIONS MAY OCCUR WHICH MAY REQUIRE CHANGES TO THE LAYOUT. IT IS THE RESPONSIBILITY OF THE INSTALLER TO NOTIFY UPONOR TECHNICAL SERVICES OF SUCH CHANGES.
- INSULATION GUIDE LINES PER NFPA 13D
 - 8.3.1* WET PIPE SYSTEMS. A WET PIPE SYSTEM SHALL BE PERMITTED TO BE TO BE USED WHERE ALL PIPING IS INSTALLED IN AREAS MAINTAINED ABOVE 40°F, INCLUDING AREAS PROPERLY INSULATED TO MAINTAIN 40°F.
 - A.8.3.1 IN AREAS SUBJECT TO FREEZING, CARE SHOULD BE TAKEN IN UNHEATED ATTIC SPACES TO COVER SPRINKLER PIPING COMPLETELY WITH INSULATION. INSTALLATION SHOULD FOLLOW THE GUIDELINES OF THE INSULATION MANUFACTURER. FIGURE A.8.3.1(A) THROUGH FIGURE A.8.3.1(E) SHOW SEVERAL METHODS THAT CAN BE CONSIDERED. (SEE 2010 CRC R313.3.2.3 FOR CA REQUIRMENTS)
- NFPA 13D 8.6 LOCATION OF SPRINKLERS
 - 8.6.1 SPRINKLERS SHALL BE INSTALLED IN ALL AREAS EXCEPT WHERE OMISSION IS PERMITTED BY 8.6.2 THROUGH 8.6.7.
 - 8.6.2 SPRINKLERS SHALL NOT BE REQUIRED IN BATHROOMS OF 55 FT² (5.1 M²) AND LESS
 - 8.6.3 SPRINKLERS SHALL NOT BE REQUIRED IN CLOTHES CLOSETS, LINEN CLOSETS, AND PANTRIES THAT MEET ALL OF THE FOLLOWING CONDITIONS:
 - THE AREA OF THE SPACE DOES NOT EXCEED 24 FT² (2.2 M²).
 - THE LEAST DIMENSION DOES NOT EXCEED 3 FT (0.9 M).
 - THE WALLS AND CEILINGS ARE SURFACED WITH NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE MATERIALS AS DEFINED IN NFPA 220, STANDARD ON TYPES OF BUILDING CONSTRUCTION.
 - 8.6.4* SPRINKLERS SHALL NOT BE REQUIRED IN GARAGES, OPEN ATTACHED PORCHES, CARPORTS, AND SIMILAR STRUCTURES
 - A.8.6.4 ALTHOUGH NFPA 13D DOES NOT REQUIRE GARAGES TO BE SPRINKLERED, SOME AUTHORITIES HAVING JURISDICTION TAKE IT UPON THEMSELVES TO ADD THIS REQUIREMENT LOCALLY. IN SUCH CIRCUMSTANCES, RESIDENTIAL OR QUICK-RESPONCE SPRINKLERS WITH A TWO-SPRINKLER DESIGN IN THE GARAGE WITH THE SAME PIPING USED IN THE REST OF THE DWELLING MAY BE USED. IT IS RECOGNIZED THAT RESIDENTIAL SPRINKLERS HAVE NOT BEEN TESTED SPECIFICALLY FOR FIRES IN GARAGES, BUT FIELD EXPERIENCE HAS SHOWN THAT THE SPRINKLERS HELP TO ALERT OCCUPANTS TO THE FACT THAT THERE IS A FIRE, CAN REDUCE THE POSSIBILITY OF FLASHOVER, AND CAN IMPROVE THE CHANCES FOR OCCUPANTS TO ESCAPE.
 - 8.6.5 SPRINKLERS SHALL NOT BE REQUIRED IN ATTICS, PENTHOUSE EQUIPMENT ROOMS, ELEVATOR MACHINE ROOMS, CONCEALED SPACES DEDICATED EXCLUSICELY TO AND CONTAINING ONLY DWELLING UNIT VENTILATION EQUIPMENT, FLOOR/CEILING SPACES, ELEVATOR SHAFTS CRAWL SPACES, AND OTHER CONCEALED SPACES THAT ARE NOT USED OR INTENDED FOR LIVING PURPOSES AND DO NOT CONTAIN FUEL-FIRED EQUIPMENT.
 - 8.6.6 SPRINKLERS SHALL NOT BE REQUIRED IN COVERED UNHEATED PROJECTIONS OF THE BUILDING AT ENTRANCES/EXITS AS LONG AS THERE IS ANOTHER MEANS OF EGRESS FROM THE DWELLING UNIT.
 - 8.6.7 SPRINKLERS SHALL NOT BE REQUIRED FOR CEILING POCKETS THAT MEET THE FOLLOWING CONDITIONS:
 - THE TOTAL VOLUME OF UNPROTECTED CEILING POCKET DOES NOT EXCEED 100 FT³ (2.83 M³).
 - THE ENTIRE FLOOR UNDER THE UNPROTECTED CEILING POCKET IS PROTECTED BY THE SPRINKLERS AT THE LOWER CEILING ELEVATION.
 - EACH UNPROTECTED CEILING POCKET IS SEPARATED FROM ANY ADJACENT UNPROTECTED CEILING POCKET BY A MINIMUM 10 FT (3.05 M) HORIZONTAL DISTANCE.
 - THE INTERIOR FINISH OF THE UNPROTECTED CEILING POCKET IS NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE MATERIAL.
 - SKYLIGHTS NOT EXCEEDING 32 FT² (2.97 M²) SHALL BE PERMITTED TO HAVE A PLASTIC COVER.

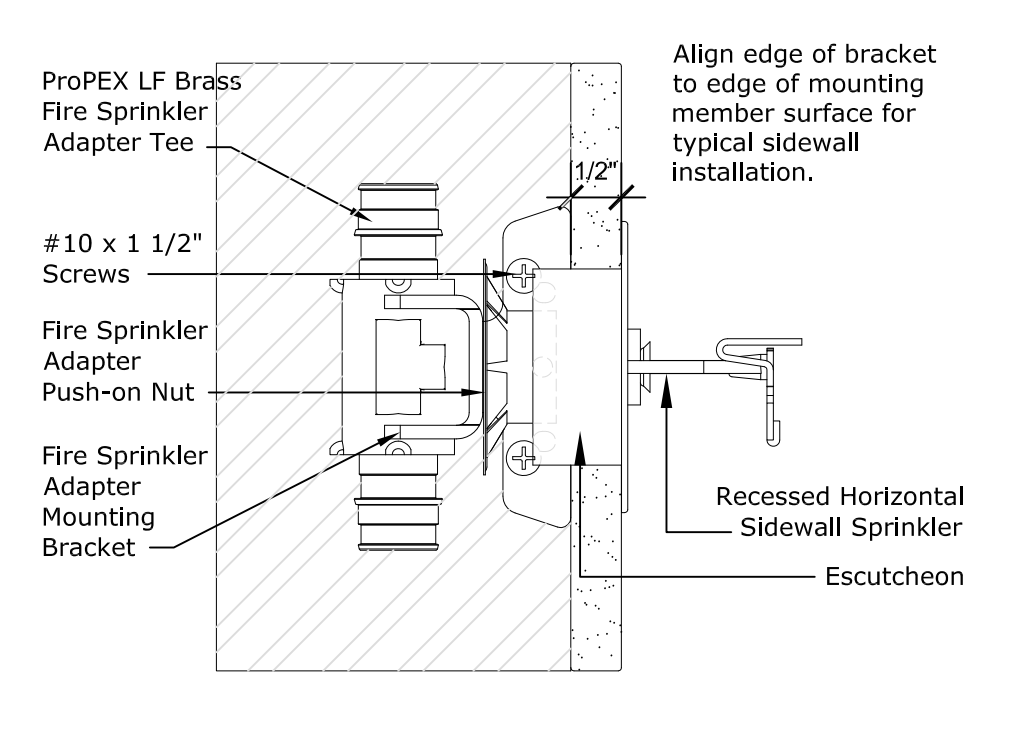
Flat Concealed Assembly Sprinkler Placement

Align top of fire sprinkler mounting bracket 1 1/2" from bottom of mounting member surface for typical Concealed installation. Use Bottom screw holes.

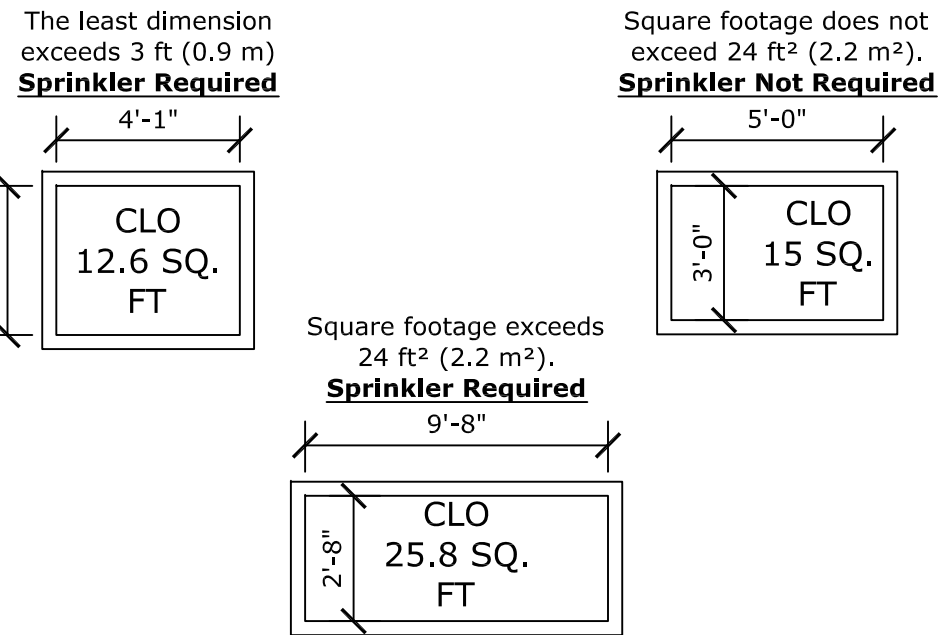


Caution: Do not paint over the sprinklers cover plates. Paint may interfere with the heat sensitivity of the sprinkler, and disturbances may damage the sprinkler.

Horizontal Sidewall Sprinkler Placement



See General Notes 8.6.3 for Closet Requirements



Insulation Recommendations

In areas subject to freezing, care should be taken in unheated attic spaces to cover Uponor AquaPEX tubing completely with insulation. Insulation should follow the guidelines of the insulation manufacturer. See Uponor Document "Uponor AquaSAFE Attic Insulation Guidelines" for attic installation guidelines (Provided in Contractors Documents package or online at www.Uponorpro.com).

Extreme Temperature Installations

AquaSAFE Residential Fire Safety systems are often installed in attics or other areas exposed to temperature extremes of heat and/or cold. Follow the recommended extreme weather installation instructions to isolate and protect system components from extreme temperatures. Because this system also delivers domestic cold water directly to plumbing fixtures, Uponor highly recommends that you protect the tubing with adequate insulation in warm weather areas to minimize heating of the cold water supply.

- Installation methods include, but are not limited to:
- Tenting over the fire sprinkler piping.
 - Additional layers of batt insulation.
 - Increased depth of blown-in insulation.

Caution: If you will be installing spray foam insulation, make sure to protect all components during application. Consult with the spray foam manufacturer to ensure compatibility with all products before application.

Consultation with local building officials is encouraged to ensure compliance with local building codes.

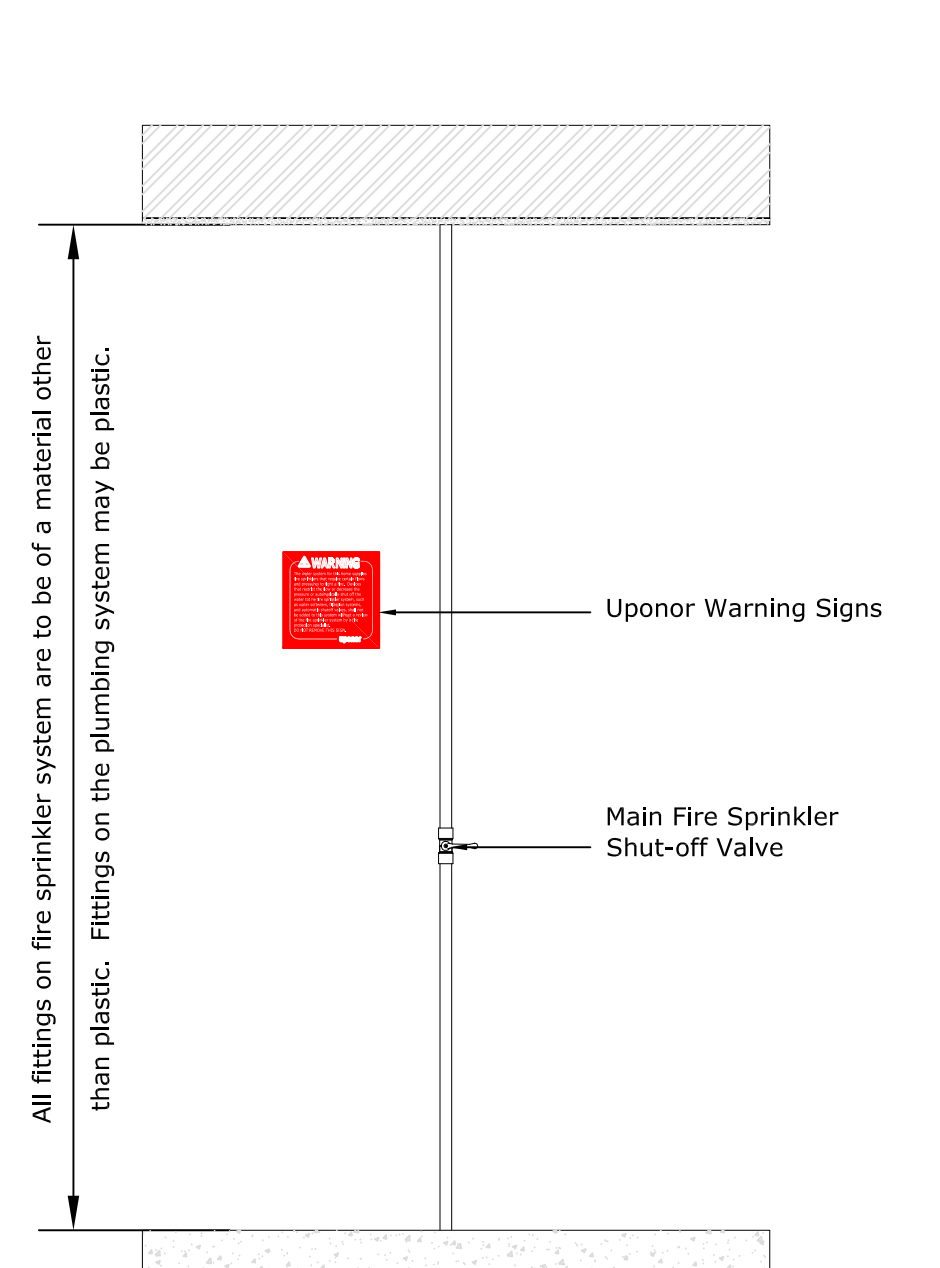
Bending PEX Tubing

The minimum bend radius of Uponor PEX tubing in any direction is six times the outside diameter (**6 x OD**). Bend supports are available for 3/8", 1/2", 3/4" and 1" Uponor AquaPEX tubing to facilitate 90-degree rigid bends.

Recommended Tubing Length Between Fittings	
Fitting Size	Minimum Tubing Length
3/8" ProPEX Fitting	2"
1/2" ProPEX Fitting	2 1/2"
3/4" ProPEX Fitting	3 1/2"
1" ProPEX Fitting	4 1/2"
1 1/4" ProPEX Fitting	5 1/2"

Standard Riser Assembly

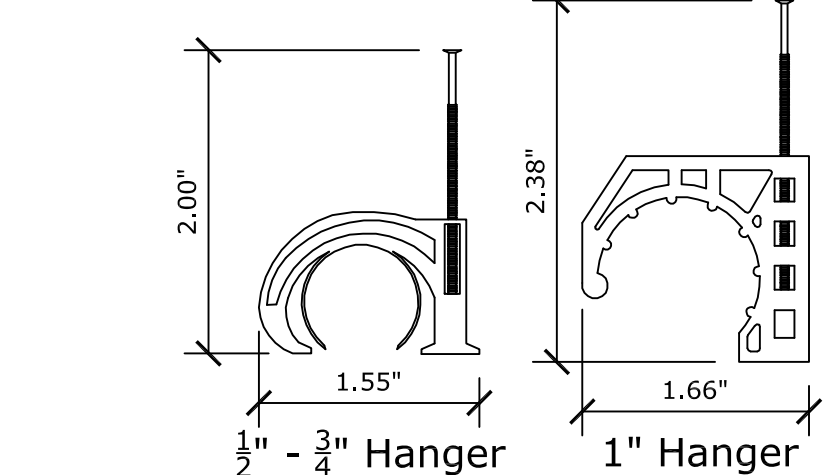
In a multi-purpose system a single control valve controls both domestic and fire safety needs.



Slope Guide			
Slope: Rise/Run	Pitch: Degrees	Slope: Rise/Run	Pitch: Degrees
0/12	0°	9/12	36.87°
1/12	4.76°	10/12	39.81°
2/12	9.46°	11/12	42.51°
3/12	14.04°	12/12	45°
4/12	18.43°	13/12	47.29°
5/12	22.62°	14/12	49.40°
6/12	26.57°	15/12	51.34°
7/12	30.26°	16/12	53.13°
8/12	33.69°	17/12	54.78°
		18/12	56.31°

NFPA 13D Table 7.5.5.3 Distances From Heat Sources

Heat Source	Ordinary Temp. 135°-170°	Intermediate Temp. 175°-225°
Side of Fireplace	36"	12"
Front of Fireplace	60"	36"
Wood Burning Stove	42"	12"
Kitchen Range	18"	9"
Wall Oven	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"
Furnace	6"	3"
50W-250W Light Fixture	6"	3"
250W-499W Light Fixture	12"	6"



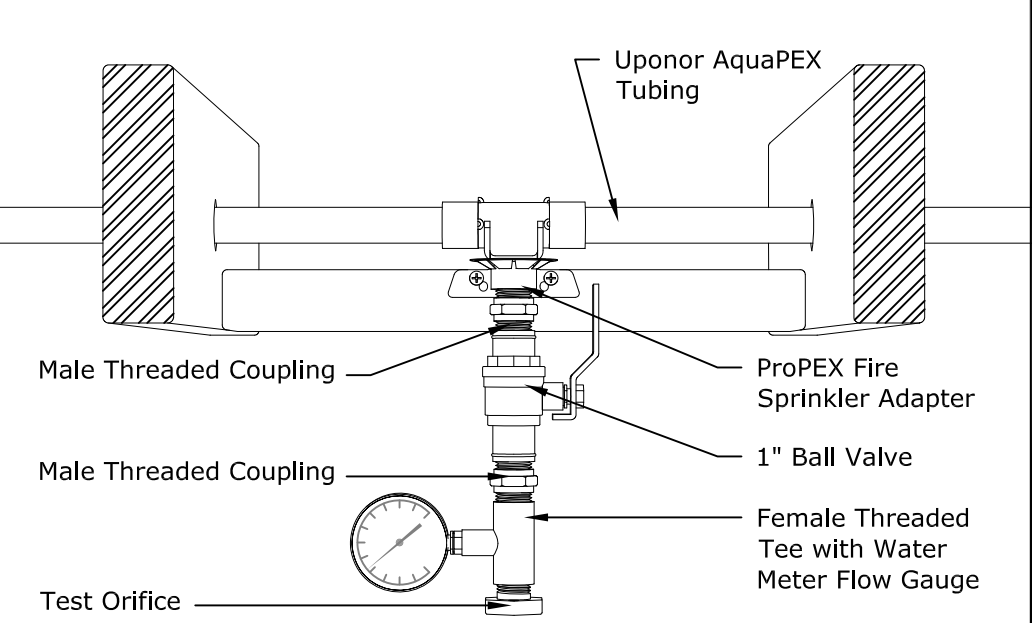
Tubing Support Spacing:

(Anchor AquaPEX Tubing Securely Enough to Support the Tubing, Yet Relaxed Enough to Allow the Tubing to Expand and Contract)

- Along Horizontal Runs, Install Supports Every 32", if Horizontal Runs are Continuously Supported, Place Tubing Supports at Six-Foot Intervals.
- Along Vertical Runs, Install Supports Every Four to Five Feet, at Each Floor and at a Mid-story Guide.

In-line Flow Test

The In-line 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.

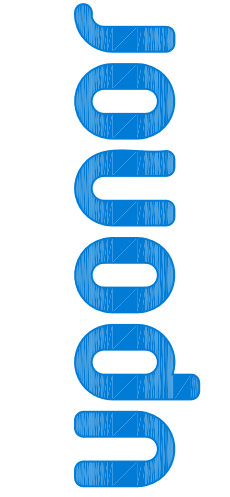
Note: The NFPA 13D Installation Standard does not require flow verification.

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 requirements on other sprinklers, consult your local code.

Note: It is a good idea to notify the fire inspector at least 24 hours prior to performing a flow verification test. This may speed up the inspection process and eliminate the need to repeat the test for the inspector.

Note: See "AquaSAFE Flow Test Instruction Sheet" (Provided in Contractors Documents package or online at www.Uponorpro.com) for more information on Flow Test Setup, Assembly, Performing the Test and Troubleshooting. If there are any questions please contact Uponor.



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EMAIL DESIGN.SERVICES@UPONOR.COM
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CA CONTRACTOR LICENCE #: #####



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WOODSIDE, CA 94062

DRAWN BY:	DAN HUBBARD SET IV	CONTACT PH. NUMBER:	626-246-8299
CHECKED BY:	MELISA RODRIGUEZ	ALLIANCE ID:	NA
CERTIFICATION LEVEL:	CET III	PLOT DATE:	8/22/2013
CERTIFICATION NUMBER:	118632	SHEET SCALE:	N.T.S.
COMPANY:	STANFORD	PROJECT NUMBER:	13045F
CONTACT:	DEREK OUYANG	SQUARE FEET:	1150
REVISIONS			
NO.	DATE	DESCRIPTION	

SHEET DESCRIPTION

LOWER AND UPPER MODULES AND DETAILS

SHEET NUMBER

F001

Markup Legend	
Delete Line	
Add Line	
Add Tee	
Add Elbow	
Add Coupling	
Add Head	
Delete Head	
Move Head	

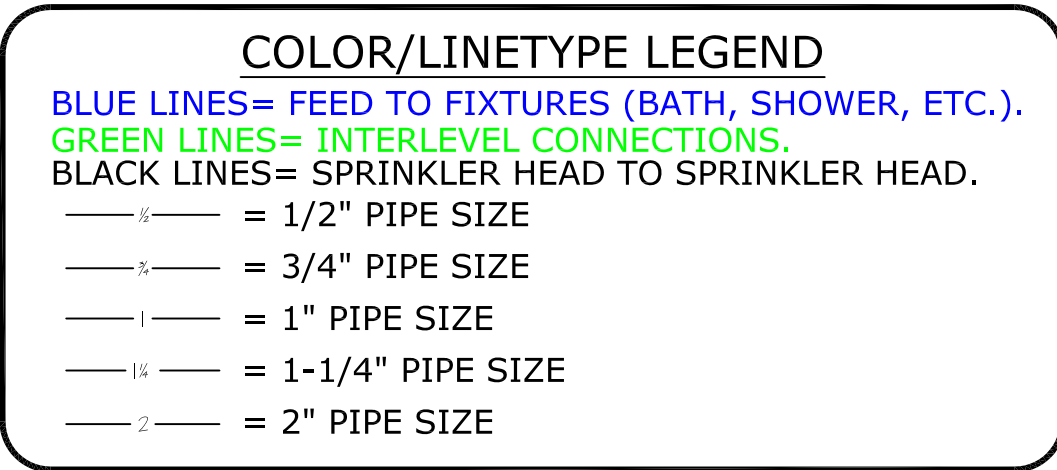
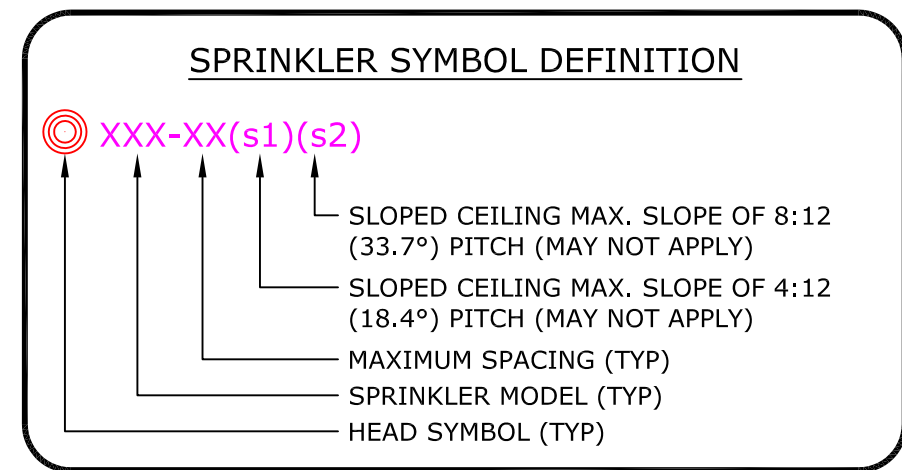
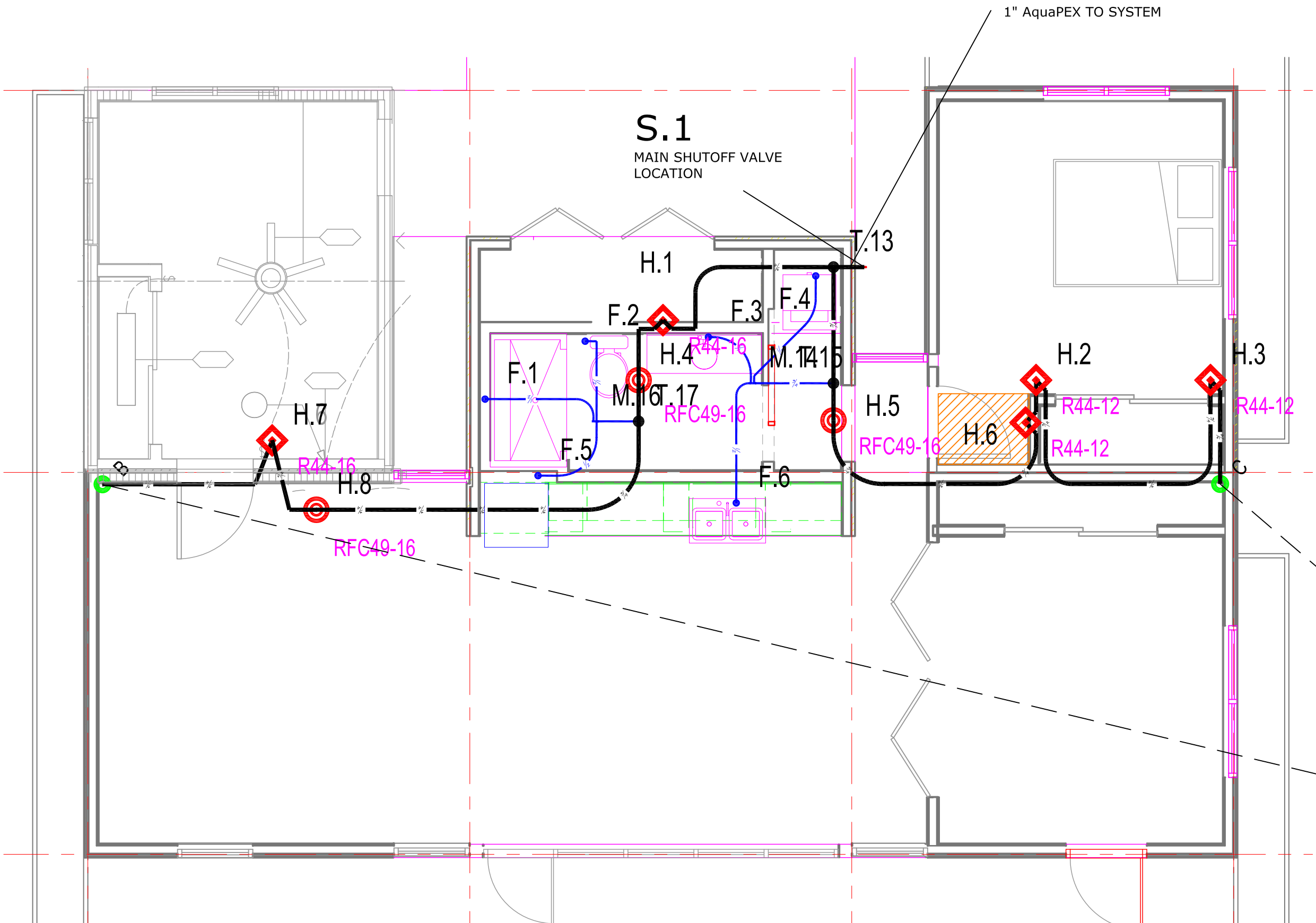


Table F002-1
Multipurpose Fire Safety Systems
 The Uponor Residential Fire Safety System is a residential fire protections system installed in combination with the cold side of the domestic potable water system. Only licensed contractors trained by Uponor can install this system.

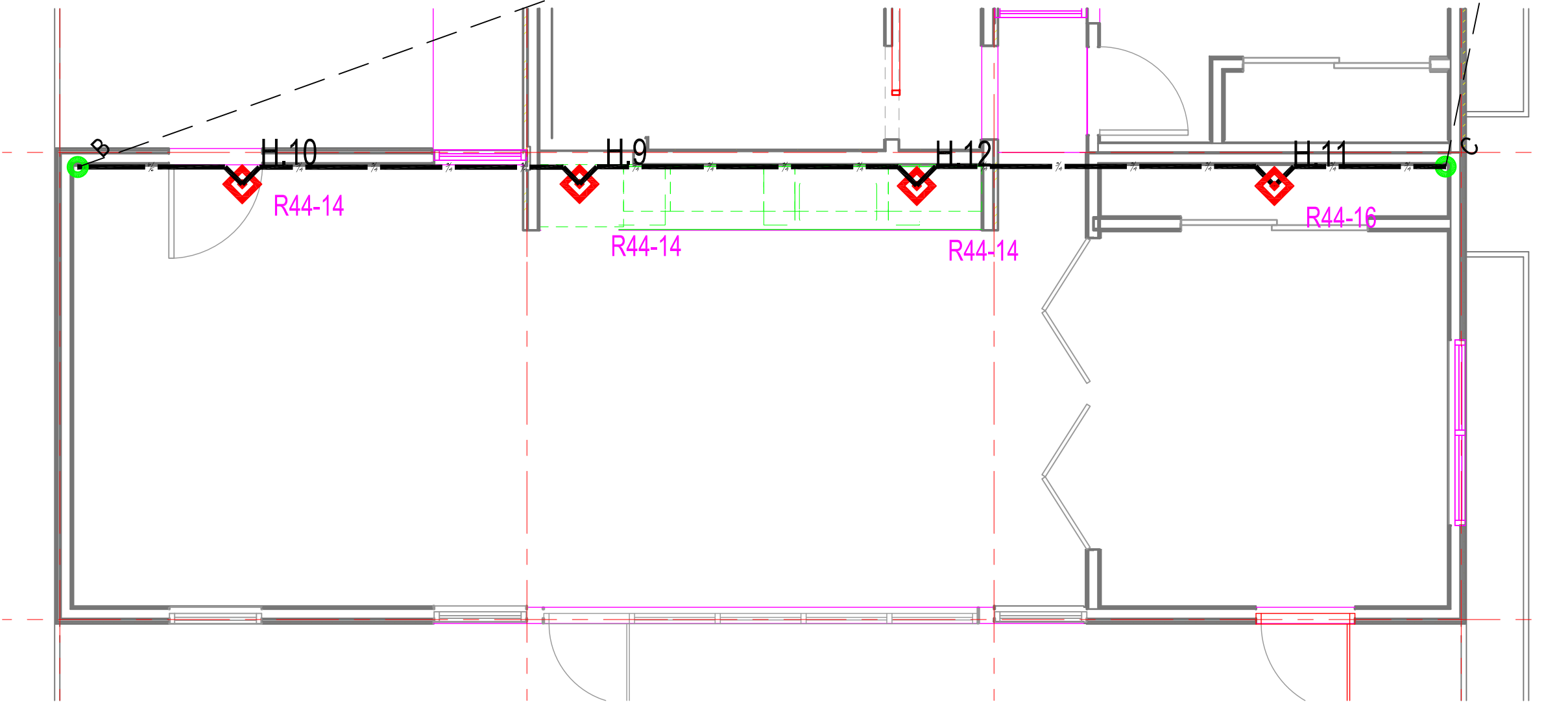
What to do if Changes are Required
 If any features or obstructions require the addition or deletion of sprinkler heads, or significant relocation of sprinkler heads, contact the Uponor Design Department to determine if observed changes require a redesign (888.594.7726).

MOST HYDRAULICALLY REMOTE HEADS			
HEAD #	GPM	PRESSURE REQ'D AT STREET	
1 HEAD H.11	21	31.41	
2 HEAD H.9 & H.12	33.1055	68.68	

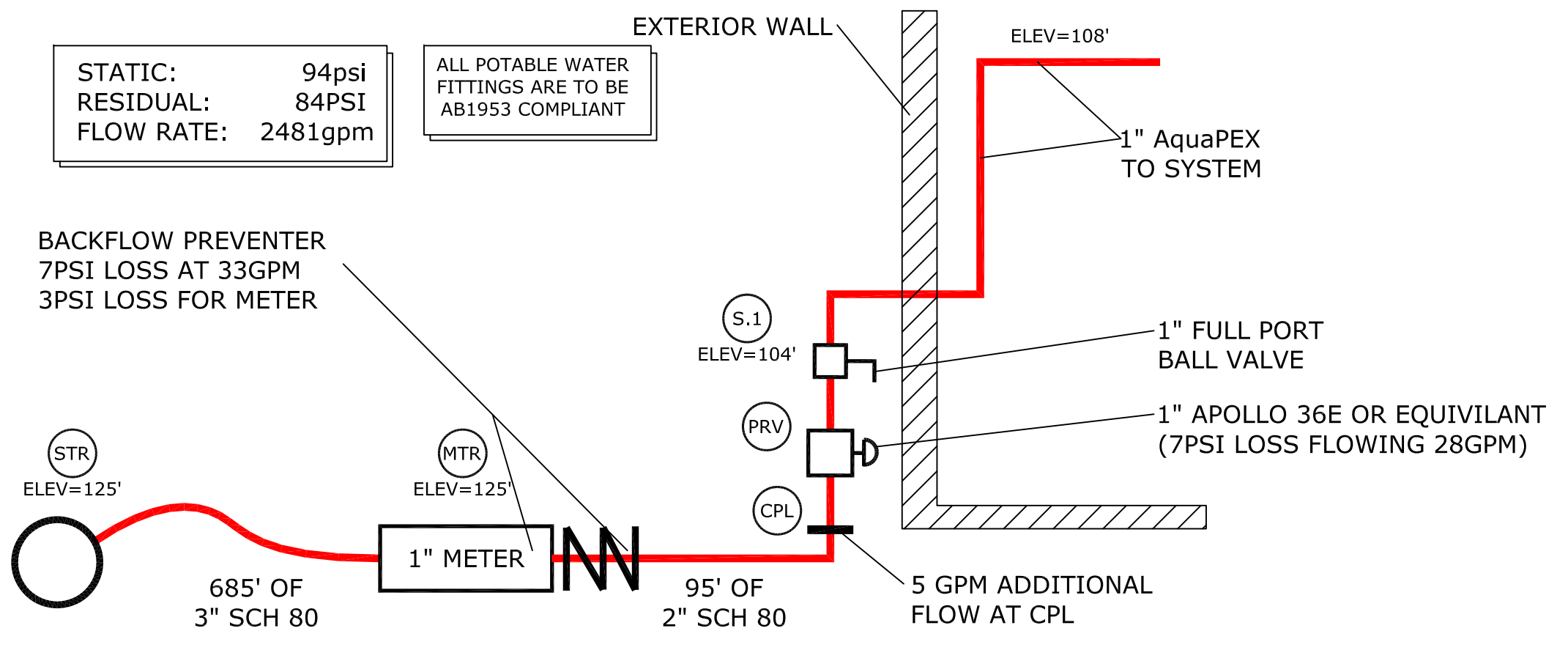
- 3 RELIABLE Model F1-R44-<F1-R44 Recessed Sidewall Sprinkler---
 K=4.4, 155F°, 3/8" Orifice, Maximum Spacing 16'x16'
 Sprinkler head demand: 16 gpm @ 13.3
- 3 RELIABLE Model F1-R44-<F1-R44 Recessed Sidewall Sprinkler---
 K=4.4, 155F°, 3/8" Orifice, Maximum Spacing 12'x12'
 Sprinkler head demand: 12 gpm @ 7.5
- 3 RELIABLE Model RFC49RFC49 Concealed Pendent Sprinkler
 K=4.9, 165F°, 3/8" Orifice, Maximum Spacing 16'x16'
 Sprinkler head demand: 13 gpm @ 7.04
- 3 RELIABLE Model F1-R44-<F1-R44 Recessed Sidewall Sprinkler---
 K=4.4, 155F°, 3/8" Orifice, Maximum Spacing 14'x14'
 Sprinkler head demand: 14.1 gpm @ 10.2



1 LOWER MODULES
 F100
 1/4" = 1'-0"



2 UPPER MODULE
 F100
 1/4" = 1'-0"



2 WATER SERVICE DETAIL
 F100
 NTS

3/4" AQUAPEX INTERLEVEL CONNECTIONS FROM LOWER MODULE TO UPPER MODULE

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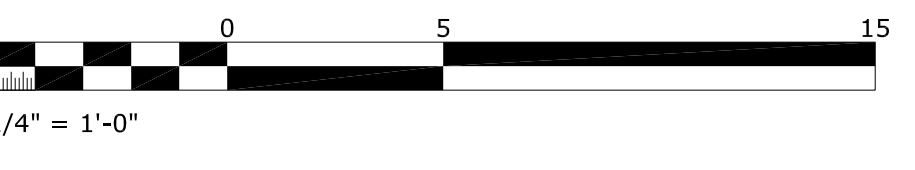


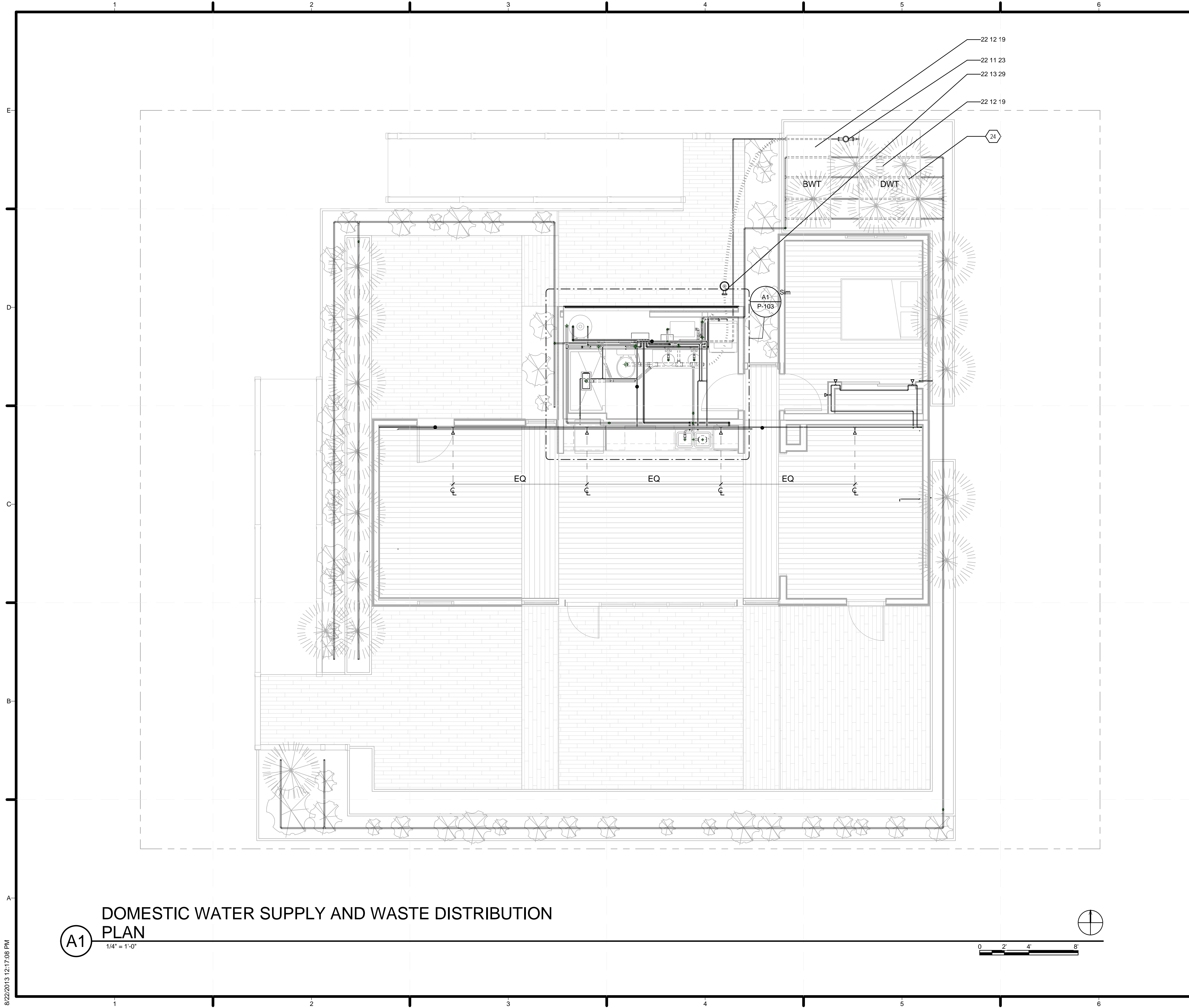
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 WOODSIDE, CA 94062

NO.	DATE	REVISIONS	DESCRIPTION

SHEET DESCRIPTION
 LOWER AND UPPER MODULES

SHEET NUMBER
F100





GENERAL SHEET NOTES

1. ALL WASTE PIPE SLOPES MINIMUM 1/4 IN/FT PER 2009 IRC
2. ALL WASTE PIPE TO BE ABS PIPING.
3. ALL BLACKWATER PIPING TO BE 3" ABS UNLESS OTHERWISE SPECIFIED
4. ALL GREYWATER PIPING TO BE 1/2" DRIP LINE UNLESS OTHERWISE SPECIFIED
5. ALL PIPING FROM PEX MANIFOLD TO FIXTURES TO BE 1/2" PEX TUBING UNLESS OTHERWISE SPECIFIED
6. WATER DELIVERY TO BE RECEIVED THROUGH ACCESS HATCH ON NORTHEAST PLANTER; 1000 GALLONS REQUESTED
7. ACCESS HATCHES TO SUPPLY AND REMOVAL VALVES TO BE MINIMUM OF 12" X 12" SQUARE, WITH AT LEAST 8 FEET OF CLEARANCE ABOVE WHEN HATCH IS OPEN
8. POTABLE WATER TANK HAS TOTAL CAPACITY OF 1000 GALLONS
9. WASTE TANK HAS TOTAL CAPACITY OF 1000 GALLONS
10. REMAINING WATER IN POTABLE TANKS TO BE PUMPED TO WASTE TANKS FOR REMOVAL DAY
11. REMAINING WATER IN CONSTRUCTED WETLAND TO BE PUMPED TO WASTE TANKS FOR REMOVAL DAY
12. WATER REMOVAL VALVE LOCATED IN NORTHWEST PLANTER, ESTIMATED QUANTITY TO BE REMOVED: 1000 GALLONS

REFERENCE KEYNOTES

- 22 11 23 DOMESTIC WATER PUMPS
- 22 12 19 FACILITY GROUND-MOUNTED, POTABLE WATER STORAGE TANKS
- 22 13 29 SANITARY SEWERAGE PUMPS

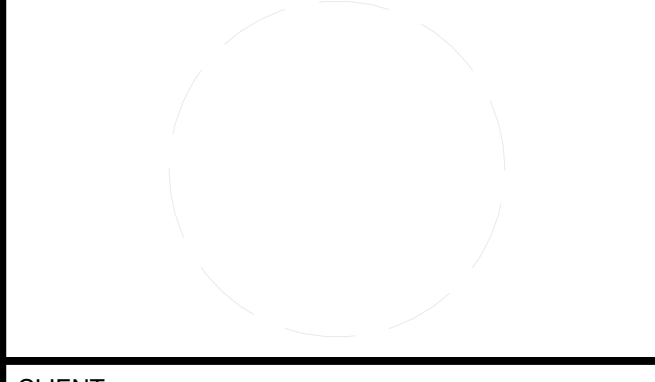
SHEET KEYNOTES

- 24 ALL STAND ALONE SITE AND BUILDING COMPONENTS TO BE ELEVATED ON 2X4 SLEEPERS PER COMPETITION REQUIREMENTS



TEAM NAME: STANFORD UNIVERSITY
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01	10/11/2012	80% DOE/NREL DD SUBMISSION
02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION
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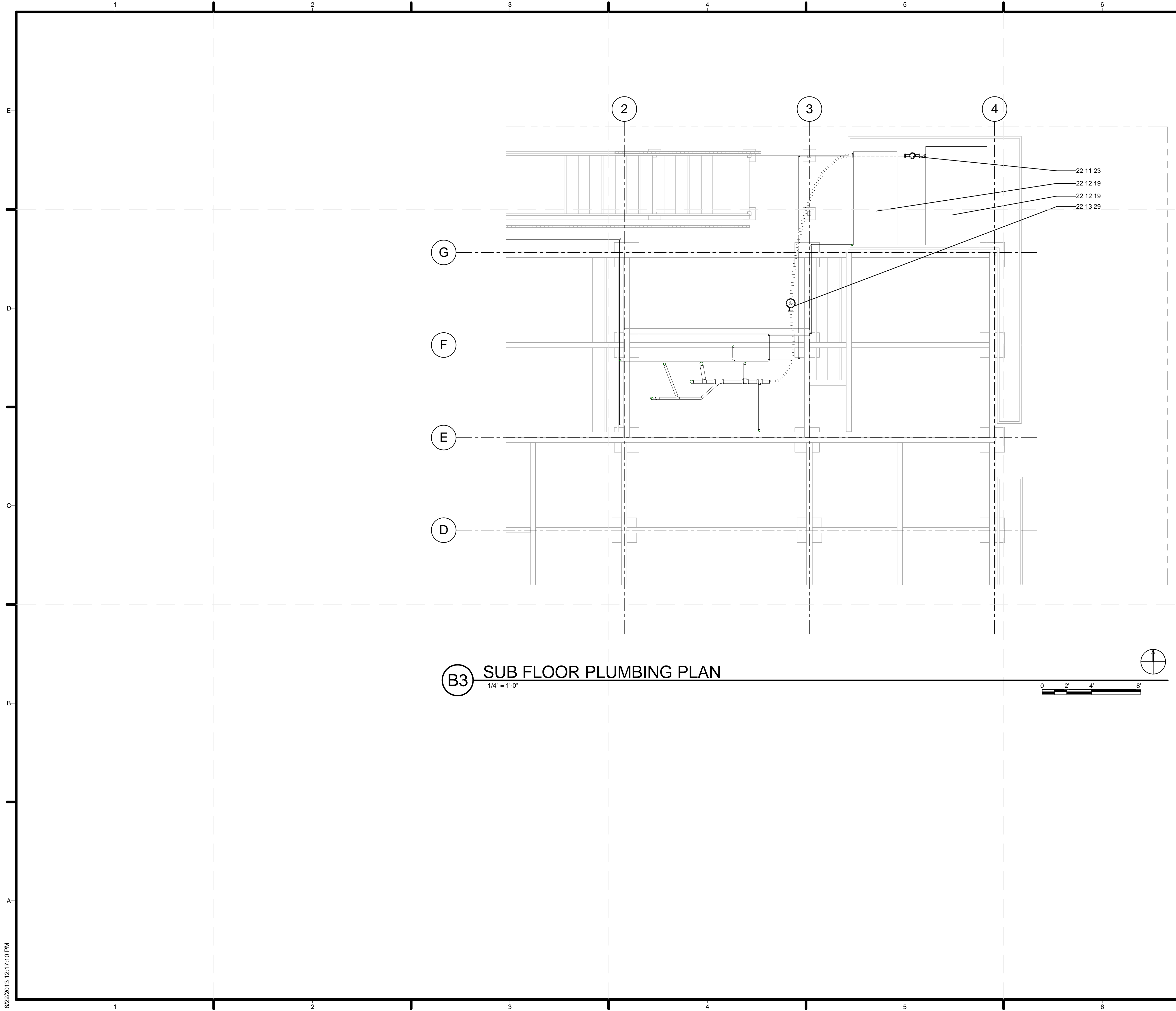
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SHEET TITLE
 DOMESTIC WATER SUPPLY AND WASTE PLAN

P-101

DOMESTIC WATER SUPPLY AND WASTE DISTRIBUTION PLAN
 1/4" = 1'-0"

8/22/2013 12:17:08 PM



B3 SUB FLOOR PLUMBING PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

- SEE L-001 FOR NOTES REGARDING GRAYWATER SYSTEM

REFERENCE KEYNOTES

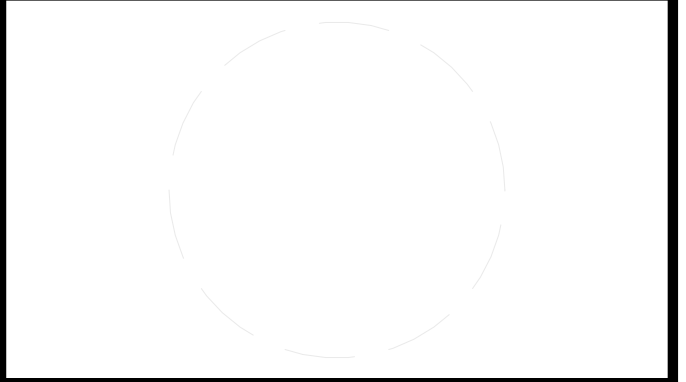
- 22 11 23 DOMESTIC WATER PUMPS
- 22 12 19 FACILITY GROUND-MOUNTED, POTABLE WATER STORAGE TANKS
- 22 13 29 SANITARY SEWERAGE PUMPS

SHEET KEYNOTES



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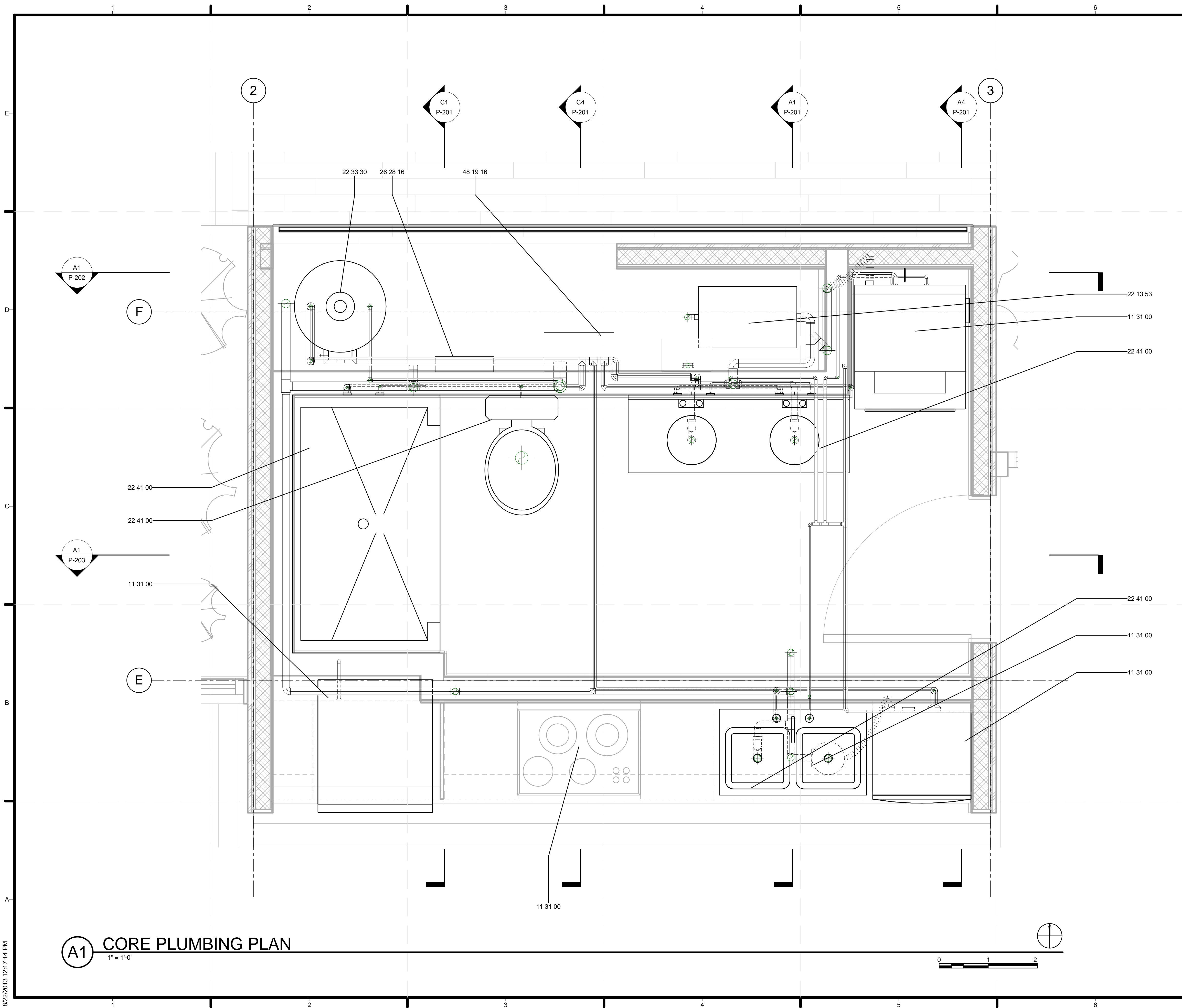
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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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SHEET TITLE
SUB FLOOR PLUMBING

P-102



GENERAL SHEET NOTES

1.

REFERENCE KEYNOTES

- 11 31 00 RESIDENTIAL APPLIANCES
- 22 13 53 FACILITY SEPTIC TANKS
- 22 33 30 RESIDENTIAL, ELECTRIC DOMESTIC WATER HEATERS
- 22 41 00 RESIDENTIAL PLUMBING FIXTURES
- 26 28 16 ENCLOSED SWITCHES AND CIRCUIT BREAKERS
- 48 19 16 ELECTRICAL POWER GENERATION INVERTERS

SHEET KEYNOTES

PROJECT LOGO

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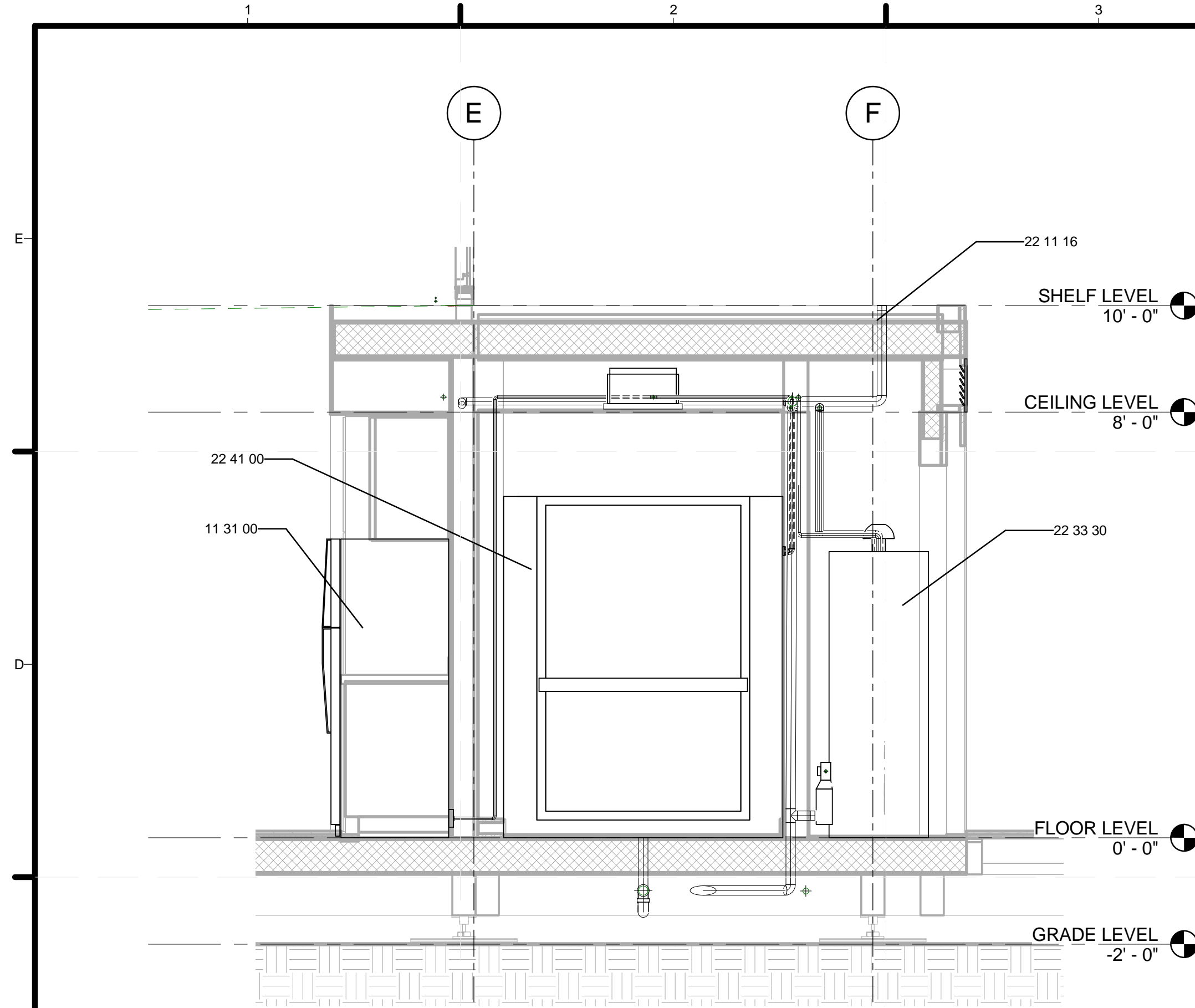
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 DRAWN BY: DEREK OUYANG
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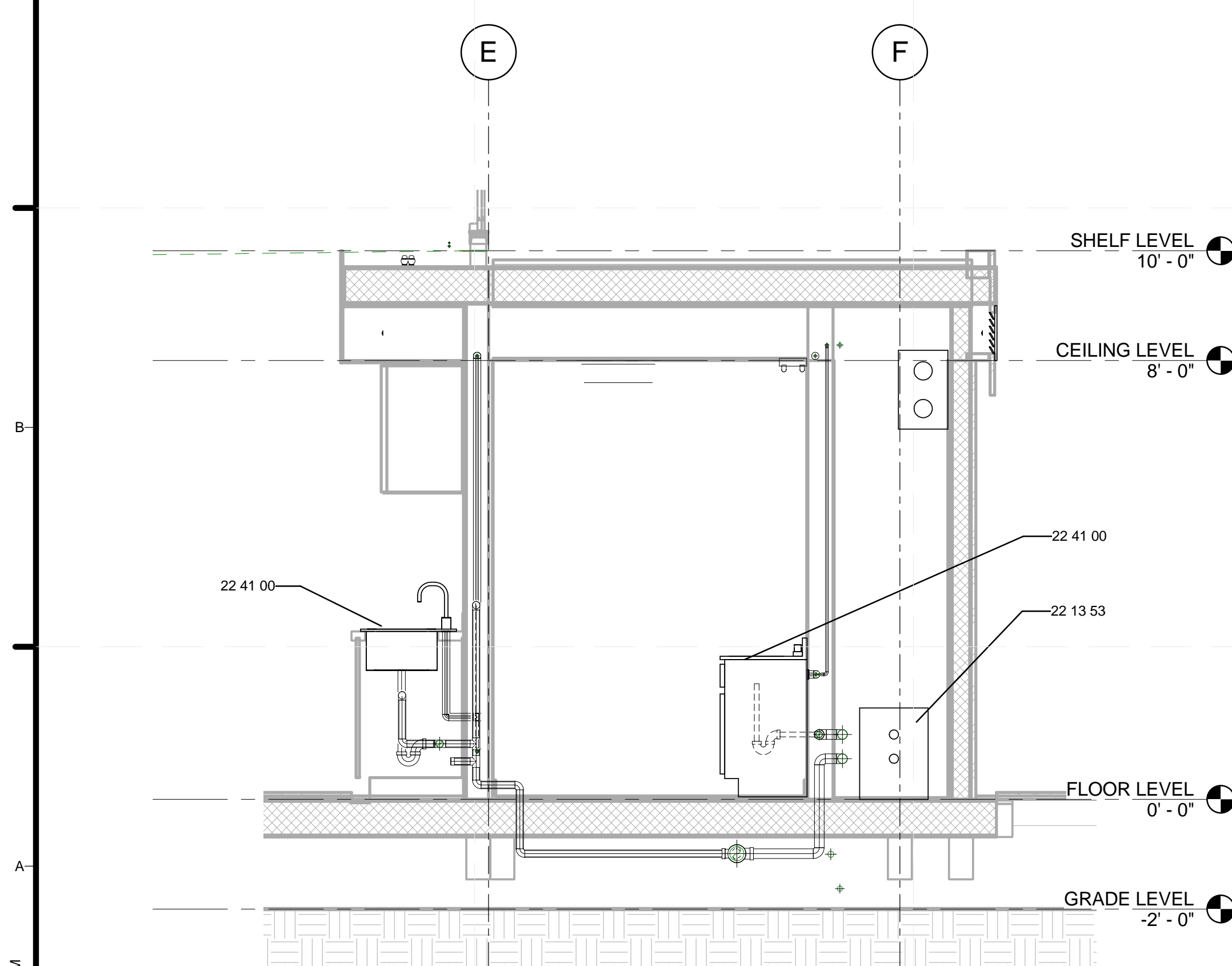
SHEET TITLE
CORE PLUMBING PLAN

P-103

A1 CORE PLUMBING PLAN
 1" = 1'-0"

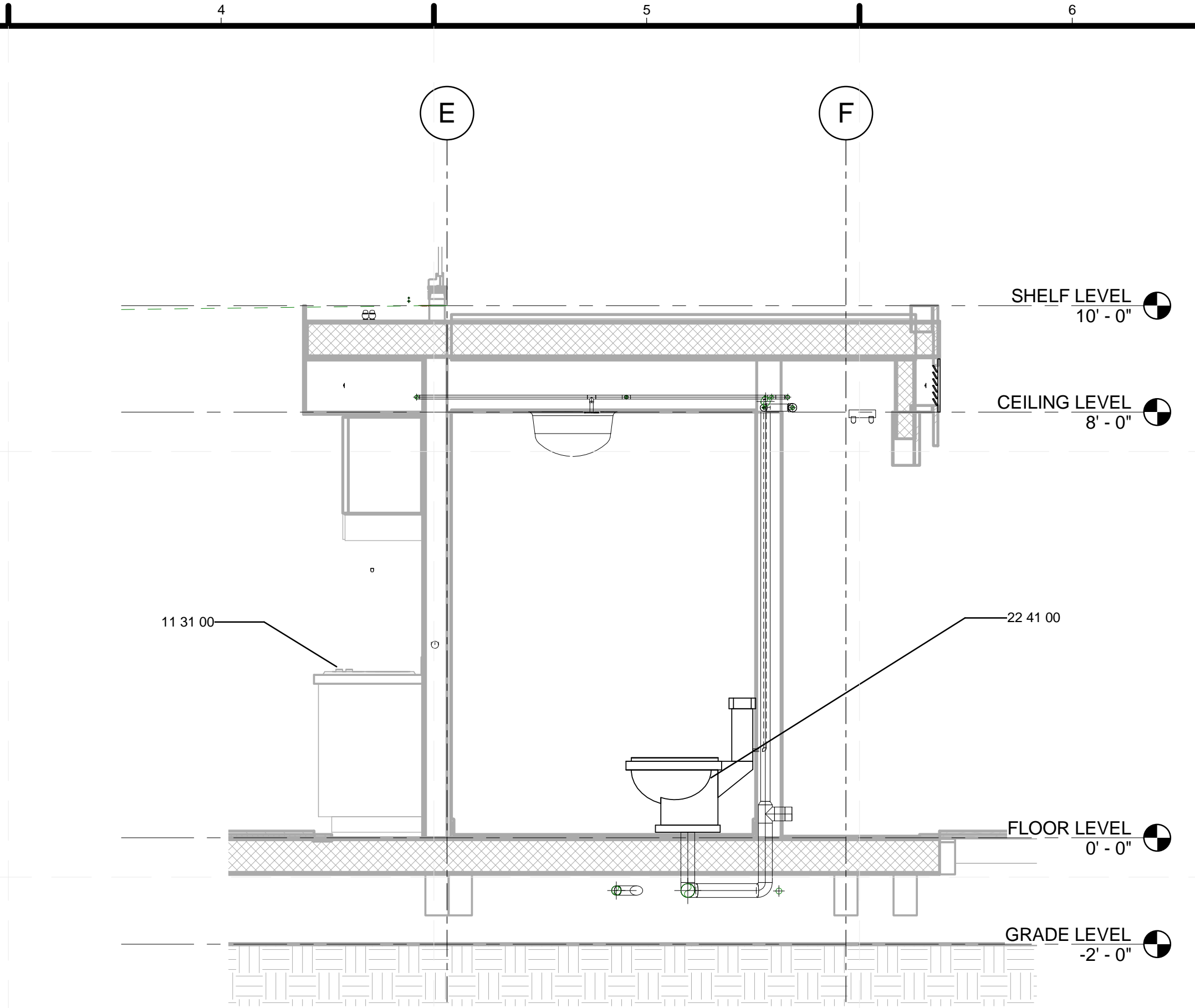


C1 REFRIGERATOR/SHOWER/HPWH SECTION
1/2" = 1'-0"

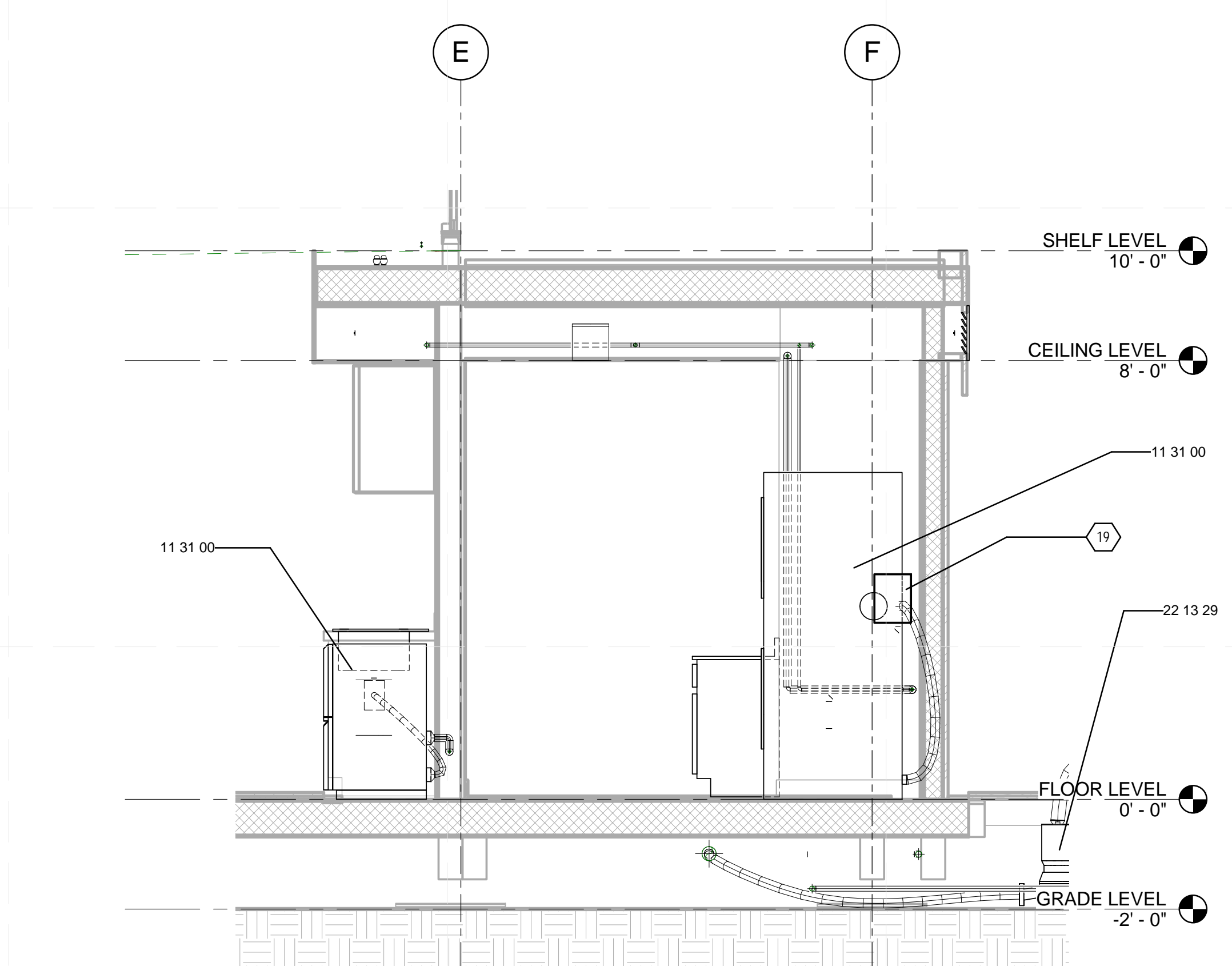


A1 KITCHEN/BATHROOM SINK SECTION
1/2" = 1'-0"

8/22/2013 12:17:25 PM



C4 TOILET SECTION
1/2" = 1'-0"



A4 DISHWASHER/LAUNDRY SECTION
1/2" = 1'-0"

GENERAL SHEET NOTES

1.

REFERENCE KEYNOTES

11 31 00	RESIDENTIAL APPLIANCES
22 11 16	DOMESTIC WATER PIPING
22 13 29	SANITARY SEWERAGE PUMPS
22 13 53	FACILITY SEPTIC TANKS
22 33 30	RESIDENTIAL, ELECTRIC DOMESTIC WATER HEATERS
22 41 00	RESIDENTIAL PLUMBING FIXTURES

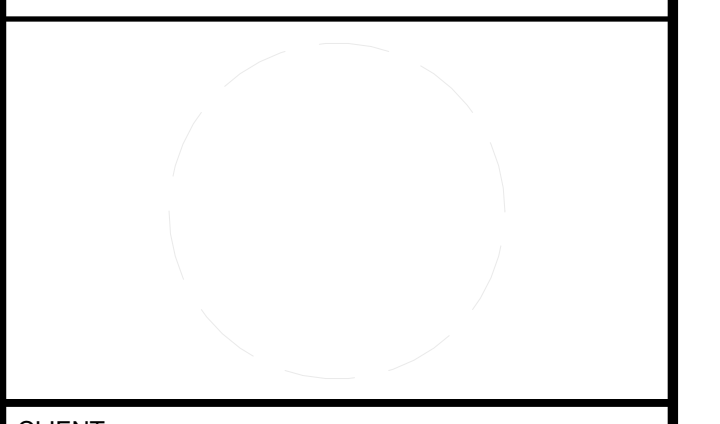
SHEET KEYNOTES

19	WASHING MACHINE JUNCTION BOX
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PROJECT LOGO

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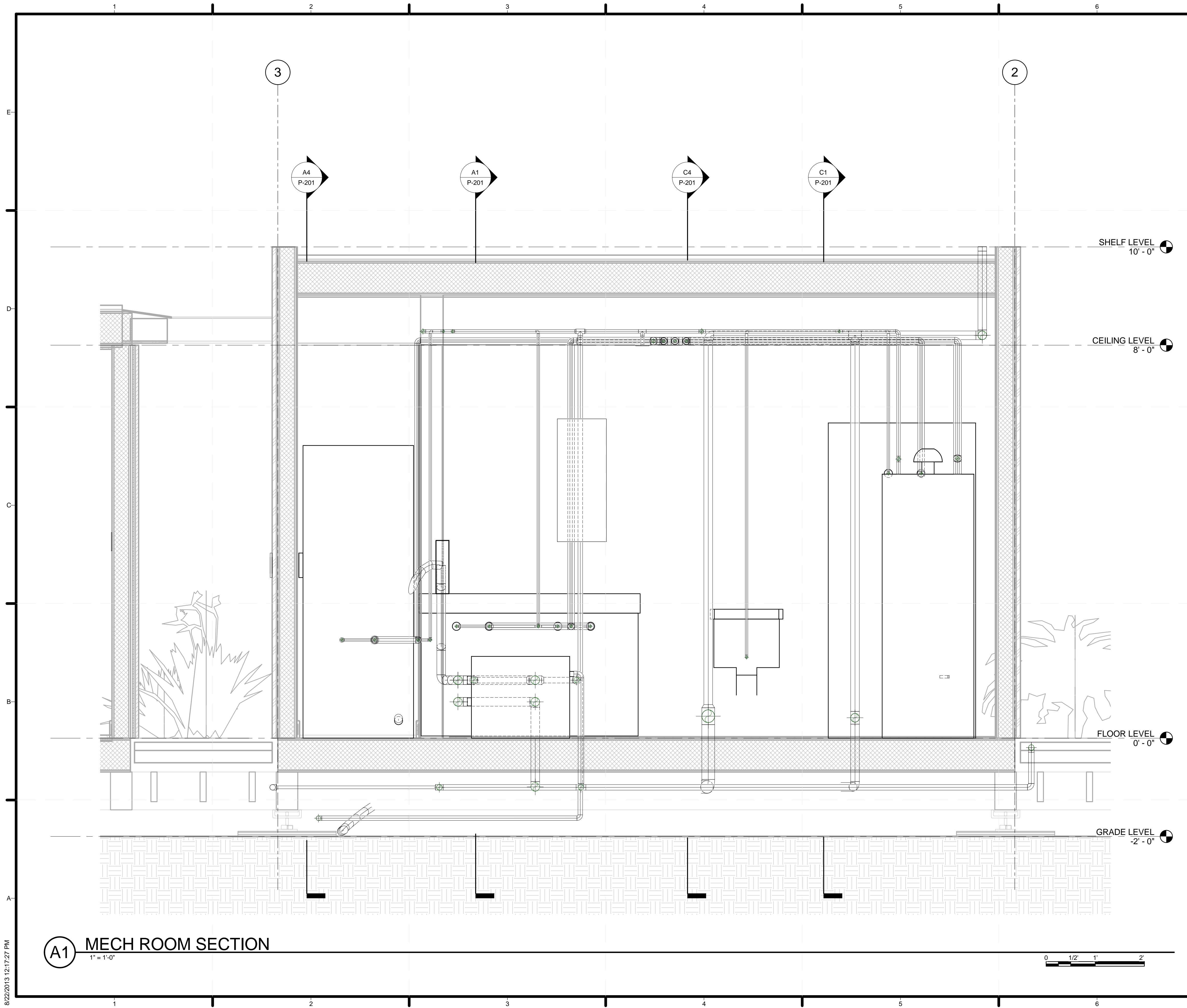


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SHEET TITLE
 CORE PLUMBING SECTIONS

P-201



A1 MECH ROOM SECTION
1" = 1'-0"

GENERAL SHEET NOTES

1.

REFERENCE KEYNOTES

SHEET KEYNOTES

19 WASHING MACHINE JUNCTION BOX



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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

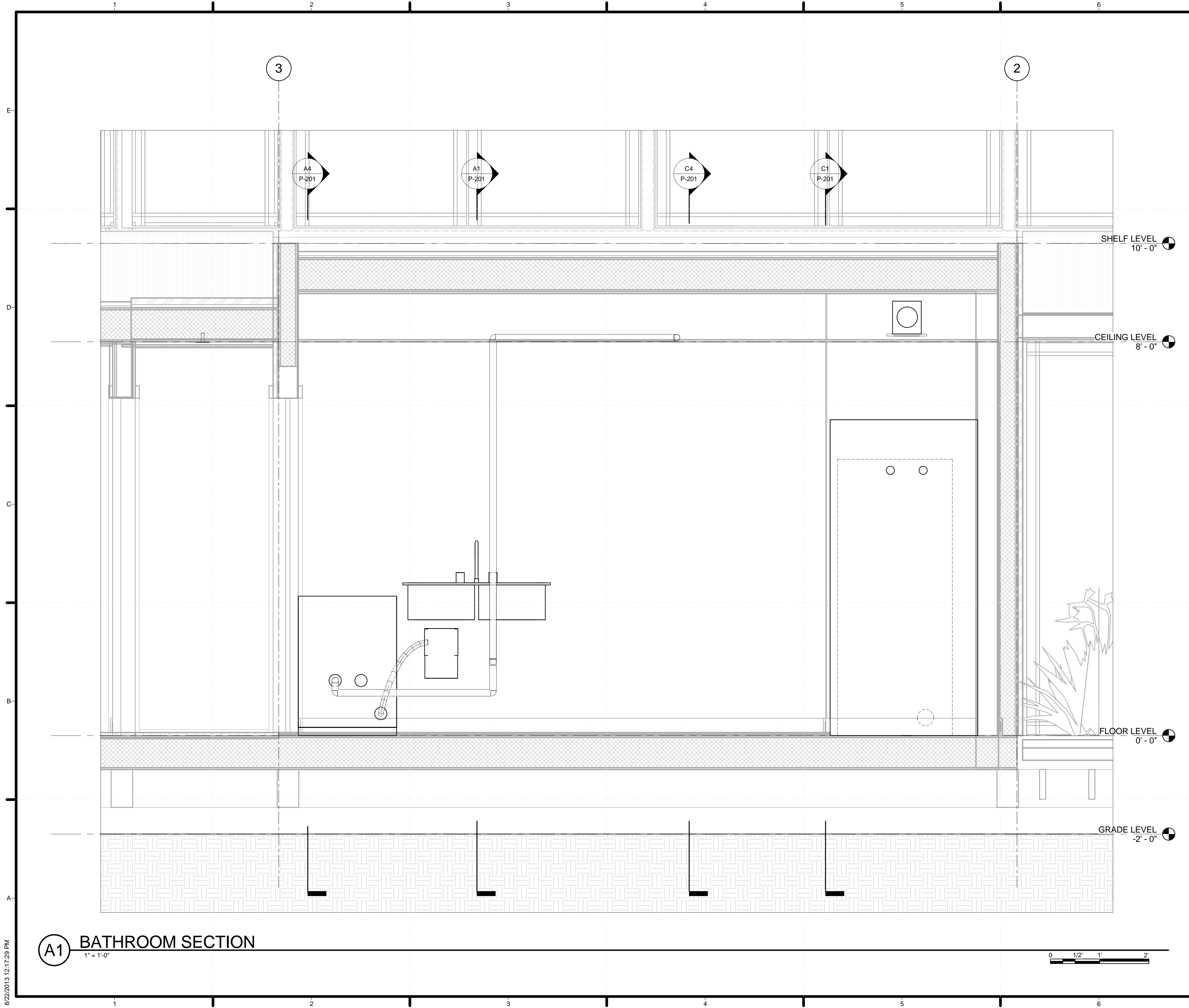
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SHEET TITLE
CORE PLUMBING SECTIONS

P-202

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GENERAL SHEET NOTES

1.

REFERENCE KEYNOTES

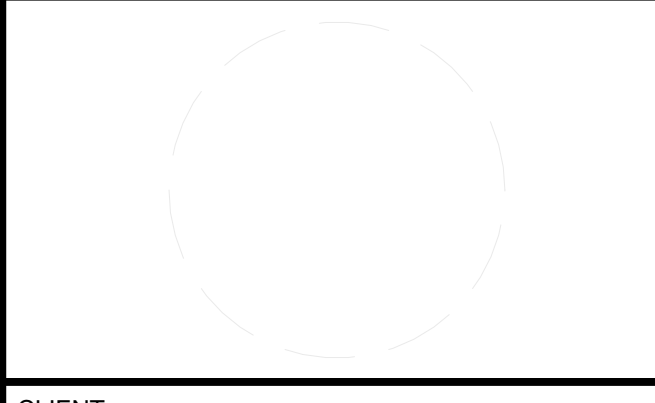
SHEET KEYNOTES

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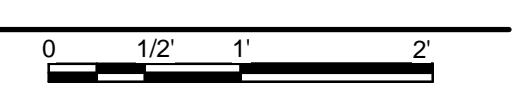
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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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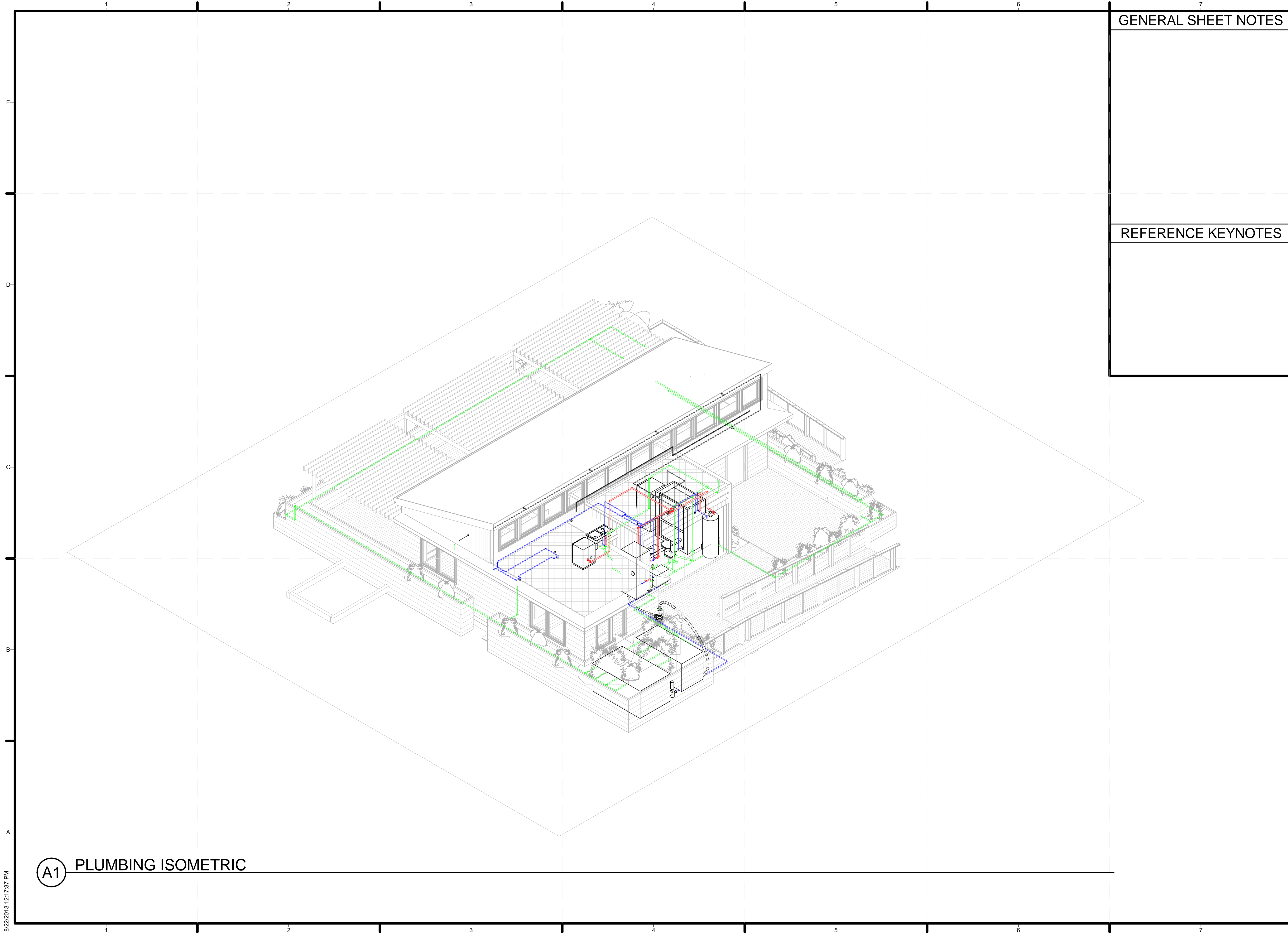
SHEET TITLE
 CORE PLUMBING SECTIONS

P-203

(A1) BATHROOM SECTION
 1" = 1'-0"



8/22/2013 12:17:28 PM



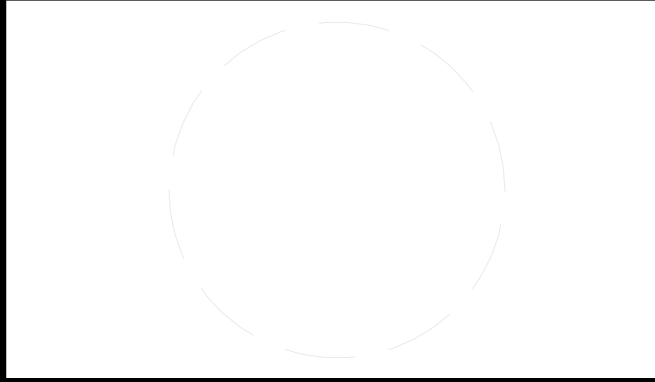
GENERAL SHEET NOTES

REFERENCE KEYNOTES



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03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION
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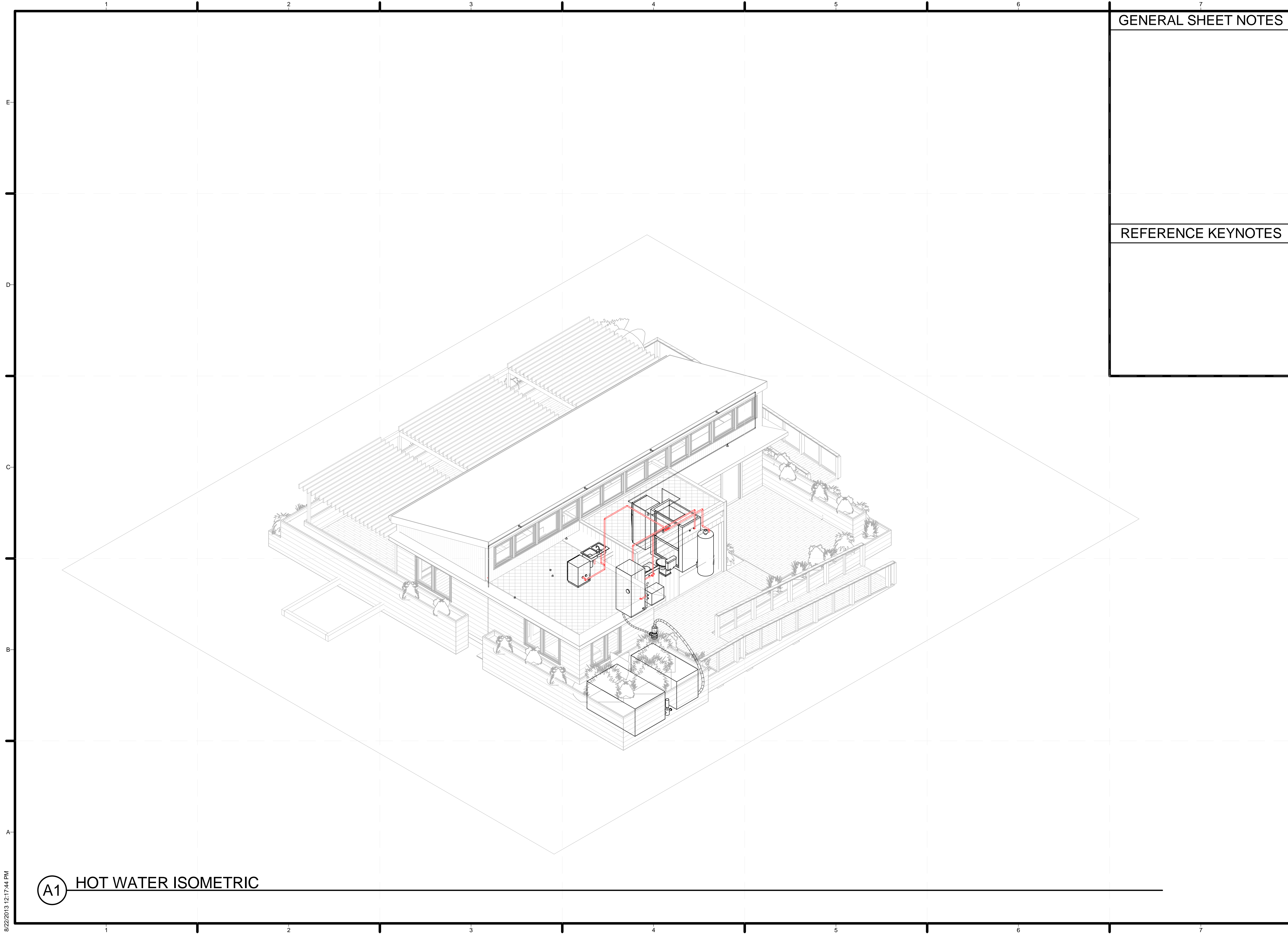
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SHEET TITLE
 PLUMBING ISOMETRIC

P-901

(A1) PLUMBING ISOMETRIC

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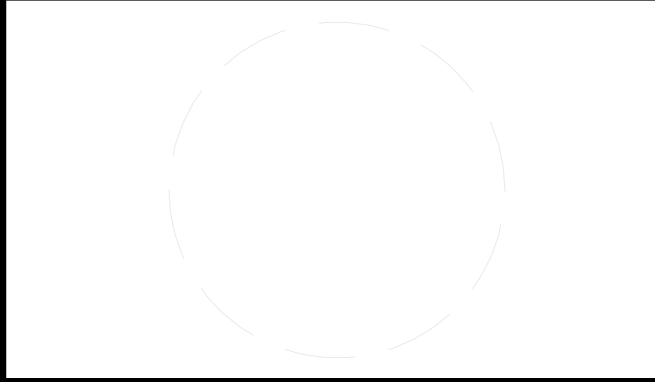
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05	08/22/2013	100% AS-BUILT SUBMISSION

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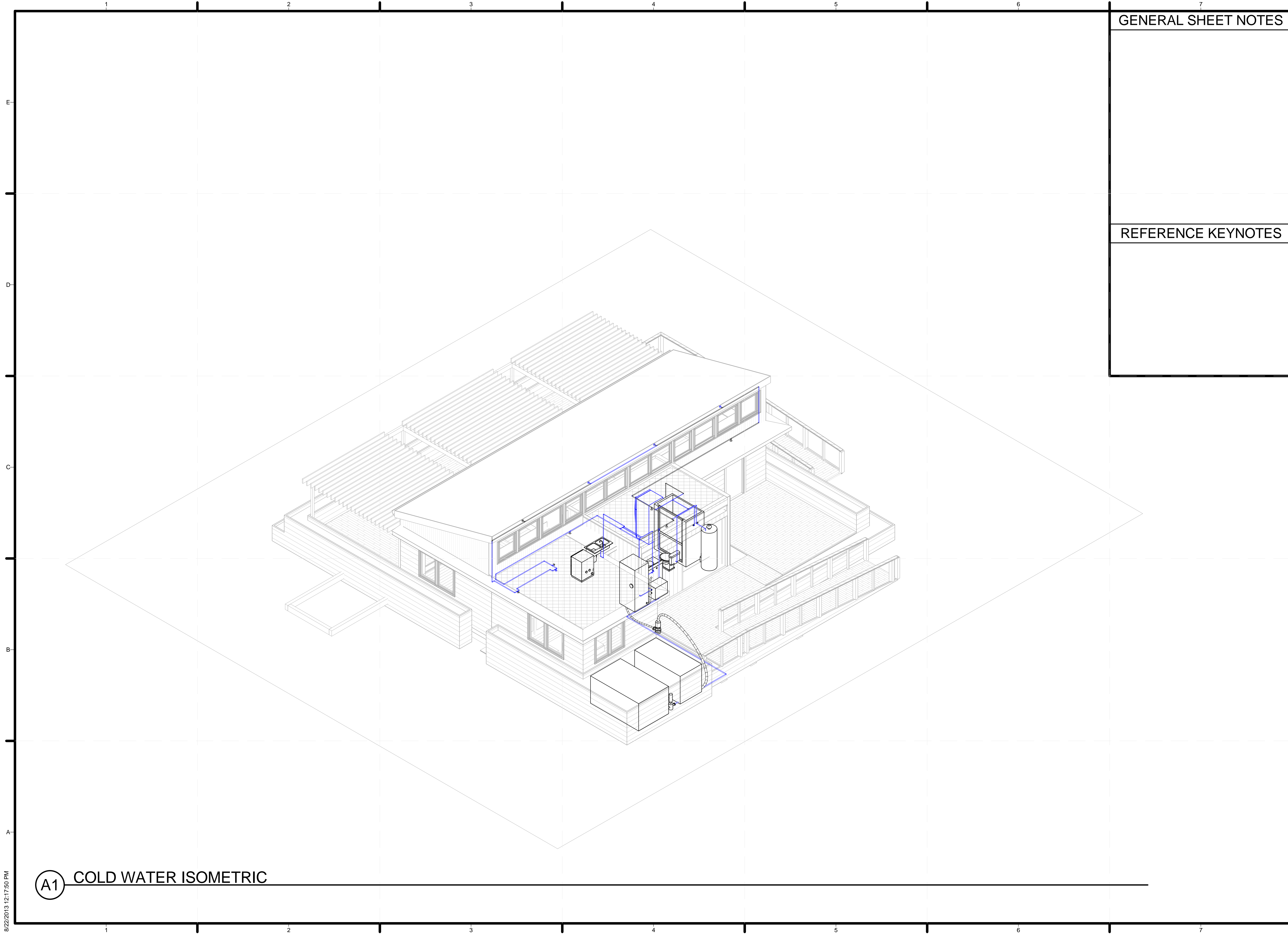
SHEET TITLE

HOT WATER ISOMETRIC

P-902

(A1) HOT WATER ISOMETRIC

8/22/2013 12:17:44 PM



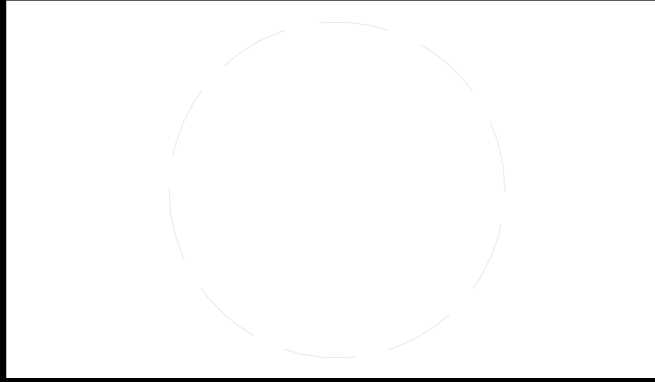
GENERAL SHEET NOTES

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04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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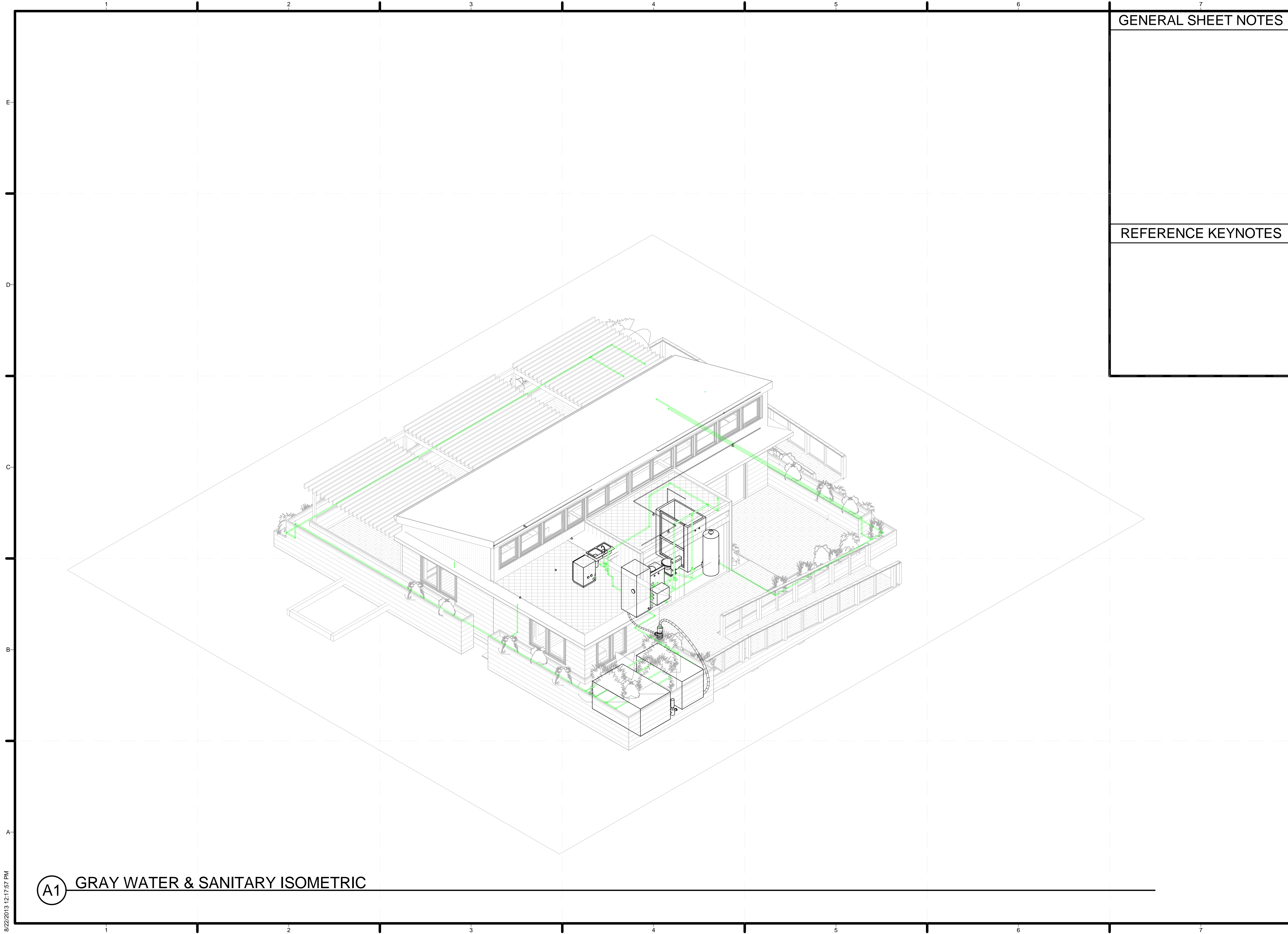
SHEET TITLE

COLD WATER ISOMETRIC

P-903

A1 COLD WATER ISOMETRIC

8/22/2013 12:17:50 PM



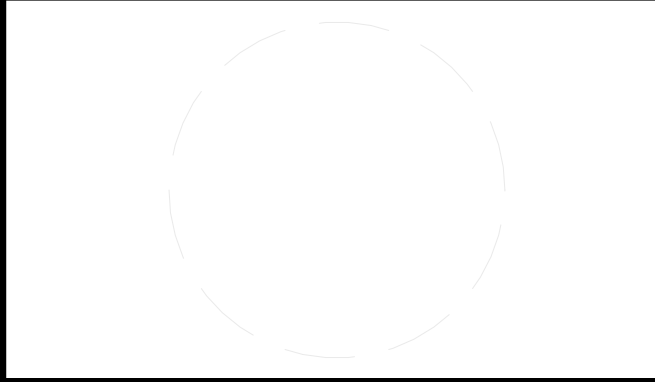
GENERAL SHEET NOTES

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03	02/14/2013	100% DOE/NREL CD SUBMISSION
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05	08/22/2013	100% AS-BUILT SUBMISSION

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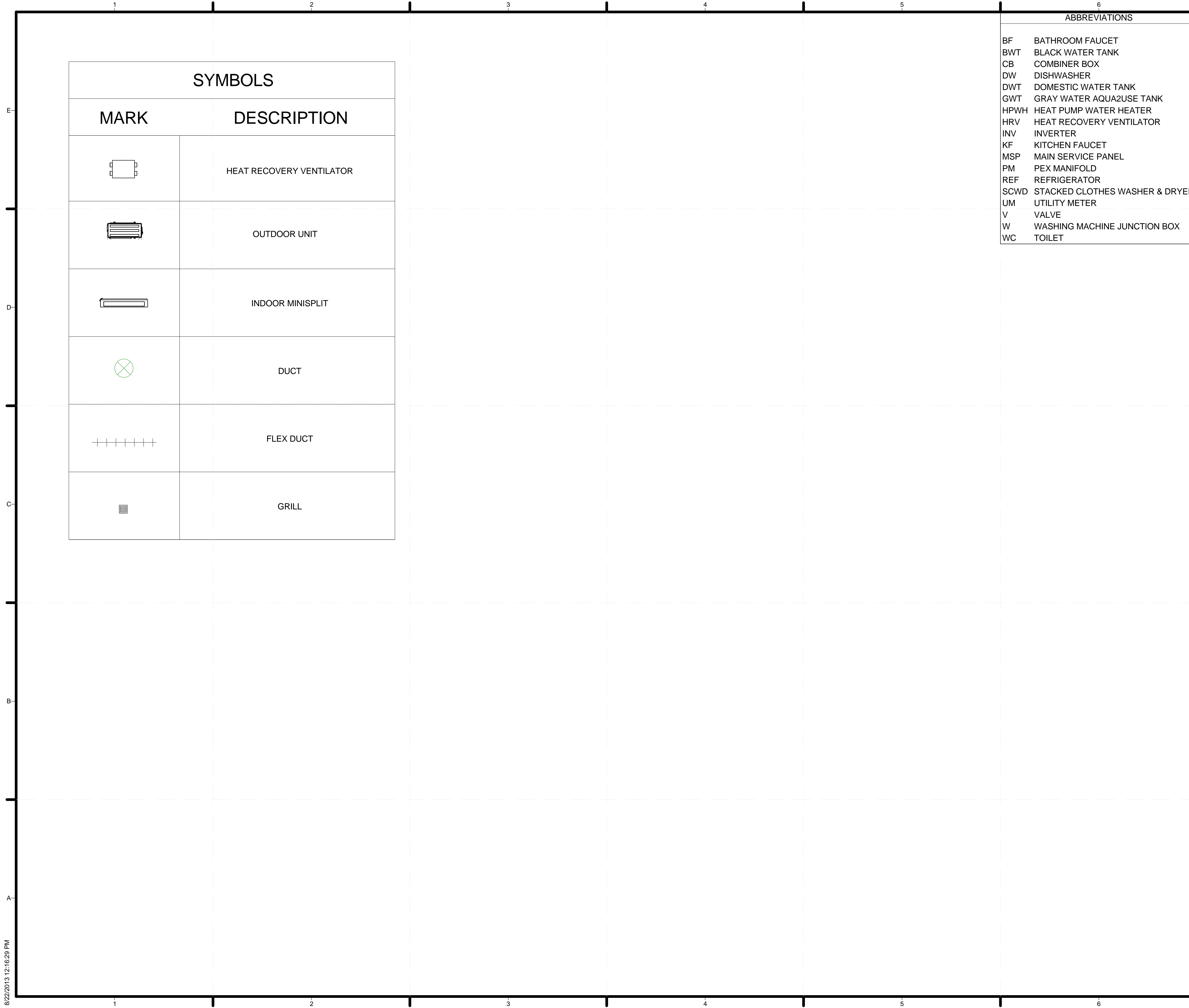
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SHEET TITLE
 GRAY WATER & SANITARY ISOMETRIC

P-904

(A1) GRAY WATER & SANITARY ISOMETRIC

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SYMBOLS	
MARK	DESCRIPTION
	HEAT RECOVERY VENTILATOR
	OUTDOOR UNIT
	INDOOR MINISPLIT
	DUCT
	FLEX DUCT
	GRILL

ABBREVIATIONS	
BF	BATHROOM FAUCET
BWT	BLACK WATER TANK
CB	COMBINER BOX
DW	DISHWASHER
DWT	DOMESTIC WATER TANK
GWT	GRAY WATER AQUA2USE TANK
HPWH	HEAT PUMP WATER HEATER
HRV	HEAT RECOVERY VENTILATOR
INV	INVERTER
KF	KITCHEN FAUCET
MSP	MAIN SERVICE PANEL
PM	PEX MANIFOLD
REF	REFRIGERATOR
SCWD	STACKED CLOTHES WASHER & DRYER
UM	UTILITY METER
V	VALVE
W	WASHING MACHINE JUNCTION BOX
WC	TOILET

GENERAL SHEET NOTES

- ALL DUCTING TO BE SPIRAL DUCT UNLESS OTHERWISE SPECIFIED.
- ALL DUCTING TAPED AND SEALED PER 2012 IRC

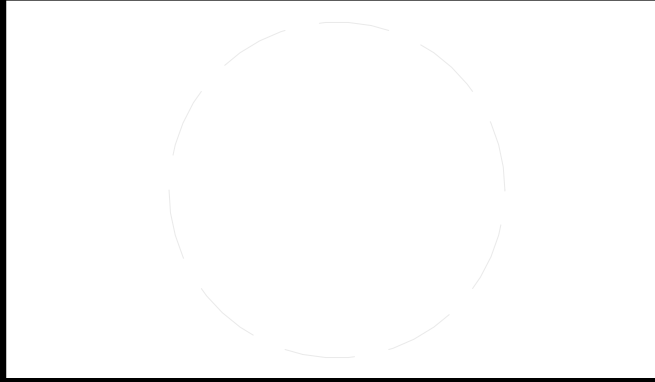
REFERENCE KEYNOTES

SHEET KEYNOTES



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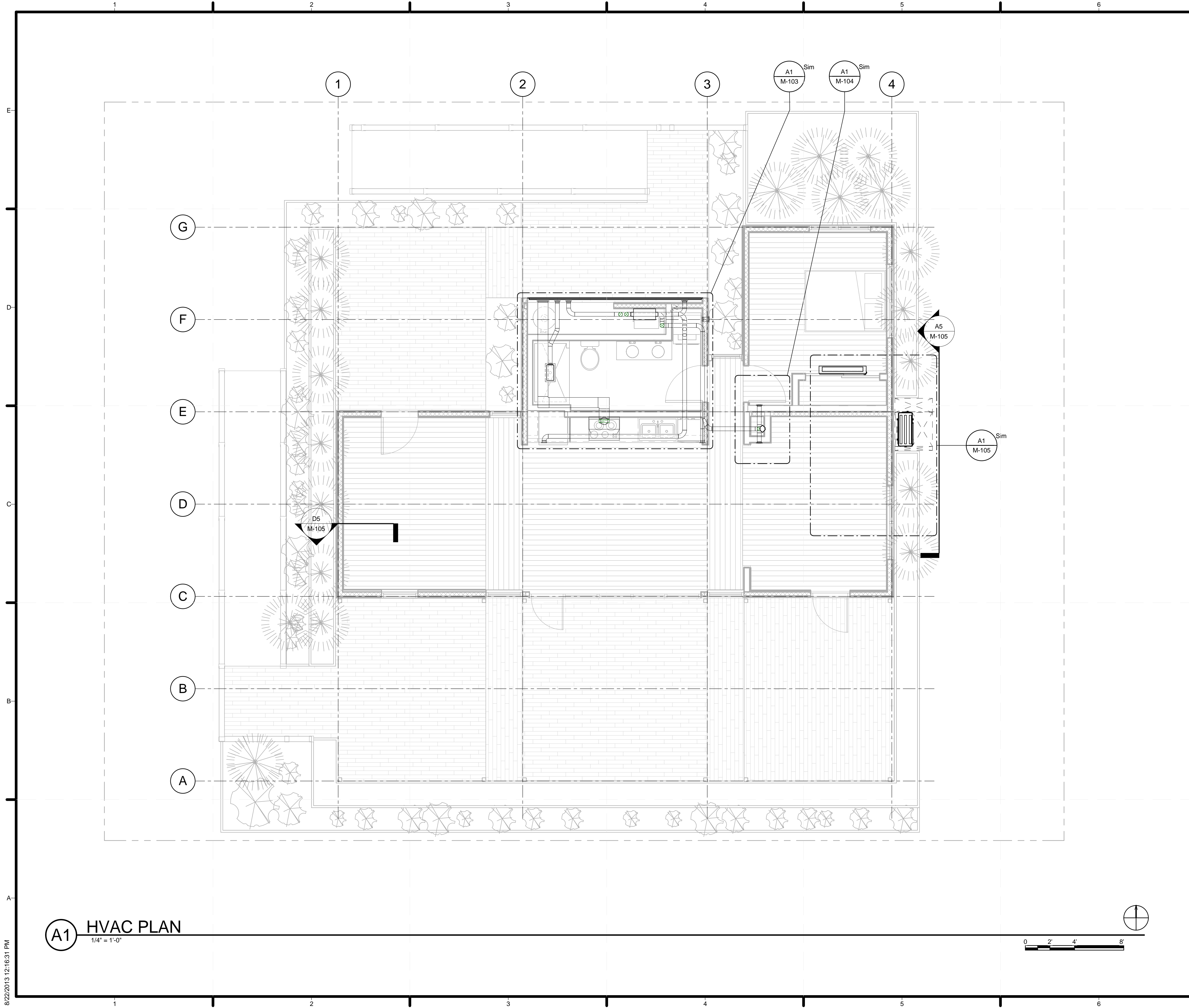
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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

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SHEET TITLE
 MECHANICAL SYMBOLS AND NOTES

M-001



(A1) HVAC PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

REFERENCE KEYNOTES

SHEET KEYNOTES



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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

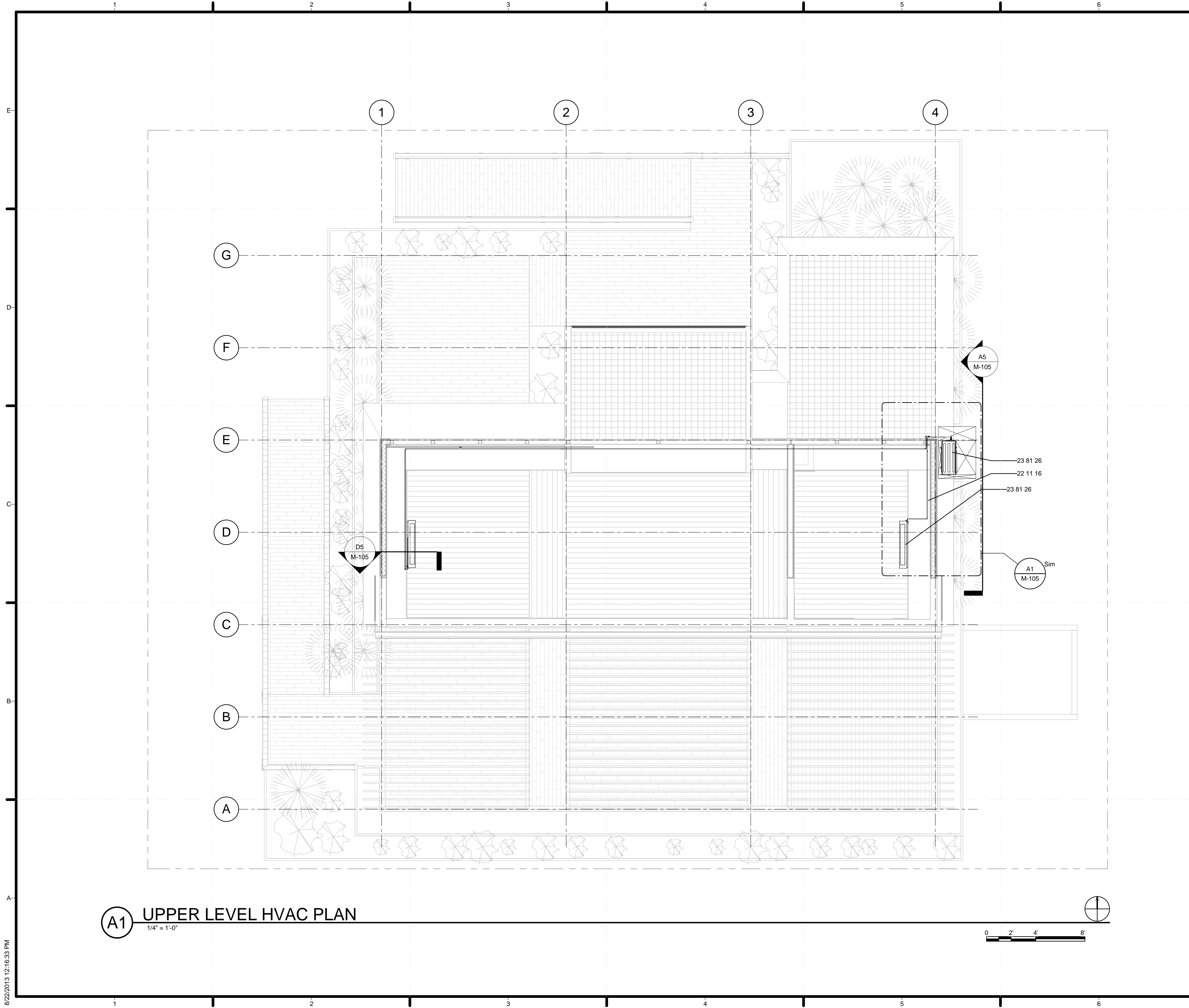
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SHEET TITLE
HVAC PLAN

M-101

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(A1) UPPER LEVEL HVAC PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

REFERENCE KEYNOTES

22 11 16 DOMESTIC WATER PIPING
23 81 26 SPLIT SYSTEM AIR CONDITIONERS

SHEET KEYNOTES



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03	02/14/2013	100% DOE/NREL CD SUBMISSION
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05	08/22/2013	100% AS-BUILT SUBMISSION

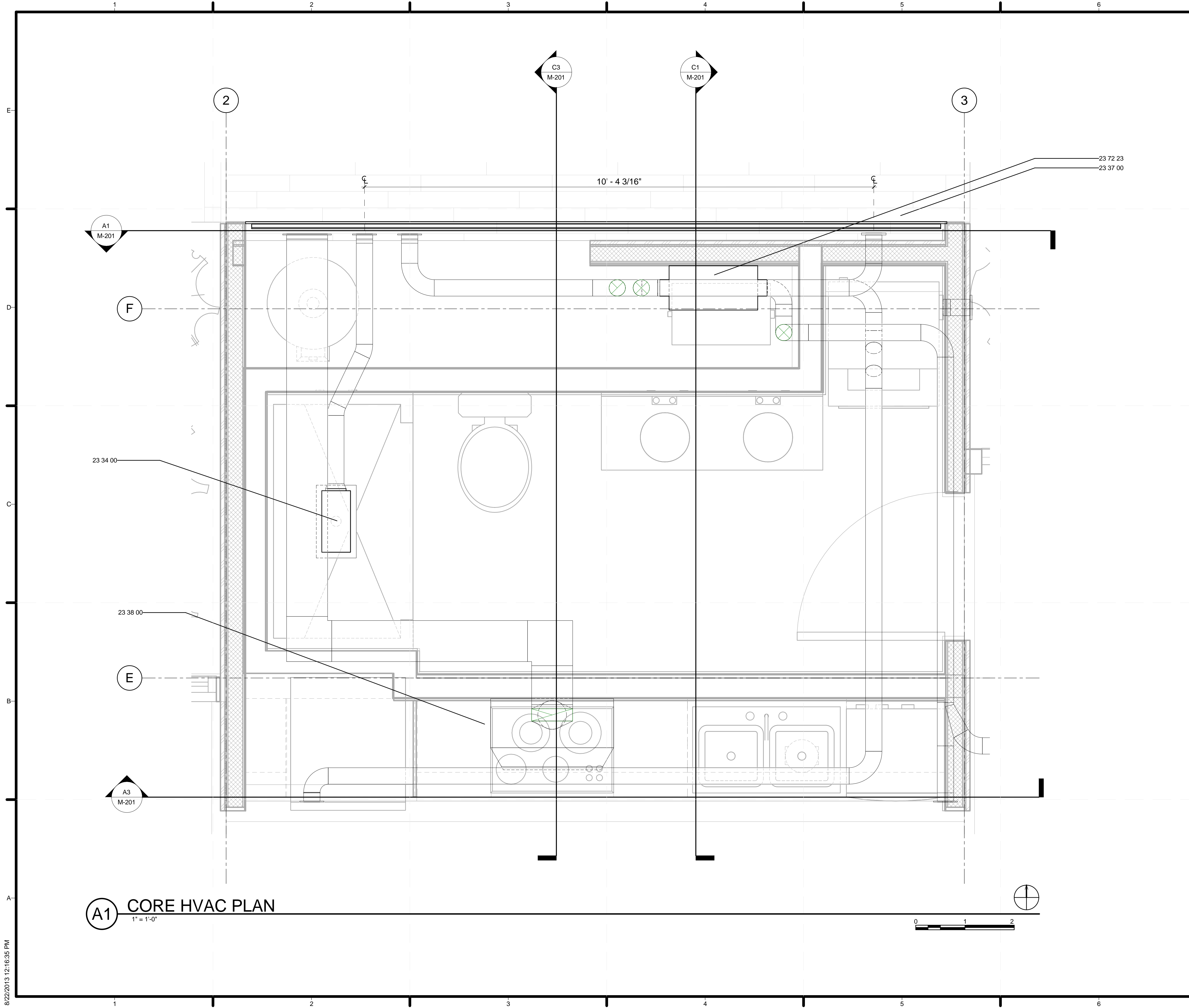
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SHEET TITLE
UPPER LEVEL HVAC PLAN

M-102

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(A1) CORE HVAC PLAN
1" = 1'-0"

GENERAL SHEET NOTES

REFERENCE KEYNOTES

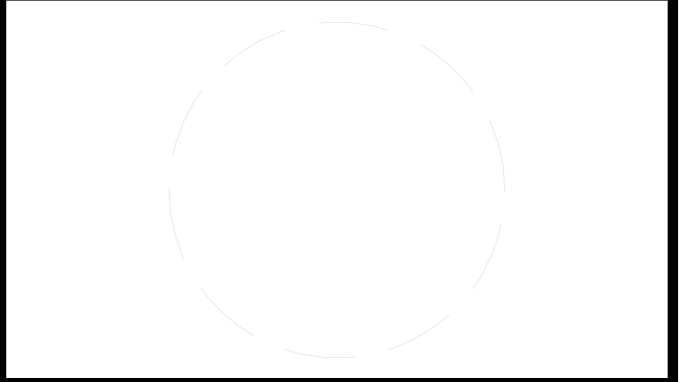
- 23 34 00 HVAC FANS
- 23 37 00 AIR OUTLETS AND INLETS
- 23 38 00 VENTILATION HOODS
- 23 72 23 PACKAGED AIR-TO-AIR ENERGY-RECOVERY UNITS

SHEET KEYNOTES



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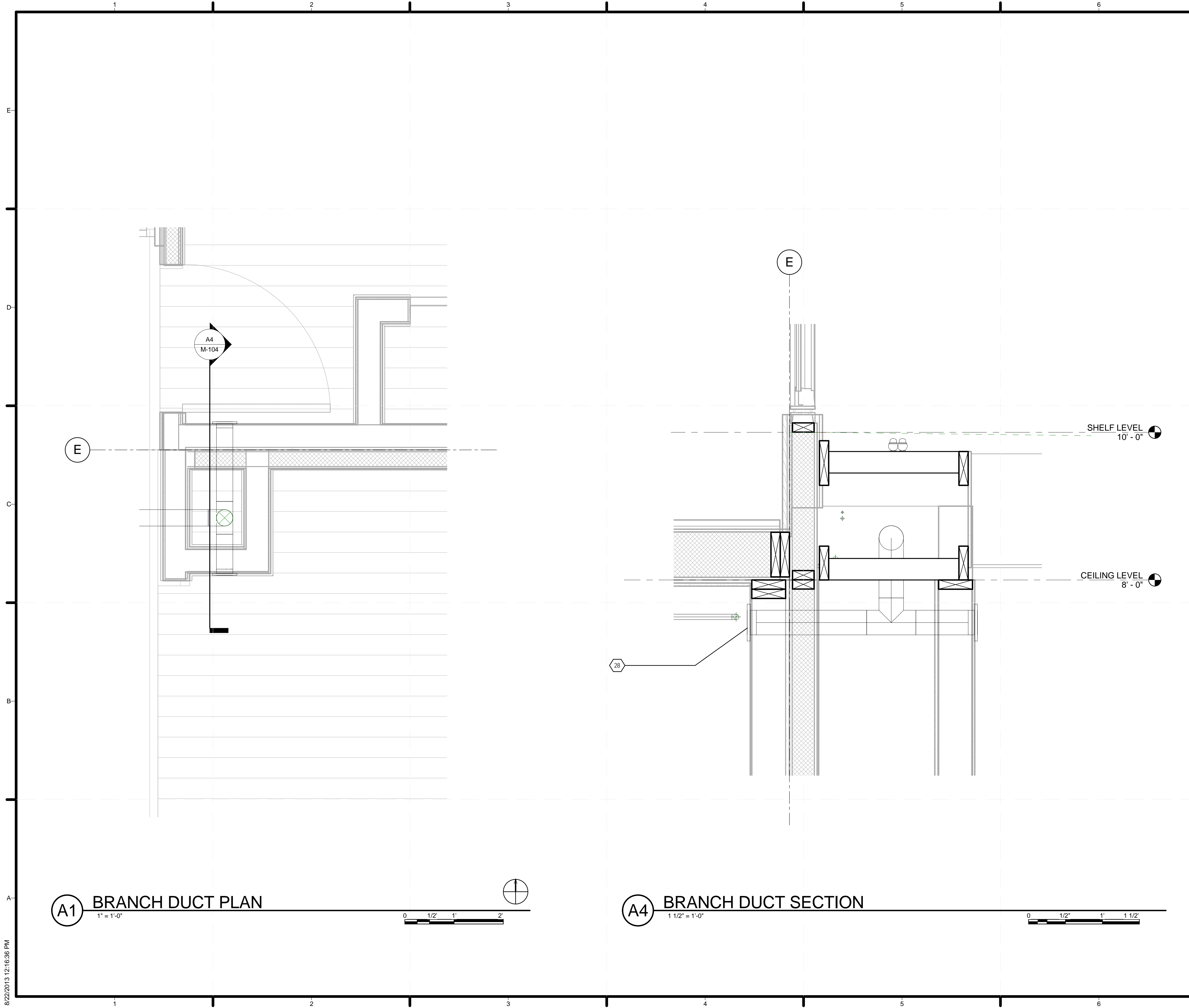


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02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
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05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION

SHEET TITLE
CORE HVAC PLAN

M-103



GENERAL SHEET NOTES

REFERENCE KEYNOTES

SHEET KEYNOTES

28 TEST NOTE 28



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05	08/22/2013	100% AS-BUILT SUBMISSION

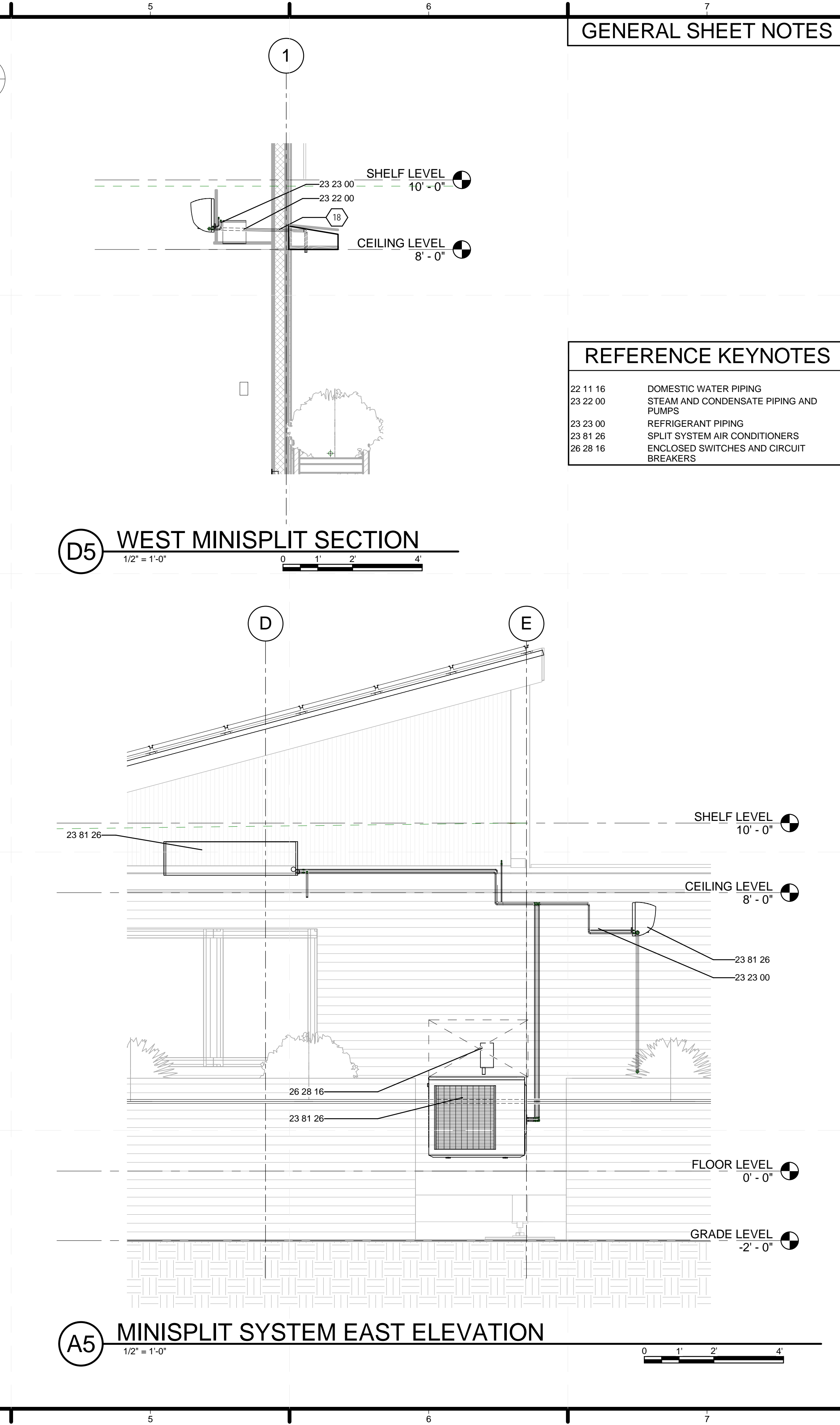
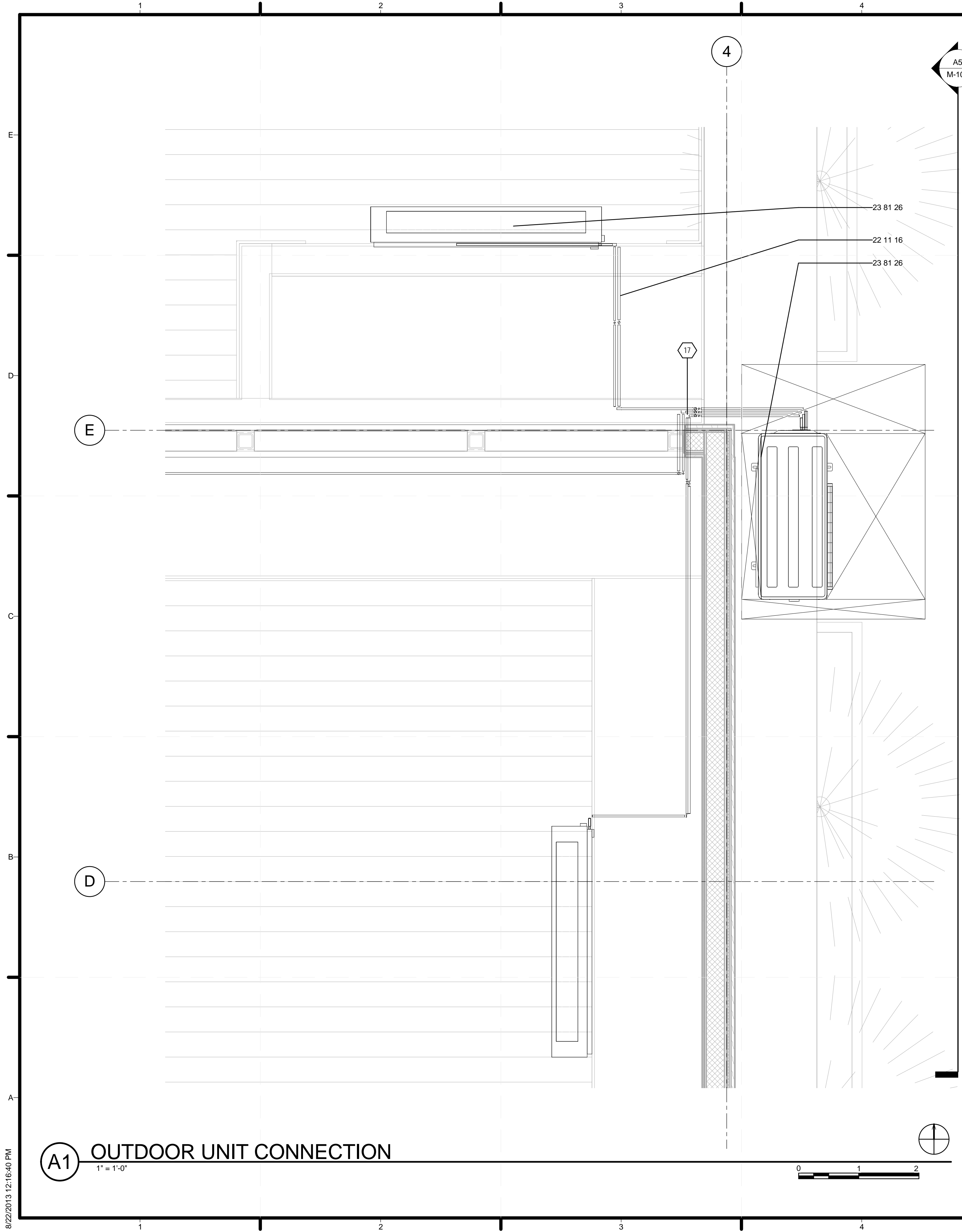
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SHEET TITLE
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M-104

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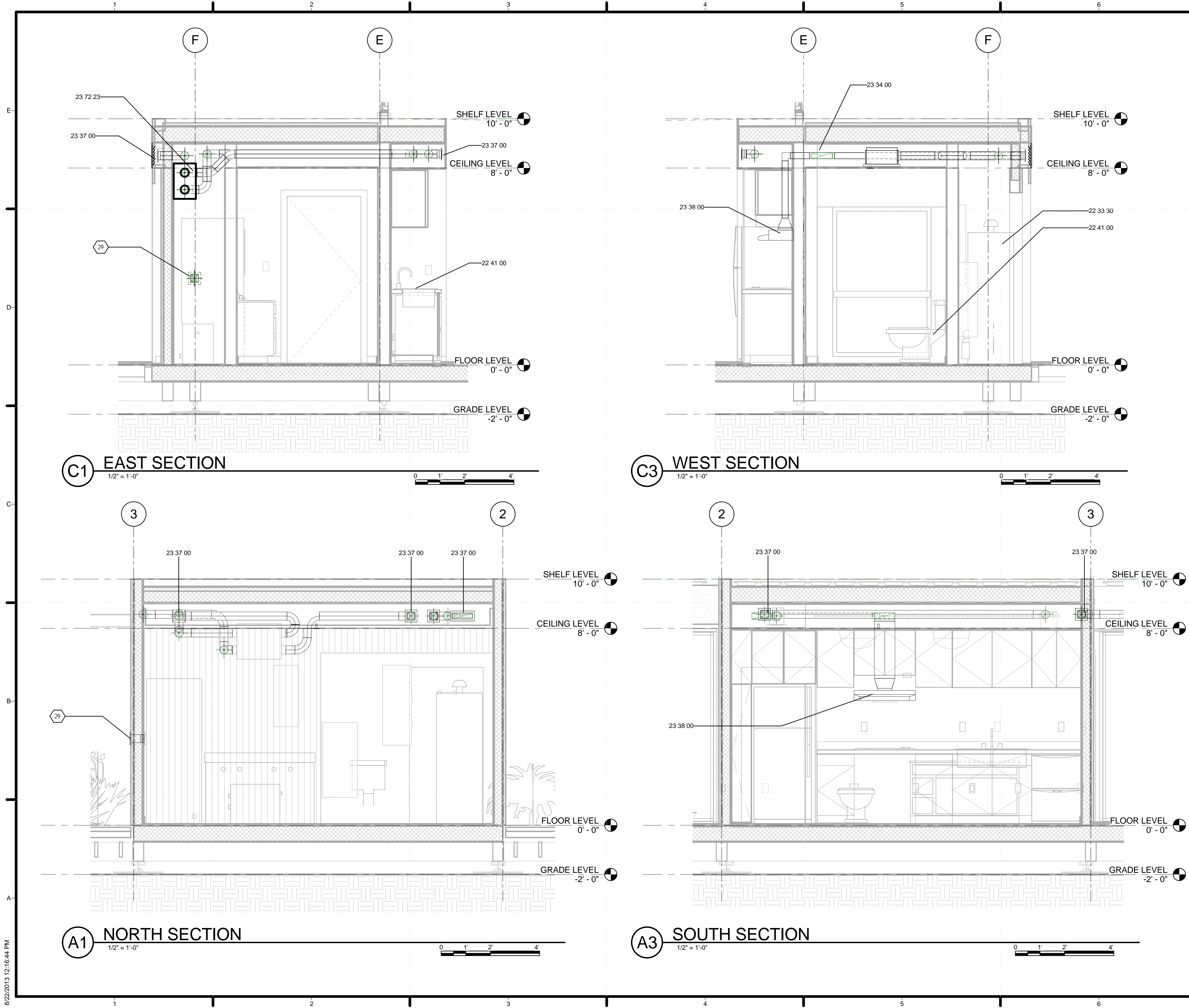
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SHEET TITLE

MINISPLIT SYSTEM

M-105



GENERAL SHEET NOTES

REFERENCE KEYNOTES

22 33 30	RESIDENTIAL, ELECTRIC DOMESTIC WATER HEATERS
22 41 00	RESIDENTIAL PLUMBING FIXTURES
23 34 00	HVAC FANS
23 37 00	AIR OUTLETS AND INLETS
23 38 00	VENTILATION HOODS
23 72 23	PACKAGED AIR-TO-AIR ENERGY-RECOVERY UNITS

SHEET KEYNOTES

29 TEST NOTE 29



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SHEET TITLE
 CORE HVAC SECTIONS

M-201

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GENERAL SHEET NOTES

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SHEET TITLE
 HVAC SCHEDULES

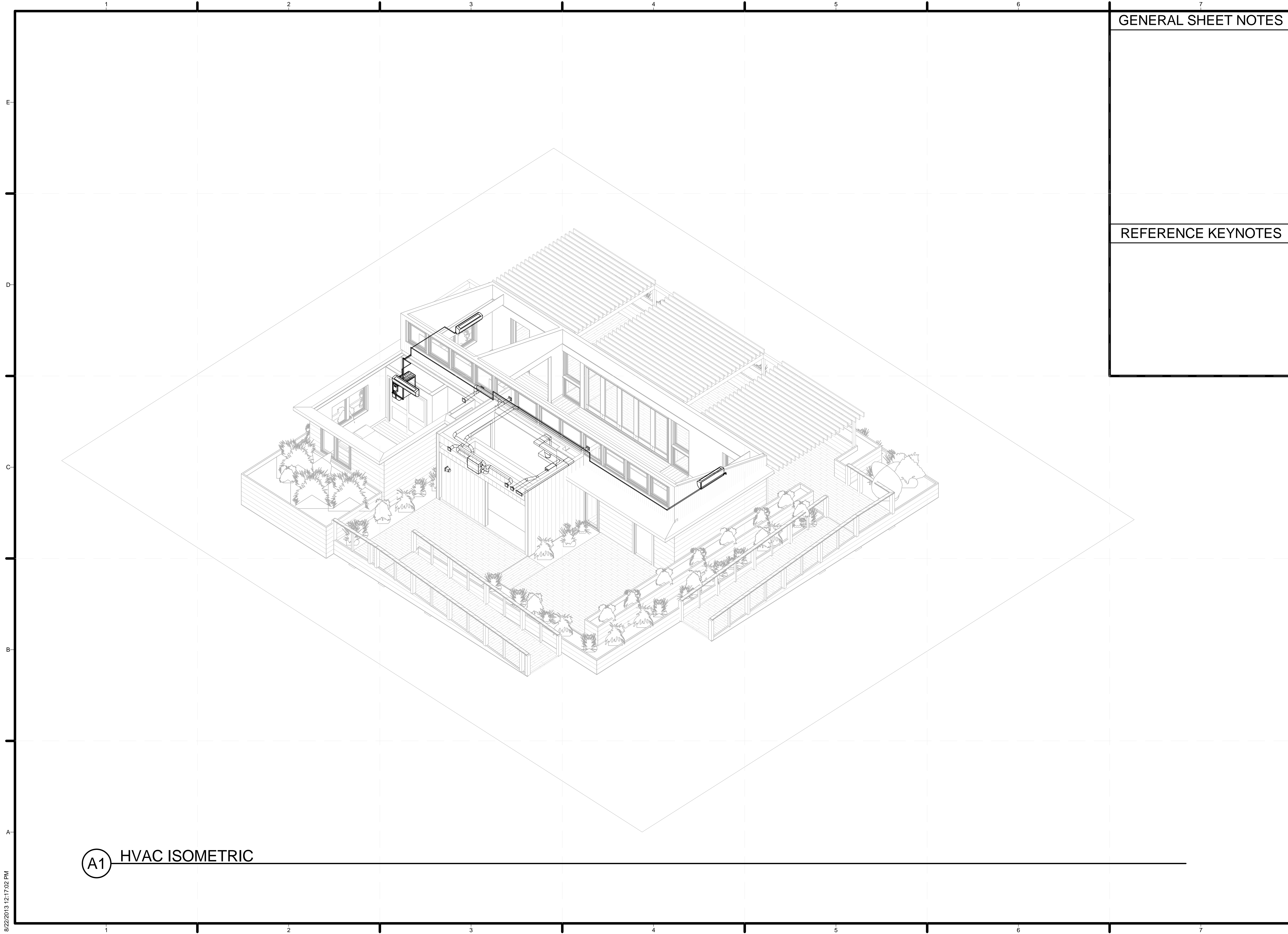
M-601

DUCT SCHEDULE			
Diameter	Keynote	Length	Manufacturer
		15' - 1 15/16"	
4"	23 31 00	51' - 5 1/4"	W.A. CALL MANUFACTURING COMPANY, INC.
Grand total		66' - 7 3/16"	

DUCT FITTING SCHEDULE						
Size	Keynote	System Type	Family	Type	Count	Manufacturer
3"x10"-3"x10"		Exhaust Air	Rectangular Elbow - Mitered	Standard	1	
4"x4"-4"Ø	23 37 00	Exhaust Air	Rectangular to Round Transition - Angle	45 Degree	3	W.A. CALL MANUFACTURING COMPANY, INC.
4"Ø-4"Ø	23 37 00	Exhaust Air	Round Elbow	1.5 D	9	W.A. CALL MANUFACTURING COMPANY, INC.
5"Ø-4"Ø	23 37 00	Exhaust Air	Round Transition - Angle	45 Degree	1	W.A. CALL MANUFACTURING COMPANY, INC.
7"Ø-10"x3"	23 37 00	Exhaust Air	Rectangular to Round Transition - Angle	45 Degree	1	W.A. CALL MANUFACTURING COMPANY, INC.
10"x3"-10"x3"		Exhaust Air	Rectangular Elbow - Mitered	Standard	2	
4"x4"-4"Ø	23 37 00	Return Air	Rectangular to Round Transition - Angle	45 Degree	1	W.A. CALL MANUFACTURING COMPANY, INC.
4"Ø-4"Ø		Return Air	Round Elbow	1 D	1	
4"x4"-4"Ø	23 37 00	Supply Air	Rectangular to Round Transition - Angle	45 Degree	4	W.A. CALL MANUFACTURING COMPANY, INC.
4"Ø-4"Ø		Supply Air	Round Elbow		9	
4"Ø-4"Ø-4"Ø		Supply Air			2	
Grand total: 34					34	

GRILLE SCHEDULE						
Mark	Keynote	Family	Type	Count	Manufacturer	Comments
G5		Supply Register - Rectangular - Floor Mounted	3"X10"	1		
	23 37 00	Intake Hood	4"X4"	4	C/S LOUVERS	
	23 37 00	Supply Register - Rectangular - Floor Mounted	4"X4"	4	C/S LOUVERS	
G4	23 38 00	Range Hood - Top Round Ducted	36"x12"	1	BROAN	EXHAUST HOOD
Grand total: 10						

MECHANICAL EQUIPMENT SCHEDULE					
ABBREV	KEYNOTE	NAME	CNT	MANUFACTURER	MODEL NUMBER
AS	12 20 00	AUTOMATED SHADES	5	HERMARY'S SHADES	SOMFY LT50
BF	23 34 00	BATHROOM FAN	1	PANASONIC	WHISPER RECESSED
CF	11 34 00	CEILING FAN	2	BIG ASS FANS	HAIKU
CS	26 33 43	CAR CHARGING STATION	1	TESLA	HIGH POWER WALL CONNECTOR
CW	11 31 00	CLOTHES WASHER	1	GE	GFWH1400DWW
DRY	11 31 00	DRYER	1	GE	GFDS140EDWW
DW	11 31 00	DISHWASHER	1	GE	CDWT280VSS
EC	11 31 00	ELECTRIC COOKTOP	1	GE	PP945SMSS
GD	11 31 00	GARBAGE DISPOSAL	1	INSINKERATOR	EVOLUTION COMPACT
HPWH	22 33 30	HEAT PUMP WATER HEATER	1	GE	GEH50DEEDSR
HRV	23 72 23	HEAT RECOVERY VENTILATOR	1	FANTECH	SH704
MS6	23 81 26	MINISPLIT UNIT 6 TON	2	MITSUBISHI	MSZ-GE06NA-8
MS9	23 81 26	MINISPLIT UNIT 9 TON	1	MITSUBISHI	MSZ-GE09NA-8
OU	23 81 26	OUTDOOR VARIABLE SPEED COMPRESSOR	1	MITSUBISHI	MXZ-3B24NA
RF	11 31 00	REFRIGERATOR	1	GE	GTZ18GCESS
RH	23 38 00	RANGE HOOD	1	GE	JVE40STSS
WA	08 75 00	WINDOW ACTUATORS	10	UCS	VEGA-DC-UR-26645
WO	11 31 00	WALL OVEN	1	GE	JT5000SFSS



A1 HVAC ISOMETRIC

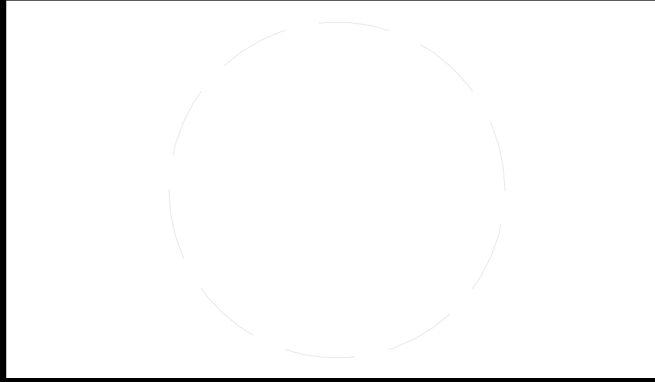
GENERAL SHEET NOTES

REFERENCE KEYNOTES



TEAM NAME: STANFORD UNIVERSITY
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01	10/11/2012	80% DOE/NREL DD SUBMISSION
02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION
----	------	-------------

LOT NUMBER: 104
 DRAWN BY: DEREK OUYANG
 CHECKED BY: FELIPE PINCHEIRA
 COPYRIGHT: NONE: PROJECT IS PUBLIC DOMAIN

SHEET TITLE
 HVAC ISOMETRIC

M-901

GENERAL NOTES

- 1. THE COMPLETE ELECTRICAL INSTALLATION SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE CALIFORNIA ELECTRICAL CODE, THE LATEST RULES AND REGULATIONS OF THE SAFETY ORDERS ISSUED BY THE DIVISION OF INDUSTRIAL SAFETY, THE NATIONAL BOARD OF FIRE UNDERWRITERS AND ALL APPLICABLE STATE AND LOCAL CODES ISSUED BY THE AUTHORITIES HAVING JURISDICTION.
2. THE INSTALLER, PRIOR TO COMMENCING WORK, SHALL VISIT THE JOB SITE TO BECOME ACQUAINTED WITH THE EXISTING INSTALLATION AND SYSTEMS RELATED TO HIS WORK AND SHALL INCLUDE IN THE DRAWINGS AND SCOPE OF WORK ALL LABOR AND MATERIALS REQUIRED FOR THE ELECTRICAL INSTALLATION TO BE COMPLETE AND OPERATIVE.
3. INSTALLER SHALL FOLLOW CURRENT STANFORD UNIVERSITY DESIGN AND CONSTRUCTION SPECIFICATIONS.
4. THE INSTALLER SHALL CONSULT THE ARCHITECTURAL, MECHANICAL, STRUCTURAL AND OTHER DRAWINGS RELATED TO THIS PROJECT FOR ADDITIONAL WORK TO BE PROVIDED.
5. THE INSTALLER SHALL BE RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS AND INSPECTIONS.
6. ALL FEEDER AND BRANCH CIRCUIT CONDUITS SHALL BE INSTALLED CONCEALED IN FINISHED AREA, UNLESS OTHERWISE NOTED.
7. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE TOTALLY SEALED TO PREVENT THE SPREAD OF SMOKE, FIRE, TOXIC GASES, AND WATER THROUGH THE PENETRATION BEFORE, DURING AND AFTER A FIRE CONDITION. THE FIRE RATING OF THE SEALED PENETRATION SHALL BE AT LEAST THAT OF THE WALL INTO WHICH IT IS INSTALLED. THE SEAL SHALL PERMIT THE VIBRATION, EXPANSION AND/OR CONTRACTION OF THE CONDUIT PASSING THROUGH THE PENETRATION WITHOUT THE SEAL CRACKING OR CRUMBLING.
8. UNLESS OTHERWISE INDICATED, THE MINIMUM SIZE OF CONDUCTORS SHALL BE #14 AWG THHN COPPER ONLY.
9. UNLESS OTHERWISE INDICATED, THE MINIMUM SIZE OF CONDUIT SHALL BE 3/4".
10. GREEN INSULATED GROUND CONDUCTORS SHALL BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUIT CONDUIT.
11. PROVIDE LABELS (BROTHER TYPE OR APPROVED EQUAL) ON ALL EQUIPMENT CONNECTIONS AND DEVICES.
12. ELECTRICAL EQUIPMENT AND FEEDERS SHALL BE SUPPORTED AND/OR ANCHORED IN ACCORDANCE WITH LOCAL AND STATE ZONE SEISMIC REQUIREMENTS.
13. THE INSTALLER SHALL MAINTAIN AT THE JOB SITE, (2) SETS OF UP TO DATE "AS-BUILT" DRAWING SET. THE "AS-BUILT" DRAWING SETS SHALL REFLECT ALL APPROVED CHANGES TO THE DESIGN DRAWINGS. THE "AS-BUILT" DRAWING SETS SHALL BE KEPT CLEAN AND IN GOOD CONDITION AND SHALL BE TURNED OVER TO THE OWNER AT THE COMPLETION OF THE PROJECT.
14. UPON COMPLETION OF HIS WORK, THE INSTALLER SHALL SCHEDULE AND PERFORM A COMPLETE FUNCTIONAL TEST TO DEMONSTRATE TO THE OWNER THAT THE NEW INSTALLATION IS OPERATING AS INTENDED. ANY DEFECTS OR DEFICIENCIES IN THE MATERIALS OR WORK SHALL BE CORRECTED IMMEDIATELY BY AND AT THE CONTRACTOR'S EXPENSE.
15. ALL WORK TO BE PERFORMED PER STANFORD UNIVERSITY FACILITIES DESIGN & CONSTRUCTION STANDARDS AND MANUFACTURER'S INSTRUCTIONS UNLESS OTHERWISE SPECIFIED. HTTP://MAPS.STANFORD.EDU/FDG_AVAILABLE
16. PRIOR TO THE COMPLETION OF WORK INSTALLER SHALL UPDATE ALL PANEL SCHEDULES WITH UPDATED TYPE-WRITTEN PANEL DIRECTORIES.

AMBIENT TEMPERATURE
TEMPERATURE IN STANFORD, CA RANGES FROM 0 DEG C TO 29 DEG C.
TEMPERATURE IN EL TORO, CA RANGES FROM 2 DEG C TO 31 DEG C.

ELECTRICAL SYSTEM BLOCK DIAGRAM
E-601 (ONE LINE DIAGRAM) PROVIDES AN OVERVIEW OF THE ELECTRICAL SYSTEM. 48 STION MODULES WILL BE INSTALLED. FOUR PV MODULES CONNECT TO ONE TIGO DUAL MAXIMIZER. TWO MODULES CONNECT IN PARALLEL TO EACH INPUT OF THE DUAL MAXIMIZER (MM-2ES75). FOUR MAXIMIZERS ARE CONNECTED IN SERIES AND THREE OF THESE PARALLEL STRINGS EXIST. EACH NEGATIVE STRING IS PROTECTED BY A 10A FUSE. STRINGS A, B, AND C ARE COMBINED INSIDE THE MECHANICAL ROOM IN A COMBINER BOX. THE COMBINER BOX IS ATTACHED TO THE CENTRAL INVERTER AND INCLUDES A DC DISCONNECT METHOD.

NEC 690.7 MAXIMUM VOLTAGE CALCULATION
STION PROVIDED TEMPERATURE COEFFICIENT VOLTAGE (VOC) = -0.28%/K
FOR LOWEST AMBIENT TEMPERATURE 0C = 273.15K, 25C = 298.15K
SIX STRINGS OF 8 AT LOWEST AMBIENT TEMPERATURE OF 0C OR 273.15K
DIFFERENCE BETWEEN RATED AND LOWEST EXPECTED TEMPERATURE 25C OR 298.15K @ ST, 0C OR 273.15K @ LOWEST EXPECTED TEMPERATURE
TEMPERATURE DIFFERENCE 25 C OR K
DIFFERENCE BETWEEN RATED AND HIGHEST EXPECTED TEMPERATURE 25C OR 298.15K @ ST, 31C OR 304.15K @ HIGHEST EXPECTED TEMPERATURE
TEMPERATURE DIFFERENCE 6 C OR K

MAXIMUM PV OPEN CIRCUIT (PVOC) V DC
VOLTAGE (VOC) = -0.28%/K
V OPEN CIRCUIT = 58.7V PER PANEL
58.7 VDC + (-0.28%/K X -25 K) = 58.7 VDC + 7.00% = 62.81 VOC/PANEL
62.81 VOC X 8 PANELS/STRING = 502.47 VDC MAXIMUM VOLTAGE PER STRING AT 0C OR 273.15K

SMA SUNNYBOY 6000-US INVERTER
MAXIMUM INPUT VOLTAGE = 600VDC
MAX POWER POINT (MPPT) VOLTAGE WINDOW = 250 - 480VDC
MAXIMUM INPUT CURRENT = 20 A
NOMINAL OUTPUT POWER = 6000 W
NOMINAL OUTPUT VOLTAGE = 240 VAC
MAXIMUM CONTINUOUS OUTPUT CURRENT = 25A

MAXIMUM PV MAX POWER POINT (VMPP) VDC
VOLTAGE (VMPP) = 44.3 V PER PANEL
44.3 VMPP + (-0.28%/K X -25 K) = 44.3 VMPP + 7.00% = 47.4 VMPP/PANEL
47.4 VMPP X 8 PANELS/STRING = 379.21 VMPP MAXIMUM VOLTAGE PER STRING AT 0C OR 273.15K

MINIMUM PV MAX POWER POINT (VMPP) VDC
VOLTAGE(VMPP) = 44.3 V PER PANEL
ASSUME MAX SOLAR MODULE TEMPERATURE IS 60 C.
44.3 VMPP + (-0.28%/K X (60-25) K) = 44.3 VMPP - 9.8% = 40.0 VMPP/PANEL
40.0 VMPP X 8 PANELS/STRING = 320 VMPP MINIMUM VOLTAGE PER STRING AT 60C OR 333.15K

NEC 690.53 DIRECT-CURRENT PV POWER SOURCE REQUIREMENTS FOR LABEL/MARKING
(1) RATED MAXIMUM POWER-POINT CURRENT (IMP) = (3.05A X NUMBER OF STRINGS IN PARALLEL)
IMP = 3.05A X 6 = 18.3A
(2) RATED MAXIMUM POWER-POINT VOLTAGE (VMP) = (MODULE VMP X NUMBER OF MODULES/STRING)
VMP = 44.3V X 8 = 354.4 VDC
(3) MAX SYSTEM VOLTAGE (PV VOC) = (PVOC X TEMP CORRECTION FACTOR X NUMBER OF MODULES/STRING)
PV VOC = 58.7 X 1.07 X 8 = 502.5 VDC (FROM ABOVE CALCULATION)
(4) SHORT-CIRCUIT CURRENT (ISC) = (MODULE ISC X 1.25 X NUMBER OF STRINGS IN PARALLEL)
ISC = (3.45A X 1.25) X 6 = 25.88A

OVERCURRENT PROTECTION DEVICE CALCULATIONS PV OUTPUT CIRCUIT FUSE
NEC 690.8 (A) (2) MAXIMUM OUTPUT CIRCUIT CURRENT
EACH OUTPUT CKT IS THE OUTPUT OF A TIGO DUAL MAXIMIZER. BECAUSE OF THE ARRANGEMENT, THE OUTPUT CKT CURRENT CORRESPONDS TO THE CURRENT OF TWO STION MODULES IN PARALLEL
PV OUTPUT CKT CURRENT = (MODULE ISC X 1.25 X NUMBER OF STRINGS IN PARALLEL)
PV OUTPUT CKT CURRENT = (3.45 X 1.25 X 2) = 8.625A MAX STRING CURRENT

NEC 690.8 (B) AMPACITY AND OVERCURRENT DEVICE (OCPD) RATINGS
"OVERCURRENT DEVICES MUST BE SIZED NOT LESS THAN 125 PERCENT OF NEC 690.8 (A) CIRCUIT CURRENT"
VERIFY TOUCH SAFE FUSE CALCULATION FOR PV OUTPUT CIRCUIT :
OCPD (OVER CURRENT PROTECTION DEVICE) = (MAX STRING CIRCUIT CURRENT X 1.25)
OCPD = (8.625A X 1.25) = 10.78 A PER STRING

AT 50C FOR MECHANICAL ROOM CONDITIONS, USING 15A TOUCHSAFE FUSE
150C-50C/125 = 0.8
SQRT(0.8) = 0.894
(15A) X (0.894) = 13.41A
VERIFIED: 13.41A > 10.78A; 14A DC TOUCH SAFE FUSE, OK

MAXIMUM NUMBER OF ALLOWABLE CONDUCTORS IN ELECTRICAL METALLIC TUBING (EMT)
THREE STRINGS OF 2 PV OUTPUT CIRCUITS TO COMBINER IN 3/4" EMT (6 CURRENT CARRYING CONDUCTORS). FROM NEC TABLE C.1 - "16 CURRENT CARRYING CONDUCTORS IS THE LIMIT FOR #12 THWN-2 IN 3/4" EMT"
CONDUCTOR TYPE THWN-2 PV WIRE SIZE IN 3/4" EMT (6 CURRENT CARRYING CONDUCTORS).

VERIFY AMPACITY OF CONDUCTORS IN CONDITIONS OF USE
CONTINUOUS USE STRING AMPERAGE: 3.45 ISC X 1.25 X 2 = 8.625A
OVER IRRADIANCE: 8.625A X 1.25 = 10.78 A

AMPACITY OF CONDUCTORS
#12AWG THWN-2 90C (194F) COPPER - FROM NEC TABLE 310.15(B)(16) = 30 AMPS

DERATED AMPACITY OF #12AWG CONDUCTORS INSIDE MECHANICAL ROOM
CONDUIT FILL CORRECTION DERATING NEC TABLE 310.15(B)(3)(a) - ADJUSTMENT FACTOR FOR MORE THAN FOUR CURRENT-CARRYING CONDUCTORS IN A RACEWAY = 4-6 CONDUCTORS IN 3/4" EMT = 0.80 DERATION
TEMPERATURE CORRECTION NEC TABLE 310.15(B)(2)(a), AMBIENT TEMPERATURE BASED ON DESIGN TEMPERATURE OF 55 C TEMPERATURE INSIDE MECHANICAL ROOM
55 C DERATION OF 90 C RATED #12AWG THWN-2 CONDUCTOR = 0.76
CONDUCTOR DERATING = 30A X 0.80 X 0.76 = 18.24A
18.24A IS GREATER THAN OCPD OF 15A. OK

DERATED AMPACITY OF #12AWG CONDUCTORS ON ROOF
ALL PVSC STRINGS ARE IN 3/4" EMT CONDUIT ON THE ROOF TO PROTECT THE CONDUCTORS.
CONDUIT FILL CORRECTION DERATING NEC TABLE 310.15 (B) (2) (A) - ADJUSTMENT FACTOR FOR MORE THAN FOUR CURRENT-CARRYING CONDUCTORS IN A RACEWAY = 4-6 CONDUCTORS IN 3/4" EMT = 0.80 DERATION
TEMPERATURE CORRECTION NEC TABLE 310.15(B)(2)(a)
ROOFTOP CONDITION OF USE 65 DEG C
65 C DERATION OF 90 C RATED #12AWG THWN-2 CONDUCTOR = 0.65

CONDUCTOR DERATING = 30A X 0.80 X 0.65 = 15.6A
15.6A IS GREATER THAN OCPD OF 15A. OK

TERMINAL RATING
CONDUCTOR AMPACITY AT TERMINAL RATED TEMPERATURE, DERATED FOR CONDUIT FILL AND TEMPERATURE, MUST BE GREATER THAN OR EQUAL TO THE SHORT CIRCUIT CURRENT
ISC X 1.56 (1.25 FOR CONTINUOUS USE X 1.25 FOR OVER IRRADIANCE)
ISC = 6.9A, 6.9A X 1.56 = 10.76A

OCPD INPUT AND OUTPUT TERMINALS ARE RATED AT 75C. FROM 2008 NEC TABLE 310.15(B)(16),
TERMINAL RATING OF #6 AWG @ 75C= 65A

CONDITIONS OF USE: SMA SB6000-US IN MECHANICAL ROOM, CORRECTION FACTOR OF 55C FROM
NEC310.15(B)(2)(a) = .67 FOR TEMPERATURES OTHER THAN 30 C . 65A X .67 = 43.55A
43.55A IS GREATER THAN OR EQUAL TO THE 10.76A MAX CKT CURRENT.
TERMINAL RATING IS OK

VOLTAGE DROP CALCULATIONS
VD = 354.4V MAX POWER-POINT
CONDUCTOR = #12 AWG THWN-2
R = 1.98 OHM/KFT (FROM NEC CH.9 TABLE 8)
IMP = 6.16A (3.08 A X 2 PARALLEL MODULES PER MAXIMIZER STRING)
D= 100FT (LONGEST ONE WAY DISTANCE OF THE STRINGS FROM ARRAY TO DC COMBINER AT INVERTER)

VERIFY VOLTAGE DROP LESS THAN (1%)
1% VD = 354.4V X 0.01 = 3.54VDC
R = 1% (VD) * 1000 / (2 X I X D)
R = 1.98 X 1000 / (2 X 6.16A X 100FT)
R = 3.06 OHMS / KFT

1.98 IS LESS THAN 3.06 OK

MAIN PANEL DESIGN
BREAKER AND CONDUCTOR SIZING
SMA SB6000-US MAXIMUM OUTPUT CURRENT = 25A
IN ACCORDANCE TO NEC 705.12(D)(2) THE BACKFEED CURRENT IS (1.25 X MAX OUTPUT CURRENT)
BACKFEED CURRENT = 25 X 1.25 = 31.25A
CONDUCTOR SIZE FOR INVERTER BACKFEED #8AWG THHW (RATED FOR 75 C). #8AWG AMPACITY = 50A

THE MAIN PANEL INCLUDES A 40A DOUBLE POLE BACK-FED PV BREAKER AND A 200A MAIN BREAKER. THE BACK-FED PV BREAKER SHALL BE LABELED AS BEING SUITABLE FOR BACKFEED. A PERMANENT WARNING LABEL SHALL BE APPLIED TO THE DISTRIBUTION EQUIPMENT WITH THE FOLLOWING WORDING:
"WARNING: INVERTER OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE"

MAIN DISTRIBUTION PANEL RATING
NEC 690.64(B)(2)
MAIN PANEL RATING = (40 + 200) / 1.2 = 200A

AC SIDE EQUIPMENT GROUNDING
NEC 250.122
#10AWG BARE CU CONDUCTORS WILL BE USED.
NEC 250.66
GROUNDING ELECTRODE CONDUCTOR: 4AWG BARE CU CONDUCTORS. AS DICTATED BY THE RULES, THE GROUND ROD WILL BE DRIVEN 8' INTO THE EARTH.

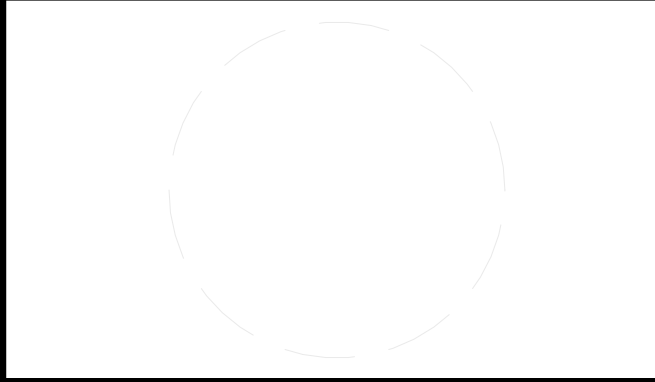
Table with 2 columns: Symbol and Description. Includes TAMPER-RESISTANT DUPLEX RECEPTACLE NEMA 5/15P, JUNCTION BOX, 240V 20A RECEPTACLE NEMA 6/20P, 3 POLE SWITCH, SWITCH, DISCONNECT, AUTOMATED SHADE, PROJECTOR SCREEN, WINDOW ACTUATOR, PUMP, SUMP PUMP, MINISPLIT, OUTDOOR UNIT, CAR CHARGING STATION.

Table with 2 columns: Abbreviation and Description. Includes BF BATHROOM FAUCET, BWT BLACK WATER TANK, CB COMBINER BOX, DW DISHWASHER, DWT DOMESTIC WATER TANK, GWT GRAY WATER AQUA2USE TANK, HPWH HEAT PUMP WATER HEATER, HRV HEAT RECOVERY VENTILATOR, INV INVERTER, KF KITCHEN FAUCET, MSP MAIN SERVICE PANEL, PM PEX MANIFOLD, REF REFRIGERATOR, SCWD STACKED CLOTHES WASHER & DRYER, UM UTILITY METER, V VALVE, W WASHING MACHINE JUNCTION BOX, WC TOILET.



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Table with 5 columns: ID, Date, Percentage, Submission Type, Status. Includes rows for 80% DOE/NREL DD SUBMISSION, 100% DOE/NREL RE-SUBMISSION, 100% DOE/NREL CD SUBMISSION, 100% DOE/NREL CD RE-SUBMISSION, 100% AS-BUILT SUBMISSION.

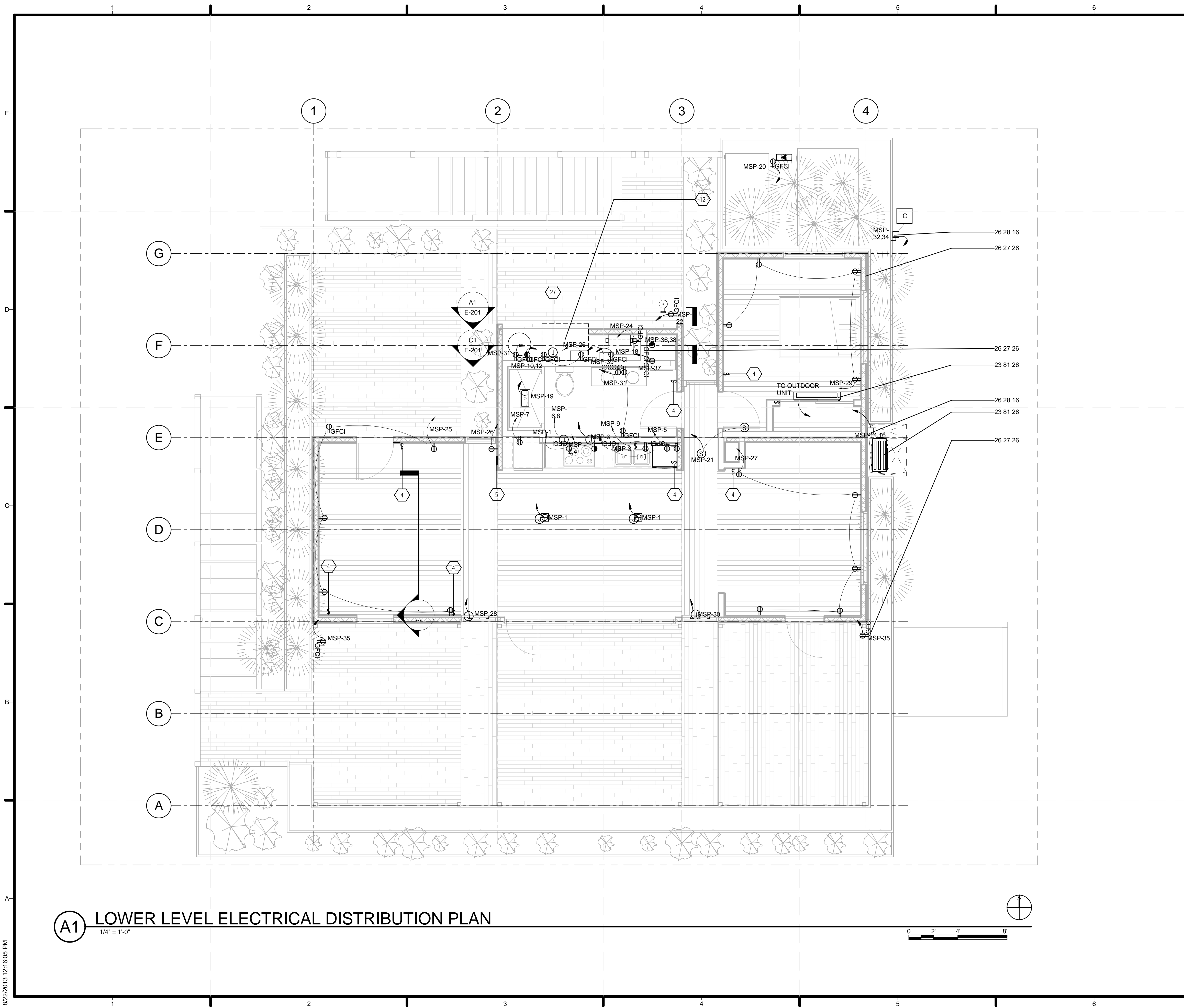
Table with 3 columns: MK, DATE, DESCRIPTION.

LOT NUMBER: 104
DRAWN BY: DEREK OUYANG
CHECKED BY: ALVARO AGUILAR
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SHEET TITLE

ELECTRICAL NOTES AND SYMBOLS

E-001



A1 LOWER LEVEL ELECTRICAL DISTRIBUTION PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

1. ALL NONLOCKING TYPE 120V, 15A, OR 20A RECEPTABLES WILL BE TAMPER RESISTANT AS TO COMPLY WITH NEC 406.12
2. ALL 15A, 20A, 120V, OR 240V RECEPTABLES IN DAMP AND WET LOCATIONS WILL BE WEATHER RESISTANT IN ACCORDANCE WITH NEC 406.9 (A) AND (B)
3. ALL 15A, 20A, 120V, OR 240V RECEPTABLES IN WET LOCATIONS WILL HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED IN ACCORDANCE TO NEC 406.9(B)(1)

REFERENCE KEYNOTES

- | | |
|----------------------------------|---|
| 23 81 26
26 27 26
26 28 16 | SPLIT SYSTEM AIR CONDITIONERS
WIRING DEVICES
ENCLOSED SWITCHES AND CIRCUIT BREAKERS |
|----------------------------------|---|

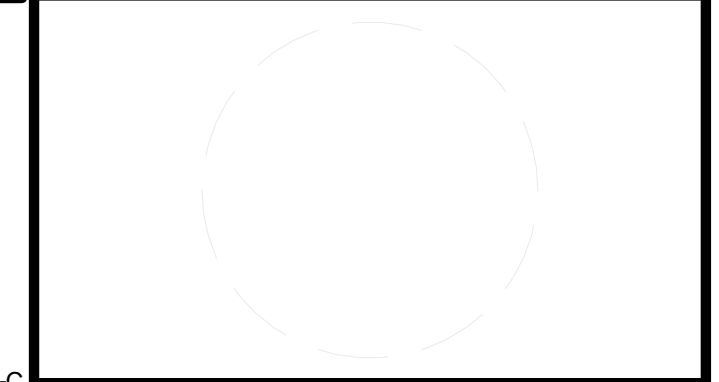
SHEET KEYNOTES

- | | |
|--------------------|---|
| 4
5
12
27 | LOW VOLTAGE ROOM SWITCH
MASTER SWITCH AND CONTROL PANEL FOR HOME, FLUSH MOUNTED TABLET
CLEARANCE FACING ELECTRICAL COMPONENTS WILL COMPLY WITH NEC 110.26 BY PROVIDING GREATER THAN 3 FEET OF ACCESS SPACE WITH DOORS OF MECHANICAL CLOSET OPEN
UNDERFLOOR JUNCTION BOX FROM BREAKER PANEL TO FLOOR OUTLETS, EXTERIOR OUTLETS, EXTERIOR LIGHTS, AND DISCONNECT BOXES |
|--------------------|---|



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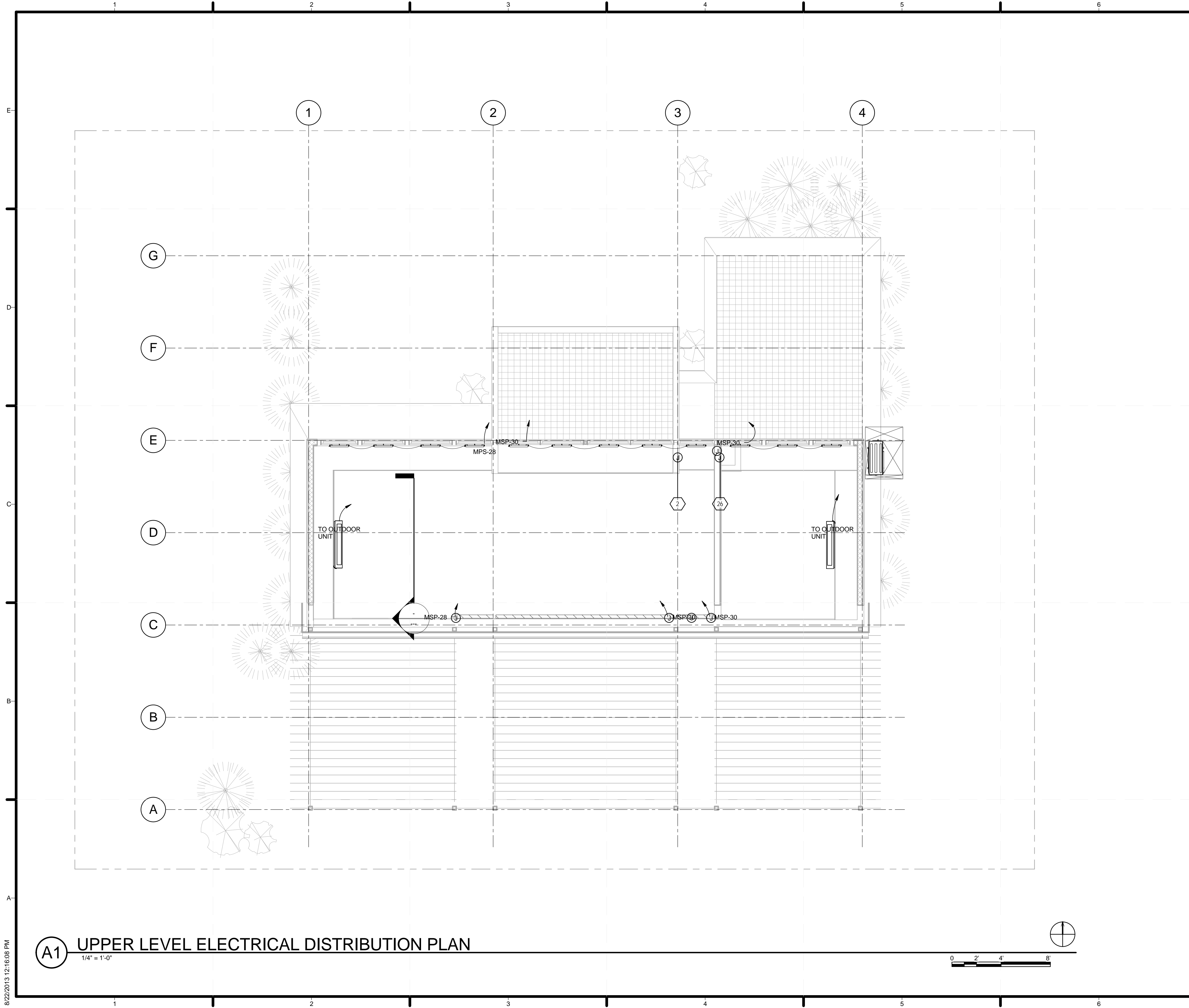
01	10/11/2012	80% DOE/NREL DD SUBMISSION
02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION

LOT NUMBER: 104
DRAWN BY: DEREK OUYANG
CHECKED BY: ALVARO AGUILAR
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SHEET TITLE
LOWER LEVEL ELECTRICAL DISTRIBUTION PLAN
E-101

8/22/2013 12:16:05 PM



GENERAL SHEET NOTES

1. ALL NONLOCKING TYPE 120V, 15A, OR 20A RECEPTABLES WILL BE TAMPER RESISTANT AS TO COMPLY WITH NEC 406.12
2. ALL 15A, 20A, 120V, OR 240V RECEPTABLES IN DAMP AND WET LOCATIONS WILL BE WEATHER RESISTANT IN ACCORDANCE WITH NEC 406.9 (A) AND (B)
3. ALL 15A, 20A, 120V, OR 240V RECEPTABLES IN WET LOCATIONS WILL HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED IN ACCORDANCE TO NEC 406.9(B)(1)

REFERENCE KEYNOTES

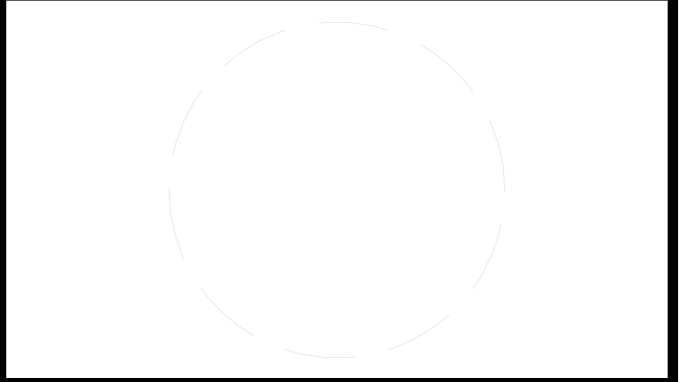
SHEET KEYNOTES

- 2 JUNCTION BOX CONNECTION POINT BETWEEN MODULES
- 26 ROOF JUNCTION BOX FROM EXTERIOR TO INTERIOR



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01	10/11/2012	80% DOE/NREL DD SUBMISSION
02	11/20/2012	80% DOE/NREL RE-SUBMISSION
03	02/14/2013	100% DOE/NREL CD SUBMISSION
04	04/05/2013	100% DOE/NREL CD RE-SUBMISSION
05	08/22/2013	100% AS-BUILT SUBMISSION

MK	DATE	DESCRIPTION
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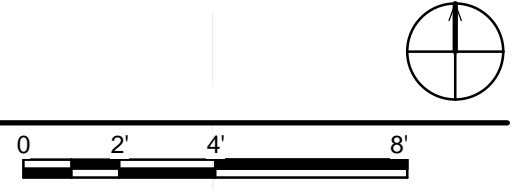
LOT NUMBER: 104
 DRAWN BY: DEREK OUYANG
 CHECKED BY: ALVARO AGUILAR
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SHEET TITLE

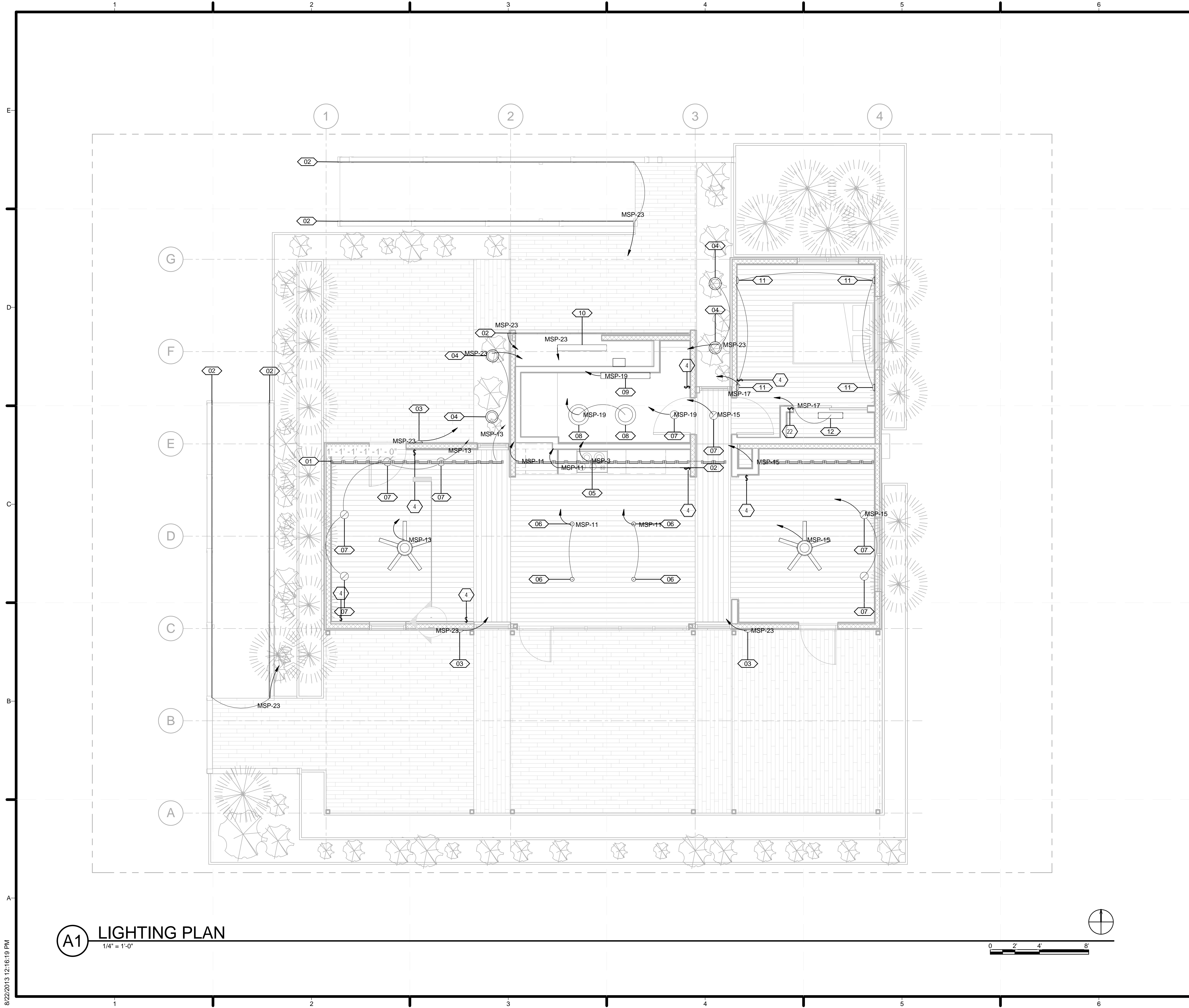
UPPER LEVEL ELECTRICAL DISTRIBUTION PLAN

E-102

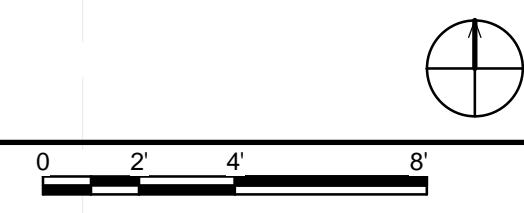
A1 UPPER LEVEL ELECTRICAL DISTRIBUTION PLAN
 1/4" = 1'-0"



8/22/2013 12:16:08 PM



A1 LIGHTING PLAN
1/4" = 1'-0"



GENERAL SHEET NOTES

REFERENCE KEYNOTES

SHEET KEYNOTES

- 4 LOW VOLTAGE ROOM SWITCH
- 22 PUSH BUTTON DOOR SWITCH

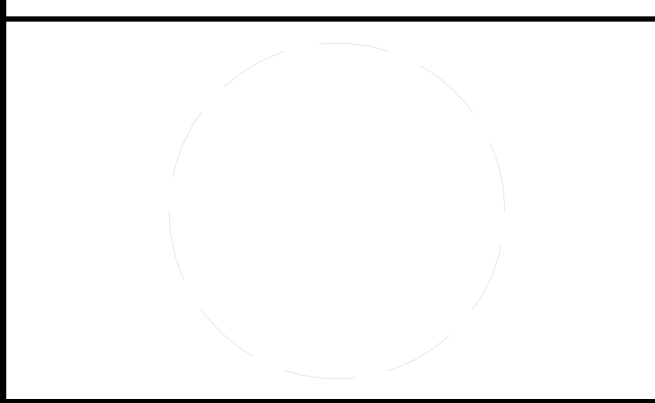


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SHEET KEYNOTES

- 4 LOW VOLTAGE ROOM SWITCH
- 22 PUSH BUTTON DOOR SWITCH



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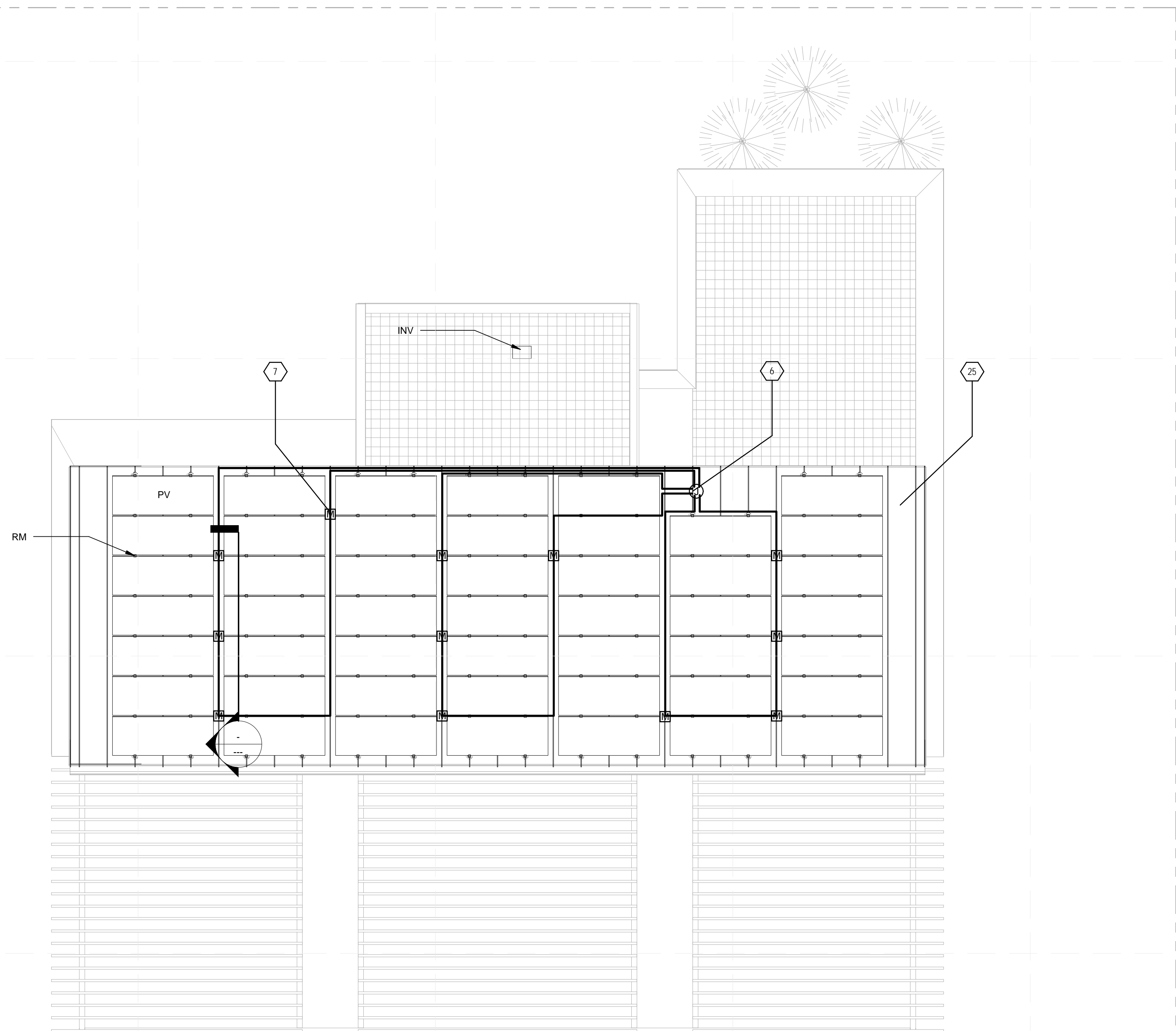
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SHEET TITLE
LIGHTING PLAN

E-103

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PHOTOVOLTAIC SCHEDULE					
MARK.	REF. NO.	SYSTEM NAME	CNT.	MFG.	MODEL
PV	26 31 00	PHOTOVOLTAIC MODULE	48	STION	STN-135
M	48 19 00	MODULE MAXIMIZERS	12	TIGO	MM-2ES75
RM	07 72 55	ROOF MOUNTING	110	S-5	S-5 PV KIT
INV	48 19 16	INVERTER	1	SMA	SB6000-US



GENERAL SHEET NOTES

- SEE E-201 FOR LAYOUT OF COMBINER BOX AND INVERTER IN MECHANICAL ROOM AND FOR GROUNDING INFORMATION
- PANELS CARRY ETL STAMP WITH U.S. CERTIFICATION
- PV CONDUCTOR SHALL BE #12 AWG THHN COPPER.

REFERENCE KEYNOTES

SHEET KEYNOTES

- PROVIDE EXTERIOR RATED JUNCTION BOX FOR WIRING OF PV INTO STUD WALL BELOW
- TWO STION PANELS CONNECTED IN PARALLEL TO EACH INPUT OF THE TIGO DUAL MAXIMIZER
- PROVIDE SHEFFIELD 1.75" SNAPLOCK ROOF AT 18" O.C. SPACING



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MK	DATE	DESCRIPTION

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SHEET TITLE
PHOTOVOLTAIC ARRAY PLAN

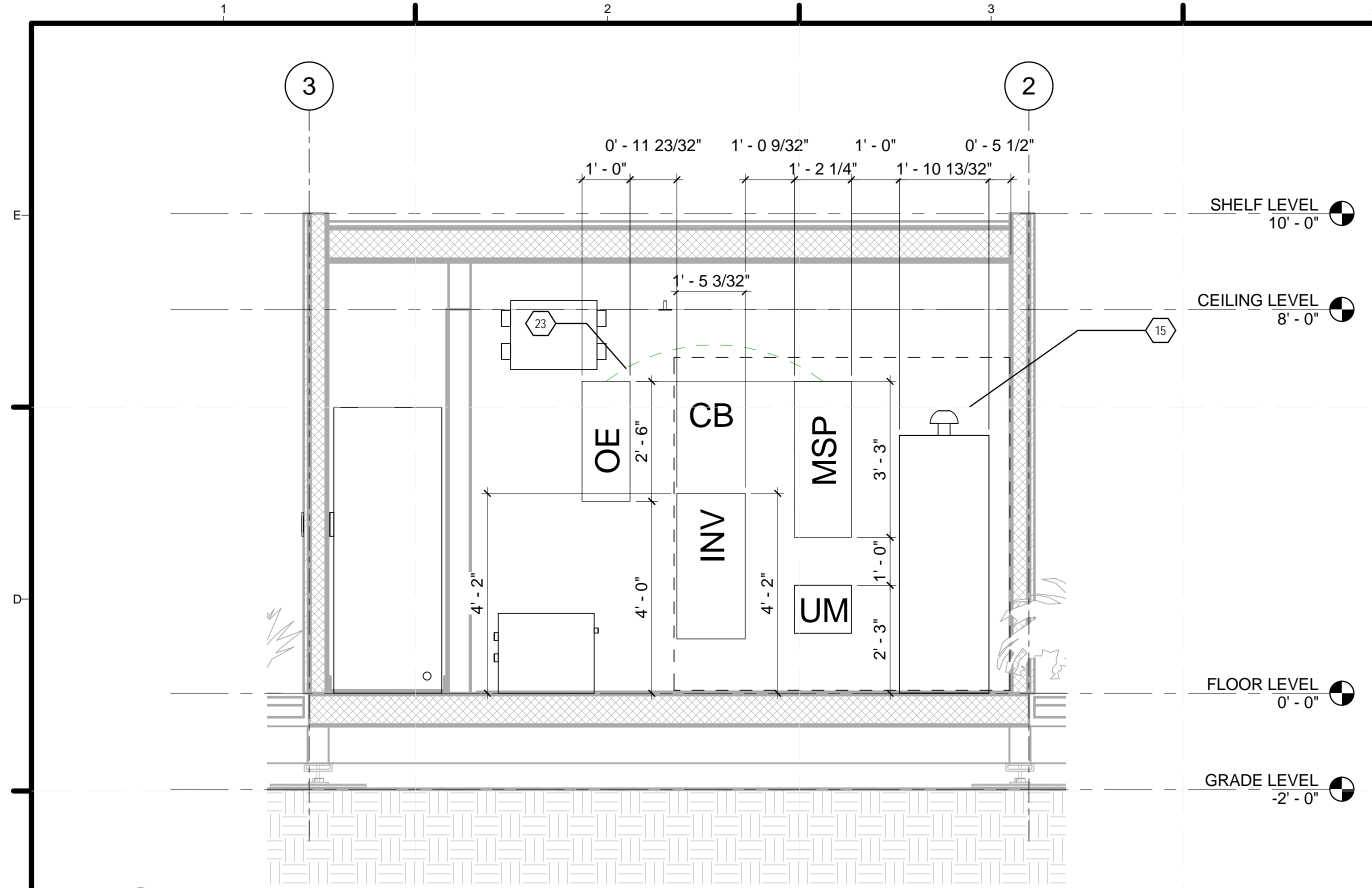
E-104

A1 PHOTOVOLTAIC ARRAY PLAN

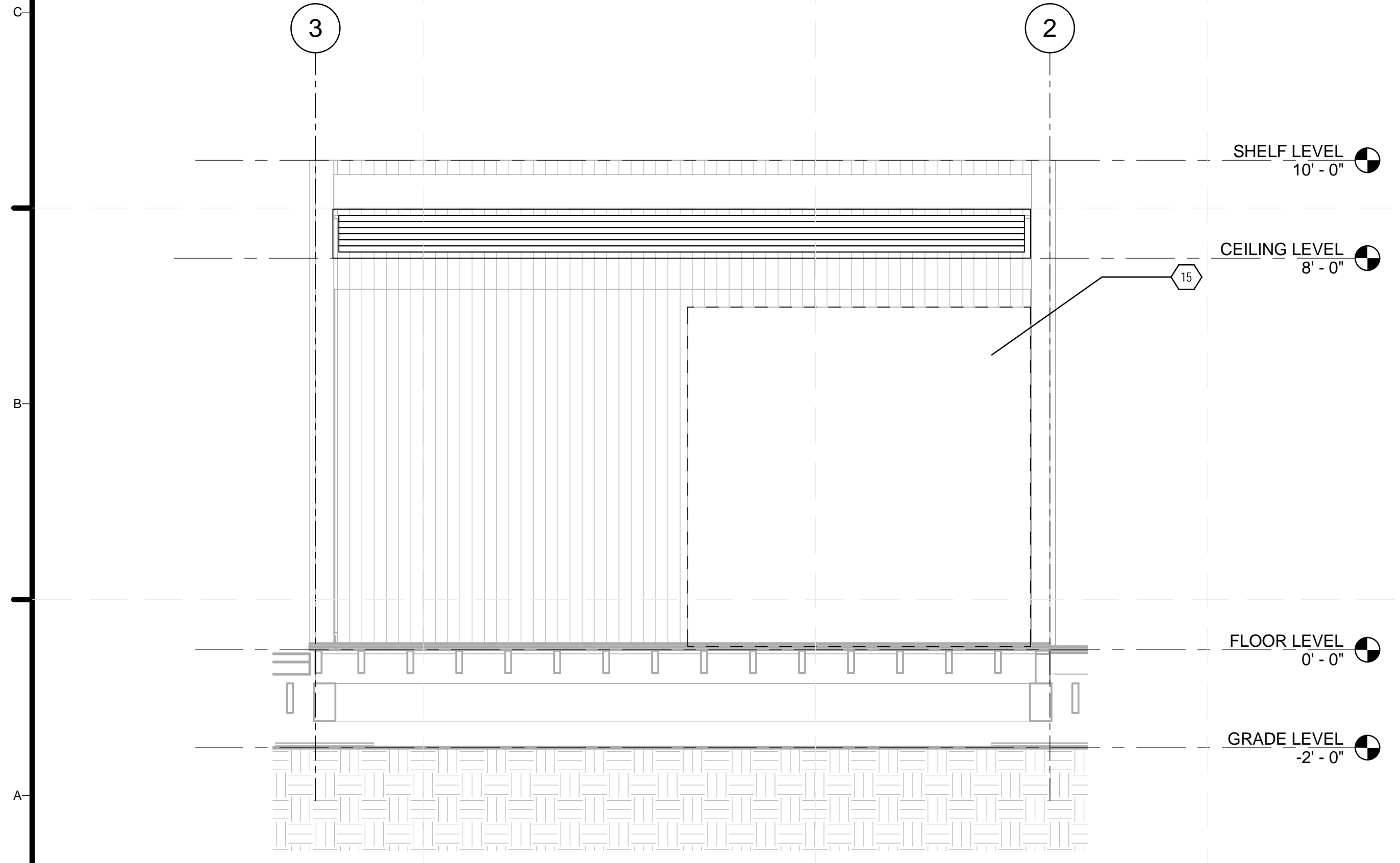
1/4" = 1'-0"

0 2' 4' 8'

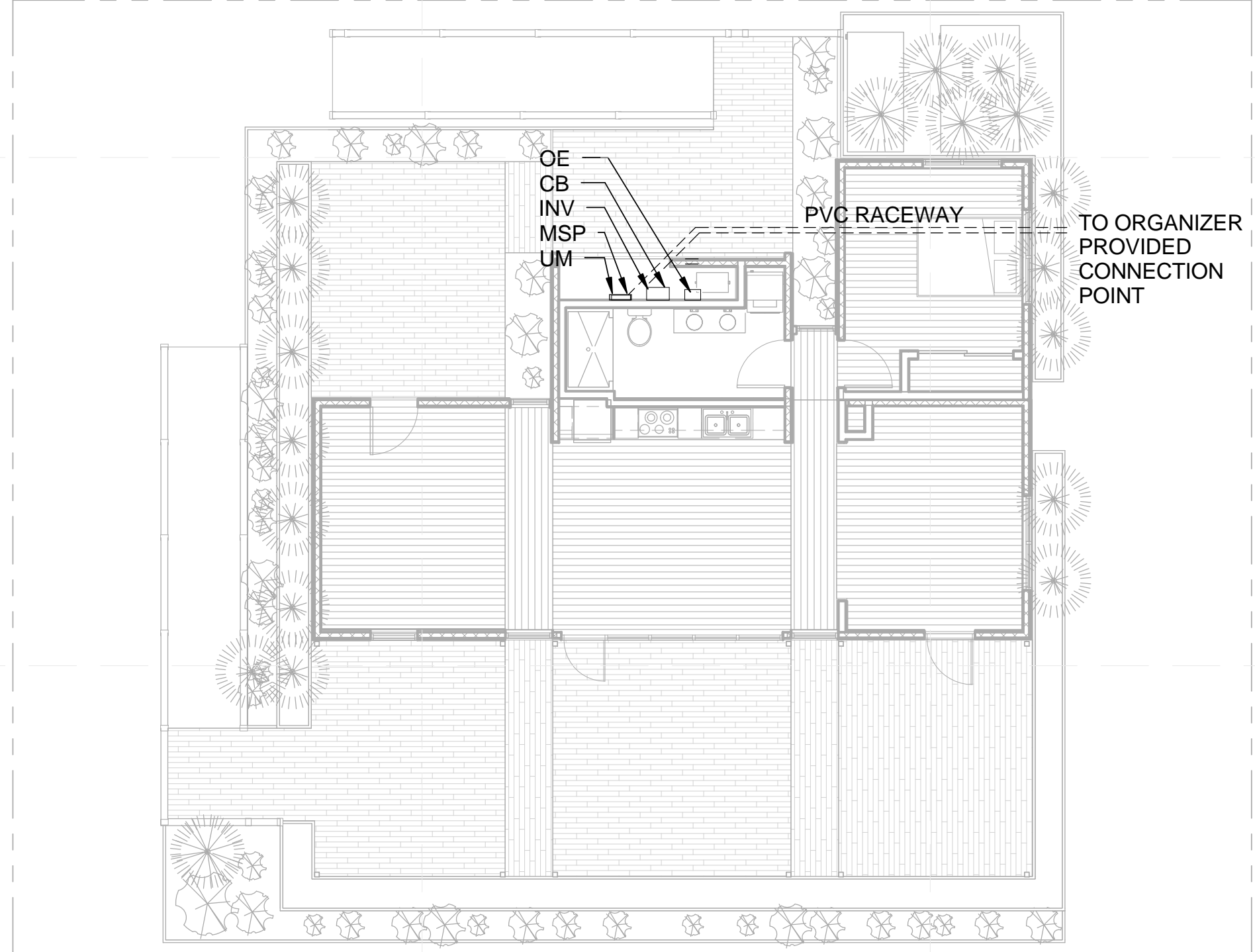
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C1 MECHANICAL ROOM SOUTH INTERIOR ELEVATION
1/2" = 1'-0"



A1 MECHANICAL ROOM SOUTH EXTERIOR ELEVATION
1/2" = 1'-0"



A5 GRID INTERCONNECTION
1/8" = 1'-0"

SHEET KEYNOTES

- 15 DASHED LINE SHOWS OUTLINE OF DOOR IN FRONT OF MECHANICAL WALL, GIVING ACCESS TO ELECTRICAL COMPONENTS PER NEC 110.26
- 23 4 AWG COPPER TO BOND WITH ORGANIZER GROUNDING ELECTRODE



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SHEET TITLE
MECHANICAL ROOM LAYOUT

E-201

MAIN SERVICE PANEL - 200A MAIN BREAKER					
CIRCUIT	CIRCUIT NAME	CB SIZE	CB SIZE	CIRCUIT NAME	CIRCUIT
1	KITCHEN OUTLETS (1)	20	40	COOKTOP	2
3	KITCHEN OUTLETS (2)	20	-		4
5	DISHWASHER	15	20	OVEN	6
7	REFRIGERATOR	15	-		8
9	GARBAGE DISPOSAL	15	30	WATER HEATER	10
11	KITCHEN LIGHTS	15	-		12
13	LIVING ROOM LIGHTS	15	30	MINISPLIT SYSTEM	14
15	STUDIO LIGHTS	15	-		16
17	BEDROOM LIGHTS	15	20	IRRIGATION PUMP (1/4 HP)	18
19	BATHROOM LIGHTS	15	20	WATER TANK PUMP (1/2 HP)	20
21	SMOKE ALARM	15	20	SUMP PUMP (1/2 HP)	22
23	EXTERIOR LIGHTS	15	15	HRV	24
25	LIVING ROOM OUTLETS	15	15	CONTROL SYSTEM	26
27	STUDIO OUTLETS	15	15	WINDOW ACTUATORS	28
29	BEDROOM OUTLETS	15	15	SHADE MOTORS	30
31	BATHROOM OUTLETS	20	50	CAR CHARGER	32
33	NOT USED	-	-		34
35	EXTERIOR OUTLETS	15	30	DRYER	36
37	LAUNDRY	20	-		38
39	ORGANIZER ACCESS PV	N/A	40	PV BACK FEED	40
41		-	-		42

GENERAL SHEET NOTES

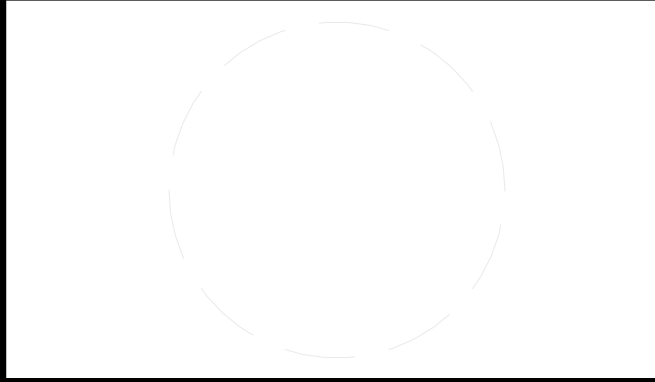
- SEE E-603 FOR LOAD CALCULATIONS
- SEE E-201 FOR LAYOUT OF EQUIPMENT IN MECHANICAL ROOM
- PROVIDE INTERCONNECTED SMOKE ALARM SYSTEM PER IRC SECTION R314
- FAULT RATING OF MAIN SERVICE PANEL IS 200A.



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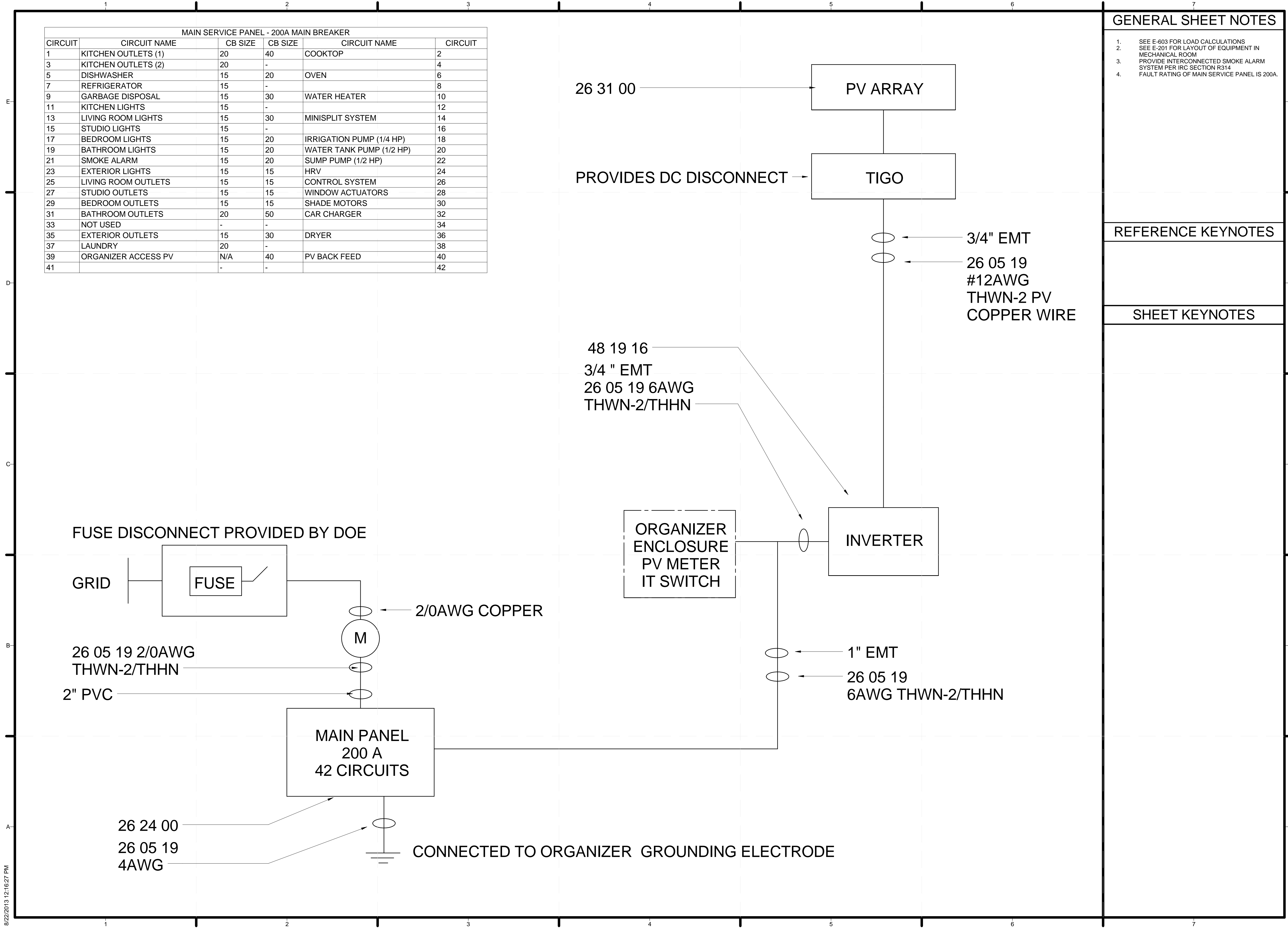


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SHEET TITLE
ONE-LINE DIAGRAM

E-601



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GENERAL SHEET NOTES

1. SEE E-001 FOR PV CALCULATIONS
2. GROUNDING ELECTRODE WILL FOLLOW 690.43 AND 960.47 REGULATIONS



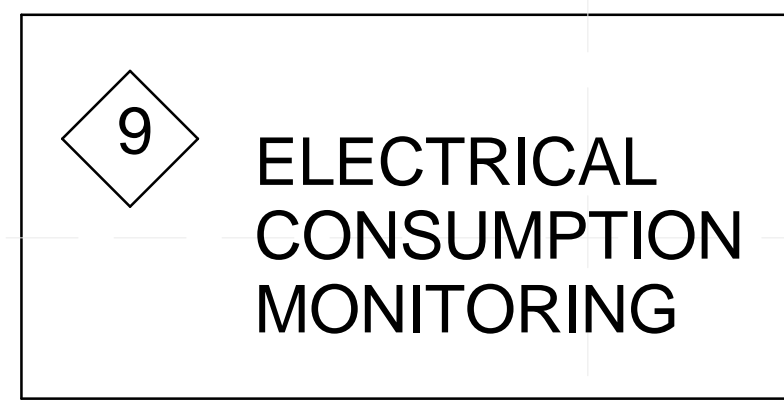
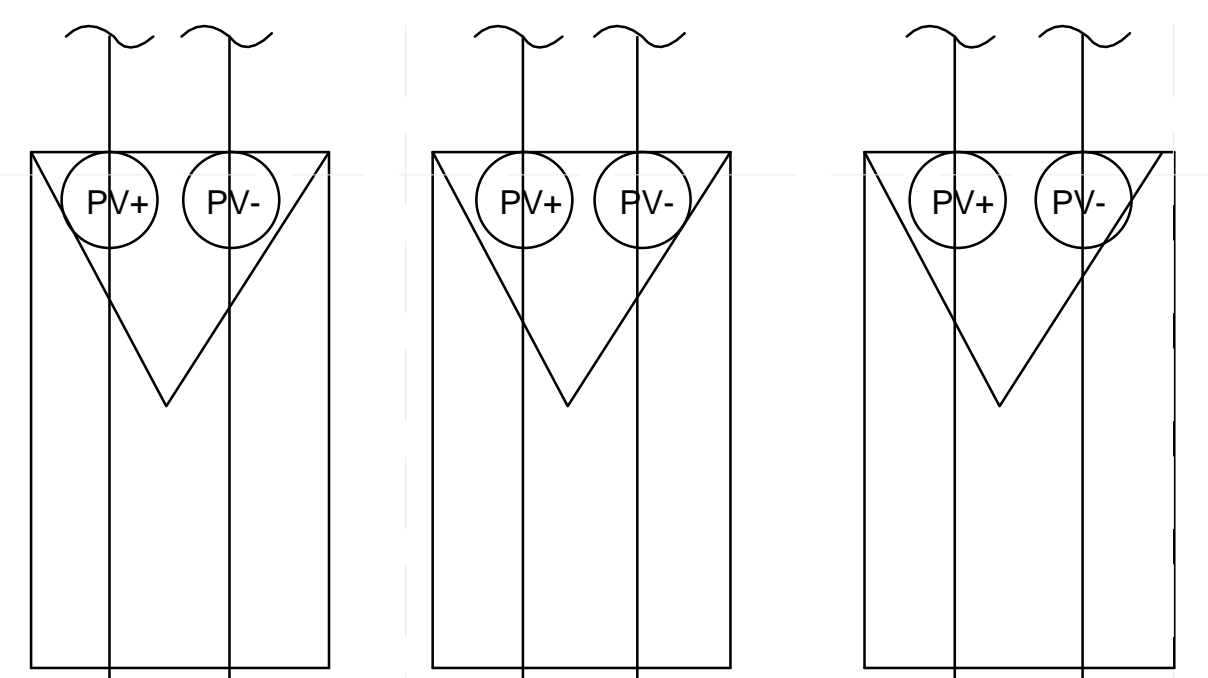
NEC 2011 COMPLIANCE DETAIL			
DESCRIPTION	ARTICLE	FORMULA	RESULT
Vdc MAX	690.7	$V_{dc} \text{ MAX} = (V_{oc})(\text{QUANTITY OF PV MODULES PER PV SOURCE CIRCUIT}) + (V_{oc})(\text{QUANTITY OF PV MODULES PER PV SOURCE CIRCUIT})(\text{MANUFACTURER TEMPERATURE COEFFICIENT OF } V_{oc} \text{ AS } \%) (\text{RECORD LOW TEMPERATURE VARIATION FROM STC})$	Vdc MAX = 502.47 Vdc
Idc MAX PVSC	690.8 (A) (1) SYSTEM CURRENT	$I_{dc} \text{ MAX PVSC} = (I_{sc})(125\%)$	Idc MAX PVSC = 25.875 Adc
Idc MAX PVOC	690.8 (A) (2) STRING CURRENT	$I_{dc} \text{ MAX PVOC} = (I_{dc} \text{ MAX PVSC})(\text{QUANTITY OF PVSC PER PVOC})$	Idc MAX PVOC = 8.625 Adc
Vdc DROP PVSC (%)	210.19 (A) (1) FPN4 & 215.2 (A) (3) FPN2 & 310.5 (A) (1) FPN1 & CH. 9 TABLE 8 & CH. 9 TABLE 9	$V_{dc} \text{ DROP PVSC } (\%) = ((0.2)(L)(R)(I))/V = 1.5\%$	One WAY L = 100 FT
Vdc DROP PVOC (%)	210.19 (A) (1) FPN4 & 215.2 (A) (3) FPN2 & 310.5 (A) (1) FPN1 & CH. 9 TABLE 8 & CH. 9 TABLE 9	$V_{dc} \text{ DROP PVOC } (\%) = ((0.2)(L)(R)(I))/V = 1.5\%$	One WAY L = 100 FT
Vac DROP IOC (%)	210.19 (A) (1) FPN4 & 215.2 (A) (3) FPN2 & 310.5 (A) (1) FPN1 & CH. 9 TABLE 8 & CH. 9 TABLE 9	$V_{ac} \text{ DROP ISC } (\%) = ((0.2)(L)(R)(I))/V = 1.5\%$	One WAY L = 100 FT

EQUIPMENT SCHEDULE				
ITEM	QTY	EQUIPMENT	MFG	MFG PART #
1	48	PV MODULE	STION	STN-135
2	12	MAXIMIZER	TIGO	MM-2ES75
3	3	FUSE	BUSSMAN	PVM-15
4	1	CENTRAL INVERTER	SMA	SB6000-US
5	1	BREAKER PANEL	SQUARE-D	HOM4252M200C
6	1	UTILITY POINT OF CONNECTION	TBA	TBA
7	1	UTILITY METER	TBA	TBA
8	1	FUSED DISCONNECT	PROVIDED BY DOE	N/A
9	1	ELECTRICAL CONSUMPTION MONITOR	POWERHOUSE DYNAMICS	4-44

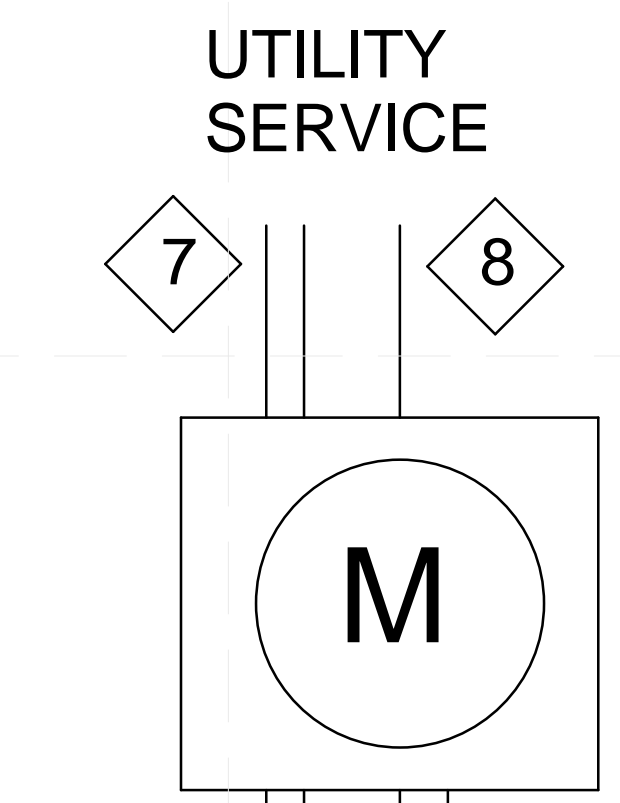
INPUT DATA		
FIELD	VALUE	UNIT
PV ARRAY:		
QUANTITY OF PV MODULES PER PV SOURCE CIRCUIT:	8	N/A
QUANTITY OF PV SOURCE CIRCUIT PER PV OUTPUT CIRCUIT:	6	N/A
PV MODULE:		
MANUFACTURER PART #:	STN-135	N/A
MAXIMUM OVERCURRENT DEVICE RATING	14	Adc
OPEN-CIRCUIT VOLTAGE (Voc):	58.7	Vdc
OPERATING VOLTAGE (Vmp):	44.3	Vdc
MAXIMUM PERMISSIBLE SYSTEM VOLTAGE (VmaxPERMISSIBLE):	600	Vdc
OPERATING CURRENT (Imp):	3.05	Adc
SHORT CIRCUIT CURRENT (Isc):	3.45	Adc
MAXIMUM POWER (Pmp):	135	Wdc
VOLTAGE TEMPERATURE COEFFICIENT (IF %/°C AVAILABLE, ENTER (%/°C)*Voc):	-0.1739	Vdc/°C
INVERTER:		
MANUFACTURER PART #:	SB6000-US	N/A
AC OUTPUT CURRENT (Imp):	25	Aac
NOMINAL OPERATING AC VOLTAGE (Vnominal):	240	Vac

1 2
EACH CIRCUIT CONSISTS OF 16 MODULES

PV CIRCUIT A PV CIRCUIT B PV CIRCUIT C



INDIVIDUAL CT'S TO EACH BREAKER CIRCUIT



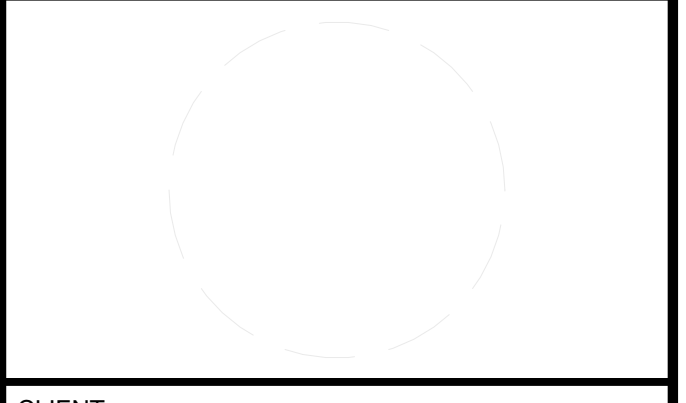
ALL CABLES 3/4" EMT #12AWG THWN-2

CONDUCTORS 3/4" EMT #6 AWG THWN-2

GROUND

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SHEET TITLE
THREE-LINE DIAGRAM

E-602



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SHEET TITLE
LOAD CALCULATIONS & SCHEDULES

E-603

GENERAL SHEET NOTES

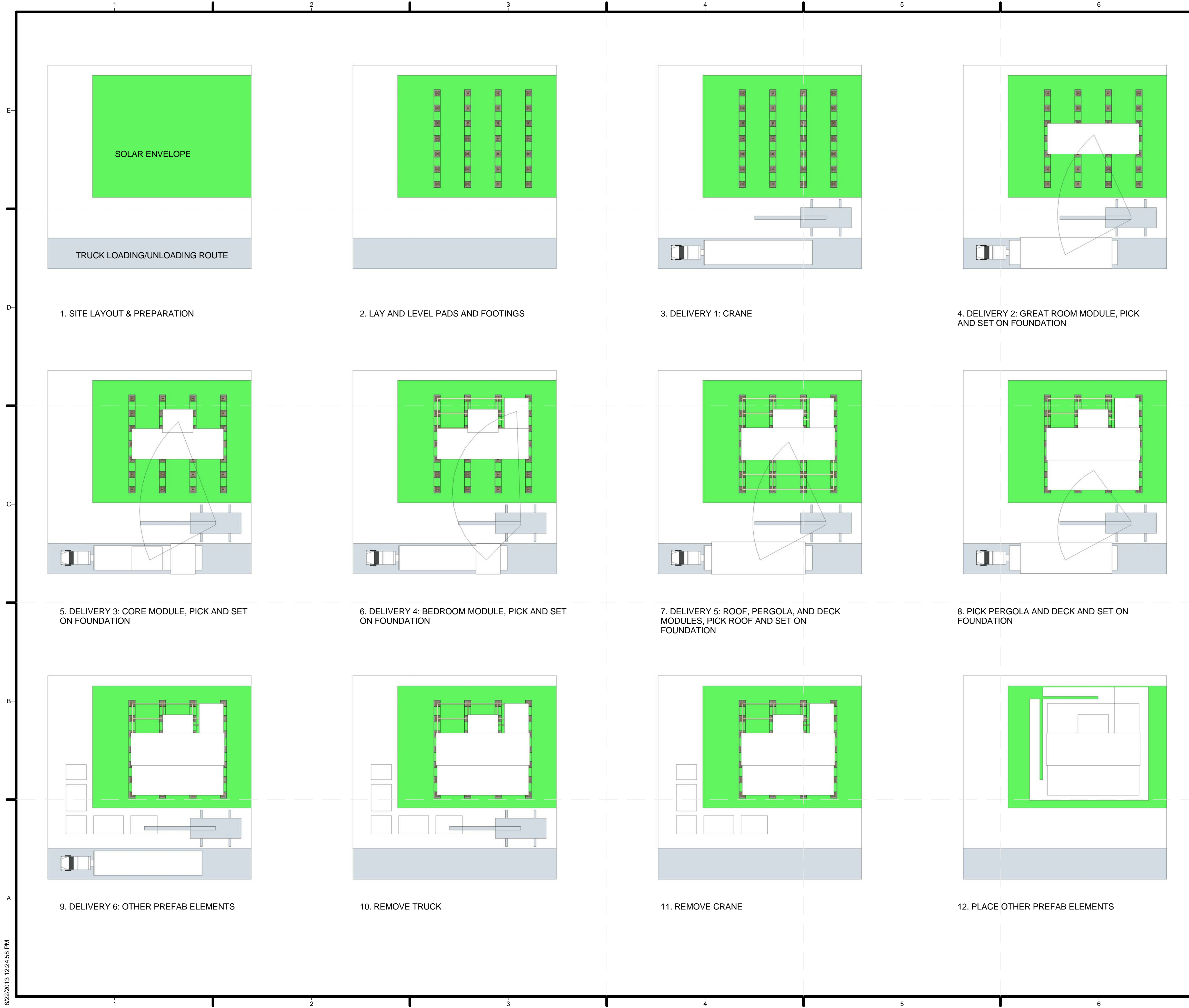
REFERENCE KEYNOTES

SHEET KEYNOTES

SERVICE FEEDER CALCS										
TYPE	VALUE	UNIT	NEC	UNIT	VALUE	UNIT	UTILIZA	TOTAL	UNIT	REF
GENERAL LIGHTING AND RECEPTACLES										
GENERAL LIGHTING	388	SF	3	VA/SF	1164	VA	0.35	407	VA	220.3 (s)
SMALL APPLIANCE CIRCUITS	2	CIRCUITS	1500	VA	3000	VA	1	3000	VA	220.16
LAUNDRY	1	CIRCUITS	1500	VA	1500	VA	0.35	525	VA	220.16
SUBTOTAL					5664	VA	CONNECTED		3932	VA DEMAND
AIR CONDITIONING										
HEAT-RECOVERY-VENTILATOR	1	QTY	150	VA	150	VA	1	150	VA	
MINISPLIT SYSTEM	1	QTY	4140	VA	4140	VA	1	4140	VA	
SUBTOTAL					4290	VA			4290	VA DEMAND
FIXED APPLIANCES										
WATER HEATER					4500	VA	1	4500	VA	
DISH WASHER					1500	VA	1	1500	VA	
RANGE HOOD					120	VA	1	120	VA	
WATER TANK PUMP	1	QTY			1150	VA	1	1150	VA	430.24
IRRIGATION PUMP	1	QTY			667	VA	1	667	VA	
GARBAGE DISPOSAL	1	QTY			840	VA	1	840	VA	
SUMP TANK	1	QTY			308	VA	1	308	VA	
GRAY WATER PUMP	1	QTY			667	VA	1	667	VA	
SUBTOTAL					8888	VA			10352	VA DEMAND
DRYER					5600	VA	1	5600	VA	
COOKING										
COOKTOP	7700	VA			7700	VA	1	7700	VA	
WALL OVEN					2400	VA	1	2400	VA	
SUBTOTAL					8888	VA	CONNECTED		8000	VA 220.55
					TOTAL DEMAND			32174	VA	
					AMP NEEDED			134.06	A	
LARGEST MOTOR	1150	VA					0.25	288	VA	220.14
					TOTAL			32462	VA	
					TOTAL			135	A	
					MAIN SERVICE			200	A	
NEUTRAL CALCS										
										220.61
GENERAL LIGHTING AND RECEPTACLES					4456	VA	1	4556	VA	220.61(A)
COOKING					8000	VA	0.7	5600	VA	220.61(B)
CLOTHES DRYER					3320	VA	0.7	2744	VA	220.61(A)
FIXED APPLIANCES					10352	VA	1	10352	VA	220.61(A)
TOTAL					23252	VA				
TOTAL					96.883	A				

LIGHTING SCHEDULE

MARK	LIGHT DESCRIPTION	TYPE	COUNT	WATTAGE	MOUNTING	OTHER NOTES
01	UPLIGHT	LED	82	3.5 W	COVE/SOFFIT	FIXTURE: PHILIPS VAYA COVE LP
02	LED STRIP	LED	10	3.6 W	UNDER CABINET, EXT WALL, RAMP	FIXTURE: NORA NUTP8-16LED
03	EXTERIOR WALL SCONCE	CFL	3	150 W	EXT WALL	FIXTURE: PROGRESS P5675-82DH
04	LANDSCAPE LIGHT	CFL	8	20 W	GROUND	FIXTURE: MALIBU 8301-9907-08
05	EXHAUST HOOD LIGHT	CFL	1	13 W	EXHAUST HOOD	BULB: PHILIPS CFQ13W/G24q
06	PENDANT	LED	4	8 W	CEILING	FIXTURE: CONTECH CRS8
07	DOWNLIGHT	LED	8	15 W	CEILING RECESSED	FIXTURE: HALO H455TUNVD010
08	SUN TUNNEL LIGHT	CFL	2	15 W	SUN TUNNEL	BULB: LITETRONICS L-1381
09	MIRROR LIGHT	CFL	1	64 W	INT WALL	FIXTURE: PROGRESS P7232-15EB
10	MECH ROOM LIGHT	CFL	1	56 W	CEILING SURFACE	FIXTURE: PHILIPS LIGHTOLIER LSW T8 4FT
11	BEDROOM SCONCE	CFL	4	13 W	INT WALL	FIXTURE: GREEN MATTERS HD-3953
12	BEDROOM CLOSET LIGHT	CFL	1	28 W	CEILING SURFACE	FIXTURE: PHILIPS LIGHTOLIER LSW T8 2FT



GENERAL SHEET NOTES

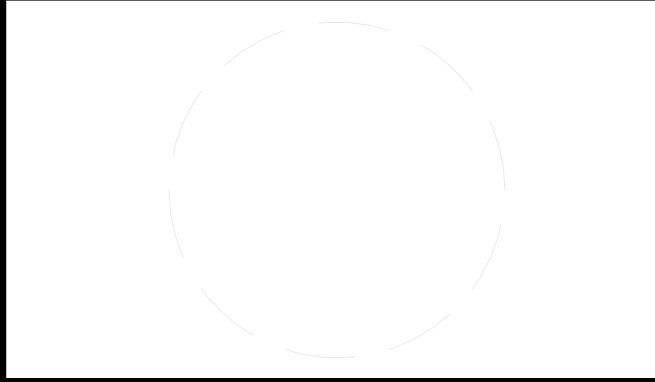
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SHEET KEYNOTES



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 DRAWN BY: DEREK OUYANG
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SHEET TITLE
 ARRIVAL/DEPARTURE SEQUENCE PLANS

O-101