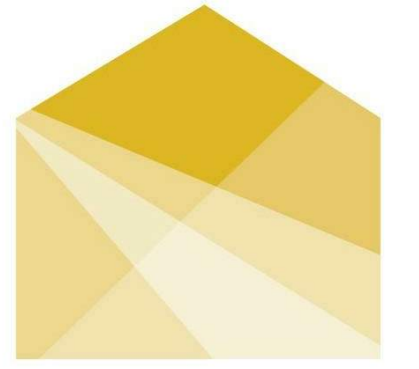




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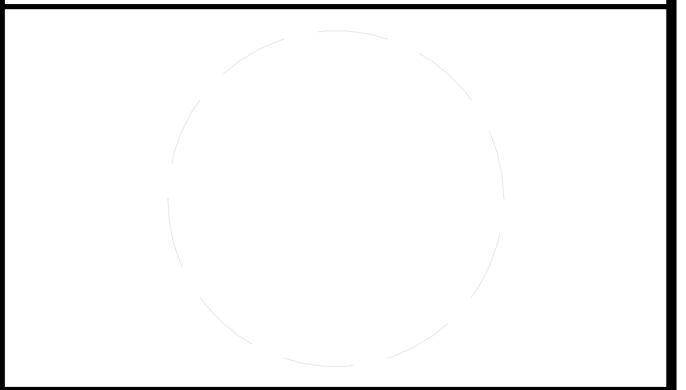
HOUSE

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The Hill Group



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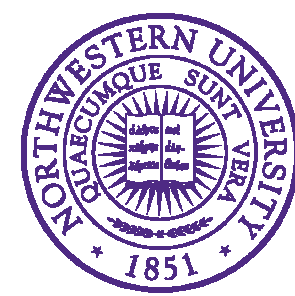
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SHEET TITLE
COVER SHEET AND PROJECT TITLE

G-001



Northwestern University



SHEET NUMBER	SHEET NAME
G-001	COVER SHEET AND PROJECT TITLE
G-002	TABLE OF CONTENTS
G-003	GENERAL NOTES AND SYMBOLS
G-004	ACCESSIBILITY DIAGRAMS
G-010	SD CODE SHEET
G-101	FINISHED SQUARE FOOTAGE COMPLIANCE PLAN
G-102	CONSTRUCTION FOOTPRINT COMPLIANCE
G-103	EGRESS PLAN
G-104	ADA TOUR ROUTE COMPLIANCE PLAN
G-201	SOLAR ENVELOPE COMPLIANCE ELEVATIONS
G-202	SOLAR ENVELOPE COMPLIANCE ELEVATIONS
G-901	PROJECT RENDERINGS
G-902	PROJECT RENDERINGS
L-101	PLANTING AND CONTAINER PLAN
S-001	GENERAL NOTES
S-002	LOADING DIAGRAMS
S-003	LOADING DIAGRAMS
S-101	FOUNDATION PLAN
S-102	FIRST FLOOR FRAMING PLAN
S-103	ROOF FRAMING PLAN
S-104	DECK FRAMING PLAN
S-105	COLUMN LOCATIONS
S-301	FRAMING SECTIONS
S-401	ENLARGED SECTIONS AND DETAILS
S-402	ENLARGED SECTION DETAILS
A-001	SITE LOCATION
A-101	SITE PLAN
A-103	FIRST FLOOR PLAN DIMENSIONED
A-104	FIRST FLOOR PLAN ANNOTATED
A-105	FIRST FLOOR REFLECTED CEILING PLAN
A-106	ROOF PLAN
A-201	NORTH AND SOUTH ELEVATIONS
A-202	EAST AND WEST ELEVATIONS
A-301	BUILDING SECTIONS
A-302	CEILING SECTIONS
A-401	WALL SECTIONS
A-402	FLOOR SECTIONS
A-403	ROOF DETAILS
A-601	DOOR AND WINDOW SCHEDULE

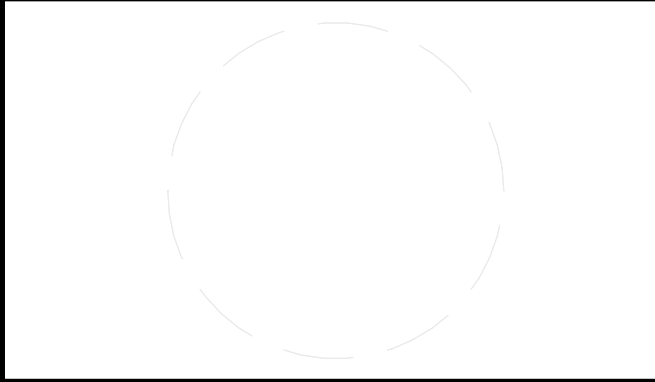
SHEET NUMBER	SHEET NAME
I-201	INTERIOR DESIGN ELEVATIONS
I-601	APPLIANCE SCHEDULE
F-101	FIRE SUPPRESSION
F-102	FIRE DETECTION AND ALARM
F-601	FIRE PROTECTION SCHEDULES
P-001	PLUMBING SYMBOLS AND ABBREVIATIONS
P-101	DOMESTIC SUPPLY
P-102	DOMESTIC RETURN
P-103	DOMESTIC RETURN ABOVE CEILING
P-104	PLUMBING DIMENSIONS
P-602	PLUMBING SCHEDULES
P-901	SUPPLY ISOMETRICS
P-902	RETURN ISOMETRICS
M-001	SYMBOLS AND ABBREVIATIONS
M-101	HVAC EQUIPMENT AND DISTRIBUTION PLAN
M-601	MECHANICAL EQUIPMENT SCHEDULE
M-602	MECHANICAL DIAGRAMS
M-901	HVAC ISOMETRICS
E-001	ELECTRICAL SYMBOLS AND ABBREVIATIONS
E-002	GENERAL NOTES
E-101	ELECTRICAL DISTRIBUTION PLAN
E-102	PV WIRING PLAN
E-103	LIGHTING PLAN
E-104	UNDER-FLOOR ELECTRICAL
E-501	ELECTRICAL DETAILS
E-601	ONE-LINE DIAGRAM
E-602	THREE-LINE DIAGRAM
E-603	ELECTRICAL EQUIPMENT SCHEDULE
O-101	SITE LOGISTIC PLAN
O-102	WATER DELIVERY AND REMOVAL
O-601	MODULE LOGISTIC PLANVIEW
O-602	CONSTRUCTION LOGISTIC DIAGRAMS
O-901	MODULE 3D



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SHEET TITLE
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G-002

ABBREVIATION SYMBOLS

ACoust	ACOUSTICAL ABOVE CONCRETE SLAB	MEZZ	MEZZANINE
ACS	ADJACENT FINISH	MFR	MANUFACTURER
ADJ	ADJACENT FINISH	MH	MINIMUM
AFF	ABOVE FINISHED FLOOR	MIN	MINIMUM
ALKS	ALUMINUM LATEX SEALANT	MISC	MISCELLANEOUS
ALUM	ALUMINUM	MP	METAL ACOUSTIC PANEL
ANOD	ANODIZED	MTD	MOUNTED
AP	ACCESS PANEL	MTL	METAL
APPROX	APPROXIMATELY	NC	NOISE CRITERIA
ARCH	ARCHITECTURAL	NIC	NOT IN CONTRACT
AS	ACOUSTICAL SEALANT	NO	NUMBER
ATP	ACOUSTIC TILE	NOM	NOMINAL
		NTS	NOT TO SCALE
B/	BOTTOM OF	OA	OVERALL
BLK	BLOCK (WOOD BLOCKING)	OC	ON CENTER
BRK	BRICK	OD	OUTSIDE DIMENSION
BRZ	BRONZE	OH	OPPOSITE HAND
BSMT	BASEMENT	OPNG	OPENING
		OTB	OPEN TO BELOW
C	CENTER LINE	OTA	OPEN TO ABOVE
C/C	C CHANNEL		
CL	COLUMN LINE		
CLG	CLOSING		
CLO	CLOSET		
CLR	CLEAR OPENING	PARTN	PARTITION
COL	COLUMN	PEN	PENETRATION
CONC	CONCRETE	PERP	PERPENDICULAR
CONN	CONNECTION	PL	PLASTIC
CONSTR	CONSTRUCTION	PLAM	PLASTIC LAMINATE
CONTR	CONTRACTOR	PLBG	PLUMBING
CONT	CONTINUOUS	PLYWD	PLYWOOD
COORD	COORDINATE	PR	PAIR
CORR	CORRIDOR	PRFAB	PREFABRICATED
CPT	CARPET (WALL TO WALL)	PREP	PREPARE
CO	CLEAN OUT	PSF	POUNDS PER SQUARE FOOT
CT	CERAMIC TILE	PSI	POUNDS PER SQUARE INCH
		PTD	PAINTED FINISH
		QTY	QUANTITY
D	DIAMETER	QUANT	QUANTITY
DIA	DIAMETER		
DIM	DIMENSION		
DN	DOWN	RD	ROOF DRAIN
DTL	DETAIL	REF	REFRIGERATOR
DW	DISHWASHER	REINF	REINFORCED
DWG	DRAWING(S)	REQD	REQUIRED
DWP	DRY WALL PAINTED	REV	REVISION
		RM	ROOM
		RO	ROUGH OPENING
EA	EACH		
EC	EXPOSED CONSTRUCTION	SECT	SECTION
EXIST	EXISTING	SHT	SHEET
FIN	FINISHED FLOOR	SIM	SIMILAR
FL	FLOOR	SPEC	SPECIFICATION
GA	GUAGE	SPP	SKIM COAT PLASTER PAINTED
GALV	GALVANIZED	SO	SQUARE
GC	GENERAL CONTRACTOR	STD	STANDARD
GL	GLASS	STL	STEEL
GL BLK	GLASS BLOCK	STOR	STORAGE
GYP BD	GYP BOARD	STRUCT	STRUCTURE
GR	GRANITE	SUSP	SUSPENDED
GRND	GROUND	TI	TOP OF
		TEL	TELEPHONE
HDW	HARDWARE	THK	THICK
HORIZ	HORIZONTAL	TYP	TYPICAL
HM	HOLLOW METAL		
HR	HOUR(S)	UNO	UNLESS NOTED OTHERWISE
HT	HEIGHT		
ID	INSIDE DIAMETER	VERT	VERTICAL
IN	INCH	VEST	VESTIBULE
INFO	INFORMATION	VIF	VERIFY IN FIELD
INSUL	INSULATION	VCT	VINYL COMPOSITION TILE
INT	INTERIOR	WVC	VINYL WALL COVERING
JC	JANITORS CLOSET	W	WASHER
LAM	LAMINATED	W/	WITH
LAV	LAVATORY	W/O	WITHOUT
LP	LOW POINT	WC	WATER CLOSET
		WD	WOOD
		WP	WORK POINT
MACH	MATCHLINE	WPR	WATERPROOFING
MAR	MARBLE	WVNR	WOOD VENEER
MATL	MATERIAL		
MAX	MAXIMUM		
MECH	MECHANICAL		
MED	MEDIUM		

MATERIAL SYMBOLS/ FILL PATTERNS

COMPACTED SOIL	POROUS FILL/ GRAVEL / GRANULAR FILL	ROCK
UNDISTURBED SOIL		
CONCRETE	CAST-IN-PLACE	GFRC
	PRE CAST	SAND/ MORTAR
MASONRY	BRICK	COMMON BRICK
	CONCRETE (CMU)	GYP SUM BLOCK
STONE	CUT	CAST
	MARBLE	RUBBLE
		BLUESTONE/ SLATE/ SOAPSTONE/ FLAGGING
METAL	ALUMINIUM	BRASS / BRONZE
		STEEL
WOOD	BLOCKING	SQUARE
	PARTICLE BOARD	FINISH WOODWORK
		PLYWOOD
		GLU-LAM
		ROUGH
GLASS	TYPICAL	INSULATING
		BLOCK
INSULATION	BATT/ LOOSE FILL	SEMI - RIGID
		RIGID
	SPRAY/ FOAM	
FINISHES	ACOUSTICAL TILE	CARPET AND PAD
	CORK	METAL LATH & PLASTER
	PLASTIC	PLASTER / GYP SUM WALLBOARD
		PLASTIC LAMINATE
		TERRAZZO
	GYP SUM BOARD	
WATERPROOFING	MEMBRANE ROOFING	VAPOR BARRIER
SEALANT	SEALANT & BACKER ROD	
MISC.		

REFLECTED CEILING SYMBOLS

CLG-01	EXPOSED UNDERSIDE OF STRUCTURAL DECK
CLG-02	EXPOSED UNDERSIDE OF ACOUSTICAL STRUCTURAL DECK - PTD. (PT-04)
CLG-03	SOUND ABSORBITIVE WALL FABRIC ON WOOD SUBSTRATE
CLG-05	PAINTED GYP SUM BOARD CEILING - PTD. (PT-05)
CLG-07	EXISTING STRUCTURE - PTD. (PT-04)

SYMBOLS

ADO	AUTOMATIC DOOR OPERATOR
OTA	OPEN TO ABOVE
OTB	OPEN TO BELOW
EJ	EXPANSION JOINT
CG	CORNER GUARD TRIM . SEE F2 / A-7010
SPR	SPRINKLER HEAD LOCATION
SPR	EXPOSED SPRINKLER MAIN PIPE
SPR	CONCEALED SPRINKLER MAIN PIPE
EXIT	EXIT SIGN

1. FOR LIGHTING LAYOUTS AND FIXTURE TYPES, REFER TO LIGHTING DRAWINGS
2. FOR MECHANICAL DETAILS AND SPECS REFER TO MECHANICAL DRAWINGS
3. FOR SPRINKLER DETAILS AND SPECS REFER TO FIRE PROTECTION DRAWINGS
4. SPRINKLER CONTRACTOR TO ISSUE SHOP DRAWINGS FOR REVIEW AND APPROVAL BY ARCHITECT
5. ALL ROOMS WITH A SINGLE LIGHT SHOULD BE CENTERED WITHIN THE ROOM
6. ALL BEAM COVERS NOT CALLED OUT ASSUMED TO BE TYPICAL DETAIL
7. ALL STRUCTURE, FIREPROOFING, MEPPF PIPING AND DUCTWORK, IN CEILING TO BE PAINTED PT-04.
8. PENDANT HEIGHTS TO BE REVIEWED AND APPROVED BY ARCHITECT
9. ALL FIXTURES AT BATHROOM SINKS TO BE CENTERED ON THE BATHROOM MIRROR.

DRAWING SYMBOLS

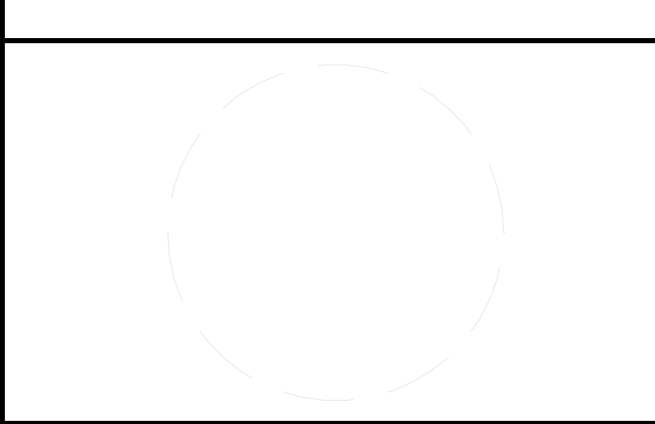
SEE SHEETS FOR SPECIFIC SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	ADA SYMBOL		FURNITURE TAG
	ADA 5' TURNING RADIUS		MATCH LINE REFERENCE
	ARCH FILL SLAB		NORTH ARROW
	AREA MOCK-UP SYMBOL		PARTITION TAG
	BREAK LINE - SINGLE		REVISION CLOUD
	BREAK LINE - DOUBLE		REVISION TAG
	CENTERLINE TAG		ROOM TAG W/ NUMBER
	COLUMN REFERENCE GRID		SECTION CALLOUT
	DETAIL REFERENCE		SHEET NUMBER
	PLAN/ DETAIL CALLOUT		SPECIALTY EQUIPMENT TAG
	DOOR TAG		STAIR DIRECTION
	DOOR NUMBER		STAIR/ ELEVATOR TAG
	ELEVATION TAG		TOILET ACCESSORY TAG
	MULTIPLE ELEVATIONS TAG		VIEW/ DRAWING TITLE
	ELEVATION CHANGE		WINDOW TAG
	ELEVATION SPOT		WORKPOINT
	ELEVATION TARGET		



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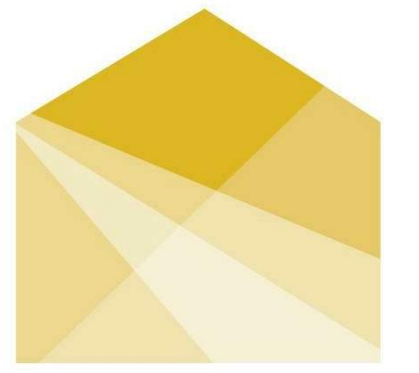


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GENERAL NOTES AND SYMBOLS

G-003



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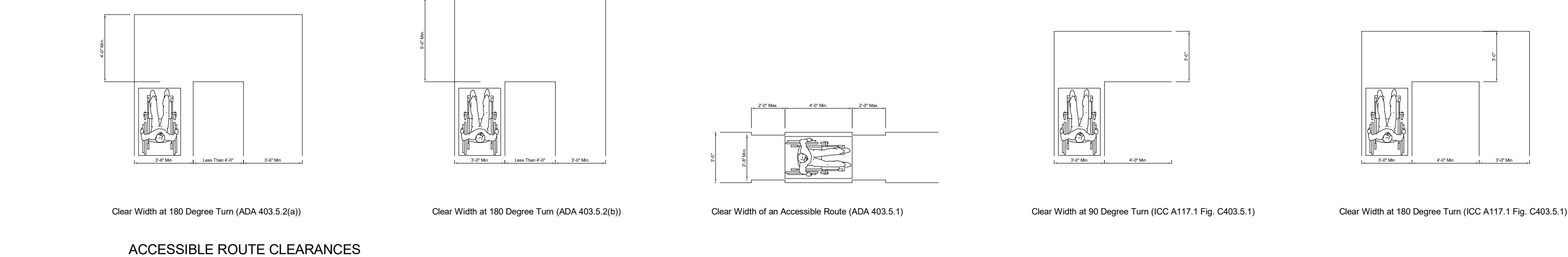
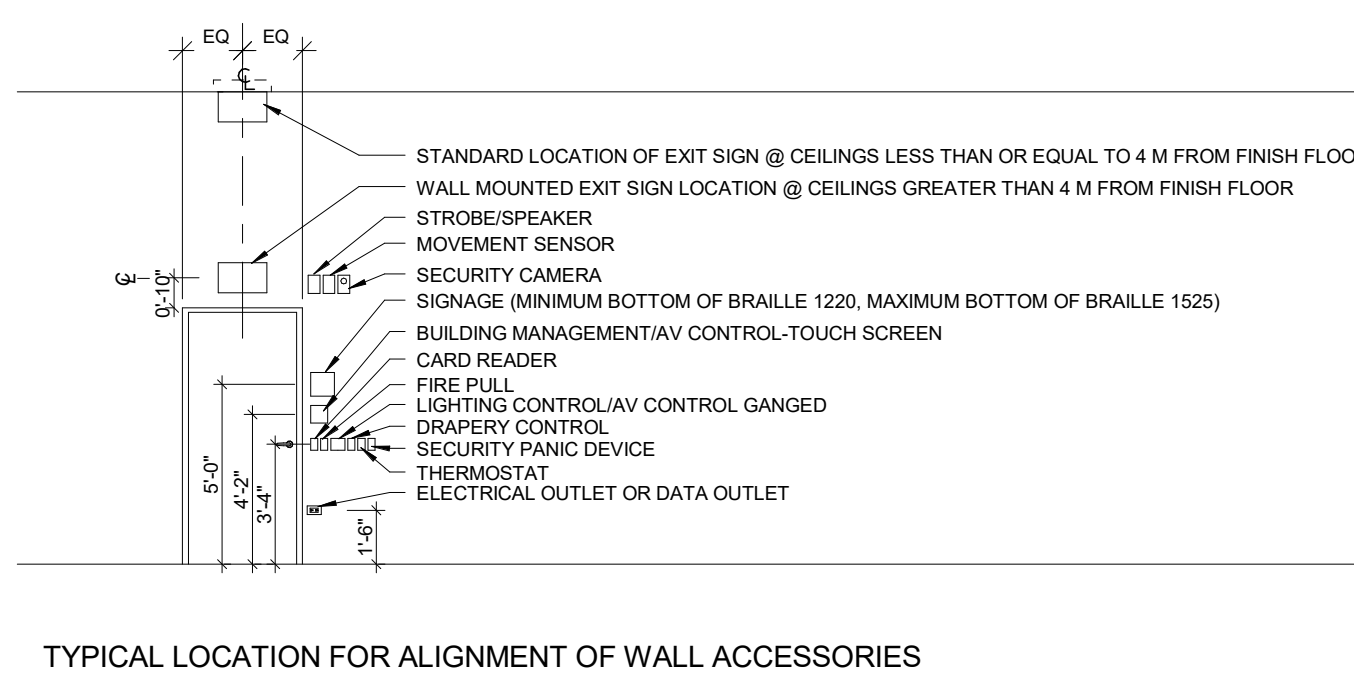
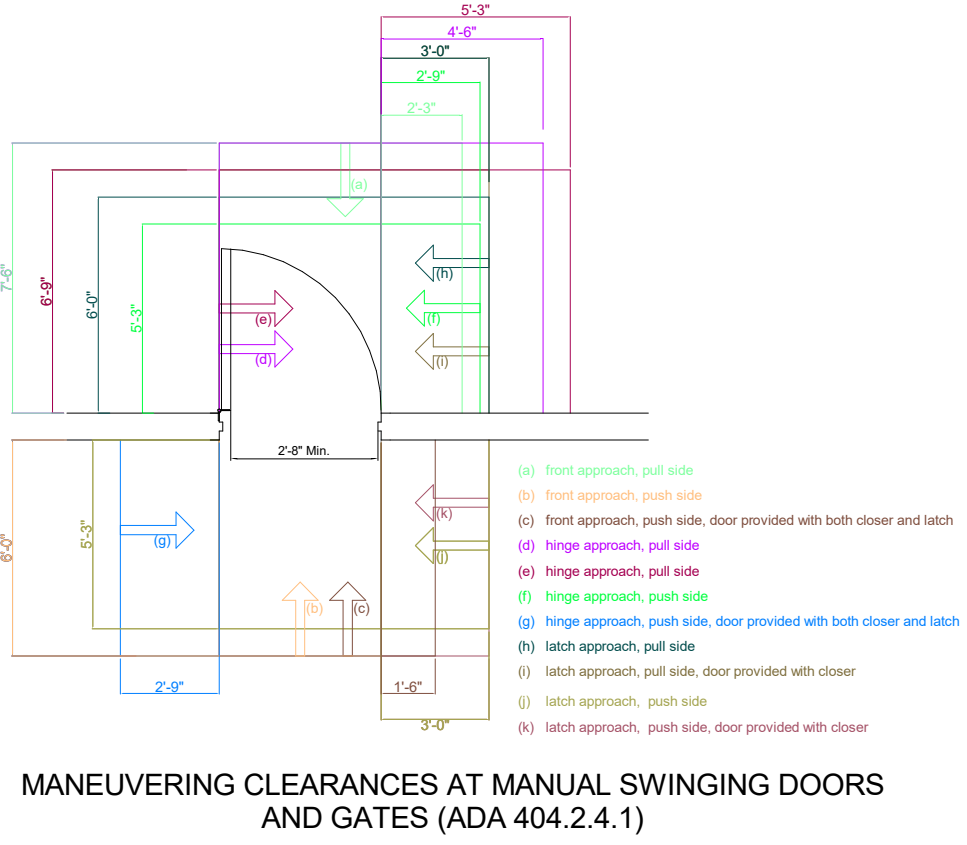
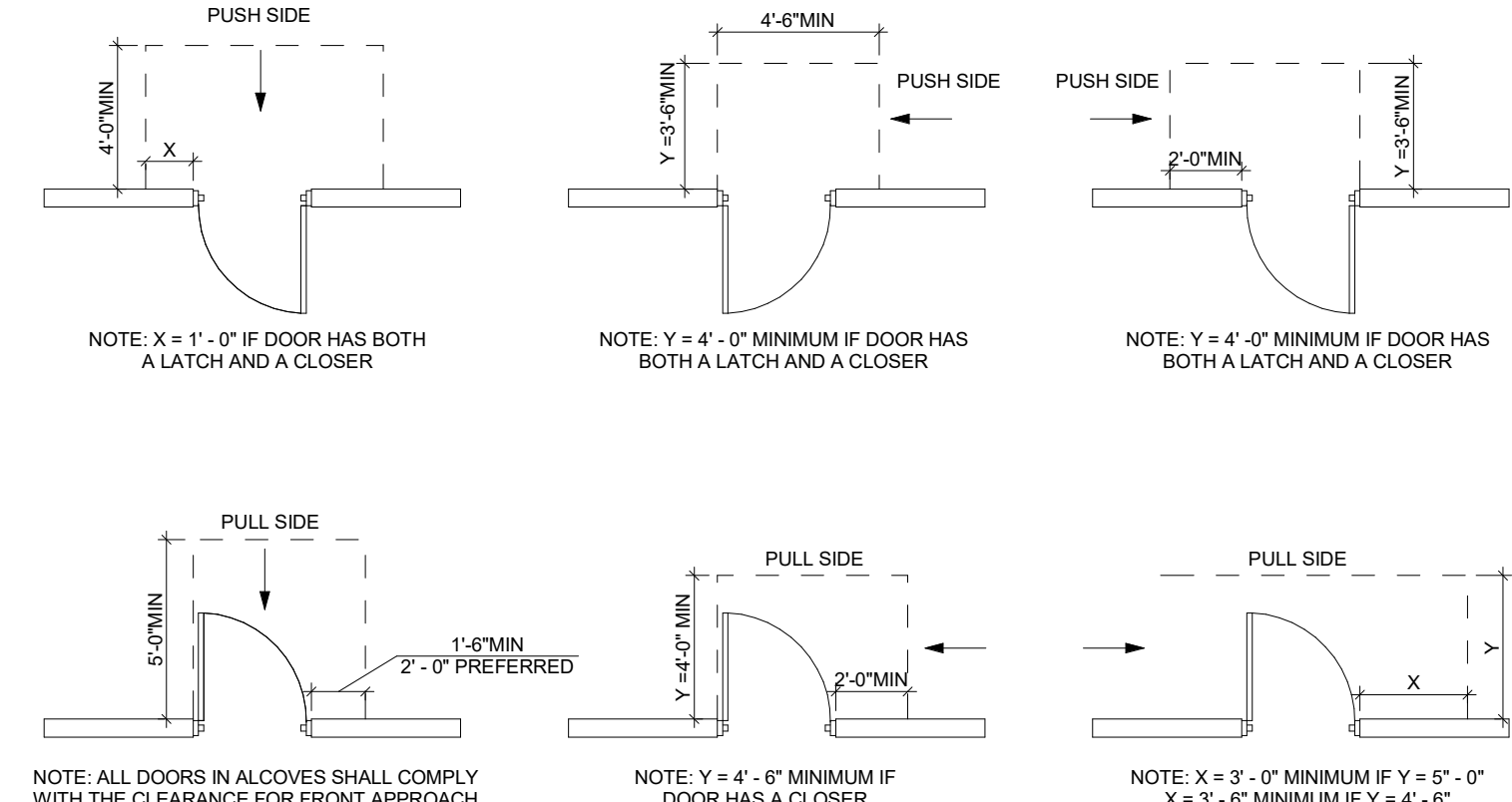
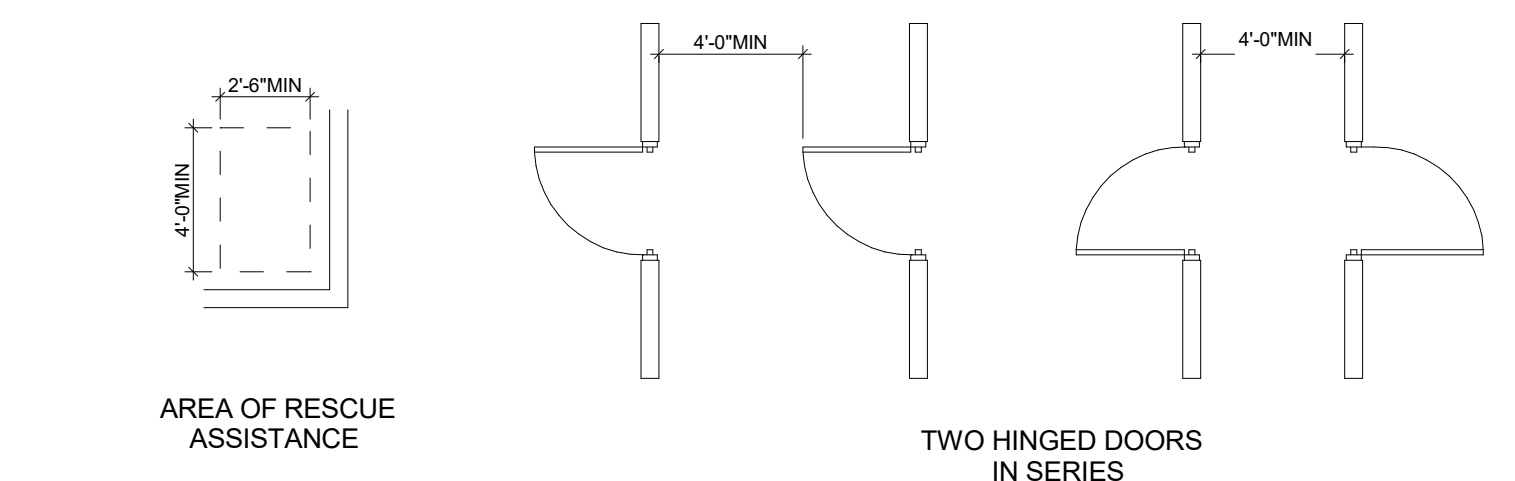
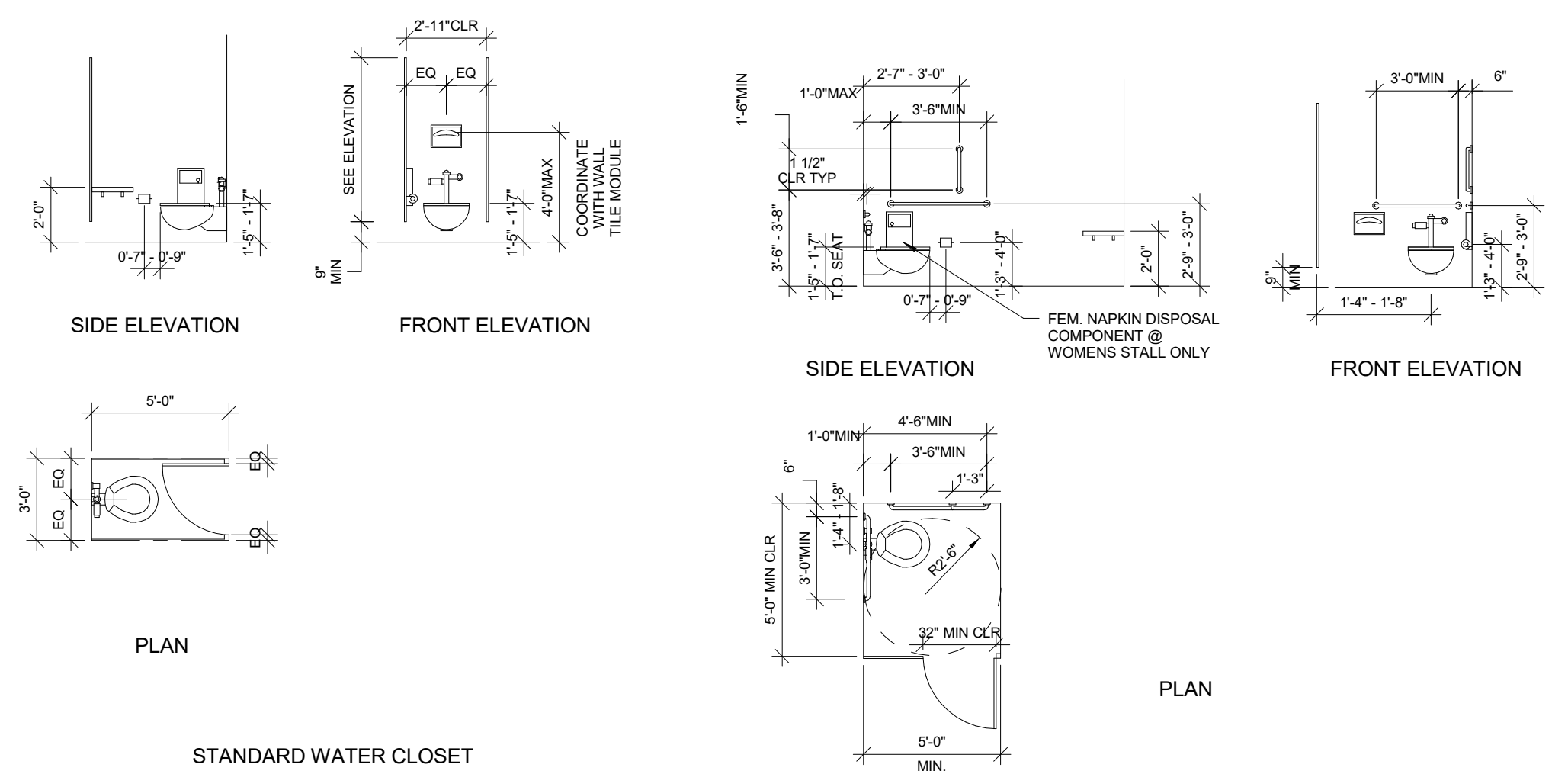
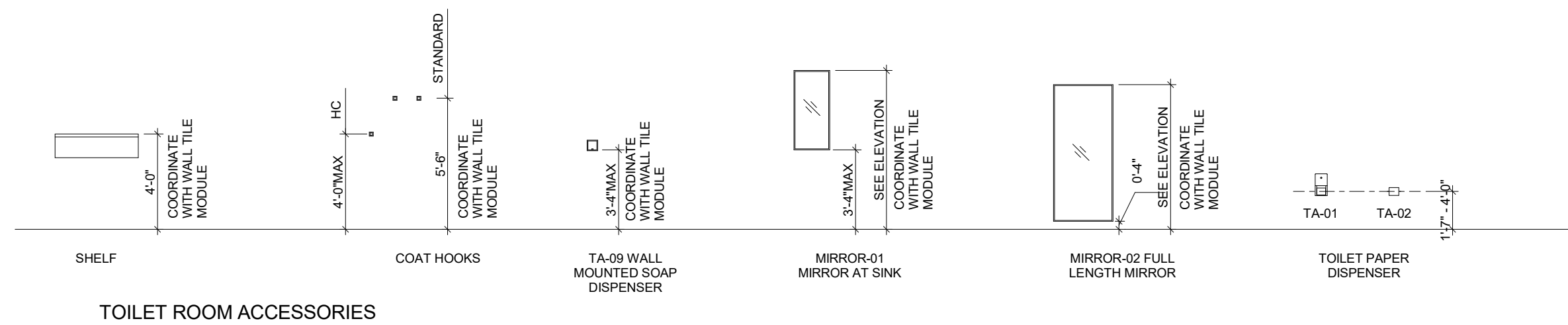
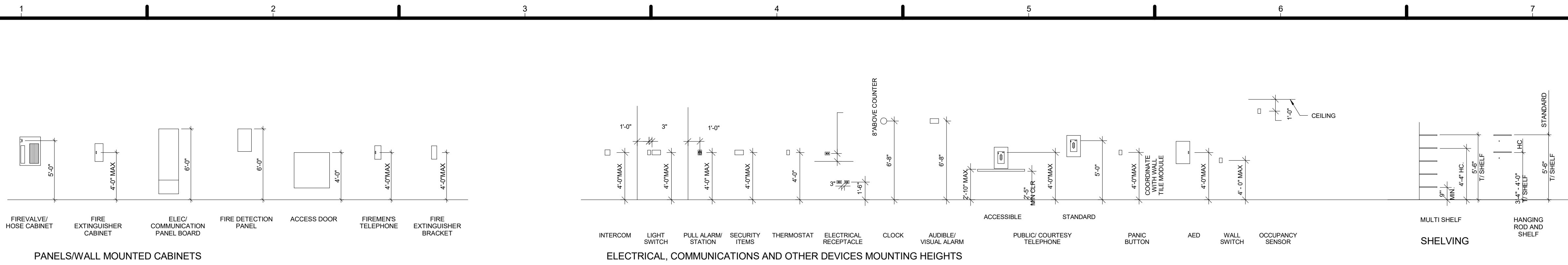


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SHEET TITLE: ACCESSIBILITY DIAGRAMS

G-004



- NOTE: 1. THE OBJECTIVES OF THIS SHEET IS TO ESTABLISH GUIDELINES FOR THE VERTICAL LOCATION OF ITEMS AND DEVICES THROUGHOUT THE PROJECT. 2. ITEMS ILLUSTRATED ON THIS SHEET ARE REPRESENTATIVE OF CONDITIONS THAT MAY OCCUR IN THE SCOPE OF THE PROJECT. HEIGHTS AND OTHER INFORMATION SHOWN ARE TYPICAL AND SHALL BE APPLIED THROUGHOUT THE PROJECT (UNO). 3. TOILET ROOMS WITH ACCESSIBLE FIXTURES SHALL BE EQUIPPED WITH ACCESSORIES IN ACCORDANCE WITH IBC 2012/ANSI A117.1 GUIDELINES. 4. ADDITIONAL MOUNTING HEIGHTS AND RELATED INFORMATION IS SHOWN ON DRAWINGS OR SPECIFIED IN THE PROJECT MANUAL. 5. MOUNTING HEIGHTS NEED TO BE 1220MM AFF. MAX. WHERE THE LOCATION OF THE DEVICE IS SUCH THAT IT ALLOWS ONLY FOR A FRONT APPROACH FOR WHEELCHAIR ACCESS. 6. PROVIDE AT LEAST 1 ACCESSIBLE COAT HOOK PER LOCATION EXCEPT IN NON-ACCESSIBLE COMPARTMENTS.

1 ADA DIAGRAMS 3/16" = 1'-0"

SUMMARY OF RULES, CODES, STANDARDS, CRITERIA, AND LOADS

A. RULES

1. U.S. Department of Energy Solar Decathlon Draft Rules. Last updated; July 26, 2017.

B. CODES

1. U.S. Department of Energy Solar Decathlon Building Code; released November 2, 2016
2. 2015 International Residential Code (IRC) with International Building Code (IBC) amendments, published by the International Code Council (ICC)
3. 2012 International Residential Code with additions set forth in Title 4 of the City of Evanston City Code
4. 2014 National Electric Code (NEC) published by the National Fire Protection Agency (NFPA)
5. 2015 International Energy Conservation Code (IECC)

C. STANDARDS

1. 2010 ADA Standards for Accessible Design; published by the Department of justice
 - a. Applicability; for all spaces accessible to the public as part of the required tour.
2. 2009 ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities, published by ICC, and 2015 IBC Chapter 11 Accessibility.
 - a. Applicability; for voluntary accessibility provided outside of areas accessible to the required tour for the level of accessibility desired.
3. 2003 ANSI Z765-2003 Square Footage-Method for Calculating.
 - a. Applicability; for determining the finished square footage of the house.

D. CRITERIA

1. Building Classification: Temporary exhibit of a single family, single story residence.
2. Fire Protection: Sprinkler system to be designed in accordance with NFPA 13D. Refer to the Solar Decathlon Building Code for additional requirements.
3. Climate Zone: 5
4. Soil Site Class: D. (ASCE 7-10)
5. Seismic: Seismic Design Category B.
6. Sunroom Category: III (IRC)
7. Solar Envelope Surface; 2,500 psf maximum load-bearing pressure.

E. LOADS

1. Railings; 200lb concentrated load applied in any direction at any point at the top of the rail
2. Interior floor decks, ramps: 50psf live load
3. Exterior floor, decks, ramps used for tour staging and egress purposes: loops 100psf live load
4. Roof: 30psf live load
5. Snow: Ground snow load; 35psf (ASCE 7-10)
6. Wind: 115mph (3 second gust), exposure category C

F. LIMITATIONS

1. Height - Maximum: 18'; Provided: 16' 8 1/2"
2. Conditioned Square Footage - Maximum: 1000sf; Provided: 994sf
3. Lot Dimensions - Maximum: 78ft x 60ft; Provided: 78ft x 60ft

G. MEANS OF EGRESS

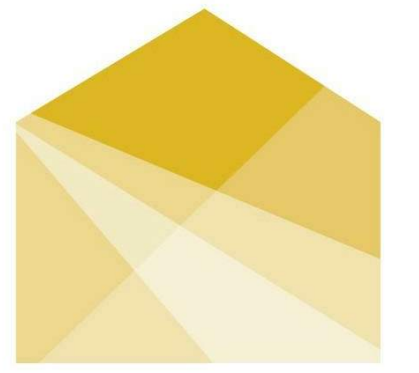
1. Minimum egress door width - Required: 32in; Provided: 36in
2. Minimum exterior door width - Required: 36in; Provided: 36in
3. Minimum corridor width - Required: 36in; Provided: 36in
4. Number of exits per dwelling unit - Required: 1; Provided: 2

H. GENERAL NOTES

1. Project is a student designed temporary home, intended for temporary use. It is built in Evanston for transportation to Denver, CO as part of the U.S. Department of Energy Solar Decathlon Competition.
2. Project will not be open to the general public during the construction process. See Health and Safety Plan for visitor requirements during the construction phase.
2. Any decks 30" above grade will require and include a code compliant guardrail.

I. PERMIT SET CONTEXT

1. This permit application set is for a temporary installation of a single story, normally unoccupied exhibit of an approximately 1000 square foot home, requiring a separate permit for any future permanent installation.



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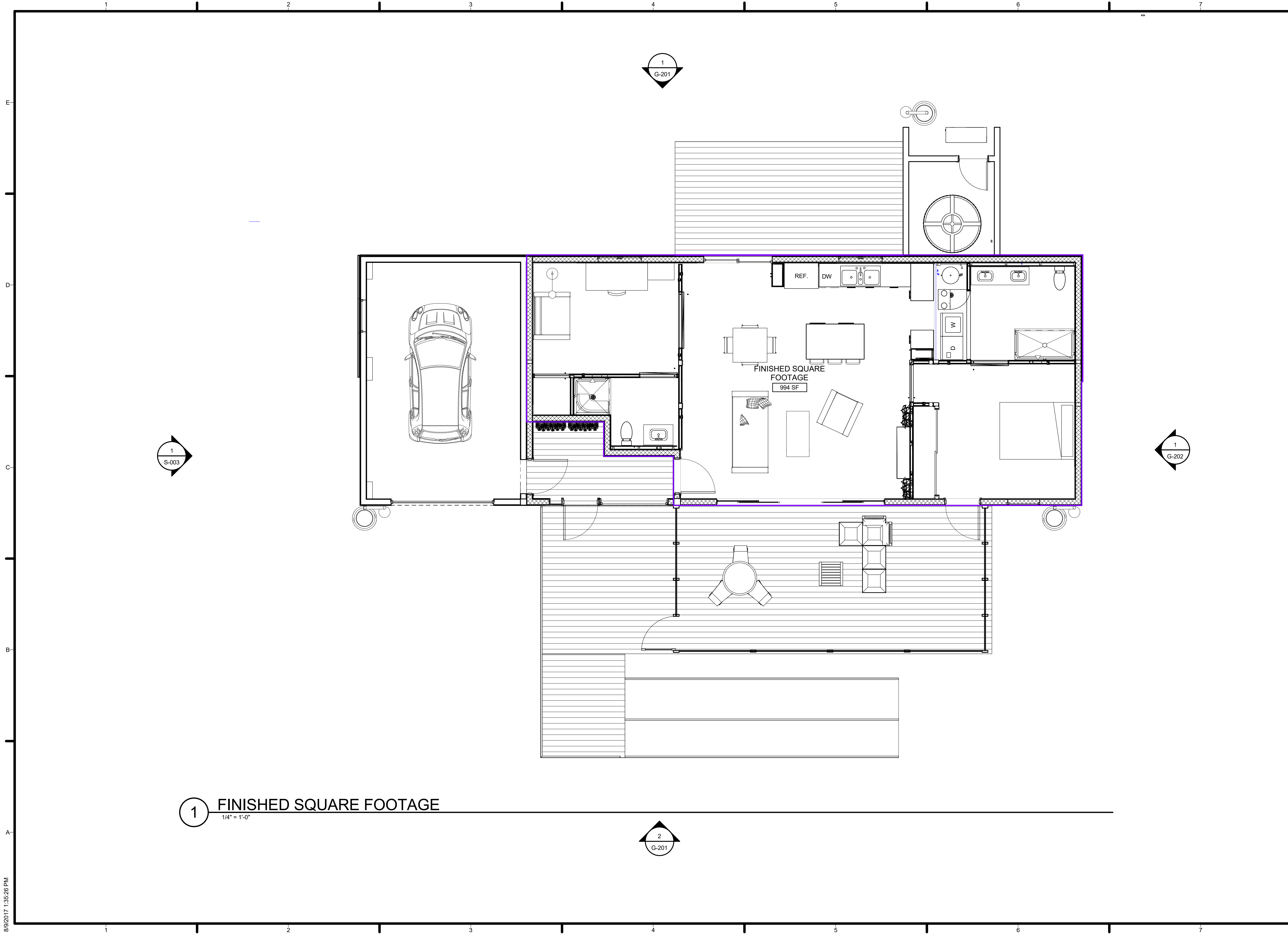
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SHEET TITLE

SD CODE SHEET

G-010



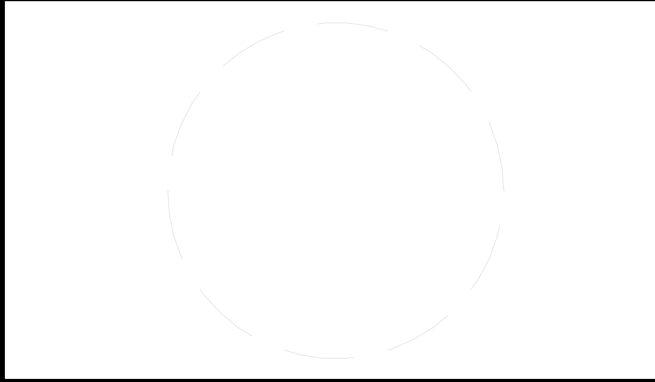
1 FINISHED SQUARE FOOTAGE
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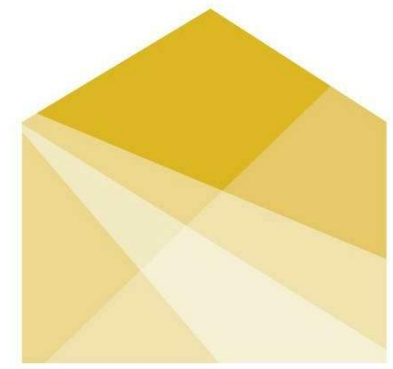
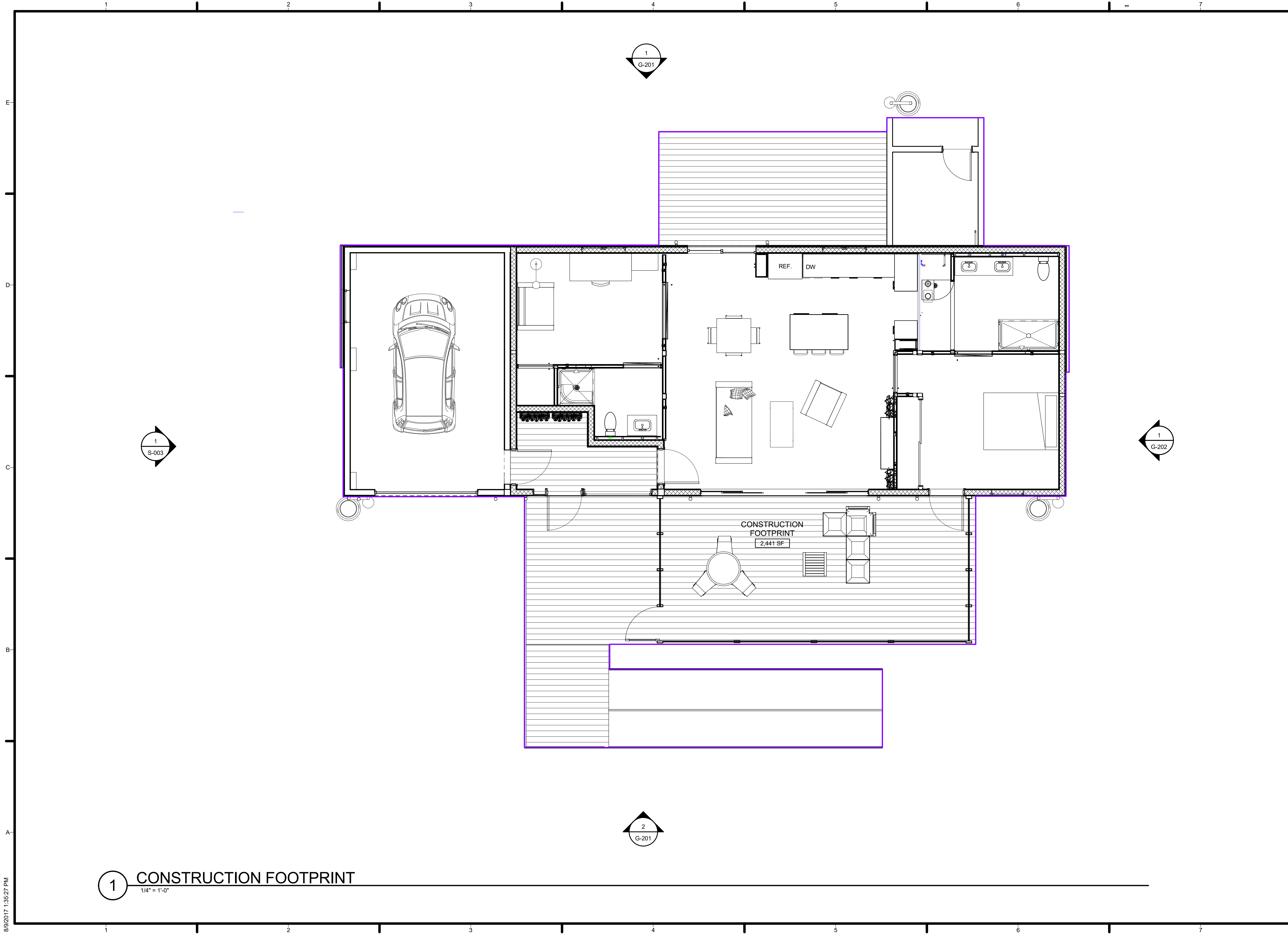


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FINISHED SQUARE FOOTAGE COMPLIANCE PLAN

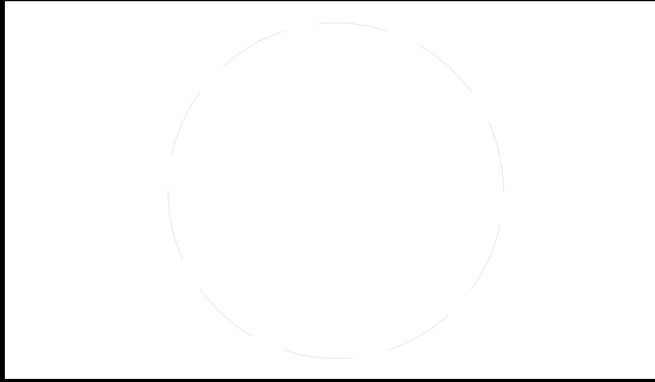
G-101



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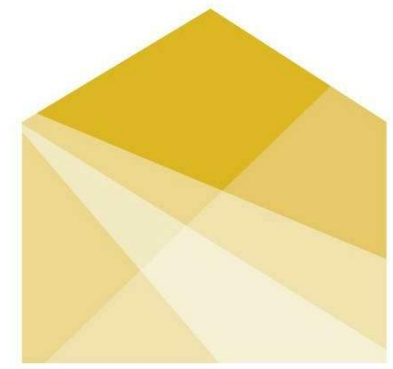
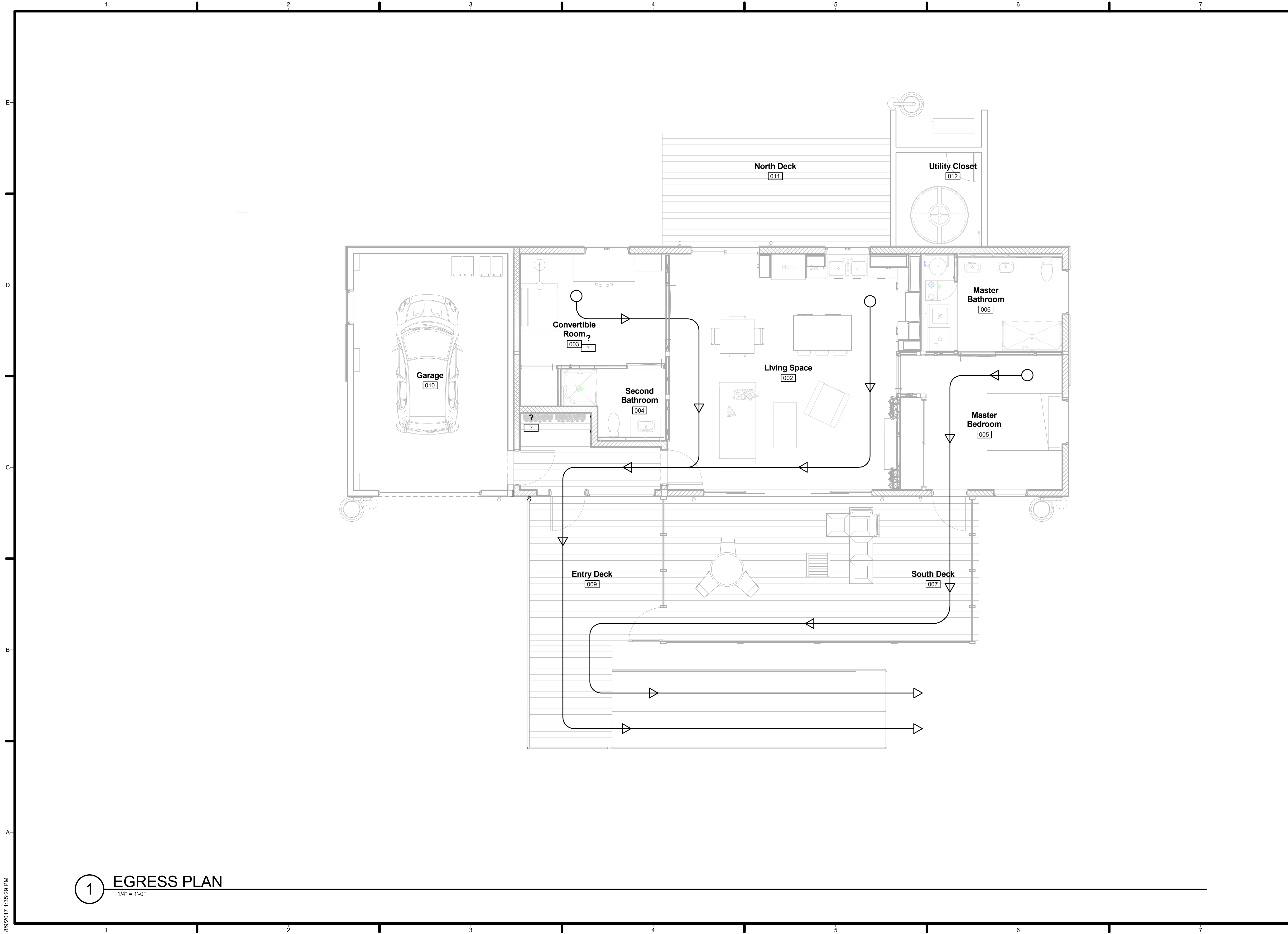
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SHEET TITLE
**CONSTRUCTION
 FOOTPRINT
 COMPLIANCE**

G-102

1 CONSTRUCTION FOOTPRINT
 1/4" = 1'-0"

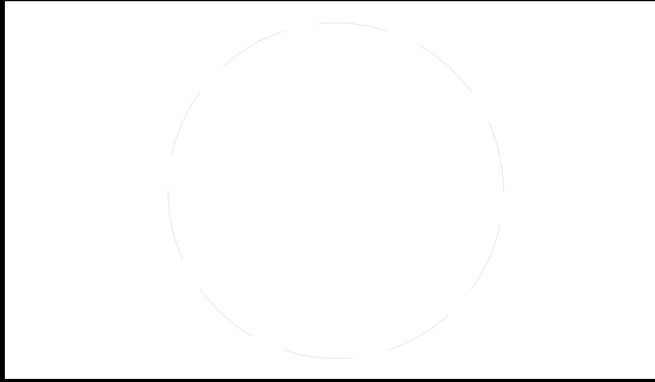
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HOUSE
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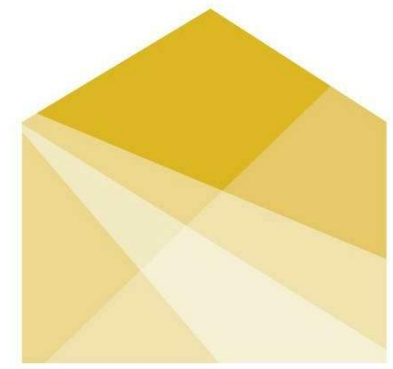
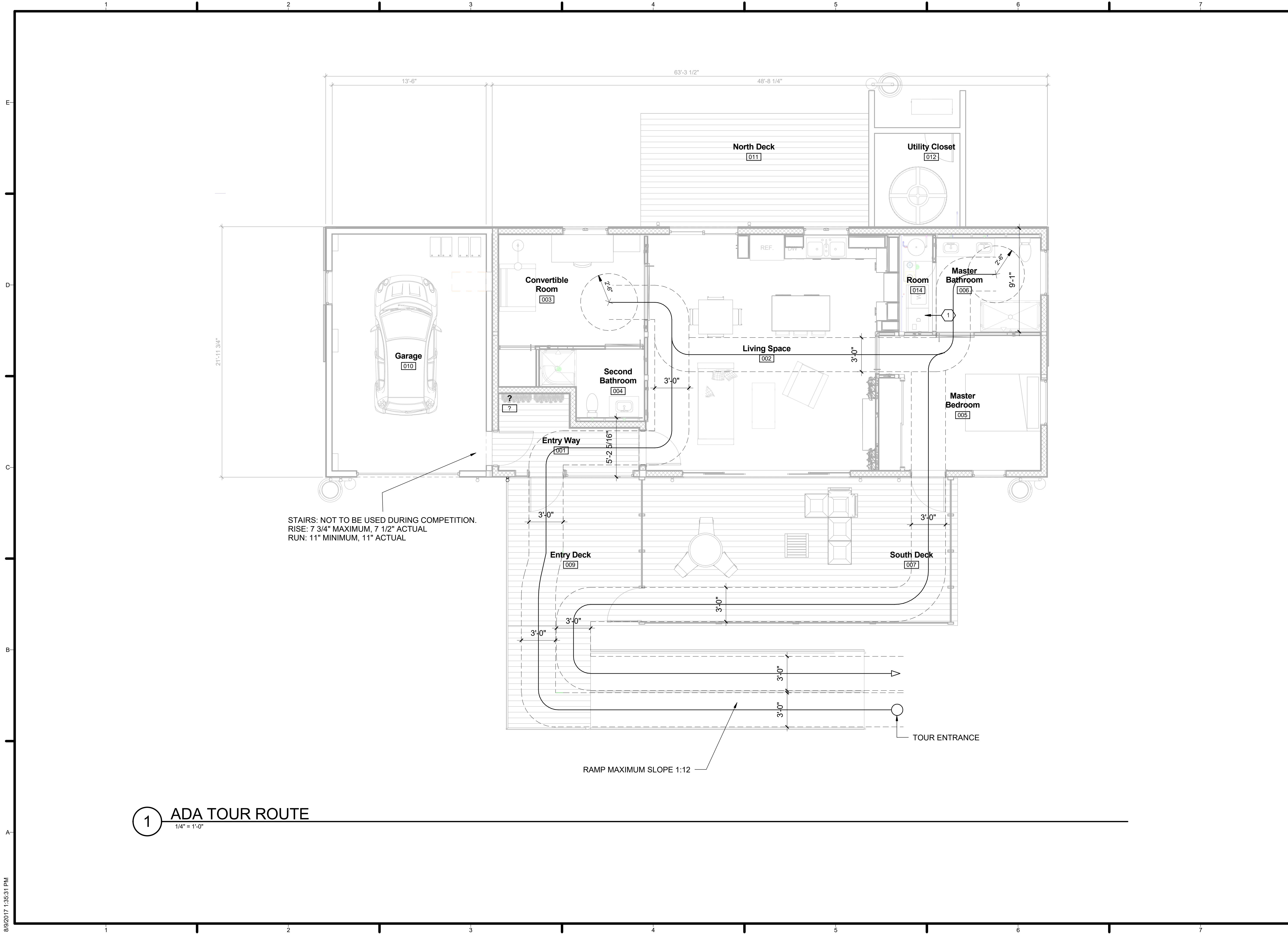
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SHEET TITLE
EGRESS PLAN

G-103

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

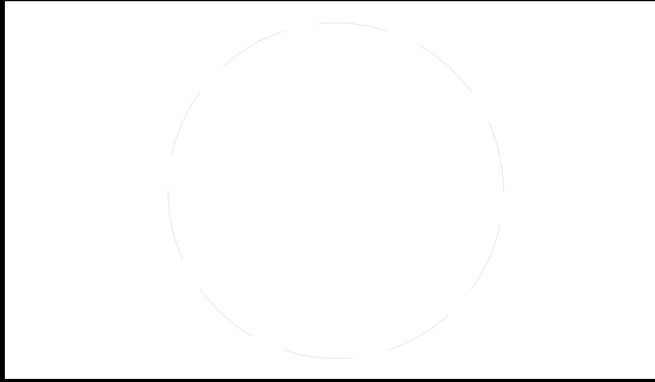
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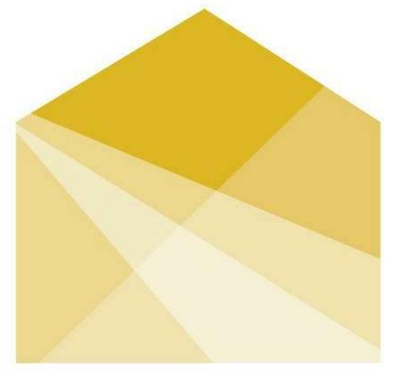


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SHEET TITLE
ADA TOUR ROUTE COMPLIANCE PLAN

G-104



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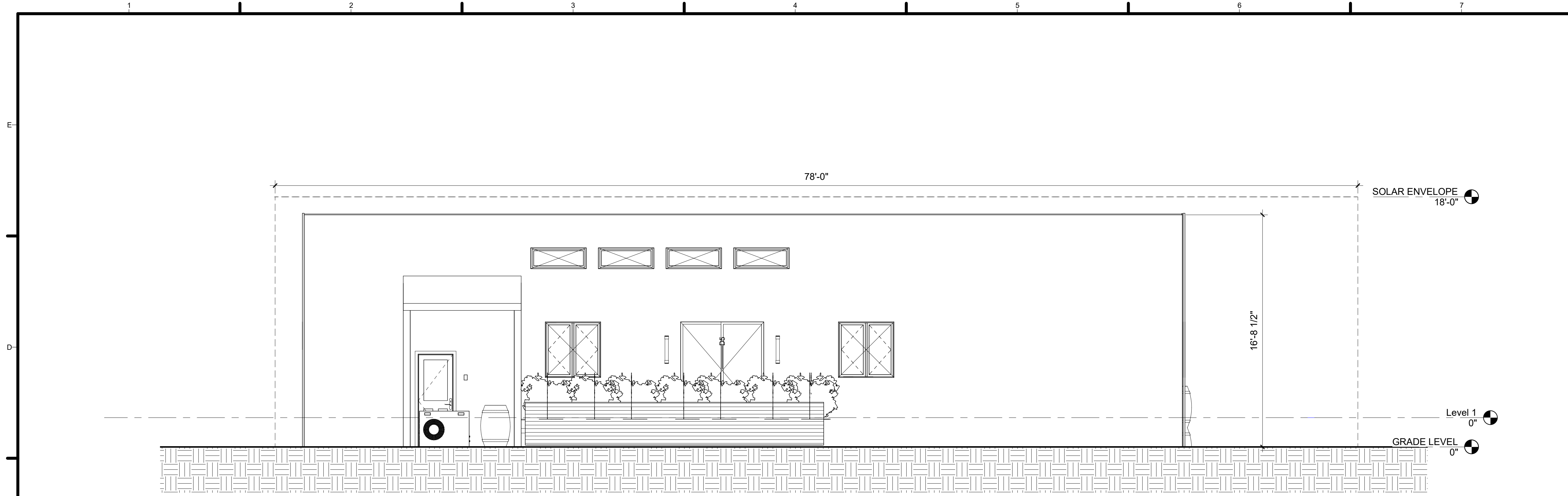


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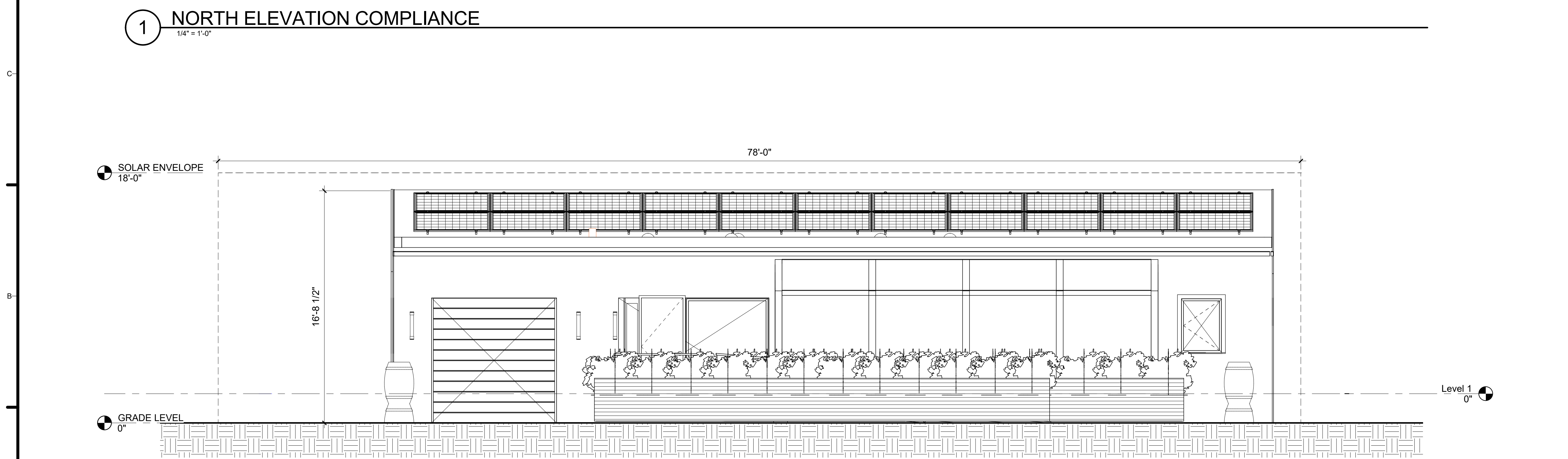
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SHEET TITLE
SOLAR ENVELOPE COMPLIANCE ELEVATIONS

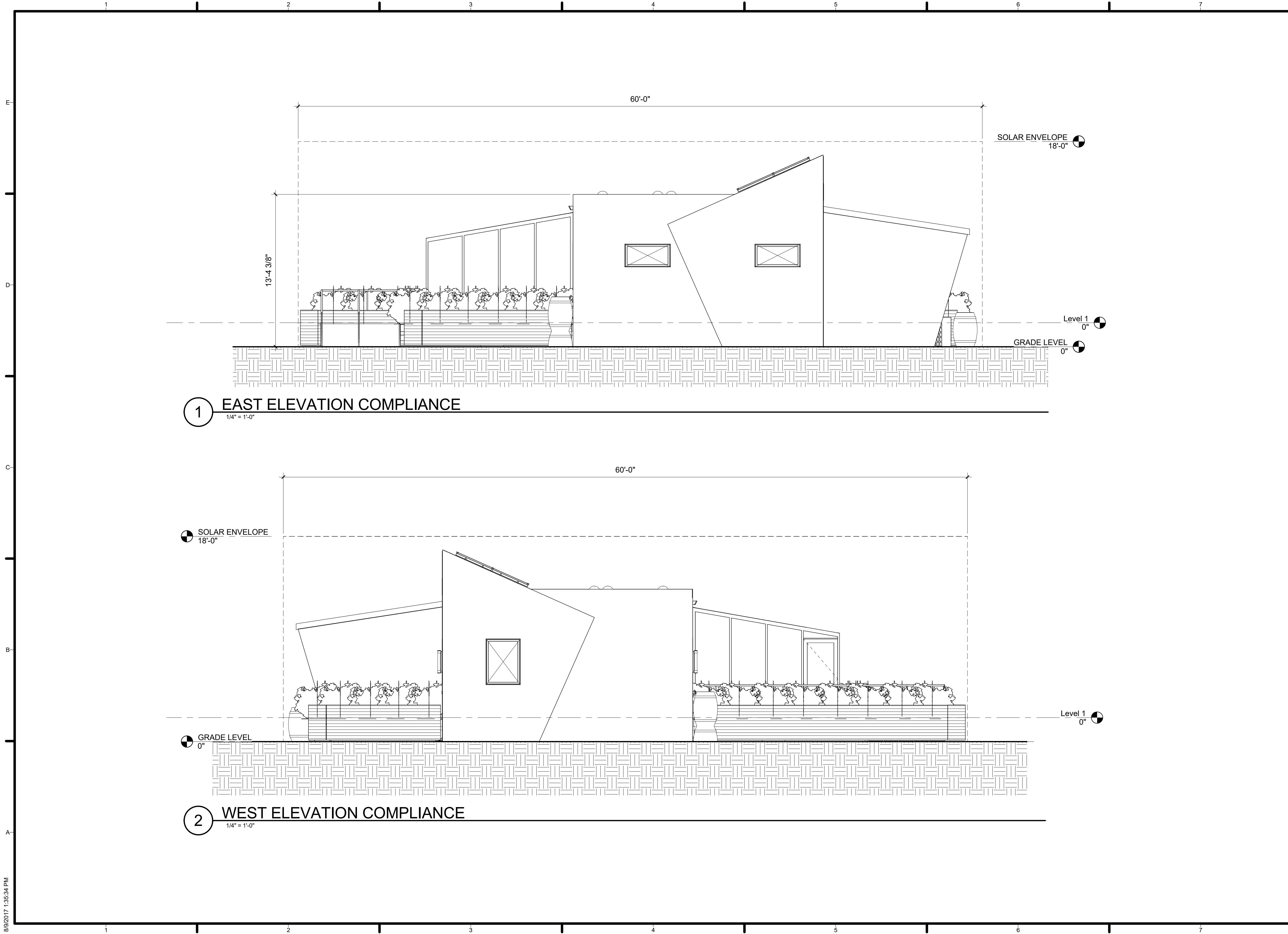
G-201



1 NORTH ELEVATION COMPLIANCE
1/4" = 1'-0"



2 SOUTH ELEVATION COMPLIANCE
1/4" = 1'-0"



1 EAST ELEVATION COMPLIANCE
1/4" = 1'-0"

2 WEST ELEVATION COMPLIANCE
1/4" = 1'-0"



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SHEET TITLE
**SOLAR ENVELOPE
COMPLIANCE
ELEVATIONS**

G-202



EXTERIOR VIEW 01
NTS



EXTERIOR VIEW 02
NTS



EXTERIOR VIEW 03
NTS



EXTERIOR VIEW 04
NTS



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SHEET TITLE

PROJECT RENDERINGS

G-901

1 PROJECT RENDERINGS
1/8" = 1'-0"



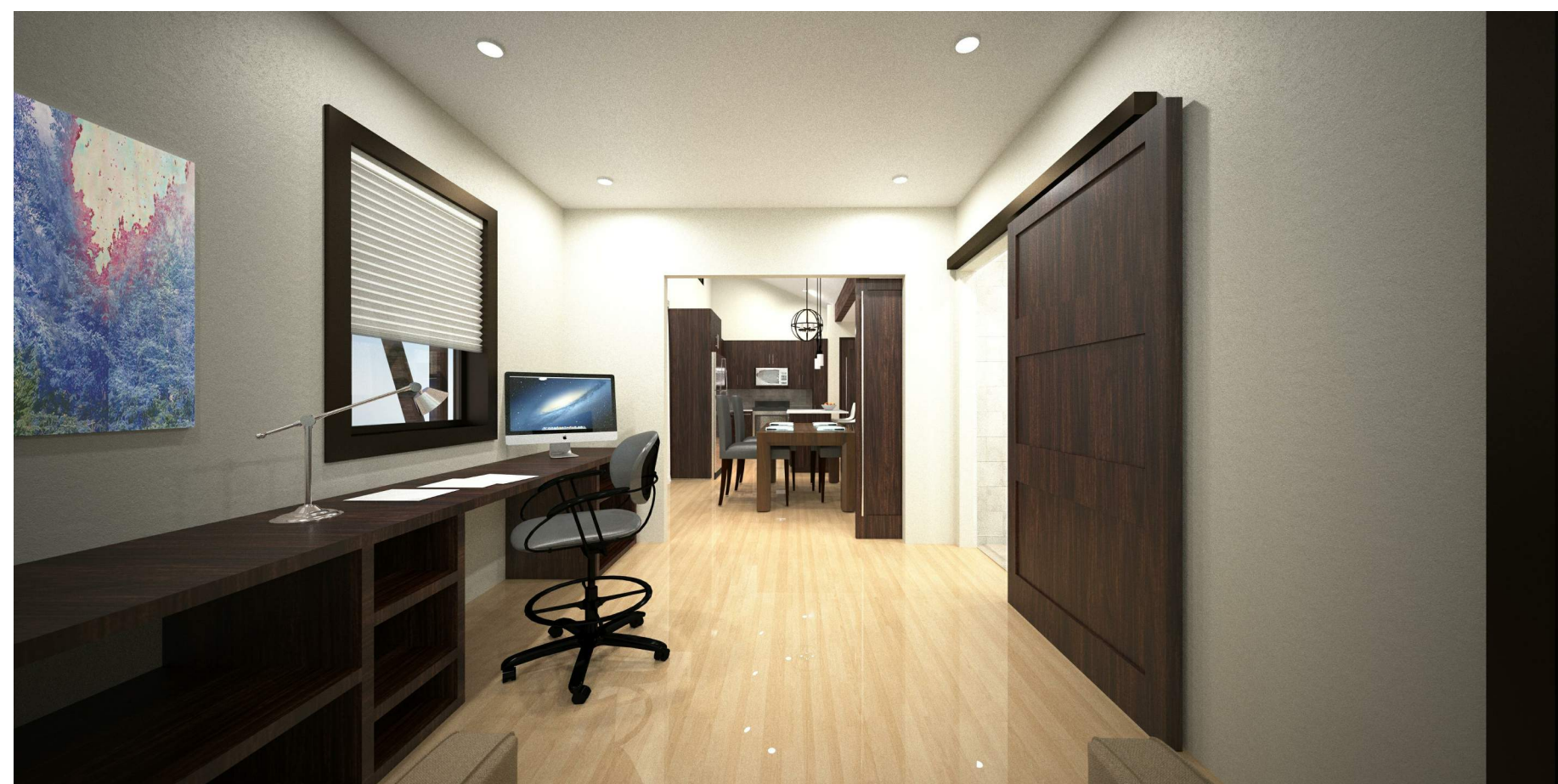
INTERIOR VIEW 01
NTS



INTERIOR VIEW 04
NTS



INTERIOR VIEW 02
NTS



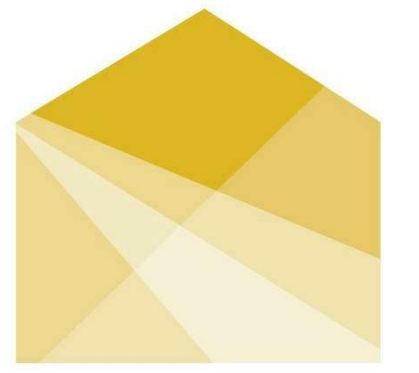
INTERIOR VIEW 05
NTS



INTERIOR VIEW 03
NTS



INTERIOR VIEW 06
NTS



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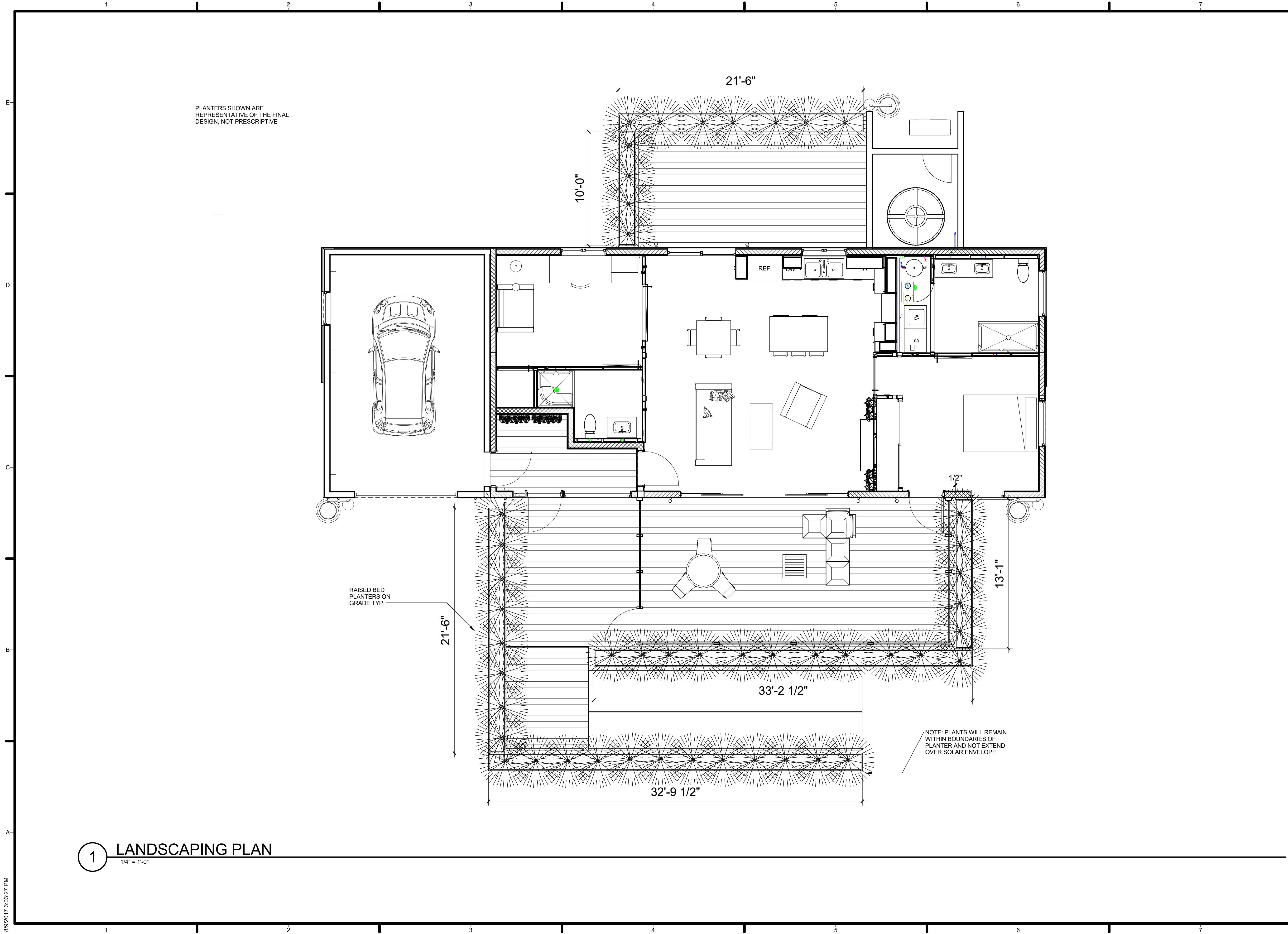
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SHEET TITLE

PROJECT RENDERINGS

G-902



PLANTERS SHOWN ARE REPRESENTATIVE OF THE FINAL DESIGN. NOT PRESCRIPTIVE

RAISED BED PLANTERS ON GRADE TYP.

NOTE: PLANTS WILL REMAIN WITHIN BOUNDARIES OF PLANTER AND NOT EXTEND OVER SOLAR ENVELOPE



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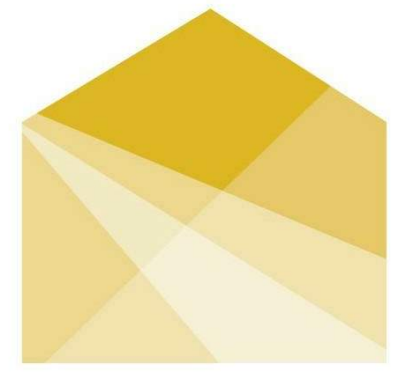
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SHEET TITLE
PLANTING AND CONTAINER PLAN

L-101

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SHEET TITLE

GENERAL NOTES

S-001

GENERAL NOTES

- ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE APPLICABLE REFERENCE STANDARDS:
 - SOLAR DECATHLON BUILDING CODE
 - INTERNATIONAL RESIDENTIAL CODE, 2015.
 - AMERICAN SOCIETY OF CIVIL ENGINEERS MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-10.
 - NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS), 2015.
- ALL STRUCTURAL WORK SHALL CONFORM TO THE PROJECT SPECIFICATIONS AND RELEVANT DOCUMENTATION INCLUDING ALL DRAWING NOTES AND APPLICABLE REFERENCE STANDARDS. THE SCOPE OF WORK IS NOT SOLELY DEFINED BY THESE DOCUMENTS. WHERE CONFLICTS IN DOCUMENTATION EXIST, THE DESIGN TEAM SHOULD BE CONTACTED FOR CLARIFICATION.
- SEE ARCHITECTURAL DRAWINGS FOR ORIGIN OF THE SITE AND POSITIONING OF THE PROJECT ALONG WITH PROJECT DATUM DEFINITION (0' 0").
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF PERSONS AND PROPERTY AND THE MEANS AND METHODS OF CONSTRUCTION.
- STRUCTURAL ELEMENTS SHALL BE CENTERED ON GRIDLINES OR DIMENSION LINES, UNLESS OTHERWISE NOTED.
- ALL STRUCTURAL WORK SHALL BE COORDINATED WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING REQUIREMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN ON PLAN. DISCREPANCIES AND/OR INTERFACES SHALL BE REPORTED TO THE ARCHITECT FOR CLARIFICATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ENGINEERED DESIGNS AND COORDINATION OF FINAL SUPPORT DETAILS OF NON-STRUCTURAL ITEMS IDENTIFIED IN CONTRACT DOCUMENTS INCLUDING; BUT NOT LIMITED TO:
 - MECHANICAL EQUIPMENT
- PORTIONS OF THE STRUCTURAL SYSTEM WILL BE DESIGNED AND DETAILED UNDER THE COVER OF A SEPARATE DESIGN SUBMISSION. THESE PORTIONS OF THE STRUCTURE THAT ARE NOT COVERED IN THIS SUBMISSION MUST BE STAMPED BY ANOTHER PROFESSIONAL ENGINEER WHO TAKES FULL RESPONSIBILITY FOR THE DESIGN OF THESE COMPONENTS AS INCORPORATED INTO THIS PROJECT. THE FOLLOWING STRUCTURAL COMPONENTS FALL INTO THIS CATEGORY:
 - ALL STRUCTURAL INSULATED PANEL (SIP) BEARING WALLS WHICH INCLUDES ALL PERIMETER WALLS OF THE HOUSE. INCLUDED IN THIS DESIGN IS ADDITIONAL FRAMING REQUIRED FOR DOOR AND WINDOW OPENINGS.
 - ALL STRUCTURAL INSULATED PANEL (SIP) ROOF ELEMENTS.
 - SUN ROOM STRUCTURAL FRAME INCLUDING THE SUN ROOM ROOF SUPPORT SYSTEM.
- DETAILS SHOWN IN STRUCTURAL DRAWINGS ARE INDICATIVE IN NATURE. CONTRACTOR TO DESIGN, COORDINATE, AND/OR PROVIDE ADDITIONAL FRAMING AS REQUIRED.
- OPENINGS SHALL NOT BE MADE IN ANY STRUCTURAL MEMBER UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY REQUIRED DEWATERING OF THE SITE DURING CONSTRUCTION.

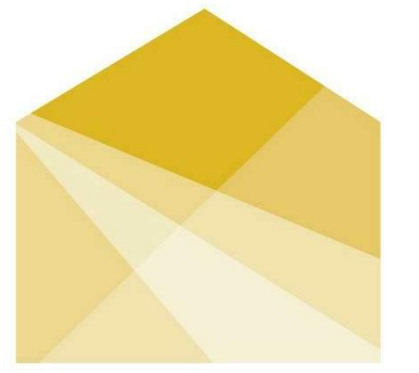
WOOD

- ALL FRAMING LUMBER AND DETAILS OF WOOD CONSTRUCTION SHALL CONFORM TO THE "NATIONAL DESIGN SPECIFICATION FOR STRESS GRADE LUMBER AND ITS FASTENING" (INCLUDING SUPPLEMENTS), 2015.
- LAMINATED LUMBER SECTIONS ARE TO BE BUILT TO THE ANNOTATED GRADE OR APPROVED EQUAL.
- TYPICAL LUMBER SHALL BE OF THE FOLLOWING MINIMUM GRADE AND SHALL BE GRADE STAMPED BY A RECOGNIZED GRADING AGENCY, SHALL BE SURFACED DRY, AND SHALL BE USED AT A MAXIMUM OF 19% WATER CONTENT.
SPECIES: DOUGLAS-FIR-LARCH OR SOUTHERN PINE.
GRADE: SELECT STRUCTURAL GRADE UNLESS SPECIFIED OTHERWISE IN DRAWINGS
- PLYWOOD SHEATHING SHALL BE APA GRADE STAMPED FOR THE SPECIFIC SPAN, AND SHALL BE MADE WITH EXTERIOR GLUE, AND SHALL BE OF THE FOLLOWING THICKNESS:

FLOORS/ROOFS: APA RATED SHEATHING EXPOSURE 1
NON-SHEAR WALLS: APA RATED SHEATHING EXTERIOR EXPOSURE 1
SHEAR WALLS: APA RATED STRUCTURAL SHEATHING GRADE 1
- ALL PLYWOOD SHEATHING SHALL BE GLUE AND NAILED TO FLOOR JOISTS USING APA APPROVED ELASTOMERIC CONSTRUCTION ADHESIVE AND CODE REQUIRED NAILING.
- WHERE BEAMS ARE FLUSH TO HEADER, USE APPROVED TYPE BEAM HANGER.
- ALL STANDARD EXTERIOR EXPOSED SPF WOOD OR SOUTHEN YELLOW PINE SHALL BE STRUCTURAL SELECT UNLESS OTHERWISE STATED.

FOUNDATIONS

- ALL SPECIFIED FOUNDATIONS SHALL BE PLACED ON ADEQUATELY PREPARED SUBGRADE TO PROVIDE A BEARING CAPACITY 2500 PSF IN ACCORDANCE WITH THE SOLAR DECATHLON BUILDING CODE.
- PROVIDE TEMPORARY ADJUSTABLE PIERS AS SPECIFIED IN PLAN IN ACCORDANCE WITH THE SIZES AND CAPACITIES SPECIFIED BY CENTRAL PIERS INC. OUT OF FRESNO, CALIFORNIA. PIERS PROVIDED SHALL BE:
 - CP SEISMIC PIERS WITH PRECAST BASE (ALLOWABLE LOADS DOWNWARD = 11,000 LBS. AND SHEAR 4,000 LBS.), HEIGHT 7".
 - CP STANDARD PIERS WITH PRESSURE TREATED PLYWOOD BASE (ALLOWABLE LOAD DOWNWARD = 6,000 LBS.), HEIGHT 11".
- FOUNDATION SUBSTITUTIONS WILL BE CONSIDERED ASSUMING THAT THEY CAN BE DEMONSTRATED TO EQUIVALENT PERFORMANCE AND CAN BE INCORPORATED INTO THE CURRENT DETAILED SYSTEM.



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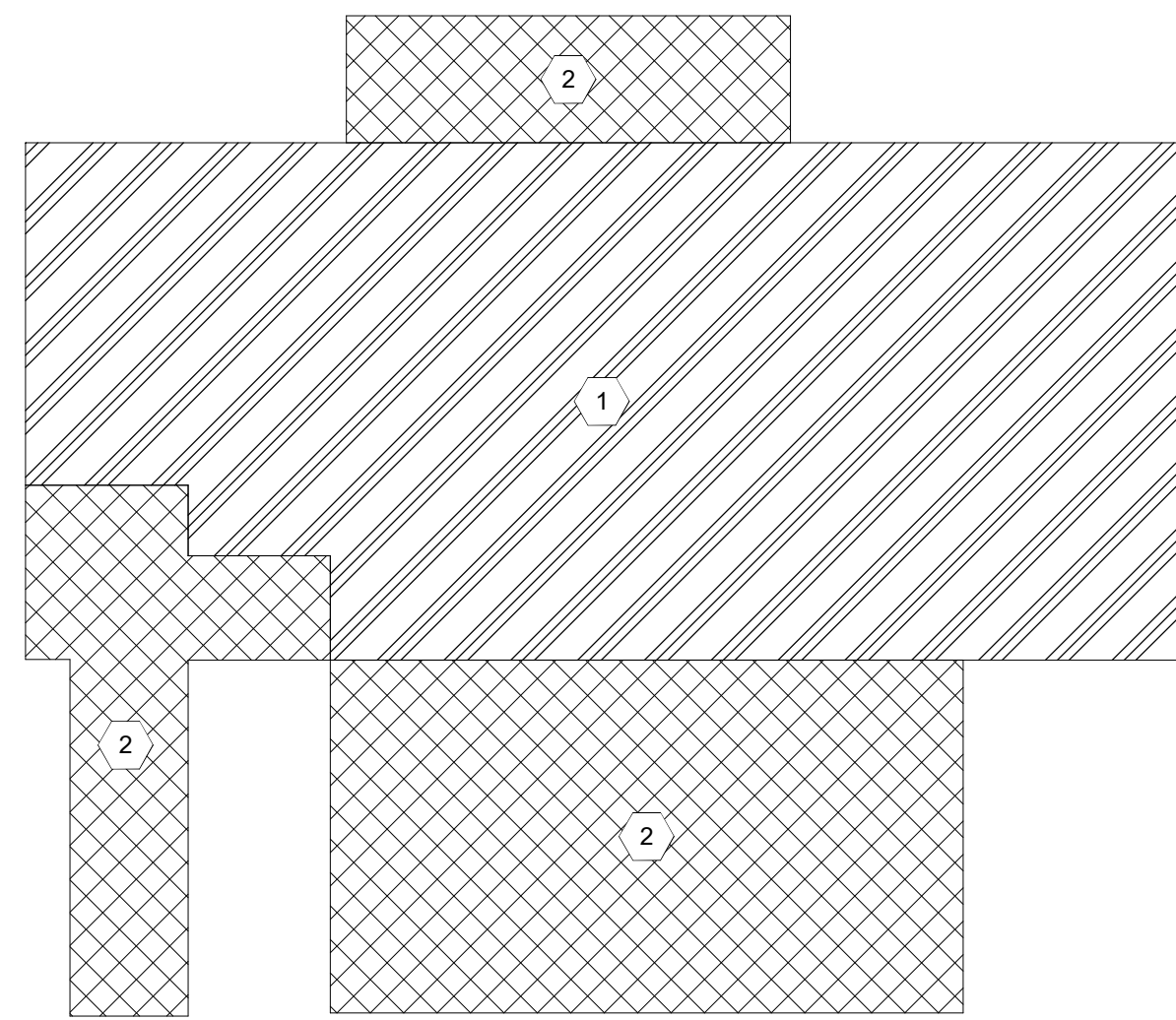
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SHEET TITLE
LOADING DIAGRAMS

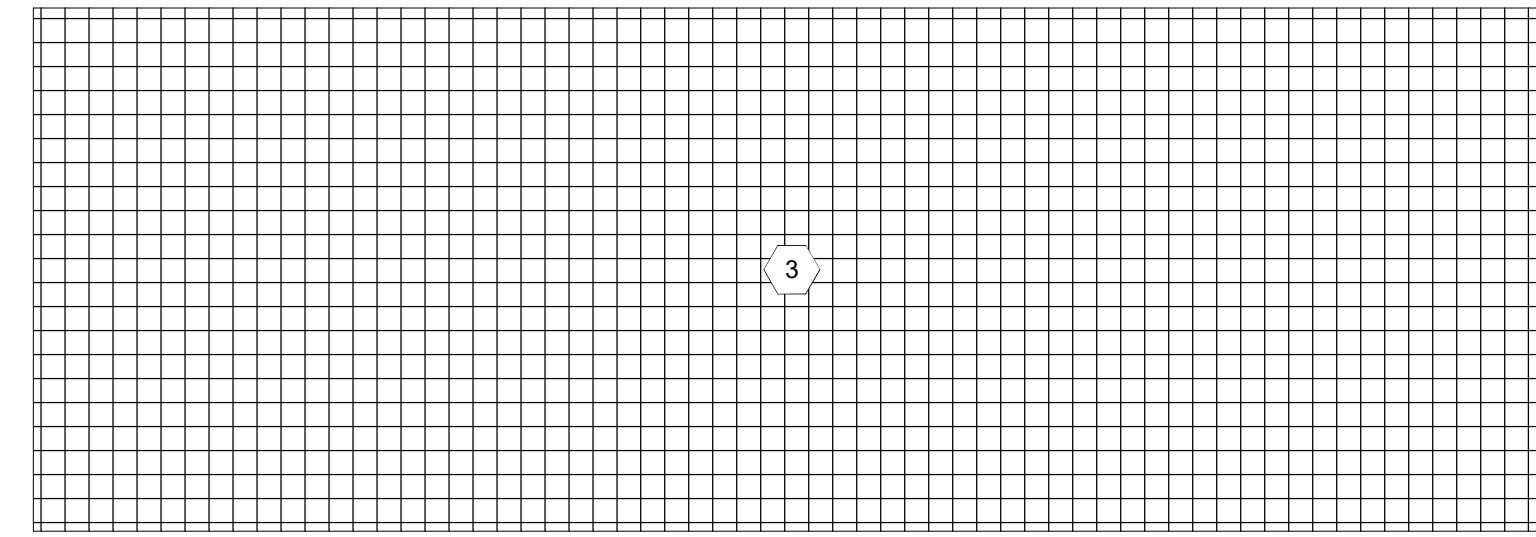
S-002

SUPERIMPOSED DEAD AND LIVE LOAD SCHEDULE			
DESCRIPTION	DESIGNATION MARK	UNFACTORED SUPERIMPOSED DEAD LOAD (PSF UON)	UNFACTORED LIVE LOAD (PSF UON)
INTERIOR SPACE	1	10	50
EXTERIOR SPACE	2	10	100
ROOF	3	8	30

5 MEP / CEILING +
3 ROOFING & SOLAR PANELS

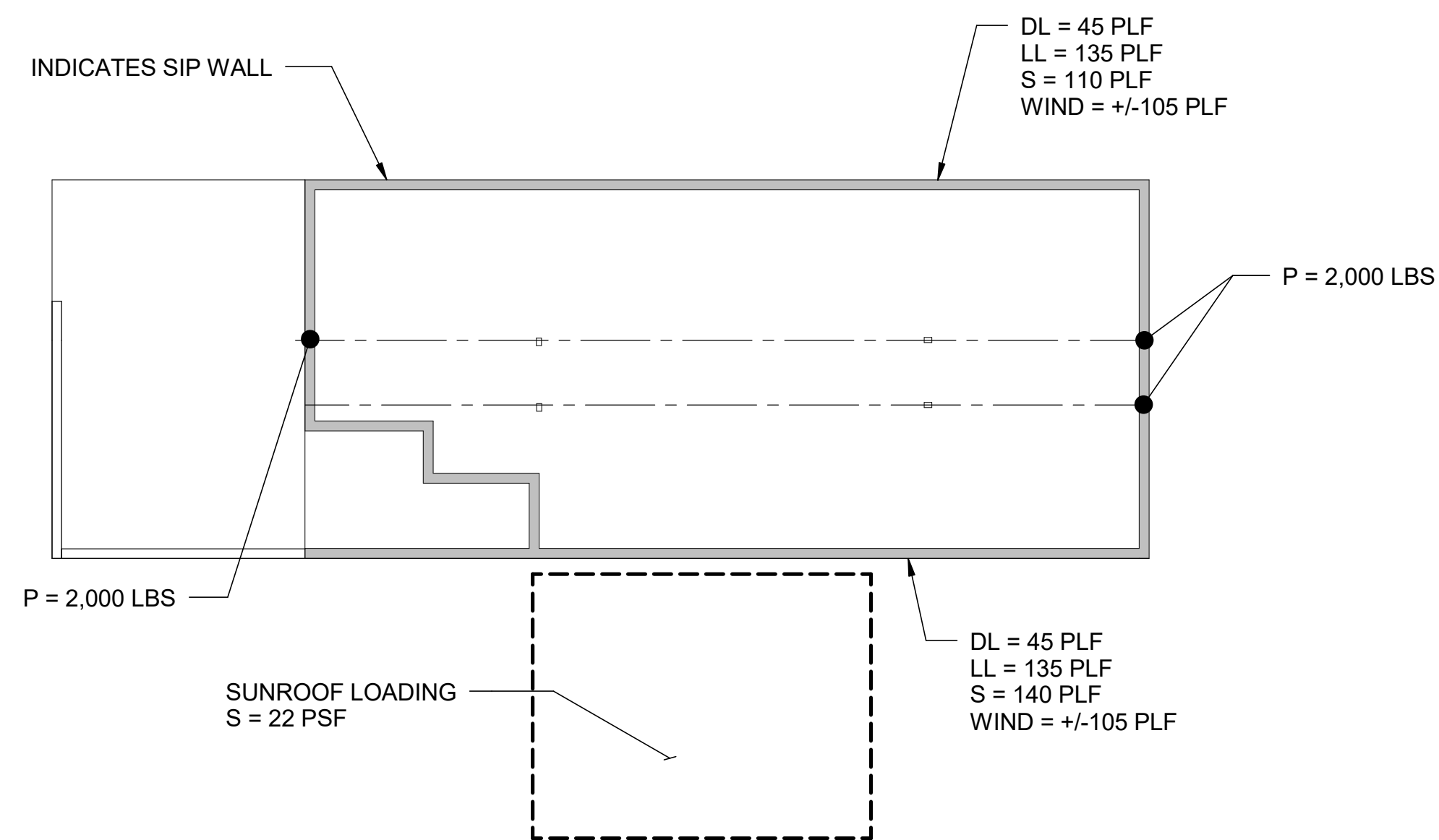


1 FIRST FLOOR LOADING PLAN
1/8" = 1'-0"

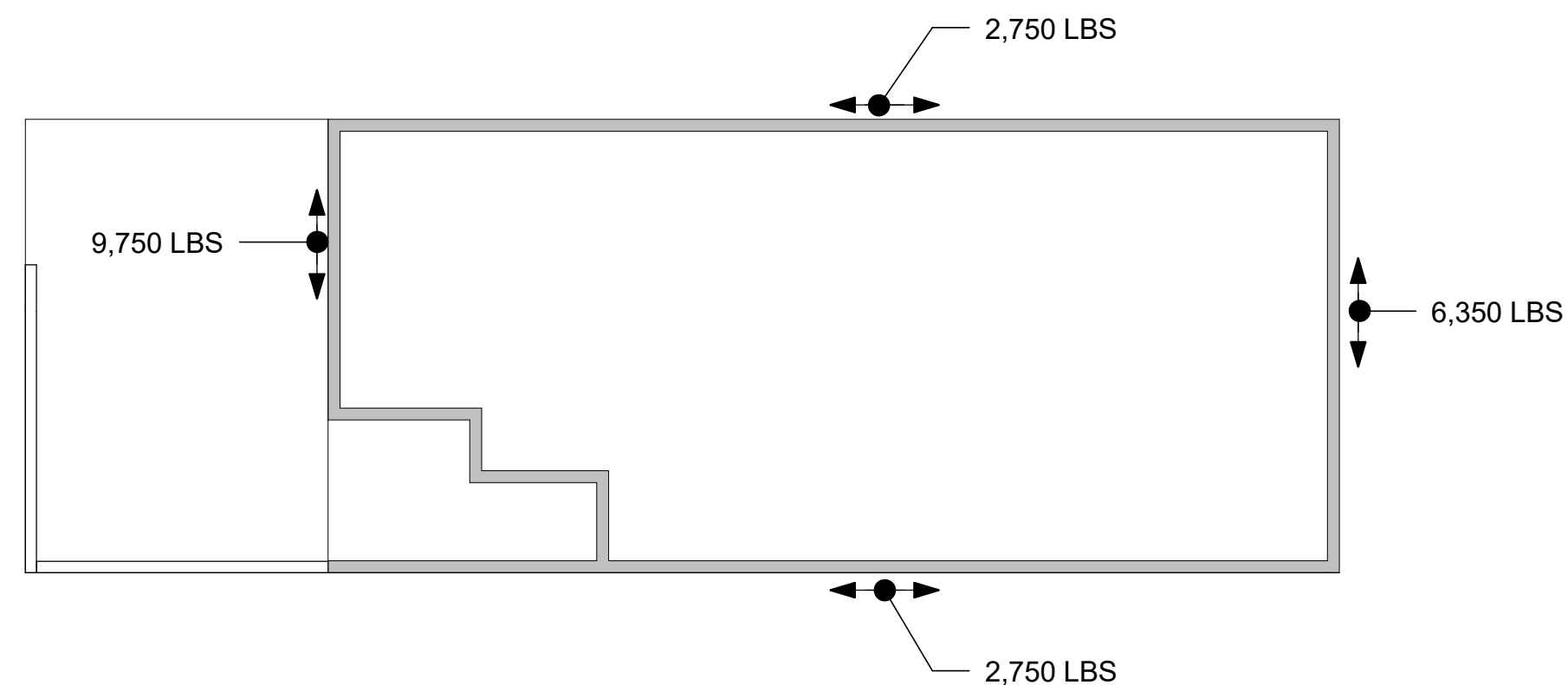


2 ROOF LOADING PLAN
1/8" = 1'-0"

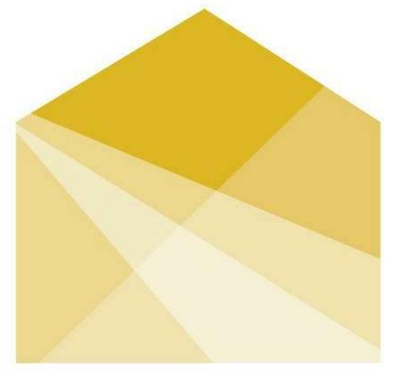
3 LOADING SCHEDULE
12" = 1'-0"



4 ROOF LEVEL SIP WALL VERTICAL LOADING DIAGRAM
1/8" = 1'-0"



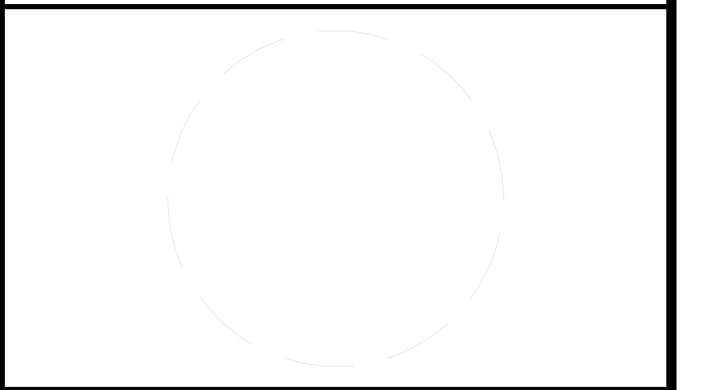
5 ROOF LEVEL SIP WALL LATERAL LOAD DIAGRAM (WIND)
1/8" = 1'-0"



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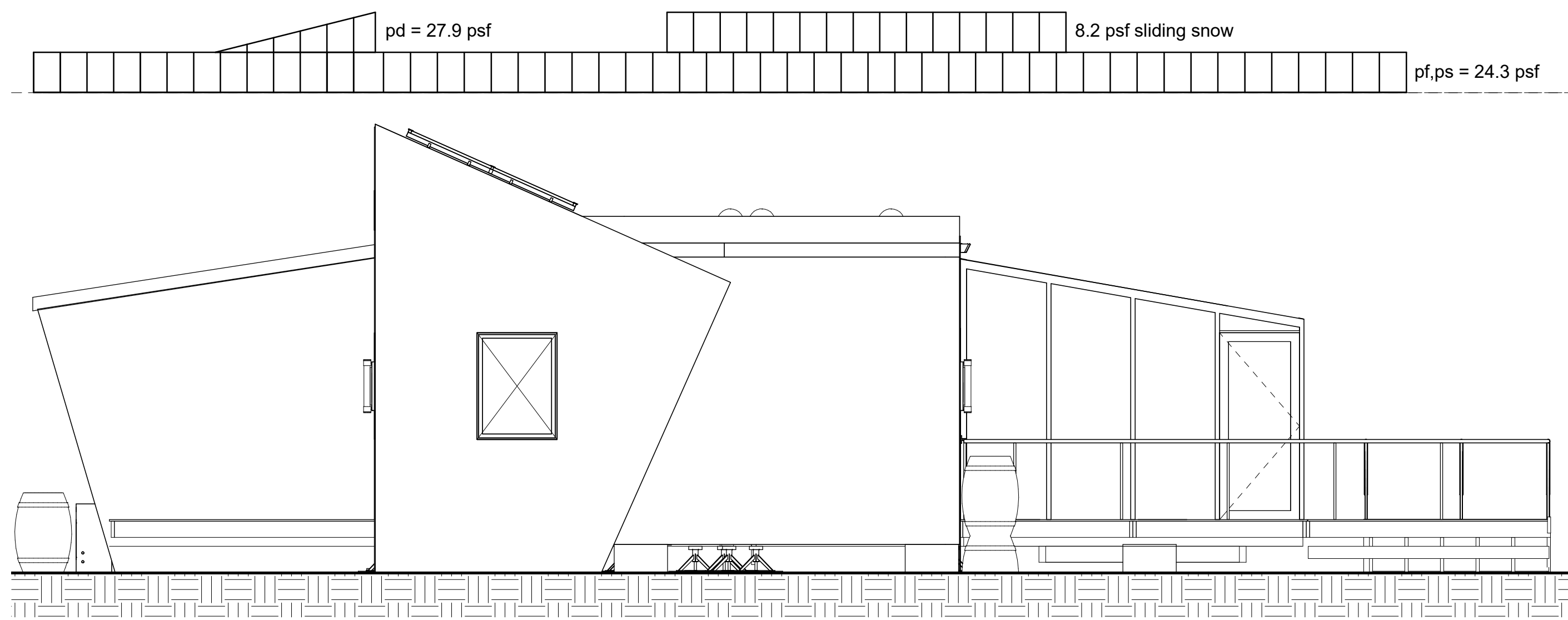


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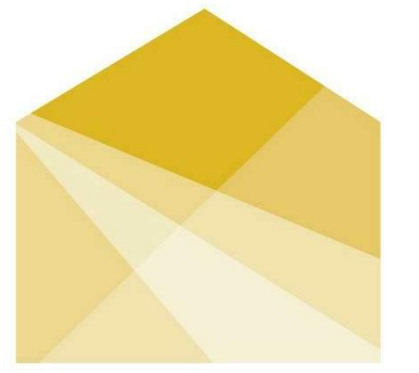
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LOADING DIAGRAMS

S-003



1 SNOW LOAD - WEST ELEVATION
1/4" = 1'-0"

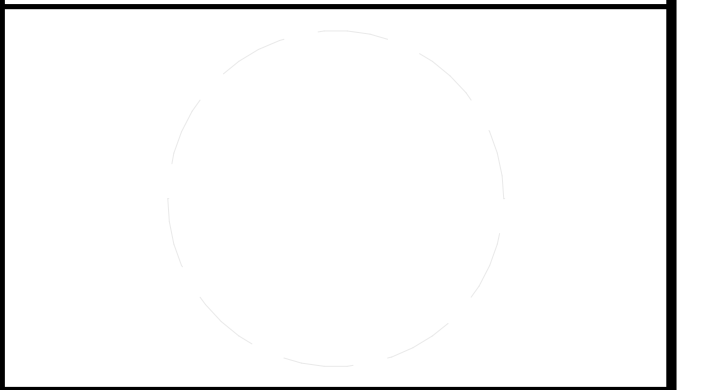


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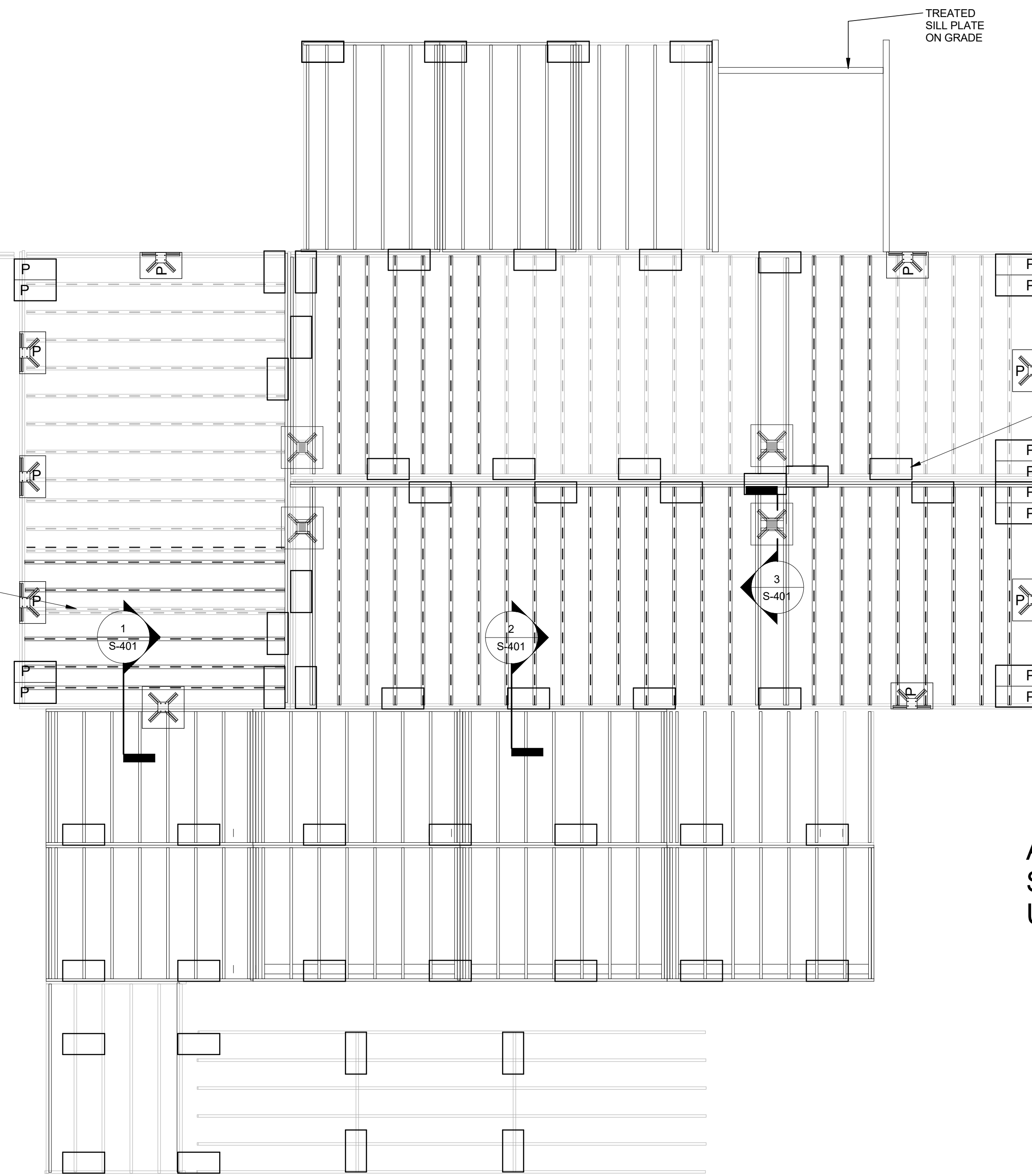
SHEET TITLE
FOUNDATION PLAN

S-101

NOTES:

- DENOTES 7" SEISMIC ANCHOR ON CONCRETE PAD
- DENOTES STANDARD STEEL PIER, H=12"
- DENOTES 7" SEISMIC PERIMETER PIER ON CONCRETE PAD
- DENOTES STANDARD PERIMETER STEEL PIER, H=12"

TJI 210 @ 16" O.C. MAX.
DOUBLE UNDER SIP WALLS

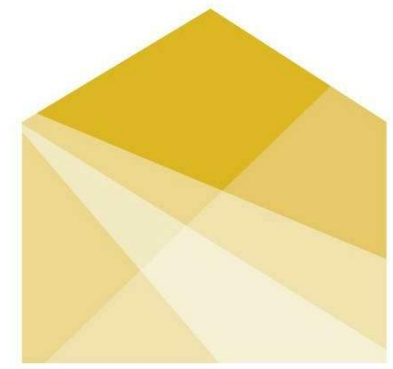
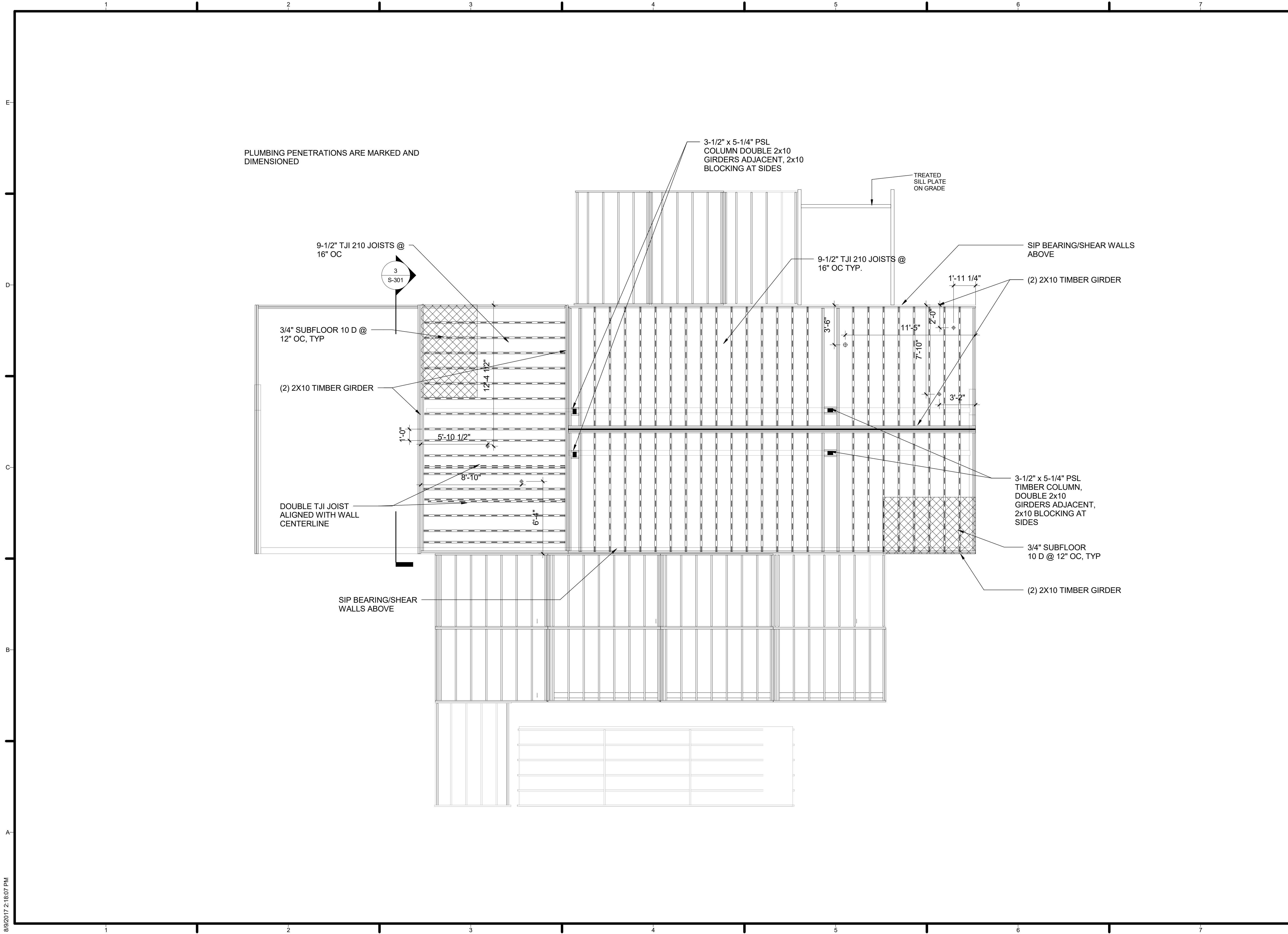


Standard Pier at
6' Max., offset
under each beam

Double Standard
Perimeter Pier
Typ.

ALL LINEAR
SPACING KEPT TO
UNDER 6'

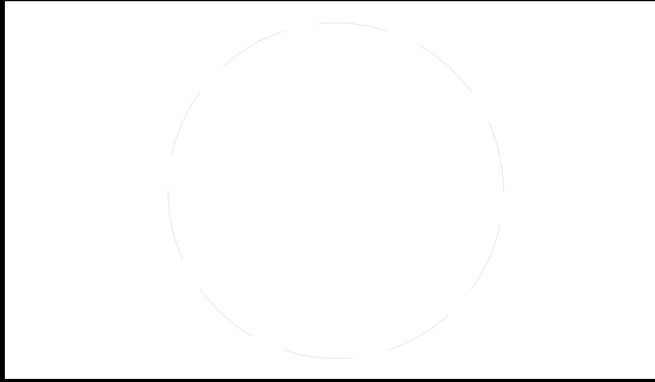
1 FOUNDATION PLAN
1/4" = 1'-0"



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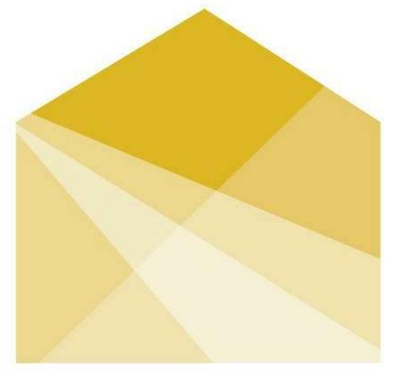
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SHEET TITLE
FIRST FLOOR FRAMING PLAN

S-102

8/9/2017 2:18:07 PM



HOUSE
by Northwestern

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CONSULTANTS
 Adrian Smith + Gordon Gill Architecture
 Thornton Tomasetti
 Power Construction
 Kelso-Burnett
 The Hill Group



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3	4/20/2017	PERMIT SET
4	8/10/2017	AS-BUILT SET

MARK DATE DESCRIPTION

LOT NUMBER: LOT #109

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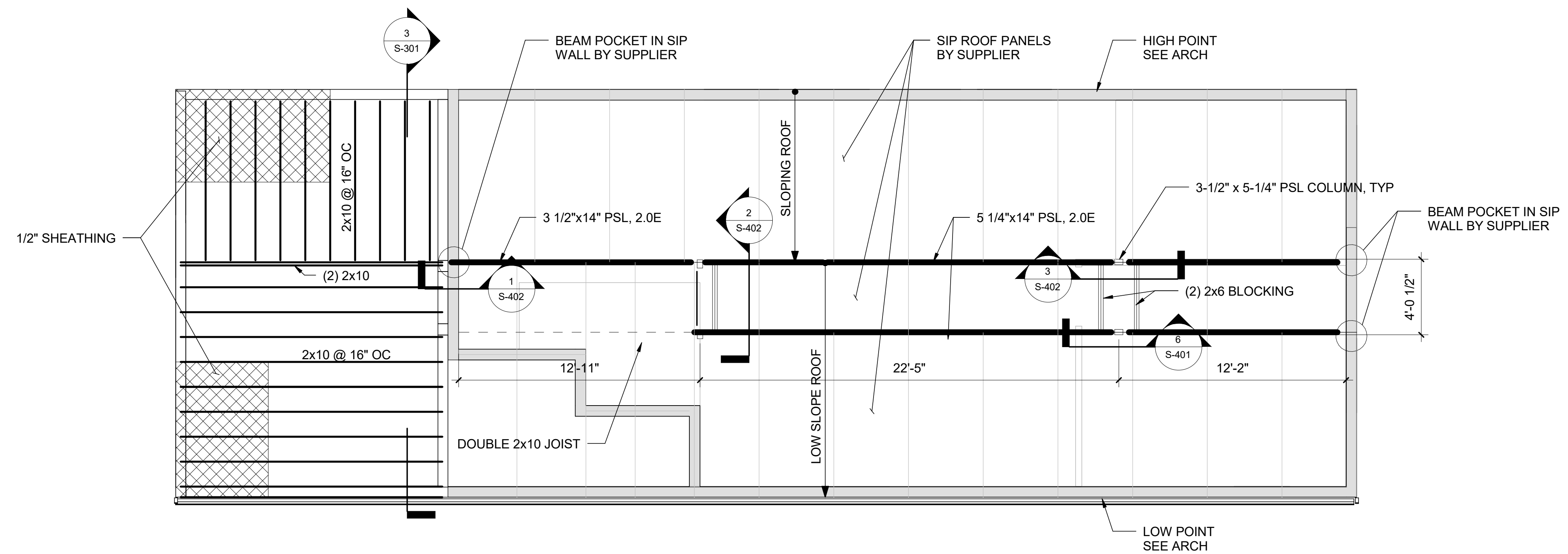
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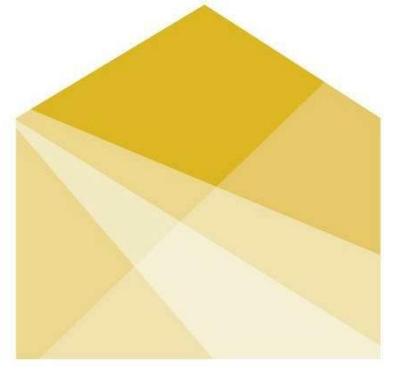
SHEET TITLE

ROOF FRAMING PLAN

S-103



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



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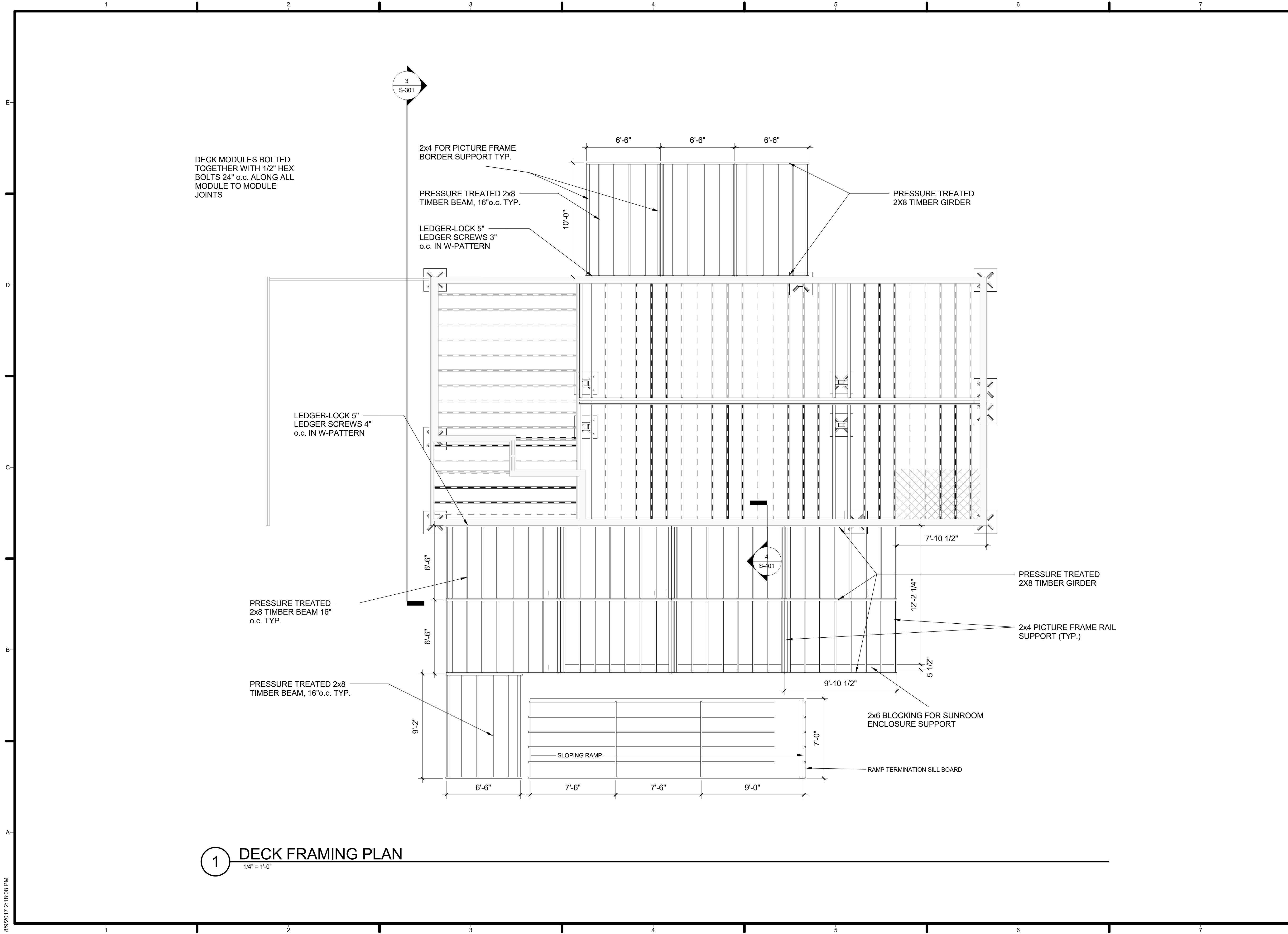


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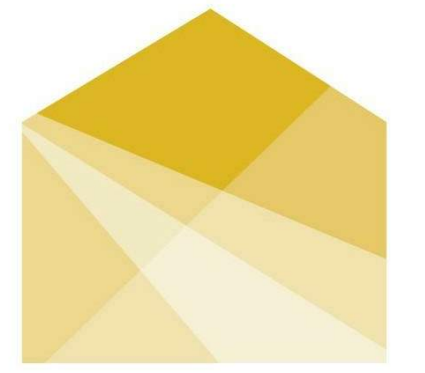
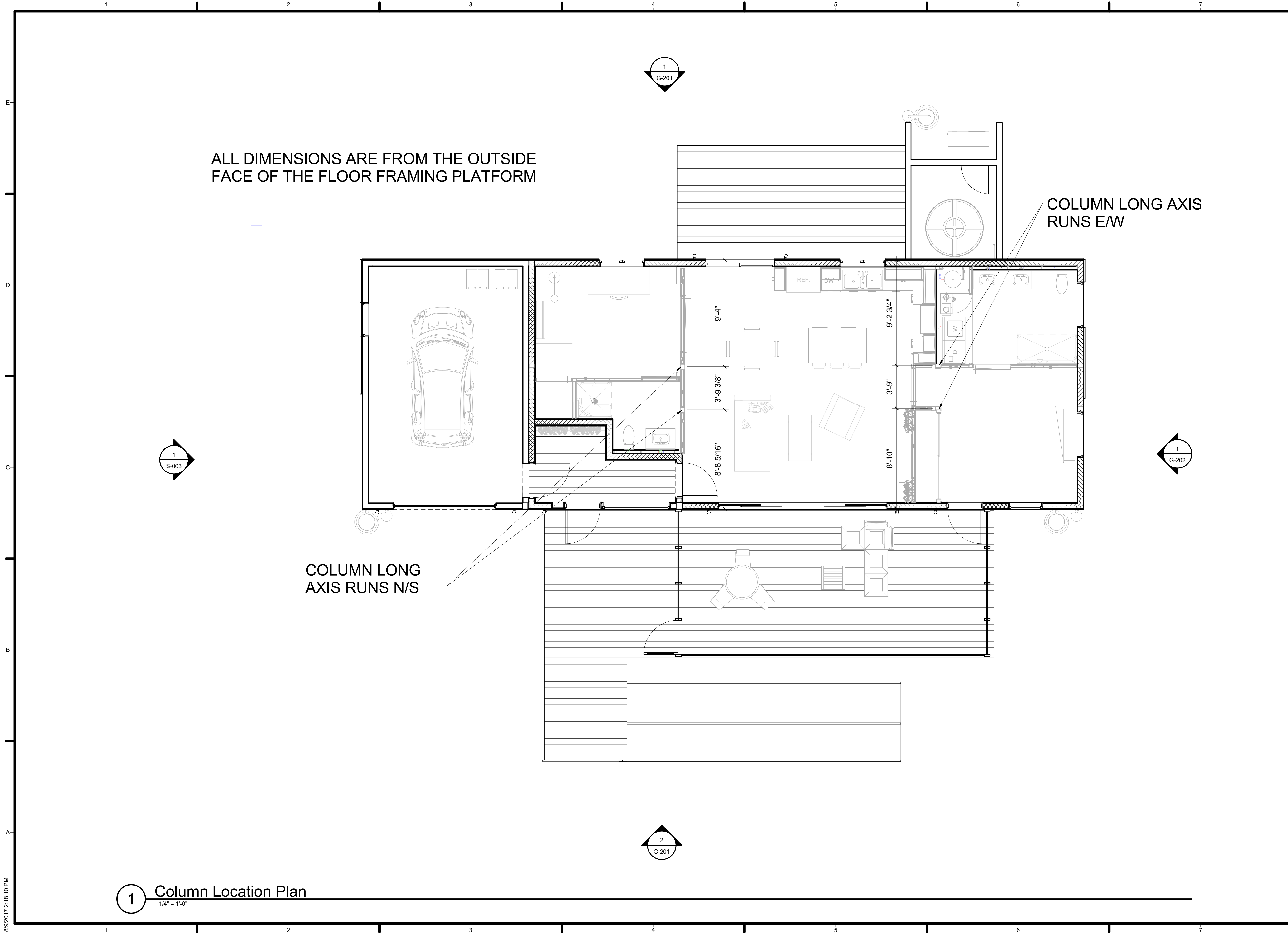
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SHEET TITLE
DECK FRAMING PLAN

S-104



1 **DECK FRAMING PLAN**
 1/4" = 1'-0"



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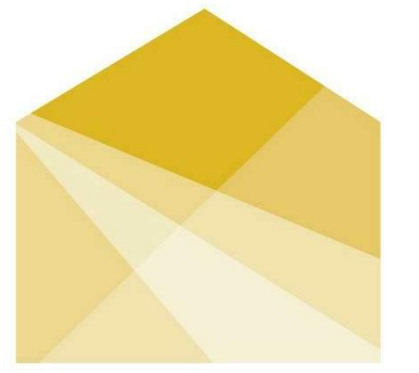
SHEET TITLE

COLUMN LOCATIONS

S-105

1 Column Location Plan

1/4" = 1'-0"



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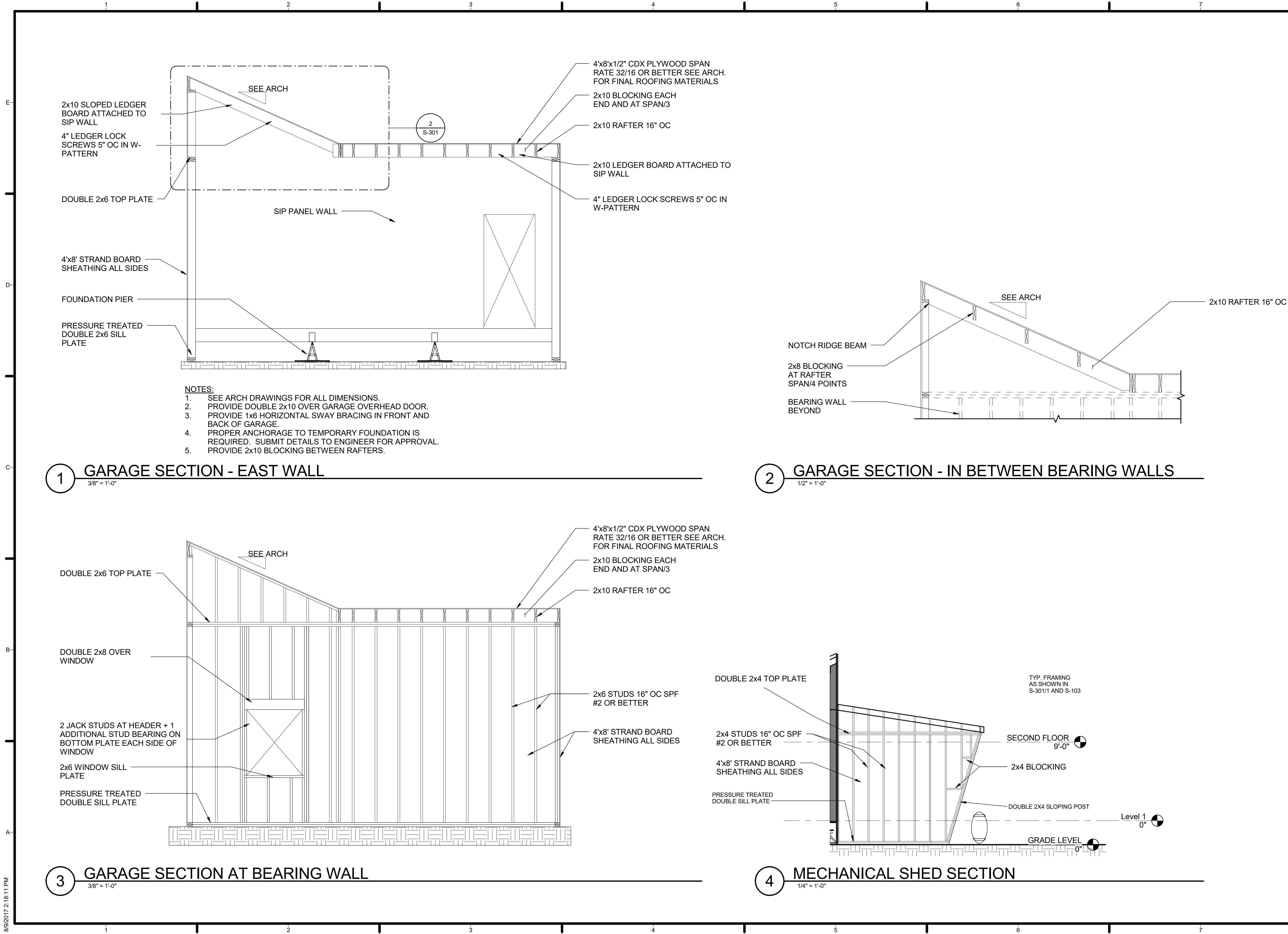


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SHEET TITLE
FRAMING SECTIONS

S-301



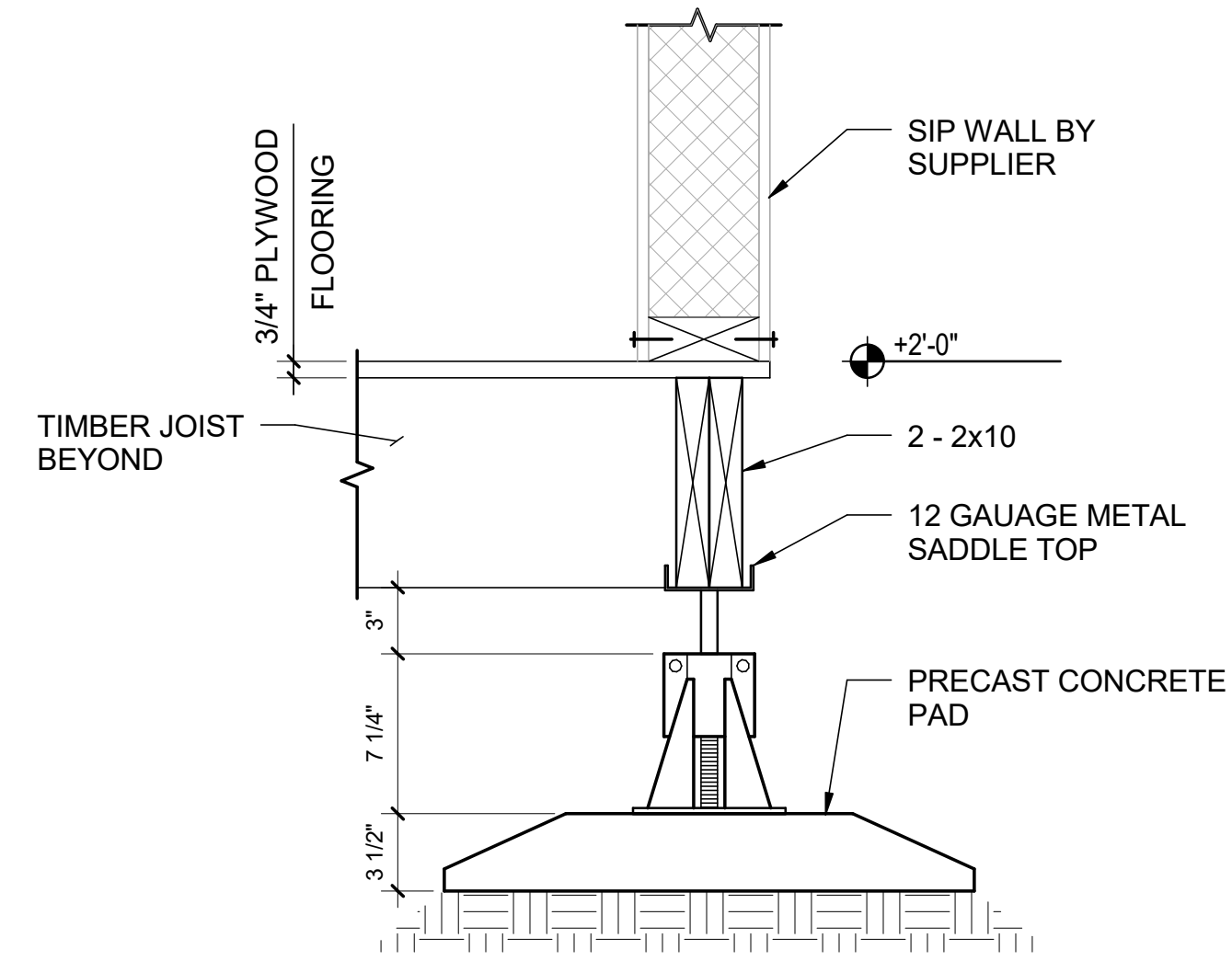
1 GARAGE SECTION - EAST WALL
3/8" = 1'-0"

2 GARAGE SECTION - IN BETWEEN BEARING WALLS
1/2" = 1'-0"

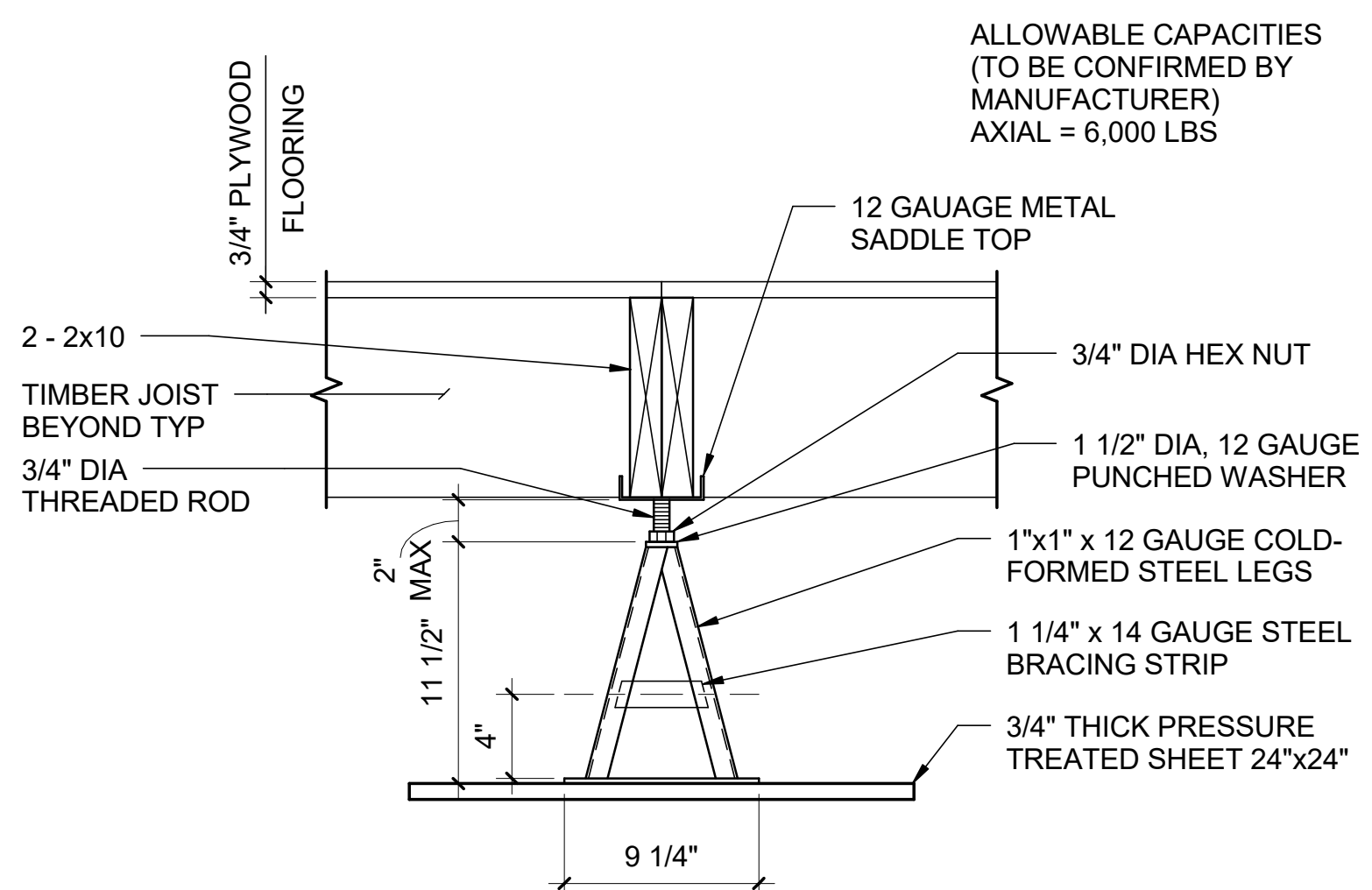
3 GARAGE SECTION AT BEARING WALL
3/8" = 1'-0"

4 MECHANICAL SHED SECTION
1/4" = 1'-0"

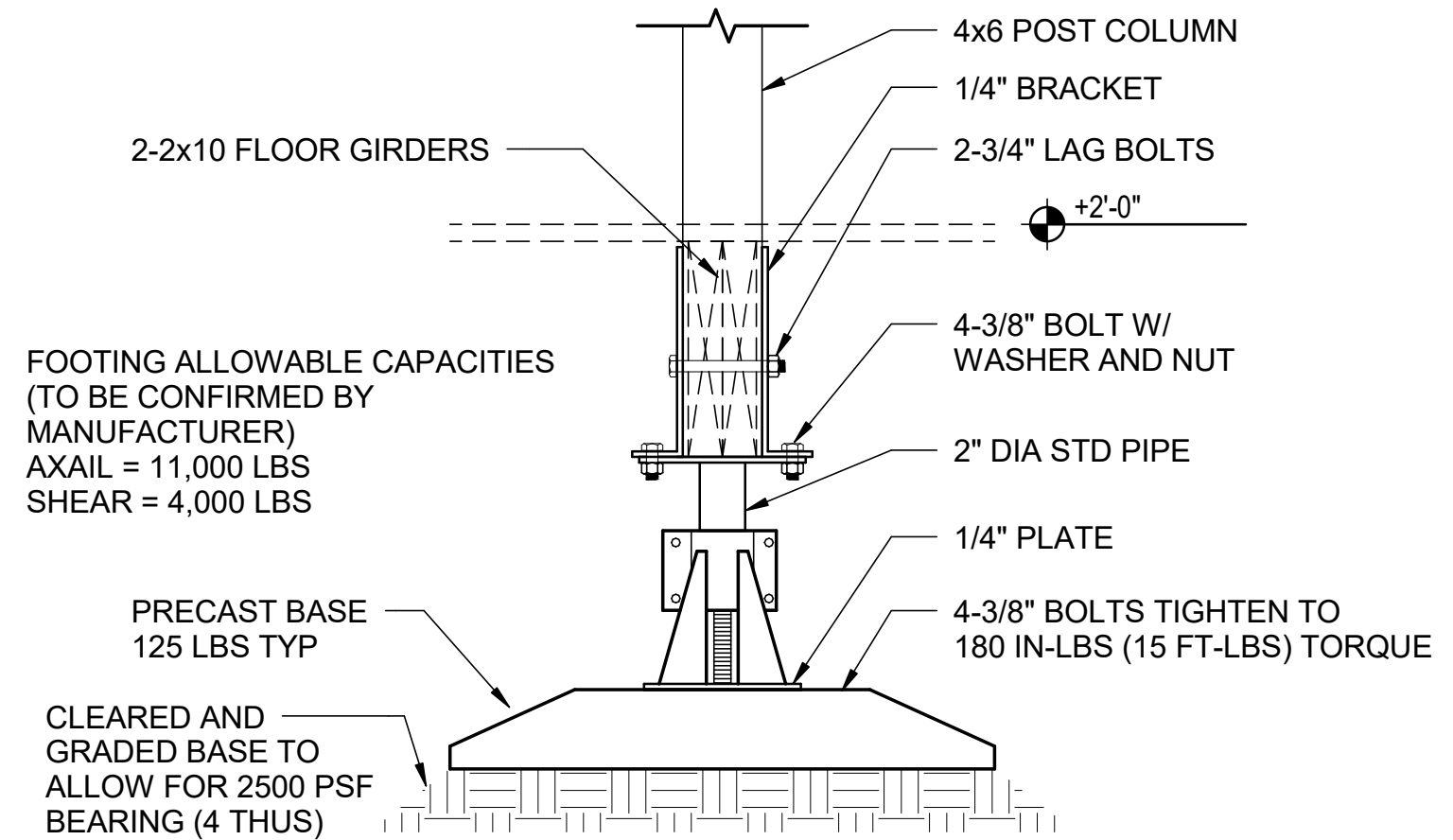
8/9/2017 2:18:11 PM



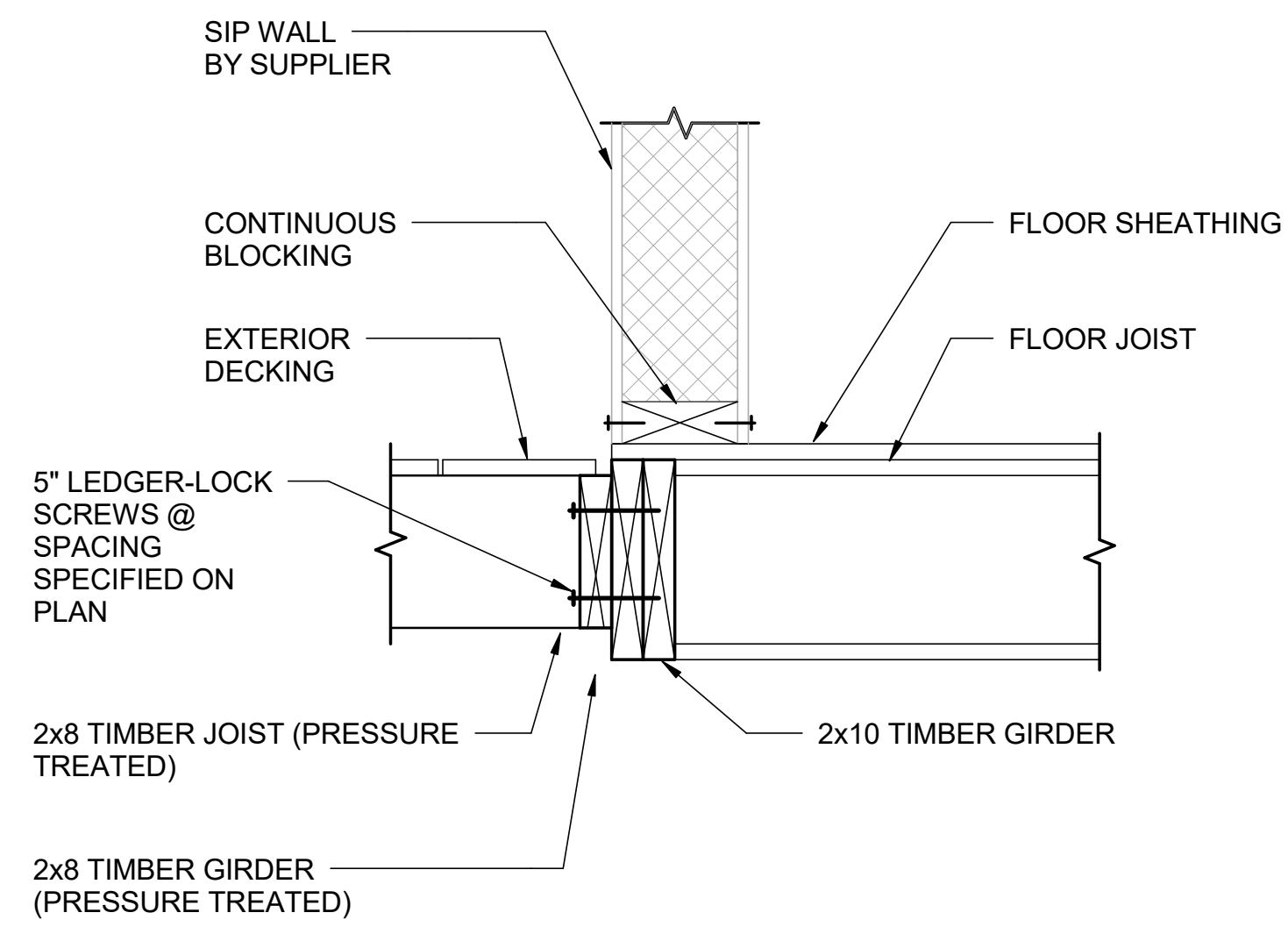
1 CP SEISMIC PIER AT DOUBLE JOIST
1 1/2" = 1'-0"



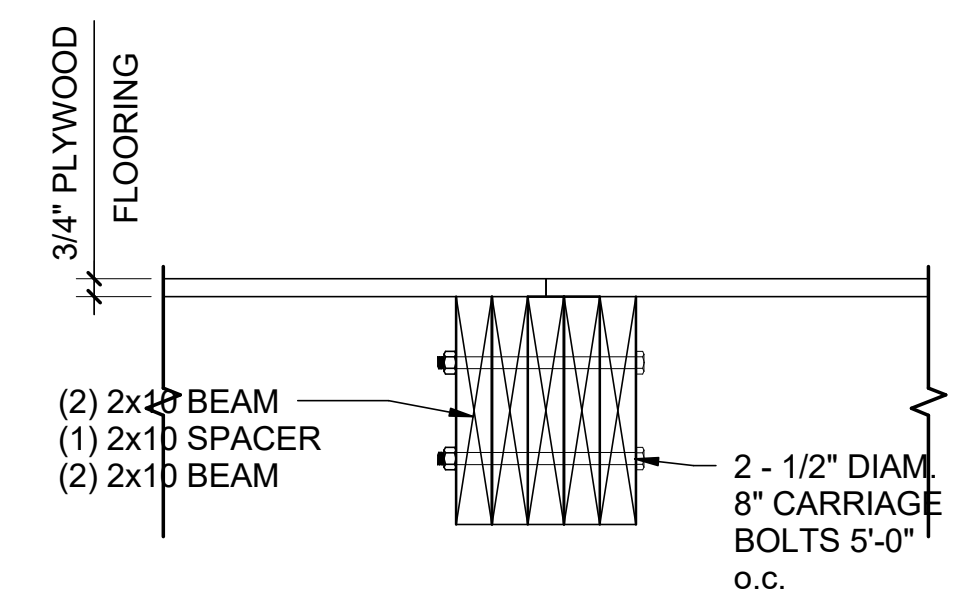
2 CP PIER AT DOUBLE JOIST
1 1/2" = 1'-0"



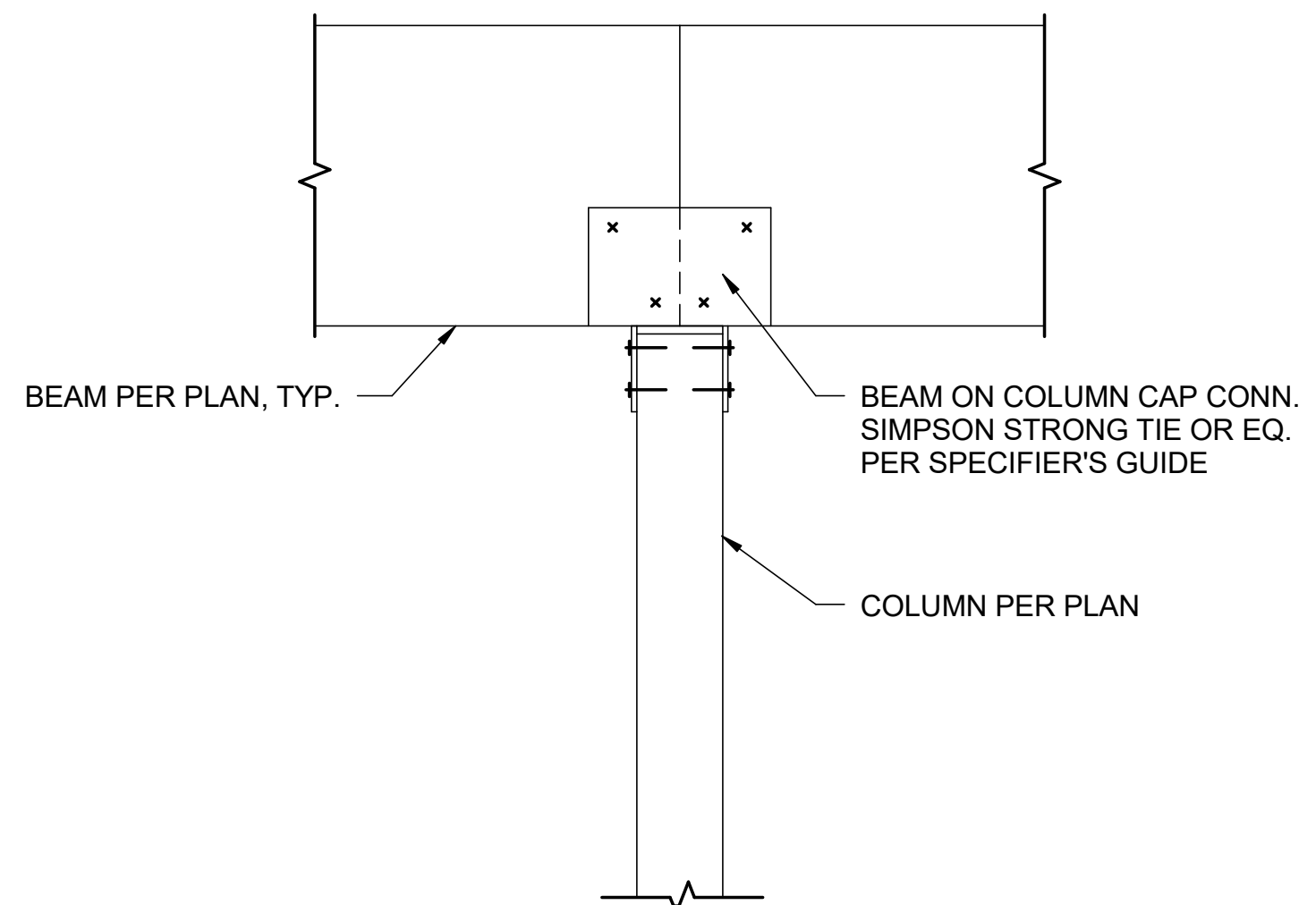
3 CP SEISMIC PIER AT INTERIOR POST COLUMNS
1 1/2" = 1'-0"



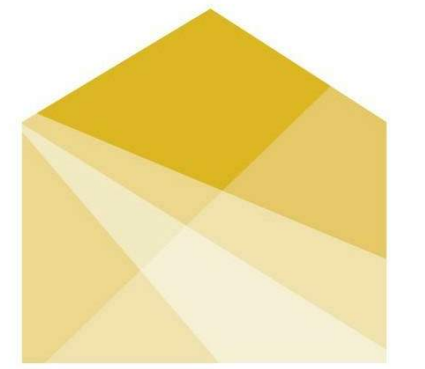
4 EXTERIOR SECTION
1 1/2" = 1'-0"



5 MODULE CONNECTION
1 1/2" = 1'-0"



6 BEAM OVER COLUMN CONNECTION
1 1/2" = 1'-0"



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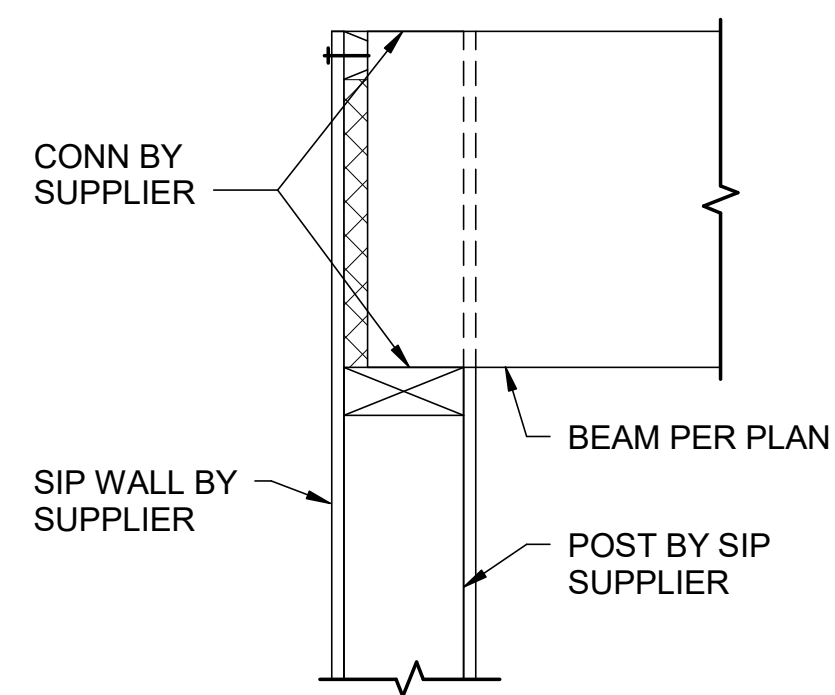
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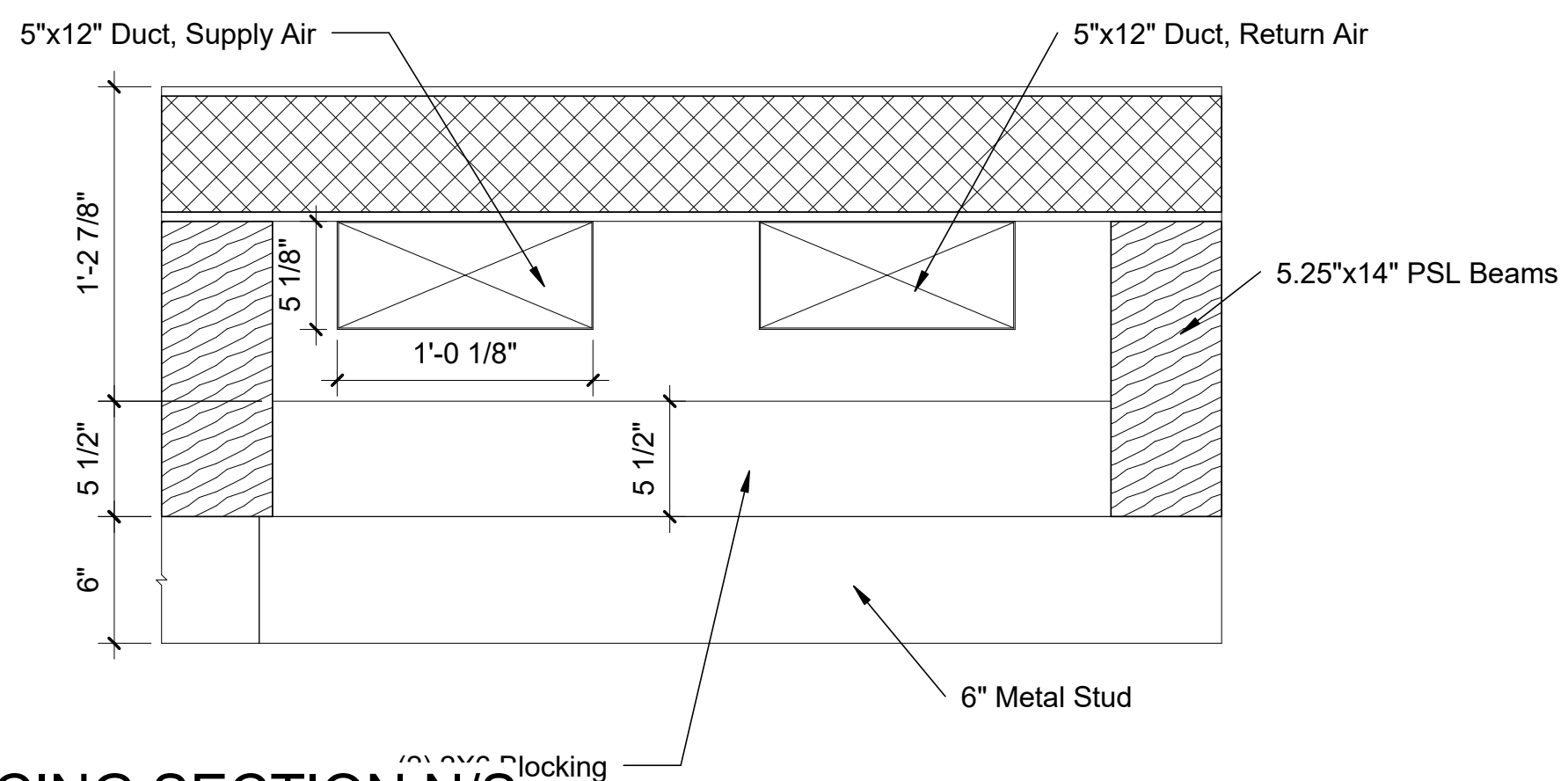
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SHEET TITLE
ENLARGED SECTIONS AND DETAILS

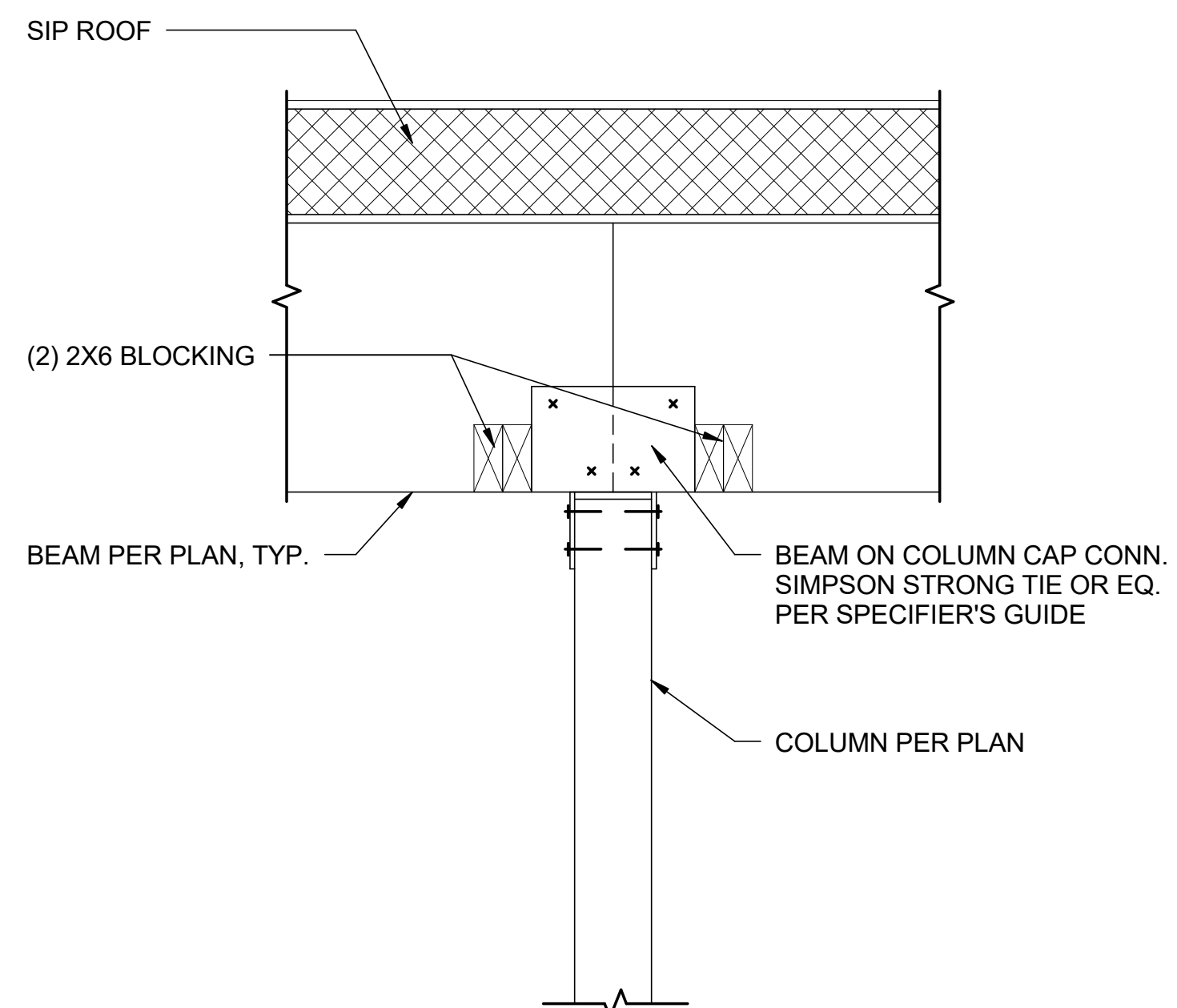
S-401



1 SIP BEAM POCKET
1 1/2" = 1'-0"



2 BEAM BRACING SECTION N/S
1 1/2" = 1'-0"



3 BEAM BRACING SECTION E/W
1 1/2" = 1'-0"



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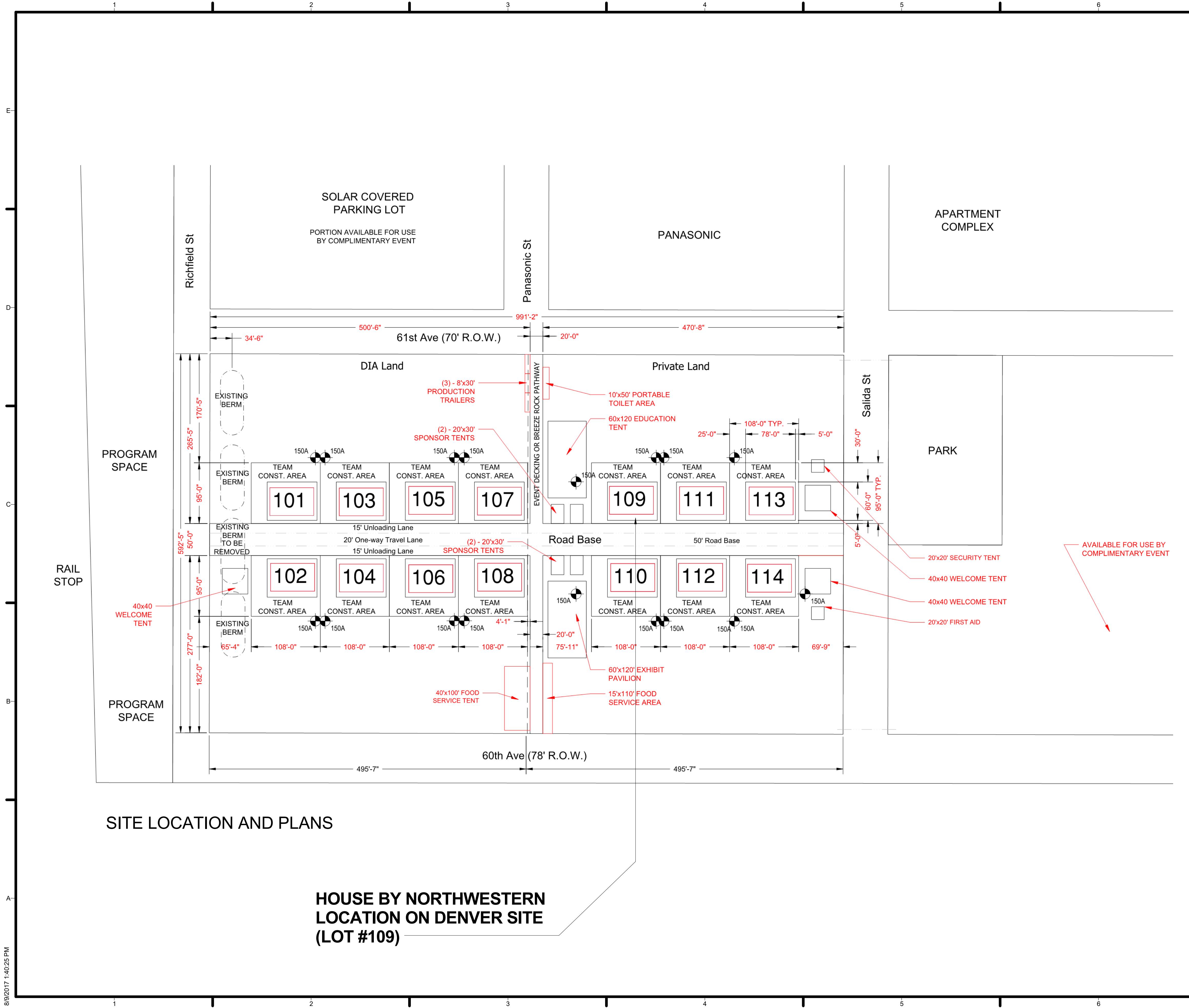
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SHEET TITLE

ENLARGED SECTION
DETAILS

S-402



GENERAL SHEET NOTES

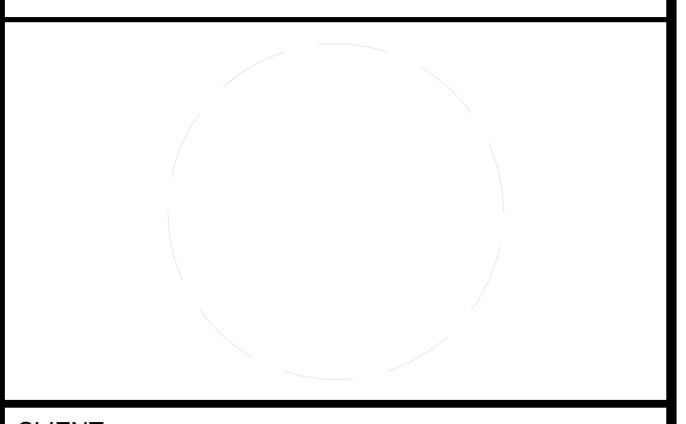
REFERENCE KEYNOTES

SHEET KEYNOTES



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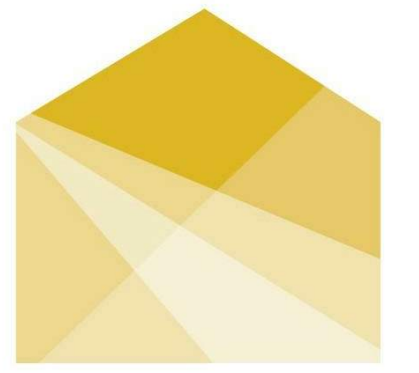


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SHEET TITLE
 SITE LOCATION

A-001



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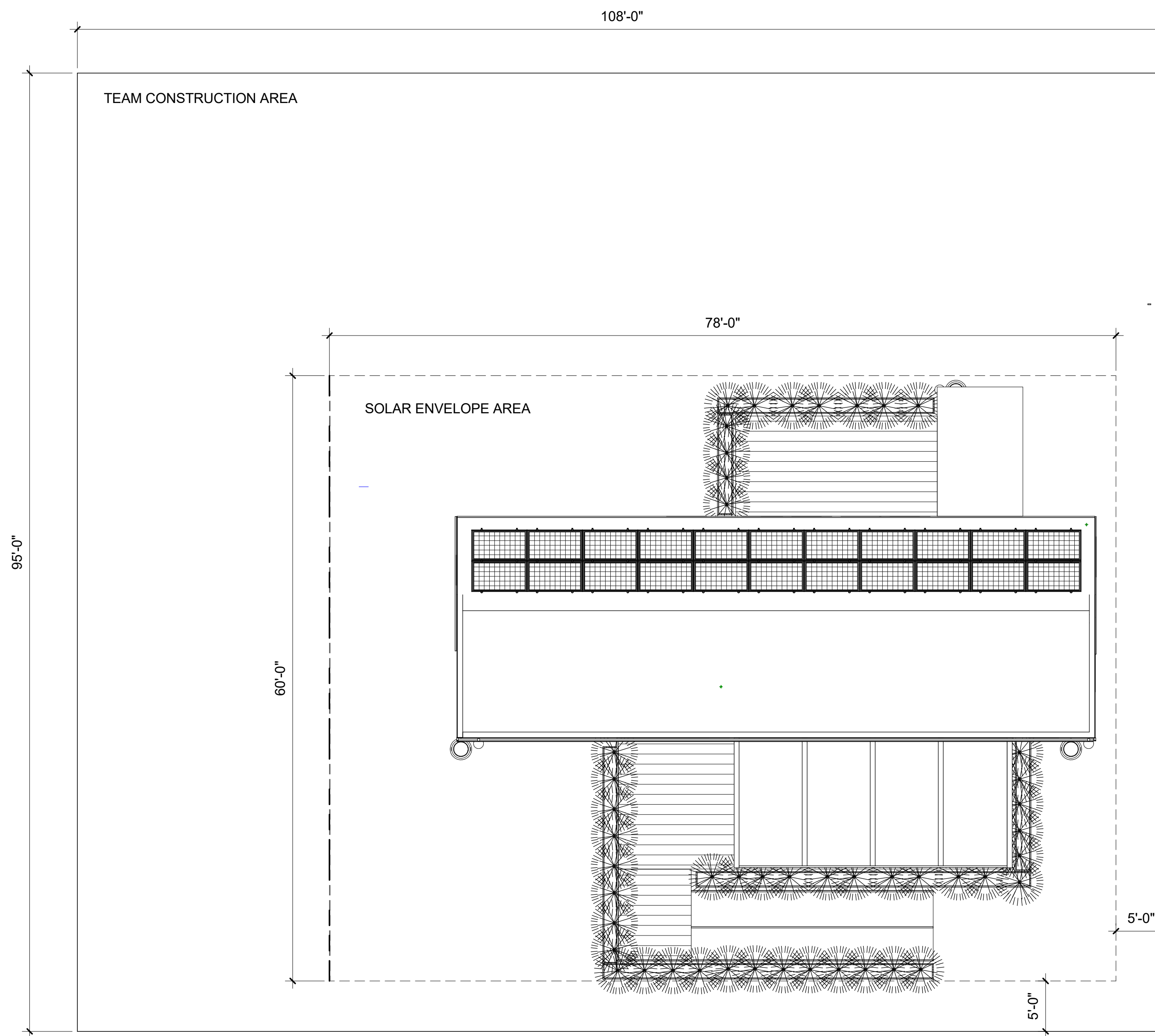
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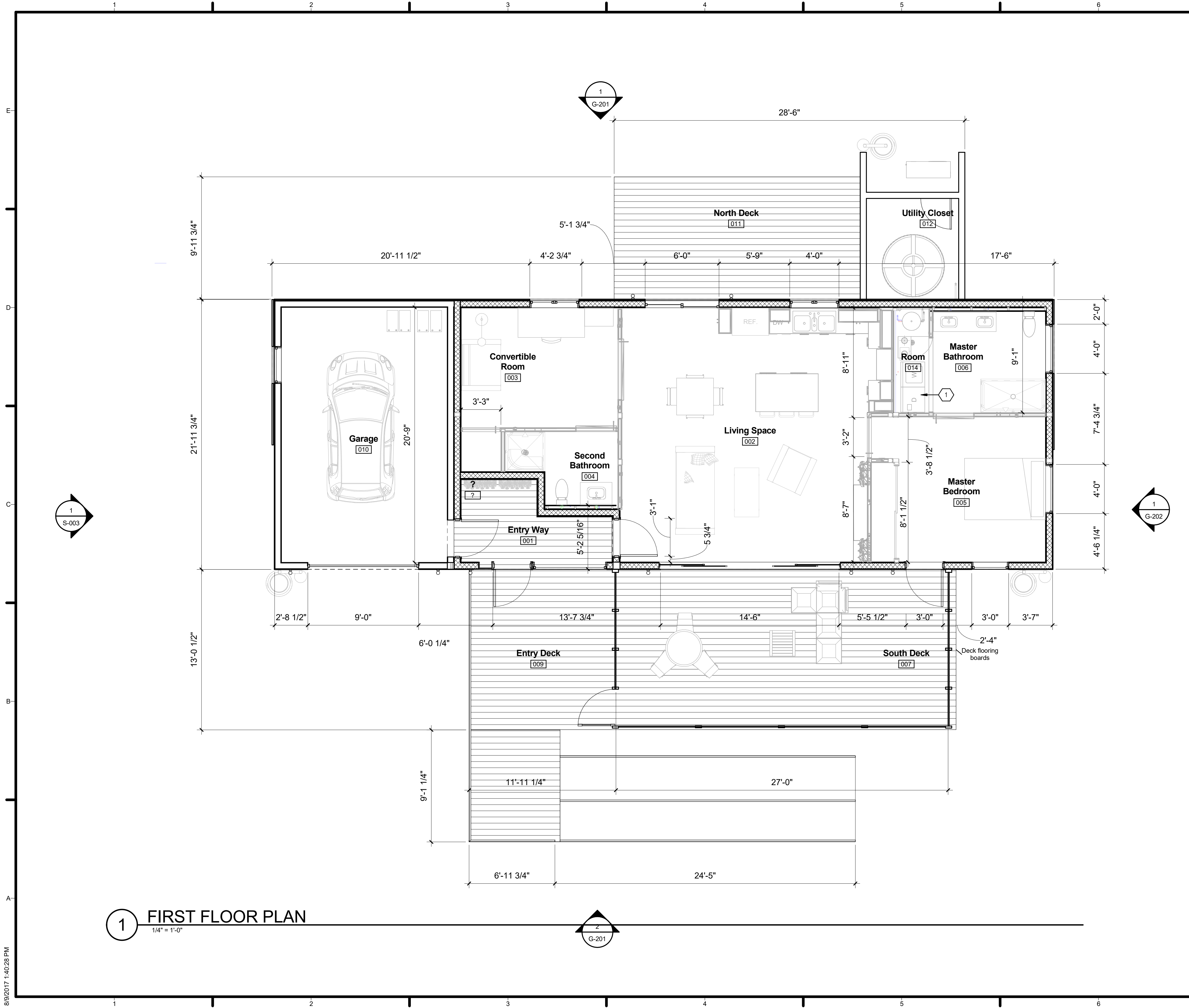
SHEET TITLE

SITE PLAN

A-101



1 SITE PLAN
1/8" = 1'-0"



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

GENERAL SHEET NOTES

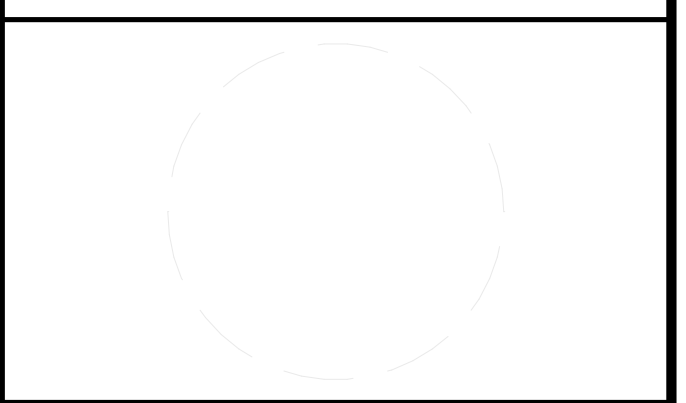
REFERENCE KEYNOTES

SHEET KEYNOTES

1 WASHER AND DRYER MUST BE OF THE ELECTRIC TYPE ONLY. ADEQUATE CLEARANCES WILL BE MAINTAINED IN AND AROUND THE LAUNDRY CLOSET FOR ACCESS, SERVICES, AND MAINTENANCE.



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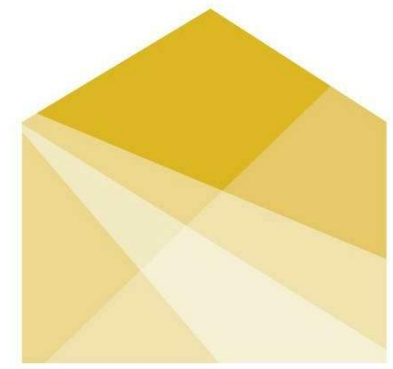
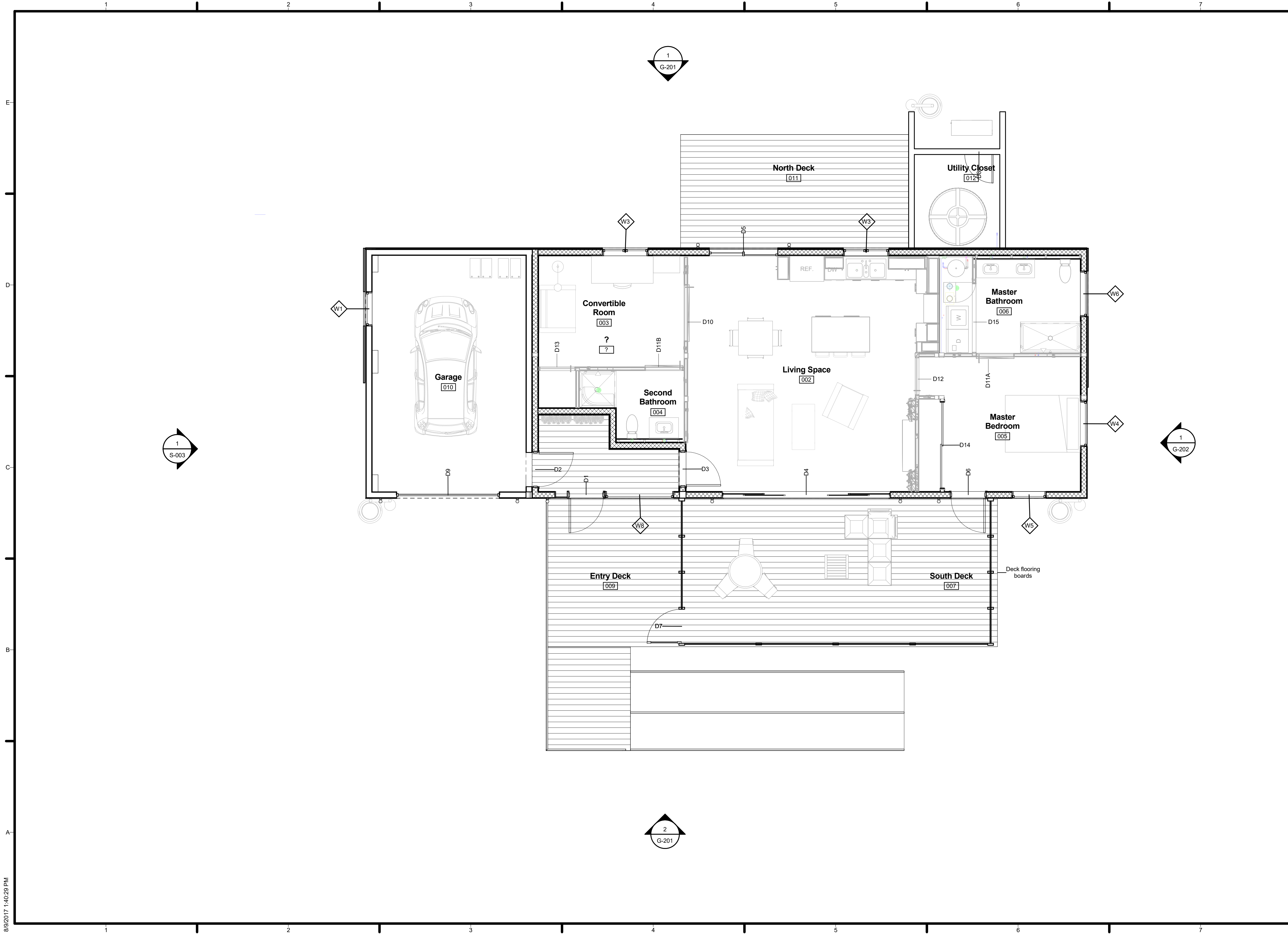


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FIRST FLOOR PLAN DIMENSIONED

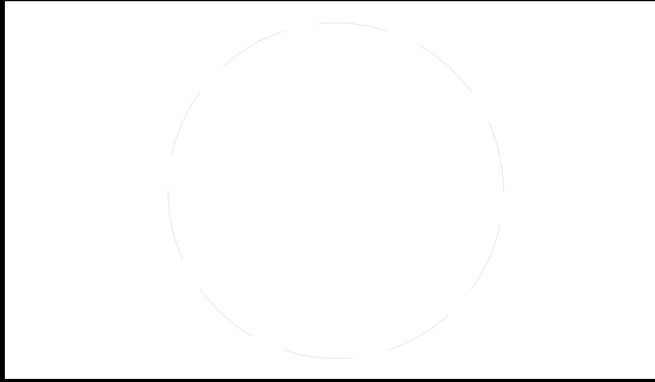
A-103



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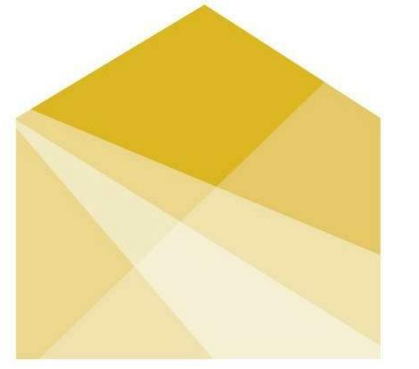


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SHEET TITLE
**FIRST FLOOR PLAN
 ANNOTATED**

A-104



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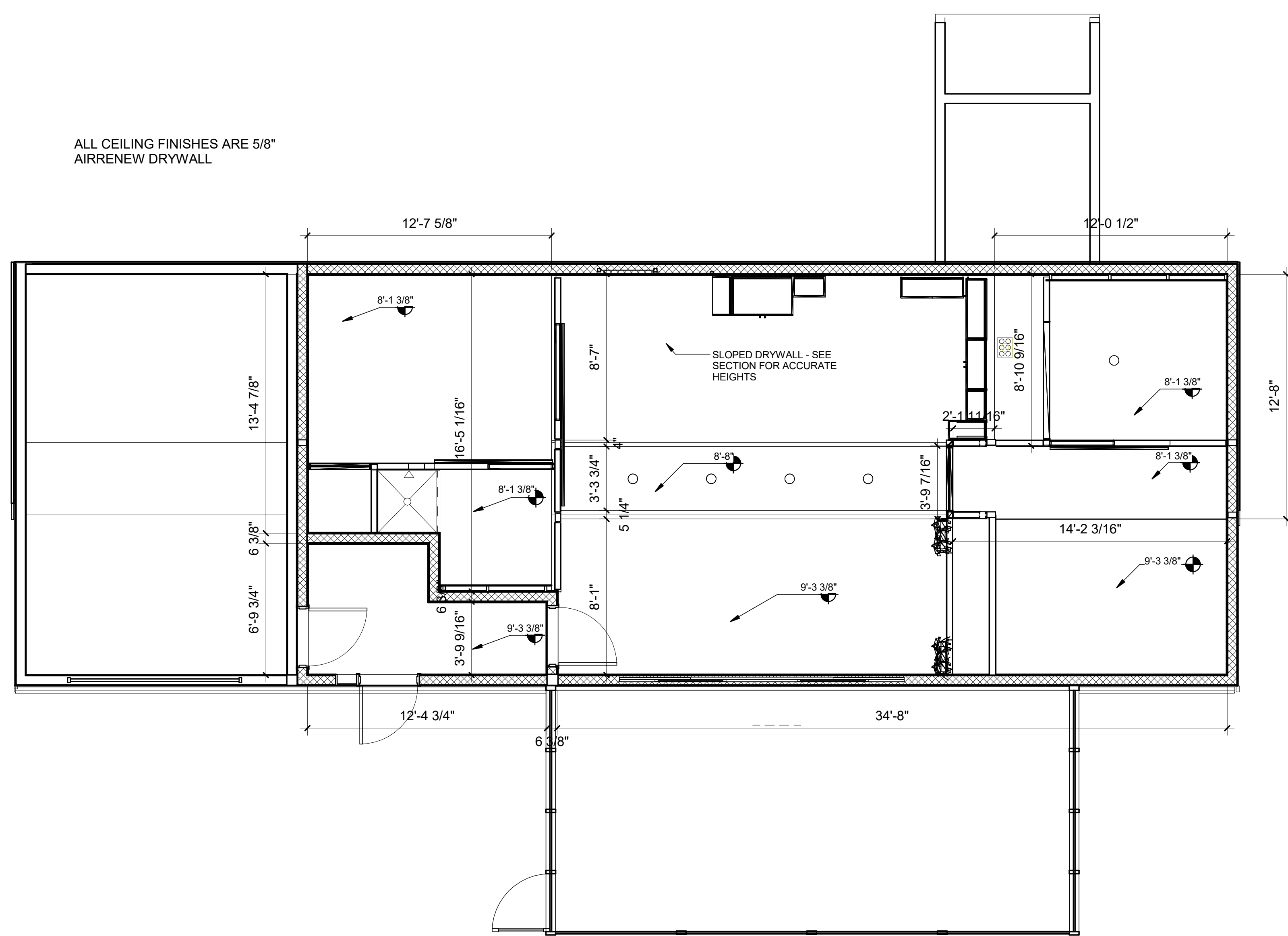
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SHEET TITLE

FIRST FLOOR
REFLECTED CEILING
PLAN

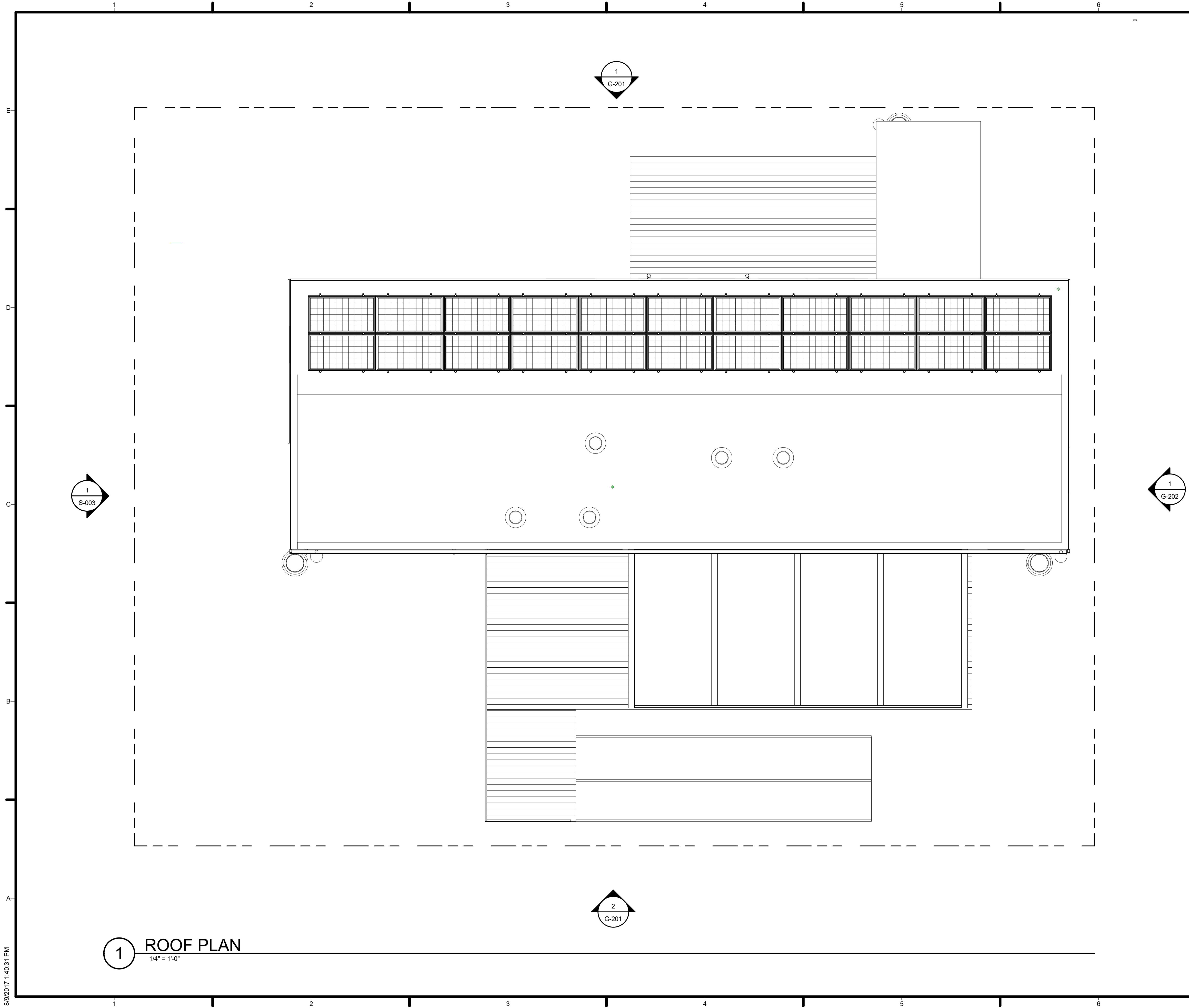
A-105



ALL CEILING FINISHES ARE 5/8\"
AIRRENEW DRYWALL

SLOPED DRYWALL - SEE
SECTION FOR ACCURATE
HEIGHTS

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



GENERAL SHEET NOTES

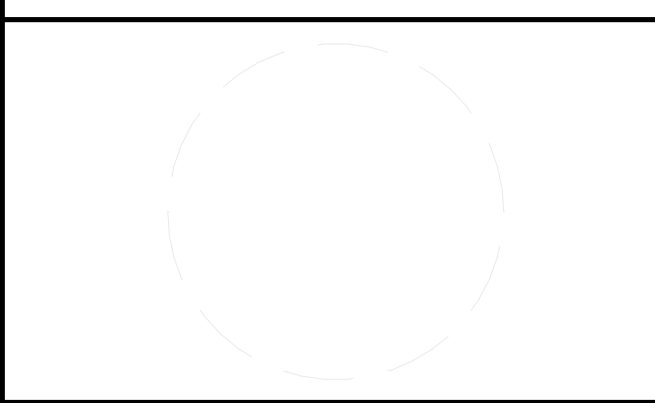
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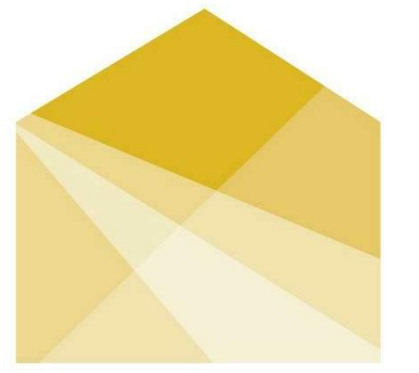
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SHEET TITLE
ROOF PLAN

A-106

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

8/9/2017 1:40:31 PM



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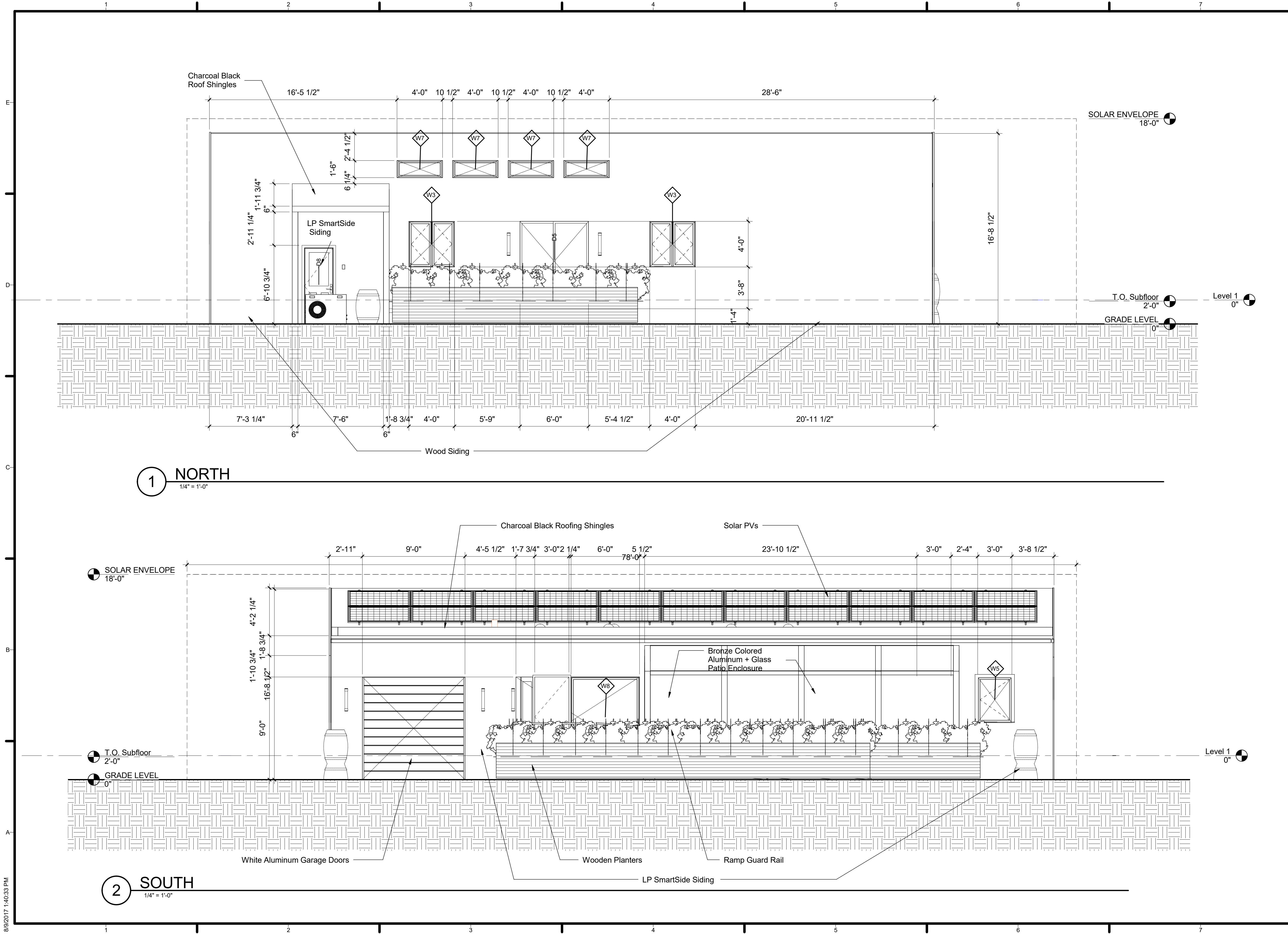


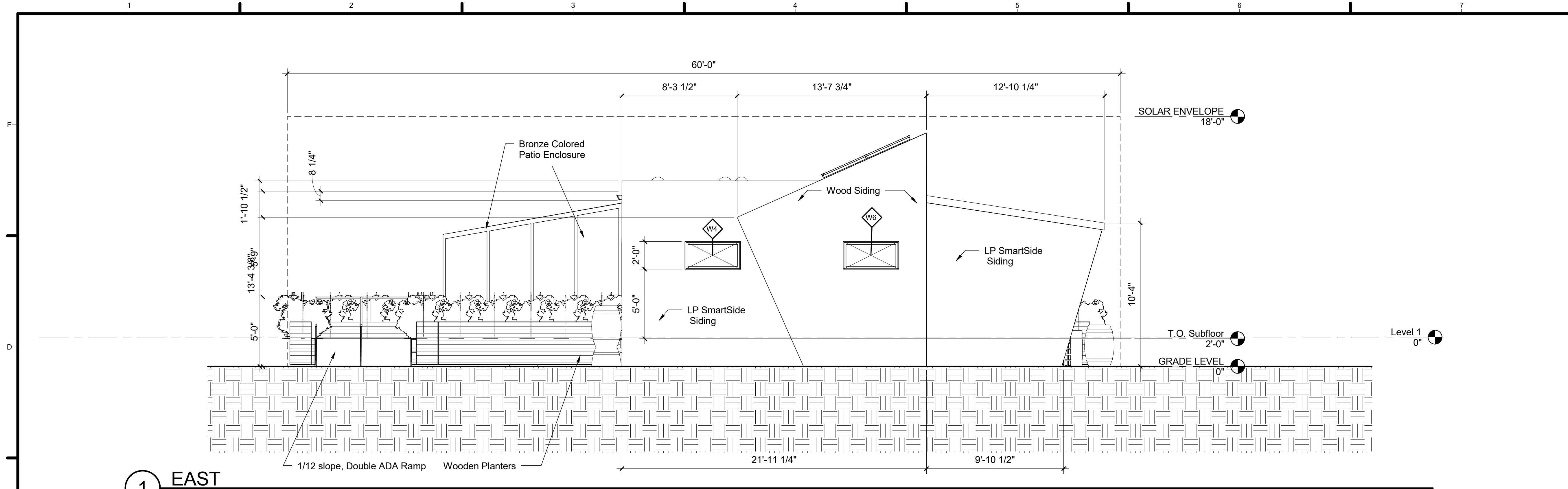
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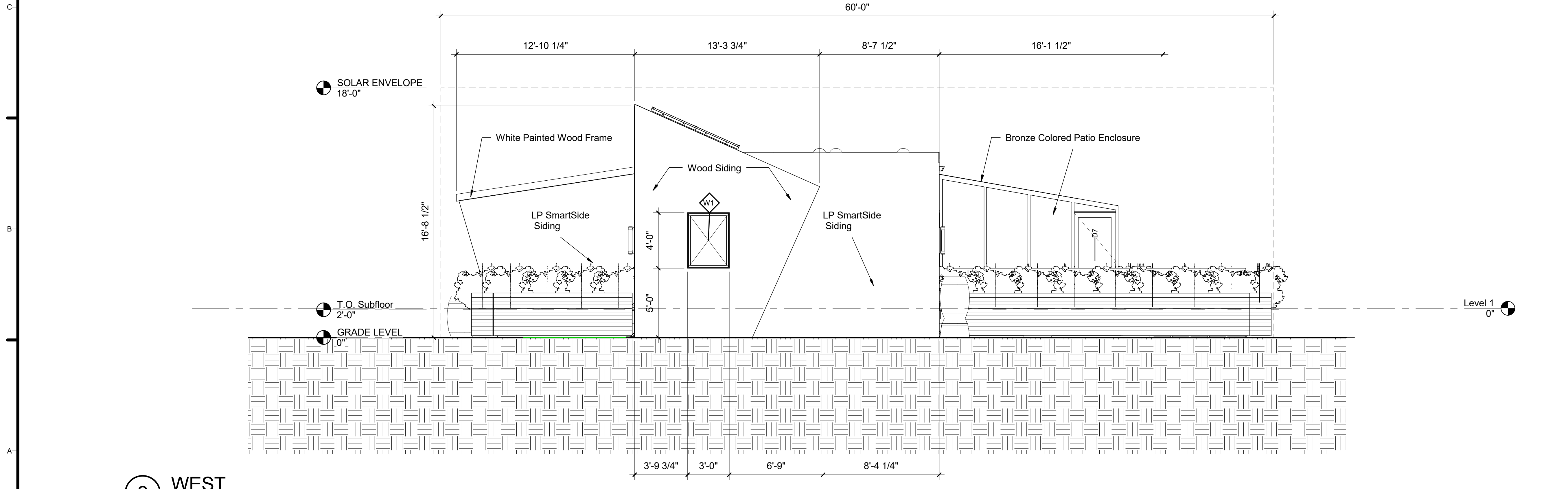
SHEET TITLE
NORTH AND SOUTH ELEVATIONS

A-201





1 EAST
1/4" = 1'-0"



2 WEST
1/4" = 1'-0"



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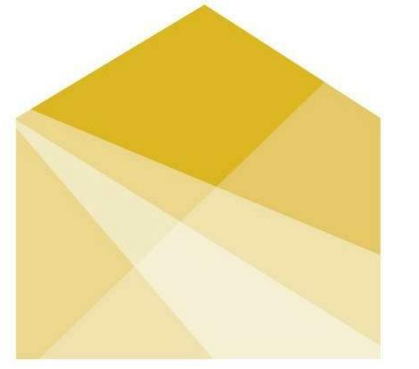


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SHEET TITLE
EAST AND WEST ELEVATIONS

A-202



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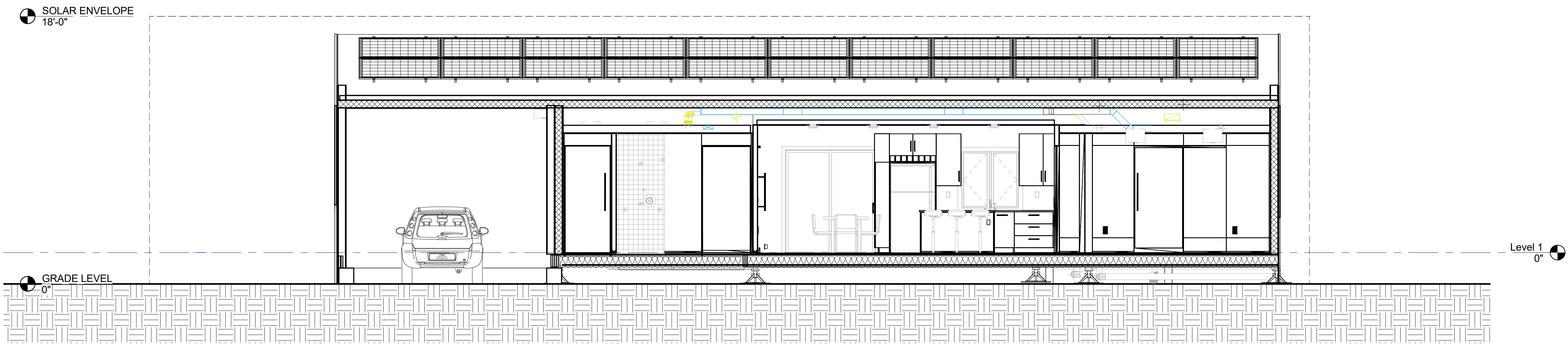


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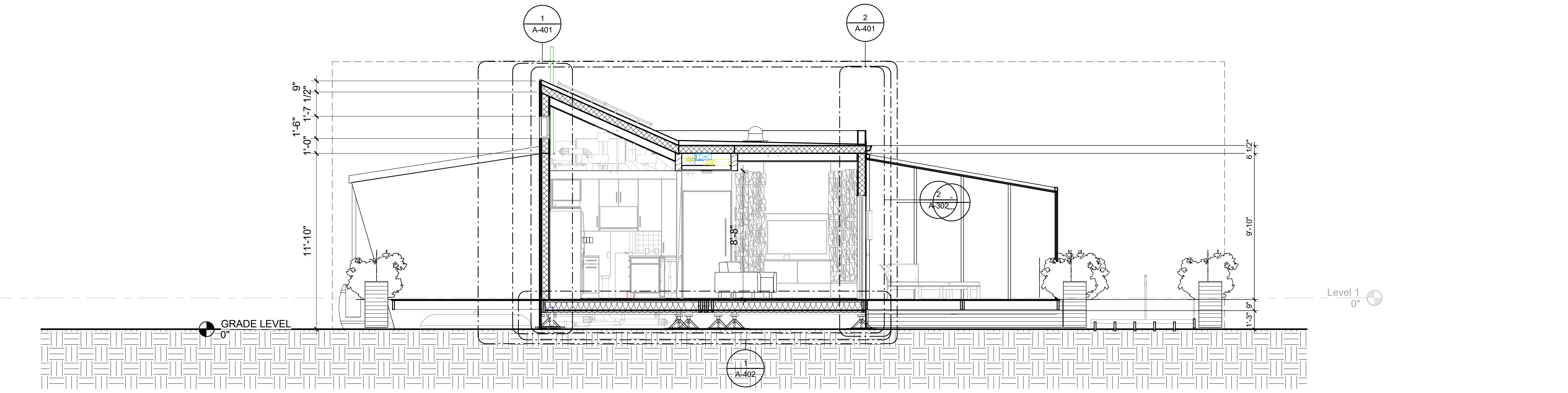
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SHEET TITLE
BUILDING SECTIONS

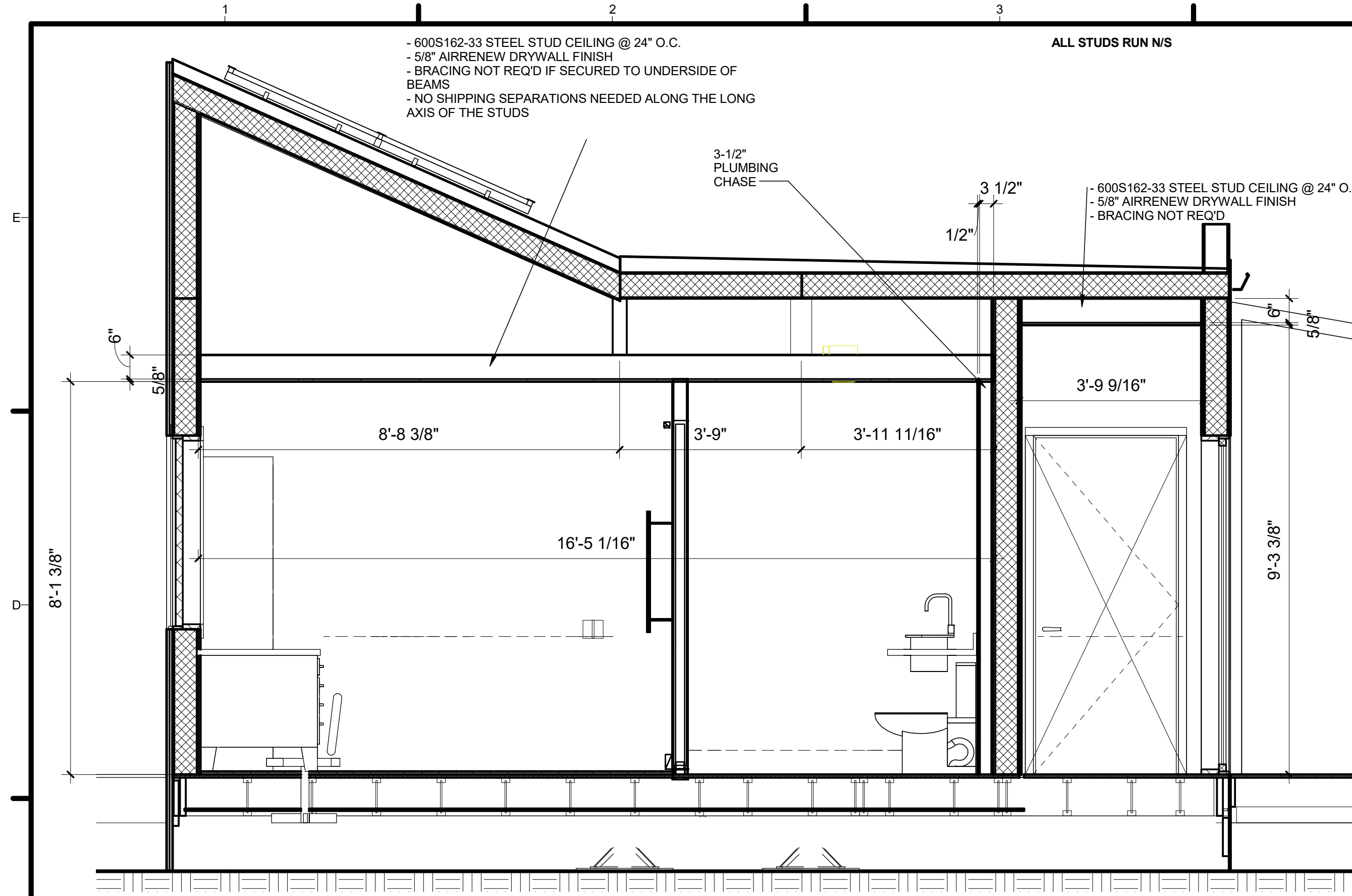
A-301



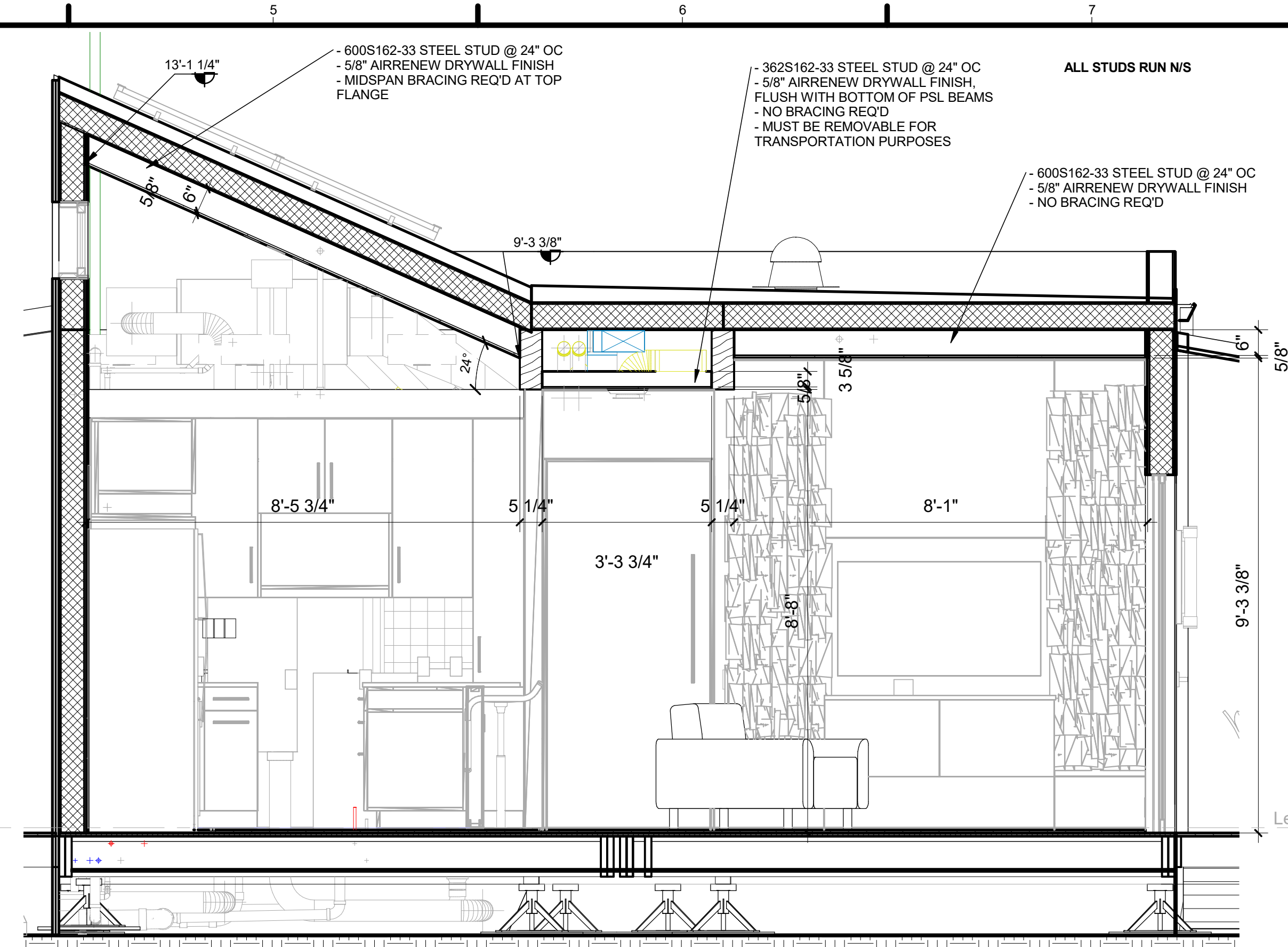
2 Building Section Looking N
1/4" = 1'-0"



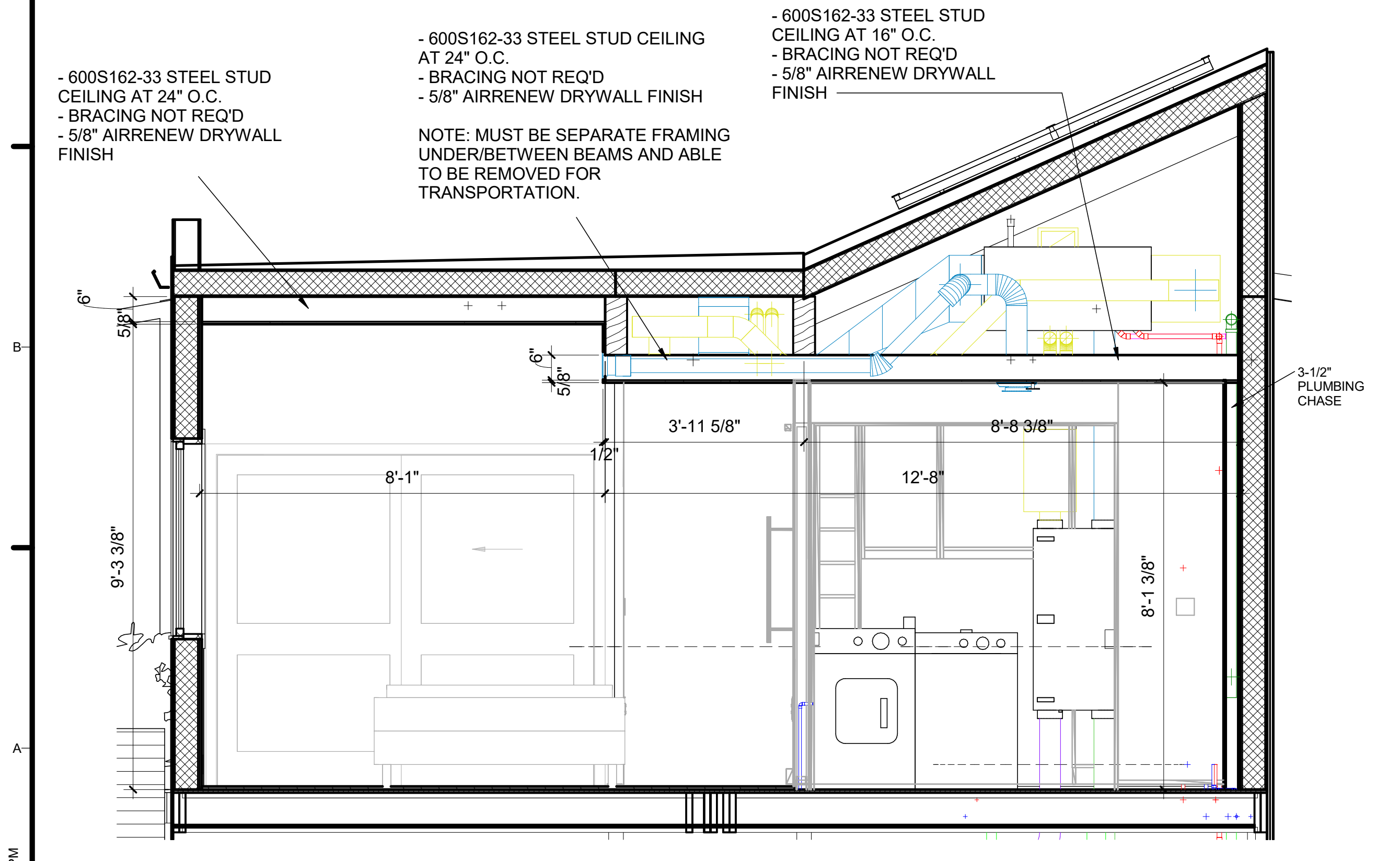
1 Building Section Looking E
1/4" = 1'-0"



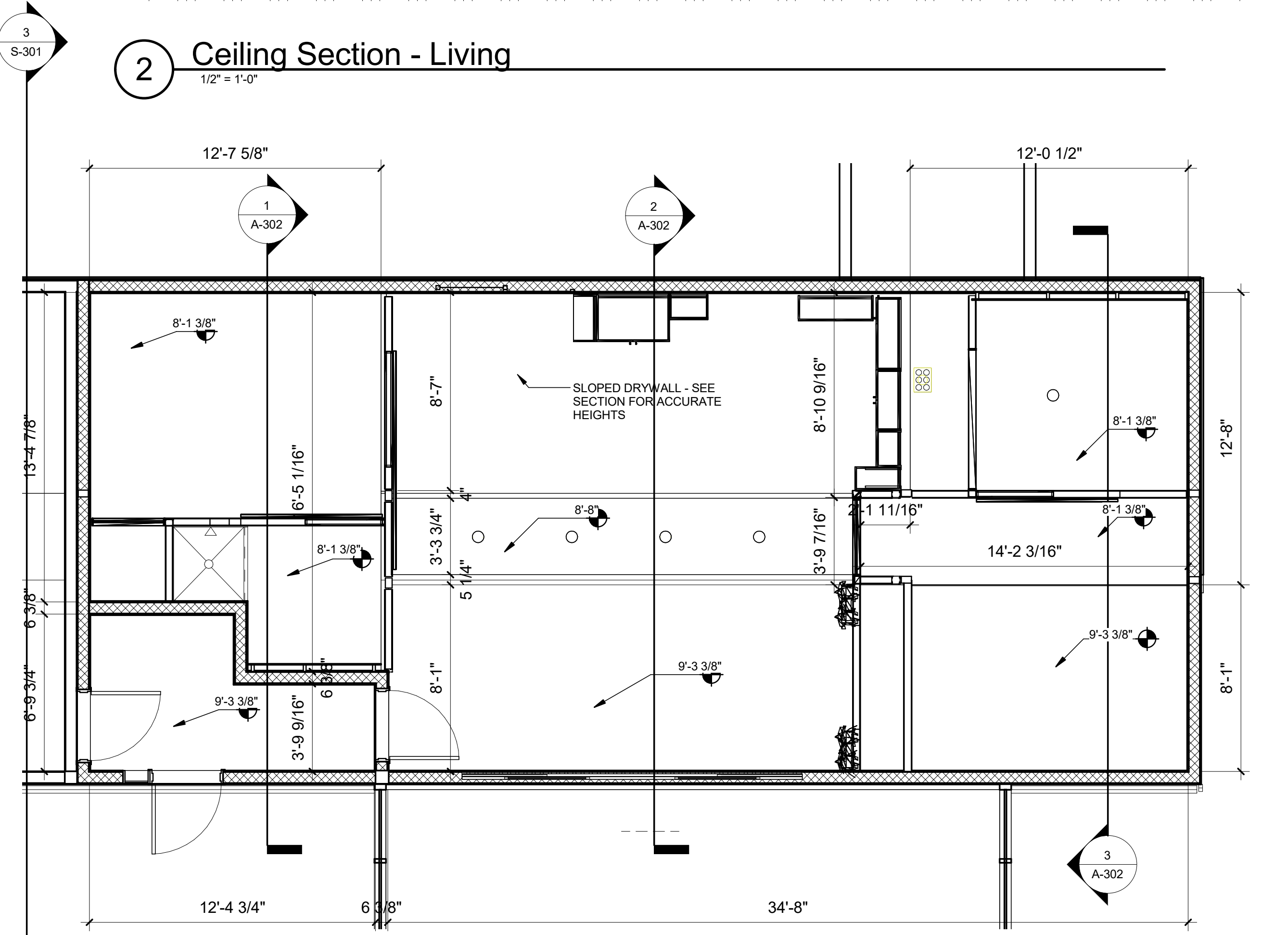
1 Ceiling Section - Entry
1/2" = 1'-0"



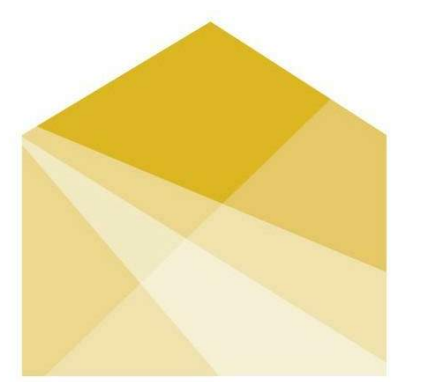
2 Ceiling Section - Living
1/2" = 1'-0"



3 Ceiling Section - Master
1/2" = 1'-0"



4 CEILING SECTION KEYNOTE
1/4" = 1'-0"



HOUSE
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Power Construction
Kelso-Burnett
The Hill Group

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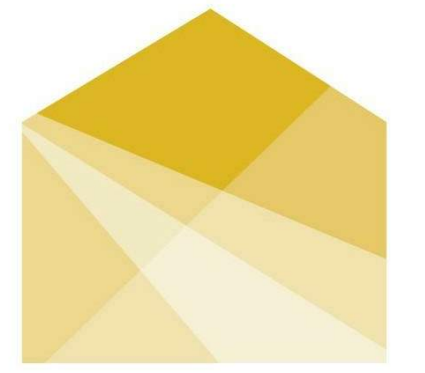
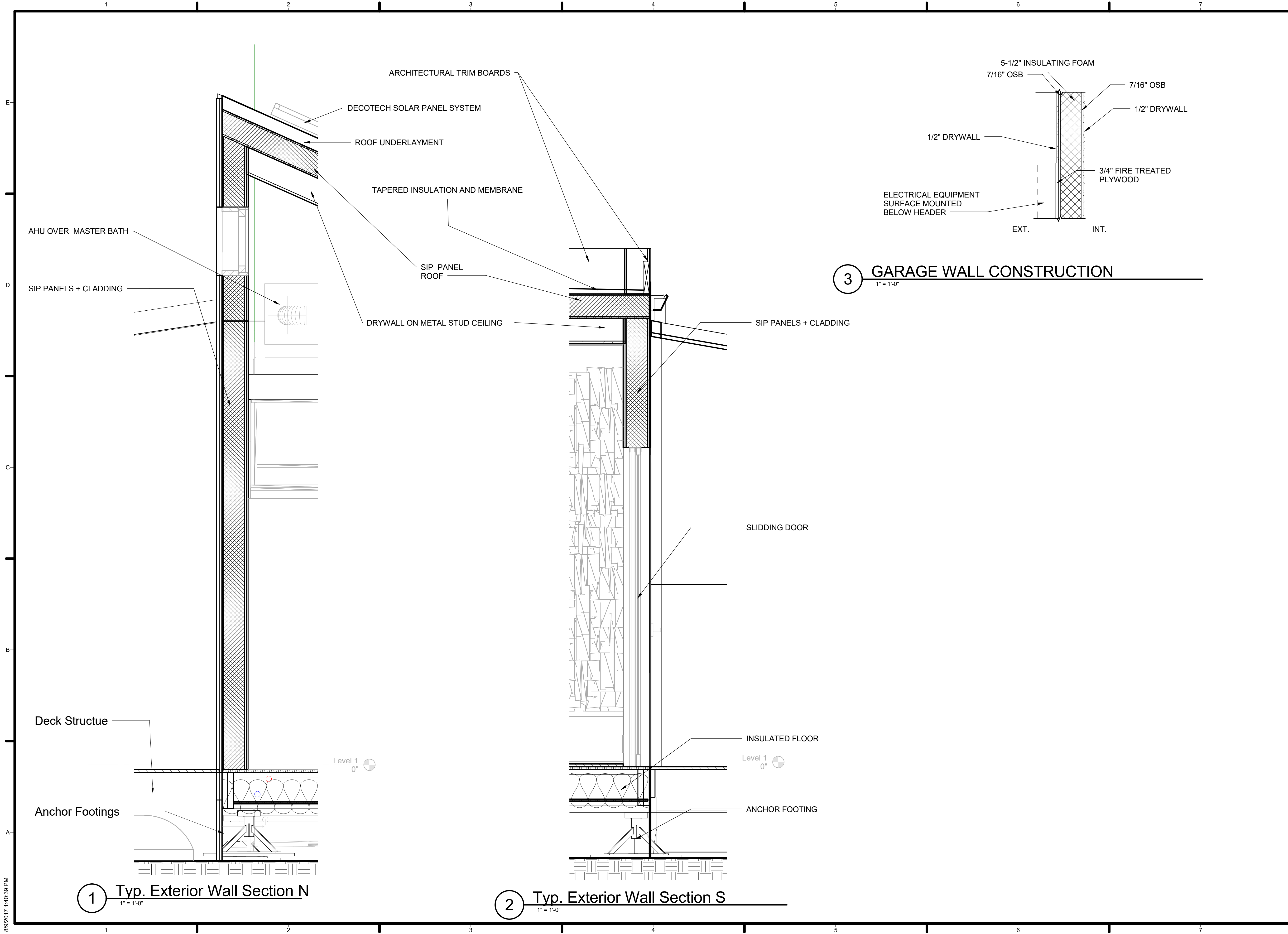


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2	2/23/2017	100% CD SET
3	4/20/2017	PERMIT SET
4	8/10/2017	AS-BUILT SET

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SHEET TITLE:
CEILING SECTIONS

A-302



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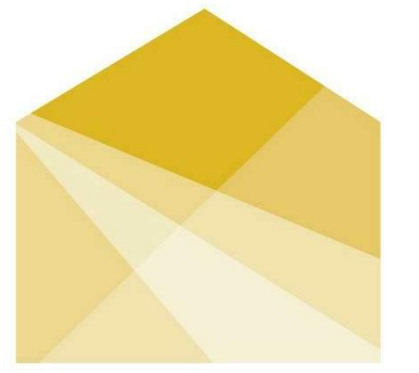
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SHEET TITLE

WALL SECTIONS

A-401

8/9/2017 1:40:39 PM



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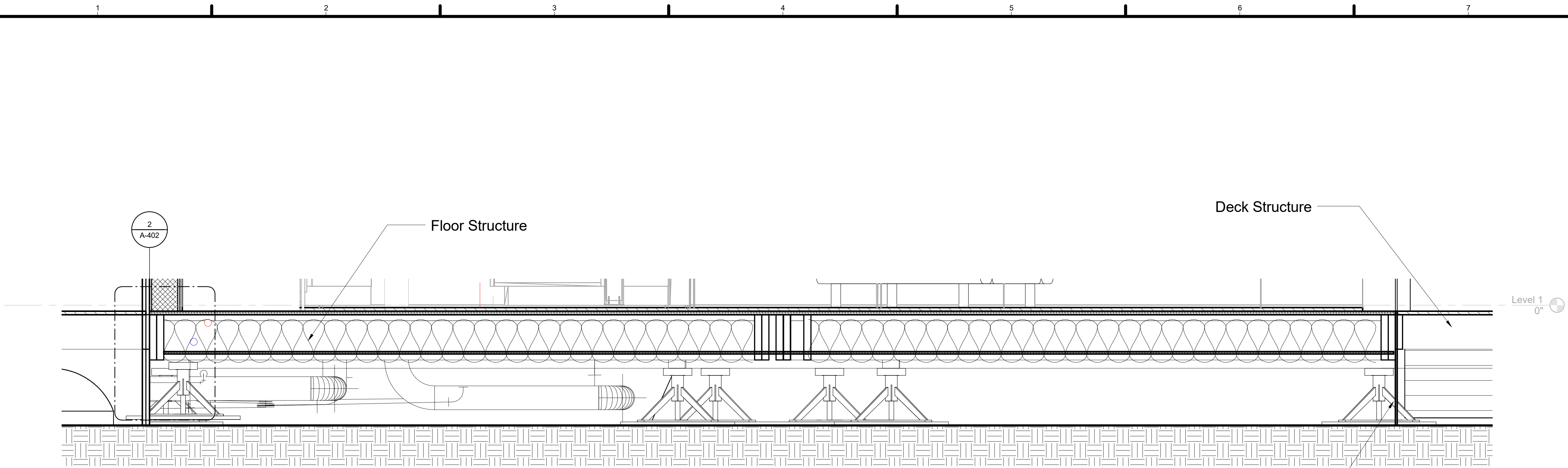


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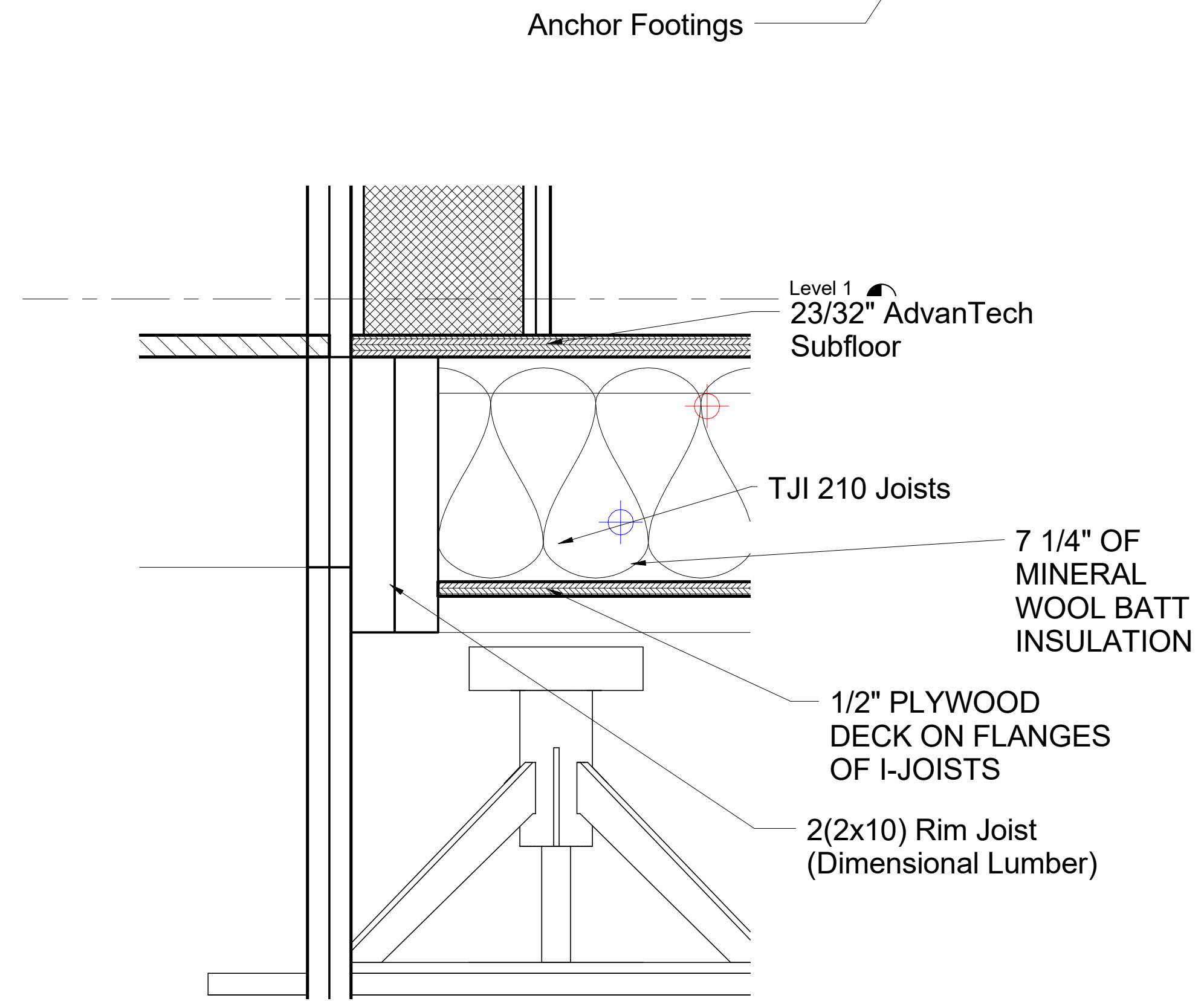
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SHEET TITLE
FLOOR SECTIONS

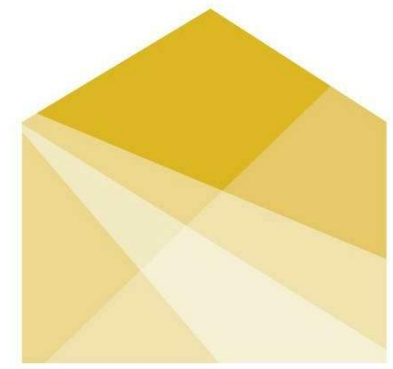
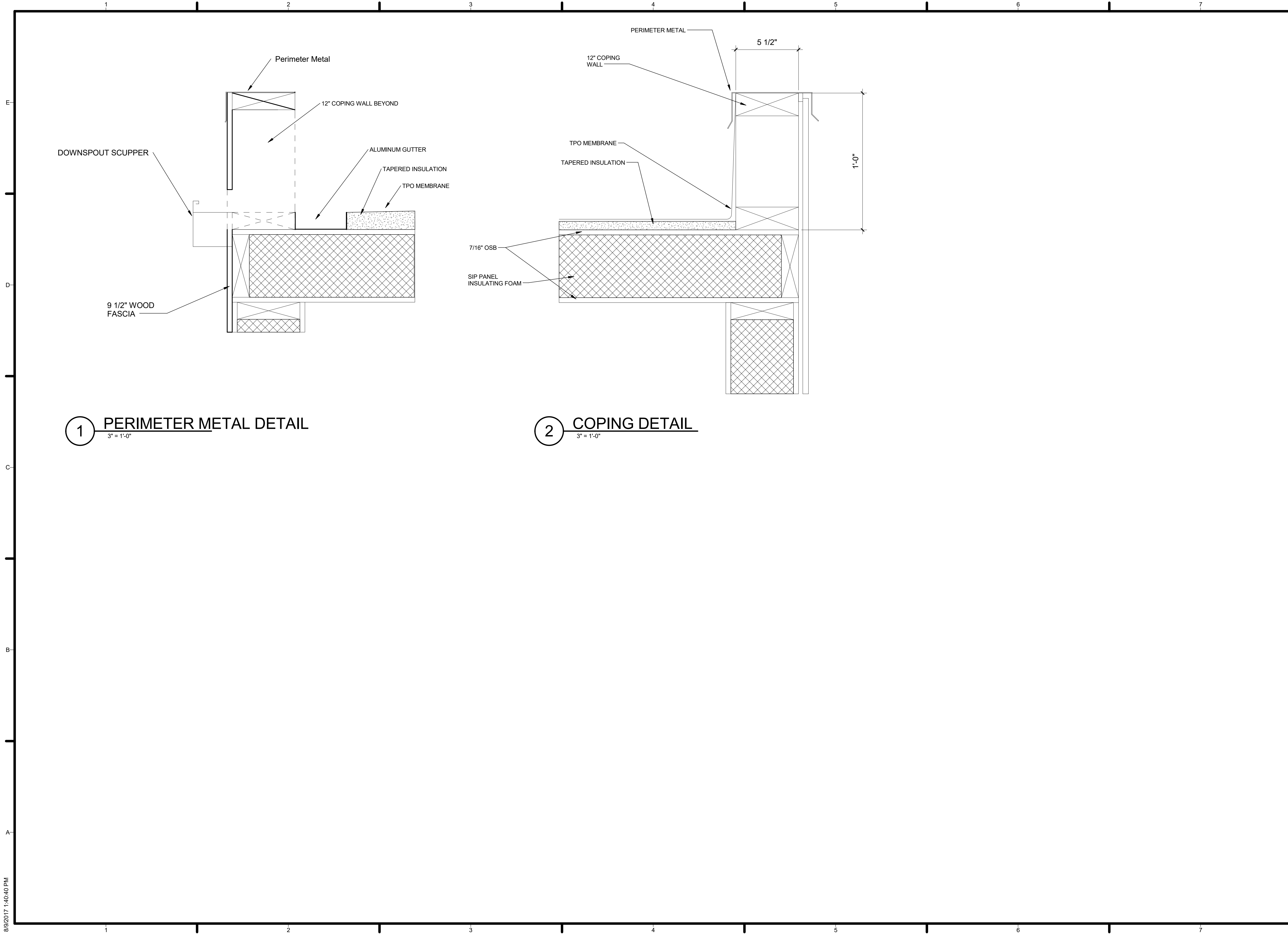
A-402



1 FLOOR SECTION
1" = 1'-0"



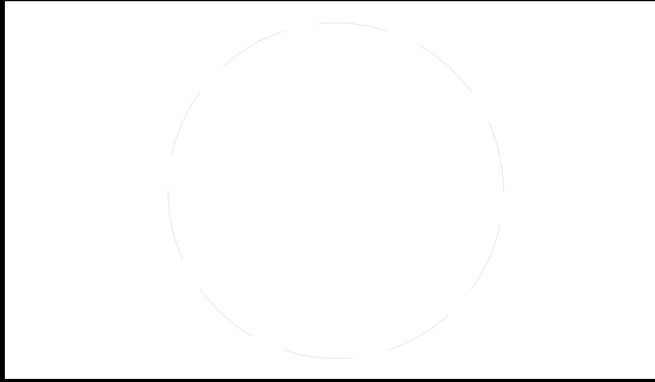
2 FLOOR RIM JOIST DETAIL
3" = 1'-0"



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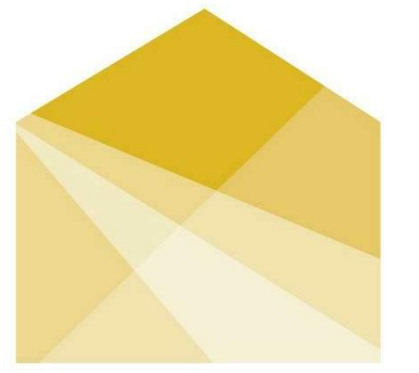


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4	8/10/2017	AS-BUILT SET

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SHEET TITLE
ROOF DETAILS

A-403



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Table with 3 columns: MARK, DATE, DESCRIPTION. Rows 1-4 showing dates and descriptions like '11/17/2016 90% DD SET'.

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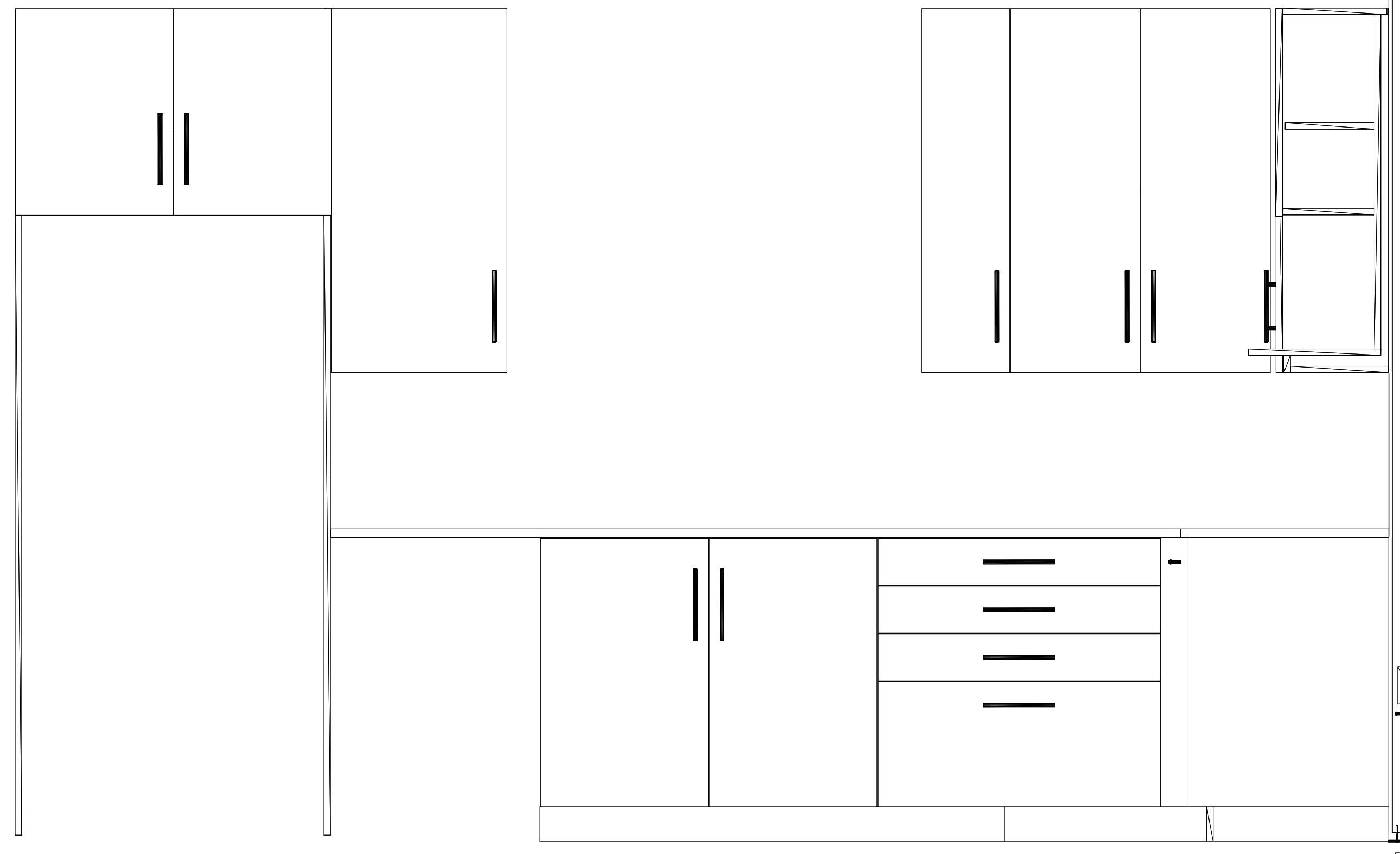
SHEET TITLE

DOOR AND WINDOW SCHEDULE

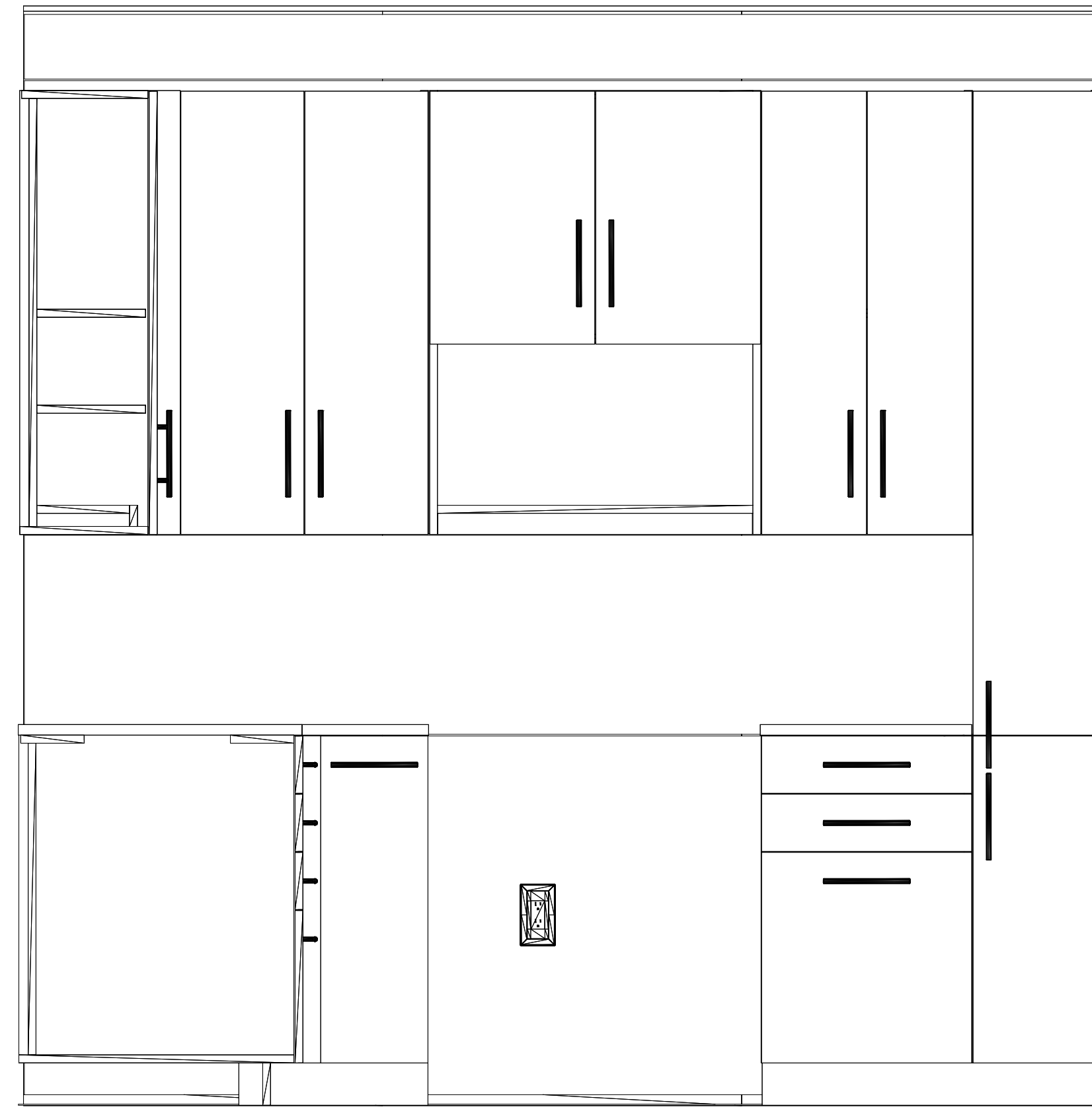
A-601

Window Schedule table with columns: Type, Count, Egress, Description, Manufacturer, Model, Frame Type, Exterior Color, Interior Color, Frame Width, Frame Height, Rough Width, Rough Height, Jamb, Glazing Type, Glass SHGC, Unit U-Value, Gas, Glass Coating, Operation, Handle Finish, Comments, CPD #.

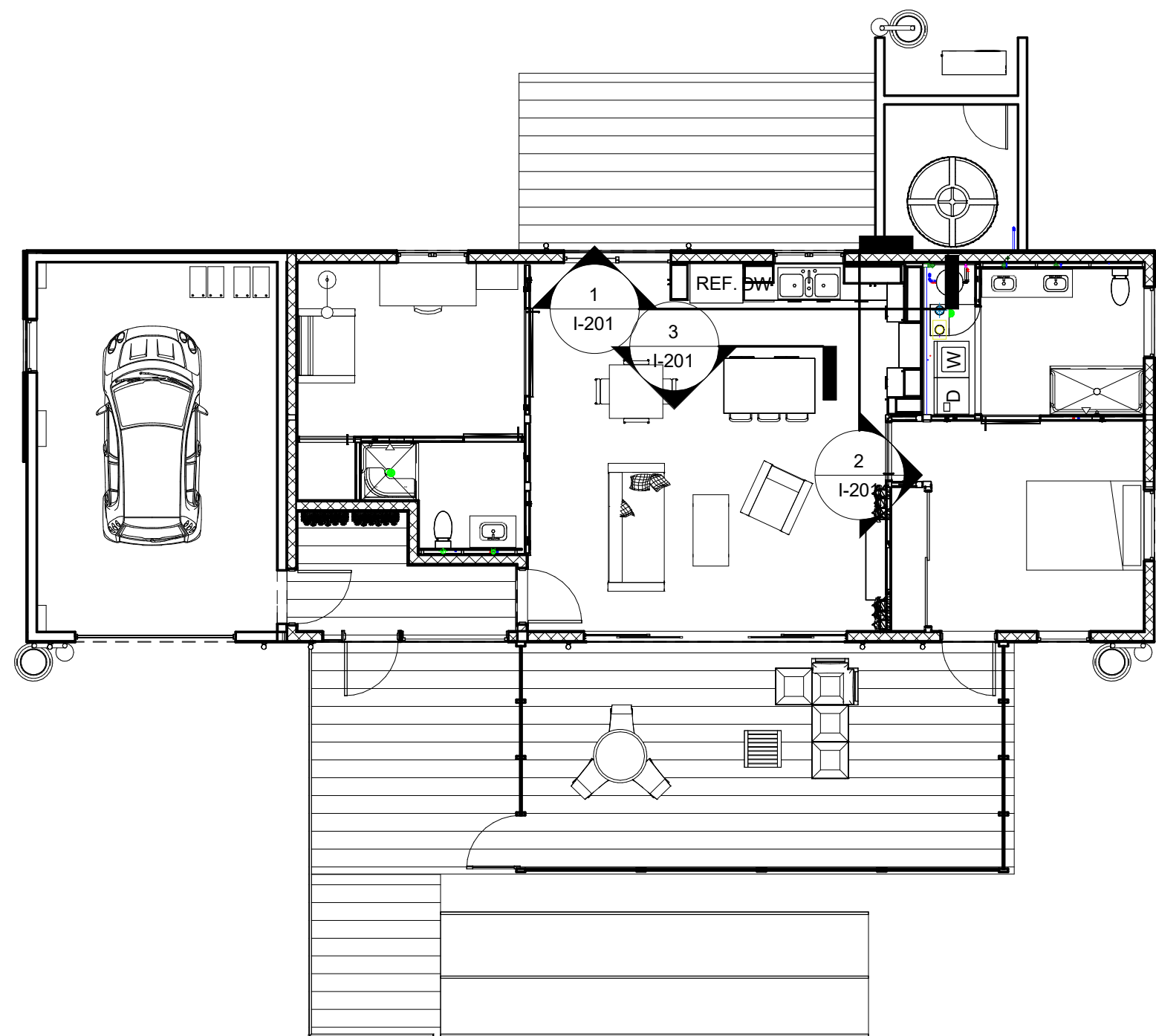
Door Schedule table with columns: Type Mark, Description, Count, Manufacturer, Model, Frame Type, Exterior Color, Interior Color, Frame Width, Frame Height, Rough Width, Rough Height, Jamb, Glazing Type, SHGC, (U)Value, Gas, Coating, Operation, Door Type, Handle Finish, Comments, CPD #.



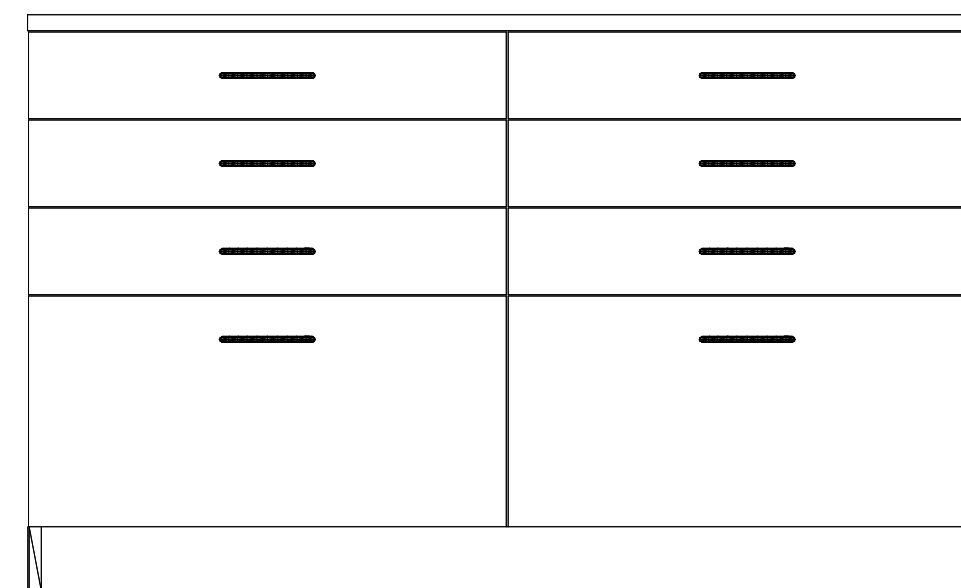
1 KITCHEN MILLWORK - NORTH
1" = 1'-0"



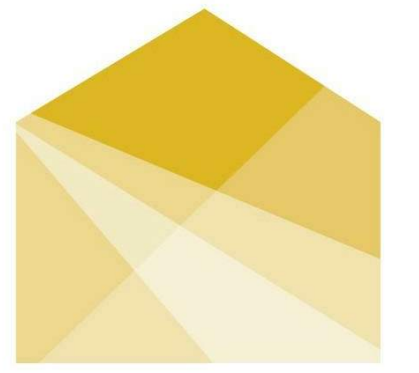
2 KITCHEN MILLWORK - EAST
1" = 1'-0"



4 MILLWORK ELEVATION KEY
1/8" = 1'-0"



3 KITCHEN ISLAND
1" = 1'-0"



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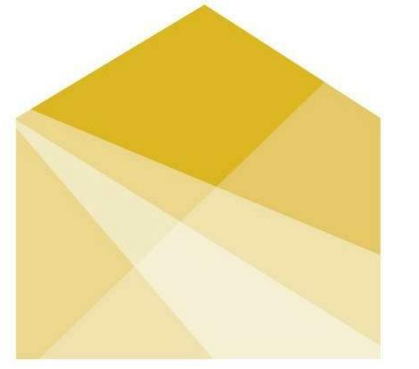


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SHEET TITLE
**INTERIOR DESIGN
ELEVATIONS**

I-201



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MARK DATE DESCRIPTION

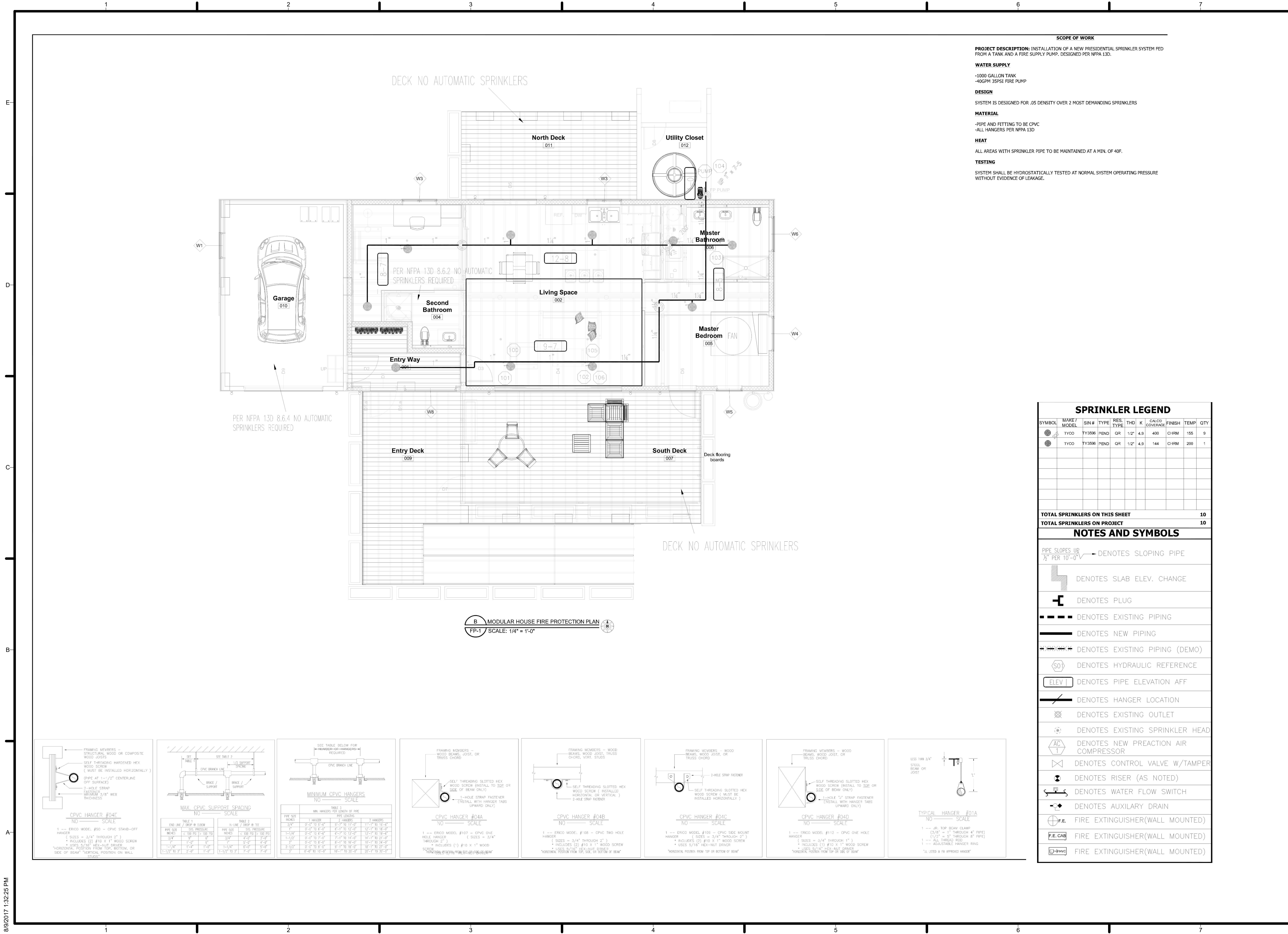
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SHEET TITLE

APPLIANCE SCHEDULE

I-601

Appliance Schedule		
Appliance	Manufacturer	Model
Dishwasher	Beko	DDN 25400
Clothes Dryer	Beko	HPD24412W
Clothes Washer	Beko	WMY10148CO
Range	Beko	BIRP34450SS
Refrigerator/Freezer	Beko	BFSB 3622SS
Microwave	Beko	MWOTR30100CSS



SCOPE OF WORK

PROJECT DESCRIPTION: INSTALLATION OF A NEW RESIDENTIAL SPRINKLER SYSTEM FED FROM A TANK AND A FIRE SUPPLY PUMP. DESIGNED PER NFPA 13D.

WATER SUPPLY

- 1000 GALLON TANK
- 40GPM 35PSI FIRE PUMP

DESIGN

SYSTEM IS DESIGNED FOR .05 DENSITY OVER 2 MOST DEMANDING SPRINKLERS

MATERIAL

- PIPE AND FITTING TO BE CPVC
- ALL HANGERS PER NFPA 13D

HEAT

ALL AREAS WITH SPRINKLER PIPE TO BE MAINTAINED AT A MIN. OF 40F.

TESTING

SYSTEM SHALL BE HYDROSTATICALLY TESTED AT NORMAL SYSTEM OPERATING PRESSURE WITHOUT EVIDENCE OF LEAKAGE.

SPRINKLER LEGEND

SYMBOL	MAKE / MODEL	SIN #	TYPE	RES. TYPE	THD	K	CALCCY CODE/FRAC	FINISH	TEMP	QTY
	TYCO	TY3596	PEND	QR	1/2"	4.9	400	CHRM	155	9
	TYCO	TY3596	PEND	QR	1/2"	4.9	144	CHRM	200	1

NOTES AND SYMBOLS

PIPE SLOPES UP $\frac{1}{8}"$ PER 10'-0" DENOTES SLOPING PIPE

DENOTES SLAB ELEV. CHANGE

DENOTES PLUG

DENOTES EXISTING PIPING

DENOTES NEW PIPING

DENOTES EXISTING PIPING (DEMO)

DENOTES HYDRAULIC REFERENCE

DENOTES PIPE ELEVATION AFF

DENOTES HANGER LOCATION

DENOTES EXISTING OUTLET

DENOTES EXISTING SPRINKLER HEAD

DENOTES NEW PREACTION AIR COMPRESSOR

DENOTES CONTROL VALVE W/TAMPER

DENOTES RISER (AS NOTED)

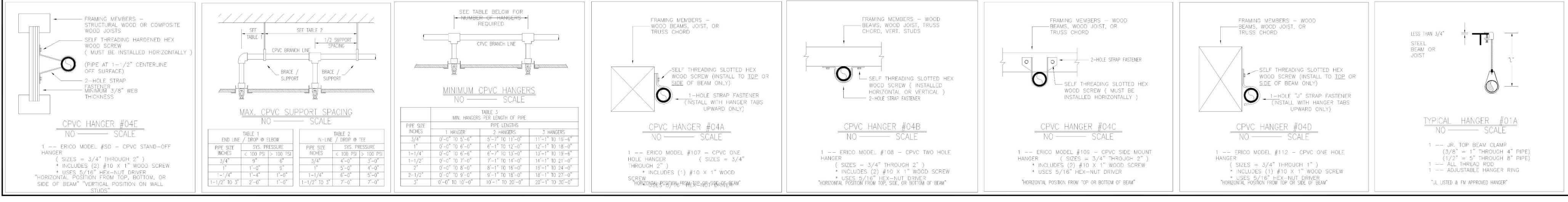
DENOTES WATER FLOW SWITCH

DENOTES AUXILIARY DRAIN

FIRE EXTINGUISHER(WALL MOUNTED)

FIRE EXTINGUISHER(WALL MOUNTED)

FIRE EXTINGUISHER(WALL MOUNTED)



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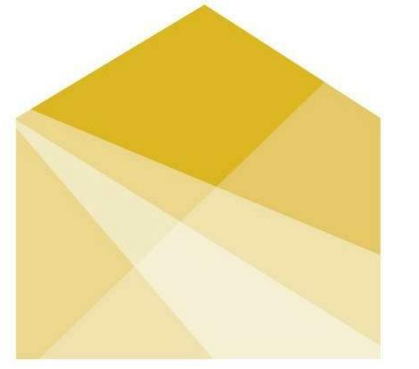
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SHEET TITLE

FIRE SUPPRESSION

F-101



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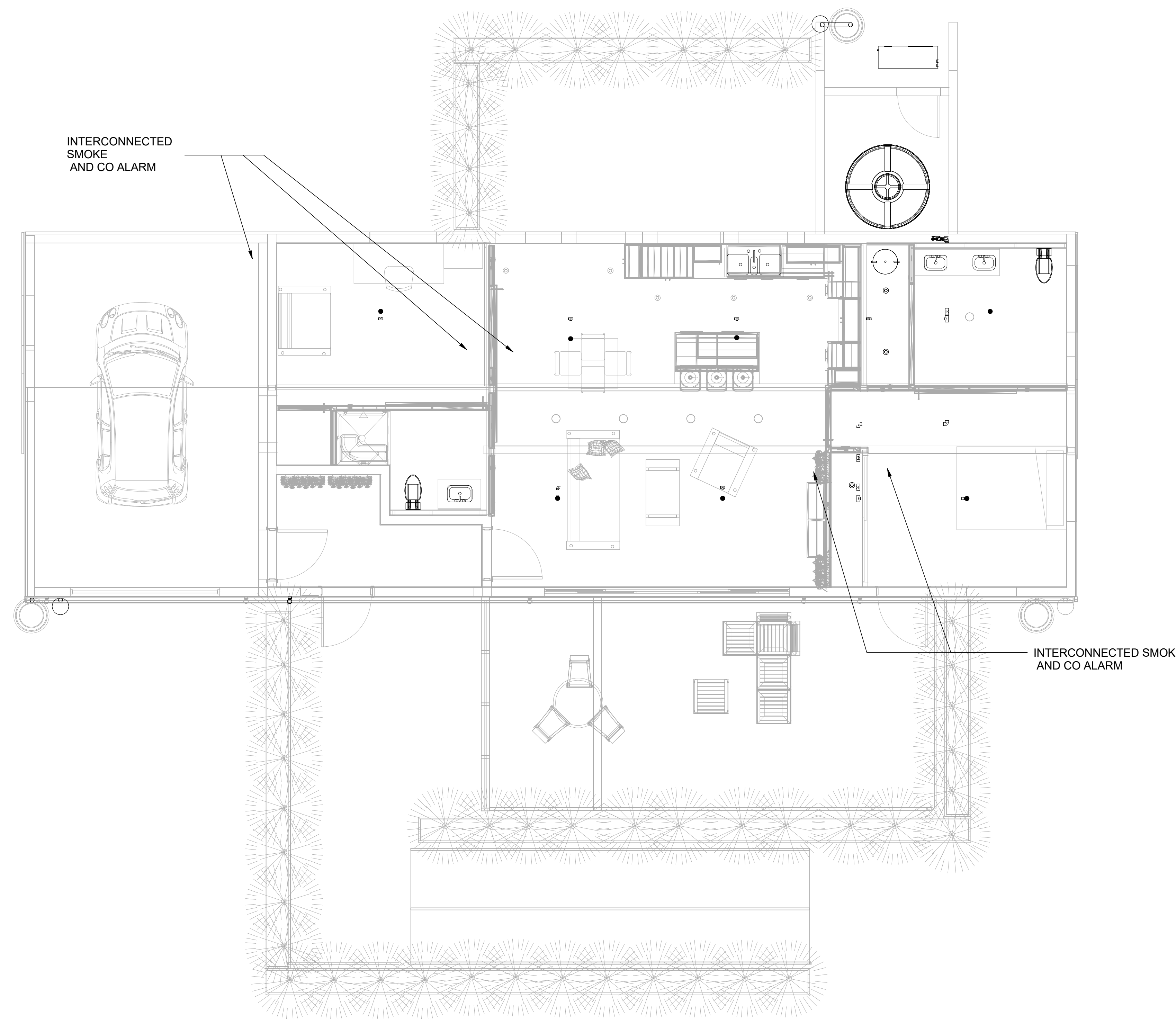
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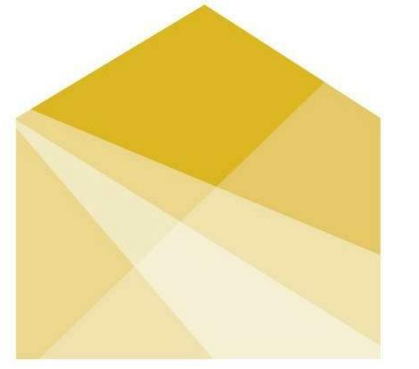
SHEET TITLE

FIRE DETECTION AND ALARM

F-102



1 FIRE ALARM PLAN
1/4" = 1'-0"



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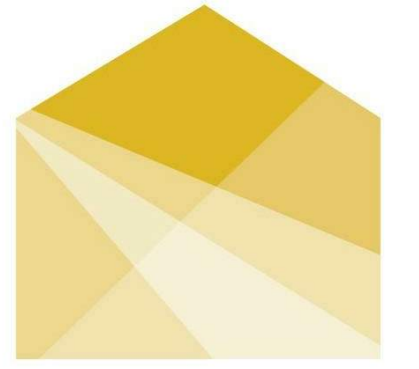
SHEET TITLE
FIRE PROTECTION SCHEDULES

F-601

FIRE PROTECTION SCHEDULE			
DESCRIPTION	QUANTITY	MANUFACTURER	MODEL
CPVC PIPE		TYCO	80303
FIRE SUPPLY PUMP	1	LEGEND	13D-120/315
PENDENT SPRINKLERS	7	TYCO	TY3596
RISER MANIFOLD	1	TYCO	TFP960
SPRINKLER COVER PLATES	7	TYCO	56-202-4-135
FIRE EXTINGUISHER	1	KIDDE	21005779
FIRE DETECTION			
NEST SMOKE + CO ALARM	5	NEST	S3003LWES

SMOKE ALARM LOCATIONS		
ROOM	QUANTITY	LOCATION
MASTER BEDROOM	1	CEILING MOUNTED
LIVING ROOM	2	CEILING MOUNTED
GUEST BEDROOM	1	CEILING MOUNTED
GARAGE	1	BATTERY ENCLOSURE

ABBREVIATIONS AND SYMBOLS	
BS	BATHROOM SINK
C/HP	CHILTRIX
CT	WASTEWATER TANK
DHW	DOMESTIC HOT WATER
DW	DISHWASHER
FPS	FIRE PROTECTION SYSTEM
KS	KITCHEN SINK
MF	MANIFOLD
SH1	SHOWER 1
SH2	SHOWER 2
ST	SUPPLY TANK
T1	TOILET 1
T2	TOILET 2
WM	WASHING MACHINE



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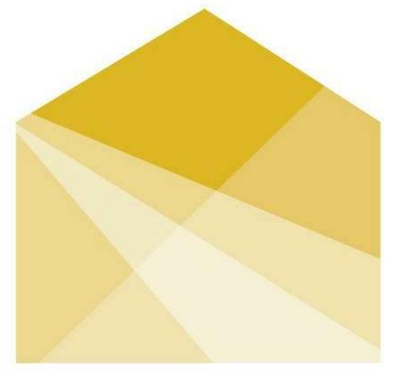
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SHEET TITLE

PLUMBING SYMBOLS
AND ABBREVIATIONS

P-001



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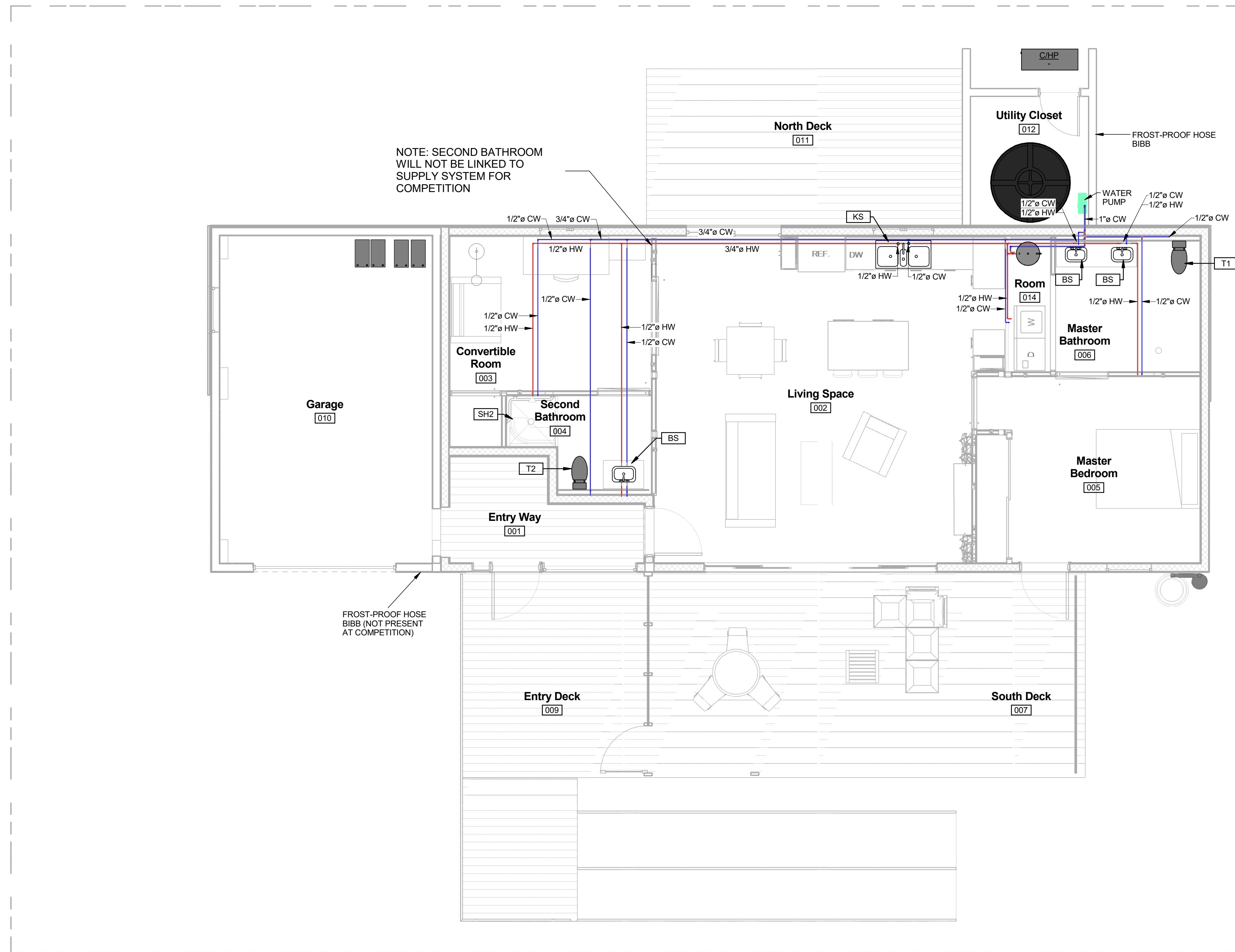


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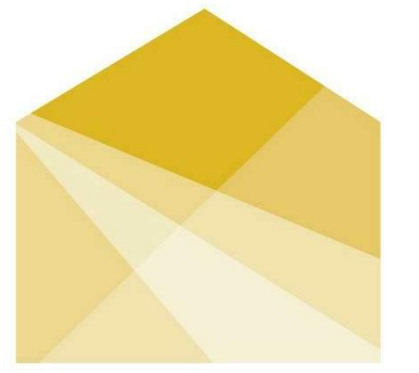
SHEET TITLE
DOMESTIC SUPPLY

P-101



1 DOMESTIC SUPPLY PLAN
1/4" = 1'-0"

8/9/2017 1:56:42 PM



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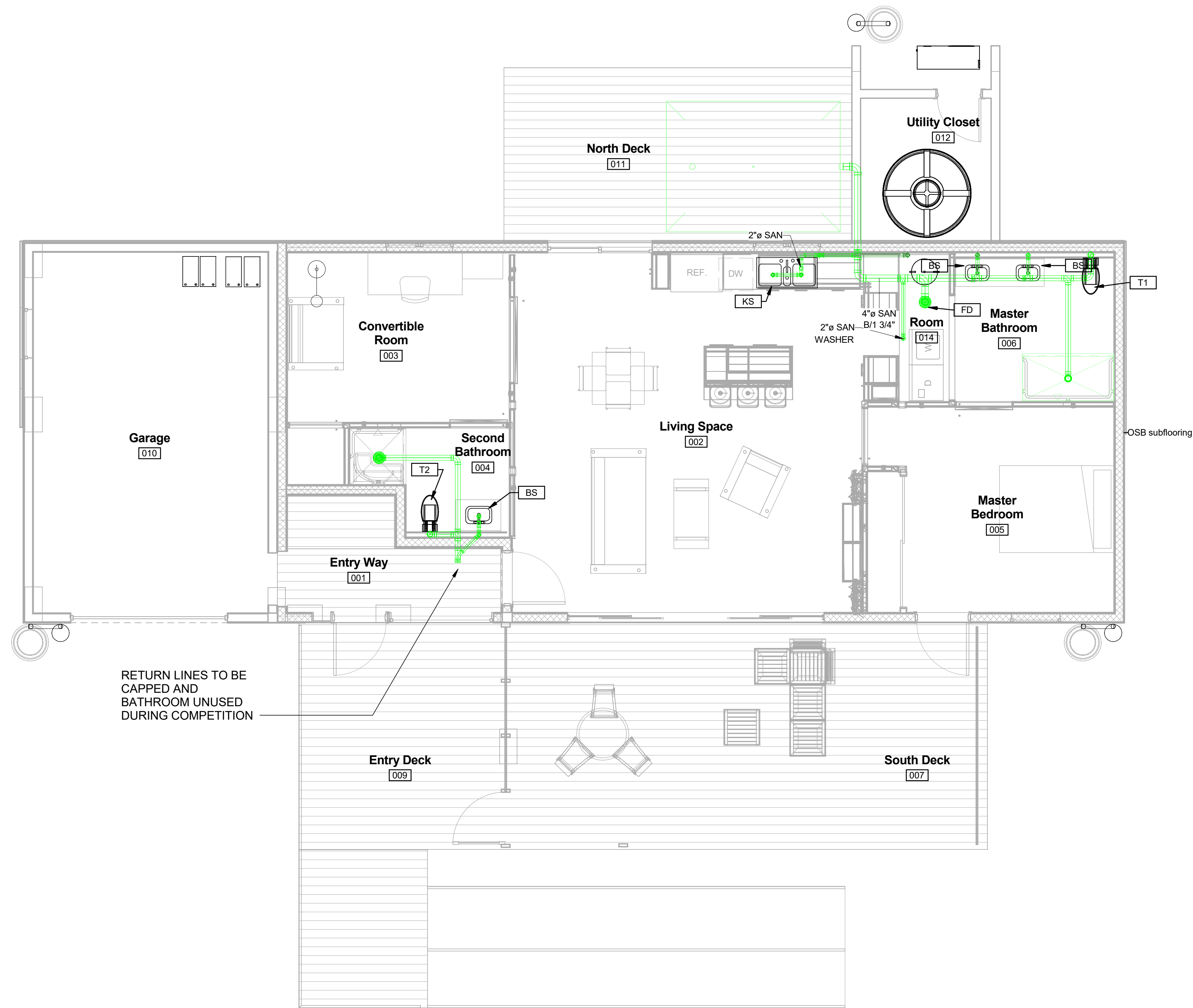
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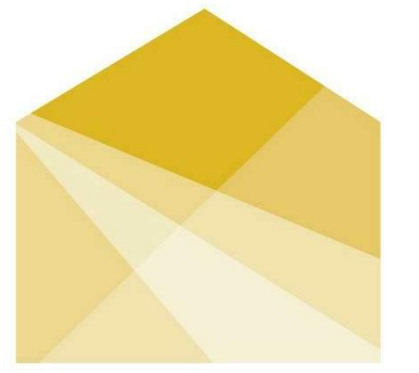
SHEET TITLE

DOMESTIC RETURN

P-102



1 DOMESTIC RETURN UNDER FLOOR PLAN
1/4" = 1'-0"



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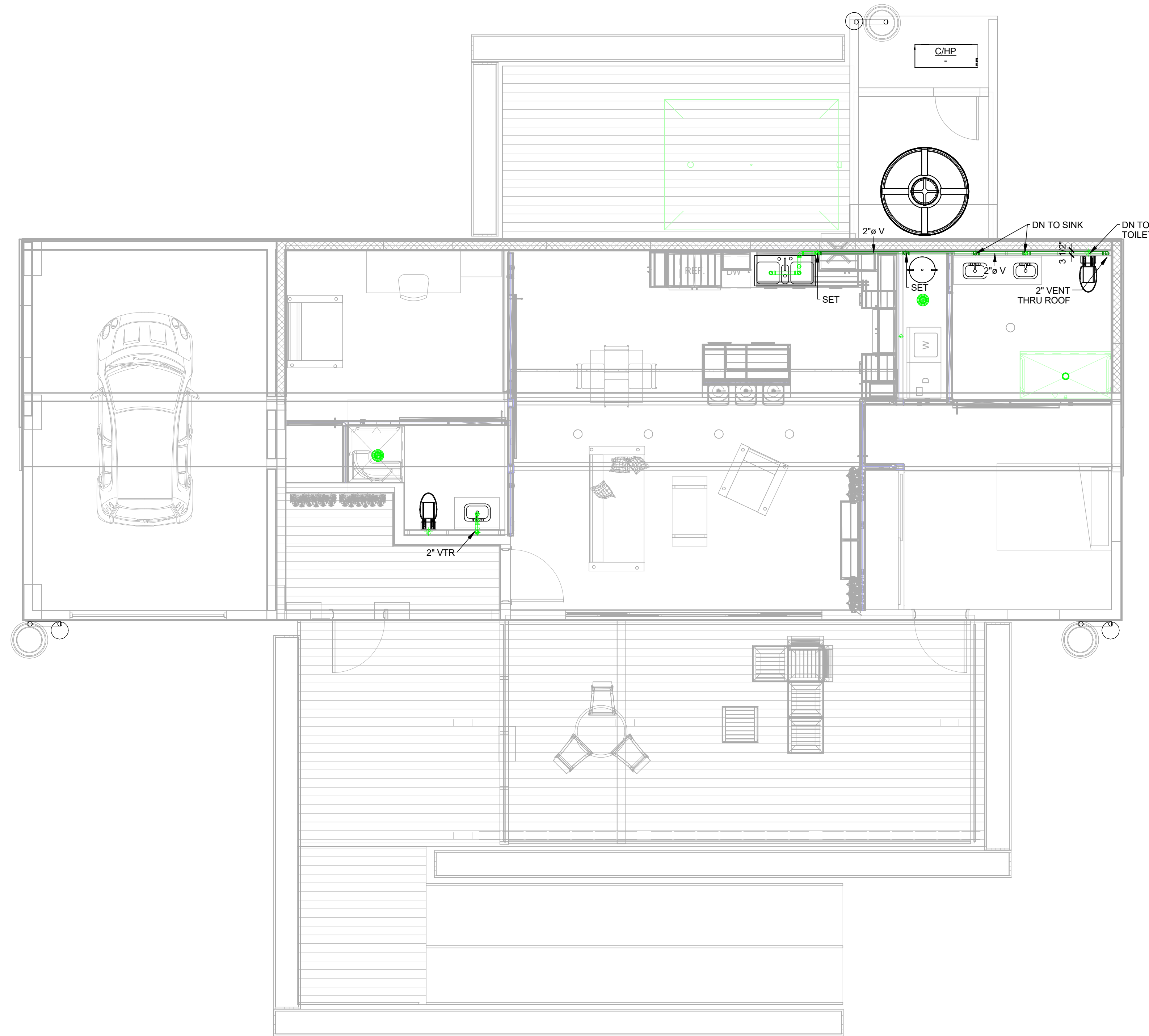


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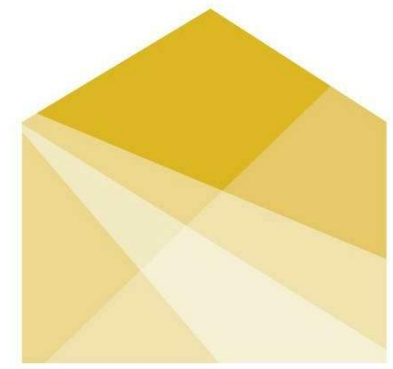
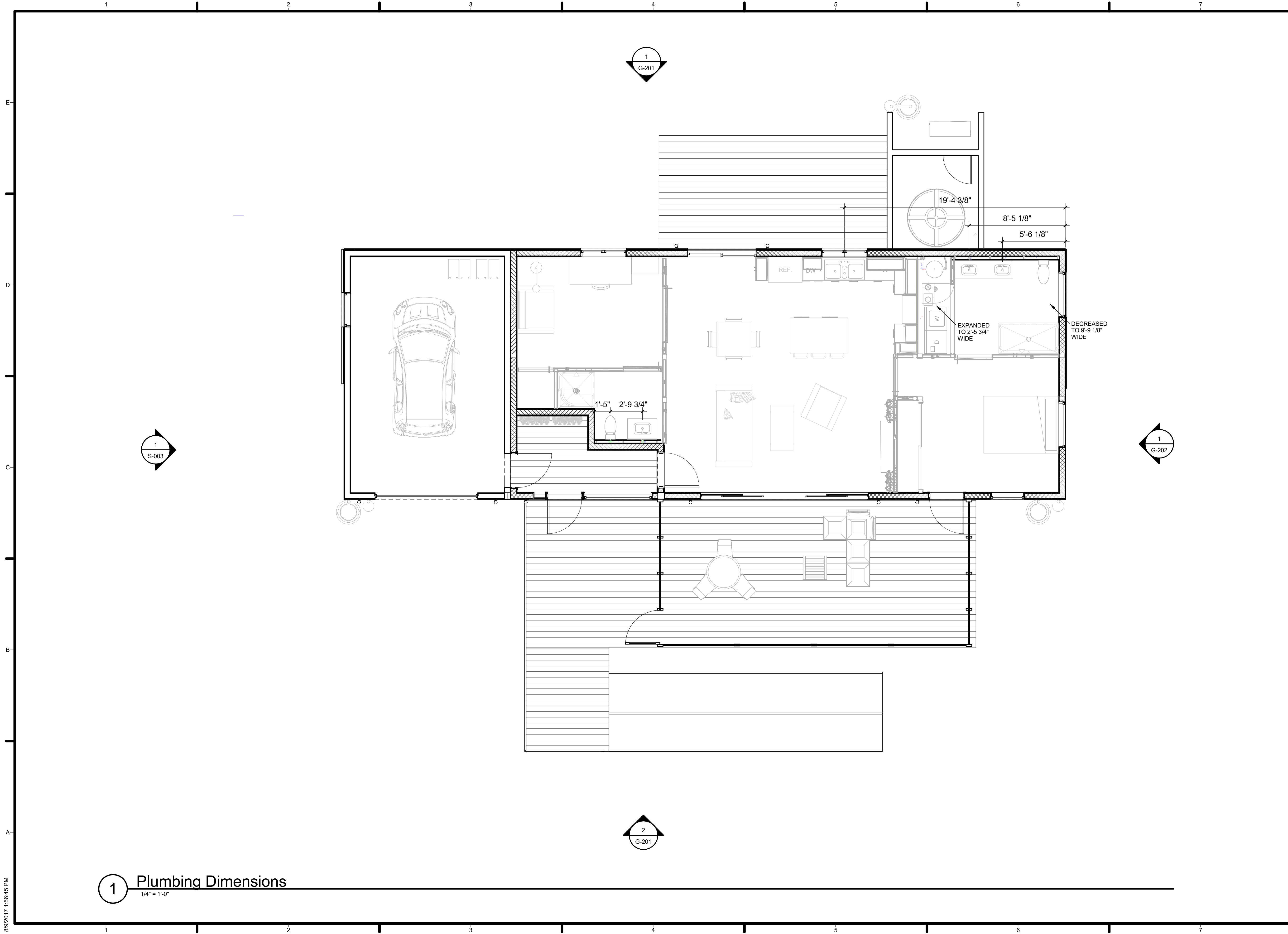
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SHEET TITLE
DOMESTIC RETURN ABOVE CEILING

P-103



1 DOMESTIC RETURN ABOVE CEILING PLAN
1/4" = 1'-0"



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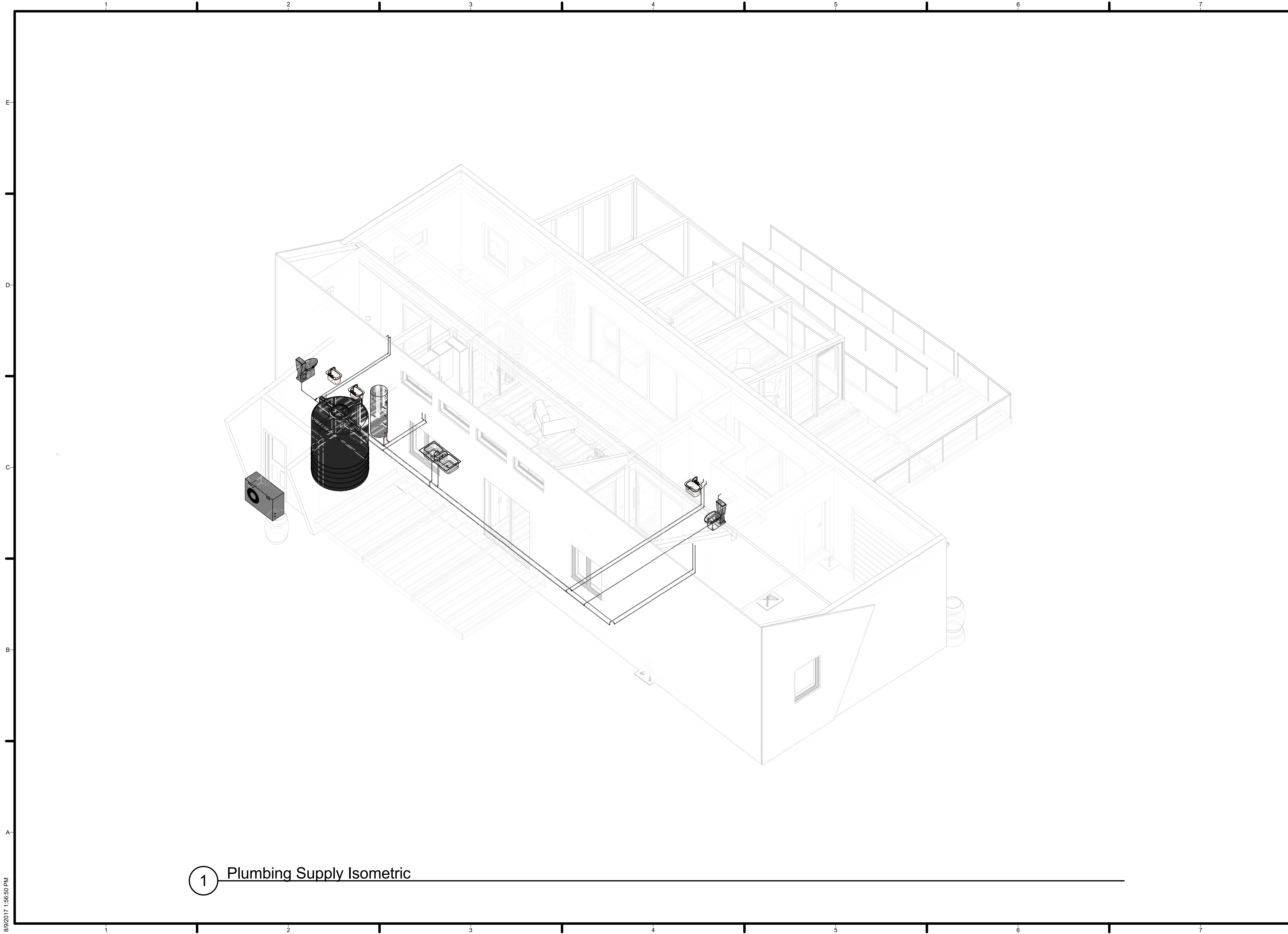
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SHEET TITLE
PLUMBING DIMENSIONS

P-104

1 Plumbing Dimensions
 1/4" = 1'-0"

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1 Plumbing Supply Isometric

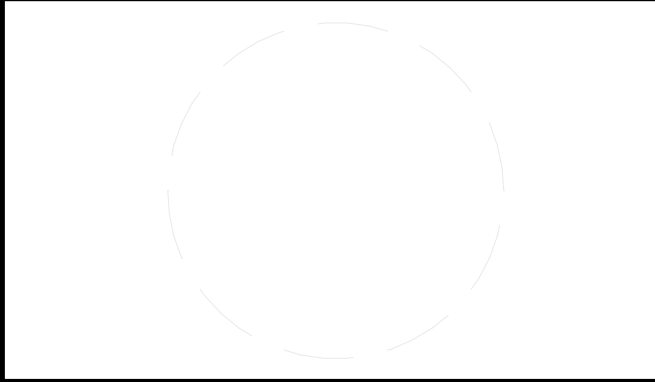
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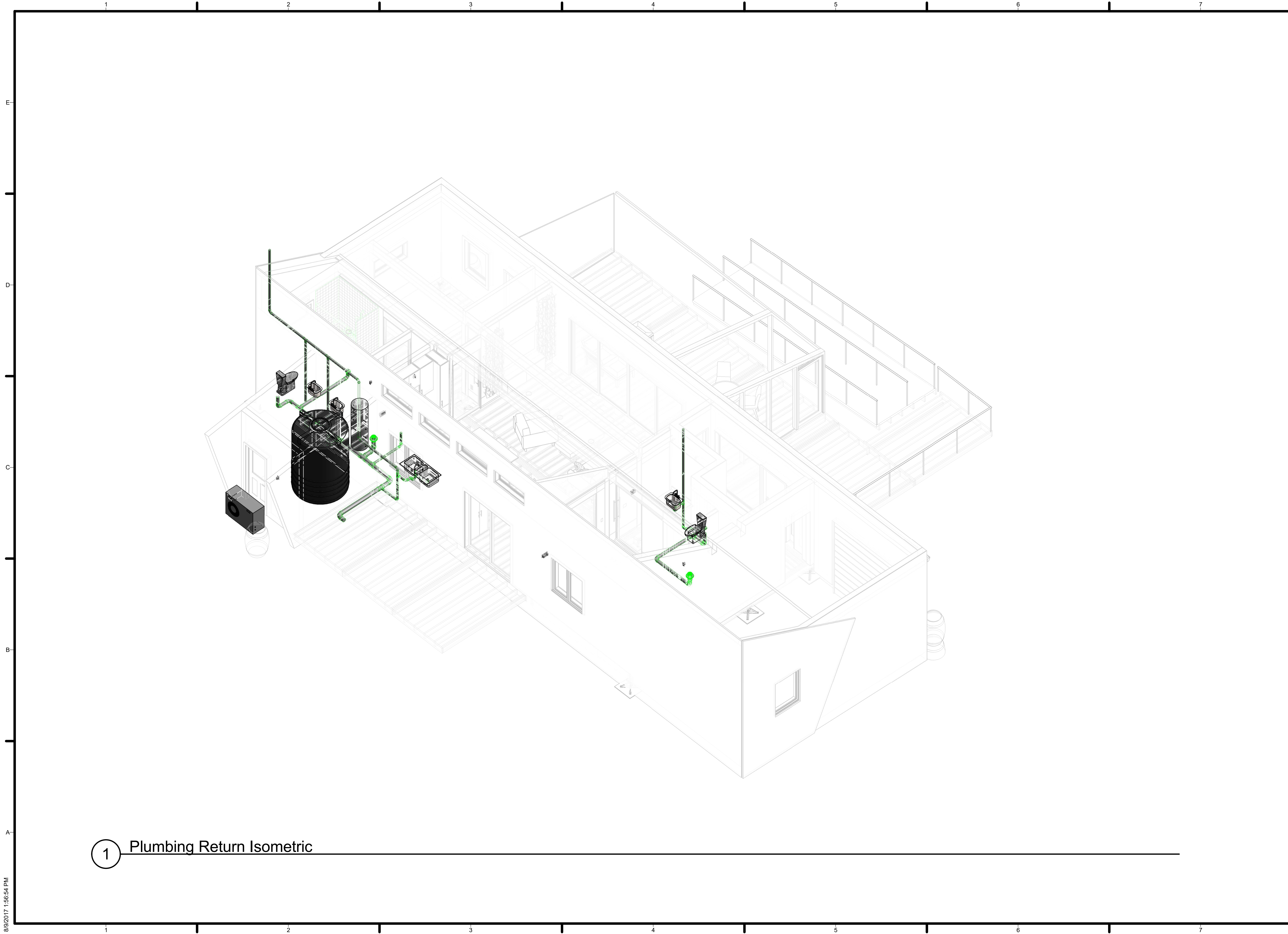


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3	4/20/2017	PERMIT SET
4	8/10/2017	AS-BUILT SET

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SHEET TITLE
SUPPLY ISOMETRICS

P-901



1 Plumbing Return Isometric

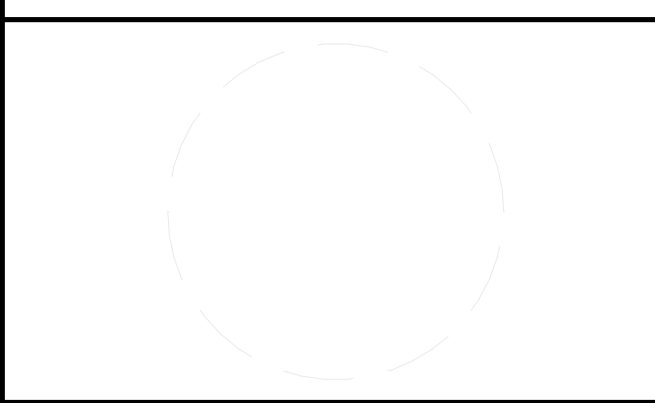
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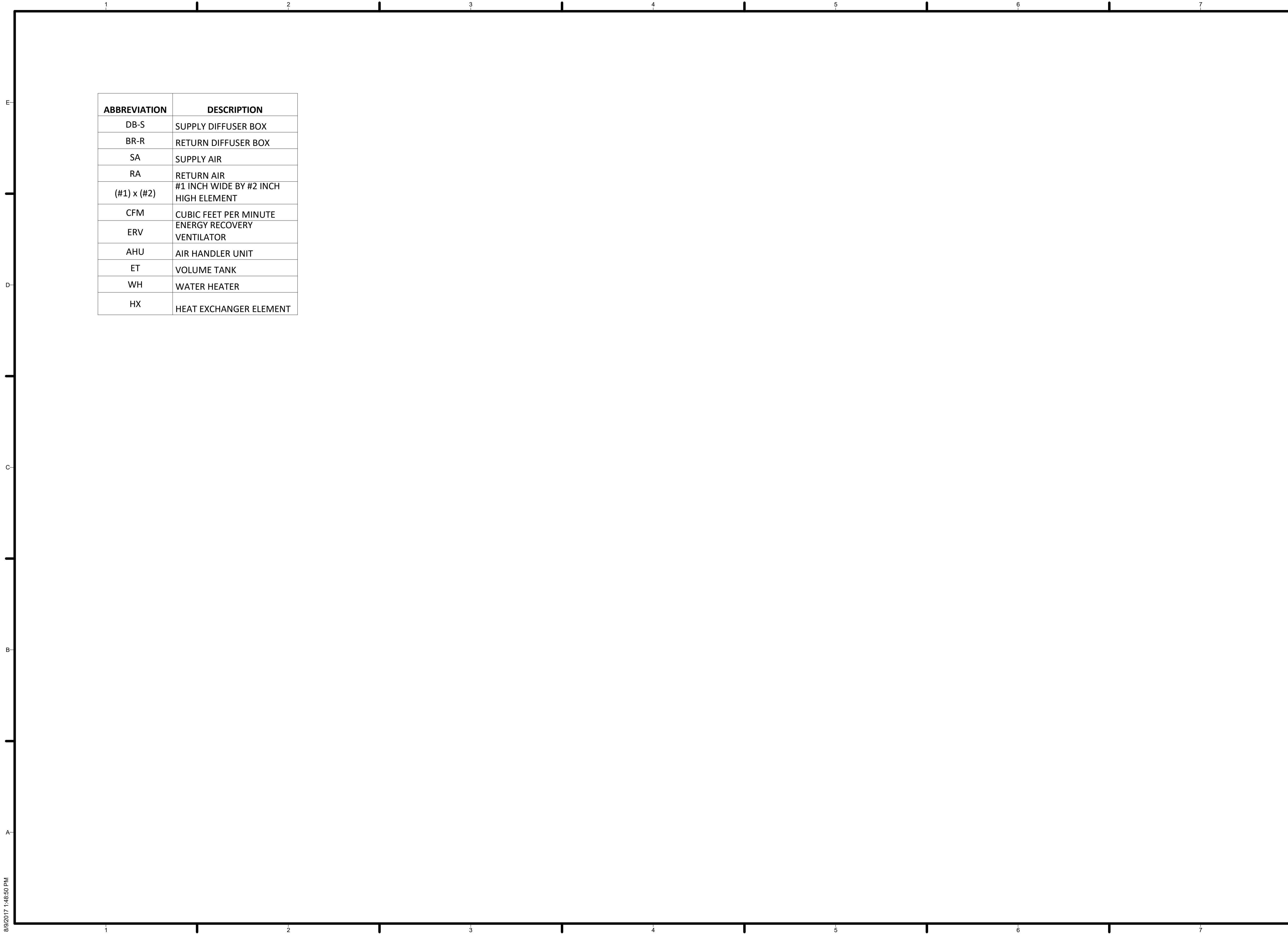


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SHEET TITLE
RETURN ISOMETRICS

P-902



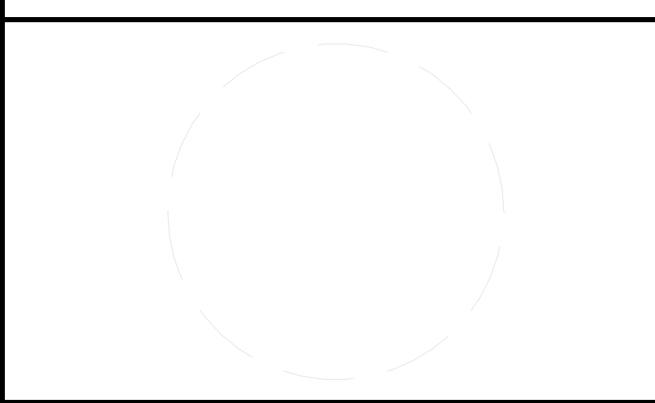
ABBREVIATION	DESCRIPTION
DB-S	SUPPLY DIFFUSER BOX
BR-R	RETURN DIFFUSER BOX
SA	SUPPLY AIR
RA	RETURN AIR
(#1) x (#2)	#1 INCH WIDE BY #2 INCH HIGH ELEMENT
CFM	CUBIC FEET PER MINUTE
ERV	ENERGY RECOVERY VENTILATOR
AHU	AIR HANDLER UNIT
ET	VOLUME TANK
WH	WATER HEATER
HX	HEAT EXCHANGER ELEMENT



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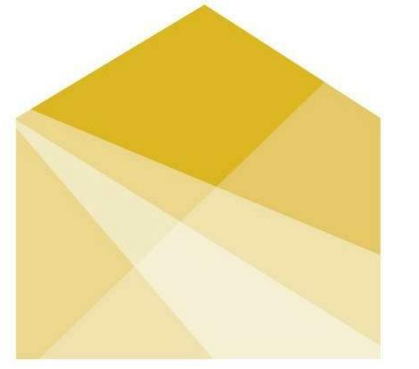
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SHEET TITLE
SYMBOLS AND ABBREVIATIONS

M-001

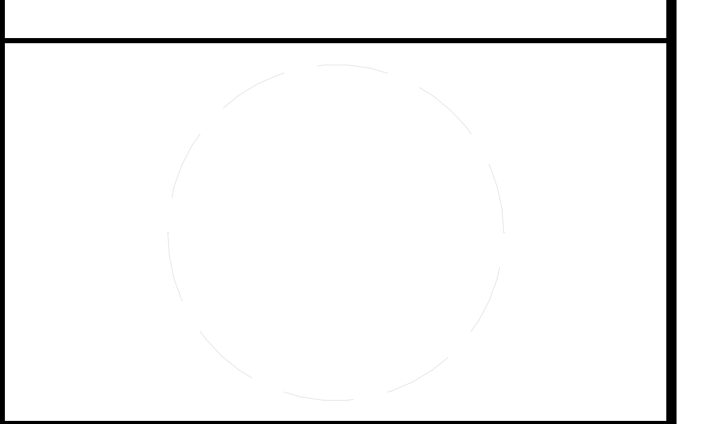


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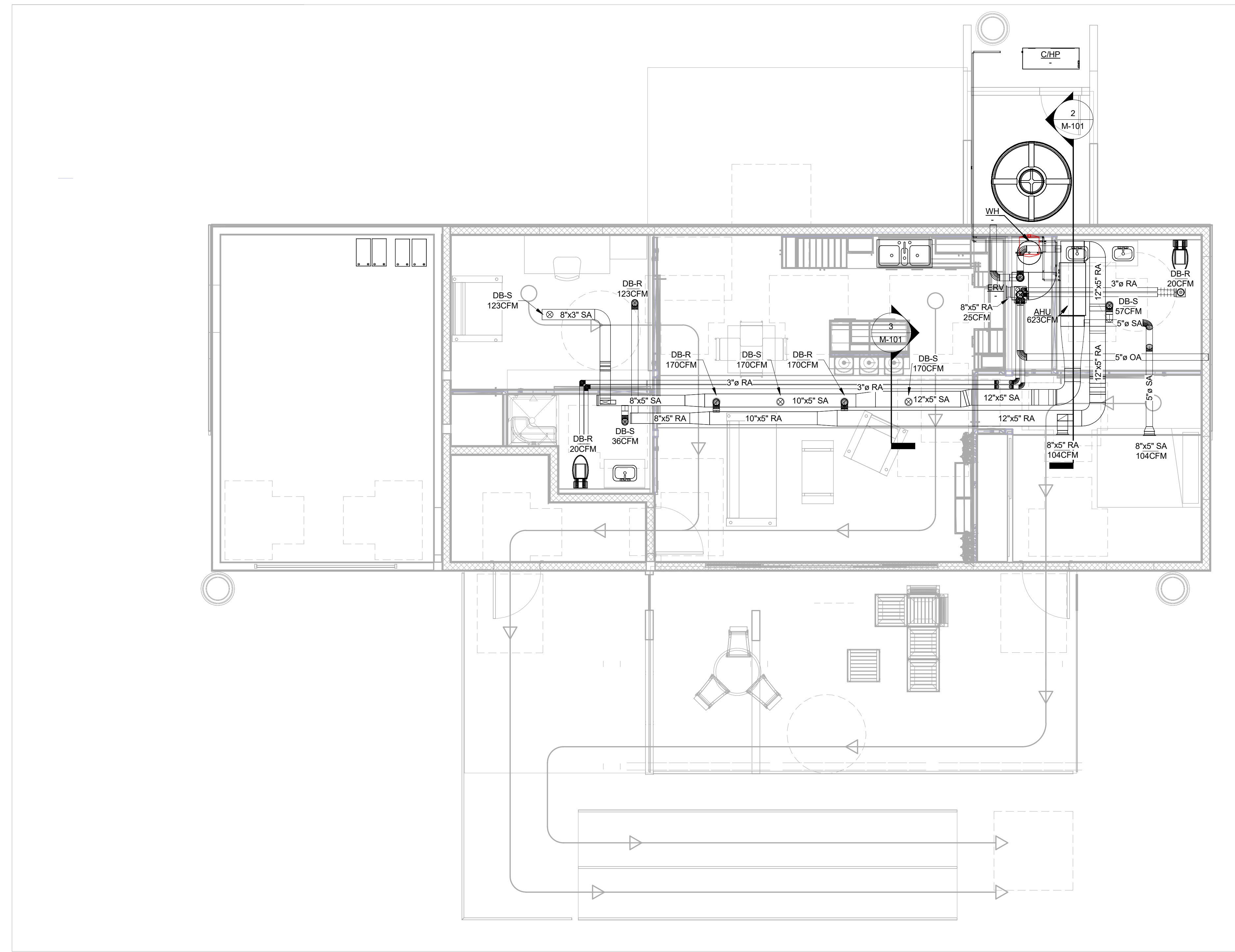
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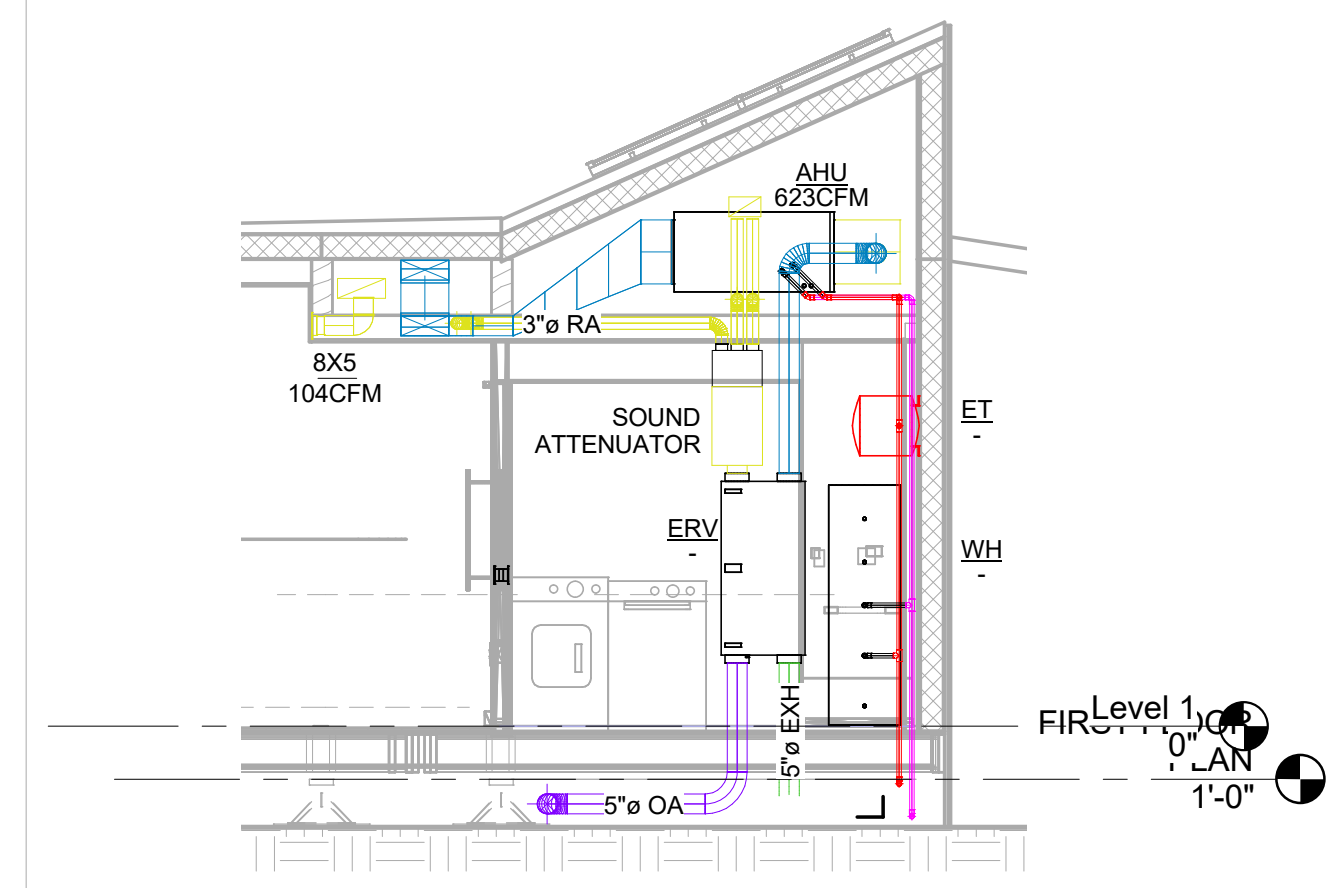
SHEET TITLE

HVAC EQUIPMENT AND
DISTRIBUTION PLAN

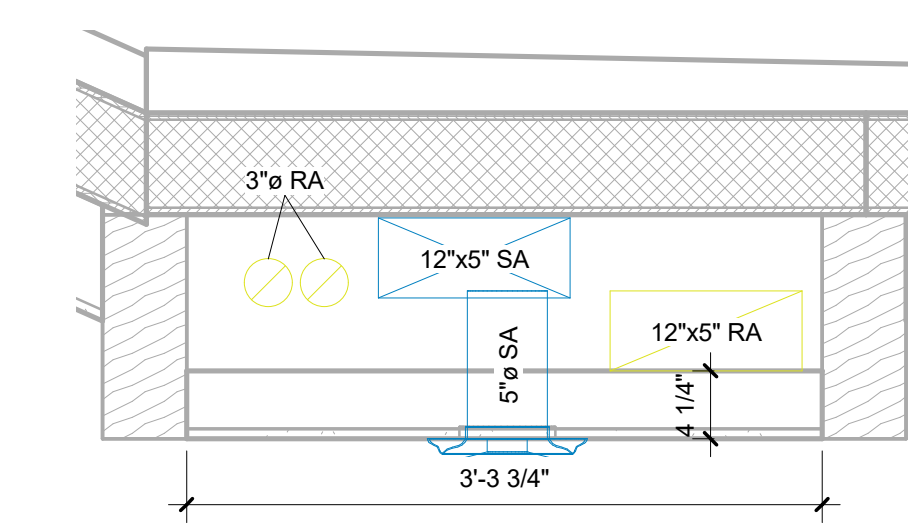
M-101



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



2 MECHANICAL ROOM
1/4" = 1'-0"



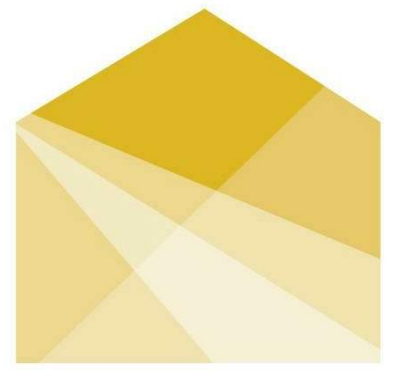
3 MECHANICAL PLENUM SECTION
1" = 1'-0"

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AHU SCHEDULE										
MARK	MANUFACTURER	MODEL	INLET/OUTLET SIZE (Ø")	HEATING CAPACITY (BTU/HR) (95 F)	COOLING CAPACITY (BTU/HR) (44 F)	MAX AIRFLOW RATE (CFM)	PRESSURE DROP (FT WATER)	MAX POWER (W)	Power Supply	Frequency (Hz)
AHU	FIRSTCO	8VMB	7/8"	15,800	15,000	800	1.2-9.5	80	115 V	60 Hz

REVERSIBLE AIR-SOURCE CHILLER/HEAT PUMP SCHEDULE													
MARK	MANUFACTURER	MODEL	PLUMBING		REFRIGERANT TYPE	CHARGE (LBS)	CAPACITIES / PERFORMANCE				ELECTRICAL DETAILS		
			INLET/OUTLET CONNECTIONS	WATER FLOW RATE (GPM)			HEATING		COOLING		AMP (MAX/RATED)	VOLTAGE	HZ
							CAPACITY (BTU/HR)	AMBIENT AIR/WATER OUTLET TEMP (°F)	CAPACITY (BTU/HR)	AMBIENT AIR/WATER OUTLET TEMP (°F)			
C/HP	CHILTRIX	CX34	1" NPT	0.2 TO 7.6	R-410A	4.4	22,237	A17/W95	24,002	A95/W44	15/20	208-240	60

VENTILATION EQUIPMENT SCHEDULE							
MARK	DESCRIPTION	MANUFACTURER	MODEL	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	QUANTITY
ERV	ENERGY RECOVERY VENTILATOR	ZEHNDER	COMFOAIR 200 VV L	47.2	21.0	12.7	1
-	VENTILATION MANIFOLD	ZEHNDER	COMFOWELL CW-M 320	9.0	12.6	9.0	1
-	SOUND ATTENUATOR DIFFUSER BOX-	ZEHNDER	COMFOWELL CW-S 320	19.7	12.6	9.0	1
DB-E	EXTRACT 3" VENTILATION	ZEHNDER	TVA 75	8.5	6.9	10.0	2
-	TUBING	ZEHNDER	COMFOFLEX	-	-	-	-



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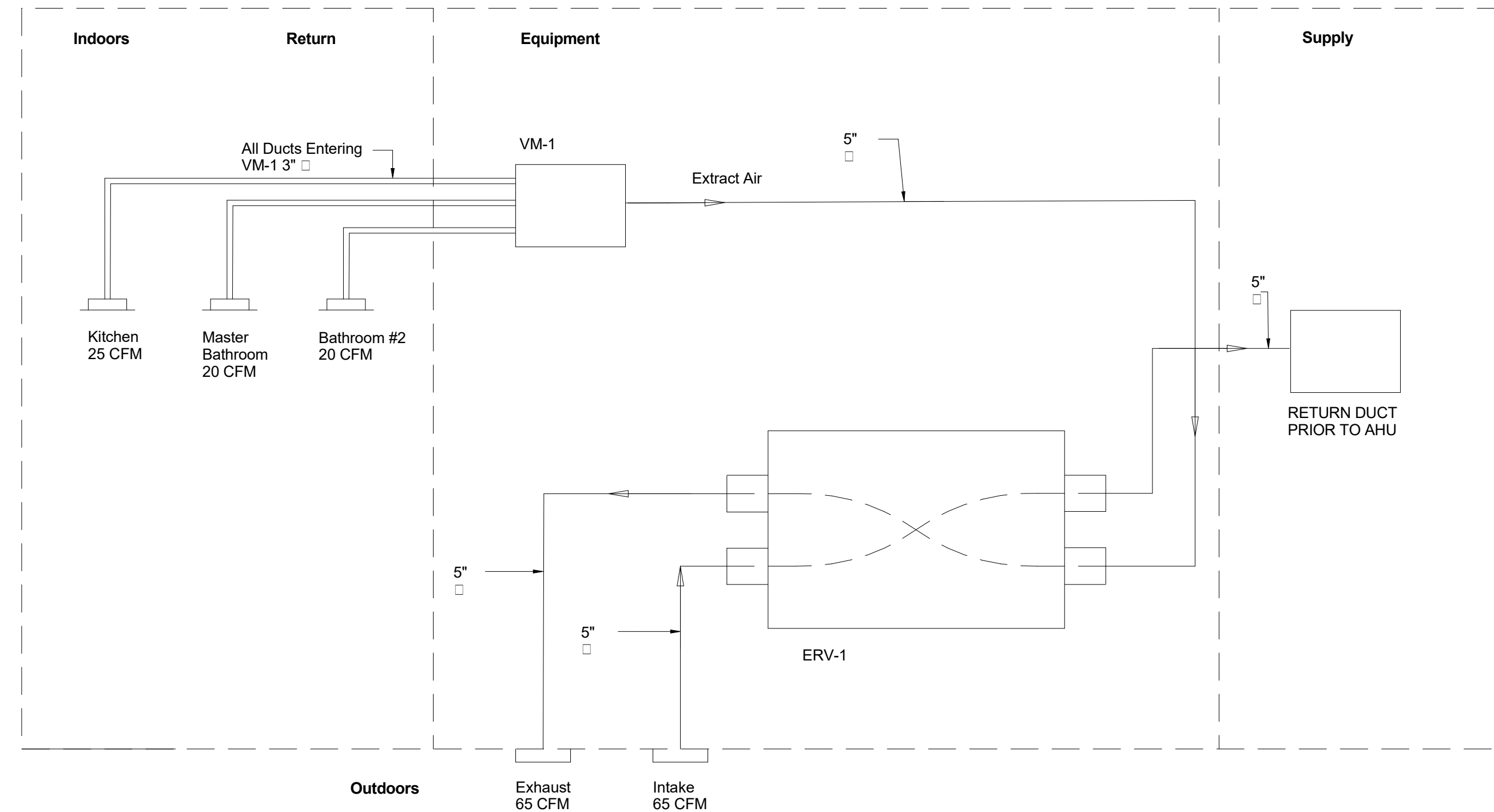
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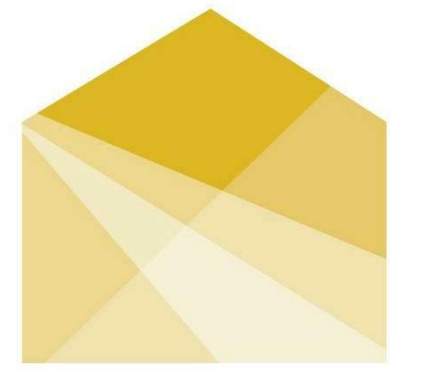
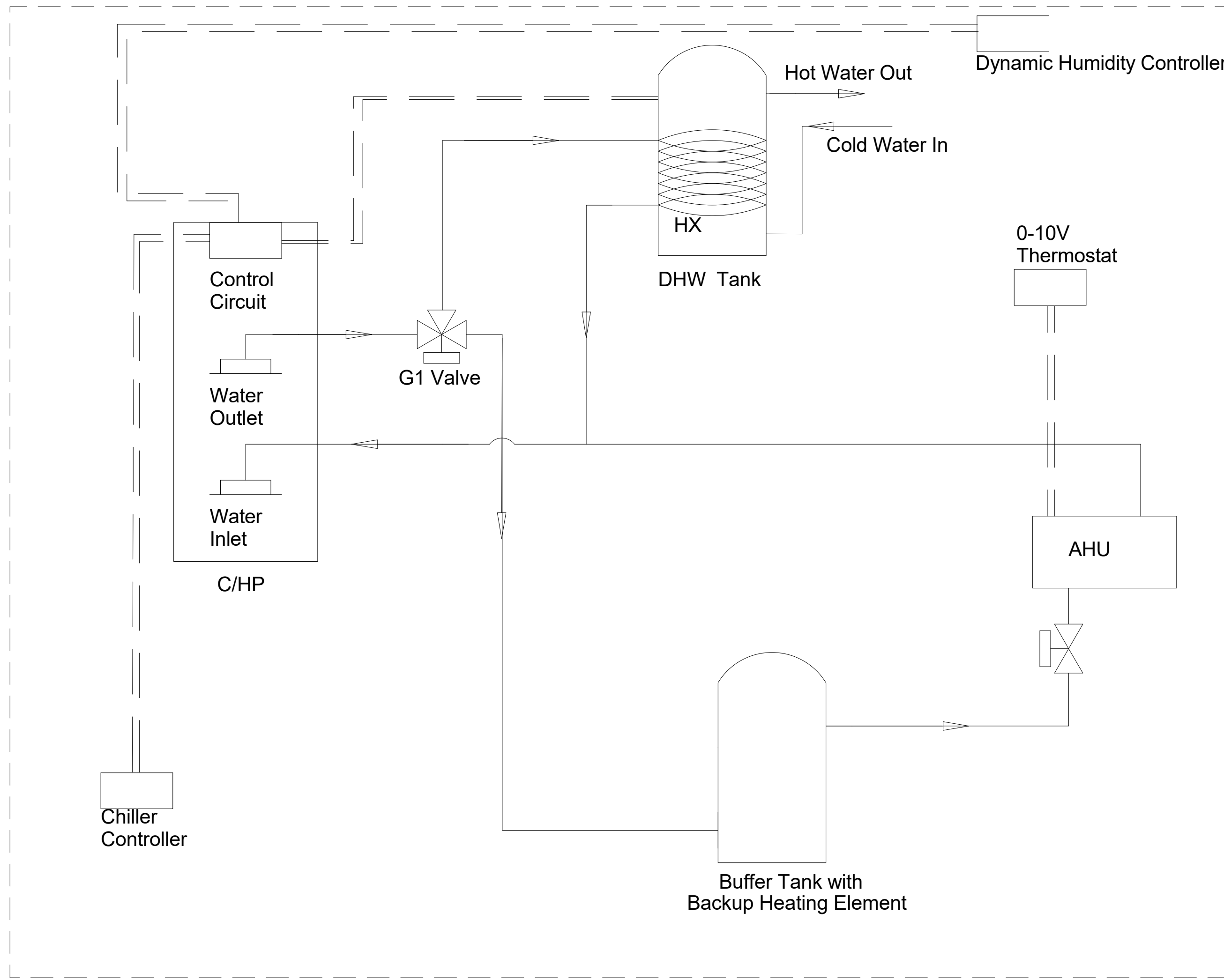
SHEET TITLE
**MECHANICAL
 EQUIPMENT SCHEDULE**

M-601

VENTILATION SYSTEM SCHEMATIC



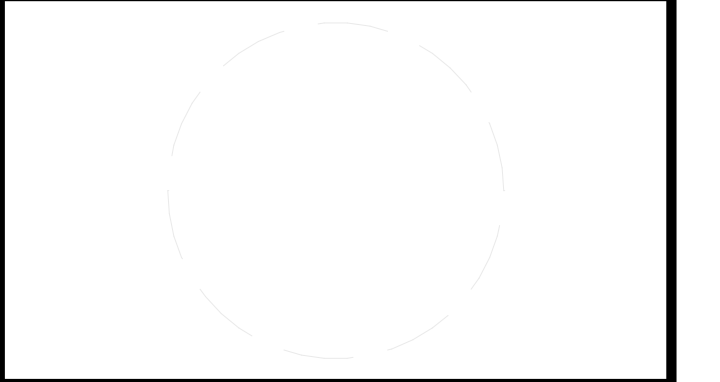
CONDITIONING SYSTEM SCHEMATIC



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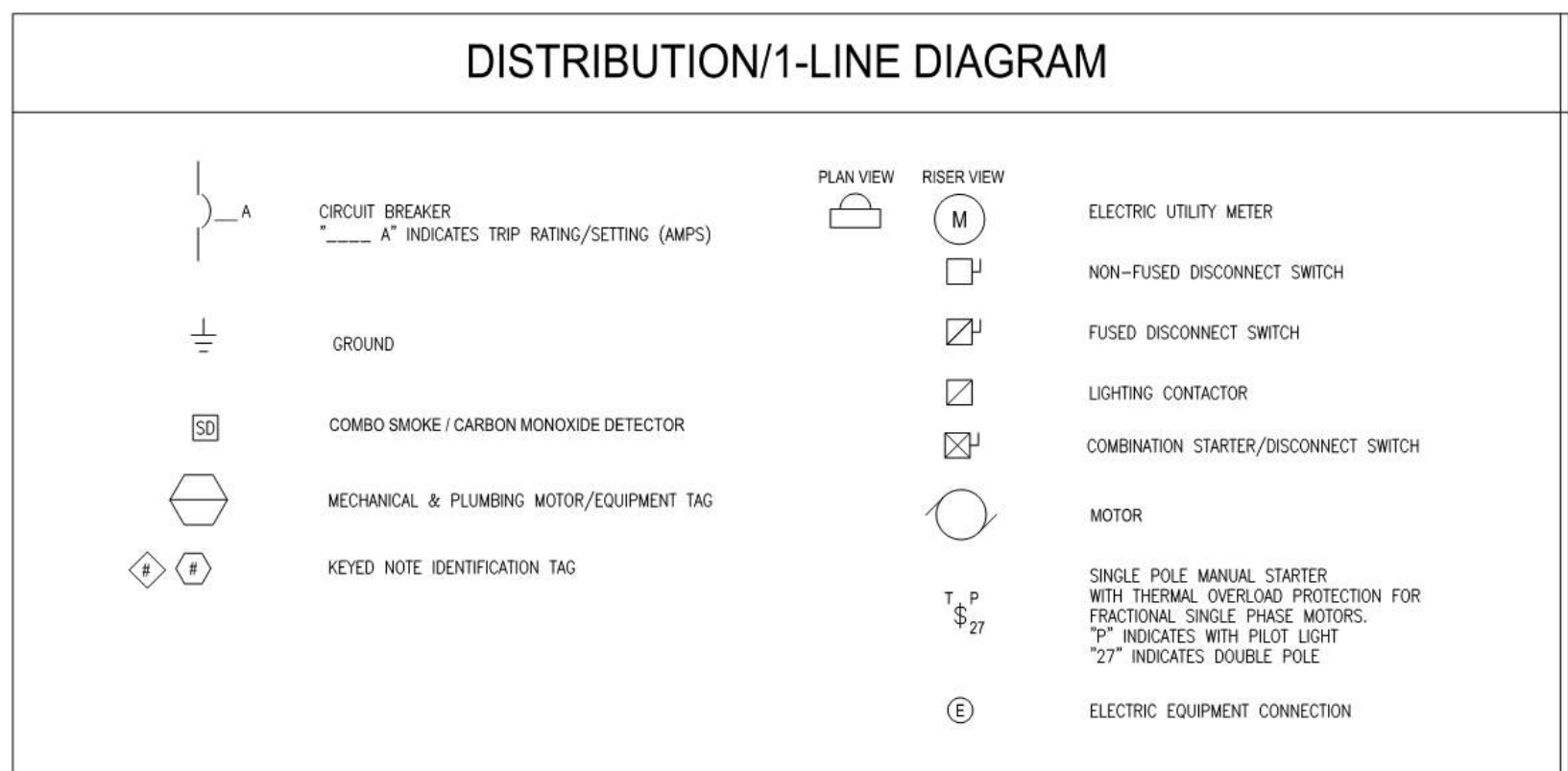
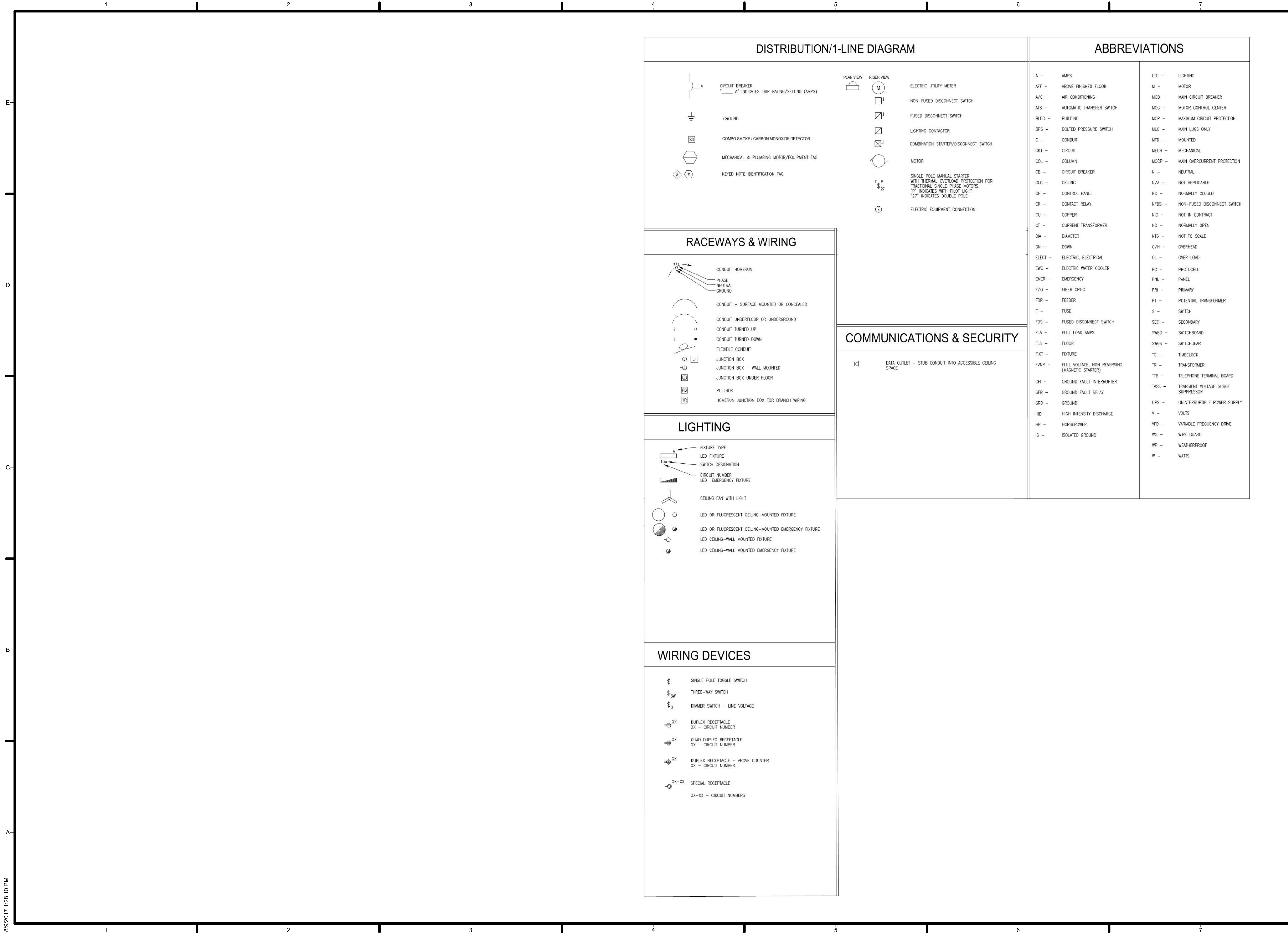


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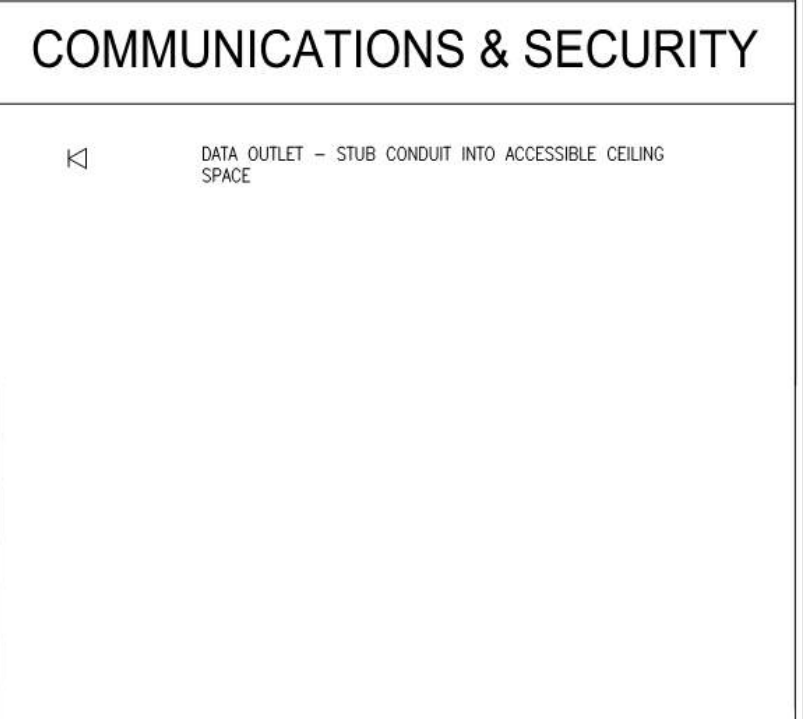
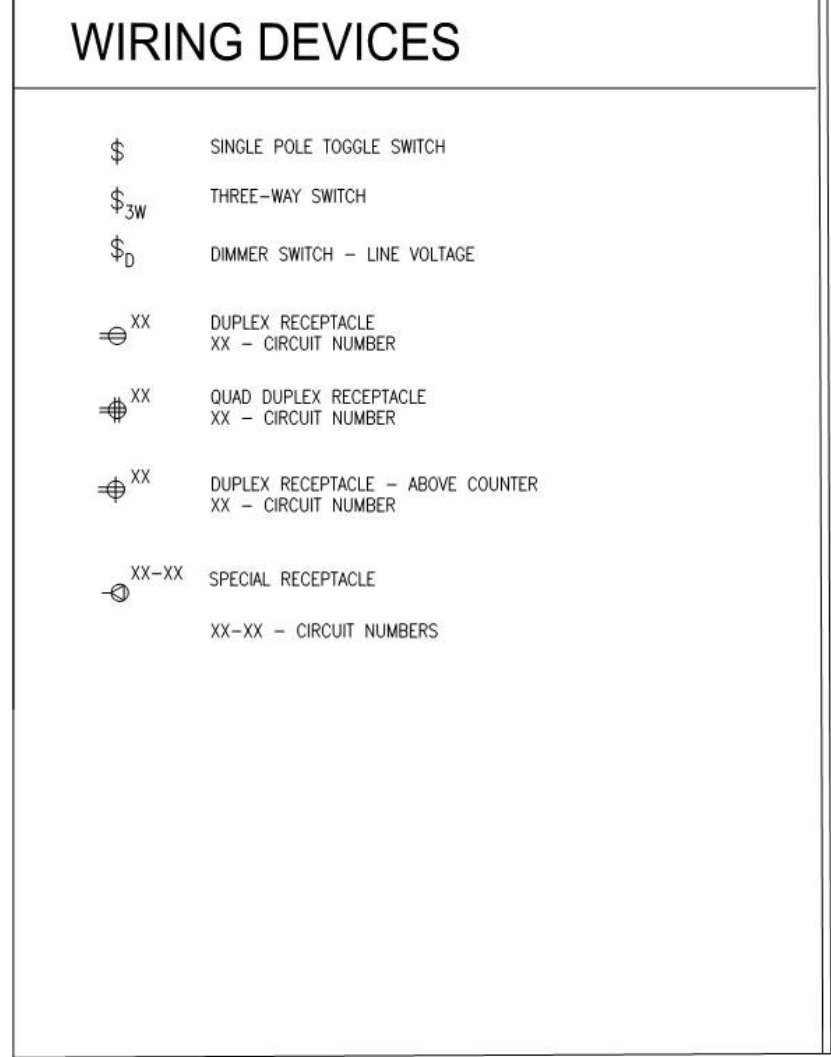
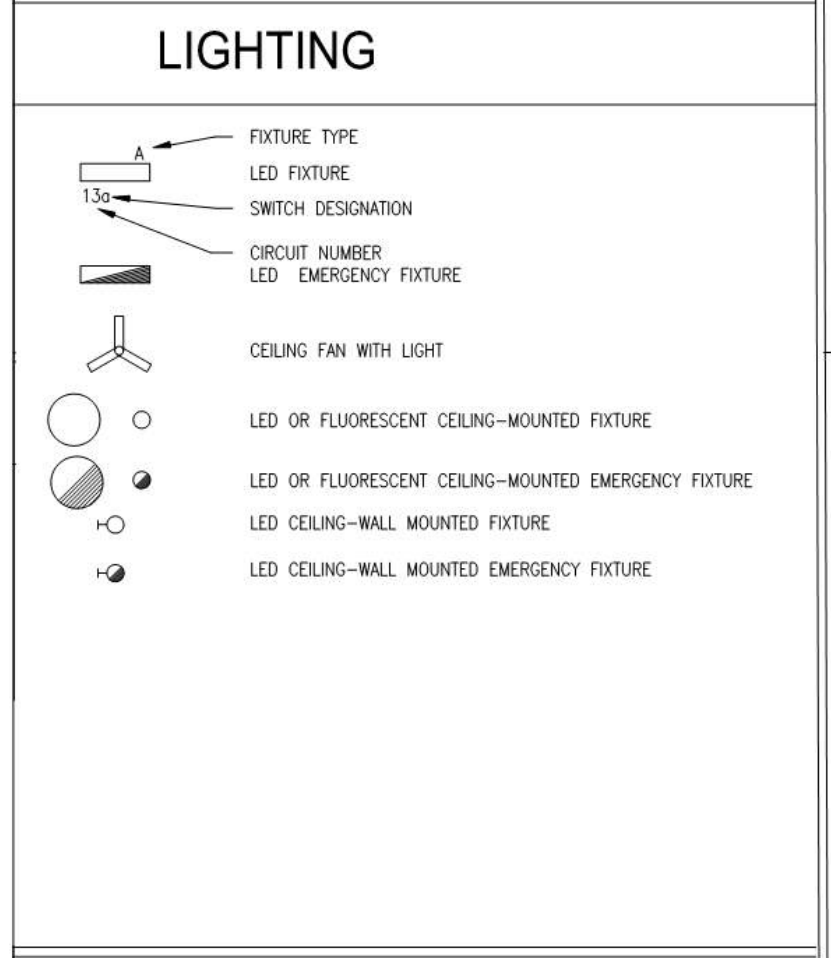
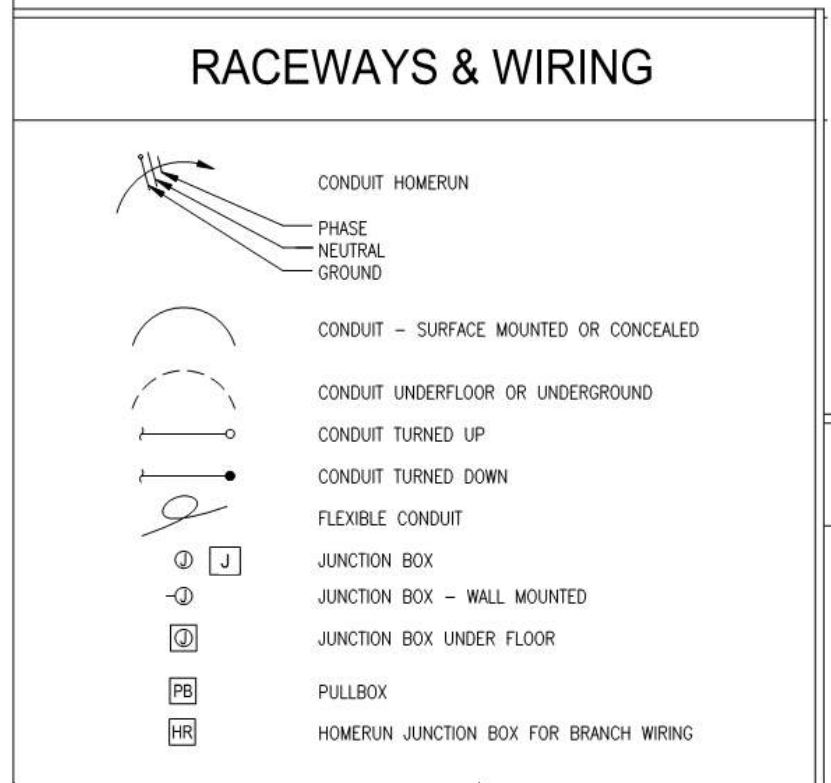
SHEET TITLE
MECHANICAL DIAGRAMS


M-602



ABBREVIATIONS

A -	AMPS	LTG -	LIGHTING
AFF -	ABOVE FINISHED FLOOR	M -	MOTOR
A/C -	AIR CONDITIONING	MCB -	MAIN CIRCUIT BREAKER
ATS -	AUTOMATIC TRANSFER SWITCH	MCC -	MOTOR CONTROL CENTER
BLDG -	BUILDING	MCP -	MAXIMUM CIRCUIT PROTECTION
BPS -	BOLTED PRESSURE SWITCH	MLO -	MAIN LUGS ONLY
C -	CONDUIT	MTD -	MOUNTED
CB -	CIRCUIT BREAKER	MECH -	MECHANICAL
CLG -	CEILING	MOCP -	MAIN OVERCURRENT PROTECTION
CP -	CONTROL PANEL	N -	NEUTRAL
CR -	CONTACT RELAY	N/A -	NOT APPLICABLE
CU -	COPPER	NC -	NORMALLY CLOSED
CT -	CURRENT TRANSFORMER	NFDS -	NON-FUSED DISCONNECT SWITCH
DIA -	DIAMETER	NIC -	NOT IN CONTRACT
DN -	DOWN	NO -	NORMALLY OPEN
ELECT -	ELECTRIC, ELECTRICAL	NTS -	NOT TO SCALE
EWC -	ELECTRIC WATER COOLER	O/H -	OVERHEAD
EMER -	EMERGENCY	OL -	OVER LOAD
F/O -	FIBER OPTIC	PC -	PHOTOCELL
FDR -	FEEDER	PANL -	PANEL
F -	FUSE	PRI -	PRIMARY
FDS -	FUSED DISCONNECT SWITCH	PT -	POTENTIAL TRANSFORMER
FLA -	FULL LOAD AMPS	S -	SWITCH
FLR -	FLOOR	SEC -	SECONDARY
FXTR -	FIXTURE	SWBO -	SWITCHBOARD
FVNR -	FULL VOLTAGE, NON REVERSING (MAGNETIC STARTERS)	SWGR -	SWITCHGEAR
GFI -	GROUND FAULT INTERRUPTER	TC -	TIMECLOCK
GFR -	GROUND FAULT RELAY	TR -	TRANSFORMER
GRD -	GROUND	TTB -	TELEPHONE TERMINAL BOARD
HD -	HIGH INTENSITY DISCHARGE	TVSS -	TRANSIENT VOLTAGE SURGE SUPPRESSOR
HP -	HORSEPOWER	UPS -	UNINTERRUPTIBLE POWER SUPPLY
IG -	ISOLATED GROUND	V -	VOLTS
		VFD -	VARIABLE FREQUENCY DRIVE
		WG -	WIRE GUARD
		WP -	WEATHERPROOF
		W -	WATTS






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ELECTRICAL SYMBOLS AND ABBREVIATIONS

E-001

ELECTRICAL SPECIFICATIONS

I. SCOPE

THE WORK COVERED BY THIS SPECIFICATION INCLUDES THE COMPLETE ELECTRICAL SYSTEM.

THE WORK TO BE PERFORMED UNDER THE ELECTRICAL SPECIFICATIONS AND DRAWINGS CONSISTS OF FURNISHING ALL LABOR AND MATERIAL FOR THE COMPLETE INSTALLATION OF ELECTRICAL SYSTEMS, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

- A. CONDUIT AND WIRING.
- B. PANELBOARDS.
- C. ELECTRICAL EQUIPMENT AND WIRING.
- D. LIGHTING FIXTURES

II. GENERAL

THIS SPECIFICATION IS INCLUSIVE FOR EACH ITEM REQUIRING ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO PROPERLY INSTALL, ALTER, ADJUST AND PUT IN OPERATION, THE COMPLETE ELECTRICAL SYSTEM.

THE DRAWINGS AND SPECIFICATIONS SHALL BE UNDERSTOOD TO COVER, ACCORDING TO THEIR INTENT AND MEANING, COMPLETE SYSTEMS AS DESCRIBED HEREIN.

MINOR ITEMS, ACCESSORIES AND DEVICES REASONABLY INFERRABLE AS NECESSARY FOR THE COMPLETE AND PROPER OPERATION OF ANY SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR FOR SUCH SYSTEMS WHETHER THEY ARE SPECIFICALLY CALLED FOR BY THE DRAWINGS AND/OR SPECIFICATIONS OR NOT.

III. VISIT TO SITE

ATTENTION IS DIRECTED TO THE NECESSITY FOR CONSTRUCTION TEAM TO VISIT THE SITE AND EXAMINE ALL CONDITIONS AFFECTING THE PROPER EXECUTION OF THIS CONTRACT. SUBMISSION OF PROPOSALS SHALL BE CONSIDERED EVIDENCE THAT THE CONSTRUCTION TEAM HAS VISITED AND EXAMINED THE SITE.

IV. LAWS, ORDINANCES AND REGULATIONS

ALL SYSTEMS SHALL CONFORM IN FULL AND/OR PART SHALL CONFORM TO ALL PERTINENT LAWS, ORDINANCES AND REGULATIONS OF ALL BODIES HAVING JURISDICTION AT ALL GOVERNING LEVELS, NOTWITHSTANDING ANYTHING IN THESE DRAWINGS OR SPECIFICATIONS TO THE CONTRARY. IN CASE OF CONFLICT BETWEEN GOVERNING LEVELS, THE MORE STRINGENT LAWS SHALL APPLY.

WHERE APPLICABLE, ALL NEW MATERIAL SHALL BEAR THE UNDERWRITER'S SEAL OF APPROVAL, AS WELL AS THOSE SEALS OF ALL MUNICIPALITIES HAVING JURISDICTION CERTIFICATES TO THIS EFFECT TO BE FURNISHED TO ARCHITECT UPON REQUEST.

THE ELECTRICAL CONSTRUCTION TEAM SHALL SECURE AND PAY FOR ALL LICENSES REQUIRED BY THE GOVERNING BODIES TO OPERATE AS AN ELECTRICAL CONSTRUCTION TEAM FOR THIS PROJECT.

V. WORKMANSHIP

ALL WORK TO BE PERFORMED SHALL BE DONE BY QUALIFIED MECHANICS IN THE EMPLOY OF THIS CONSTRUCTION TEAM ON THIS PROJECT SHALL BE SKILLED IN THE PHASES OF THE WORK TO WHICH THEY ARE USED.

THE COMPLETE SYSTEM SHALL MEET THE REQUIREMENTS OF THE NATIONAL CURRENT EDITION OF THE ELECTRICAL CODE AND AS MAY BE MODIFIED BY THE LOCAL ELECTRICAL CODE.

VI. MATERIALS AND EQUIPMENT

ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL CONFORM TO THE GRADE, QUALITY AND STANDARD SPECIFIED HEREIN.

ALL EQUIPMENT OFFERED UNDER THESE SPECIFICATIONS SHALL BE LIMITED TO PRODUCTS REGULARLY PRODUCED AND RECOMMENDED FOR SERVICE, IN ACCORDANCE WITH ENGINEERING DATA, RATINGS OR OTHER COMPREHENSIVE LITERATURE MADE AVAILABLE TO THE PUBLIC AND IN EFFECT AT THE TIME OF OPENING BIDS.

EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR TYPE AND CAPACITY OF EACH PIECE OF EQUIPMENT USED.

PANELBOARDS AND DISTRIBUTION EQUIPMENT SHALL HAVE CLEAR WORKING SPACE IN FRONT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

VII. COORDINATION WITH OTHER TRADES

THE CONSTRUCTION TEAM SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THAT WORK OF THE OTHER TRADES. CONSTRUCTION TEAM IS COMPLETELY RESPONSIBLE IF FAILURE ON HIS PART TO COORDINATE EFFORTS RESULTS IN EXTRA WORK HAVING TO BE DONE TO COMPLETE A TASK. AS SUCH, HIS FAILURE SHALL NOT BE THE BASIS FOR ANY EXTRA CHARGE AGAINST THE OWNER.

VIII. GROUNDING

PROVIDE ALL ELECTRICAL SYSTEM AND EQUIPMENT WITH SEPARATE GROUNDING CONDUCTOR OR AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY THE LOCAL ELECTRICAL CODE, THE NATIONAL SAFETY CODE AND ALL AGENCIES/AUTHORITIES NOTED ABOVE.

IX. WIRING - MANNER OF INSTALLATION

ALL WIRES SHALL BE INSTALLED IN METALLIC CONDUIT. PROVIDE THIN WALL CONDUIT (EMT) IN ALL LOCATIONS EXCEPT WHERE PROHIBITED BY CODE. EXPOSED TO WEATHER, EXPOSED TO MECHANICAL INJURY OR WHERE BURIED IN OR BELOW SLABS ON GRADE, IN THOSE LOCATIONS PROVIDE RIGID STEEL CONDUIT.

THE ENTIRE CONDUIT SYSTEM SHALL BE INSTALLED BOTH ELECTRICALLY AND MECHANICALLY CONTINUOUS. CONDUIT FITTINGS SHALL BE SUITABLE FOR THE PURPOSE AND SHALL BE SET SCREW OR COMPRESSION TYPE ONLY. INDENTER TYPE FITTINGS ARE STRICTLY PROHIBITED.

EXTERIOR CONDUITS SHALL BE IMC.

X. WIRE AND CABLE

WIRE AND CABLE FOR BRANCH CIRCUITS AND SECONDARY FEEDERS WITHIN THE BUILDING SHALL BE OF COPPER, THERMOPLASTIC INSULATED, TYPE THWN OR THHN, 600VOLT. TYPE THW MAY BE USED IN LIEU OF TYPE THWN OR THHN IN SIZES OF #12 AND #10 AWG IN DRY LOCATIONS AT THE CONSTRUCTION TEAM'S OPTION. WIRE BENEATH OR IN THE GROUND FLOOR AND OTHER WET LOCATIONS SHALL BE TYPE THWN. ALL WIRE SHALL BE STRANDED.

WIRE SIZING TO MEET APPLICABLE CODE REQUIREMENTS.

XI. SPLICING

SPLICING WIRES SHALL BE DONE ONLY IN ACCESSIBLE OUTLET JUNCTION OR PULL BOXES. SPLICES SHALL BE MADE STRICTLY IN ACCORDANCE WITH THE INSTRUCTIONS OF THE CABLE MANUFACTURER USING THE METHODS AND MATERIALS RECOMMENDED BY HIM.

FOR #10 AND #12 WIRE, SPLICES SHALL BE MADE WITH SCOTCH-LOK CONNECTORS.

WIRE #8 AND LARGER SHALL BE CONNECTED WITH BURNDY OR EQUAL SOLDER LESS MECHANICAL LUG AND PAINTED WITH INSULATING VARNISH.

ALL CONNECTIONS SHALL BE PROPERLY TAPED WITH SCOTCH ELECTRICAL TAPE #22, #33 OR APPROVED EQUAL.

XII. JUNCTION AND PULL BOXES

JUNCTION BOXES, PULL BOXES AND TERMINAL BOXES SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS AND AT OTHER LOCATIONS AS REQUIRED TO FACILITATE THE PULLING OF CABLES. THEY SHALL BE CODE SIZED AND SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED SHEET STEEL. EACH BOX SHALL BE PROVIDED WITH A SCREW-ON REMOVABLE COVER. PROVIDE FLANGED COVERS ON FLUSH BOXES. BOXES SHALL BE SMOOTH, SQUARE AND SET PARALLEL WITH WALLS AND CEILING.

XIII. CONDUIT AND ELECTRIC METALLIC TUBING

CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE IN ACCORDANCE WITH ARTICLES 346 AND 348 OF THE NATIONAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY THE LOCAL ELECTRICAL CODE.

CONDUIT AND ELECTRIC METALLIC TUBING SHALL BE GALVANIZED STEEL.

THE CONDUIT SHALL BE INSTALLED PERPENDICULAR AND PARALLEL TO THE BUILDING LINES.

PVC CONDUIT SHALL BE ACCEPTABLE ONLY IF ALLOWED BY LOCAL CODE. FOLLOW ALL LOCAL AND NATIONAL CODE REQUIREMENTS FOR INSTALLATION.

XIV. OUTLET BOXES

GENERALLY, OUTLET BOXES OF PROPER TYPE AND NOT LESS THAN 4 INCHES SQUARE OR OCTAGONAL, AS REQUIRED BY BUILDING CONDITIONS, SHALL BE PLACE AT ALL LIGHT, RECEPTACLE AND SWITCH OUTLETS. OUTLET BOXES SHALL BE FIRMLY SECURED IN PLACE AND SHALL BE SET TRUE, SQUARE AND FLUSH WITH THE FINISHED SURFACES. CONSTRUCTION TEAM SHALL MOVE ANY OUTLET BOX 5 FEET IN ANY DIRECTION WITHOUT COST, IF RELOCATED PRIOR TO INSTALLATION.

XV. WIRING DEVICES

SWITCHES SHALL BE OF THE AC HEAVY DUTY, 120/277 VOLT, FLUSH TOGGLE TYPE RATED AT 20 AMPERES AND UL APPROVED. ALL SWITCHES SHALL HAVE POLES AS REQUIRED AND SHALL BE SIMILAR TO LEVITON CS120. DEVICES TO BE WHITE ONLY. RECEPTACLES SHALL BE POLARIZED, GROUNDED, DUPLEX, RATED 20 AMPERES AND UL APPROVED. ALL GENERAL PURPOSE RECEPTACLES SHALL BE SIMILAR TO LEVITON Q920. ALL ISOLATED GROUND RECEPTACLES SHALL BE SIMILAR TO LEVITON UNLESS NOTED OTHERWISE. GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLES SHALL BE SIMILAR TO LEVITON 8895. RECEPTACLES SHALL BE MOUNTED 18" AFF OR AS NOTED. SWITCHES TO BE MOUNTED 42" AFF OR AS NOTED.

FLOOR BOXES PROVIDE HUBBEL PTF75DBRS2A

XVI. PLATES

SWITCH AND RECEPTACLE PLATES IN FINISHED AREAS SHALL BE WHITE. ALL PLATES IN SHOP AREA SHALL BE FORMED STEEL (GARVIN COVERS).

XVII. PANELBOARDS

1. GENERAL ELECTRIC

ALL NEW BREAKERS IN EXISTING PANELBOARDS SHALL MATCH THE TYPE AND INTERRUPTING CAPACITY OF THE EXISTING BREAKERS

PROVIDE UPDATED TYPEWRITTEN DIRECTORIES IN ALL EXISTING PANELBOARDS UTILIZED DURING THE REMODELING

IF REQUIRED THIS CONSTRUCTION TEAM SHALL FURNISH AND INSTALL ALL PANELBOARDS AND CABINETS, AS FOLLOWS:

PANELBOARDS SHALL BE DEAD FRONT, WITH CAPACITY AND VOLTAGE CHARACTERISTICS AS SHOWN ON THE SCHEDULES. MAIN BUS BARS SHALL BE ALUMINUM AND BASED ON A CURRENT DENSITY OF NOT MORE THAN 1000 AMPERES PER SQUARE INCH CROSS SECTION AND SHALL BE FULL CAPACITY THE ENTIRE LENGTH OF THE PANEL. BUSSING SHALL BE SEQUENCED SO AS TO PERMIT THE INSTALLATION OF FUSIBLE SWITCHES OR 1, 2, AND 3 POLE BREAKERS AT ANY LOCATION. LUGS SHALL BE SUITABLE FOR COPPER CABLE.

COPPER GROUND BUS BAR

FUSIBLE SWITCHES SHALL BE 3 POLE, SEPARATE COMPARTMENT WITH CLASS RK1 FUSE CLIPS.

CIRCUIT BREAKERS SHALL BE QUICK-MADE, QUICK-BREAK, SWITCHING DUTY RATED FOR 20A BREAKERS, TRIP INDICATING AND AMBIENT COMPENSATED, WITH COMMON TRIP ON MULTI-POLE BREAKERS. CIRCUIT BREAKERS SHALL BE BOLT-ON CONNECTED TO THE PANELBOARD. MINIMUM INTERRUPTING CAPACITY SHALL BE 10,000 AIC FOR 120/208 VOLT CIRCUIT BREAKERS. (PLUG-IN BREAKERS ARE NOT APPROVED.)

PANELBOARD BOXES SHALL BE CODE GAUGE, GALVANIZED SHEET STEEL WITH 4 INCH MINIMUM SIZE GUTTERS AND 5 INCH MINIMUM END GUTTERS. SHALL NOT EXCEED 78 INCHES ABOVE FINISHED FLOOR.

EACH BRANCH CIRCUIT SHALL BE DISTINCTLY NUMBERED. PANELBOARD WIRING SHALL BE TAGGED AT EACH BREAKER WITH PROPER CIRCUIT NUMBER. WRAP AROUND TAPES (BRADY TAGS) WILL BE ACCEPTABLE.

PANELBOARDS SHALL CONFORM TO LATEST REQUIREMENT OF THE NATIONAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY THE LOCAL ELECTRICAL CODE, UNDERWRITER'S LABORATORIES AND NEMA AND SHALL DISPLAY A SERVICE ENTRANCE LABEL WHERE APPLICABLE. EACH PANELBOARD SHALL BE LEFT WITH A TYPEWRITTEN DIRECTORY, IDENTIFYING EACH LOAD, AFFIXED TO THE INSIDE COVER OF THE PANELBOARD.

PROVIDE PERMANENT IDENTIFICATION NAMEPLATE ON ALL PANELBOARDS AND DISTRIBUTION PANELS. AT FUSIBLE DISTRIBUTION PANELS PROVIDE NAMEPLATE AT EACH PIECE OF EQUIPMENT.

XVIII. FIRE STOPPING

THE CONSTRUCTION TEAM SHALL FIRE STOP ALL PENETRATIONS THRU FIRE RATED WALLS, PARTITIONS, ROOFS AND/OR FLOORS SO THAT THE INTEGRITY OF THE FIRE RATING IS NOT COMPROMISED BY THE CONSTRUCTION TEAM'S INSTALLATION OF ANY BOX, CABLE TRAY, RACEWAY AND/OR CONDUIT. FIRE STOPPING METHODS AND MATERIALS SHALL CONFORM TO LOCAL CODE AUTHORITY REQUIREMENTS. AS A MINIMUM, CONSTRUCTION TEAM SHALL GROUT AROUND ALL BOXES, CABLE TRAYS, RACEWAYS, CONDUITS, ETC., IN PENETRATION RATED PARTITION/FLOOR CONSTRUCTION WITH NON-SHRINK GROUT SO THAT ALL OPEN SPACES ARE FILLED IN SOLIDLY.

THE CONSTRUCTION TEAM SHALL PROVIDE SUITABLY RATED LIGHTING FIXTURES OR UTILIZE APPROVED MATERIALS AND METHODS TO MAINTAIN THE INTEGRITY OF THE FIRE RATED CEILING. CONSTRUCTION TEAM SHALL REFER TO ARCHITECTURAL PLANS FOR THE LOCATION OF ALL FIRE RATED CEILINGS, PARTITIONS AND WALLS.

XIX. BALANCING

THE SYSTEM OF FEEDERS AND BRANCH CIRCUITS FOR POWER AND LIGHTING SHALL BE CONNECTED IN SUCH A MANNER THAT THE CONNECTED LOADS ARE BALANCED ELECTRICALLY ON THE THREE PHASES AS CLOSELY AS POSSIBLE (WITHIN 10 PERCENT) SHOULD THE BALANCE COMPANY FIND AN UNFAVORABLE OPERATING CONDITION, REACTING ON THE SERVICE, THE CONSTRUCTION TEAM SHALL MAKE SUCH CHANGES REQUIRED TO BALANCE THE LOAD WITHOUT ADDITIONAL COST TO THE OWNER.

XX. TESTING AND ADJUSTMENTS

ALL WORK SHALL BE TESTED BY CONSTRUCTION TEAM. ALL MATERIAL, LABOR AND EQUIPMENT SHALL BE FURNISHED BY HIM TO ACCOMPLISH SUCH TESTS AS ARE REQUIRED BY THE ARCHITECT/OWNER.

UPON COMPLETION OF THIS WORK, THE PROJECT SHALL BE FREE FROM SHORT CIRCUITS AND GROUNDS AND A THOROUGH TEST SHALL BE MADE. ALL OVERLOAD DEVICES, INCLUDING THOSE FURNISHED UNDER OTHER CONTRACTS SHALL BE ADJUSTED TO SUIT LOAD CONDITIONS BY CONSTRUCTION TEAM. ALL SYSTEMS SHALL BE TESTED AND THEIR OPERATION DEMONSTRATED.

LIGHTING EQUIPMENT SHALL BE ADJUSTED TO THE SATISFACTION OF THE OWNER.

XXI. LIGHTING FIXTURES

LIGHT FIXTURES SHALL BE PROVIDED AS SPECIFIED ON DRAWINGS. ALL FIXTURES SHALL BE HUNG AND MOUNTED IN PLACE, PROPERLY WIRED, TESTED AND LEFT READY FOR OPERATION BY THE CONSTRUCTION TEAM.

HANGING DEVICES, BRACKETS, ENCLOSURES AND OTHER ACCESSORIES SHALL BE PROVIDED FOR A COMPLETE INSTALLATION AND SHALL BE INSTALLED BY THE CONSTRUCTION TEAM. ALL WIRES SHALL BE HUNG PLUMB AND SET SQUARE AGAINST THE WALL OR CEILING OR SUSPENDED AS DESIGNATED.

MOUNTING HEIGHT OF ALL FIXTURES SHALL BE CONFIRMED BEFORE INSTALLATION.

FIXTURES SHALL BE COMPLETE WITH BASE, GLASSWARE, REFLECTORS, LAMPS, HOLDERS AND ACCESSORIES. FIXTURES SHALL BE COMPLETELY WIRED ACCORDING TO CODE. MINIMUM WIRE SIZE PERMITTED IN FIXTURE WHIPS IS #14 AWG. FLUORESCENT FEATURES SHALL BE COMPLETE WITH NOISE FREE, HIGH POWER FACTOR, ENERGY SAVING RAPID START BALLASTS

WITH INTERNAL PROTECTION AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY THE LOCAL ELECTRICAL CODE. ALL FIXTURES SHALL CARRY THE UL LABEL.

WHERE LOCATED BENEATH DUCTWORK, THE CONSTRUCTION TEAM IS PROHIBITED FROM PUNCTURING THE DUCTWORK OR MOUNTING FIXTURES DIRECTLY TO THE DUCTWORK. THE CONSTRUCTION TEAM MAY MOUNT THE LIGHTING FIXTURES TO THE DUCTWORK SUPPORT MEMBERS.

ALL EXIT SIGNS, NIGHT LIGHTS, AND EMERGENCY EGRESS LIGHTING SHALL BE BATTERY BACKUP. BATTERY SHALL PROVIDE A MINIMUM OF 90 MINUTES OF RUN TIME FOR ALL EMERGENCY LIGHTING.

CONSTRUCTION TEAM TO SUBMIT SHOP DRAWINGS ON THIS ITEM.

XXII. INFORMATION SYSTEM

UNLESS NOTED OTHERWISE, THE CONSTRUCTION TEAM SHALL FURNISH AND INSTALL BACKBOXES WITH BLANK COVER PLATES AND 3/4" CONDUIT WITH PULLWIRE STUBBED INTO ACCESSIBLE CEILING SPACE FOR TELEPHONE AND DATA WIRING BY OTHERS. COORDINATE LOCATIONS WITH LOW VOLTAGE CONTRACTOR.

XXIII. FIRE ALARM

PROVIDE NEW EQUIPMENT AS REQUIRED.

XXIV. FIRE ALARM

- ALL DEVICES SHALL BE TESTED FOR SYNCHRONIZATION.
- WIRING SHALL BE #14 AWG.

XXV. GUARANTEE

THE CONSTRUCTION TEAM SHALL UNCONDITIONALLY GUARANTEE IN WRITING ALL MATERIAL, EQUIPMENT AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY OWNER. THE CONSTRUCTION TEAM SHALL PROVIDE FREE SERVICE FOR ALL EQUIPMENT INVOLVED IN HIS CONTRACT DURING THIS GUARANTEE PERIOD.

THE GUARANTEE SHALL INCLUDE RESTORATION TO ITS ORIGINAL CONDITION OF ALL ADJACENT WORK THAT MUST BE DISTURBED IN FULFILLING THIS GUARANTEE.

ALL SUCH REPAIRS AND/OR REPLACEMENTS SHALL BE MADE WITHOUT DELAY AND AT THE CONVENIENCE OF THE OWNER.

XXVI. SUBSTITUTIONS

APPROVALS OF SUBSTITUTIONS, FOR "APPROVED EQUAL," MUST BE MADE IN WRITING AND SUBSTITUTIONS MUST BE APPROVED BEFORE INSTALLATION. INSTALLATION WITHOUT PRIOR APPROVAL MAY RESULT IN CONSTRUCTION TEAM REMOVING SUBSTITUTION AND REPLACING IT WITH SPECIFIED ITEM AT HIS EXPENSE.

APPROVAL MAY BE GIVEN BY ARCHITECT OR OWNER.

XXVII. DISCONNECTS

LOCAL DISCONNECT SWITCHES FOR ELECTRICALLY OPERATED EQUIPMENT SHALL BE HEAVY DUTY WITHIN ENCLOSURE SUITABLE FOR THE LOCATION. FUSIBLE DISCONNECT SWITCHES 800 AMPS AND LARGER SHALL BE BOLTED PRESSURE, LOAD-BREAK TYPE. FUSIBLE AND NON-FUSIBLE DISCONNECT SWITCHES 600 AMPS AND SMALLER SHALL BE QUICK-MAKE, QUICK-BREAK TYPE. MAIN SERVICE DISCONNECT SWITCHES/CIRCUIT BREAKERS SHALL BE SERVICE ENTRANCE RATED AS REQUIRED.

FUSIBLE DISCONNECT REQUIRED FOR EACH PV STRING WITHIN 5' OF ENTRANCE TO BUILDING. FUSIBLE DISCONNECTS TO BE SQUARE D H394N OR SIMILAR.

GENERAL NOTES

1. CONSTRUCTION TEAM SHALL FURNISH MATERIALS AND USE INSTALLATION METHODS SUITABLE FOR THE ENVIRONMENTAL CONDITIONS OF THE AREA IN WHICH EQUIPMENT, FIXTURES, AND DEVICES ARE INSTALLED.
2. ALL CONNECTIONS TO EQUIPMENT WHICH ARE SUBJECT TO VIBRATION OR MOVEMENT SHALL BE MADE WITH FLEXIBLE CONDUIT.
3. THE LOCATIONS SHOWN FOR ALL LIGHTING FIXTURES AND CEILING MOUNTED ELECTRICAL EQUIPMENT ARE DIAGRAMMATIC. EXACT LOCATION SHALL BE DETERMINED FROM THE REFLECTED CEILING PLANS AND/OR ON THE JOB SITE BY THE ARCHITECT/OWNER REPRESENTATIVES. IT SHALL BE THE CONSTRUCTION TEAM'S RESPONSIBILITY TO MAINTAIN CODE REQUIRED SPACING FOR ITEMS SUCH AS FIRE ALARM DEVICES.
4. CONSTRUCTION TEAM SHALL BE REQUIRED TO MAINTAIN THE FIRE RATED INTEGRITY OF FLOORS CEILINGS AND/OR WALL PARTITIONS. ALL PENETRATIONS THROUGH FIRE RATED BUILDING ELEMENTS SHALL BE EFFECTIVELY SEALED USING APPROVED MATERIALS AND METHODS. ALL LIGHTING FIXTURES MOUNTED IN FIRE RATED CEILINGS SHALL BE INSTALLED TO MAINTAIN THE INTEGRITY OF THE FIRE RATED CEILING USING APPROVED MATERIALS AND METHODS. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT CONSTRUCTION TYPES AND RATINGS.
5. DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF CONDUITS, RACEWAYS, ETC., AS SHOWN ON DRAWINGS, DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. EACH CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO THE BUILDING'S CONSTRUCTION. THE CONSTRUCTION TEAM SHALL BE RESPONSIBLE FOR ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
6. IT IS INTENDED THAT EQUIPMENT SHALL BE LOCATED SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS OF THE BUILDING, NOTWITHSTANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLEARNESS OF PRESENTATION.
7. CONSTRUCTION TEAM SHALL CHECK DRAWINGS OF OTHER TRADES TO VERIFY THAT SPACES IN WHICH THEIR WORK WILL BE INSTALLED ARE CLEAR OF OBSTRUCTION. WORK SHALL BE INSTALLED TO MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONSTRUCTION TEAM SHALL NOTIFY ARCHITECT/OWNER BEFORE PROCEEDING WITH THE INSTALLATION OF THEIR WORK.
8. CONSTRUCTION TEAM SHALL FURNISH OTHER TRADES ADVANCE INFORMATION AND/OR SHOP DRAWINGS ON LOCATIONS AND SIZES OF PIPING, DUCTWORK, CONDUIT, RACEWAYS, EQUIPMENT, FRAMES, BOXES, SLEEVES AND OPENINGS, ETC. NEEDED FOR THEIR WORK TO PERMIT OTHER TRADES AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.
9. WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS AND MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONSTRUCTION TEAMS SHALL VERIFY EXISTING LOCATIONS OF DEVICES AND EQUIPMENT WITH FIELD CONDITIONS. SHOP DRAWINGS, AND WORK OF OTHER TRADES PRIOR TO ROUGH-IN. EACH CONSTRUCTION TEAM SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL AND REINSTALLATION OF ANY PART OF THEIR WORK IF SAME WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.
10. CONSTRUCTION TEAM SHALL PROVIDE SLEEVES IN BEAMS, FLOORS, COLUMNS AND WALLS AS SHOWN ON THE DRAWINGS, AS REQUIRED BY JOB SITE CONDITIONS, AND/OR AS SPECIFIED, WHEN INSTALLING THEIR WORK. ALL BEAMS AND COLUMNS WHICH ARE REQUIRED TO BE SEALED SHALL BE CUT AND REINFORCED AS REQUIRED BY FIELD CONDITIONS AND LOCATIONS AND SIZES SHALL BE CHECKED AND APPROVED BY ARCHITECT BEFORE CONSTRUCTION TEAM CUTS ANY STRUCTURAL BUILDING MEMBER.
11. THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT AND IN STRICT ACCORDANCE WITH ARCHITECT/OWNER AND OWNERS STIPULATION AS DIRECTED.
12. CONSTRUCTION TEAM SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL CONTRACT DRAWINGS (BEFORE SUBMITTING THEIR BIDS) TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE GENERAL CONTRACTORS WORK, CEILING HEIGHTS AND CLEARANCE FOR INSTALLING THEIR WORK.
13. CONSTRUCTION TEAM SHALL BE RESPONSIBLE AND PAY FOR ALL CORING, CUTTING, PATCHING, REPAIRING, REFINISHING AND REMOVAL/REPLACEMENT OF NEW BUILDING CONSTRUCTION REQUIRED TO ACCOMMODATE THE INSTALLATION OR REMOVAL OF THEIR WORK. ALL PATCHING, REPAIRING AND REFINISHING WORK SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE ADJACENT CONSTRUCTION AS CLOSELY AS POSSIBLE. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY EXISTING BUILDING CONSTRUCTION OR ITEMS THAT ARE TO REMAIN. ANY EXISTING FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK OR REMOVAL OF EXISTING WORK SHALL BE REPAIRED, REPLACED AND PAID FOR BY THE INSTALLING CONTRACTOR, TO THE SATISFACTION OF THE ARCHITECT AND OWNER. REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING BUILDING CONSTRUCTION THAT IS TO REMAIN AND, THEREFORE, SUBJECT TO PATCHING, REPAIRING, REFINISHING, AND REMOVAL/REPLACEMENT.
14. CONSTRUCTION TEAM SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPPORTING OF THEIR CONDUIT, EQUIPMENT, ETC. ALL SUPPORTING STEEL FOR ITEMS ABOVE A SUSPENDED CEILING SHALL BE FROM BUILDING STRUCTURAL MEMBERS ONLY.
15. UNLESS INDICATED OTHERWISE, THE ARCHITECT/OWNER MAKES NO REPRESENTATION AS TO WHETHER OR NOT ANY HAZARDOUS OR CONTAMINATED MATERIALS (INCLUDING BUT NOT LIMITED TO ASBESTOS, PCB'S, CONTAMINATED SOILS, ETC.) ARE PRESENT WITHIN THE EXISTING BUILDING OR ON THE SITE. WORK SHOWN ON THE DRAWINGS AND/OR INDICATED IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CALL FOR CONTACT WITH ANY OF THESE MATERIALS. IF THESE MATERIALS ARE ENCOUNTERED OR SUSPECTED, THE CONSTRUCTION TEAM SHALL NOT DISTURB THEM AND SHALL CONTACT THE ARCHITECT/OWNER IMMEDIATELY.
16. CONSTRUCTION TEAM SHALL STORE ALL MATERIALS AND EQUIPMENT SHIPPED TO THE SITE IN A PROTECTED AREA. IF MATERIAL IS STORED OUTSIDE OF THE BUILDING, IT MUST BE STORED OFF THE GROUND A MINIMUM OF SIX INCHES (6") SET ON 6 X 6 PLANKS AND/OR WOOD PALLET'S. ALL MATERIAL AND EQUIPMENT MUST BE COMPLETELY COVERED WITH WATERPROOF TARPS OR VISQUIN. ALL CONDUIT WILL HAVE THE ENDS CLOSED TO KEEP OUT DIRT AND OTHER DEBRIS. NO EQUIPMENT WILL BE ALLOWED TO BE STORED ON THE SITE UNLESS IT IS SITTING ON WOOD PLANKS AND COMPLETELY PROTECTED WITH WEATHER PROOF COVERS.
17. THE DRAWINGS, SCHEDULES AND SPECIFICATIONS HAVE BEEN PREPARED USING ONE MANUFACTURER FOR EACH PIECE OF EQUIPMENT AS THE BASIS FOR DIMENSIONAL DESIGN. IF THE CONSTRUCTION TEAM PURCHASES EQUIPMENT FROM A SPECIFIED ACCEPTABLE MANUFACTURER, BUT NOT THE SCHEDULED MANUFACTURER USED FOR THE BASE DESIGN, THE CONSTRUCTION TEAM SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED, PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH SUITABLE ACCESS AROUND EQUIPMENT FOR OPERATION AND MAINTENANCE OF THE EQUIPMENT. WHEN EQUIPMENT SUBMITTED FOR REVIEW DOES NOT MEET THE PHYSICAL SIZE OR ARRANGEMENT OF THAT SCHEDULED AND SPECIFIED, CONSTRUCTION TEAM SHALL PAY FOR ALL ALTERATIONS REQUIRED TO ACCOMMODATE SUCH EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER. CONSTRUCTION TEAM WILL ALSO PAY ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS, OWNER, ARCHITECT OR OWNER TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT TO FIT IN THE SPACE AND FUNCTION AS INTENDED.
18. CONSTRUCTION TEAM AND/OR MANUFACTURER SHALL VERIFY THAT THE CHARACTERISTICS OF THE EQUIPMENT HE SUBMITS FOR REVIEW MEET THE CAPACITY AND DUTY SPECIFIED.
19. CONSTRUCTION TEAM SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND THEIR ASSOCIATED FEES.
20. CONSTRUCTION TEAM SHALL PROVIDE WARRANTY FOR ALL MATERIAL AND GUARANTEE ALL WORKMANSHIP PROVIDED BY HIM FOR 1 (ONE) YEAR FROM SUBSTANTIAL COMPLETION OF WORK INVOLVED.



HOUSE
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MARK	DATE	DESCRIPTION
1	11/17/2016	90% DD SET
2	2/23/2017	100% CD SET
3	4/20/2017	PERMIT SET
4	8/10/2017	AS-BUILT SET

LOT NUMBER: LOT #109

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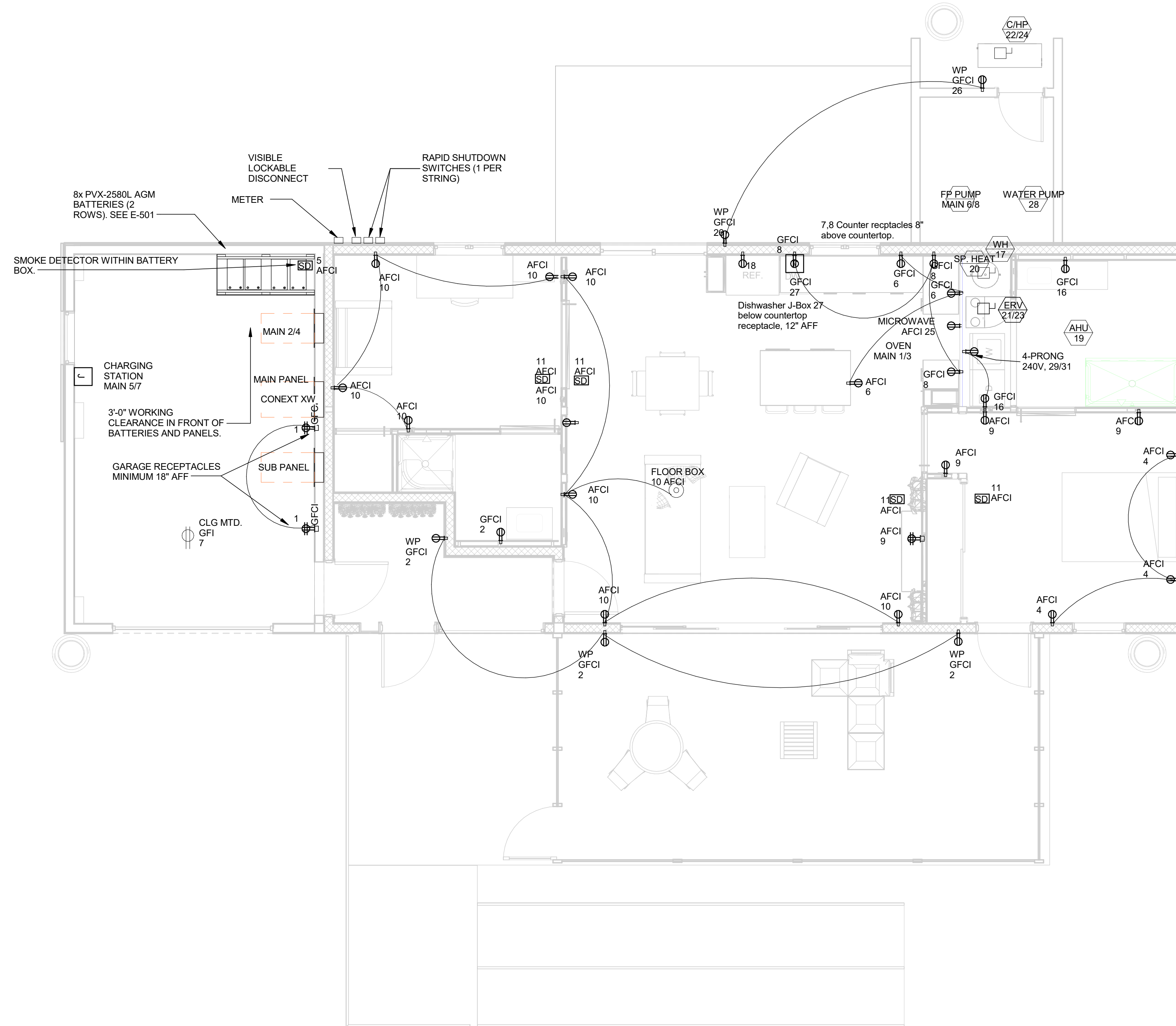
SHEET TITLE

GENERAL NOTES

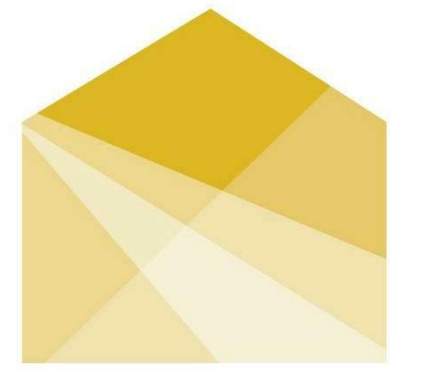
E-002

SHEET NOTES:

ALL RECEPTACLES TO BE THE TAMPER RESISTANT TYPE WITH THE EXCEPTION OF RECEPTACLES SUPPLYING APPLIANCES NOT EASILY MOVED.



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



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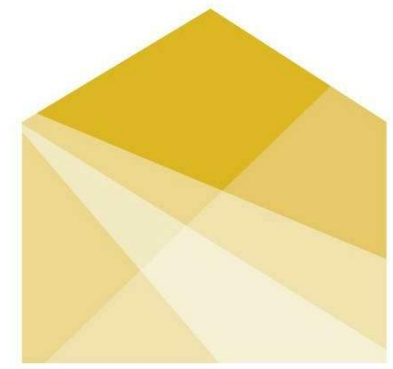
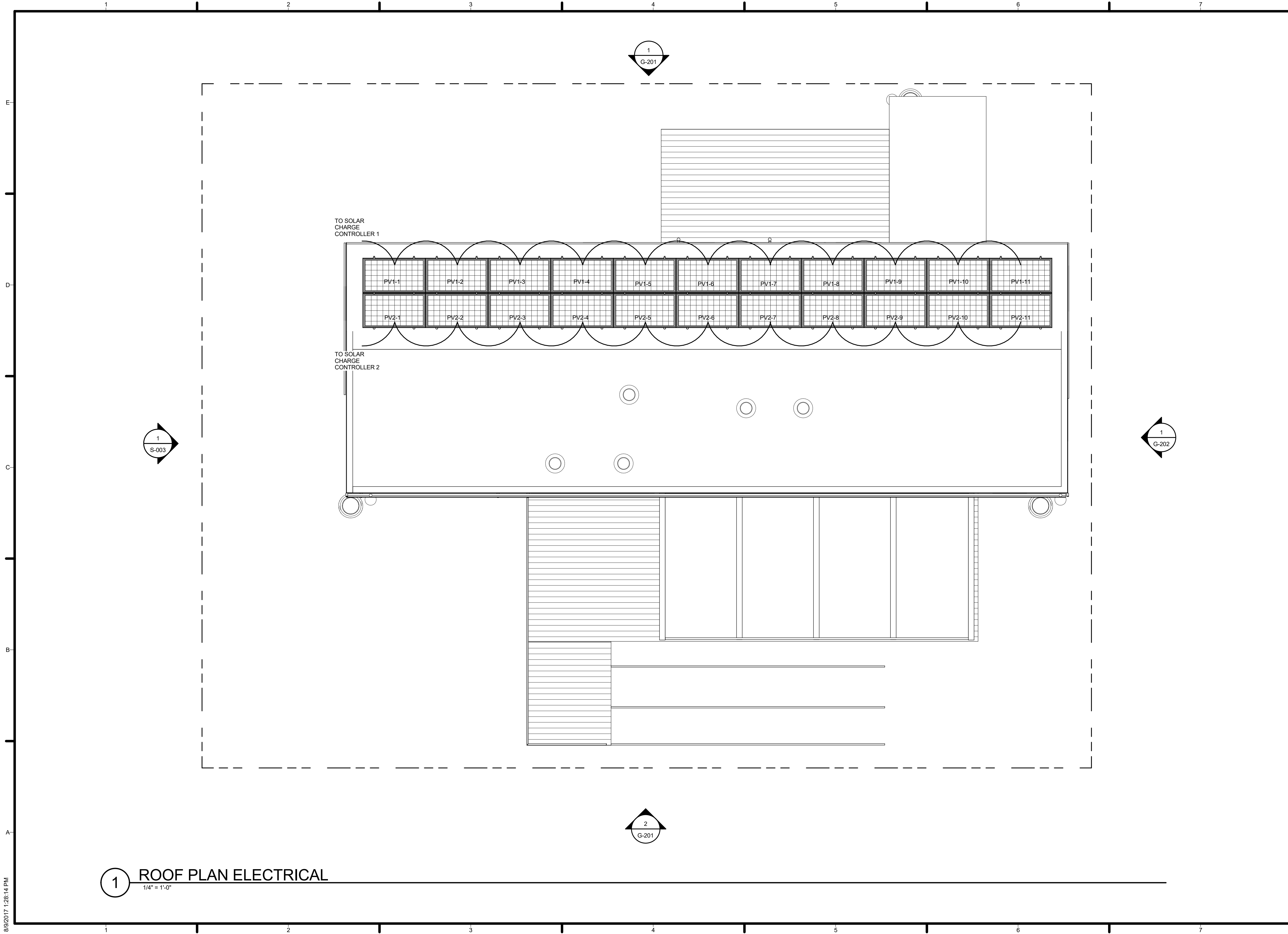
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**ELECTRICAL
DISTRIBUTION PLAN**

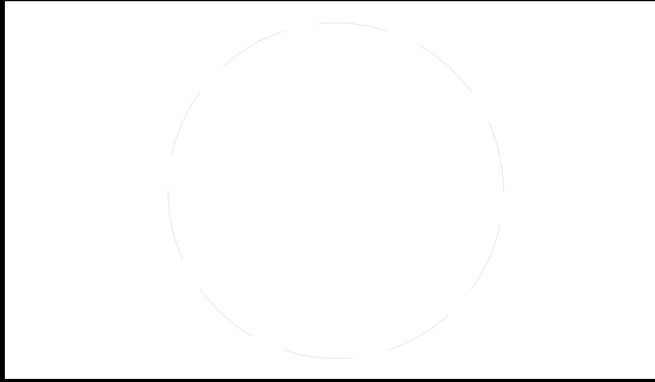
E-101



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SHEET TITLE
PV WIRING PLAN

E-102

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

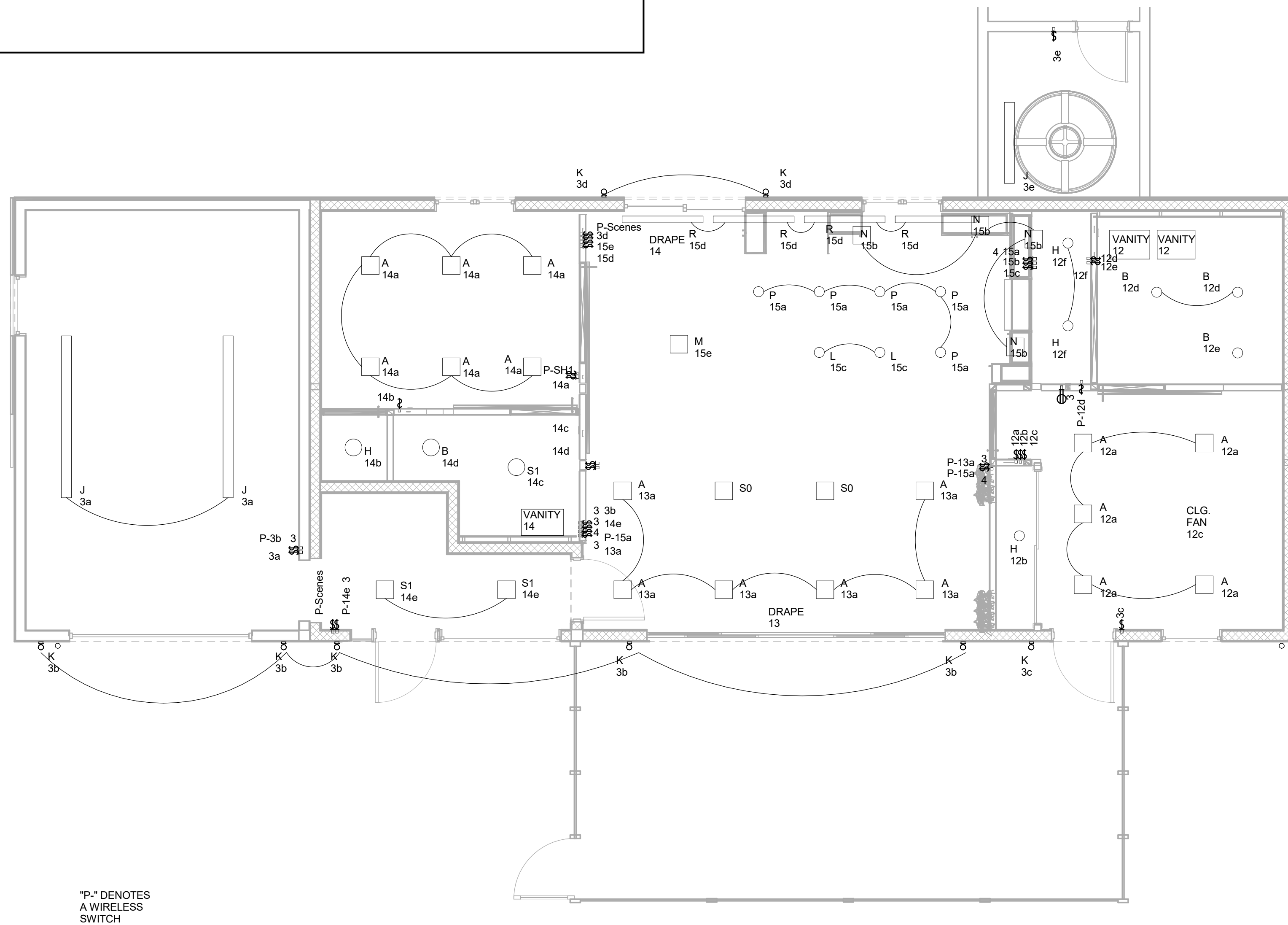
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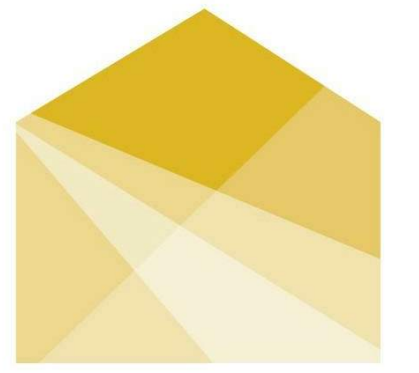
LIGHTING FIXTURE SCHEDULE

TYPE	CATALOG NUMBER	MANUFACTURER	Wattage	FIXTURE TYPE	LOAD TYPE	REMARKS
A	IC104AL-27K-F-1 / 42LHZ-WH	JUNO LIGHTING	17	Recessed Ceiling	ELV	Recessed Downlight
B	IC104AL-27K-F-1 / 41L-WH	JUNO LIGHTING	17	Recessed Ceiling	ELV	Lensed Recessed Downlight
E	L08-2-W30S-S-A-S-**-MA / (Driver = TLW120MT150)	MP LIGHTING	3	Recessed Floor	Mag LV	Outdoor Inground
H	4RLS-927-6-WH	JUNO LIGHTING	10	Surface Ceiling	ELV	Closet Light
J	ALR1-0-1-T-47-1-4-S-N-V-ST-K-N-W	GE LIGHTING	23	Surface Ceiling	0-10V Dimming	Garage Ceiling
K	12302TT	HINKLEY	15	Outdoor Surface Wall	ELV	Outdoor Coach Light
L	6125201EN-839	SEA GULL LIGHTING	10	Surface Pendant	ELV	1 Light Pendant / Island
M	5125205EN-839	SEA GULL LIGHTING	10	Kitchen Pendant	ELV	Kitchen Table Pendant
N	BOS-Length-30K-SO-F-S-SA-F1 / PSD96-24	LUMINII LIGHTING	3.2 Per Foot	Under Cabinet	Mag LV	Kitchen Undercabinet Lighting
O	59284	CASABLANCA	80	Surface Ceiling	Remote Control	Bedroom Ceiling Fan
P	T381L-27-HC-F-Color / T40F-Color	JUNO LIGHTING	13	Surface Ceiling	ELV	Adjustable Track Lighting
R	M-Length-27K-MO-LT-PR-Lx-Rx-xxx	LUMINII LIGHTING	3.2 Per Foot	Surface Uplight	Mag LV	Mainroom Linear Uplight

NOTES:
 1. COORDINATE MOUNTING METHODS WITH CONTRACTOR.
 2. CONFIRM ALL FINISHES WITH DESIGN TEAM.



1 ELECTRICAL - FIRST FLOOR - CEILING PLAN
 1/4" = 1'-0"



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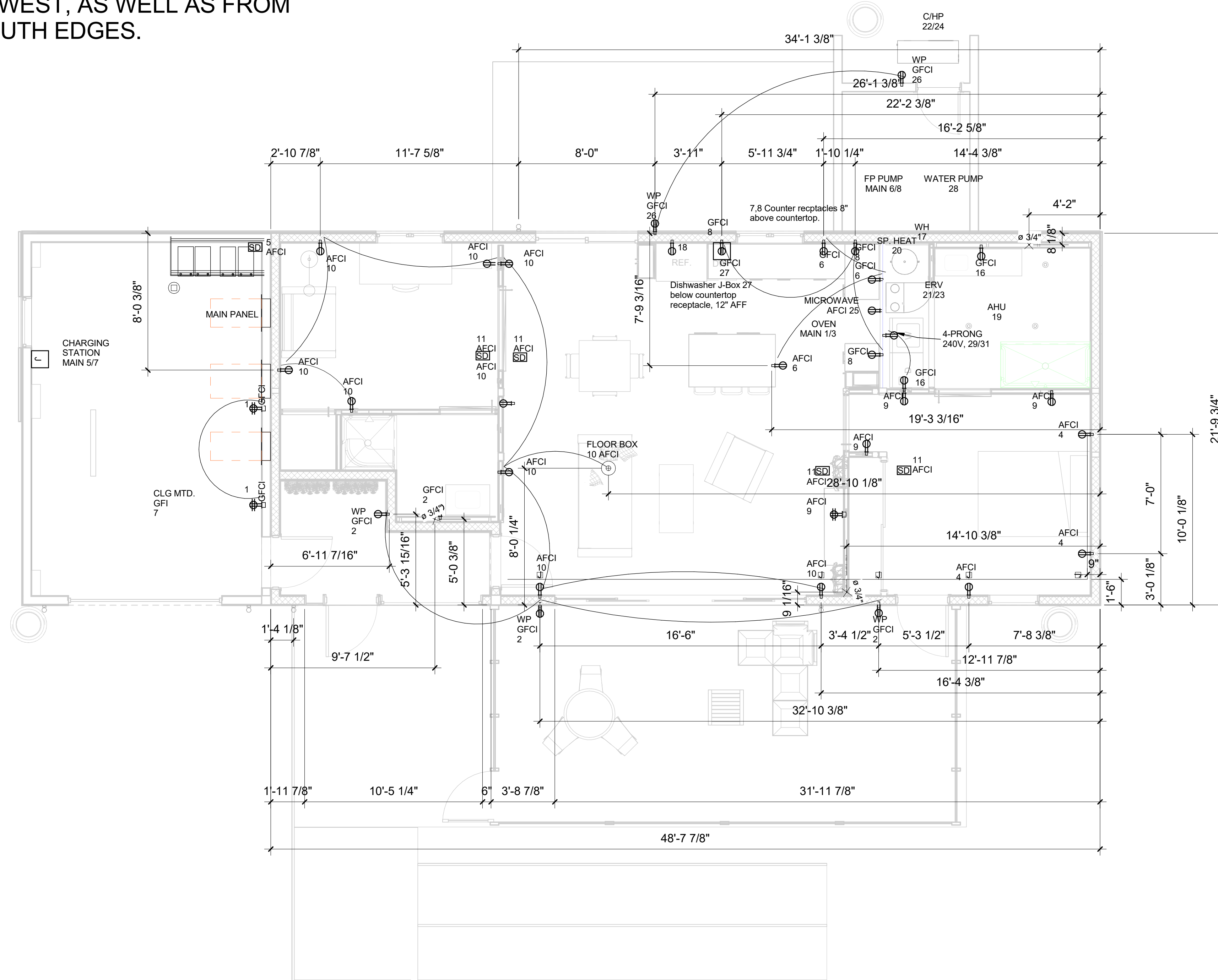
SHEET TITLE
LIGHTING PLAN

E-103

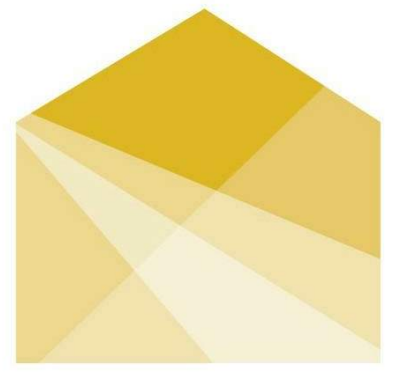
ALL DIMENSIONS ARE FROM EXTERIOR OF FLOOR FRAMING PLATFORM. DIMENSIONS FROM EAST ARE EQUALLY AS ACCURATE AS THOSE FROM THE WEST, AS WELL AS FROM THE NORTH OR SOUTH EDGES.

CLOUDED RECEPTACLES/FIXTURES REQUIRE UNDER-FLOOR CONDUIT.

CLOUDED 3/4" CONDUIT IN EACH MODULE CAN CONNECT TO IN-CEILING ELECTRICAL RATHER THAN CROSSING UNDER MODULE SEAMS



1 UNDER-FLOOR ELECTRICAL LOCATIONS
1/4" = 1'-0"



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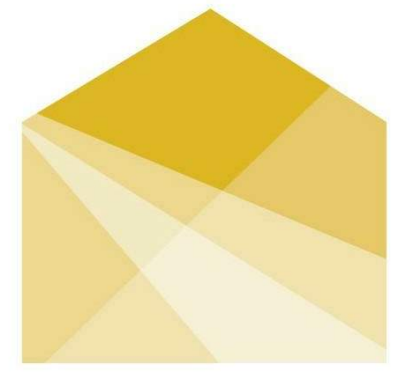


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SHEET TITLE
UNDER-FLOOR ELECTRICAL

E-104



HOUSE
by Northwestern

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4	8/10/2017	AS-BUILT SET

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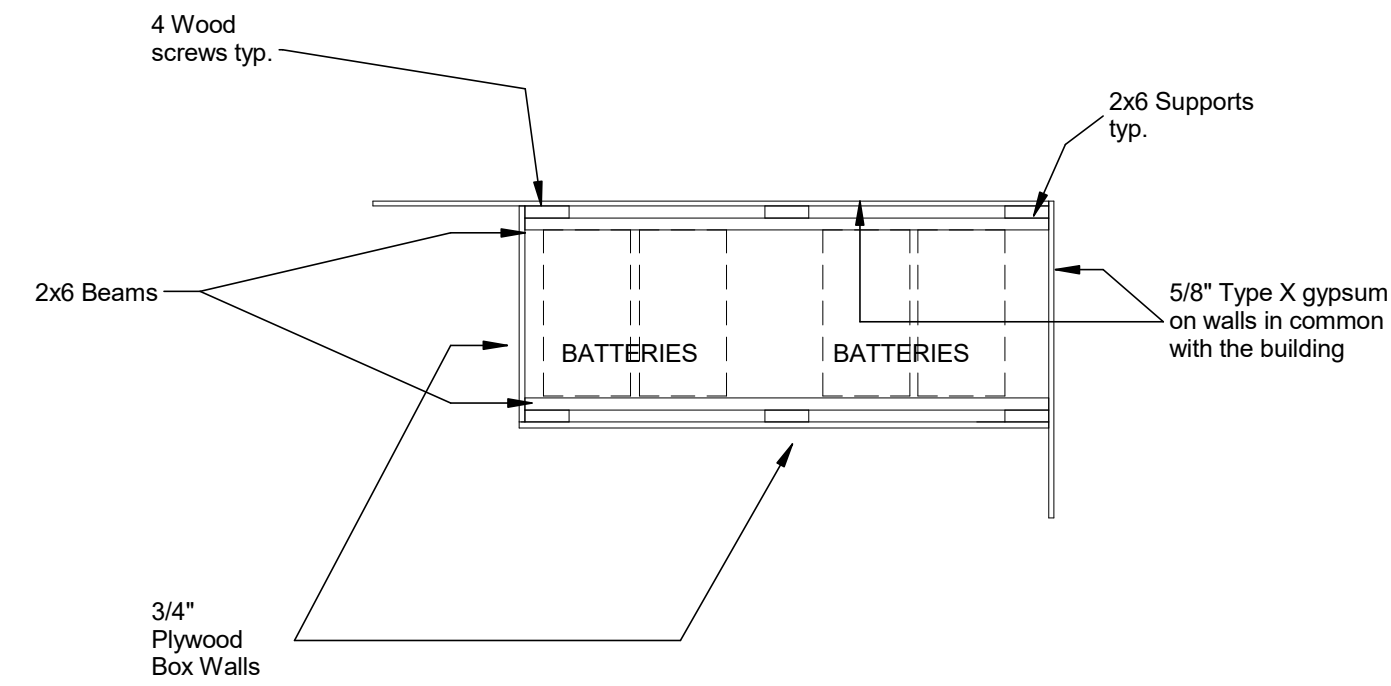
SHEET TITLE

ELECTRICAL DETAILS

E-501

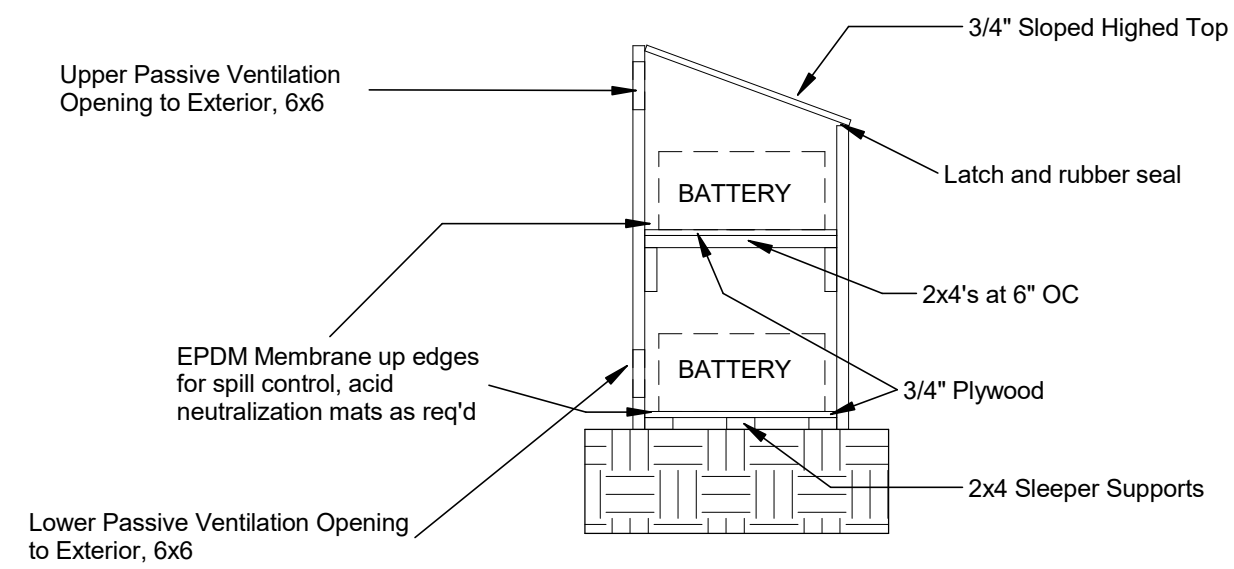
1 BATTERY BOX PLAN

1/2" = 1'-0"



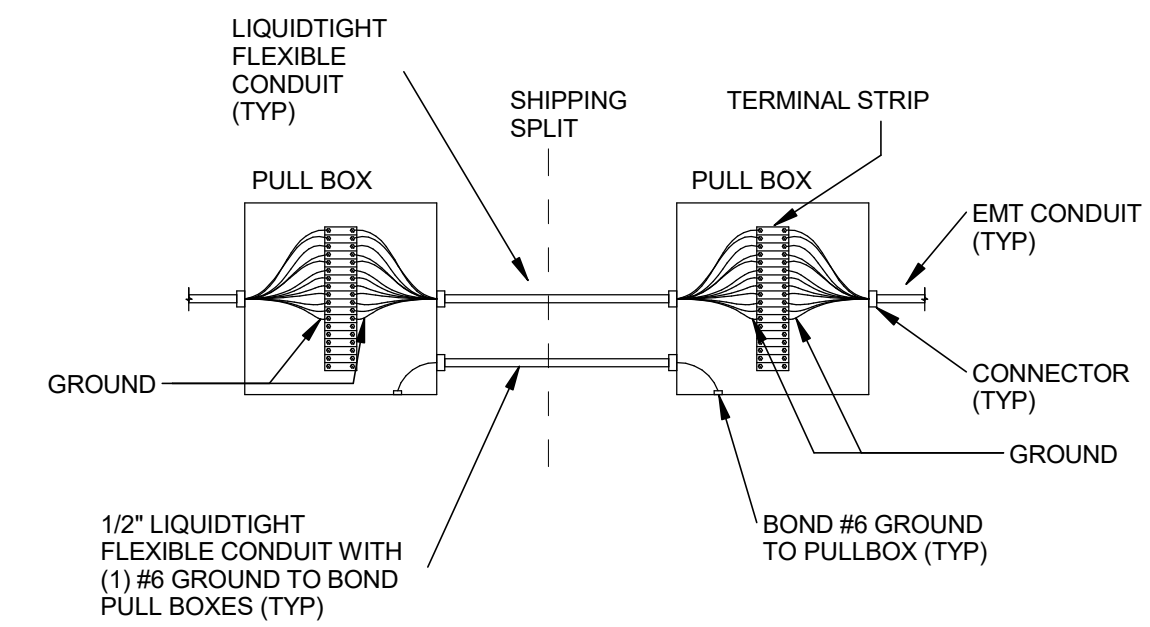
2 BATTERY BOX ELEVATION

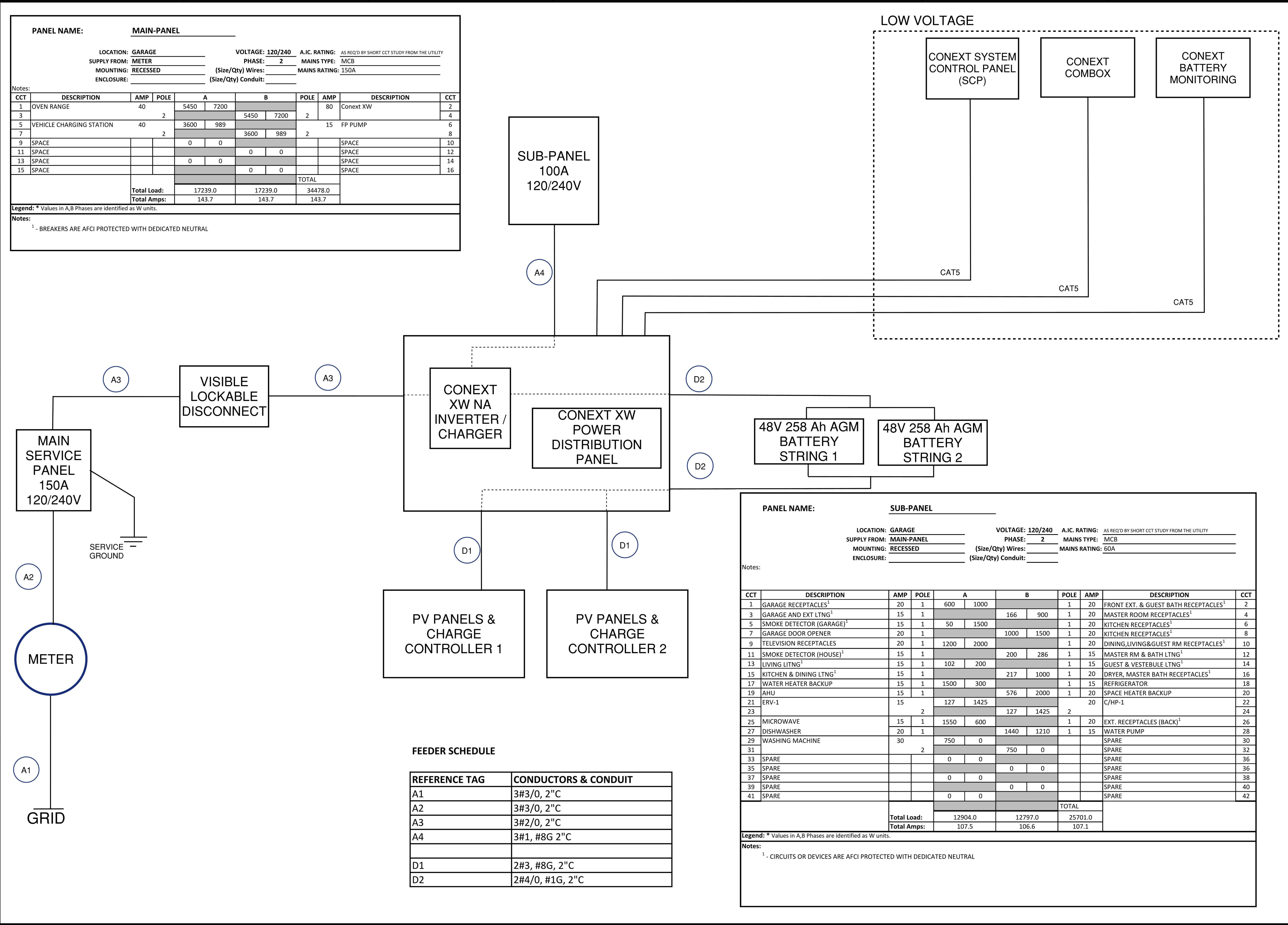
1/2" = 1'-0"



3 RACEWAY DETAIL AT SHIPPING SPLITS

1/2" = 1'-0"





PANEL NAME: MAIN-PANEL

LOCATION: GARAGE VOLTAGE: 120/240 A.I.C. RATING: AS REQ'D BY SHORT CCT STUDY FROM THE UTILITY
 SUPPLY FROM: METER PHASE: 2 MAINS TYPE: MCB
 MOUNTING: RECESSED (Size/Qty) Wires: MAINS RATING: 150A
 ENCLOSURE: (Size/Qty) Conduit:

Notes:

CCT	DESCRIPTION	AMP	POLE	A	B	POLE	AMP	DESCRIPTION	CCT
1	OVEN RANGE	40	2	5450	7200		80	Conext XW	2
3				5450	7200	2			4
5	VEHICLE CHARGING STATION	40	2	3600	989		15	FP PUMP	6
7				3600	989	2			8
9	SPACE			0	0			SPACE	10
11	SPACE			0	0			SPACE	12
13	SPACE			0	0			SPACE	14
15	SPACE			0	0			SPACE	16
				TOTAL					
Total Load:				17239.0	17239.0	34478.0			
Total Amps:				143.7	143.7	143.7			

Legend: * Values in A,B Phases are identified as W units.

Notes:
 1 - BREAKERS ARE AFCI PROTECTED WITH DEDICATED NEUTRAL

PANEL NAME: SUB-PANEL

LOCATION: GARAGE VOLTAGE: 120/240 A.I.C. RATING: AS REQ'D BY SHORT CCT STUDY FROM THE UTILITY
 SUPPLY FROM: MAIN-PANEL PHASE: 2 MAINS TYPE: MCB
 MOUNTING: RECESSED (Size/Qty) Wires: MAINS RATING: 60A
 ENCLOSURE: (Size/Qty) Conduit:

Notes:

CCT	DESCRIPTION	AMP	POLE	A	B	POLE	AMP	DESCRIPTION	CCT
1	GARAGE RECEPTACLES ¹	20	1	600	1000		20	FRONT EXT. & GUEST BATH RECEPTACLES ¹	2
3	GARAGE AND EXT LTNG ¹	15	1		166	900	1	MASTER ROOM RECEPTACLES ¹	4
5	SMOKE DETECTOR (GARAGE) ¹	15	1	50	1500		20	KITCHEN RECEPTACLES ¹	6
7	GARAGE DOOR OPENER	20	1		1000	1500	1	KITCHEN RECEPTACLES ¹	8
9	TELEVISION RECEPTACLES	20	1	1200	2000		20	DINING,LIVING&GUEST RM RECEPTACLES ¹	10
11	SMOKE DETECTOR (HOUSE) ¹	15	1		200	286	1	MASTER RM & BATH LTNG ¹	12
13	LIVING LTNG ¹	15	1	102	200		15	GUEST & VESTEBULE LTNG ¹	14
15	KITCHEN & DINING LTNG ¹	15	1		217	1000	1	DRYER, MASTER BATH RECEPTACLES ¹	16
17	WATER HEATER BACKUP	15	1	1500	300		15	REFRIGERATOR	18
19	AHU	15	1		576	2000	1	SPACE HEATER BACKUP	20
21	ERV-1	15	2	127	1425		20	C/HP-1	22
23			2		127	1425	2		24
25	MICROWAVE	15	1	1550	600		20	EXT. RECEPTACLES (BACK) ¹	26
27	DISHWASHER	20	1		1440	1210	1	WATER PUMP	28
29	WASHING MACHINE	30	2	750	0			SPARE	30
31			2		750	0		SPARE	32
33	SPARE			0	0			SPARE	36
35	SPARE			0	0			SPARE	36
37	SPARE			0	0			SPARE	38
39	SPARE			0	0			SPARE	40
41	SPARE			0	0			SPARE	42
				TOTAL					
Total Load:				12904.0	12797.0	25701.0			
Total Amps:				107.5	106.6	107.1			

Legend: * Values in A,B Phases are identified as W units.

Notes:
 1 - CIRCUITS OR DEVICES ARE AFCI PROTECTED WITH DEDICATED NEUTRAL

FEEDER SCHEDULE

REFERENCE TAG	CONDUCTORS & CONDUIT
A1	3#3/0, 2" C
A2	3#3/0, 2" C
A3	3#2/0, 2" C
A4	3#1, #8G 2" C
D1	2#3, #8G, 2" C
D2	2#4/0, #1G, 2" C

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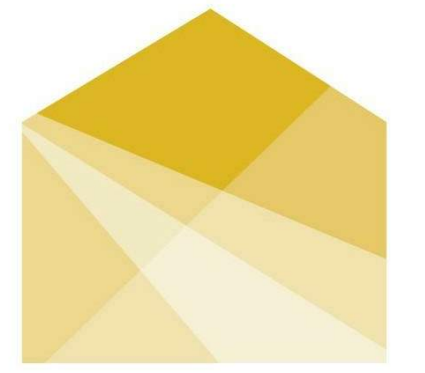
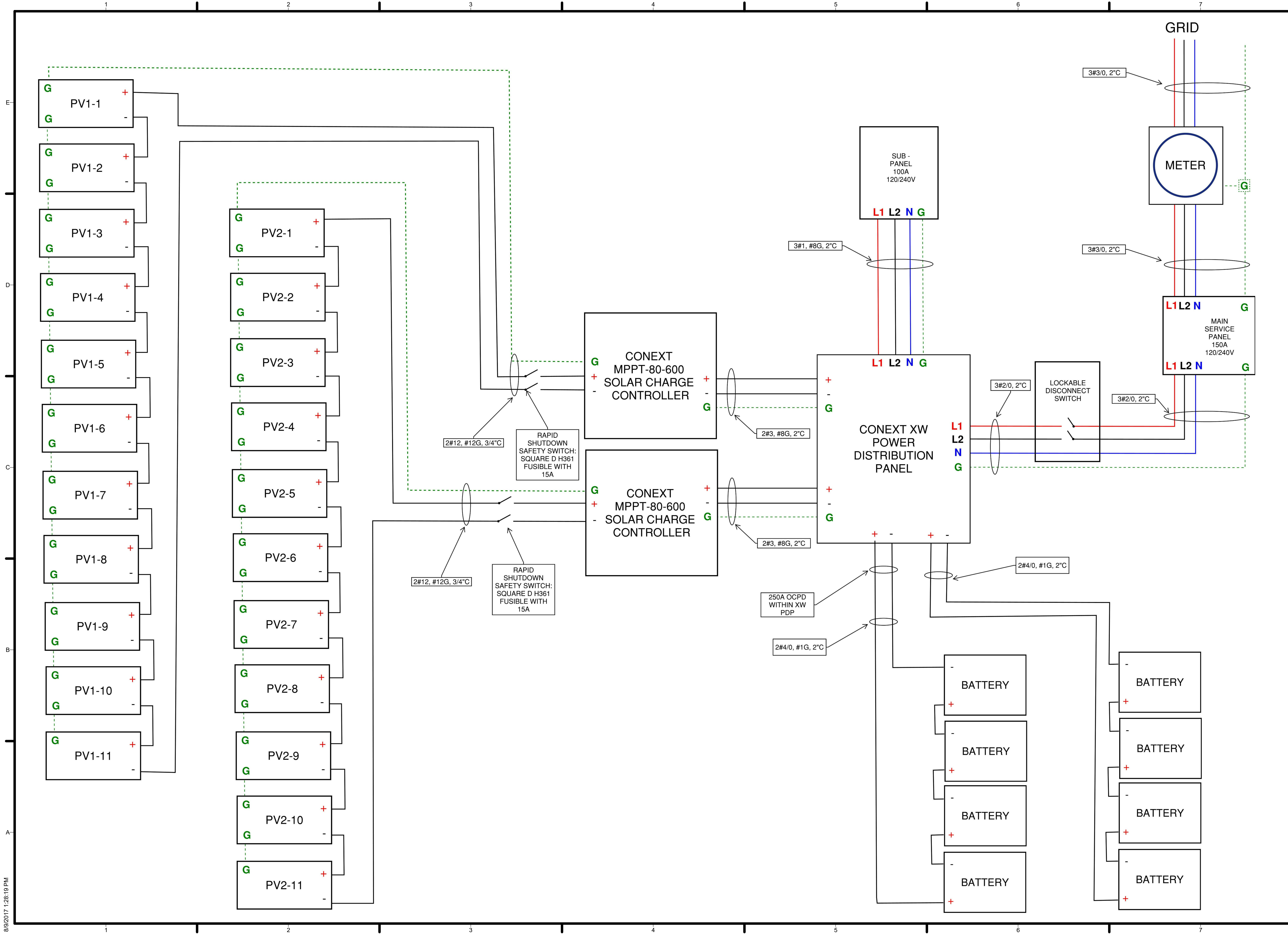
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SHEET TITLE:
ONE-LINE DIAGRAM

E-601



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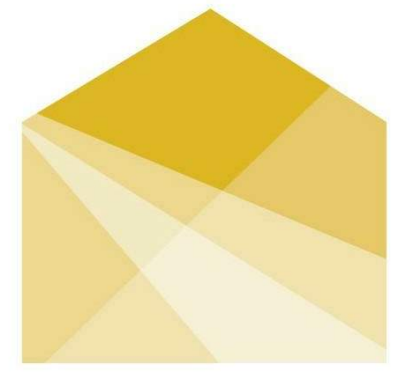
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SHEET TITLE
THREE-LINE DIAGRAM

E-602

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Table with 3 columns: MARK, DATE, DESCRIPTION. Contains schedule items 1-4.

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SHEET TITLE: ELECTRICAL EQUIPMENT SCHEDULES

E-603

PHOTOVOLTAIC EQUIPMENT table containing PV ARRAY SUMMARY, SOLARWORLD PHOTOVOLTAIC PANELS, CONEXT XW+ 6848 NA HYBRID INVERTER/CHARGER, CONEXT MPPT 80 600 SOLAR CHARGE CONTROLLER, and COMPLIANCE sections.

NEC 220 II & III SERVICE LOAD CALCULATION table listing items like Microwave, Refrigerator, Dishwasher, etc., with Reference, Unit, Quantity/Factor, and VA.

CALCULATIONS AND REDUCTIONS table showing demand factors, appliance reduction, and final Feeder Amperage of 139.02.

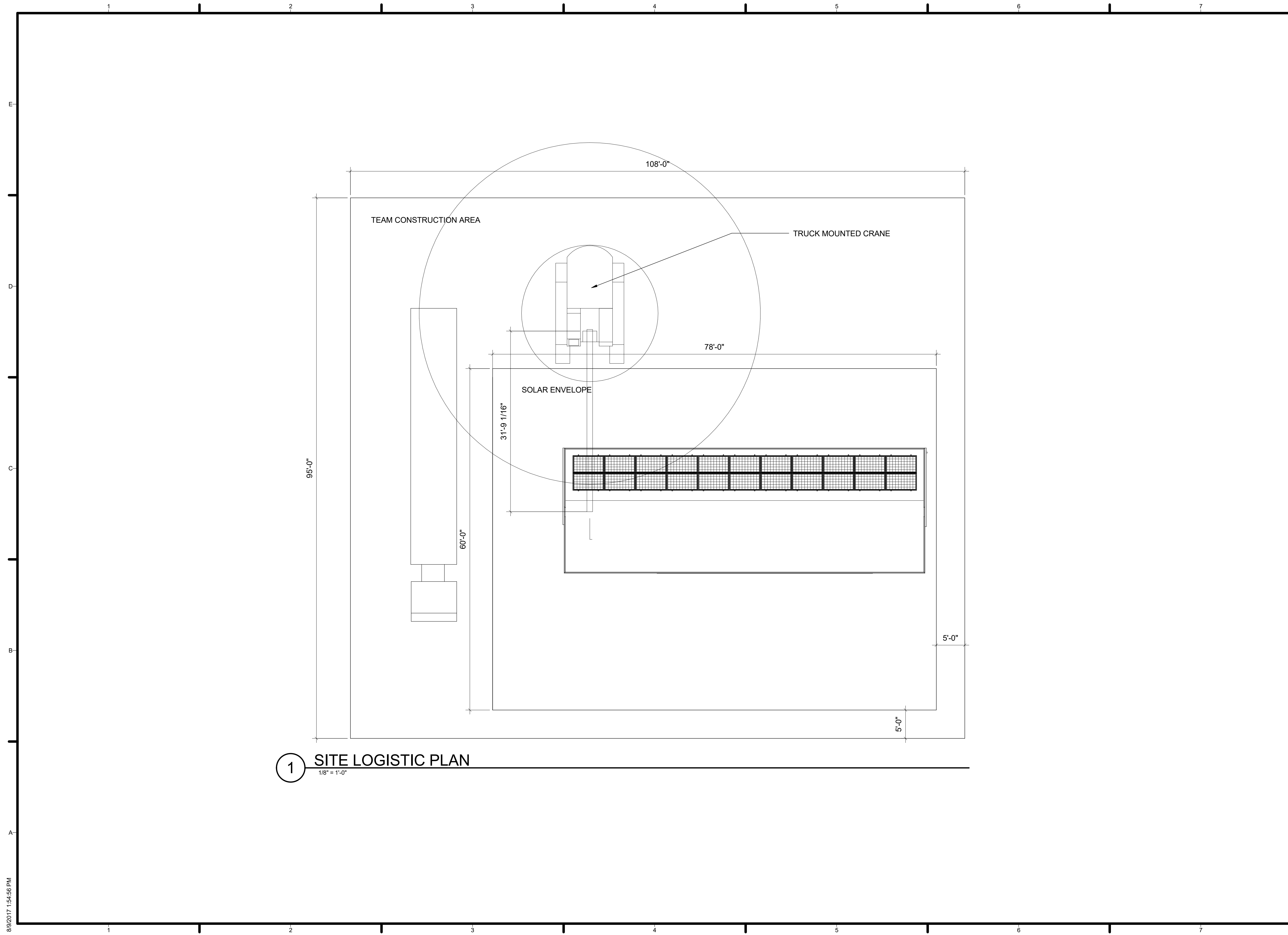
SUB-PANEL CALCULATION table showing Main Panel VA Load (33364.65) and Feeder Amperage (57.02).

MAXIMUM PHOTOVOLTAIC SYSTEM VOLTAGE - NEC 690.7 (A)

V_adj = V_OC * {1 + [(Min Temp (°C) - 25 (°C)) * Module Coefficient (%/°C)]} * # of modules in string
V_adj = 40.0 V * {1 + [(-23 (°C) - 25 (°C)) * -0.3 (%/°C)]} * 11
V_adj = 503.4 V

MAXIMUM CIRCUIT CURRENT - NEC 690.8 (A) & (B)

I_max = I_sc * 1.25
I_max = 10.1 A * 1.25
I_max = 12.6 A



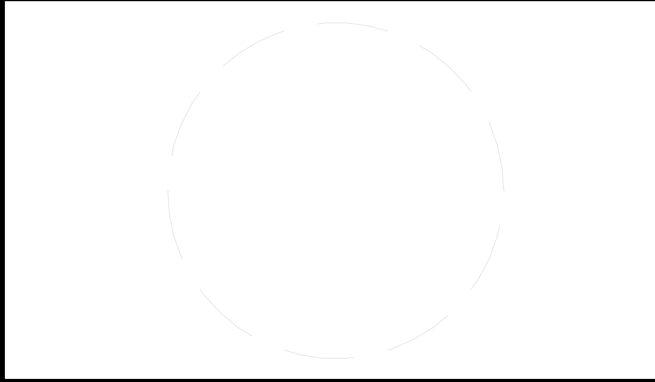
1 SITE LOGISTIC PLAN
1/8" = 1'-0"



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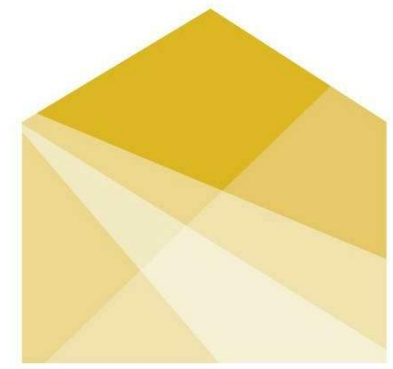
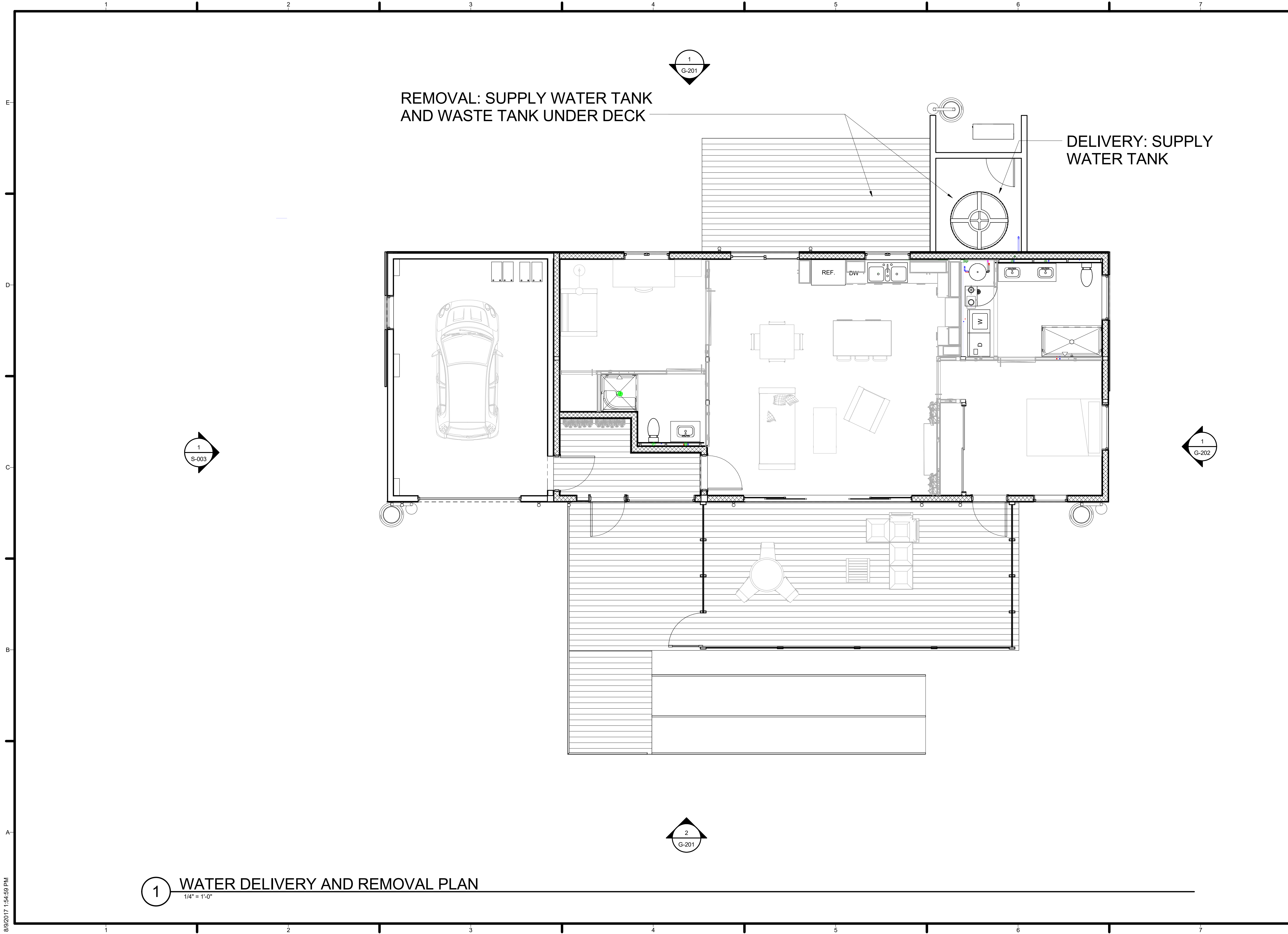


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SHEET TITLE
 SITE LOGISTIC PLAN

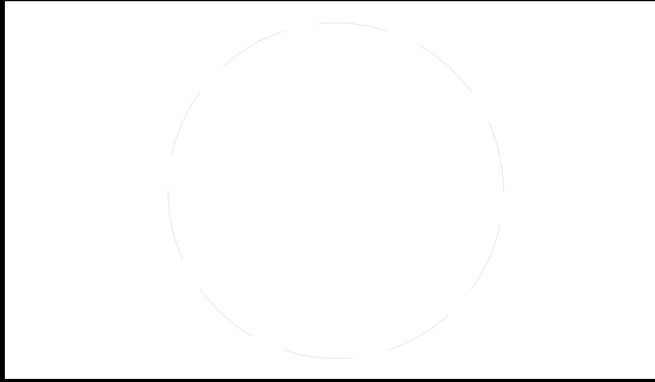
O-101



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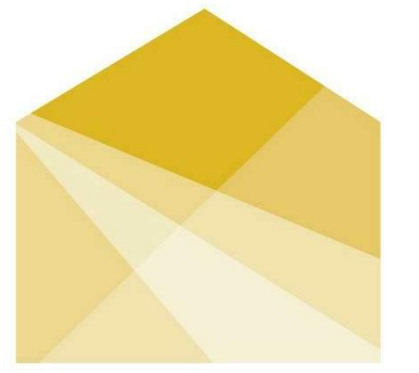
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SHEET TITLE
WATER DELIVERY AND REMOVAL

O-102

1 WATER DELIVERY AND REMOVAL PLAN
 1/4" = 1'-0"

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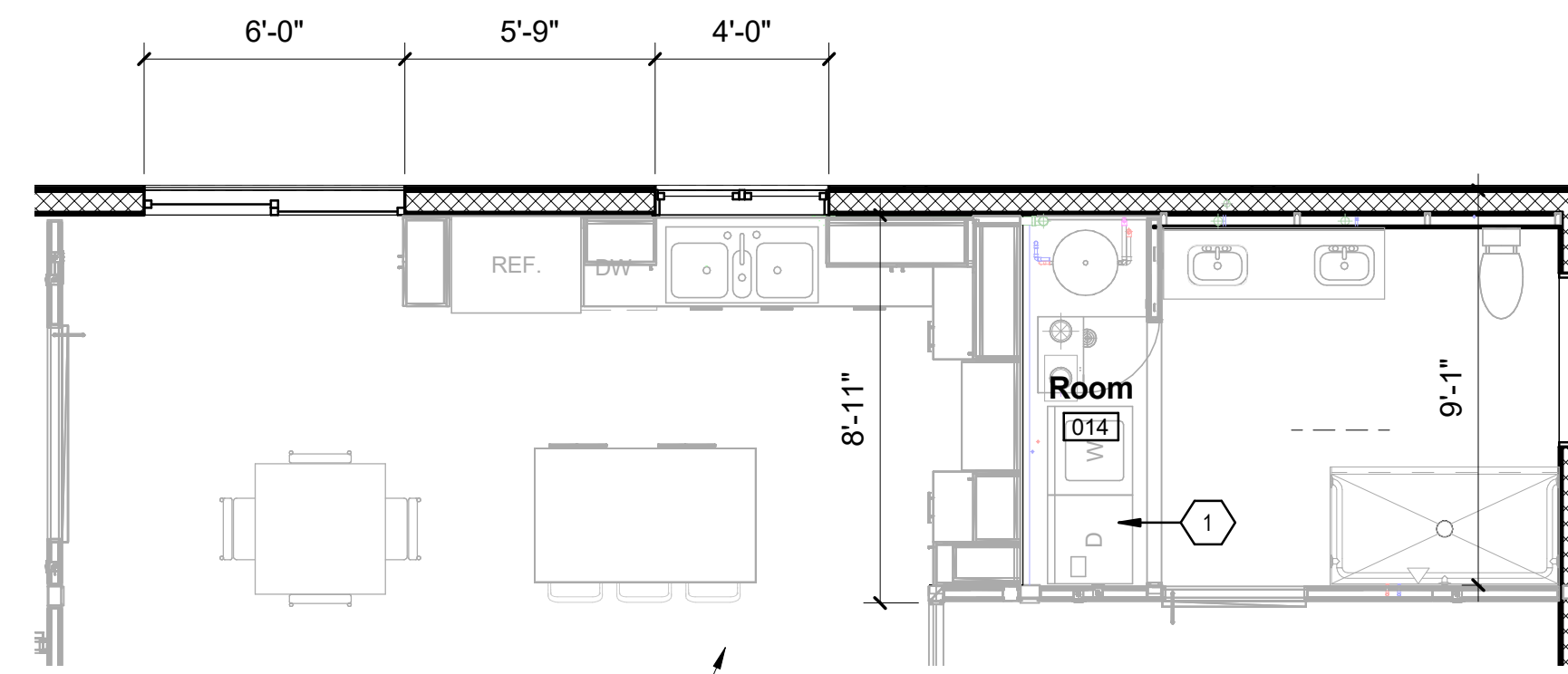


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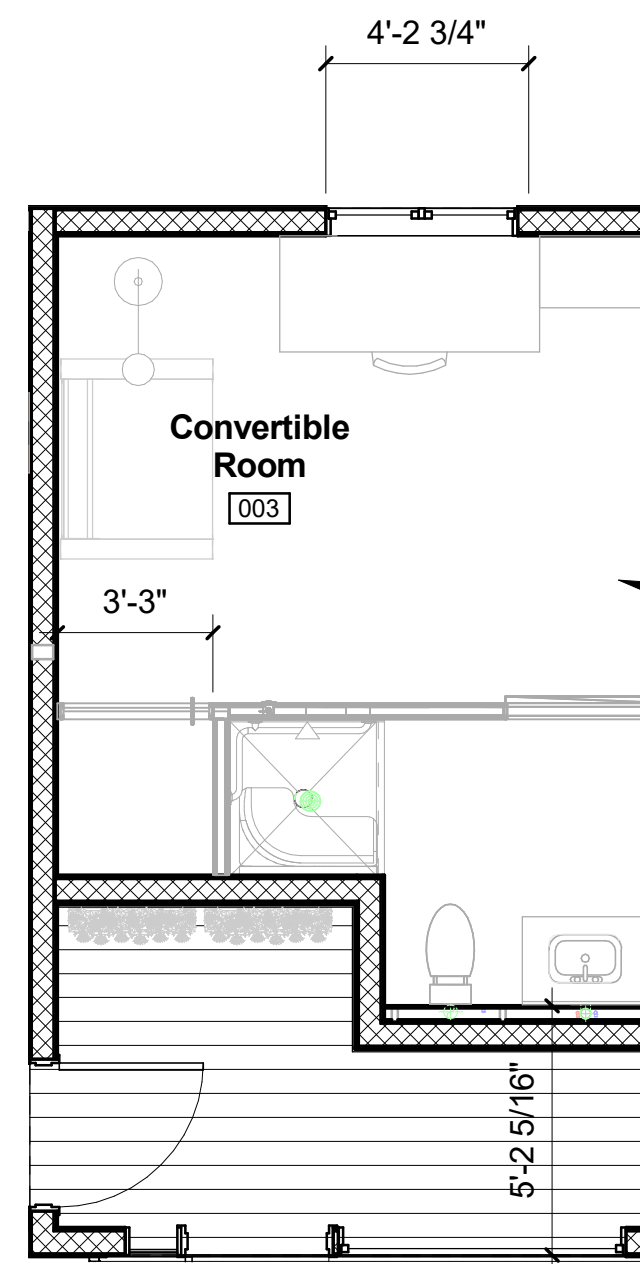
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SHEET TITLE
**MODULE LOGISTIC
PLANVIEW**

O-601

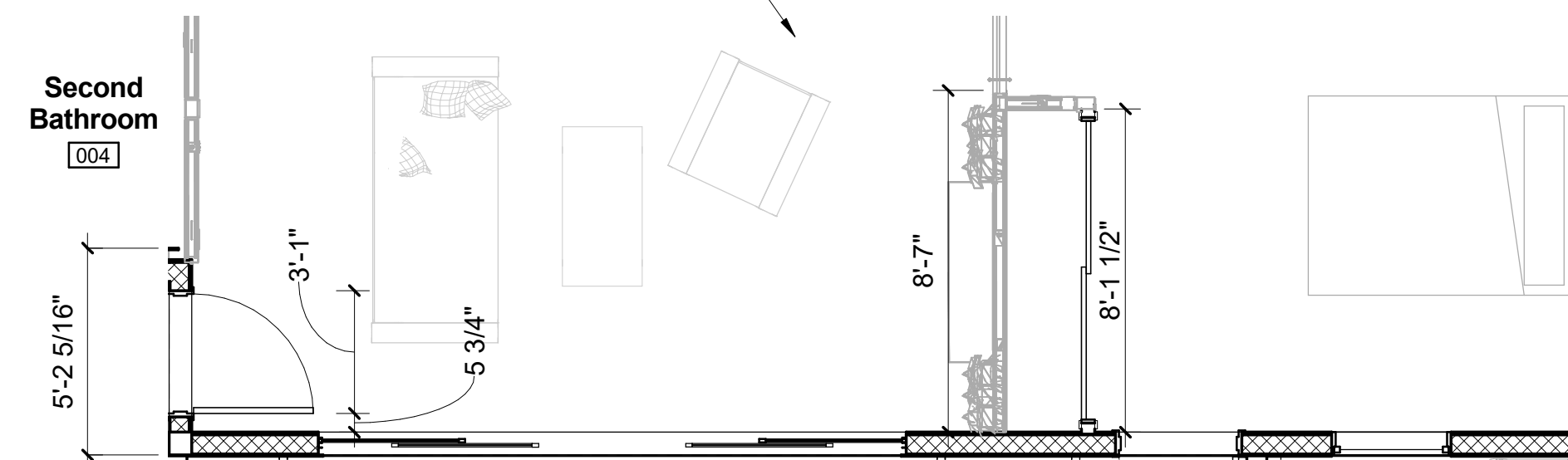


1 FIRST FLOOR PLAN - Module 1
1/4" = 1'-0"

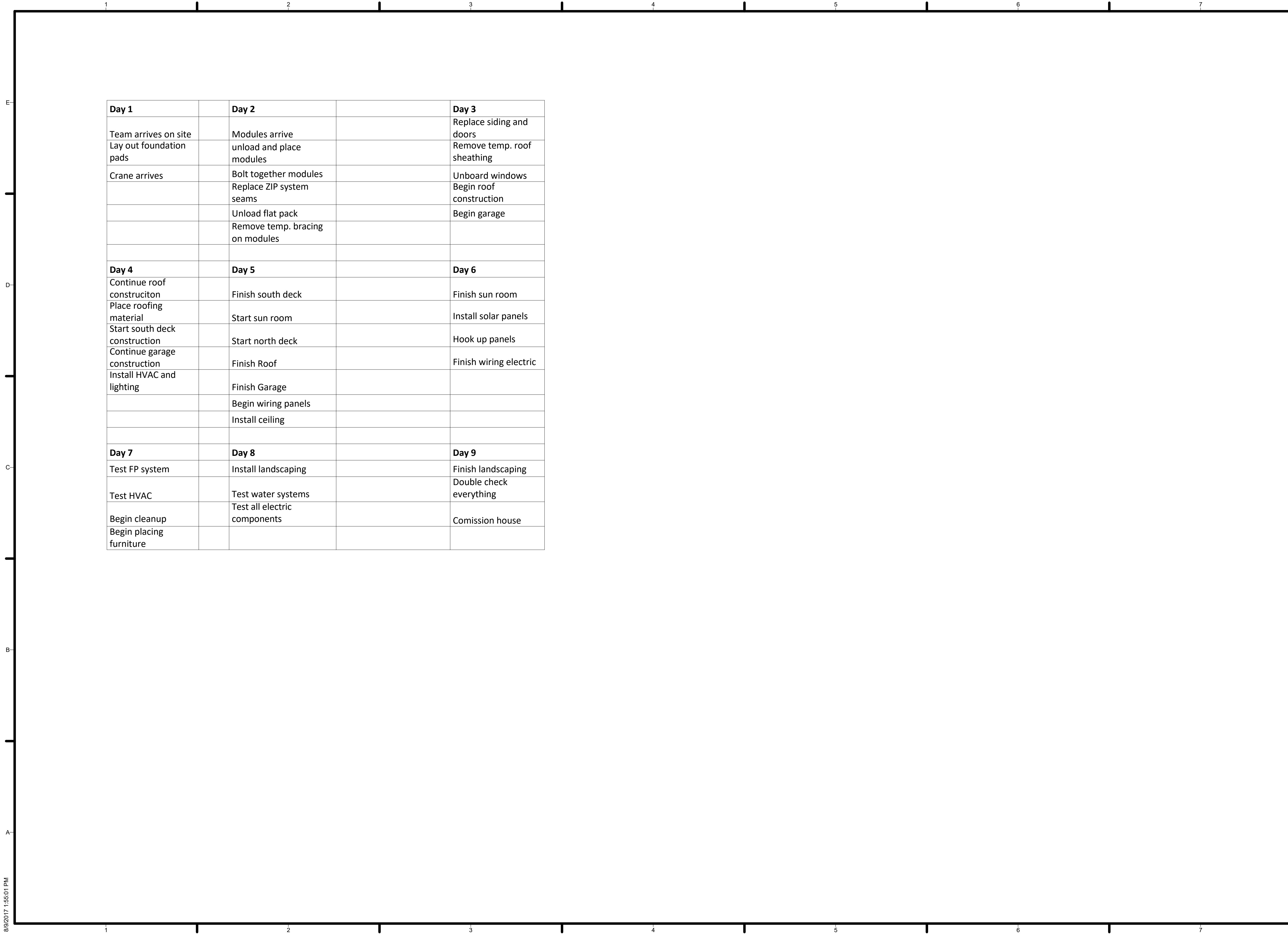


2 FIRST FLOOR PLAN - Module 3
1/4" = 1'-0"

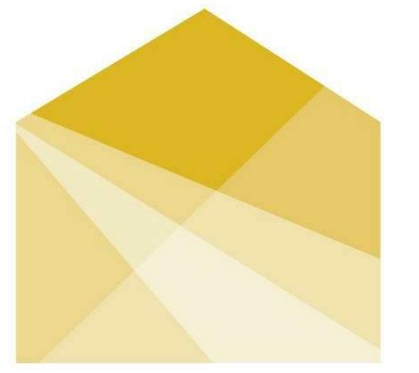
TEMPORARY BRACING AND WALLS
FOR TRANSPORTATION



3 FIRST FLOOR PLAN - Module 2
1/4" = 1'-0"



Day 1	Day 2	Day 3
Team arrives on site	Modules arrive	Replace siding and doors
Lay out foundation pads	unload and place modules	Remove temp. roof sheathing
Crane arrives	Bolt together modules	Unboard windows
	Replace ZIP system seams	Begin roof construction
	Unload flat pack	Begin garage
	Remove temp. bracing on modules	
Day 4	Day 5	Day 6
Continue roof construction	Finish south deck	Finish sun room
Place roofing material	Start sun room	Install solar panels
Start south deck construction	Start north deck	Hook up panels
Continue garage construction	Finish Roof	Finish wiring electric
Install HVAC and lighting	Finish Garage	
	Begin wiring panels	
	Install ceiling	
Day 7	Day 8	Day 9
Test FP system	Install landscaping	Finish landscaping
Test HVAC	Test water systems	Double check everything
Begin cleanup	Test all electric components	Comission house
Begin placing furniture		



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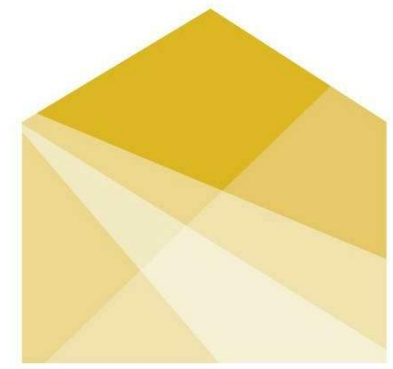
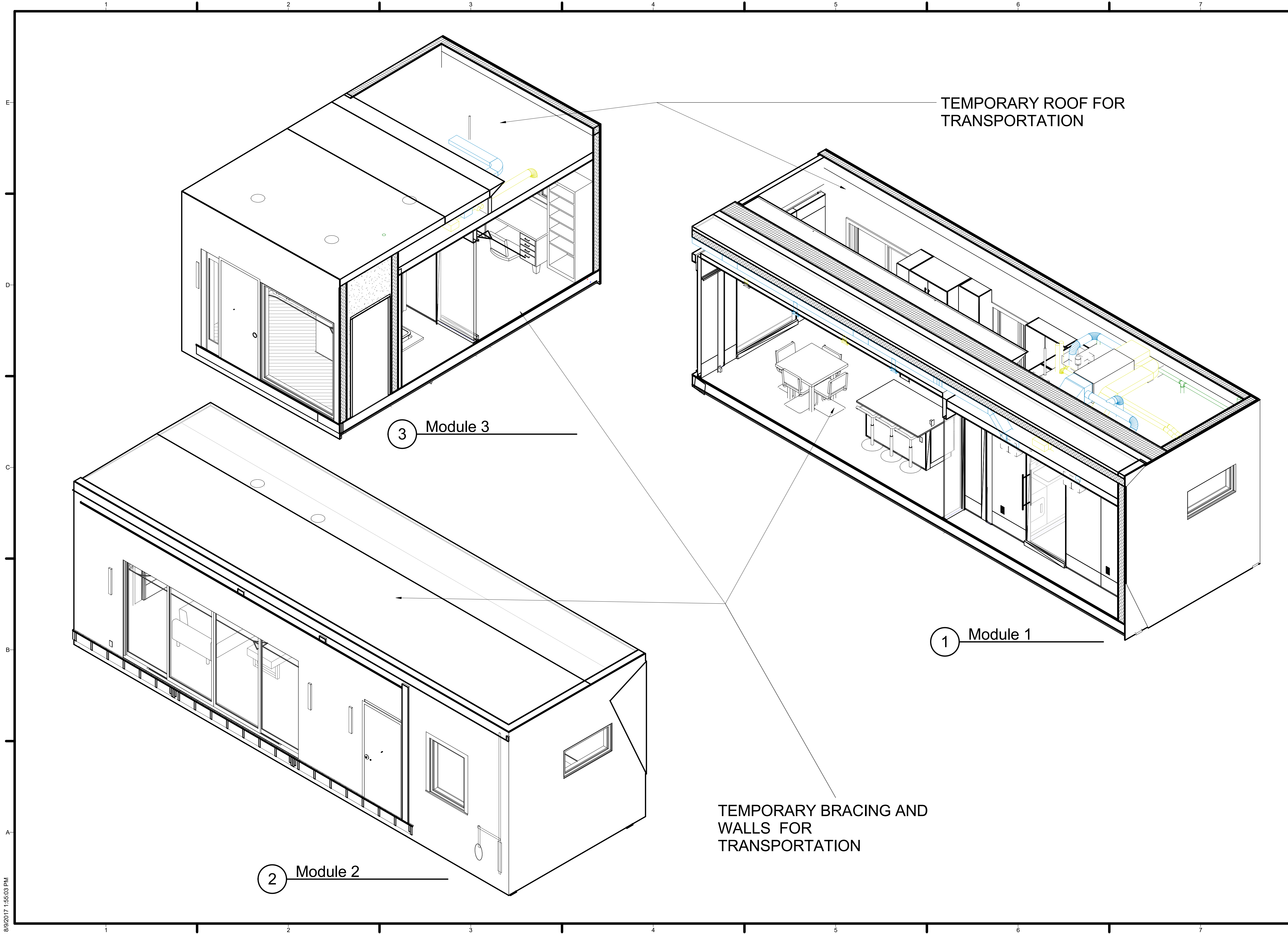
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SHEET TITLE

CONSTRUCTION
LOGISTIC DIAGRAMS

O-602



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SHEET TITLE
MODULE 3D

O-901