

Plans designed for Migrant Labor Housing in Michigan in collaboration with the Michigan Department of Agriculture and Rural Development-Migrant Labor Housing Program and Habitat for Humanity of Michigan.

NO.	DESCRIPTION	BY	DATE

SHEET TITLE:
MAIN FLOOR PLAN

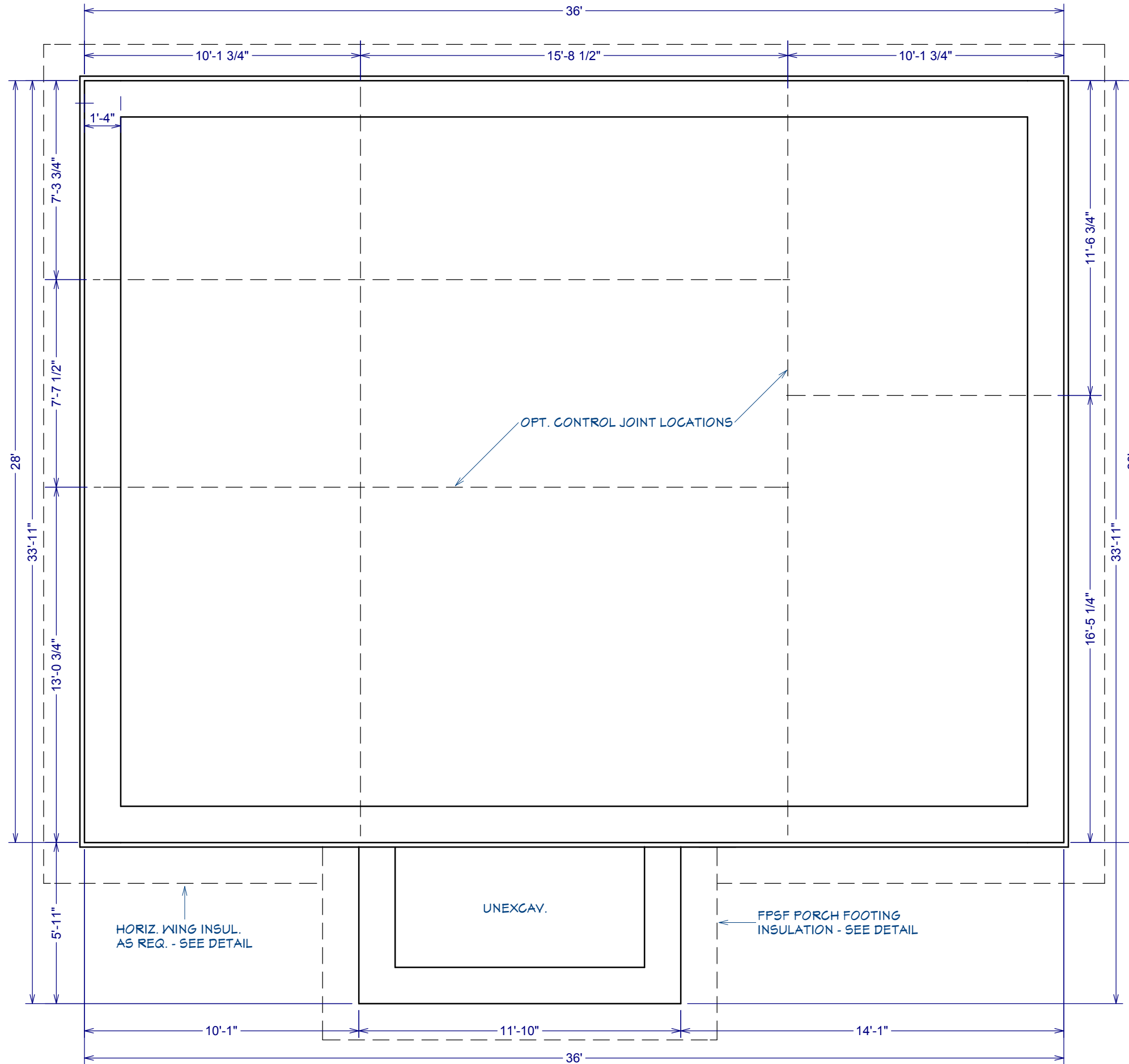
PROJECT DESCRIPTION:
28X36 9 PERSON HOUSING - FAMILY SUITE 4-14-15

DRAWINGS PROVIDED BY:
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618 S. CREYTS RD.
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DATE:
4/17/2015

SCALE:
1/4" OR AS NOTED

SHEET:
A-1



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NO.	DESCRIPTION	BY	DATE

SHEET TITLE:
FOUNDATION/SLAB

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A-2



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SHEET:

A-3

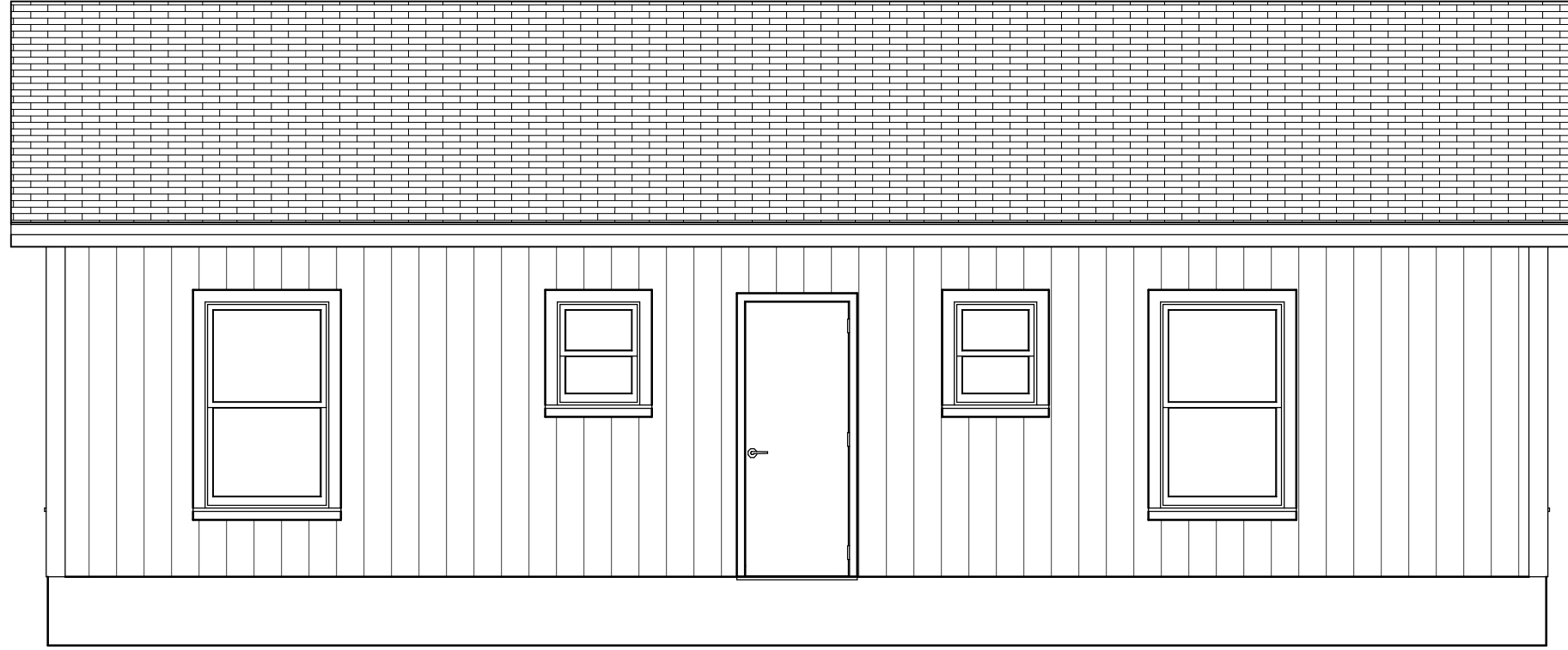
PROJECT DESCRIPTION:
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SHEET TITLE:

FRONT ELEVATION

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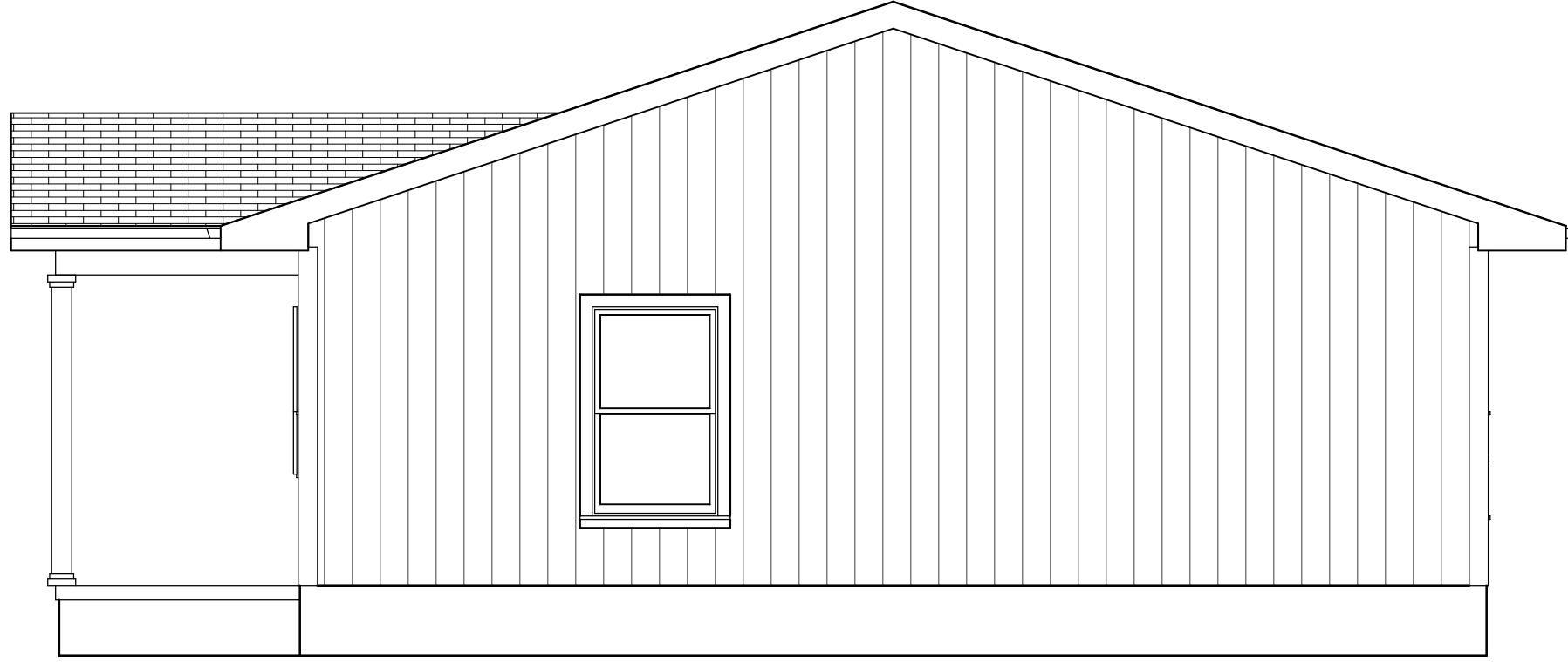
A-4

PROJECT DESCRIPTION:
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SHEET TITLE:
BACK ELEVATION

NO.	DESCRIPTION	BY	DATE

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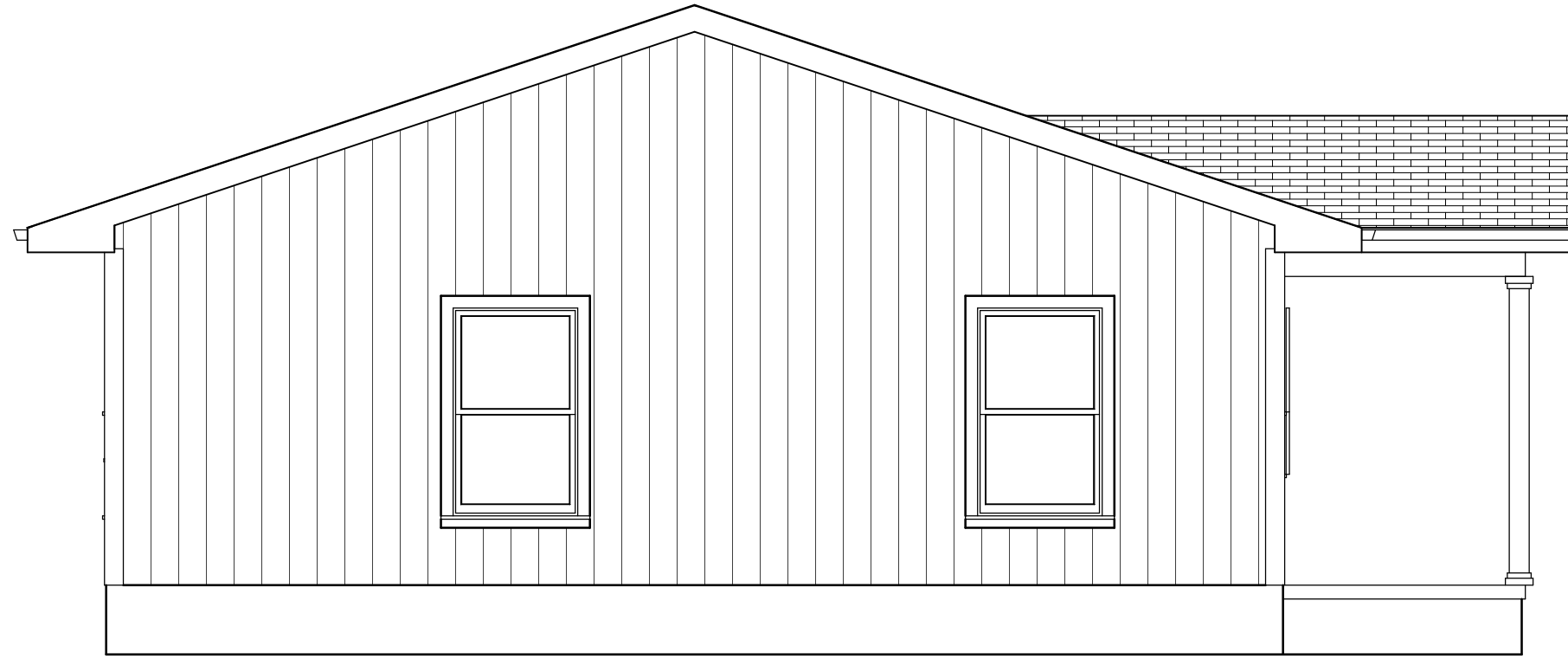
A-5

PROJECT DESCRIPTION:
 28X36 9 PERSON HOUSING - FAMILY
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SHEET TITLE:
 RIGHT ELEVATION

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NO.	DESCRIPTION	BY	DATE

SHEET TITLE:
LEFT ELEVATION

PROJECT DESCRIPTION:
28X36 9 PERSON HOUSING - FAMILY SUITE 4-14-15

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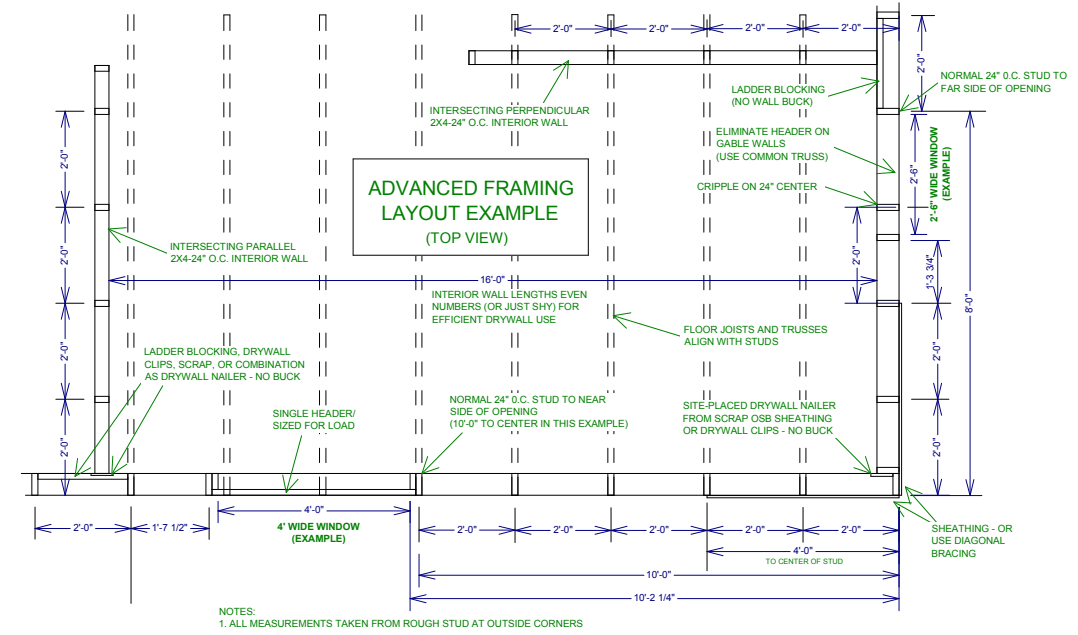
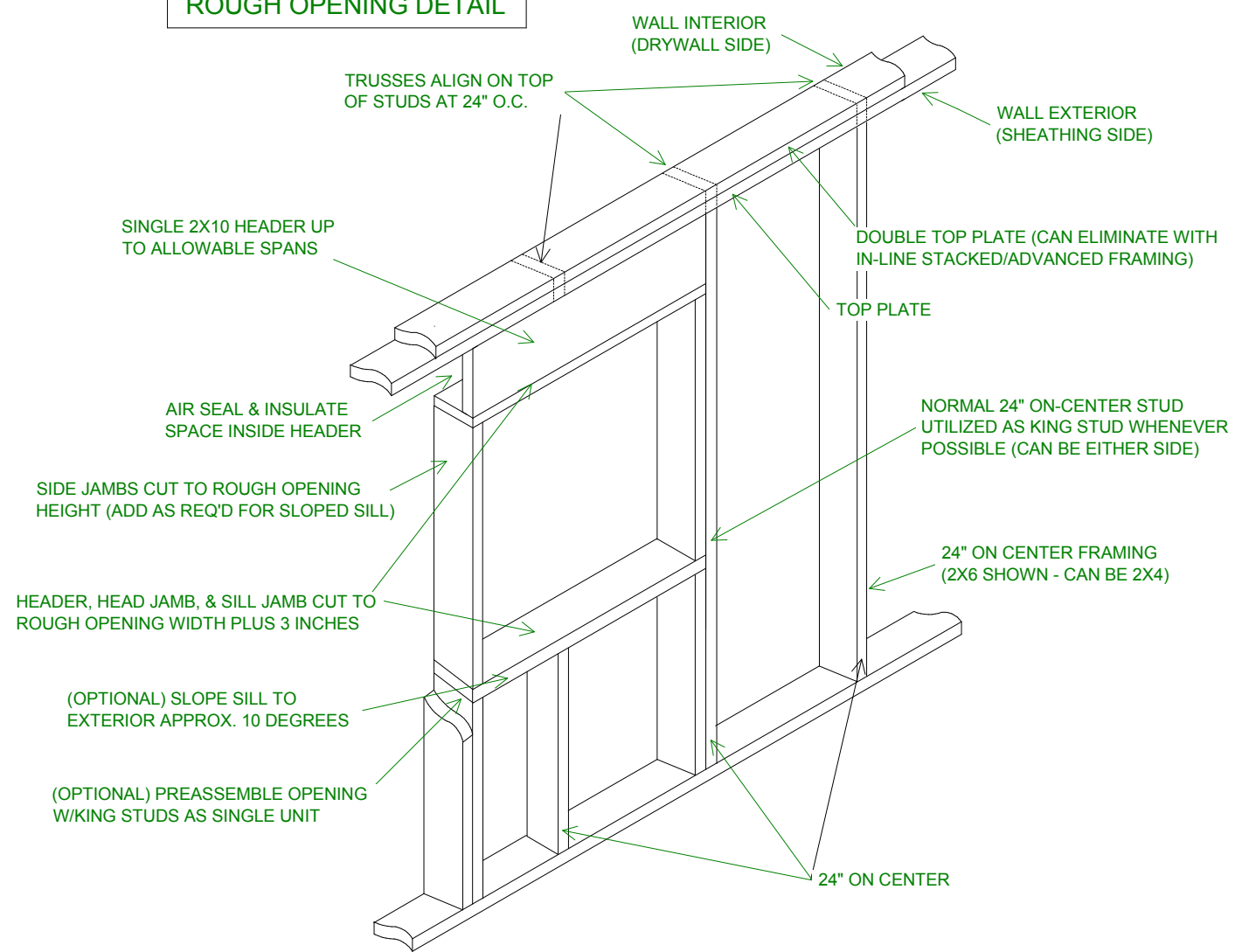
A-6

DOOR SCHEDULE												
NUMBER	LABEL	QTY	FLOOR	SIZE	DIMENSIONS	WIDTH	HEIGHT	R/O	TYPE	DESCRIPTION	THICKNESS	COMMENTS
D01	2668	1	1	2668 L EX	30"X80"X1 3/4" L EX	30"	80"	32"X82 1/2"	HINGED	EXT. HINGED-SLAB	1 3/4"	
D02	2868	2	1	2868 L IN	32"X80"X1 3/8" L IN	32"	80"	34"X82 1/2"	HINGED	HINGED DOOR F04	1 3/8"	
D03	2868	6	1	2868 R IN	32"X80"X1 3/8" R IN	32"	80"	34"X82 1/2"	HINGED	HINGED DOOR F04	1 3/8"	
D04	3068	1	1	3068 L EX	36"X80"X1 3/4" L EX	36"	80"	38"X82 1/2"	HINGED	EXT. HINGED DOOR E03	1 3/4"	

WINDOW SCHEDULE											
NUMBER	LABEL	QTY	FLOOR	SIZE	DIMENSIONS	WIDTH	HEIGHT	R/O	EGRESS	DESCRIPTION	COMMENTS
W01	20265H	4	1	20265H	24"X30"SH	24"	30"	24"X30"		SINGLE HUNG	
W02	30405H	1	1	30405H	36"X48"SH	36"	48"	36"X48"		SINGLE HUNG	
W03	30505H	5	1	30505H	36"X60"SH	36"	60"	36"X60"	YES	SINGLE HUNG	

CABINET SCHEDULE										
NUMBER	LABEL	QTY	FLOOR	DIMENSIONS	WIDTH	DEPTH	TOP	BOTTOM	DESCRIPTION	COMMENTS
C01	B12L	2	1	12X24X36 "	12"	24"	36"	0"	BASE CABINET	
C02	B12R	1	1	12X24X36 "	12"	24"	36"	0"	BASE CABINET	
C03	B60	1	1	60X24X36 "	60"	24"	36"	0"	BASE CABINET	
C04	5B33	1	1	33X24X36 "	33"	24"	36"	0"	BASE CABINET	
C05	5B422131	2	1	42X21X30 1/2 "	42"	21"	30 1/2"	0"	BASE CABINET	
C06	W1230L	2	1	12X12X30 "	12"	12"	84"	54"	WALL CABINET	
C07	W1230R	1	1	12X12X30 "	12"	12"	84"	54"	WALL CABINET	
C08	W3015	1	1	30X12X15 "	30"	12"	84"	69"	WALL CABINET	
C09	W3315	1	1	33X12X15 "	33"	12"	84"	69"	WALL CABINET	
C10	W3615	1	1	36X12X15 "	36"	12"	84"	69"	WALL CABINET	

**ADVANCED FRAMING
ROUGH OPENING DETAIL**



- NOTES:
- WITH 92-5/8" PRECUT STUDS & DOUBLE TOP PLATE, TOP OF ROUGH OPENING = APPROX. 83-1/4"
 - WITH 94-1/8" STUDS AND SINGLE TOP PLATE, USE 2X12 HEADER FOR R. O. TOP HEIGHT OF APPROX. 82-7/8" OR SIZE FOR ACTUAL LOAD *VERIFY REQUIREMENTS FOR USE OF METAL CONNECTOR PLATES, ETC.
 - HEADER MAY BE DOUBLED FOR EXTREME LOADS - JOIN TO FIRST HEADER TO MAINTAIN INSULATION SPACE TO INTERIOR
 - FOR EXTERIOR DOOR ROUGH OPENING, FUR DOWN AS REQUIRED PER MANUF. SPECS., OR SIZE FOR ACTUAL LOAD
 - HEADER CAN BE ELIMINATED ON GABLE WALL FOR OPENINGS UP TO 8' PER CODE WITH USE OF STANDARD TRUSS (VERIFY W/CODE OFFICIALS)

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SHEET TITLE:
**SCHEDULES,
FRAMING DETAILS**

PROJECT DESCRIPTION:
**28X36 9 PERSON HOUSING - FAMILY
SUITE 4-14-15**

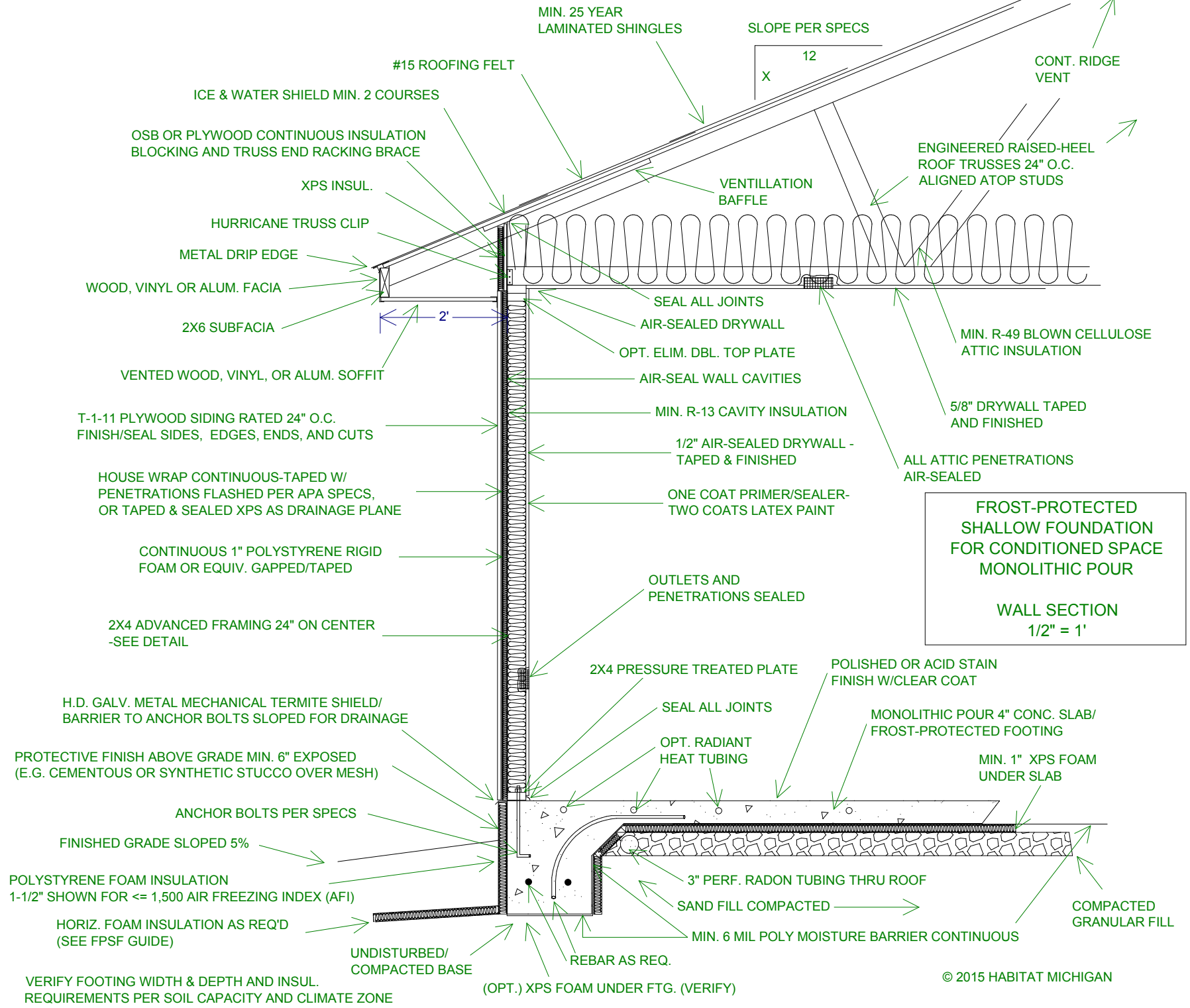
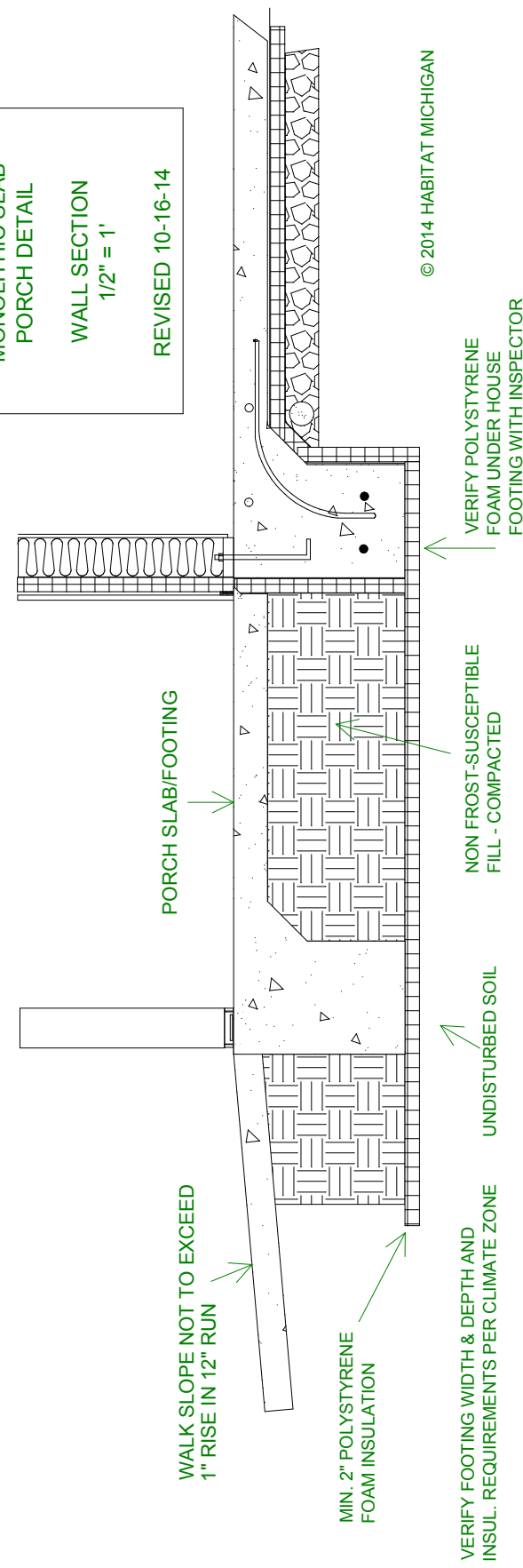
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A-7

FROST-PROTECTED
SHALLOW FOUNDATION
MONOLITHIC SLAB
PORCH DETAIL
WALL SECTION
1/2" = 1'
REVISED 10-16-14



FROST-PROTECTED
SHALLOW FOUNDATION
FOR CONDITIONED SPACE
MONOLITHIC POUR
WALL SECTION
1/2" = 1'

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SHEET TITLE: **WALL SECTIONS**

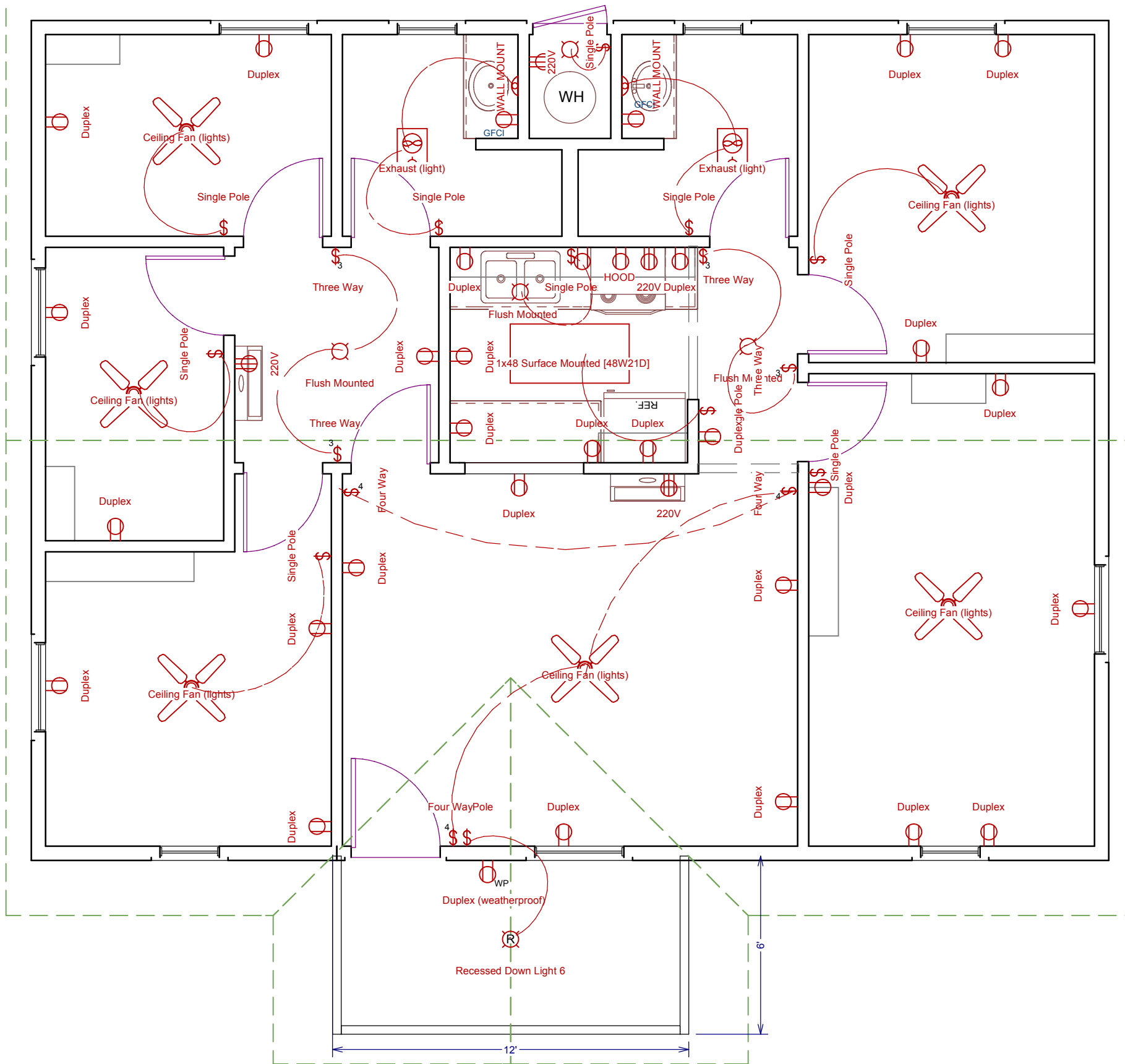
PROJECT DESCRIPTION: **28X36 9 PERSON HOUSING - FAMILY SUITE 4-14-15**

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SHEET: **A-8**



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NO.	DESCRIPTION	BY	DATE

SHEET TITLE:
ELECTRICAL LAYOUT

PROJECT DESCRIPTION:
28X36 9 PERSON HOUSING - FAMILY SUITE 4-14-15

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SHEET:
A-9

Table 2. Design Values for FPSF Insulation Materials¹

Type of Polystyrene Foam	Type of Insulation	Minimum density (pcf)	Nominal R-value (per inch)	Max. Effective R-value (per inch)		Allowable Bearing Capacity ² (psf)	Minimum Thickness (inches)	
				5v	5h		7v	7h
Expanded (EPS)	II	1.35	4.0	3.2 ³	2.6 ³	-	2.0	3.0
Expanded (EPS)	IX	1.8	4.2	3.4 ³	2.8 ³	1,200	1.5	2.0
Extruded (XPS)	IV	1.6	5.0	4.5	4.0	1,200	1.0	1.5
Extruded (XPS)	V	3.0	5.0	4.5	4.0	4,800	1.0	1.0
Extruded (XPS)	VI	1.8	5.0	4.5	4.0	1,920	1.0	1.0
Extruded (XPS)	VII	2.2	5.0	4.5	4.0	2,880	1.0	1.0
Extruded (XPS)	X	1.35	5.0	4.5	4.0	-	1.5	2.0

¹ For ASTM C578, except for effective R-values (shaded column).
² Bearing capacity developed for non-cyclic loading conditions at 10% deformation.
³ SEI/ASCE 32-01 adopted values and restrictions are referenced. Reprinted with permission, American Society of Civil Engineers, "Design and Construction of Frost-Protected Shallow Foundations," 2001. <http://www.PUBS.ASCE.org>
⁴ For additional information on envelope detailing and site grading at foundation perimeter see Durability by Design, A Guide for Residential Builders and Designers, NAHB Research Center for PATH. (May 2002.) <http://www.huduser.org/publications/deslect/durdesign.html>

Table 3. Minimum Insulation Requirements for FPSFs in Heated Buildings¹ – Simplified Method

Air Freezing Index ("F ₁₀₀) ²	Vertical Insulation R-Value ^{3,4}	Horizontal Insulation R-Value ^{3,5}		Horizontal Insulation Dimensions per Figure 5. (in inches)			Minimum Footing Depth (in inches)
		Along Walls	At Corners	A	B	C	
≤1,500	4.5	NR	NR	NR	NR	NR	12
2,000	5.6	NR	NR	NR	NR	NR	14
2,500	6.7	1.7	4.9	12	24	40	16
3,000	7.8	6.5	8.6	12	24	40	16
3,500	9.0	8.0	11.2	24	30	60	16
4,000	10.1	10.5	13.1	24	36	60	16
4,500	12.0	12.0	15.0	36	48	80	16

¹ Insulation requirements are for protection against frost damage in heated buildings. Greater values may be required to meet energy conservation standards. See Appendix IV.
² See Figure 4 for Air Freezing Index values.
³ Insulation materials shall provide the stated minimum R-values under long-term exposure to below ground conditions in freezing climates. NR indicates that insulation is not required.
⁴ Vertical insulation shall be expanded polystyrene insulation or extruded polystyrene insulation.
⁵ Horizontal insulation shall be extruded polystyrene insulation.
⁶ Interpolation between values is permissible.
⁷ Portions of Table 3 reprinted with permission from SEI/ASCE 32-01, American Society of Civil Engineers, "Design and Construction of Frost-Protected Shallow Foundations," 2001. <http://www.PUBS.ASCE.org>

Figure 5 contains a section and a plan view of the possible insulation locations for FPSFs dependent on climate zone of project. The alphabetical characters in Figure 5 correspond to the identically designated columns in Table 3.

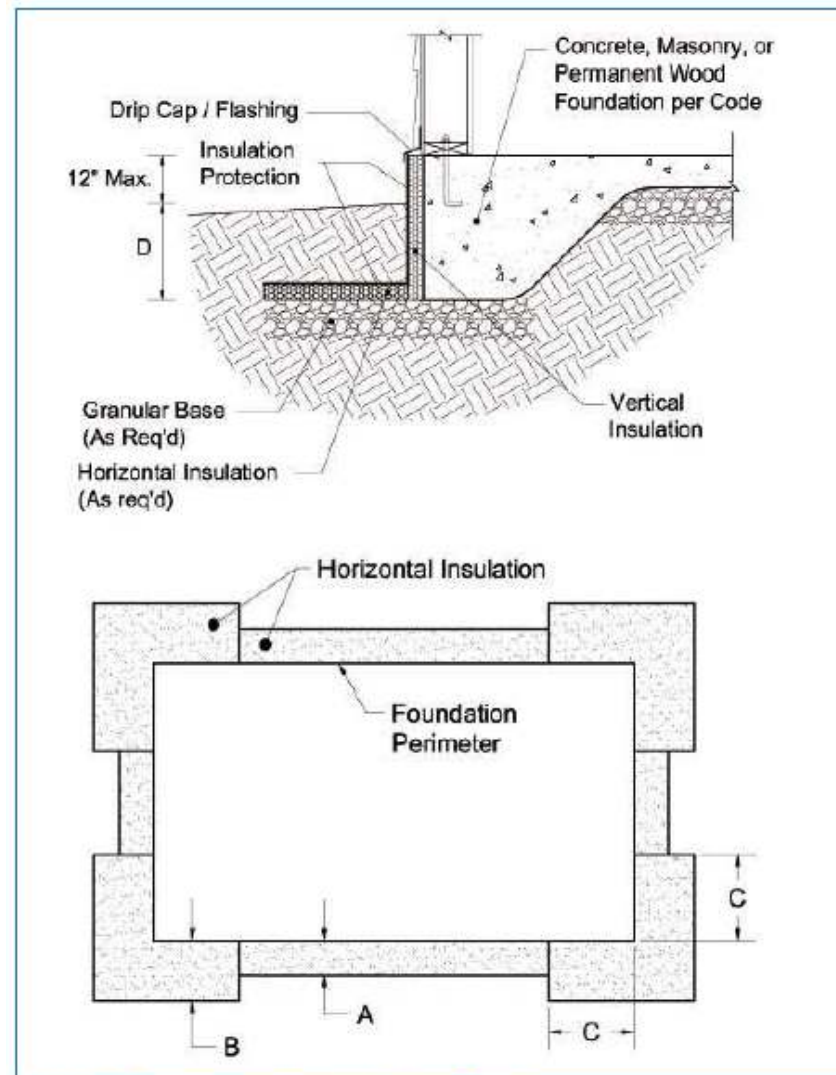


Figure 5. FPSF Simplified Design Parameters – Heated Buildings

DRAWINGS REPRESENT SIMPLIFIED FROST PROTECTED SHALLOW FOUNDATION MINIMUM INSULATION REQUIREMENTS BASED ON 100 YEAR AIR FREEZING INDEX (AFI) WITH SYSTEM AS SHOWN. SUBSLAB INSULATION AND OTHER DETAILS AFFECT MINIMUM INSULATION REQUIREMENTS. FOR ALTERNATIVE APPLICATIONS AND DETAILED INFORMATION, REFER TO THE FOLLOWING PUBLICATIONS:

- 1) ASCE STANDARD: DESIGN AND CONSTRUCTION OF FROST-PROTECTED SHALLOW FOUNDATIONS AVAILABLE ONLINE AT: <http://www.asce.org/templates/publications-book-detail.aspx?id=7997> OR:
- 2) NAHB RESEARCH CENTER REVISED BUILDER'S GUIDE TO FROST PROTECTED SHALLOW FOUNDATIONS AVAILABLE ONLINE AT: <http://www.toolbase.org/Design-Construction-Guides/Foundations/Design-Guide-Frost-Protected-Shallow-Foundation>

TABLE R403.3(2)— AIR-FREEZING INDEX BY COUNTY

STATE	AIR-FREEZING INDEX					
	1500 or less	2000	2500	3000	3500	4000
Michigan	Berrien, Branch, Cass, Kalamazoo, Macomb, Ottawa, St. Clair, St. Joseph	All other counties not listed	Alger, Charlevoix, Cheboygan, Chippewa, Crawford, Delta, Emmet, Iosco, Kalkaska, Lake, Luce, Mackinac, Menominee, Missaukee, Montmorency, Ogemaw, Osceola, Otsego, Roscommon, Schoolcraft, Wexford	Baraga, Dickinson, Iron, Keweenaw, Marquette	Gogebic, Houghton, Ontonagon	—

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SHEET TITLE:
SIMPLIFIED FPSF INSULATION REQUIREMENTS

PROJECT DESCRIPTION:
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A-10