



OTI - PF3 (Permanent Frost Free Foundation)

EXPLANATION

The purpose of this plan is to provide a simple, cost-effective method to protect manufactured homes from the effects of frost heave. This method has been in use in many states for decades. In other frost heave engineering applications such as roadways and railway beds, it is not possible to control the temperature to prevent frost heave. The engineering of these structures focus on the elimination of water through sealing the surface and/or adding drainage paths. If water is eliminated, frost heave is not possible. The design advocated by this plan ensures that the area beneath the manufactured home remains dry, thereby preventing frost heave.

CONSTRUCTION NOTES

- Correct site preparation shall be** performed to provide effective frost heave protection by ensuring positive drainage away from the home. Grading must begin two feet in from outside of home and slope a minimum of 1/2" per foot for a distance of 10 feet. (Diagram 1) Where property lines, walls, slopes, or other physical conditions prohibit this slope, the site must be provided with drains or swales or otherwise graded to drain water away from the structure. (Diagram 2)
- Skirting (under-pinning) shall be a** continuous wall designed and constructed to prohibit vermin and water from penetrating under the home. Base of skirting may be installed at ground level. (Diagram 1)
- Crawlspace access, ventilation and moisture protection (vapor barrier) shall meet the requirements of the authority having jurisdiction and/or per requirement of the home manufacturer's installation instructions.
- Footings shall be** constructed using Oliver Technologies Inc ABS Pier Pads. Select appropriate ABS pads after determining soil bearing values and use chart below for correct pier spacing, unless otherwise specified by home manufacturer's setup manual. ABS pads are to be placed upon level, undisturbed soil at ground level. Refer to Oliver Technologies Inc, ABS Pier Pad instructions for proper installation. (Diagram 1)
- Block (CMU) piers, steel piers or other approved material shall be constructed per the requirement of home manufacturer's installation instructions, state and/or local jurisdiction. (Diagram 1)
- Mainline support piers may be replaced by Oliver Technologies 1100"V" Series All Steel Foundation Systems (ASFS) and shall be installed per Oliver Technologies installation instructions. (See illustrations page 2)
- Perimeter piers shall be** constructed using one of three Oliver Technologies Inc products (see illustration page 2); (a) Anchor Pier Part#OTAP12K, (b) OTI-S3 Part# OTIS3, (c) Adjustable Outrigger Part#1055-11. Refer to individual product installation instructions for correct method of installation and load ratings.
- Lateral and longitudinal strapping shall be** replaced by Oliver Technologies 1100"V" Series All Steel Foundation Systems (ASFS) and shall be installed per Oliver Technologies installation instructions. (See illustrations page 2)
- Vertical tie down straps or any special tie down straps, if required by the home manufacturer's installation instructions, such as shear wall, mating lines, porches or other architectural features, shall be installed.
- Straps and anchors shall have a working load capacity of 3150 lbs and a minimum ultimate capacity of 4725 lbs. All straps shall meet ASTM D3953-91. Bottom helix of anchors shall be at or below frost line.

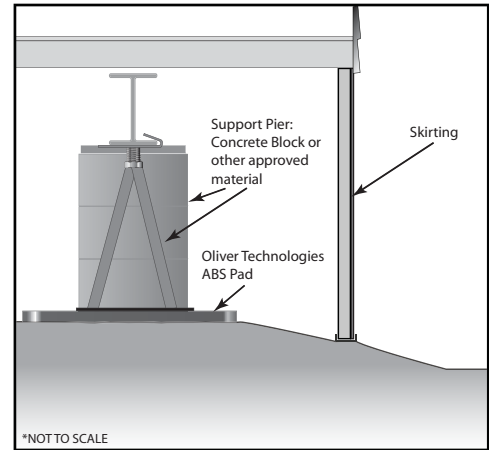


Diagram 1

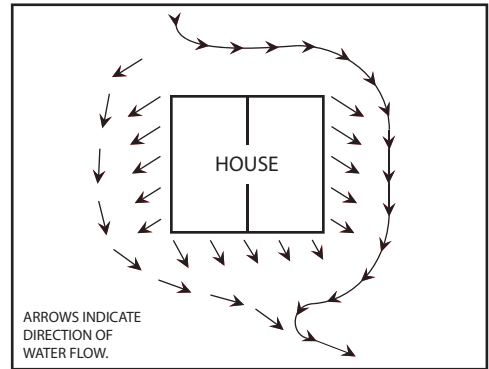


Diagram 2

20 lbs Roof Load - Main Frame Only - 750# prf*

PAD SIZE	ID NO.	PAD AREA	1000	2000	3000
			PSF SOIL	PSF SOIL	PSF SOIL
Square 16" x 16"	1055-14/AIT-06-1005	256 Sq. In.	2'4"	4'8"	7'1"
Oval 16" x 18.5"	1055-23/AIT-06-1000	288 Sq. In.	2'7"	5'3"	8'0"
Oval 17" x 22"	1055-16/AIT-06-1001	360 Sq. In.	3'3"	6'7"	8'0"
Oval 17.5" x 22.5"	1055-21	384 Sq. In.	3'6"	7'1"	8'0"
Oval 17.5" x 25.5"	1055-17/AIT-06-1002	432 Sq. In.	4'0"	8'0"	8'0"
Oval 21" x 29"	1055-22/AIT-06-1003	576 Sq. In.	5'3"	8'0"	8'0"
Oval 23.25" x 31.25"	1055-20/AIT-06-1004	675 Sq. In.	6'3"	8'0"	8'0"

30 lbs Roof Load - Main Frame Only - 775# prf*

PAD SIZE	ID NO.	PAD AREA	1000	2000	3000
			PSF SOIL	PSF SOIL	PSF SOIL
Square 16" x 16"	1055-14/AIT-06-1005	256 Sq. In.	2'3"	4'6"	6'8"
Oval 16" x 18.5"	1055-23/AIT-06-1000	288 Sq. In.	2'6"	5'2"	7'7"
Oval 17" x 22"	1055-16/AIT-06-1001	360 Sq. In.	3'2"	6'5"	8'0"
Oval 17.5" x 22.5"	1055-21	384 Sq. In.	3'4"	6'9"	8'0"
Oval 17.5" x 25.5"	1055-17/AIT-06-1002	432 Sq. In.	3'9"	7'7"	8'0"
Oval 21" x 29"	1055-22/AIT-06-1003	576 Sq. In.	5'1"	8'0"	8'0"
Oval 23.25" x 31.25"	1055-20/AIT-06-1004	675 Sq. In.	6'1"	8'0"	8'0"

40 lbs Roof Load - Main Frame Only - 862# prf*

PAD SIZE	ID NO.	PAD AREA	1000	2000	3000
			PSF SOIL	PSF SOIL	PSF SOIL
Square 16" x 16"	1055-14/AIT-06-1005	256 Sq. In.	2'0"	4'1"	6'2"
Oval 16" x 18.5"	1055-23/AIT-06-1000	288 Sq. In.	2'3"	4'6"	7'0"
Oval 17" x 22"	1055-16/AIT-06-1001	360 Sq. In.	2'9"	5'8"	8'0"
Oval 17.5" x 22.5"	1055-21	384 Sq. In.	3'1"	6'2"	8'0"
Oval 17.5" x 25.5"	1055-17/AIT-06-1002	432 Sq. In.	3'5"	7'0"	8'0"
Oval 21" x 29"	1055-22/AIT-06-1003	576 Sq. In.	4'6"	8'0"	8'0"
Oval 23.25" x 31.25"	1055-20/AIT-06-1004	675 Sq. In.	5'4"	8'0"	8'0"

*prf = Per Running Foot of Each Main Frame (I-Beam)

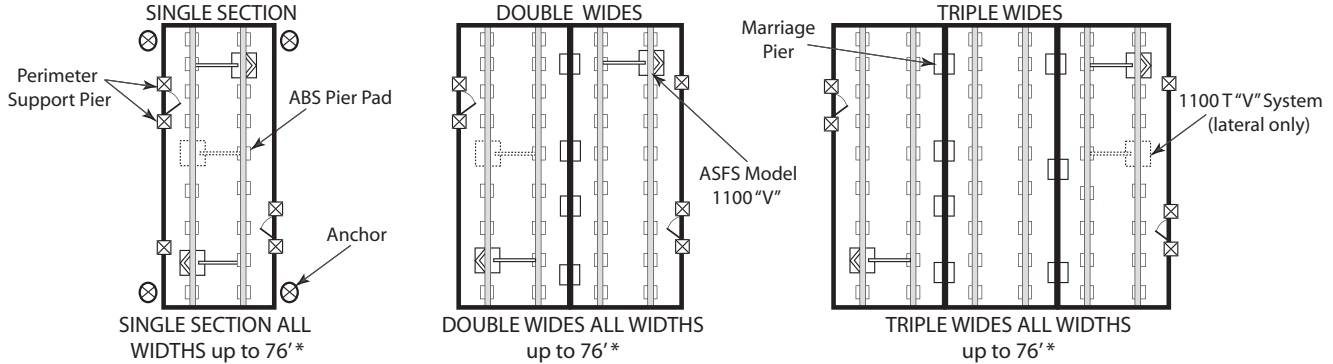
This spacing chart is designed for used homes up to 16' / 32' wide. For new home spacing refer to the home manufacturer's installation instructions.

This design meets or exceeds the requirements of NCSBCS/ANSI A225.1-1994, HUD 24 CFR, §3285 Final Rule, October 2008 & International Residential Code (IRC) Appendix E

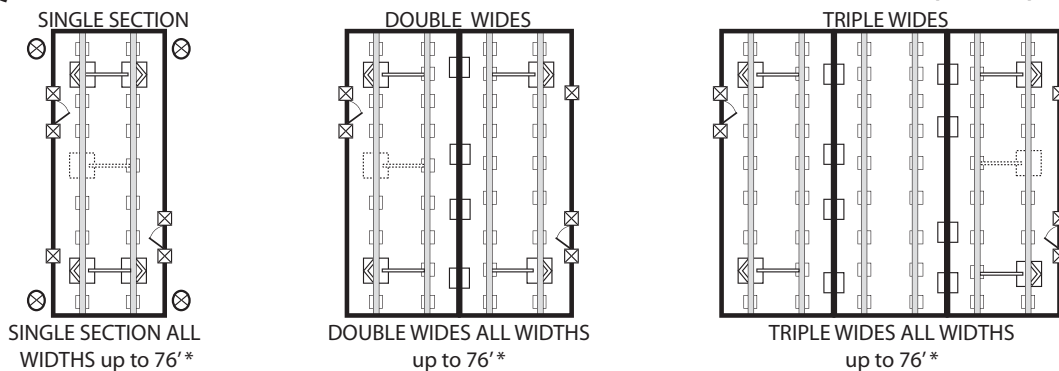




REQUIRED NUMBER AND LOCATION OF FOUNDATION COMPONENTS FOR 4/12 & 5/12 ROOF



REQUIRED NUMBER AND LOCATION OF FOUNDATION COMPONENTS FOR 6/12 & 7/12 ROOF



LEGEND:

- = ASFS Model 1100 "V" (Lateral and Longitudinal Bracing)
- = Additional ASFS Model 1100 T "V" System (Lateral only) - The additional system is to be installed at approximately the midpoint of the house and may be installed at either exterior beam.
- = Perimeter Support Pier - (Used for doors, windows, fireplaces or any other perimeter support)
Refer to product instructions for load ratings:
 (A) = OTI Anchor Pier - Part# OTAP12K (Single pier may be installed when using OTJB48 or OTJB38)
 (B) = OTI-S3 - Part# OTIS3 (Single pier)
 (C) = OTI Adjustable Outrigger - Part# 1055-11
- = ABS Pier Pad (I-beam and marriage line footings)
- = Anchor & Strap - Installation of single wide homes require two (2) anchors per side, located within two (2) feet, but not more than ten (10) feet from each end. (with a minimum of 3150 lbs load rating)
- = Marriage Pier, ABS Pier Pad (For marriage pier load ratings refer to ANSI standards, for new homes refer to home manufacturer's installation instructions.)

* LENGTH OF HOUSE IS ACTUAL BOX SIZE

