Installation Instructions Navi-Trac® Frame Tent 50' Wide Hip End System Non-Certified Installation



Please read all assembly / installation instructions before the installation or removal of this product.



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NAV50HNC 1019

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INTRODUCTION:

The NAVI-TRAC frame configuration is based on the hip roofed square tent shown below, right. Hip bars connect corners to the peak, and rafters connect eave bars to the peak. The square can be extended into a rectangle by adding 10', 15' or 20' bays made up of rafters and the appropriate ridge/ eave bars (see below). In the **square tent**, female eave bars and rafters are connected to eave weldments by rigid slip joints. Hip bars and eave/ridge bars and rafters in the middle bays use easy to install drop-in fittings.

The NAVI-TRAC frame is made up of extruded aluminum members joined by weldments such as corner weldments, ridge weldments, eave weldments, etc. The aluminum frame members themselves are extruded with channels into which the NAVI-TRAC fabric "kedar" is fed.

The first bay added to the square tent shape is a "**starter**" bay. This starter bay allows a slip fit connection to the square tent eaves on one end of the weldment and a drop-in connection for the new starter bay eaves on the other end of the weldment.

Subsequent bays added to the unit are "**extension**" bays. Extension bays allow drop-in connections on both ends of the eave weldments.

The chart on page 5 lists components needed for the 50' x 50' square tent, the first (starter) extension, and for each additional extension to be added to the unit. Note: starter mids or bays and extension mids are available in options of 10', 15' or 20' increments of length, as shown.



50' Navi-Trac Frame Terminology



50' NAVI-TRAC COMPONENT ILLUSTRATIONS



50' NAVI-TRAC COMPONENT LIST

LETTER	50 NAV	-TRAC FRAME							
ON		OTHER I.D.	50	10' MID	10' MID	15' MID	15' MID	20' MID	20' MID
DWG.	COMPONENT DESCRIPTION	CODES	X 50	START	EXT	START	EXT	START	EXT
	TOP EXTRUSIONS WITH CHANNELS								
E10	EAVE - FEMALE 10'		8						
E15	EAVE - FEMALE 15'		8						
ER10	EAVE/RIDGE - DROP-IN 10'			3	3				
ER15	EAVE/RIDGE - DROP-IN 15'					3	3		
ER20	EAVE/RIDGE - DROP-IN 20'							3	3
R21-9	RAFTER LOWER SPLICE, 21-9		4	2	2	2	2	2	2
R5-7	RAFTER UPPER SPLICE, 5-7 w/ Bolt *		4	2	2	2	2	2	2
R16-2	RAFTER, INTERMEDIATE 16-2		8						
H21-4	HIP LOWER SPLICE (2-PC) 21-4 (50')		4						
H15	HIP UPPER SPLICE (2-PC) 15' (50') w/ Bolt *		4						
	BRACES:								
B2	HIP BRACE, 18-9 W/ LANYARDS		8						
B3	BRACE, RIDGE 9'-6"		1	1	1	1	1	1	1
B4	BRACE, UPRIGHTS 3'-9"		12	2	2	2	2	2	2
	PURLINS:								
P1	PURLIN 10'			2	2			2	2
P2	PURLIN 15'					2	2		
P3	PURLIN 20'							2	2
	UPRIGHTS:								
U8	UPRIGHT 8'		16	2	2	2	2	2	2
	WELDMENTS AND PLATES								
CW	CORNER WELDMENTS		4						
EIW	END INTERMEDIATE. WELDMENTS		12						
MLW	MID LEFT WELDMENTS			2		2		2	
MRW	MID RIGHT WELDMENTS			2		2		2	
MCW	MID CENTER WELDMENTS				2		2		2
RW	RIDGE WELDMENT		1	1	1	1	1	1	1
BFW	ADJ. BASE PLATESW/INSERTS (FIXED)	STAMPED "END"	16	2		2		2	
BHW	ADJ. BASE PLATESW/INSERTS (HINGED)				2		2		2
TFW	TOP FITTING (END RAFTER) W/HDWR		2						
EFW	END FITTING (HIP/ INT. RAFTER) W/HDWR		16						
*	LANYARD ASSY. W/ HAIR PIN COTTER		16						
C50	CROSS CABLE FOR 50'	GREEN	1	1	1	1	1	1	1
	INSTALLATION TOOLS:		1						
			1						
			1						
	ADJUSTABLE BASE PLATE GUIDE BAR		1						
			2						
	WHEELED PANEL GUIDES		2						
			1						
	PUSH POLE		1						

OTHER COMPONENT NOTES:

1. FOR X-CABLES FOR UNITS W/OVER (6) BAYS BETWEEN HIP ENDS, SEE PAGE 18 FOR LABELING, QUANTITIES, AND INSTALLATION.

2. STAKES AND GUYS ARE NOT INCLUDED IN THIS TABLE. SEE STAKING GUIDELINES ON PAGE 12.

HARDWARE LOCATION CHART

FASTENING HARDWARE & WHERE IT'S USED	30 X 30	30 MID	40 X 40	40' MID	50 X 50	50' MID	CARTON #			
TENSION LOCK PINS, 1/2"										
2 ea. End of Knee & Ridge Brace -	0	0	20	12	52	12	No. 11			
1 ea. End of Cross Cable		***Included with Cross Cable Carton***								
(some cartons could have greater quantities than are	required)									
BOLT 1/2" X 3" W/NYLOCK NUT										
Splices, 2 pc. Hip or Rafter -	0	0	1	0	8	2	w/splice			
(attached in splice insert)	0	0		0	0	2	wspilce			
Top Fitting F/End Rafter -	2	0	2	0	2	0	No. 1			
End Fittings F/Hip/Int Rafter -	8	0	8	0	16	0	No. 1 or 6			
Uprights - Attach Adjustable Insert	8	2	8	2	16	2	No. 1, 2, 4 or 5			
LANYARD Assembly with Hair Pin Cotter										
Ends of Hips	8	0	8	0	8	0	No. 1			
Top End of Int Rafter	0	0	0	0	8	0	No. 6			
Ends of Braces (Installed at factory)	0	0	16	0	16	0	W/Braces			

50' NAVI-TRAC Installation Safety Guidelines

Your installation techniques will evolve to fit the needs of your clients, the experience level of your crews, the nature of other tentage on-site, and the equipment that you have most readily available. We encourage you to begin with a crew of (4) workers and only reduce this number as your experience level allows you to do so

safely. Whatever techniques you adapt for your crews, we encourage you to keep safety utmost in mind.

Please read through this assembly manual completely before beginning your installation. Be sure the proper equipment, crew and safety precautions are in place. We hope that you enjoy the design features of the NAVI-TRAC each time the unit is installed.

- 1. It is recommended that workers wear safety shoes and hard-hats on site.
- 2. When moving beam sections by hand, use proper lifting techniques to protect the back, and avoid pinching fingers while making hardware connections.
- 3. Never permit bystanders or uninvolved to stand or walk even briefly in the falling path of a beam as it is being raised or lowered.
- 4. Be aware to avoid contact of beams with any overhead power lines near the site.
- 5. When anchoring the structure, avoid all underground power lines and gas lines or other utility easements. Local authorities should be able to map the location of these obstacles.
- 6. Keep site clear of debris to avoid tripping, especially while carrying components or bundles of fabric.
- 7. Do not drag bundles of fabric on concrete, asphalt, or ground as this can cause damage to the fabric from abrasion through the bag.
- 8. When lifting the NAVI-TRAC frame, be sure to use the heavy duty NAVI-TRAC frame lift. The standard Anchor frame lift was not designed for the weight of the NAVI-TRAC frame. When lifting each side of an end section, (2) NAVI-TRAC frame lifts should be used.
- 9. Before pivoting beams to vertical, clear the area of items that could cause tripping or slipping.
- 10. Before pivoting middle beam, install the cross-cable for safety bracing. On the 50' NAVI-TRAC, the cross-cable should be left in place as an essential part of the structure.
- 11. NOTE: Hinged baseplates should be used only on middle beams supplied as "extensions" and not as a component of an end module. End module plates should all be fixed, and end module eave connections should be rigid, slip joints. Use of hinged baseplates in the end module could cause the end module to collapse during installation.
- 12. When using ladders to make peak connections, be sure the ladder is tall enough that workers can reach the peak from a ladder step consistent with the safety recommendations for the ladder being used. On middle beams, secure the eaves before climbing the ladder to secure the peak.
- 13. To meet design loads, x-cabled bays (upright and rafter x-cables) must be added such that there are no more than 6 open bays between x-cabled bays or hip ends (see illustration on page 18)
- 14. For proper loading and anchoring information, consult the appropriate NAVI-TRAC blueprint available from Anchor Industries Inc.
- 15. Before installing fabric, verify that all hip, brace, and rafter pins are seated into weldment fittings and secured by lanyard pins.
- 16. The installation method described herein requires coordination of tasks between workers. A safe installation is dependent on alertness and coordination.
- 17. Before lifting the top frame to install uprights, always guy out and stake at least both corners of the side or end being lifted. This will help maintain the intended footprint and will protect against uplift from the wind that could move or flip the tent, causing damage to the tent and/or severe injury to workers.

SQUARING THE TENT FOOTPRINT LAYOUT



DIRECTIONS FOR SQUARING THE TENT

1. USE A TAPE MEASURE TO MARK THE ENDS OF A LINE FOR ONE END (A TO B ABOVE) EQUAL TO THE EXACT WIDTH OF THE UNIT.

2. HOLD THE "0" END OF ONE TAPE AT POINT "A" AND THE "0" END OF ANOTHER TAPE AT POINT "B".

3. EXTEND THE FIRST TAPE ALONG ONE SIDE OF THE UNIT TO A MEASURE-MENT EQUAL TO THE EXACT LENGTH OF THE TENT.

4. CONSULT THE CHART BELOW TO FIND THE DIAGONAL FOR THE TENT YOU ARE BUILDING.

5. EXTEND THE SECOND TAPE TO A MEASUREMENT EXACTLY EQUAL TO THIS DIAGONAL.

6. BRING THE TWO TAPES TOGETHER SO THAT THE LENGTH MEASUREMENT OF ONE LIES DIRECTLY ON THE DIAGONAL MEASUREMENT OF THE OTHER. PULL THE TAPES TIGHT AND MARK THEIR INTERSECTION. THIS WILL LOCATE A FAR CORNER (POINT "D" ABOVE).

7. SWITCH TAPES SO THAT TAPE 1 (ABOVE) MEASURES THE DIAGONAL AND TAPE 2 (ABOVE) MEASURES THE LENGTH. THIS WILL LOCATE POINT "C" ABOVE.

8. WITH THE FOUR PRIMARY CORNERS LOCATED, LAY OUT BASEPLATES AND UPRIGHTS ACCORDING TO THE DIAGRAM TO THE RIGHT AND BEGIN ASSEMBLY, DOUBLE-CHECKING FROM TIME TO TIME TO MAKE SURE THE SQUARE FOOT-PRINT IS BEING MAINTAINED.

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148-8

158-1 162-10

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172-5

177-2

182-0

40

50

144-0

DIAGONALS FOR SQUARING FOOTPRINT LENGTH OF TENT

FEET	30	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130
30	42-5	50-0	54-1	58-4	62-8	67-1	71-7	76-2	80-9	85-5	90-2	94-10	99-8	104-5	109-2	114-0	118-10	123-8	128-7	133-5
40	N/A	56-7	N/A	64-0	68-0	72-1	76-4	80-7	85-0	89-5	93-11	98-6	103-1	107-8	112-4	117-1	121-9	126-6	131-3	136-0
50	N/A	N/A	N/A	70-9	74-4	78-1	82-0	86-0	90-2	94-4	98-7	102-11	107-4	111-10	116-4	120-10	125-5	130-0	134-8	139-3
DIAGONAL SHOWN IN FEET-INCHES (TO NEAREST INCH)																				
					I	DIAG	ONAL	SHO	WN IN	I FEE	T-INC	HES (EARE	ST INC	CH)				
FEET	135	140	145	150	l 155	DIAG(160	DNAL 165	SHO 170	WN IN 175	I FEE 180	T-INC 185	HES (190	(TO N 195	EARE:	ST INC 205	CH) 210	215	220	225	230
FEET 30	135 138-4	140 143-2	145 148-1	150 153-0	155 157-11	DIAG(160	165	SHO 170	WN IN 175 177-7	180 182-6	T-INC 185 187-5	HES (190 192-4	TO N 195 197-4	200 202-3	ST INC 205 207-2	210 212-2	215 217-1	220 222-0	225 227-0	230 231-11

140-10 145-7 150-5 155-3 160-1 164-11 169-9 174-8 179-6 184-4 189-3 194-2 199-1 204-0 208-10 213-9 218-8 223-7 228-6 233-5

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196-6

201-4

206-2

215-10

211-0

220-9

225-7

230-6

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186-10







SUMMARY OF STEPS FOR COMPLETING THE SQUARE TENT

- 1. INSTALL OPPOSITE EAVES, RAFTERS, HIPS AND HIP BRACES TO COMPLETE SQUARE FRAME.
- 2. USE PULL ROPES TO PULL TOP FABRIC KEDAR FOR EACH END UP AND OVER THROUGH THE CHANNELS ON EACH SIDE OF THE RAFTERS THAT ARE ALIGNED WITH THE RIDGE BRACE.
- LET FABRIC LAY LOOSELY ON TOP OF FRAME. SECURE WITH ROPES AS NEEDED AGAINST THE BREEZE.
- 4. USE HEAVY-DUTY NAVI-TRAC FRAME LIFTS TO LIFT FRAME ONE SIDE AT A TIME TO INSERT UPRIGHTS UNDER THE TOP FRAME.
- 5. INSTALL KNEE BRACES AT ALL INTERMEDIATE UPRIGHTS AS THEY ARE INSTALLED.
- 6. STAKE BASE PLATES USING STAKING LAYOUTS.
- 7. USE WEB/RATCHETS TO TENSION CATENARY FABRIC ARCHES TO UPRIGHT LEGS.
- 8. GUY TENT OUT AND STAKE. CONSULT WEB GUY, STAKING GUIDELINES ON PAGE 12.

INSTALLING FABRIC ON HIP END FRAMES

NOTE: BEFORE INSTALLING FABRIC, INSPECT THE FRAME TO ENSURE ALL HIP PINS ARE PROPERLY SEATED IN THE WELDMENT FITTINGS AND SECURED WITH LANYARD PINS.

PULL FABRIC UP AND OVER THROUGH CHANNEL IN NAVI-TRAC RAFTER EXTRUSIONS. EACH HIP END IS ONE-PIECE. LET FABRIC TAILS HANG LOOSE UNTIL FRAME HAS BEEN LIFTED AND UPRIGHTS HAVE BEEN INSTALLED.

SQUARE UNIT TOP

FRAME COMPLETE

BE CAREFUL TO AVOID SNAGGING FABRIC ON OPEN ENDS OF END INTERMEDIATE RAFTERS HERE.

> STRAPS ON UNDERSIDE OF FAB-RIC MUST CONNECT TO END INTERMEDIATE RAFTERS AND HIP BARS, AS PROVIDED.

> > BE CAREFUL TO AVOID SNAGGING FABRIC ON OPEN ENDS OF END INTERMEDIATE RAFTERS HERE AND ON OPPOSITE HIP END.

NOTE: TO ENSURE THAT END FABRIC GOES IN SMOOTHLY AND TO MINIMIZE CHANCE OF DAM-AGE TO FABRIC, <u>ALWAYS</u> USE THE WHEELED PANEL GUIDE TO FEED KEDAR INTO FRAME CHANNELS. SEE PAGE 17 FOR INFORMATION ON HOW TO ATTACH PULL ROPES TO FABRIC.

INSERT FINGERS OF WHEELED PANEL GUIDE INTO OPEN END OF RAFTER AND WELDMENT. TIGHTEN BUTTERFLY NUT. REVERSE FOR OPPOSITE SIDE OF BEAM.

RAFTER

WHEELED PANEL GUIDE

LIFTING TOP FRAME (FIRST SIDE)



2. INSTALL UPRIGHT BRACES AT ALL INTERMEDIATE UPRIGHTS.



* **IMPORTANT NOTE:** REFER TO CAUTION STATEMENT #2 FOR IMPORTANT WARNING ABOUT NUMBER OF STAKES SUPPLIED. (SEE BACK PAGE OF THIS MANUAL)

THE INSTALLER MUST USE THE LOCAL SOIL CONDITIONS TO CALCULATE THE ACTUAL NUMBER OF STAKES REQUIRED AND IS RESPONSIBLE FOR THE STAKING PATTERN AND CONFIGURATION. ANCHOR PROVIDES ANCHORING PACKAGES FOR COMMON SOIL CLASSIFICATIONS; CONTACT YOUR TENT SALES REPRESENTATIVE FOR MORE INFORMATION.













50' NAVI-TRAC COMPLETE WITH (2) 10' MID BAYS

- 1. ALL ENGINEERING ON THE 50' NAVI-TRAC WAS DONE WITH THE WALLS IN PLACE. (FULLY ENCLOSED). SEE NEXT PAGE FOR SIDEWALL INSTALLATION.
- 2. INSTALL, STAKE, AND TENSION ALL GUY WEBS, AS SHOWN IN THIS MANUAL. TENSION FABRIC SO THAT ALL CATENARY ARCHES ARE EQUIDISTANT BELOW THE EAVE BARS.
- 3. REVIEW PAGE 13 FOR TENSIONING AND GUYING INSTRUCTIONS.

Wall Installation

Step 1

Determine which side of wall is inside and out. Ground bar pockets are on outside, Lace flap is on inside. Start by feeding top of kedar edge into channel opening until top of wall is as far as it will go. (Figure A) Insert the bottom edge of kedar into channel opening and feed down until wall is smoothly installed into upright.

Step 2

Starting with wall tab nearest the lace, insert into slotted opening in bottom channel of eave bar. Feed rest of wall tabs into channel.

Step 3

Repeat with the matching half of the wall.

Step 4

Lace wall starting at top of wall bringing top loop thru the top grommet of matching half of wall to inside of wall. Continue with this process looping next loop thru grommet and then the upper loop until all loops are laced. (See Figure B) Tie off bottom loop to keep lace together.

Step 5

Slide ground bar (Figure C) thru pocket on outside of wall. Fasten to frame using the ground bar keeper as noted on next page.







Navi-Trac Ground Bar Keeper Instructions





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Anchor products are of superior design and operate best within the parameters of these instructions. It is imperative that the instructions be carefully read and **COMPLETELY FOLLOWED**. Please read installation instructions before the installation or removal of this product. Installation instructions are available online at <u>www.anchorinc.com</u> or by calling 1-800-544-4445.



- For each installation, the installer is solely responsible for evaluating the site and the proper securing method determined. Some soils require different staking or securing than that provided with the tent. Due to this variety of soil conditions, these are the manufacturer's suggested sequence of installation procedures. Anchor's responsibility is limited to the manufacture of the tent parts and materials. We are not responsible for methods that installers may choose to erect and secure the tent to the ground.
- 2. The number of stakes suggested in the installation instructions do not necessarily meet all or any relevant codes on the site of the tent installation. The number of stakes suggested will, in many cases, keep the tent erected, however, due to various soil conditions; these stakes will be insufficient to keep the tent secure in high winds. It is the tent installer's responsibility, not the manufacturer, to determine the appropriate number of stakes to meet the necessary wind loads on the site. Regardless of the number of stakes we suggest, we make no representation or warranty as to whether this specific number of stakes will meet the local tent code. Anchor does not, nor can it make any suggestions, representation, or warranties about the adequate staking required at each specific installation site. Staking information provided in the installation instructions is not a suggestion about what is necessary to meet a site-specific load.

For additional important information, consult: "The IFAI Procedural Handbook For the Safe Installation and Maintenance of Tentage" and the IFAI Pocket Guide "Pullout Capacity of Tent Stakes", both available from the IFAI Tent Rental Division on their website (<u>www.ifai.com</u>).

3. Inasmuch as the weather is unpredictable, good judgment and common sense must be incorporated within installation guidelines. It is the responsibility of the tent installer/maintainer to determine the severity of the weather, proper time and method of installation and/or erection and disassembly. Note: We recommend that snow and ice be removed from the tent surface as soon as possible because accumulation will damage the tent or fabric structure. Please consult with our Engineering Department about the maximum loads for each product.

This product has been manufactured for use as a temporary structure. For the safety of all occupants, evacuation is recommended if threatening weather occurs, or if there is any doubt concerning the safe use of this product.

- 4. Proper safety equipment should be used at all times to insure a safe installation and take down. We suggest a careful evaluation be made to determine safety equipment needed, such as hard hats, steel-toe shoes, safety glasses and other as required. It is our desire that all installations are safe. Please be aware of hidden dangers both underground, i.e., gas lines, water lines, electrical lines, etc. and above the tent such as power lines and telephone lines.
- 5. Anchor stands behind its products in accordance with its standard Terms and Conditions of sale. A copy of our Terms and Conditions of Sale can be obtained by contacting Anchor at the telephone number and/or address on this document.