Important Contact Information:

▶ If material takeoff list isn’t received in your login within one week after receiving building plans, notify your Project Coordinator via online login▶

Plans/Drafting Department:

Engineer sealed building plans always take precedence over any other information or instructions. Should you find something you question, are unclear about, or feel may be contradictory, contact Hansen Buildings’ Plans Department via online login immediately or Email Plans@HansenPoleBuildings.com.

Technical Support:

Fastest way to get assistance:

For questions regarding proper installation or for any additional information other than as outlined on engineer sealed plans or in this manual, technical support is available at NO CHARGE via online login or Email TechSupport@HansenPoleBuildings.com.

Telephone technical support is available for a nominal fee and may be pre-purchased via online login.

Purchasers of a telephone technical support plan will receive a return call from a technician in our Technical Support Department, usually in 24 to 48 hours, depending upon call volume. A technician will take information regarding your challenge and send an email asking to confirm his or her understanding of issue(s) at hand. Upon receipt of your confirmation – a return email will be sent with challenge solutions.

Keep in mind post frame buildings are highly complex structures, involving thousands of components. Solutions to a particular challenge may require further research by Hansen Buildings’ Technical Support team. However, they will respond with email answers as quickly as reasonably possible.

Please avoid contacting component manufacturers for Technical Support as wrong information may be given.

Calls or Emails to Engineer of Record WILL result in you being charged hundreds of dollars, even if question goes unanswered.

No technical support is available through Sales or Materials Departments.
Even if You ignore the rest of this manual - PLEASE READ THIS . .

CAUTION Improper eave height measurement is most common and most expensive construction error!

Follow this procedure to properly measure eave height:

1.) Go to building eave side, other than at a corner.
2.) Hook a tape measure to splash plank bottom at a column.
3.) Measure up column outside, to UNDERSIDE of roofing.

POP QUIZ

You, and your builder, must pass this one question, open book quiz, before going further.

Question: Pick correct measurement of eave height:

A) From bottom of splash plank to bottom of trusses.
B) From top of concrete slab to bottom of trusses.
C) From bottom of splash plank to underside of roofing at intersection with outside edge of columns
D) Some other randomly determined distance.

Answer: C
Quick Answers

**Q:** When will my building plans arrive?
**A:** Most building plans are available by online login approximately five to seven working days after door and any stair locations are provided by you, all documents are signed and payment has been received according to terms on your invoice. Plans will be in .pdf format. Please review thoroughly and approve online, so they may be reviewed and sealed by Engineer of Record (E.O.R.), printed and sent to you. Online plans are unsuitable for structural building permit reviews or plan checks.

**Q:** Does everything show up at once?
**A:** No. Usually there will be at least three major deliveries: lumber, roof trusses and steel. Other deliveries may include: hardware, reflective radiant barrier, and/or doors and windows, depending on features selected.

**Q:** I didn’t get my nails (or Strong-Drive® SDWS TIMBER Screws or bolts). Where are they?
**A:** We only furnish nails normally undrivable by a nail gun. Other larger fasteners, typically used to fasten roof trusses (or rafters) to columns are sent from Hansen Buildings’ warehouse. Take everything out of ALL boxes, count and inventory. Box contents are “mixed merchandise”.

**Q:** What’s difference between “stitch” and “diaphragm” screws?
**A:** *Stitch screws* are 1-1/4” long metal-to-metal and are used to install trim to siding and roofing. They also fasten steel sheeting onto sliding doors. No wood is required beneath point to fasten.

*Stitch Screws*  

*Diaphragm screws* are 1-1/2” long and have an outward tapered shank directly below head. They are used to install roofing and siding with tip placed into a wood member beneath steel sheeting.
Q: Reflective radiant barrier has a silver side and a white side. What is correct placement?
A: Silver or foil side “up” (facing metal). White side faces down (towards inside of building).

Q: Do reflective radiant barrier edges overlap?
A: No! If overlapped, plan on purchasing more reflective radiant barrier. Standard A1V product comes with an adhesive tab. “Butt” reflective radiant barrier edges to each other, remove pull strip and press tabs together at seams. This reflective radiant barrier design will give a 48” or 72” net coverage per roll (depending upon product). With other reflective radiant barrier products, edges may “but” together and seams are taped.

Q: I spent $500 buying “extra” materials for my building. When does a check come?
A: Any materials purchased, without Emailing or calling to verify what was missing or damaged or for any “extra” materials used in building structure other than according to building plans and instructions contained in Hansen Buildings’ Construction Manual, are at your expense. Only with written pre-authorization from Hansen Buildings may anyone purchase additional materials and be reimbursed.

Q: What if I run short of screws?
A: Without meaning to insult anyone…..from experience, screw shortages in building construction most often happen when hiring a “professional builder”. Reality: these are not their materials – they are YOURS. You, building owner, have paid for them. Screws dropped on ground are more likely to be picked up at day’s end by person who paid for them!

Washers may become separated from screws during shipment. If neglecting reassembly, replacements for these discarded screws are at your expense.

If you or your builder runs short 100 screws or more in any color, you will be required to pay for additional. All screws are calculated with a 5% overage added to ensure plenty to complete building.

Q: Are materials off-loaded for me?
A: In most cases, lumber and roof trusses are off-loaded. With larger roof truss spans (usually over 40’ in width), lifting equipment may be required to help off-load roof trusses. In no case, does unloading include roof truss setting onto building columns, by crane or any other equipment.

Unless steel offloading is available in your area and was purchased at building order, YOU provide equipment to unload steel roofing and siding.
**Q:** Can electrical be drilled through framing or columns?

**A:** Very little drilling, if any, will be needed for holes in order to run electrical wires. Wall framing (girts) extend or are placed so as to leave a 1-1/2 inch space between outside of wall columns and siding.

Think of a hole being drilled through as being an “open knot”. Lumber grading rules refer to these as being “Unsound or Loose Knots and Holes” due to any cause. Most structural framing – like wall girts and roof purlins or posts and timbers are graded as Number 2.

For practical purposes, a hole up to just less than ¼ of board face being drilled through will be within grade in #2 lumber. Example: 3-1/2” face of a 2x4 a hole up to 7/8” may be drilled through, as often as every two feet. Allowable hole sizes are reduced and spacing increased for higher grades of lumber.

Any holes drilled through pressure preservative treated lumber or columns, especially near grade, should be treated with a Copper Naphthenate solution. Copper Naphthenate is available as a brush-on (Cuprinol No. 10 Copper-Green® Wood Preserver [https://www.homedepot.com/p/Copper-Green-1-gal-Wood-Preservative-176223/300502829](https://www.homedepot.com/p/Copper-Green-1-gal-Wood-Preservative-176223/300502829)) or spray-on ([https://www.homedepot.com/p/Copper-Green-Wood-Preservative-14-fl-oz-Aerosol-CopperSpr/100191444](https://www.homedepot.com/p/Copper-Green-Wood-Preservative-14-fl-oz-Aerosol-CopperSpr/100191444)).
Icons Used in This Book

Key points to basic, but “open sesame” concepts to insure getting your dream building!

Red push pin to get fired up and paying close attention to these details.

STOP! Take time to read and re-read before proceeding.

Follow directions and money stays in your pocket. If you or anyone building for you fails to follow directions in this manual, cost is yours!

Warning of possible problems if ignoring this point.

A solution or fix to a common building error.

Check lumber for acceptable and allowable defects.

What icons should be followed? ALL of them!
Chapter 1: Introduction.............................................................................................................. 13
Chapter 2: General Construction Procedures.................................................................17
Chapter 3: Delivery and Storage Procedures ................................................................. 35
Chapter 4: Beginning Building Construction ................................................................. 55
Chapter 5: Setting Columns ............................................................................................... 64
Chapter 6: Nailing Right First Time .................................................................................. 70
Chapter 7: Splash Plank ..................................................................................................... 73
Chapter 8: Notching Columns With Trusses ................................................................. 80
Chapter 9: Truss Preparation .............................................................................................. 83
Chapter 10: Roof Truss Legalese .................................................................................... 90
Chapter 11: Installing and Bracing Trusses ................................................................. 101
Chapter 12: Sidewall Eave Struts (Purlins) ................................................................. 116
Chapter 13: SquareRoof ................................................................................................. 119
Chapter 14: Roof Reflective Radiant Barrier .............................................................. 121
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 15</td>
<td>Important Steel Roofing and Siding Information</td>
<td>124</td>
</tr>
<tr>
<td>Chapter 16</td>
<td>Roof Steel</td>
<td>127</td>
</tr>
<tr>
<td>Chapter 17</td>
<td>Ridge Cap</td>
<td>136</td>
</tr>
<tr>
<td>Chapter 18</td>
<td>Concrete Slabs</td>
<td>140</td>
</tr>
<tr>
<td>Chapter 19</td>
<td>Girts</td>
<td>143</td>
</tr>
<tr>
<td>Chapter 20</td>
<td>Meet Steel Trims</td>
<td>147</td>
</tr>
<tr>
<td>Chapter 21</td>
<td>Wall Steel</td>
<td>156</td>
</tr>
<tr>
<td>Chapter 22</td>
<td>Corner &amp; Rake Trim</td>
<td>159</td>
</tr>
<tr>
<td>Chapter 23</td>
<td>Entry Door Installation</td>
<td>166</td>
</tr>
<tr>
<td>Chapter 24</td>
<td>Overhead Door Openings</td>
<td>171</td>
</tr>
<tr>
<td>Chapter 25</td>
<td>Sliding Door Opening Framing</td>
<td>183</td>
</tr>
<tr>
<td>Chapter 26</td>
<td>Sliding Door Hardware</td>
<td>189</td>
</tr>
<tr>
<td>Chapter 27</td>
<td>Sliding Door Assembly and Installation</td>
<td>193</td>
</tr>
<tr>
<td>Chapter 28</td>
<td>Installing Windows</td>
<td>205</td>
</tr>
<tr>
<td>Chapter 29</td>
<td>Commercial Girts</td>
<td>210</td>
</tr>
<tr>
<td>Chapter 30</td>
<td>Endwall Braced Wall Panels</td>
<td>215</td>
</tr>
<tr>
<td>Chapter 31: Polycarbonate Eave Lights</td>
<td>219</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 49: Adding Rafter Extensions (Tails) for Sidewall Overhangs .......................... 299

Chapter 50: Sidewall Overhang(s) Only - Open..................................................................301

Chapter 51: Sidewall Overhang(s) Only - Enclosed............................................................313

Chapter 52: Endwall Overhang(s) Only - Open.................................................................325

Chapter 53: Endwall Overhang(s) Only - Enclosed............................................................341

Chapter 54: Sidewall and Endwall Overhangs - Open.....................................................358

Chapter 55: Sidewall and Endwall Overhangs - Enclosed...............................................381

Appendix

I. Amarr Overhead Door Installation..........................................................412
II. Genie Door Opener Installation.................................................................423
III. Direct Drive Chain Hoist Mounting Instructions.............................................453
IV. Applying Roofing Shingles..............................................................................454
V. Applying Alternate Sidings...............................................................................458
VI. Cupolas............................................................................................................459
VII. Plasti-Skirt.......................................................................................................467
VIII. Using Transits, Laser Levels and Optical Builder’s Level.............................469
IX. How to Have Straight Roof Steel Overhangs .................................................470
X. Flying Gable and Widow’s Peaks ........................................................................472
Triton Stall Kits........................................................................................................474
Hardware Pictures..................................................................................................489
Chapter 1: Introduction

Due to client and builder input, this latest Hansen Buildings’ Construction Manual edition covers features common to most installations first, followed by chapters individually addressing popular options.

There are two keys to successful post frame building installation.

First is quality products – products professional builders and contractors have come to expect from Hansen Buildings, pioneer in easy-care, easy-to-install post frame (pole) building products. If using Hansen Buildings’ products for this building project, then an important first step has been taken to an outstanding installation.

Second key is quality workmanship - an installation carefully planned and completed with attention to detail. This is where knowledge and know-how come into play.

Maybe you are an experienced installer, or perhaps preparing for your first post frame building installation. Whatever your situation, this Construction Manual will help you follow all necessary steps involved in outstanding post frame building installation. This manual also will help master skills and techniques required for each step. With products such as pre-manufactured metal plate connected wood trusses, even a beginner can successfully construct their own building. A building should be considered as many, small, easily accomplished steps.

We truly mean EACH step. This manual begins with site preparation. Then it moves to laying out a building, digging holes and setting building columns. Next, building framing. Finally there are techniques for installing steel roofing, siding, and trims.

Techniques and helpful hints in this manual are based on over four decades’ actual field experience. These instructions come from builders and individuals who have collectively successfully constructed over 100,000 post frame buildings. Be assured these are time-proven techniques. A good idea is to review local building codes to be aware of any special requirements for post frame (pole) building installation. Local building departments may have prescriptive structural requirements for “non-engineered” pole buildings. These prescriptive requirements are non-applicable to an engineered building except for loading and climatic conditions (snow, wind, soil and seismic), those you verified prior to placing your order.

Best way to use this construction manual will be as an addition to your own experience. If you are an old pro at post frame building installations, skim table of contents and inside pages looking for tips and techniques you can add to your current skill sets.

Chances are this post frame building will be different from any prior post frame building you have installed. Avoid making assumptions. Review this manual to be familiar with differences.

If new to post frame building installations, read book from cover to cover. You will quickly understand what has to be done, and in what order, to complete a successful post frame building installation.
If hiring a contractor to construct your new building, even one who has built Hansen Buildings before, provide to them this Construction Manual, building plans and all material takeoff lists.

Failure to provide these resources to builder will exponentially decrease chances things will be done correctly and will increase probability of disappointment with outcome. We frequently update this Construction Manual, as new products are introduced and Building Code changes are made, so we would encourage builders to read thoroughly, even if they have read a prior version. Also, in your best interest, is to read this manual, as even a most experienced builder will miss an important aspect from time to time. Only direct personal involvement will guarantee a satisfactory installation.

Construction manual creation custom tailored to any specific building is neither economically practical nor feasible. While one or more of these sections may be non-applicable to your building, it could prove helpful to read through them anyway. They may occasionally contain vital information proving helpful in other project areas.

IMPORTANT INFORMATION

Application and detail drawings in this manual are strictly for illustration purposes and may be non-applicable to all building designs or product installations. It is impossible for this manual, or any other resource, to cover all possible circumstances. In some cases, generally accepted construction practices and common sense may have to be used. Conform all projects to applicable building codes for their particular area.

Hansen Pole Buildings, LLC cannot be responsible for building performance, or portion thereof, if installed other than in accordance with suggested instructions referenced in this manual and according to building plans and erection drawings. If a conflict exists between this manual and actual erection drawings, erection drawings take precedence.

In event any difference exists between plans, material takeoffs, this manual, or any other furnished documents, contact Hansen Buildings immediately for clarification or resolution prior to moving forward.

Hansen Pole Buildings, LLC reserves right to modify, without notice, any details, recommendations, or suggestions.
SOME WORDS ABOUT SAFETY: STUDY APPLICABLE OSHA AND OTHER SAFETY REQUIREMENTS BEFORE FOLLOWING THESE INSTRUCTIONS.

During construction many potential hazards exist. Construction is a dangerous procedure and some work portions may be advisable to have supervised or done by trained knowledgeable erectors. Hansen Pole Buildings, LLC cannot be aware of all possible job site situations causing unsafe conditions to exist. Building erector is responsible for reading these instructions and determining safest way to install materials.

CAUTION Actual photos in this manual have been provided by clients and/or their builders. They are for illustrative purposes only, and may portray unsafe construction practices.

These instructions are provided as a guide to show correct parts placement, one to another. **IF** following any installation steps would endanger a worker or bystander, building erector must stop work and decide upon a corrective action.

As you exercise your do-it-yourself skills, develop and stick to safe work habits.

- Work patiently. If becoming confused, frustrated or hurried, chances are greater mistakes will be made or accidents will happen.
- Read and follow recommended safety procedures from tool manufacturers or products used.
- Turn off and unplug tools when changing blades or making adjustments.
- Use tools or equipment for their intended purposes; keep cutting tools sharp and all tools in good working condition.
- Adequately protect eyes and ears at all times.
- Wear appropriate protective clothing and heavy soled boots (with rubber soles when working on roof), gloves when handling lumber.
- Tie back long hair to avoid catching accidentally in power tools.
- Keep work surfaces and traffic areas free from materials, cords, tools, scraps and debris.
- Too heavy or awkward an object? Get assistance in moving; bend from knees when picking up large or heavy items.
- Wear hard hats when working under or around overhead construction.
- Use scaffolding when working on high places. Manipulating heavy and unwieldy trusses, rafters, beams and sheathing can cause balance loss. Be careful where stepping; move slowly and with caution. Avoid anyone standing below.
• Be extra careful working around glass – one wrong move can cause injury or replacing a costly item.

• Avoid working under or near overhead power lines.

• Provide required safety railing, netting, or safety lines for persons working on roof.

• Avoid using roof panels or sheathing as a walking platform. They won’t withstand a person’s weight standing at a panel or sheet edge.

• Sufficiently attach any construction materials placed on a sloped surface, prior to walking on them.

• Avoid working on damp or frosty steel surfaces, or with inadequate lighting.

• Use proper protection, take precautions and plan ahead. Never bypass safety to save money or rush a project.

• For detailed specifics on construction jobsite safety contact:

  Office of Construction Services
  USDOL/OSHA
  Room N3468, 200 Constitution Avenue, N.W.
  Washington, D.C. 20210
  (202) 693-2020