



INSTALLATION INSTRUCTIONS & WARRANTY POLICY



WE MAKE IT EASY



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1.1 INTRODUCTION

You are setting up one of the finest modular buildings on the market today. Great care was taken during its construction to create a building that is square and true. As you begin the setup procedures, **ADHERE CLOSELY TO THE FOLLOWING INSTRUCTIONS.**

Use journeyman workmanship quality standards.

NORTHSTAR SYSTEMBUILT WILL NOT BE RESPONSIBLE
FOR WARRANTY CLAIMS RESULTING FROM
IMPROPER SETUP PROCEDURES

Check carefully the overall site conditions and foundation layout for accuracy to avoid problems. Improper site conditions or foundation layout can create serious problems.

PLEASE READ AND UNDERSTAND THE FOLLOWING INSTRUCTIONS IN THEIR ENTIRETY PRIOR TO COMMENCING WITH THE HOME SETUP. The following instructions are intended to provide the installer with the proper setup instructions.

FOUNDATION PLANS WILL BE SUPPLIED BY A
LICENSED ARCHITECT OR ENGINEER CONTRACTED BY
THE BUILDER.

SITE PREPARATION AND FOUNDATION CONSTRUCTION
SHOULD BE VERIFIED BY A REGISTERED ENGINEER
OR ARCHITECT FAMILIAR WITH LOCAL SOIL CONDITIONS.

ALL SITE WORK WILL BE SUBJECT TO PERMITS, INSPECTION
AND APPROVAL BY LOCAL AUTHORITY HAVING JURISDICTION.



1.2 FOUNDATION PREPARATION (PER LOCAL CODES) RECOMMENDATION

The following requirements must be properly completed:

1. Soil conditions are acceptable at site.
2. Site properly prepared on firm or compacted soil.
3. Adequate drainage away from foundation.
4. Ground moisture control required for wet areas, foundation in wet areas for ground moisture control:

SOIL-GAS RETARDER. A continuous membrane of 10-mil (0.254 mm) polyethylene, 10-mil (0.254 mm) cross laminated polyethylene, or other equivalent material used to retard the flow of soil gases into a building.

Subfloor preparation. A layer of gas-permeable material shall be placed under all concrete slabs and other floor systems that directly contact the ground and are within the walls of the living spaces and conditioned crawl spaces of the building, to facilitate the installation of an active sub-slab depressurization system if needed. The gas-permeable layer shall consist of one of the following:

- a. A uniform layer of clean aggregate, a minimum of 4 inches (102 mm) thick. The aggregate shall consist of material that will pass through a 2-inch (51 mm) sieve and be retained by a 1/4-inch (6.4 mm) sieve.
- b. A uniform layer of sand (native or fill), a minimum of 4 inches (102 mm) thick, overlain by a layer or strips of geotextile drainage matting designed to allow the lateral flow of soil gases.
- c. Other materials, systems, or floor designs with demonstrated capability to permit depressurization across the entire sub-floor area.

Soil-gas-retarder. A minimum of 10-mil (0.254 mm) [or 3-mil (0.075 mm) cross-laminated] polyethylene or equivalent flexible sheeting material shall be placed on top of the gas-permeable layer prior to casting the slab or placing the floor assembly to serve as a soil-gas-retarder by bridging any cracks that develop in the slab or floor assembly and to prevent concrete from entering the void spaces in the aggregate base material. The sheeting shall cover the entire floor area with separate sections of sheeting lapped at least 12 inches (305 mm). The sheeting shall fit closely around any pipe, wire, or other penetrations of the material. All punctures or tears in the material shall be sealed or covered with additional sheeting.



Passive sub-membrane depressurization system. In buildings with crawl space foundations, the following components of a passive sub-membrane depressurization system shall be installed during construction.

a. Ventilation. Unconditioned crawl spaces shall be provided with vents to the exterior of the building. The minimum net area of ventilation openings shall comply with Section R408.1 of this code.

b. Soil-gas-retarder. The soil in crawl spaces shall be covered with a continuous layer of minimum 10-mil (0.254 mm) polyethylene soil-gas-retarder. The ground cover shall be lapped a minimum of 12 inches (305 mm) at joints and shall extend to all foundation walls enclosing the crawl space area.

c. Crawlspace area should have a gradual sloping grade away from the center to help prevent pooling.



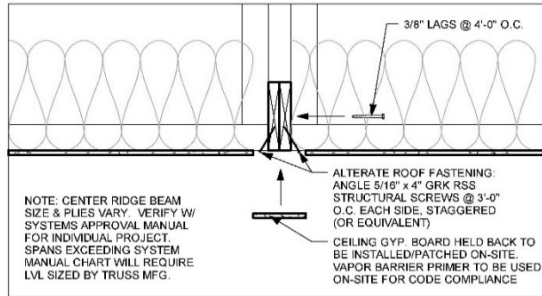
1.3 FOUNDATION PREPARATION

1. Verify correct foundation plans from engineer/architect.
2. Install correct size and thickness of all footings per local code.
3. Install all footings below frost depth.
4. Install correct size, location and spacing of piers and perimeter walls.
5. Check foundation layout for correct length and width.
6. Check the foundation wall for square by measuring from front corner to diagonal rear corner then measure other front corner to other diagonal rear corner. If the measurements are not the same the walls are not square. Call your engineer/architect immediately!
7. Verify walls and piers are the same height.
8. Shimming between piers and floor may be required for leveling when home sections are set on foundation.
9. Install 1/2" diameter anchor bolts in top of foundation wall located at a maximum of 6'-0" o.c. 4' for buildings over 2 stories beginning 12" from the foundation corners. Minimum of 2 per board. (Bolts to be 15" in length for concrete block wall and set into concrete. R403.1.6 Requires a minimum of 7" of embedment into concrete. A 7-inch bolt embedded into the concrete 7 inches will not allow for proper connection of the plate line to the foundation system. Foundation Anchor Bolt size must allow for proper embedment into the concrete and allow plate line to be properly bolted to the foundation system.
10. All foundation work must be completed at least three (3) days prior to erection if concrete blocks are used, and at least five (5) days prior to erection if poured concrete is used under normal conditions. Extreme wet or freezing conditions may require longer set time.
11. Place an approved sill seal on top of the wall under the sill plate. Bolt minimum 2" x 6" pressure treated sill plate to wall in accordance with local code. (Anchor bolts, sill seal and sill plate supplied by others at site).
12. Recheck all site-work for square and level.
13. See details for bay window/fireplace support requirements (If applicable.)

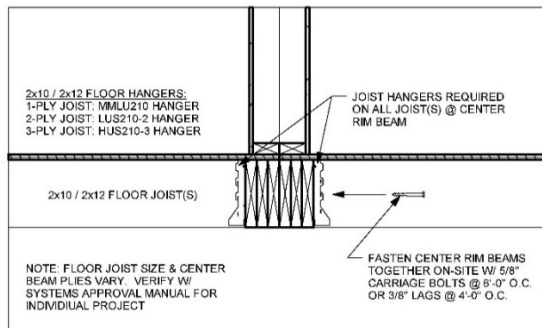


1.4 HOUSE SECTION PREPARATION

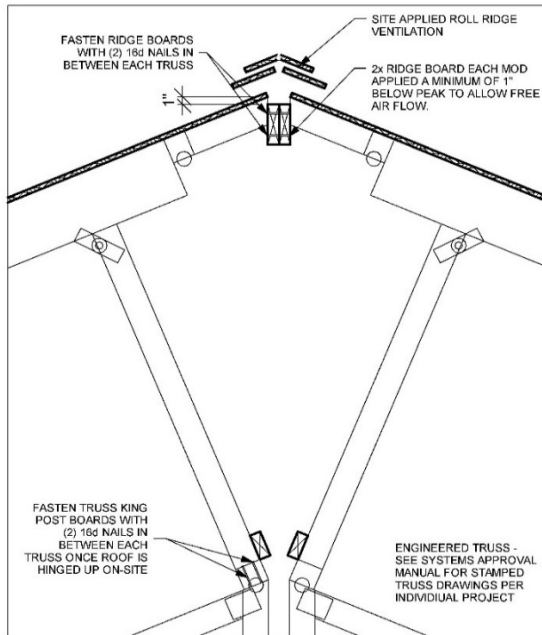
1. Before home is delivered at site, make arrangements to remove tree branches, raise any overhead electrical or telephone wires, and remove any other objects that may cause damage to the home. Make sure foundation perimeter will have adequate clearance for the transporter and carrier of the home upon delivery to the site.
2. Remove all plastic, bracing, strapping and close up material, leaving temporary walls and shipping columns in place at large span openings.
3. Remove all the fasteners used to connect the transporter to the floor section.
4. If there are two (2) sections, on the same transporter frame, completely separate any connections between sections before attempting to move or lift.
5. Ensure there are no projections, staples, shipping blocks, etc., remaining that may interfere with the close tolerances of the mating process.
NOTE: It is the responsibility of the installer/setup crew to maintain weather tightness of home throughout ALL on-site processes, including storage, setup and finishing.
6. *PROTECT ALL FINISHES AND FLOORING FROM ON-SITE CONTRACTOR TRAFFIC.*



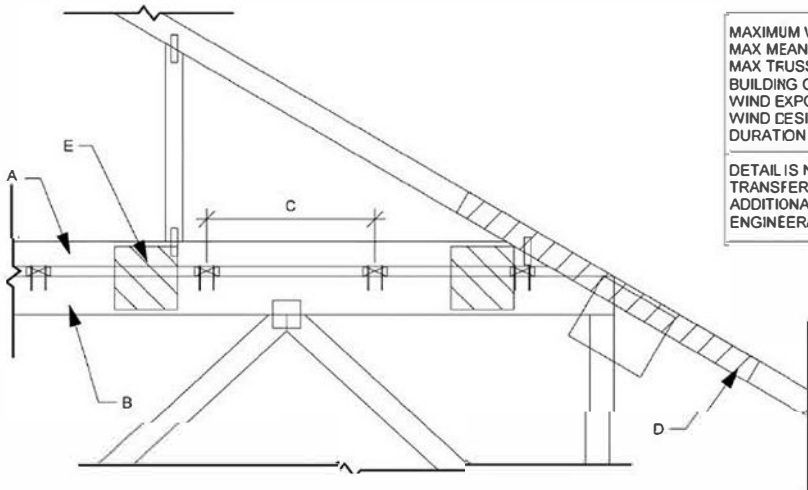
CENTER RIDGE BEAM DETAIL



CENTER FLOOR RIM DETAIL



ROOF RIDGE DETAIL

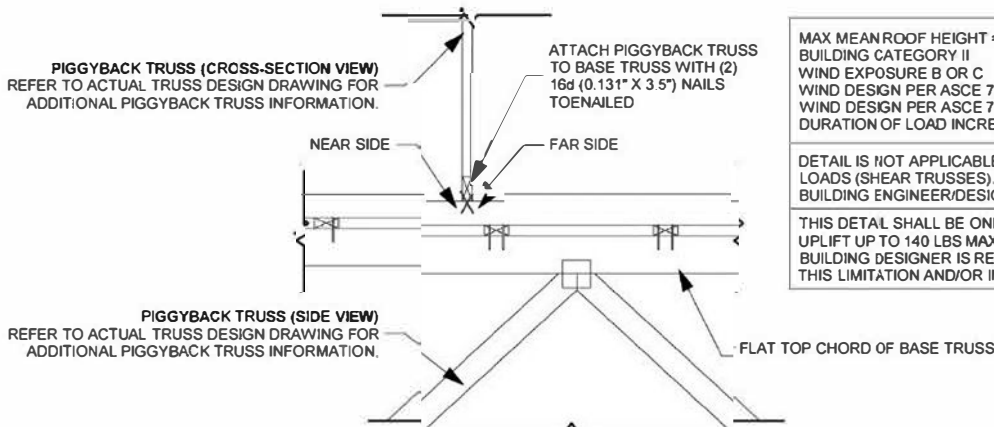


MAXIMUM WIND SPEED = REFER TO NOTES D AND/OR E
 MAX MEAN ROOF HEIGHT = 30 FEET
 MAX TRUSS SPACING = 24' O.C.
 BUILDING CATEGORY II
 WIND EXPOSURE B OR C
 WIND DESIGN PER ASCE 7-02, ASCE 7-05
 DURATION OF LOAD INCREASE FOR WIND LOADS: 1.60

DETAIL IS NOT APPLICABLE FOR TRUSSES TRANSFERRING DRAG LOADS (SHEAR TRUSSES). ADDITIONAL CONSIDERATIONS BY BUILDING ENGINEER/DESIGNER ARE REQUIRED.

- A - PIGGYBACK TRUSS, REFER TO MITEK TRUSS DESIGN DRAWING. SHALL BE CONNECTED TO EACH PURLIN WITH (2) (0.131" X 3.5") TOE-NAILED.
- B - BASE TRUSS, REFER TO MITEK TRUSS DESIGN DRAWING.
- C - PURLINS AT EACH BASE TRUSS JOINT AND A MAXIMUM 24" O.C. UNLESS SPECIFIED CLOSER ON MITEK TRUSS DESIGN DRAWING. CONNECT TO BASE TRUSS WITH (2) (0.131" X 3.5") NAILS EACH.
- D - 2 X 4'-0" SCAB, SIZE TO MATCH TOP CHORD OF PIGGYBACK TRUSS, MIN GRADE #2, ATTACHED TO ONE FACE, CENTERED ON INTERSECTION, WITH (2) ROWS OF (0.131" X 3") NAILS @ 4" O.C. SCAB MAY BE OMITTED PROVIDED THE TOP CHORD SHEATHING IS CONTINUOUS OVER INTERSECTION AT LEAST 1 FT. IN BOTH DIRECTIONS AND:
 - 1. WIND SPEED OF 90 MPH OR LESS FOR ANY PIGGYBACK SPAN, OR
 - 2. WIND SPEED OF 91 MPH TO 140 MPH WITH A MAXIMUM PIGGYBACK SPAN OF 12 FT.
- E - FOR WIND SPEED IN THE RANGE OF 126 MPH - 160 MPH; ADD 9" x 9" x 1/2" PLYWOOD (OR 7/16" OSB) GUSSET EACH SIDE AT 48" O.C. OR LESS, ATTACH WITH (3) 6d (0.113" X 2") NAILS INTO EACH CHORD FROM EACH SIDE (TOTAL = 12 NAILS)

1 STANDARD PIGGYBACK TRUSS CONNECTION DETAIL



MAX MEAN ROOF HEIGHT = 30 FEET
 BUILDING CATEGORY II
 WIND EXPOSURE B OR C
 WIND DESIGN PER ASCE 7-98, ASCE 7-02, ASCE 7-05 100 MPH (MWFRS)
 WIND DESIGN PER ASCE 7-10, ASCE 7-16 125 MPH (MWFRS)
 DURATION OF LOAD INCREASE FOR WIND LOADS: 1.60

DETAIL IS NOT APPLICABLE FOR TRUSSES TRANSFERRING DRAG LOADS (SHEAR TRUSSES). ADDITIONAL CONSIDERATIONS BY BUILDING ENGINEER/DESIGNER ARE REQUIRED.

THIS DETAIL SHALL BE ONLY USED FOR RESISTING A VERTICAL WIND UPLIFT UP TO 140 LBS MAXIMUM AT EACH CONNECTION POINT. BUILDING DESIGNER IS RESPONSIBLE FOR THE LOAD EXCEEDING THIS LIMITATION AND/OR IN OTHER DIRECTIONS.

NOTES FOR TRUSS:

1. THIS DETAIL IS VALID FOR ONE-PLY PIGGYBACK TRUSS ONLY
2. THE CHORD MEMBER OF PIGGYBACK AND BASE TRUSSES MUST BE SOUTHERN PINE OR DOUGLAS FIR-LARCH LUMBER
3. THE SPACING OF PIGGYBACK TRUSSES AND BASE TRUSSES IS 2 FT OR LESS
4. THE PIGGYBACK TRUSSES SHOULD BE PERPENDICULAR TO BASE TRUSSES
5. PIGGYBACK TRUSS MAY NOT CANTILEVER OVER BASE TRUSS OR HAVE AN OVERHANG WHICH WILL CREATE A HIGHER UPLIFT AT CONNECTING POINT

NOTES FOR TOE-NAIL:

1. TOE-NAILS SHALL BE DRIVEN AT AN ANGLE OF 30 DEGREES WITH THE MEMBER AND STARTED 1/3 THE LENGTH OF THE NAIL FROM THE MEMBER END AS SHOWN.
2. THE END DISTANCE, EDGE DISTANCE, AND SPACING OF NAILS SHALL BE SUCH AS TO AVOID UNUSUAL SPLITTING OF THE WOOD.

2 STANDARD PIGGYBACK TRUSS CONNECTION DETAIL (PERPENDICULAR)

1/2" = 1'-0"

*DETAILS CREATED FROM MITEK DETAILS



1.5 PLACEMENT OF FIRST FLOOR SECTIONS

NOTE: CRANE SET METHOD RECOMMENDED

1. Personnel Requirements - Crane set method will require a minimum of a lead man familiar with crane sets and four (4) workmen. Manpower requirements may vary with the scope of the project.
2. Contact a reputable crane company to conduct a site and determine proper crane size to perform the lift.
3. Prepare an area for the crane next to the foundation, but under no circumstances should crane be placed over any over dig, recent trench, or loose fill. At the same time allow space for turning sections as required while hoisting.
4. Placement Of First Floor Sections - The lifting of the farther section is considered normal procedure, although there will be times when site conditions dictate the setting of the closer section first. Verify sections and that they are correct according to the plot plan.
5. Provide small notches in sill plate for the lifting straps to facilitate the removal of the straps after the set is complete. Spreader bars are required to prevent severe damage to ceiling/roof structures. Discuss liabilities with crane operator before work is started.
6. With the transporter and the first section into position along-side the crane, rigging can start. Relocation or adjustments to strap locations may be required for pick-up points when lifting sections. Final determination of strap placement is the responsibility of the crane operator & builder.

7. Crane Rigging

- a. Spreader bars must be used at every pick point to keep rigging from damaging any part of the roof or truss assemblies. Also, eave protection is required, typically 2"x6" or wider to be placed over the fascia to disperse any pressure placed against the overhang from the rigging. Eave protection should be designed to hook below the fascia as to keep it from sliding up and damaging the d-edge and shingles. Eave protection should be designed to attach to and hang from the roof deck, never screwed or nailed through the fascia causing damage to the covering.
- b. Lift points on the house boxes are to be determined upon multiple factors including but not limited to:
 - i. House box width and length
 - ii. Weight of each individual box
 - iii. Weight carrying capabilities of the rigging
 - iv. Bump-out or recessed sections of the box
 - v. Interior floor plan layout
 - vi. Door and archway openings
 - vii. Any temporary roof structures or wall sections
 - viii. Weight distribution of any ship loose items that are not removed prior to lift
 - ix. Integrated LVLs in the rim joist area
 - x. Type of rigging being used, cables vs straps
- c. On 60' or shorter boxes, 2 lift points can be used and should be placed no more than 1/4 of the length of the box in from each end of the box. With the factors above taken into consideration, ensure that each lift point and rigging will carry any equal amount of the weight of the box without exceeding the capacity of the rigging. For heavier boxes, a third pick point will need to be added at the center point of the box and the outer lift points to be no more than 1/6th of the overall length of the box in from the ends. On boxes that are longer than 60' in length, a minimum of 3 lift points are required. These lift points can start at no more than 1/6th the total length of the box in from each end and one lift point at the center point of the box. Additional lift points may be needed if the weight of the box exceeds the capacity of the rigging when using three lift points. If this is the case all rigging must be equally spaced and carry an equal amount of the load. Care must be taken to ensure that the box is lifted evenly not putting more pressure or weight on one lift point over any other, this will cause damage to the box.



8. Remove any ship loose materials and tools from the foundation that could cause damage.
9. Lift farther section from transporter slowly and only a few inches to check for balance. Lift section to clear foundation. The erection crew must guide the section onto the foundation and lower into position. Care must be taken to align section onto foundation for proper placement before crane lifting straps are removed. (Next section first floor to be placed on foundation in the same manner.)
10. After first floor sections have been properly placed on foundation, check for tightness and alignment at mate up of ceiling and floor. Use a "come-along" or other suitable device at the outside ends if any adjustments must be made before the weight is fully borne on the foundation walls and piers/columns. Remove lifting straps only after proper alignment has been achieved.
11. Fasten the ceiling sections on top together at mate up with 3/8"x6"lag screws 4'-0" O.C. and toe-screwed at a 45 degree angle to penetrate roof rails. NOTE: Predrill pilot holes for lag screws to avoid splitting rails. (alternating directions)
12. Fasten floor perimeter joist at mate up under home with 1/2" carriage bolts no more than 4'-0" O.C. and in the top third of joist.
13. 10. Toe-nail or screw floor perimeter rim joist to sill plate with 16d nails or #8X3" wood screws 16" O.C. from outside full perimeter of home.
14. Remove and reinstall the 7/16" OSB sheathing at the mating seam of end walls. Install OSB sheathing at the end wall perimeter. Seal all seams to prevent air infiltration. Note: Perimeter rims of the first floors ceiling system is constructed flush with the bottom of the ceiling joists. The perimeter rim of the second floor's floor system is flush with the top of the floor joists. There is a space left between the two (2) sets of joists for any connections through floor and cross-over at mate up for water supply, plumbing, drain, waste, vents, electrical junction boxes and HVAC ducts for supply and return air. Complete all preparations and/or connections between floors before setting second floor units (see all details and specific plans.)
15. Removing Transporter - Pull transporter away from site and prepare to return to factory.



1.6 PREPARATION OF SECOND FLOOR SECTION

1. See house section preparation and follow instructions #1 through #7.
2. Raise hinged section of roof into position and secure king posts (per details) of trusses. It will be necessary to cut underlayment over the hinged area to eliminate any wrinkle. Check for correct overlap to ensure watertightness. Do not allow underlayment to be pinched in hinged joint or any wrinkles to remain.
IMPORTANT NOTE TO INSTALLER: AFTER ROOF SECTION IS RAISED AND SECURED IN THE PROPER POSITION. THE ROW OF SHINGLES OVER THE TOP OF THE TRUSS HINGE LINE MUST BE FASTENED BETWEEN THE SHINGLE TAB AND MANUFACTURE'S INSTALLATION INSTRUCTIONS.) SEE DETAILS SHOWN ABOVE.
3. Remove and reinstall the 7/16" OSB at the mating seam of gable end walls. Securely fasten and shim as necessary. Seal all seams to prevent air infiltration. Install the nominal 12" OSB strip at seam of mated perimeter rails.
4. Prepare to crane set second floor sections with appropriate rigging and spreader bars.
5. Ensure there are no obstructions at any side that would interfere with the close tolerances of the mating process.
6. Remove any loose materials and tools from the first floor's ceiling system that could cause damage before attempting to set the second floor sections and assure all perimeter rim insulation is correct. Make sure upper floor perimeter rim has been insulated.
7. Set next level of boxes using the same process as the floor below.
8. After second floor sections have been properly placed on first floor sections. Check for tightness and alignment at mate up of roof and floor. Use a 'come-along' or other suitable device at the outside ends if any adjustments must be made before the weight is fully borne on the first floor sections. Remove lifting straps. Only after proper alignment as been achieved.
9. Fasten the roof sections on top with 3/8"x5" lag screws no more than 4-0" O.C. (alternating directions) and tow-screwed at a 45-degree angle to penetrate roof rails. NOTE: Predrill pilot holes for lag screws to avoid splitting rails.
10. Toe-nail or screw perimeter rim joist together by using 16d nails or #8x3" wood screws 16" O.C. Direct fasteners downward from the top floor rim joist into the lower box ceiling system (full perimeter of home.)
11. If hinged roof overhangs are used, fold overhangs down at this time shimming may be required to level the soffit and true the pitch of the overhang. Fasten and secure overhang with #8X3" wood screws 16" O.C. Install gable end soffit, fascia and drip edge material.



1.7 EXTERIOR FINISHING

1. Complete installation of all roof sheathing, shingles, flashing, ridge vents, shingle caps, etc., as required per manufacture's specifications.
2. Install siding between stories, complete upper boxes and all end-walls per siding manufacturers specifications. Add bottom starter course of - siding to cover sill plate (full perimeter of home.)
3. Fasten roof rake (overhang) together at mate up with #8X3" wood screws 12"O.C. Install gable end soffit, fascia and drip edge material at rake. NOTE: Check roof for level and proper alignment. Shimming may be required at mate up.
4. Conduct an overall check of the exterior finish and make any adjustments required.
5. Clean-up site and dispose of all trash properly, recycle when possible.

ATTENTION INSTALLERS

VINYL SIDING MUST BE INSTALLED LOOSELY TO ALLOW FOR EXPANSION AND CONTRACTION DUE TO TEMPERATURE CHANGES.

BE SURE TO FOLLOW THESE BASIC RULES:

1. Nail or staple in center of slot (not in the corners).
2. Do not nail too tight (panel must be allowed to move-check this by sliding panel with hand after installation).
3. Do not face nail (nailing must be done in slots or punch outs).
4. Leave a minimum of 1/4" clearance at all openings and stops to allow for normal expansion and contraction.
5. Do not pull siding up tight when applying (allow it to hang without strain).
6. Overlap seam areas at least 1".
7. When cutting vinyl siding use a fine-tooth plywood blade. Reverse the direction of the blade for ease in cutting. Snips can also be used.

IMPORTANT: CHECK EACH PANEL TO SEE THAT IT SLIDES 1/4" IN EACH DIRECTION AFTER INSTALLATION



1.8 PLUMBING (SEE PLUMBING DRAIN/WASTE/VENT AND SUPPLY PLANS)

NOTE: Use only licensed, qualified personnel for plumbing connections and conducting tests.

1. Complete all plumbing cross-over connections: water supply, drain/waste/vent, and ship loose vents at floor line and through ceiling/floor passages provided.
2. Check all exposed connections thoroughly before covering. Warranty claims resulting from on-site plumbing errors and subsequent water damage will not be honored by Northstar Systembuilt. All plumbing site work will be the responsibility of the plumber and/or subcontractor performing the work.
3. Interconnect any ship loose vent through second floor section ceiling/floor passages provided if applicable (see details) and complete any vent that needs to be extended through the roof above the hinged section.
4. Supply and drain/waste/vent systems to be tested for leaks.
5. Provide freeze protection for all exposed supply and drain lines in the ceiling, attic, and below floors.
6. Verify dryer exhaust is vented to outside of home.
7. See set-up checklist.

1.9 GAS PIPING (SEE GAS PIPING PLANS IF APPLICABLE)

NOTE: Use only licensed qualified personnel for gas piping connections and conducting tests. Gas piping materials and installation to be provided by others at site.

1. Complete all gas piping cross-over connections.
2. Gas piping system to be tested for leaks.
3. Complete all gas appliance start-up and operation procedures.
4. See set-up checklist.



1.10 ELECTRICAL (SEE ELECTRICAL PLANS)

NOTE: USE ONLY LICENSED QUALIFIED PERSONNEL FOR ELECTRICAL CONNECTIONS AND TESTING.

1. Complete all electrical cross-over connections.
2. Cross-over connections will be color-coded and/or numbered to prevent mixing of circuits. Warranty claims resulting from on-site electrical completion errors and subsequent property damage will not be honored by Northstar Systembuilt. All electrical site work will be the responsibility of the electrician and/or subcontractor performing the work.
3. Install all light fixtures.
4. Electricians to test all electrical operations.
5. Install meter base and support to meet local codes.
6. Connect electrical drops to load center.
7. See set-up checklist.

1.11 HVAC SYSTEM (SEE HVAC PLANS)

NOTE: USE ONLY LICENSED, QUALIFIED PERSONNEL FOR HVAC SYSTEM CONNECTIONS AND TESTING.

1. Complete all fire stopping requirements in chases and between floors.
2. Install all vent stacks and extensions for furnace, water heater, range hood, fireplace, etc., as required per manufacturer's specifications.
3. Complete all duct supply and return air cross-over connections below the floor, between the ceiling/floor of first and second floor sections and above the ceiling. Any deviations from the HVAC specifications must be approved by the engineering department of Northstar Systembuilt, before they are made, or HVAC warranty may be voided.
4. Complete all HVAC system start-up and operation procedures.
5. Fireplace cold air return must terminate outside the home per manufacturer's specifications.



6. See set-up checklist.
7. Duct Blaster and Blower Door Testing to be performed on site by others (if required).
8. See set-up checklist.

1.12 INTERIOR FINISHING

See service policy for drywall cracks resulting from shipment and setup.

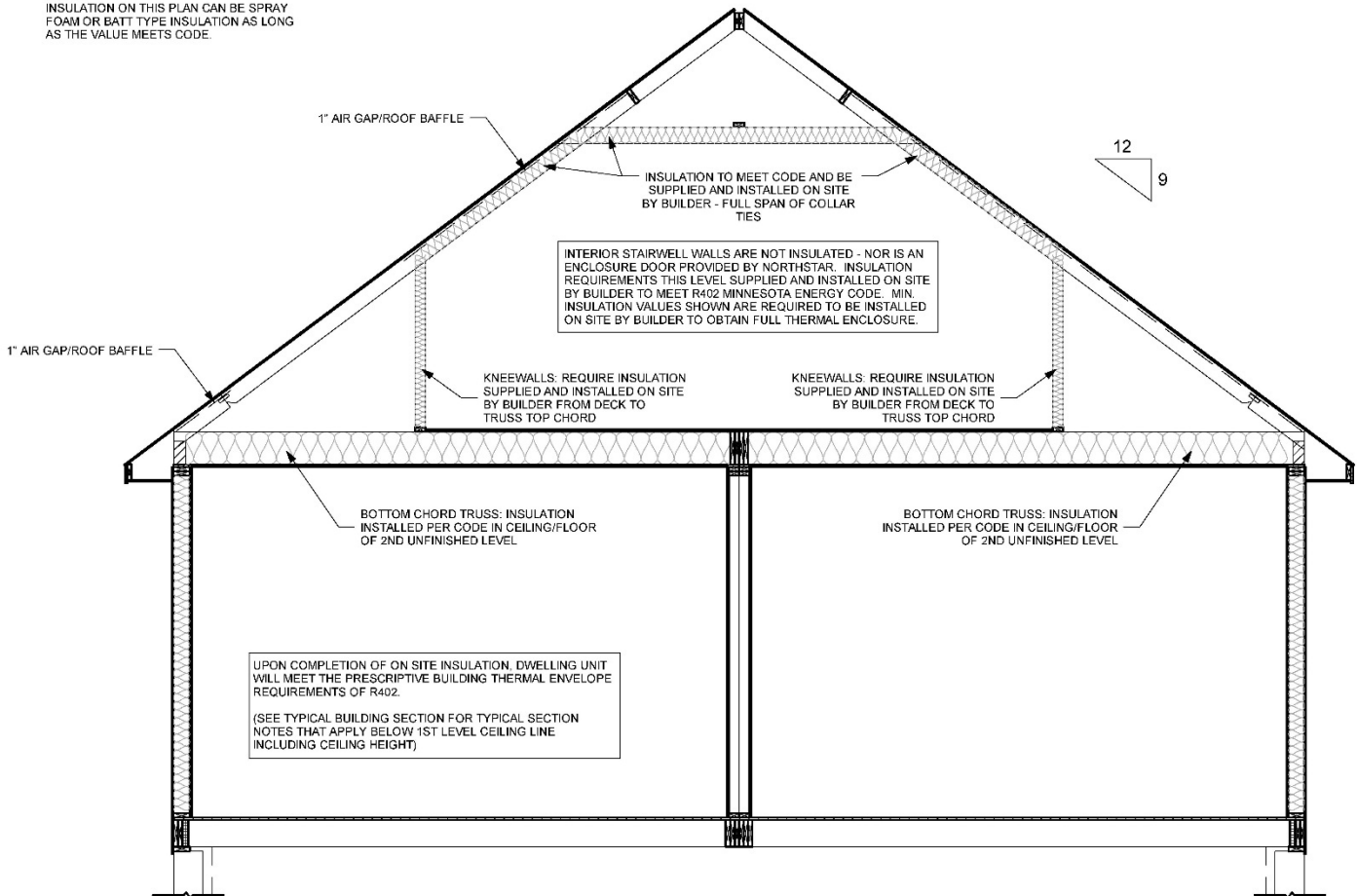
1. Remove all temporary shipping walls, columns and supports.
2. Install all (ship loose) wall panels and complete all interior drywall. To repair ceiling corner cracks simply cut out old caulking with knife or putty knife, re-caulk and paint with vapor barrier paint provided by manufacturer. For hairline cracks mix mud with vapor barrier paint and paint into corner cracks.
3. Install all (ship loose) doors.
4. Install all molding and trim.
5. Adjust all doors for proper operation.
6. Complete all floor coverings, underlayment, tile or carpet/pad per manufacturer's specifications.
7. Conduct an overall check of the interior finish and make any adjustments required.
8. Make a general clean-up of interior and dispose of all trash properly.

1.13 Finishing of Unfinished Attics on Site

1. If the house has an attic that hasn't been insulated in the Factory (such as an unfished Cape home), Insulation is the responsibility of the onsite contractor (All plan reviews, permits and inspections to complete these areas must be submitted to the local authority having jurisdiction, and are the responsibility of the onsite contractor.). Please see drawing on the following page showing how these Attics need to be insulated to complete the thermal envelope.

Insulation Requirement for Unfinished Attic

NOTES:
INSULATION ON THIS PLAN CAN BE SPRAY
FOAM OR BATT TYPE INSULATION AS LONG
AS THE VALUE MEETS CODE.





1.14 SET-UP CHECK LIST

SET-UP CHECK LIST

This list is provided to be a helpful tool only. **The site contractor is responsible** for a correct setup and installation before final delivery **and inspection of the home to the customer.**

WARRANTIES COULD BE VOIDED BECAUSE OF IMPROPER SET-UP!

SITE PREPARATION

- Soil conditions in compliance per local codes.

FOUNDATION PREPARATION

- Correct size and thickness of all footings (Below frost depth).
- Size, location and spacing of piers and walls properly installed.
- Check layout with plans for correct foundation length and width.
- Foundation is plumb, true, square and level.
- Verify foundation walls and sill plates are in full contact

ERECTION ROLL-ON / CRANE SET

- As each section is set, are supports and piers (columns) in proper locations?
- Check for obstructions that prevent tight fitting at mate-up.
- Attach insulation at mate-up to prevent air infiltration.
- Ensure sections are properly fastened at gable end walls, roofs, floors, ridge-beams and sill plates
- Check sections for proper placement and alignment on foundation.
- Verify all fastening requirements.

EXTERIOR FINISHING

- Complete installation of all roof sheathing, shingles, flashing, ridge vents, shingle caps, etc.
- Install siding on Gable end walls and bottom perimeter row to cover sill plate.
- Install soffit, fascia and drip edge material at roof rake.
- Verify all exterior finish completed.
- Verify all fastening requirements (roof, walls, floor).

PLUMBING

- All cross-over connections & testing completed by licensed, qualified personnel.
- Complete all cross-over connections; water supply, drainage and (ship loose) vents.
- Connect cross-over plumbing drops below floor.
- Connect cross-over (ship loose) vents in roof through access.
- Test supply and drainage systems for leaks.
- Provide freeze protection for all exposed supply and drain lines.
- Verify dryer exhaust is vented to outside of home.



GAS PIPING

- All cross-over connections and testing completed by licensed, qualified personnel.
- Complete all gas piping cross-over connections.
- Test gas piping system for leaks.
- Complete all appliance start-up and operation procedures.

ELECTRICAL

- All cross-over connections and testing completed by licensed, qualified personnel.
- Complete all cross-over connections.
- Verify color-coded and/or numbered to prevent mixing of circuits.
- Install all exterior light fixtures.
- Check each outlet/switch for proper operation - without exception.
- Test all circuits for proper operation.
- Install meter base and support to meet local codes.
- Connect electrical drops to load center.

HVAC SYSTEM

- All cross-over connections and testing completed by licensed, qualified personnel.
- Complete all fire stopping and flue work per local codes.
- Complete all cross-over duct connections per plans.
- Ensure all connections are secured and sealed.
- Check all supply and cold air return for blockage, obstructions, crushed duct work, etc., in
- Basement/Crawlspace and attic.
- Insulate and support duct work in attic and crawlspace.
- Test HVAC system start-up and operation procedures.

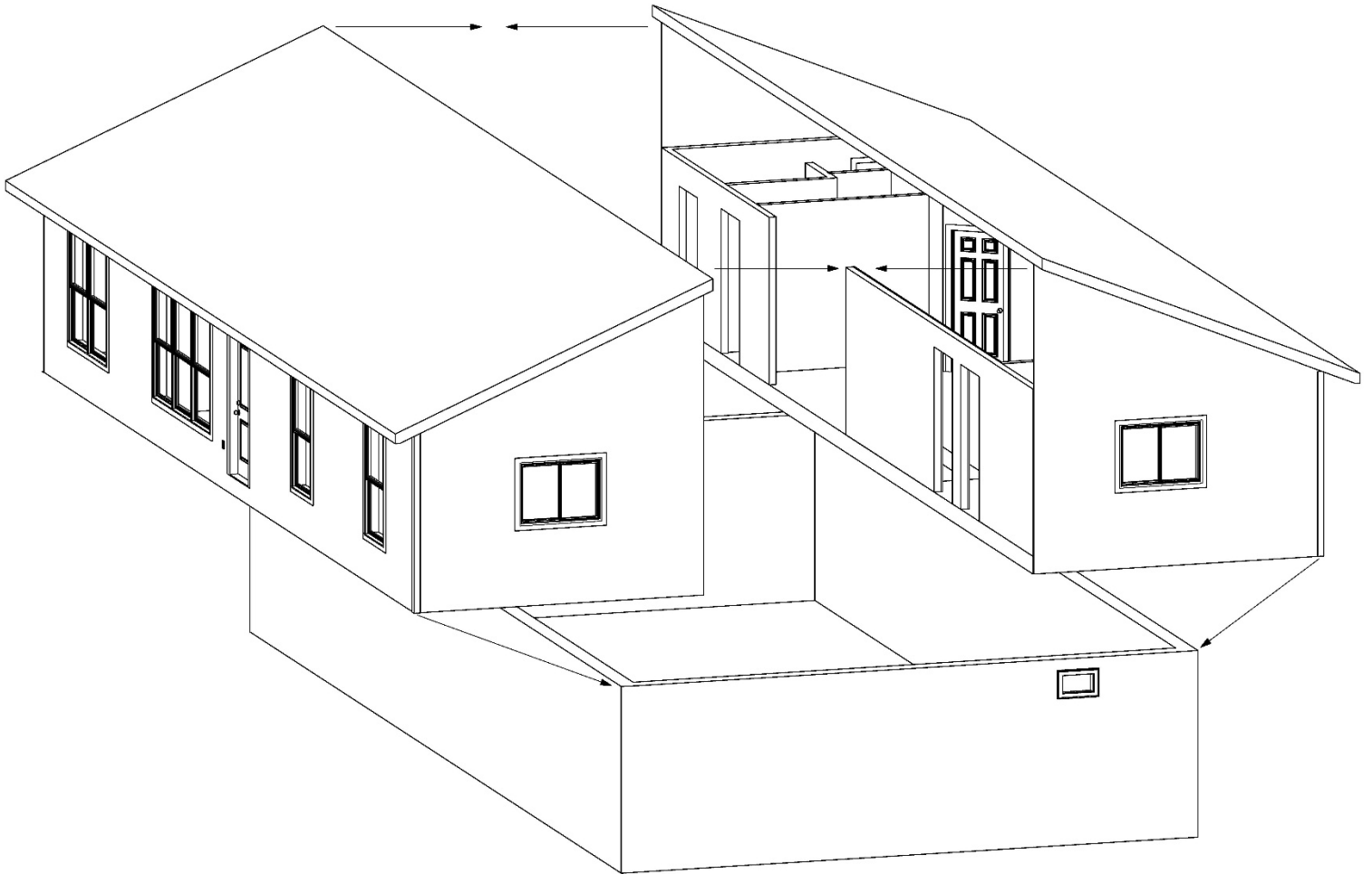
INTERIOR FINISHING

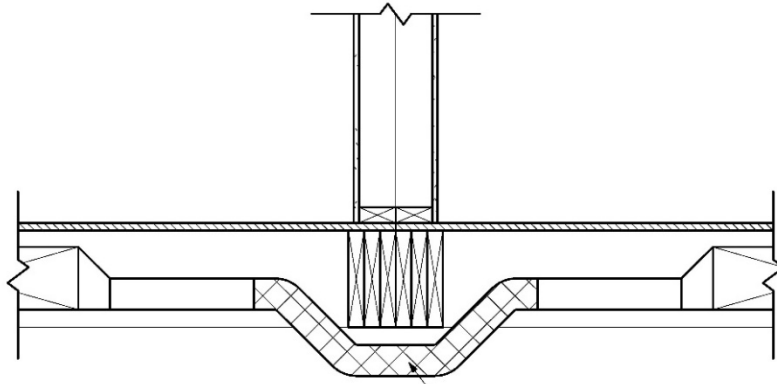
- Install (ship loose) doors.
- Install molding and trim.
- Adjust all doors for proper operation.
- Install (ship loose) wall panels.
- Remove all shipping columns and supports.
- Complete all floor underlayment, tile or carpet/pad (if applicable).
- Verify interior finish is completed.

NOTES:

SECTION 2 – STANDARD DETAILS

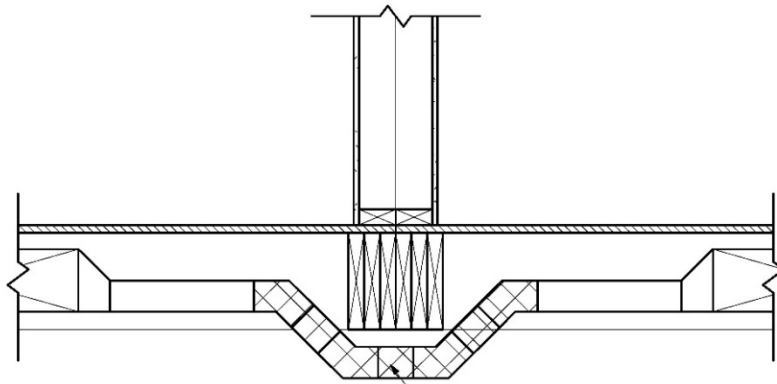
2.1 SETTING ILLUSTRATION





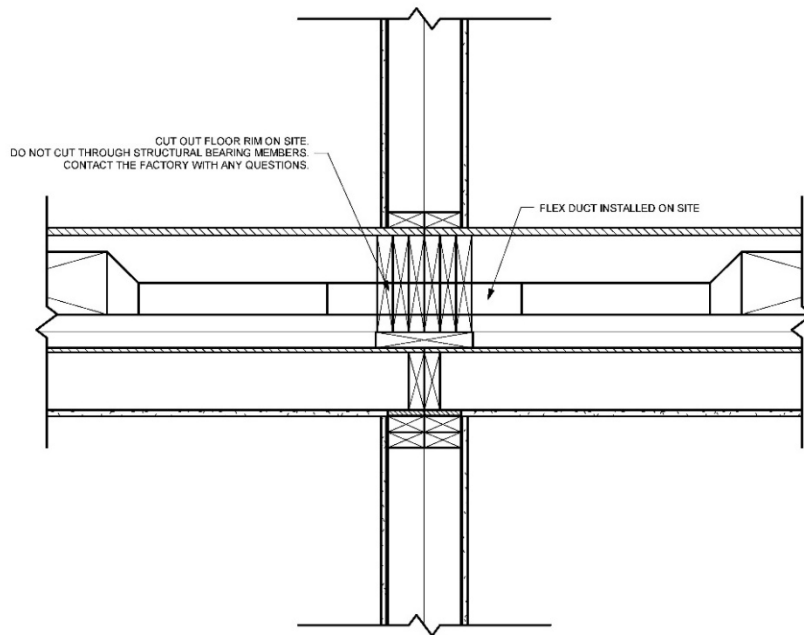
① FLEX DUCT CROSS-OVER
3/4" = 1'-0"

FLEX DUCT INSTALLED ON SITE



② TRUNK LINE CROSS-OVER
3/4" = 1'-0"

TRUNK LINE DUCT INSTALLED ON SITE UNDER THE MATELINE RIMS

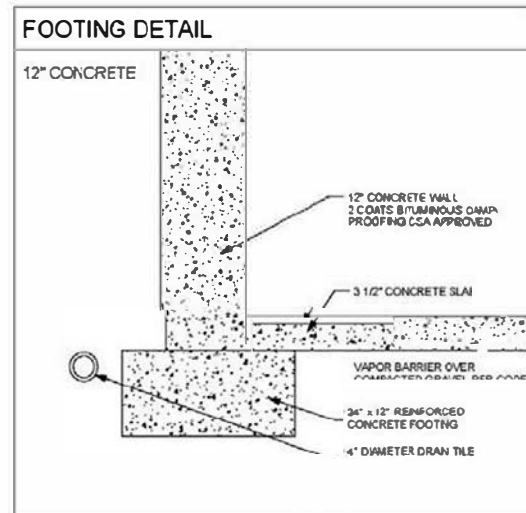
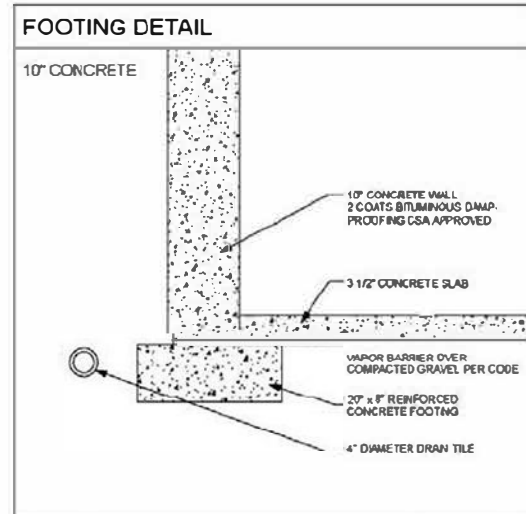
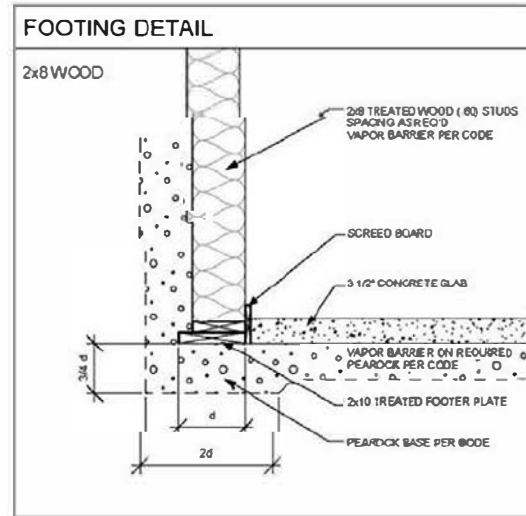
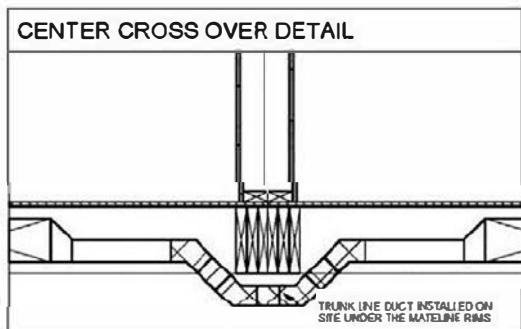
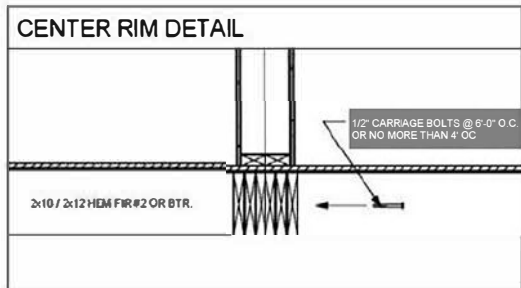
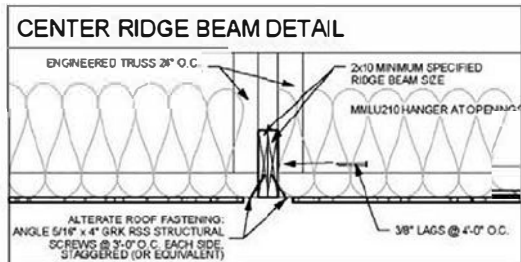
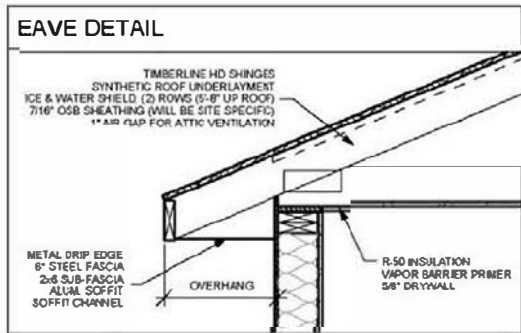
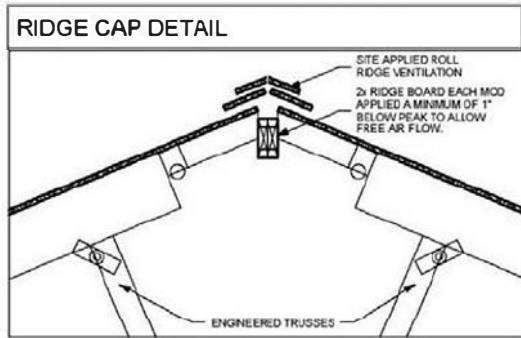


③ FLEX DUCT CROSS-OVER
3/4" = 1'-0"

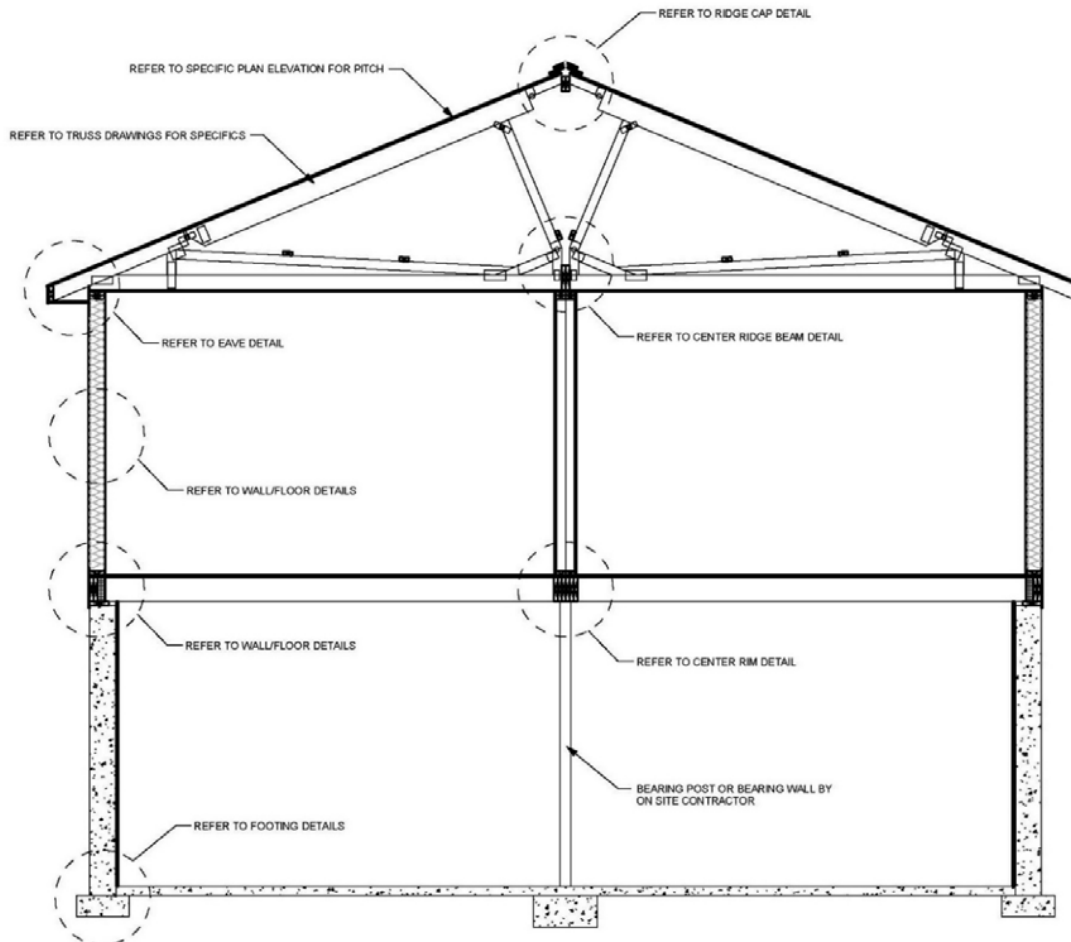
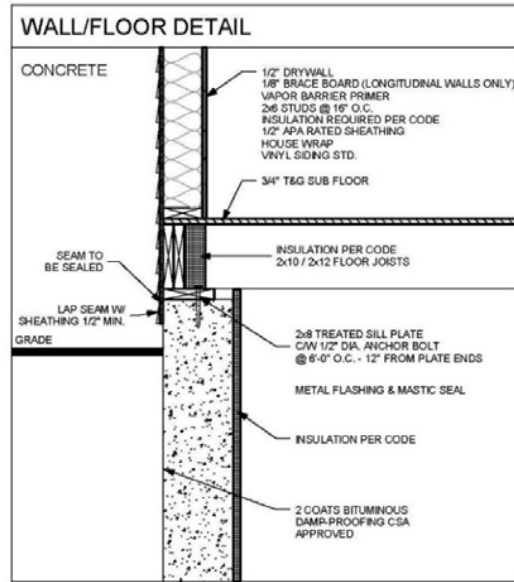
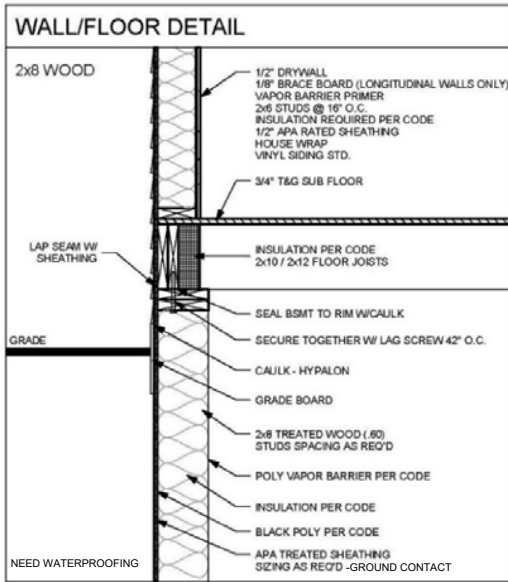
CUT OUT FLOOR RIM ON SITE.
DO NOT CUT THROUGH STRUCTURAL BEARING MEMBERS.
CONTACT THE FACTORY WITH ANY QUESTIONS.

FLEX DUCT INSTALLED ON SITE

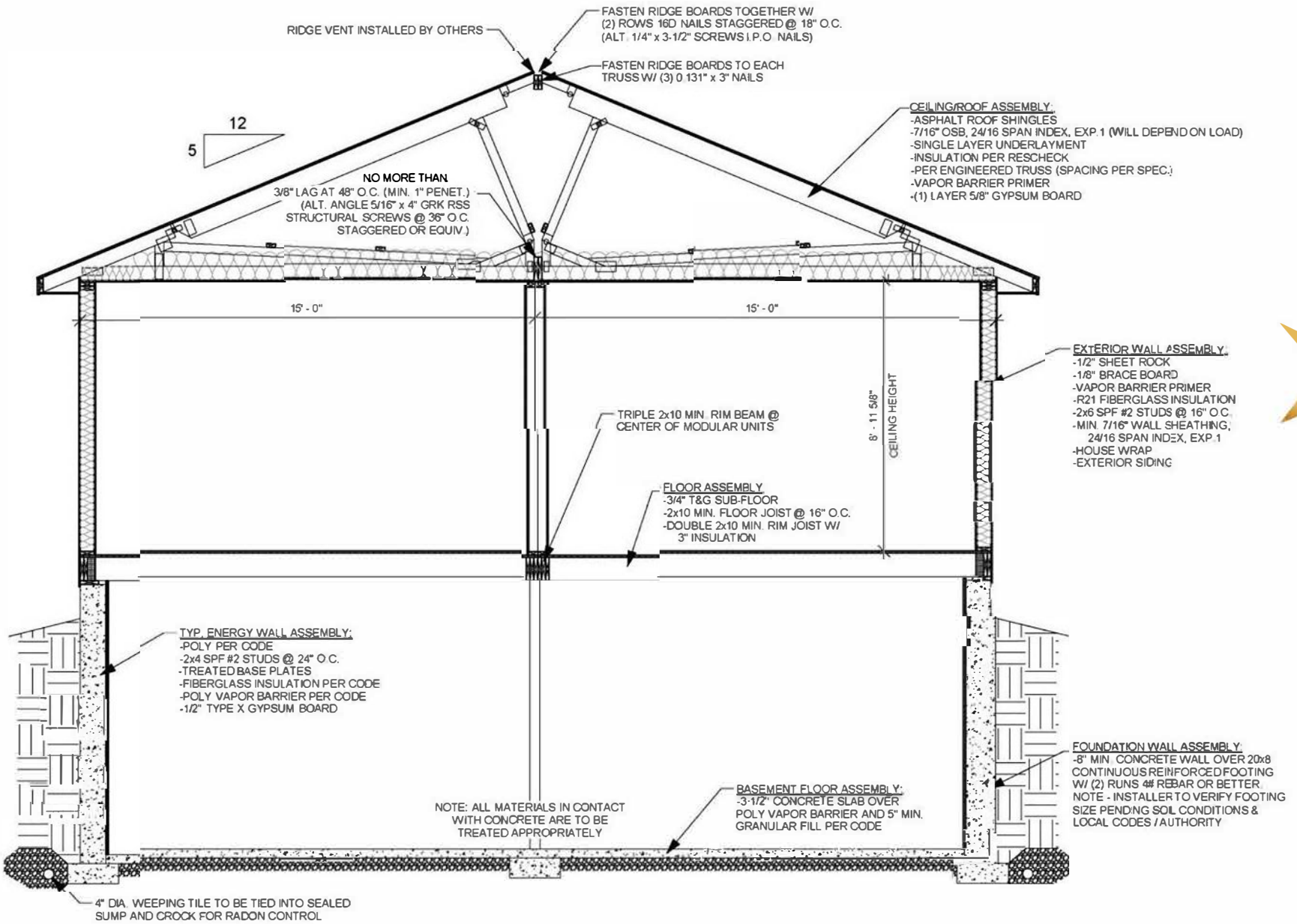
2.2 CROSS SECTION 'A'



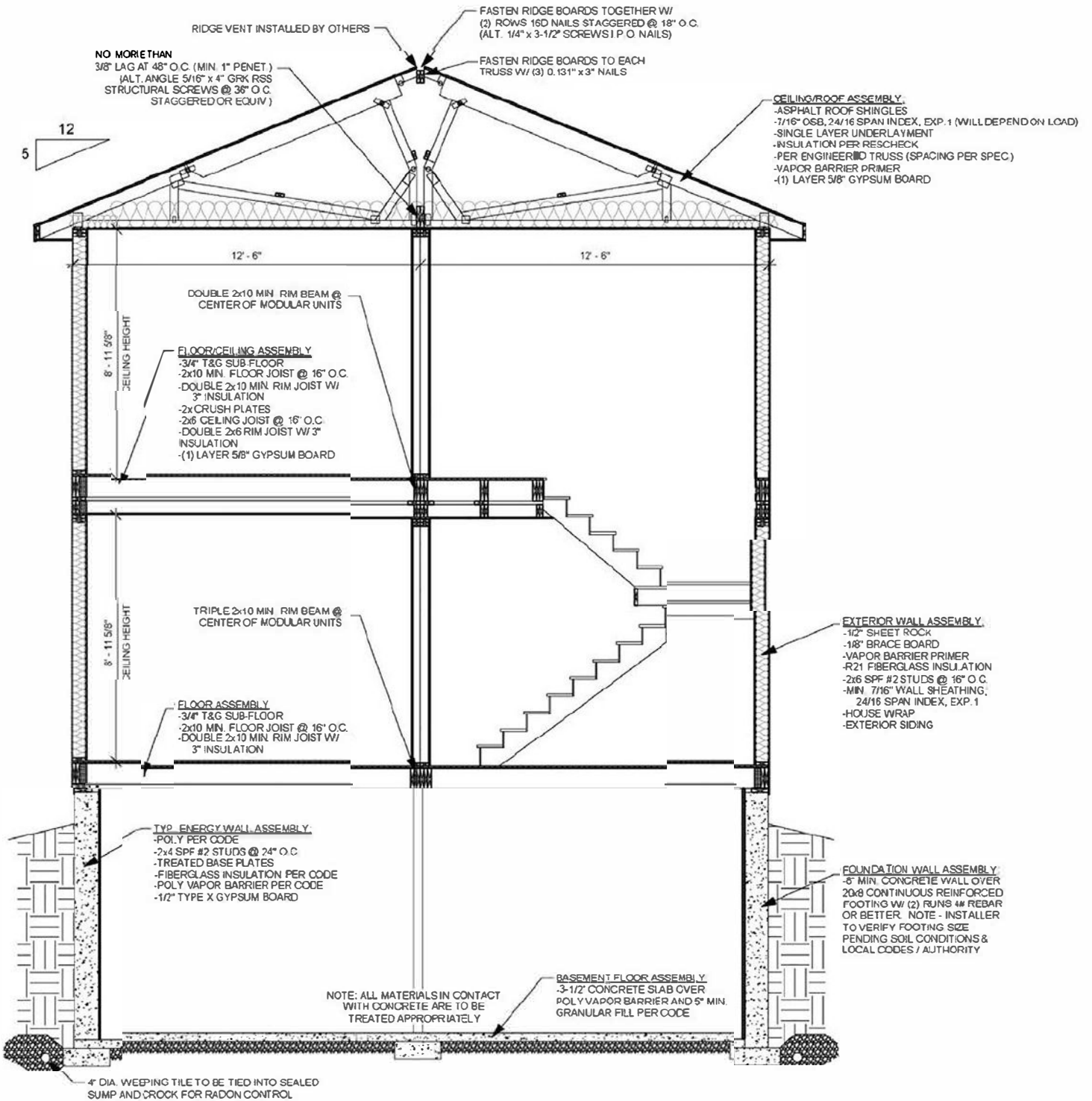
2.2 CROSS SECTION 'A'



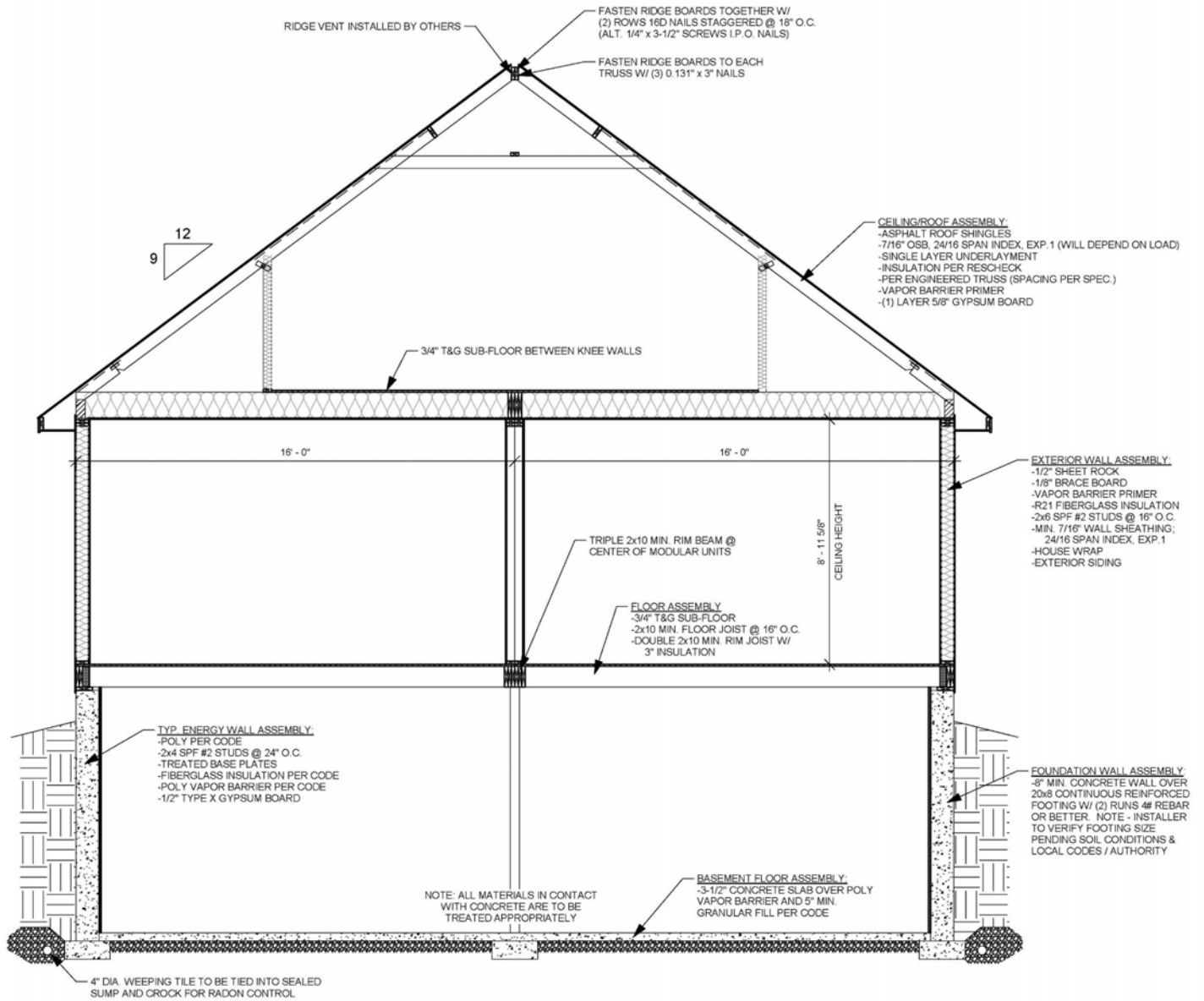
STANDARD RANCH CROSS SECTION



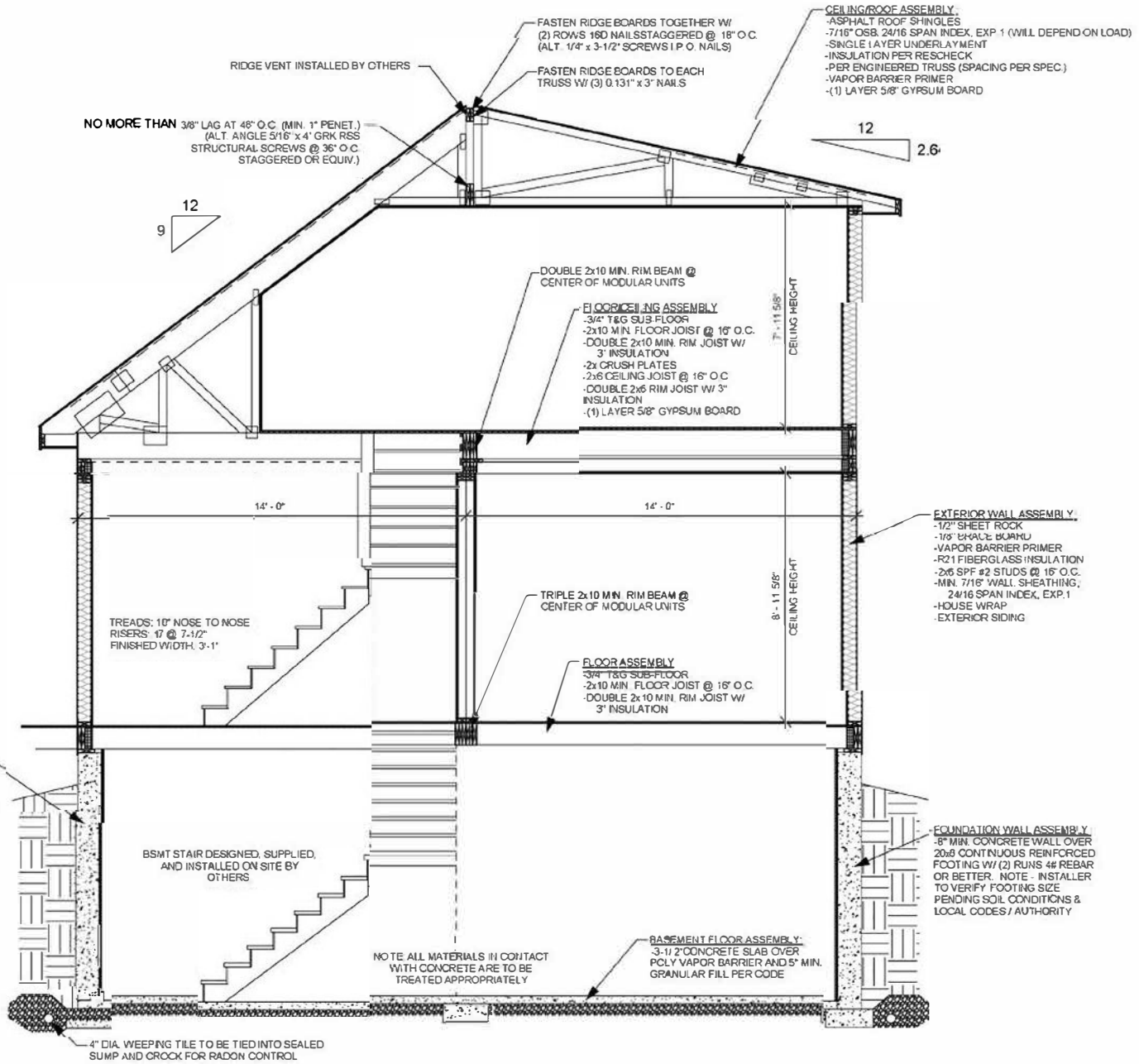
2.2 CROSS SECTION 'A'



2.2 CROSS SECTION 'A'



2.2 CROSS SECTION 'A'





SECTION 3 – WARRANTY & SERVICE POLICY

3.1 PRODUCT WARRANTY

- 3.1.10 The customer is given specific legal rights that may vary from state to state. Each customer is encouraged to refer to his or her specific rights.
 - 3.1.10.1 Minnesota State Statute 327A: STATUTORY WARRANTIES
Subdivision 1. Warranties by vendors. In every sale of a completed dwelling, and in every contract for the sale of a dwelling to be completed, the vendor shall warrant to the vendee that: (a) during the one-year period from and after the warranty date the dwelling shall be free from defects caused by faulty workmanship and defective materials due to noncompliance with building standards; (b) during the two-year period from and after the warranty date, the dwelling shall be free from defects caused by faulty installation of plumbing, electrical, heating, and cooling systems due to noncompliance with building standards; and (c) during the ten-year period from and after the warranty date, the dwelling shall be free from major construction defects due to noncompliance with building standards.
- 3.1.20 Each building fabricated at the listed facility (Section 100.00) is warranted to the original purchaser for one year from the date of retail delivery by the company. The company reserves the right to decide the appropriate correction of any defect as per all applicable codes.
- 3.1.30 All construction methods comply with the applicable codes approved herein at the time of fabrication.
- 3.1.40 Repair, adjustment or replacement of any defective items manufactured at the plant facility, will be provided free of charge. Non-warranted items excluded.

3.2 CONDITIONS OF WARRANTY

- 3.2.10 All claims must be submitted in writing to their Dealer. Dealer must be allowed reasonable time to investigate claim. Claims must include; home owner's name, address, serial number, date of purchase, and full claim description.
- 3.2.20 All work to correct claim by dealer, *must* have the manufacturer's approval prior to the start of any work.
- 3.2.30 Items having their own warranties shall apply. Extensions of warranty will be made by the company as required by state laws. Such warranties will be included in the shipping packet.
- 3.2.40 Dealer is *solely* responsible for any claims, or contracts they make.
- 3.2.50 Exclusions to warranty
 - 3.2.50.1 Floor squeaks, nail/screw pops, drywall cracks, and resetting doors or countertops due to transportation, building installation, normal drying conditions and settling of foundation.
 - 3.2.50.2 Any wall or floor issues at the mating line of the modular pieces subject to or due to on-site work.
 - 3.2.50.3 Damaged exterior finishes caused by carelessness of on-site workers.
 - 3.2.50.4 Damages or losses due to shipping/transportation incidents/conditions (i.e. water damage, theft, etc.).



- 3.2.50.5 Modules must be parked on level ground, plastic must be regularly inspected for any rips, tears or damage (including pooling water) and snow sitting on the top of the modules must be removed.
 - 3.2.50.6 Any damage caused by inadequate ventilation system or high moisture levels (i.e. *not installing an air exchanger*).
 - 3.2.50.7 Damage caused by altering factory-installed items or not compiling to any/all applicable building code items, either factory installed or on-site. Any damage caused by compromising the structural stability of the structure (i.e. cutting through the center rim joists).
 - 3.2.50.8 Any damage or loss caused by theft, vandalism, or abnormal weather conditions including but not limited to; rainstorms, flooding, hail, snowstorms, fires, wind storms, tornadoes, or any act of God. Also including the home used for purposes it was not intended for (i.e. residential homes used as a business or daycare.)
 - 3.2.50.9 Items covered by other manufacturers' warranties. i.e. GE appliances.
 - 3.2.50.10 Any work carried out by persons not employed by Northstar unless given explicit approval to do so.
- 3.2.60 This serves as the entire warranty issued by the company. *The company will not be held liable for any claims or damages outside this warranty, as per state laws.*
- 3.2.70 Disclaimer of Implied Warranties: This Warranty is the sole and exclusive warranty provided by the Company. All other warranties, express or implied, including the implied warranties of merchantability and fitness for a particular purpose, are hereby disclaimed.
- 3.2.80 Limitation of Liability: The Company's liability under this Warranty is limited to the repair or replacement of defective items. The Company shall not be liable for any incidental, consequential, or punitive damages arising from any defect in the Home.

3.3 PRODUCT SERVICE POLICY

- 3.3.10 Service will be performed by the company or its authorized representative pending proper documentation and submitting the required information. No payments will be made for any unauthorized service work.
- 3.3.20 Warranty Service
 - 3.3.20.1 Upon written notification (Service Request Form), the request will be reviewed and approved or denied.
 - 3.3.20.2 If the request is denied, a written response shall be made describing the reason for the denial and filed in the service file.
 - 3.3.20.3 If the request is approved, the request will be recorded and assigned a service order number.
 - 3.3.20.4 A target date is estimated for work to be performed depending on all factors involved (i.e. weather, urgency, material needed, etc.).
 - 3.3.20.5 The required preparation of materials and labor needed, is then ordered.
 - 3.3.20.6 Upon satisfactory completion of the service work, the request form is filed in the service file.



3.3.30 Service Authorization

- 3.3.20.1 Upon written notification (Service Request Form), the request will be reviewed. All requests must include cost proposals.
- 3.3.20.2 If the request is denied, a written response shall be made describing the reason for the denial and filed in the service file.
- 3.3.20.3 If the request is approved as other service work, written approval will be given to the dealer.
- 3.3.20.4 Upon satisfactory completion of the service work, the request form is signed off by the customer and submitted to the company with a detailed invoice by the dealer.
- 3.3.20.5 The service manager reviews the submitted request and authorizes for payment once verification that the information and work is in order.
- 3.3.20.6 Once completed, the documentation is filed in the service file.

3.4 STATEMENT OF COMPLIANCE FOR INSULATION

- 3.4.10.1 Service will be performed by the company or its authorized representative pending proper documentation and submitting the required information. No payments will be made for any unauthorized service work. In line with our vision to be the 'Easy to deal with', Industry Leading, Modular Building manufacturer that is continually improving, we maintain a comprehensive program that allows for the highest level of quality in our homes, as well as the process of construction. This is effectively accomplished by using documentation, inspections and communication.
- 3.4.10.2 Pursuant to MSBC, Chapter 7670.470 Subp. 11; performance and identification of loose fill insulation are in accordance with the state construction code. All system-built homes leaving our facility have been inspected and identified as in compliance.
- 3.4.10.3 Due to transportation and disruption on-site being beyond our control, we cannot be responsible for any adjustments that may be required to maintain compliance. We do however offer our cooperation and assistance in rectifying these situations.



CUSTOMER SERVICE REQUEST FORM

DATE:

DEALER:

CUSTOMER

Horizontal lines for dealer and customer information.

CONTACT:

HOME:

CELL:

PHONE:

FAX:

WORK:

S/N:

DATE OF MFG:

PLEASE INCLUDE AS MUCH INFORMATION AS POSSIBLE ON ITEMS NEEDING REPAIRS, SUCH AS COLORS, SIZES, LOCATIONS, ETC. IF POSSIBLE, PLEASE SEND PHOTOS

Table with 3 columns: ITEM #, SERVICE ISSUE, ROOM. Multiple rows for item entry.

UPON RECEIPT OF THIS REQUEST FORM NORTHSTAR WILL GENERATE A WORK ORDER AND A COPY OF THE WORK ORDER WILL BE SENT TO YOU FOR VERIFICATION THAT ALL ITEMS ARE CORRECT. SERVICE WORK WILL THEN BE SCHEDULED.

PLEASE RETURN VIA:

X _____
CUSTOMER DATE

E-MAIL: service@northstarsb.com

MAIL: 203 INDUSTRIAL DR.
REDWOOD FALLS, MN 56283

