

Vernon Building Department

55 west Main Street, Vernon, CT 06066

860-870-3633

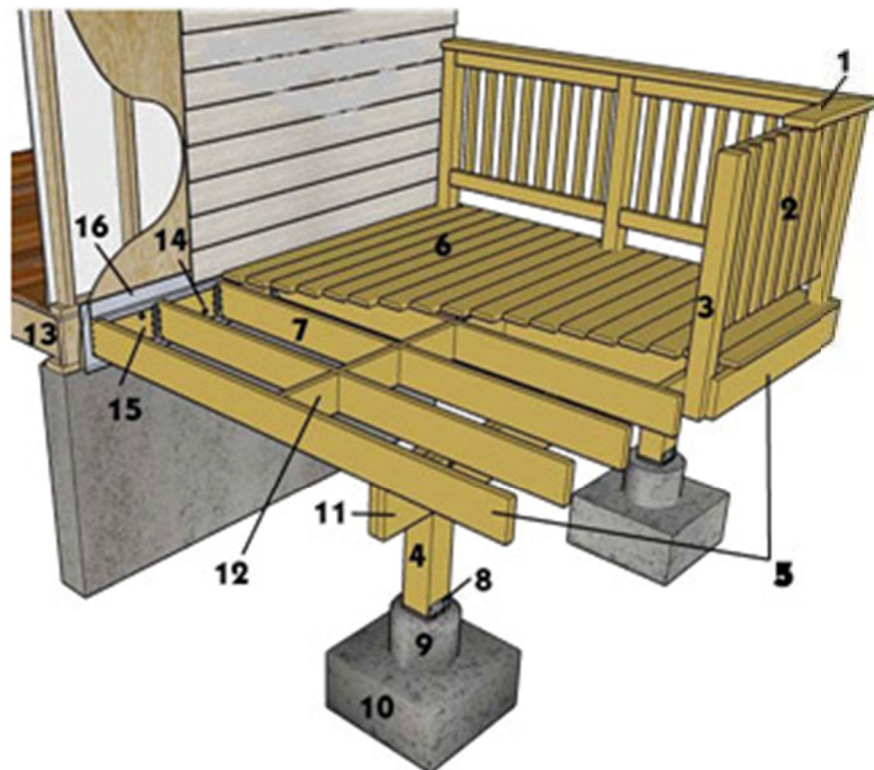
ILLUSTRATED GUIDE TO DECKS

The purpose of this handout is to provide illustrations of common deck construction techniques. It is not the purpose of this handout to endorse any of the methods show or limit designs to those shown here. The techniques shown may not be suitable for some designs, soil types, or locations. While every attempt has been made to insure the correctness of this handout, no guarantees are made to its accuracy or completeness. Responsibility for compliance with applicable codes and ordinances falls on the owner or contractor. For specific questions regarding code requirements, refer to the Connecticut State Building Code or contact the Building Department.

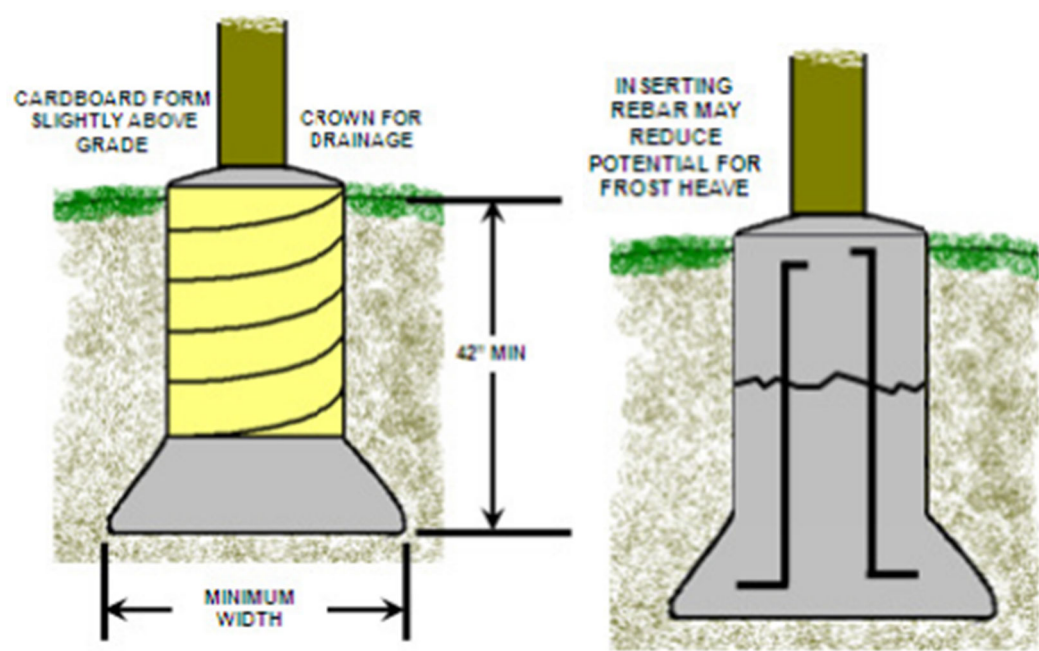
For charts on joist/beam spans, column/footing sizing, and cantilever projections, see the handouts or the 2015 IRC.

TERMINOLOGY

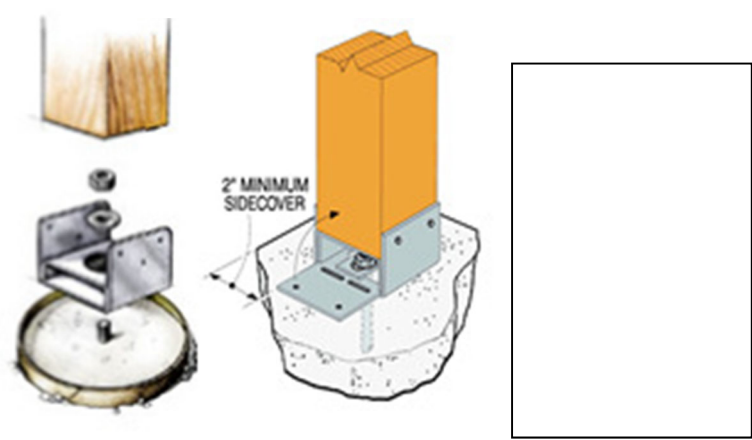
1. RAIL TOP CAP
2. BALLUSTERS
3. RAIL POST
4. SUPPORT POST
5. RIM OR BAND JOIST
6. DECKING
7. JOISTS
8. POST BASE CONNECTOR
9. PIER
10. FOOTING
11. DROP BEAM
12. BLOCKING
13. HOUSE JOIST
14. ½" BOLTS
15. LEDGER BOARD
16. FLASHING



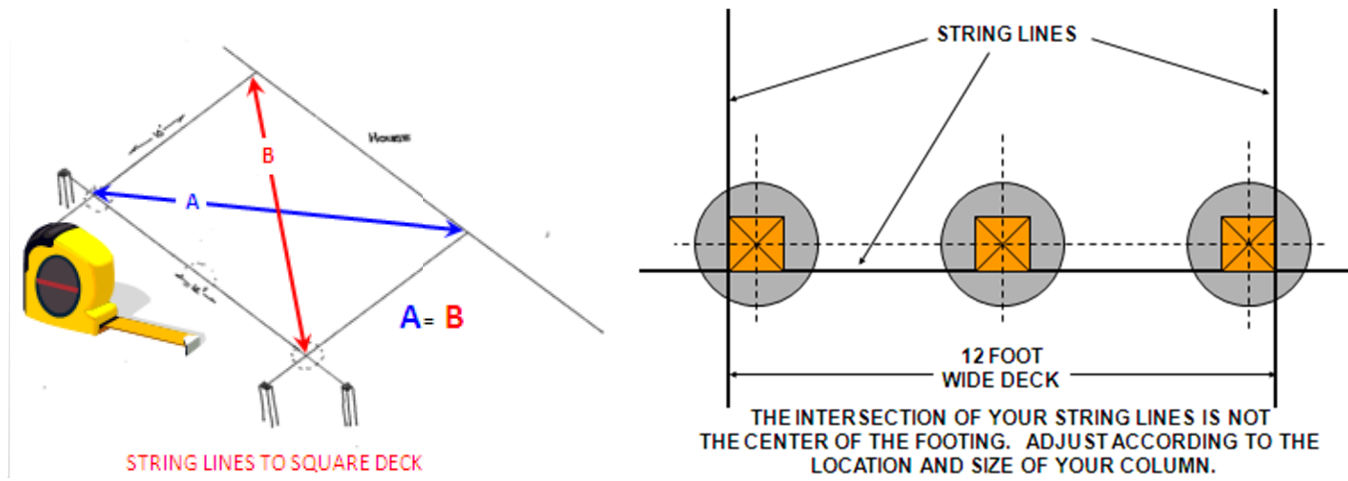
FOOTINGS



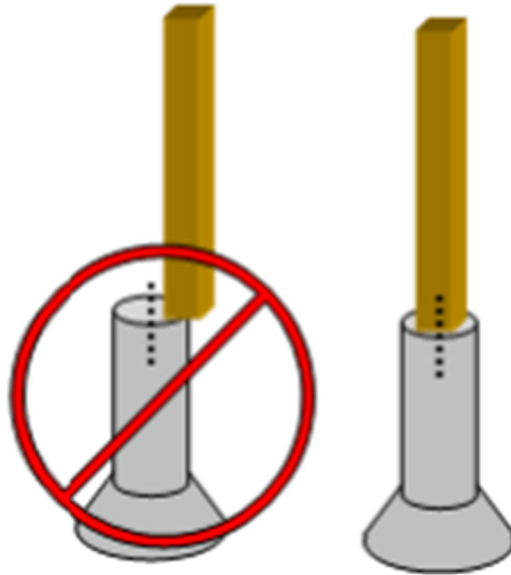
ANCHORING POST



WHERE DO I PUT MY FOOTINGS?

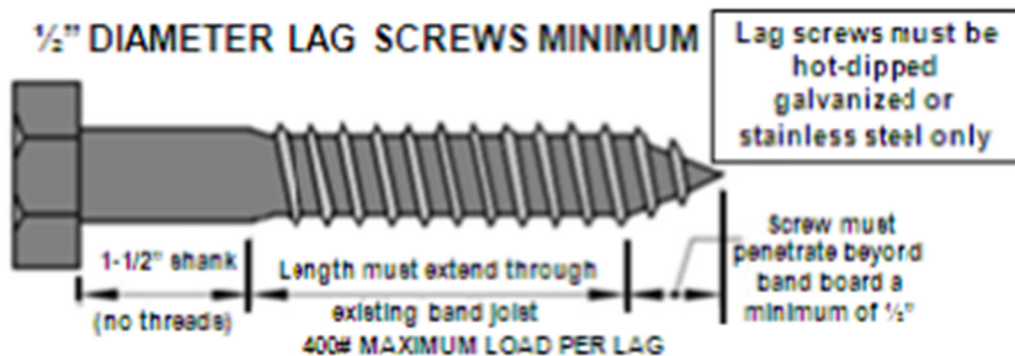
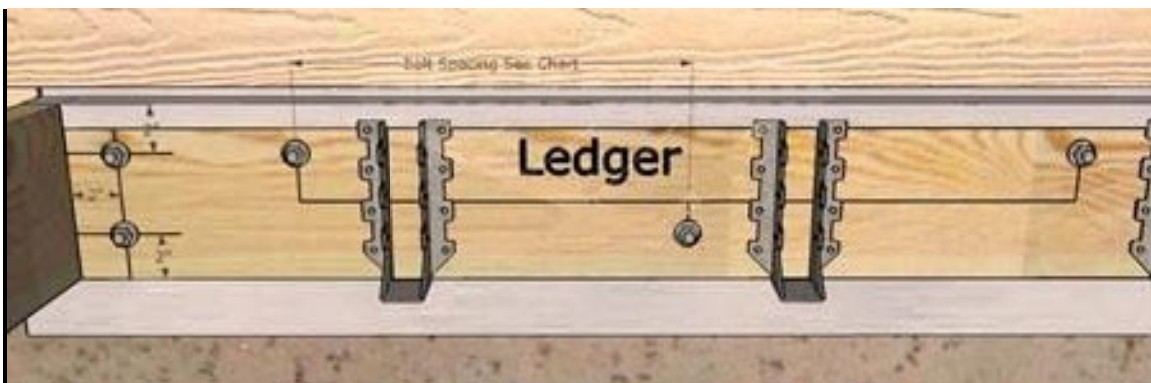


THE REQUIRED AREA OF THE COLUMN SHOULD FULLY BEAR ON THE FOOTING



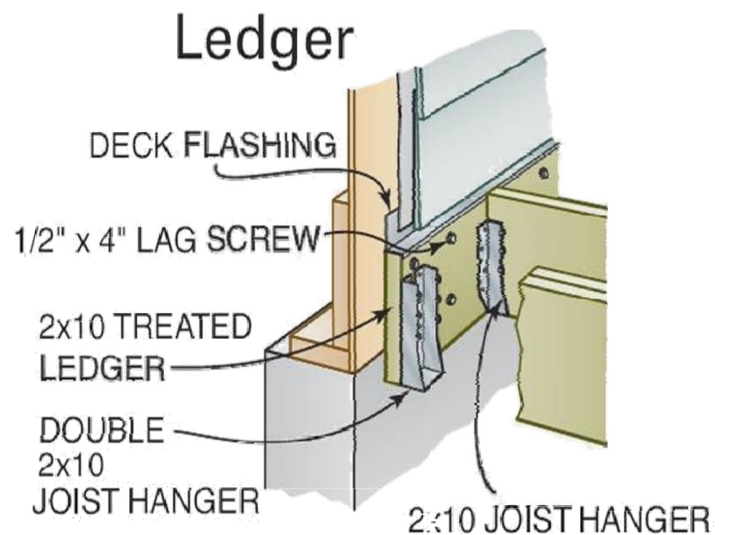
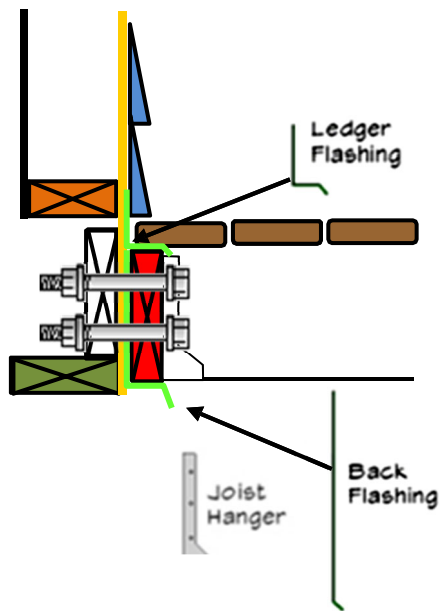
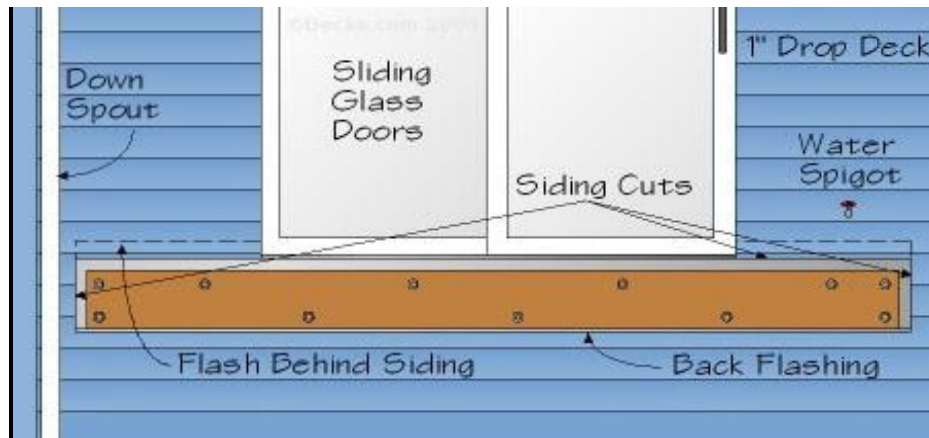
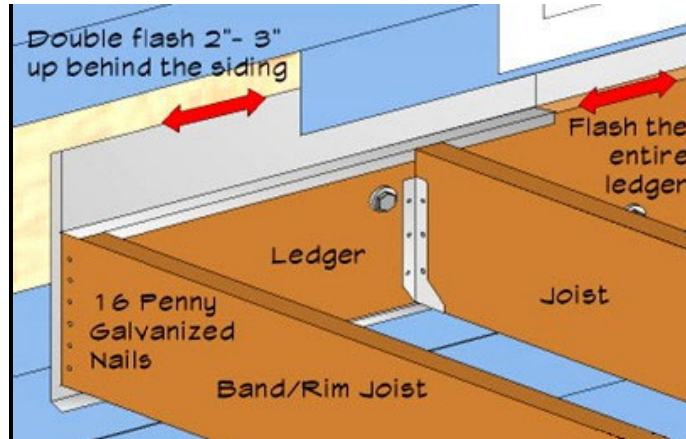
ATTACHING LEDGERS

The lag screws or bolts shall be placed 2 inches in from the bottom or top of the deck ledgers and between 2 and 5 inches in from the ends. The lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger.

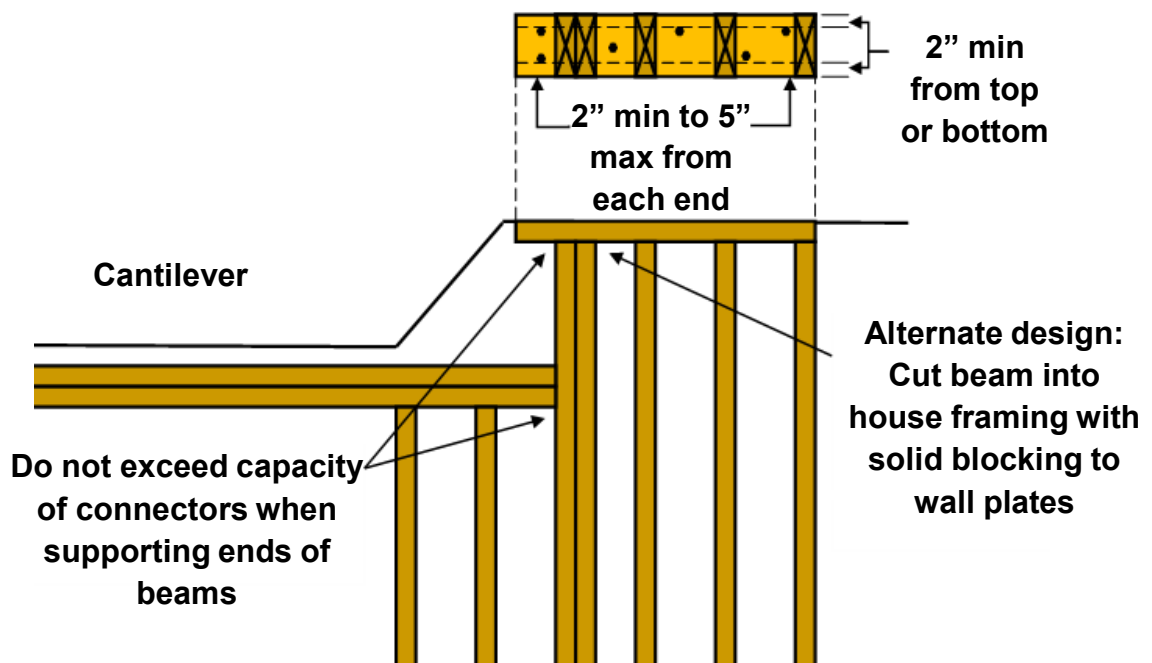
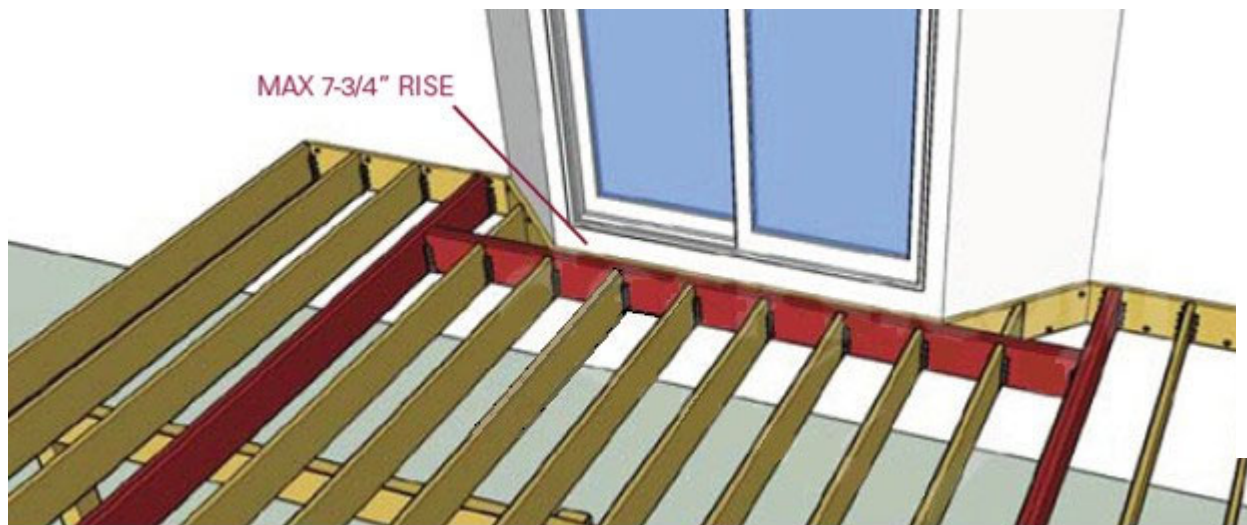
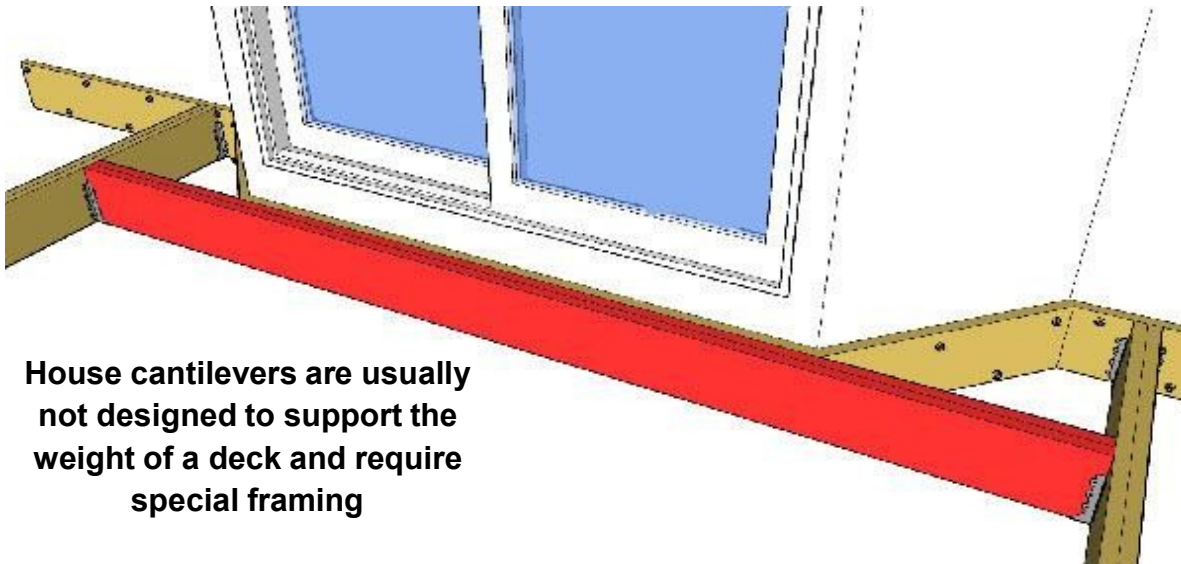


OR EQUIVALENT “LEDGERLOK”-TYPE SCREWS
TYPICALLY ONE OR TWO PER JOIST BAY

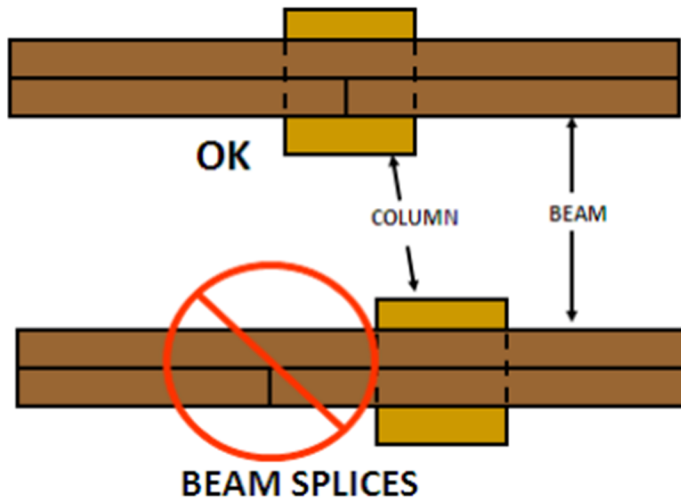
FLASHING LEDGERS



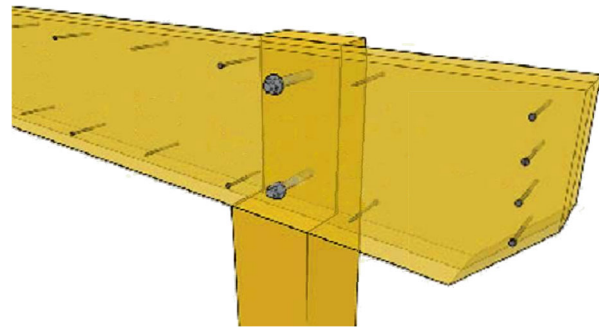
HOUSE CANTILEVERS



BEAMS

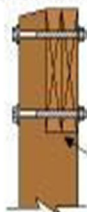


ONE FOOT MAXIMUM
CANTILEVER BEYOND COLUMN



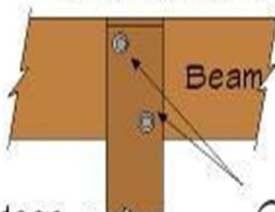
Beam Pocket Cut Into A 6x6 Support Post

Section View



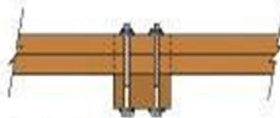
Cut 3" deep
beam pocket for
Beam to rest on

Elevation View

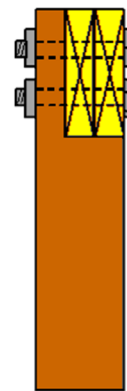


Off Set (2)
6" x 1/2" Carriage
Bolts With Washers

Top View



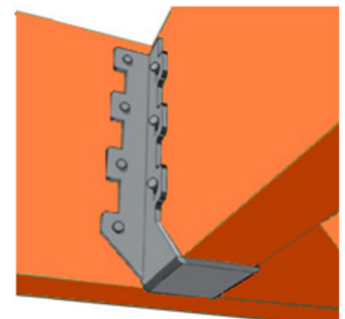
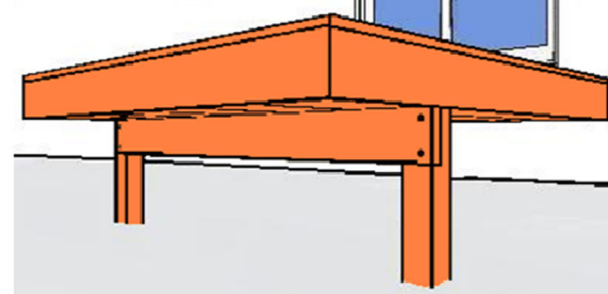
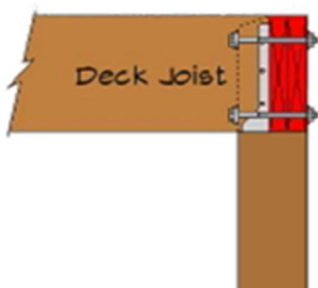
BEAM
SECURED
WITH
POST
CAP



BEAM
SECURED WITH
BOLTS TO
NOTCHED
COLUMN

JOISTS MAY EITHER FRAME INTO THE SIDE OF A
BEAM WITH JOIST HANGERS OR REST ON A
DROPPED BEAM

Header beam



3-8D TOE NAILS
2 ON ONE SIDE,
1 ON THE OTHER

MECHANICAL
CONNECTOR OR
HURRICANE CLIP

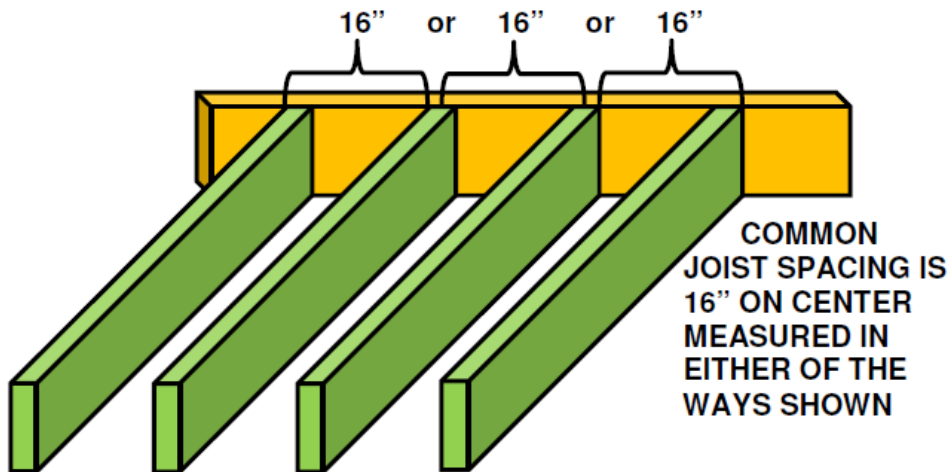
JOIST
HANGER

TOP OF BEAM AND JOIST
MUST BE AT SAME
ELEVATION

BEAM

JOIST TO BEAM ATTACHMENTS

JOIST SPACING IS
DETERMINED BY THE
TYPE OF DECKING
USED. 16" O.C.
SPACING MUST BE
USED WITH 5/4 DECKING
OR WHEN 2X6 OR 2X4
DECKING IS USED AT A
45° ANGLE. 12" O.C.
SPACING REQUIRED
WHEN 5/4 DECKING IS
USED AT A 45° ANGLE.

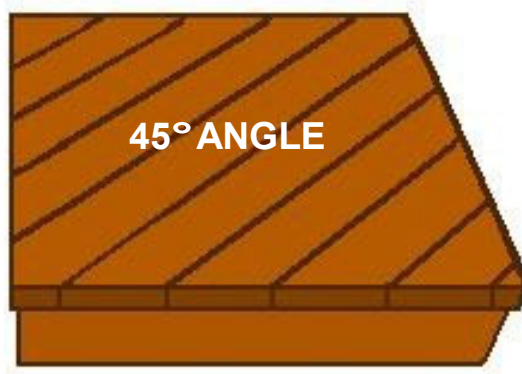
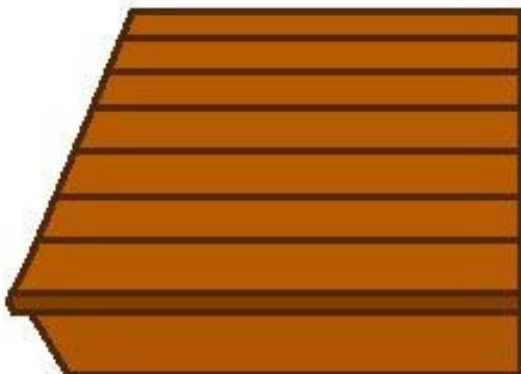


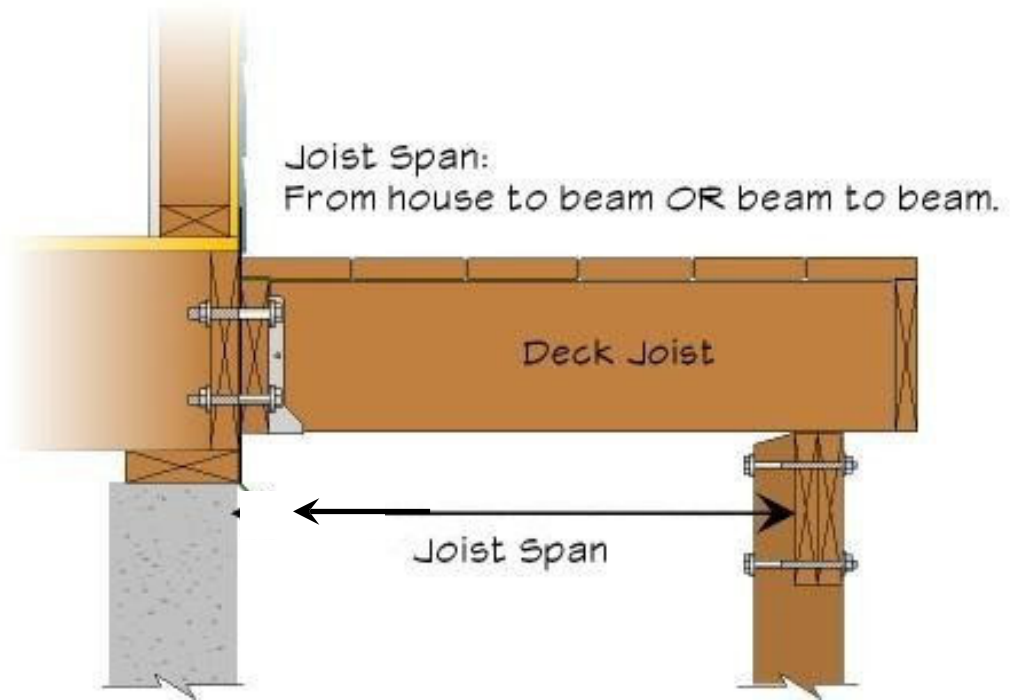
5/4"x6"

5/4"x4"

2"x6"

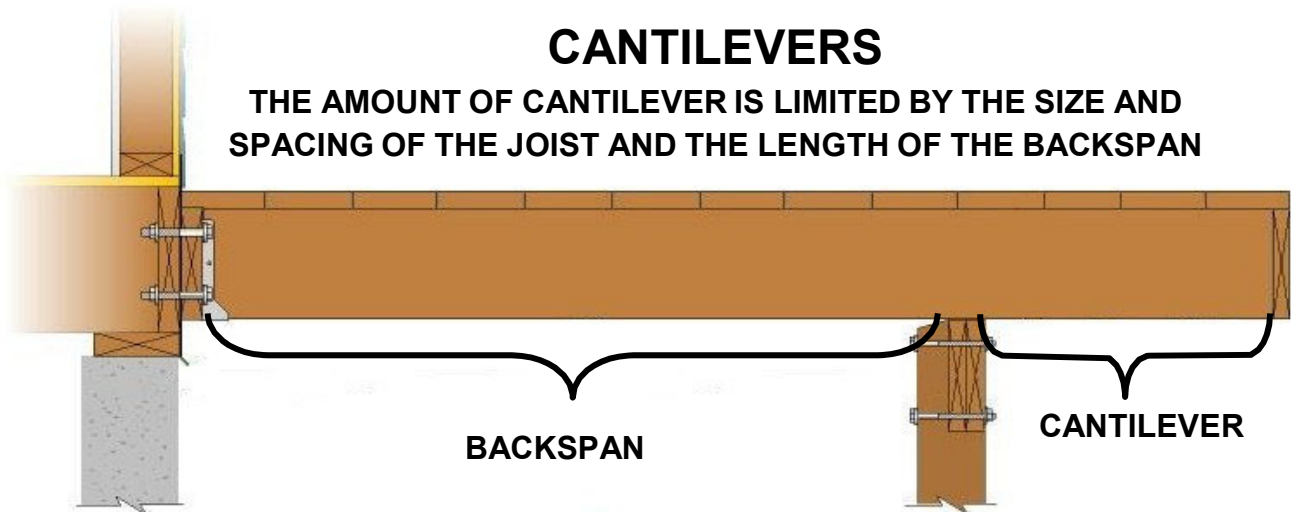
2"x4"



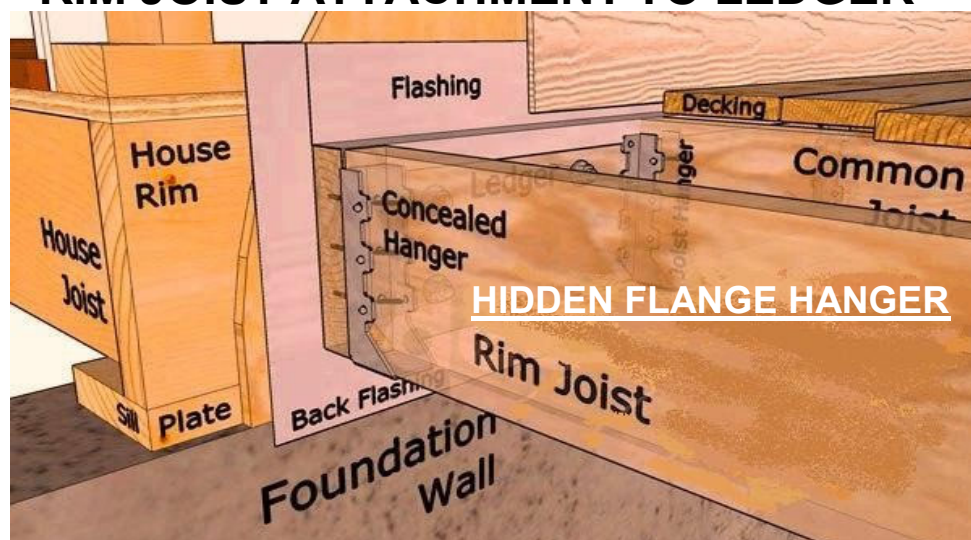


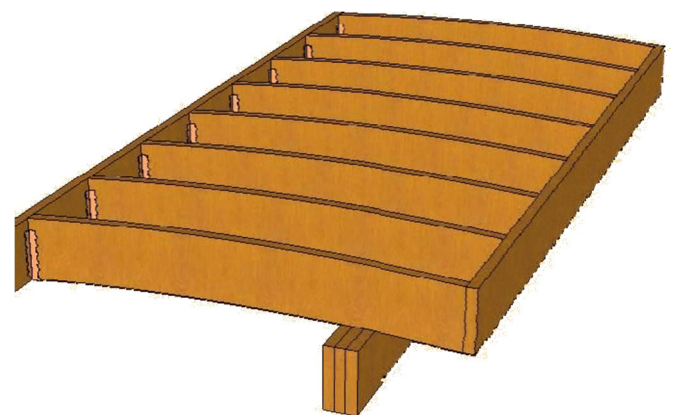
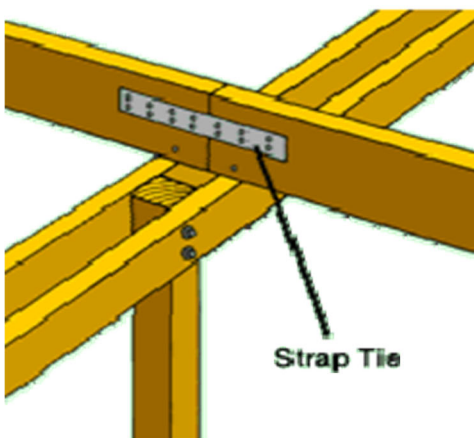
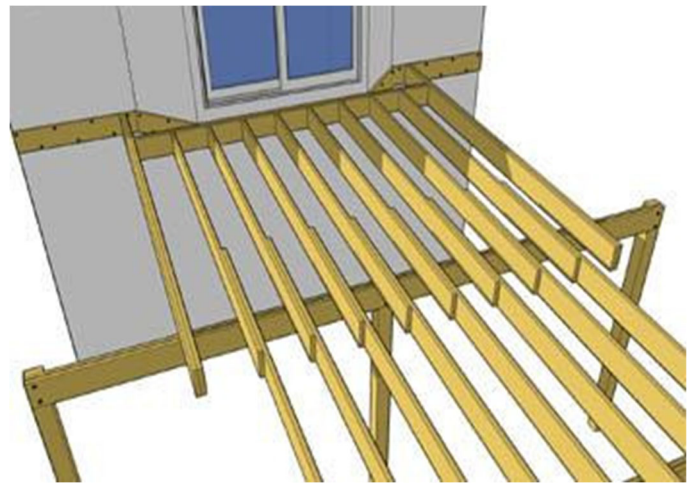
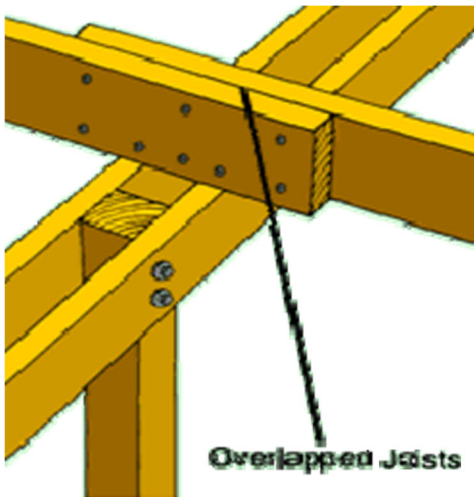
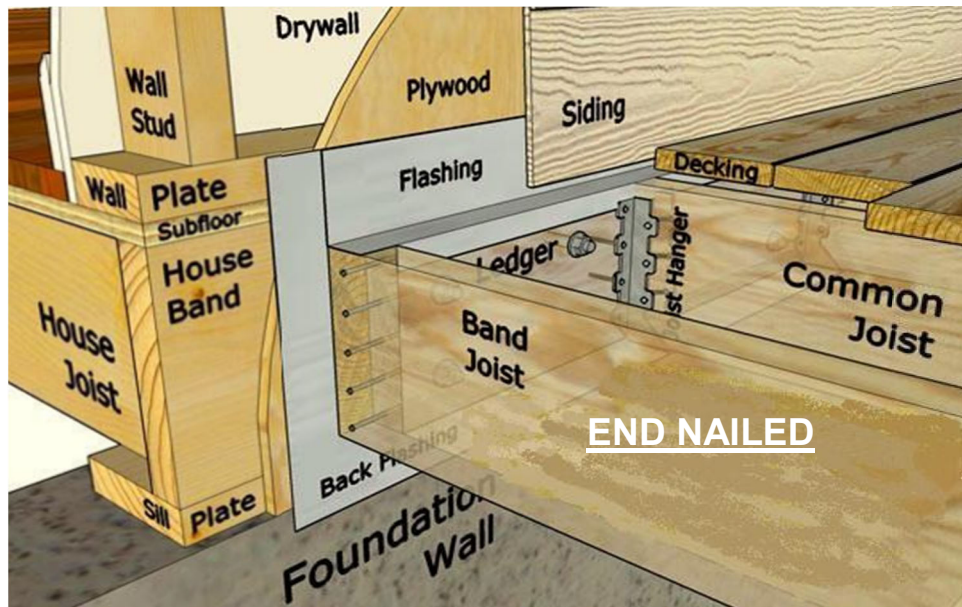
CANTILEVERS

THE AMOUNT OF CANTILEVER IS LIMITED BY THE SIZE AND SPACING OF THE JOIST AND THE LENGTH OF THE BACKSPAN



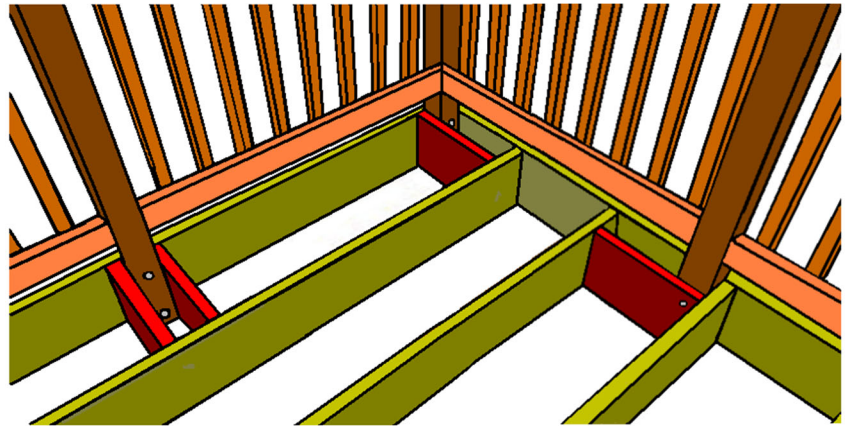
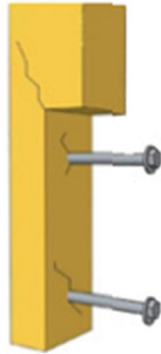
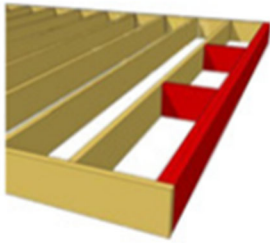
RIM JOIST ATTACHMENT TO LEDGER



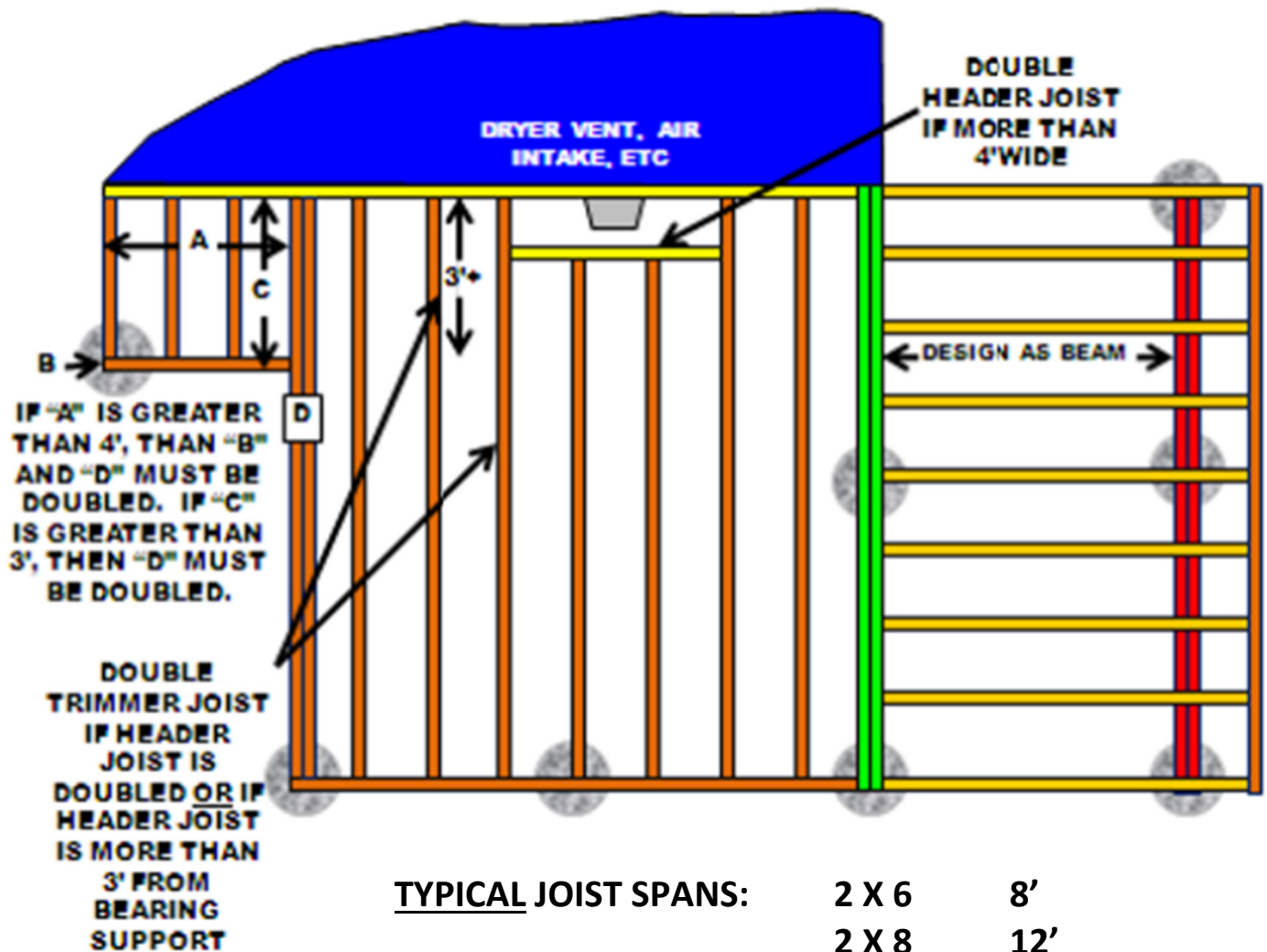


JOISTS CROWN UP

AVOID NOTCHING
GUARD POSTS

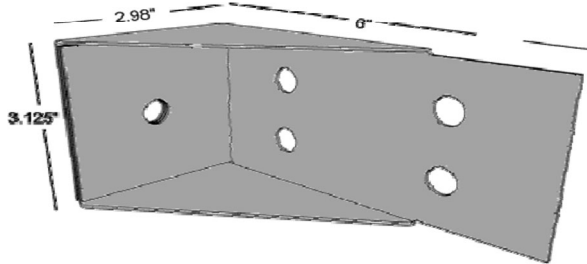
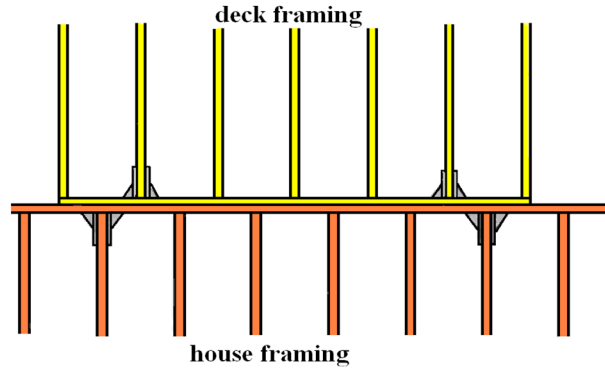
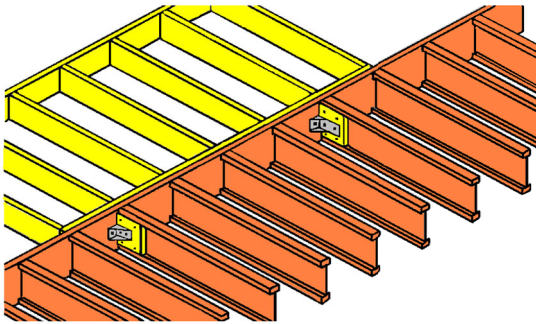


BLOCKING MAY BE ADDED TO
STRENGTHEN POST ATTACHMENT

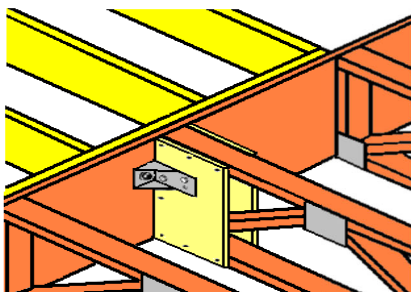
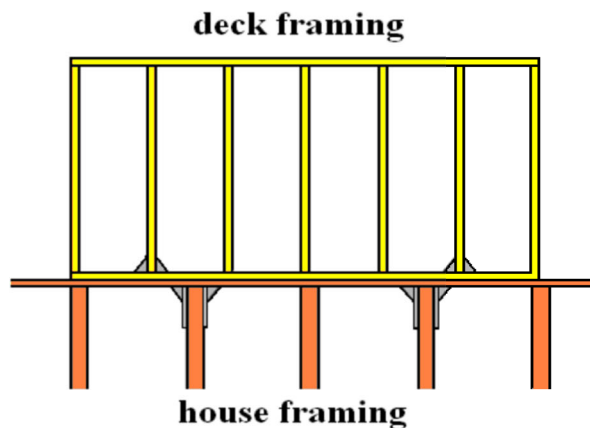
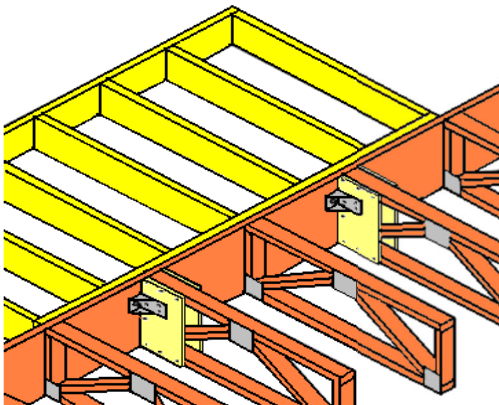
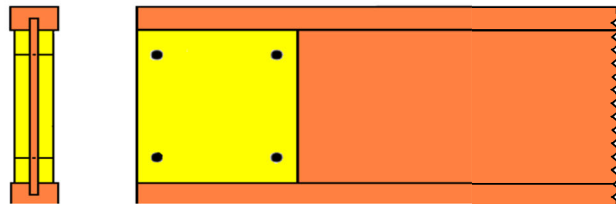
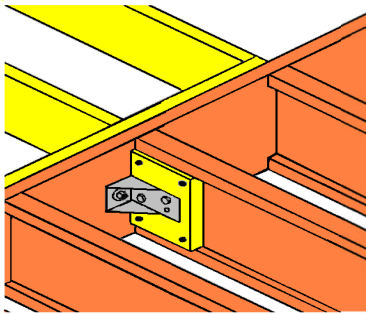


<u>TYPICAL JOIST SPANS:</u>	2 X 6	8'
	2 X 8	12'
	2 X 10	16'
AT 16" O.C.		

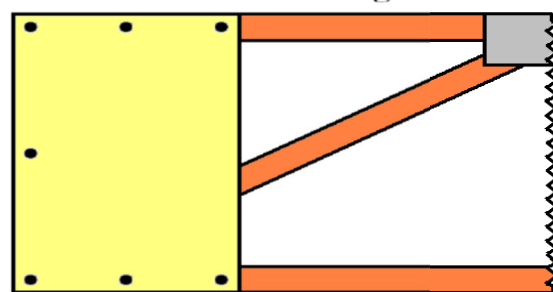
DECK ATTACHMENTS TO I-JOIST OR TRUSS FLOOR SYSTEMS



**INSTALL CONNECTOR IN
ACCORDANCE WITH
MANUFACTURERE'S
INSTALLATION INSTRUCTIONS**

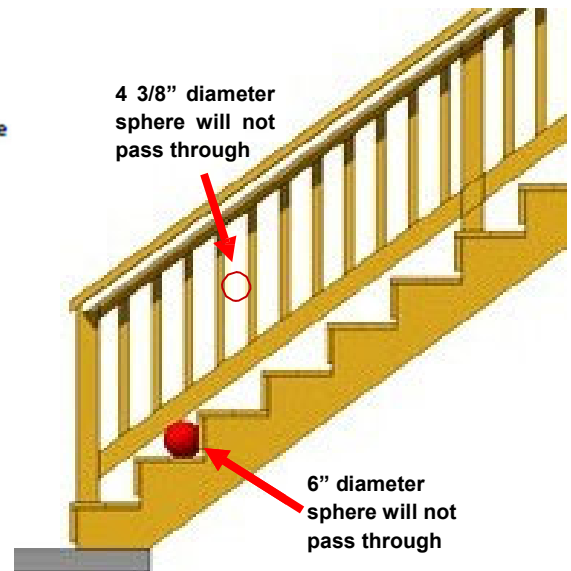
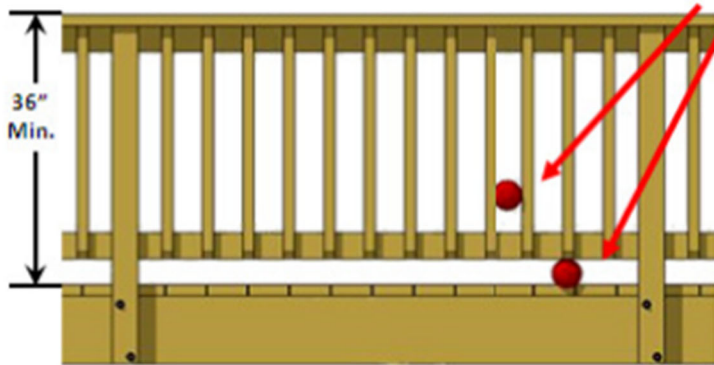


truss joist to rim joist & ledger



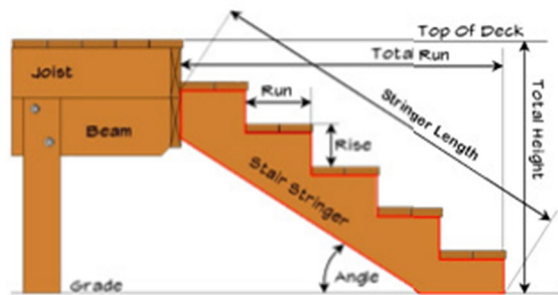
blocking plate nailed to truss joist

GUARDS



GUARD IS REQUIRED IF DECK IS MORE THAN 30 INCHES ABOVE GRADE

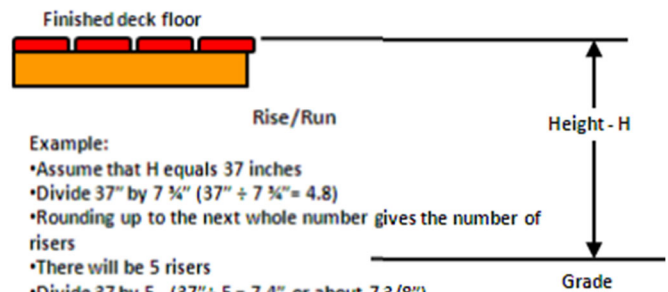
STAIR TERMINOLOGY



Stair Basics

- The maximum riser height is 8 1/2 inches
- The minimum tread run is 9 inches
- Treads and risers should be approximately equal with the largest not exceeding the smallest by more than 3/8 inch.

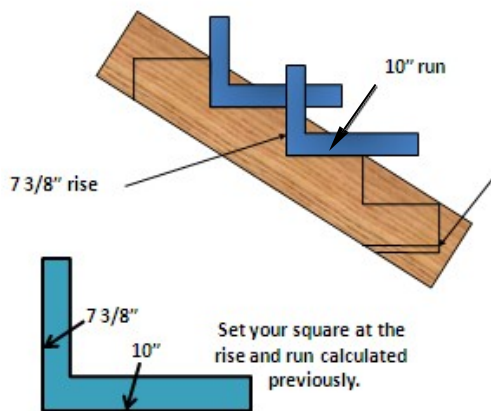
DETERMINING RISE/RUN



Example:

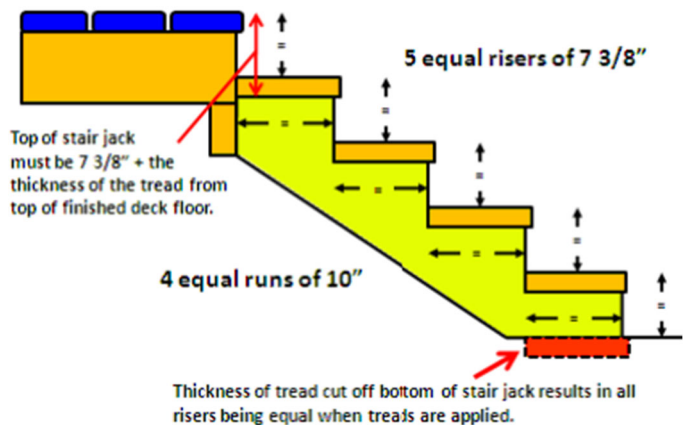
- Assume that H equals 37 inches
- Divide 37" by 7 3/4" ($37 \div 7 \frac{3}{4} = 4.8$)
- Rounding up to the next whole number gives the number of risers
- There will be 5 risers
- Divide 37 by 5. ($37 \div 5 = 7.4$ " or about 7 3/8")
- Each riser will be 7 3/8"
- For 5 risers there will be 4 treads
- Since each tread must be at least 10", the length of the stair from the face of the deck to the face of the bottom riser will be at least 40" ($10" \times 4 \text{ treads} = 40"$)

LAYING OUT STAIR JACKS

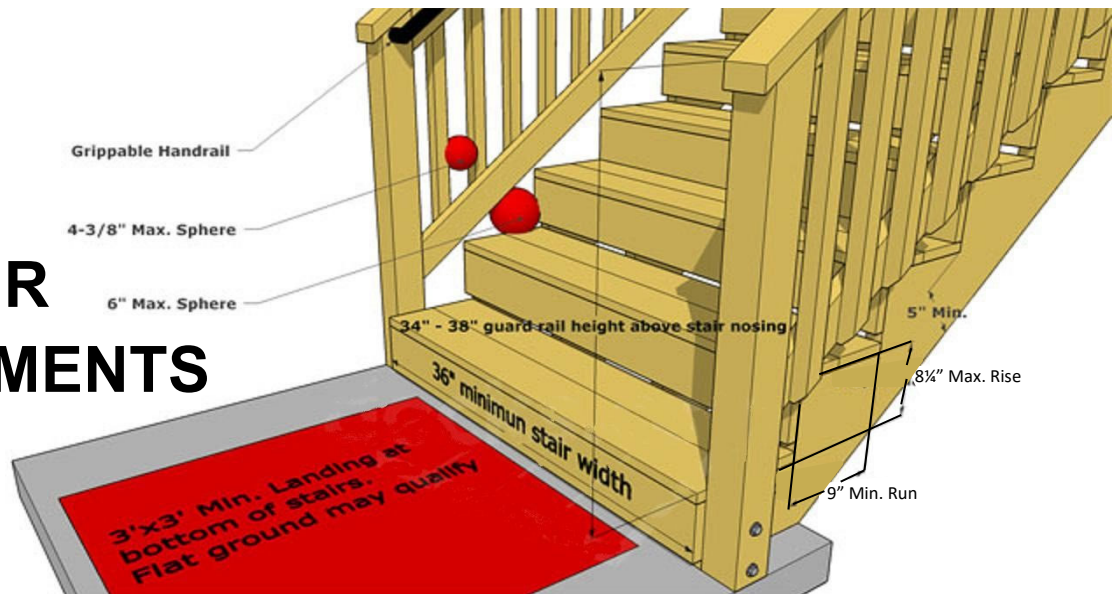


Cut an amount equal to the thickness of the tread from the bottom of the stair jack

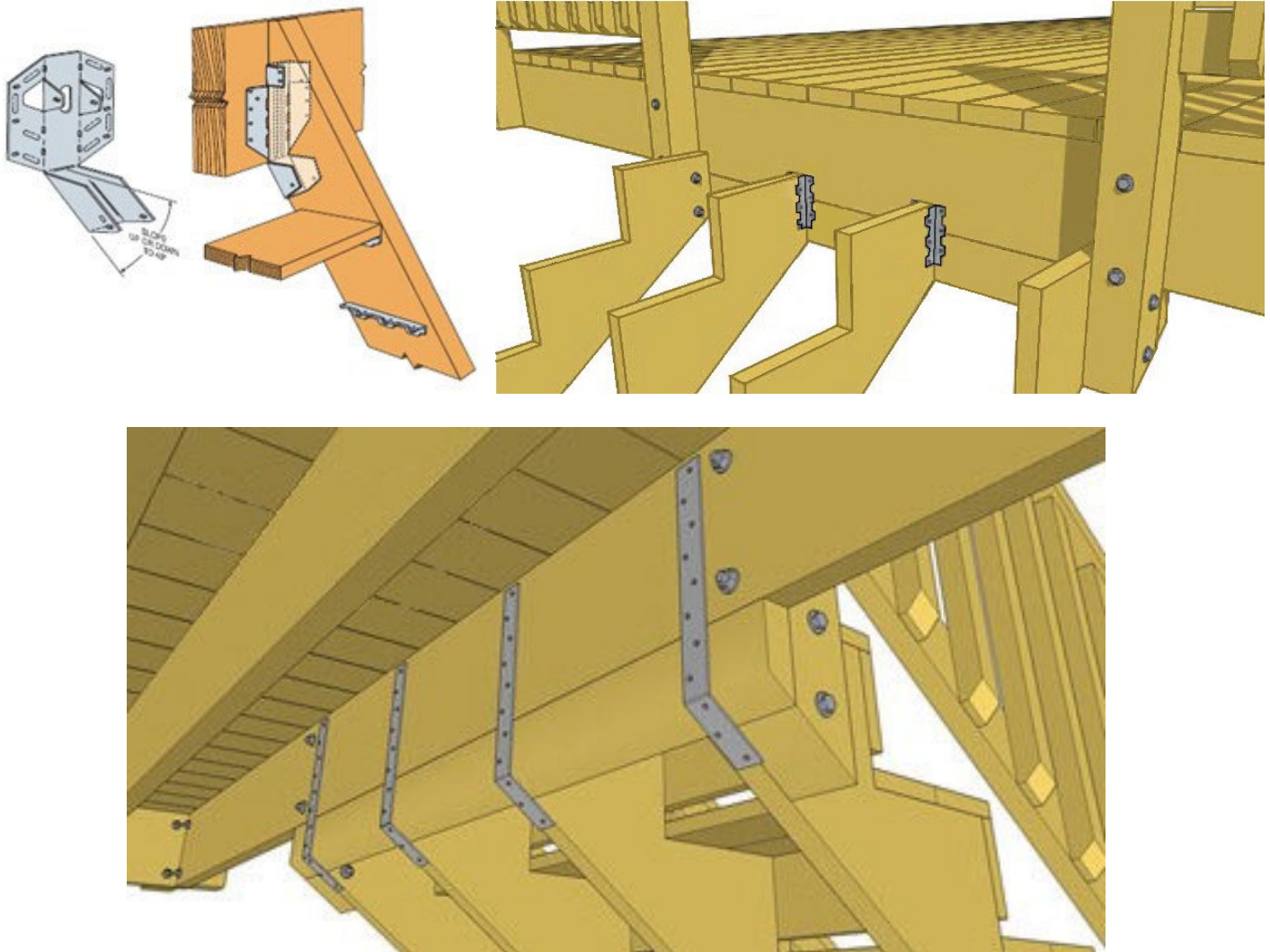
THE COMPLETED STAIR



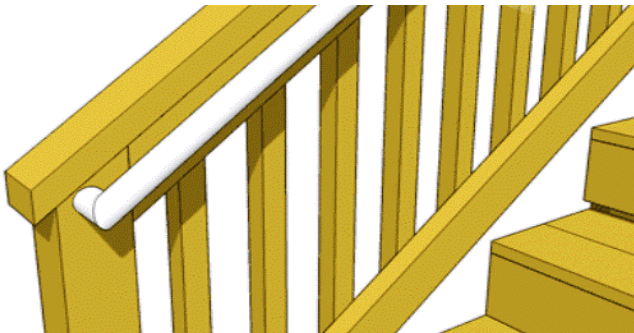
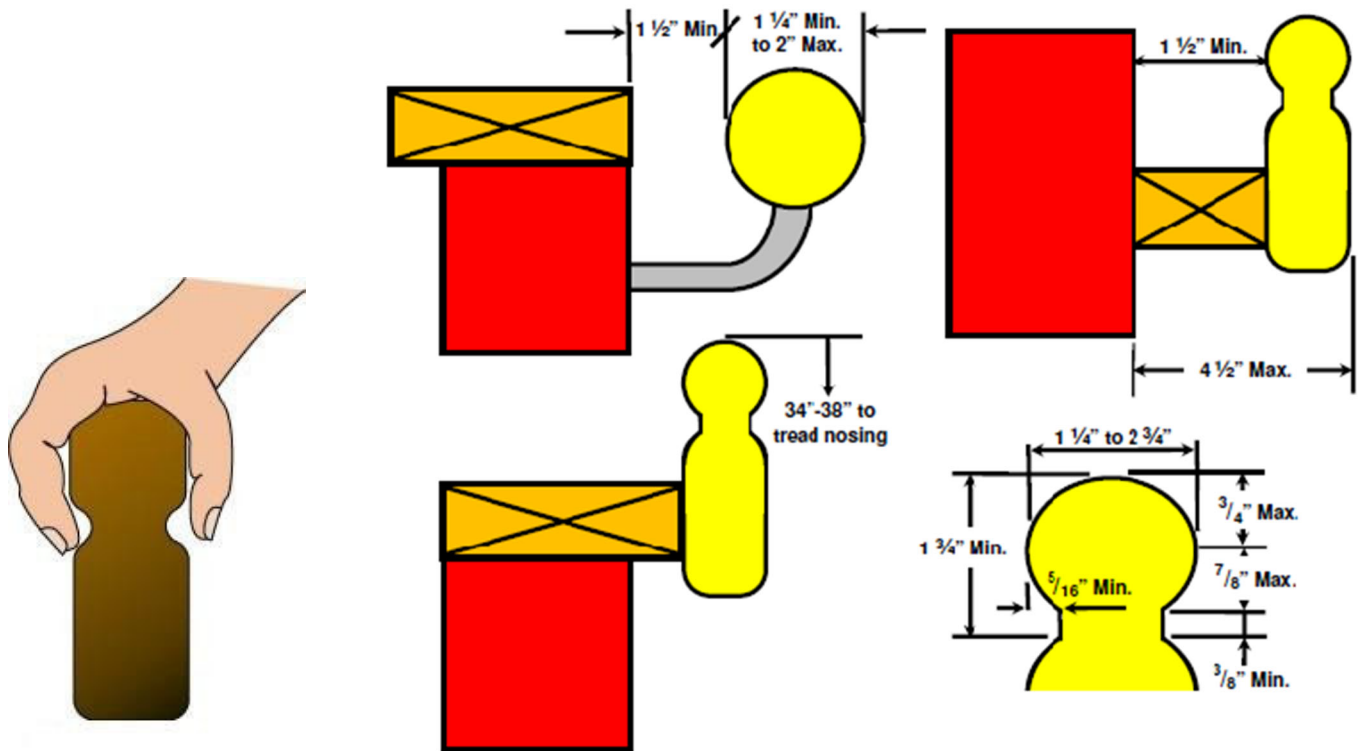
STAIR REQUIREMENTS



STAIR ATTACHMENTS



HANDRAILS



HANDRAILS MUST RETURN TO A NEWEL POST AND BE CONTINUOUS WITHOUT INTERRUPTION FOR THE LENGTH OF THE FLIGHT

COMPOSITES AND OTHER DECK/RAILING PRODUCTS

THIS HANDOUT DOES NOT COVER DECK OR RAILING PRODUCTS MADE OF COMPSITES, ALUMINUM, STEEL, GLASS, OR ANY OTHER MAN MADE PRODUCT. THOSE PRODUCTS MAY BE USED IF THE MANUFACTURER HAS A RESEARCH REPORT FROM THE INTERNATIONAL CODE COUNCIL AND THE PRODUCT IS INSTALLED IN STRICT ACCORDANCE WITH THAT REPORT.