Town of Coventry Building Department
1712 Main Street, Coventry, CT 06238
860-742-4064

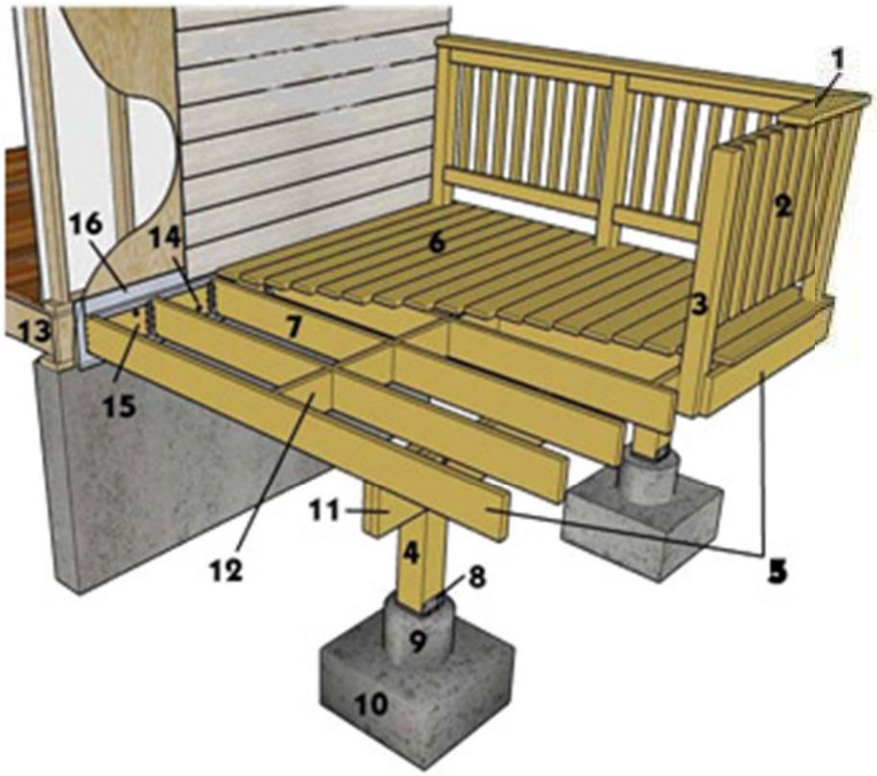
ILLUSTRATED GUIDE TO DECKS

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.

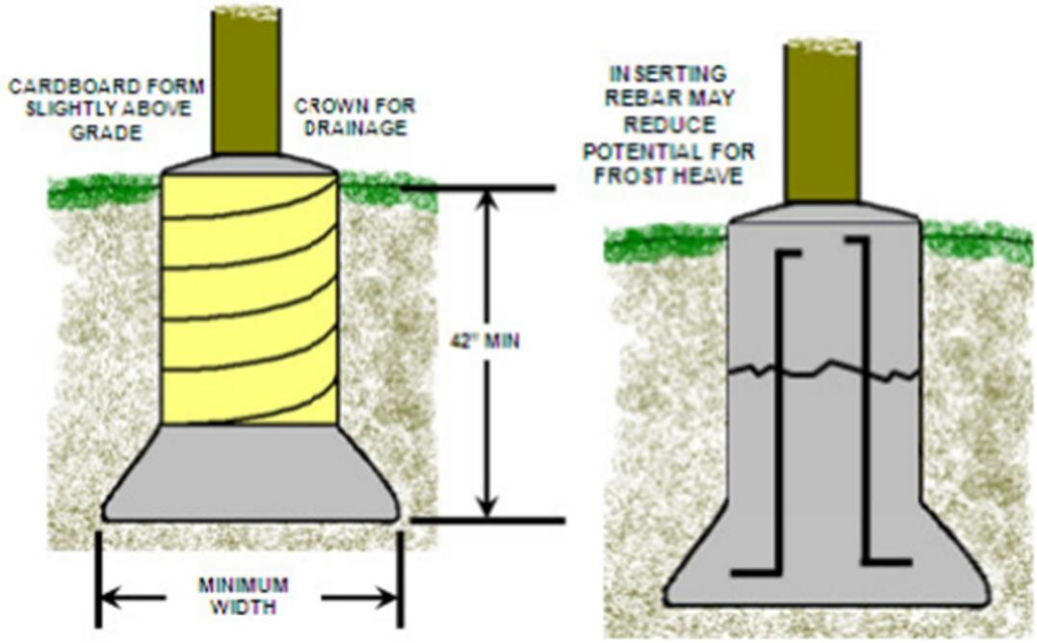
For charts on joist/beam spans, column/footing sizing, and cantilever projections, see the handouts or the 2015 IRC.

TERMINOLOGY

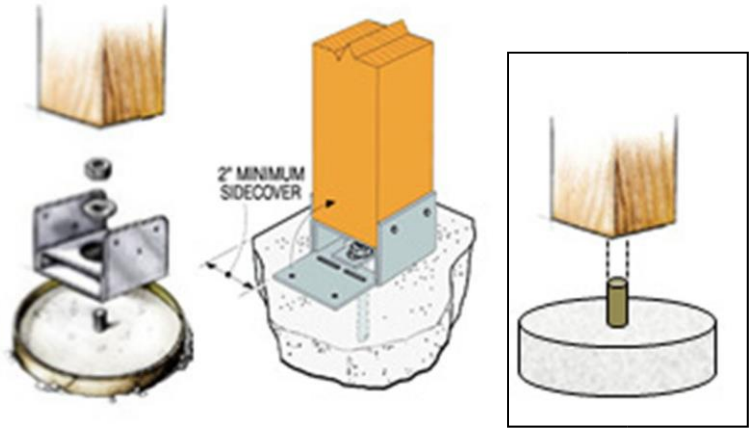
1. RAIL TOP CAP
2. BALLUSTERS
3. RAIL POST
4. SUPPORT POST
5. RIM OR BAND JOIST
6. DECKING
7. JOISTS
8. POST BASE CONNECTOR
9. PIER
10. FOOTING
11. DROP BEAM
12. BLOCKING
13. HOUSE JOIST
14. ½" BOLTS
15. LEDGER BOARD
16. FLASHING



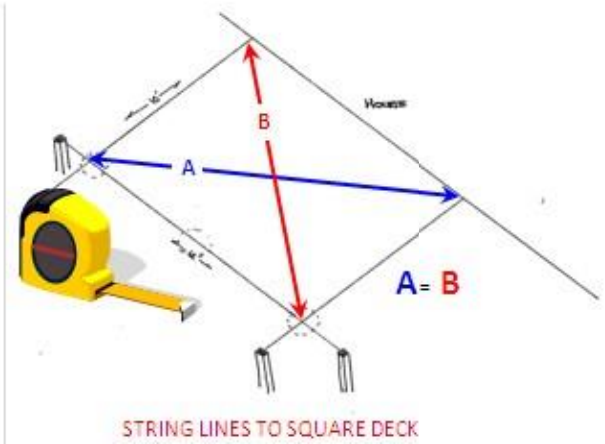
FOOTINGS



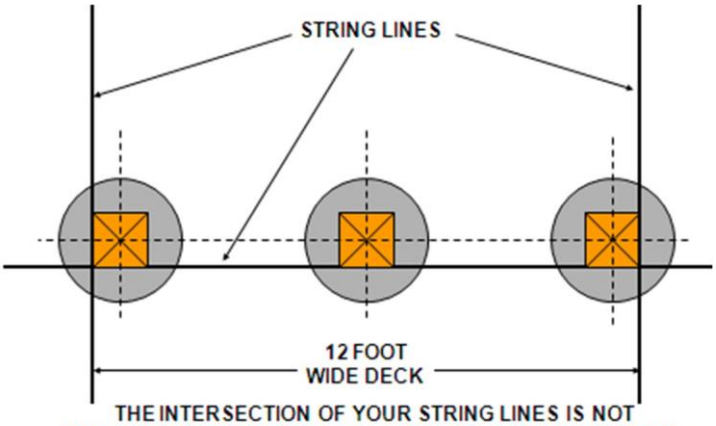
ANCHORING POST



WHERE DO I PUT MY FOOTINGS?

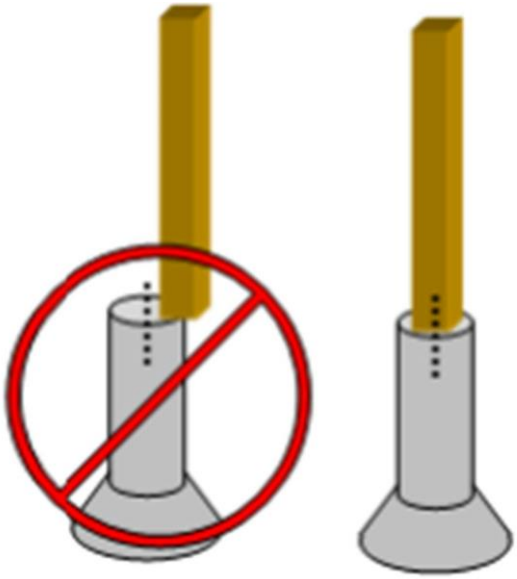


STRING LINES TO SQUARE DECK



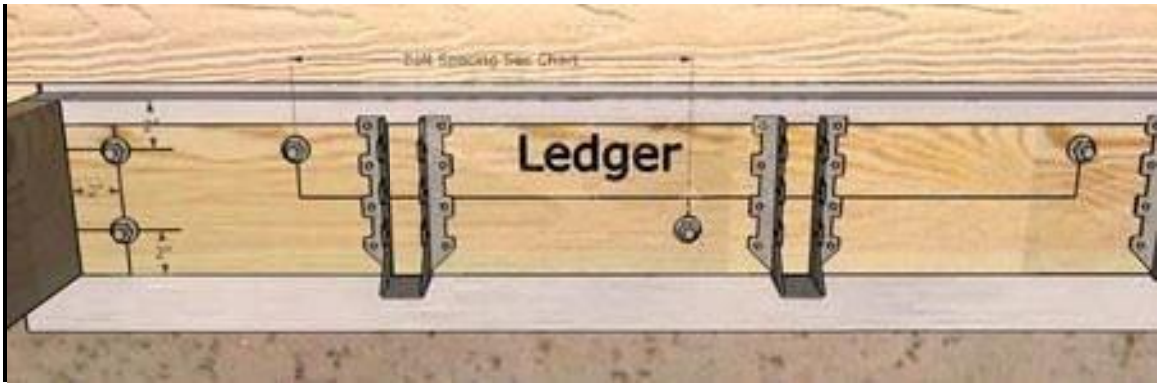
THE INTERSECTION OF YOUR STRING LINES IS NOT THE CENTER OF THE FOOTING. ADJUST ACCORDING TO THE LOCATION AND SIZE OF YOUR COLUMN.

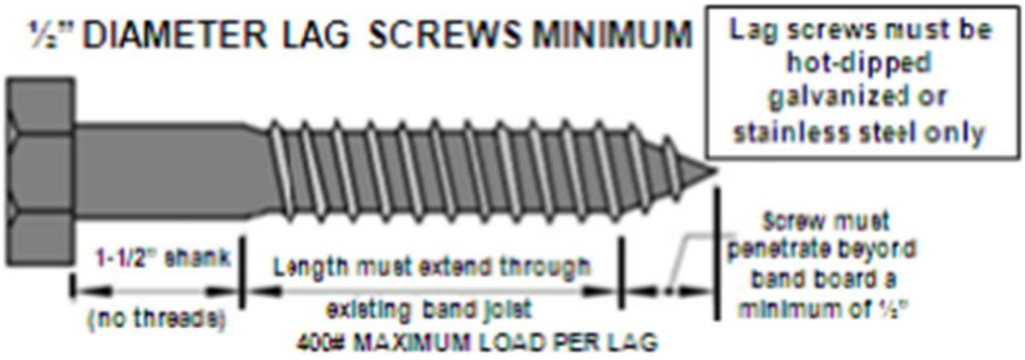
THE REQUIRED AREA OF THE COLUMN SHOULD FULLY BEAR ON THE FOOTING



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.

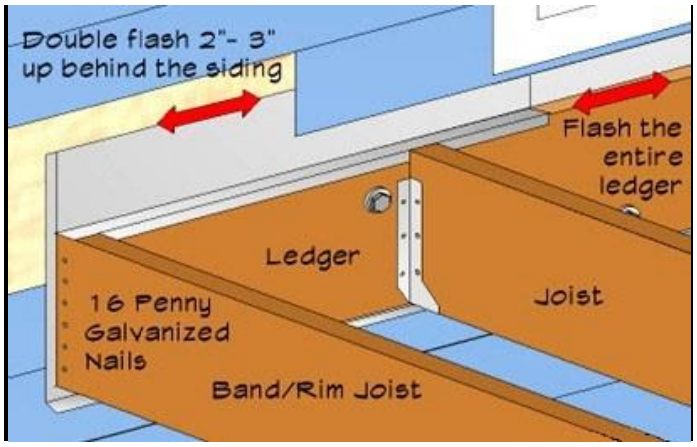


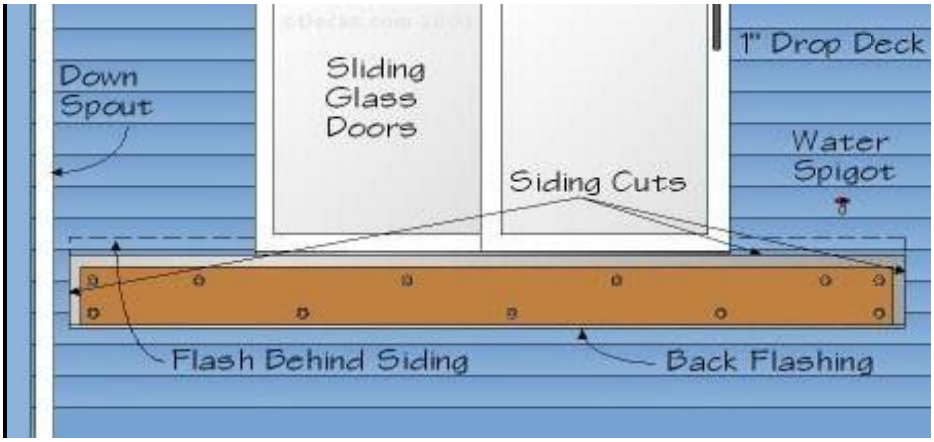


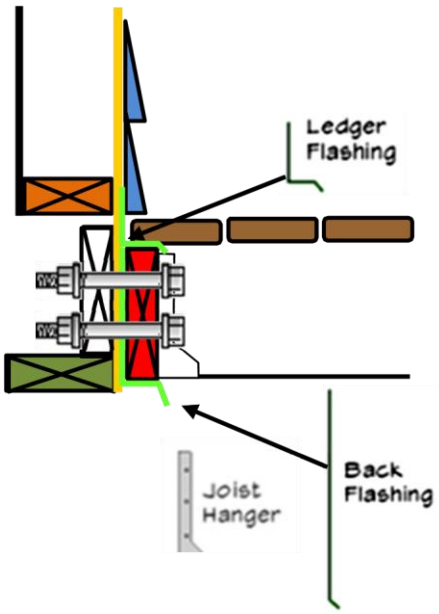
OR EQUIVALENT "LEDGERLOK"-TYPE SCREWS

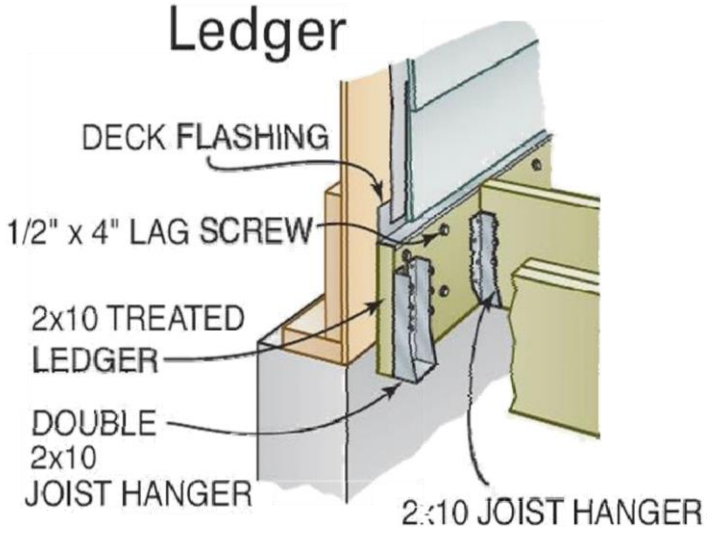
<u>TYPICALLY</u> ONE OR TWO PER JOIST BAY

FLASHING LEDGERS

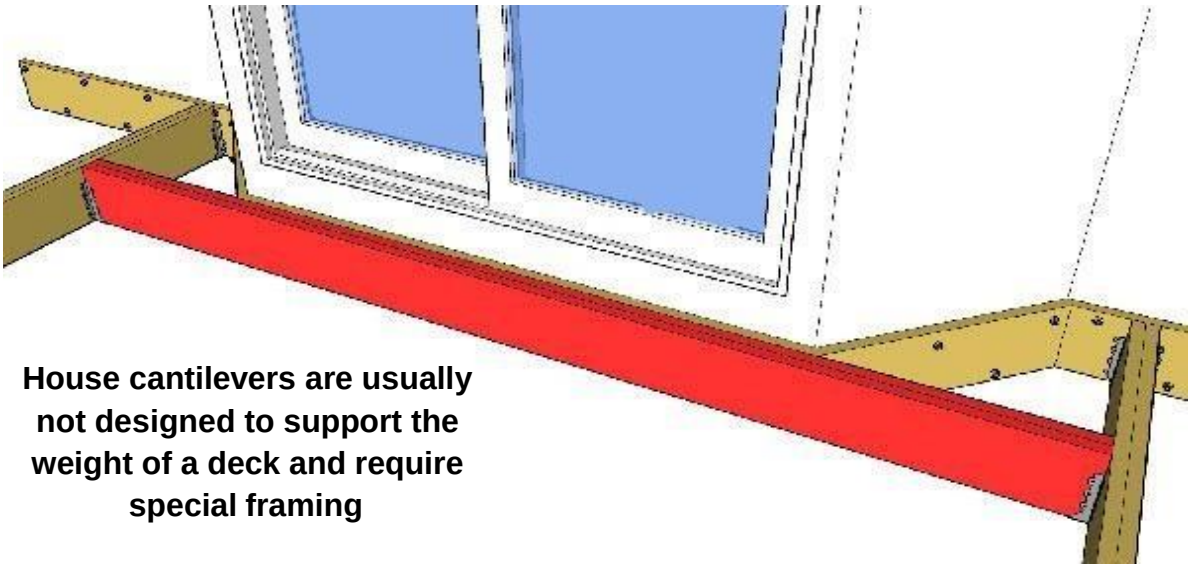




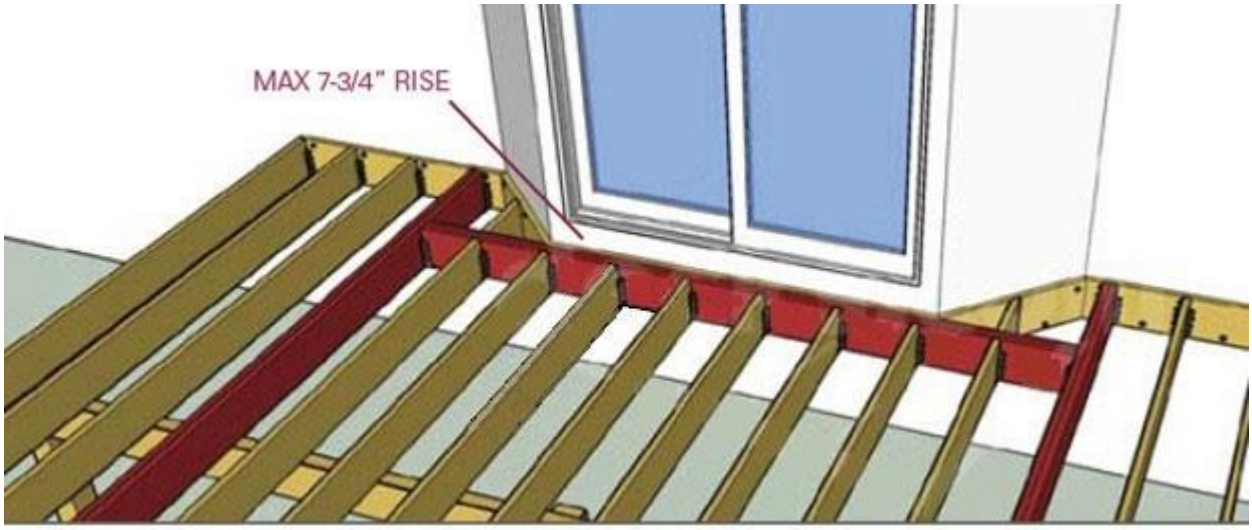


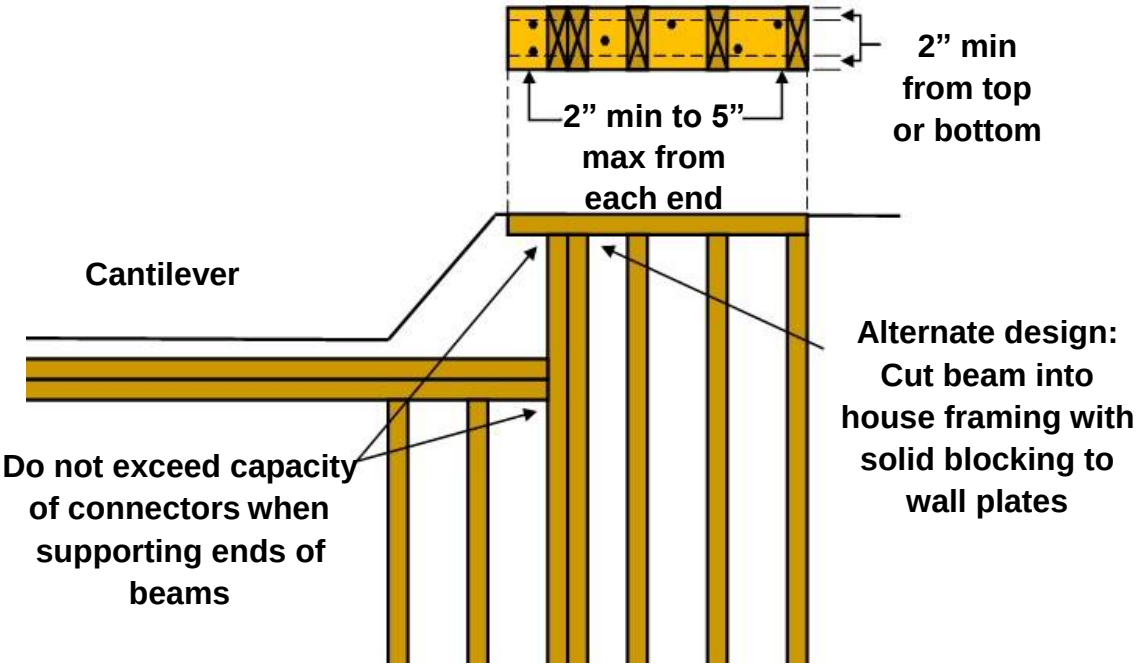


HOUSE CANTILEVERS

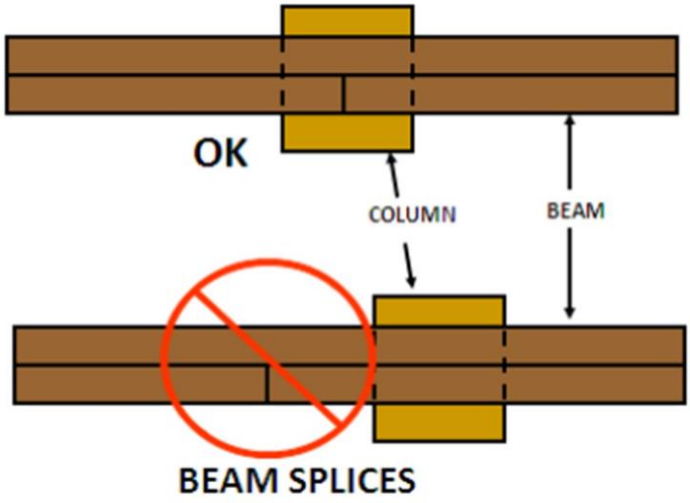


House cantilevers are usually not designed to support the weight of a deck and require special framing

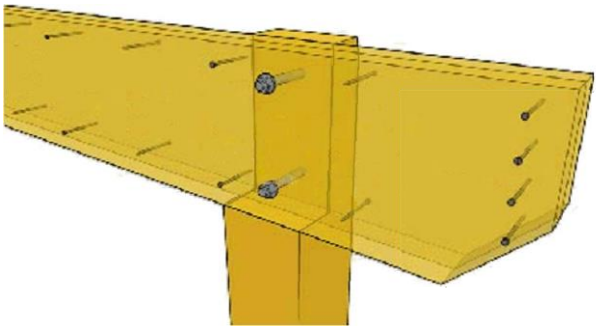


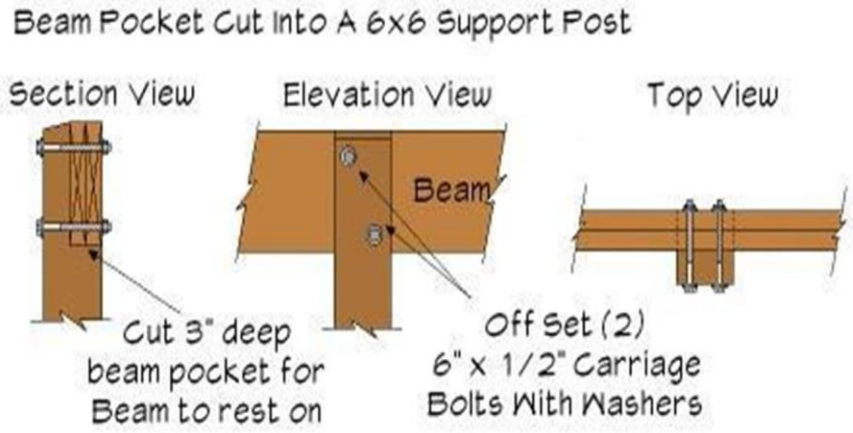


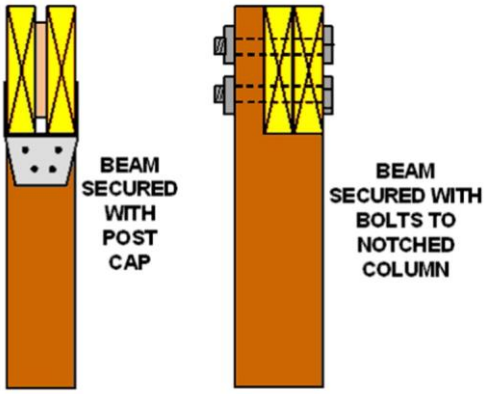
BEAMS



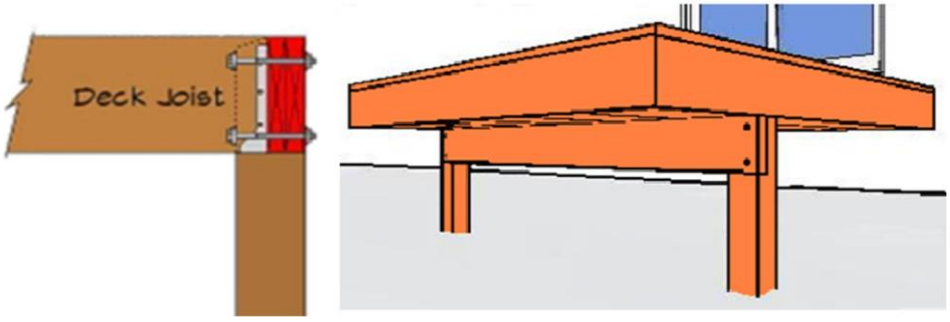
ONE FOOT MAXIMUM CANTILEVER BEYOND COLUMN

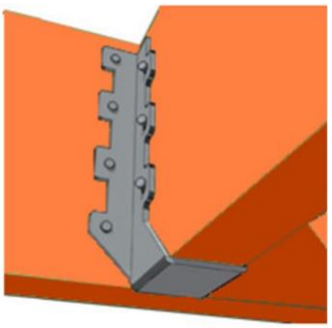


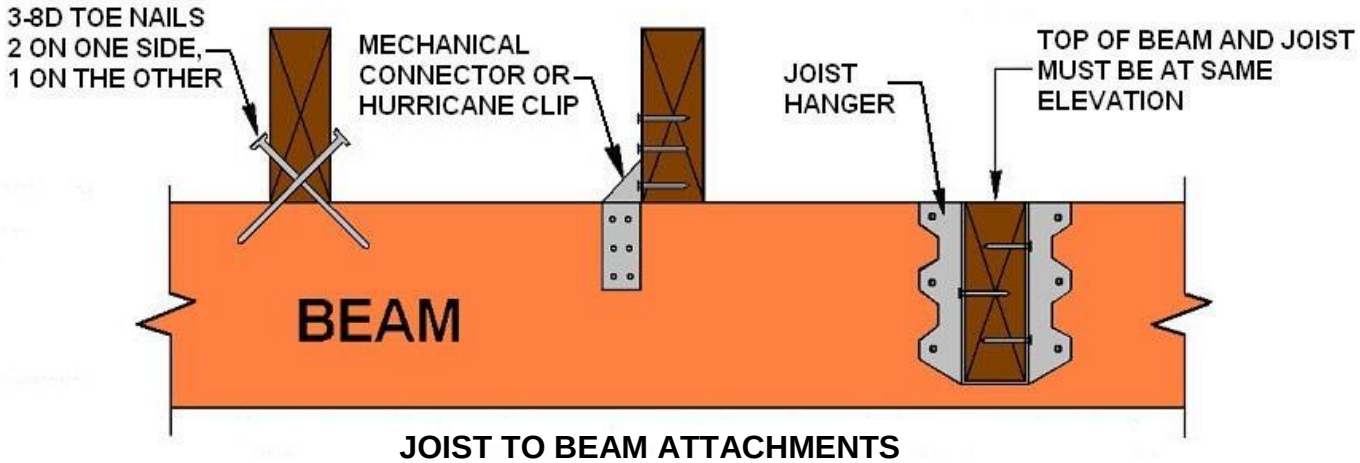




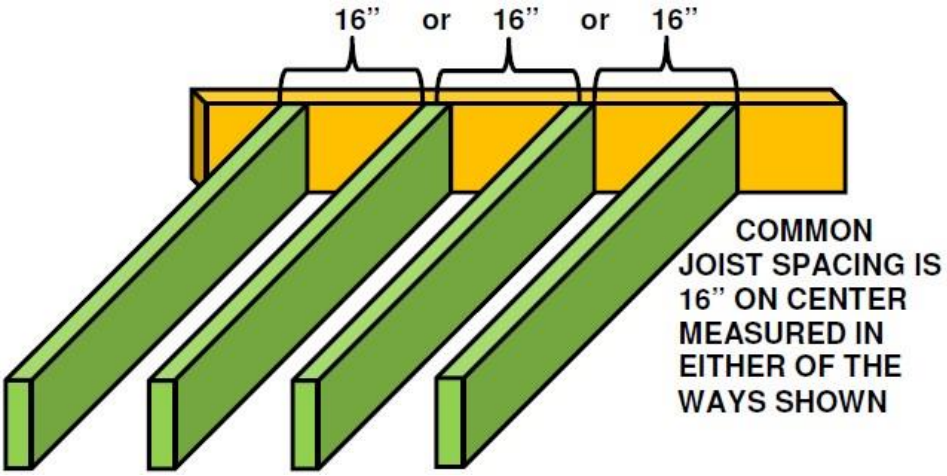
JOISTS MAY EITHER FRAME INTO THE SIDE OF A BEAM WITH JOIST HANGERS OR REST ON A DROPPED BEAM



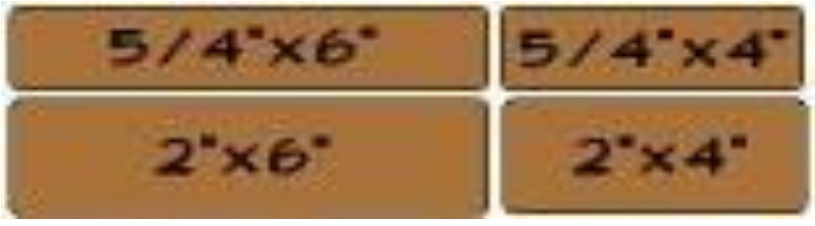


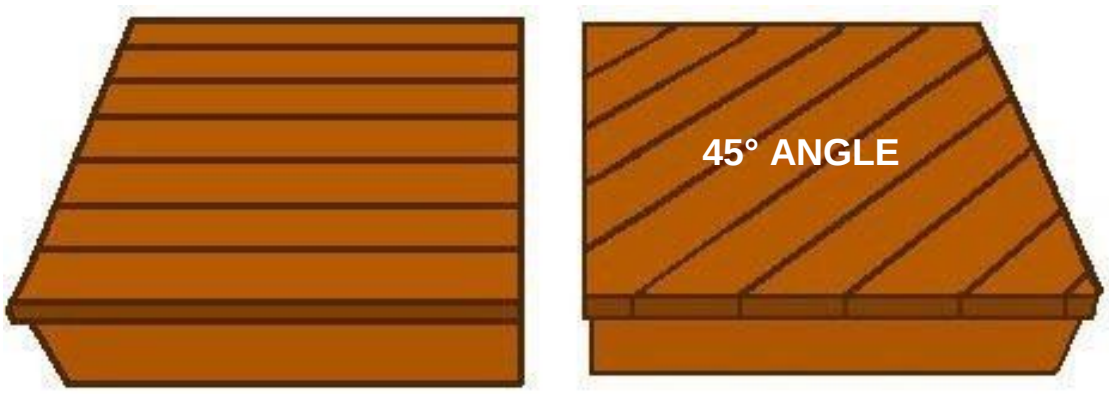


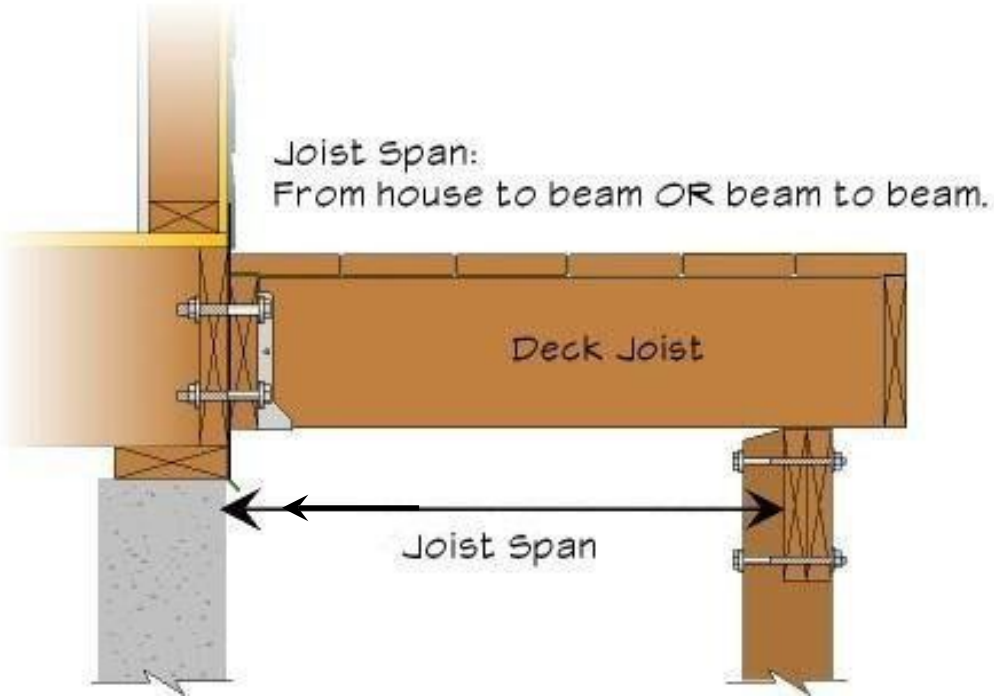
JOIST TO BEAM ATTACHMENTS



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.

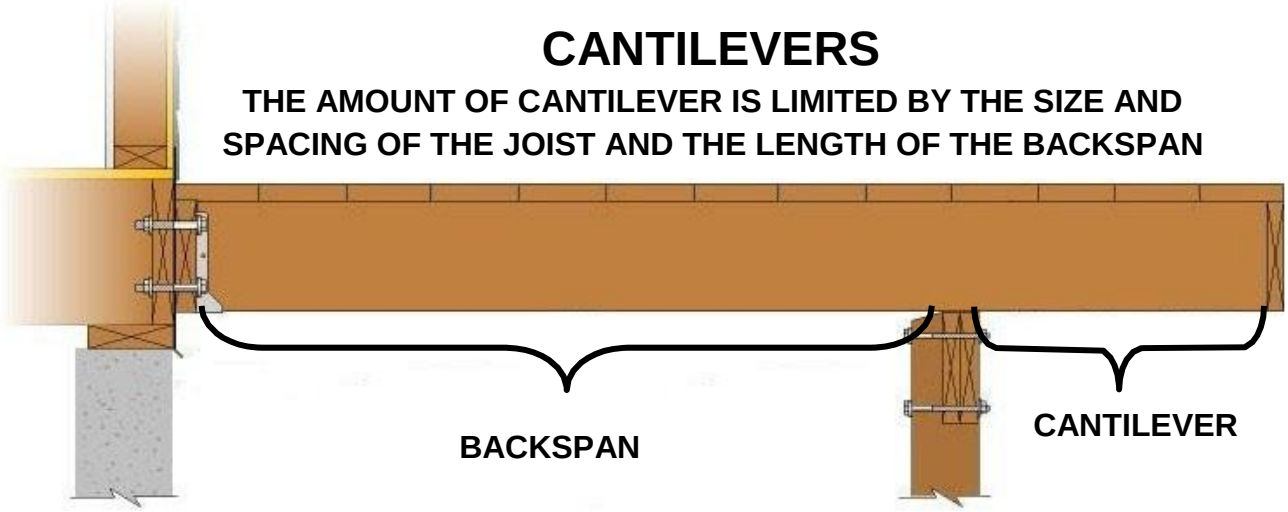




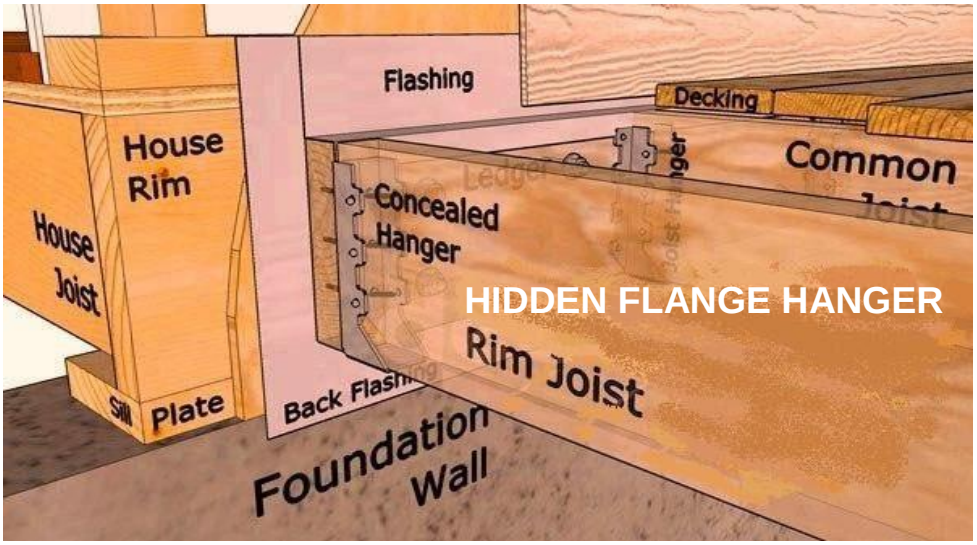


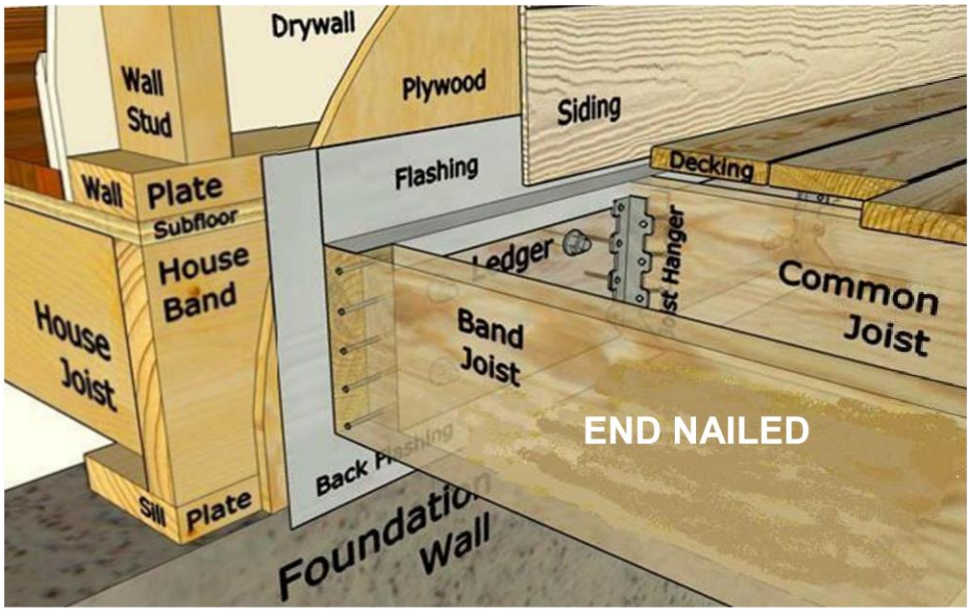
CANTILEVERS

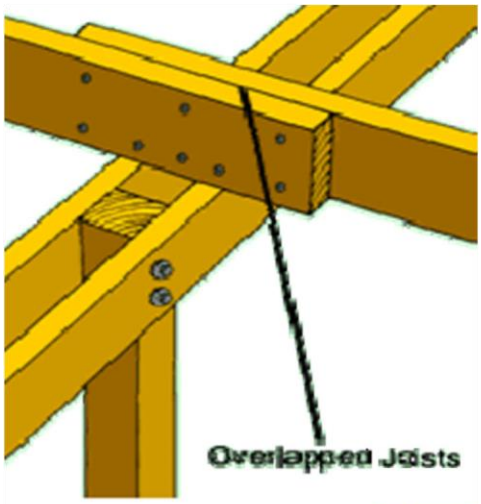
THE AMOUNT OF CANTILEVER IS LIMITED BY THE SIZE AND SPACING OF THE JOIST AND THE LENGTH OF THE BACKSPAN

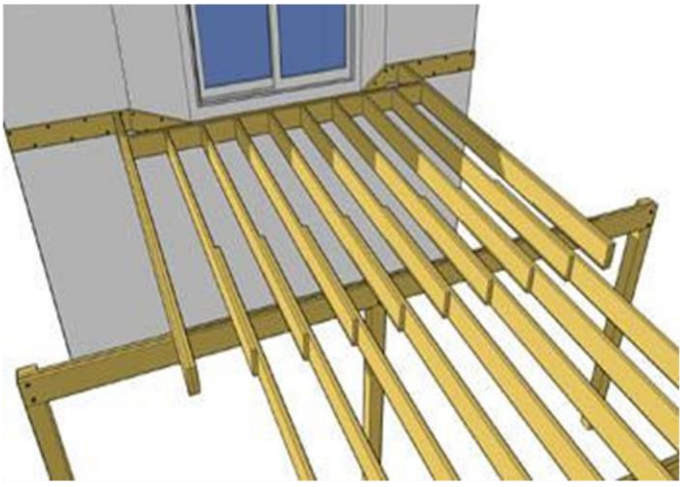


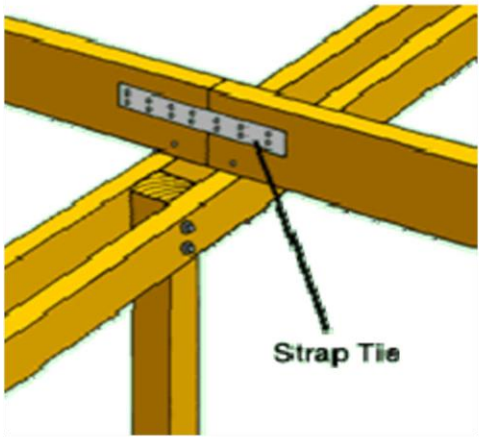
RIM JOIST ATTACHMENT TO LEDGER

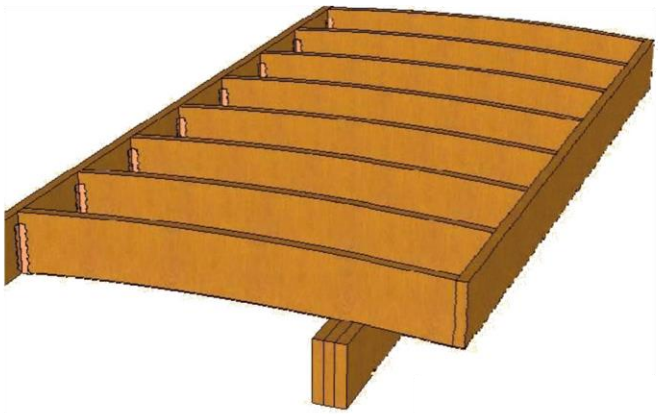






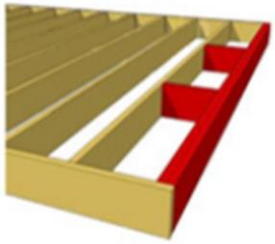


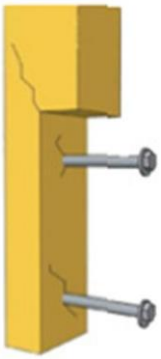




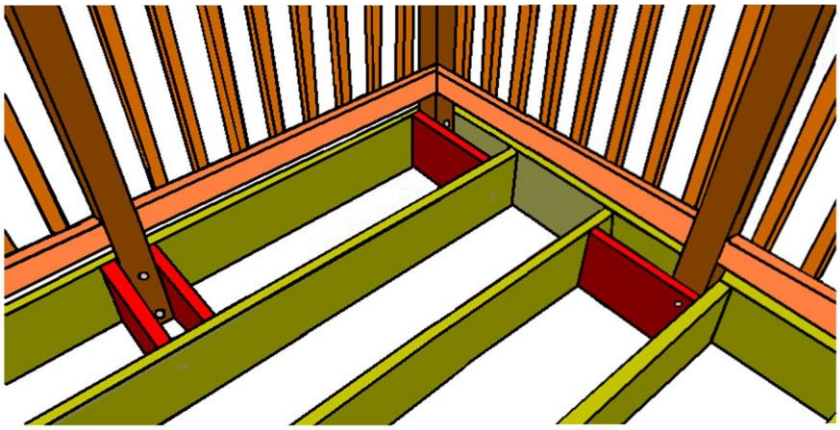
JOISTS CROWN UP

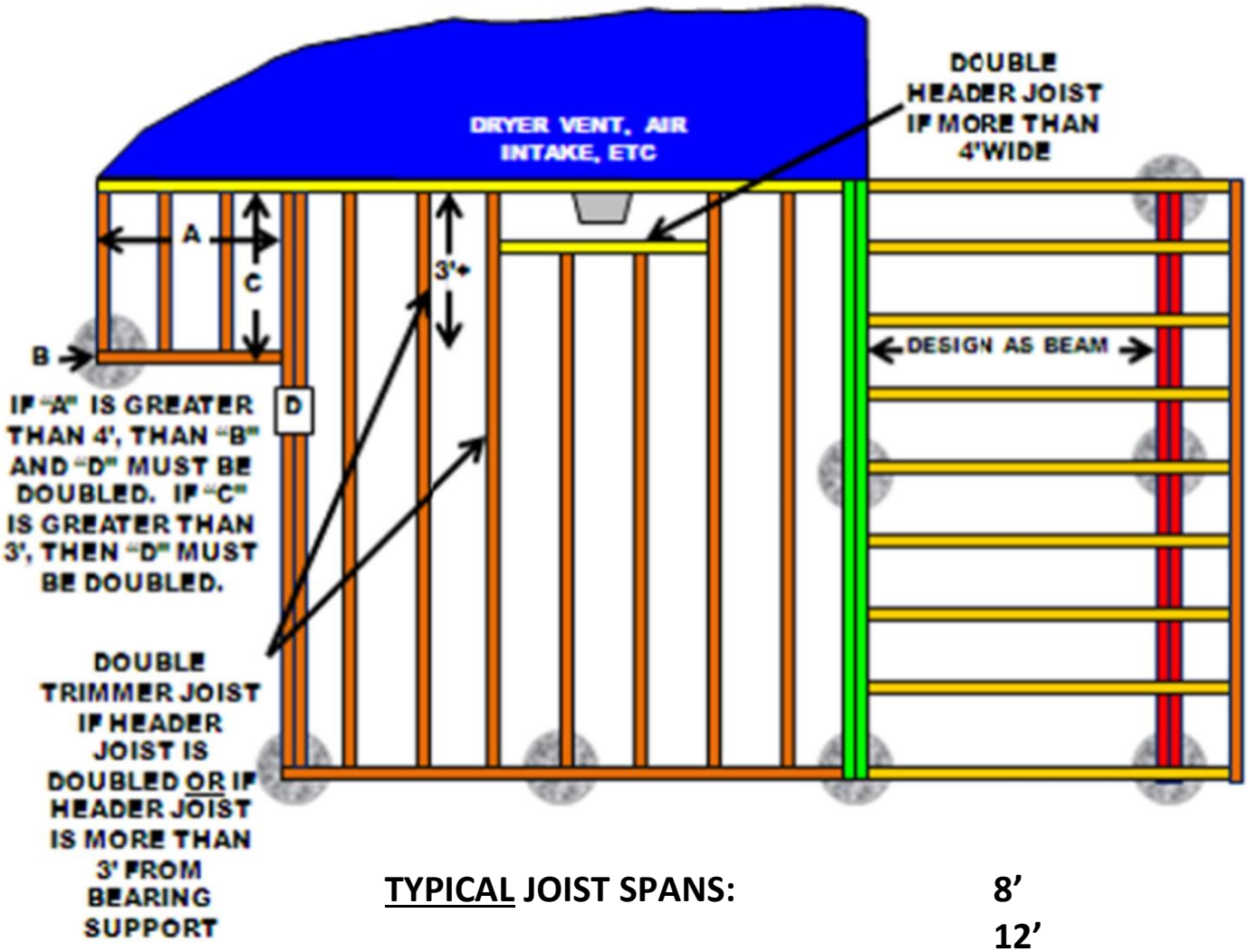
AVOID NOTCHING
GUARD POSTS





BLOCKING MAY BE ADDED TO
STRENGTHEN POST ATTACHMENT





TYPICAL JOIST SPANS: 8’

12’

16’

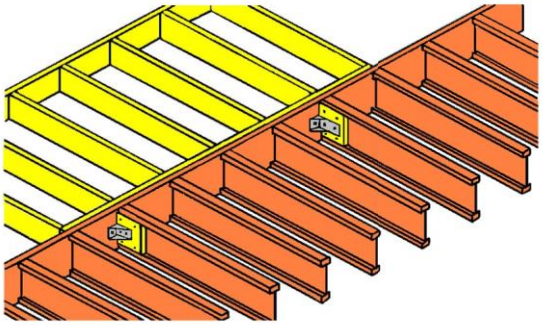
2 X 6

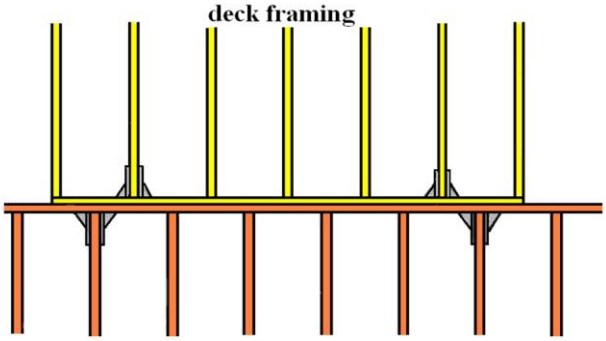
2 X 8

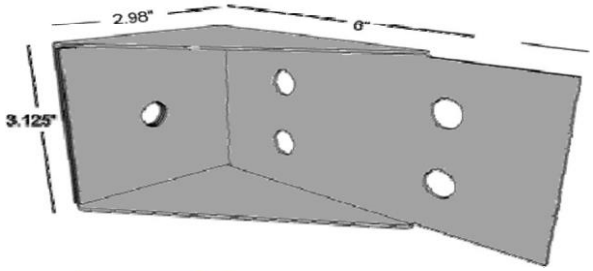
2 X 10

AT 16” O.C.

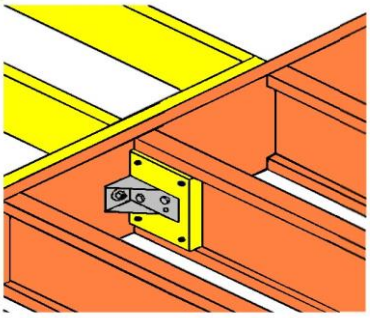
DECK ATTACHMENTS TO I-JOIST OR TRUSS FLOOR SYSTEMS

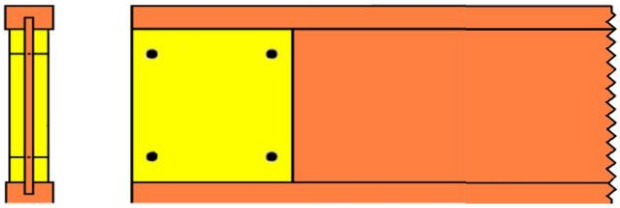


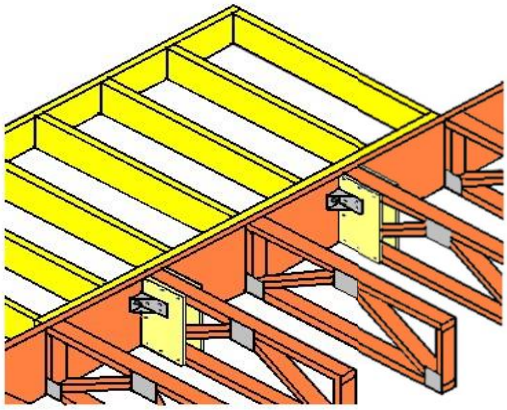


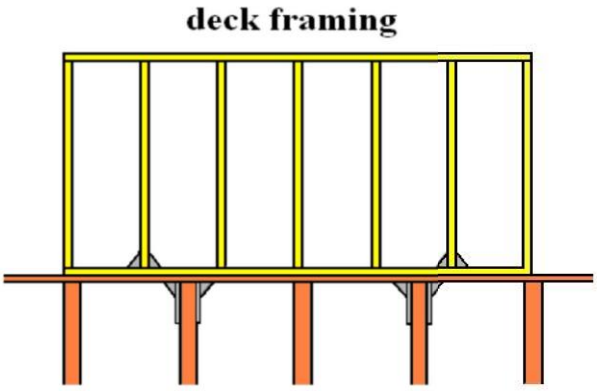


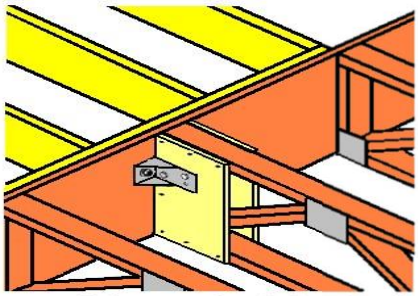
INSTALL CONNECTOR IN ACCORDANCE WITH MANUFACTURERE'S INSTALLATION INSTRUCTIONS



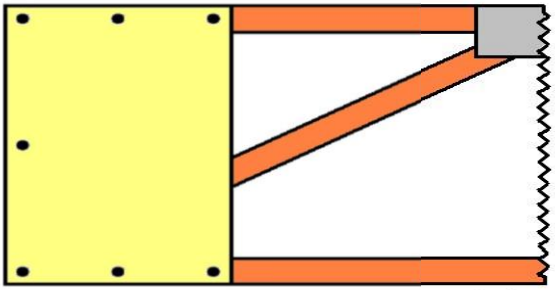






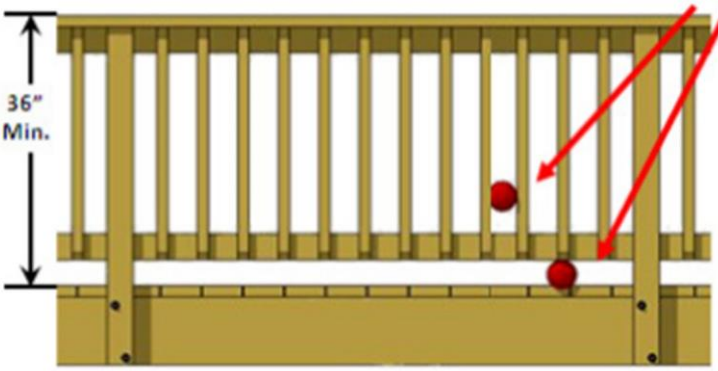


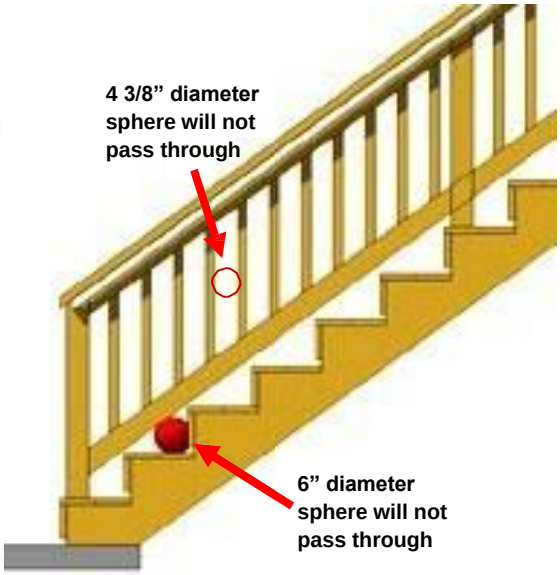
truss joist to rim joist & ledger



blocking plate nailed to truss joist

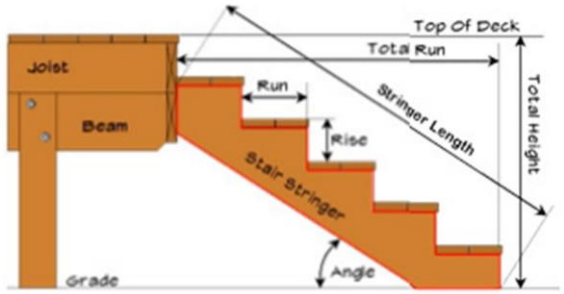
GUARDS





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

STAIR TERMINOLOGY



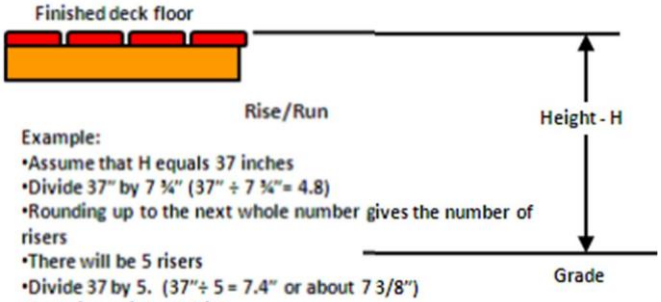
Stair Basics

- The maximum riser height is 7 ¾ inches
- The minimum tread run is 10 inches
- Treads and risers should be approximately equal with the largest not exceeding the smallest by more than ⅜ inch.

Stair Basics

- The maximum riser height is 8¼ 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 ⅜ inch.

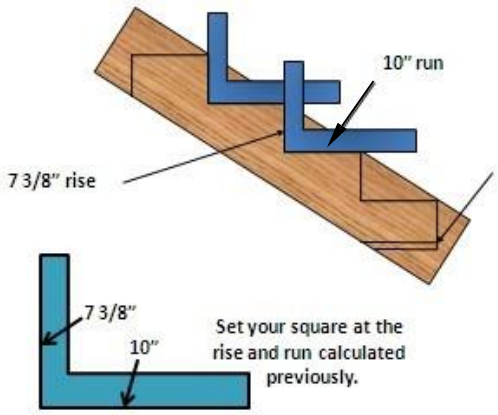
DETERMINING RISE/RUN



Example:

- Assume that H equals 37 inches
- Divide 37" by 7 ¾" (37" ÷ 7 ¾"= 4.8)
- Rounding up to the next whole number gives the number of risers
- There will be 5 risers
- Divide 37 by 5. (37"÷ 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" X 4 treads = 40")

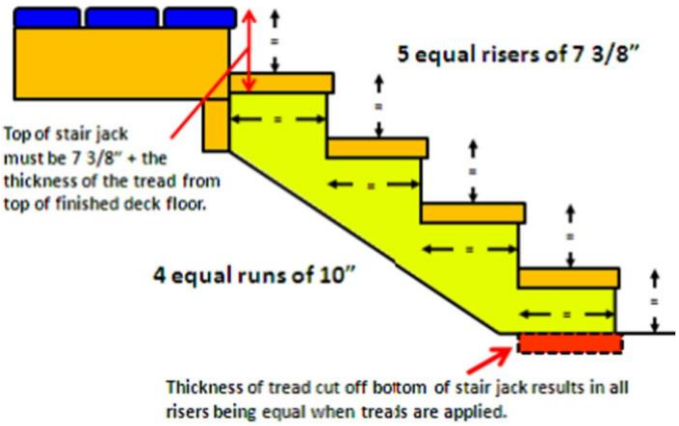
LAYING OUT STAIR JACKS



Set your square at the rise and run calculated previously.

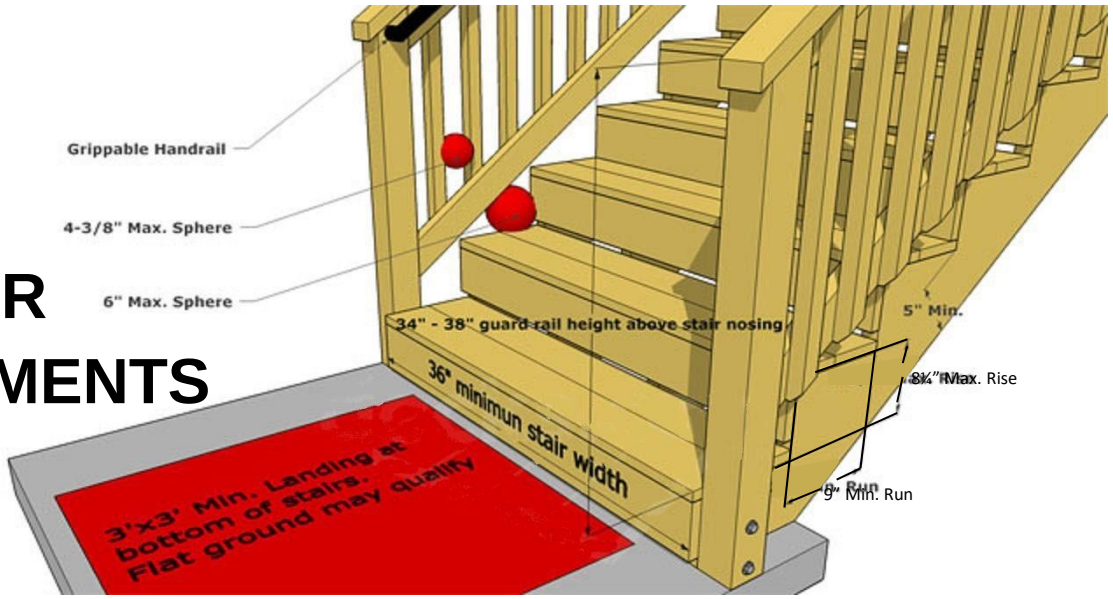
Cut an amount equal to the thickness of the tread from the bottom of the stair jack

THE COMPLETED STAIR

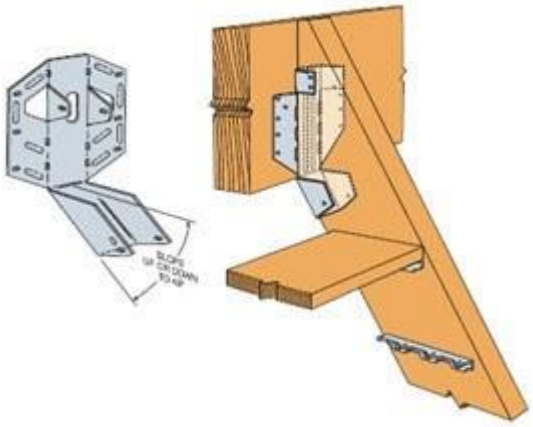


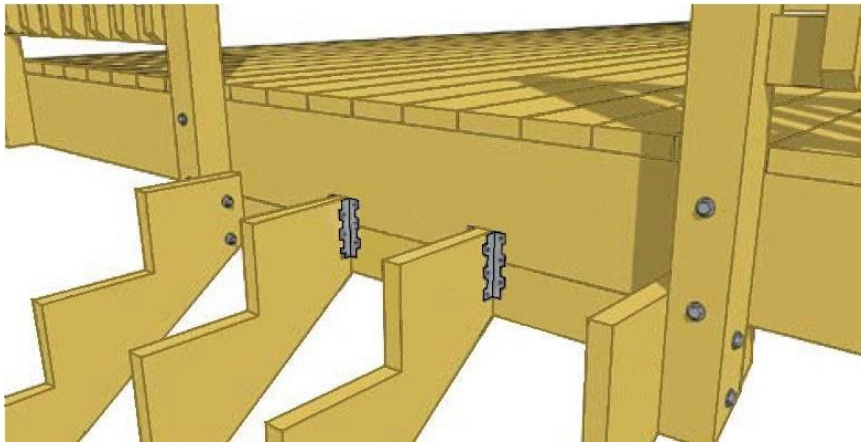
Thickness of tread cut off bottom of stair jack results in all risers being equal when treads are applied.

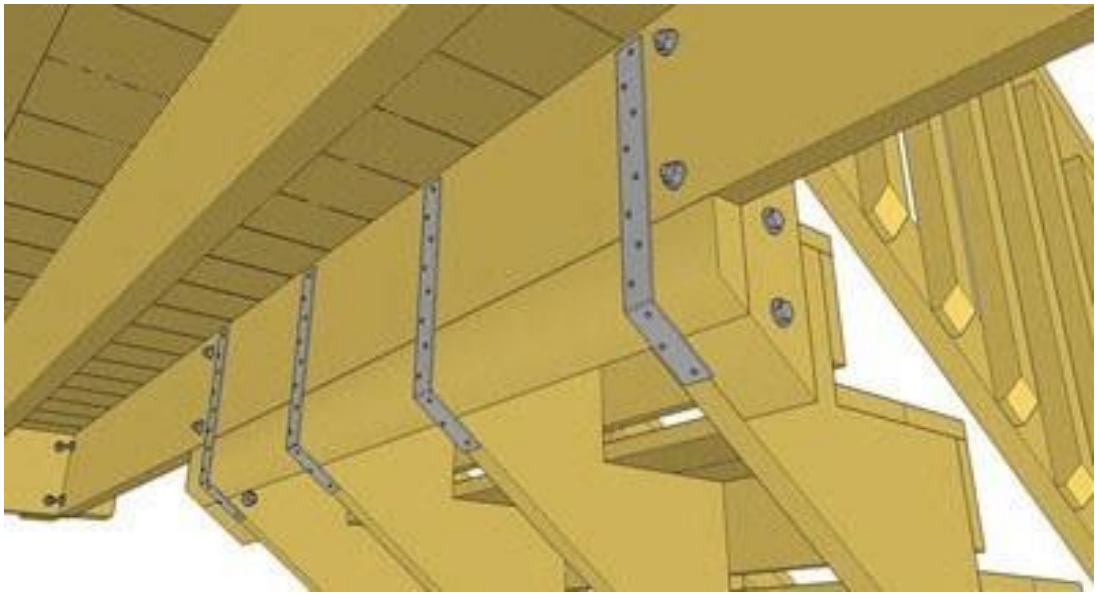
STAIR REQUIREMENTS



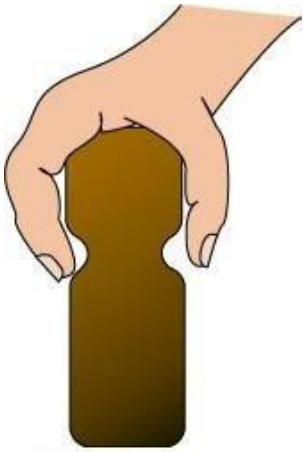
STAIR ATTACHMENTS

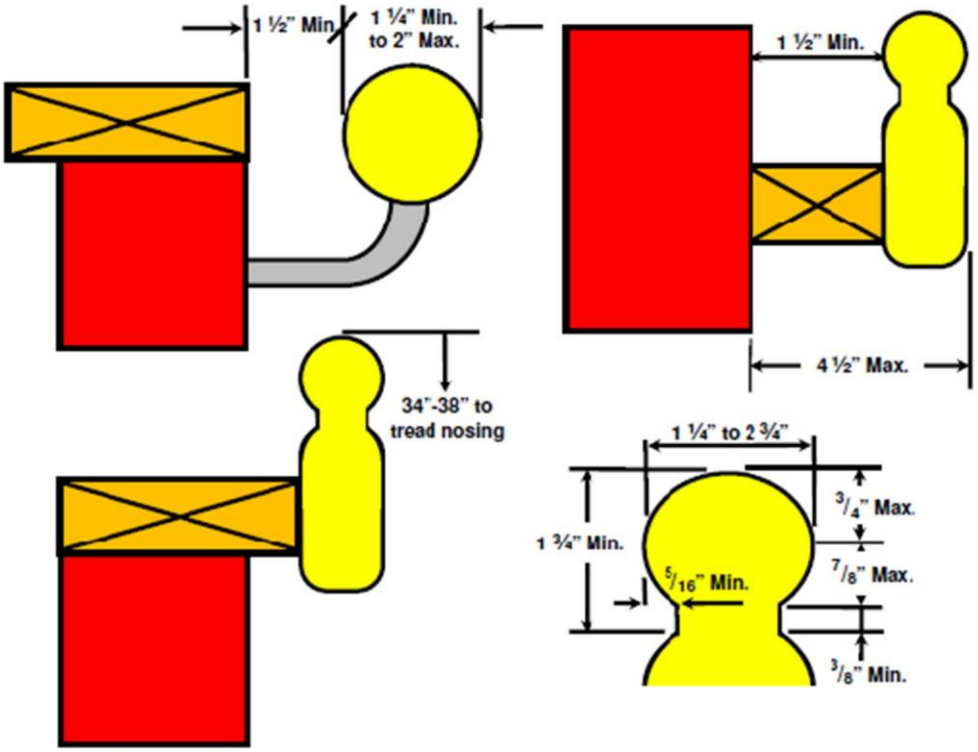


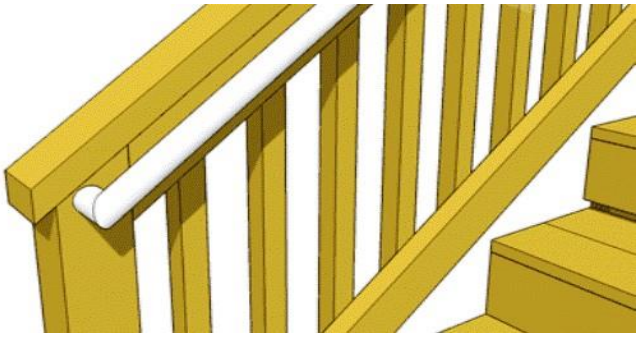




HANDRAILS







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

COMPOSITES AND OTHER DECK/RAILING PRODUCTS

THIS HANDOUT <u>DOES NOT</u> 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 <u>RESEARCH REPORT</u> FROM THE INTERNATIONAL CODE COUNCIL AND THE PRODUCT IS INSTALLED IN STRICT ACCORDANCE WITH THAT REPORT.