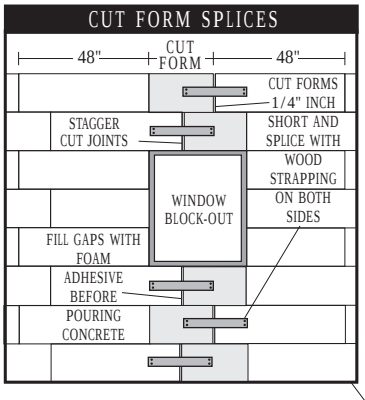

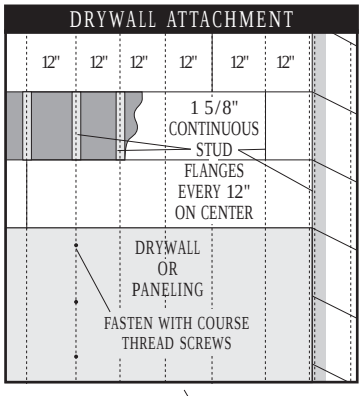

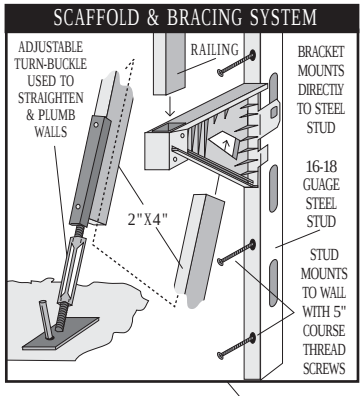

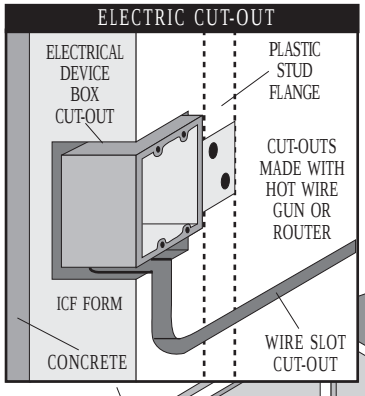

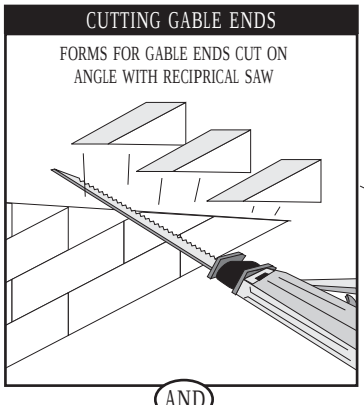

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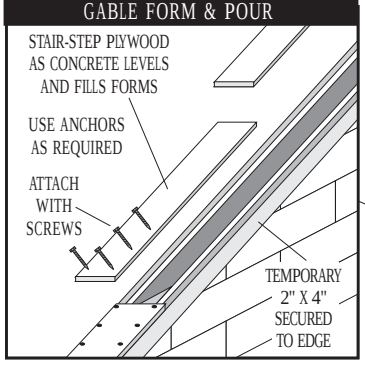

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The Modified 7" Flat Wall System
INSTALLATION GUIDE

FOR INSTRUCTIONAL USE ONLY

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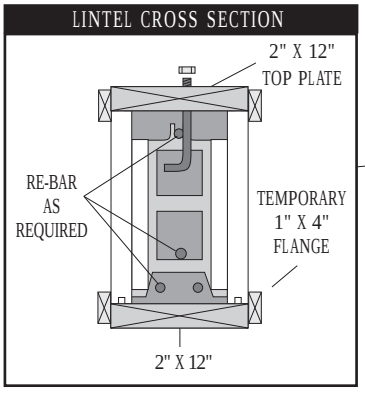

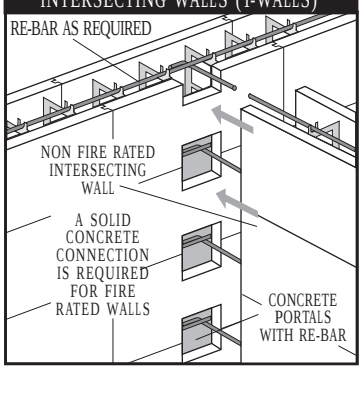

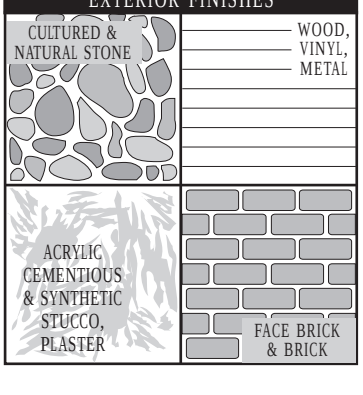

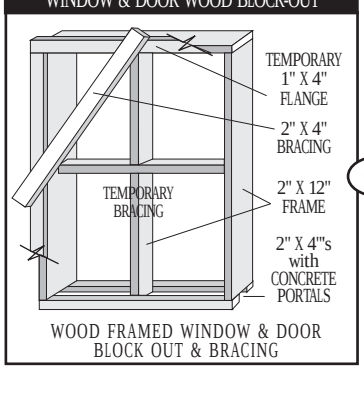

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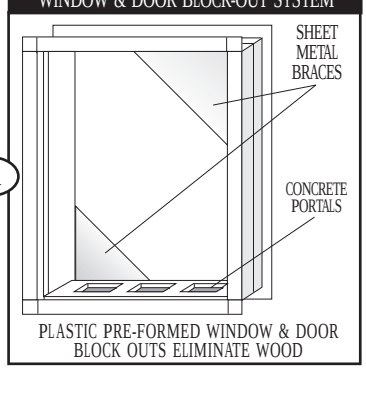

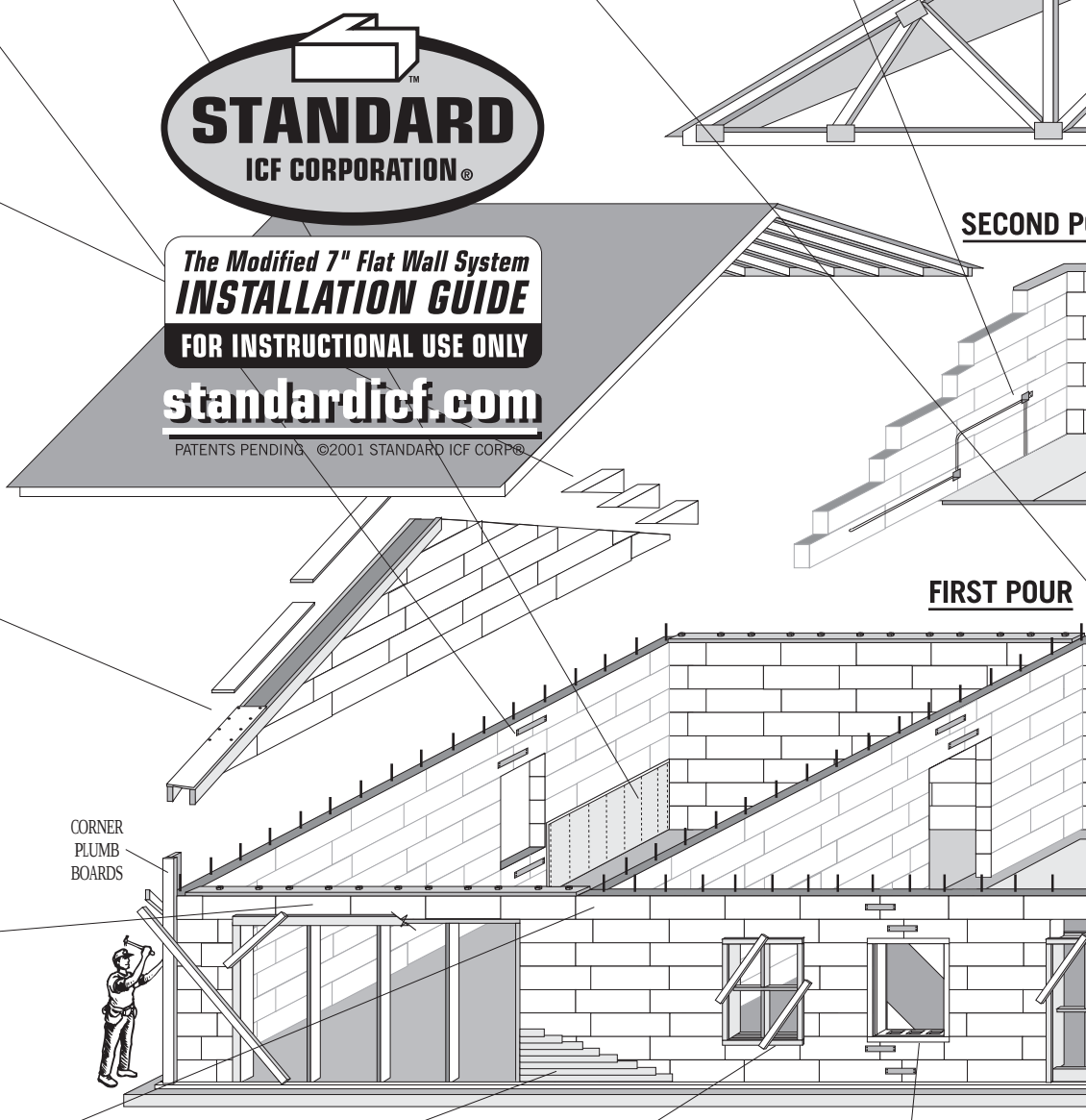

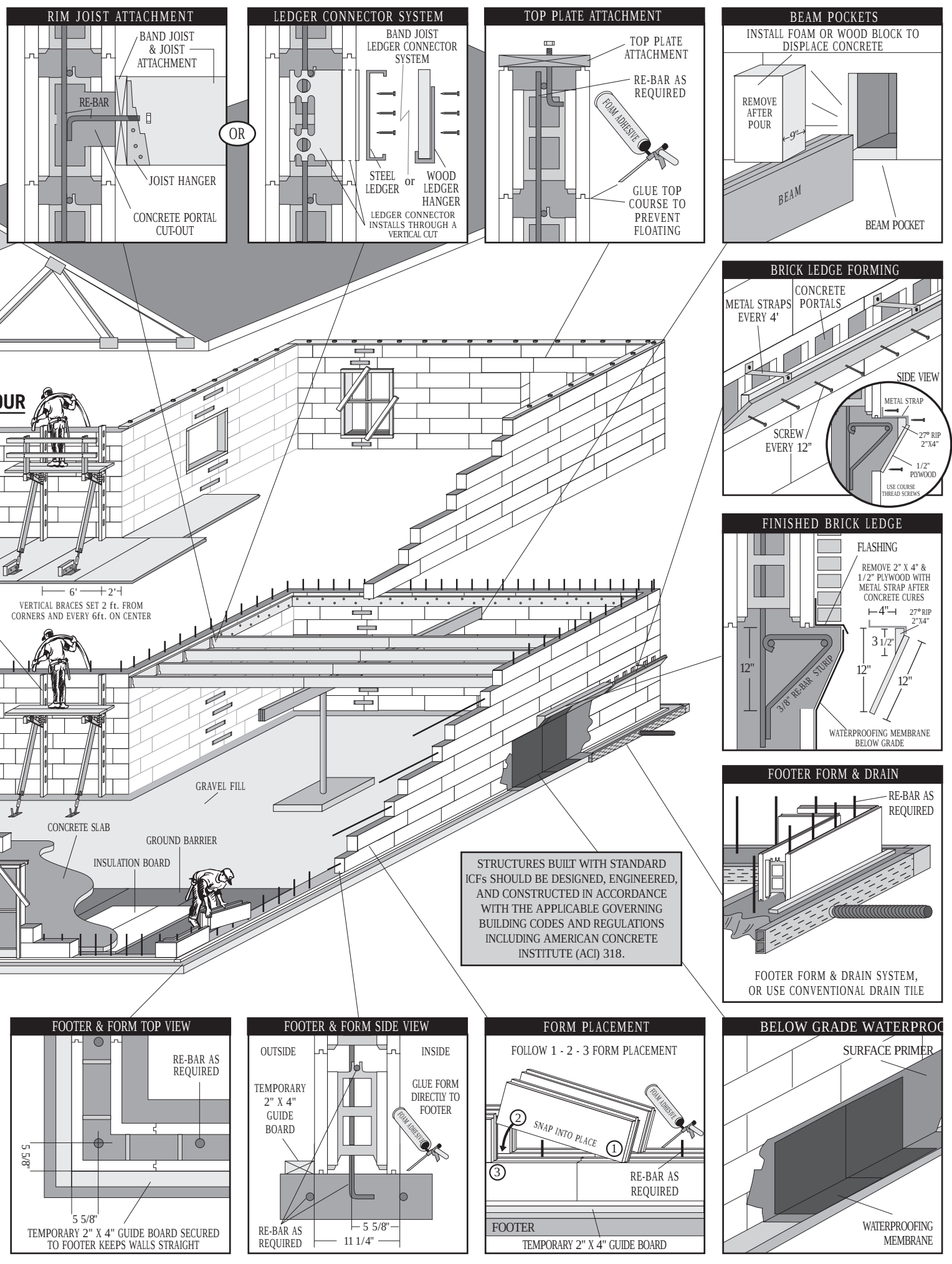
RIM JOIST ATTACHMENT
BAND JOIST & JOIST ATTACHMENT
RE-BAR
JOIST HANGER
CONCRETE PORTAL CUT-OUT
OR
LEDGER CONNECTOR SYSTEM
BAND JOIST LEDGER CONNECTOR SYSTEM
STEEL LEDGER
or
WOOD LEDGER HANGER
LEDGER CONNECTOR INSTALLS THROUGH A VERTICAL CUT
TOP PLATE ATTACHMENT
TOP PLATE ATTACHMENT
RE-BAR AS REQUIRED
FOAM ADHESIVE
GLUE TOP COURSE TO PREVENT FLOATING
BEAM POCKETS
INSTALL FOAM OR WOOD BLOCK TO DISPLACE CONCRETE
REMOVE AFTER POUR
9"
BEAM
BEAM POCKET
BRICK LEDGE FORMING
METAL STRAPS EVERY 4'
CONCRETE PORTALS
SIDE VIEW
METAL STRAP
SCREW EVERY 12"
2"X4"
1/2" PLYWOOD
USE COURSE THREAD SCREWS
FINISHED BRICK LEDGE
FLASHING
REMOVE 2" X 4" & 1/2" PLYWOOD WITH METAL STRAP AFTER CONCRETE CURES
4"
3 1/2"
12"
3/8" RE-BAR STIRUP
WATERPROOFING MEMBRANE BELOW GRADE
6'
2'
VERTICAL BRACES SET 2 ft. FROM CORNERS AND EVERY 6ft. ON CENTER
GRAVEL FILL
CONCRETE SLAB
GROUND BARRIER
INSULATION BOARD
STRUCTURES BUILT WITH STANDARD ICFs SHOULD BE DESIGNED, ENGINEERED, AND CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE GOVERNING BUILDING CODES AND REGULATIONS INCLUDING AMERICAN CONCRETE INSTITUTE (ACI) 318.
FOOTER FORM & DRAIN
RE-BAR AS REQUIRED
FOOTER FORM & DRAIN SYSTEM, OR USE CONVENTIONAL DRAIN TILE
FOOTER & FORM TOP VIEW
RE-BAR AS REQUIRED
5 5/8"
5 5/8"
TEMPORARY 2" X 4" GUIDE BOARD SECURED TO FOOTER KEEPS WALLS STRAIGHT
FOOTER & FORM SIDE VIEW
OUTSIDE
INSIDE
TEMPORARY 2" X 4" GUIDE BOARD
GLUE FORM DIRECTLY TO FOOTER
FOAM ADHESIVE
RE-BAR AS REQUIRED
5 5/8"
11 1/4"
FORM PLACEMENT
FOLLOW 1 - 2 - 3 FORM PLACEMENT
FOAM ADHESIVE
SNAP INTO PLACE
1
2
3
RE-BAR AS REQUIRED
FOOTER
TEMPORARY 2" X 4" GUIDE BOARD
BELOW GRADE WATERPROO
SURFACE PRIMER
WATERPROOFING MEMBRANE

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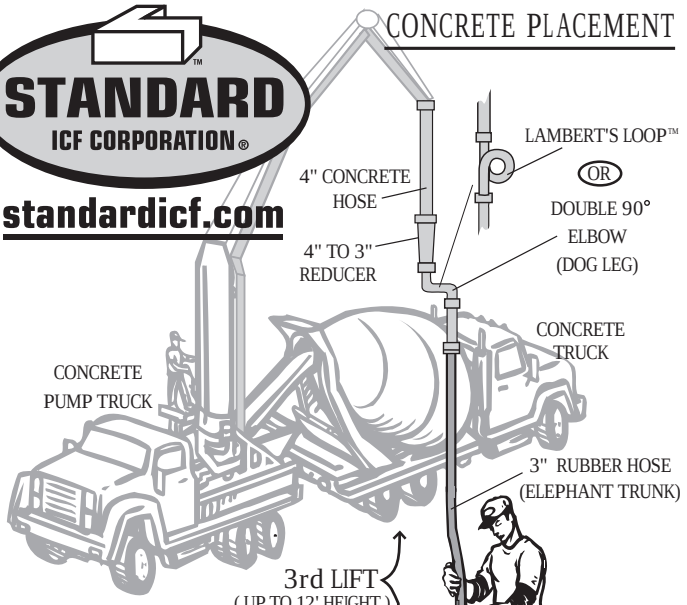
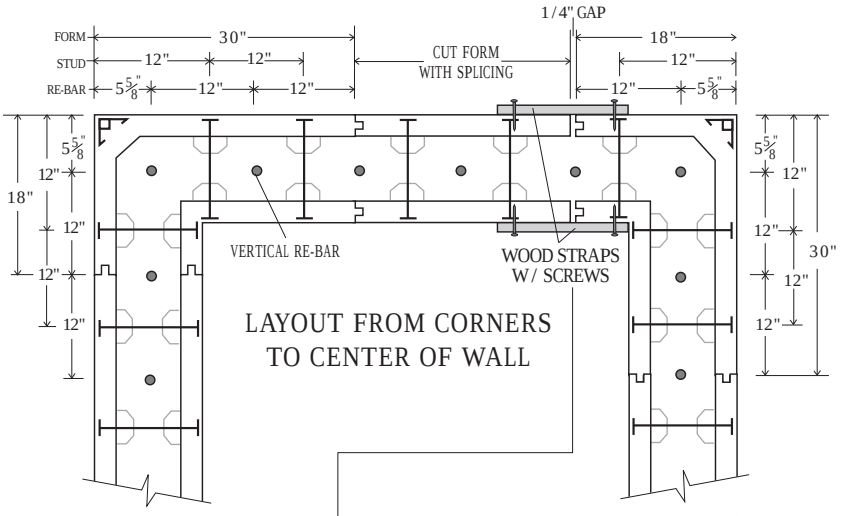
CONCRETE PLACEMENT



STANDARD ICF™ WALL LAYOUT WITH SPLICES



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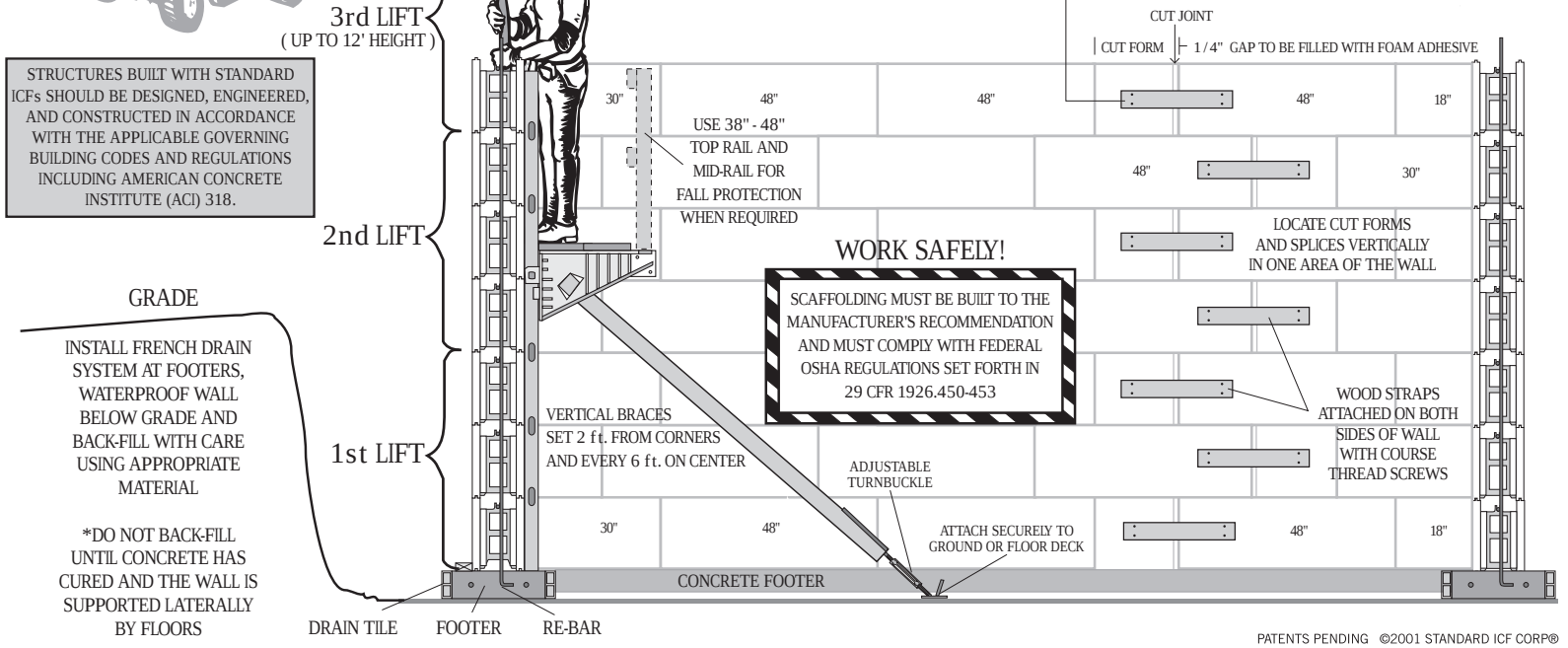
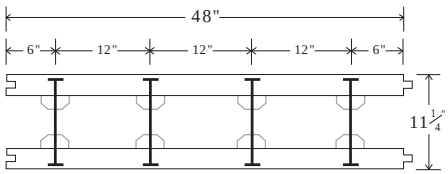
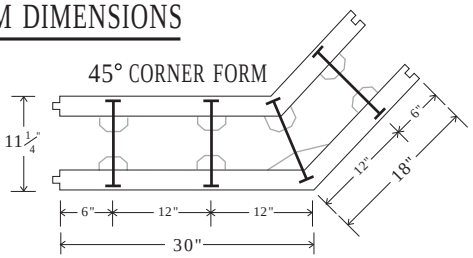
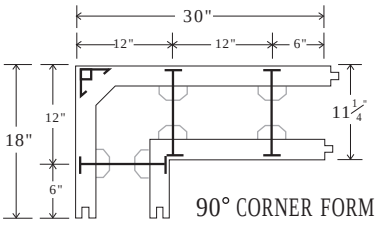


FORM DIMENSIONS



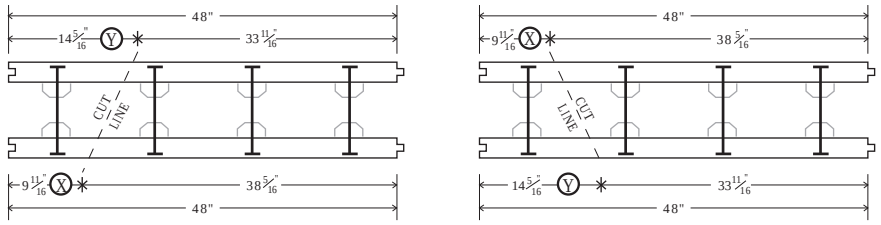
STRAIGHT FORM

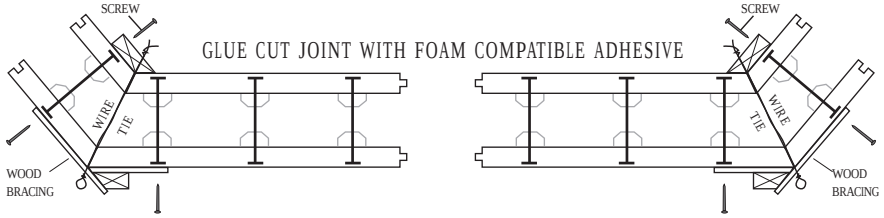




90° CORNER FORM

CUTTING STRAIGHT STANDARD ICFs™ FOR 45° AND OTHER CUSTOM CORNERS





STANDARD ICF™ CUSTOM ANGLE TABLE

To miter straight forms for making custom corners use the following table and diagram, and the text found in the STANDARD ICF Installation Instruction Manual.

Corner Angle (degrees)	Cut Angle (degrees)	X (inches)	Y (inches)
90°	45°	6 3/8	17 5/8
85°	42.5°	6 13/16	17 3/16
80°	40°	7 1/4	16 3/4
75°	37.5°	7 11/16	16 5/16
70°	35°	8 1/8	15 7/8
65°	32.5°	8 7/16	15 9/16
60°	30°	8 3/4	15 1/4
55°	27.5°	9 1/16	14 15/16
50°	25°	9 3/8	14 5/8
45°	22.5°	9 11/16	14 5/16
40°	20°	9 15/16	14 1/16
35°	17.5°	10 1/4	13 3/4
30°	15°	10 1/2	13 1/2
25°	12.5°	10 3/4	13 1/4
20°	10°	11	13
15°	7.5°	11 1/4	12 3/4
10°	5°	11 1/2	12 1/2
05°	2.5°	11 3/4	12 1/4

Footers
•Install level footers with a ¼-inch vertical tolerance and with 16-inch steps as required.
•Install vertical re-bar dowels in footers.

Layout
•Locate corners and mark the wall perimeter with a chalk line.
•Install a 2 x 4 guide board on the footer.

Materials and Tools
•Locate the work area inside wall perimeter.
•Specialized tools are not required.

Handling and Storage
•Proper handling and storage is important.
•Protect from high winds and damage caused by construction site activities.

First Course
•Begin at the corners with forms tongue side up and facing in one direction.
•Glue forms to footer staying tight against the inside of the guide board.
•Work from opposing corners toward the center of wall.

Cut Forms and Splices
•Locate splices at window or door openings to minimize cuts, or in the center of wall.
•Locate cut forms and splices in a vertical, staggered, and reacquiring alignment.
•Splice both sides of the cut form.
•Use 1 x 4 pieces of wood for splices.
•Splice cut forms when the cut ends are located between stud wall-tie brackets that are more than 10-inches apart.

Cutting Forms
•Use a carpenter's handsaw, Saws-All, drywall saw, or table saw to cut forms.
•Reinforce forms when a wall-tie is cut.
•Cut forms ¼-inch smaller than measured opening and fill gap before concrete pour.

Gluing Forms
•Glue forms to the footer with a good size bead of foam adhesive.
•Glue top course to course below to prevent floating with a ½-inch bead of adhesive.
•There is no need to glue vertical joints.
•To assure quality, glue all horizontal joints.

Additional Courses
•Install additional courses by alternating the direction of each course.
•Install horizontal re-bar as required.

Horizontal Re-bar
•Place re-bar in tandem re-bar saddles.
•Make all re-bar splices with 36 bar diameter overlaps, including at corners.

Vertical Re-bar
•Install re-bar full length, or in pieces with splices overlapping 36 bar diameters.

External Bracing
•Not required at pre-molded corners.
•Required at all miter cut corners, window and door fames, intersecting walls, gable ends, and bulkheads.

Window and Door Openings
•Build frames with pressure treated 2 x 12s for top and sides, and 2 x 4 on bottom.
•Attach temporary 1 x 4 flanges on all the edges to center the frames in the wall.
•Install temporary diagonal and cross bracing to withstand concrete pressures.
•Install fasteners that will protrude into the wall cavity for concrete attachment.

Bulkheads
•Build with pressure treated 2 x 12s and temporary 1 x 4 wood flanges.
•Brace the bulkheads as required.

45-Degree and Other Custom Corners
•Miter cut straight forms to make 45-degree and other acute or obtuse corners.

Rim Joists and Ledgers
•Attach joists and ledgers with a series of anchor bolts or ledger connectors.
•Do not install structural framing until concrete has had time to cure properly.

Beam Pockets
•Remove a section of foam panel from the side of the wall assembly as required.
•Block out the opening with pieces of wood or foam inserted into the wall cavity that are easy to remove after concrete is cured.

Brick Ledge
•Establish elevations for a brick ledge form.
•Remove sections of foam from between studs and top and bottom of the brick ledge form to allow for the flow of concrete.
•Install re-bar as required.
•Fabricate a wood or metal brick ledge form and attach it to the side of the wall.

Utility, Mechanical, and Service Penetrations
•Install sleeves and chases through the wall for all penetrations.

Scaffolding and Bracing
•Install to keep wall assembly straight, plumb, square, and protect wall during concrete curing, and high winds.
•Provide a safe and adequate work platform. Ref: OSHA 29 CFR 1926.450 thru 453.
•Space 2-feet from corners and at 6-feet intervals throughout the wall assembly.

Before Concrete Check List
•Check wall for plumb and straight.
•Check splices and fill gaps and spaces with foam adhesive.
•Check for all required penetrations.
•Have connecting devices and structural pieces in place, or on hand for installation.
•Check scaffolding and bracing for safety.
•Check all window and door frames and all required external bracing.
•Determine the proper ready-mix design.
•Do not order concrete until you are ready.

Concrete Placement
•Place concrete with a concrete pump.
•Reduce hose diameter to 3-inch, add a "dog leg", and an "elephant trunk".
•Have materials on hand to make repairs.
•Place concrete in lifts of 4-feet.
•Concrete strength should not be less than 3000 psi. with 28 day moist cure.
•Use concrete with a 6-inch slump.

Concrete Consolidation
•Consolidate concrete by "rodding" with a re-bar, and/or by tapping on the side with a hammer and a wood block as necessary.

After Concrete Placement
•Check the installation of anchor bolts and structural connectors for alignment.
•Check the walls for plumb and straight.

Concrete Curing and Removal of Bracing
•Do not remove bracing until the walls have developed adequate strength and/or have been supported laterally.
•Be aware of environmental factors that affect concrete curing.

Waterproofing
•Apply waterproofing to all below grade walls to keep the water out and protect the integrity of the foam insulation.
•Install a French Drain System at the footer.

Backfilling
•Wait until the concrete has cured properly and the walls are braced laterally by floors.
•Use backfill materials that will percolate water and reduce hydraulic pressure.

Standard ICF Specifications
•Manufactured using molded Type II EPS in accordance with ASTM E84.
•Molded to a net cured weigh of 1.5 psi.
•UL tests results with a flame spread of 10, and smoke a development of 300.
•Finished wall has a fire resistance of 3-hours with 5/8-inch drywall.
•Brackets made with recycled HDPE.
•No HCFCs or HFCs are emitted during the manufacturing process.
•The finished product does not off-gas and does not produce fumes, odors, or toxins.
•Calculated R-Value of R-26+. System performance comparison of up to R-50.
•Sound transmission class of STC-50.
•Stud flanges are 1 5/8-inches wide, 12-inches on center measured from corners.
•Nominal 7-inch modified flat wall with a net 6 ½-inch concrete core.
•Straight forms: 48-inches long, 16-inches high, 11 ¼-inches wide.
•90° & 45°Corner forms: 48-inches (18+30) long, 16-inches high, 11 ¼-inches wide.
•Surface area of 5.33 sq. ft. per form.
•One cu yd of concrete fills 10.5 straight forms, 13.75 - 90° & 12 - 45°corner forms.