



**I.C.E. BLOCK<sup>®</sup>**  
(U.S. Patent No. 4,223,501)

**Installation Manual**

An energy efficient - cost effective building system,  
designed for contractors and property owners alike.

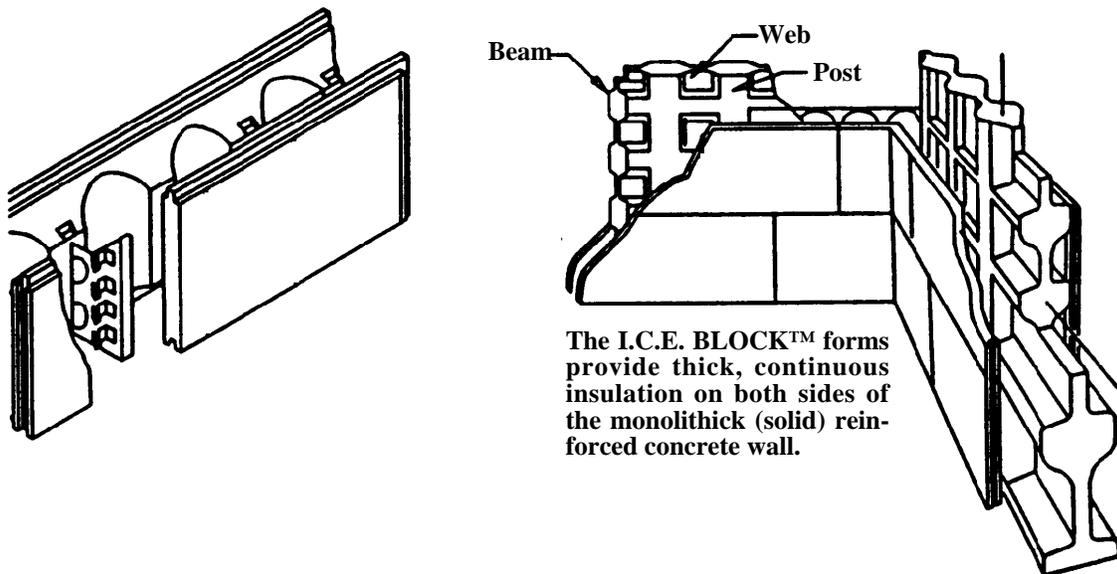
# I.C.E. BLOCK™ INSTALLATION MANUAL

## INTRODUCTION

**I.C.E. BLOCK™** is an energy and cost efficient wall system made of environmentally safe and durable expanded polystyrene (EPS). **I.C.E. BLOCK™** is used with conventional reinforced concrete to create a wall system that can be used from footing to rafter. Quick and convenient, the **I.C.E. BLOCK™** wall has a "textbook" R value of 24+ (ASHRE 90.1) and costs about the same as conventional construction.

**I.C.E. BLOCK™** creates a wall that can be as much as 50% stronger than normal poured concrete, and stronger yet than frame construction. This manual is designed to be a guide for the contractor of residential, commercial, or industrial properties of all sites.

**Figure A - I.C.E. BLOCK™ Wall System**

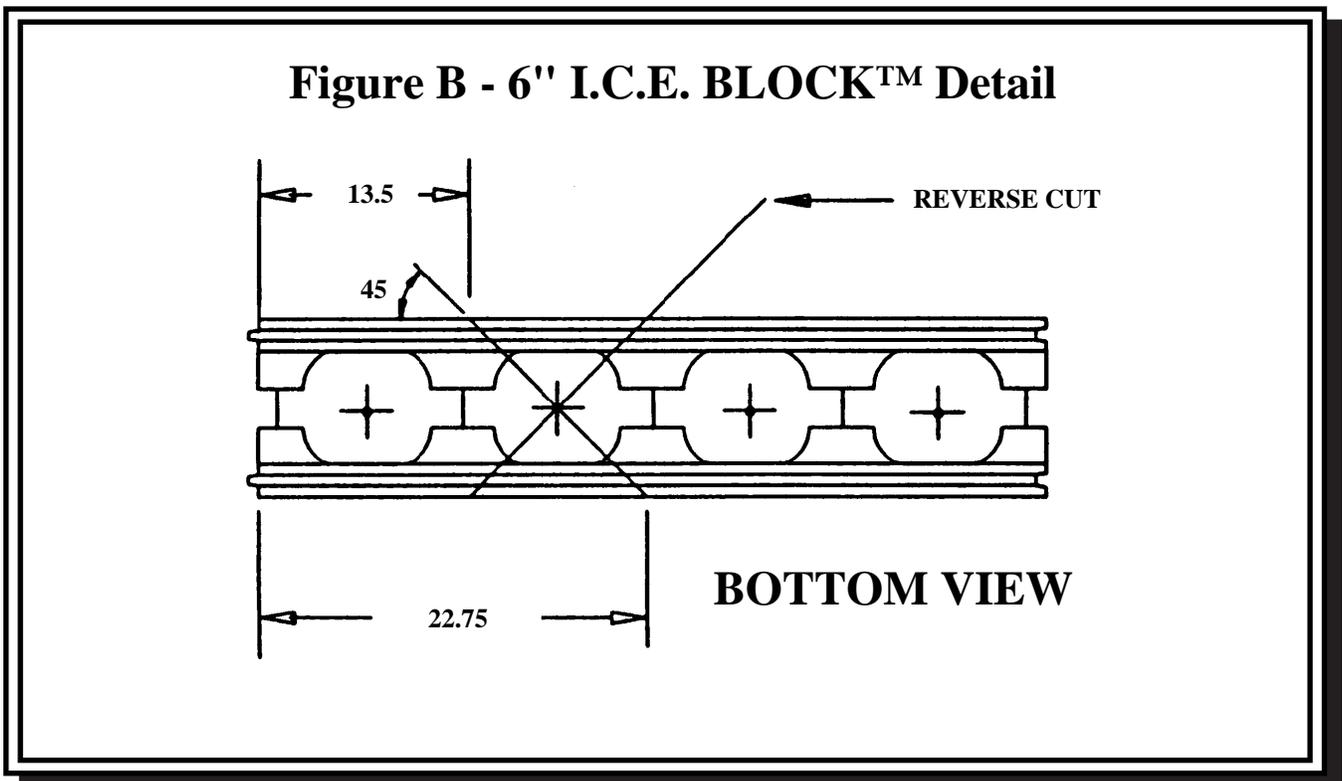


## PREPARATION

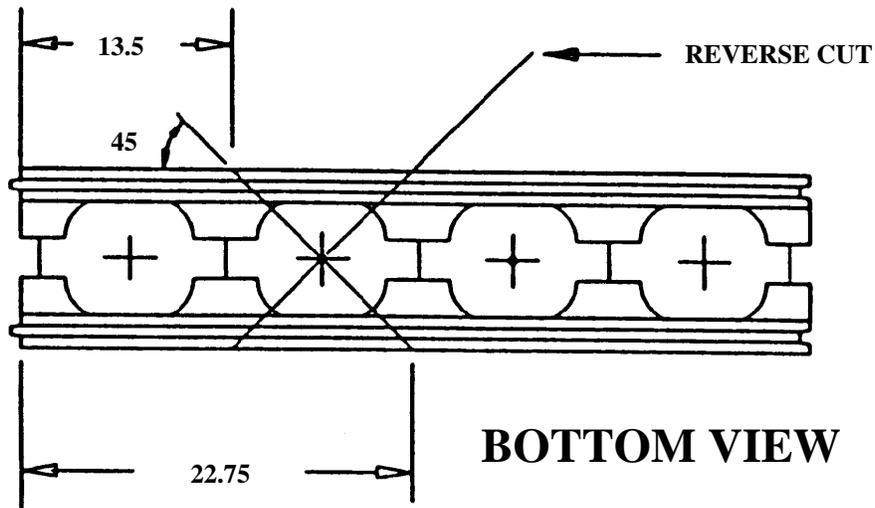
**IMPORTANT NOTE:** The following procedures outline activities and materials used for typical construction. Special designs may require the contractor to alter the basic instructions. For example, this manual may call for #4 rebar on two foot centers, while the engineer's design may call for #4 rebar on one foot centers, in all cases the engineering recommendations always take precedence.

1. The building site can be excavated in the manner normal for any conventional building. The footings are a normal spread type unless special local conditions (as determined by a construction professional) indicate changes.

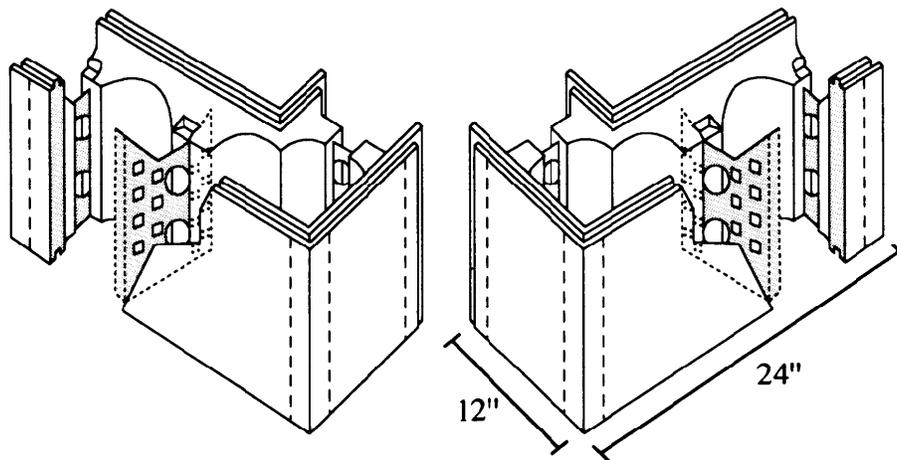
2. The builder should assemble the appropriate number of ICE BLOCK™ forms, reinforcing steel, wire ties, structural lumber, and tools at the job site in a convenient arrangement. Corners for the first course of I.C.E. BLOCK™ forms should be cut at this time (Figures B & C), unless factory preformed corners are used,



**Figure C - 8" I.C.E. BLOCK™ Detail**



**Figure D - Factory Preformed Corners**



**IMPORTANT NOTE:** I.C.E. Block™ forms have a low weight to surface ratio. If left individually or bound in small groups, they may be subject to high winds and could be damaged. Care should be taken to make sure unattended forms are properly secured.

A qualified structural engineer should be consulted when the wall application exceeds the following conditions:

1. Basement applications where the unbalanced backfill between the inside and the outside of the wall exceeds 5' for 6" I.C.E. Block™ walls or 6' for 8" I.C.E. Block™ walls, or whenever the equivalent fluid pressure of the backfill exceeds 30 psf.
2. Design wind loads for above grade walls exceeds 25 psf or vertically unsupported span exceeds 10'.
3. Lintels which exceed 14 feet, or are shallower than 12 inches or carry concentrated loads if strict ACI Code conformance to Chapter 14, a maximum spacing of 18 inches is required especially in Seismic Zones 3 and 4.

This manual explains the correct Installation methods for the unique I.C.E. Block™ Super Insulated Concrete Building System. Basic to this building system is the light weight I.C.E. Block™. It's made of environmentally safe EPS (expanded polystyrene) molded with five integral steel cross members. The ends of the cross members are located just below the surface of the block to prevent heat transfer and moisture consolidation during cold weather. The embedded 26 gage steel studs also provide attachment points for the application of finishing materials. When I.C.E. Block™s are stacked together they create a smooth wall form into which rebar is wired and concrete is placed to create a solid, super-insulated and super strong structure. I.C.E. Block™s have tongue and groove edges to make alignment easy and to provide a complete insulation seal. The I.C.E. Block™ System is appropriate for building walls below and above grade from footing to rafter. Damp proofing is recommended for the outside of below grade walls before backfilling, but other than that, walls built with I.C.E. Block™s are ready for finishing once the concrete is set. Some of the many benefits for contractor and crew when building with the I.C.E. Block™s verses traditional frame or masonry include fast easy construction by smaller crews using light weight materials with minimal waste and requiring no special skills. No special equipment is required and no unusual building techniques are necessary. Plus, with I.C.E. Block™, concrete can be placed in below freezing temperatures. This Installation Manual shows how to build with the I.C.E. Block™. Methods described here are designed to be a guide to the contractor for residential, commercial and industrial projects of all sizes. Once understood, they can be adjusted to fit the construction requirements of any special design. For your convenience, this manual is divided into five sections. Each section is labeled accordingly for your quick reference. This installation Manuals content closely follows that of our video tape which is available from your I.C.E. Block™ Distributor. If you have not received a copy, please call 1-877-ICF-4800 (1-877-423-4800).

**Section One** includes Site preparation, I.C.E. Block™ Handling, Block Cutting and Pre-molded Corners; Arch, and Radius Bend. (Blue Section)

**Section Two** includes Footing Preparation, Rebar Cutting, Laying First Course, Installing Vertical Rebar, Building Bucks and Fabricating Corner Braces. (Green Section)

**Section Three** includes Installing Corner Braces, Stacking and Bracing the Wall, Installing Door and Window Bucks, Reinforcing, Building T-Walls, Grade Changes and Wing Walls, Incorporating the Floor System and Completing the Stack. (Orange Section)

**Section Four** includes placing Concrete in the Wall, Consolidation of Concrete, Final Alignment of the Wall, Finishing the Top of the Wall, Making and Utilizing Ladders. (White Section)

**Section Five** includes Additional Levels, Electrical and Plumbing Installation, Brick Facades, More on Curves, Arches, Gables, Bulkheads, Exterior Walls Below Grade and Finishing. (Red Section)

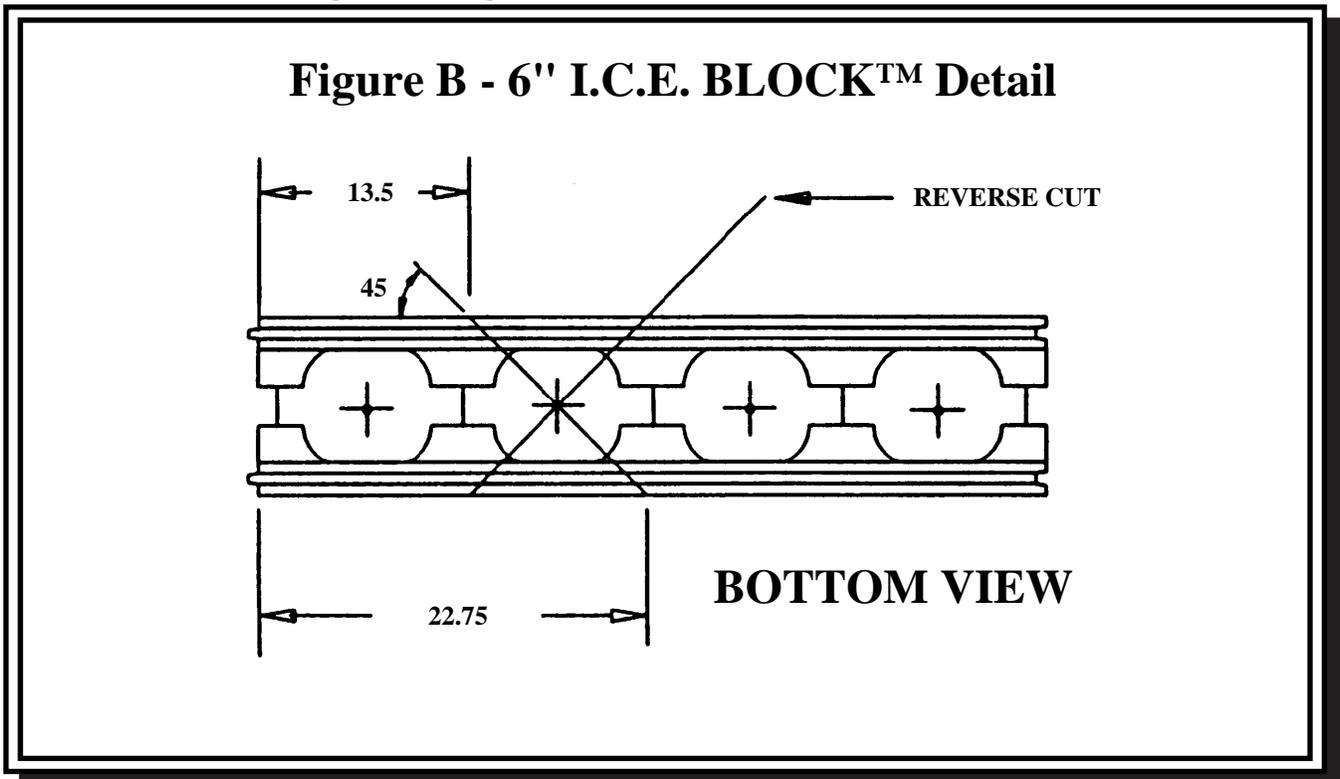
## Section One

Initially the site is excavated in the manner consistent with conventional building practices. Normal spread-type footings are used unless special or local conditions indicate a change based upon the recommendation of a construction professional. All materials should be conveniently arranged at the job site. All required I.C.E. Block™ reinforcing steel, wire-ties or clips, bracing lumber and tools should be on hand before beginning. Make sure I.C.E. Block™s are properly secured or stored, and easily available until ready for use. Setting I.C.E. Block™s is quick work. Planning and preparation are required to keep the work moving along efficiently.

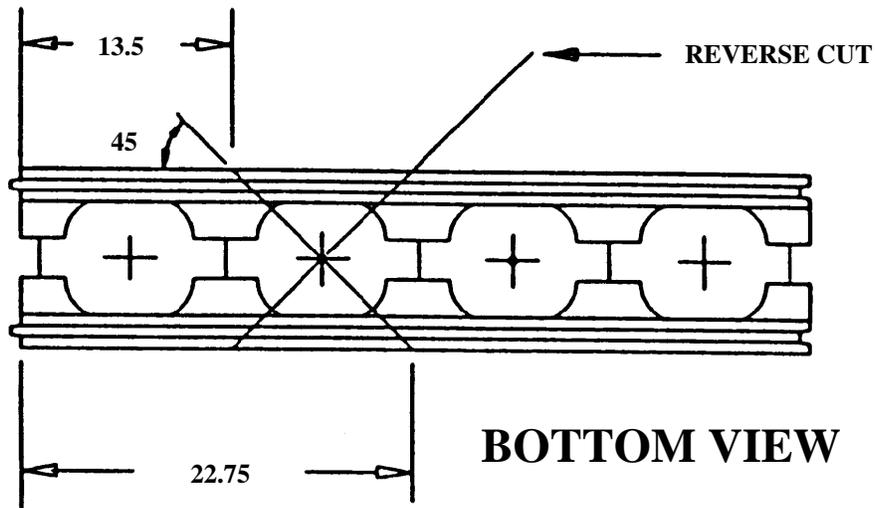
**Corners:** The use of premolded corners is recommended but not mandatory. They come as left and right hand corners. (See Figure D, page 3)

**Fabricated corners:** The appropriate number of corners needed to start the job and stay ahead of construction should first be prepared, Cutting I.C.E. Block™ for corners is easy. A hand saw or optional hot-wire cutter available from your I.C.E. Block™ distributor is used. The hot wire cutter produces an accurate dove-tail joint. Clear plastic tape is used to seal the joined edges to prevent spillage of concrete, (In case of premolded corners there is a right and left corner) In the the case of hand cut corners there will be a short and long stack of I.C.E. Block™. Stack large and small corners alternately beginning with the large corner on the bottom of the stack. This alternating achieves the proper stagger of courses and alignment of studs. Care must be taken to cut I.C.E. Block™ properly to provide the correct alignment of the steel studs and vertical concrete columns. ( Figures B & C)

Below are drawings for cutting a 6 inch and 8 inch I.C.E. Block™



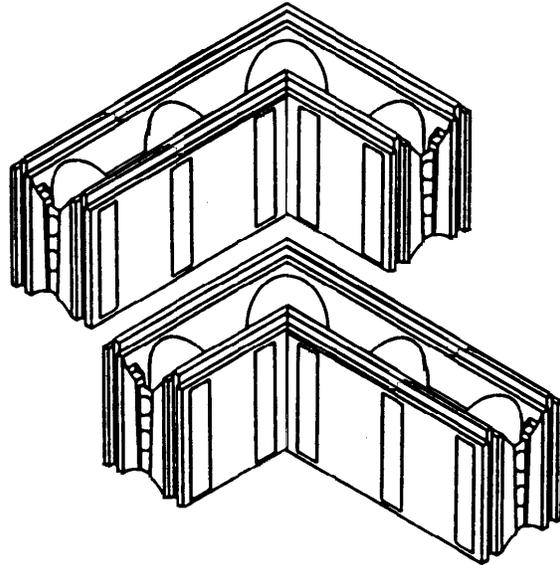
**Figure C - 8" I.C.E. BLOCK™ Detail**



Shown are four cavities and five steel cross members. The cut to make a corner block is made diagonally through the center of the second cavity. In practice, to make a right angle corner, a set of two I.C.E. Block™s are cut at opposite 45 degree angles. The two large pieces, when taped together, create a corner as do the two smaller ones. When stacked alternately, the result is the proper alignment of steel cross-members and a solid concrete post up through the courses (Figure E). Pre molded corners eliminate the need to cut the block to make corners thus making the job go faster.

## Figure E - I.C.E. BLOCK™ Wall Alignment

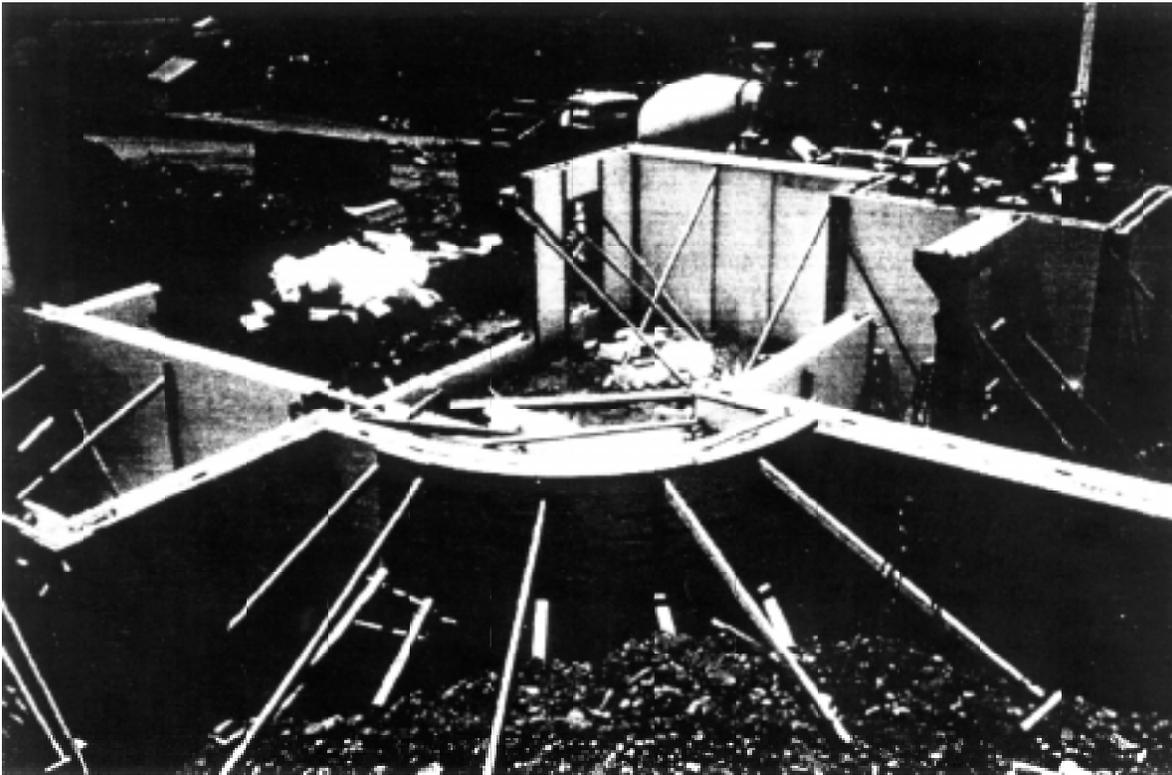
**Corners can be made by cutting two I.C.E. Block™s forms at opposite 45° angles. One small and one large piece create a corner. When stacked alternately, the result is proper metal stud alignment, staggered joints, solid concrete posts, beams and webs, with no waste. I.C.E. Block™ forms can also be trimmed to create a curved wall.**



Actual measurement for a right angle corner from the end of the block are for the I.C.E. Block™ that measures 9 1/4 inches in width (6 inch I.C.E. Block™), the 45 degree cut slices through the block at 13 1/2 inches from the tongue end, through the center of the cavity, and exits at the 22 3/4 inches from the tongue end on the opposite side. For the I.C.E. Block™ that measures 11 inches in width (8 inch I.C.E. Block™), the 45 degree cut slices through the block at 12 1/2 inches from the tongue end, through the center of the cavity, and exits 23 1/2 inches from the tongue end on the opposite side. Although 45 degree diagonal cuts must be measured from the tongue end of the block, do not include the tongue in this measurement. The measurements shown are for 45 degree cuts only (Figures B & C).

The measurements would be different for other angles but the same basic principles would apply. That is, make your diagonal cuts through the center point of a cavity when the block is viewed from above, and cut a set of two blocks at opposite angles when building a particular corner, so that two larger and smaller pieces can be paired in alternating courses. It may be necessary from time to time to construct a radius bend directly off the footing. this can be easily accomplished in two ways depending on the tightness of the radius. If the radius is fairly large, simply sand or hot-wire the inside tongue or groove of the two blocks to be joined together. Repeat the procedure on subsequent attaching blocks until the desired radius is achieved (Figure E). If a tight radius is desired the I.C.E. Block™s can be stood on end subsequently sanding or hot-wiring the tongue or groove end of the block to achieve the desired radius ( Figure E). Radius as tight as five feet can be achieved in this manner with very good results.

**Figure F - Radius Bend**



In case of Arches, cutting the I.C.E. Block™ to the desired arch shape can be accomplished with a common band saw. First set the block either in place within the wall or horizontally on any flat surface such as the slab. Next draw the outline of the desired radius archway directly onto the I.C.E. Block™ with magic marker or equivalent. If necessary number the blocks so they can be installed properly within the wall after they are cut with the band saw to the proper shape. Once the I.C.E. Block™s are installed into the wall and you are satisfied with the results, use any sturdy flexible material to brace the bottom and sides of the arch to prepare for the concrete pour; [plywood works very well] (Figure G).

**Figure G - Building Arches**



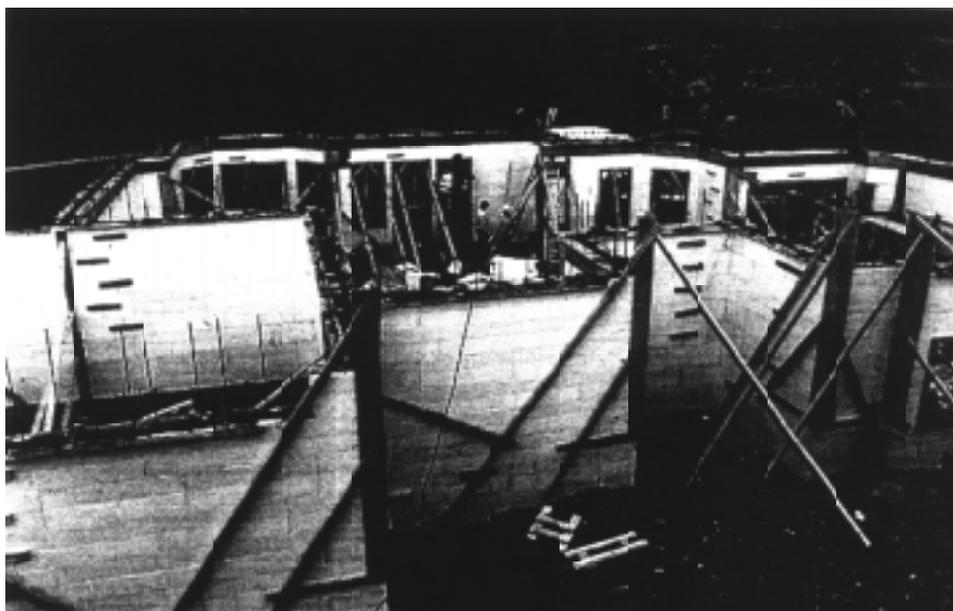
In the next section of this manual we will begin building with I.C.E. Block™ s. In case of differences between your actual site requirements and this manual, your engineering specification always take precedence.

## Section Two

**Footing Design:** Once the footing design has been determined, the footing is formed in the conventional manner. The forms should provide for a finished footing that conforms to local code requirements. Reinforcing bars should be placed in the footing as required by local code. During this process, a crew member places rebar vertically into the wet footing as per code and engineering specifications. Depending on the depth of the footing, the bar will extend approximately 35 to 40 inches above the first course of blocks. Care must be taken at this time not to stub up rebars excessively high through window, door, or other openings which would later cause unnecessary difficulties with construction of exit or entry of building site. Usually a careful look at the plans prior to pouring the footing and during rebar placement will prevent any embarrassment later. While work on the footing is proceeding, all I.C.E. Block™ corners for the first course are prepared by a crew member.

**Laying First Course:** It is important that the first course of I.C.E. Block™ be installed properly. This will determine how subsequent levels will stack as the work progresses. With this in mind we will now prepare the footing to receive the first course of block. To do this an interior and exterior runner or nailer must be secured to the footing to align the bottom course with the exterior of the building. This usually consists of 2 x 4 wood nailed directly to the footing when the concrete has properly set. Next fabricate corner bracing from 2 x 6 boards. Bracing to plumb the corners can be cut at this time. Securing the corners at the top, middle, and bottom is recommended. The contractor must determine the layout of the braces. They can be placed in line with walls, or nailed back to the footing rails parallel to each wall (Figure H). Metal bracing/scaffolding is available from your I.C.E. Block™ Distributor.

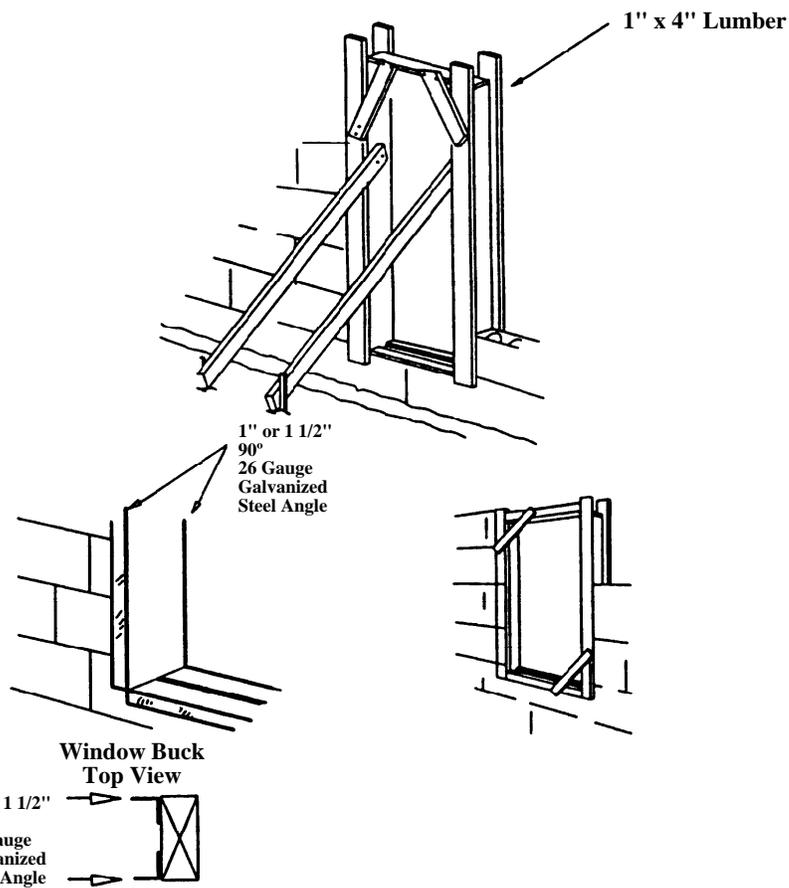
**Figure H - Bracing I.C.E. Block™ Walls**



Place all door and window bucks which originate off the first course of block. Proceed to cut and stack first course always working from a corner to a window or door.

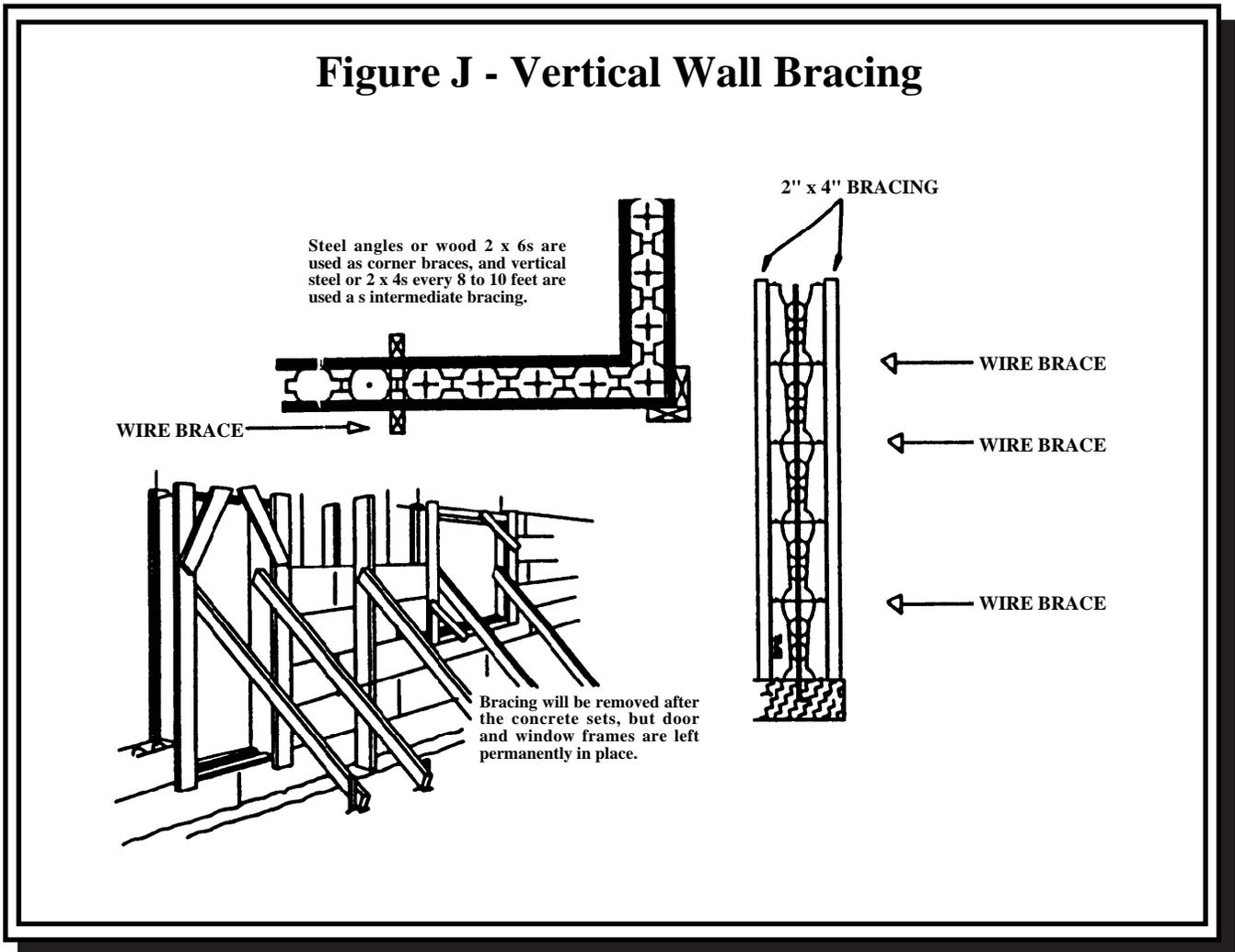
**Door and Window Bucks:** When fabricating door and window bucks the inside dimensions of the bucks must match the rough openings of the door and window assemblies. Bucks are made of 2 x 10 stock when using the 9 1/4 inch I.C.E. Block™ and 2 x 12 stock when using the 11 inch wide I.C.E. Block™. Window bucks are made using two 2 x 4s for the bottom of the buck, placing them flush with the outside edge of the buck to leave a gap through which concrete can be placed into the cavity directly below the window. In addition to the internal framing, each buck should be made with a 1 x 4 interior and exterior vertical trim creating a “C-channel” into which the blocks slide. This keeps the edges of the I.C.E. Block™s from spreading during concrete placement. (Figure I) Galvanized nails or bolts must be inserted directly through the bucks into the I.C.E. Block™ cavities to permanently anchor the bucks to the concrete. Also, locate vertical rebars in the first core cavity on each side of the buck or as specified.

**Figure I - Window and Door Bracing**



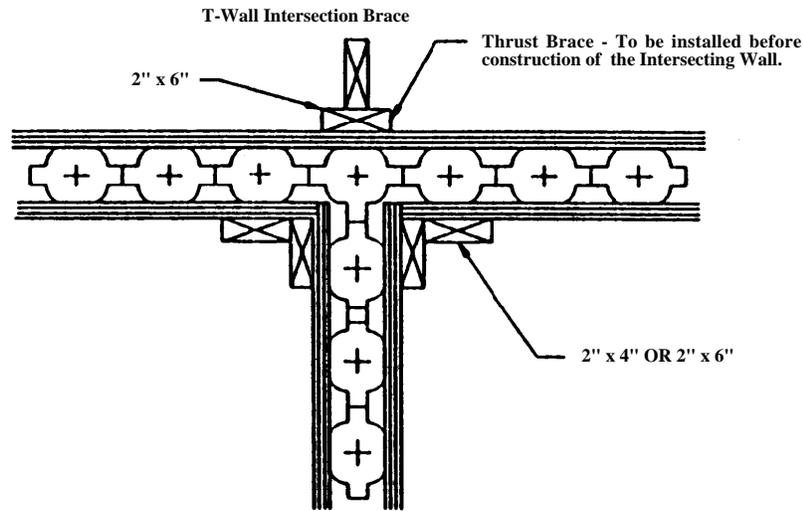
### Section Three

Before stacking the second course of I.C.E. Block™ make sure corner braces are in place, plumb and square, and secured and braced according to specifications. Install the wire that will be used to attach the sets of two 2 x 4 temporary vertical braces. The braces will be placed directly opposite one another on each side of the wall every 8 to 10 feet. The wire is to be placed in the shape of an oblong loop. Press the wire into the tongue on the first, middle and next to top course of block (see Figure J). Starting at the original corner of the first course, stack subsequent courses in the same manner and direction and conclude at the same point.



Check for proper alignment of steel studs and vertical concrete columns. The steel studs are centered beneath the raised vertical line on both sides of the block. Continue stacking to 4 feet above grade (3 block high). At this point, place horizontal rebar along the top of the connector plates and wire-tie them to each vertical rebar. Horizontal rebar must be placed a minimum of every 4 feet (Refer to code and engineering specifications). If need be, tie in another set of vertical rebar before stacking the I.C.E. Block™s higher. Refer to code for proper over-lap of rebar. On the final lift the vertical rebar should extend to just below the top of the wall. Place window and door bucks as needed according to the required location and elevation. Cut I.C.E. Block™s to fit snug around them. Finish stacking the wall to the height specified in the design. Again, at this point, tie in a horizontal rebar to all vertical bars. Also, use horizontal rebar above and below all window and door bucks of a sufficient size and grade to ensure proper loading capacity. Now the intermediate 2 x 4 wall braces are installed. They are located every 8 to 10 feet on the inside and outside of the walls and tied by wire to the wall. The wire that was placed previously on the first course is used to secure the bottom of these braces. A second and third wire is placed across the middle and top course to secure the middle and top of each of these opposing intermediate braces. Each pair of vertical intermediate braces is supported by a 2 x 4 kick brace placed perpendicular to the wall. The kick brace can be installed inside or outside the wall depending on the conditions of the site. The bottoms of braces, including corner braces, can also be secured by nailing with a spacer to the footing rail. Make sure each 2 x 4 intermediate brace is plumb. Run a string line at the top of the wall to check the alignment of the wall. Check wall height with a transit to ensure proper wall height. Mark the proper wall height with a string line and remove excess block. Verify specified wall dimensions. Adjust bracing if needed to straighten walls. Make sure all window and door bucks are braced securely. Install ladders at the top of all walls [To be discussed later] (See Figure O). Place plastic tape over any cut block or filler piece location, or where I.C.E. Block™ seams from course to course are not offset by at least six inches. To create a t-wall intersection, cut an opening in the intersected wall that is the same as the outside dimension of the intersecting wall block. Lay the first course on the footing and stack the block in the described manner. Fabricate and place a t-brace against the outside of the intersected wall, opposite the point of intersection. Brace each inside corner of the intersected wall. Wire through the block and around the bottom, middle, and top of the t-brace and both inside corner braces (See Figure K).

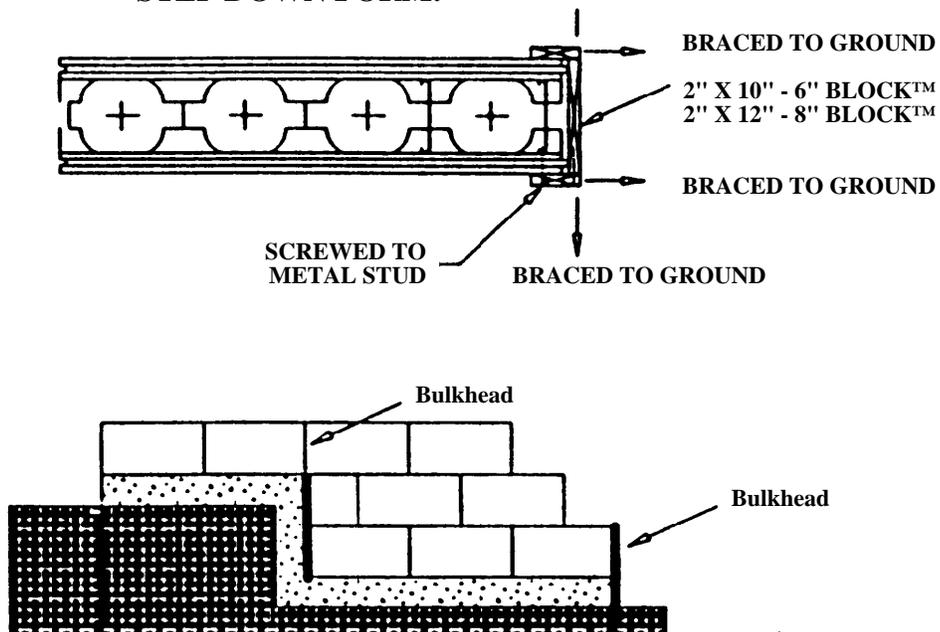
## Figure K - T-Wall Intersection Bracing



For grade changes, continue the foundation wall past the building's corner to the edge of the over-dig. Use the earthen wall as a bulk-head and continue to stack until a course meets the higher grade. For the builder's convenience, all footing grade changes should be made in 16 inch increments, i.e. the height of an I.C.E. Block™. For wing-walls, use the same procedure as for t-walls at the intersection point. A wooden bulkhead will be required at the end of the wing wall (Figure L).

## Figure L - Bulkhead Form

### STEP DOWN FORM:



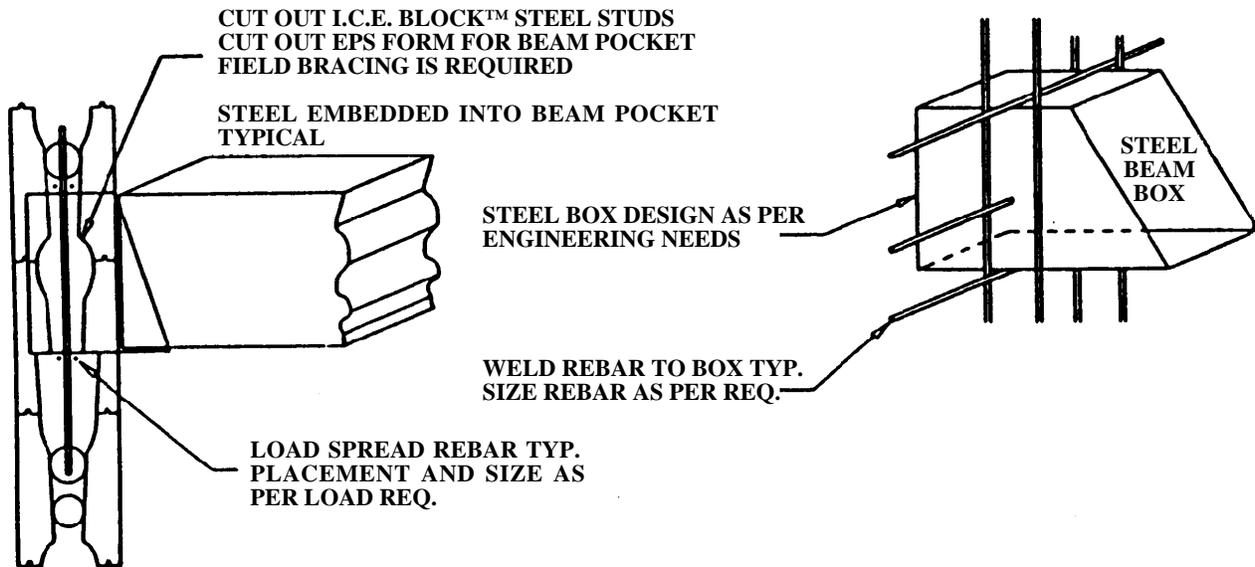
**Wall Height:** It's best to plan the wall height to be evenly divisible by 16 inches, which is the height of the I.C.E. Block™. If not, to compensate, I.C.E. Block™s can be cut horizontally to the appropriate height by cutting the top of the top course or the bottom of the first course. If you decide to cut off the bottom of the first course of blocks, the first course string line must be lowered accordingly. It is easier to lower the footing to the point where the number of courses comes out even. Although this takes more concrete, it requires much less labor. Remember the top course of block receives a horizontal bar placed directly on the cross-member and tied to the vertical bars.

Before concluding this phase, the crew must prepare the top of the wall to incorporate floor or roof systems. For floor trusses or joist pockets, they are created in the top course of blocks. The pockets are made by notching I.C.E. Block™s in the appropriate manner and inserting a blank. Blanks are nailed together from structural lumber or fabricated from steel to the proper dimensions. Cut the pockets at least 1 inch wider than the thickness of the joist or truss and 1/2 inch higher. Make the pocket at least 5 1/2 inches deep into the wall. Place blanks into the pockets before filling the wall. Knock them out after placing the concrete where you are planning to install the joist or trusses (Figure M). If steel inserts are used these are left in place.

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## Figure M - Wood/Steel Beam Typical Attachment

OD STEEL BEAM TYPICAL ATTACHMENT  
COMMERCIAL APPLICATION

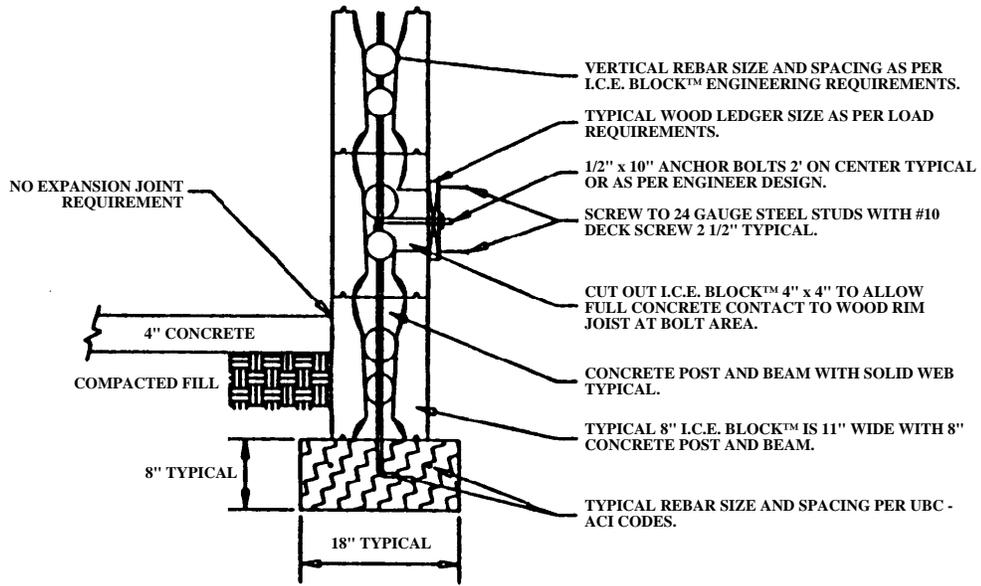


THIS IS ONLY A SUGGESTED METHOD OF  
INCORPORATING DIFFERENT BUILDING  
METHODS WITH THE I.C.E. BLOCK™ WALL  
SYSTEM. PLEASE CONSULT YOU ARCHITECT  
OR ENGINEER FOR THEIR APPROVALS.

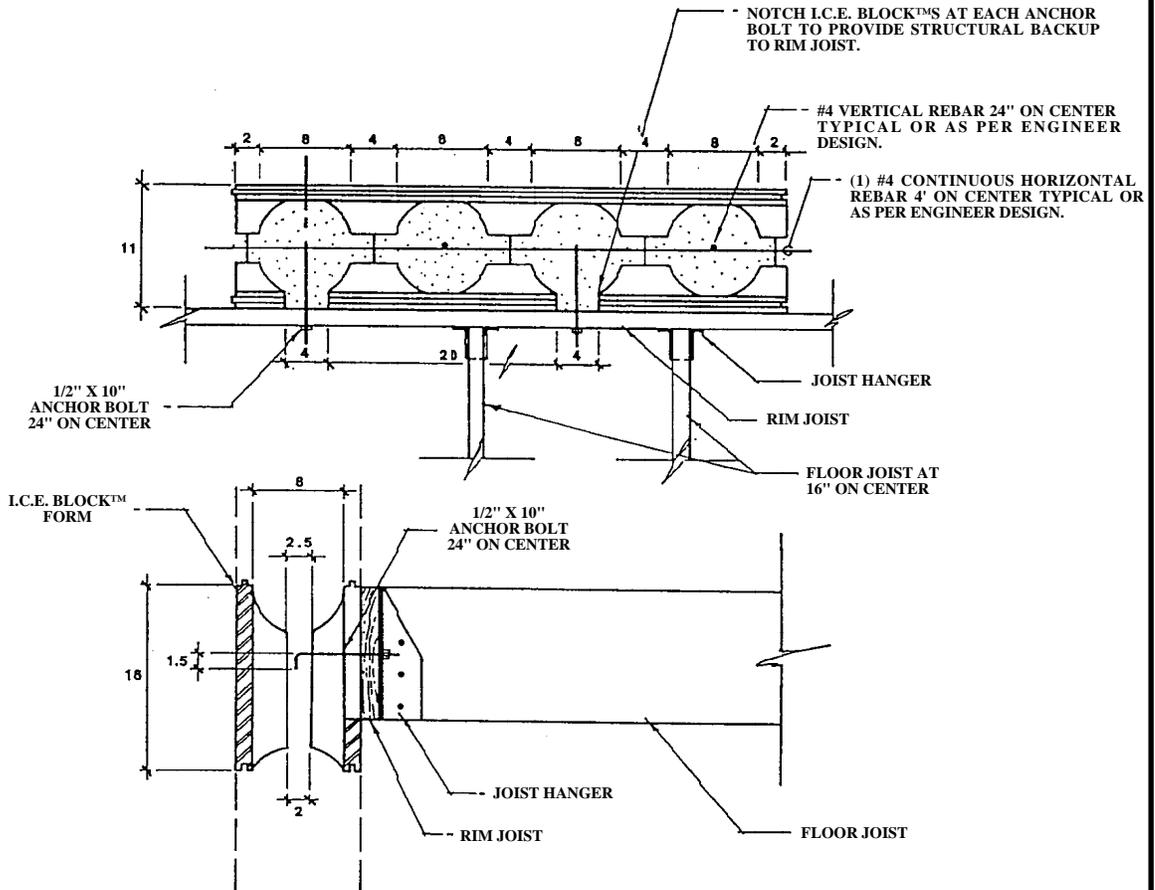
**Note:** If a pocket location occurs at a steel cross-member in the I.C.E. Block™, you will need to cut out part of that brace. An alternate and popular method is to install a ledger plate with rim joist hangers. In this application the number, size, and placement of anchor bolts are determined by code. Openings are cut in the blocks at the prescribed intervals and height. The ledger board is positioned over these openings and attached to the metal finishing stud with 3 inch sheet rock screws. Holes are drilled through the ledger into the openings at the required positions. Anchor bolts are placed in the openings in the wall cavity and through the holes in the ledger board. The washers and nuts are put into place and the concrete placed. When the concrete is set, tighten the anchor bolts and install joist hangers. (Figure N)

Floor joists can generally installed after 2 days depending on the weight of the floor structure and the concrete used.

# Figure N - Typical I.C.E. BLOCK™ to Concrete or Wood



Note: This is only a suggested method of incorporating different building methods with the I.C.E. Block™ Wall System. Please consult your architect or engineer for their approvals.



## Section Four

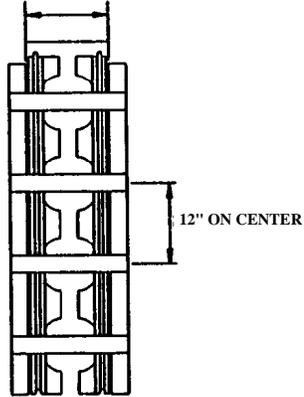
It is recommended that a minimum crew size of four be present when pouring the I.C.E. Block™ walls. You will need two people to check consolidation of the concrete, one to place the concrete, and one to handle finishing off the top of the wall and handling any other duties. It is recommended that the minimum concrete used be 3000 psi although this should be determined by code and engineering specifications if applicable. The concrete should be delivered at a five (5) inch slump using pea gravel as the aggregate although up to a 3/4 inch aggregate can be used with I.C.E. Block™. Placement should be made by grout pump or boom truck. Placing concrete can begin at any location along the wall, however proceeding from the corner around the building in a spiral fashion works very well.

The bottom of window openings should be filled last. Care should be taken when filling cavities around window bucks, lintels and heavy concentrations of rebar to make sure the space is completely filled.

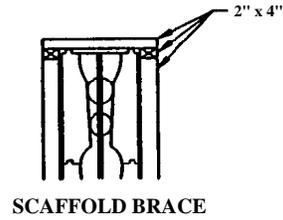
The I.C.E. Block™ system is designed so that all vertical cavities are filled completely and naturally with the inflow of the concrete. The concrete can be consolidated with a 5 to 7 foot bar to make sure there are no voids or the wall can be repeatedly struck with a 2 x 4 board approximately 10 inches long. The wall should be struck smartly and repeatedly with the broad side of the 2 x 4. The use of a vibrator for consolidation is **not** recommended without proper training. If the wall is to continue upward, vertical rebar is extended above the top of the form, concrete placement should stop 6 inches below the top form instead of being leveled off. After the concrete has been placed, the walls are again checked to be sure they are plumb, straight, level and true. Alignment can be maintained through the use of ladders at the top of the wall (see Figure O).

# Figure O - Ladder Bracing

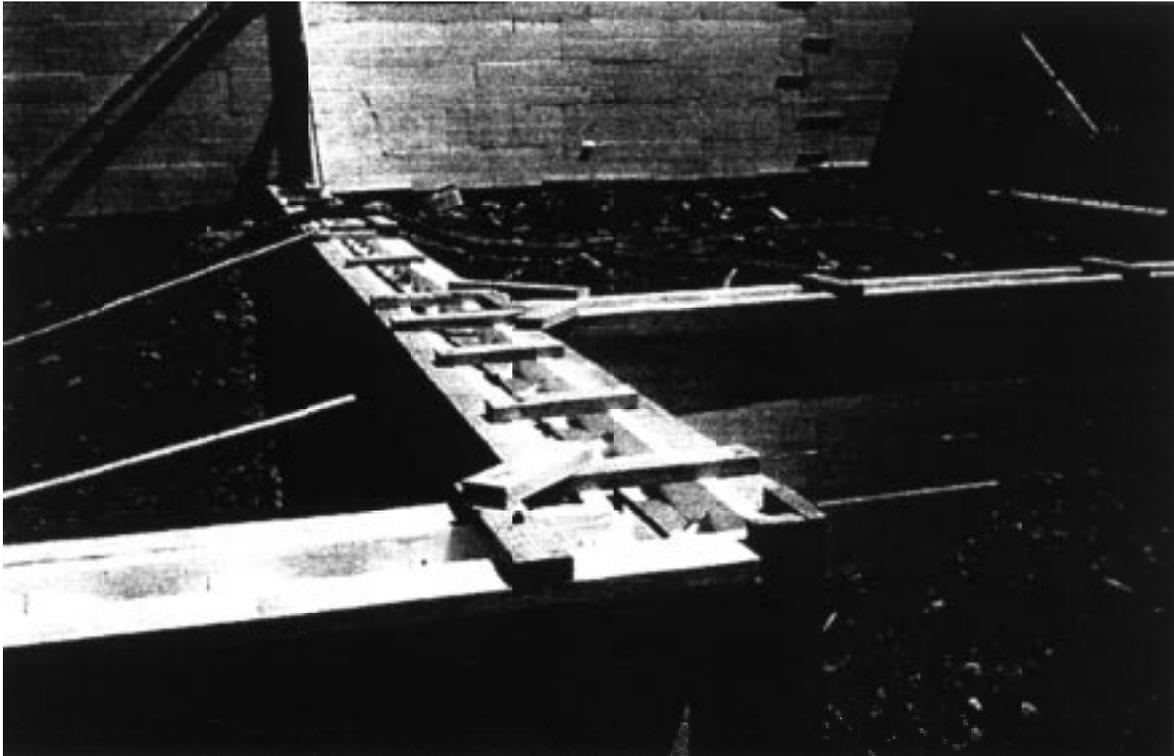
11 1/8" - 8" I.C.E. BLOCK™  
9 3/8" - 6" I.C.E. BLOCK™



LADDER BRACE



SCAFFOLD BRACE



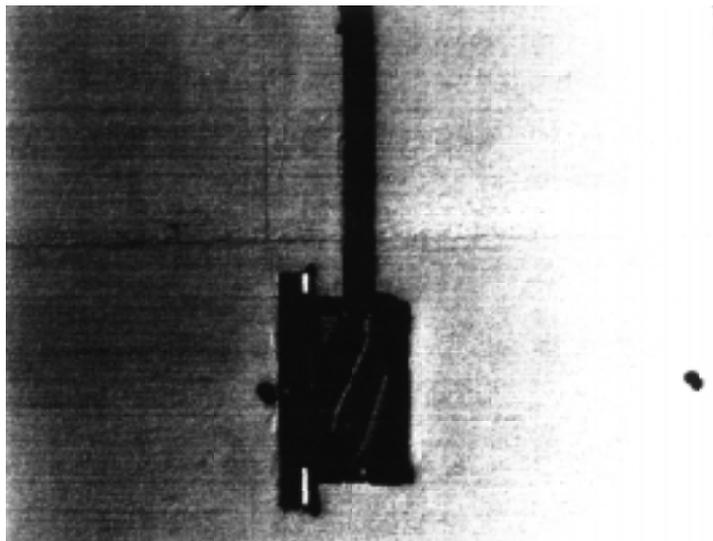
Ladders will give the crew a place to walk and rest the boom pump hose while placing the concrete. These ladders are constructed out of 2 x 4 stock approximately 16 feet long depending on the wall length. Ladders are made to fit snugly over the top the the I.C.E. Block™ and pressed firmly into place. They should be placed along the entire top surface of the wall and removed after the concrete has set (at least 24 hours). If desired, vertical bracing can be cut to fit snugly against the bottom surface of the 2 x 4 ladder although not absolutely necessary. Through the use of ladders you will find realignment of the I.C.E. Block™ walls after the pour to be minimal or non-existent. After a minimum of 24 hours of cure time, corner braces, intermediate braces, and the 1 x 4 buck trim is removed.

## Section Five

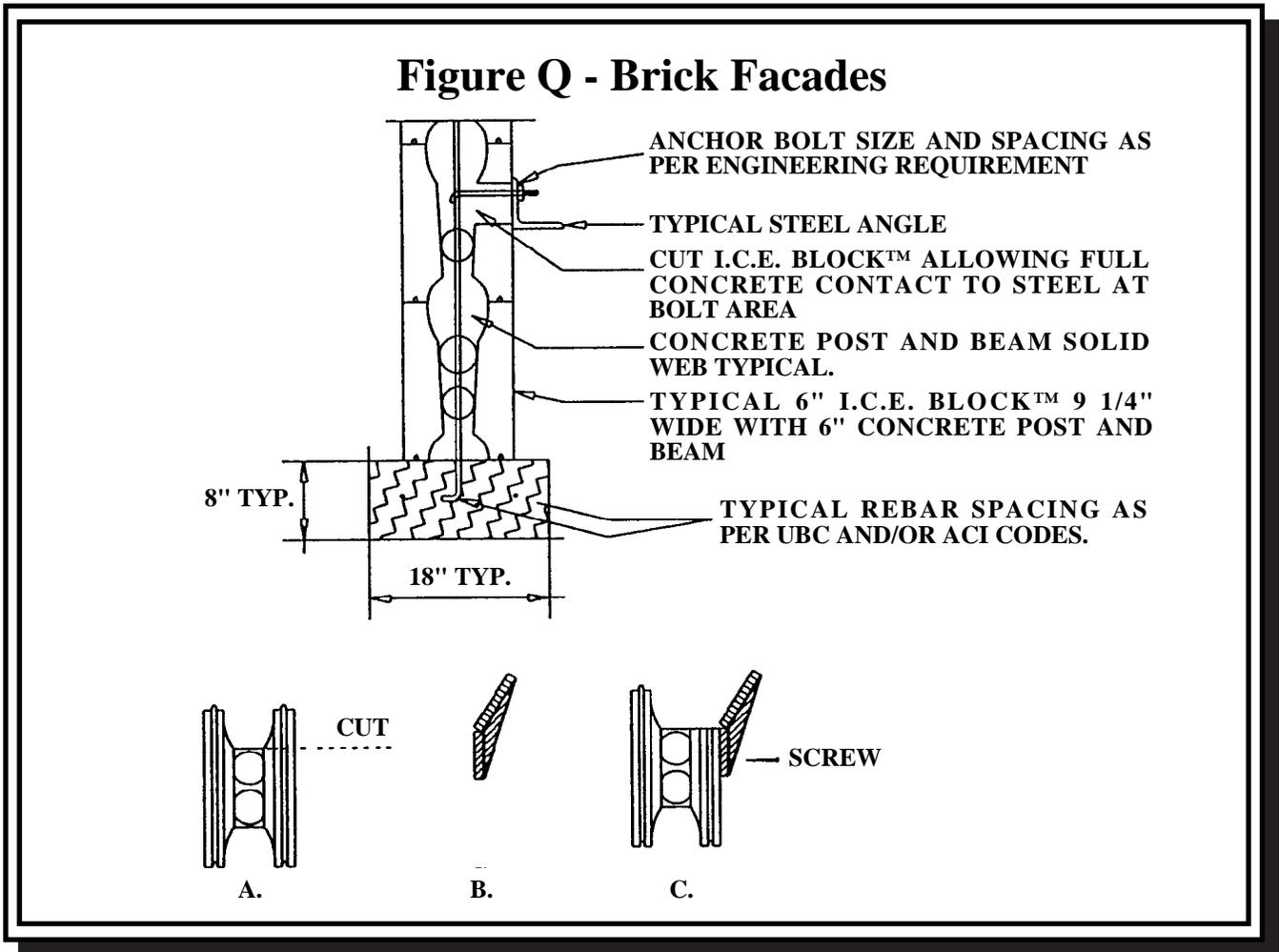
For subsequent lifts, additional rebar is wired to the exposed vertical rebar extending above the previously placed concrete. Then, I.C.E. Block™ are stacked, braced, reinforced and filled with concrete as before. No rebar will extend above the top most course. Next the concrete is leveled off and anchor bolts or other specified fasteners are placed into the wet concrete.

Installation of electrical or plumbing components is fast and easy using the I.C.E. Block™ system. Once the necessary openings are located and marked, they are cut out using any one of various methods. You may use a hot-wire, a small saw, a router, or a drill with grasp-tight bit. For electrical openings, boxes can be screwed to the steel studs. Conduit or Romex simply laid into an appropriate chase which was opened using any of the previously mentioned tools (Figure P).

**Figure P - Chase for Electrical Wiring**



Brick Ledges are created easily by constructing a simple form that is attached directly in the steel studs embedded in the I.C.E. Block™ (Figure Q).



Brick ties are installed by screwing them directly to the steel studs. Angled walls and gables are made by cutting I.C.E. Block™ to the angle or slope required. If the angle is too steep, a bulkhead is required. Secure the bulk-head to prevent lifting and cut openings every 4 feet up the slope to place concrete. As you fill with concrete, reinstall the section removed. The I.C.E. Block™ system is easily adapted to curved wall design. Blocks are cut on one side at intervals determined by the desired radius.

Arches are formed by cutting the desired radius and using a flexible form material, such as plywood, as the buck. When a wall abruptly ends, a bulk-head is required using 2 x 10s or 2 x 12s depending on the size of the I.C.E. Block™. A "C-channel" for the blocks is formed from either 1 or 1 1/2 inch 26 gauge 90 degree galvanized steel angle or from 1 x 4 lumber (Figure L).

All exterior basement walls should receive a water-resistant coating prior to backfilling and this includes I.C.E. Block™ . Only coatings that are compatible with expanded polystyrene should be used. A tile drain must be installed at the bottom of each below grade wall to drain water away from the footing. If using a non-plastic membrane, protection board should be installed over the water resistant coating prior to backfilling. Also before backfilling I.C.E. Block™ walls, concrete must be adequately cured and floor trusses installed.

If you have any further questions about installation, are unsure about certain information contained herein, or would like to discuss applications not covered in this brochure, please contact your I.C.E. Block™ Distributor.

## I.C.E. Block™ Technicians

I.C.E. Block™ technicians are provided as a training tool to work with you or your crew and ensure a quality finished product. They are not intended as labor to complete your project and are not to be included in the count for minimum crew size requirements. It is important to schedule adequate labor for your project to avoid costly delays.

To avoid these additional costs complete all checklist items and prepare your site thoroughly as possible prior to the arrival of the I.C.E. Block™ technician.

Note: Most complicated layouts (i.e.: numerous angles, extreme angles, radius walls) will require additional technician time.

### TOOL LIST

- rebar bender/cutter
- framing square
- sawzall/bi-metal blade
- standard carpentry hand tools
- shears
- cordless drill/screw gun
- skil saw/carbide blade
- levels
- dikes
- packing tape gun

### MATERIAL/ACCESSORIES

- polypropylene tape
- 2 1/2" drywall screws
- bracing material
- scaffold materials
- tie wire
- string line
- stakes
- spray foam insulation

All walls over 4 feet in height and all difficult access sites require a boom or tail pump to pour the I.C.E. Block™ forms. Adequate scaffold should be in place prior to ordering concrete.

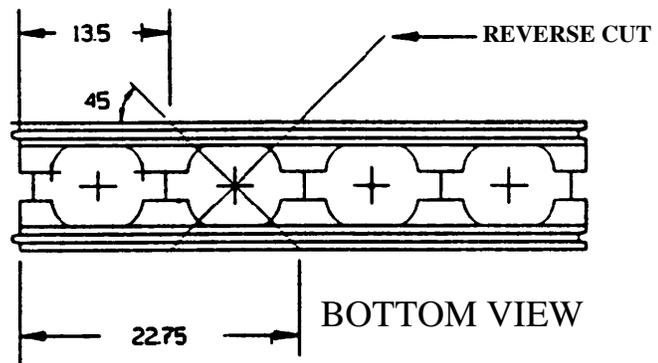
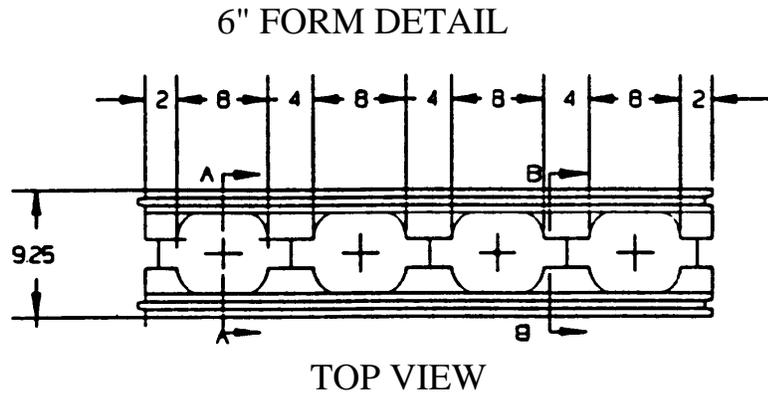
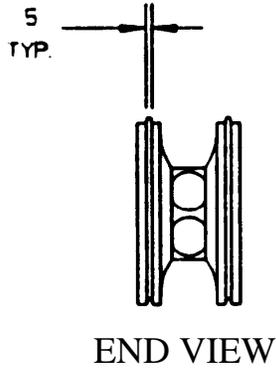
## **DISCLAIMER**

As with any building project, the owner or contractor should first check with local building officials regarding local practices and codes. The reinforced concrete wall which is part of the I.C.E. Block™ system is of conventional design, and should present no problem in meeting local codes. The expanded polystyrene used to actually shape the form is the most environmentally safe form of moldable or sheet plastic used in building trades. It is important not to confuse expanded polystyrene with extruded polystyrene or other forms of insulation materials which are less acceptable or otherwise restricted.

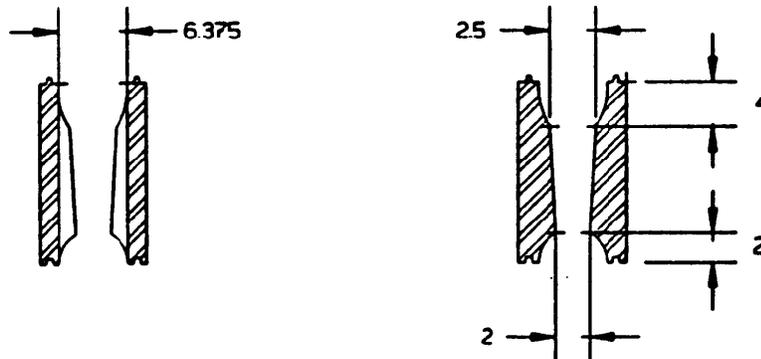
The basics of the I.C.E. Block™ wall system, expanded polystyrene, steel, and concrete, are all common materials. Since there are literally thousands of building codes throughout the nation, there may be occasional misunderstandings with local permit officials who are not familiar with the product or the concept. In these cases you may need to contact your I.C.E. Block™ distributor for assistance.

Soil conditions vary from state to state, city to city and even lot to lot in the same area. It is important that someone familiar with local soils evaluate the building site to determine if special conditions warrant special measures in the use of any wall system. Such determinations are generally best made by a building professional. Nothing in this manual is intended to replace, supplant, or modify the need for evaluation by a construction professional.

# Figure R - 6" I.C.E. BLOCK™ Form Detail

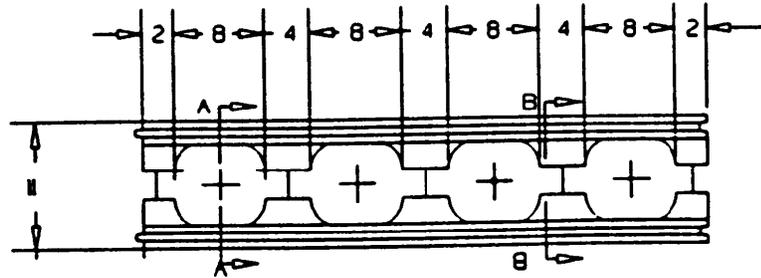


ALL DIMENSION  
ARE IN INCHES

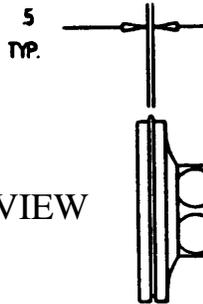


# Figure S - 8" I.C.E. BLOCK™ Form Detail

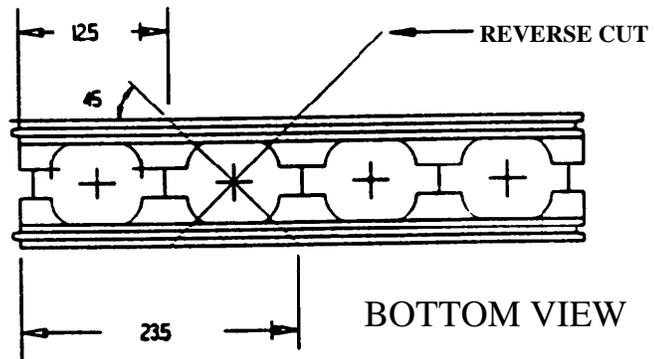
## 8" FORM DETAIL



TOP VIEW

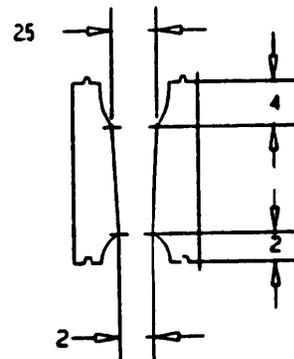
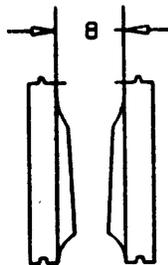


END VIEW



BOTTOM VIEW

ALL DIMENSION  
ARE IN INCHES



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### **WARNING AND DISCLAIMER**

**While I.C.E. Block™ Building Systems, Inc. has taken every precaution to utilize the existing state of the art and to assure the correctness of the analytical solutions and design techniques used in this Manual, it is possible that there may be errors, both of omission and commission and the responsibilities for modeling the structure to develop input data, applying engineering judgment to evaluate the output, and implementing engineering drawings remain with the structural engineer of record. Accordingly, I.C.E. Block™ Building Systems, Inc. does and must disclaim any and all responsibility for defects or failures in structures in connection with which this information is used.**

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