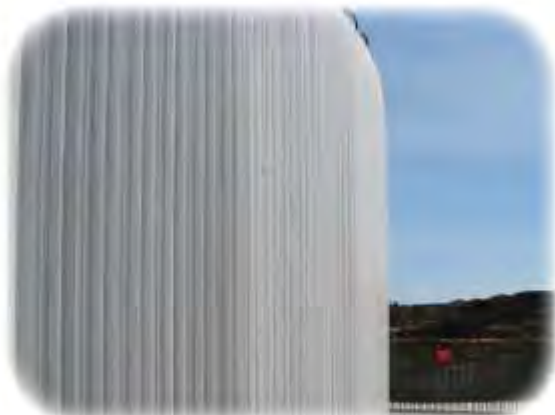


# OCTAFORM<sup>®</sup>

---

## Construction Guide

Version 2, Updated 2010



**START WITH QUALITY**



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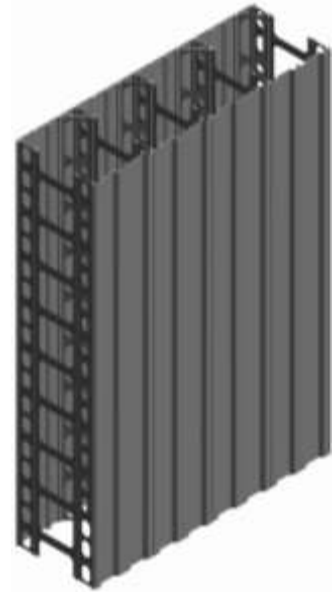
10.3 Conversion

# 1. Introduction

Octaform is a finished cast in place/ stay in place finished concrete forming system. The forms, made of extruded PVC components, are custom cut to match wall heights up to 30 ft. Octaform comes in six different thicknesses; 2", 4", 6", 8", 10" and 12", which allows various R-values of expanded polystyrene insulation (EPS) to be added to the innards of the form.

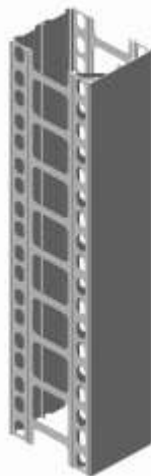
Octaform panels come in three different colours (white, grey and beige) and in three different shapes (flat, corrugated and octagonal). Octaform can also recommend a variety of water based heat reflecting paints to meet a large array of different colour needs.

This installation manual will allow contractors, engineers and end users to gain the knowledge needed to erect Octaform walls. In some cases, the manual may be used to troubleshoot problem areas. It is the responsibility of the contractor and the engineer to comply with all local safety codes and local building codes.



1.0 Typical 8" Corrugated Wall

Octaform has made every effort to ensure the following information is accurate and factual. Octaform Systems Inc. does not assume any liability for errors or oversights that may result from the Installation Manual. In the event information contained here does not coincide with the blue prints, ALWAYS REFER TO THE BLUE PRINTS FOR ACCURATE INFORMATION AND DIRECTION.



1.1 Typical 8" Flat Wall

# Pre-Job Inspection

Before construction of your Octaform walls, you must do a pre-job inspection. A pre-job inspection consists of logistics, site inspection and materials & tools inspection.

## 2.1 Logistics Analogy

To ensure that your project stays on schedule, the following areas should be pre-arranged:

- Determine concrete supplier
- Determine availability of concrete placement equipment
- Confirm delivery time of Octaform materials
- Ensure equipment required to off-load Octaform crates is available

## 2.2 Site Inspection

On your site the following items need to be determined:

- An area to place the Octaform material when off-loading  
(This area should be close to where the walls will be constructed and be cleared flat)
- Soil condition  
(When bracing, bracing will need to be pinned in the ground)
- Have photos and marks on plans where any in-slab piping is placed
- Inspect dowel placement to ensure dowels are within the wall location  
(Check plans for door openings. Rebar is not placed in the openings)

## 2.3 Materials Check List

The following materials are needed to assemble the Octaform walls:

- Depending on the style of bracing used, you will need 2x4, 2x6, 2x10 or metal scaffold
- 3" screws
- 1 ½" screws
- 3" double-headed nails
- Rebar tie wire
- ¾" plywood
- 1" iron pins
- Water stops as specified by engineer

## 2.4 Tool Check List

The following tools are needed to assemble the Octaform walls:

- Grinder
- Concrete vibrator (*section 6.7*)
- Circular saw
- Chop saw
- Hammer drill
- Drill
- Concrete trowel
- Turn buckles
- Chalk line
- Level (6ft/1.8m)
- Ladder

## 2.5 Request for Field Services Advisor

A Field Services Advisor is always recommended for first time users of Octaform. A Field Services Advisor should be scheduled to arrive after the foundation of the Octaform walls is completed. Please ensure to inform the Octaform sales representative if any changes to the schedule are made. Please allow two weeks lead time to book a Field Services Advisor.

# 3. Arrival of Octaform

Before the Octaform delivery, familiarize the crew in charge of the install with Octaform's components, handling and installation procedure.

## 3.1 Octaform Assembly Drawings

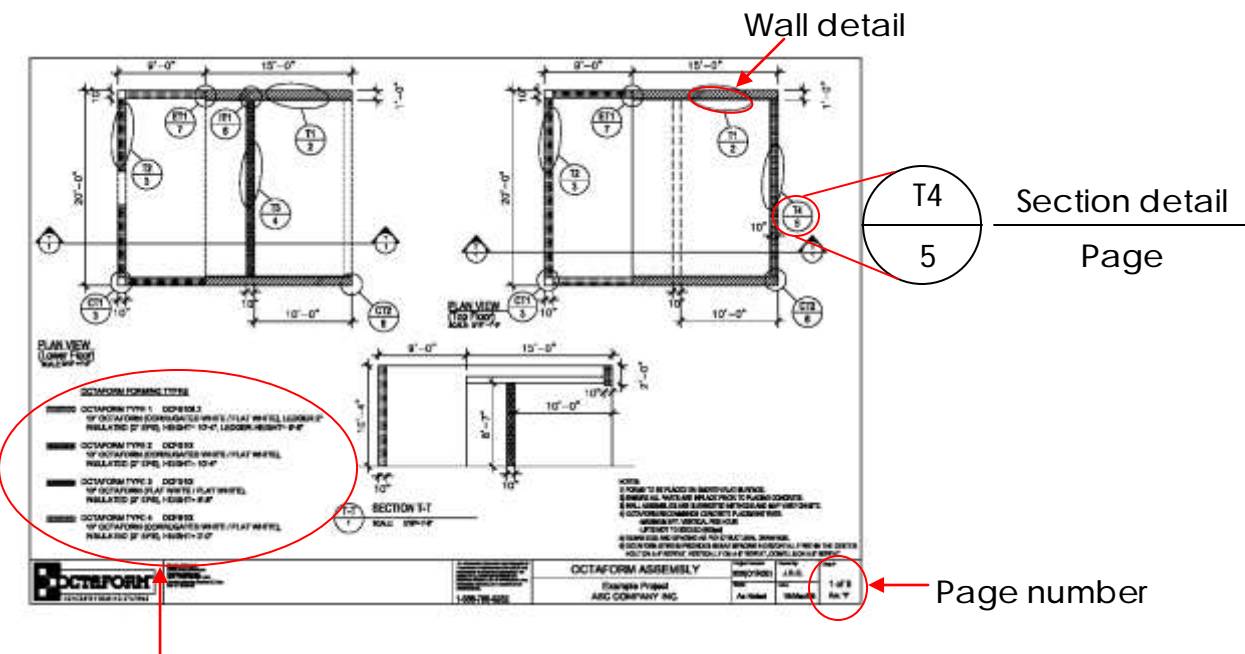
Before shipment of the Octaform product, Octaform assembly drawings will be sent out for review. The assembly drawings will show detailed drawings of Octaform assembly, cross sections of components with material count and crate numbers to locate the material.

*(Note: you are responsible reviewing and confirming any errors on the drawings).*

### 3.1.1 Wall layout

The first page of the assembly drawings will show a wall layout with the various wall details. Use the legend to determine height, thickness, color and shape. The size of the project determines how many pages the wall layout consists of.

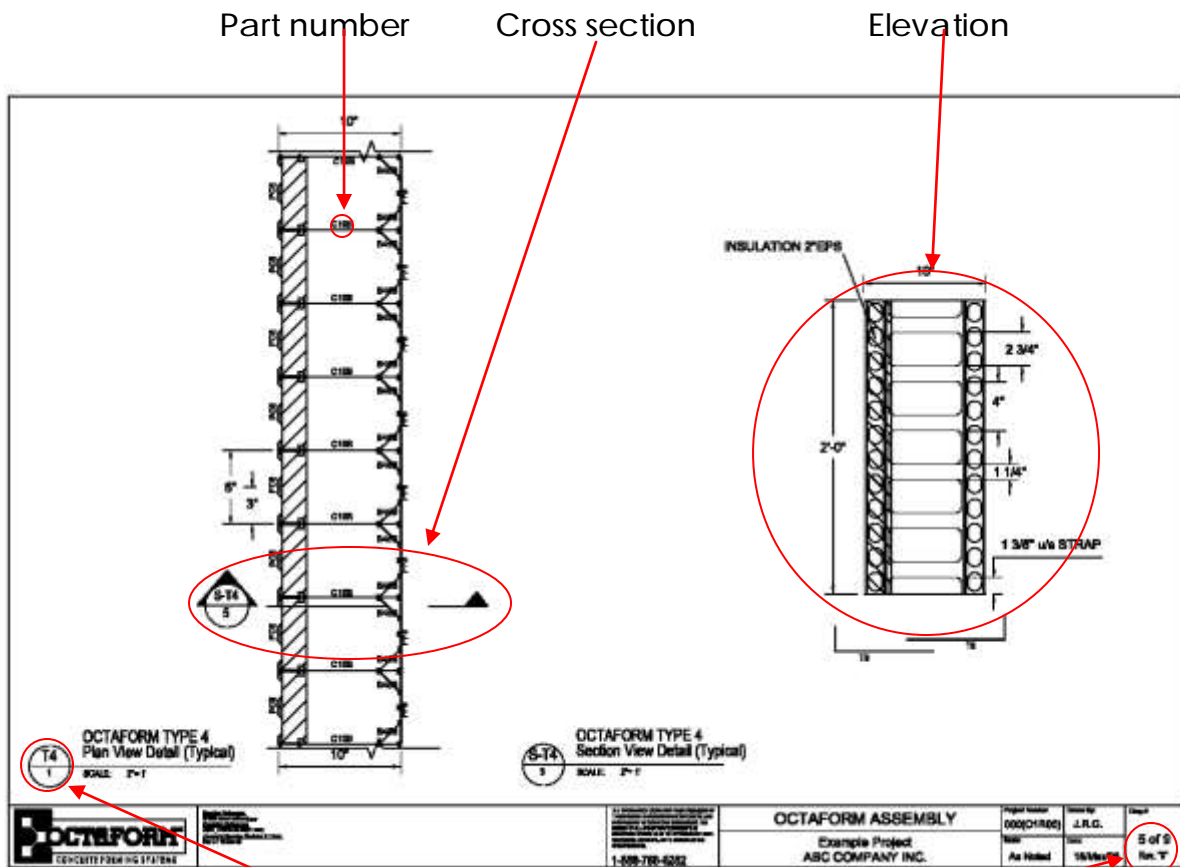
A section detail and page number will show the page and section to refer to for the wall set up.





### 3.1.2 Wall Details

After the wall layouts, the next pages will show the wall details. Using the section details will help you find more information on the wall setup. The wall details will show the part numbers used to assemble the wall. There will also be a cross section that will show an elevation drawing on the detail drawings.



T4  
5

Section detail  
Page

### 3.1.3 Parts List

The final pages will be a list of all the parts that are used in the assembly of the project. The crate number (see 3.3) will also be on the parts list to assist in locating the parts.

The parts list will include:

Cross section drawings of the parts

**EXTERNAL PVC PARTS**  
SCALE: 3/8" = 1'-0"

PART NO.	PART NAME	CROSS SECTION	NUMBER OF PARTS BY OCTAFORM TYPE			
			10'-0" H	12'-0" H	14'-0" H	16'-0" H
1000	10' WALL	[Cross Section]	1	1	1	1
1001	12' WALL	[Cross Section]	1	1	1	1
1002	14' WALL	[Cross Section]	1	1	1	1
1003	16' WALL	[Cross Section]	1	1	1	1

**CUSTOM CUT INSULATION**  
SCALE: 3/8" = 1'-0"

PART NO.	PART NAME	CROSS SECTION	NUMBER OF PARTS BY OCTAFORM TYPE			
			10'-0" H	12'-0" H	14'-0" H	16'-0" H
2000	10' INSULATION	[Cross Section]	1	1	1	1
2001	12' INSULATION	[Cross Section]	1	1	1	1
2002	14' INSULATION	[Cross Section]	1	1	1	1
2003	16' INSULATION	[Cross Section]	1	1	1	1

**INTERNAL PVC PARTS**  
SCALE: 3/8" = 1'-0"

PART NO.	PART NAME	CROSS SECTION	NUMBER OF PARTS BY OCTAFORM TYPE			
			10'-0" H	12'-0" H	14'-0" H	16'-0" H
3000	10' CONNECTION	[Cross Section]	1	1	1	1
3001	12' CONNECTION	[Cross Section]	1	1	1	1
3002	14' CONNECTION	[Cross Section]	1	1	1	1
3003	16' CONNECTION	[Cross Section]	1	1	1	1

**OCTAFORM ASSEMBLY**  
SCALE: 3/8" = 1'-0"

PROJECT NO.	PROJECT NAME	DATE	BY	CHECKED	APPROVED
000001	Example Project	10/10/00	J.R.C.		

Parts number

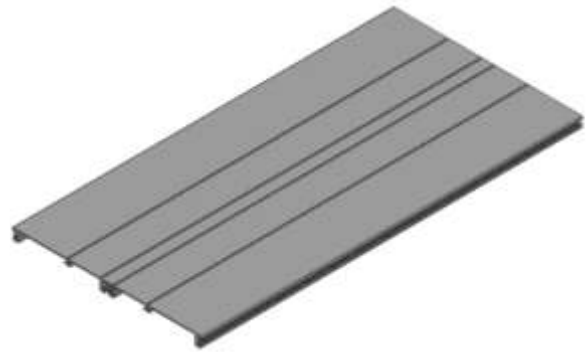
Parts name

Quantity of parts

Crate number

## 3.2 Octaform Wall Components

1. The full line of Octaform components consists of up to 30 different parts. Typically, less than half of the components are used in the assembly of a project. On each project, refer to the assembly drawings to determine the location, quantity and components being used.
2. All Octaform components are made of custom PVC extruded to project specification.
3. Extra components are added to the order in case of adjustment or damage that could occur during installation. If extra components are needed, advise your Octaform representative immediately.
4. Octaform connectors that determine wall thickness vary from 100mm, 150mm, 200mm, 250mm and 300mm (2", 4", 6", 8", 10 and 12") wide and are extruded to maximum height of 9000mm (30').



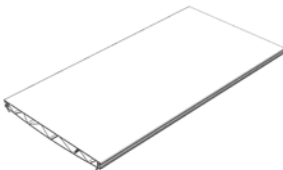
### 3.2.1 Octaform Parts List

Octaform parts are divided into 4 sections:

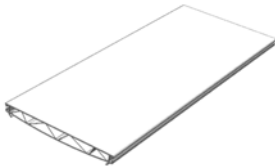
Panels	The outer shell of the Octaform that becomes the finished wall surface.
Connectors	The component that connects the panels and holds the forms together.
45° Braces	The component that stops the forms from bulging.
SNAPLockTight	A completely sealed wall surface that is watertight, air tight and Canadian Food Inspection Agency (CFIA) approved.

# PANELS

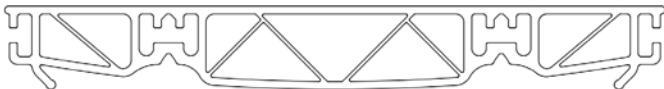
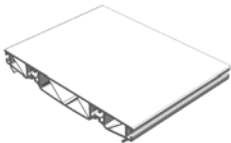
**PH6**  
Hollow Panel 6"  
PH6-0



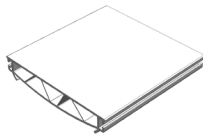
**PH5**  
Hollow Panel 5"  
PH5-0



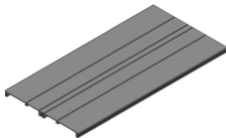
**PH4M**  
Hollow Panel 4"  
PH4M-0



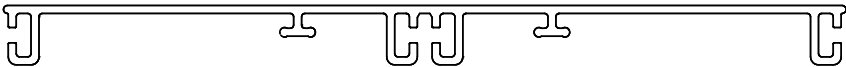
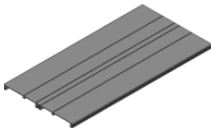
**PH3**  
Hollow Panel 3"  
PH3-0



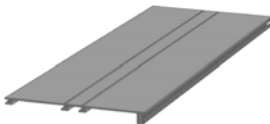
**PF6**  
Flat 6"  
PF6-1853 Z



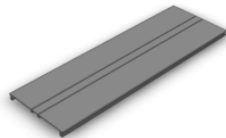
**PF5**  
Flat 5"  
PF5-0



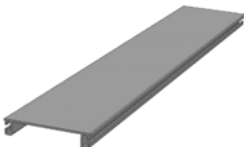
**PF4R**  
4" Corner Flat  
PF4R-1789 Z



**PF4**  
Flat 4"  
PF4-1599 Z



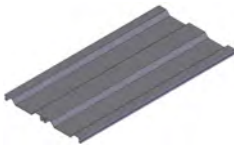
**PF2**  
Flat 2"  
PF2-1600 Z



# PANELS

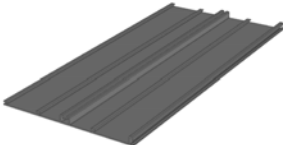
**PC6**

Corrugated 6"  
PC6-4210



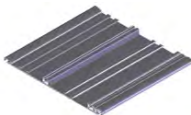
**PF6R**

6" Corner Flat  
PF6R-4209



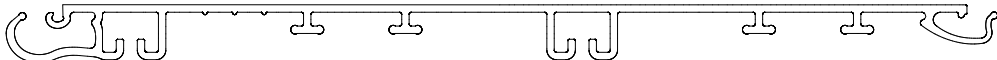
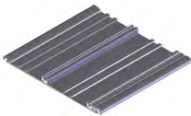
**PT6**

SLT Panel Flat 6"  
PSLT6-4217



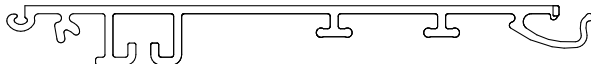
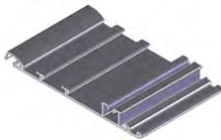
**PT5.75**

SLT Panel Flat 5.75"  
PSLT5.75-4337



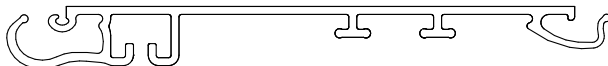
**PT3J**

SLT Joiner Panel 3"  
PSLT3J-4224



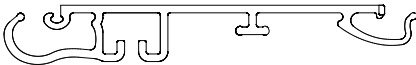
**PT3**

SLT Panel Flat 3"  
PSLT3-4300



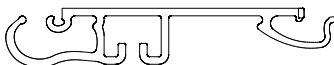
**PT2**

SLT Panel Flat 2"  
PSLT2-4227



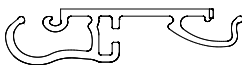
**PT1.5**

SLT Panel Flat 1.5"  
PSLT1.5-4200

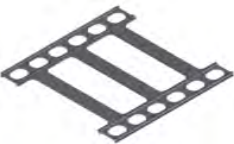

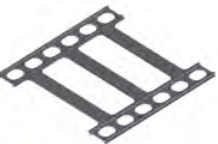

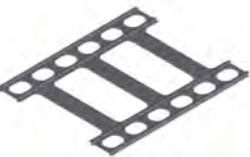

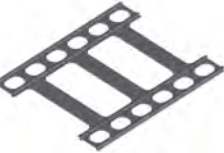




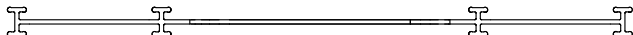


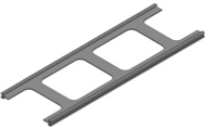





**PT1**

SLT Panel Flat 1"  
PSLT1-4226

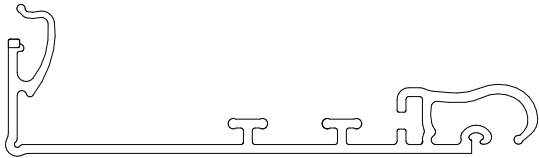
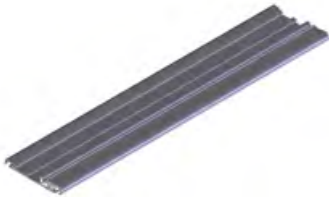


# CONNECTORS

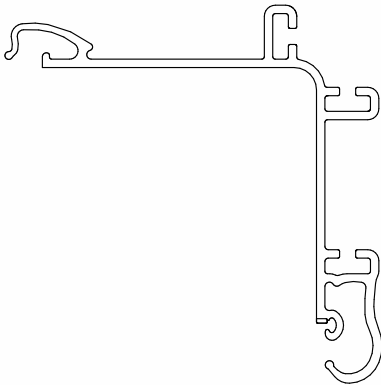
<b>C12</b> Connector 12" C12-1612 Z		
<b>C11</b> Connector 11" C11-1611 Z		
<b>C10</b> Connector 10" C10-1611 Z		
<b>C9</b> Connector 9" C9-0		
<b>C8</b> Connector 8" C8-1604 Z		
<b>C7</b> Connector 7" C7-4306		
<b>C6</b> Connector 6" C6-1601 Z		
<b>C4</b> Connector 4" C4-1645 Z		
<b>C2</b> Connector 2" C2-4192		

# CORNERS

**PTRO**  
SLT Outside Corner  
PSLTRO-4229

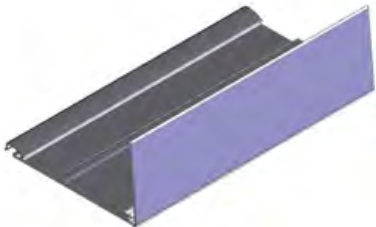


**PTRI**  
SLT Inside Corner  
PSLTRI-4228



# TRIM

**T3M**  
Trim 3" Male  
T3M-4219



**T3F**  
Trim 3" Female  
T3F-4221



VARIOUS

**JRO**  
Outside Corner Joiner  
JRO0



**JFFF**  
Joiner Female-Female-Female  
JFFF-1779 Z



**JRI**  
Inside Corner Joiner  
JRI0



**JFF**  
Joiner Female-Female  
JFF-1616 Z



**JRA**  
Connector Extension  
JRA0



**IC**  
Insulation Clip 1LF = 6 Pcs  
ICIM



**JMMH**  
Joiner M/M Holder  
JMMH-4208



**CG**  
Connector Guide  
CG-4193



**JMM90**  
Joiner Male-Female 90°  
JMM901597 Z



**TC**  
SLT Joiner Clip  
PSLTC-4201



**JMF90**  
Joiner Male-Female 90°  
JMF90-1615



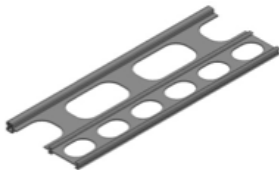
**JMF**  
Joiner Male-Female  
JMF-1740 Z



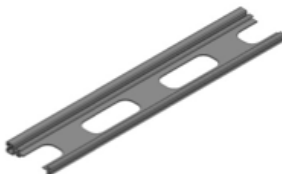
**B451**  
Brace 45 Degree  
B451-1602 Z-V1



**L4**  
Internal Components: Ledger 4"  
L4-1757 Z



**L2**  
Internal Components: Ledger 2"  
L2-1721 Z





### 3.3 Crate Labelling

Every crate will have a label attached to the side. The label will indicate the following:

Shipping address      Project name

Cross section of the components

Date packaged      Components name      Height of components

Crate number



**Shipping Address:**  
Sundale Colony  
c/o Excel Design & Construction  
14226 75th St. SE  
Milnor, ND 58060-9645 USA

Date: 25.June.2010			Project: PN735-10-03 (O2R00V1)			
Purchase Order #: 1119			Production Order #: PF6V160PC			
Acronym	Tool Code	Ref.	Product Name	Profile	Qty	Length
PF6-V1	1853-Z		Universal Flat Panel		604	16'
C12	1612-Z		12" Connector		204	16'
QC Representative: Dave Butcher						



**Octaform Systems Inc.**  
520-885 Dunsmuir Street  
Vancouver BC  
Canada  
V6C 1N5

**Certificate of Compliance**  
I certify that the items listed herein have been processed, inspected and tested and comply to all specifications and requirements detailed in the Contract and Purchase Order

**Signature:** 

**Production Facility:** Poly-Chlor Plastics Industries Ltd., 45 Leeder St., Coquitlam, BC V3K 3V5 Canada Tel: (604) 524-9585

**Patents:** CA 2,271,601, CA 2,226,497, CA 2,218,600, CA

**CRATE NO:**

**Notes:**

### 3.4 Shipping Crates

Octaform uses lightweight wooden crate packaging. In order to ensure that the crate can be shipped internationally, the crate must be manufactured from heat treated wood. In addition, the crate must be inspected for damages prior to shipping and handled with care throughout the transportation process.

Working with your Octaform sales representative will determine a delivery date that will fit with your schedule. Once a date is agreed, shipping can either be handled by Octaform or be arranged by yourself.

Due to ease of shipping flat, Octaform can be shipped by Truck, Train, Ship and Air. Octaform's sales team would also be happy to try and accommodate any special delivery requests.

### 3.5 Unloading Crates

Before receiving the Octaform shipment, talk to your Octaform representative regarding the weight of the crates being shipped. The crate may contain up to 700 components and can weigh up to 1814 kg/pallet (4000 lbs/pallet). Once the weight is known, determine the size of equipment needed to unload the truck.

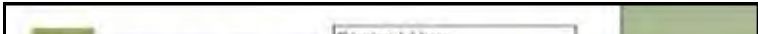
When unloading a crate, ensure that the crate is lifted. Sliding the crate will cause damage and is prohibited.



Typical crate - Maximum size  
of crate is 42" wide and 46" high

The crate is built with an elevated bottom for easy lifting with forks or straps. When lifting, ensure the lifting points and weight is evenly positioned.

### 3.6 Material Storage

1. Have a predetermined location to position the crates. The location should be on levelled ground located close to the install site.
  2. Group crates that are used to build the same wall are numbered together. Allow 600mm (2') between crates during storage.
  3. Protect full crates from the elements until they are ready to install. This will help avoid ice or dirt build-up in connection points.
  4. Crates can be stacked up to 2 crates high in situations where the material will not be installed right away.
- 

 <b>OCTAFORM™</b> CONCRETE FORMING SYSTEMS		Shipping Address:				
Date:		Project:				
Cite ID	Dist ID	Wall	Product Name	Profile	Quantity	Weight
T1A03	FPA	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">F3</span>	Midweight Wall Panel	[Image]	360	14H
T1A04	CB		8" Flat Wall Connector	[Image]	200	14H
PO #:		Piper QC Rep:				

 Octaform Systems Inc.  
 12340 Commerce Street  
 Richmond BC  
 V6V 1R2  
 Tel: 604-271-4401 Fax: 604-271-4402 www.octiform.com

If this wall number matches other crate labels, group the crates together

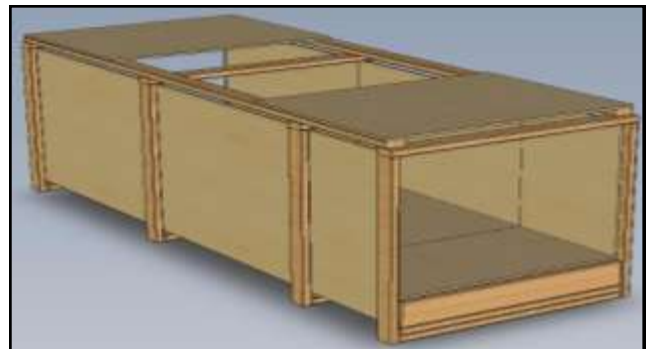
### 3.7 Turning crates into work table

Once ready to assemble the panels, the crates that hold the parts can be transformed into work benches.

Step 1 Position crate so that it is close to area of installation.



Step 2 Remove the ends off both sides of the crate and fasten to the top of the crate.



Step 3 Fasten two 2x4 to top of crate at one end. Now the crate is ready to use as an assembly table.



## 4. Pre-Installation of Octaform

### 4.1 Foundation Preparation

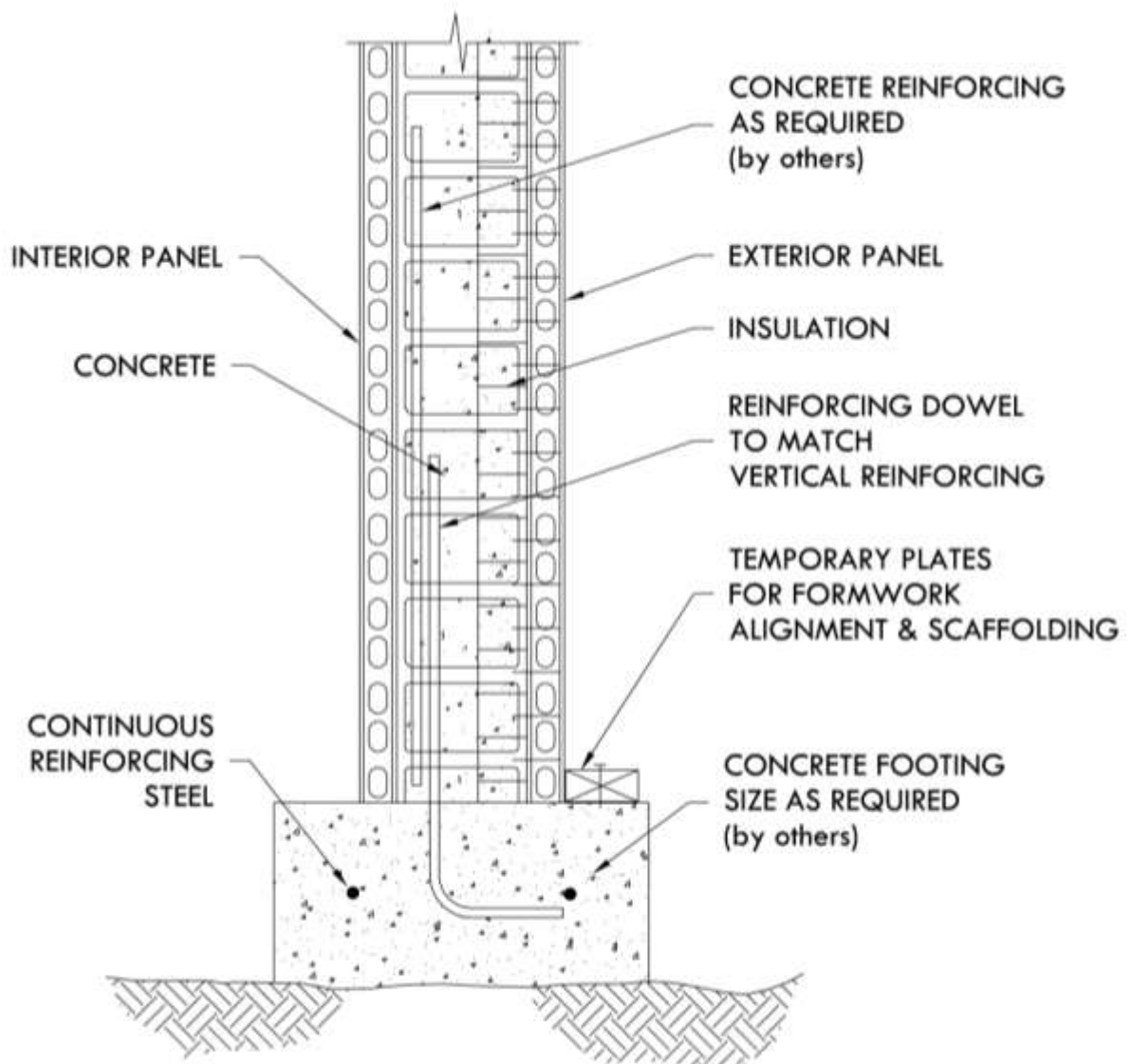
1. The Octaform wall system can be installed on top of footings, foundation walls, grade beams and concrete slabs.
2. The top of the foundation is to be screed to finish and level +/- 3 mm in 3000 mm (1/8" in 10') and within 6mm (1/4") of the specified elevation.
3. The foundation must be free of loose concrete and cleaned of debris.
4. The foundation will be designed by the structural engineer as will the wall thickness.

### 4.2 Placing Wall Dowels

1. When placing wall dowels, start by finding the center line of the foundation by using string line. If using insulation, subtract the insulation thickness off the center line to the inside of the form.
2. As your starting point, use where the corner of the string line crosses to place your first dowel. (Refer to the technical guide for rebar sizing and spacing).
3. From the placement of the first dowel, measure specified spacings and place the dowels.
4. Do not place dowels into door openings. Place the last dowel 50 mm (2") before the door opening.



## Typical Octaform Wall



## 4.3 Location of Wall

### 4.3.1 Straight Wall

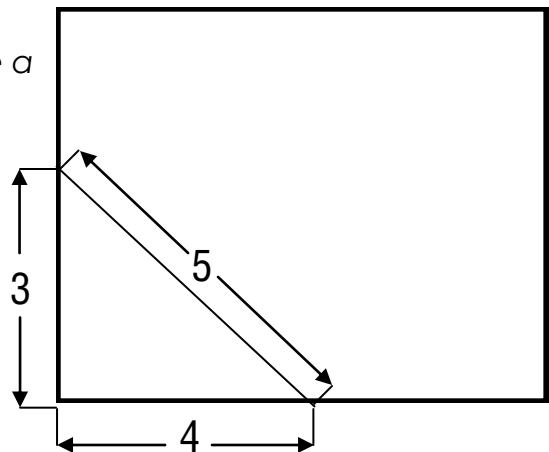
1. Use the wall plan view drawing off the site plans.
2. Locate the longest wall first and make marks on the foundation at both ends, then snap a chalk line to mark out the wall. Measure off the first wall to mark out the rest of the parallel walls.
3. To mark the perpendicular walls, use one of the walls already marked out. Make sure the walls are square by checking with a 3, 4, 5 right angle triangle method or measure diagonals.

#### *3, 4, 5 right angle triangle method*

*1. Down one side of the wall measure from the corner 3' and make a mark.*

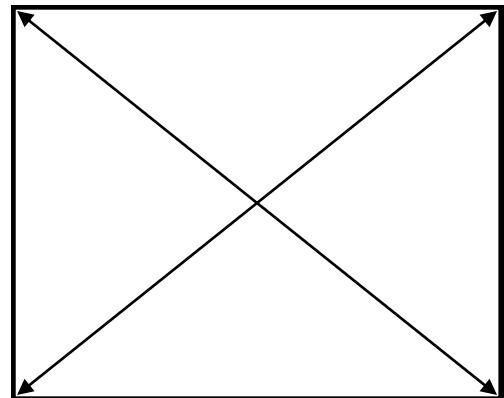
*2. Measure at the perpendicular wall starting from the same corner 4' and make a mark.*

*3. If the walls are square, the measurement on the diagonal will measure 5'.*



#### *Measure diagonals*

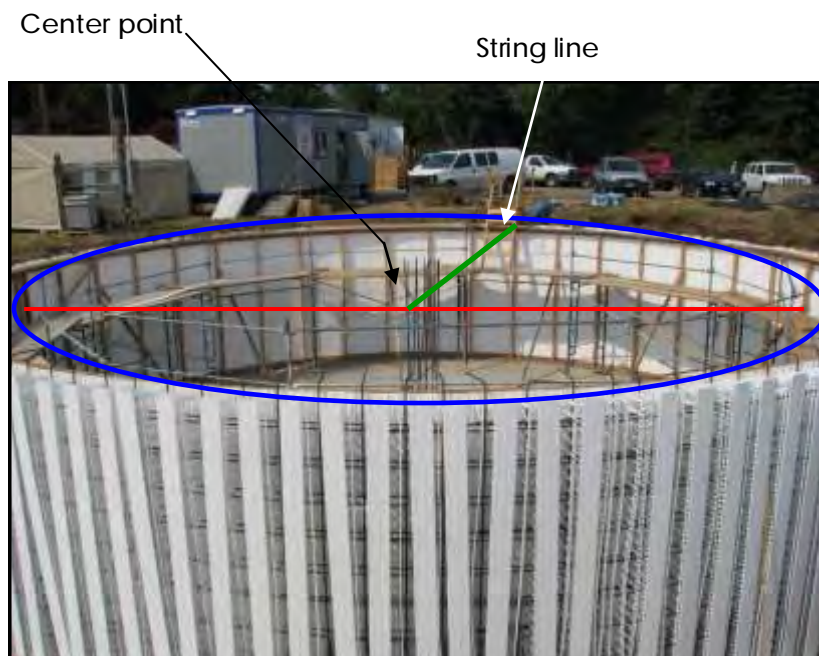
*Measure diagonally from corner to corner. If the measurements are the same, the foundation side dimensions are equal.*





### 4.3.2 Curved Wall

1. Snap a chalk line half way through the slab.
2. Measure half the inside diameter starting from outside of the chalk line and make a mark. This will be your center point.
3. Place a string line to the center point that is half the size of the inside diameter with a marker attached to the other side. Move around the circle and mark inside of the wall.





## 4.4 Bracing

Bracing is a critical step when installing the Octaform wall. When setting up the bracing make sure the braces are set up square and level as this will reflect in the walls.

Bracing the Octaform walls can be done by different methods. Some of the methods include wood, steel frame, tube and clamp and ICF bracing. To determine the best method for the job, verify the local safety code, consider the height of the walls and understand the local weather.



Wood Bracing



Steel Frame Bracing



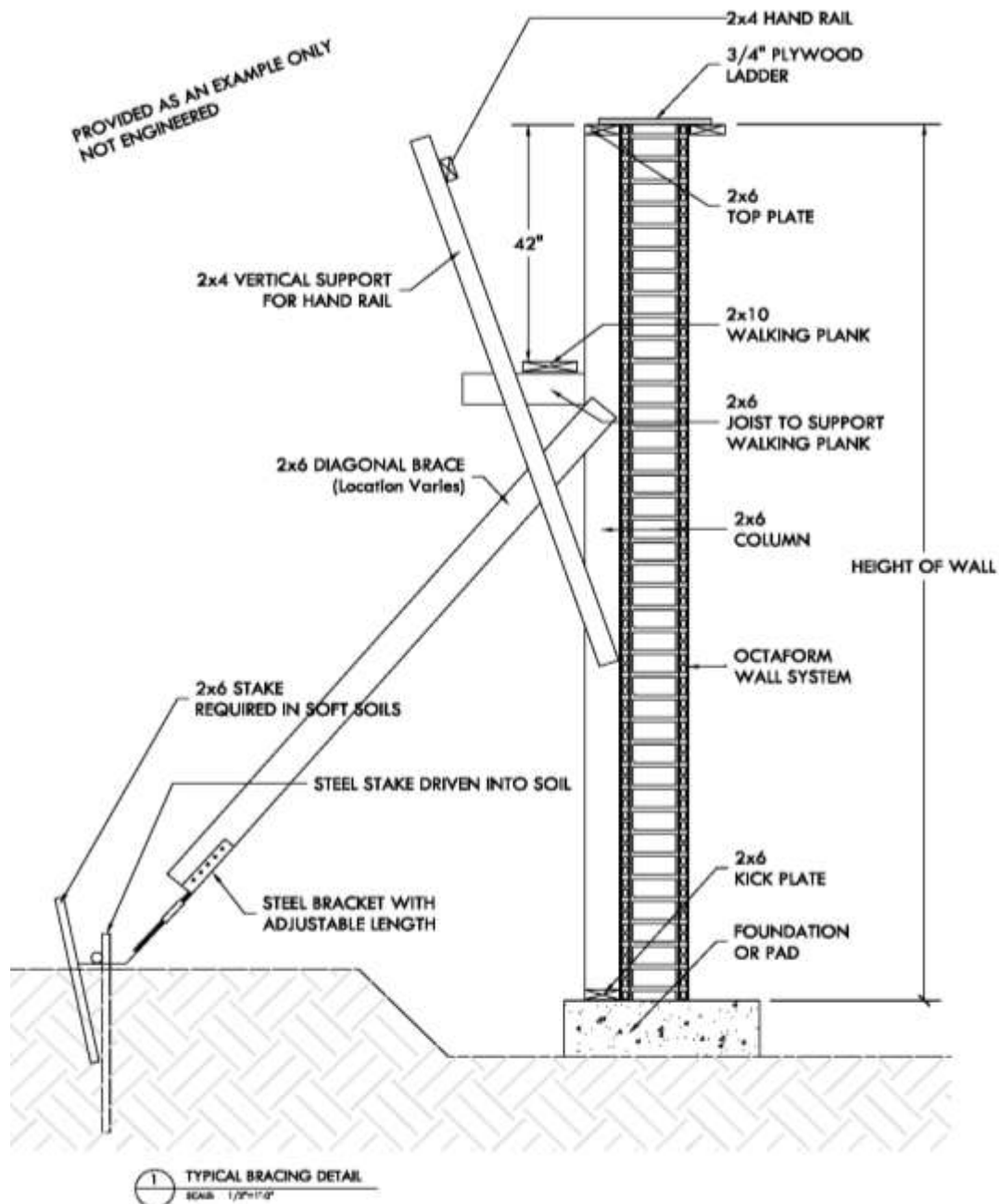
ICF Bracing



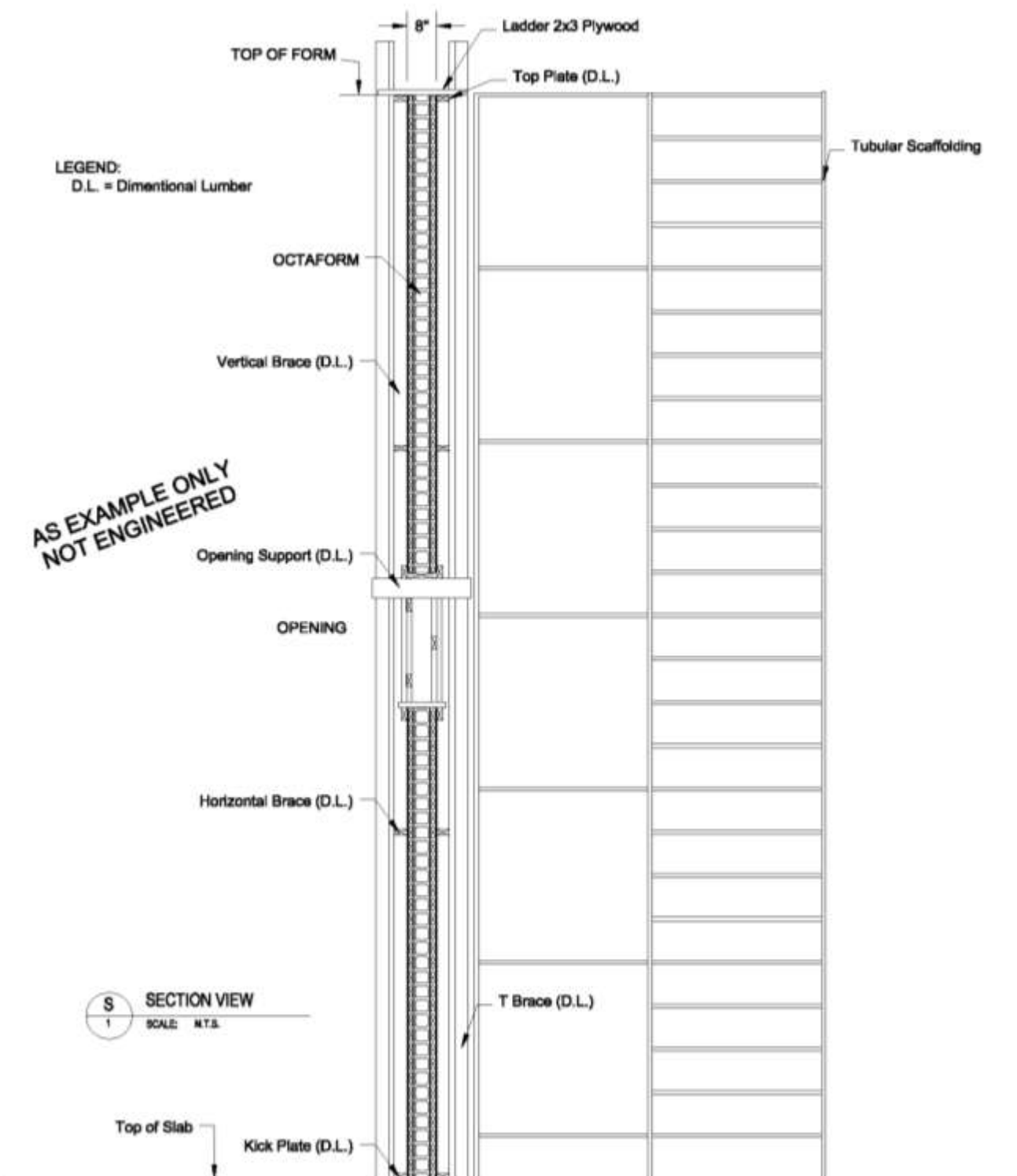
Tube and Clamp Bracing



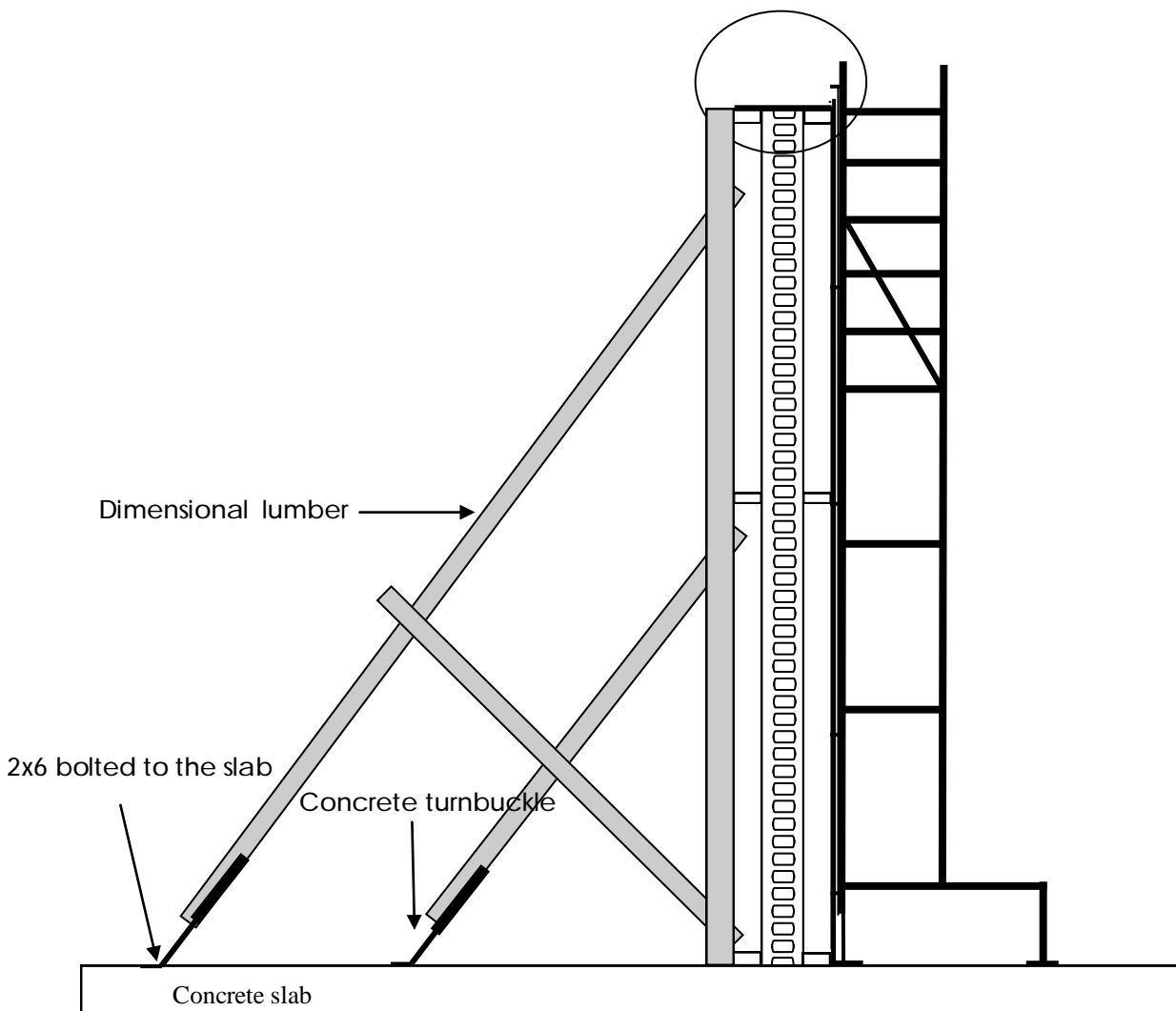
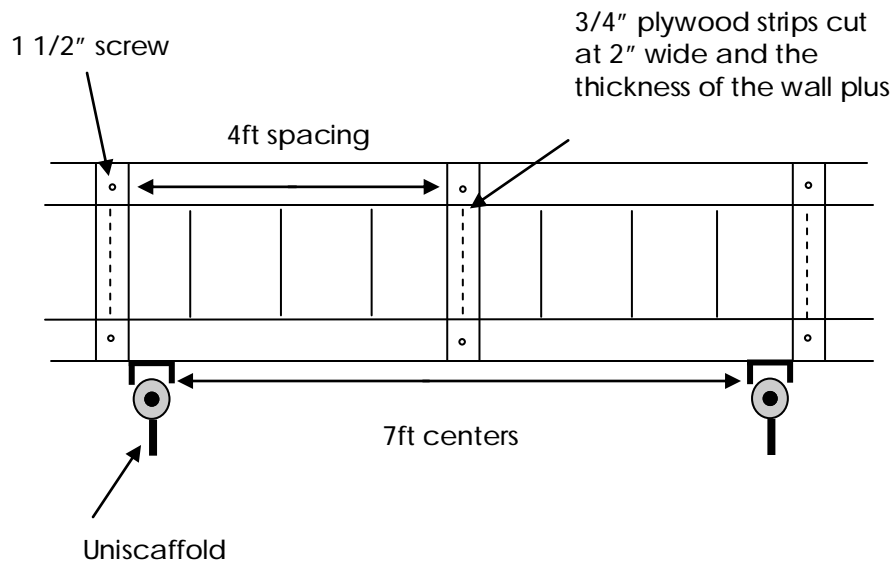
## Y Bracing



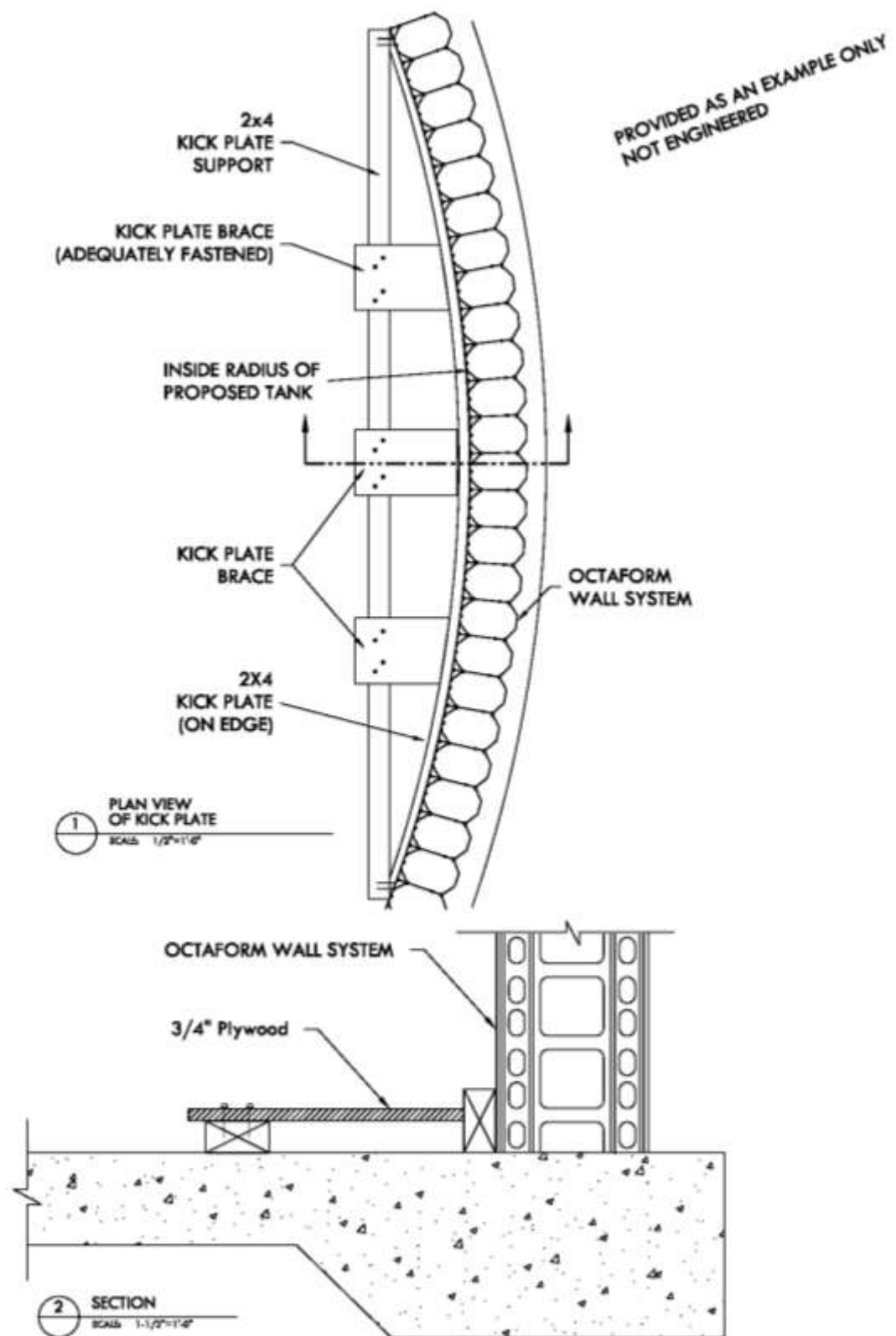
## 4.4.2 Steel Frame Bracing and Tubular Scaffolding



### 4.4.3 Unisccaffold Bracing Detail (Tall Wall)



#### 4.4.4 Curve Wall Bracing

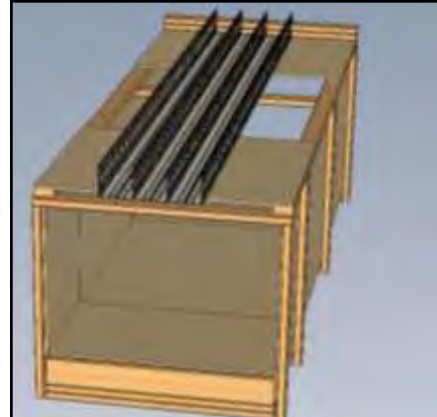


## 4.5 Installing Panels

Use the crate that the Octaform arrived in as the assembly table to assemble the Octaform parts. Determine the set up of the panels by using the assembly drawing.



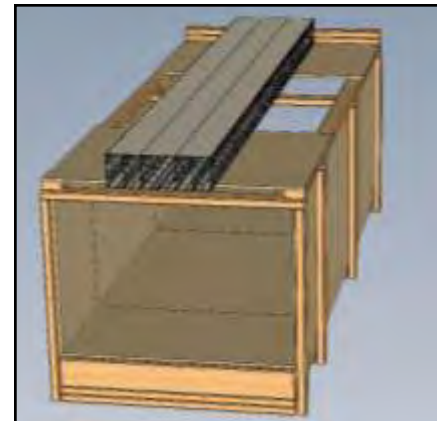
Step 1 Place 3 panels  
face down.



Step 2 Slide 4 connectors  
into panels.



Step 3 Slide the top panels  
into connectors.



Step 4 Slide in the interior  
connectors or 45  
degree braces  
if insulating.



## 4.6 Storing Panels

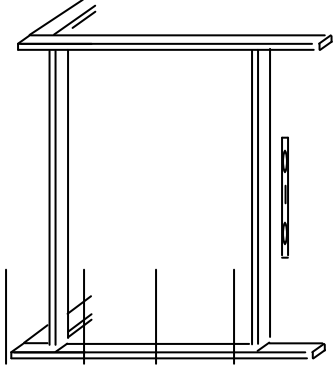
Once a section is assembled, carry and place on an elevated area. Panels can be stacked no more then 3 sections high.



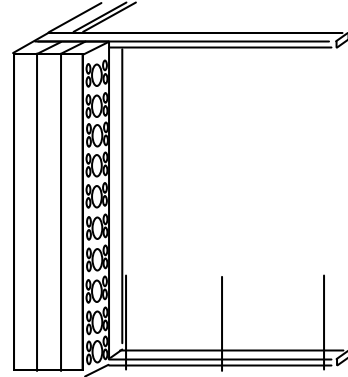


## 5.1 Installing Walls

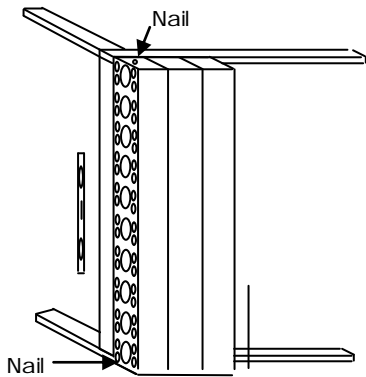
1. Make sure bracing is square and level by using a level.



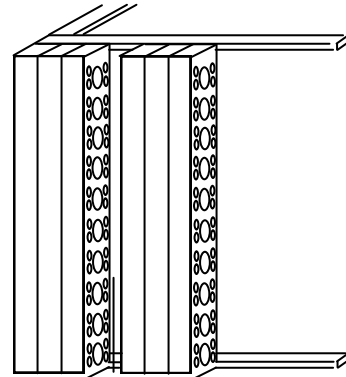
2. Start from a corner. Lift the panel over the foundation dowels and stand against the bracing.



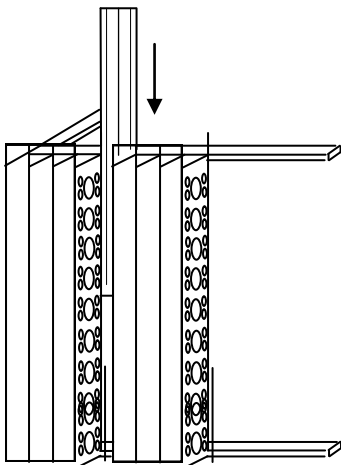
3. Line section up with the corner of the bracing and tack a nail in the top, then level and tack a nail into the bottom corner.



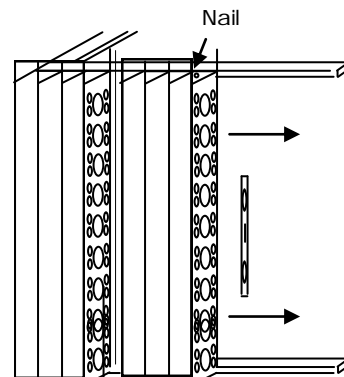
4. Stand the next section following Step 2 leaving a 150mm (6") space between previous section.



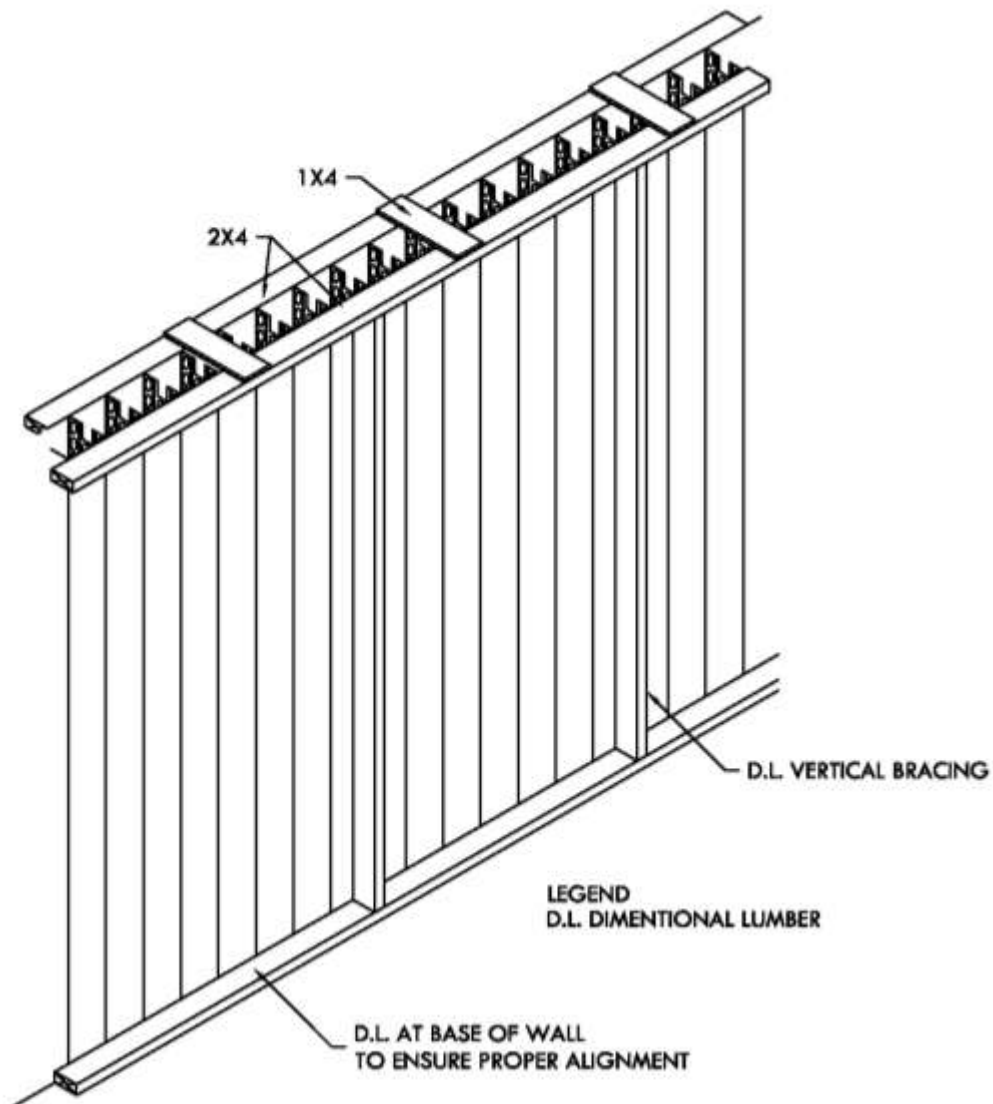
5. Join the 2 sections together with a 150 mm (6") panel. Place the panel to the bracing side.



6. Pull the wall tight from the working end, so that the joints open up 3mm (1/8"). Tack a nail in the top of the panel and level the section.



### 5.1.1 Corners Bracing



#### LADDER BRACING

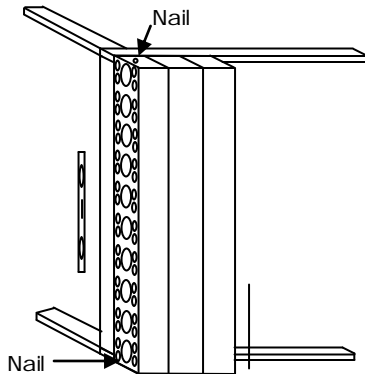
##### BRACING TECHNIQUES

**NOTE:** This drawing presents possible methods of providing alignment support for the Octaform Wall System. They are intended to be used as a guide only, and are not to scale. Proper support will vary depending upon site conditions, concrete pressures, wall height, soil capacities and the overall building system being incorporated or architect for precise bracing requirements.

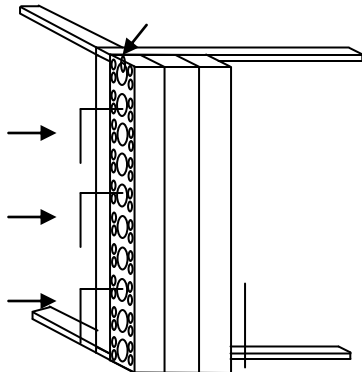
NOT ENGINEERED

## 5.2 Corners

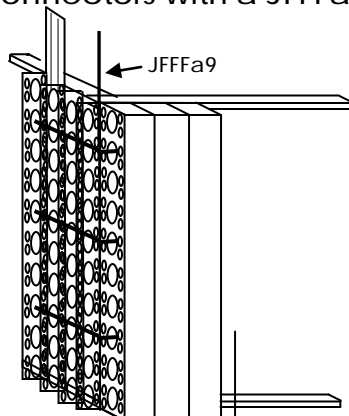
1. Make sure bracing is square and level. Line section up with the corner of the bracing and tack a nail in the top, then level and tack a nail into the bottom corner of the bracing.



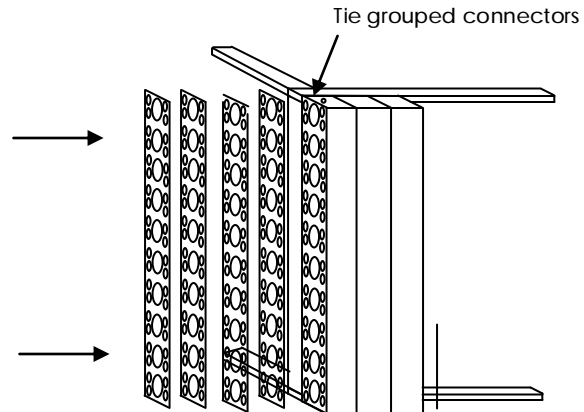
3. Install bent horizontal rebar through the grouped connectors.



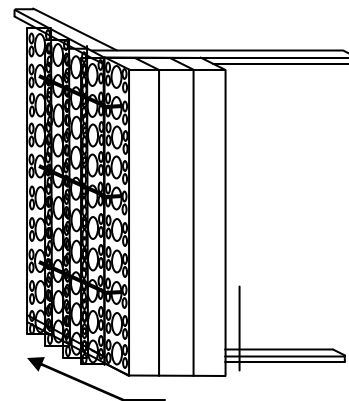
5. Separate connectors and slide in 150mm (6") panel to the bracing side. Connect the corners of the connectors with a JFFFa90.



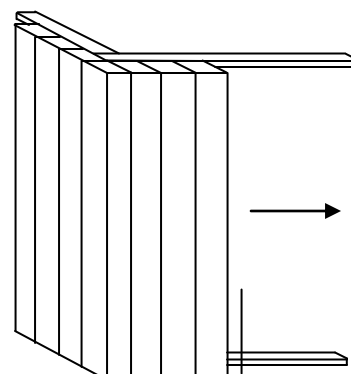
2. Group 4-6 connectors and tie one end together. Place tied connector end to the top of the installed panel and tie together.



4. Untie the connector and move around the corner with rebar still located in the webs.



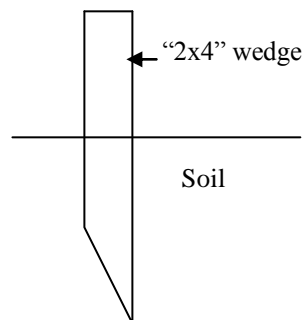
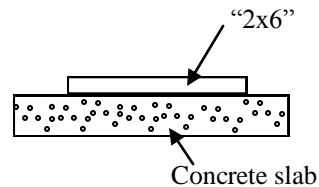
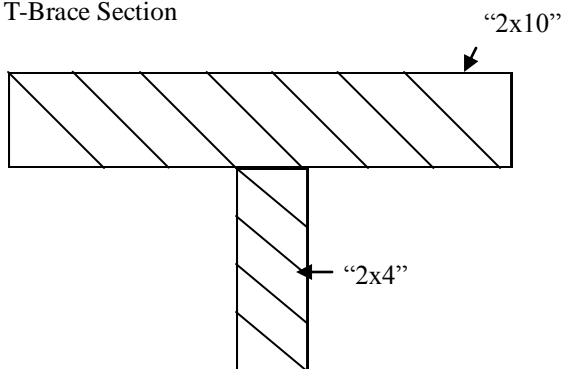
6. Install outside panels and pull wall tight. Check level.



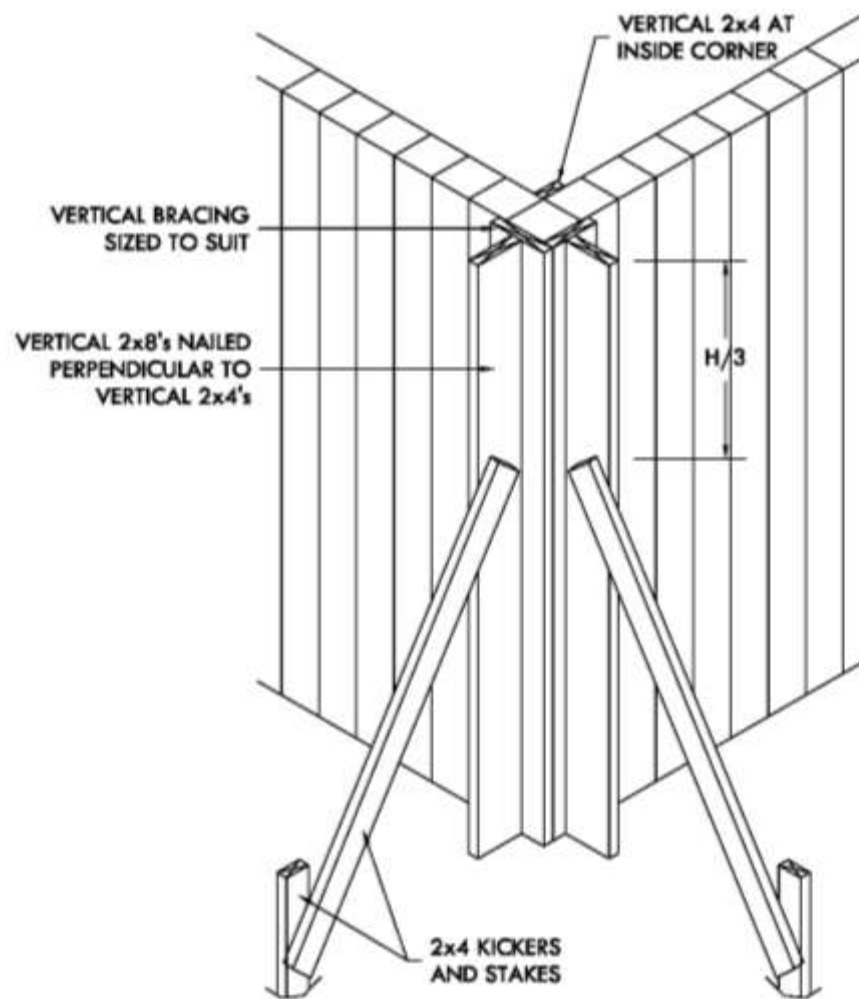
## 5.2.1 Corners Bracing

1. Using 2x10 and 2x4 P wood, build T-braces which have a height equivalent to the height of the wall.
2. Stand the T-brace tight against the corner. Fasten the top and bottom of the T-brace to the kicker plates.
3. Stand the second T-brace tight against the corner overlapping the first T-brace.
4. *Soil:* Cut a wedge out of 2x4 and hammer in the ground until solid.  
*Slab:* Fasten a foot long 2x6 to the slab.
5. Fasten a 2x4 to the T-brace at a 45 degree angle to the ground and fasten to a 2x4 wedge or the 2x6 which is fastened to the slab.

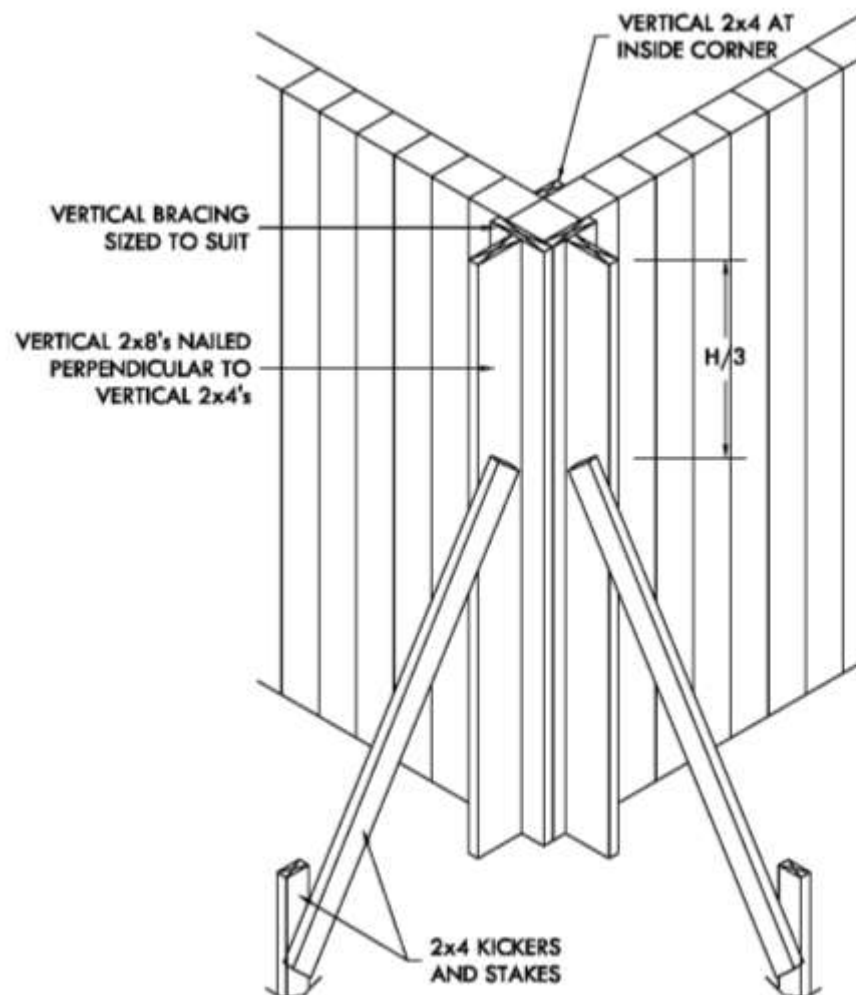
T-Brace Section



## Outside Corners Bracing

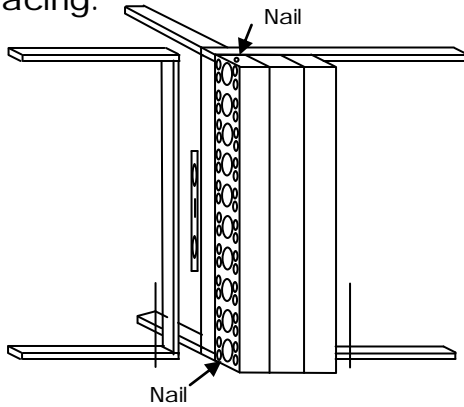


## Inside Corners Bracing

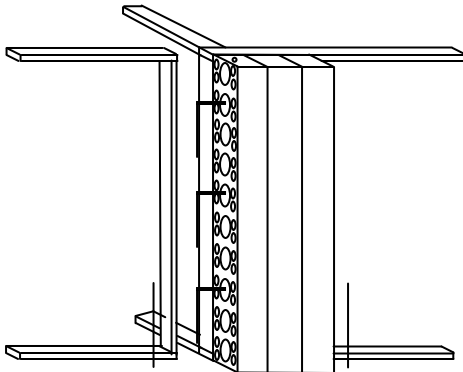


### 5.3 Intersection

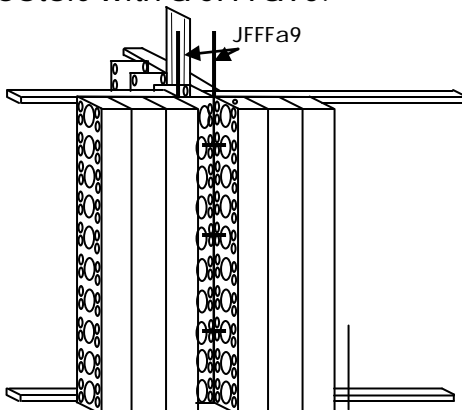
1. Make sure bracing is square and level. Line section up with the corner of the bracing and tack a nail in the top, then level and tack a nail into the bottom corner of the bracing.



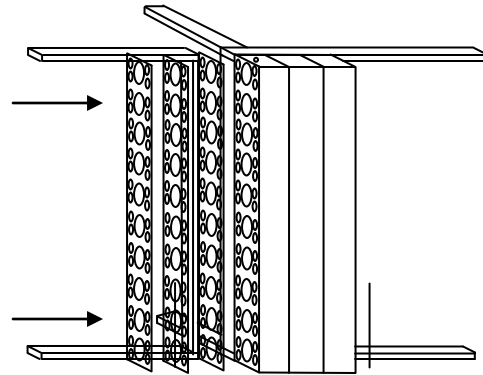
3. Install bent horizontal rebar through the grouped connectors.



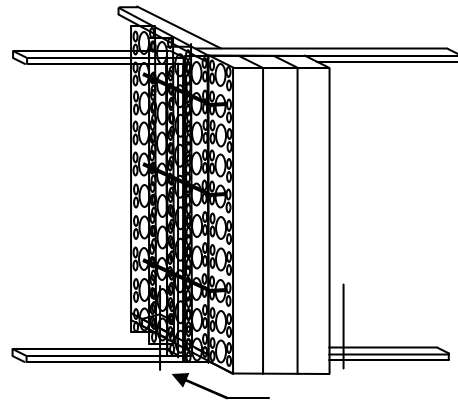
5. Separate connectors and slide in a 150mm (6") panel to the bracing side. Install a second section. Connect the corners of the connectors with a JFFFa90.



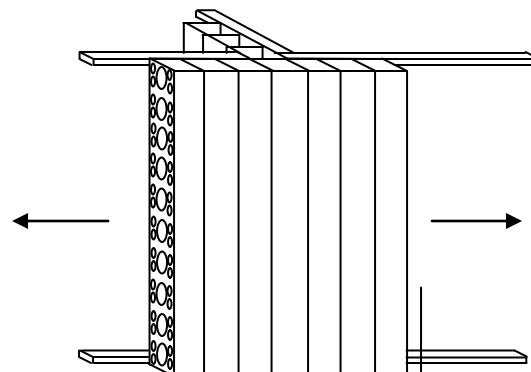
2. Group 4-6 connectors and tie one end together. Place tied connector end to the top of the installed panel and tie together.



4. Untie the connector and move around the corner with rebar still located in the webs.

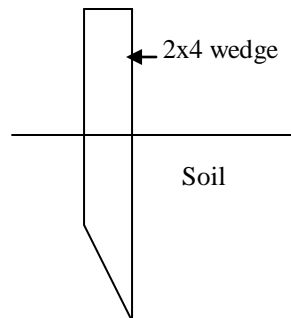
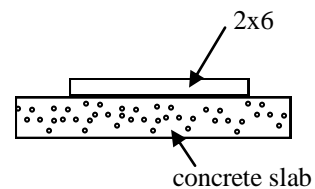
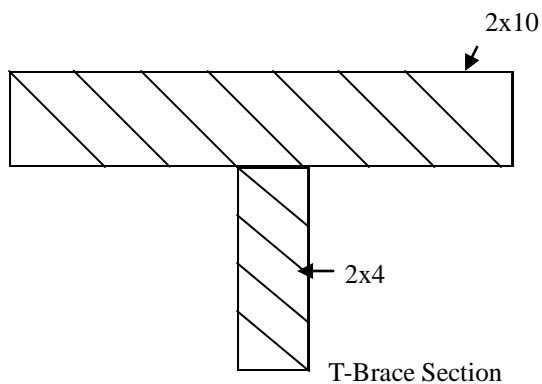


6. Install outside panels and pull wall tight. Check with level of the foundation.



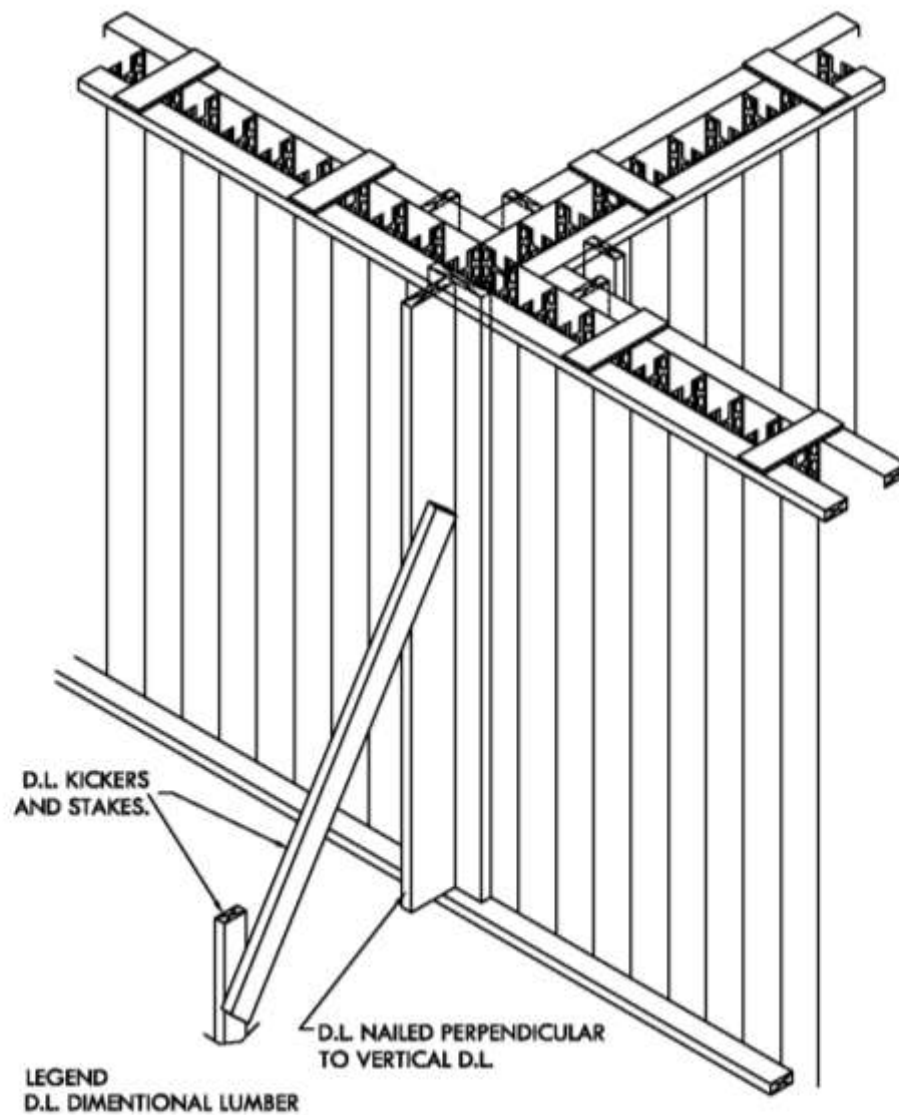
### 5.3.1 Intersection Bracing

1. Using 2x10 and 2x4 P wood, build T-braces which have a height equivalent to the height of the wall.
2. Stand the T-brace tight against the corner. Fasten the top and bottom of the T-brace to the kicker plates.
3. *Soil:* Cut a wedge out of 2x4 and hammer in the ground until solid.  
*Slab:* Fasten a foot long 2x6 to the slab.
4. Fasten a 2x4 to the T-brace at a 45 degree angle to the ground and fasten to a 2x4 wedge or the 2x6 which is fastened to the slab.





## Intersection Bracing



### INTERSECTION BRACING

#### BRACING TECHNIQUES

NOTE: This drawing presents possible methods of providing alignment support for the Octaform Wall System. They are intended to be used as a guide only, and are not to scale. Proper support will vary depending upon site conditions, concrete pressures, wall height, soil capacities and the overall building system being incorporated or architect for precise bracing requirements.

NOT ENGINEERED

## 5.4 Installing Multiple Wall Heights

Octaform is custom extruded to a maximum height of 18 m (30ft). Octaform is shipped to site and pre-cut to project specification. Refer to the Octaform assembly drawings to determine the wall heights.



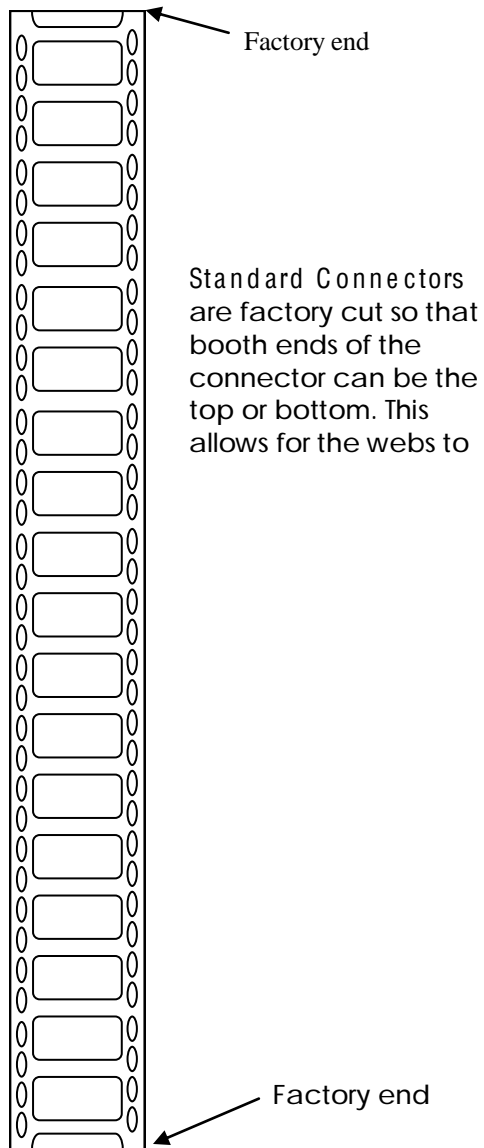
## 5.5 Wall Openings

A buck or a sleeve is required in all wall openings to resist the pressure and the escape of concrete. Bucks or sleeves can be made out of wood, metal or plastic. Leave bucks in for as long as possible.

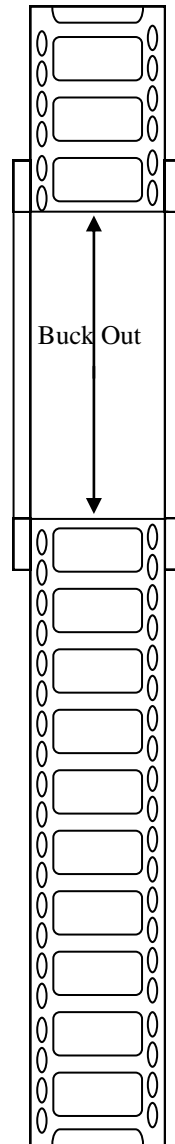


## 5.5.1 Cutting Connectors

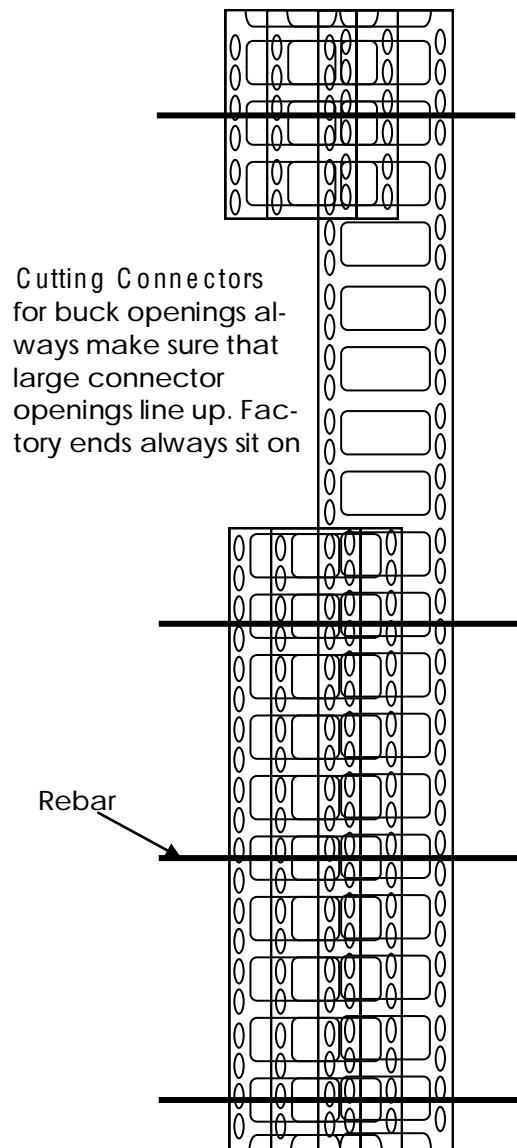
Standard Connector



Buck Out Cross Section

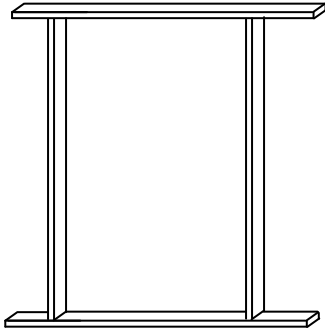


Cut Connector

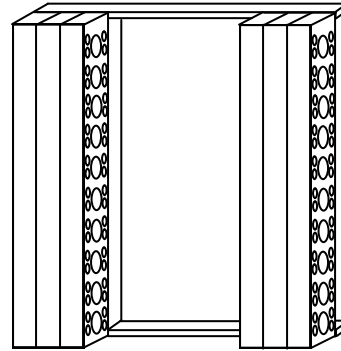


## 5.5.2 Steps to Install Window Bucks

1. Mark out the location of the window on the bottom plate and place a "2x4" at beginning and end of the window location.

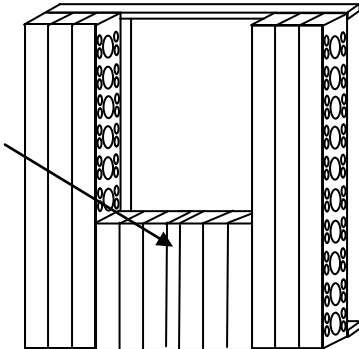


2. Install 2 assembled Octaform panels to each side of the window openings.

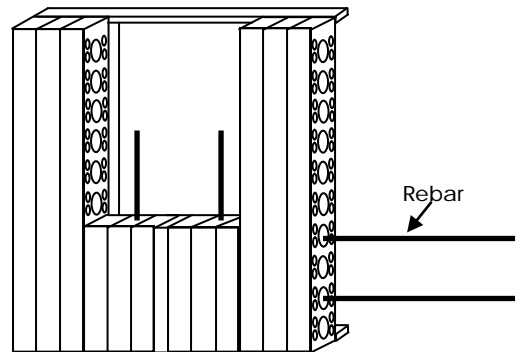


3. Install Octaform under the window. (Make sure the Octaform is pulled tight).

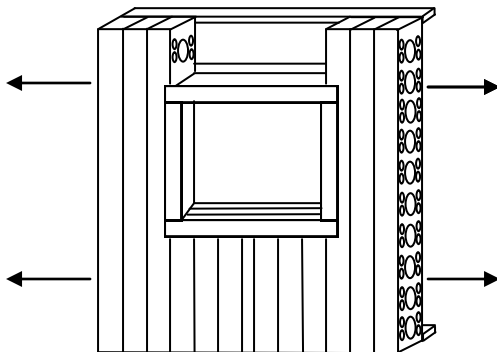
A 2", 3 or 4 panel maybe needed.



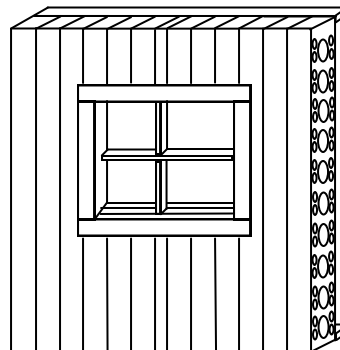
4. Place rebar and insulation under the window.



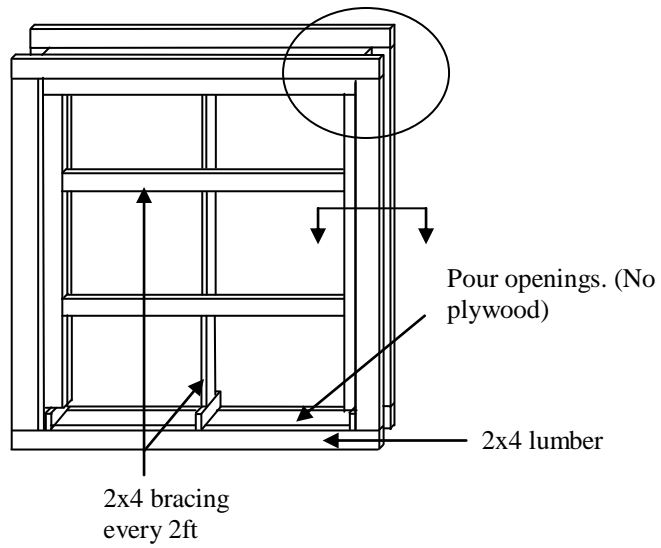
5. Install window buck and pull the wall tight.



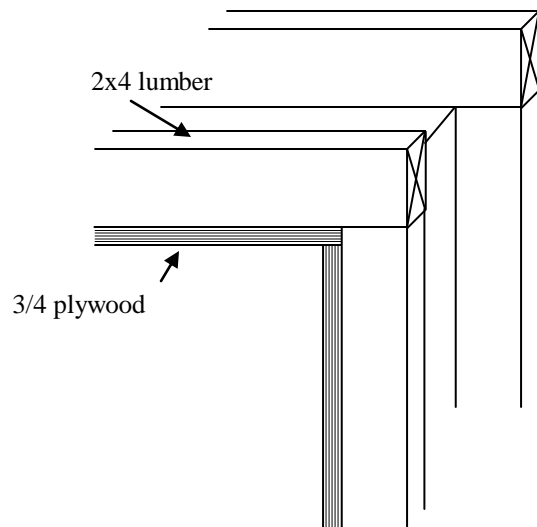
6. Install Octaform over the window. (Make sure the Octaform is pulled tight). Add extra bracing.



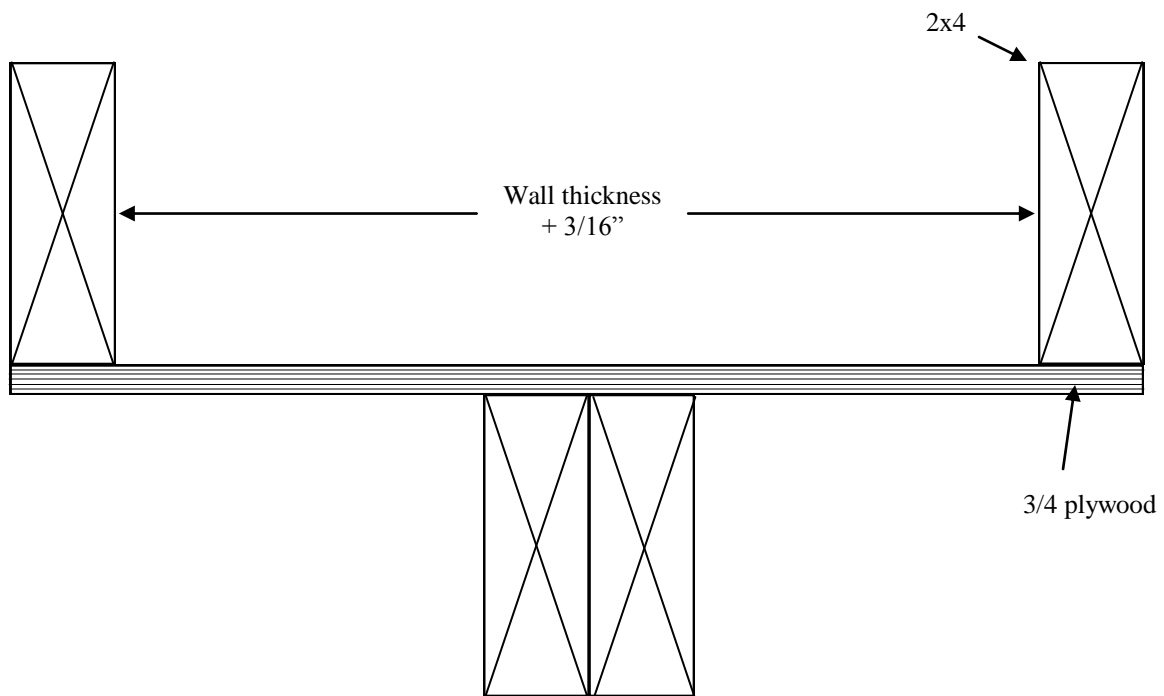
### 5.5.3 Window Openings (Wood)



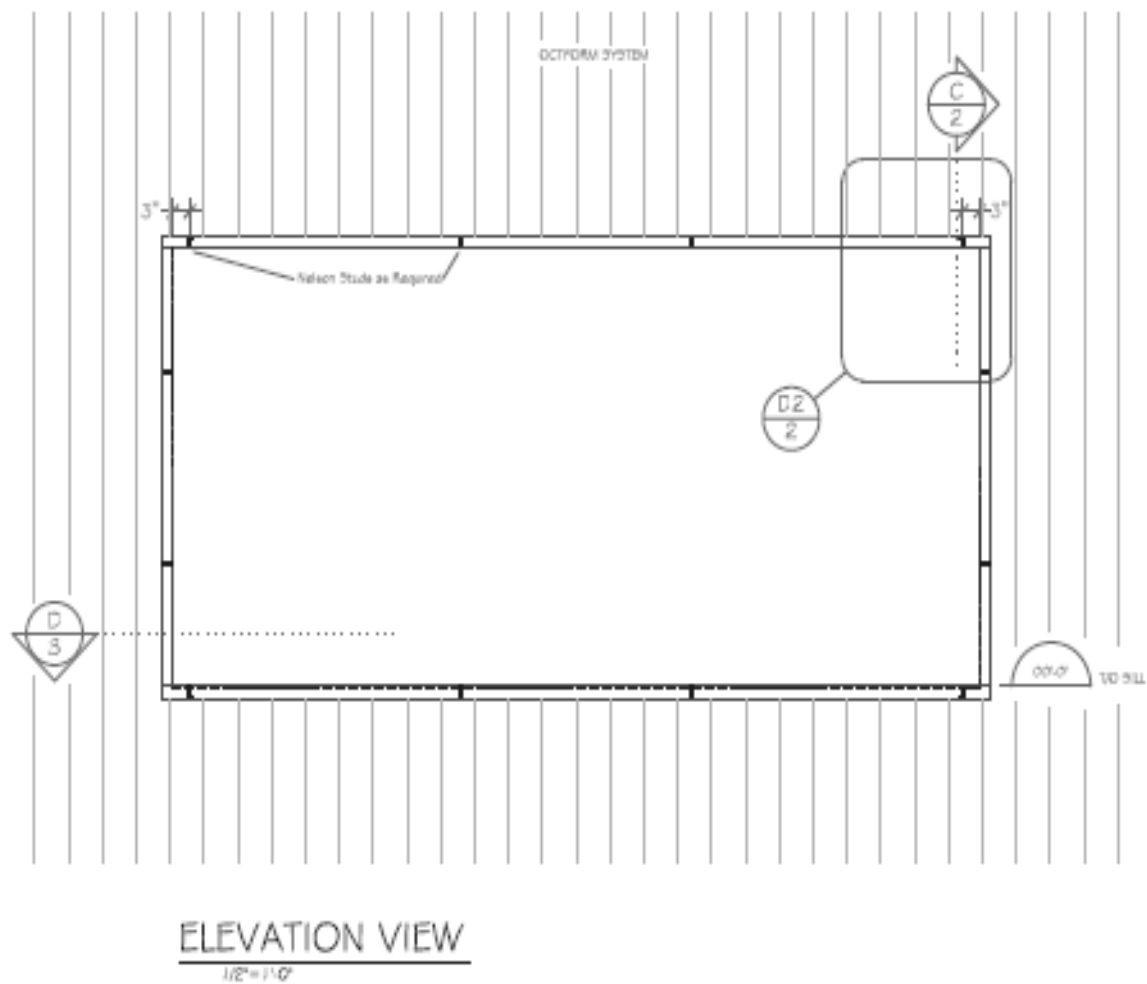
#### Detail Section



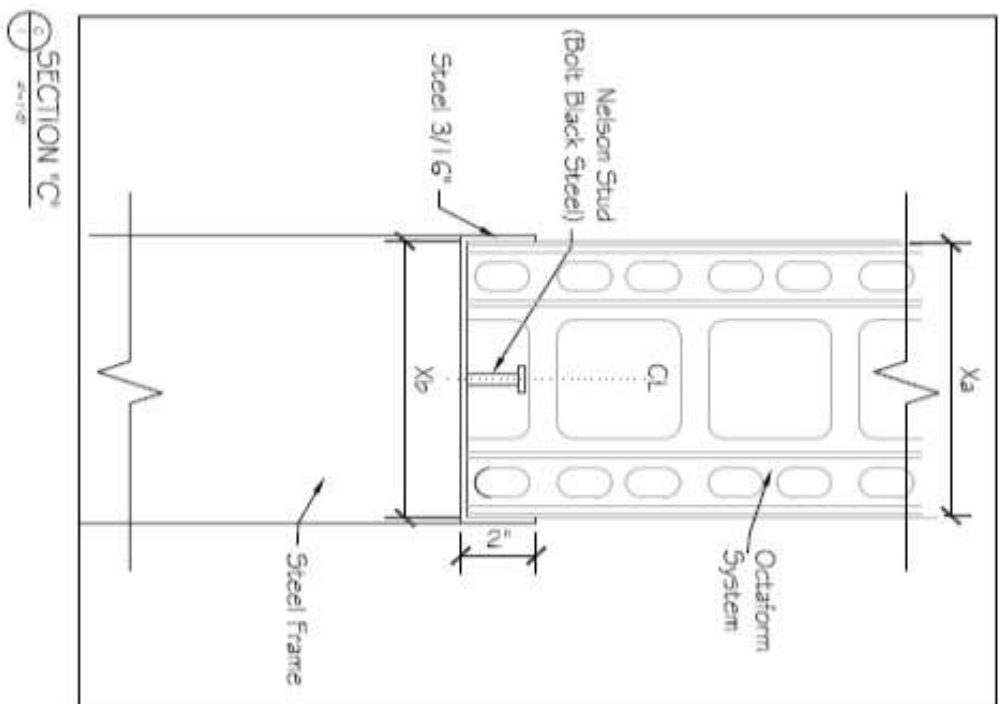
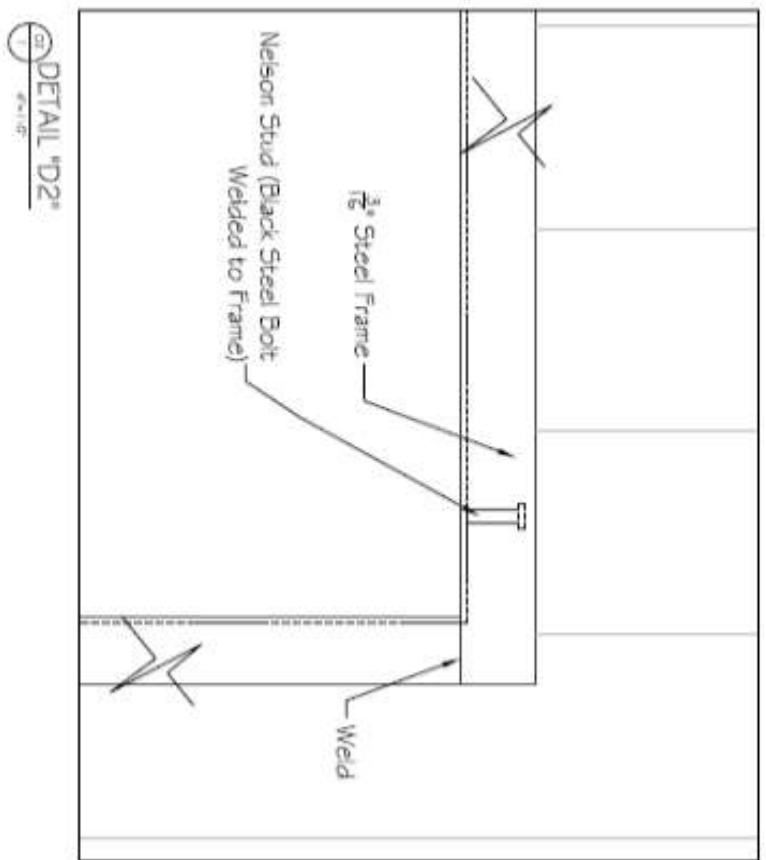
#### Cross Section



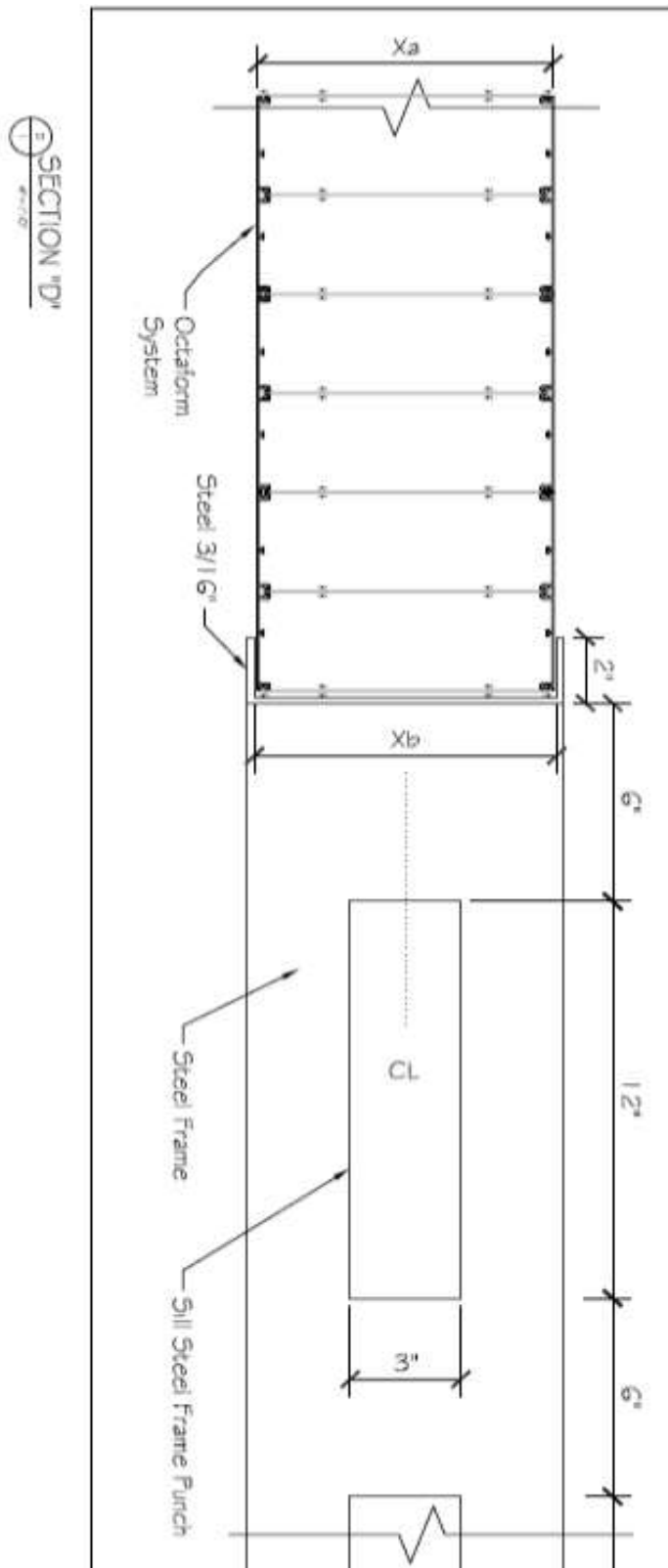
#### 5.5.4 Window Openings (Steel)



## Steel and Wood Openings



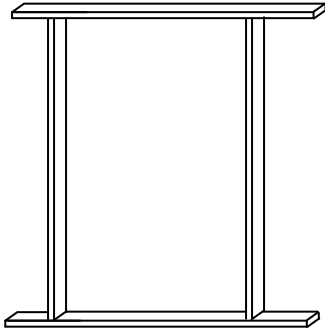
## Steel and Wood Openings



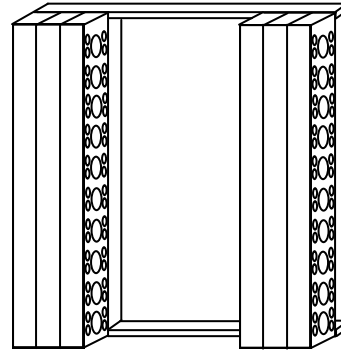


### 5.5.5 Steps to Install Door Bucks

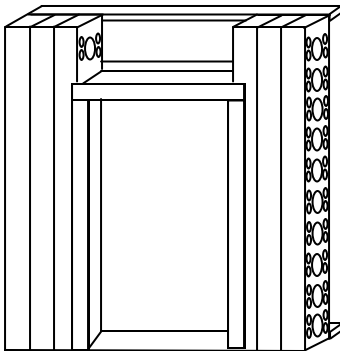
1. Mark out location of door and place "2x4" at beginning and end of door location.



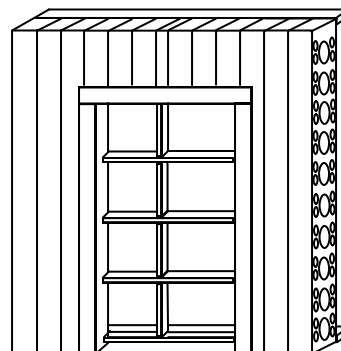
2. Install 2 assembled Octaform panels to each side of the door openings.



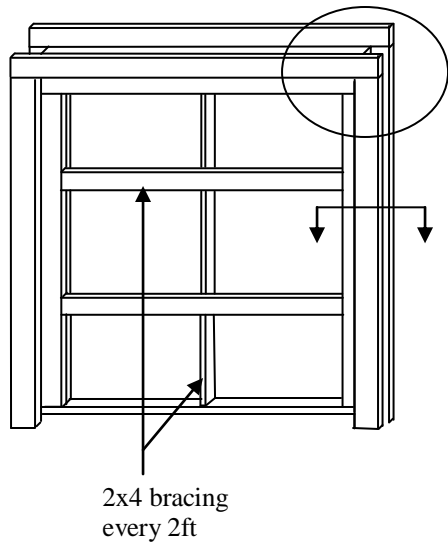
5. Install door buck.



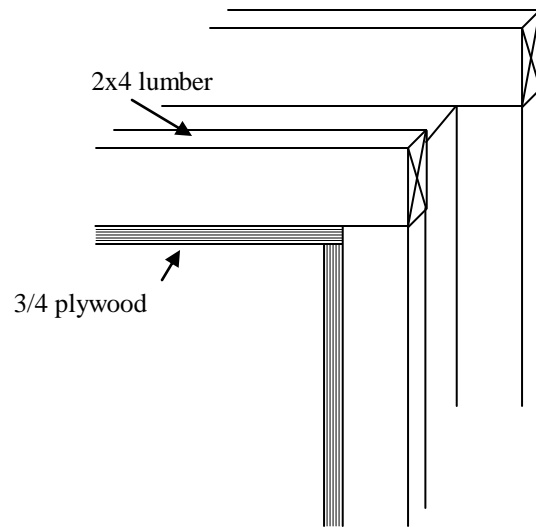
6. Install Octaform over the door. (Make sure the Octaform is pulled tight). Add extra bracing.



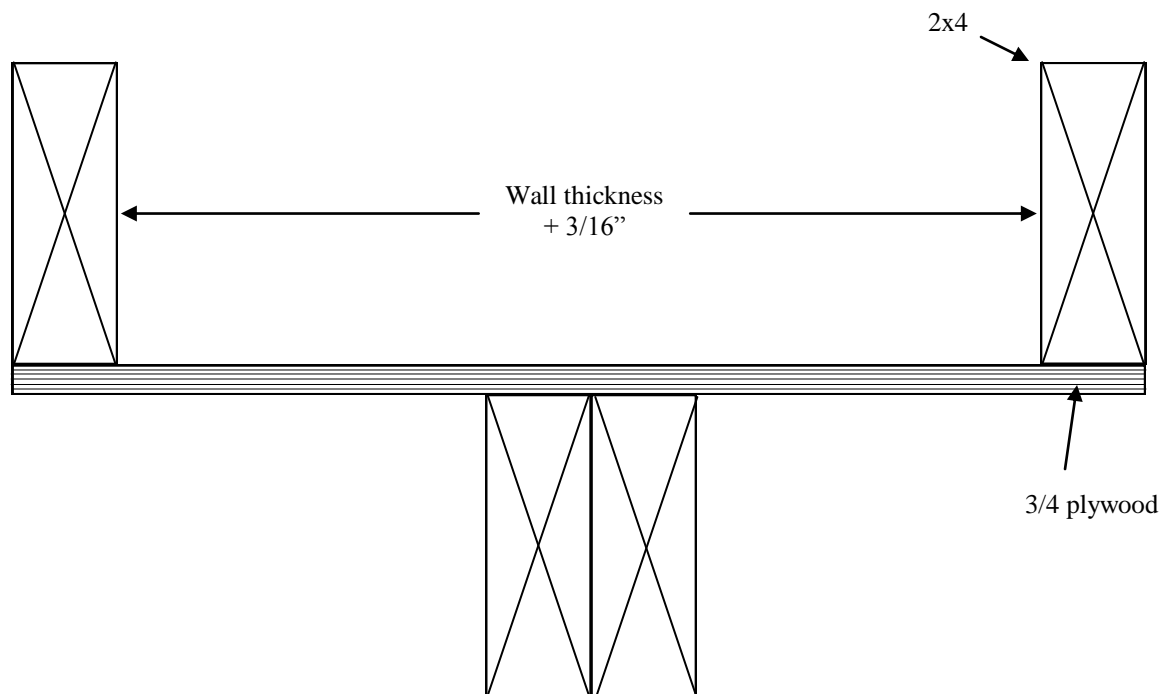
### 5.5.6 Door Openings Wood)



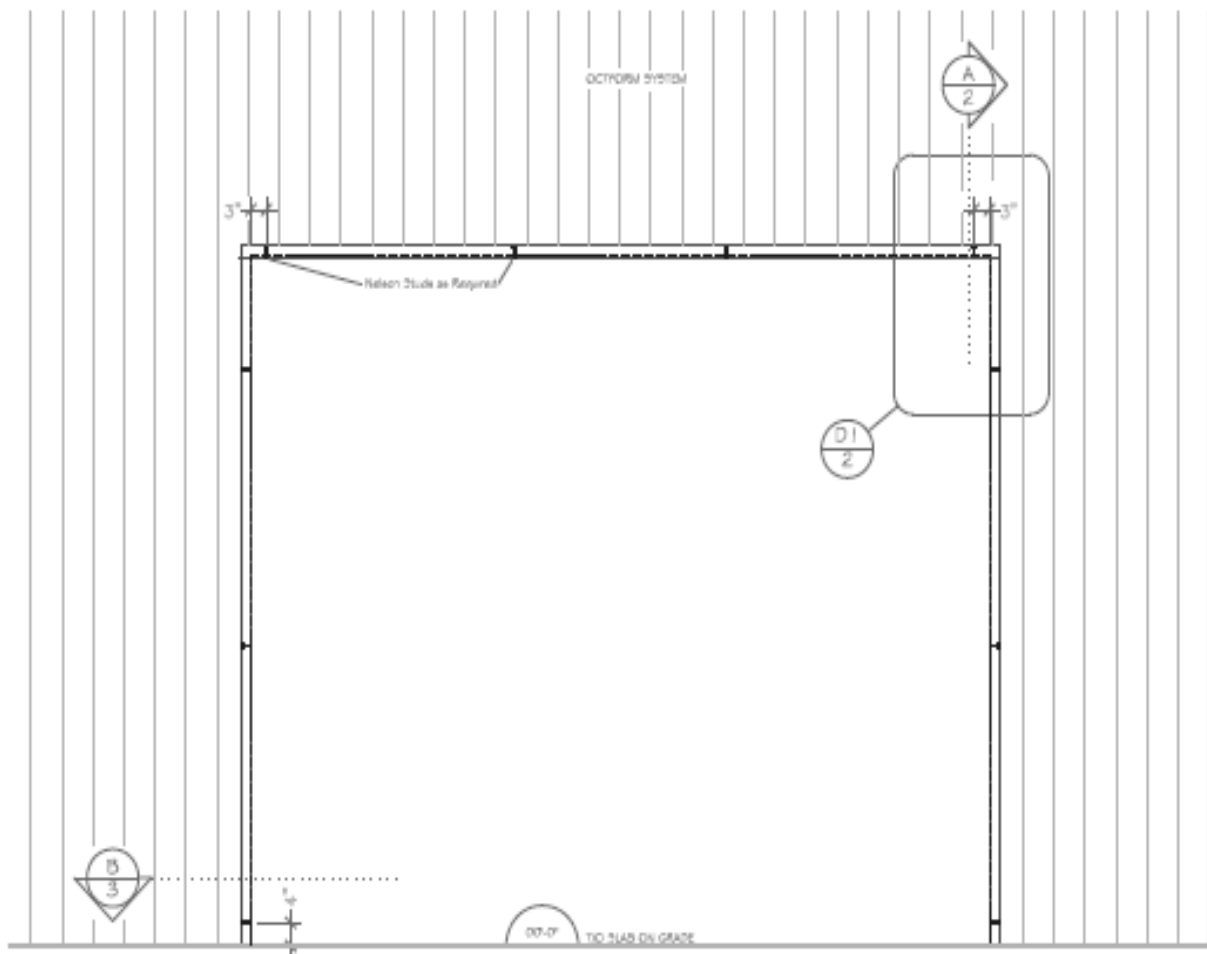
**Detail Section**



**Cross Section**



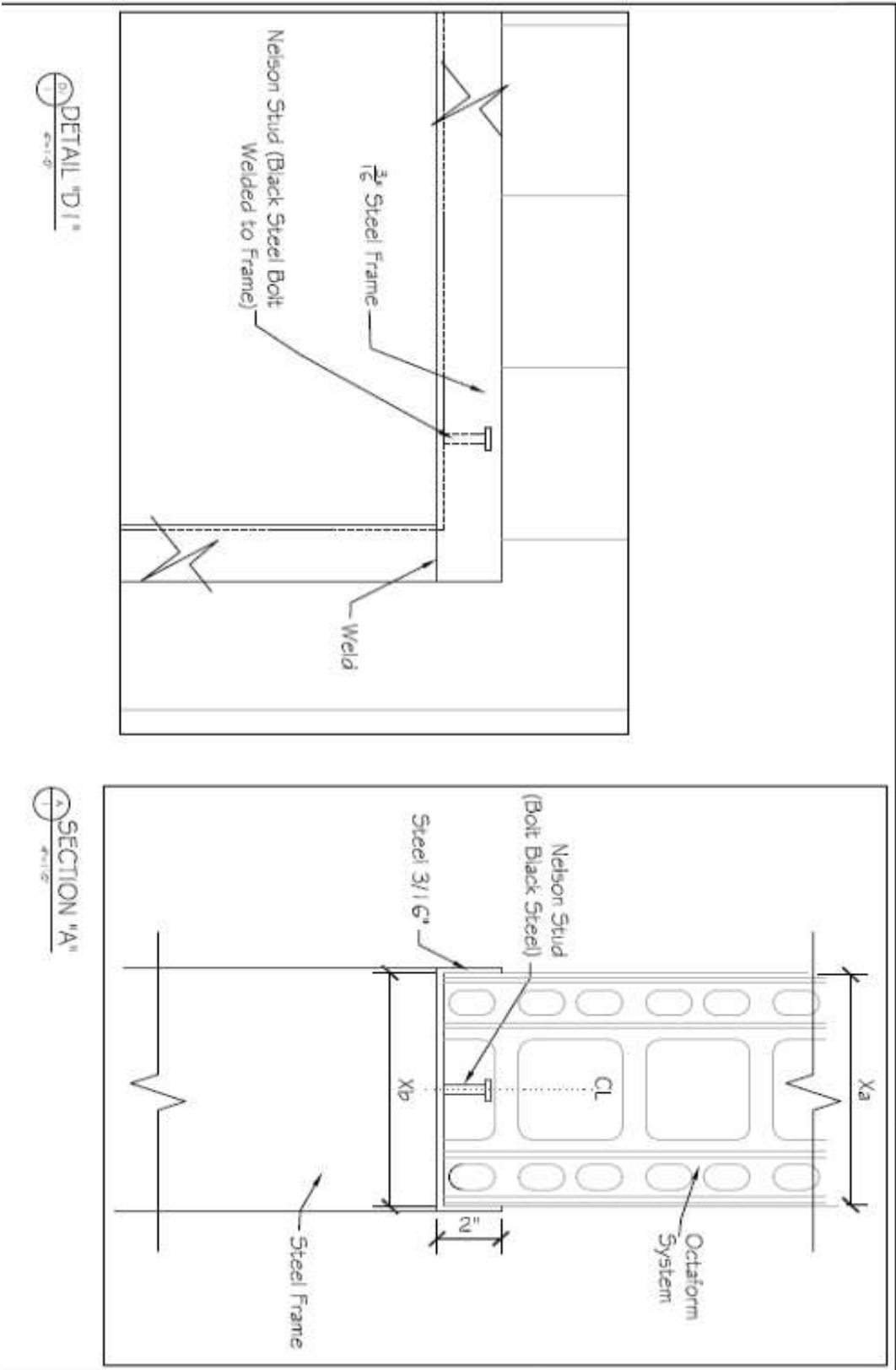
### 5.5.7 Door Openings (Steel)



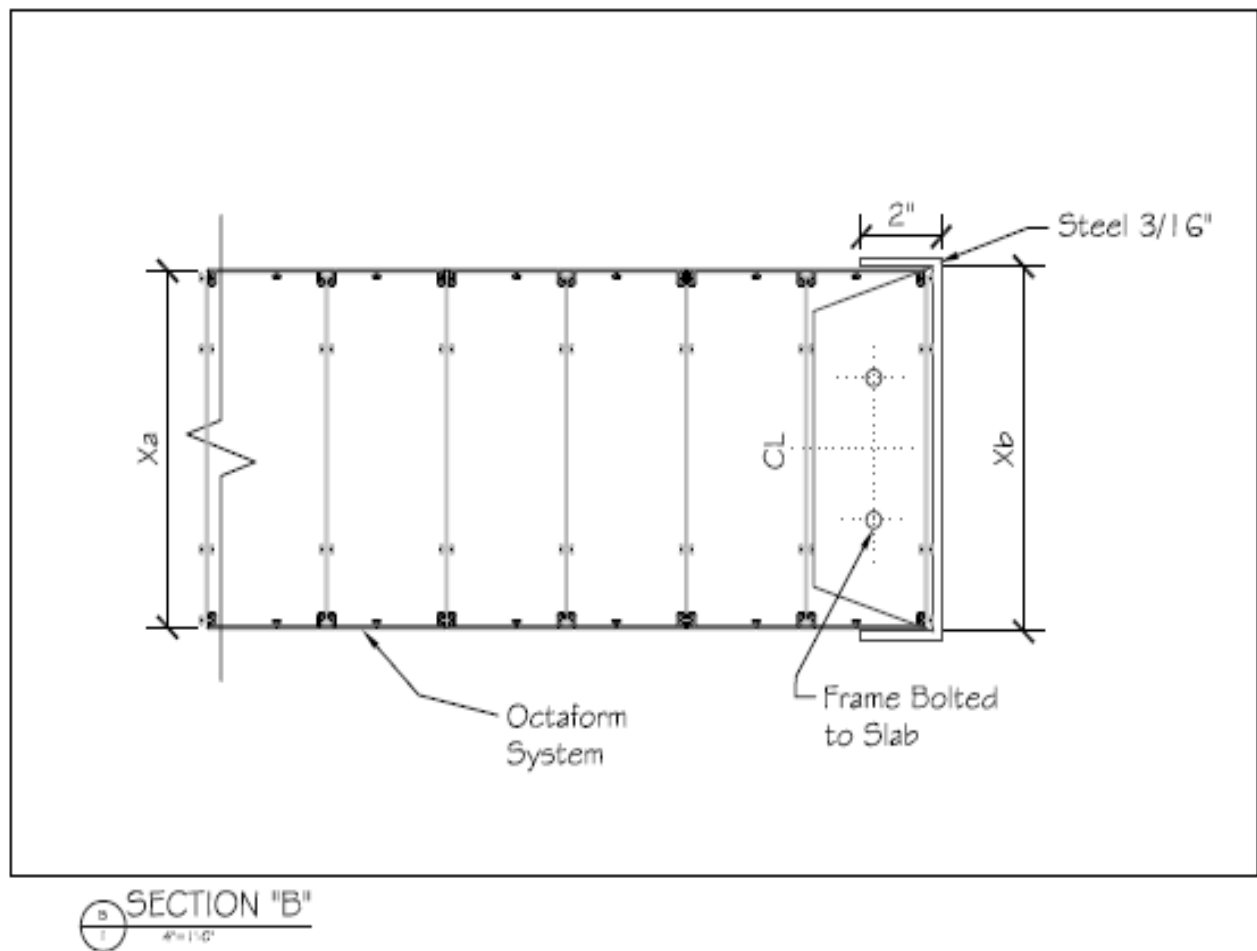
ELEVATION VIEW

$$|\vec{E}| = 1.50 \text{ V}$$

## Steel Window Bracing



## Steel Bracing



## 5.6 Pilasters

There are multiple designs and multiple ways to construct a pilaster. When assembling a pilaster refer to the assembly drawings for the setup.

1. Assemble pilaster on work table.
2. Place assembled pilaster in the proper location.
3. Install wall panels off of pilaster. If multiple pilasters, work to the middle.
4. Place rebar and tie to the rebar.
5. Brace pilaster with wood ladder.
6. Pour and vibrate concrete.

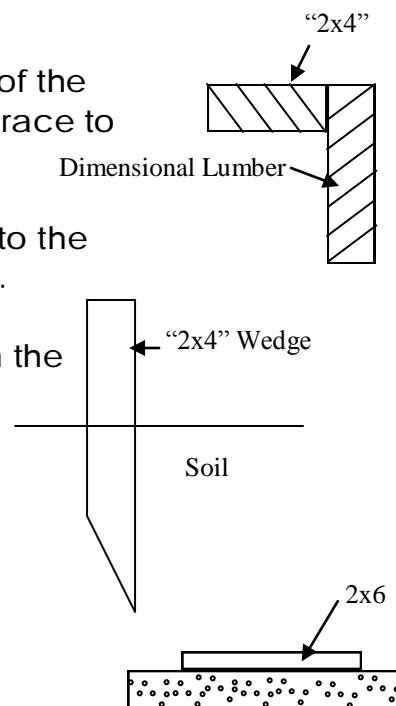


### 5.6.1 Pilasters Bracing

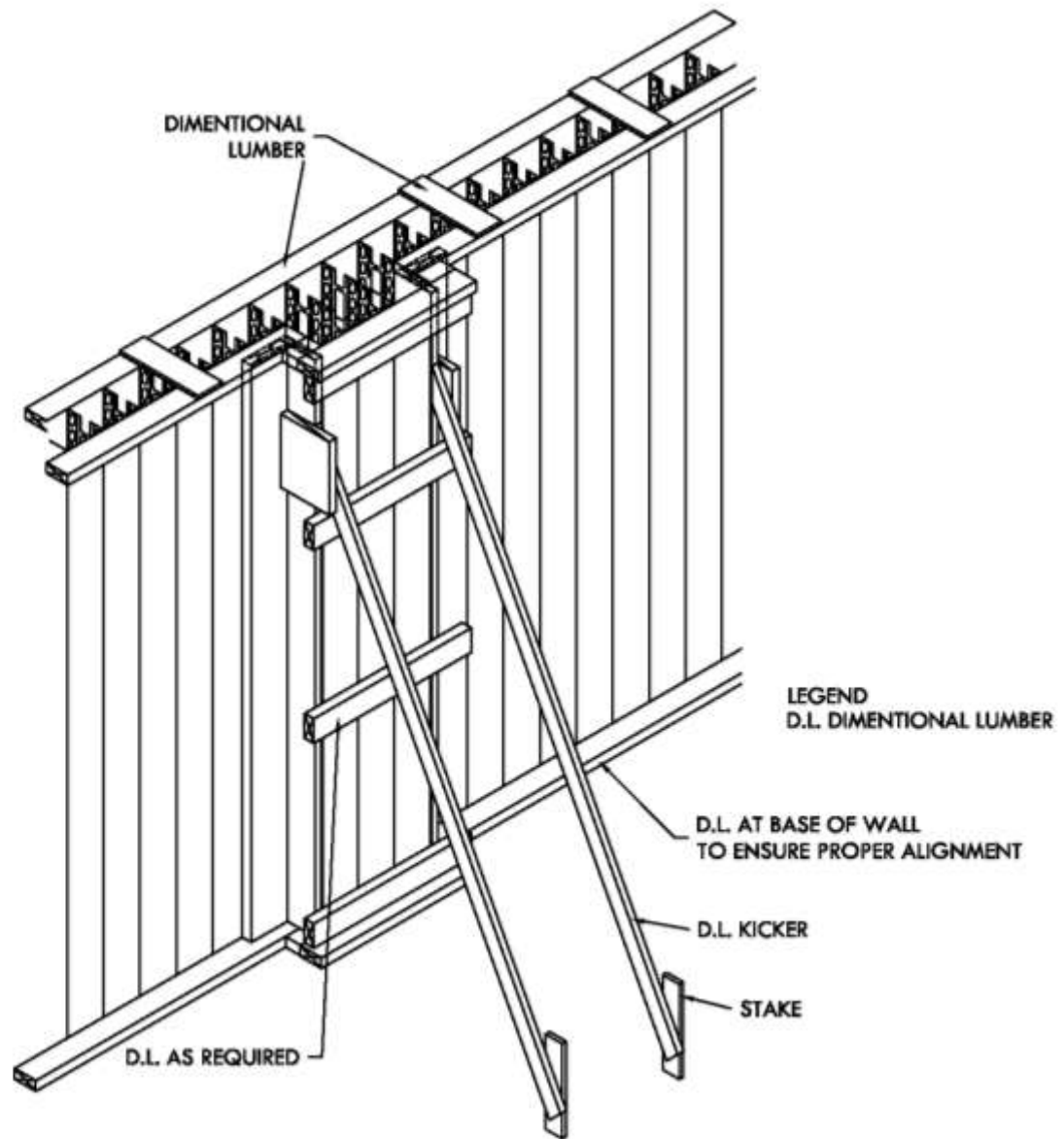
1. Using dimensional lumber, build 2 L-braces the height of the pilaster.
2. Stand both L-braces tight against the corners of the pilasters. Fasten the top and bottom of the T-brace to the kicker plates.
3. Pinch the pilaster together by placing "2x4's" to the front of the pilaster and fasten to the L-braces.
4. *Soil:* Cut a wedge out of "2x4" and hammer in the ground until solid.

*Slab:* Fasten a 4' long "2x6" to the slab.

5. Fasten a "2x4" to the T-brace at a 45 degree angle to the ground and fasten to a "2x4" wedge or the "2x6" fastened to the slab.



## Pilaster Bracing



PILASTER BRACING

### BRACING TECHNIQUES

**NOTE:** This drawing presents possible methods of providing alignment support for the Octaform Wall System. They are intended to be used as a guide only, and are not to scale. Proper support will vary depending upon site conditions, concrete pressures, wall height, soil capacities and the overall building system being incorporated or architect for precise bracing requirements.

**NOT ENGINEERED**

## 5.7 Brick Ledgers

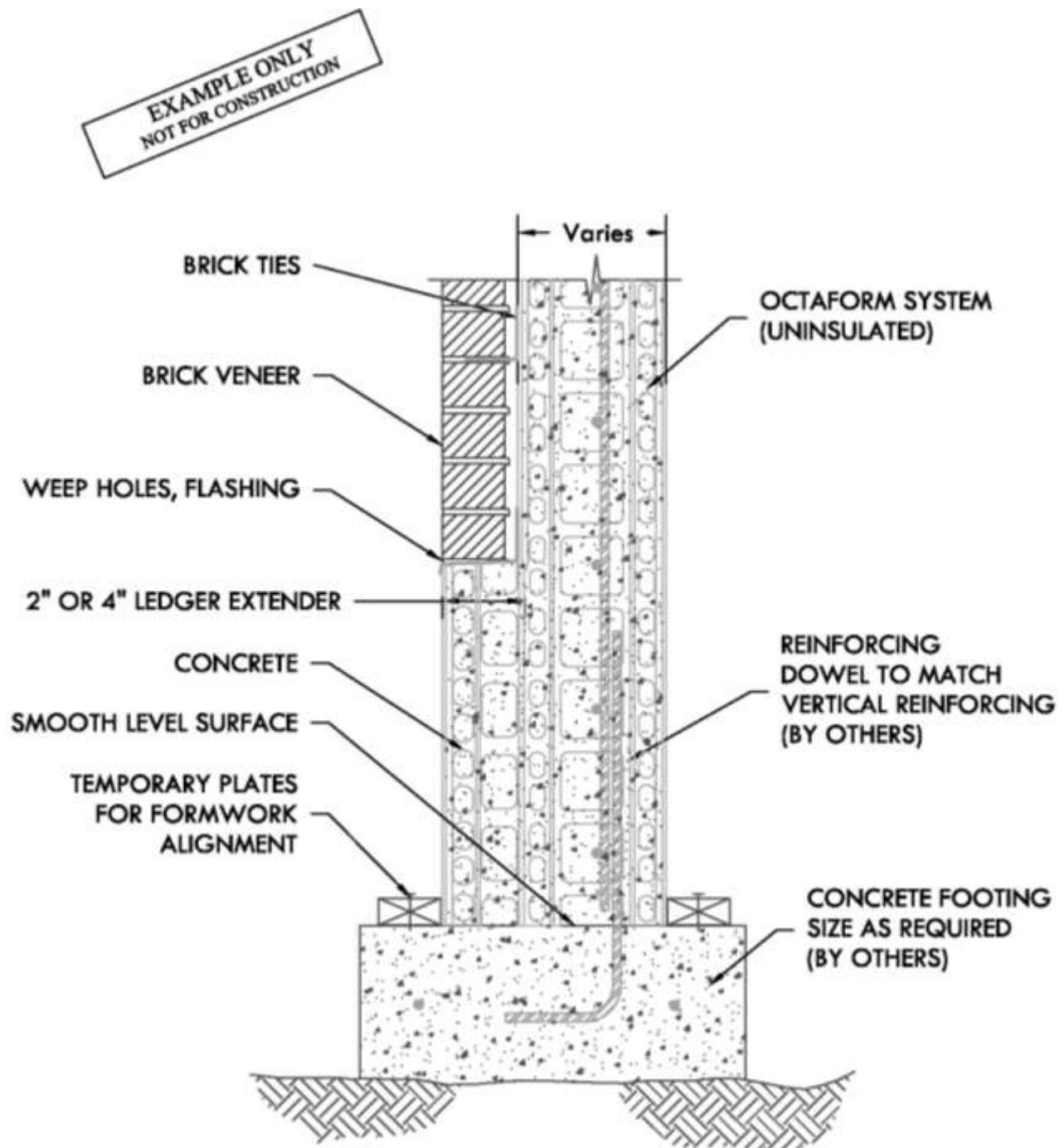
Ledgers can be used for many applications such as wood floors, concrete floors. When assembling a ledger refer to the assembly drawings for the setup.

1. Assemble the wall panels on work table.
2. Slide ledger webs onto connectors.
3. Slide top 150mm (6") panels onto ledger webs and connectors.  
(The panels may need to be cut on site, refer to assembly drawings).
4. Install wall panels and bracing system

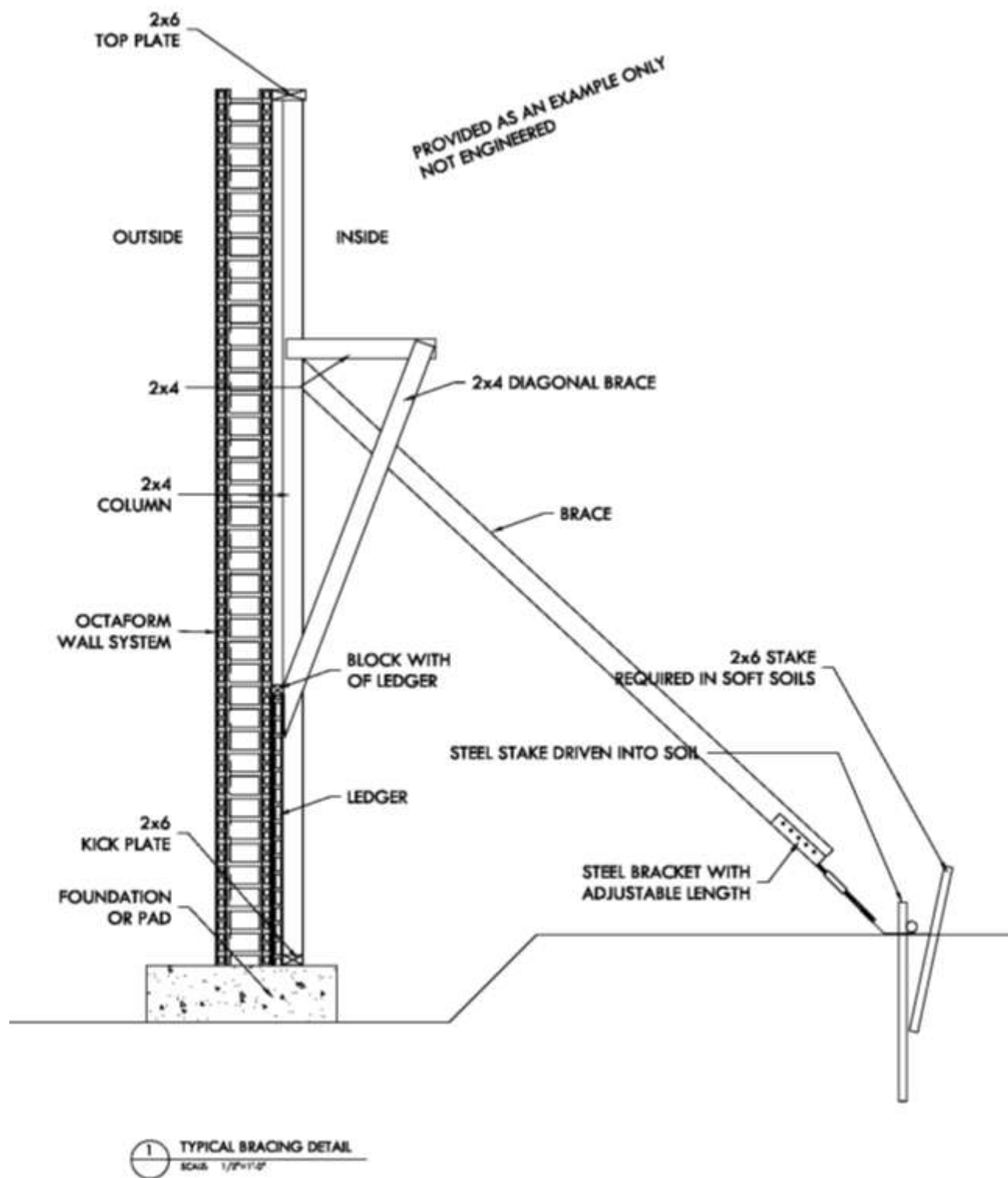




## Brick Veneer Ledger Detail

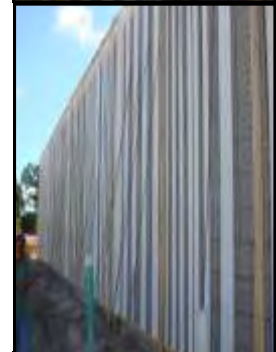


## Bracing Ledgers



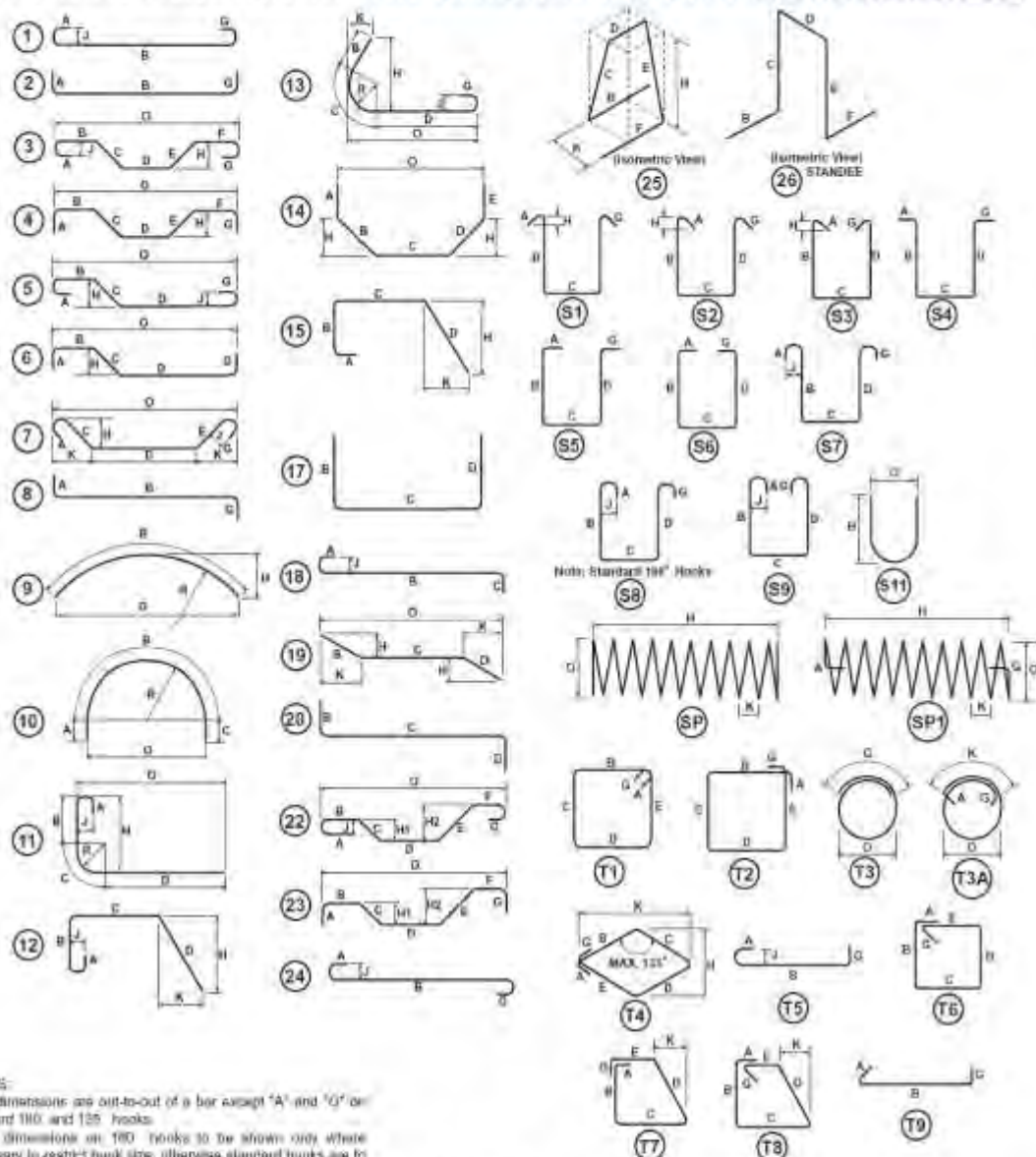
## 5.8 Rebar Placement

1. Check from one end of the wall to make sure the cells line up.
2. Slide horizontal rebar in from one end. Horizontal bar should not be longer than 5.2 m (20"). Make sure all Octaform webs are in place before placing rebar.
3. Tilt vertical rebar into place. Vertical rebar should be placed in the same cells as the foundation dowels. Install all vertical rebar under all bucks before installing bucks.
4. Tie rebar in cell.
5. Reinstall panels.



## 5.8.1 Rebar Bends

**Table 4**  
**Typical Bar Bends**

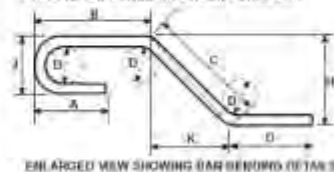


**NOTES:**

1. All dimensions are out-to-out of a bar except "A" and "G" on standard 180° and 135° hooks.
2. "J" dimensions on 180° hooks to be shown only where necessary to restrict hook size; otherwise standard hooks are to be used.
3. On Truss bars "J" will be kept equal to or less than "H". Where "J" can exceed "H" it should be shown.
4. On stirrups "H" dimension should be shown only where necessary to fit within concrete.
5. Critical dimensions are to be identified where bars are to be bent more accurately than standard bending tolerances.
6. On type T3 "G" dimension is equal to Case B splice.
7. Figures shown in circles show types.
8. All bar bends other than the types shown above must be designated as type "X".

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Richmond Hill, Ont. L4B 1H1  
(416) 899-4000

Unless otherwise noted diameter "D" is the same for all bends and hooks on a bar.



## 5.9 Installing Insulation

Insulation is made up of extruded polystyrene (EPS). The EPS is wire cut to fit the Octaform wall system to the dimensions 2.4 m only comes in eight feet heights (8') in height and 150mm (6") in width. The thickness of the EPS is dependent on the R values needed. The EPS has a R rating of 4.5 per inch.

1. Slide insulation into the top of the wall form until panel is full. (Check the assembly drawing to verify the side of the form to install the insulation.)
2. Once insulation is to the top of the form, cut the insulation so that it is even with the top of wall.
3. Not all Octaform panels are 150mm (6'). For all other sizes, the insulation will need to be cut on site.

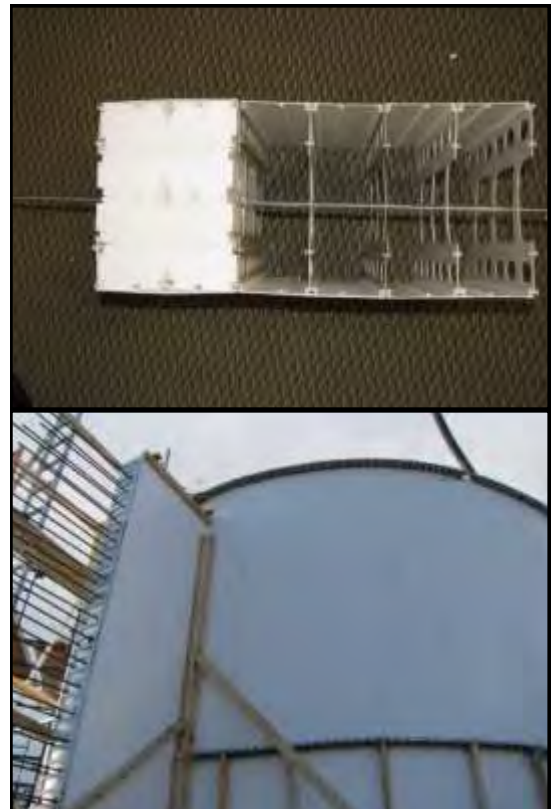


## 5.10 Cold Joints

A cold joint is used when the concrete needs to be terminated at a predetermined point.

The best area to install a cold joint is either at a T-intersection or at a corner. Do not install a cold joint over a header or on a liquid containment wall.

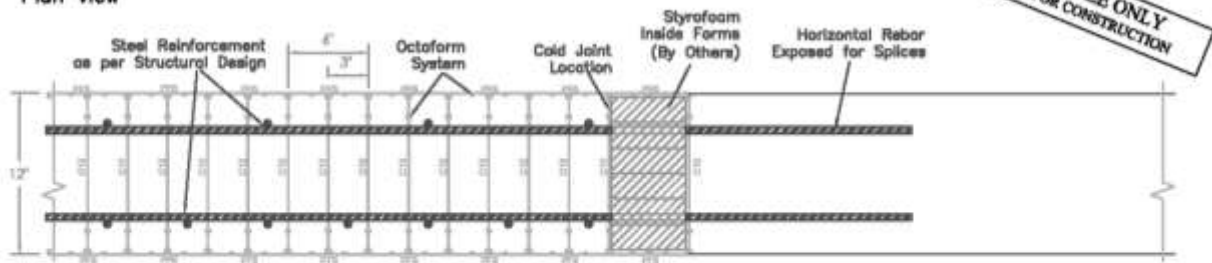
To create a cold joint, fill the last cell up with styrofoam. Place horizontal rebar through the styrofoam. Once concrete has been placed, cut webs out and remove the styrofoam. Replace webs and install more wall.



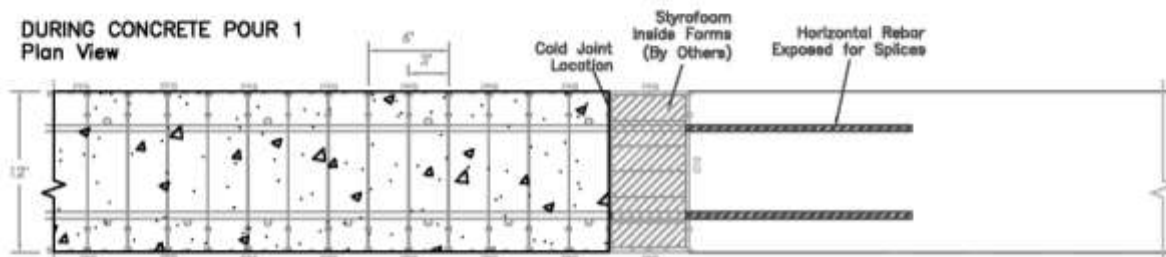


## 5.10 Cold Joints

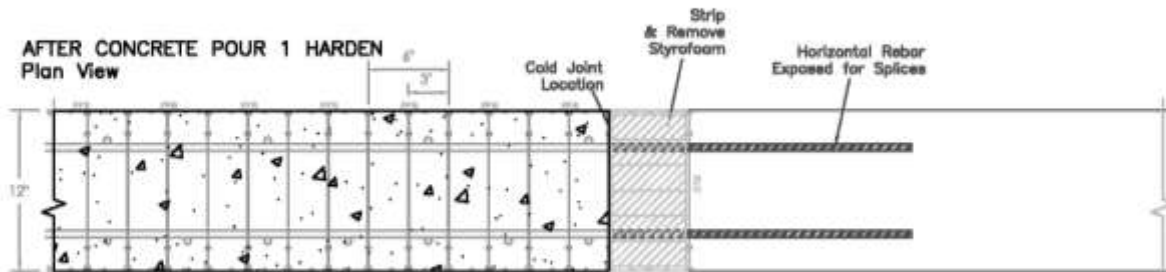
**BEFORE CONCRETE POUR 1**  
Plan View



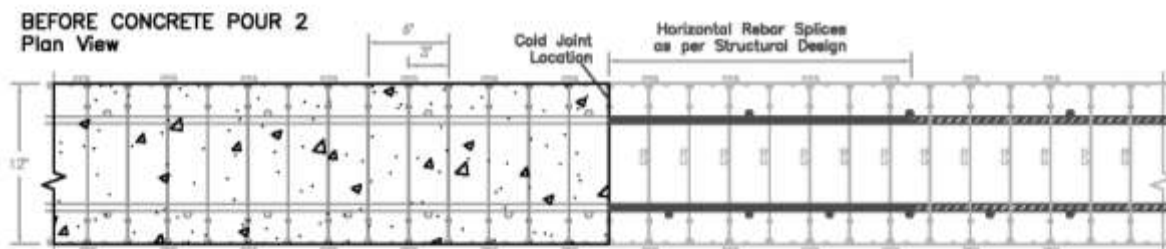
**DURING CONCRETE POUR 1**  
Plan View



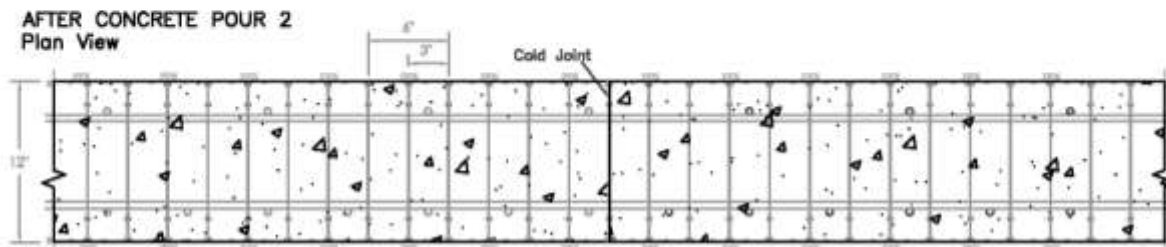
**AFTER CONCRETE POUR 1 HARDEN**  
Plan View

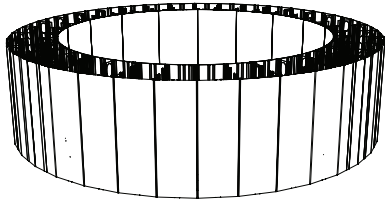


**BEFORE CONCRETE POUR 2**  
Plan View



**AFTER CONCRETE POUR 2**  
Plan View





# ASSEMBLING A TANK WITH SNAPLOCKTIGHT™

The timber crate that the Octaform parts are delivered in should be used as an assembly table on-site to minimize requirements for additional work platforms and to provide better working conditions for workers (see 3.7).

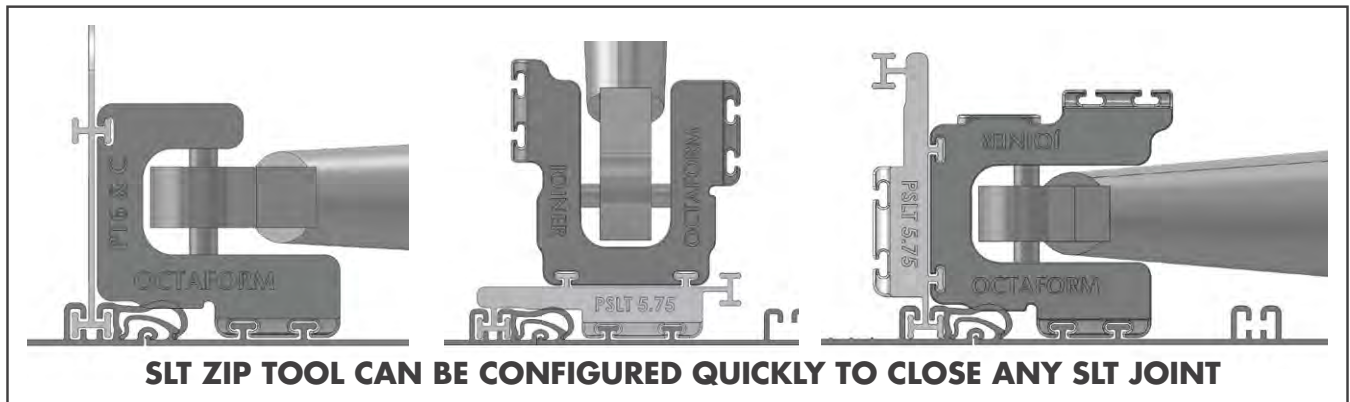
Identify the parts included in the crate before proceeding and ensure they are the correct parts for the structure under construction.

The tank wall radius often requires alternating panel widths. Consult assembly instructions for the exact configuration of tank. Panels should be pre-assembled in pairs on the crate/assembly table.



## SLT ZIP TOOL

The enclosed Zip Tool is required to close each SLT joint. This tool is multi-sided and can be modified to fit any configuration of panels and connector pieces.



The zip tool can also be attached to a rope or a pole, enabling joint closure from prohibitive heights or inside closed walls.

### PRE-ASSEMBLE PAIRS OF SLT PANELS

Lay one panel face down, lengthwise along assembly table (crate).



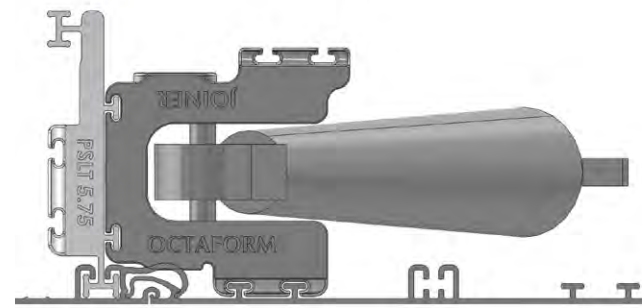
Slide top, male end of a second panel into the bottom, female end of the first panel.

Lift the female and male ends of each panel to create a slight angle allowing the panels to easily slide together.



When second panel is pushed all the way through and both ends are flush, allow the partially engaged panels to lay flat (they will not lay completely flat until after the next steps).

Using the heel of your palm, push down on the first 2-3" of the joint to initiate the second (and final) snap-lock mechanism. From this partially engaged end, you will now be able to insert the SLT zip tool.



The SLT zip tool should slide easily into the connector channels (adjacent to the joint) and over the engaged section of the locking mechanism.



Use the tool to apply leveraged pressure to the remaining section of the joint. You will feel the mechanism snap tightly into place as you slide the tool along the entire length of the two panels.



Inspect the entire closed joint to ensure that the seal is intact and closed.

Put this assembled pair aside and repeat until you have assembled all of panels required for the inside wall of the tank.



### INNER WALL ASSEMBLY

Tank assembly requires at least two installers: one positioned on the ground and one on the scaffold.



Ground installer now raises the first pre-assembled section to installer on the scaffold with the smooth side facing towards the inside of the tank.

From the top of the panel section, slide two connectors down, through the connector channels. This will add stability to this first section allowing it to be leveled.

Wiggle and adjust this first partially assembled section until it is perfectly level, then tack the panel to the top and bottom bracing.

### ADDING SECTIONS VERTICALLY

The remaining panels will slide together vertically as described in the pre-assembly section. With enough hands, sections can be added concurrently in both directions from the first tacked panels.

The SLT zip tool will be used by installers above and on the ground to close each joint. If the tank height requires it, tie a rope (approximately 2.5 X the length of the panels) to the handle of the zip tool.

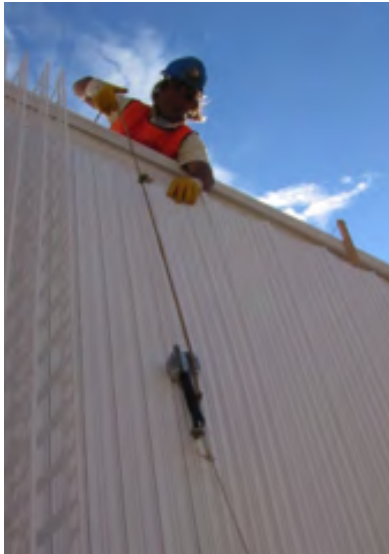
Ground installer passes next pre-assembled section to installer on scaffold.

Installer above then slides this section into place using their shoulder to guide and stabilize it. Panels are light and flexible and will drape over the installer's shoulder.

*Use care when sliding panels together. Panels may chip or crack if dropped.*



## 5.11 Tank Assembly With SLT



When panels are slid into place and flush, initiate the final joint engagement at the top of the panels by hand as in the preassembly section (2-4" will allow the tool to slide into the connector channels).

Use the tool to apply leveraged pressure to the remaining section of the joint. For higher walls, a ground installer can assist by pulling the rope attached to the tool. Do not tug/jerk the tool – if properly engaged, it should move smoothly. At the bottom, an audible snap will indicate that the joint is closed. The tool should then be slid back up and out through the top of the wall section. This will also ensure a closed seam.

Continue this process around the inside perimeter of the tank, leveling and tacking panels at the top every 4 feet.

Connector pieces may now be added (optionally by a third installer) as per the assembly drawings.

## CLOSING THE INNER WALL

Your assembly drawings specify the precise combination of panels to create an inner tank wall that will connect perfectly to the outer panels. SLT joints, however, close very tightly and will not tolerate imperfect measurement. In the likely event that the installation is not perfect, a combination of enclosed adjustment panels will close the tank (1", 1.5", 2").

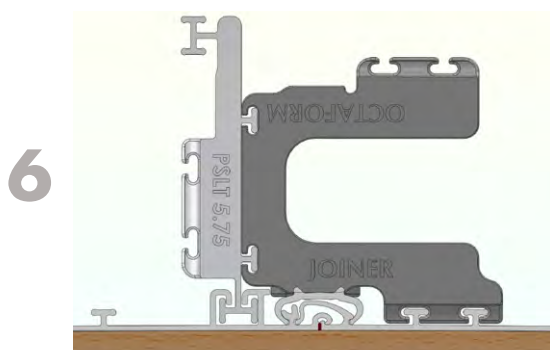
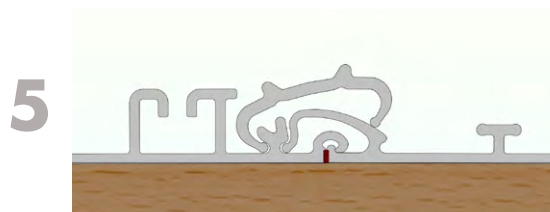
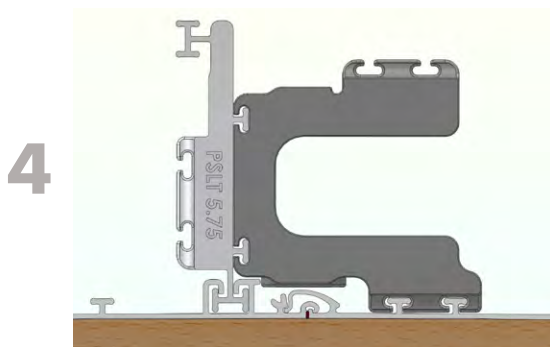
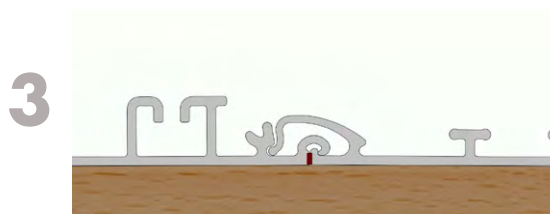
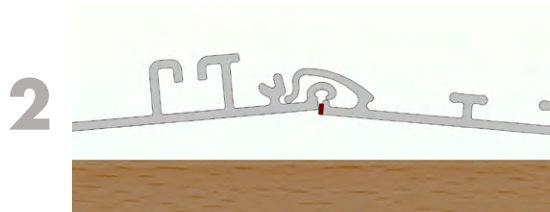
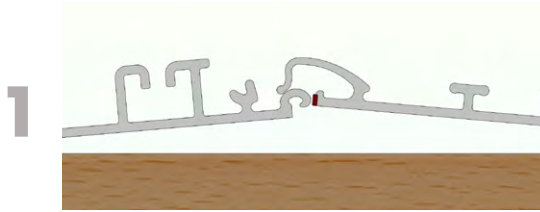
While it is possible to simply close the inner wall with a panel that fits into the last remaining space, this is not ideal and it may unnecessarily complicate the connector configuration and insulation in that section. Where possible, it is preferred to balance a variation over multiple panels.

For example, instead of using a 2" panel to make up for a couple of inches gained, consider a configuration of alternating 5.75" and 6" panels that achieve the same linear distance.



With a few simple calculations (REMEMBER TO INCLUDE THE FINAL JOINER PANELS), it is usually possible to adjust on the fly, while still maintaining relative panel/cell consistency. Assemble as directed until about 10 linear feet remain to be installed. Ten feet will be sufficient to measure, calculate and make slight adjustments to the configuration.

### FINAL JOINER PANEL



In most cases, wall bracing & scaffolding will obstruct and prevent the closing of the inner tank wall with a standard SLT joint. It may be possible to temporarily remove or adjust bracing/scaffolding to accommodate the final SLT panel but the enclosed Joiner Panel and Clip makes this unnecessary.

The Joiner Panel closing mechanism functions no differently than SLT. Its final engagement (snap) is achieved with a second piece (Clip), allowing it to connect at an angle requiring very little clearance.

Engage the Joiner panel with the standard SLT panel (steps 1-3).

Use zip tool to ensure engagement (4).

Slide the Clip down over the Joiner Panel side of the joint (5). The clip should slide easily and be held loosely in place by the connector panel, ready to be snapped over the joint.

Once the clip is in place, initiate the final engagement, by hand, over the top 2-3" of the joint

The side of the SLT zip tool marked "Joiner" should slide easily into the connector channels (adjacent to the joint) and over the engaged section of the Clip mechanism (6).

Use the tool to apply leveraged pressure to the remaining section of the joint. You will feel the mechanism snap tightly into place as you slide the tool along the entire length of the two panels.

### REBAR PLACEMENT

Double-check all connector pieces for compliance with assembly instructions and place rebar as specified by a structural engineer. Rebar should only be placed through the large center holes of the connector webs. Rebar should be tied up to the vertical bars and not reliant on the connector webs for support.

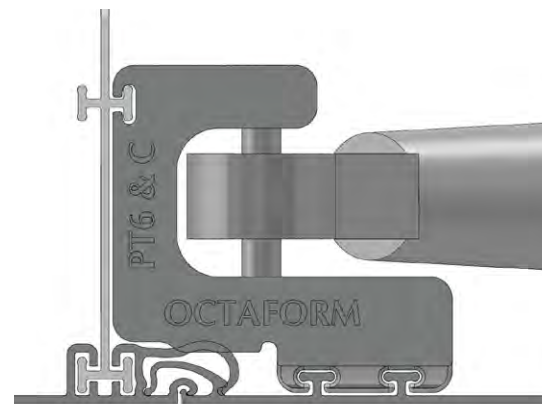


### OUTER WALL ASSEMBLY

Consult assembly instructions for the configuration of the outer tank wall.

If SLT is specified for the outer wall (usually in shared wall tanks), the assembly process changes slightly and will require some modifications to the SLT zip tool.

Ground installer will not be able to access the tool on inside of the wall. The tool should be attached to the end of a rigid pole, long enough to extend beyond the height of the wall. This will allow the above installer to close the entire joint. The SLT zip tool is designed to accommodate all likely configurations.



**SLT ZIP TOOL CAN BE CONFIGURED TO CLOSE SLT WITH CONNECTOR IN PLACE.**

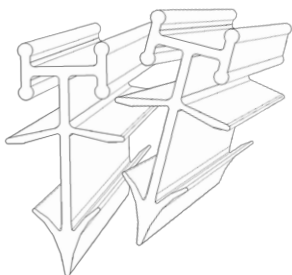
If SLT has not been specified for the outer wall, the SLT zip tool will no longer be needed and panels will slide easily into place as per the assembly instructions.



# INSULATION

If specified, insulation pieces will be custom cut to slide easily into the cells of the wall.

Prior to installation, consult assembly instructions for the exact configuration and insert the enclosed Insulation Clips into the Insulation as required. These will prevent movement during concrete pour.



Slide insulation pieces into the closed wall, taking care to ensure that the clips slide into the connector channel.



# MOUNTS & PENETRATIONS

Octaform formwork can accommodate most mounts and penetrations with relative ease. It is important to understand, however, that any penetration or cut into the Octaform panels creates an opportunity for the wall to be compromised, particularly at the panel joints.

Octaform will work with your team to specify sealant and installation guidelines to meet your project's unique demands and circumstances.

# BIOGAS APPLICATIONS

SLT is designed to be watertight and gastight without the need of additional sealants. In Biogas applications, however, a secondary sealant is required over the joints in the gas zone. This application should be done after the concrete pour to ensure that in the rare occasion a joint has been compromised (during handling, construction, pour) the tank will remain gaslight.

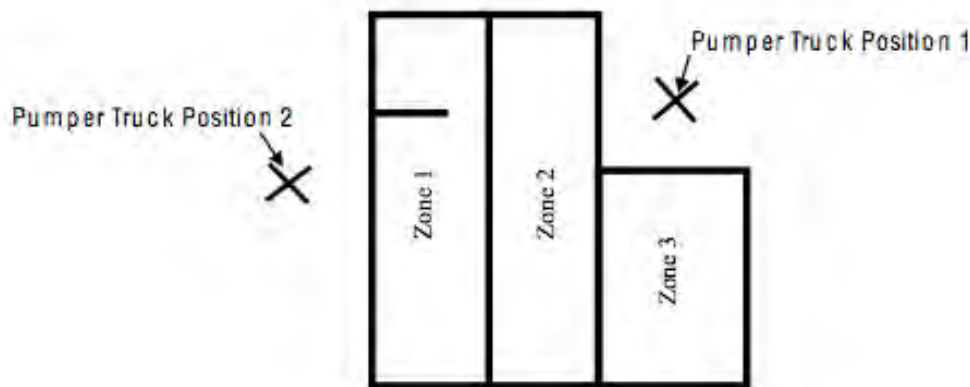
## 6.0 CONCRETE PLACEMENT

Before placing concrete in the Octaform walls, a final detailed inspection should be completed, in particular for panels that may be missing, insulation that is improperly fitted, stability of the bracing system and any other unusual defects.

A concrete pour schedule and plan should be established prior to ordering of concrete to site.

1. It is recommended to begin with pouring of the exterior walls.
2. When planning the concrete pours, ensure that there is sufficient space for equipment to maneuver in the space available. This may affect how much concrete is poured at one time.
3. Concrete should typically be placed in the Octaform wall system at a rate of no more than 4' (1.2m) height lifts per 60 minutes. If increased rates are required, please discuss with your sales representative.
4. Pour two lifts of concrete in the exterior walls before placing the first lift of concrete in the interior walls. This will help to relieve the pressure of the concrete at any T-intersections.

As per traditional concrete walls, concrete can be placed in the Octaform walls by various methods including pumper truck, line pumper and hopper.



## 6.1 Concrete Pumper Truck

Concrete Pumper Trucks are used for tank construction and large builds. When using a Concrete Pumper Truck the following needs to be considered:

1. The size of the job will determine the size of the pumper trucks needed. Ordering the proper truck size will reduce the amount of times a pumper truck will need to be moved.
2. Before the Pumper Truck arrives, have a chosen location cleared for the pumper truck to set up. The location should allow the pumper truck to access all or majority of the walls. In addition, the location should be easy to access by concrete trucks.
3. There is a need to slow the concrete coming out of the Pumper Truck. This is done by installing a 3" to 4" rubber hose at the end of the concrete line.
4. When pouring, keep eye contact with pumper truck driver at all times.
5. Make sure there is a pour plan before pouring.



## 6.2 Concrete Line Pumper

Concrete Line Pumps are used for medium builds or areas a Pumper truck cannot fit. When using a Line Pumper the following needs to be considered:

1. Before the Line Pumper arrives, have a location picked and clear for the Pumper truck to set up. The location should allow the Line Pumper to access all or majority of the walls. The location should also be easily accessible by concrete trucks.
2. When using a line pumper, ensure that you have sufficient workers on hand. It is also important to have a pour plan in place before pouring.
3. Have enough support to hold the line at the top of the bracing.
4. When pouring keep eye contact and communication with Pumper truck driver at all times.



## 6.3 Hopper

Hoppers are used for small builds or when there is a lack of other concrete placing equipment. When using a hopper the follow needs to be considered:

1. There must be enough room to drive equipment around the build.
2. All the walls must be able to be reached by the hopper.
3. Have a pouring plan before pouring and keeping eye contact with pumper at all times.





## 6.4 Top of Wall Finish

1. Place concrete 150 mm (3") higher than the Octaform wall.
2. Using a hand trowel or a "2x4", screed off the excess concrete.
3. Trowel to preferred finish.



## 6.5 Concrete Mix Design

The concrete mix design and selection of aggregates shall provide a mix that will flow easily through the connectors and 45 degree braces with minimum vibration and will minimize the fluid pressure on the face of the wall components.

If concrete mix is not specified by an engineer a typical mix for Octaform is:

- Min. 28 day compressive strength 20 MPa (3000psi) to 32MPa (4600psi)
- Water to cement ratio of 0.55
- Max. aggregate size 12mm (1/2")
- Superplasticized slump 125 mm (5") to 180mm (7") at the point of discharge plus or minus 12mm (1/2")

Note: This is only the suggested concrete mix design. Concrete should be specified by an on-site engineer.



## 6.6 CONCRETE POUR RATES

Concrete being placed in the wall forming system made by OCTAFORM™ Systems Inc. should be poured such that the maximum concrete pressure does not exceed a 600 psf (29 kPa) pressure on the form wall area. This maximum concrete loading results in a safety factor of 2 as recommended by the American Concrete Institute (ACI).

Table 1 below provides information on acceptable pour rates for different ambient air temperature. For OCTAFORM™ PVC forms a line has been drawn across the table such that the values above (in shaded cells) the green line do not exceed the design form pressures.

**TABLE 1: ACI MAXIMUM LATERAL PRESSURE, POUNDS PER SQUARE FOOT FOR AMBIENT AIR TEMPERATURES (OCTAFORM™ RECOMMENDATIONS SHADED GREY)**

Rate of Placement	90°F	80°F	70°F	60°F	50°F	40°F
1 foot per hour	250	262	278	300	330	375
2 feet per hour	350	375	407	450	510	600
3 feet per hour	450	488	536	600	690	825
4 feet per hour	550	660	664	750	870	1050
5 feet per hour	650	712	793	900	1050	1275
6 feet per hour	750	825	921	1050	1230	1500
7 feet per hour	850	938	1050	1200	1410	1725
8 feet per hour	881	973	1090	1246	1466	1795
9 feet per hour	912	1008	1130	1293	1522	1865
10 feet per hour	943	1043	1170	1340	1578	1935

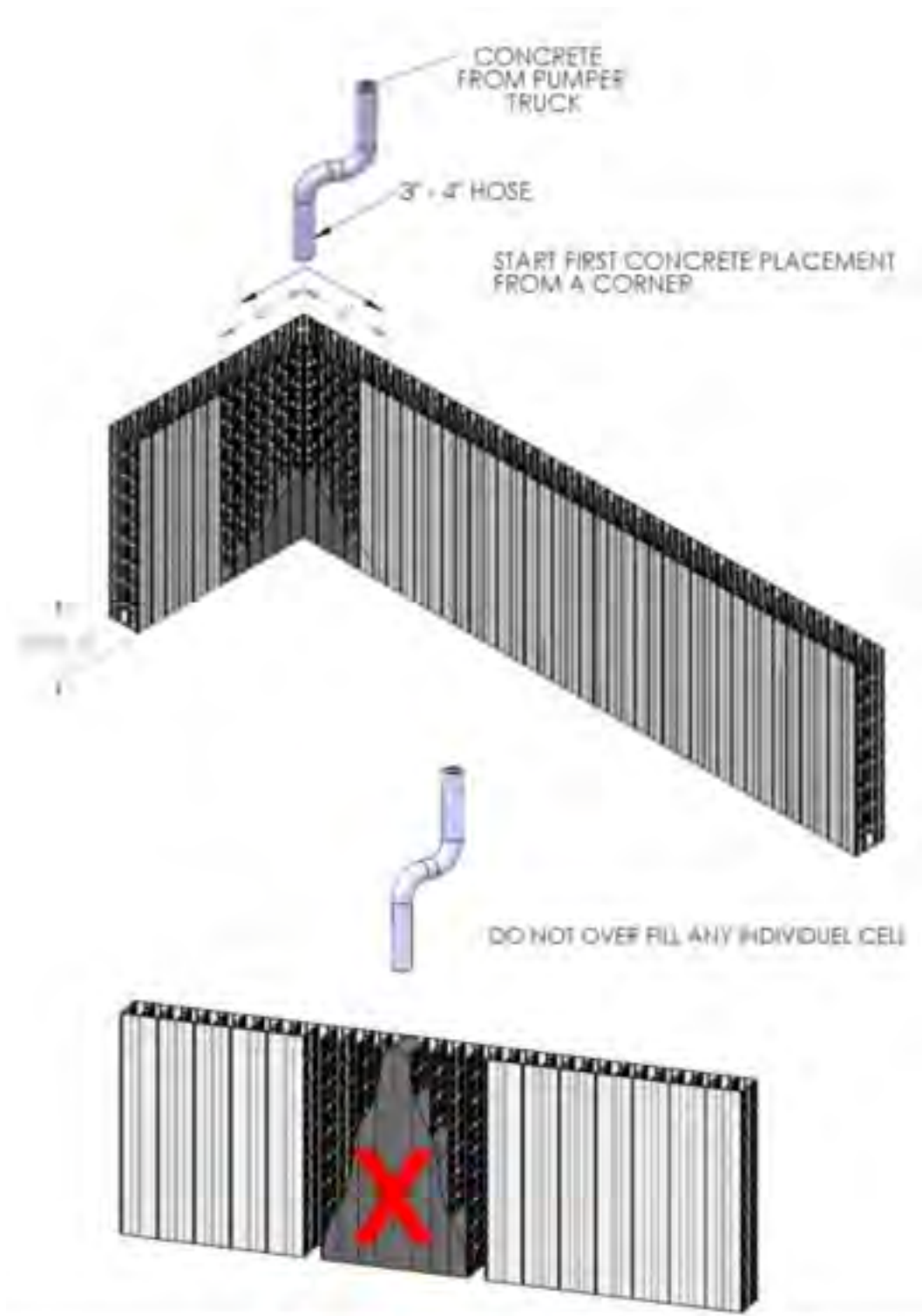
In Table 2, note that actual concrete pour rates versus ambient air temperature for OCTAFORM™ PVC forms range from a high of 4.5 feet per hour to a low of 2 feet per hour based on ambient temperatures of 90°F and 40°F respectively are provided.

**TABLE 2: MAXIMUM ALLOWABLE CONCRETE POUR RATES WITH OCTAFORM™**

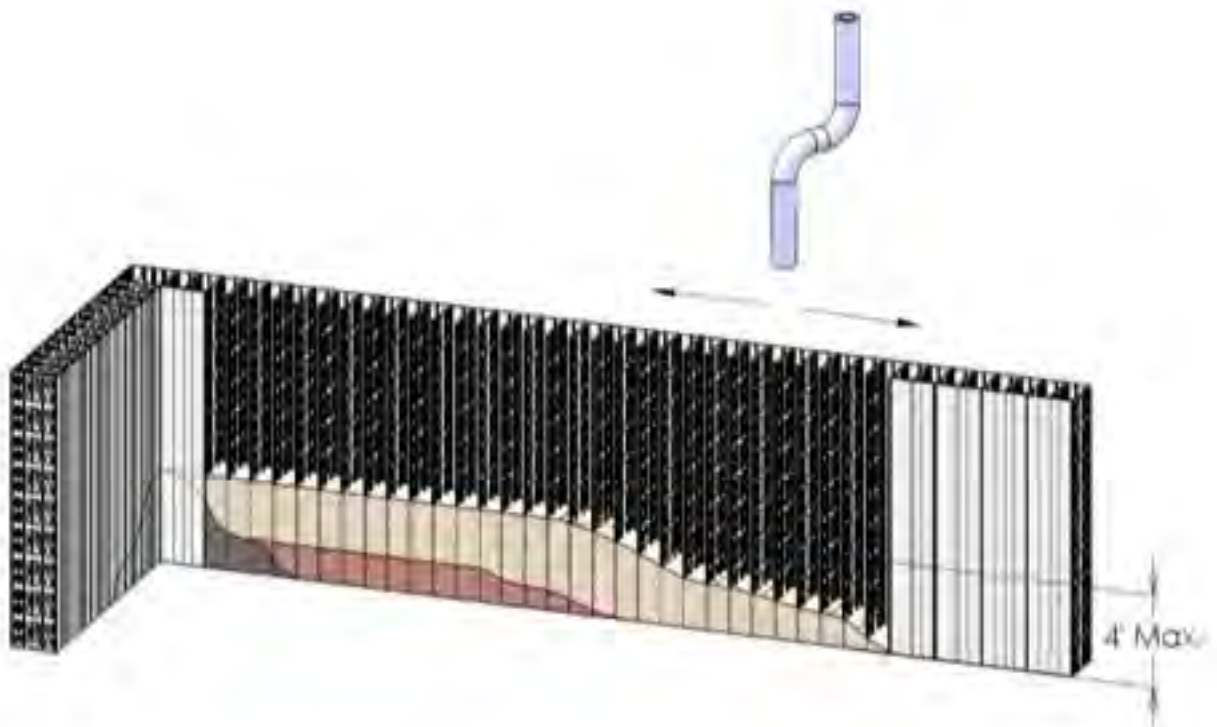
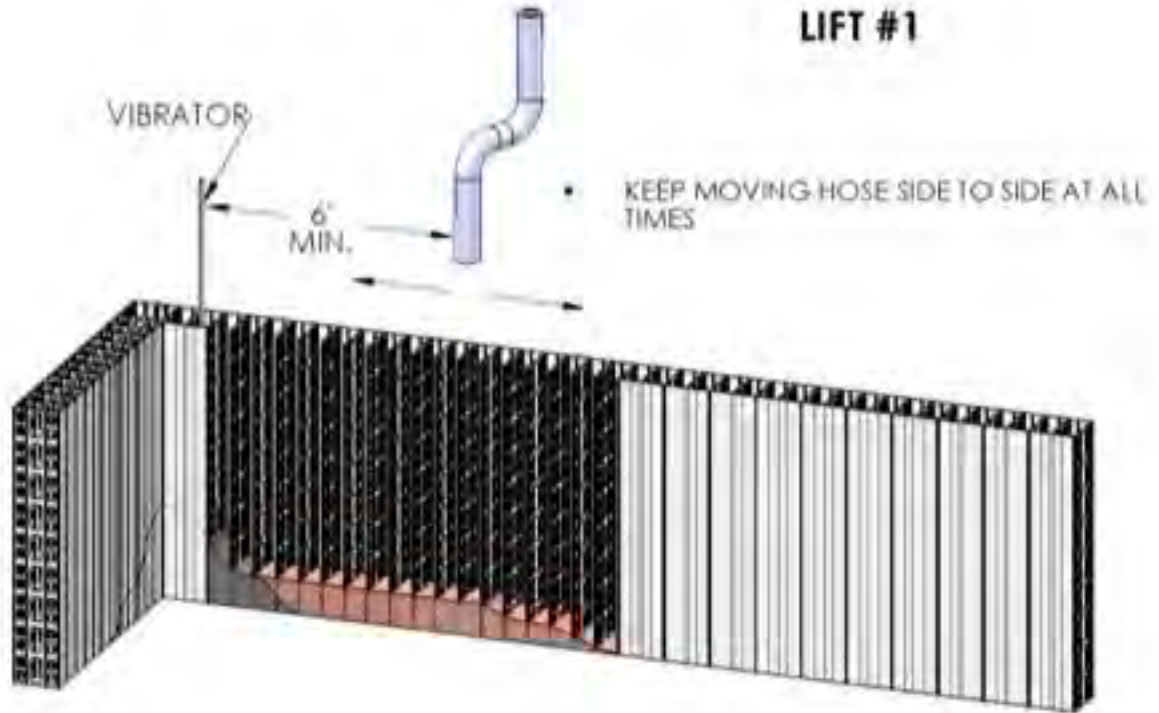
	Ambient Air Temperature					
	90°F	80°F	70°F	60°F	50°F	40°F
Concrete Pour Rates, feet per hour for OCTAFORM™ PVC Forms	4.50	3.64	3.61	3.00	2.61	2.00

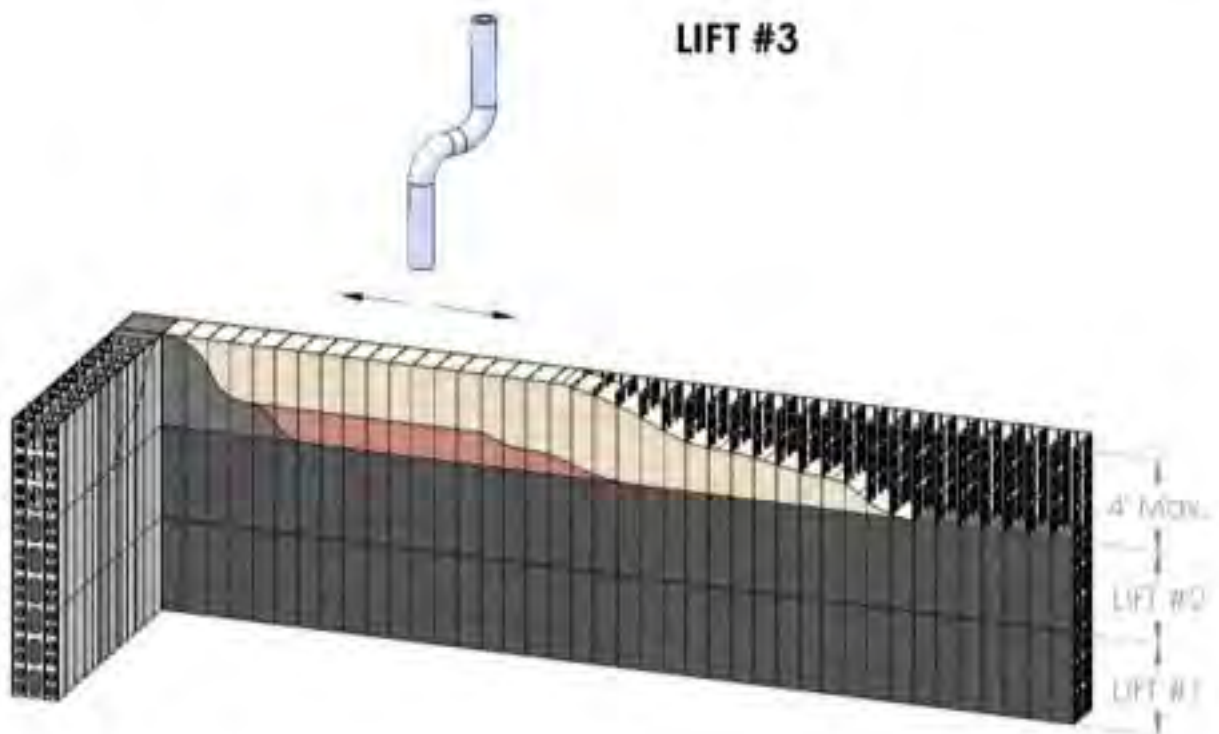
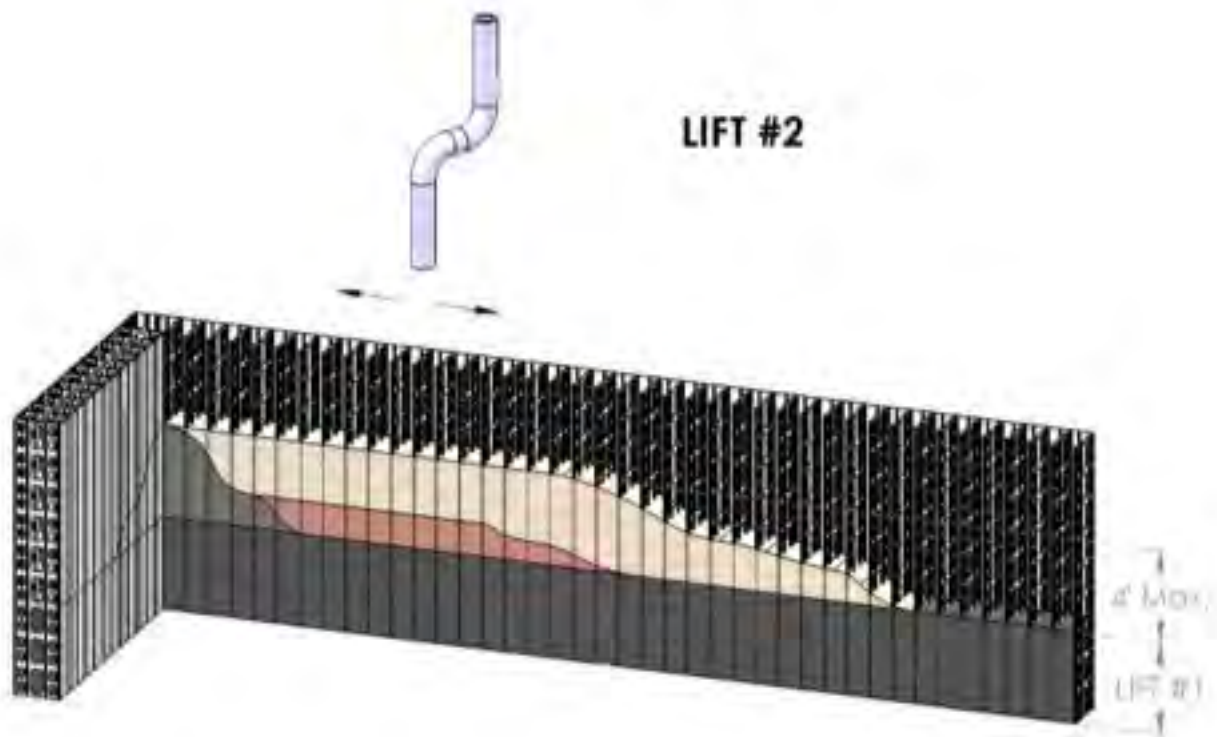
## 6.6 CONCRETE POUR RATES

Concrete being placed in the Octaform system should be poured such that the maximum concrete pressure does not exceed a 600psf (29kPa) pressure on the form area. The typical pour rate is up to 1.2m (4Ft) per 60 minutes.



## LIFT #1







## 6.7 Vibration (Consolidation)

There are 2 types of concrete vibrators: external and internal. The most common used with Octaform is internal vibration.

Right after placement, concrete vibration should begin. Try to keep a 3.6m (6ft) distance between the concrete being placed and the vibration.

Vibration will help eliminate honeycombing, pockets of voids and air bubbles to maximize the strength of the concrete.

Use the chart to determine the sizing of the concrete vibrator.



Head Diameter	Radius of Action (R- inches)	X = 1 1/2 Times Radius of Action	Amplitude Centerline to Side (inches)	Centrifugal Force (pounds)	Compaction Rate (cu. yds. / hour)
Steel Heads					
3/4"	3	5	0.03	155	1-3
1"	4	6	0.04	220	2-4
1 1/4"	5	8	0.04	510	2-5
1 1/2"	6	9	0.05	920	5-8
1 3/4"	9	14	0.08	1200	8-16
2"	11	17	0.075	1500	12-20
2 1/2"	13	20	0.08	1850	23-30
Rubber Heads					
1 1/2"	9	13.5	0.075	1050	9-13
1 7/8"	11	16	0.09	1400	10-18
2 1/2"	14	20	0.12	1900	14-22
2 3/4"	18	27	0.12	2100	25-35
2 3/4" short	15	22	0.12	1100	9-15

## 6.8 Washing

The Octaform wall system needs to be washed before the concrete placement and immediately after placement of concrete.

A thorough cleaning of the PVC walls should be done with a power washer. For some areas, a broom maybe be needed to scrub the walls.



## 7. Finish

### 7.1 Installing Wood Trusses

1. Place sill gasket on top of wall.
2. Place a plate with a minimum dimension of 2" to 6" top of the sill gasket. Make sure the lumber is over the top of the outside panel.
3. Anchor the top plate to the top of the wall by previously placed J anchors or by drilling into the top of the wall and place in wedge anchors.
4. Dimensional lumber may need to be placed at the bottom of the trusses for furring.



Top plate

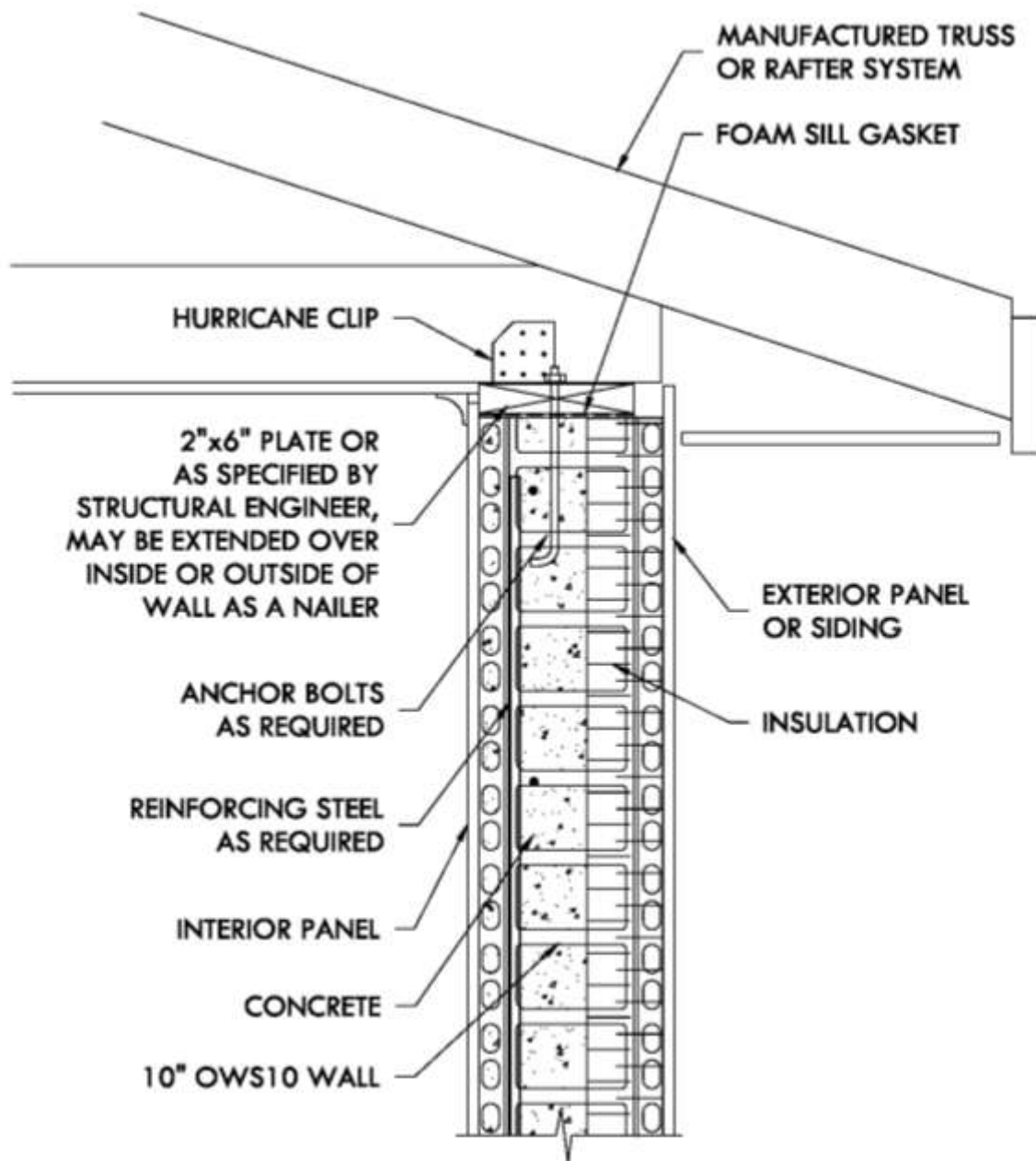
Truss

Furring

Anchor



## Truss Connection to Exterior Wall



## 7.2 Installing Steel Trusses

### 7.2.1 Top of Wall Install

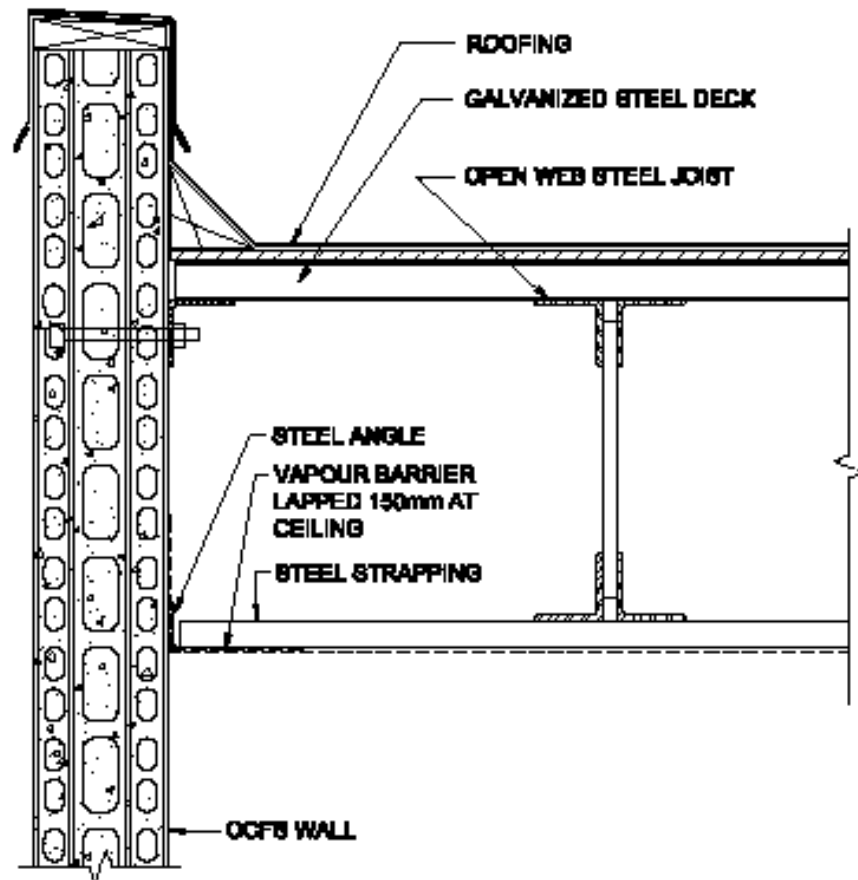
1. Before placing concrete in the form mark, out the location of the steel plates that will be embedded into the concrete.
2. After the walls are filled with concrete, place steel plates into the freshly placed concrete.
3. Once the steel plate is in the concrete, use a concrete vibrator to consolidate concrete around the nelson stud.
4. Place steel truss and weld to embedded steel plates.



### 7.2.2 Mid Wall Install

1. Before walls are poured, measure up the form to the level the anchors are placed. Mark two points on the form
2. Snap a chalk line between the two marked points. Measure and mark off the anchor point on the form.
3. Drill a hole the size of the anchor at marked off location.
4. After wall is poured, place anchors in wet concrete, then vibrate to consolidated concrete around anchor.

## Exterior Wall and Steel Deck



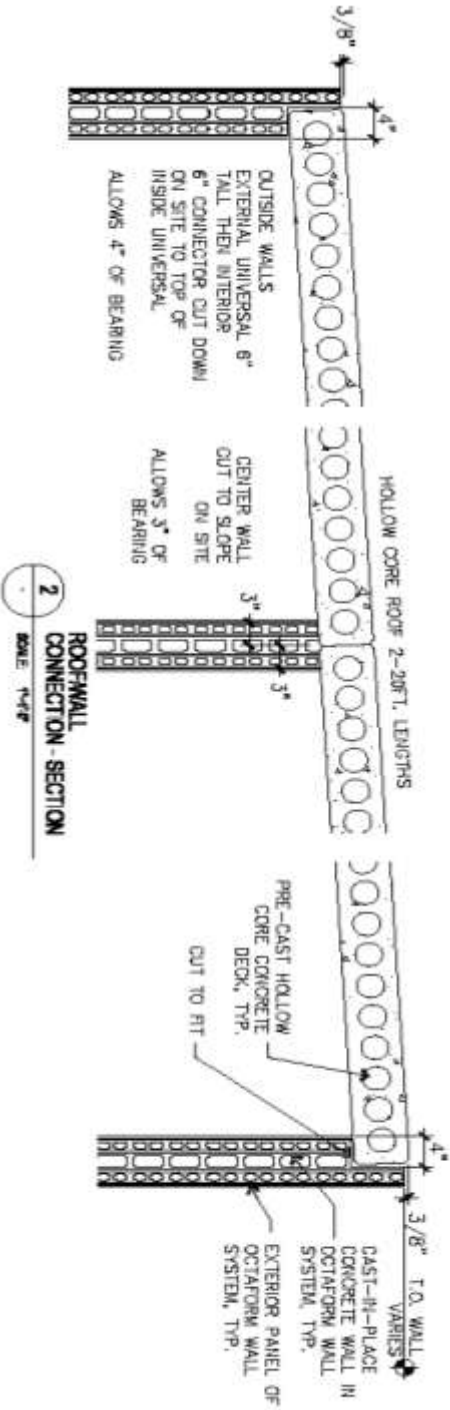
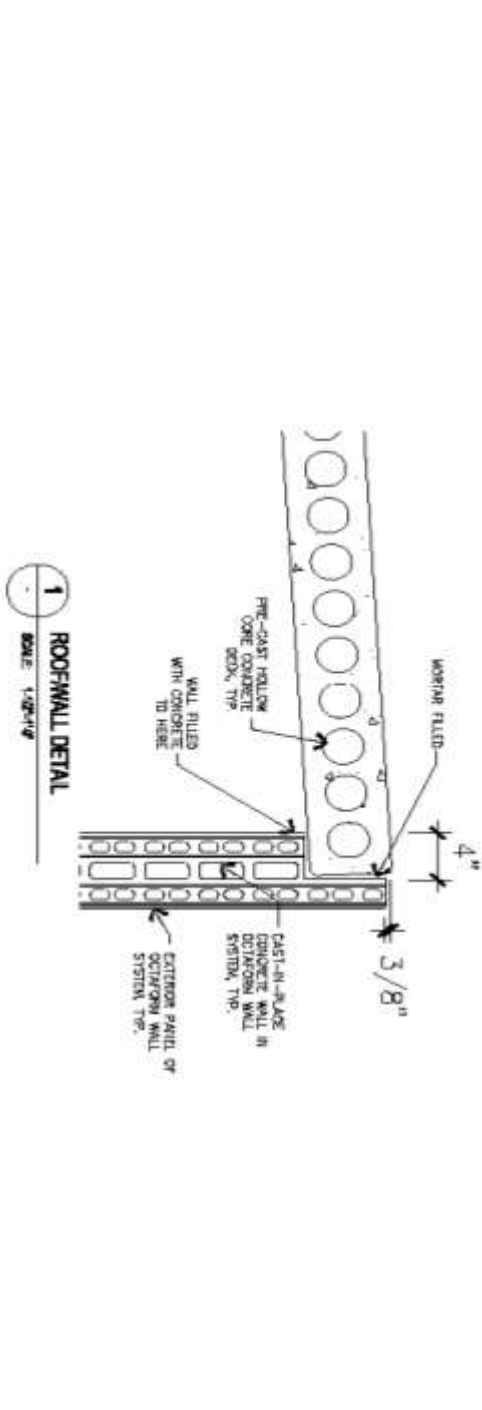
### 7.3 Installing a Precast Concrete Roof or Floor

1. Install Octaform wall panels.( Refer to Section 5.1 Installing Wall Panels)
2. Add a guide board to the side that will be shorter.
3. Using a grinder or a reciprocating saw, cut the panels and connectors using the guide board.
4. Remove excess material and fill with concrete.



Guide Board

Exterior Wall and Steel Deck



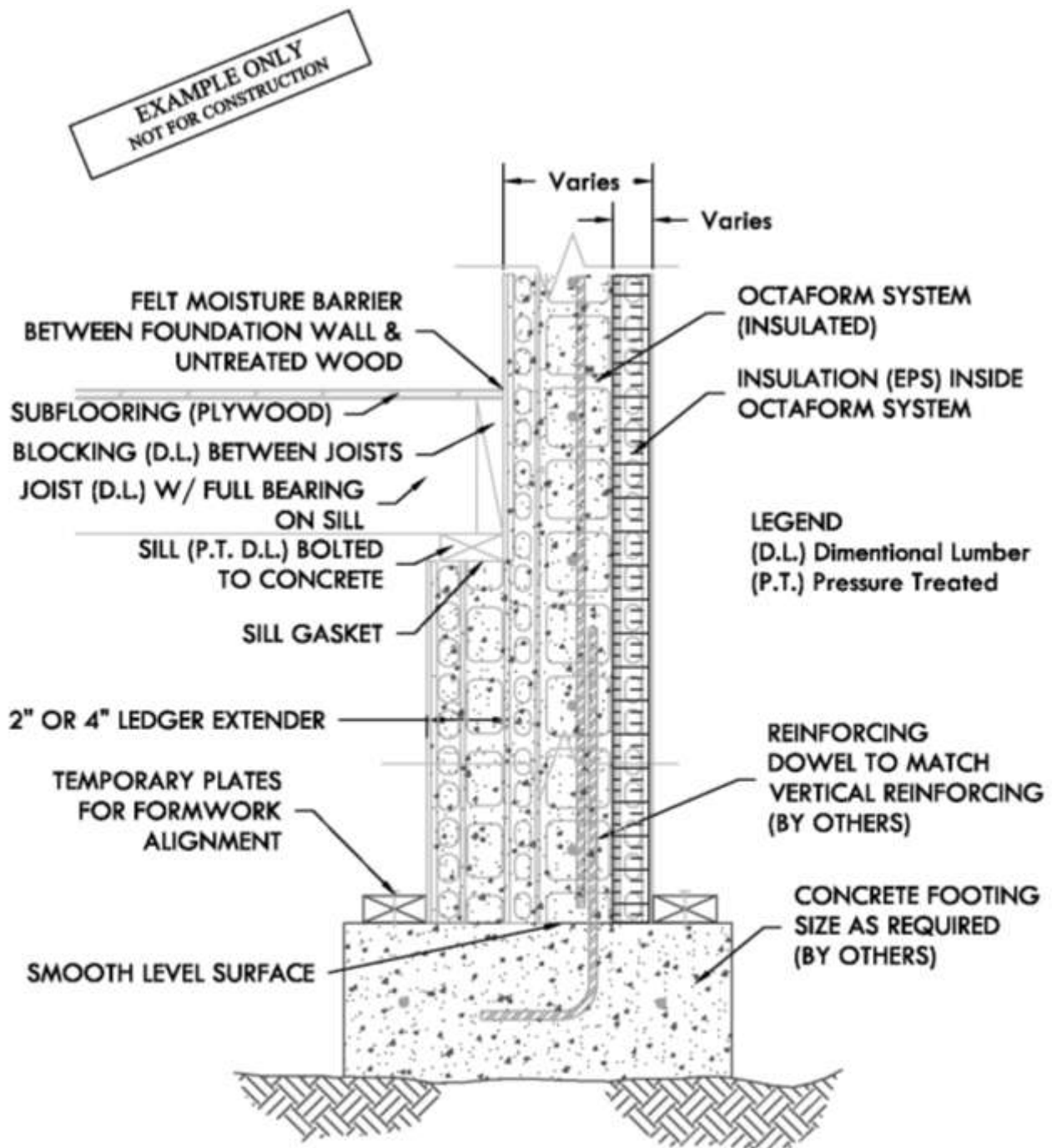
## 7.4 Installing Wood Floors

1. Before walls are poured, measure up the form to the level the anchors are placed. Mark two points on the form.
2. Snap a chalk line between the two marked points. Measure and mark off the anchor point on the form.
3. Drill a hole the size of the anchor at marked off location.
4. After wall is poured, place anchors in wet concrete, then vibrate to consolidated concrete around anchor.
5. Pre-drill ledger board to match cast in place anchors.
6. Install and bolt ledger board to wall.





## 7.4 Installing Octaform Systems Wood Floors



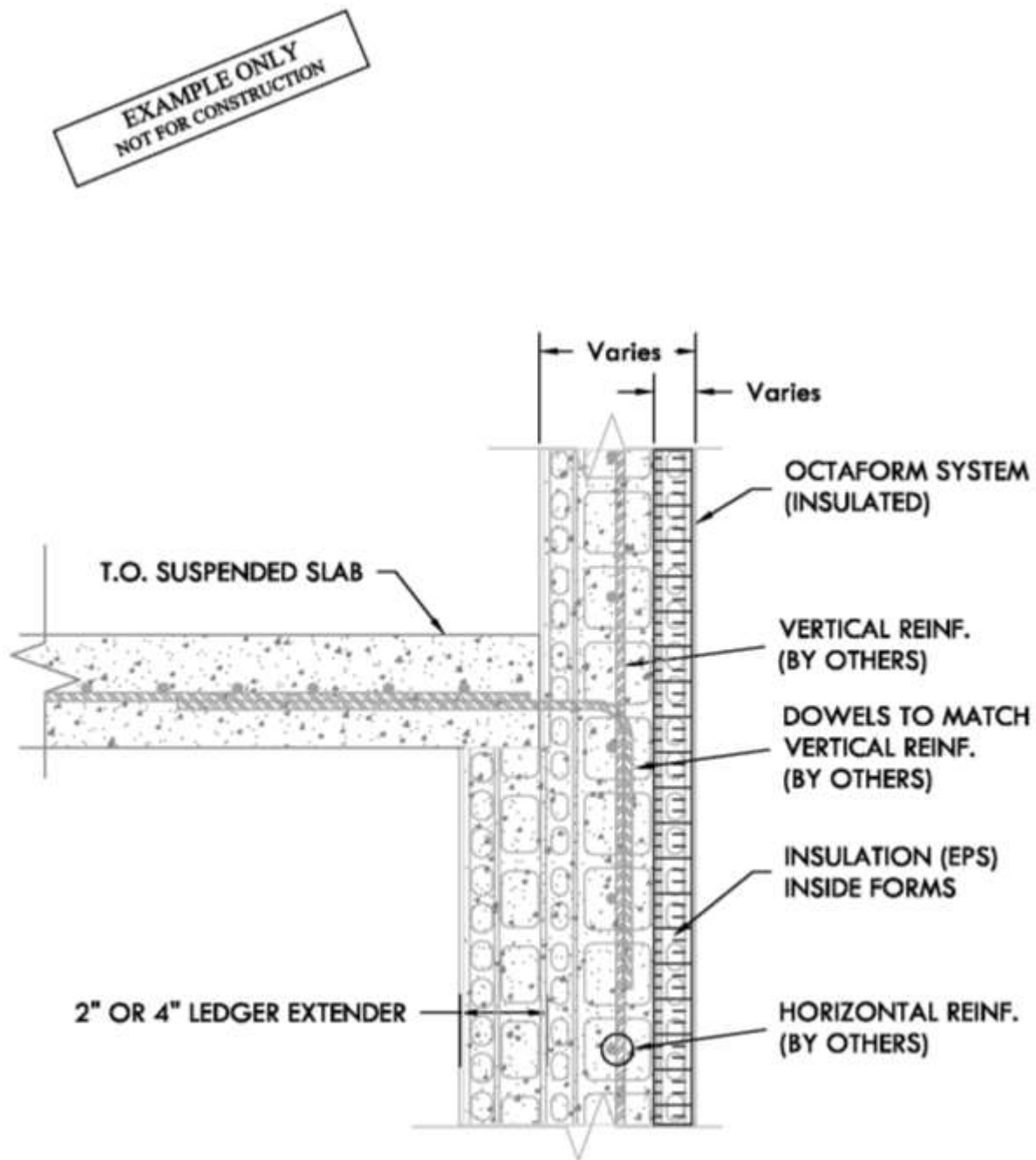
## 7.5 Installing Concrete Floors

1. Assemble the wall panels on work table.
2. Slide ledger webs onto connectors.
3. Slide top 150mm (6") panels onto ledger webs and connectors.  
(The panels may need to be cut on site. Refer to assembly drawings.)
4. Install wall panels and brace.
5. Before walls are poured, measure up the form to the level the rebar is placed. Mark 2 points on the form.
6. Snap a chalk line between the 2 marked points. Measure and mark off the rebar points on the form.
7. Drill a hole the size of the rebar at marked off location.
8. After wall is poured, place rebar in wet concrete, then vibrate to consolidated concrete around rebar.
9. Use preferred forming methods to form the concrete floor.





## 7.5 Installing Concrete Floors



## 7.6 Installing Steel Floors

1. Before walls are poured, measure up the form to the level the anchors are to be placed. Mark two points on the form.
2. Snap a chalk line between the 2 marked points. Measure and mark off the anchor point on the form.
3. Drill a hole the size of the anchor at marked off location.
4. After wall is poured, place anchors in wet concrete, then vibrate to consolidated concrete around anchor.
5. Pre-drill ledger board to match cast in place anchors.
6. Install and bolt ledger board to wall.



## 7.7 Installing Interior Walls

1. Frame wall.
2. Install vapour barrier on framed wall that will be attached to the Octaform wall.
3. Place wall against Octaform wall and anchor by drilling in anchor, powder actuated tool or fastening into the vertical Octaform panel seam.



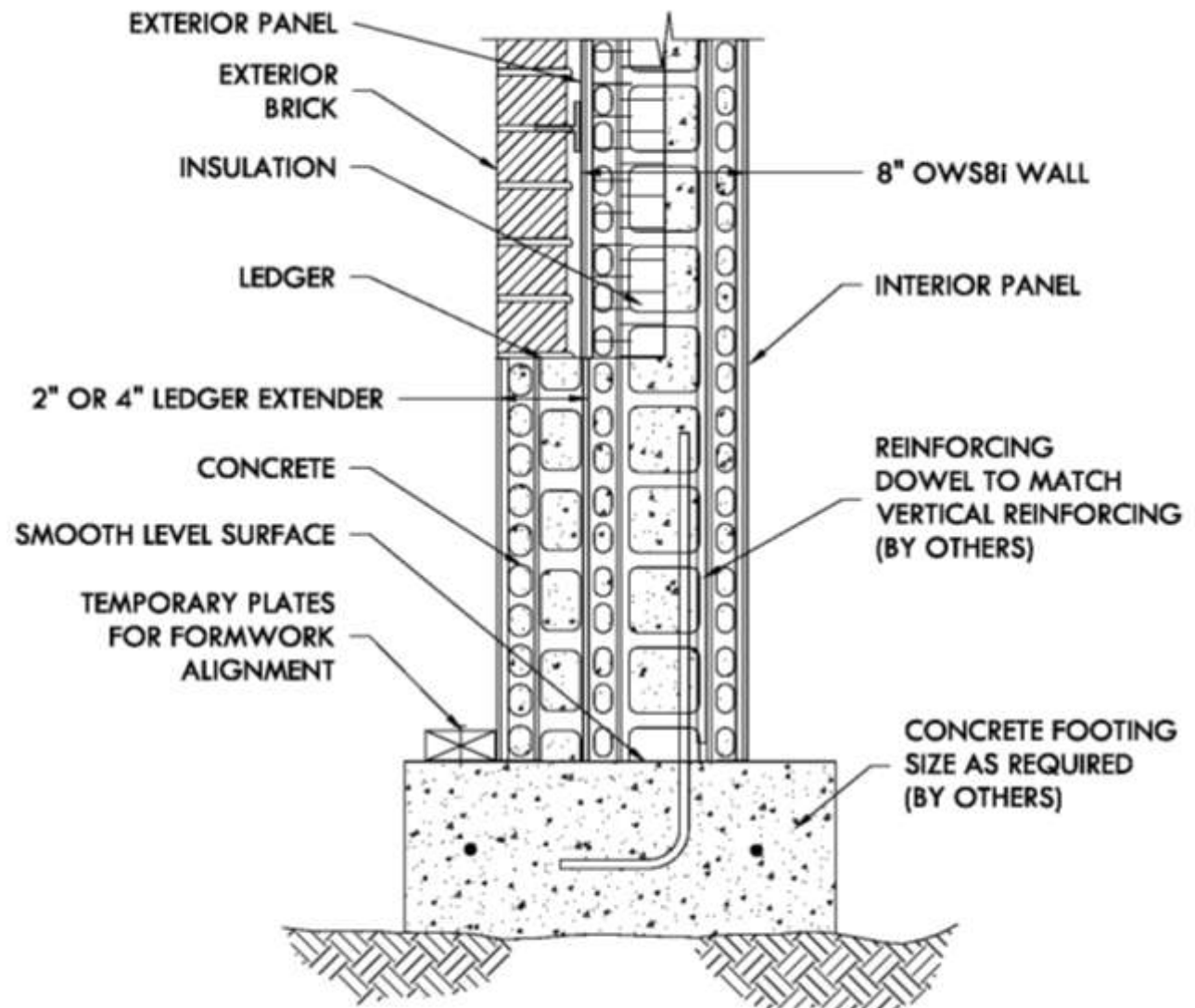
## 7.8 Installing Brick

Because of Octaform's versatility, a brick ledger can be incorporated into the Octaform wall by adding the ledger connector to the common connector.

Brick can be installed by attaching brick ties to the Octaform connectors. Refer to the jobs blue prints for brick ties spacing.



## Typical 8" Wall Outside Ledger Detail

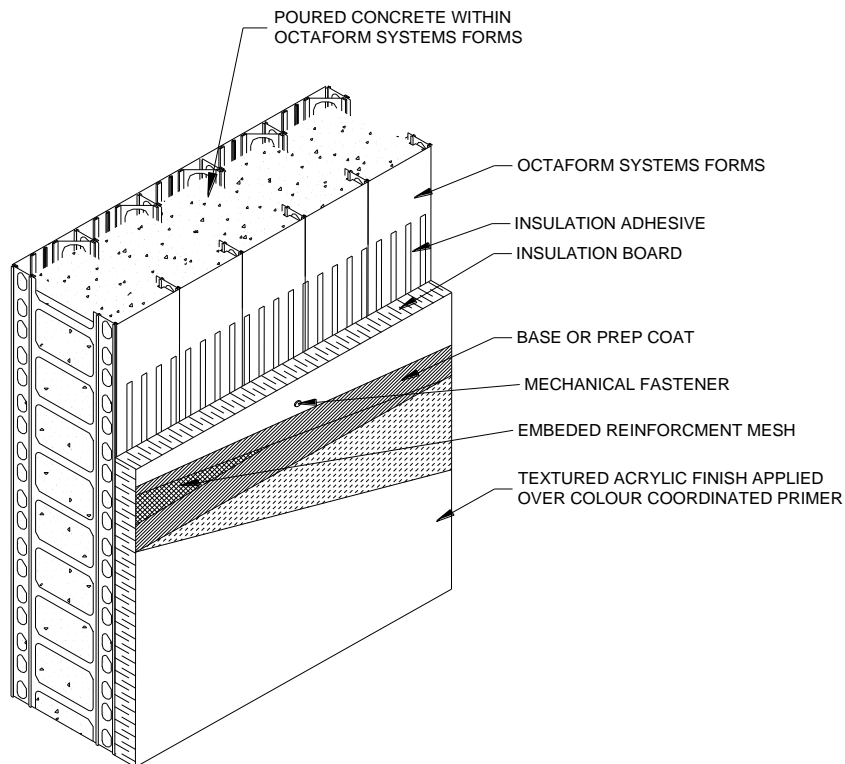


## 7.9 Installing Stucco

### EIFS System Method

Insulation board must be properly fastened to the Octaform prior to installation of the stucco application. The insulation board can be mechanically fastened to the Octaform wall or glued using an approved adhesive.

Once the insulation board is applied, refer to manufacturers' guidelines for proper stucco application over the insulation.



## 7.10 Caulking

When applying caulking to Octaform, a primer may need to be applied first to help the caulking adhere to the Octaform.

Check manufacturer's recommendation for caulking guidelines.



# Repairs

## 8.1 Wall Repair

Even though Octaform is a durable forming system, damage can still occur to the wall. The most common damages are gouges and holes in the Octaform wall. These can be fixed with off-the-shelf products.



### Step 1 Remove Damaged PVC

Cut out and remove the damaged PVC in a rectangular shape. Remove any loose material.



### Step 2 Prep Surface

Using masking tape, mask off a perimeter 25mm (1") from the cut out area. Sand the masked off area with 80 grit sand paper.





### Step 3 Fill and Patch Hole

Using automotive body filler, patch hole with plastic trowel.



### Step 3 Sand Patch

Sand patch until smooth and until all edges are removed. Use 120 grit sandpaper then 600 grit wet dry sandpaper. Sand the PVC around the patch with the 600 grit.



### Step 4 Paint the Patched Area

Using an automotive spray paint (match colour with a sample panel) spray patched area in layers.



## 8.2 Bulge Repair

When pouring concrete, bulging can occur. Bulging is caused by two issues; the most common reason is that components are missing in the form and the second is a connector has been damaged and not replaced during assembly.



1. If a bulge is noticed, stop the pouring of concrete in that section.
2. The concrete will then have to be released to remove the bulge.
3. To release the concrete, cut up the center of the panel using a grinder and remove the cut panel.
4. Once the panel is removed, clean the concrete out and clean the inside of the form with water, making sure the T's on the connectors are clean.
5. Check to see if parts are missing or if the connector is damaged.
  - If center connectors are missing, replace the connector with four 45 braces.
  - If 45 braces are missing, install the 45 braces.
  - If connector is damaged, use heavy duty zap straps through the connectors and brace both sides of the wall.
6. Replace panel and add extra bracing as needed.
7. Continue pouring concrete.

### 8.3 Blow Out Repair

Octaform system is a durable forming system that can take up to 600 lbs per square foot of pressure from concrete. When pouring concrete blow outs can occur. Blow outs occur because of one of four issues; damaged parts, improper installation, over vibration or too high of a concrete pour.

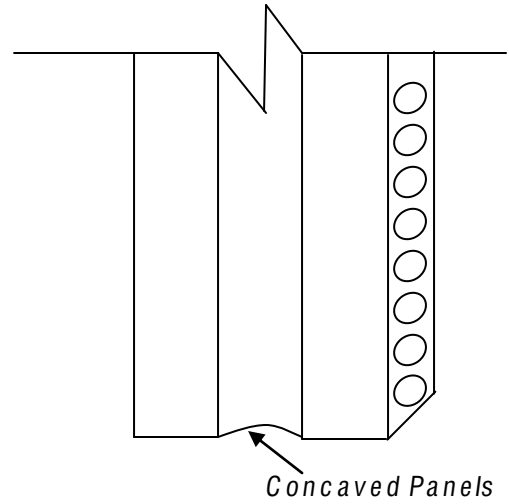
If a bulge is noticed stop the pouring of concrete into that section.

1. The concrete will then have to be released to remove the bulge
2. To release the concrete, cut up the center of the panel using a grinder and remove the cut panel
3. Once the panel is removed, clean the concrete out and clean the inside of the form with water making sure the T's on the connectors are clean
4. Replace panel and add extra bracing as needed
5. Continue pouring concrete

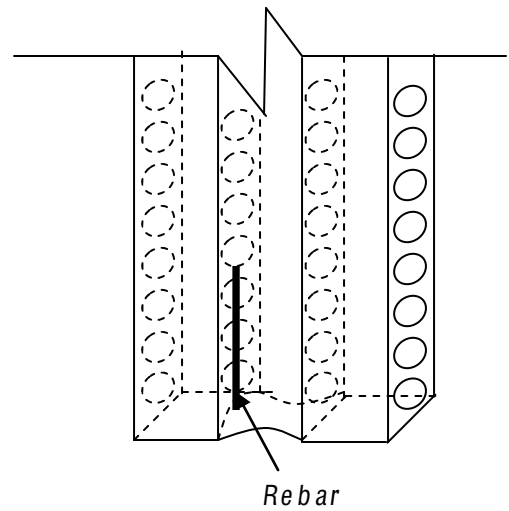


## 8.4 Concaved Panels

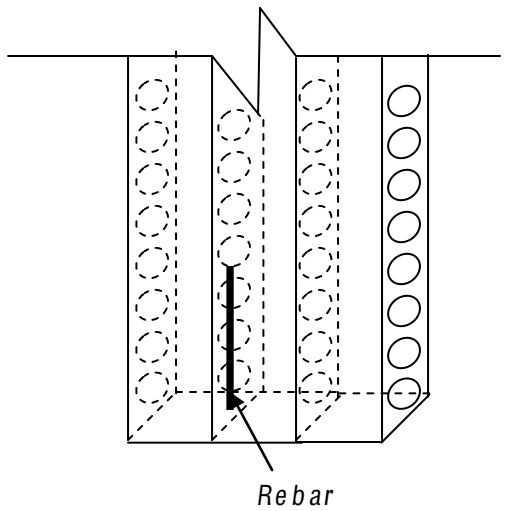
While installing the Octaform panels, it may be noticed that a panel is concaved.



The panel will become concaved when the rebar dowel is placed on the wrong side of the web.



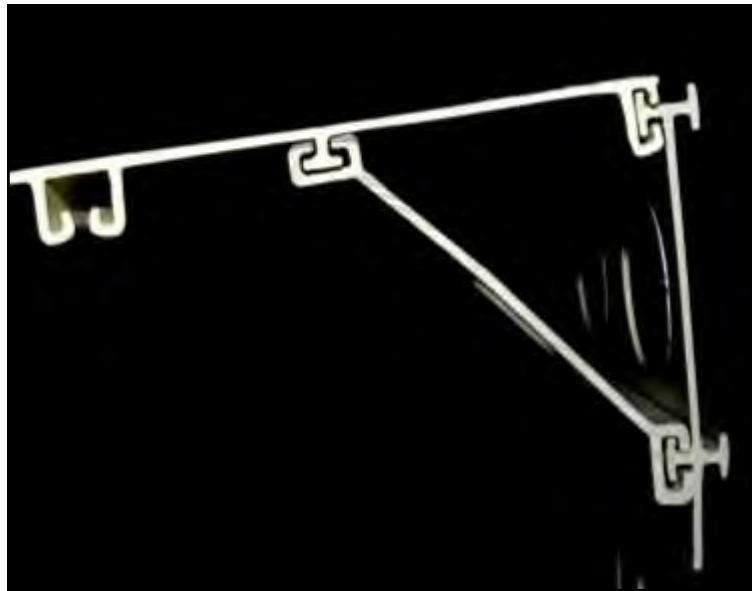
To fix the concave, lift the web and move the rebar over .



## 8.5 Assembly Issues

During the assembly process of the Octaform panels, if the components are difficult to slide together, this sliding issue can be caused by one of 2 issues:

- The most common issues are a build up of debris in the C's of the panels or 45 braces. To remove the debris, simply clean the C's out with water.
- A less common occurrence would be an out of tolerance C or T on the components. If this occurs, it is typically an isolated issue. Remove and replace the components. Notify your sales rep if this is an issue on multiple pieces.

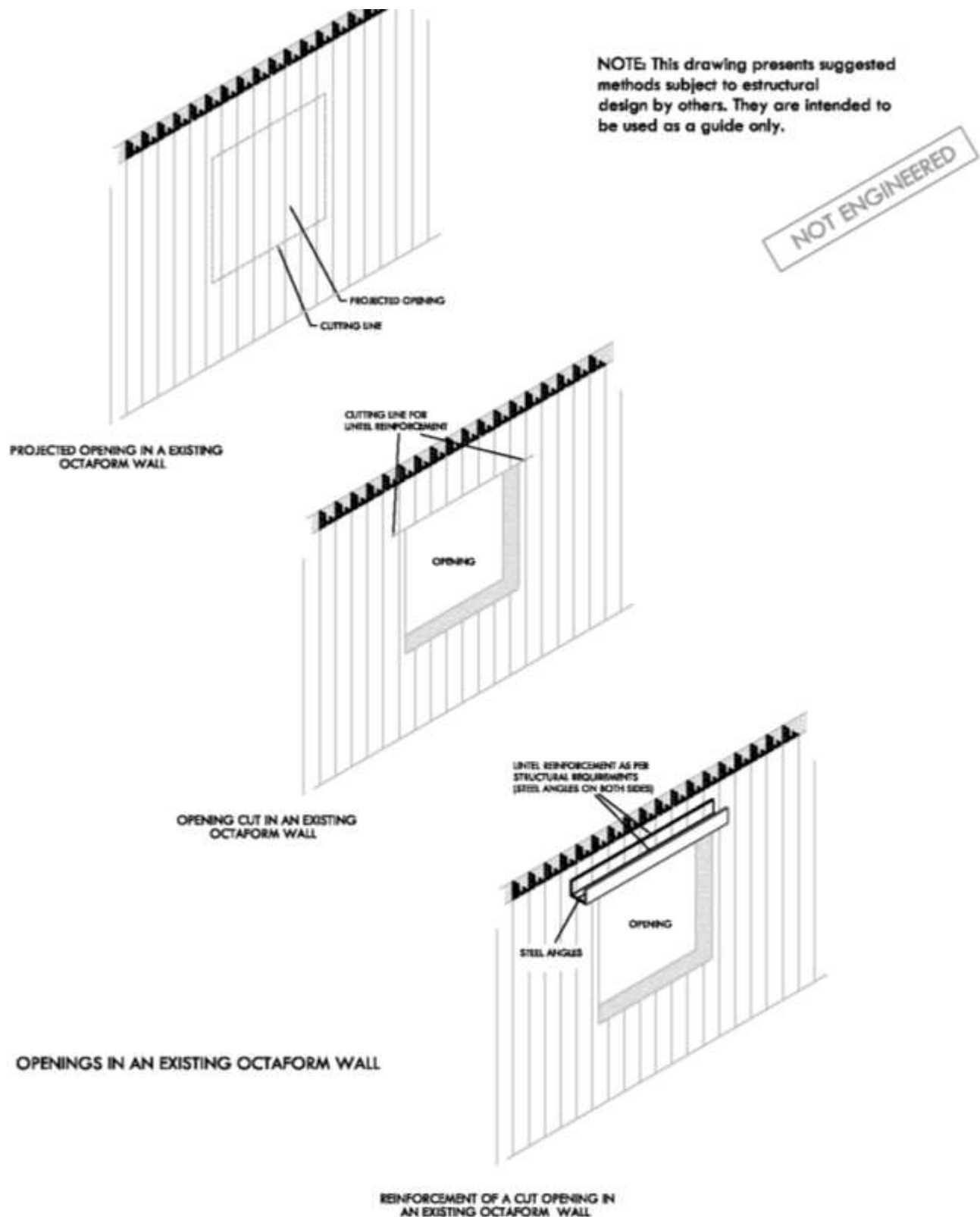


## 8.6 Broken Webs

During the installation of rebar, webs can be damaged. To repair damaged webs, use nylon zip ties on the top and bottom of the damaged web.



## 8.7 Retro-Fitting Openings





## 8.8 Recommended Cleaners For PVC

Pencil	Soft Scrub Ajax Pledge	Tide Powder Endust
Flair Pen	Fantastic	Any water based cleaner
Nail Polish	Brillo Pad	Nail Polish Remover
Paint	Ajax Brillo Pad	
DAP	Brillo Pad Ajax	Fantastic Soft-Scrub
Lipstick	Murphy's Oil Soap	Soft Scrub Ivory Liquid Tide Powder
Oil Stain	Brillo Pad	Soft Scrub Ajax
Top Soil	Fantastic	Pine-Sol Clorox Soft- Scrub Shout Murphy's Pine Powder
Motor Oil	Fantastic Windex Endust	Tide Liquid Ivory Pine Powder Lysol Shout Murphy's
Lithium Grease	Windex	Pine Powder Grease Relief Lysol Pine-Sol Pledge Clorox
Black Tar (crack filler)	Soft-Scrub	Endust
Red Crayon	Soft-Scrub	
Rust Stain / Water Stain	Oxalic Acid - 1 TBL. Spoon/ Cup Soft Water and rinse with rust free water	Rust Out

# Safety

## 9.1 Ladder Safety

The OSHA Standard for portable ladders contains specific requirements designed to ensure worker safety:

### Loads

Self-supporting (foldout) and non-self-supporting (leaning) portable ladders must be able to support at least four times the maximum intended load, except extra-heavy-duty metal or plastic ladders, which must be able to sustain 3.3 times the maximum intended load.

### Angle

Non-self-supporting ladders, which must lean against a wall or other support, are to be positioned at such an angle that the horizontal distance from the top support to the foot of the ladder is about 1/4 the working length of the ladder. (See Figure 1.)

In the case of job-made wooden ladders, the angle should equal about 1/8 the working length. This minimizes the strain of the load on ladder joints that may not be as strong as on commercially manufactured ladders.

### Rungs

Ladder rungs, cleats, or steps must be parallel, level, and uniformly spaced when the ladder is in position for use. Rungs must be spaced between 10 and 14 inches apart.

For extension trestle ladders, the spacing must be 8-18 inches for the base, and 6-12 inches on the extension section.

Rungs must be shaped so that the users foot cannot slide off, and must be skid-resistant.

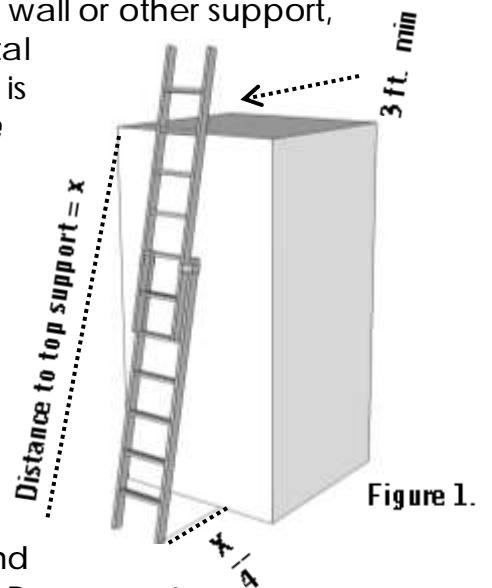


Figure 1.

## Slipping

Ladders are to be kept free of oil, grease, wet paint, and other slipping hazards.

## Other Requirements

Foldout or stepladders must have a metal spreader or locking device to hold the front and back sections in an open position when in use.

When two or more ladders are used to reach a work area, they must be offset with a landing or platform between the ladders.

The area around the top and bottom of ladder must be kept clear.

Ladders must not be tied or fastened together to provide longer sections, unless they are specifically designed for such use.

Never use a ladder for any purpose other than the one for which it was designed.

## 9.2 Supported Scaffold

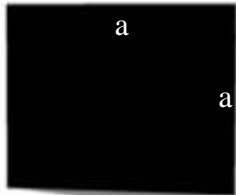
- Supported scaffolds consist of one or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support.
- Guardrails or personal fall arrest systems for fall prevention/protection are required for workers on platforms 10 feet or higher.
- Working platforms/decks must be planked close to the guardrails.
- Planks are to be overlapped on a support at least 6 inches, but not more than 12 inches.
- Legs, posts, frames, poles, and uprights must be on base plates or mud sills or a firm foundation, and must be level and braced.



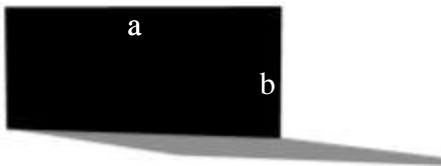
# Calculations

## 10.1 Perimeter

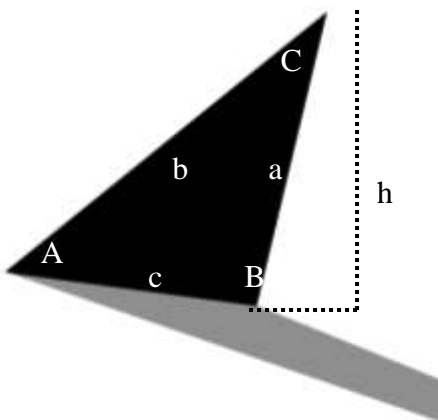
Square =  $4a$



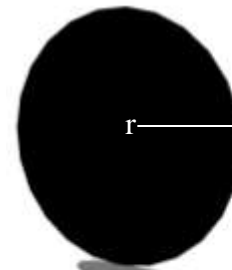
Rectangle =  $2a + 2b$



Triangle =  $a + b + c$



Circle =  $2\pi r$

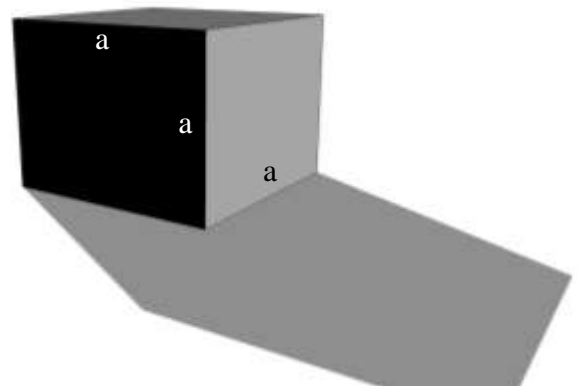


Circle =  $\pi d$  (where d is the diameter)

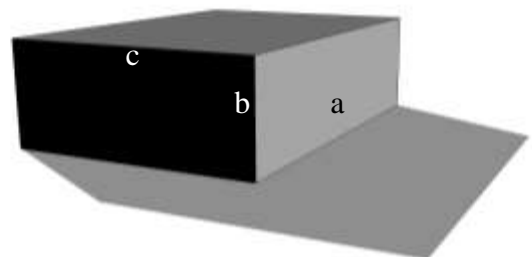
The perimeter of a circle is more commonly known as the circumference.  $\pi = 3.14$

## 10.2 Volume

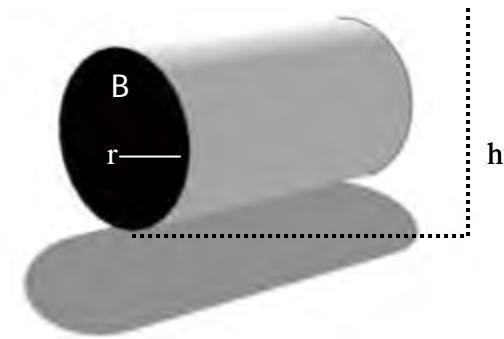
Cube =  $a^3$



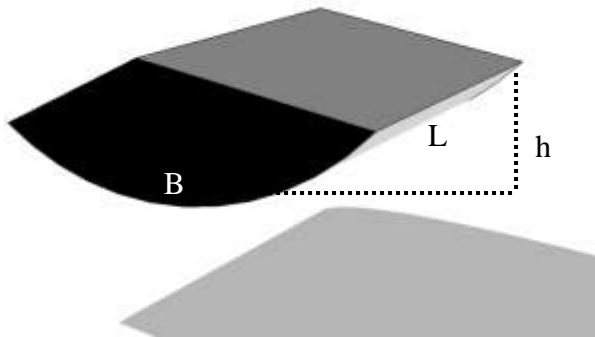
Rectangular Prism =  $a b c$



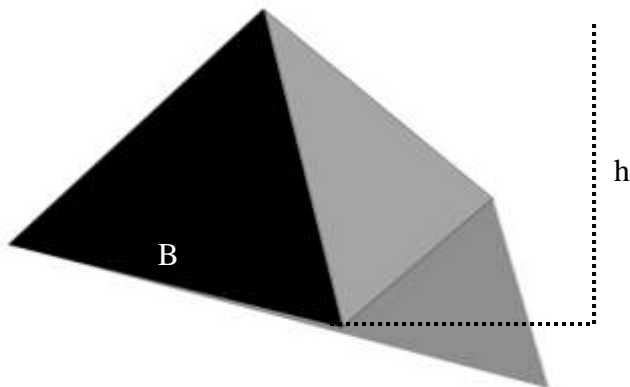
Cylinder =  $b h = \pi r^2 h$



Irregular prism =  $b h$



Pyramid =  $(1/3) b h$



## 10.3 Conversion

1 Centimetre = 0.39370 Inches

1 Inch = 2.54000 Centimetres

1 Centimetre = 0.03281 Feet

1 Foot = 30.48000 Centimetres

1 Meter = 3.28100 Feet

1 Foot = 0.30480 Meters



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