

Order Number: \_\_\_\_\_ Building Manufacturer: \_\_\_\_\_  
 Bid Number: 112112-BS Contact: \_\_\_\_\_  
 Bid Date: 11/21/12 Fax/E-Mail: \_\_\_\_\_

Company: Buck Steel Name: \_\_\_\_\_  
 Customer: Brian Job Loc: Miami Port FL

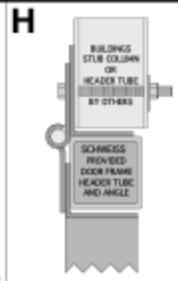
Door Width	Door Height	Wedge	Overall Height	Door Style	Truss Type	Hinge Style	Tot W - Inches	Tot H - Inches
50'-0.00"	17'-0.00"	10.25"	17'-10.25"	HYDRAULIC H	External	Single Hinges	602"	214.25"

**PRELIMINARY SPECS** - These are Preliminary Spec Sheets - do not manufacture the building header/columns using these specs. This is a rough estimate of what the door measurements and weights will be when purchased.

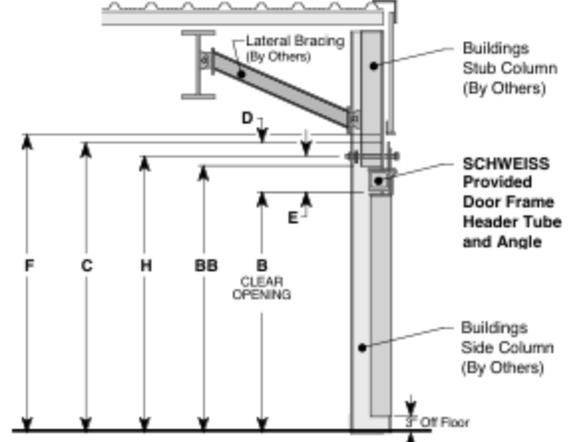
**FINAL SPECS - AS OF 11/21/12** Will be provided when the door contract is finalized.

## Preliminary - Hydraulic Door Specifications

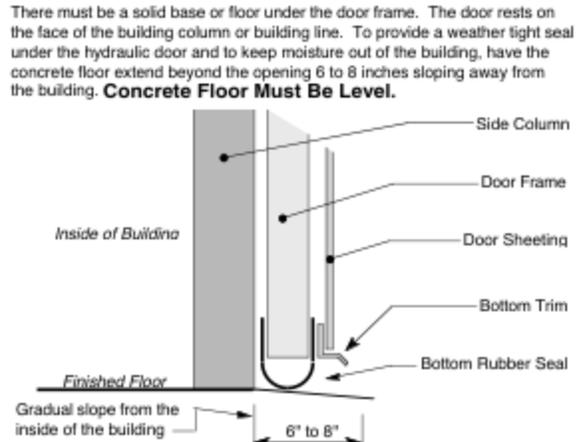
- A- 600.00"** Inches Feet & Inches 50'- 0.00" **Customer's Finished Clear Opening Width.**
- A1- 605.00"** 50'- 5.00" Placement of the building side columns to accept a Hydraulic Door. Clear Opening between the building side columns.
- AA- 614.00"** 51'- 2.00" Total distance to stay back with the building sheeting on the side columns.
- B- 204.00"** 17'- 0.00" **Customer's Finished Clear Opening Height - Door in the Open Position.**
- BB- 210.75"** 17'- 6.75" Distance from the finished floor to the bottom of the Building Header / Stub Column. Do not have stub columns / continuous header located any lower than this measurement.
- C- 214.25"** 17'- 10.25" Distance from finished floor to the very top of hinge (B+D=C).
- D- 10.25"** 10.25" Distance from top of clear height to top of single hinges.
- E- 9.00"** 9.00" Distance from top of clear height to center of mounting hole for single hinges.
- F- 215.25"** 17'- 11.25" Distance from finished floor to the building sheeting line above the door. Hold the sheeting to this elevation from the finished floor.
- H- 213.00"** 17'- 9.00" Distance from the finished floor to the center of single hinge bolt holes. **YOU WILL BOLT THROUGH YOUR HEADER AT THIS HEIGHT**



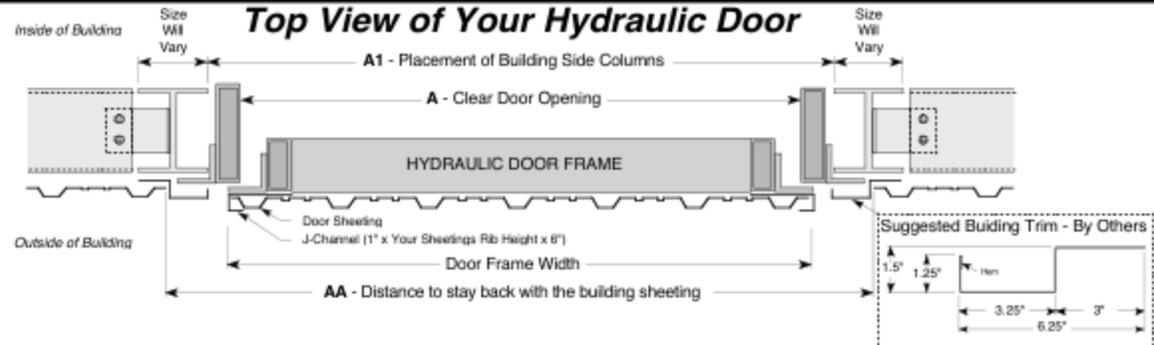
### Side View



### Your Concrete Floor



### Top View of Your Hydraulic Door



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## Preliminary - Design Criteria - Required Door Information

Building Code	2009 IBC	Building Code - (Default is 2009 IBC)
Wind Speed	180 mph	3 second gust - (Default is 90 mph)
Wind Exposure	C	Exposure - (Default is C)
Wind Type	Main Wind	Component Wind or Main Wind (MWFRS) - (Component if less than 700sqft.)
Enclosure	Enclosed	Enclosed or Partially Enclosed - (Default is Enclosed)
Topographic Factor - Kzt	1	Must Be Provided by the Engineer of Record- (Default is 1)
Occupancy	Standard	Standard, Essential, or High Occupancy - (Default is Standard)
Building Height	21'	Mean Roof Height or Eave Height for Building with Roof Slope of 10 Degrees or Less.
Roof Slope	1 : 12	Roof Slope - (Default is 1 : 12)
Door Operational Wind Speed	30 mph	Maximum Wind Speed for Door Operation is: <b>30 mph</b> Do not operate door if wind speed exceeds the maximum door operating speed. Door must be closed with floor pins and locks engaged when un-attended or when wind speed is expected to exceed the maximum door operating speed.

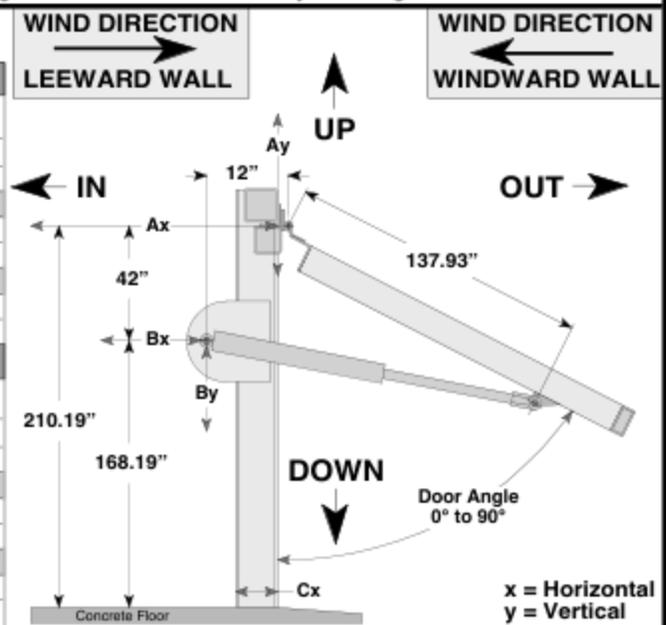
## Preliminary - Technical Information For Your Hydraulic Door

A1-	9	Number of Hinges	
A2-	2	Number of Lift Points - Location: (One on each end of the door frame)	
A3-	240-1PH	Electrical System with Up/Stop/Down Switch and Power Unit on the	(LI) - Left/Inside
<b>Door Weights</b>			
B1-	13463 lbs	Structural Framing Weight	
B2-	876 lbs	Exterior Sheeting & Trim Weight	(29ga. = 0.82 psf. -- 26ga. = 0.99 psf.)
B3-		Liner Sheeting & Trim Weight	(29ga. = 0.82 psf. -- 26ga. = 0.99 psf.) / 2 If Only Bottom Half
B4-		Insulation Weight	(4" Blanket = 0.5 psf. -- 6" Blanket = 0.65 psf.)
B5-		Optional - added accessories	
B6-	14339 lbs	Estimated Total Door Weight	

**WARNING - Schweiss manufactures the door based on the listed weights above. DO NOT modify the weight of the door.**

## Preliminary - Door Reactions

DOOR CLOSED	COLUMN REACTIONS AT BASE (lbs.)		END HINGES		CENTER HINGES	
	(C <sub>x</sub> )	(C <sub>y</sub> )	(A <sub>x</sub> )	(A <sub>y</sub> )	(A <sub>x</sub> )	(A <sub>y</sub> )
Dead Load	0	0	0	986	0	1972
<b>WINDWARD WALL 180 MPH WIND LOAD</b>						
Internal Pressure	3098	←	426	←	0	852
Internal Suction	8168	←	1123	←	0	2246
<b>LEEWARD WALL</b>						
Internal Pressure	6619	→	910	→	0	1820
Internal Suction	1549	→	213	→	0	426
DOOR OPEN	COLUMN REACTIONS AT BASE (lbs.)		END HINGES		CENTER HINGES	
	(B <sub>x</sub> )	(B <sub>y</sub> )	(A <sub>x</sub> )	(A <sub>y</sub> )	(A <sub>x</sub> )	(A <sub>y</sub> )
Dead Load	19878	←	6869	↓	11927	→
<b>WINDWARD WALL 30 MPH MAXIMUM WIND FOR DOOR OPERATION</b>						
Internal Pressure	3964	←	1110	↑	20	←
Internal Suction	2324	←	651	↑	76	←
<b>LEEWARD WALL</b>						
Internal Pressure	2506	→	702	↑	11	→
Internal Suction	866	→	243	↑	4	→



**Important Note:** When your hydraulic door is opening or in the fully open position, the door tends to pull away from the building at the hinge line also putting stress on each building column where the cylinders attach. The building manufacturer / contractor / owner is responsible to insure that the building structure is capable of handling all the imposed loads. All materials not supplied by Schweiss are the full responsibility of others!!

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**PRELIMINARY SPECS** - These are Preliminary Spec Sheets - do not manufacture the building header/columns using these specs. This is a rough estimate of what the door measurements and weights will be when purchased.

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**Minimum Hydraulic Door Header Requirements**

1. **Maximum Allowable Vertical Deflection**  $L / 180$  Maximum under Dead + Live Load or Dead + Snow Load Combinations. **Vertical Frame Deflection** must be held so that the door will open when the full snow load is applied to the building.
2. **Deflection** Increases from 0" at Door Side Columns to the maximum allowable deflection at the center of the door.
3. **Maximum Allowable Horizontal Frame Drift** is  $H/60$  in the plane of the wall containing the door.

**Minimum Hydraulic Door Side Column Requirements**

4.  $L / 90$  (Wind Load) **Maximum Allowable Inward or Outward Deflection** of Your Buildings Hydraulic Door Side Columns:
5.  $L / 180$  (Dead Load of Door)
6.  $1/2"$  **Recommended Minimum Flange Thickness** of Your Buildings Hydraulic Door Side Columns:
7.  $6.00"$  **Side Column Eccentricity "e"**

**Information for Building Designers**

**Designing the Door Side Column for Hydraulic Doors.**

8. The door side column must be designed to withstand the forces from the hydraulic door cylinder as the door opens and in all positions. Due to the diameter of the cylinder and clearance required to allow the cylinder to rotate as the door opens, the bracket that attaches the cylinder to the door side column causes eccentric loading and torsion on the door side column. The bracket is offset from the centerline of the door side column on both the major and minor axis of the door column.

**Design the door side columns for:**

9. Door Column Must Be Designed for inward deflection due to wind load distributed uniformly along the length of the door column and for an outward deflection due to the hydraulic cylinder reaction (door Closed) at the cylinder location.
10. Major axis and minor axis bending are due to the cylinder reactions  $B_x$  and  $B_y$  as shown in the adjacent eccentricity diagram.
11. Torsion on the door column due to the eccentricity ("e") of the door cylinder and bracket are shown in the adjacent eccentricity diagram.
12. Axial load by the building framing on the door side column (including the dead load of the door).
13. Torsional properties of the door column must be designed for combined axial compression and torsion according to Chapter H of AISC 13th Edition.

**Deflection Requirements for door side column:**

14. Design the door side column for the same deflection requirements as required by the building code for your cladding type.

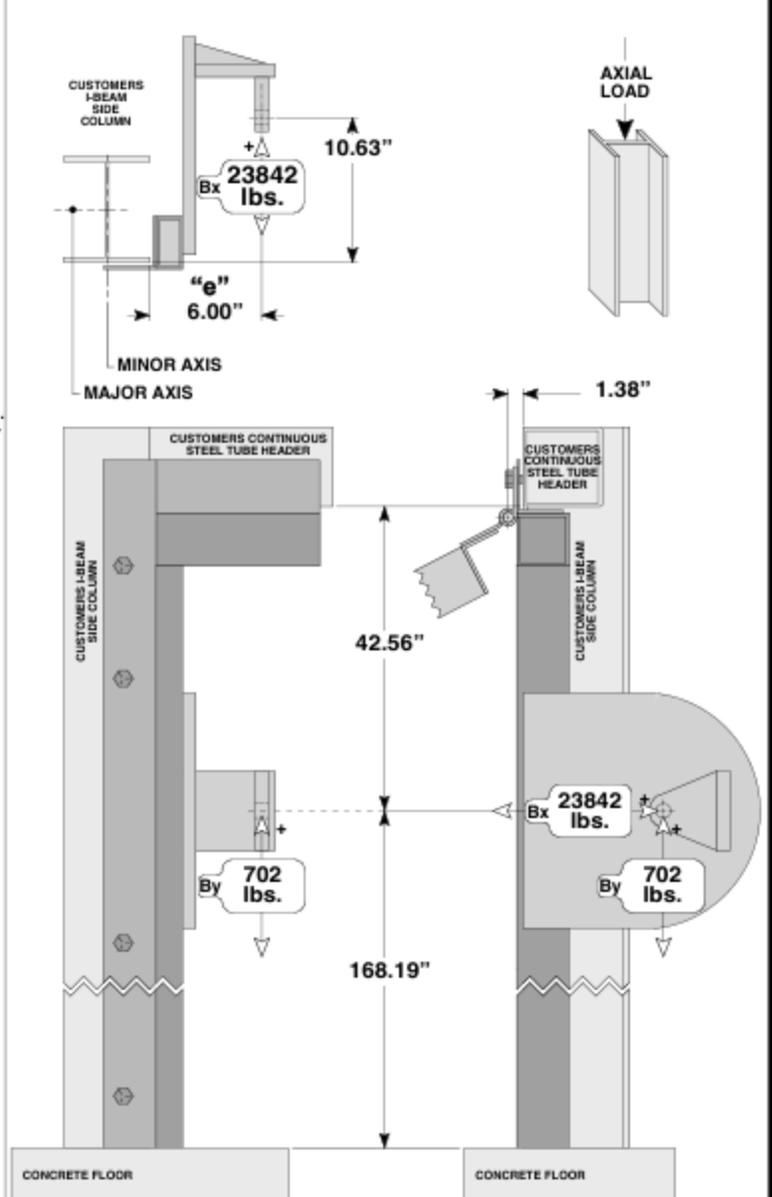
**Torsional Deflection:**

15. The torsional deflection of the door side column should be limited to  $3^\circ$  to allow the door hydraulic cylinder to operate properly.

**General Design Notes:**

16. The door side columns, header and bracing should be designed by a registered Professional Engineer.
17. Specific building conditions other than those indicated in the Spec Sheets may exist which require further engineering consideration.
18. Schweiss is not responsible for the size or design of the door header and side columns for your building. All materials not supplied by Schweiss are the full responsibility of others.
19. Door Dead Load is applied to the building when the door is open or closed.
20. It is the building designers responsibility to combine the door reactions with the appropriate load combinations.

**Eccentricity Diagram**

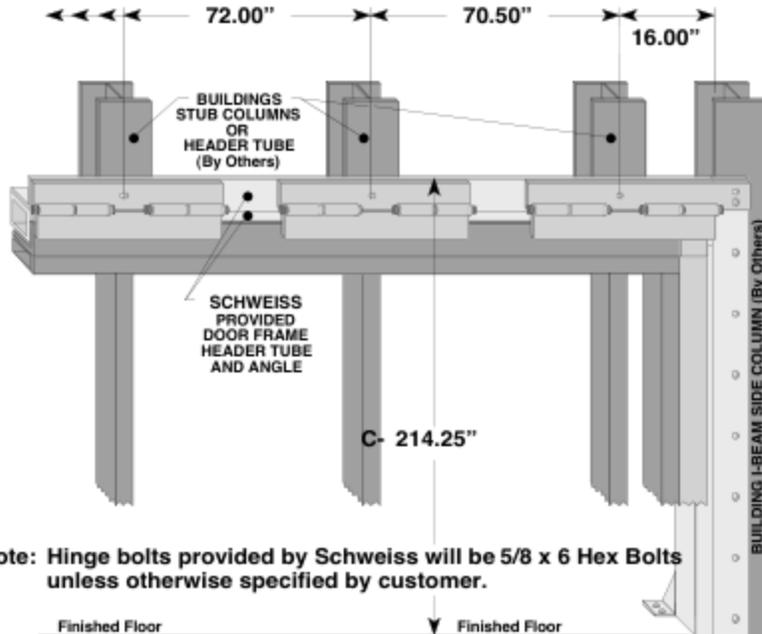


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**Attaching Hydraulic Door To Your Building**

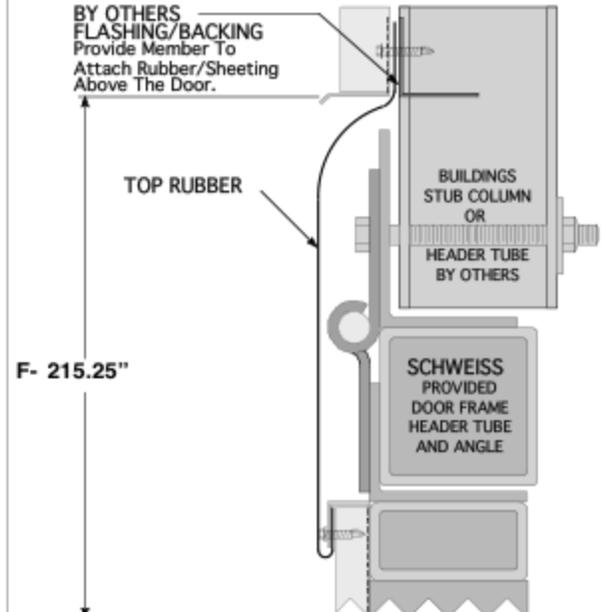
**Typical I-Beam Building Side Column With Stub Columns**

- Bolt Through I-Beam Side Columns and Stub Columns or Steel Tube Header.
- Face of Header and Stub Columns must be Flush with each other.



**Sheeting Above Your Hydraulic Door**

- Sheet above door at the height shown below.
- Provide proper backing to attach sheeting and door top rubber to at this height.



Note: Hinge bolts provided by Schweiss will be 5/8 x 6 Hex Bolts unless otherwise specified by customer.

**Owners / Contractors and Building Manufacturers:**

When working with contractors or construction companies **it is your responsibility to pass** this information on to them. The Building Manufacturer / Contractor / Owner is responsible to ensure that the building structure is capable of handling all the imposed loads. All materials not supplied by Schweiss are the full responsibility of others!!

The Customer / Contractor / Building Manufacturer is responsible for ensuring that the correct version of the A-1 thru A-8 Spec Sheets are being used for their door. Schweiss Distributing is **Not** liable for the Customer / Contractor / Building Manufacturer using an obsolete version of the A-1 thru A-8 Spec Sheets.

I have read through Spec Sheets A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8 and agree to them.

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Customer: \_\_\_\_\_  
SIGNATURE

Thank You :  
Sales Person Jeremy Rieke

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**Schweiss furnishes the hydraulic door frame.**  
**Hinge Locations for your Hydraulic Door**

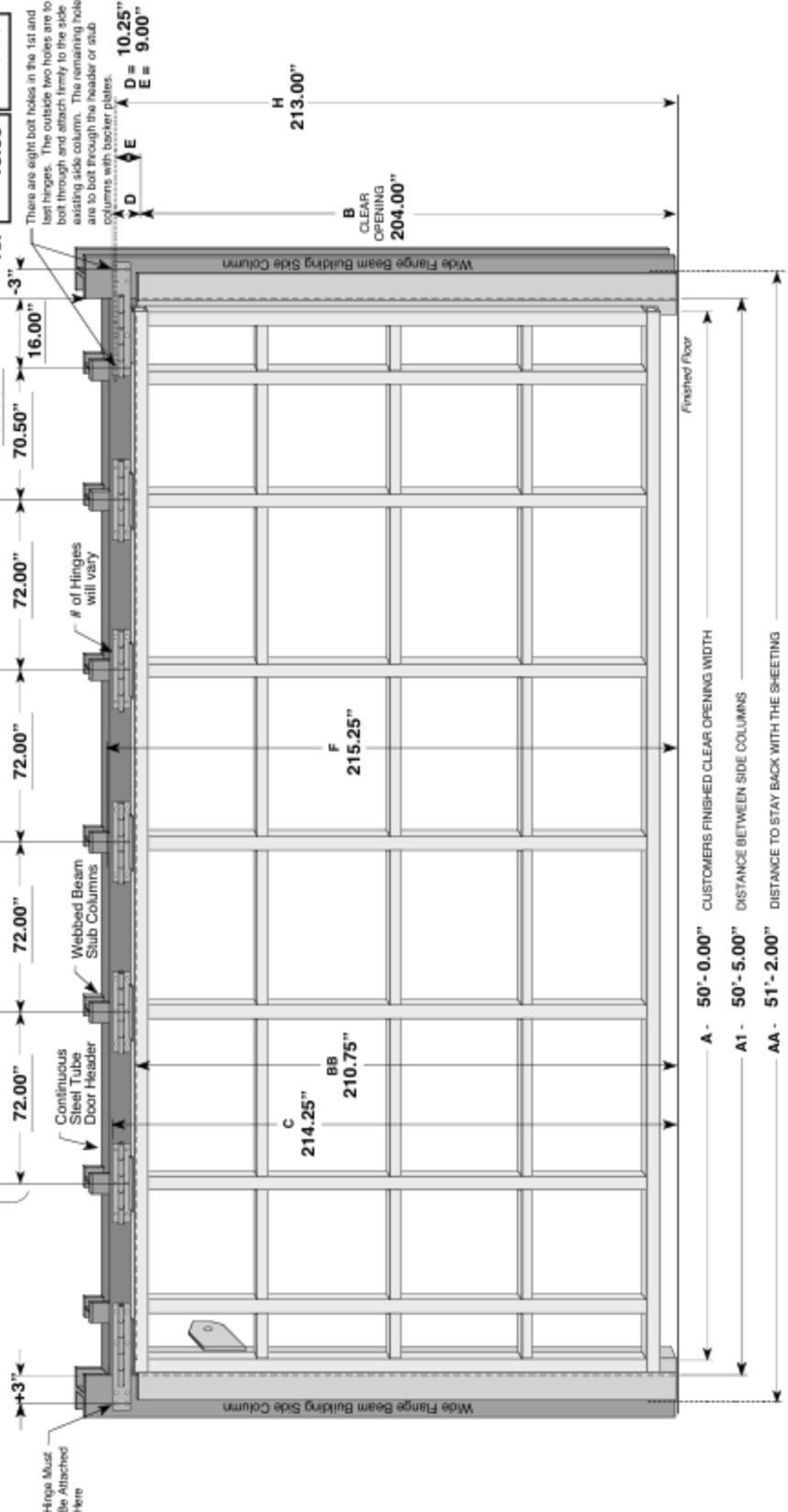
Field drill the hinge header holes when you are installing the hydraulic door.  
Distance from the right side of the clear opening to the center of the holes on each of the single hinges.  
**Left and Right End Hinges:**  
**Important:** Each end hinge of the hydraulic door will overlap the building side column and must be attached securely to each building side column.

Hinge Locations	Distance Between Hinges
13th	70.50"
12th	72.00"
11th	72.00"
10th	72.00"
9th	589.00"
8th	518.50"
7th	446.50"
6th	374.50"
5th	302.50"
4th	230.50"
3rd	158.50"
2nd	86.50"
1st	16.00"

These are eight bolt holes in the 1st and last hinges. The outside two holes are to bolt through and attach firmly to the side existing side column. The remaining holes are to bolt through the header or slab columns with backer plates.

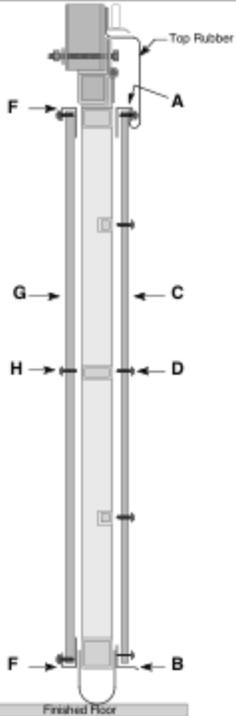
Hinge Locations	Distance Between Hinges
14th	
15th	
16th	
17th	
18th	
19th	
20th	
21st	72.00"
22nd	
23rd	
24th	
25th	
26th	

See Chart For Additional Hinge Locations

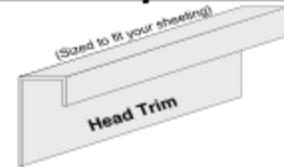


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**External Sheeting and Trim Provided By: Customer Responsibility**

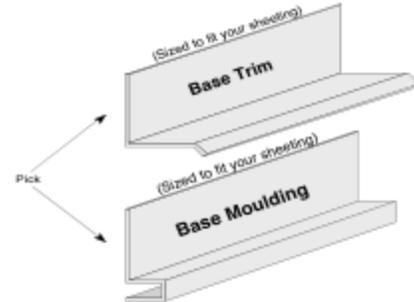


A- Head-Trim..... 51'



B- Base Trim..... 51'

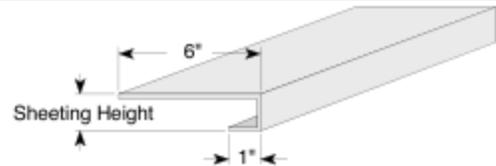
Customers choice on base trim style. Either style works well. If provided by Schweiss you will receive "Base Trim".



C- Door Sheeting..... Qty 17 Length 205.75"

D- Tek Screws..... 546 Fine Thread Tek Screws w/ Washer x 1-1/2" if Insulating x 3/4" if Not Insulating

E- Sides of Door Trim..... 38'  
Special Sized J-Trim - See Dimensions

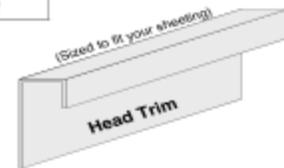


Leave your end wall open or un-sheeted until the door is installed! If the end wall is to be fully sheeted before the door is completed, do not nail or fasten the bottom of the sheets above the door frame.

**Liner Sheeting and Trim Prov. By: Customer Responsibility**

**Flash For Liner Sheeting = Not Set-Up for Liner Sheeting**

F- Head-Trim.....



G- Door Sheeting..... Qty Length

H- Tek Screws..... Fine Thread Tek Screws w/ Washer x 3/4"

**Upgrade Equipment - Customer's Choice**

You may add any accessory to your Hydraulic Bi-Fold Door. Schweiss strongly recommends these accessories be used on every door. Only included with your order if the box is checked

1.  Top Override Jiggle Switches
2.  Electric Photo Eye Sensors
3.  3 Button Automatic Switch
4.  Door Base Safety Edge
5.  Warning Lights and Horn
6.  Emergency Back-Alternate Power Couplers
7.  12 Volt D.C. Emergency Back-Up Power Unit

**Read the Schweiss**

**"Safety Information and Operation Manual"**

The Schweiss Hydraulic Doors Safety Information and Operation Manual should be read by anyone involved in the design, specifications, selection or purchase of an industrial hydraulic door operator / system.

**Call Us If You Have Any Questions**

If you have any questions or comments about your hydraulic door's safe operation or its design, call us at the numbers listed at the top of the page and talk to our knowledgeable staff at the factory.

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**Verifying your building's opening to accept a Schweiss Hydraulic Door.**

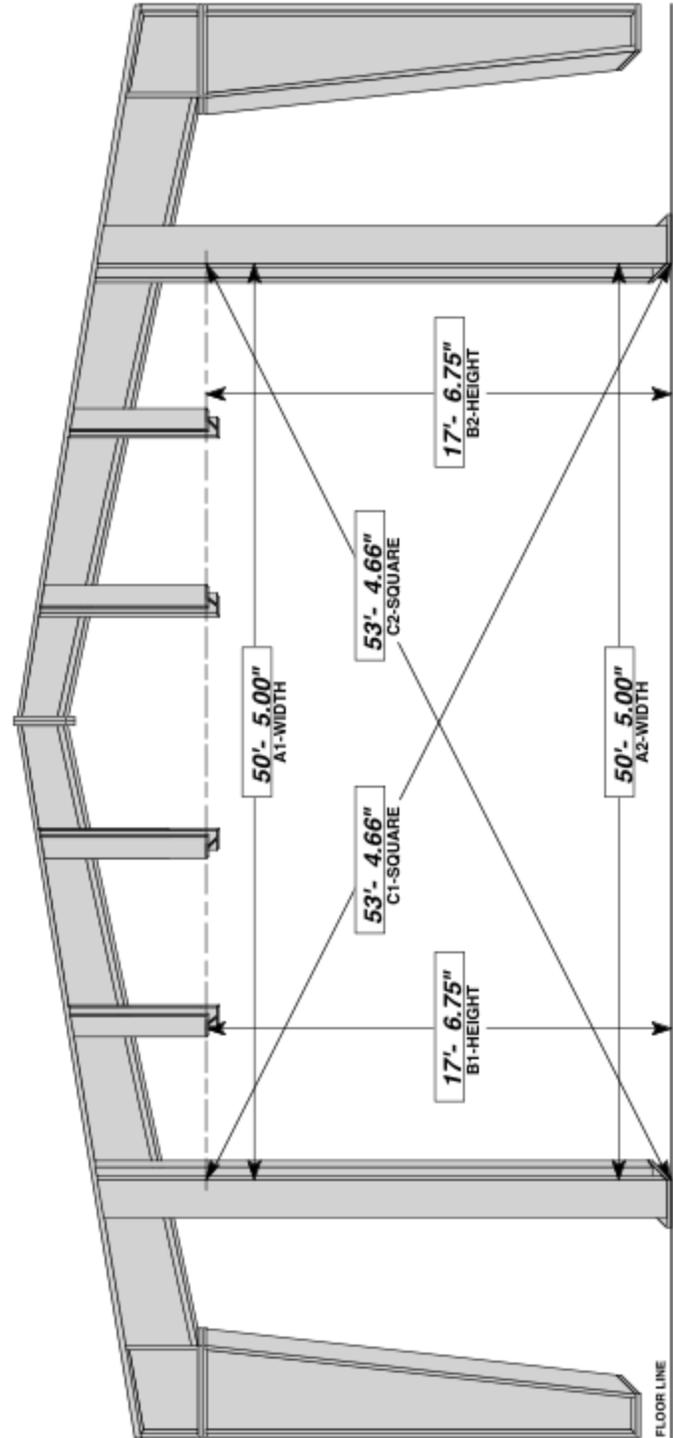
Before you attempt to install your hydraulic door, the building opening must have been prepared to accept a hydraulic door. The measurements below are what Schweiss is expecting your opening to be based on the information that you provided (width and height on the door contract). It is very important that you double check these measurements along with the square opening to ensure that the door will fit in your clear opening when it arrives.

Distance Between Your Buildings Side Columns.	
A1 - Width	<u>50'- 5.00"</u> = Width
A2 - Width	<u>50'- 5.00"</u> = Width
Distance from the Finished Floor to the Bottom of the Building Header.	
B1 - Height	<u>17'- 6.75"</u> = Height
B2 - Height	<u>17'- 6.75"</u> = Height
Verify that the Building Opening is Square.	
C1 - Square-Up	<u>53'- 4.66"</u> = Diagonal
C2 - Square-Up	<u>53'- 4.66"</u> = Diagonal

IMPORTANT: Both A1 and A2 measurements must be exactly the same and match your spec sheet.

IMPORTANT: Both B1 and B2 measurements must be exactly the same and match your spec sheet.

IMPORTANT: Both C1 and C2 measurements must be exactly the same and match your spec sheet.



- \* Cement floor must be level
- \* The measurements above represent the rough opening of your building
- \* All measurements must be inside measurements

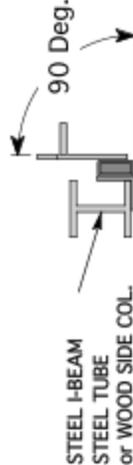
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**Measuring your building's opening after cylinder legs are mounted.**

With the cylinder legs mounted to the building you need to remeasure the clear opening, you should come up with the measurements below. If the clear opening is not square, you need to make adjustments to square the cylinder legs vertically and front to back when completely mounted.

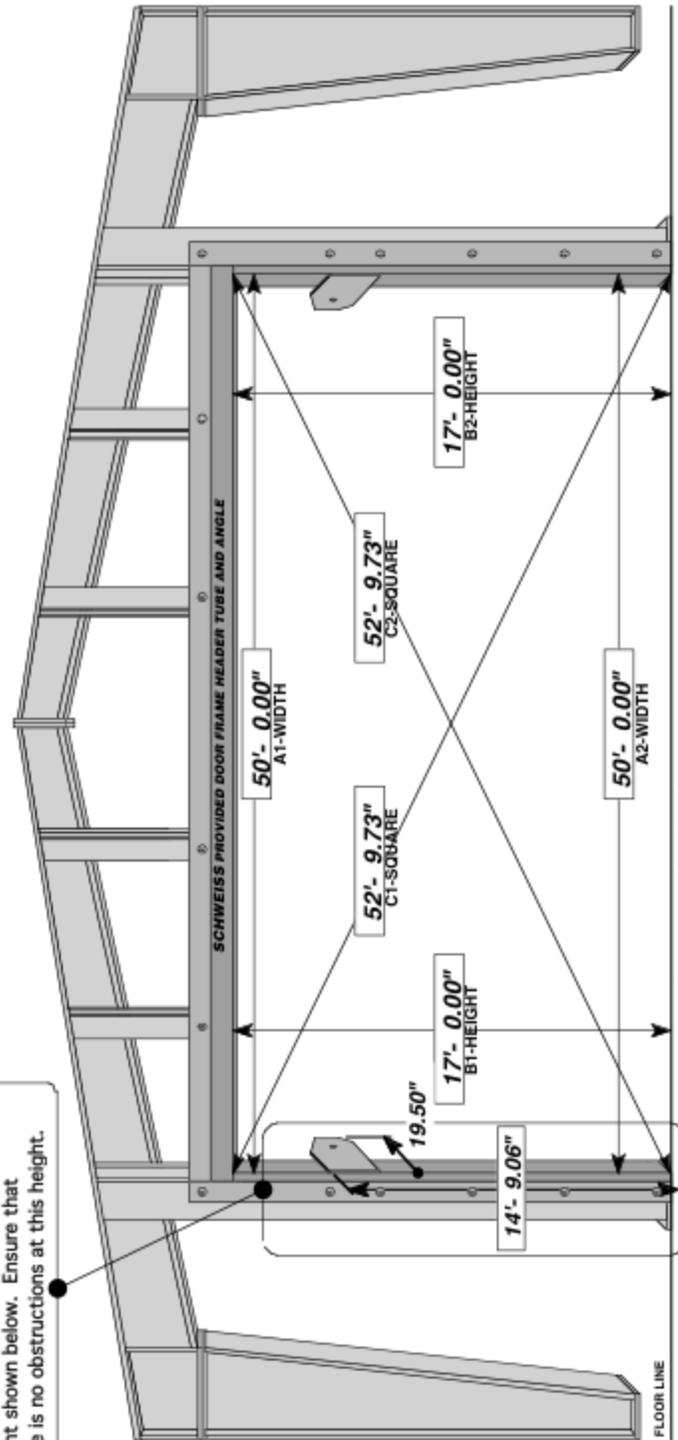
Distance Between Your Cylinder Legs.	
A1 - Width	50'- 0.00" = Width
A2 - Width	50'- 0.00" = Width
Distance from the Finished Floor to the Bottom of the Door Header.	
B1 - Height	17'- 0.00" = Height
B2 - Height	17'- 0.00" = Height
Verify that the Door Opening is Square.	
C1 - Square-Up	52'- 9.73" = Diagonal
C2 - Square-Up	52'- 9.73" = Diagonal

Ensure that your building Side Column is square with the face of the building. But most importantly see to it that the cylinder legs are 90 Deg. from the face of your building.



**VERY IMPORTANT**

The Hydraulic Cylinder Plate will project into your building 18" at the height shown below. Ensure that there is no obstructions at this height.



\* Cement floor must be level

\* The measurements above represent the rough opening of your building

\* All measurements must be inside measurements