

ColumnCreator (Version 4.2)

Gates Columns

Scissor Clamp Columns

Units in inches or ft'-in"

Width (X)24

Length (Y)18

Height (Z)240

Quantity1

Squaring Corners

Regular

Picking

Plywood type

HDO

Clamp size

8-24 Gates

24-36 Gates

36-48 Gates

Choose by column size

Allow mismatched clamps

Window?

4'-0"

8'-0"

8'-0"

Z

X

8'-0", 8'-0", 4'-0"

Sheet Fields

Sheet name24" x 18" GATES COLUMN FORM

Project titleProject Title

Project addressProject Address

Date12/3/2020

Sheet issued for...

Scale ( \_\_\_\_ To 1'-0")0.75

Drawn byMCC

Job #999

Sheet1.0.0

SuffixA

McClone AreaNCA

Save

Load

Draw Gates!

Min x: 12, max x: 48  
Default: -blank-

Min x: 12, max x: 48  
Default: -blank-

Min x: 8'-0", max x: 20'-0"  
Default: -blank-

Only positive integers allowed  
Default: -blank-

X, Y, Z, and the plywood spacing boxes need a converter function when read.  
It needs to handle ft'-in" style inputs in a variety of formats. No negative values are allowed anywhere. The only allowable non-numeric symbols for these boxes are " ' , - .  
  
For example, all of the below strings should result in a value of 40.5:  
40.5  
40.5"  
3' 4.5  
3'4.5"  
3'-4.5  
3'-4.5"  
3'-4 1/2  
3' 4 1/2"  
3'-4 1/2  
3'-4 1/2"  
  
Feet only inputs are also valid. 3' should result in a value of 36

Only 1 side may have a pour window, either X or Y but not both.

If X or Y is > 46.5" then reduce the max ply height from 96" to 48"

Plywood layout preview

User needs to be able to edit spacing, add/remove sheets. Min sheet length: 6". Max sheet length: 8'-0". This should be auto-populated and drawn when X, Y, and Z are provided, and refreshed whenever any of those are changed.

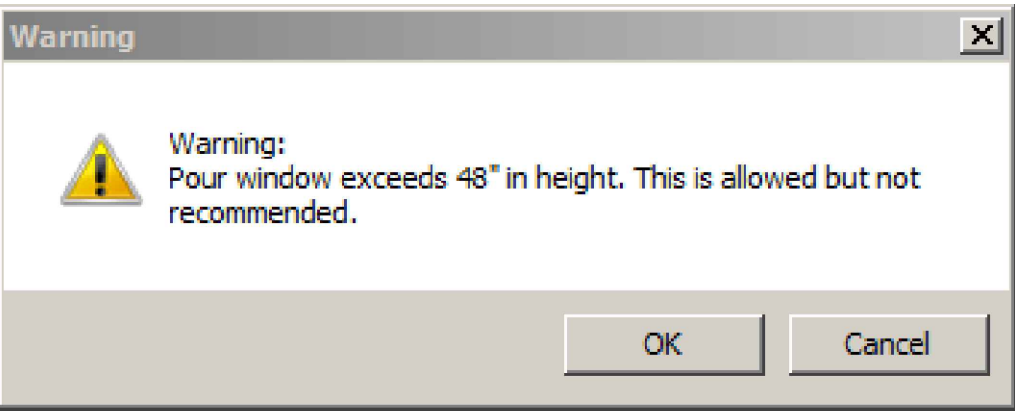
If the sum of provided sheet lengths don't equal "Height (Z)" then text should appear saying how much needs to be added or removed to equal Z.

Sheet Fields are entered into the sheet that is created.

Currently the Save/Load buttons simply write these to 1 text file.

Auto filled with current date





User can edit this blue text to set the location of the window seam.  
If the top window dimension is >48" then warn the user like this:

ColumnCreator (Version 4.2)

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Units in inches or ft'-in"

Width (X)24

Length (Y)18

Height (Z)240

Quantity1

Squaring Corners

☒ Regular

☐ Picking

Plywood type

HDO

Clamp size

☐ 8-24 Gates

☐ 24-36 Gates

☐ 36-48 Gates

☒ Choose by column size

☒ Allow mismatched clamps

Window?

☒

Diagram

5'0"

4'-0"

8'-0"

15'-0"

8'-0"

8'-0", 8'-0", 4'-0"

Z

X

Sheet Fields

Sheet name

24" x 18" GATES COLUMN FORM

Project title

Project Title

Project address

Project Address

Date

12/4/2020

Sheet issued for...

Scale ( \_\_\_\_ To 1'-0")

0.75

Drawn by

MCC

Job #

999

Sheet

1.0.0

Suffix

A

McClone Area

NCA

Save

Load

Draw Gates!

ColumnCreator (Version 4.2)

Gates Columns

Scissor Clamp Columns

Units in inches or ft'-in"

Width (X)

24

Length (Y)

18

Height (Z)

240

Quantity

1

Maximum height  
w/ full liquid head: 16'-3"

Plywood type

HDO

Clamp size

☐ 36" Scissor clamp

☐ 48" Scissor clamp

☐ 60" Scissor clamp

☒ Choose by column size

☒ Allow mismatched clamps

Z

X

4'-0"

8'-0"

8'-0"

8'-0", 8'-0", 4'-0"

Sheet Fields

Sheet name

24" x 18" SCISSOR CLAMP COLUMN FAE

Project title

Project Title

Project address

Project Address

Date

12/4/2020

Sheet issued for...

Scale ( \_\_\_\_ To 1'-0")

0.75

Drawn by

MCC

Job #

999

Sheet

1.0.0

Suffix

A

McClone Area

NCA

Save

Load

Draw Scissors!

Scissor clamp columns can't have windows

Min x: 8", max x: 46"  
Default: -blank-

Min x: 8", max x: 46"  
Default: -blank-

Min x: 12", max x: 40"  
Default: -blank-

Only positive integers allowed  
Default: -blank-



Precise dimensioning is essential.  
Development must occur in an Imperial unit environment.

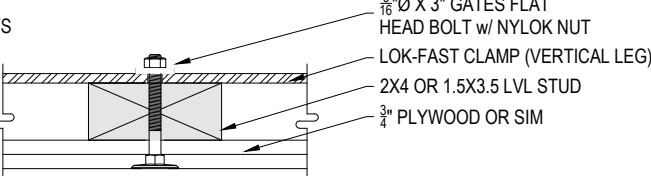
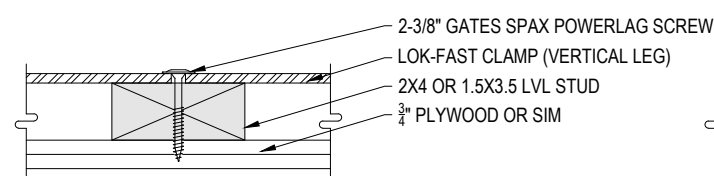
I've broken out this sheet into 4 phases. I want to review progress  
and polish the output before moving on to the next phase.

Sheets need to print in greyscale.

Phase 4: Everything remaining

#### CLAMP ATTACHMENT NOTES:

- 1) USE 1/4"Ø X 2-3/8" GATES SPAX POWERLAG SCREWS FOR ALL CLAMP SETS EXCEPT FOR THE TOP (RIGID) CLAMPS & AT OPERATOR ANGLE CORNERS FOR LOWER CLAMPS - REF. DETAIL 4A.
- 2) USE 5/16" Ø X 3" GATES FLAT HEAD BOLTS FOR THE TOP CLAMP ATTACHMENTS & AT OPERATOR ANGLE CORNERS FOR LOWER CLAMPS - REF. DETAIL 4B.

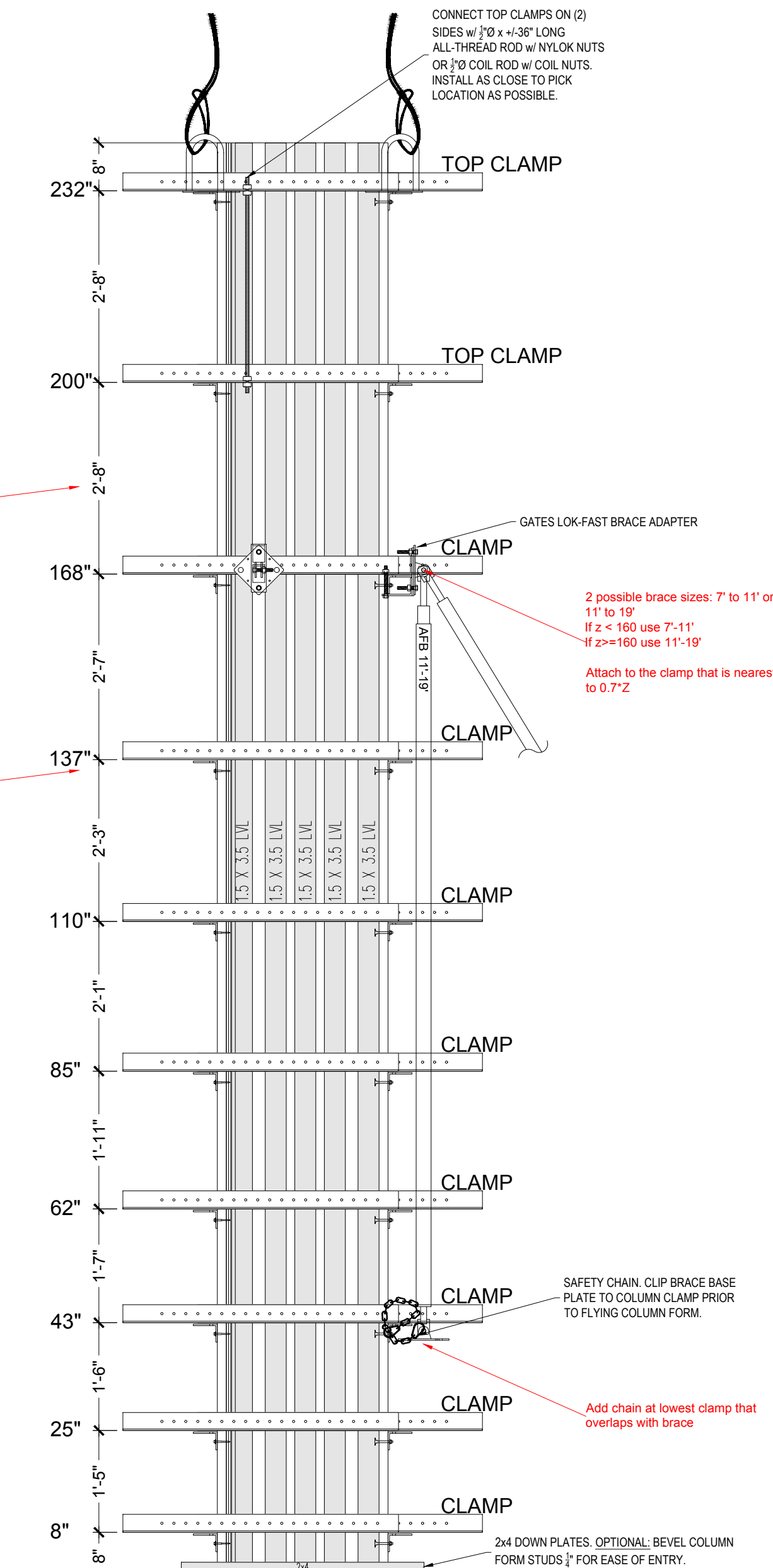


DETAIL 3A - GATES SPAX POWERLAG SCREW  
THROUGH PLYWOOD, STUD, AND CLAMP.

DETAIL 3B - GATES FLAT HEAD BOLT  
THROUGH PLYWOOD, STUD, AND CLAMP.

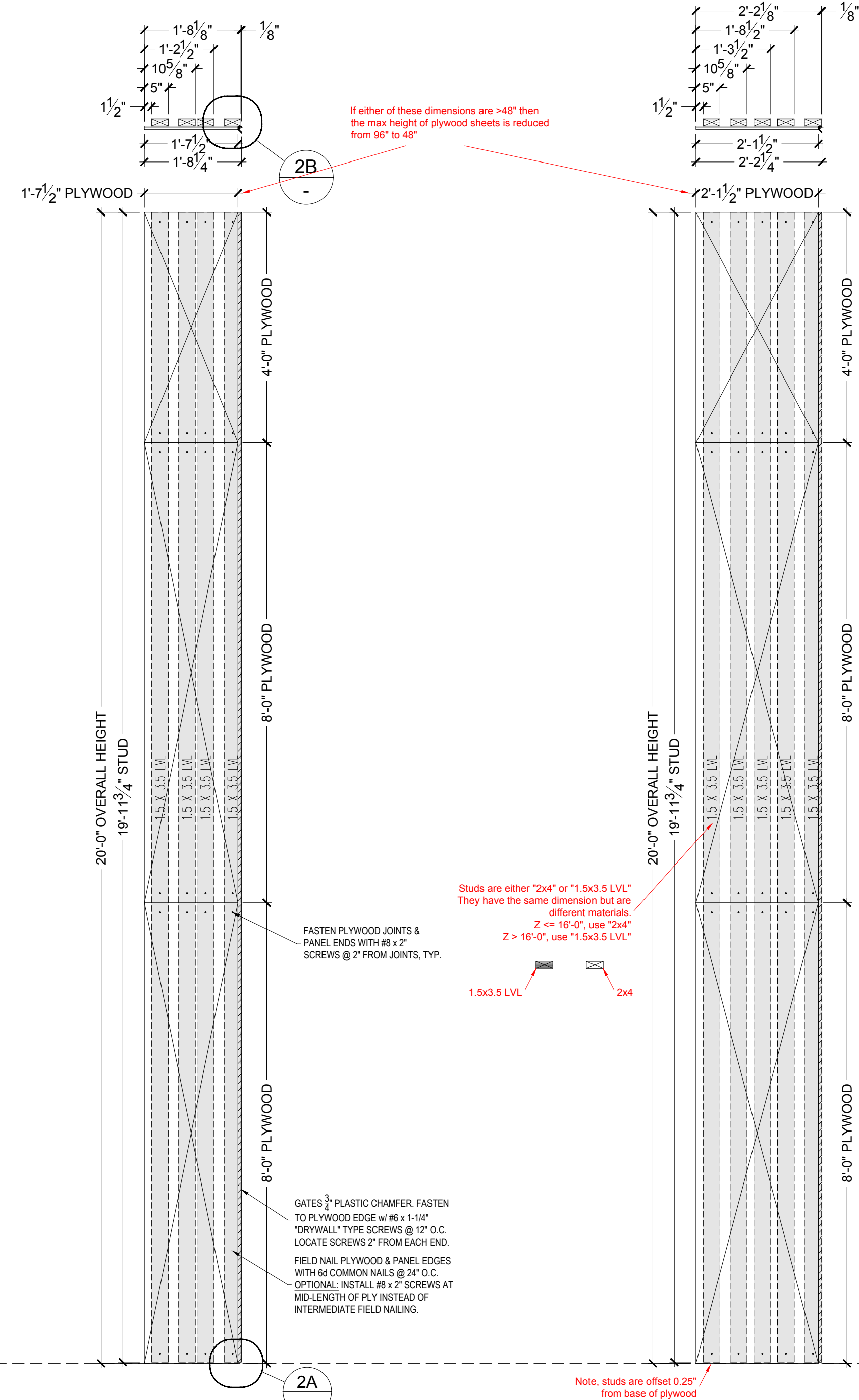
#### 3 CLAMP ATTACHMENTS

Phase 3: Elevation view



#### E COLUMN FORM ELEVATION FAB 1-EA

Phase 2: Panel views



#### B SIDE \"B\" PANEL VIEWED FROM PLYWOOD FACE

#### A SIDE \"A\" PANEL VIEWED FROM PLYWOOD FACE

#### DESIGN AND FABRICATION NOTES

- COLUMN SIZE = 24\"/>
- NUMBER OF COLUMN FORMS = 1-EA
- COLUMN FORM WEIGHT (APPROXIMATE) = 2300-LBS
- PLYWOOD = 3/4\"/>
- COLUMN FORMS AND CLAMP SPACING LAYOUTS FOR L4 X 3 X 1/4 GATES LOK-FAST COLUMN CLAMPS ARE DESIGNED FOR A FOUR RATE = FULL LIQUID HEAD U.N.O.
- CONTACT THE MCC ENGINEER PRIOR TO ANY CHANGES OR MODIFICATIONS TO THE DETAILS ON THIS SHEET.

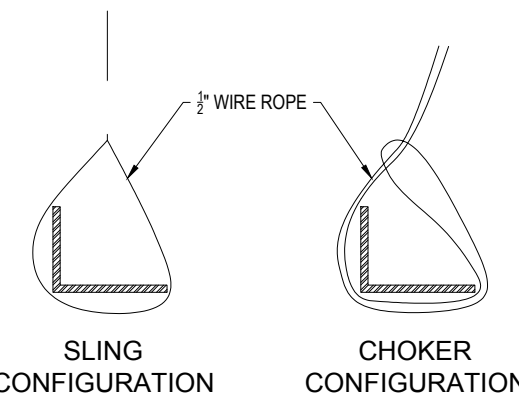
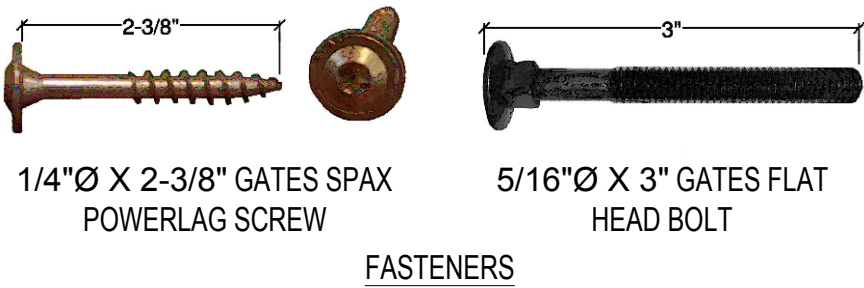
#### COMPONENTS

- PLYWOOD
- (4-EA) = (1-COL) X (4-EA/COL) @ 2'-1 1/2\"/>
  - (4-EA) = (1-COL) X (4-EA/COL) @ 1'-7 1/2\"/>
  - (2-EA) = (1-COL) X (2-EA/COL) @ 2'-1 1/2\"/>
  - (2-EA) = (1-COL) X (2-EA/COL) @ 1'-7 1/2\"/>
- STUDS
- (18-EA) = (1-COL) X (18-EA/COL) @ 19'-11 3/4\"/>
- COLUMN CLAMPS
- (10-EA) = (1-COL) X (10-EA/COL) @ GATES 12/36 LOK-FAST CLAMP ASSEMBLIES (SETS).
- FASTENERS
- (52-EA) = (1-COL) X (52-EA/COL) @ 5/16\"/>
  - (52-EA) = (1-COL) X (52-EA/COL) @ 5/16\"/>
  - (128-EA) = (1-COL) X (128-EA/COL) @ 1/4\"/>
  - (2-EA) = (1-COL) X (2-EA/COL) @ 1/2\"/>
  - (8-EA) = (1-COL) X (8-EA/COL) @ 1/2\"/>
  - (8-EA) = (1-COL) X (8-EA/COL) @ 1/2\"/>
- 3/4\"/>
- (7-EA) = (1-COL) X (7-EA/COL) @ 12'-0\"/>
- GATES ADJUSTABLE FORM BRACES (INCLUDING FORM BASE PLATES)
- (3-EA) = (1-COL) X (3EA/COL) 11'-TO-19' LONG GATES AFB
- HOISTING SLINGS
- (2-EA) = (1-COL) X (2EA/COL) ENDLESS ROUND SLINGS; LIFTX PIN \"ENR1\", PURPLE, SWL = 2400-LBS. PER SLING IN CHOKER CONFIGURATION.

Calculated by this formula: RoundUp(wt\_ply + wt\_stud + wt\_clamp + wt\_brace \* 50, 100)

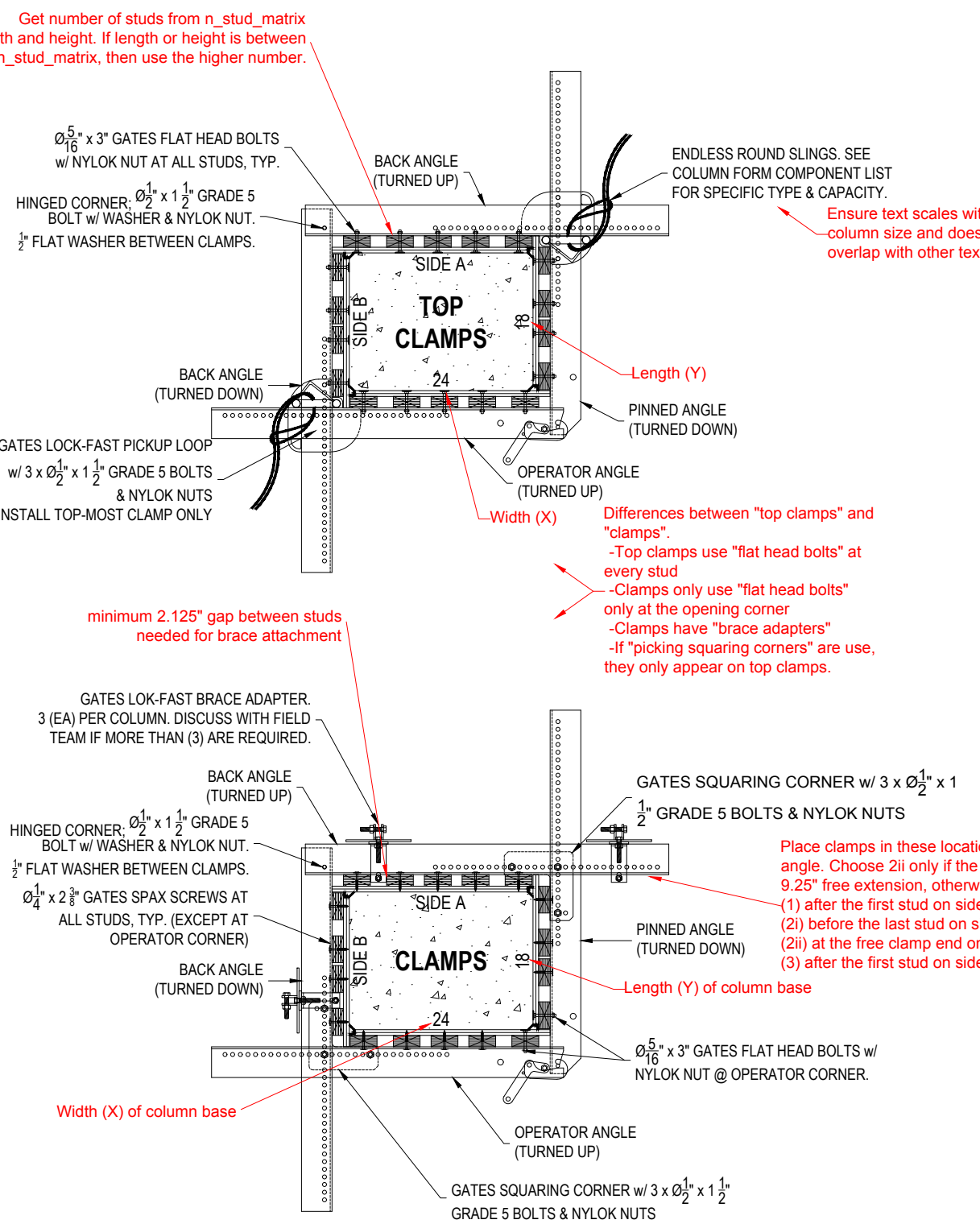
wt\_ply = (2.2 lb/ft<sup>2</sup>) \* (total plywood area in ft<sup>2</sup>)  
wt\_stud = wt\_stud\_size \* (total lumber length in ft)  
wt\_clamp = wt\_clamp\_size \* (total # of clamp sets)  
wt\_brace = wt\_brace\_size \* 3

wt\_clamp\_size = 76 lbs for 08-24 Gates clamps  
wt\_clamp\_size = 100 lbs for 12-36 Gates clamps  
wt\_clamp\_size = 123 lbs for 24-48 Gates clamps  
wt\_clamp\_size = 40 lbs for 36\"/>

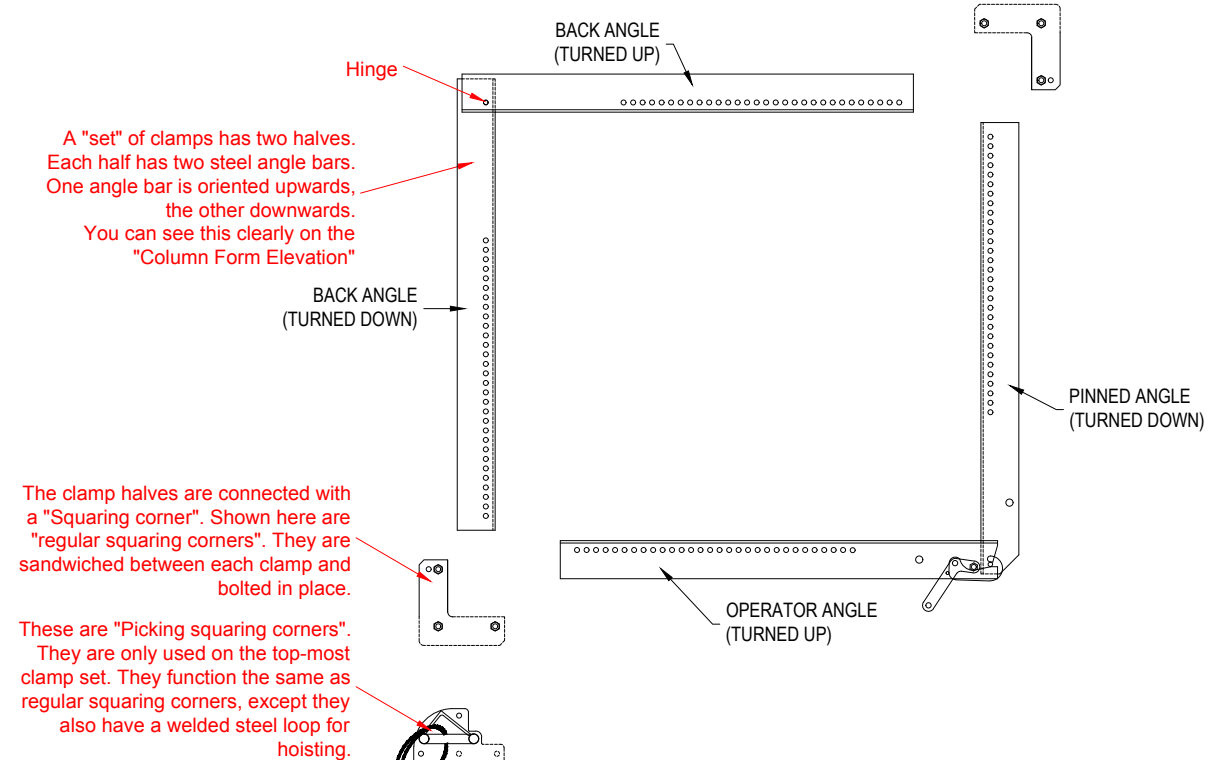


#### 4 ALTERNATE PICKING DETAILS

Phase 1: Plan view only.



#### 1 CLAMP FASTENING DETAILS



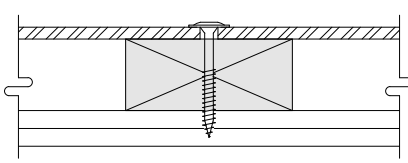


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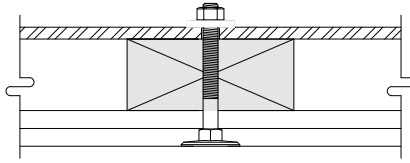
12/02/2020 11:58 AM Z:\SHARED\COLLABORATION\ENGINEERING\DEVELOPMENT\RENT

CLAMP ATTACHMENT NOTES:

- USE 1/4"Ø X 2-3/8" GATES SPAX POWERLAG SCREWS FOR ALL CLAMP SETS EXCEPT FOR THE TOP (RIGGING) CLAMPS & AT OPERATOR ANGLE CORNERS FOR LOWER CLAMPS - REF. DETAIL 4A.
- USE 5/16" Ø X 3" GATES FLAT HEAD BOLTS FOR THE TOP CLAMP ATTACHMENTS & AT OPERATOR ANGLE CORNERS FOR LOWER CLAMPS - REF. DETAIL 4B.

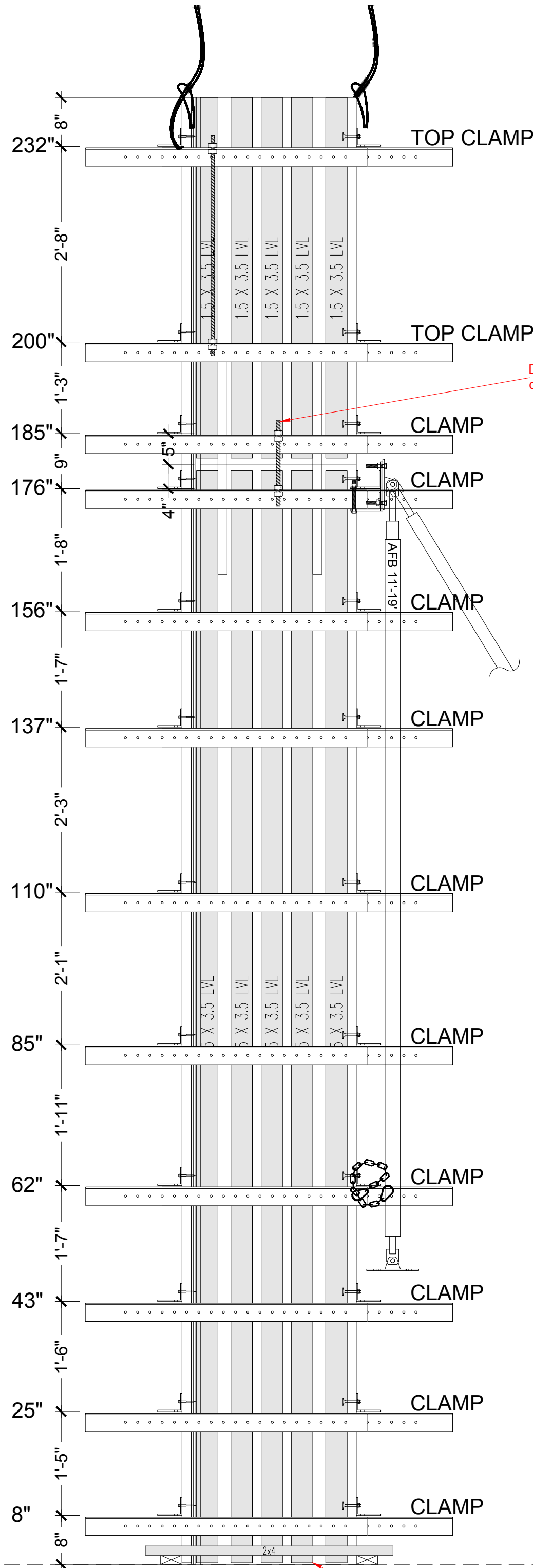


DETAIL 3A - GATES SPAX POWERLAG SCREW THROUGH PLYWOOD, STUD, AND CLAMP.



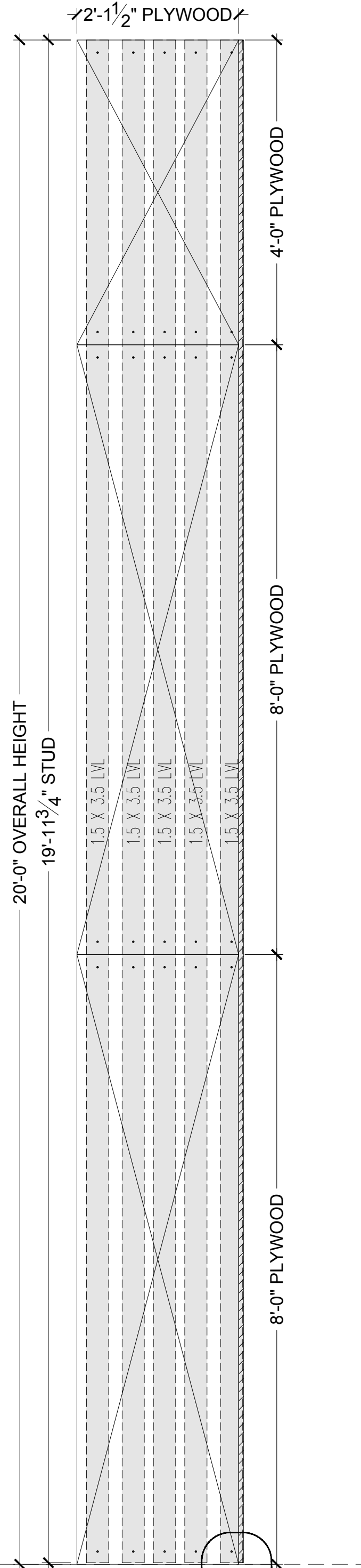
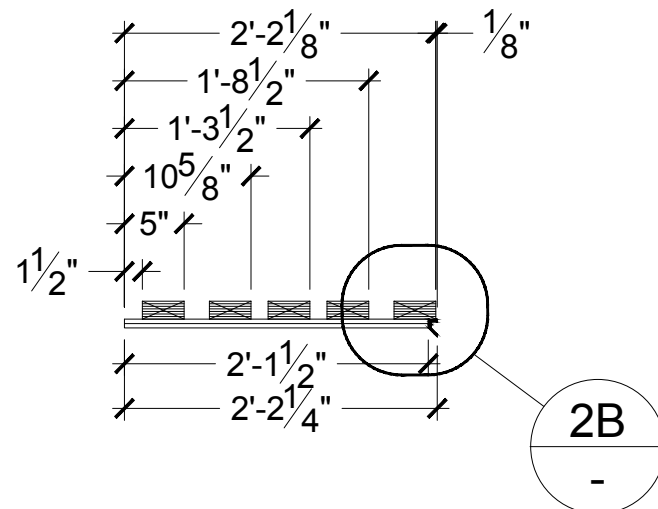
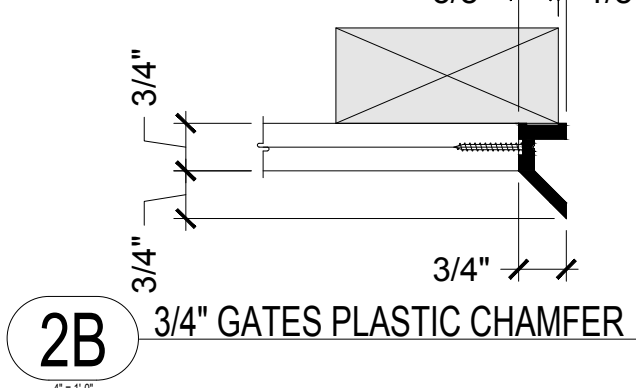
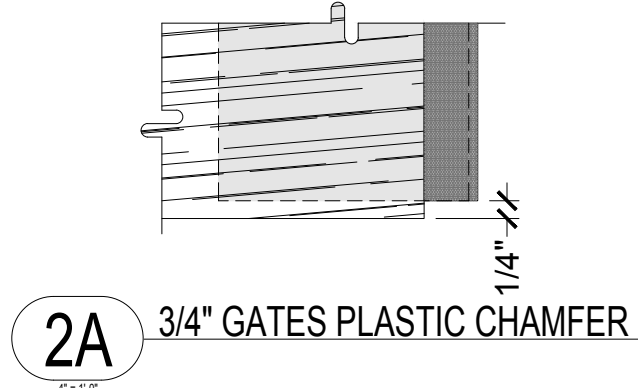
DETAIL 3B - GATES FLAT HEAD BOLT THROUGH PLYWOOD, STUD, AND CLAMP.

3 CLAMP ATTACHMENTS

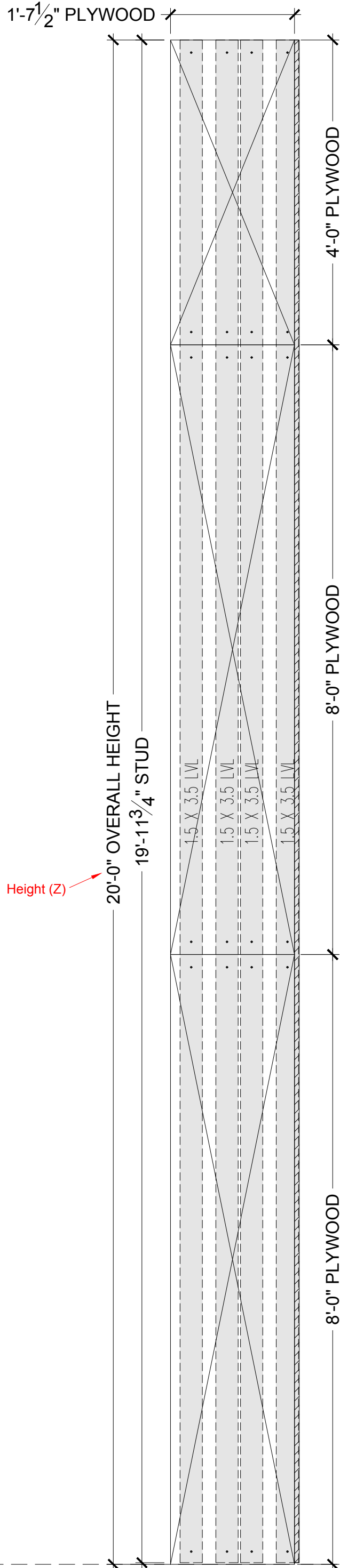


By default side X is shown here. The only exception is if a pour window is used on side Y, then we want to show that pour window so side Y is displayed.

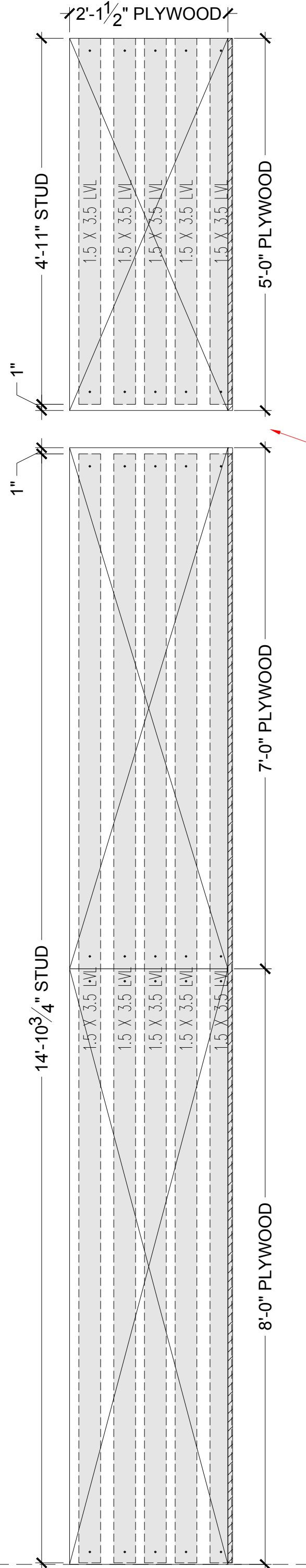
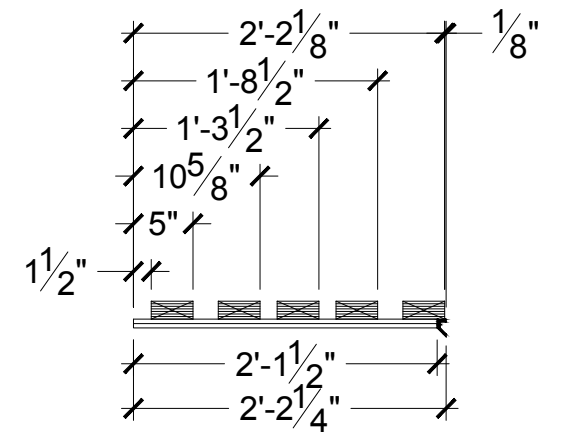
E COLUMN FORM ELEVATION  
FAB 1-EA



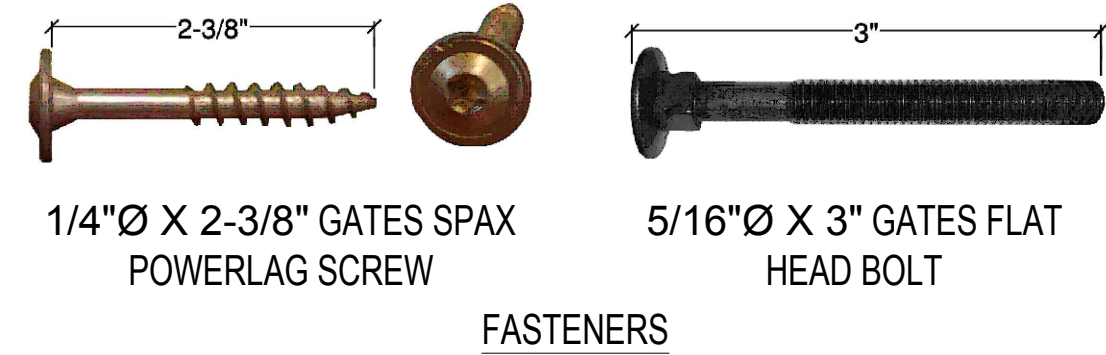
B SIDE "B" PANEL  
VIEWED FROM PLYWOOD FACE



A SIDE "A" PANEL  
VIEWED FROM PLYWOOD FACE

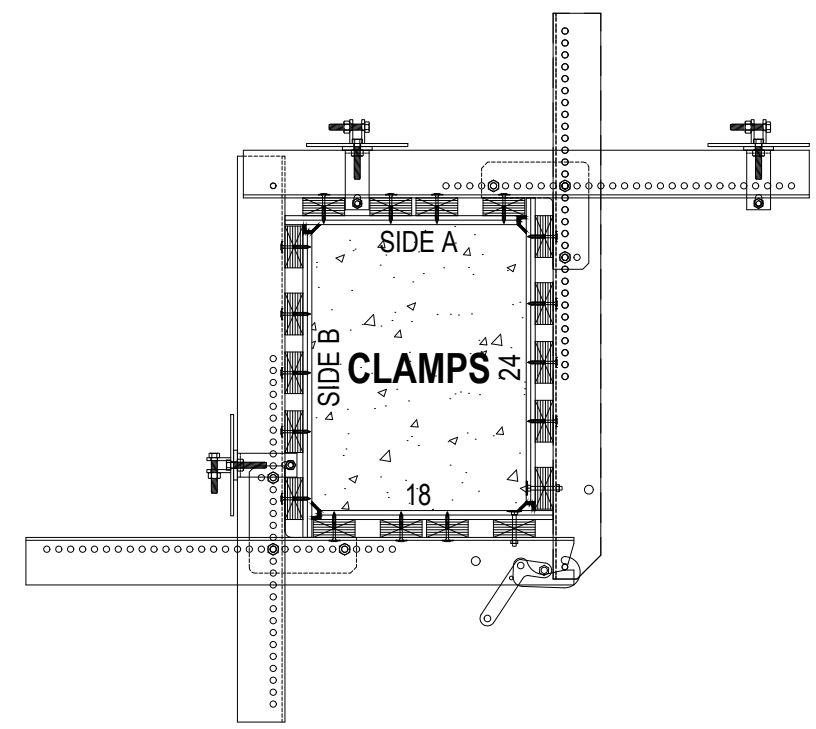
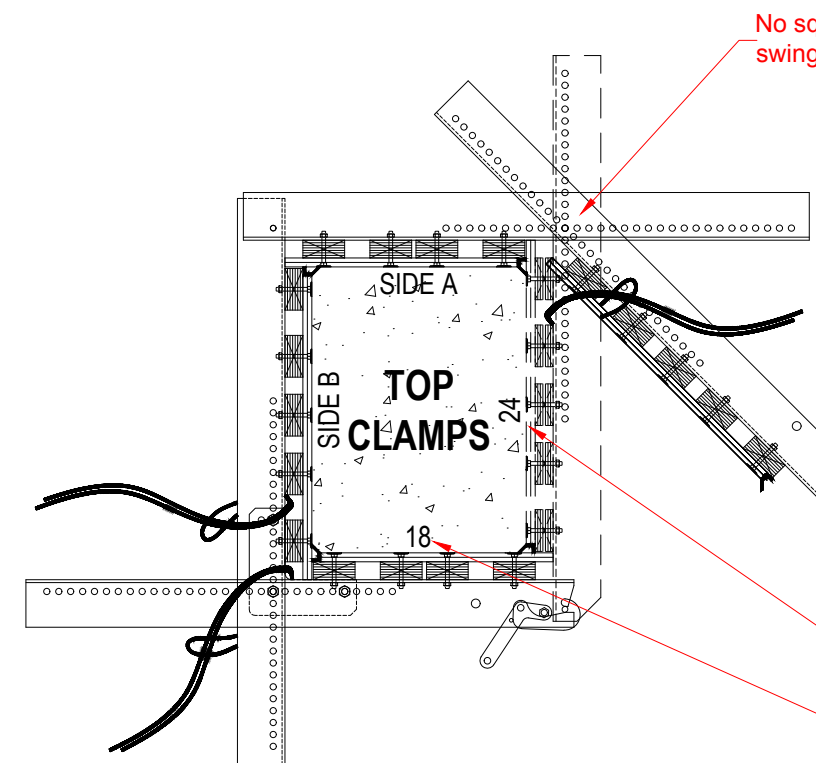


W POUR WINDOW PANEL  
VIEWED FROM PLYWOOD FACE



FASTENERS

If the plywood sheets above or below the window seam can be combined into 1 sheet that's <96" tall then combine them.



1 CLAMP FASTENING DETAILS

DESIGN AND FABRICATION NOTES

- COLUMN SIZE = 18" X 24"
- NUMBER OF COLUMN FORMS = 1-EA
- COLUMN FORM WEIGHT (APPROXIMATE) = 2500-LBS
- PLYWOOD = 3/4" PLYFORM (HDO), CLASS-1 (MIN)
- COLUMN FORMS AND CLAMP SPACING LAYOUTS FOR L4 X 3 X 1/4 GATES LOK-FAST COLUMN CLAMPS ARE DESIGNED FOR A POUR RATE = FULL LIQUID HEAD U.N.O.
- CONTACT THE MCC ENGINEER PRIOR TO ANY CHANGES OR MODIFICATIONS TO THE DETAILS ON THIS SHEET.

COMPONENTS

- PLYWOOD
- (4-EA) = (1-COL) X (4-EA/COL) @ 1'-7 1/2" WIDE X 8'-0" LONG 3/4" PLYWOOD
  - (3-EA) = (1-COL) X (3-EA/COL) @ 2'-1 1/2" WIDE X 8'-0" LONG 3/4" PLYWOOD
  - (2-EA) = (1-COL) X (2-EA/COL) @ 1'-7 1/2" WIDE X 4'-0" LONG 3/4" PLYWOOD
  - (1-EA) = (1-COL) X (1-EA/COL) @ 2'-1 1/2" WIDE X 4'-0" LONG 3/4" PLYWOOD
  - (1-EA) = (1-COL) X (1-EA/COL) @ 2'-1 1/2" WIDE X 7'-0" LONG 3/4" PLYWOOD
  - (1-EA) = (1-COL) X (1-EA/COL) @ 2'-1 1/2" WIDE X 5'-0" LONG 3/4" PLYWOOD

- STUDS
- (13-EA) = (1-COL) X (13-EA/COL) @ 19'-11 3/4" 1.5" X 3.5" LVL
  - (5-EA) = (1-COL) X (5-EA/COL) @ 14'-10 3/4" 1.5" X 3.5" LVL
  - (5-EA) = (1-COL) X (5-EA/COL) @ 4'-11" 1.5" X 3.5" LVL

- COLUMN CLAMPS
- (12-EA) = (1-COL) X (12-EA/COL) @ GATES 12/36 LOK-FAST CLAMP ASSEMBLIES (SETS).

- FASTENERS
- (56-EA) = (1-COL) X (56-EA/COL) @ 5/16" X 3" GATES FLAT HEAD BOLTS
  - (56-EA) = (1-COL) X (56-EA/COL) @ 5/16"-18 UNC NYLOK LOCK NUTS
  - (160-EA) = (1-COL) X (160-EA/COL) @ 1/4" X 2-3/8" GATES SPAX POWERLAG SCREWS
  - (2-EA) = (1-COL) X (2-EA/COL) @ 1/2"-13 UNC X +/-36" LONG ALL-THREADED ROD
  - (1-EA) = (1-COL) X (2-EA/COL) @ 1/2"-13 UNC X +/-14" LONG ALL-THREADED ROD
  - (12-EA) = (1-COL) X (12-EA/COL) @ 1/2"-13 UNC NYLOK LOCK NUTS
  - (12-EA) = (1-COL) X (12-EA/COL) @ 1/2" STANDARD FLAT WASHER

- 3/4" GATES PLASTIC CHAMFER (BASED ON 12" CHAMFER LENGTHS)
- (7-EA) = (1-COL) X (7-EA/COL) @ 12'-0" LONG PIECES

- GATES ADJUSTABLE FORM BRACES (INCLUDING FORM BASE PLATES)
- (3-EA) = (1-COL) X (3-EA/COL) 11'-TO-19' LONG GATES AFB

- HOISTING SLINGS
- (2-EA) = (1-COL) X (2EA/COL) ENDLESS ROUND SLINGS; LITEX P/N "ENR2", GREEN. SWL = 4800-LBS. PER SLING IN CHOKER CONFIGURATION.



24" x 18" GATES COLUMN FORM  
Project Title  
Project Address

SHEET DATE: 12/04/2020  
SHEET NUMBER: PRELIMINARY  
SCALE: 3/4" = 1'-0"  
DRAWN BY: MCC  
JOB: 999  
SHEET: 1.0.0  
SHEET DATE: A



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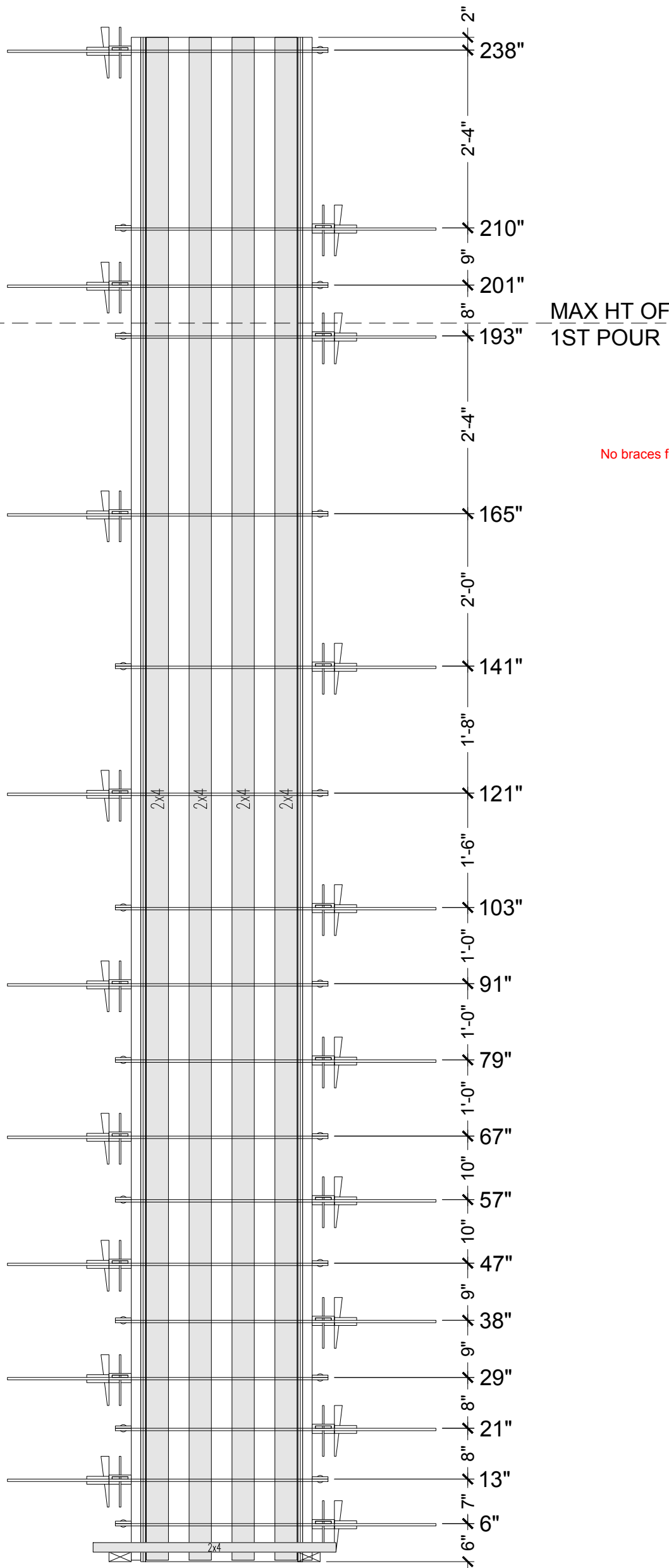
7/24/2020 1:42:36 PM F:\SHAREDCOLLABORATION\ENGINEERING\DEVELOPMENT\BENT

This height is from the userform "Maximum height w/ full liquid head". This is how tall the column can be poured before the crew must wait for the wet concrete to cure. Above this line, the clamp spacing pattern repeats from the top. A column may have up to 4 of these pour breaks

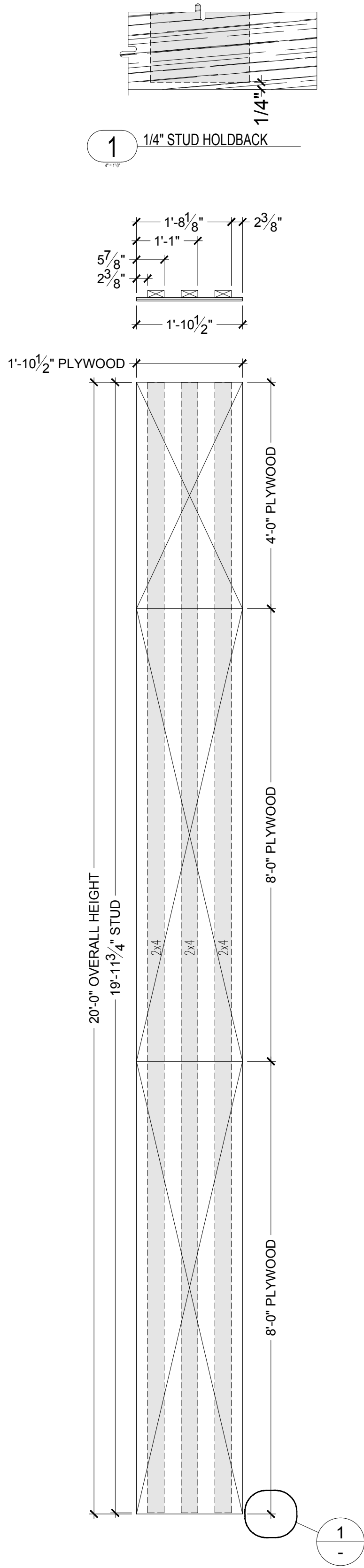
Scissor clamps alternate direction

Scissor clamp spacing from "scissor\_clamp\_matrix"  
Column 1: maximum height w/ full liquid head" for given side length. If sides are different use whichever has the lower value in column 1.  
Column 2: side length  
Remaining columns: clamp spacing. Clamp spacing logic is same as Gates clamps.

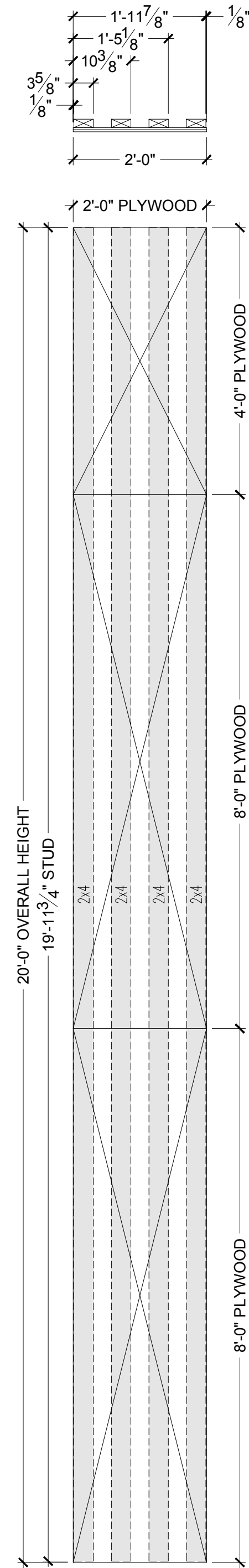
There are 3 scissor clamp sizes, select using the larger value of X and Y.  
If < 23.5 use 36" scissor clamps  
Elseif <= 35.5 use 48" scissor clamps  
Elseif <= 48" use 60" scissor clamps



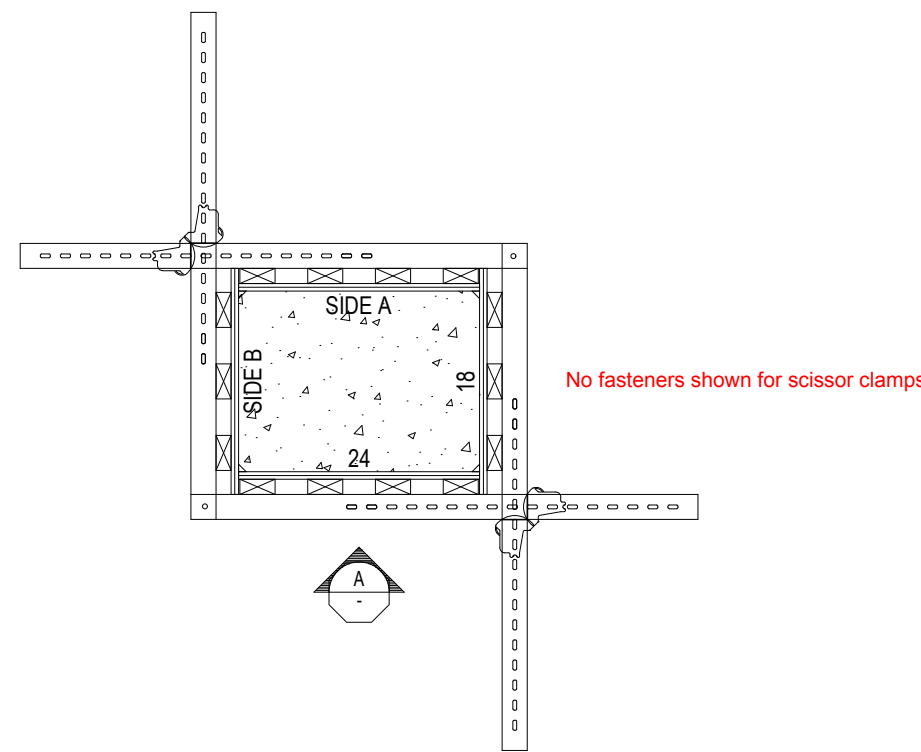
A COLUMN FORM ELEVATION  
FAB 1-EA



B SIDE "B" PANEL  
VIEWED FROM PLYWOOD FACE



C SIDE "A" PANEL  
VIEWED FROM PLYWOOD FACE



D PLAN VIEW

## DESIGN AND FABRICATION NOTES

- COLUMN SIZE = 24" X 18"
- NUMBER OF COLUMN FORMS = 1-EA
- COLUMN FORM WEIGHT (APPROXIMATE) = 1800-LBS
- COLUMN PANEL WEIGHT (SINGLE PANEL) = 240-LBS
- PLYWOOD = 3/4" PLYFORM (HDO), CLASS-1 (MIN)
- COLUMN FORMS AND CLAMP SPACING LAYOUTS FOR SCISSOR CLAMPS ARE DESIGNED FOR A POUR RATE = 16'-3"
- CONTACT THE MCC ENGINEER PRIOR TO ANY CHANGES OR MODIFICATIONS TO THE DETAILS ON THIS SHEET.

## COMPONENTS

- PLYWOOD
- (4-EA) = (1-COL) X (4-EA/COL) @ 2'-0" WIDE X 8'-0" LONG 3/4" PLYWOOD
  - (4-EA) = (1-COL) X (4-EA/COL) @ 1'-10 1/2" WIDE X 8'-0" LONG 3/4" PLYWOOD
  - (2-EA) = (1-COL) X (2-EA/COL) @ 2'-0" WIDE X 4'-0" LONG 3/4" PLYWOOD
  - (2-EA) = (1-COL) X (2-EA/COL) @ 1'-10 1/2" WIDE X 4'-0" LONG 3/4" PLYWOOD

- STUDS
- (14-EA) = (1-COL) X (14-EA/COL) @ 19'-11 3/4" 2X4

- SCISSOR CLAMP SETS (2 CLAMPS PER SET)
- (18-EA) = (1-COL) X (18-EA/COL) @ 48" SCISSOR CLAMP SETS

No fasteners specified for scissor clamps

Calculated by this formula: RoundUp(wt\_ply + wt\_stud + wt\_clamp + 50, 100)

wt\_ply = (2.2 lb/ft<sup>2</sup>) \* (total plywood area in ft<sup>2</sup>)  
wt\_stud = wt\_stud\_size \* (total lumber length in ft)  
wt\_stud\_size = 1.31 lbs for 2x4s  
wt\_stud\_size = 1.80 lbs for 1.5x3.5 LVLs  
wt\_clamp = wt\_clamp\_size \* (total # of clamp sets)  
wt\_clamp\_size = 76 lbs for 08-24 Gates clamps  
wt\_clamp\_size = 100 lbs for 12-36 Gates clamps  
wt\_clamp\_size = 123 lbs for 24-48 Gates clamps  
wt\_clamp\_size = 40 lbs for 36" scissor clamps  
wt\_clamp\_size = 56 lbs for 48" scissor clamps  
wt\_clamp\_size = 65 lbs for 60" scissor clamps



24" x 18" SCISSOR CLAMP COLUMN FAB

Project Title  
Project Address

SHEET NUMBER	1204-2020
SHEET DATE	PRELIMINARY
SCALE	3/4" = 1'-0"
DESIGNED BY	MCC
DWG	999
SHEET	1.0.0
SHEET COUNT	A

24X36 ORIGINAL SHEET SIZE