



4344 MISSION BLVD.  
(909) 627-0981

FAX (909) 628-3774

MONTCLAIR, CA. 91763  
(800) 377-8441

SERVING AGRICULTURE SINCE 1946

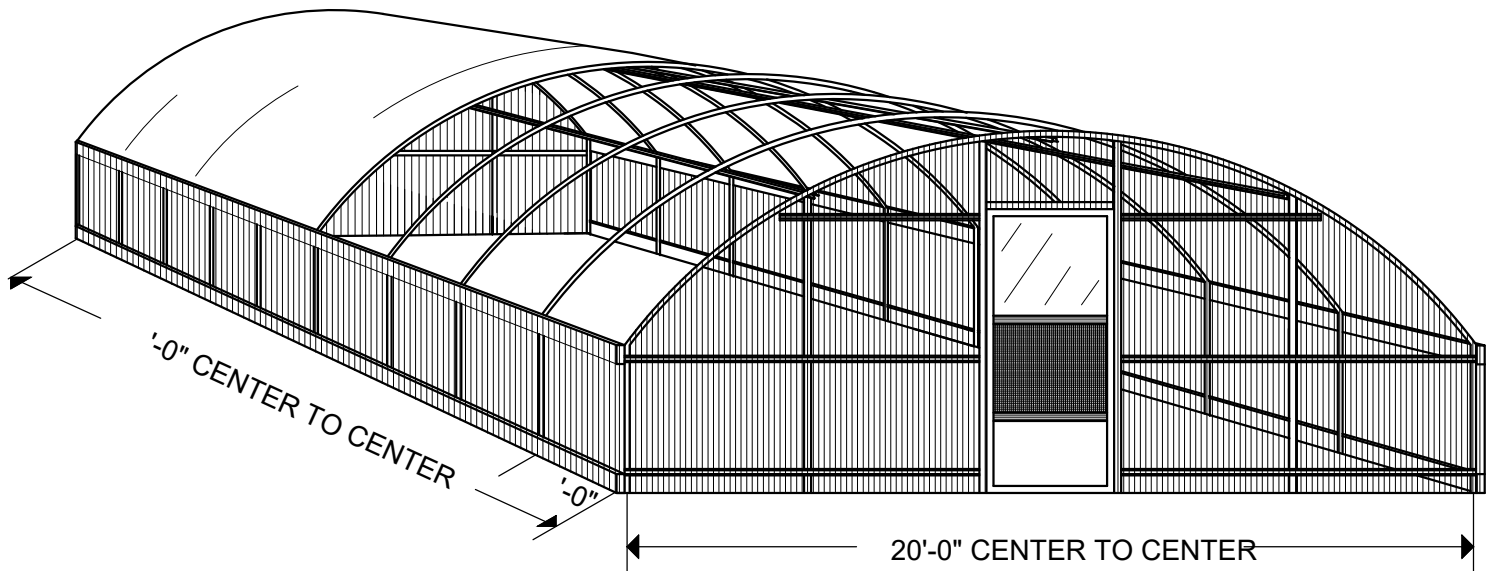
A DIVISION OF JOHN L. CONLEY, INC.

GENERAL CONTRACTORS LICENSE NO. 323391-B

## COLD FRAME SERIES 1210 GREEN HOUSE SYSTEM

**IMPORTANT!!!!**

NON - CODE COLD FRAMES REPRESENT A NON - CODE- NON ENGINEERED DESIGN WITH CERTIFICATION UNAVAILABLE. IT IS NOT RECOMMENDED THAT THIS HOUSE BE UTILIZED IN REGIONAL AREAS REPRESENTING SNOW OR HIGH WIND FACTORS.



NOTE:  
ENDWALL COLUMN SPACING ILLUSTRATED  
MAY VARY TO ACCOMMODATE DOOR SIZING.

### 20'-0" WIDE WITH LEGS INSTRUCTION MANUAL

---

---

# TABLE - CONTENTS

INTRODUCTION -----	PAGE 1
DISCLAIMER -----	PAGE 1
NOTICE TO CONLEY'S CUSTOMERS PROTECT YOURSELF FROM ADDED COSTS-----	PAGE 1 - 2
WARRANTY -----	PAGE 2
GRADE AND PREPARE THE BUILDING SITE -----	PAGE 3
LAYOUT AND SQUARE THE FOUNDATION -----	PAGE 3 - 5
FIND COLUMN CENTERS -----	PAGE 5
AUGER COLUMN HOLES -----	PAGE 6
SETTING THE LINES -----	PAGE 6
SLOPE LINES -----	PAGE 7
MARK CENTERS ON COLUMN -----	PAGE 7
MARK COLUMNS -----	PAGE 8
SET COLUMNS -----	PAGE 8
INSTALLATION - ARCHES -----	PAGE 9
STRUCTURAL UPGRADES (OPTIONAL - LOWER CHORD AND FILLER TUBES)-----	PAGE 10
STRUCTURAL UPGRADES (OPTIONAL - LOWER CHORD AND KNEE BRACE)-----	PAGE 11 - 12
ARCH TO COLUMN CONNECTION-----	PAGE 13
INSTALL REMAINING ARCHES AND PURLINS -----	PAGE 13 - 16
INSTALL CABLE BRACING -----	PAGE 17 - 18
COLD FRAME INTERMEDIATE ARCH PARTS LIST -----	PAGE 19
COLD FRAME END WALL PARTS LIST -----	PAGE 20
COLD FRAME END WALL UPRIGHT INSTALLATION-----	PAGE 21
COLD FRAME END WALL GIRT CONNECTION DETAILS-----	PAGE 22
COLD FRAME END WALL UPRIGHT BRACING DETAILS-----	PAGE 23
SHUTTER FAN INSTALLATION (OPTIONAL)-----	PAGE 24 - 25
SIDE WALL GIRT INSTALLATION DETAILS-----	PAGE 26 - 27
GABLE END BAR COMBO INSTALLATION-----	PAGE 28 - 29
COVERING AND TRIM INSTALLATION OPTIONS (SPLICER BOW AT END WALL AND MID-SPAN)-----	PAGE 30
INSTALLATION OF POLY COVERING WITH VINNIPET SPRING -----	PAGE 31
INSTALLATION OF POLY COVERING ON ARCHED BUILDINGS -----	PAGE 32
INSTALLATION OF INFLATOR FAN -----	PAGE 33
INFLATOR FAN ASSEMBLY -----	PAGE 34

---

# INTRODUCTION

SHOULD YOU HAVE ANY QUESTIONS CONCERNING THESE INSTRUCTIONS, COMPONENTS, ETC., PLEASE CONTACT US DIRECTLY. WE WILL BE GLAD TO ANSWER ANY QUESTIONS CONCERNING OUR MANUFACTURED PRODUCT.

INCLUDED IN THIS PACKAGE ARE INSTRUCTIONS AND DETAILED DRAWINGS PERTAINING TO YOUR CONLEY'S GREENHOUSE SYSTEM. STUDY THE INSTRUCTIONS BEFORE BEGINNING CONSTRUCTION TO BECOME FAMILIAR WITH OUR PRODUCT AND HOW IT IS ASSEMBLED.

STORE ALL MATERIALS OFF THE GROUND ON WOOD BLOCKS. PROTECT ALL YOUR MATERIALS FROM THEFT AND/OR DAMAGE. YOU MAY WISH TO DISCUSS BUILDER'S RISK INSURANCE WITH YOUR INSURANCE AGENT.

## DISCLAIMER

THE FOLLOWING INSTRUCTIONS ARE GIVEN AS SUGGESTED GUIDELINES FOR GENERAL INSTRUCTIONS. CONLEY'S MANUFACTURING AND SALES OR ANY OF THEIR EMPLOYEES SHALL NOT BE RESPONSIBLE RESULTING FROM PURCHASER'S IMPLEMENTATION OF THESE INSTRUCTIONS. PURCHASERS ALONE SHALL BE RESPONSIBLE FOR CONFORMANCE WITH ALL APPLICABLE LAWS, ORDINANCES, AND SAFETY STANDARDS IN CONSTRUCTING THIS GREENHOUSE AND ALL EQUIPMENT INSTALLED THEREIN.

## NOTICE TO CONLEY'S CUSTOMERS PROTECT YOURSELF FROM ADDED COSTS

ALL PRODUCTS ARE SOLD F.O.B. SHIPPING POINT, AND THE ATTACHED MEMORANDUM COPY OF BILL OF LADING THAT INDICATES THAT MATERIAL SHIPPED HAS NOW, BY LAW, BECOME YOUR PROPERTY AND IS AN ACKNOWLEDGMENT BY THE TRANSPORTATION COMPANY OF THE RECEIPT OF THE MATERIALS IN GOOD CONDITION.

SAFE DELIVERY OF THIS SHIPMENT IS NOW THE RESPONSIBILITY OF THE CARRIER WHO ACTS AS YOUR AGENT. WE WILL BE GLAD TO RENDER ASSISTANCE TO TRACE AND RECOVER LOST GOODS.

EXAMINE THE SHIPMENT CAREFULLY BEFORE SIGNING THE FREIGHT BILL. IF ANY DAMAGE IS NOTED, OR IF THE NUMBER OF PIECES DOES NOT AGREE WITH THE BILL OF LADING, INSIST THAT SHORTAGE OR DAMAGE BE NOTED ON THE FREIGHT BILL BY THE CARRIER'S AGENT. FAILURE TO DO SO MAY JEOPARDIZE YOUR RECOVERY.

DO NOT REFUSE SHIPMENT AS THIS IS YOUR PROPERTY AND REFUSAL CAUSES UNNECESSARY DELAYS AND SHORTAGE EXPENSES. ARRANGE WITH CARRIER WITHIN 15 DAYS TO INSPECT AND MAKE REFERENCE THERETO ON THE FREIGHT BILL. CONSULT YOUR CARRIER FOR DISPOSITION OF DAMAGED ARTICLES.

---

MAKE YOUR CLAIM PROMPTLY, THE TRANSPORTATION COMPANY WILL NOT CONSIDER A CLAIM UNLESS IT IS PRESENTED WITHIN NINE (9) MONTHS FROM THE DATE OF SHIPMENT. CARRIER'S AGENT WILL ASSIST YOU IN PREPARING A CLAIM.

CLAIMS FOR LOSS OR DAMAGE AND TRANSPORTATION CHARGES RESULTING FROM SHIPPING, MUST NOT BE DEDUCTED FROM THE INVOICE, NOR PATENT INVOICES WITHHELD AWAITING ADJUSTMENT OF SUCH CLAIMS, SINCE IT IS THE FUNCTION OF THE CARRIER TO GUARANTEE SAFE DELIVERY.

CHECK THE ITEMS RECEIVED WITH THE INVOICE. OF THERE IS ANY DISCREPANCY CONTACT US IMMEDIATELY GIVING FULL PARTICULARS. CLAIMS FOR SHORTAGE ATTRIBUTED TO OUR COUNT IN PACKAGE MUST BE MADE WITHIN 10 DAYS FROM THE SHIPMENT IS RECEIVED.

NO MERCHANDISE MAY BE RETURNED FOR CREDIT WITHOUT A RETURN GOODS TAG AND SHIPPING INSTRUCTIONS FROM THE FACTORY.

## WARRANTY

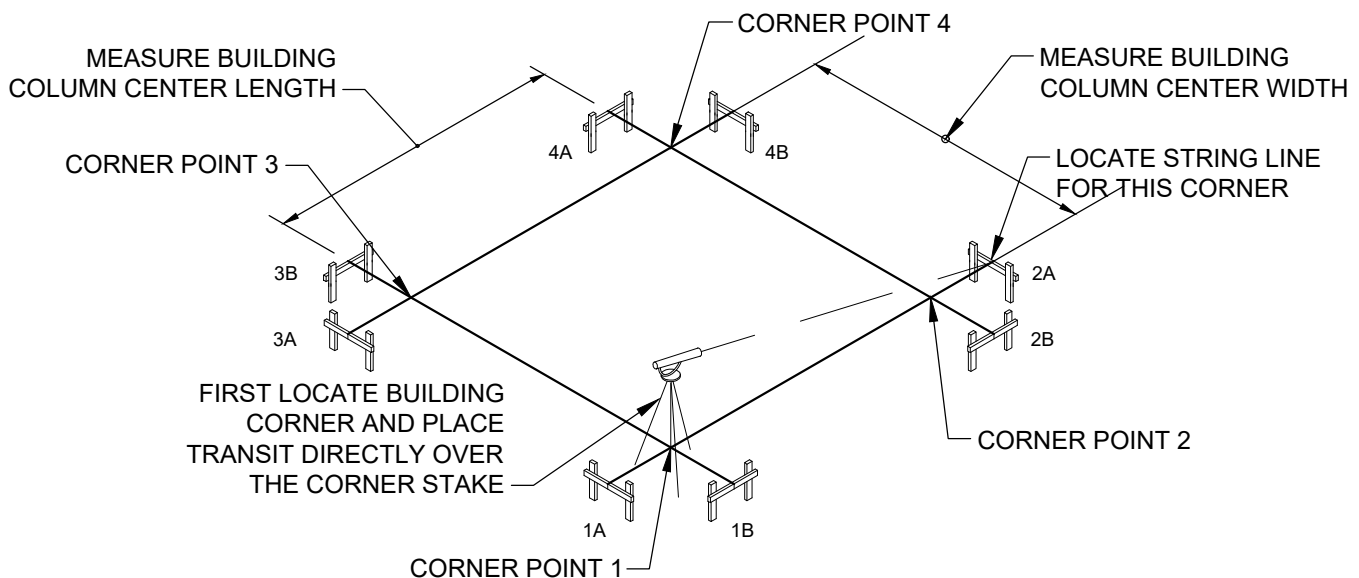
CONLEY'S MANUFACTURING AND SALES, THEIR EMPLOYEES OR REPRESENTATIVES, WILL NOT BE RESPONSIBLE FOR ANY DAMAGES TO GREENHOUSE COVERINGS, STRUCTURES, CROPS OR EQUIPMENT WHEN USED IN CONDUCTION WITH OUR TUBE - LOCK, OR ANY OTHER LOCKING DEVICE MANUFACTURED BY CONLEY'S MANUFACTURING AND SALES OR OTHERS.

# GRADE AND PREPARE THE BUILDING SITE

1. REMOVE THE GRASS AND DEBRIS DOWN TO SOLID SOIL.
2. LOCATE THE BUILDING CORNERS AND SET THE GRADING STAKES 5' BEYOND THE CORNERS.
3. A TRANSIT LEVEL IS NEEDED TO SURVEY THE AREA OF THE BUILDING. IN ORDER TO INSURE PROPER DRAINAGE AND EVEN HEATING, THE WIDTH SHOULD BE SET LEVEL AND THE LENGTH SHOULD BE SET LEVEL WITHIN APPROXIMATELY 1%. WITH A LEVEL GRADE, THE COLUMNS WILL NEED TO BE SET AT DIFFERENT HEIGHTS TO ACHIEVE A SLOPE FOR THE GUTTERS TO DRAIN (BUILDINGS WITH GUTTERS ONLY, SEE FIG 9). THE GRADE COULD ALSO BE PREPARED AT A 1/2 % SLOPE, FOR GUTTER BUILDINGS AND THE COLUMNS CAN ALL BE SET AT THE SAME HEIGHT (SEE SHT 7 FOR OPTIONS)
4. CUT AND FILL THE SITE UNTIL IT IS AT THE RECOMMENDED GRADE.

## LAYOUT AND SQUARE THE FOUNDATION

1. ROUGHLY LOCATE THE CORNERS OF THE BUILDING AND DRIVE IN THE CORNER STAKES.
2. SET BATTER BOARDS APPROXIMATELY 6' ( OR ADEQUATE DISTANCE FROM AUGER CLEARANCE) BACK FROM THE CORNERS IN EACH DIRECTION. SET INTERMEDIATE BATTER BOARDS OF THE BUILDING IS LONGER THAN 50' TO KEEP THE LINES FROM SAGGING OR BLOWING IN THE WIND.
3. LOCATE THE FIRST BUILDING CORNER POINT AND MARK IT WITH A STAKE OR NAIL HEAD.
4. MEASURE FROM CORNER POINT 1, THE SPECIFIED DIMENSION OF THE BUILDING, TO LOCATE CORNER POINT 2. PULL A TIGHT LINE BETWEEN BATTER BOARD "1A" AND BATTER BOARD "2A", MAKING SURE THE LINE PASSES OVER CORNER POINT 1 AND CORNER POINT 2. FASTEN THE LINE ONTO THE BATTER BOARDS AND CHECK IT WITH TRANSIT. MAKE SURE THE BATTER BOARDS AND LINES ARE LEVEL (SEE FIG. 1). VARIATIONS IN THIS WILL ULTIMATELY AFFECT THE EAVE HEIGHT.



SEE PAGE 7 FOR GUTTER CONNECTED HOUSES

FIGURE 1 - LOCATING CORNER POINT 2

5. TO LOCATE THE THIRD CORNER POINT (FIG. 2), YOU MAY USE ONE OF TWO METHODS, THE DIAGONAL METHOD OR THE TRIANGLE METHOD.

THE DIAGONAL METHOD - RUN A LINE DIAGONALLY ACROSS FROM CORNER TO CORNER AND ADJUST THE LINES UNTIL THE DIAGONAL DIMENSIONS ARE EQUAL (SEE FIG. 3).

THE TRIANGLE METHOD - CREATE A 90° ANGLE FROM THE FIRST LINE USING CORNER POINT 1 AS A VERTEX. THIS ANGLE MAY BE ACCOMPLISHED BY USING TWO TAPE MEASURES AND THE CHART LISTED BELOW (SEE FIG. 4) (USE THIS METHOD FOR LARGER BUILDINGS WHERE THE LENGTH OF THE DIAGONAL EXCEEDS THE 100 FOOT TAPE MEASURE). WHEN YOU HAVE LOCATED CORNER POINT 3, PULL YOUR SECOND LINE BETWEEN BATTER BOARD "1B" AND BATTER BOARD "3B" MAKING SURE IT PASSES OVER CORNER POINT 1 AND CORNER POINT 3. CHECK WITH TRANSIT MAKING SURE THAT BATTER BOARDS AND LINES ARE LEVEL (SEE FIG. 2).

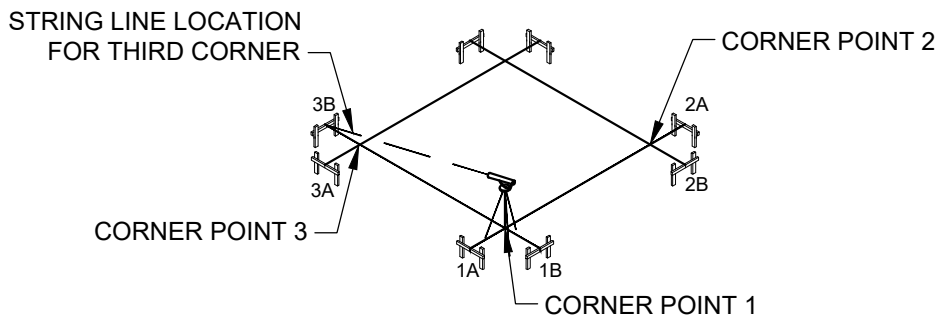


FIGURE 2 - LOCATING CORNER POINT 3

MEASURE THE DIAGONAL LINES AND ADJUST THE LINES UNTIL THE TWO DIAGONAL DIMENSIONS ARE EQUAL

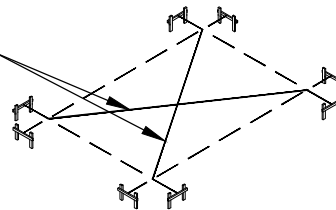


FIGURE 3 - DIAGONAL METHOD

$\sqrt{\text{DIMENSION A}^2 + \text{DIMENSION B}^2} = \text{DIMENSION C}^2$		
20'	15'	25'
24'	18'	30'
28'	21'	35'
32'	24'	40'
36'	27'	45'
40'	30'	50'

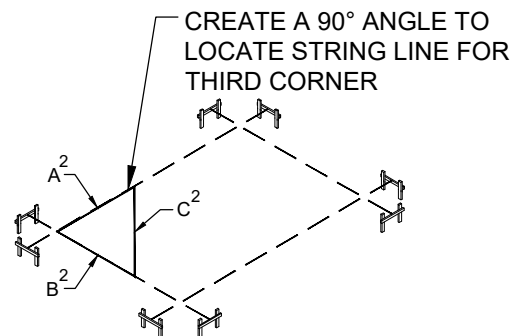


FIGURE 4 - TRIANGLE METHOD

6. TO LOCATE THE FOURTH CORNER POINT (FIG. 5), USING TWO TAPE MEASURES, FROM CORNER POINT 3 AND CORNER POINT 2, THE SPECIFIED LENGTH AND WIDTH. THE POINT AT WHICH THESE LINES INTERSECT WILL BE CORNER POINT 4.
7. NOW YOU MAY PULL YOUR LAST TWO LINES AND FASTEN THEM TO THE APPROPRIATE BATTER BOARDS. BE SURE TO CHECK THE LEVEL OF YOUR LINES (FIG. 5).

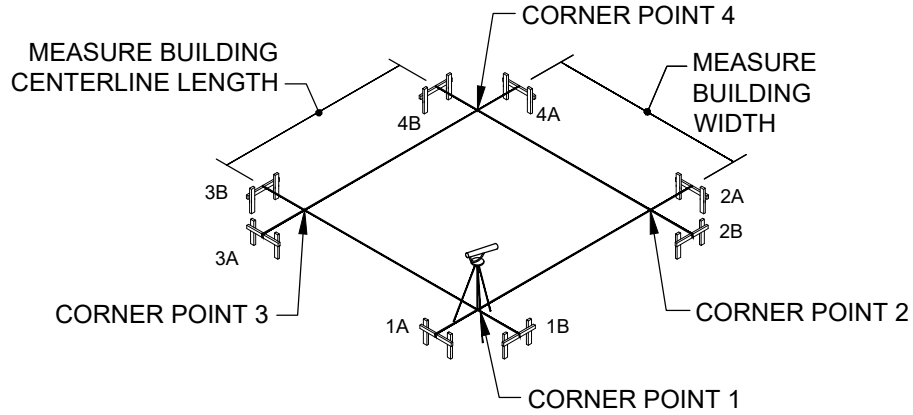


FIGURE 5 - LOCATING CORNER POINT 4

## FIND COLUMN CENTERS

1. MARK THE CORNER POINTS ON THE LINES, AND USE A 100' TAPE MEASURE TO MARK THE INTERMEDIATE HOLE CENTERS ON THE LINES. DETERMINE FROM DRAWINGS PROVIDED, WHAT THE COLUMN CENTER TO CENTER SPACING IS FOR YOUR BUILDING.
2. USING A LEVEL FOR VERTICAL ACCURACY, MARK THE HOLE CENTERS ON THE GROUND WITH NAILS. PAINT THE NAIL HEADS WITH FLUORESCENT PAINT.
3. MEASURE DOWN THE WIDTH OF THE LINES AND MARK THE END WALL UPRIGHT CENTERS IN THE SAME MANNER.

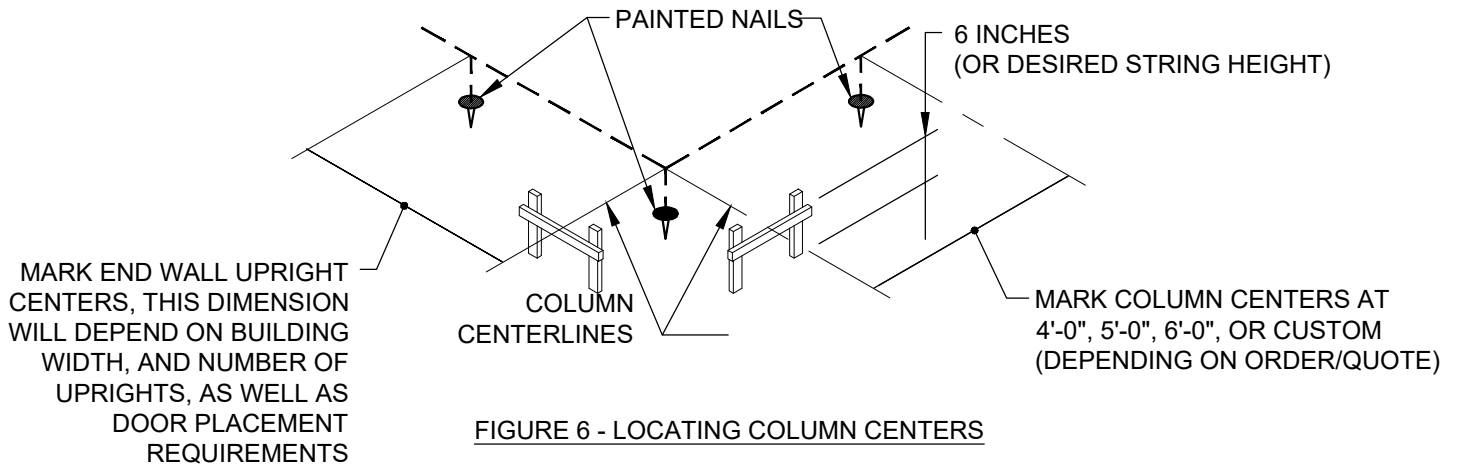


FIGURE 6 - LOCATING COLUMN CENTERS

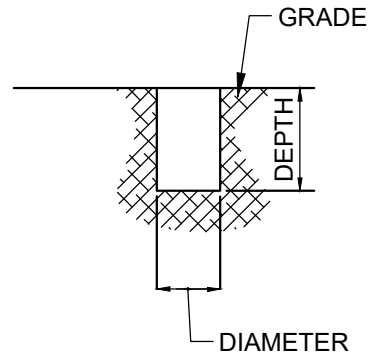
# AUGER COLUMN HOLES

1. AT THE POINT THAT THE LINES MEET THE BATTER BOARDS, CLEARLY AND ACCURATELY MARK THE PLACEMENT OF THE LINES. MAKE SURE ALL THE BATTER BOARDS ARE MARKED.
2. REMOVE THE LINES.
3. AUGER THE HOLES DIAMETER AND DEPTH (SEE ENGINEERING DRAWINGS OR CONSULT YOUR LOCAL BUILDING DEPARTMENT FOR HOLE DIMENSIONS).
4. AFTER DIGGING THE HOLES FOR END WALL UPRIGHTS, REFILL LOOSELY WITH DIRT, UNTIL READY FOR USE (SEE FIG. 9).

## CAUTION

BE SURE THERE ARE NO UNDERGROUND OR OVERHEAD ELECTRICAL WIRES, WATER PIPES, GAS LINES, ETC. ON OR NEAR THE JOB SITE.

FIGURE 7 - AUGER HOLE



# OFFSETTING THE LINES

1. OFFSETTING OF THE LINES SHOULD BE DONE THE DAY THE CONCRETE IS POURED AND NOT LEFT OVERNIGHT TO PREVENT STRETCHING OR KNOCKING DOWN LINES.
2. TO FIND THE **COLUMN SET LINES**, YOU MUST RE-STRING THE FOUNDATION LAYOUT. FROM THE CENTER LINE MARKS ON THE BATTER BOARDS, MEASURE 1/2 THE SIZE OF THE COLUMN AND MOVE THE LINES TO THAT MARK. (ALWAYS MOVE THE LINES IN THE SAME DIRECTION TO PREVENT CONFUSION AND MISPLACEMENT OF COLUMNS (SEE FIG. 8).

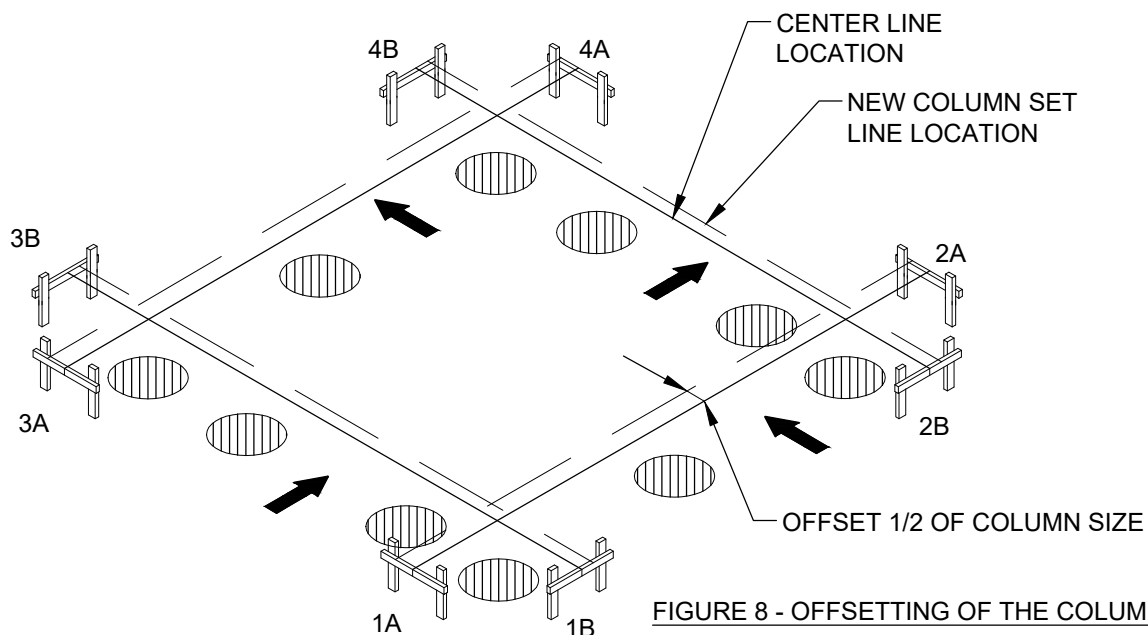


FIGURE 8 - OFFSETTING OF THE COLUMN SET LINES



# SLOPING "GUTTER BUILDINGS" FOR PROPER WATER DRAINAGE

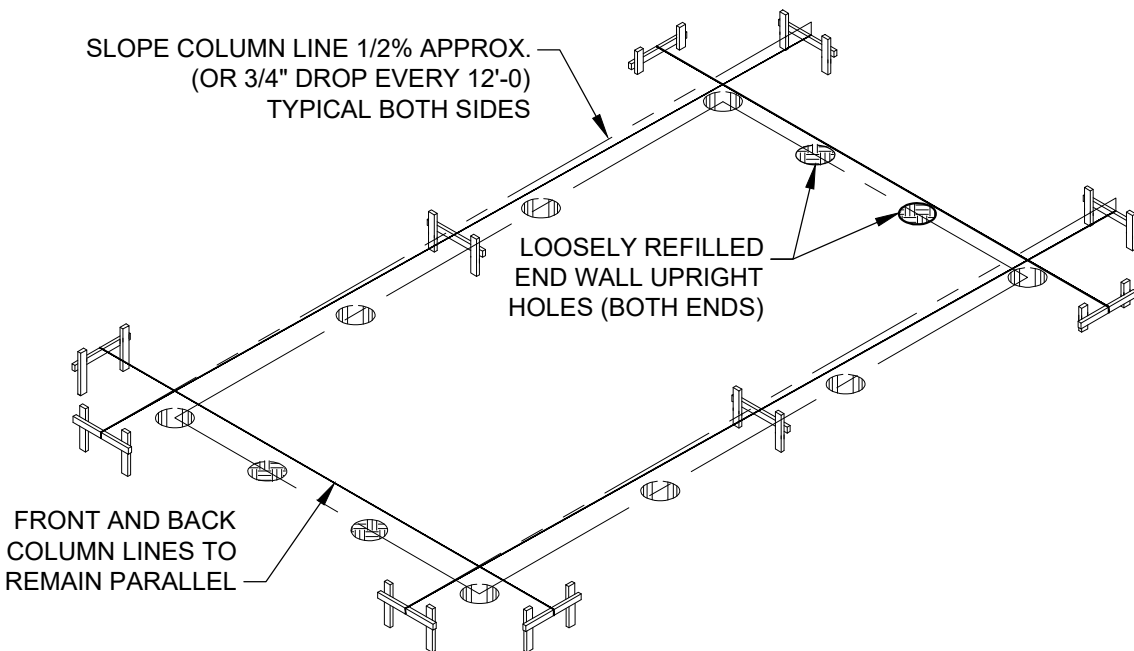
NOTE: ONLY **GUTTER CONNECTED COLD FRAMES** NEED TO APPLY SOME SLOPING FOR WATER DRAINAGE. IF YOU HAVE A SINGLE COLD FRAME, YOU **DO NOT** NEED TO APPLY ANY KIND OF SLOPING.

1. IT IS PREFERRED TO SLOPE THE GRADE FOR WATER DRAINING (GUTTERED) GREENHOUSES. SLOPE THE GRADE ALONG THE LENGTH OF THE FOUNDATION KEEPING THE FRONT AND BACK COLUMN LINES PARALLEL. A SLOPE OF 3/4" EVERY 12'-0" (APPROXIMATELY 1/2 % SLOPE) WILL INSURE PROPER DRAINAGE AT THE GUTTERS. IF THIS OPTION IS CHOSEN, THEN ALL COLUMNS CAN BE SET TO THE SAME HEIGHT, AND BE ABLE TO ACHIEVE A CONSTANT BUILDING HEIGHT. IF THE BUILDING IS VERY LONG (OVER 300' LONG), IT IS ADVISABLE TO HAVE THE PEAK AT THE CENTER OF THE BUILDING, AND HAVE (2) OUTLETS, (1) AT EACH THE END WALL. THIS DETERMINATION WILL NORMALLY BE TAKEN CARE OF BY THE DESIGN TEAM AT CONLEY'S.

## SLOPE LINES

1. IF SLOPING THE GRADE IS NOT DESIRED, THE THE SLOPE CAN BE ACHEIVED BY SETTING THE COLUMNS AT SPECIFIC HEIGHTS ALONG THE LENGTH OF THE BUILDING. PLEASE NOTE THAT THE UNDER GUTTER (UG) HEIGHT OF THE BUILDING IS MEANT TO BE FOR THE HIGH SIDE OF THE BUILDING (THE PEAK UG HEIGHT AT THE CENTER OF THE BUILDING FOR LONGER THAN 300' BUILDINGS).

SLOPE THE COLUMN LINES ALONG THE LENGTH OF THE FOUNDATION KEEPING THE FRONT AND BACK COLUMN LINES PARALLEL. THIS WILL INSURE PROPER DRAINAGE (SEE FIG. 9).



NOTE: THIS TECHNIQUE TO BE USED WITH GUTTER HOUSES ONLY

FIGURE 9 - SLOPING COLUMN LINES

## MARK CENTERS ON COLUMNS

1. MARK THE INTERMEDIATE COLUMN CENTER LOCATIONS ALONG THE LENGTH OF THE BUILDING ON THE NEW COLUMNB SET LINES.
2. MARK THE END WALL UPRIGHTS IN THE SAME MANNER. PLEASE NOTE THAT THE OFFSETS FOR END WALL INTERMEDIATE COLUMNS MAY BE DIFFERENT THAN THE OFFSET OF THE SIDE WALL COLUMNS DUE TO THE DIFFERENCE IN COLUMN SIZE. THE CENTER LINES OF COLUMNS MUST BE THE CENTER LINE END WALL COLUMNS.

# MARK COLUMNS

1. TO FIND THE ABOVE GROUND COLUMN HEIGHT, MEASURE FROM THE TOP OF THE COLUMN, THIS DISTANCE, AND SUBTRACT THE STRING HEIGHT. MARK THE COLUMN AT THIS POINT WITH A FELT TIP MARKER. CONTINUE WITH REMAINING COLUMNS (SEE FIG. 10).

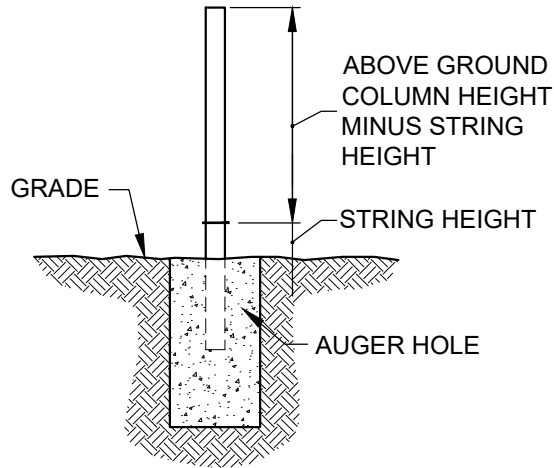
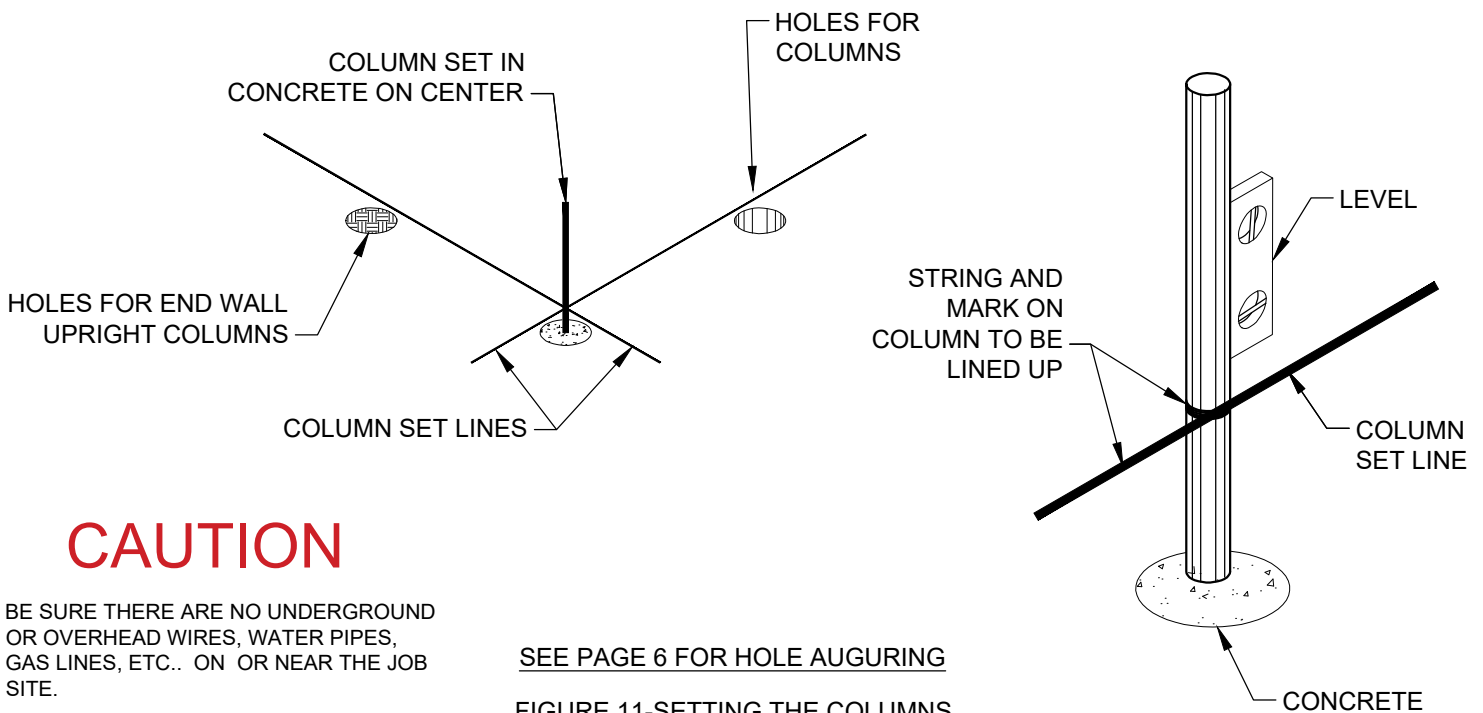


FIGURE 10-MARKING COLUMNS

# SET COLUMNS

1. POUR CONCRETE INTO THE FIRST HOLE. 2" SLUMP, 5 SACK MIX, AND 3/4" ROCK IS THE MOST POPULAR MIX TO SUPPORT COLUMNS.
2. PUSH THE COLUMN INTO THE CONCRETE AT THE CENTER MARK ON THE STRING (BE SURE THE COLUMN IS NOT ACTUALLY TOUCHING STRING) UNTIL THE MARK ON COLUMN LINES UP WITH THE STRING. THE COLUMN MUST BE PLUMB IN BOTH DIRECTIONS BEFORE MOVING ON TO THE NEXT COLUMN.
3. MOVE ON TO THE NEXT COLUMN, POUR CONCRETE THEN SET THE COLUMN. NEVER POUR ALL THE CONCRETE FIRST THEN GO BACK AND SET COLUMNS AS THE CONCRETE SETS UP TOO FAST.



## CAUTION

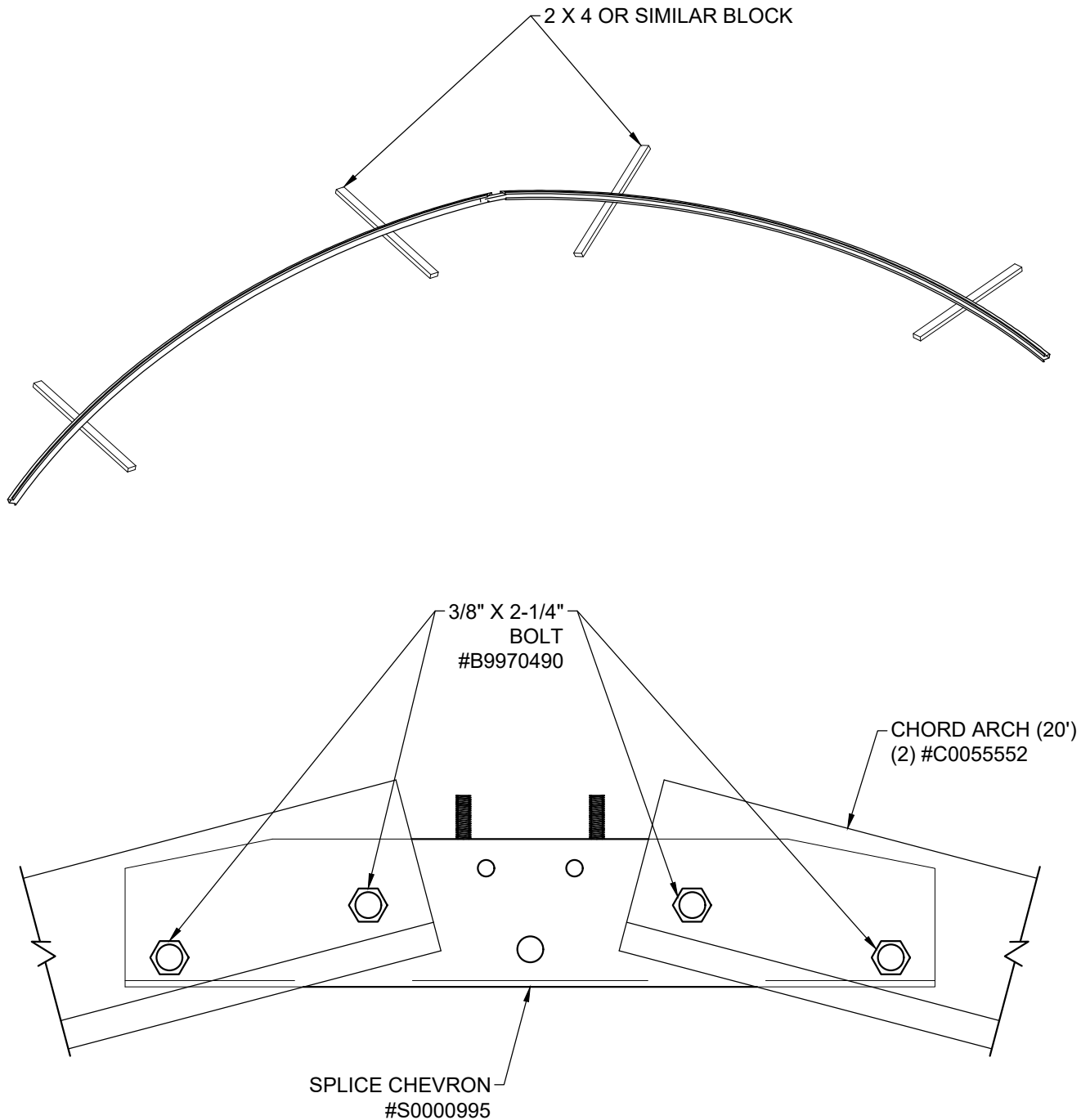
BE SURE THERE ARE NO UNDERGROUND OR OVERHEAD WIRES, WATER PIPES, GAS LINES, ETC.. ON OR NEAR THE JOB SITE.

SEE PAGE 6 FOR HOLE AUGURING

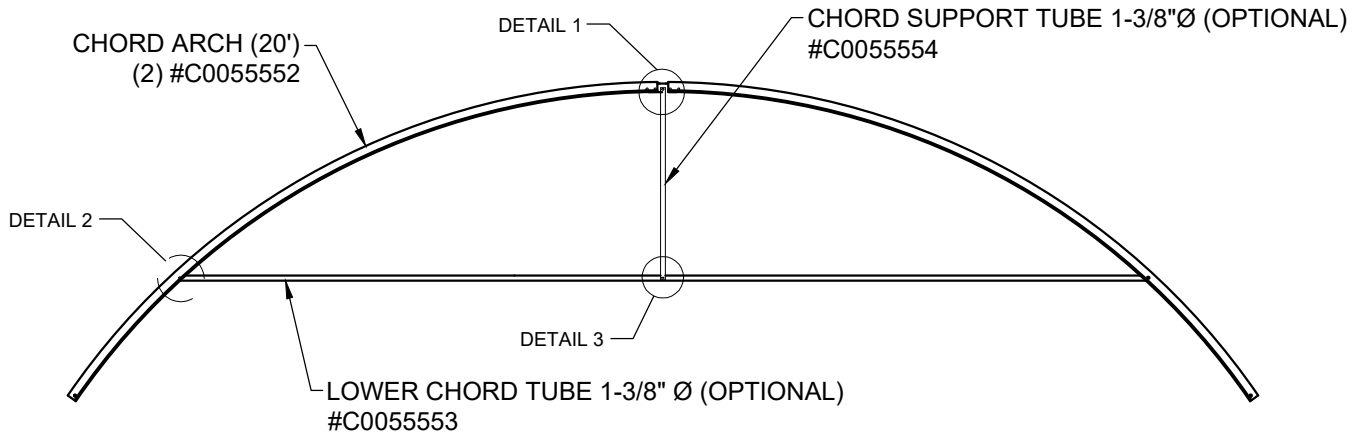
FIGURE 11-SETTING THE COLUMNS

# ARCH ASSEMBLY

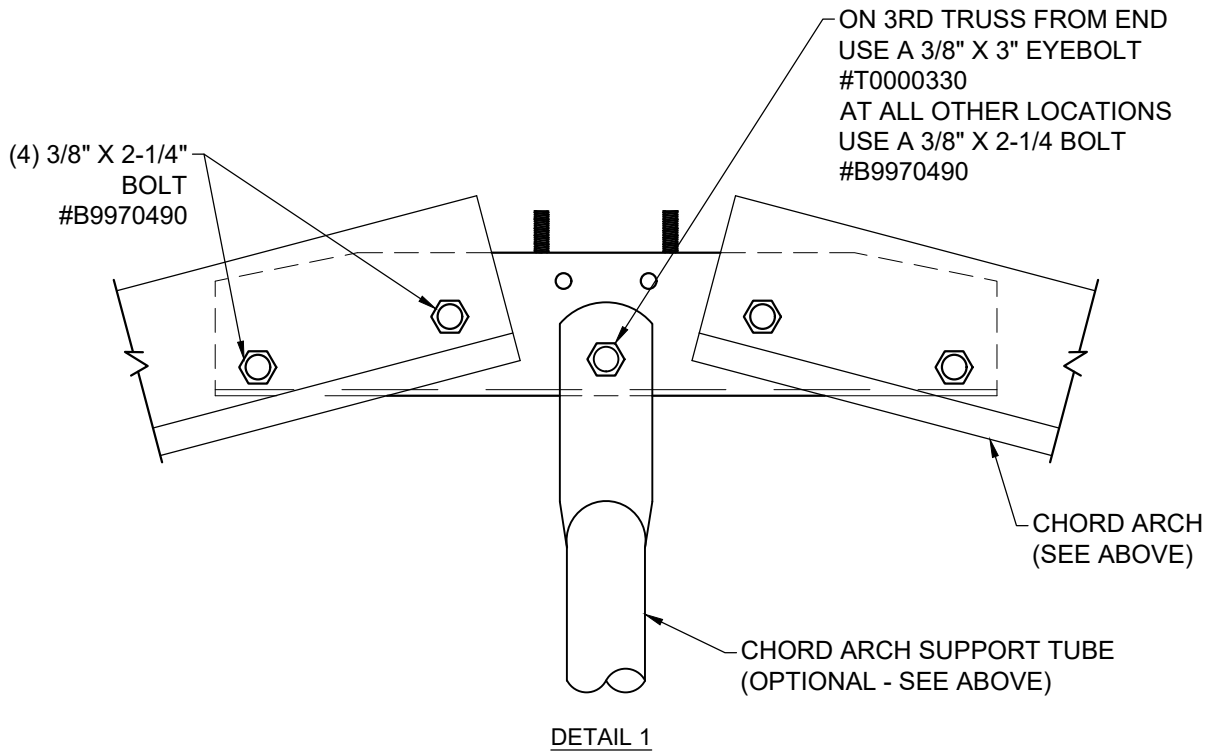
1. ASSEMBLE THE ARCHES USING (4) 2 X 4 BLOCKS TO LIFT THE ARCHES OFF THE GROUND FOR ASSEMBLY.
2. ATTACH THE ARCH HALVES TO THE CHEVRON SPLICE WITH (4) 3/8" X 2 1/4" MACHINE BOLTS.



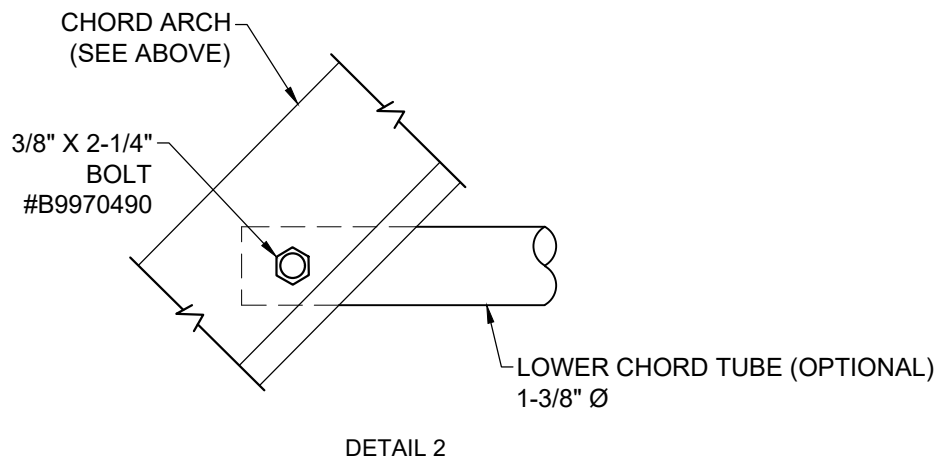
# OPTIONAL STRUCTURAL UPGRADE I



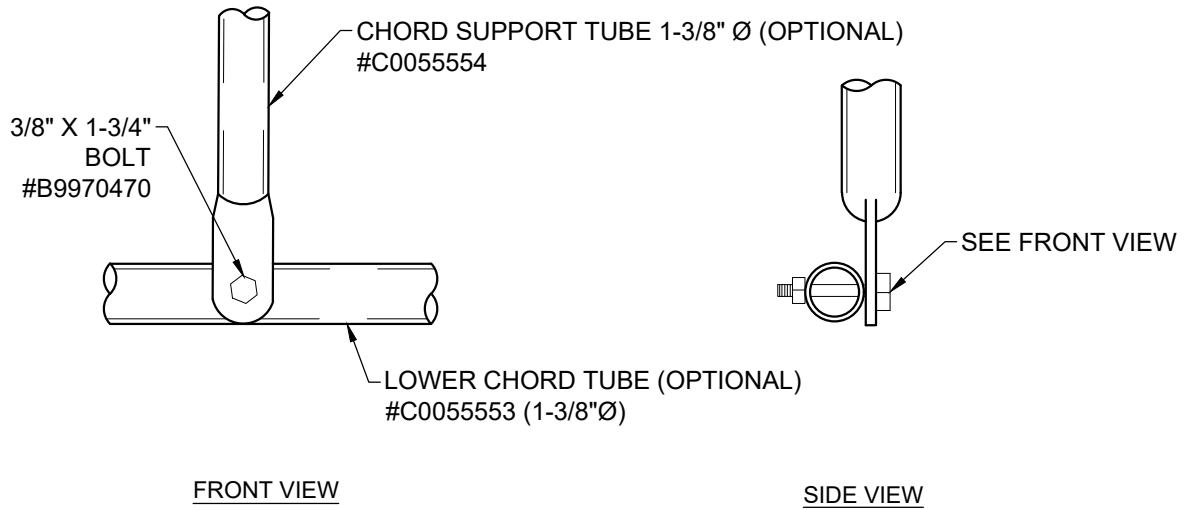
1. ATTACH THE CHORD SUPPORT TUBES TO THE CHEVRON SPLICE WITH (4) 3/8 X 2 1/4" MACHINE BOLT. PLACE 1 SUPPORT TUBE ON ONE SIDE OF THE CHEVRON SPLICE.



2. ATTACH EACH END OF THE CROSS BRACE TO THE CHORD ARCH WITH A 3/8" X 2 1/4" MACHINE BOLTS.



3. ATTACH THE CHORD SUPPORT TUBES TO THE LOWER CHORD CROSS TUBE WITH A 3/8" X 1 3/4" MACHINE BOLT.

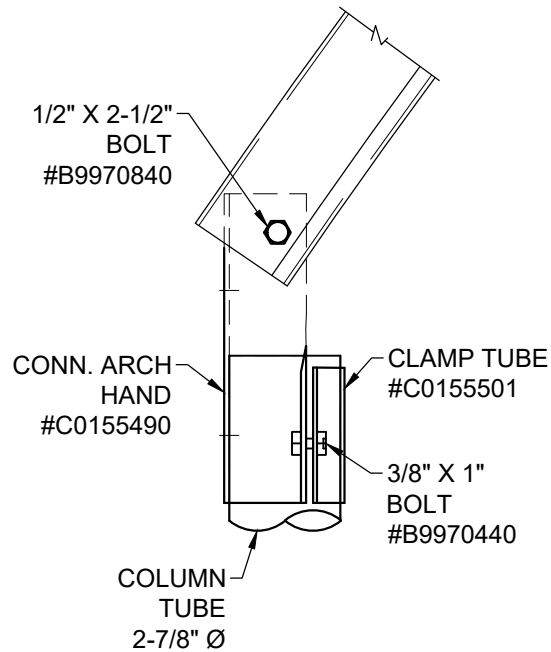


DETAIL 3

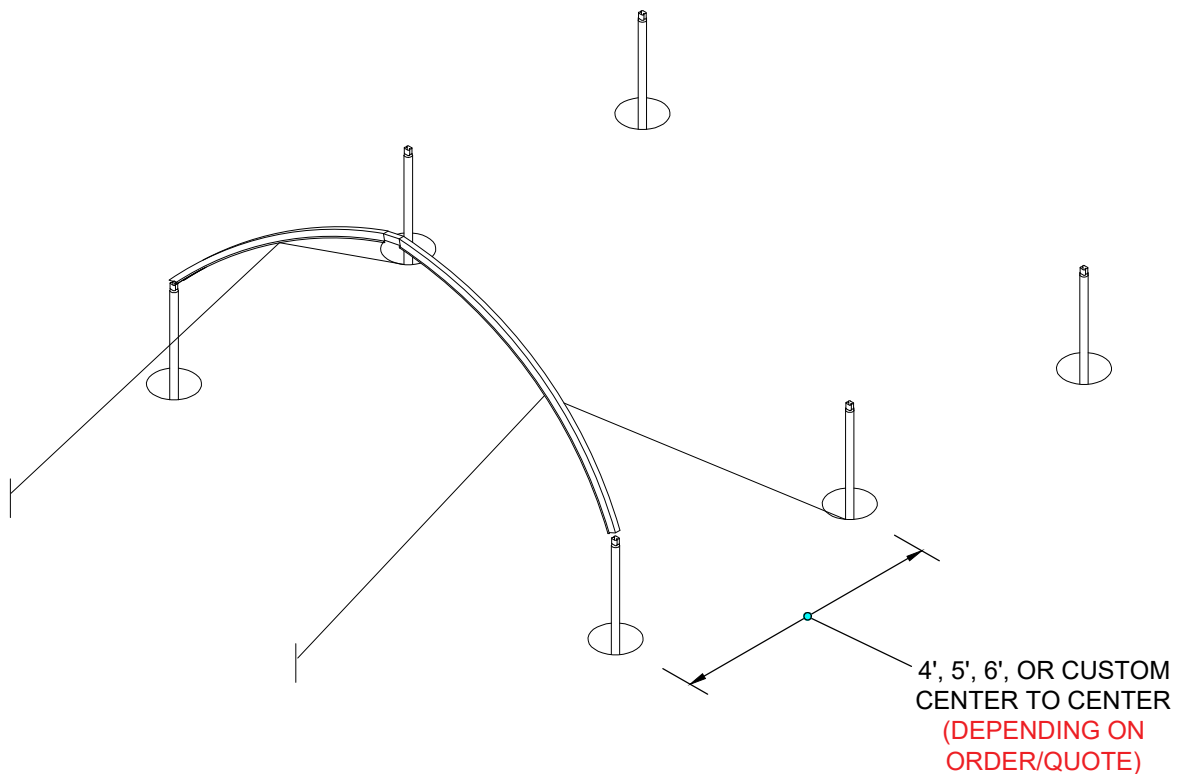
THIS PAGE LEFT  
INTENTIONALLY  
BLANK

# ARCH INSTALLATION

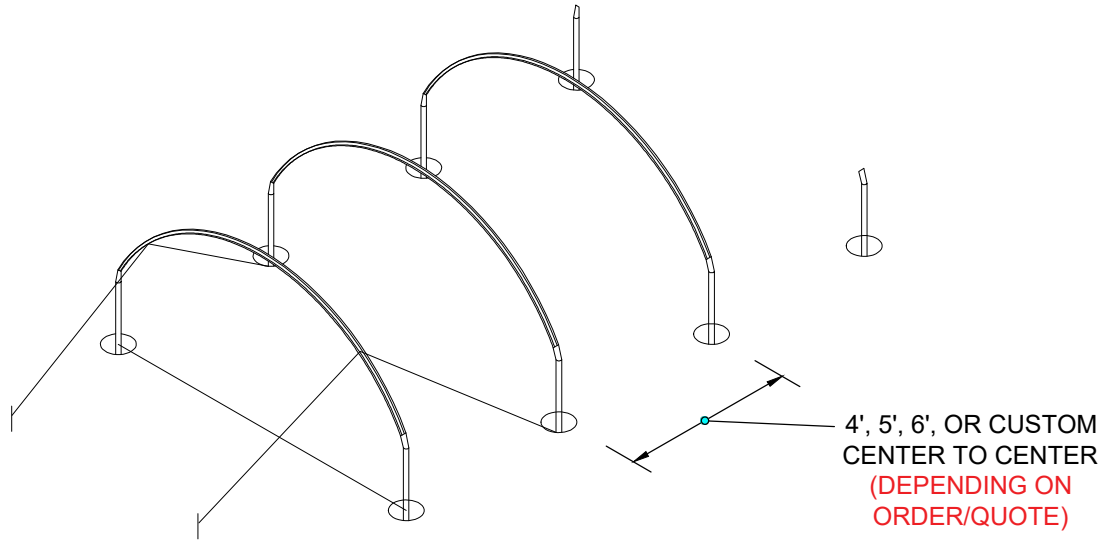
1. SLIDE THE CHORD ARCH OVER EITHER OF THE CONNECTION OPTIONS SHOWN BELOW AND SECURE THEM WITH A 1/2" X 2 1/2" MACHINE BOLT.



2. TIE OFF THE ARCH USING ROPES OR CABLES TO MAKE THE ATTACH PLUMB AND SQUARE.  
(MATERIALS FOR SECURING COLUMNS ARE NOT SUPPLIED BY CONLEY'S MANUFACTURING AND SALES.)

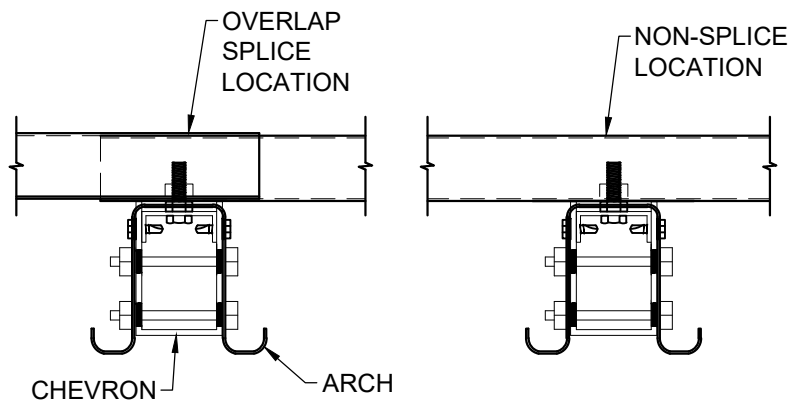
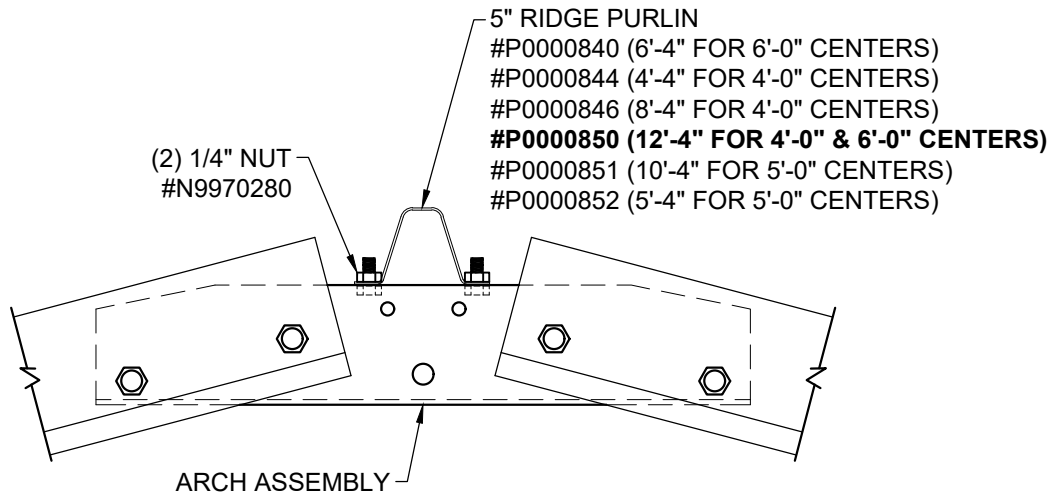


3. BOLT TWO OR MORE ARCHES TO THE LEGS USING (2) 1/2" X 2 1/2" MACHINE BOLT PER ARCH.



## RIDGE PURLIN INSTALLATION

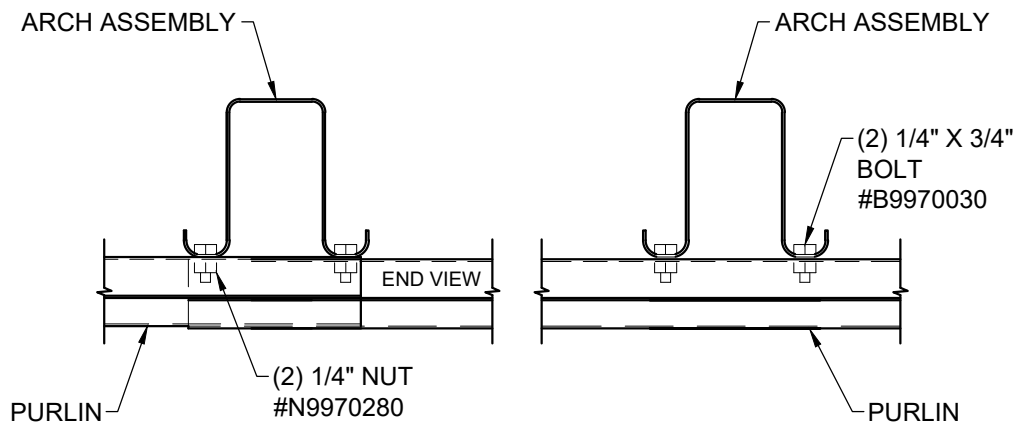
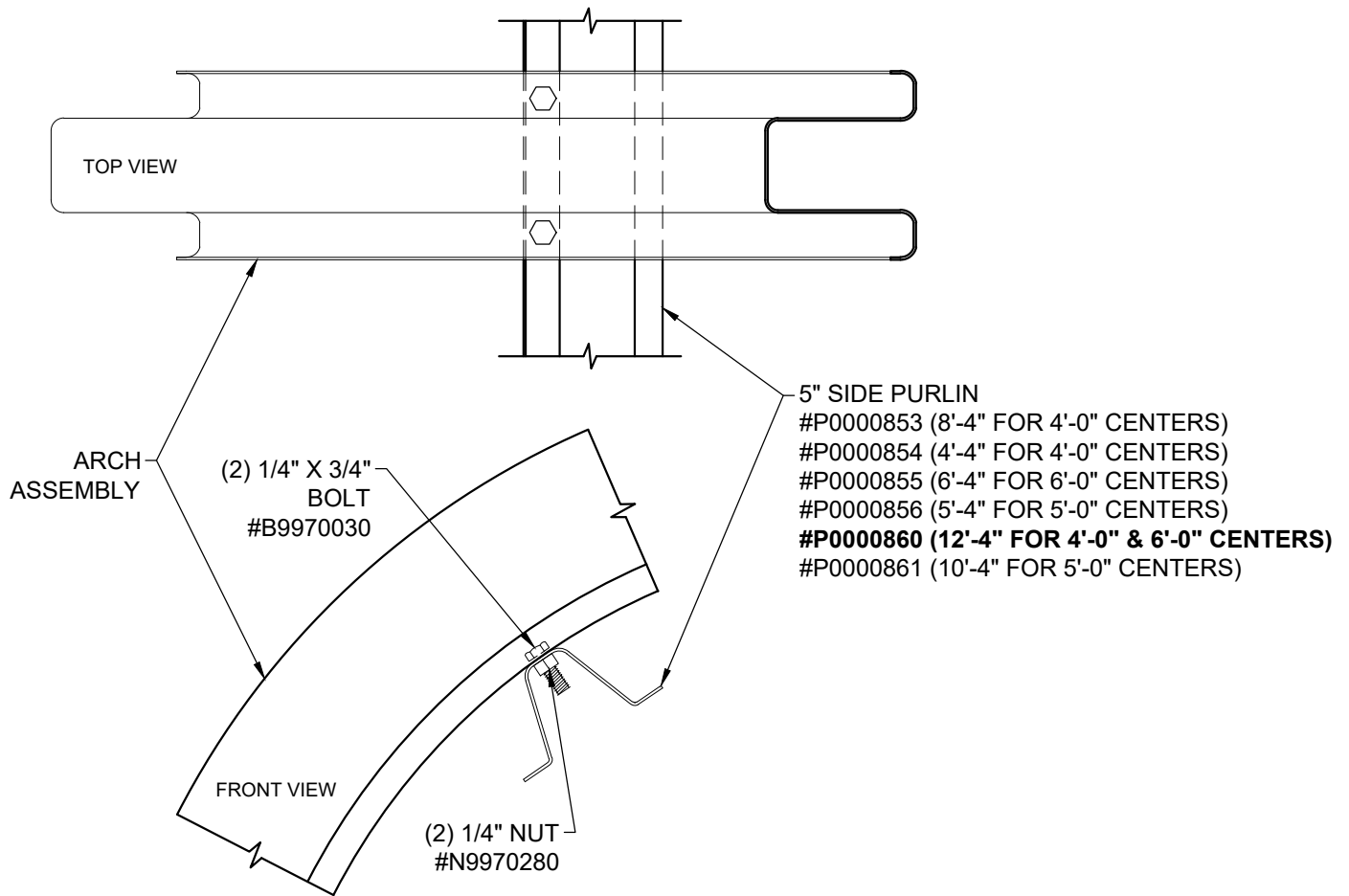
1. ATTACH THE RIDGE PURLIN TO THE PLATE WELDED ON THE CHEVRON SPLICE USING (2) 1/4" NUTS.





# ARCH AND PURLIN INSTALLATION

1. ATTACH THE PURLINS TO THE FIRST AND SECOND ARCHES WITH (2) 1/4" X 3/4" MACHINE BOLTS.



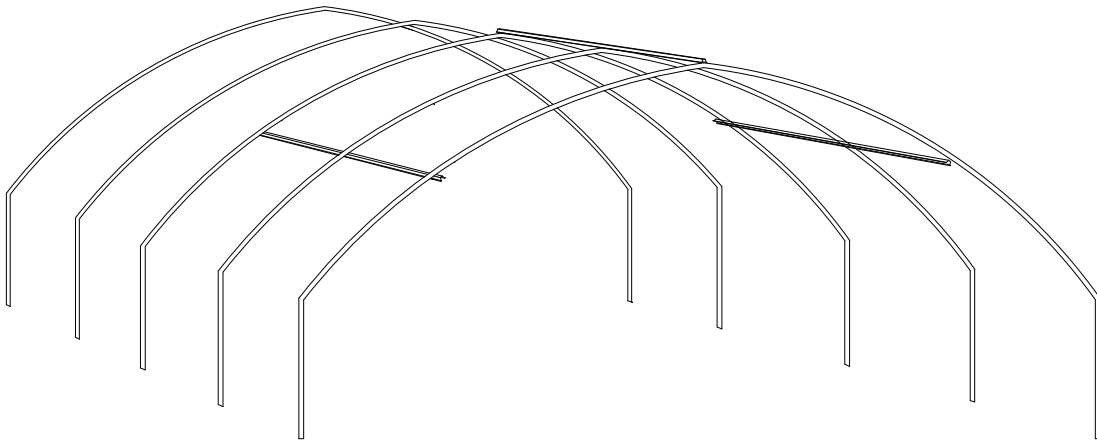
2. ATTACH TWO MORE ARCHES. OVERLAP THE RIDGE PURLIN AT THE THIRD ARCH AND BOLT IT TO THE THIRD AND FOURTH ARCHES WITH (2) 1/4" X 3/4" MACHINE BOLTS PER ARCH.

3. OVERLAP THE QUARTER POINT PURLINS AT THE THIRD ARCH AND BOLT THEM TO THE THIRD AND FOURTH ARCHES. (SEE NOTE 1 FOR BOLT INFORMATION.)

---

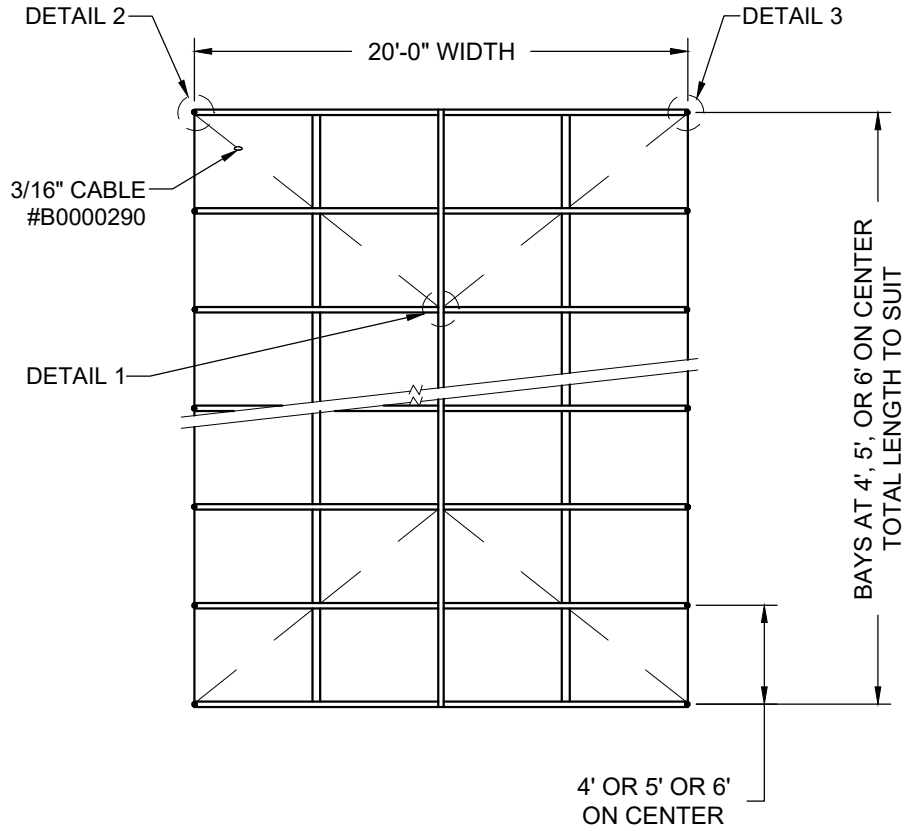
# INSTALLATION REMAINING ARCHES & PURLINS

1. INSTALL THE REMAINING ARCHES, TWO AT A TIME, AND THE PURLINS UNTIL THE FULL LENGTH OF THE BUILDING IS COMPLETE.

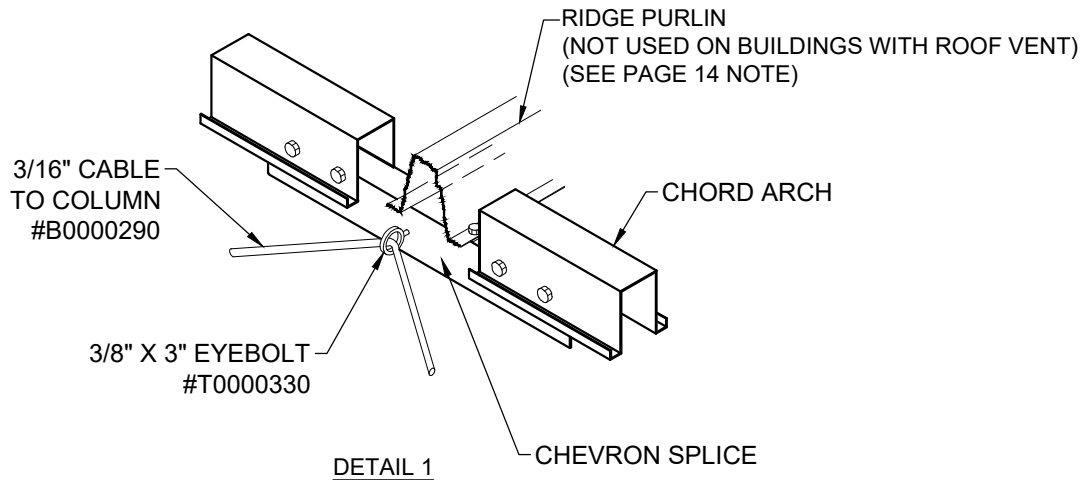


**FIGURE 12 - 3 PURLIN OPTION**  
DEPENDING ON ORDER/QUOTE

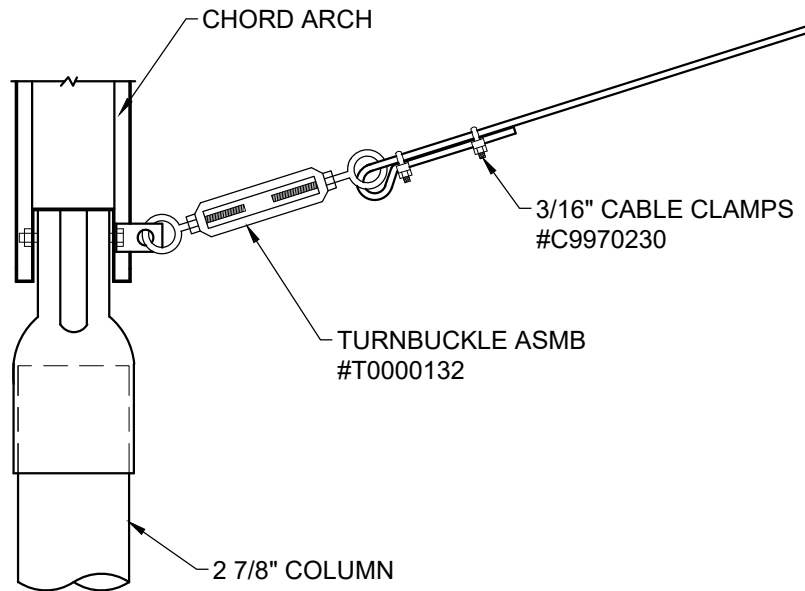
# INSTALLATION OF CABLE BRACING



1. APPROXIMATELY 12'-0" IN FROM THE END OF THE BUILDING, RAP THE MIDDLE OF THE 1/4" BRACE CABLE THROUGH EYE BOLT, AND BACK OVER THE CHEVRON SPLICE.

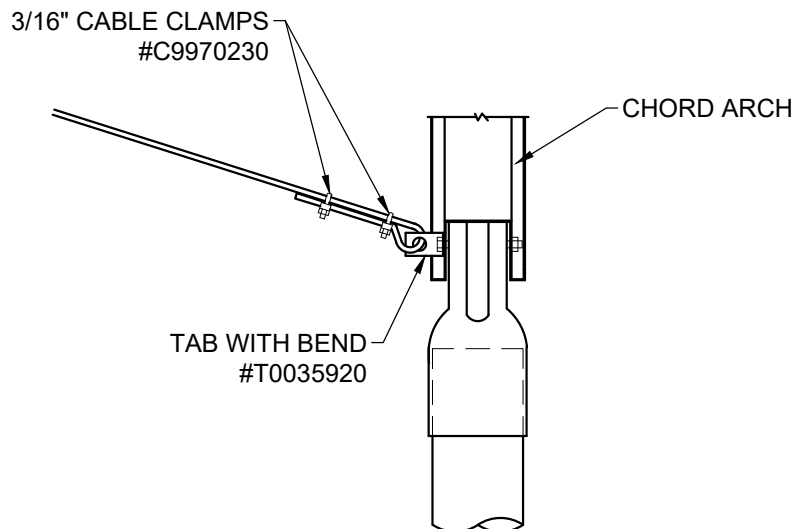


2. ATTACH THE 3/8" TURNBUCKLE TO ONE SIDE OF THE ARCH AT THE COLUMN TO ARCH CONNECTIONS.
3. ATTACH THE 3/16" CABLE TO THE TURNBUCKLE WITH (2) 3/16" CABLE CLAMPS.



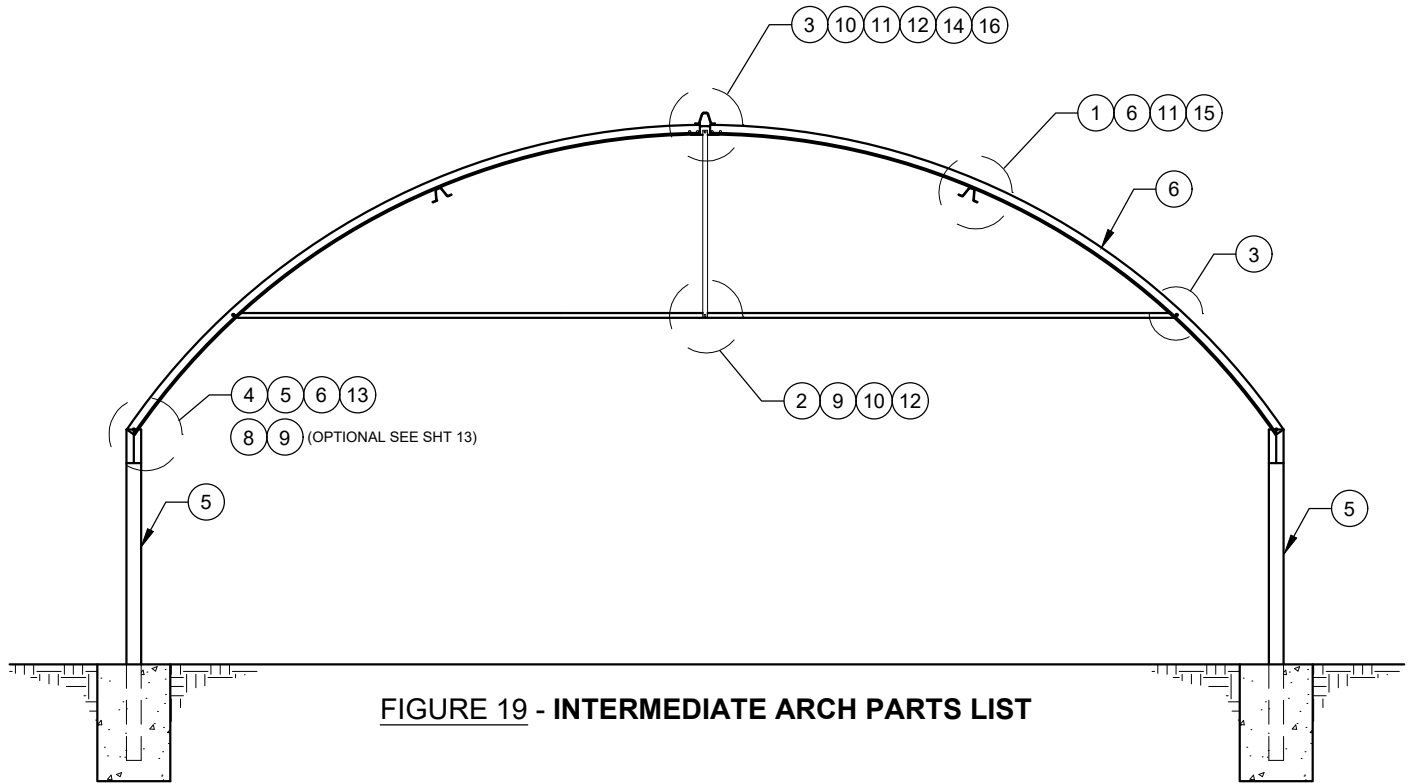
DETAIL 2

4. ATTACH THE BENT TAB TO THE OPPOSITION SIDE FROM THE TURNBUCKLE AT THE COLUMN TO CHORD ARCH CONNECTION.
5. ATTACH THE 3/16" CABLE TO THE BENT TAB WITH (2) 3/16" CABLE CLAMPS.



DETAIL 3

# 20'-0" COLD FRAME INTERMEDIATE ARCH PARTS LIST

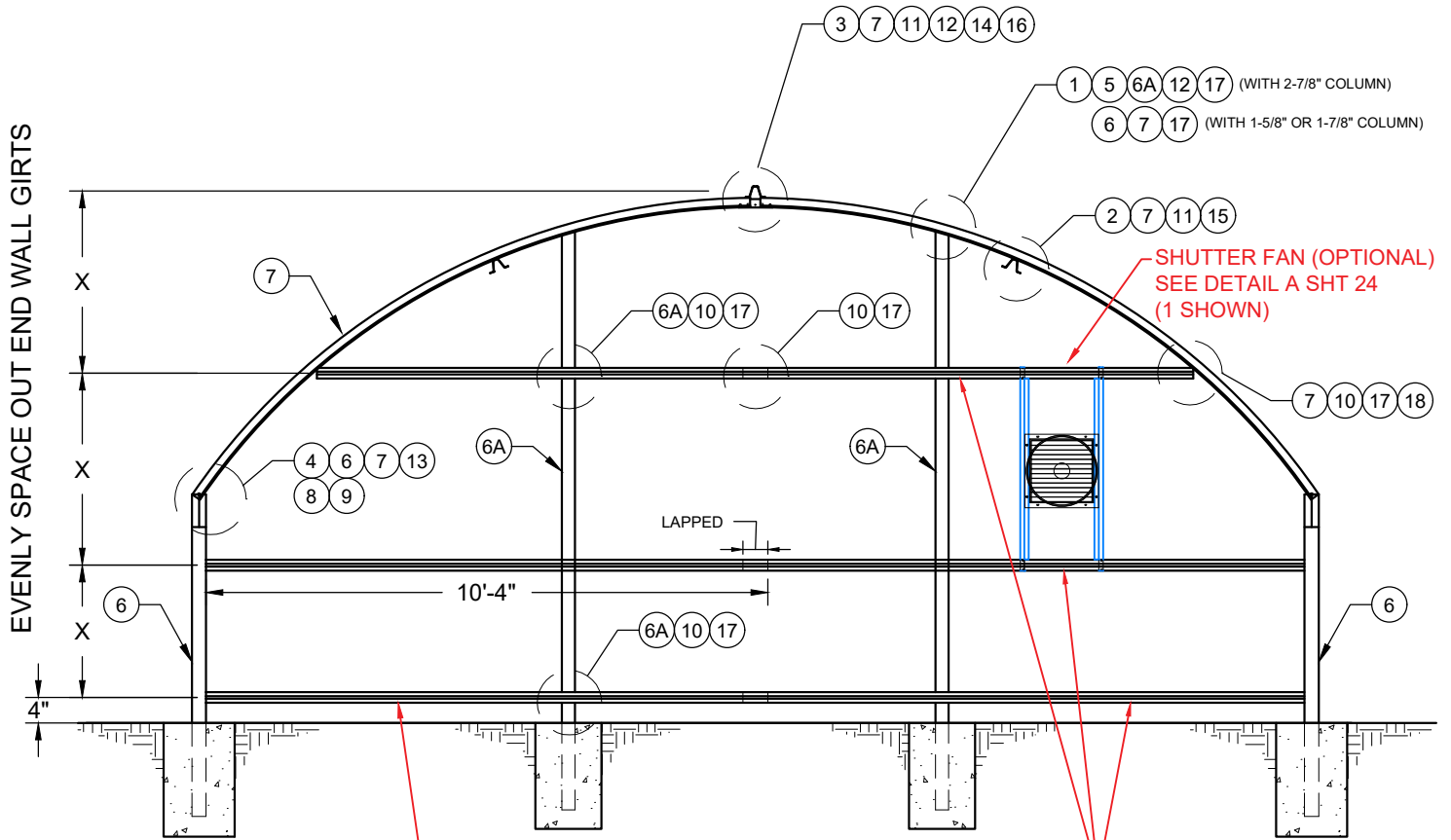


**FIGURE 19 - INTERMEDIATE ARCH PARTS LIST**

ITEM	QTY	PART No.	DESCRIPTION
1	4	B9970030	BOLT / HH 1/4" X 3/4" GRADE 5
2	1	B9970470	BOLT / HH 3/8" X 1-3/4"
3	6	B9970490	BOLT / HH 3/8" X 2-1/4"
4	2	B9970840	BOLT / HH 1/2" X 2-1/2"
5	2	-	COLUMN TUBE T-22 2 7/8"
6	2	C0055552	CHORD ARCH 228" RAD (2PCS)
7	2	C0155490	CONN COLUMN TO ARCH HAND
8	2	C0155501	CONN. COLUMN TO ARCH CLAMP
9	1	C0055553	LOWER CHORD (1-3/8" Ø)
10	1	C0055554	L. CHORD SUPT TUBE (1-3/8" Ø)
11	6	N9970280	NUT HEX PLTD COARSE 1/4"
12	7	N9970300	NUT HEX PLTD COARSE 3/8"
13	2	N9970320	NUT HEX PLTD COARSE 1/2"
14	1	P0000850	PURLIN 5" X 12'-4" TOP
15	2	P0000860	PURLIN 5" X 12'-4" SIDES
16	1	S0000995	SPLICE CHEVRON ASMB

(OPTIONAL SIZE SEE SHT 14)  
(OPTIONAL SIZE SEE SHT 15)

# 20'-0" COLD FRAME END WALL PARTS LIST



**FIGURE 20 - END WALL ARCH PARTS LIST**

**EVENLY SPACE END WALL GIRTS  
FOR 4' & 6' SIDE WALL VERSION  
(6) 10'-4" GIRTS EVENLY SPACED  
#G0000282**

**NOTE:  
SPACING COULD BE DEPENDANT  
ON FANS OR SHUTTERS THAT  
WERE PROVIDED. PLEASE REFER  
TO THE SIZING REQUIREMENTS  
OF THESE ITEMS BEFORE  
INSTALLING THE END WALL GIRTS**

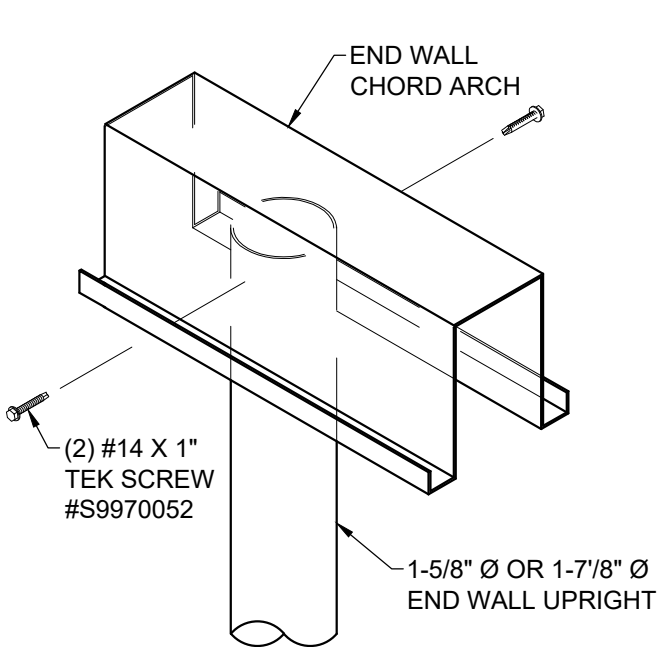
ITEM	QTY	PART No.	DESCRIPTION
1	2	B0005004	COLUMN BRACE CLAMP 2 7/8"
2	4	B9970030	BOLT / HH 1/4" X 3/4" GRADE 5
3	4	B9970490	BOLT / HH 3/8" X 2-1/4"
4	2	B9970840	BOLT / HH 1/2" X 2-1/2"
5	2	B9971605	CARR. BOLT 3/8" X 1-3/4"
6	2	-	COLUMN TUBE T-22 2 7/8"
6A	2	-	EW UPRIGHT 1-5/8" OR 1-7/8" OR 2 7/8"
7	2	C0055552	CHORD ARCH 228" RAD (2PCS)
8	2	C0155490	CONN COLUMN TO ARCH HAND
9	2	C0155501	CONN. COLUMN TO ARCH CLAMP
10	6	G0000282	GIRT 5" X 10'-4"
11	6	N9970280	NUT HEX PLTD COARSE 1/4"
12	6	N9970300	NUT HEX PLTD COARSE 3/8"
13	2	N9970320	NUT HEX PLTD COARSE 1/2"
14	1	P0000850	PURLIN 5" X 12'-4" TOP
15	2	P0000860	PURLIN 5" X 12'-4" SIDES
16	1	S0000995	SPLICE CHEVRON ASMB
17	38	S9970052	#14 X 1 TEK SCREW
18	2	T0030890	TAB END GIRT

(WITH 2 7/8" EW COL. ONLY)

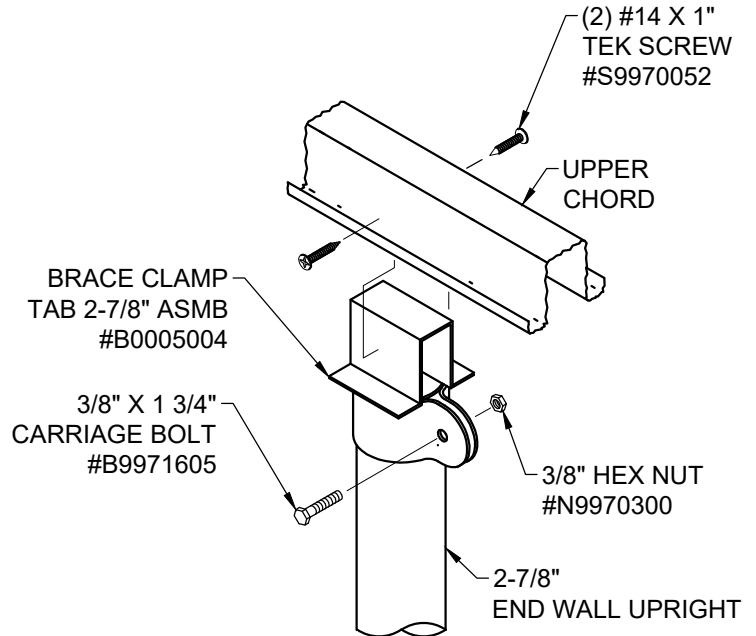
(OPTIONAL SIZE SEE SHT 14)  
(OPTIONAL SIZE SEE SHT 15)

# END WALL UPRIGHT INSTALLATION

1. PUT THE BOTTOM OF THE END WALL UPRIGHT INTO THE AUGURED FOOTING HOLE.
2. SLIP THE OPPOSITE END OF THE END WALL UPRIGHT INSIDE OF THE END WALL CHORD ARCH AND SECURE WITH (2) 14-14 X 1" TEK SCREW AT EACH SIDE OF THE CHORD (AS SEEN IN DETAIL 1A). IF UPRIGHTS ARE 2-7/8" Ø, THEN USE THE PROVIDED BRACE CLAMP SHOWN IN DETAIL 1B.

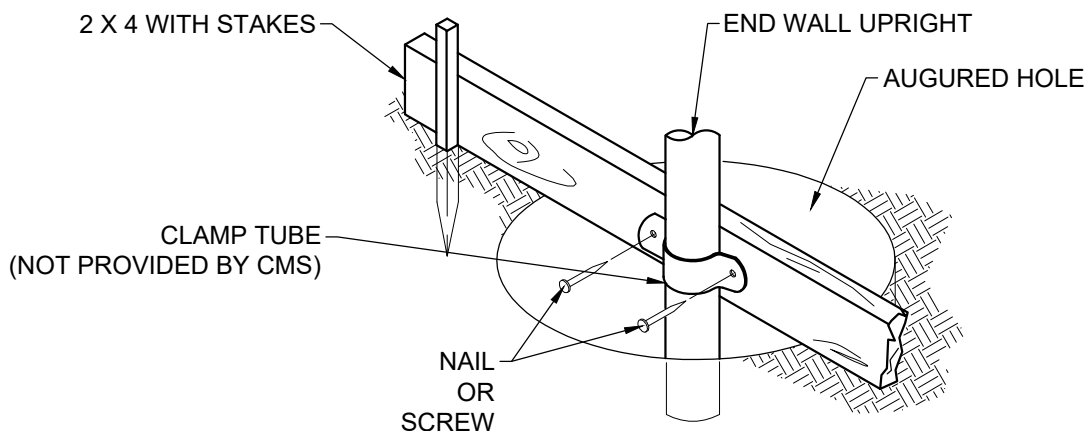


**DETAIL 1A** - 1-5/8" & 1-7/8" Ø COLUMN



**DETAIL 1B** - 2-7/8" Ø COLUMN

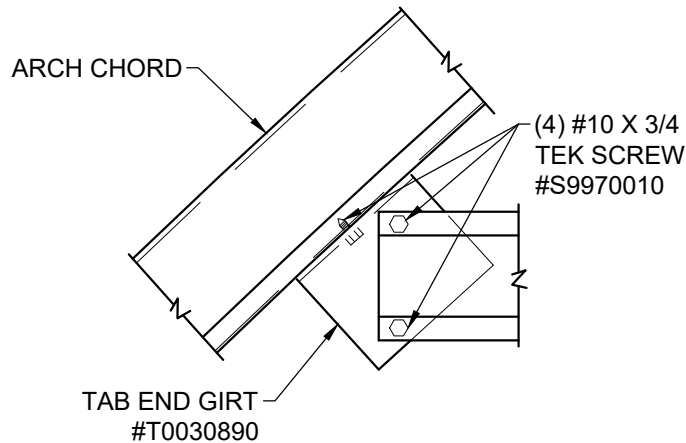
3. BEFORE POURING THE CEMENT, SLIP (1) CLAMP TUBE LEG BRACE ON EACH END WALL COLUMN TUBE. STAKE 2 X 4'S IN PLACE KEEPING THE COLUMNS PLUMB IN BOTH DIRECTIONS AND TEMPORARILY NAIL THE CLAMP TUBE LEG BRACES TO THE 2 X 4'S (SEE DETAIL 2 BELOW). THIS IS DONE TO HELP SUPPORT THE WEIGHT OF THE BUILDING WHILE THE CEMENT IS CURING. WAIT A MINIMUM OF 24 HOURS BEFORE REMOVING 2 X 4'S. USE THE OFFSETTING LINES TO PROPERLY ALIGN THE COLUMNS INTO THE AUGUR HOLE. (SEE PAGE 6)



**DETAIL 2** - FOOTING DETAIL

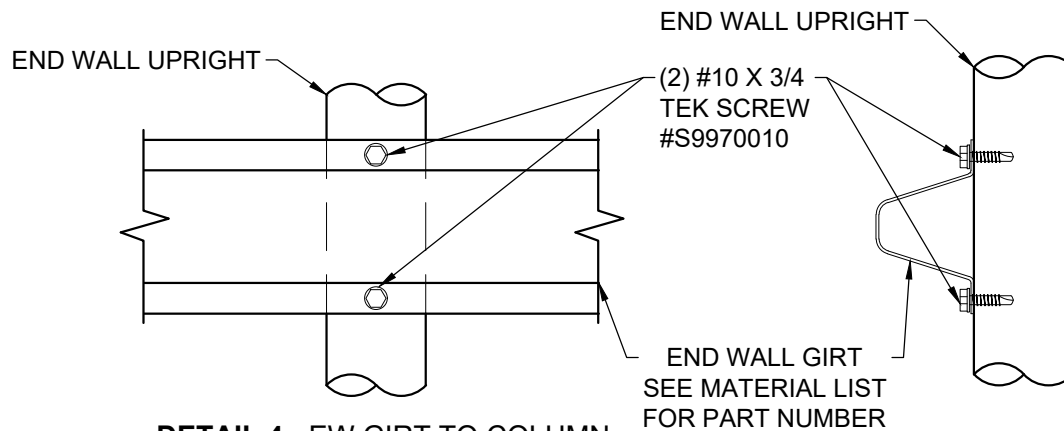
# END WALL GIRT CONNECTIONS

1. DRILL SCREW THE TAB END GIRT TO THE BOTTOM OF THE END WALL ARCH, WITH (2) #10 X 3/4" TEK SCREWS.
2. LEVEL AND DRILL SCREW THE END GIRTS TO THE TABS WITH (2) #10 X 3/4" TEK SCREWS.



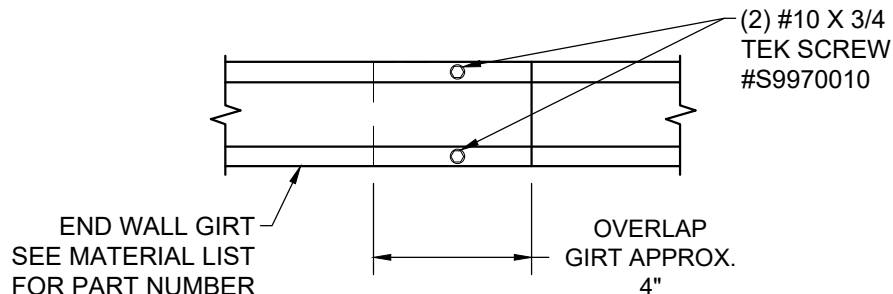
**DETAIL 3 - EW GIRT @ ARCH**

3. SECURE THE END GIRTS TO THE END WALL UPRIGHTS WITH (2) #10 X 3/4" TEK SCREWS.  
(SEE DETAIL 4 BELOW).
4. END WALL GIRTS ARE TYPICALLY SPACED OUT EVENLY, TO SUPPORT THE END WALL COVERING.  
GIRTS CAN BE SPACED OUT AS FAR AS 48" IF NEEDED.



**DETAIL 4 - EW GIRT TO COLUMN**

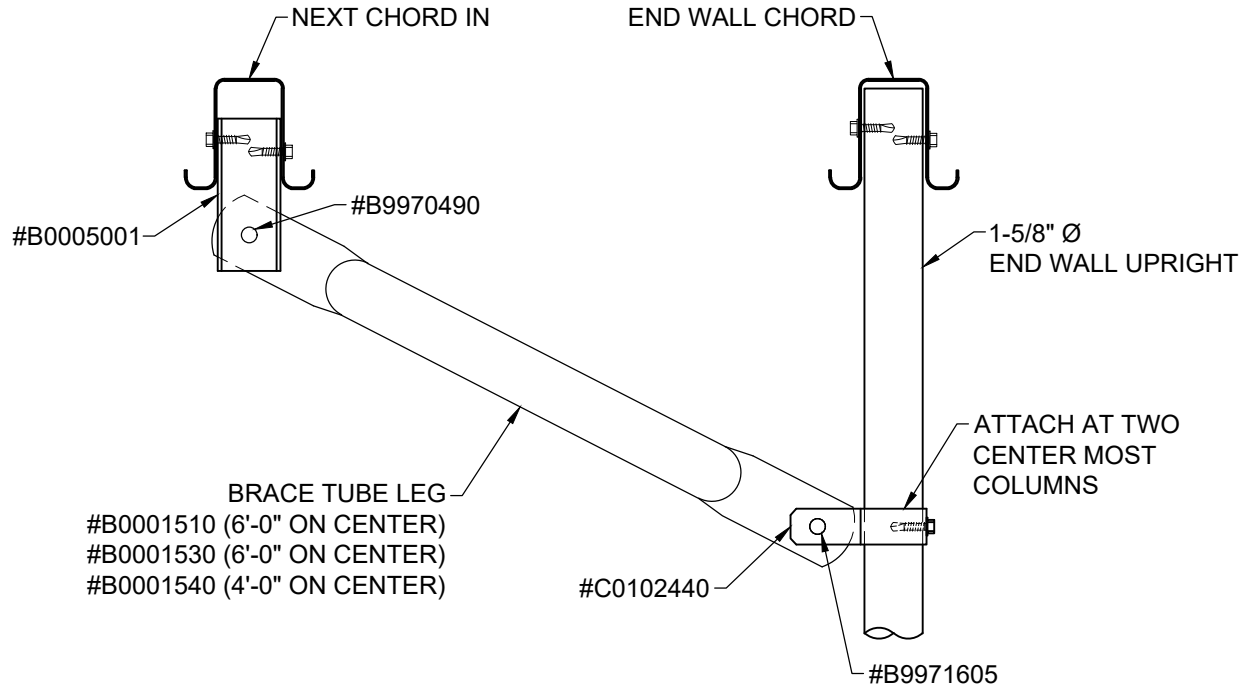
5. OVERLAP THE END WALL GIRTS BY APPROXIMATELY 4", AND USE (2) #10 X 3/4" TEK SCREWS TO FASTEN THEM TOGETHER



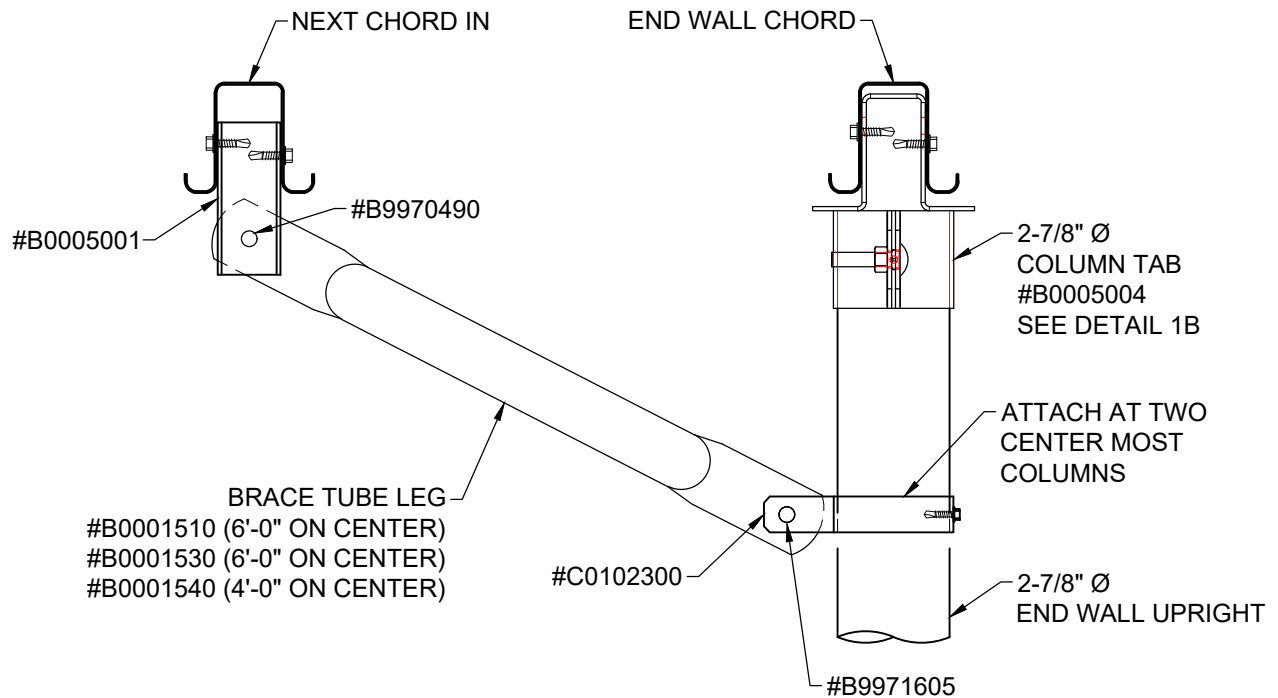
**DETAIL 5 - EW GIRT OVERLAP**



# END WALL UPRIGHT BRACING



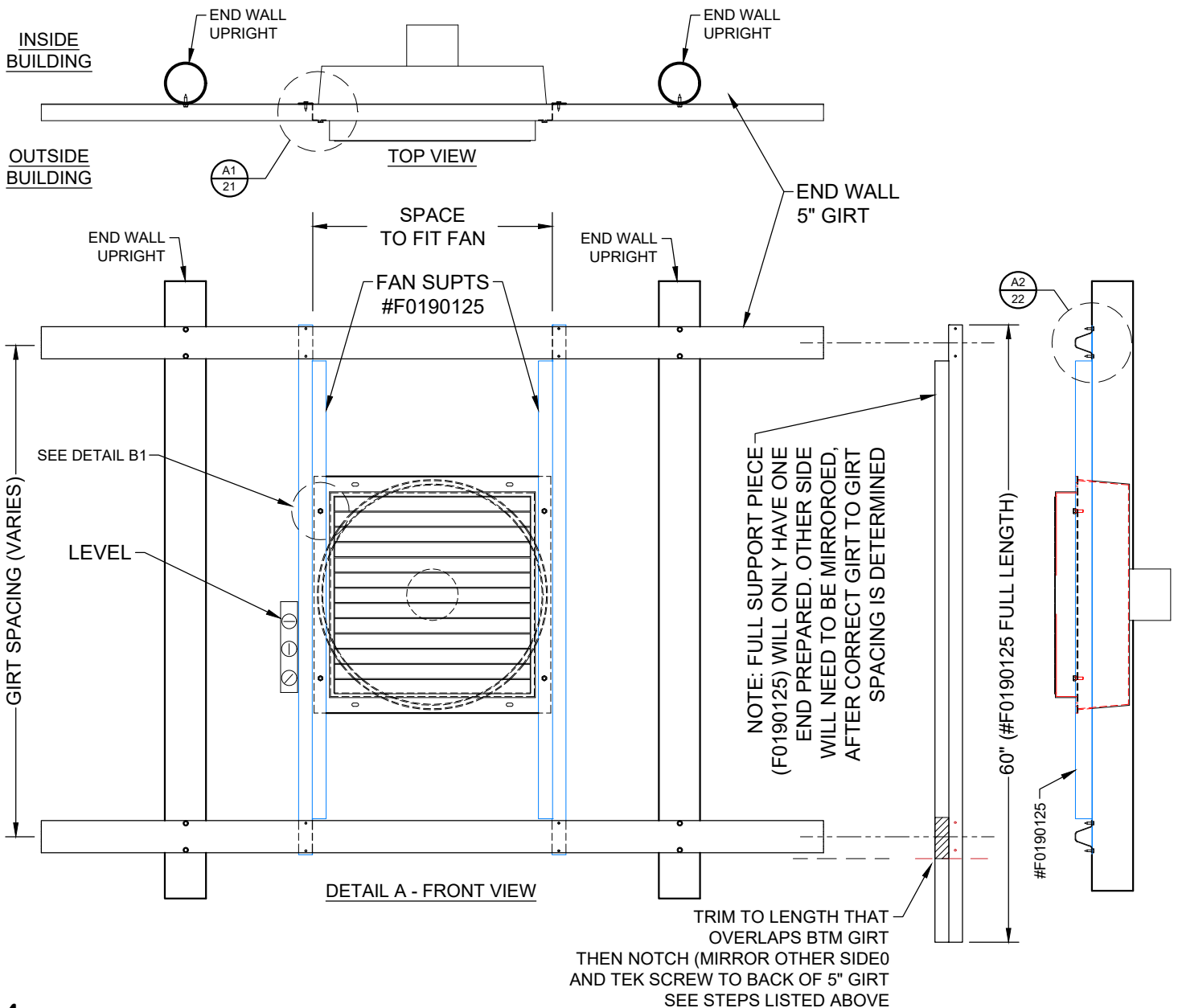
**VIEW A-A - END WALL BRACING FOR 1-5/8" Ø (SHT 20)**

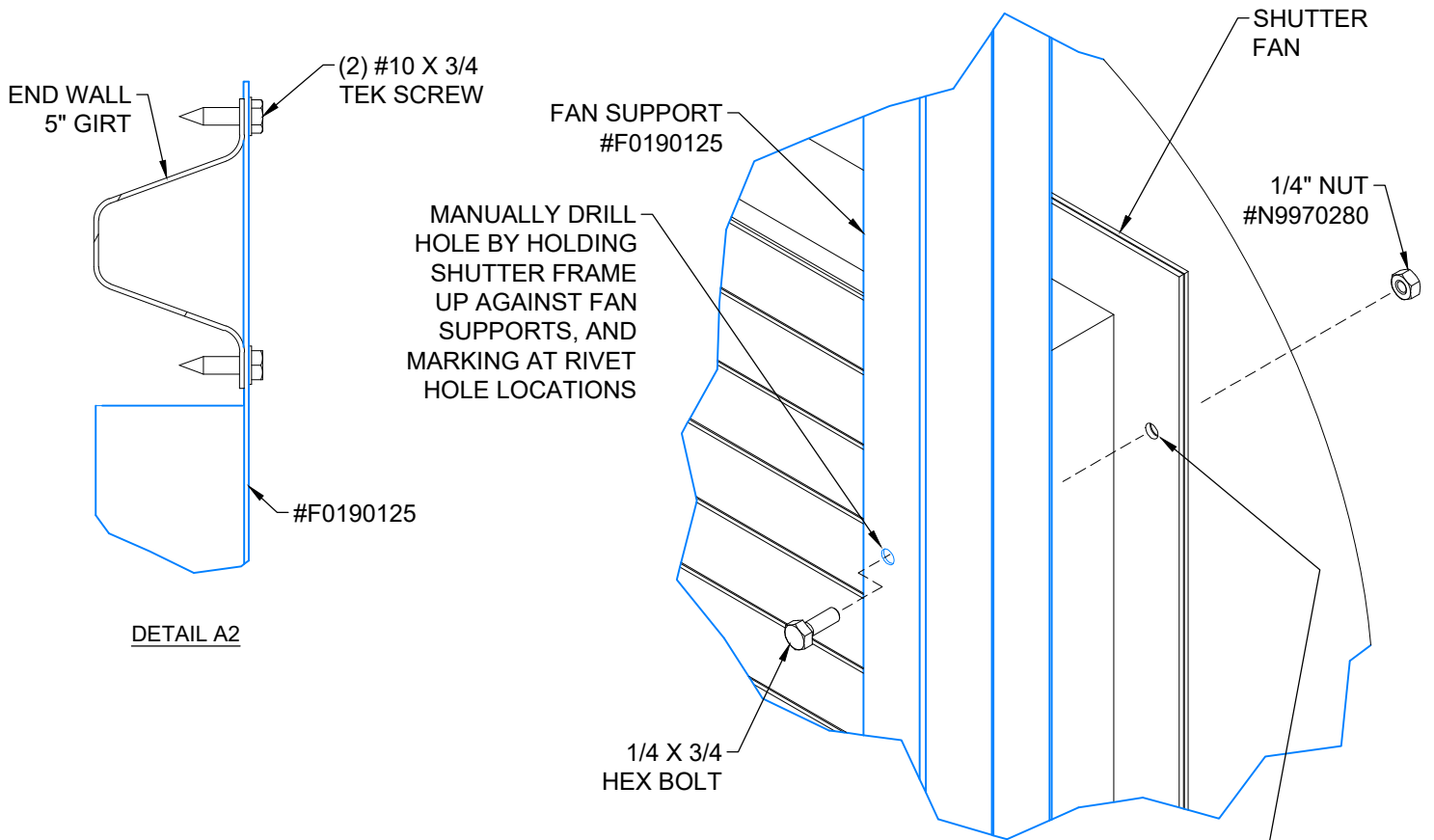


**VIEW A-A - END WALL BRACING FOR 2-7/8" Ø (SHT 20)**

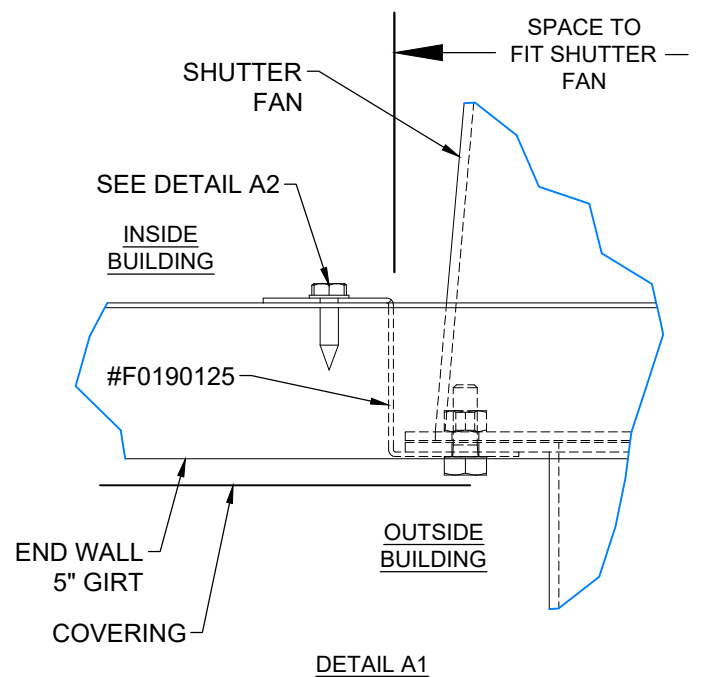
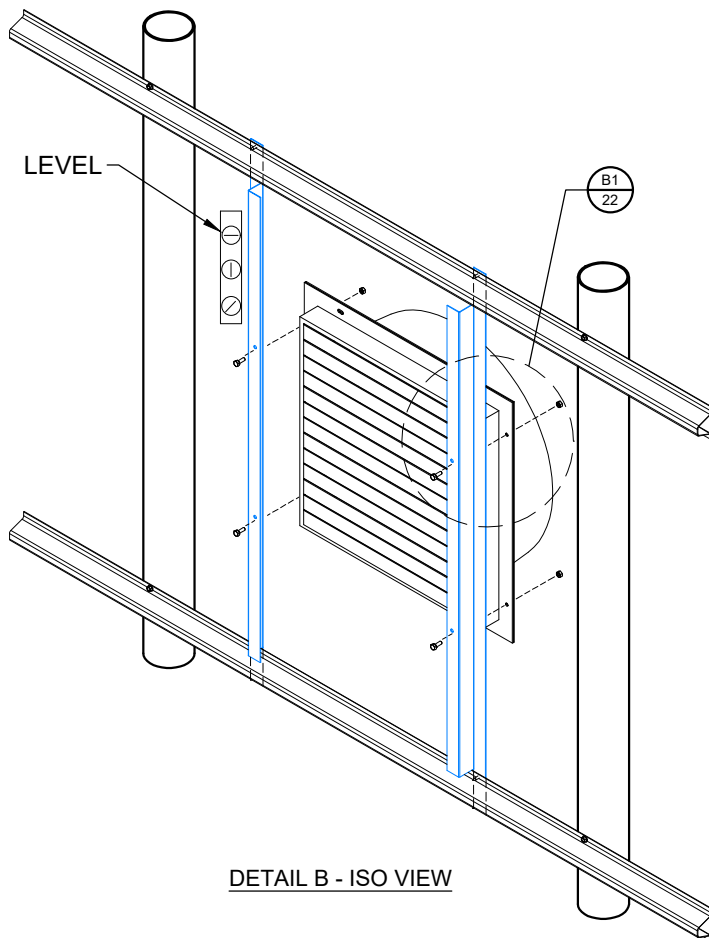
# SHUTTER FAN INSTALLATION (OPTION)

- STEP 1: INSTALL END WALL GIRTS (NORMALLY EVENLY SPACED, WITH THE FIRST RUN 8" FROM THE GROUND). MAKE SURE THAT THE GIRT SPACING IS SUFFICIENT TO FIT SHUTTER FAN OR ANY OTHER FANS BEING INSTALLED.
- STEP 2: REMOVE (4) RIVETS FROM SHUTTER FAN, AS DIRECTED BY THE INSTRUCTIONS INCLUDED WITH THE FAN.
- STEP 3: DETERMINE WHICH GIRT SPACE WILL BE USED FOR THE SHUTTER FAN, AND MEASURE THE DISTANCE FROM THE HIGHEST LIP ON THE TOP GIRT TO THE BOTTOM LIP ON THE LOWER GIRT, AND ADD 3/8" ADDITIONAL.
- STEP 4: CUT THE FULL 60" LENGTH SUPPORT BRACKET, TO THE DIMENSION CALCULATED IN STEP 2.
- STEP 5: NOTCH THE NEWLY CUT SIDE, SO THAT IT WILL BE A MIRROR IMAGE OF THE OPPOSITE SIDE.
- STEP 6: MAKE (2) PIECES FOR EACH SHUTTER FAN INSTALLED.
- STEP 7: WITH A LEVEL, LOCATE THE FIRST OF TWO SUPPORTS, SO THAT THE SHUTTER FAN WILL BE IN THE APPROXIMATE LOCATION THAT IS DESIRED. TEK SCREW THE SUPPORT BRACKET FROM THE REAR, USING THE (2) PRE-PUNCHED HOLES FIRST, THEN FOR THE OTHER END, USE (2) TEK SCREWS TO DRILL SCREW THROUGH THE SUPPORT BRACKET AND THE GIRT, IN ONE SHOT.
- STEP 8: USING THE FLAP SHUTTER SECTION (FLANGE PIECE THAT DOES NOT INCLUDE THE FAN MOTOR) AS A GUIDE (SEE DETAIL A AND A1), DETERMINE THE LOCATION OF THE OTHER SUPPORT, AND TEK SCREW THEM INTO PLACE.
- STEP 9: NOW DETERMINE HOW HIGH YOU WILL WANT THE SHUTTER FAN, AND MARK WITH A SHARPIE OR PENCIL, THE HOLE LOCATIONS WHERE THE RIVETS WERE REMOVED ON THE SHUTTER FAN, ONTO THE SUPPORT BRACKETS. DRILL THESE LOCATIONS SO THAT A 1/4" BOLT WILL EASILY PASS (~ 9/32" DRILL)
- STEP 10: INSTALL THE FULL SHUTTER ASSEMBLY, USING (4) 1/4 X 3/4 BOLTS AND NUTS, AS WELL AS MAKING SURE TO FOLLOW ANY SPECIAL DIRECTIONS FROM THE INSTALLATION INSTRUCTIONS INCLUDED WITH THE SHUTTER FAN ASSEMBLY. SEE DETAIL B1





DRILL OUT (4)  
SIDE RIVETS  
ON SHUTTER  
FAN AND USE  
1/4" BOLTS



# COVERING TRIM INSTALLATION SIDE WALL / ROOF CONNECTION

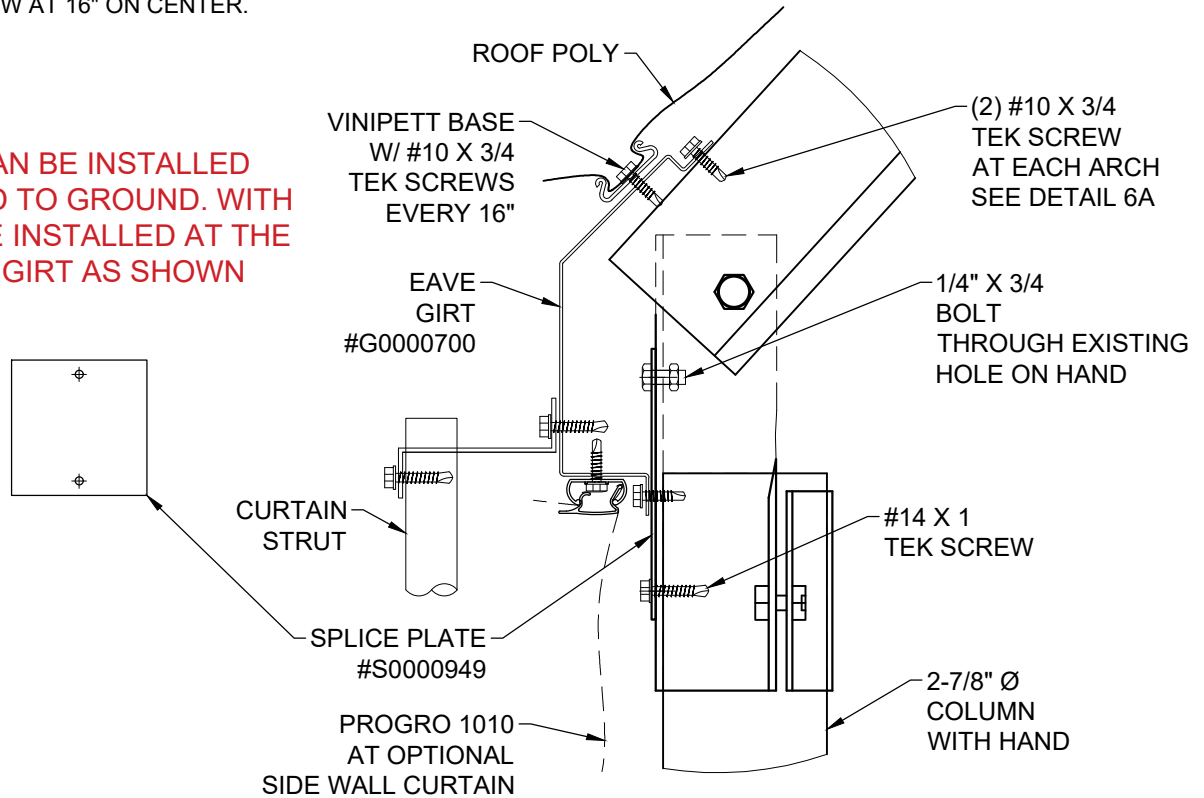
1. EAVE GIRT INSTALL (PART#: G0000700)

ATTACH SPLICE PLATE (#S0000949) TO EACH COLUMN AT THE APPROX LOCATIONS SHOWN. USE THE EXISTING HOLE ON THE HAND, AND USE A 1/4" X 3/4 BOLT AND NUT, AND FOR THE BOTTOM SPLICE PLATE HOLE, USE A #14 X 1 TEK SCREW.

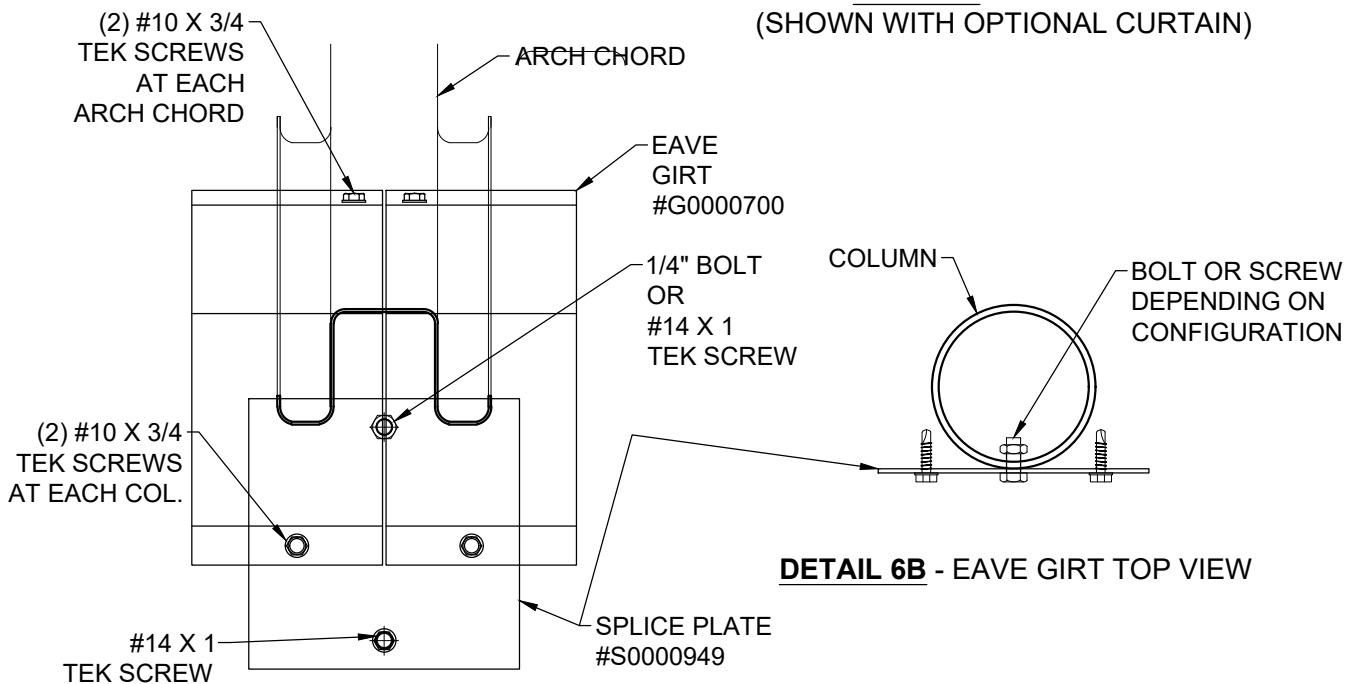
EAVE GIRT WILL BE BUTED UP AGAINST EACH OTHER, AND WILL BE ATTACHED TO EACH ARCHED CHORD WITH (2) #14 X 1 TEK SCREWS. THE BOTTOM PORTION WILL BE ATTACHED TO THE SPLICE PLATE WITH (4) #14 TEK SCREWS.

ATTACH THE ROOF COVERING ALUM VINNIPET BASE TO THE TOP PORTION OF THE EAVE GIRT WITH #10 X 3/4" TEK SCREW AT 16" ON CENTER.

**NOTE: POLY CAN BE INSTALLED FROM GROUND TO GROUND. WITH VINIPETT BASE INSTALLED AT THE BOTTOM WIDE GIRT AS SHOWN IN DETAIL 7.**



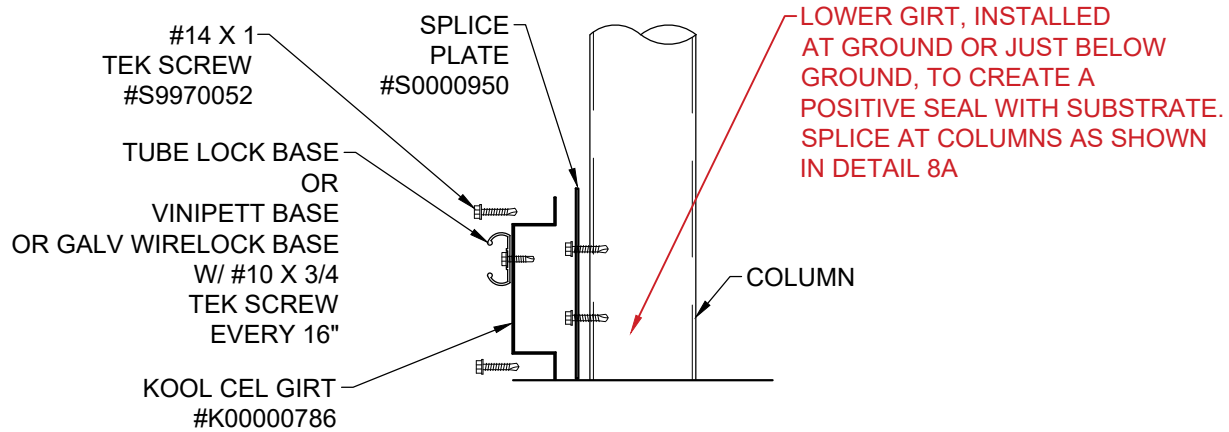
**DETAIL 6 - EAVE GIRT  
(SHOWN WITH OPTIONAL CURTAIN)**



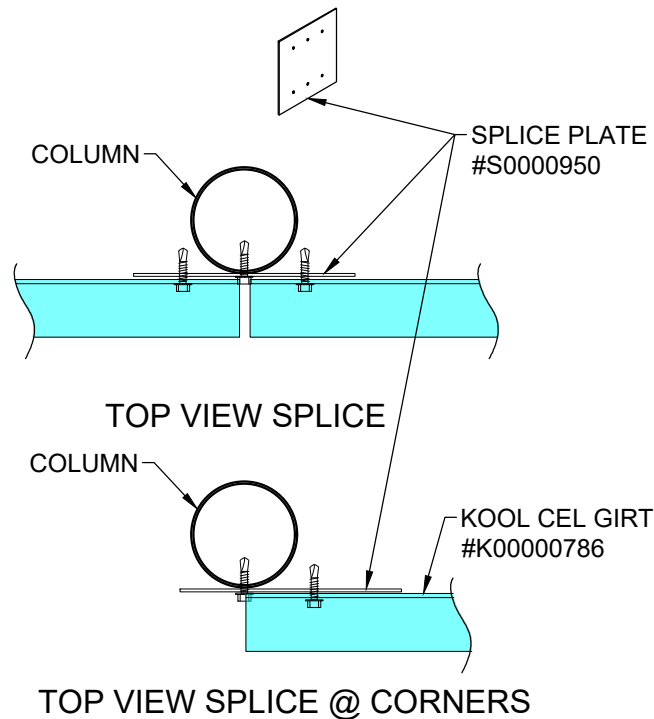
**DETAIL 6A - EAVE GIRT FRONT VIEW**

2. "WIDE" KOOL CEL GIRT INSTALL. (PART#: K0000786 OR SIMILAR PART NUMBER)

A "WIDE" KOOL CEL GIRT IS PROVIDED TYPICALLY FOR ATTACHING AT THE BOTTOM OF THE SIDE WALLS, AS SHOWN IN DETAIL 7 BELOW. ATTACH THE KOOL CEL SPLICE PLATE (S0000950) TO EACH COLUMN, NEAR THE BOTTOM OF THE COLUMNS WITH (2) #14 TEK SCREWS. ATTACH THE KOOL CEL GIRT TO THE KOOL CEL SPLICE PLATES WITH (2) #14 TEK SCREWS, APPROXIMATELY AS SHOWN IN DETAIL 7 BELOW. ATTACH THE ALUM VINNIPET BASE (OR OTHER POLY LOCKING) TO THE UPPER PORTION OF THE KOOL CEL GIRT WITH A #10 X 3/4" TEK SCREW AT 16" ON CENTER.



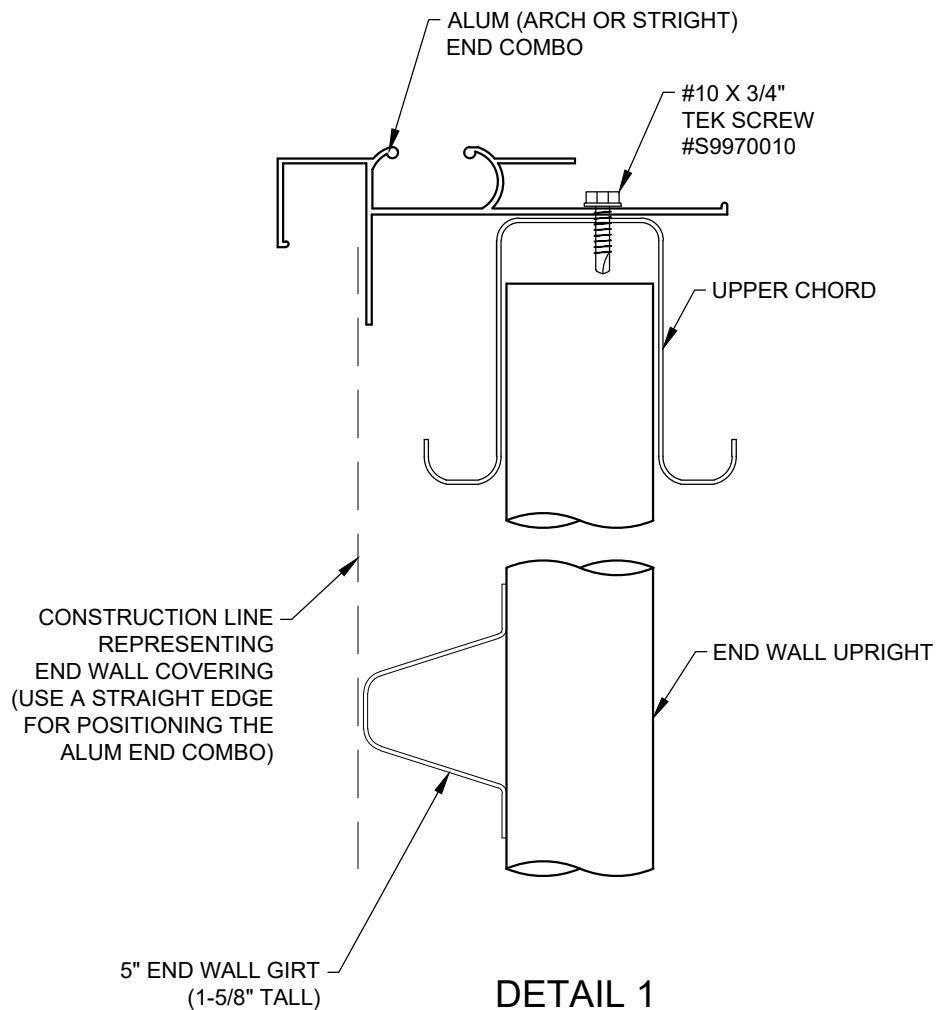
**DETAIL 7 - KOOL CEL BOTTOM GIRT**



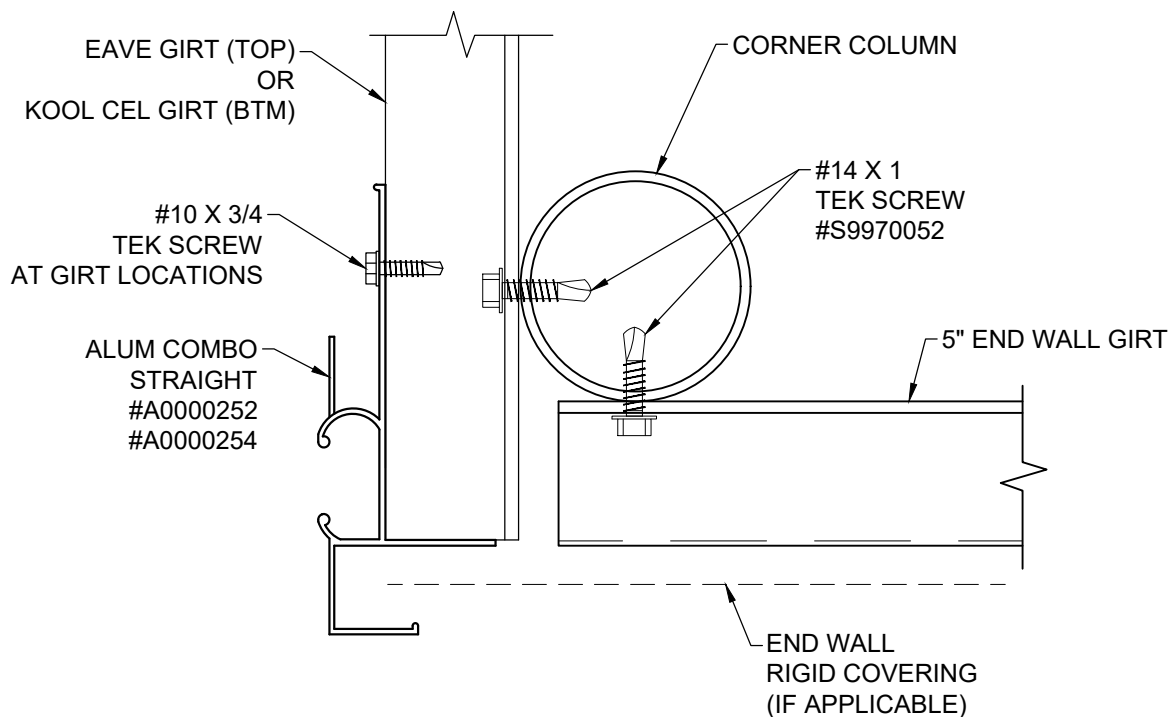
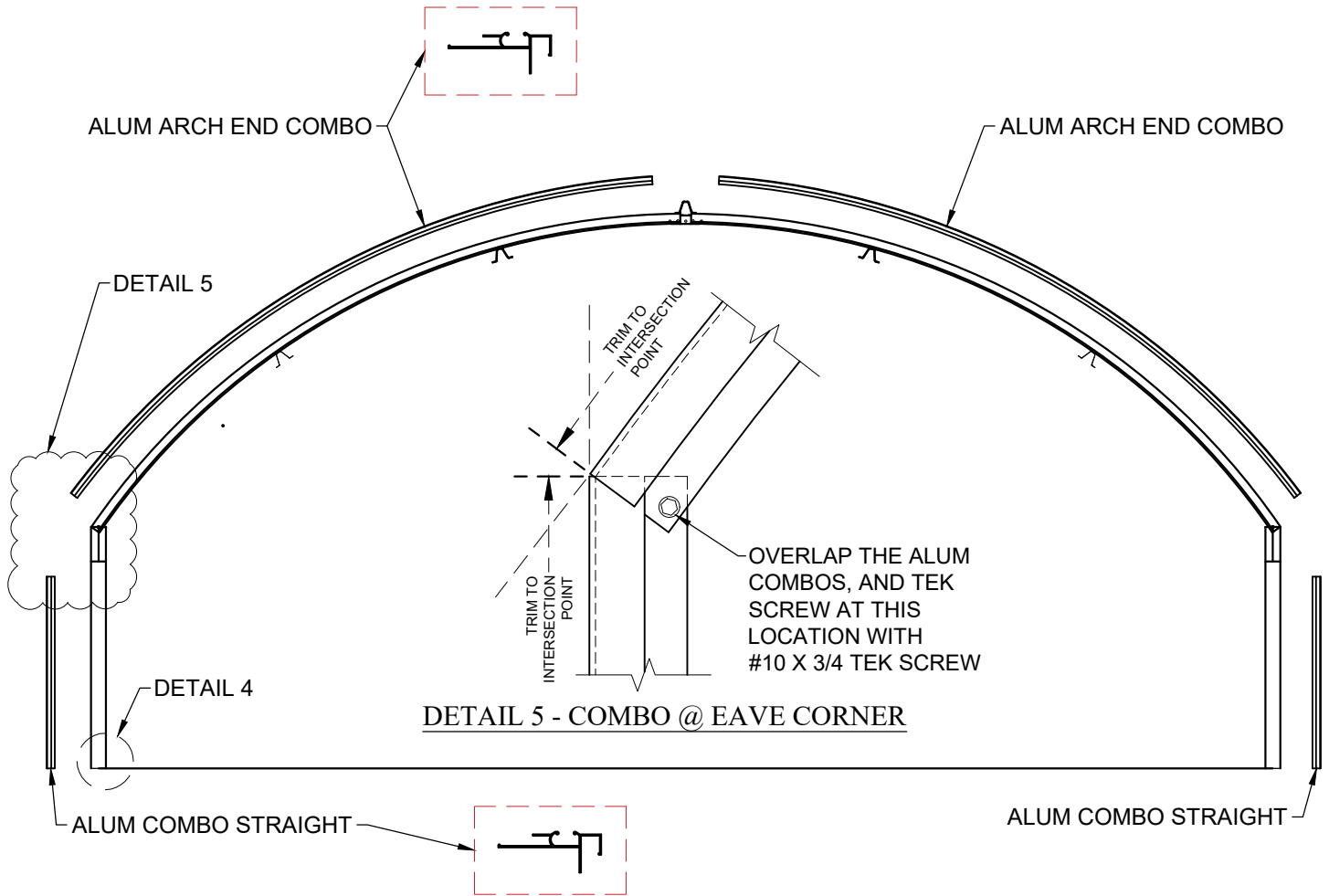
**DETAIL 8A - KOOL CEL GIRT SPLICE**

# END BAR COMBO OPTION AT END WALL (FOR RIGID COVERING)

1. FOR CORRUGATED OR 8MM TWINWALL END WALL COVERING, USE AN ALUMINUM ARCH END COMBO. ATTACH IT TO THE END WALL ARCH WITH #10 X 3/4" TEK SCREWS AT 16" ON CENTER.



# END BAR COMBO OPTION AT END WALL



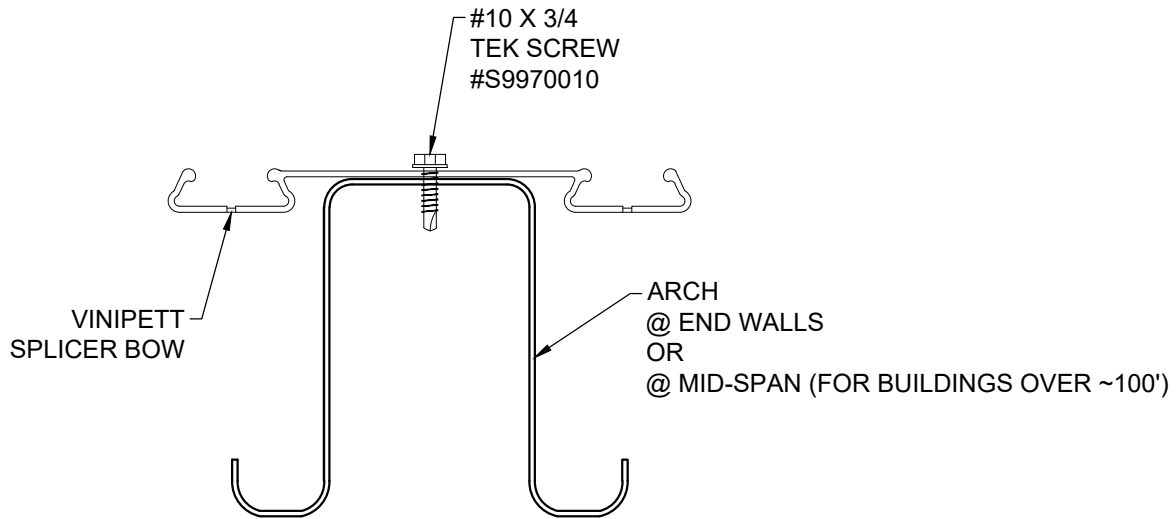
DETAIL 4 (COMBO END BAR CORNER DETAILS)

# COVERING TRIM INSTALLATION

## VINIPETT SPLICER BOW (OPTIONAL)

1. IF YOUR BUILDING IS SET TO HAVE POLY ROOF AND POLY END WALL COVERING, THEN A SPLICER BOW MAY BE PROVIDED. ONE CHANNEL WILL BE DEDICATED TO THE ROOF POLY COVERING AND THE OTHER CHANNEL WILL BE DEDICATED TO THE END WALL POLY COVERING.

2. IF YOUR BUILDING IS LONGER THAN THE POLY SHEETS SUPPLIED, YOU WILL HAVE A SPLICER BOW. IT WILL BE PLACED ON THE ARCH JUST BEFORE THE POLY SHEETS END. ATTACH IT WITH #10 X 3/4" TEK SCREWS AT 16" ON CENTER.



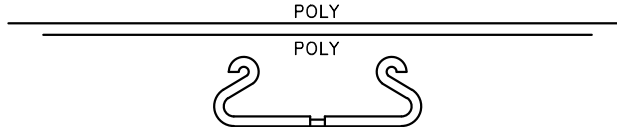
OPTIONAL - FOR BUILDINGS WITH POLY FILM INSTALLED AT END WALLS AND ROOF



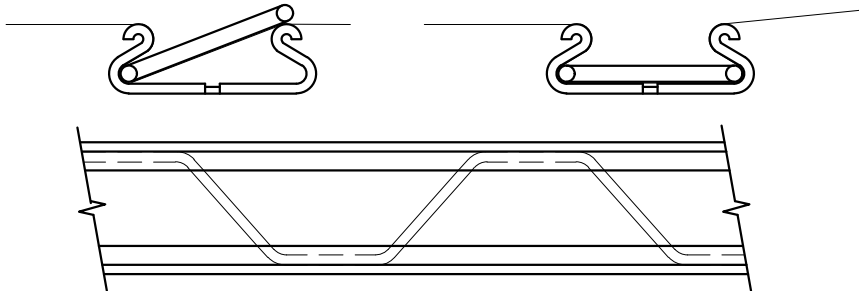
# INSTALLATION OF POLY COVERING WITH VINNIPET SPRING

NOTE: TEK SCREW ALL VINNIPET BASE AT A MINIMUM OF 16" ON CENTER

1. APPLY POLY FILM (ONE OR MORE LAYERS) OVER PREVIOUSLY INSTALLED VINNIPET BASE.

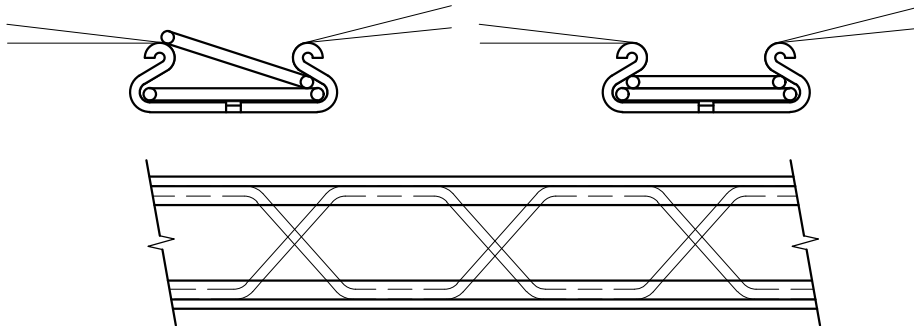


2. INSERT ONE EDGE OF THE VINNIPET SPRING INTO THE VINNIPET BASE. KEEPING POLY TIGHT WEAVE THE VINNIPET SPRING INTO THE BASE SECURING THE POLY.



USE DOUBLE CLIPS WHEN INSTALLING 32' OR WIDER POLY, DOUBLE POLY, AND/OR BUILDING IS LOCATED IN HIGH WIND AREA.

3. INSERT ONE EDGE OF THE SECOND VINNIPET SPRING INTO THE VINNIPET BASE. KEEPING POLY TIGHT WEAVE THE SECOND VINNIPET SPRING INTO THE BASE SECURING THE POLY.



WARRANTY CONLEY'S MFG. AND SALES, THEIR EMPLOYEES OR REPRESENTATIVES, WILL NOT BE RESPONSIBLE FOR ANY DAMAGE TO GREENHOUSE COVERING, STRUCTURES, CROPS OR EQUIPMENT WHEN USED IN CONJUNCTION WITH OUR TUBE - LOCK, OR ANY OTHER LOCKING DEVICE MFG,D BY C.M.S. OR OTHERS.

# INSTALLATION OF POLY COVERING ON ARCHED BUILDINGS

1. ON SINGLE BUILDINGS, ROLL OUT THE POLY LENGTHWISE NEXT TO BUILDING.
2. WAD UP THE POLY (APPROX. EVERY 20') AND TIE IT WITH ROPES ON THE SIDE OF THE POLY FURTHEST FROM THE BUILDING.
3. THROW ROPES OVER THE BUILDING AND PULL THE POLY ONTO THE BUILDING. REPEAT THIS PROCEDURE FOR MULTIPLE LAYERS OF POLY.
4. INSTALLING POLY REQUIRES A MINIMUM OF FOUR PEOPLE, TWO PEOPLE TO HOLD THE POLY IN PLACE AT THE END OF THE BUILDING, ONE ON EACH SIDE. THE OTHER TWO PEOPLE STARTING AT THE OPPOSITE END OF BUILDING TO INSTALL THE TUBE LOCK CAP SIMULTANEOUSLY, ON EACH SIDE OF BUILDING. (SEE PAGE 27 FOR POLY LOCKING INSTRUCTIONS).
5. SECURE THE TUBE LOCK CAP WITH TEK SCREWS AT EACH END.

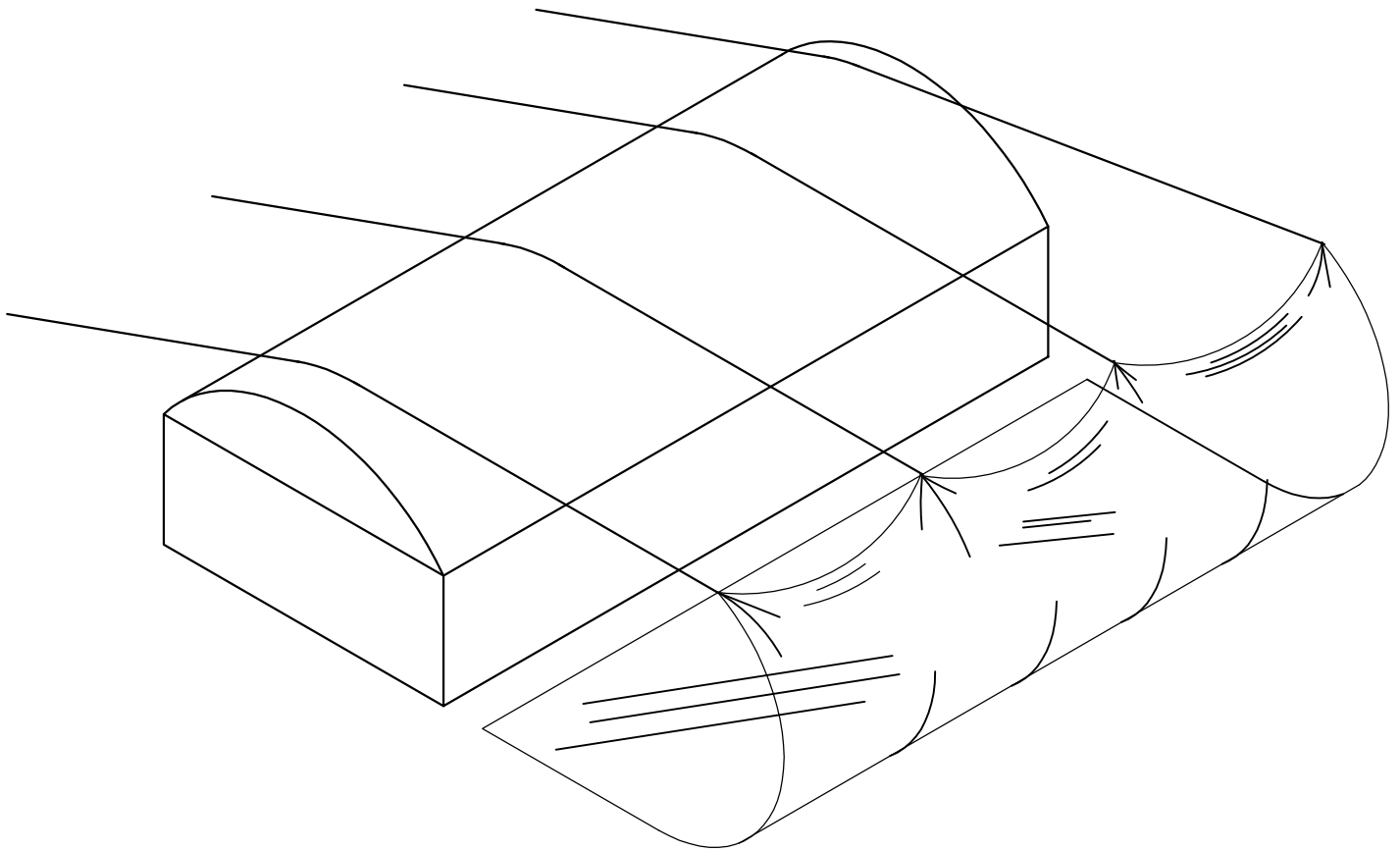


FIGURE 26 - (POLY INSTALLATION)

# INSTALLATION OF INFLATOR FAN

## (FOR DOUBLE POLY COVERING OPTION)

1. ATTACH THE INFLATOR FAN HANGER TO THE END WALL UPRIGHT.

CAUTION - BE SURE THERE ARE NO UNDERGROUND OR OVERHEAD ELECTRICAL WIRES, WATER PIPES, GAS LINES, ETC. ON OR NEAR THE JOB SITE.

2. CLAMP THE INFLATOR FAN HOSE TO THE INFLATOR FAN (CLAMPS SUPPLIED WITH FAN).
3. ATTACH THE MOUNTING PLATE WITH THE FAN TO THE INFLATOR FAN HANGER WITH (2) 1/4" X 3/4" MACHINE BOLTS AND (2) 1/4" HEX NUTS.
4. TO CUT THE POLY, PUT YOUR HAND BETWEEN THE 2 LAYERS OF POLY AND CUT A 3" "X" SLIGHTLY SMALLER THAN THE SMALL END OF THE INFLATOR COUPLING IN THE BOTTOM LAYER OF THE POLY, ABOVE THE INFLATOR FAN.



(BE CAREFUL TO KEEP THE CIRCLE CONTINUOUS SO THAT WHEN POLY IS INFLATED THE WALL WILL NOT RIP.)

5. SLIP ONE RUBBER WASHER OVER THE INFLATOR COUPLING. SLIDE THE COUPLING BETWEEN THE TWO LAYERS OF POLY AND PUSH THE SMALL END THROUGH THE HOLE MADE IN STEP 4.
6. SLIP THE SECOND RUBBER WASHER OVER THE SMALL END OF THE COUPLING AND SCREW ON THE NUT, SANDWICHING THE BOTTOM LAYER OF POLY BETWEEN THE TWO RUBBER WASHERS.
7. CLAMP THE INFLATOR HOSE TO THE INFLATOR COUPLING.
8. SECURE THE POLY WITH THE TUBE LOCK OR VINIPETT BASE. (SEE PAGES 25-26).
9. WIRE THE INFLATOR FAN TO 110 VOLT ELECTRICAL OUTLET.

(OPTIONAL)

10. CLAMP THE INTAKE TO THE INFLATOR FAN.
11. CUT A HOLE IN THE SIDE WALL COVERINGS SO THE EXTERIOR VENT CAN SLIDE THROUGH.
12. SLIDE THE VENT THROUGH THE SIDE WALL AND CLAMP THE INTAKE HOSE TO IT.

# INFLATOR FAN ASSEMBLY (FOR DOUBLE POLY COVERING OPTION)

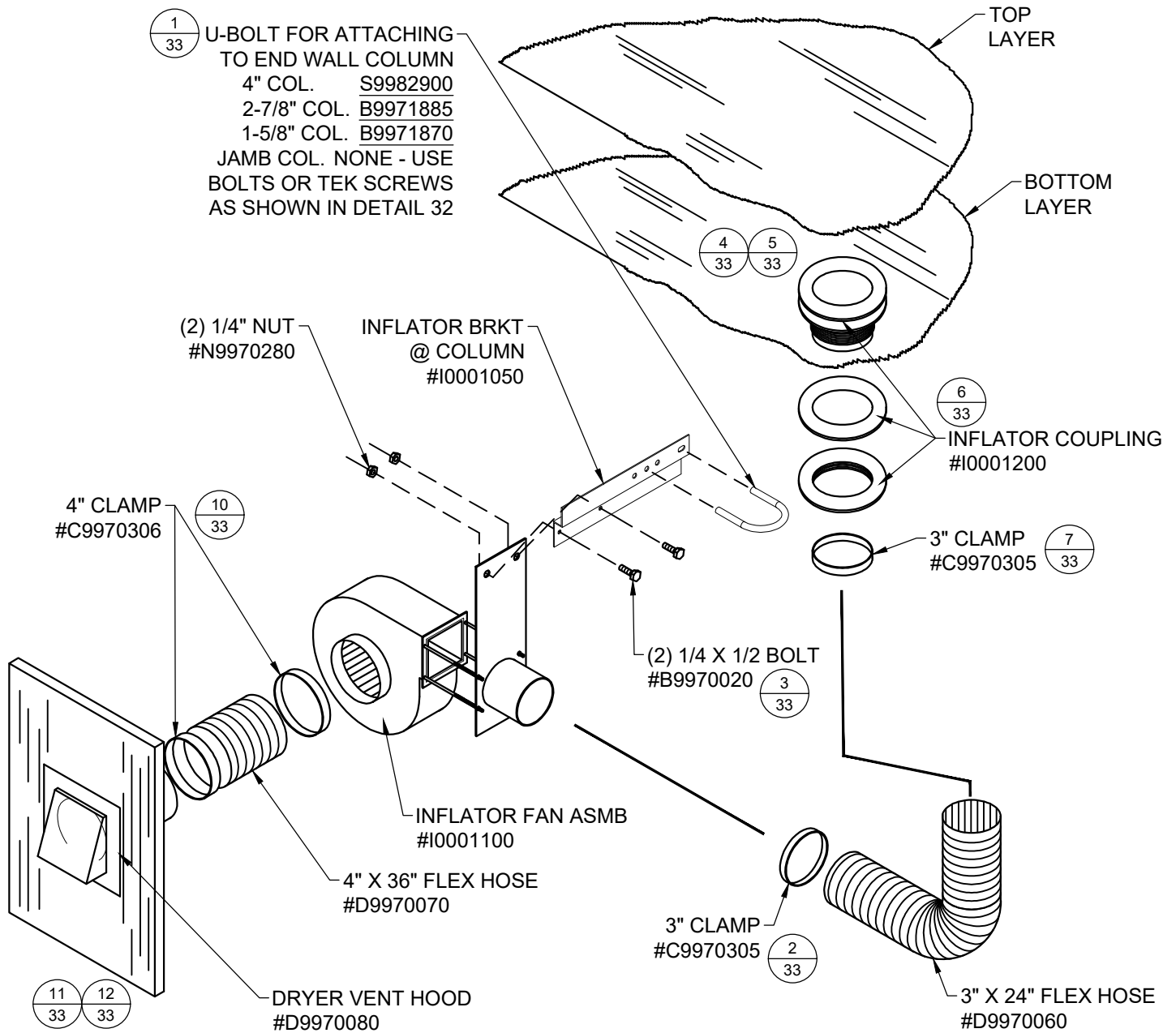


FIGURE 31 - (INFLATOR FAN ASSEMBLY FOR COLUMN MOUNING - I0050001)

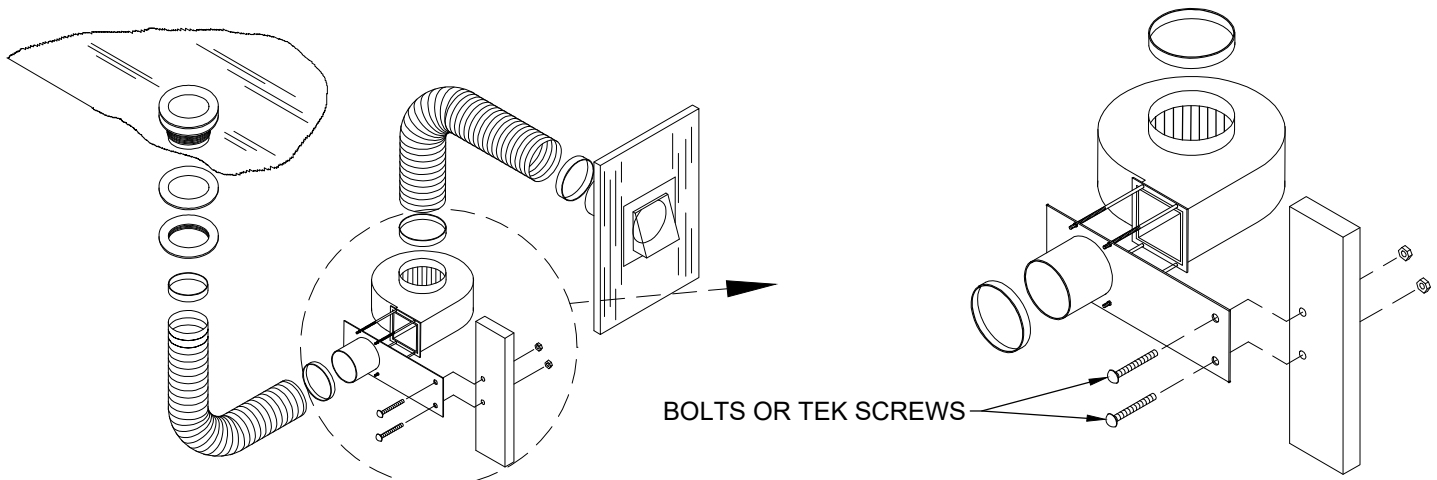


FIGURE 32 - (INFLATOR FAN ASSEMBLY FOR SQ OR JAMB MOUNTING)