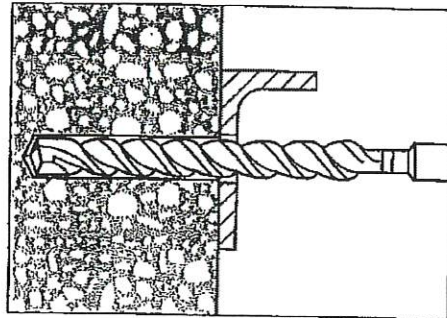
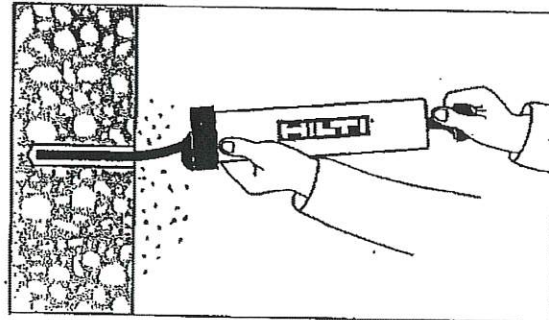


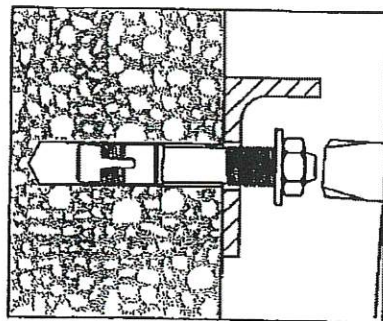
### Kwik Bolt 3 Expansion Anchor Installation Instructions



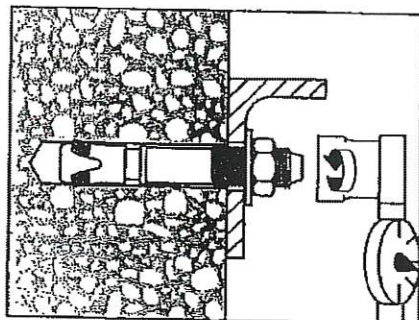
1. Hammer drill a hole to the same nominal diameter as the Kwik Bolt 3. The hole depth must exceed the anchor embedment by at least one diameter. The fixture may be used as a drilling template to ensure proper anchor location.



2. Clean hole.

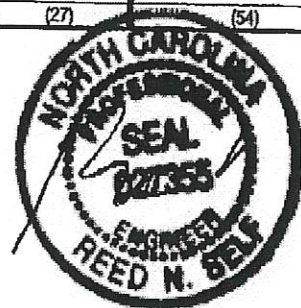


3. Drive the Kwik Bolt 3 into the hole using a hammer. The anchor must be driven until at least six threads are below the surface of the fixture.



4. Tighten the nut to the recommended installation torque.

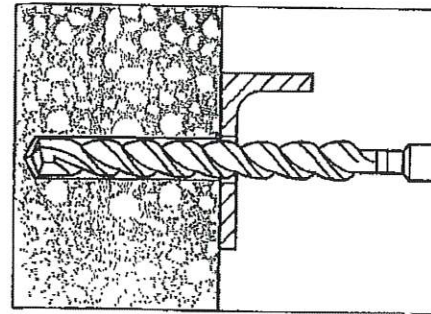
DESIGN INFORMATION	Units	Nominal Anchor Diameter				
		1/4	3/8	1/2	5/8	3/4
Installation torque	ft*lb	4	20	40	60	110
	(Nm)	(5)	(27)	(54)	(81)	(149)



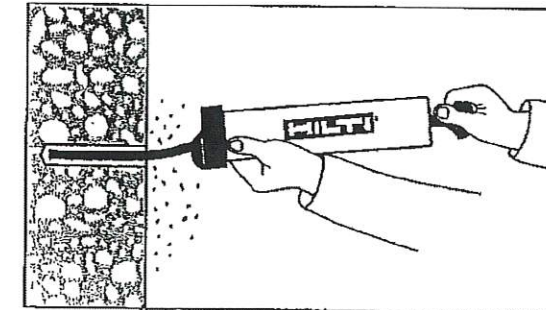
5-26-16

REVISIONS	DATE	BY

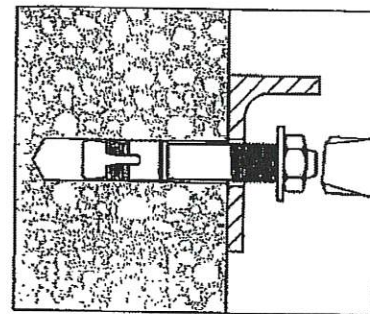
### Kwik Bolt TZ Anchor Installation Instructions into normal-weight and lightweight concrete



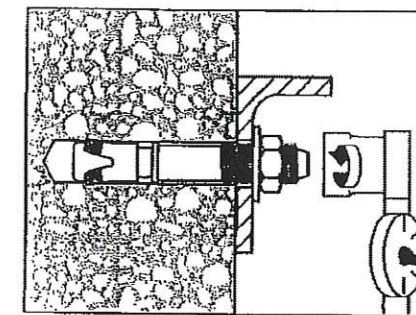
1. Hammer drill a hole to the same nominal diameter as the Kwik Bolt TZ. The hole depth must exceed the anchor embedment by at least 1/4 inch. The fixture may be used as a drilling template to ensure proper anchor location.



2. Clean hole.



3. Drive the Kwik Bolt TZ into the hole using a hammer. The anchor must be driven until at least 4 threads are below the surface of the fixture.



4. Tighten the nut to the recommended installation torque.

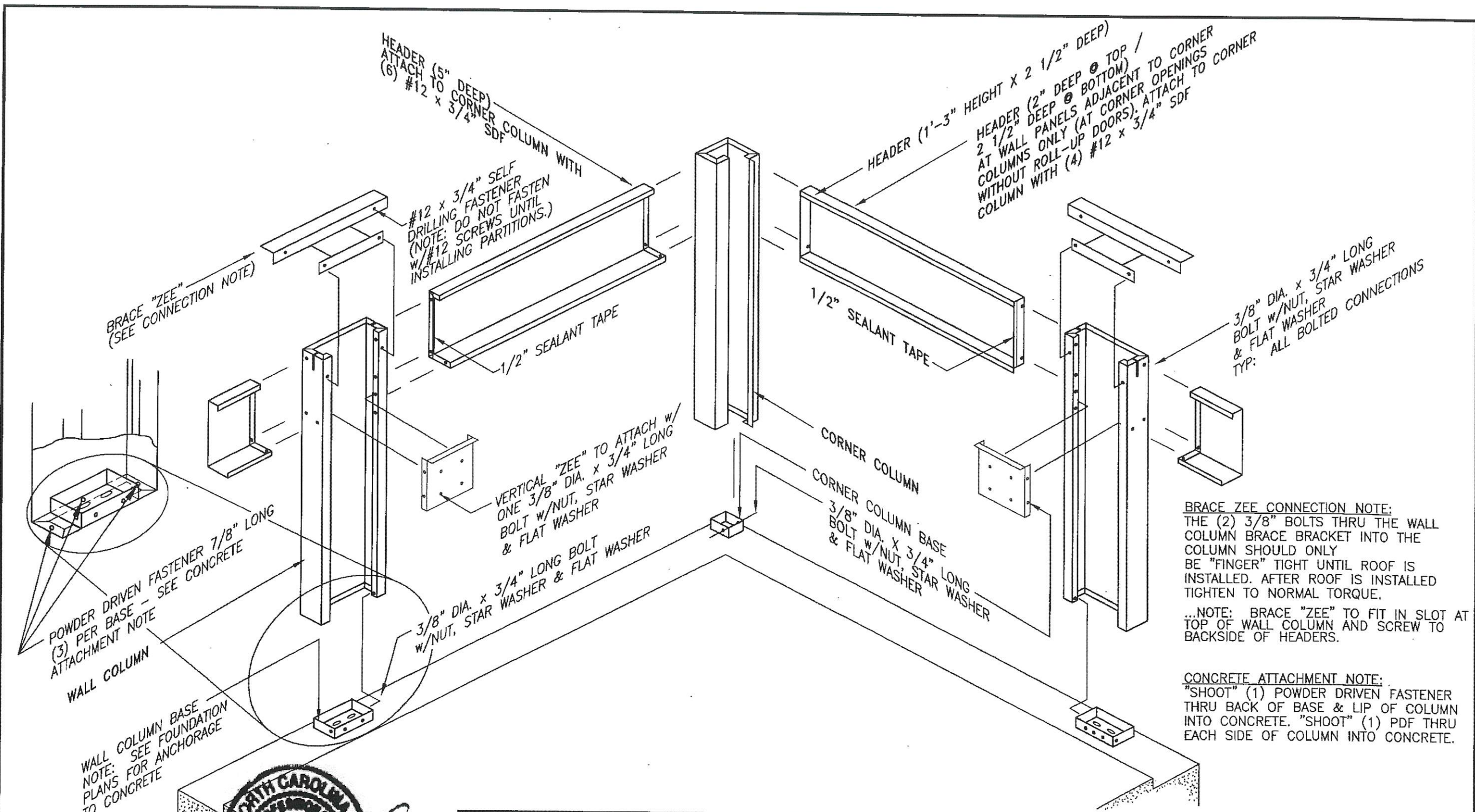
SETTING INFORMATION	Units	Nominal anchor diameter (in.)			
		3/8	1/2	5/8	3/4
Installation torque	ft-lb	25	40	60	110
	(Nm)	(34)	(54)	(81)	(149)



228 COMMERCE BLVD.  
STATESVILLE, NC 28625  
(800)654-7813

SHEET TITLE: Kwik Bolt Anchor Installation Instructions		
DRAWN BY: BDL	APPROVED BY:	DRAWING NUMBER: ERC016X
SCALE: NTS	DATE: 11/8/2011	

NC20251



BRACE "ZEE"  
(SEE CONNECTION NOTE)

HEADER (5" DEEP)  
ATTACH TO CORNER  
(6) #12 x 3/4" SDF COLUMN WITH

#12 x 3/4" SELF  
DRILLING FASTENER  
(NOTE: DO NOT FASTEN  
W/ #12 SCREWS UNTIL  
INSTALLING PARTITIONS.)

1/2" SEALANT TAPE

VERTICAL "ZEE" TO ATTACH W/  
ONE 3/8" DIA. x 3/4" LONG  
BOLT W/NUT, STAR WASHER  
& FLAT WASHER

3/8" DIA. x 3/4" LONG BOLT  
W/NUT, STAR WASHER & FLAT WASHER

HEADER (1'-3" HEIGHT x 2 1/2" DEEP)  
2 1/2" DEEP @ TOP /  
2 1/2" DEEP @ BOTTOM  
AT WALL PANELS ADJACENT TO CORNER  
COLUMNS ONLY (AT CORNER OPENINGS  
WITHOUT ROLL-UP DOORS): ATTACH TO CORNER  
COLUMN WITH (4) #12 x 3/4" SDF

1/2" SEALANT TAPE

CORNER COLUMN

CORNER COLUMN BASE  
3/8" DIA. x 3/4" LONG  
BOLT W/NUT, STAR WASHER  
& FLAT WASHER

3/8" DIA. x 3/4" LONG  
BOLT W/NUT, STAR WASHER  
& FLAT WASHER  
TYP: ALL BOLTED CONNECTIONS

**BRACE ZEE CONNECTION NOTE:**  
THE (2) 3/8" BOLTS THRU THE WALL  
COLUMN BRACE BRACKET INTO THE  
COLUMN SHOULD ONLY  
BE "FINGER" TIGHT UNTIL ROOF IS  
INSTALLED. AFTER ROOF IS INSTALLED  
TIGHTEN TO NORMAL TORQUE.

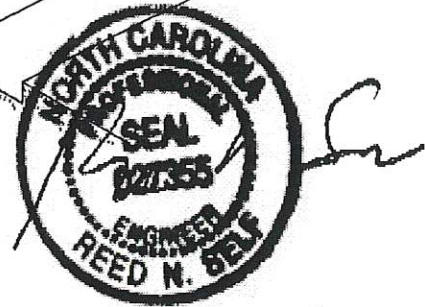
...NOTE: BRACE "ZEE" TO FIT IN SLOT AT  
TOP OF WALL COLUMN AND SCREW TO  
BACKSIDE OF HEADERS.

**CONCRETE ATTACHMENT NOTE:**  
"SHOOT" (1) POWDER DRIVEN FASTENER  
THRU BACK OF BASE & LIP OF COLUMN  
INTO CONCRETE. "SHOOT" (1) PDF THRU  
EACH SIDE OF COLUMN INTO CONCRETE.

POWDER DRIVEN FASTENER 7/8" LONG  
(3) PER BASE - SEE CONCRETE  
ATTACHMENT NOTE

WALL COLUMN

WALL COLUMN BASE  
NOTE: SEE FOUNDATION  
PLANS FOR ANCHORAGE  
TO CONCRETE



5-26-16

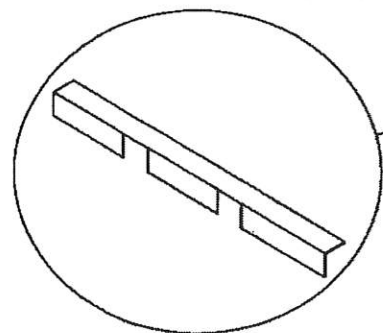
REVISIONS	DATE	BY

**BETCO**  
228 COMMERCE BLVD.  
STATESVILLE, NC 28625  
(800)654-7813

SHEET TITLE: <b>PERIMETER WALL ASSEMBLY</b> All Eave Heights		
DRAWN BY: J Pope	APPROVED BY:	DRAWING NUMBER: ERC100X
SCALE: NTS	DATE: 6/17/94	

CONTROL JOINT BRACE (S20139)  
 ATTACH TO HEADERS w/(2)  
 #12 x 7/8" SDF AT EACH HEADER  
 (TOTAL OF 4 SCREWS)  
 ..FIELD NOTCH IF NECESSARY TO FIT OVER  
 CONTROL JOINT COLUMN...SEE ISOMETRIC  
 VIEW BELOW...NOTE: LOCATION OF NOTCHES  
 TO BE DETERMINED FROM WIDTH OF C.J. COLUMN

CONTROL JOINT COLUMN (HALF)



CONTROL JOINT COLUMN (HALF)

C.J. COLUMN EXPANSION TRIM

#10 x 5/8" SDF (PP) (8) EACH SIDE

SLAB RECESS

HEADER

7/8" PDF (2) EA. SIDE

SEALANT TAPE  
 1/8" thick x 1/2" wide

C.J.C. EXPANSION TRIM  
 #10 x 5/8" SDF (PP)  
 (4) EACH SIDE

CONTROL JOINT BRACE  
 FOR ROOF PAN  
 ATTACHMENT AT TOP OF  
 COLUMN... FASTEN TO  
 HEADER WITH #12 x 7/8"  
 SDF EACH END  
 (SEE ISOMETRIC VIEW)

#12 x 7/8" SDF

3/8" DIA. x 3/4" LG. BOLT,  
 NUT, FLAT WASHER &  
 STAR WASHER

FIELD CUT ANGLE SA-2 FOR  
 VERTICAL 'ZEE' ATTACHMENT  
 AT WALL COLUMNS... POSITION  
 ACCORDING TO 'VZ' LENGTH  
 FASTEN TO C.J. COLUMN w/(2)  
 #12 x 7/8" SDF EA. END...

CONTROL JOINT COLUMN (HALF)

FIELD CUT ANGLE SA-2 FOR  
 VERTICAL 'ZEE' ATTACHMENT  
 AT BASE OF COLUMN...  
 'SHOOT' TO FOUNDATION  
 w/(2) 7/8" PDF...

CONTROL JOINT COLUMN (HALF)

C.J.C. EXPANSION TRIM  
 BRACKET...(2) REQUIRED...  
 (1) AT 1/3 OF COLUMN HGT.  
 & (1) AT 2/3 OF COLUMN HGT.

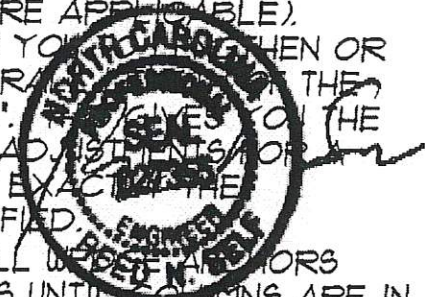
#12 x 7/8" SDF  
 (2) PER BRACKET

#12 x 7/8" SDF  
 (4) PER ANGLE

1/2" DIA. x 3 3/4" LG.  
 WEDGE ANCHOR

NOTE: ADJUSTABLE 'CONTROL JOINT COLUMNS'  
 (C.J.C.'s) ARE TO BE USED IN LIEU OF  
 SIDEWALL COLUMNS IN LOCATIONS OPPOSING  
 EACH OTHER (WHERE APPLICABLE).  
 THE C.J.C.'S ALLOW YOU TO LENGTHEN OR  
 SHORTEN THE OVERALL HEIGHT OF THE  
 BLDG. BY UP TO 2'. THE C.J.C.'S HAVE THE  
 ABILITY TO MAKE ADJUSTMENTS TO THE  
 SLAB THAT IS NOT EXACT TO THE  
 DIMENSIONS SPECIFIED.

DO NOT INSTALL WEDGE ANCHORS  
 IN C.J.C. LOCATIONS UNTIL COLUMNS ARE IN  
 PLACE & ADJUSTED AS REQUIRED.



REVISIONS	DATE	BY
4	11/15/05	JCM
3	4/30/03	RSG
2	1/22/99	JAB
1	3-8-99	FOX



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 STATESVILLE, NC 28625  
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SHEET TITLE:

CONTROL JOINT COLUMN  
 AND TRIM INSTALLATION

DRAWN BY:  
 K.D.W.

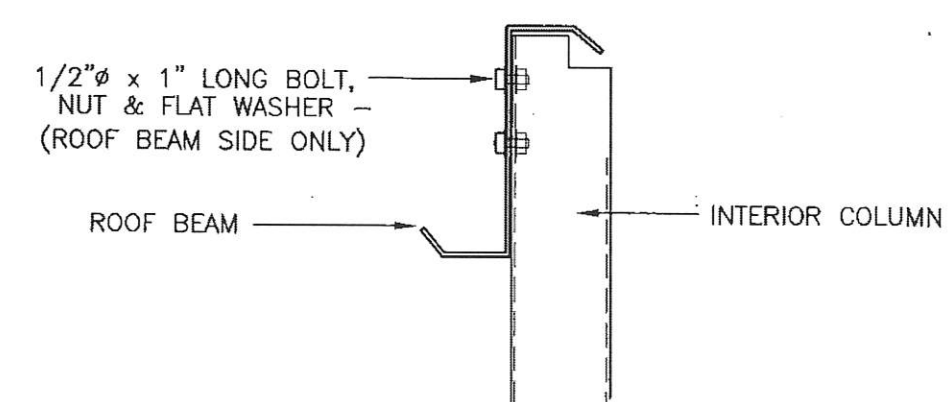
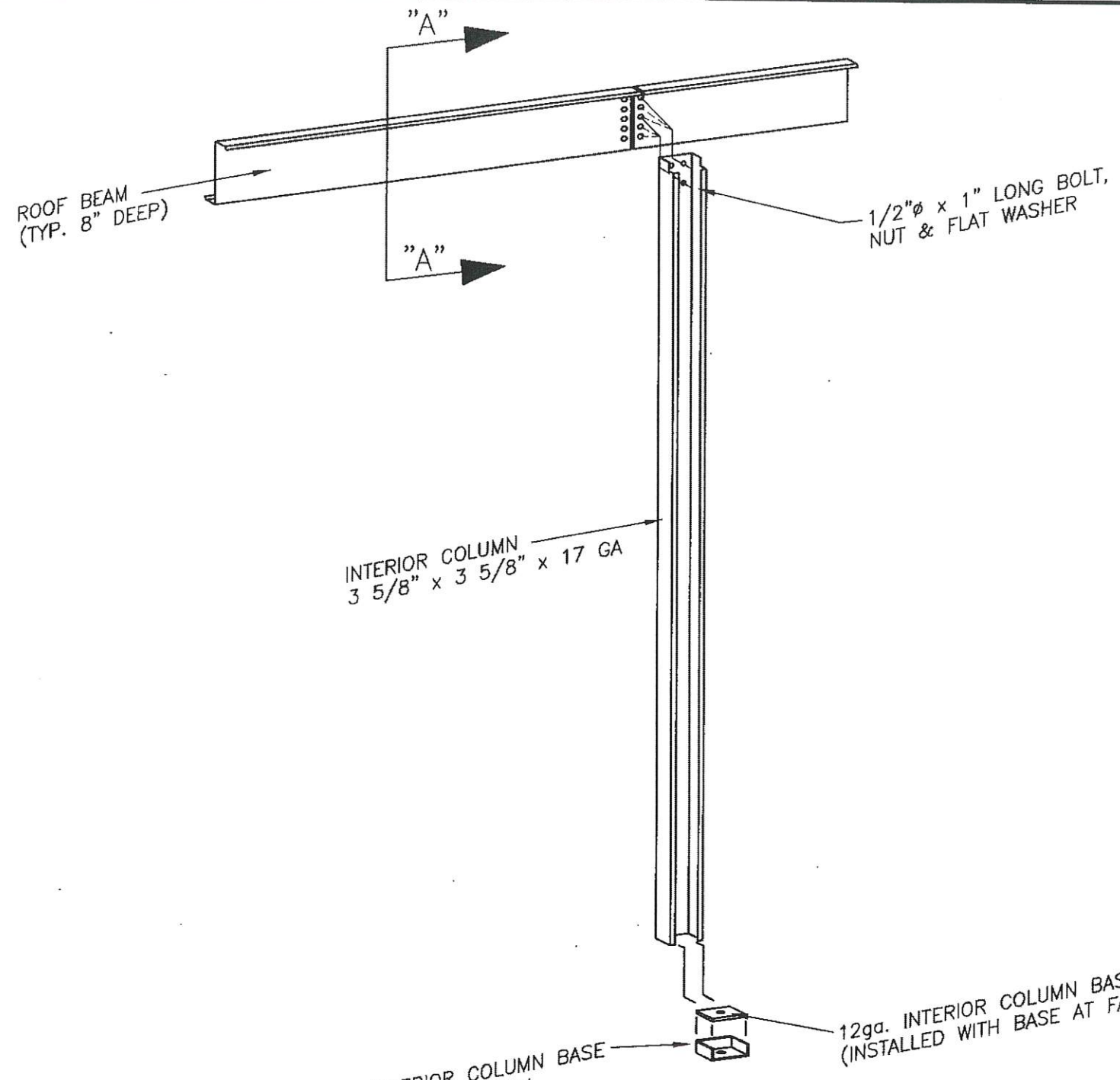
APPROVED BY:

DRAWING NUMBER:

SCALE:  
 NTS

DATE:  
 8/1/94

ERC105X



SECTION  
"A" - "A"

NOTE: SEE BUILDING CROSS SECTION FOR COLUMN HEIGHT & ROOF BEAM HGT. ABOVE FINISHED FLOOR

12ga. INTERIOR COLUMN BASE  
TO BE FACTORY  
WELDED INSIDE COLUMN  
(2) #12 x 7/8"  
THREE SIDES.)

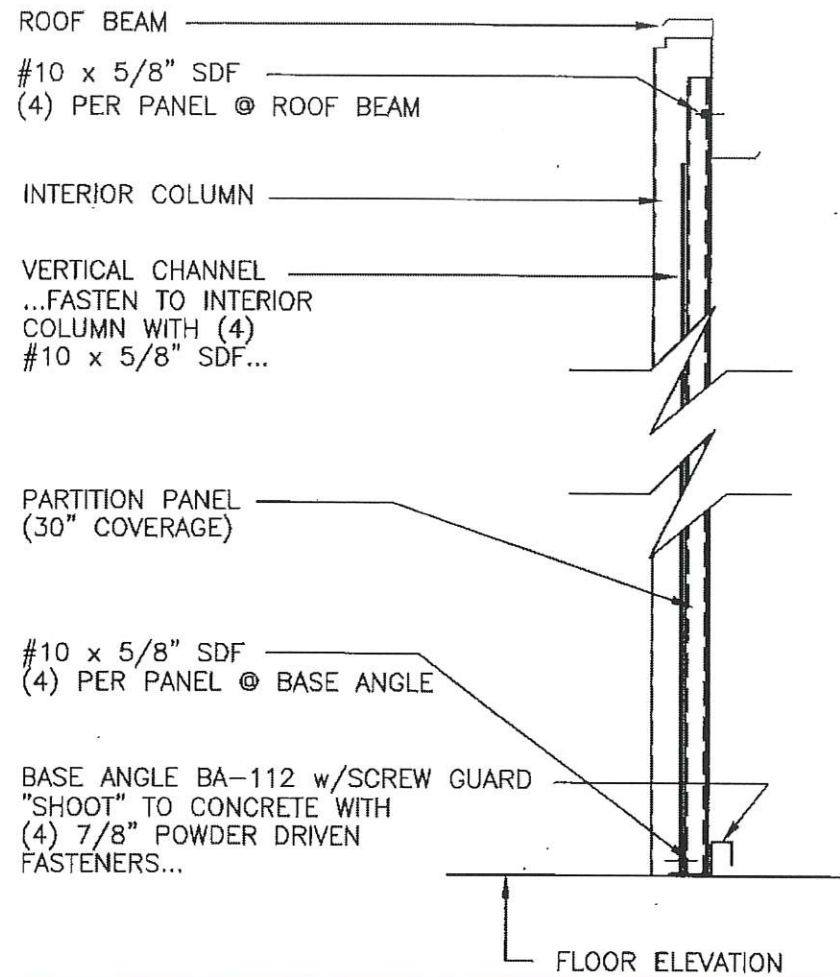


5-26-16

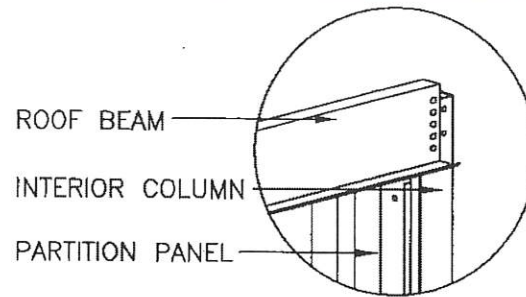
REVISIONS	DATE	BY
3	8-29-02	BAM
2	3-16-99	FOX
1	3-9-99	FOX

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STATESVILLE, NC 28625  
(800)654-7813

SHEET TITLE: <i>Interior Column Installation All Heights</i>		
DRAWN BY: J POPE	APPROVED BY:	DRAWING NUMBER: ERC110X
SCALE: NTS	DATE: 1/30/98	



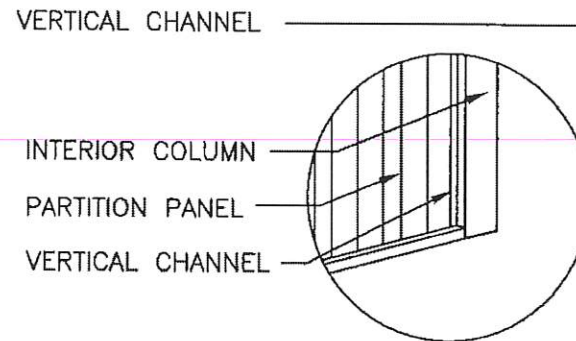
**SECTION A-A**



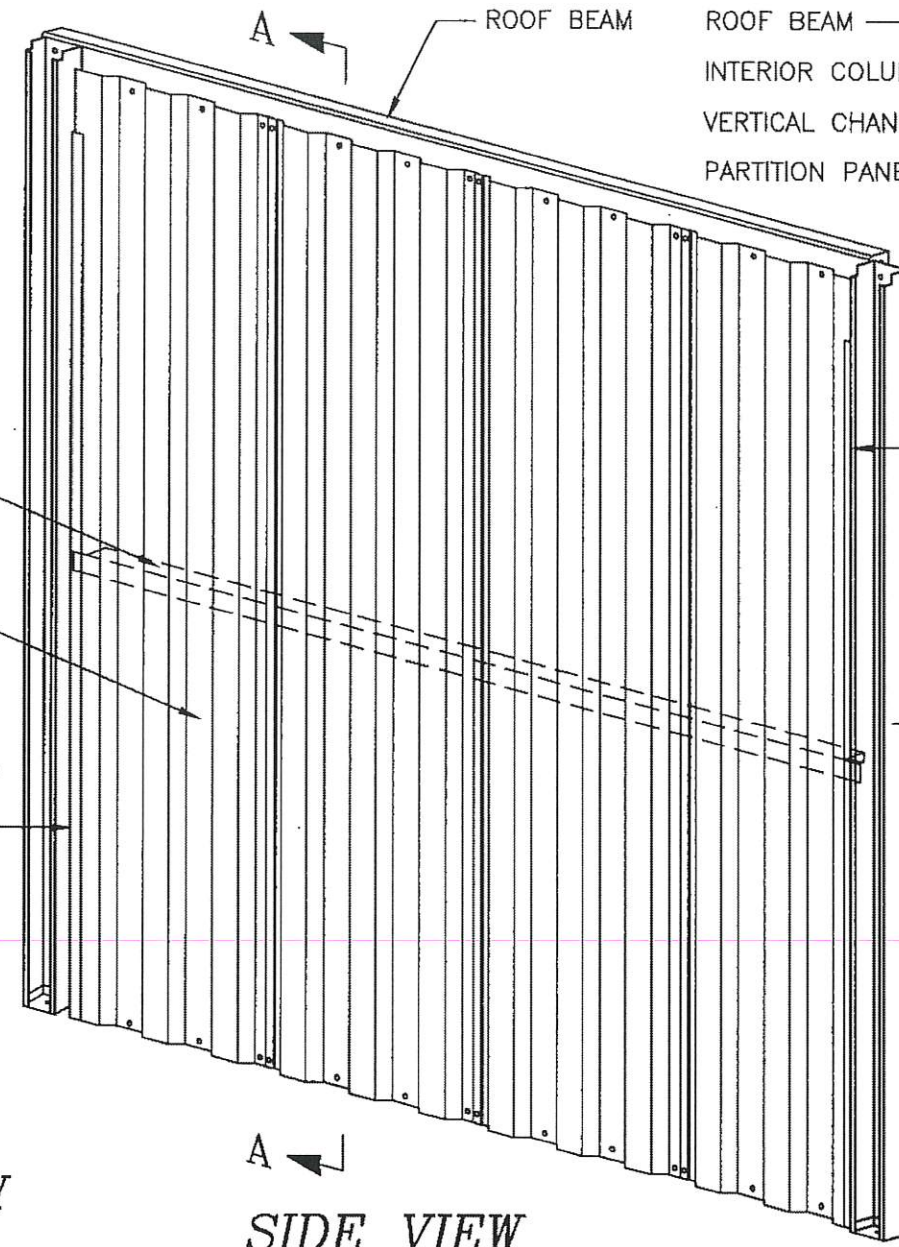
**OPPOSITE VIEW  
THIS CORNER**

(NOTE: INSTALL A TOP CHANNEL AT 4-6" A.F.F. ONLY WHEN PANEL HEIGHT IS 9'-0" OR MORE.) (INSTALL FLANGES DOWN)

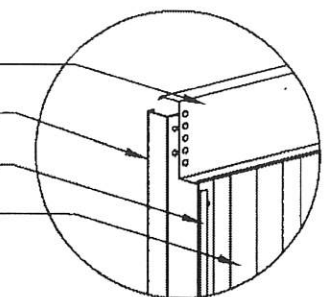
PARTITION PANEL (30" COVERAGE) FASTEN TO ROOF BEAM AND BASE ANGLE w/(4) #10 x 5/8" SDF EACH...(1) PER PAN SECTION AND (1) EACH SIDE OF LAP JOINT... ...FASTEN TO VERTICAL FRAMING w/(4) #10 x 5/8" SDF EACH --(SEE NOTE)



**OPPOSITE VIEW  
THIS CORNER**

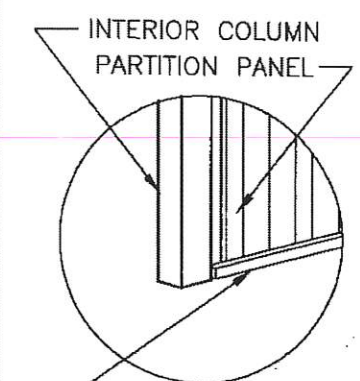


**SIDE VIEW**



**OPPOSITE VIEW  
THIS CORNER**

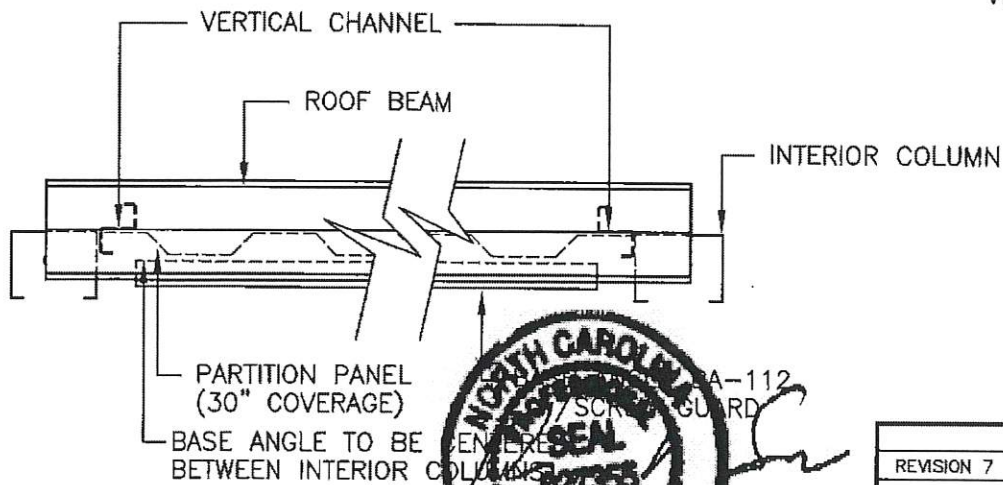
VERTICAL CHANNEL FASTEN TO INTERIOR COLUMN WITH (4) #10 x 5/8" SDF (SEE NOTE)



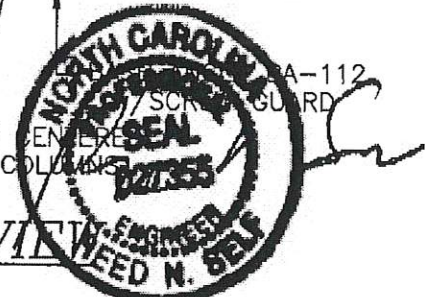
**OPPOSITE VIEW  
THIS CORNER**

BASE ANGLE BA-112 w/SCREW GUARD

NOTE: THE FOUR (4) FASTENERS FOR ATTACHING PARTITION PANELS TO INTERIOR COLUMNS ARE INSTALLED AT THE TOP, BOTTOM AND AT THE 1/3 POINTS NOT TO EXCEED A 3'-0" VERTICAL SPACING BETWEEN FASTENERS.



**PLAN VIEW**



5-26-16

REVISIONS	DATE	BY
REVISION 7	3/17/04	JCM
REVISION 6	8/29/02	BAM
REVISION 5	2/7/02	BDL
REVISION 4	3/30/01	TLR
REVISION 3	3-24-99	FOX
REVISION 2	6/23/98	CJG
REVISION 1	6/4/98	KLH

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(800)654-7813

SHEET TITLE: <b>Partition - Interior Column to Interior Column</b>		
DRAWN BY: J Pope	APPROVED BY:	DRAWING NUMBER: ERC201X
SCALE: NTS	DATE: 6/20/94	

BRACE "ZEE"  
 ...FASTEN TO WALL COLUMN w/(1)  
 3/8"φ x 3/4" BOLT, NUT, STAR  
 WASHER & FLAT WASHER EACH  
 FLANGE...FASTEN TO HEADER w/(1)  
 #12 x 7/8" SDF...

TOP CHANNEL TC-119.5  
 SECURE TO TOP OF DOOR  
 MOUNTING PLATE w/(1)  
 #10 x 5/8" SDF...FASTEN TO INT.  
 COLUMN w/(2) #10 x 5/8" SDF...

#10 x 5/8" SDF  
 (4) PER PANEL @ TOP CHANNEL

DOOR MOUNTING PLATE  
 ...FASTEN TO WALL COLUMN w/(2)  
 3/8"φ x 3/4" BOLT, NUT, STAR  
 WASHER & FLAT WASHER EACH FLANGE

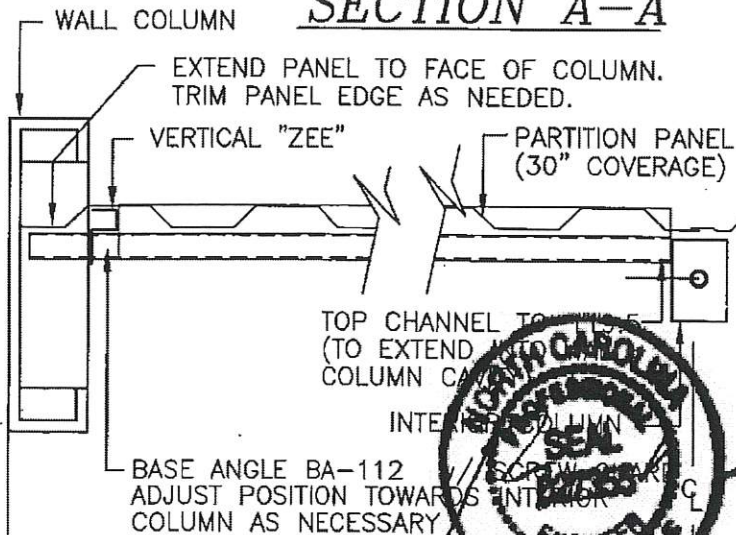
VERTICAL "ZEE"  
 ...FASTEN TO WALL COLUMN BASE  
 AND TO DOOR MOUNTING BRACKET  
 W/(1) 3/8"φ x 3/4" BOLT, NUT, STAR  
 WASHER & FLAT WASHER EACH END...

WALL COLUMN  
 PARTITION PANEL  
 (30" COVERAGE)  
 #10 x 5/8" SDF  
 (4) PER PANEL @ BASE ANGLE

BASE ANGLE BA-112 w/SCREW GUARD  
 "SHOOT" TO FOUNDATION  
 w/(4) 7/8" POWDER  
 DRIVEN FASTENERS...

FLOOR ELEVATION  
 THRESHOLD ELEVATION

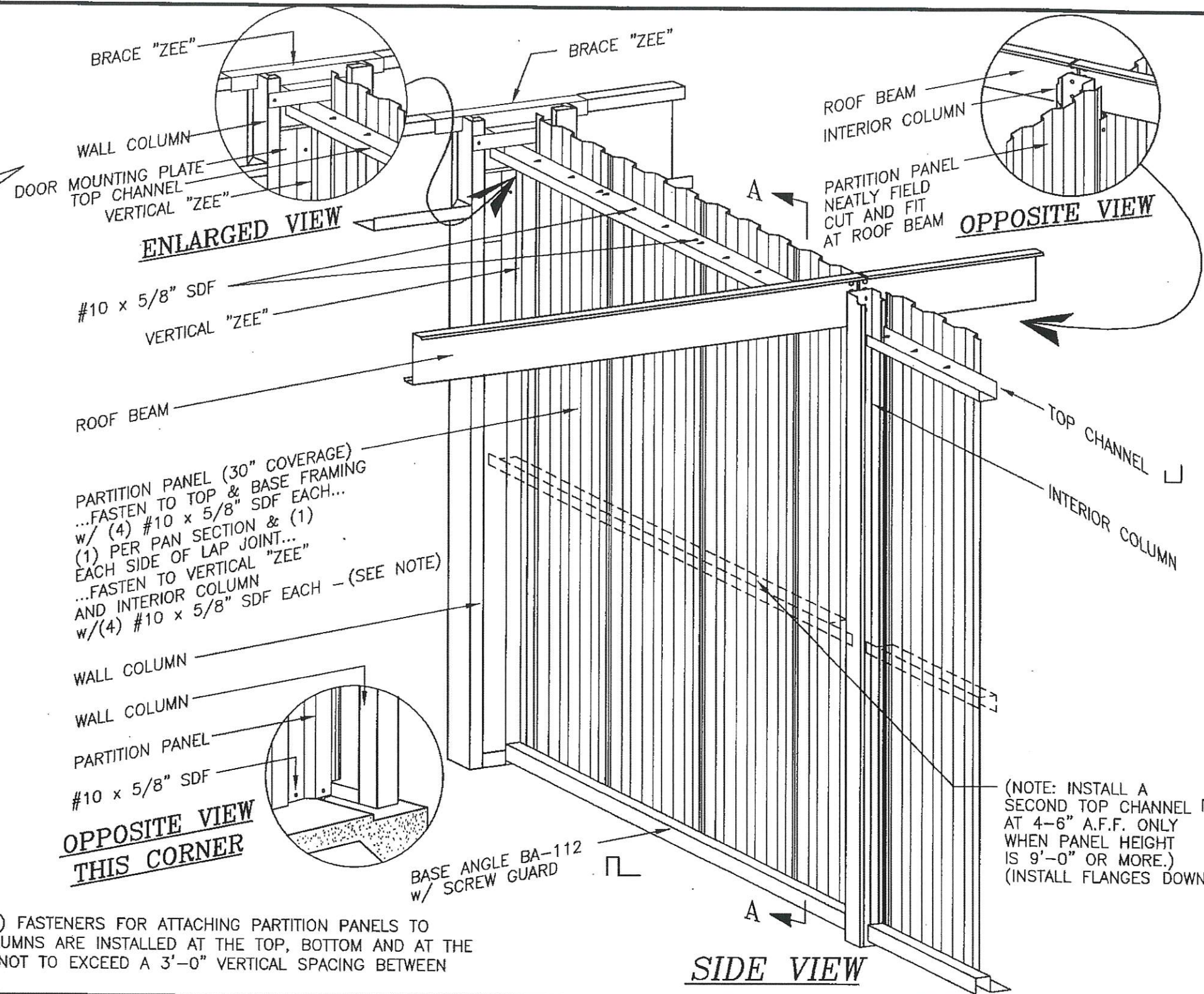
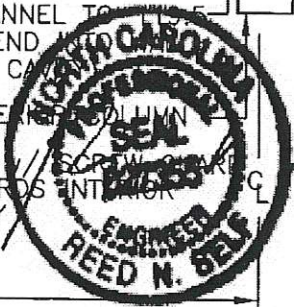
**SECTION A-A**



10'-0"

**PLAN VIEW** 5-26-16

NOTE:  
 THE FOUR (4) FASTENERS FOR ATTACHING PARTITION PANELS TO  
 INTERIOR COLUMNS ARE INSTALLED AT THE TOP, BOTTOM AND AT THE  
 1/3 POINTS NOT TO EXCEED A 3'-0" VERTICAL SPACING BETWEEN  
 FASTENERS.

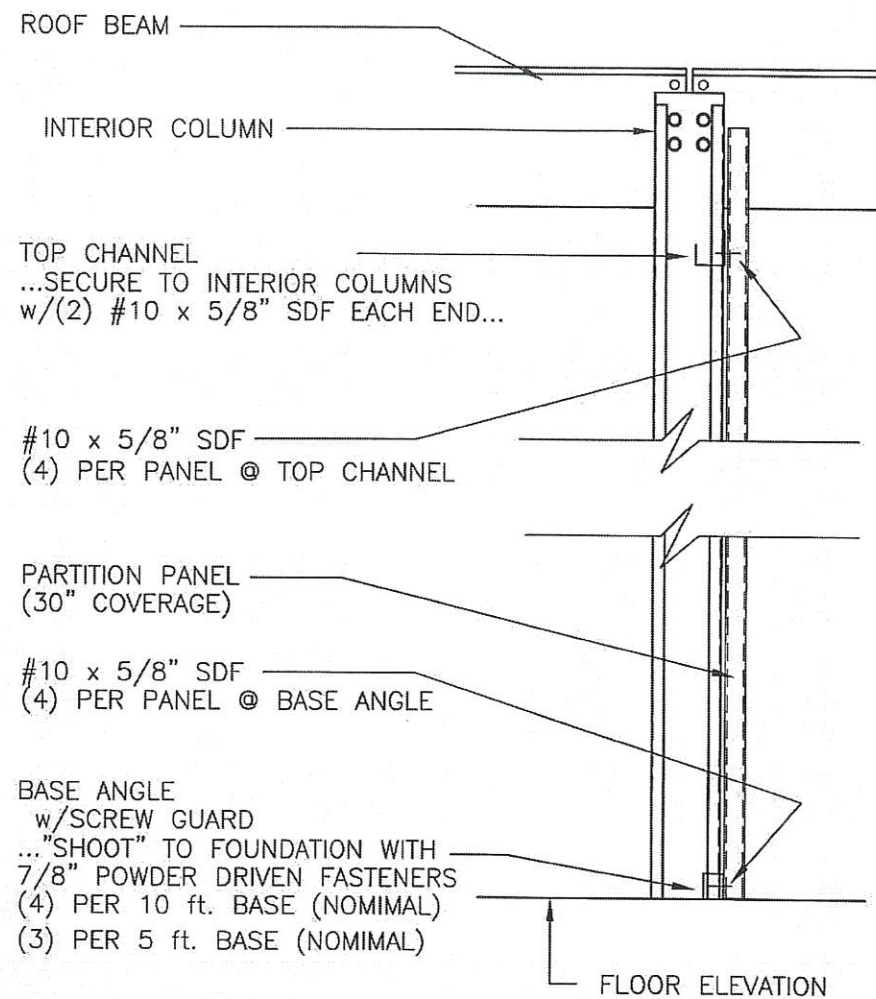


**SIDE VIEW**

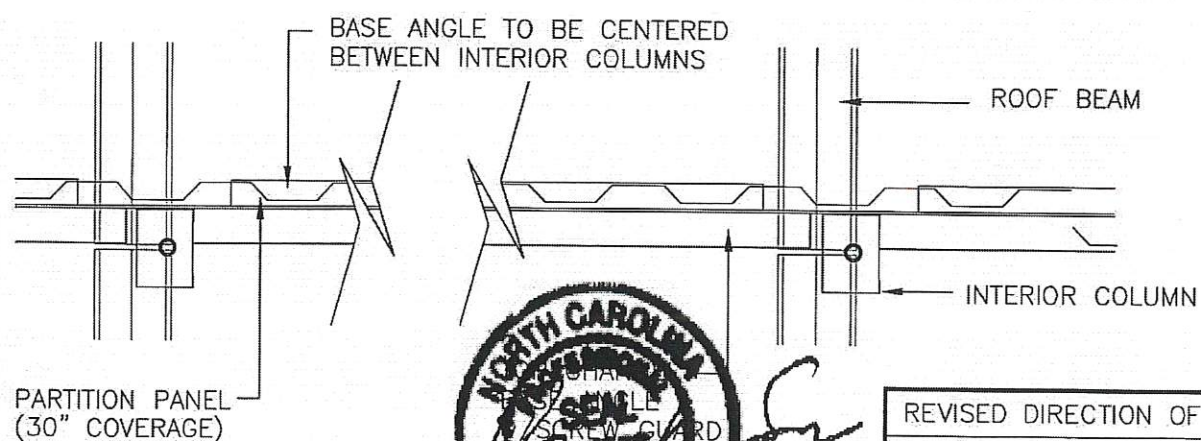
REVISIONS	DATE	BY
REVISED DIRECTION OF MID TOP CHANNEL	3/17/04	JCM
REVISED INTERIOR COLUMNS	8/29/02	BAM
ADDED TOP CHANNEL AT PANELS OVER 9'-0"	2/7/02	BDL
ADDED NOTE FOR INTERIOR COLUMNS	4/2/01	TLR
GENERAL REVISIONS	4/12/99	CWM

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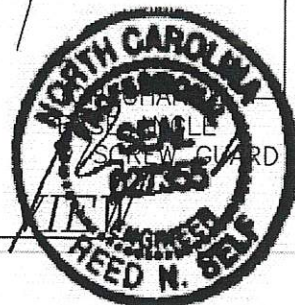
SHEET TITLE: <b>Partition - Sidewall Column to Interior Column - 10' span</b>		
DRAWN BY: J Pope	APPROVED BY:	DRAWING NUMBER: ERC202X
SCALE: NTS	DATE: 6/20/94	



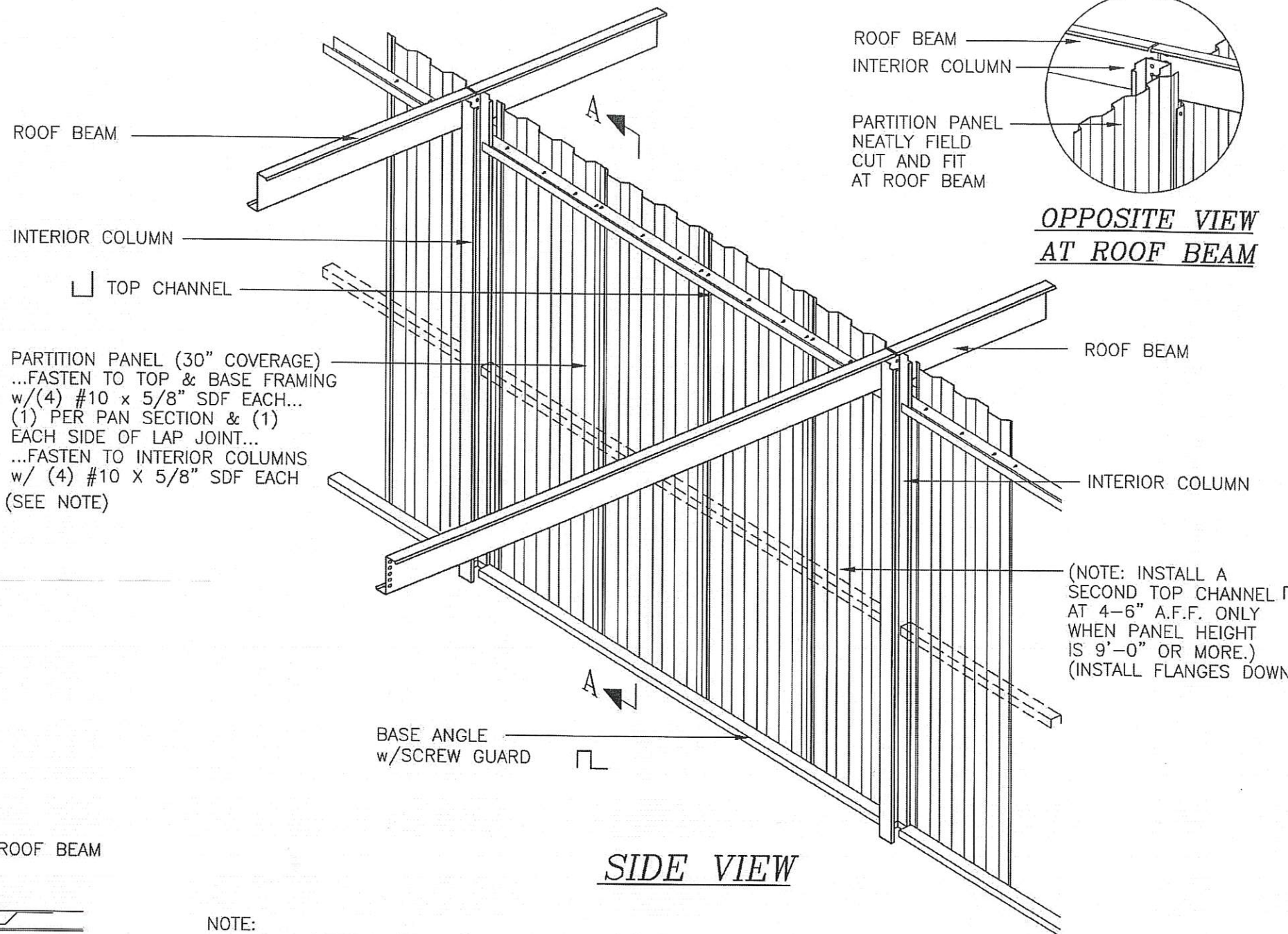
**SECTION A-A**



**PLAN**



5-26-16



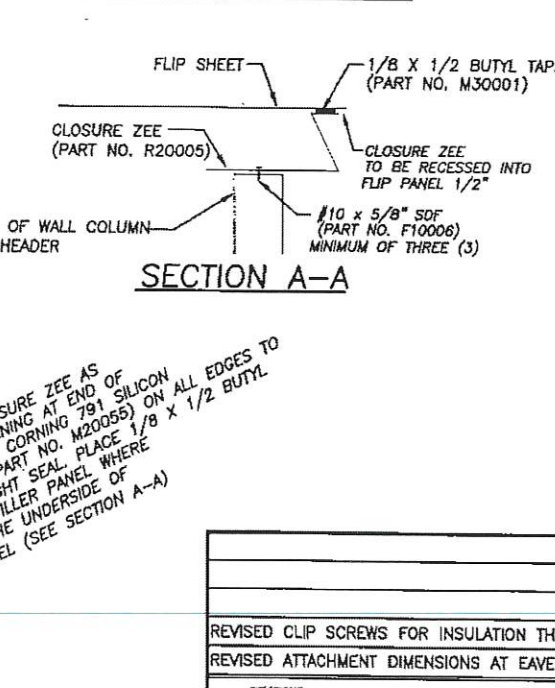
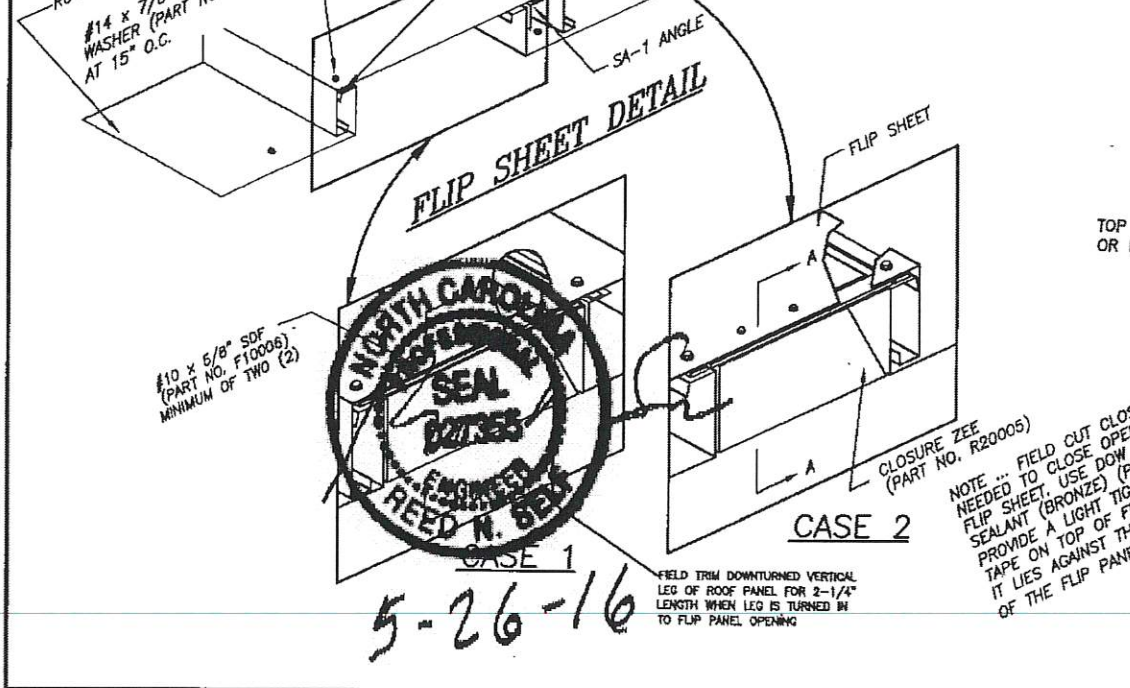
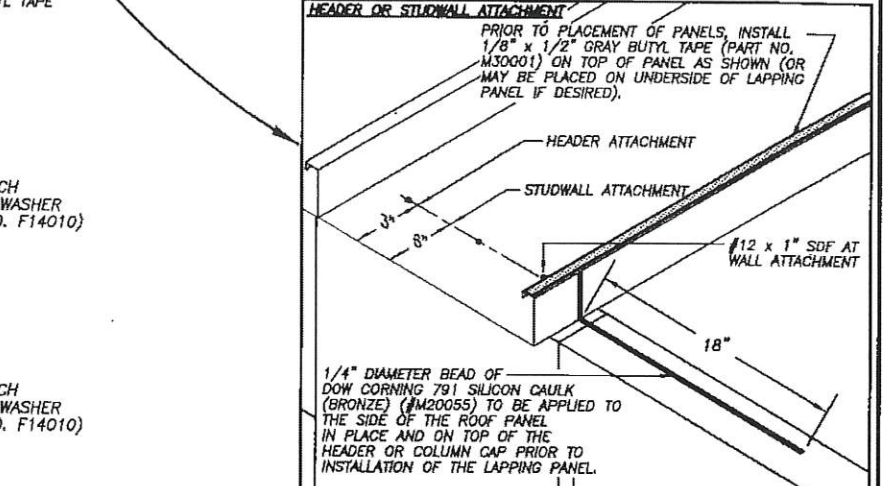
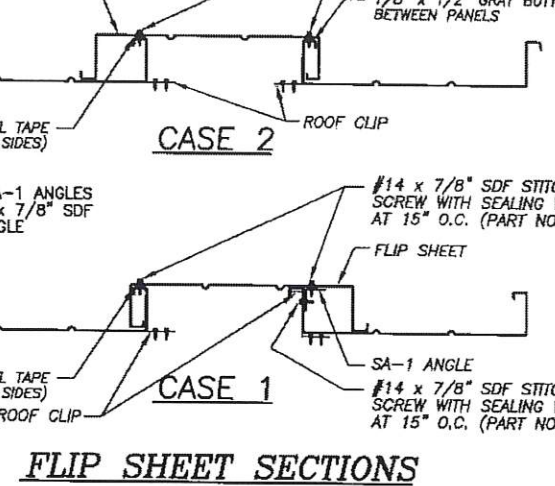
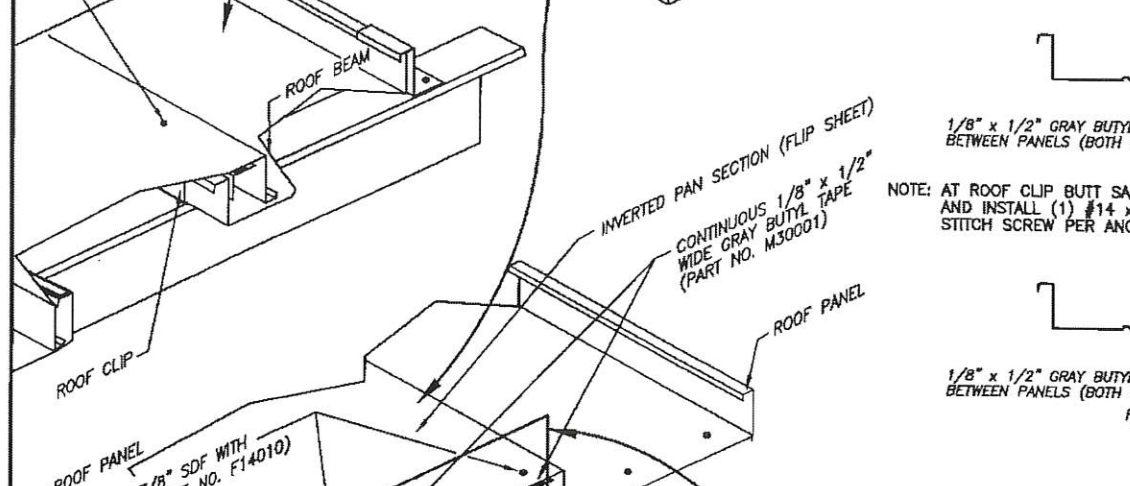
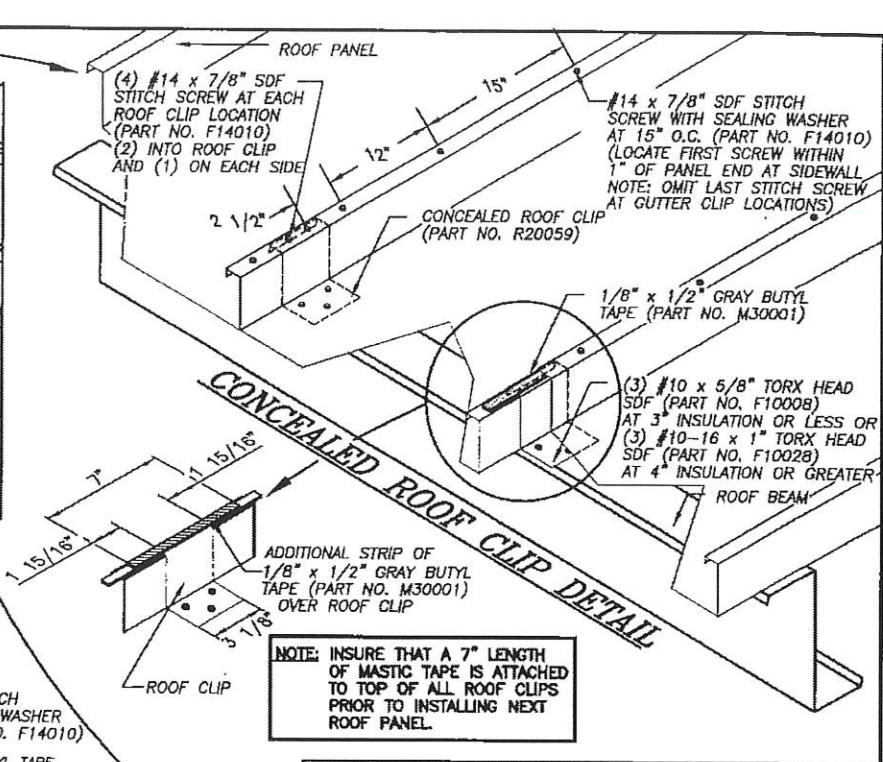
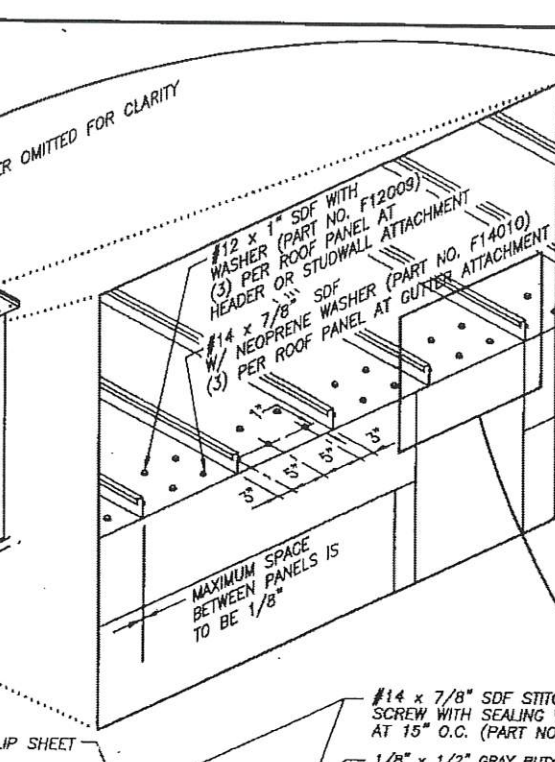
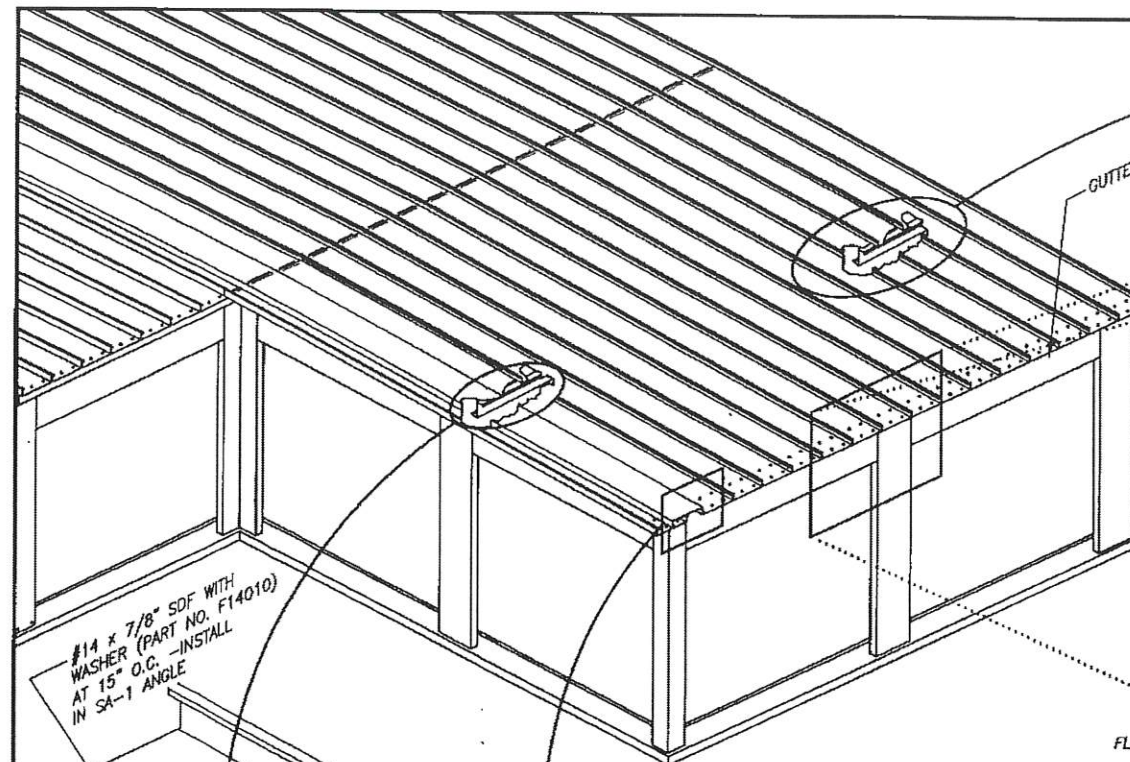
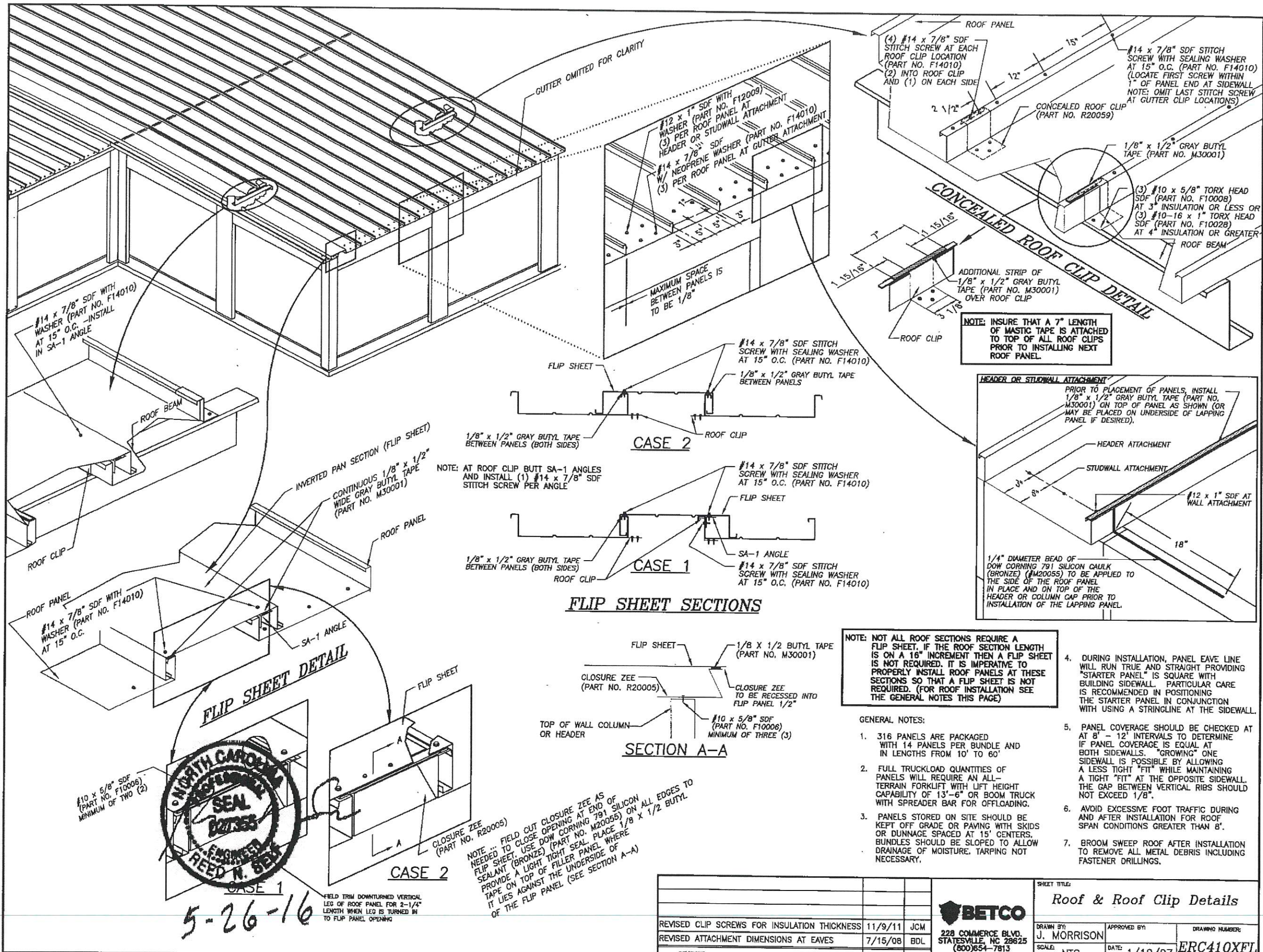
**SIDE VIEW**

NOTE:  
THE FOUR (4) FASTENERS FOR ATTACHING PARTITION PANELS TO INTERIOR COLUMNS ARE INSTALLED AT THE TOP, BOTTOM AND AT THE 1/3 POINTS NOT TO EXCEED A 3'-0" VERTICAL SPACING BETWEEN FASTENERS.

REVISIONS	DATE	BY
REVISED DIRECTION OF MID TOP CHANNEL	3/17/04	JCM
REVISED INTERIOR COLUMNS	8/29/02	BAM
ADDED TOP CHANNEL AT PANELS OVER 9'-0"	2/7/02	BDL
ADDED NOTE FOR INTERIOR COLUMNS	4/2/01	TLR
GENERAL REVISIONS	5/7/99	CJG

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SHEET TITLE: <i>Partition - Interior Column to Interior Column (all eave heights)</i>		
DRAWN BY: J POPE	APPROVED BY:	DRAWING NUMBER:
SCALE: NTS	DATE: 6/22/98	ERC203X



**NOTE:** NOT ALL ROOF SECTIONS REQUIRE A FLIP SHEET. IF THE ROOF SECTION LENGTH IS ON A 16\"

**GENERAL NOTES:**

- 316 PANELS ARE PACKAGED WITH 14 PANELS PER BUNDLE AND IN LENGTHS FROM 10' TO 60'
- FULL TRUCKLOAD QUANTITIES OF PANELS WILL REQUIRE AN ALL-TERRAIN FORKLIFT WITH LIFT HEIGHT CAPABILITY OF 13'-6\"
- PANELS STORED ON SITE SHOULD BE KEPT OFF GRADE OR PAVING WITH SKIDS OR DUNNAGE SPACED AT 15' CENTERS. BUNDLES SHOULD BE SLOPED TO ALLOW DRAINAGE OF MOISTURE. TARPING NOT NECESSARY.
- DURING INSTALLATION, PANEL EAVE LINE WILL RUN TRUE AND STRAIGHT PROVIDING "STARTER PANEL" IS SQUARE WITH BUILDING SIDEWALL. PARTICULAR CARE IS RECOMMENDED IN POSITIONING THE STARTER PANEL IN CONJUNCTION WITH USING A STRINGLINE AT THE SIDEWALL.
- PANEL COVERAGE SHOULD BE CHECKED AT AT 8' - 12' INTERVALS TO DETERMINE IF PANEL COVERAGE IS EQUAL AT BOTH SIDEWALLS. "GROWING" ONE SIDEWALL IS POSSIBLE BY ALLOWING A LESS TIGHT "FIT" WHILE MAINTAINING A TIGHT "FIT" AT THE OPPOSITE SIDEWALL. THE GAP BETWEEN VERTICAL RIBS SHOULD NOT EXCEED 1/8\"
- AVOID EXCESSIVE FOOT TRAFFIC DURING AND AFTER INSTALLATION FOR ROOF SPAN CONDITIONS GREATER THAN 8'.
- BROOM SWEEP ROOF AFTER INSTALLATION TO REMOVE ALL METAL DEBRIS INCLUDING FASTENER DRILLINGS.

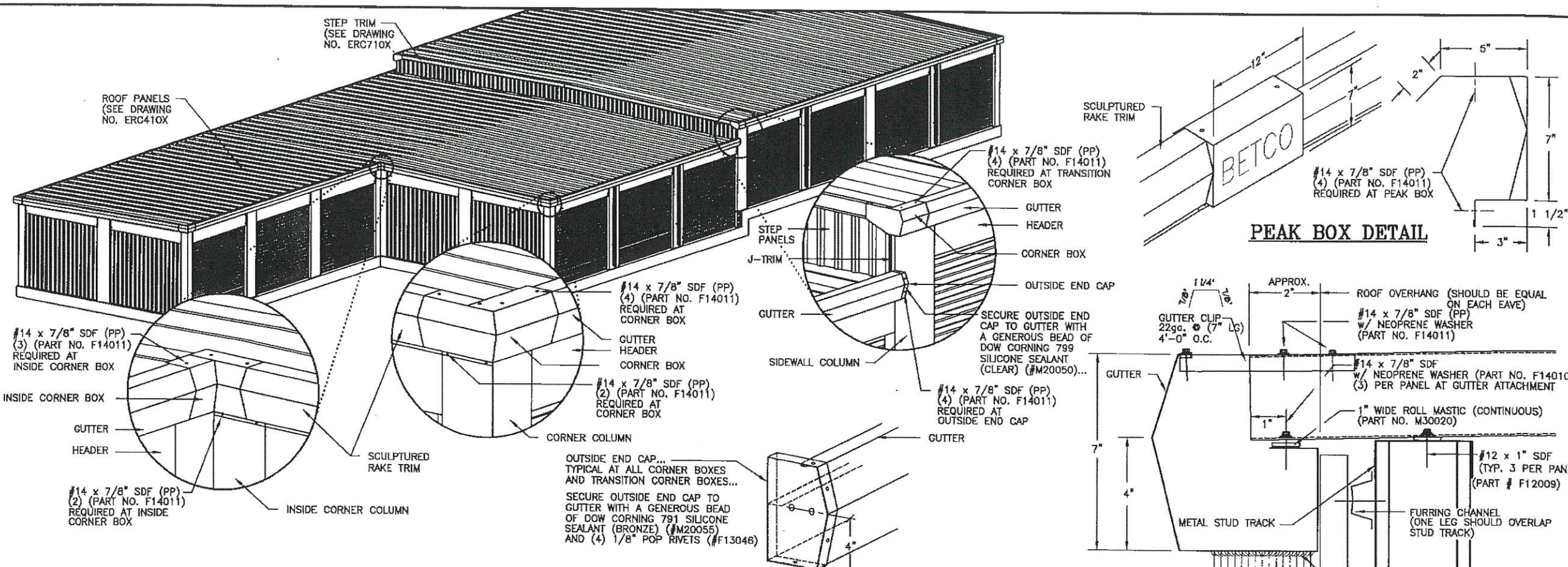


5-26-16

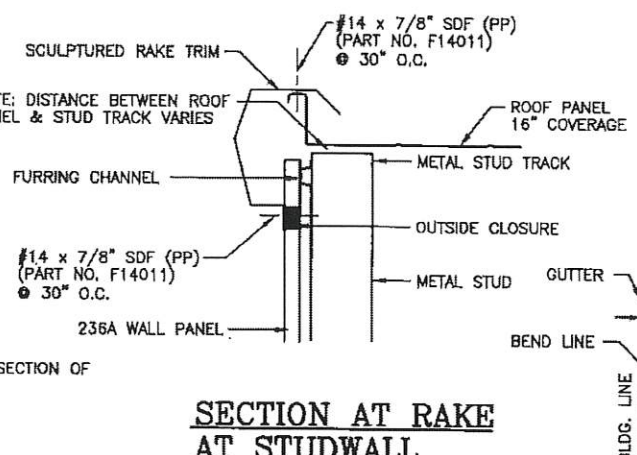
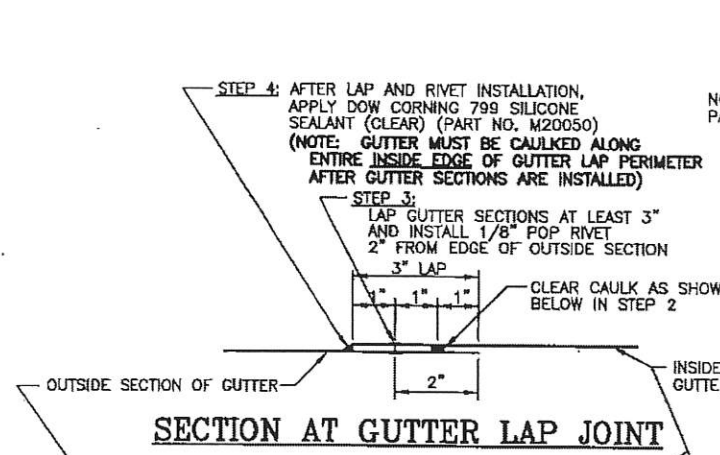
REVISIONS			DATE			BY		
REVISED CLIP SCREWS FOR INSULATION THICKNESS	11/9/11	JCM	BETCO			SHEET TITLE		
REVISED ATTACHMENT DIMENSIONS AT EAVES	7/15/08	BDL	228 COMMERCE BLVD.			Roof & Roof Clip Details		
			STATESVILLE, NC 28625			DRAWN BY		
			(800)654-7813			J. MORRISON		
						APPROVED BY		
						DATE		
						1/10/07		
						DRAWING NUMBER		
						ERC410XFL		



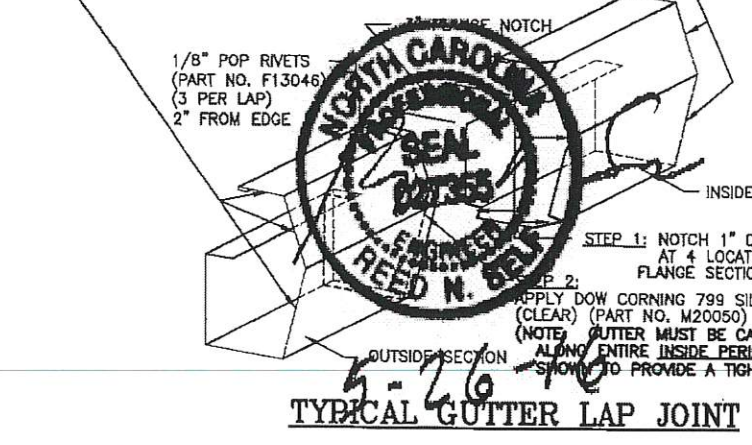
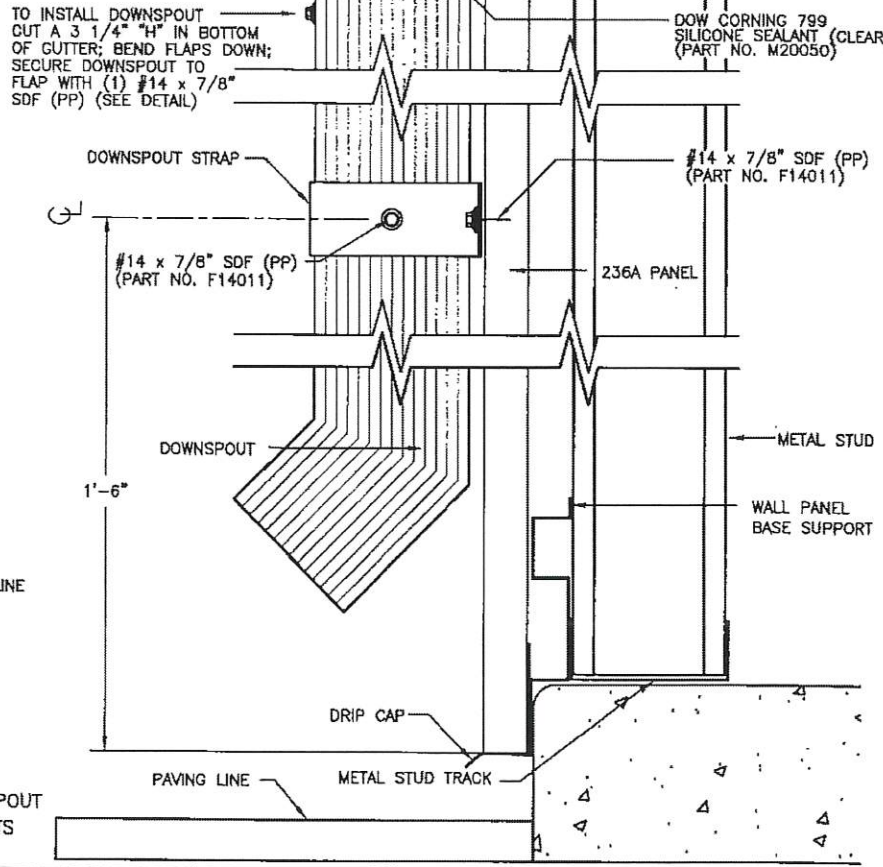
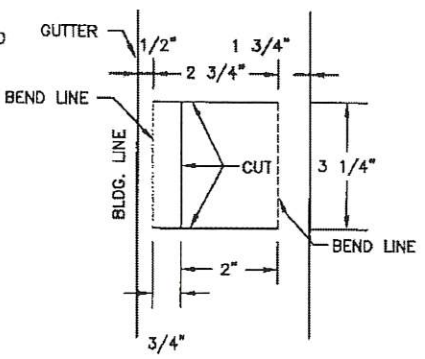




**INSTALLATION DETAIL FOR OUTSIDE END CAP WITHIN CORNER BOXES**



**TYPICAL DOWNSPOUT OPENING**

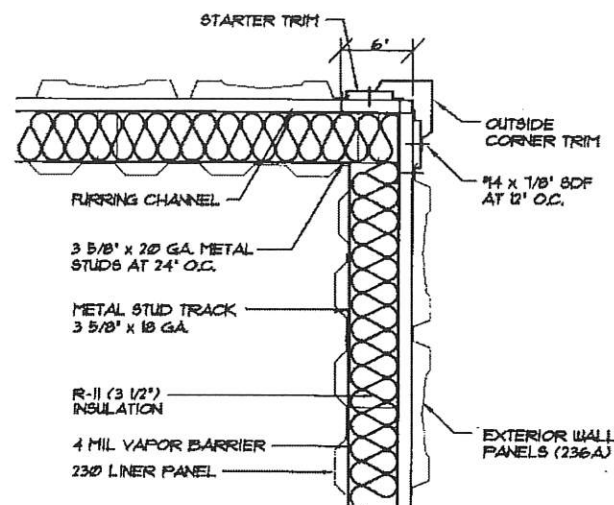


REVISIONS	DATE	BY
REVISED PANEL OVERHANG	1/3/08	LKW
ADDED RAKE AT STUDWALL DETAIL	1/16/04	JCM
REVISED GUTTER LAP DETAIL	3/20/03	JCM
REVISED FASTENER SIZE	1/15/03	JCM
REVISED GUTTER JOINT DETAIL	10/8/02	JCM
REVISED STUDWALL NOTES	8/29/02	BAM
CHANGED INSIDE END CAP TO OUTSIDE END CAP	12/13/00	BDL

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SHEET TITLE:  
**Sculptured Rake Trim, Extended Gutters and Downspouts at Studwall**

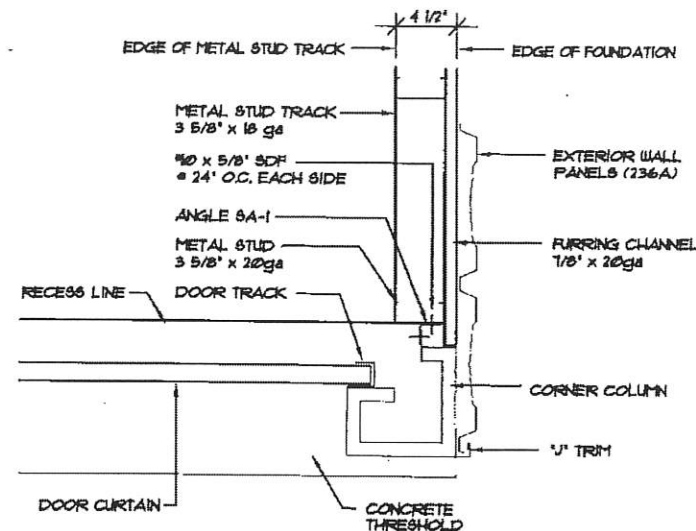
DRAWN BY: C/JG      APPROVED BY: [Signature]  
 SCALE: NTS      DATE: 4/7/98      DRAWING NUMBER: **ERC506X**



**INSULATED STUDWALL CORNER DETAIL**

**A**  
ERC600

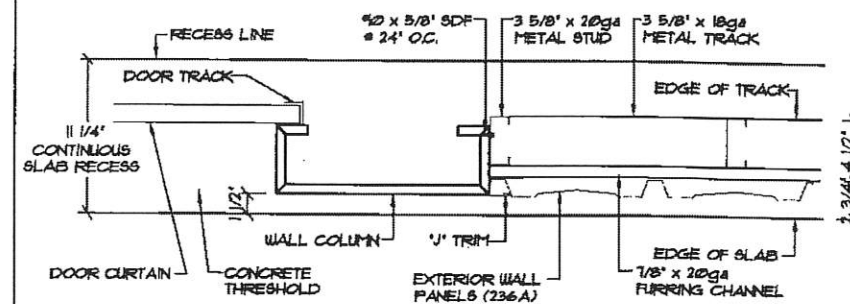
NOT TO SCALE



**STUDWALL CONSTRUCTION @ CORNER COLUMN**

**C**  
ERC600

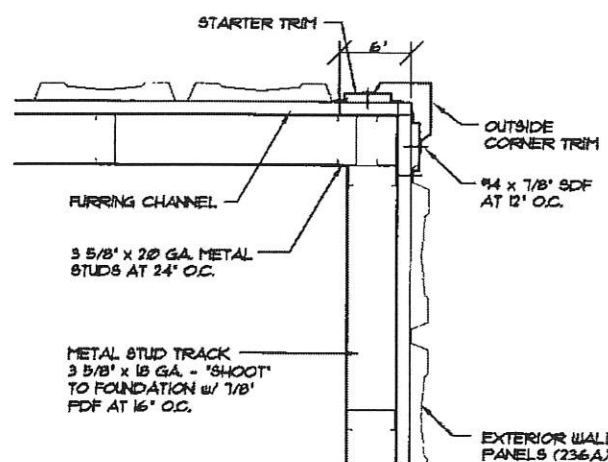
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**STUDWALL CONSTRUCTION @ WALL COLUMN IN RECESS**

**E**  
ERC600

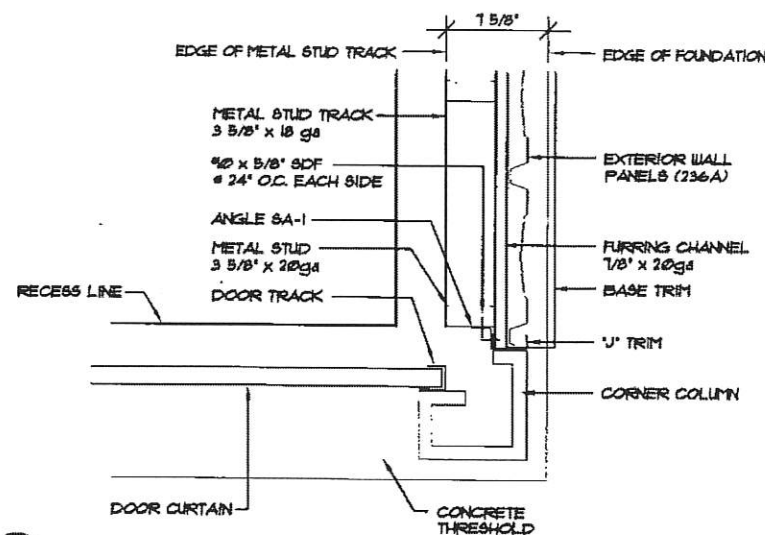
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**UNINSULATED STUDWALL CORNER DETAIL**

**B**  
ERC600

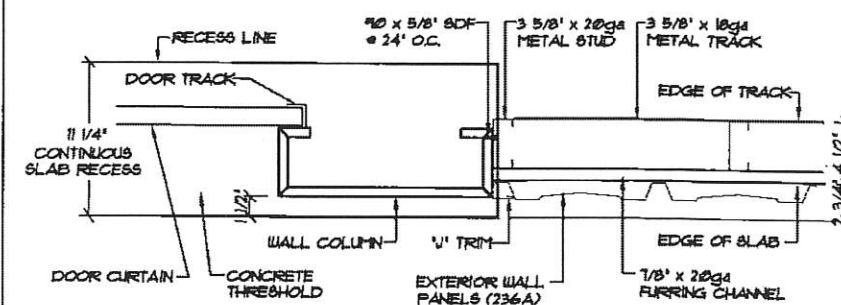
NOT TO SCALE



**STUDWALL CONSTRUCTION @ CORNER COLUMN W/ THRESHOLD**

**D**  
ERC600

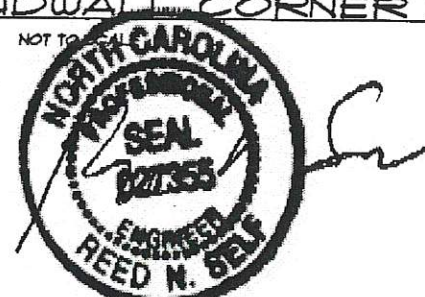
NOT TO SCALE



**STUDWALL CONSTRUCTION @ WALL COLUMN**

**F**  
ERC600

NOT TO SCALE



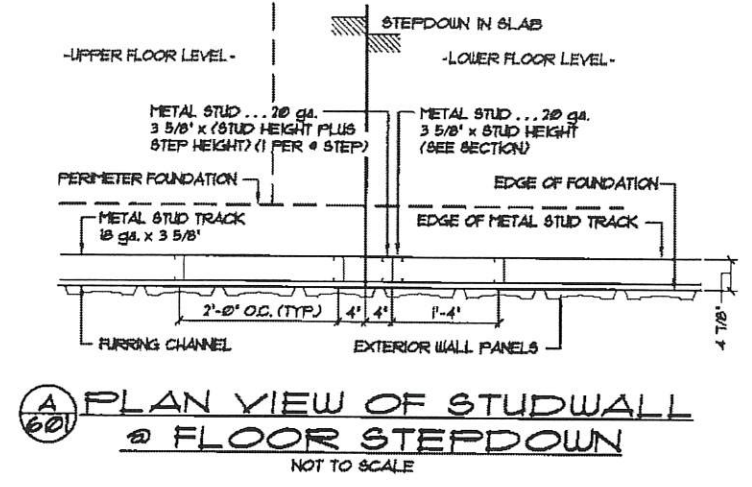
5-26-16

REVISIONS	DATE	BY
△ REVISED STUD SIZE	8/29/02	BAM

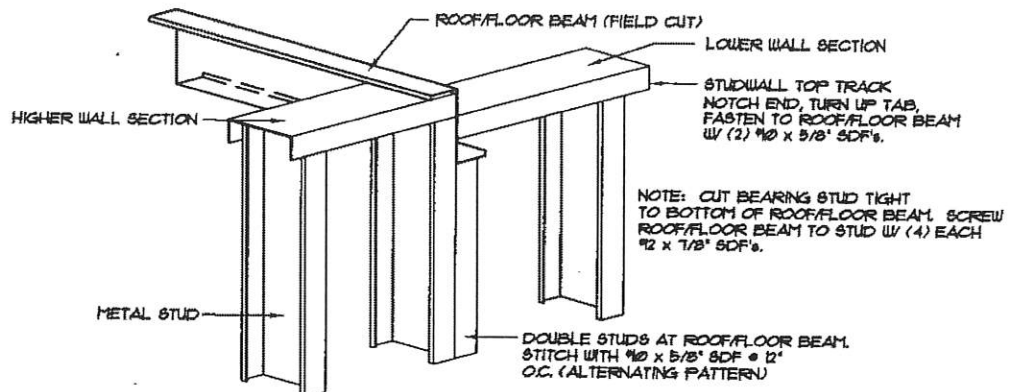


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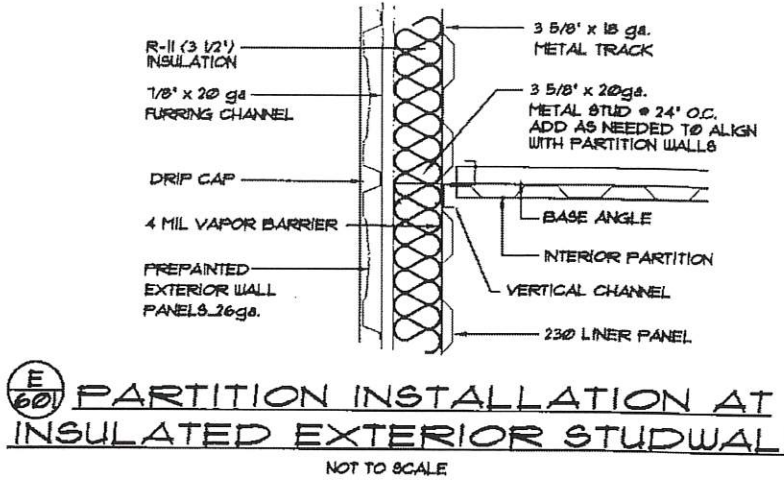
SHEET TITLE: <b>Studwall Details</b>		
DRAWN BY: CJG	APPROVED BY:	DRAWING NUMBER: ERC600X
SCALE: NTS	DATE: 4/14/00	



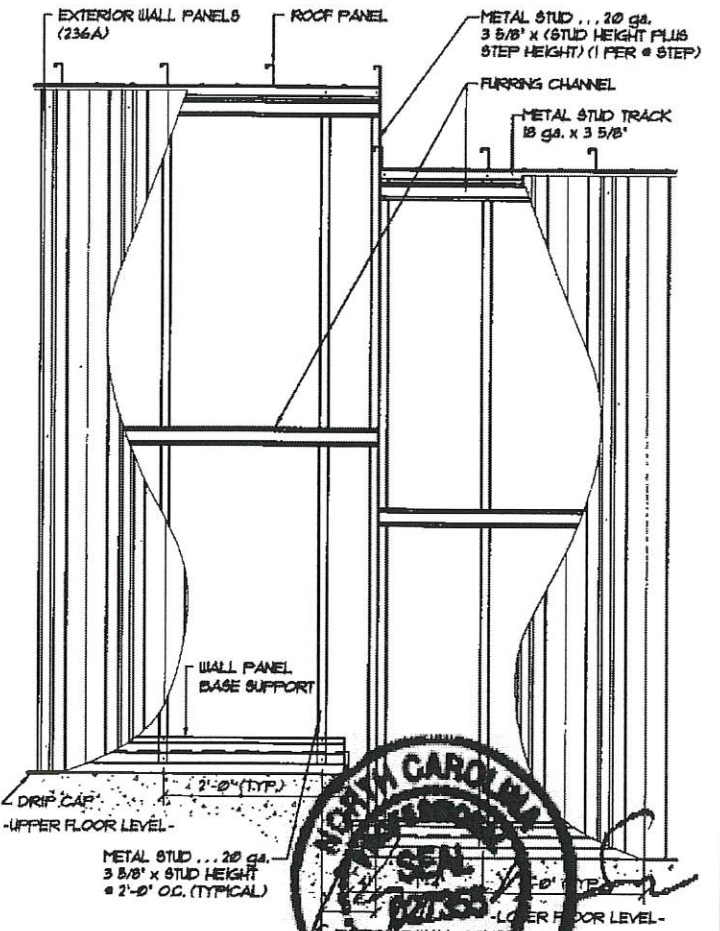
**(A) PLAN VIEW OF STUDWALL @ FLOOR STEPDOWN**  
NOT TO SCALE



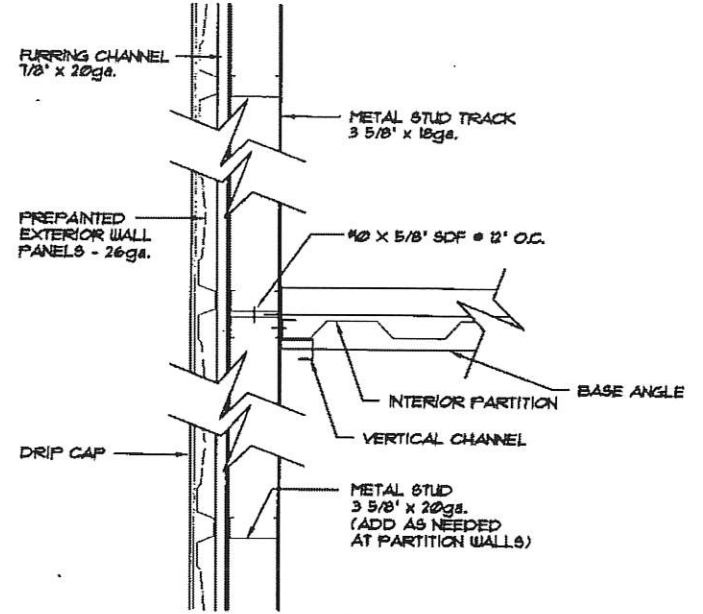
**(C) ROOF/FLOOR BEAM @ STUDWALL**  
NOT TO SCALE



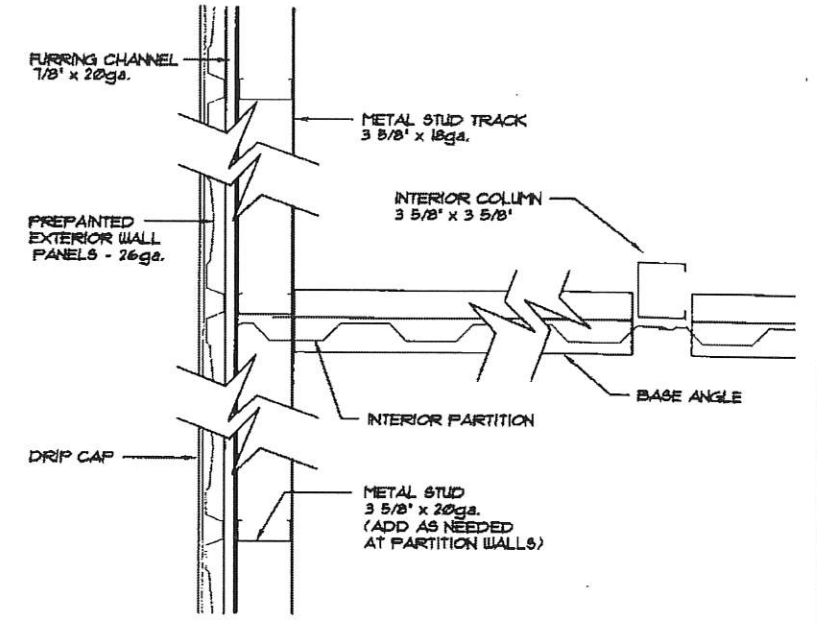
**(E) PARTITION INSTALLATION AT INSULATED EXTERIOR STUDWALL**  
NOT TO SCALE



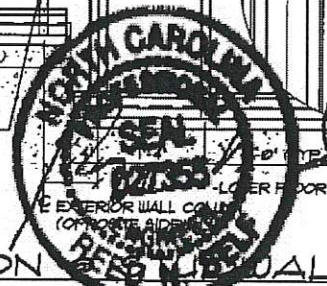
**(B) ELEVATION OF STUDWALL AND STEPDOWN**  
NOT TO SCALE



**(D) PARTITION INSTALLATION UNDER ROOF BEAM**  
NOT TO SCALE



**(F) PARTITION INSTALLATION AT STUDWALL**  
NOT TO SCALE



REVISIONS	DATE	BY
1	5/1/03	JCM
2	4/17/03	JCM
3	8/29/02	BAM

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228 COMMERCE BLVD.  
STATESVILLE, NC 28625  
(800)654-7813

SHEET TITLE: <b>Studwall Details</b>		
DRAWN BY: CJG	APPROVED BY:	DRAWING NUMBER: ERC601X
SCALE: NTS	DATE: 4/14/00	

① **EXTERIOR STUDWALL CONSTRUCTION • FLAT SLAB:**  
**(SEE ERC630X)**  
 -3 5/8" METAL STUDS @ 24" O.C. - 20ga  
 -3 5/8" CONTINUOUS FLOOR AND CEILING TRACK - 18ga. - FASTEN w/  
 3/8" x 3" WEDGE ANCHOR (2" MIN. EMBEDDMENT) @ 30" O.C. MAX  
 -2 OR 3 ROWS CONTINUOUS 20ga. FURRING CHANNELS (NOTE #2)  
 -PRE-PAINTED EXTERIOR 236A WALL PANELS  
 -WALL PANEL BASE SUPPORT  
 -DRIP CAP (#T60120)  
 \*3 1/2" THICK FIBERGLASS INSULATION  
 \*4 MIL POLYETHYLENE VAPOR BARRIER  
 \*230 LINER PANELS @ INTERIOR (ATTACH EACH PANEL  
 TO BASE & TOP TRACK WITH 4 EACH #10 x 5/8" SDF's)  
 \*J-TRIM @ TOP OF LINER PANELS  
 -SEE NOTE #4 FOR GENERAL STUDWALL CONSTRUCTION NOTES.

② **EXTERIOR STUDWALL CONSTRUCTION • RECESS:**  
**(SEE ERC630X)**  
 -3 5/8" METAL STUDS @ 24" O.C. - 20ga  
 -3 5/8" CONTINUOUS FLOOR AND CEILING TRACK - 18ga. - FASTEN w/  
 3/8" x 3" WEDGE ANCHOR (2" MIN. EMBEDDMENT) @ 30" O.C. MAX  
 -3 OR 4 ROWS CONTINUOUS 20ga. FURRING CHANNELS (NOTE #2)  
 -PRE-PAINTED EXTERIOR 236A WALL PANELS  
 -BASE TRIM (#T60593)  
 \*3 1/2" THICK FIBERGLASS INSULATION  
 \*4 MIL POLYETHYLENE VAPOR BARRIER  
 \*230 LINER PANELS @ INTERIOR (ATTACH EACH PANEL  
 TO BASE & TOP TRACK WITH 4 EACH #10 x 5/8" SDF's)  
 \*J-TRIM @ TOP OF LINER PANELS  
 -SEE NOTE #4 FOR GENERAL STUDWALL CONSTRUCTION NOTES.

③ **INSULATED LOAD BEARING STUDWALL:**  
 -3 5/8" METAL STUDS @ 24" O.C. - 20ga  
 -3 5/8" CONTINUOUS FLOOR AND CEILING TRACK - 18ga. - FASTEN w/  
 3/8" x 3" WEDGE ANCHOR (2" MIN. EMBEDDMENT) @ 30" O.C. MAX  
 -3 1/2" THICK FIBERGLASS INSULATION  
 -4 MIL POLYETHYLENE VAPOR BARRIER  
 -230 LINER PANELS (EACH SIDE-ATTACH EACH PANEL TO  
 TOP & BASE TRACK WITH 4 EACH #10 x 5/8" SDF's)  
 -J-TRIM @ TOP OF LINER PANELS  
 -SEE NOTE #4 FOR GENERAL STUDWALL CONSTRUCTION NOTES.

④ **INSULATED NON-LOAD BEARING STUDWALL:**  
 -3 5/8" METAL STUDS @ 24" O.C. - 20ga  
 -3 5/8" CONTINUOUS FLOOR AND CEILING TRACK - 20ga.  
 (ATTACH BASE TRACK TO CONCRETE FLOOR SLAB  
 WITH 7/8" PDF'S @ 24" O.C.)  
 -3 1/2" THICK FIBERGLASS INSULATION  
 -4 MIL POLYETHYLENE VAPOR BARRIER  
 -230 LINER PANELS (EACH SIDE-ATTACH EACH PANEL TO  
 TOP & BASE TRACK WITH 4 EACH #10 x 5/8" SDF's)  
 -J-TRIM @ TOP OF LINER PANELS  
 -SEE NOTE #4 FOR GENERAL STUDWALL CONSTRUCTION NOTES.

⑤ **EXTERIOR STUDWALL CONSTRUCTION • HYAC. INSET/ALCOVE:**  
**(ERC 620X & 621X)**  
 -3 5/8" METAL STUDS @ 24" O.C. - 20ga  
 -3 5/8" CONTINUOUS FLOOR AND CEILING TRACK - 18ga. - FASTEN w/  
 3/8" x 3" WEDGE ANCHOR (2" MIN. EMBEDDMENT) @ 30" O.C. MAX  
 -3 OR 4 ROWS CONTINUOUS 20ga. FURRING CHANNELS (NOTE #2)  
 -PRE-PAINTED EXTERIOR 236A WALL PANELS  
 -DRIP CAP (#T50032)  
 \*3 1/2" THICK FIBERGLASS INSULATION  
 \*4 MIL POLYETHYLENE VAPOR BARRIER  
 \*230 LINER PANELS @ INTERIOR (ATTACH EACH PANEL  
 TO BASE & TOP TRACK WITH 4 EACH #10 x 5/8" SDF's)  
 \*J-TRIM @ TOP OF LINER PANELS  
 -SEE NOTE #4 FOR GENERAL STUDWALL CONSTRUCTION NOTES.

⑥ **FIRE RESISTANT PARTITION . . . 1 HOUR RATED**  
**UL • U465 . . . (NON-LOAD BEARING)**  
 ONE HOUR FIREWALL CONSTRUCTION:  
 -3 5/8" METAL STUDS @ 24" O.C. - 20ga.  
 -3 5/8" CONTINUOUS FLOOR AND CEILING TRACK - 20ga  
 (TOP TRACK MUST FOLLOW SLOPE OF ROOF DECK)  
 (SECURE BOTTOM TRACK W/ 7/8" PDF'S AT 24" O.C.)  
 -5/8" GYPSUM BOARD (X-RATED) EACH SIDE IT MUST  
 BE PLACED SUCH THAT ALL JOINTS ARE VERTICAL.  
 -GYPSUM BOARD SHALL BE ATTACHED TO STUDS, FLOOR  
 AND CEILING TRACK USING TYPE "S" SELF-TAPPING SCREWS  
 ALONG EDGES OF BOARD SPACED 8" O.C. AND 12" O.C. IN THE FIELD.  
 -VINYL OR CASE-IN, DRY OR PRE-MIXED JOINT COMPOUND APPLIED IN  
 TWO COATS TO JOINTS SCREW-HEADS. PERFORATED PAPER TAPE, 2"  
 WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS.  
 \*3 1/2" THICK FIBERGLASS INSULATION  
 \*4 MIL POLYETHYLENE VAPOR BARRIER  
 -SEE NOTE #4 FOR GENERAL STUDWALL CONSTRUCTION NOTES.

⑦ **FIRE RESISTANT PARTITION . . . 1 HOUR RATED**  
**UL • U425 . . . (LOAD BEARING)**  
 ONE HOUR FIREWALL CONSTRUCTION:  
 -3 5/8" METAL STUDS @ 24" O.C. - 20ga.  
 -3 5/8" CONTINUOUS FLOOR & CEILING TRACK - 18ga - FASTEN w/  
 3/8" x 3" WEDGE ANCHOR (2" MIN. EMBEDDMENT) @ 30" O.C. MAX  
 (TOP TRACK MUST FOLLOW SLOPE OF ROOF DECK)  
 -5/8" GYPSUM BOARD (X-RATED) EACH SIDE IT MUST  
 BE PLACED SUCH THAT ALL JOINTS ARE VERTICAL.  
 -GYPSUM BOARD SHALL BE ATTACHED TO STUDS,  
 FLOOR AND CEILING TRACK USING TYPE "S"  
 SELF-TAPPING SCREWS ALONG EDGES OF BOARD  
 SPACED 8" O.C. AND 12" O.C. IN THE FIELD.  
 -VINYL OR CASE-IN, DRY OR PRE-MIXED JOINT  
 COMPOUND APPLIED IN TWO COATS TO JOINTS  
 SCREW-HEADS. PERFORATED PAPER TAPE, 2" WIDE,  
 EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL  
 JOINTS.  
 \*3 1/2" THICK FIBERGLASS INSULATION  
 \*4 MIL POLYETHYLENE VAPOR BARRIER  
 -SEE NOTE #4 FOR GENERAL STUDWALL CONSTRUCTION NOTES.

⑧ **EXTERIOR FIRE RESISTANT PARTITION . . .**  
**-UL • U423 . . . (1 HOUR RATED) (LOAD BEARING)**  
 ONE HOUR FIREWALL CONSTRUCTION:  
 -3 5/8" METAL STUDS @ 24" O.C. - 20ga.  
 -3 5/8" CONTINUOUS FLOOR AND CEILING TRACK - 18ga. - FASTEN w/  
 3/8" x 3" WEDGE ANCHOR (2" MIN. EMBEDDMENT) @ 30" O.C. MAX  
 (TOP TRACK MUST FOLLOW SLOPE OF ROOF DECK)  
 -2 OR 3 ROWS CONTINUOUS 20ga. FURRING CHANNELS (NOTE #2)  
 -PRE-PAINTED EXTERIOR 236A WALL PANELS  
 -WALL PANEL BASE SUPPORT  
 -DRIP CAP (#T60120)  
 -1 LAYER 5/8" GYPSUM BOARD (X-RATED) EACH SIDE IT MUST  
 BE PLACED SUCH THAT ALL JOINTS ARE VERTICAL.  
 -GYPSUM BOARD SHALL BE ATTACHED TO STUDS,  
 FLOOR AND CEILING TRACK USING TYPE "S"  
 SELF-TAPPING SCREWS ALONG EDGES OF BOARD  
 SPACED 8" O.C. AND 12" O.C. IN THE FIELD.  
 -VINYL OR CASE-IN, DRY OR PRE-MIXED JOINT  
 COMPOUND APPLIED IN TWO COATS TO JOINTS  
 SCREW-HEADS. PERFORATED PAPER TAPE, 2" WIDE,  
 EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL  
 JOINTS.  
 \*3 1/2" THICK FIBERGLASS INSULATION  
 \*4 MIL POLYETHYLENE VAPOR BARRIER  
 -SEE NOTE #4 FOR GENERAL STUDWALL CONSTRUCTION NOTES.

⑨ **EXTERIOR FIRE RESISTANT PARTITIONS • RECESS:**  
**UL • U423 . . . (1 HOUR RATED) (LOAD BEARING)**  
 ONE HOUR FIREWALL CONSTRUCTION:  
 -3 5/8" METAL STUDS @ 24" O.C. - 20ga.  
 -3 5/8" CONTINUOUS FLOOR AND CEILING TRACK - 18ga. - FASTEN w/  
 3/8" x 3" WEDGE ANCHOR (2" MIN. EMBEDDMENT) @ 30" O.C. MAX  
 (TOP TRACK MUST FOLLOW SLOPE OF ROOF DECK)  
 -3 OR 4 ROWS CONTINUOUS 20ga. FURRING CHANNELS (NOTE #2)  
 -PRE-PAINTED EXTERIOR 236A WALL PANELS  
 -DRIP CAP (#T60593)  
 -1 LAYER 5/8" GYPSUM BOARD (X-RATED) EACH SIDE IT MUST  
 BE PLACED SUCH THAT ALL JOINTS ARE VERTICAL.  
 -GYPSUM BOARD SHALL BE ATTACHED TO STUDS, FLOOR  
 AND CEILING TRACK USING TYPE "S" SELF-TAPPING SCREWS  
 ALONG EDGES OF BOARD SPACED 8" O.C. AND 12" O.C. IN THE FIELD.  
 -VINYL OR CASE-IN, DRY OR PRE-MIXED JOINT COMPOUND APPLIED IN  
 TWO COATS TO JOINTS SCREW-HEADS. PERFORATED PAPER TAPE, 2"  
 WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS.  
 \*3 1/2" THICK FIBERGLASS INSULATION  
 \*4 MIL POLYETHYLENE VAPOR BARRIER  
 -SEE NOTE #4 FOR GENERAL STUDWALL CONSTRUCTION NOTES.

⑩ **EXTERIOR FIRE RESISTANT PARTITION • HYAC. INSET/ALCOVE**  
**UL • 423 . . . (1 HOUR RATED) (LOAD BEARING) (ERC 620X & 621X)**  
 ONE HOUR FIREWALL CONSTRUCTION:  
 -3 5/8" METAL STUDS @ 24" O.C. - 20ga.  
 -3 5/8" CONTINUOUS FLOOR AND CEILING TRACK - 18ga. - FASTEN w/  
 3/8" x 3" WEDGE ANCHOR (2" MIN. EMBEDDMENT) @ 30" O.C. MAX  
 (TOP TRACK MUST FOLLOW SLOPE OF ROOF DECK)  
 -3 OR 4 ROWS CONTINUOUS 20ga. FURRING CHANNELS (NOTE #2)  
 -PRE-PAINTED EXTERIOR 236A WALL PANELS  
 -DRIP CAP (#T50032)  
 -1 LAYER 5/8" GYPSUM BOARD (X-RATED) EACH SIDE IT MUST  
 BE PLACED SUCH THAT ALL JOINTS ARE VERTICAL.  
 -GYPSUM BOARD SHALL BE ATTACHED TO STUDS, FLOOR  
 AND CEILING TRACK USING TYPE "S" SELF-TAPPING SCREWS  
 ALONG EDGES OF BOARD SPACED 8" O.C. AND 12" O.C. IN THE FIELD.  
 -VINYL OR CASE-IN, DRY OR PRE-MIXED JOINT COMPOUND APPLIED IN  
 TWO COATS TO JOINTS SCREW-HEADS. PERFORATED PAPER TAPE, 2"  
 WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS.  
 \*3 1/2" THICK FIBERGLASS INSULATION  
 \*4 MIL POLYETHYLENE VAPOR BARRIER  
 -SEE NOTE #4 FOR GENERAL STUDWALL CONSTRUCTION NOTES.

**NOTE #1:** INTENTIONALLY BLANK.

**NOTE #2:** AS PER WALL CONSTRUCTION NOTES, EXTERIOR STUDWALLS  
 ARE CONSTRUCTED WITH "X" OR "Y" ROWS OF FURRING  
 CHANNELS IF WALL IS LESS THAN 9'-10 1/2" HGT. A.F.F.,  
 CONSTRUCT WITH "X" ROWS; OTHERWISE USE "Y".

**NOTE #3:** "\*" ON THIS SHEET, REFERS TO THE ADDITIONAL MATERIALS  
 REQUIRED FOR INSULATION OF WALL SYSTEM.  
 NOT ALL WALLS ARE INSULATED. VERIFY WITH FLOOR PLANS.  
 INSTALL INSULATION & RELATED MATERIALS ONLY IN WALLS  
 DESIGNATED WITH AN "\*" BESIDE THE DETAIL NUMBER ON  
 THE FLOOR PLAN.

**NOTE #4:** GENERAL STUDWALL CONSTRUCTION:  
 A) - ATTACH STUDS WITH #10 x 5/8" SDF'S EACH SIDE  
 OF TRACK (4 PER STUD).  
 B) - WALLS MUST EXTEND FROM FLOOR TO ROOF DECK  
 AND INTO WALL COLUMN CAVITY.  
 C) - TOP TRACK MUST FOLLOW SLOPE OF ROOF LINE.



5-26-16

REVISIONS	DATE	BY
REVISED STUD TRACK FASTENERS TO CONCRETE	9/24/10	JCM
REVISED STUD TRACK FASTENERS	1/12/04	JCM
REVISED STUD SIZE	8/29/02	BAM
REVISE LAYERS, GYPSUM BOARD THICKNESS & UL ON NOTES #8, 9, 10	11/16/01	JRB
ADDED ERC 620X & 621X TO NOTE #10	08/28/01	JCM
CHANGED 5/8" TO (2 LAYERS 1/2")	02/21/01	DSF

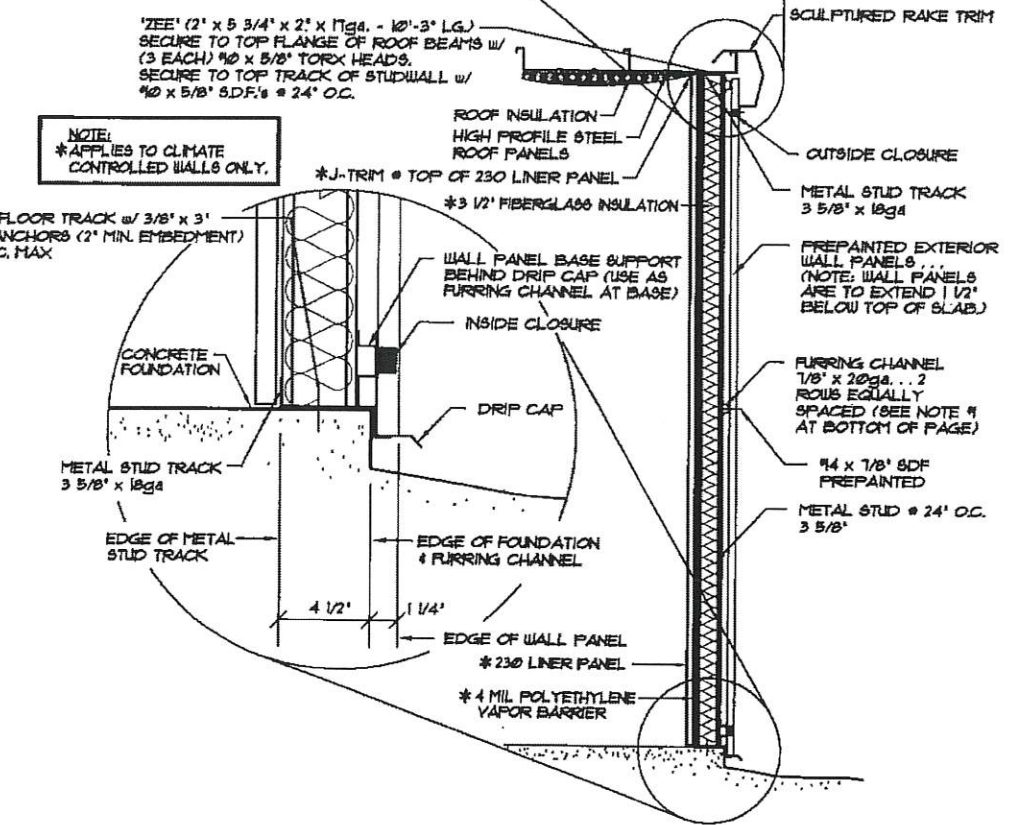
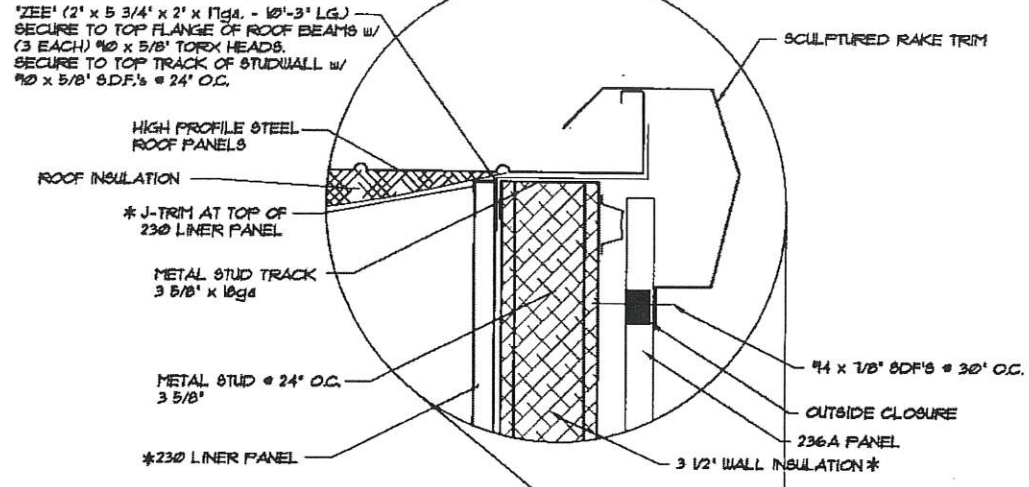
**BETCO**  
 228 COMMERCE BLVD.  
 STATESVILLE, NC 28625  
 (800)654-7813

SHEET TITLE:  
**Studwall Notes**

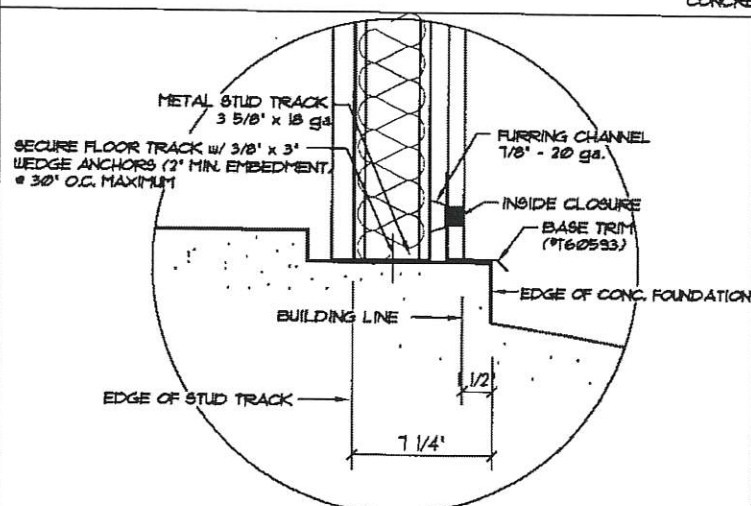
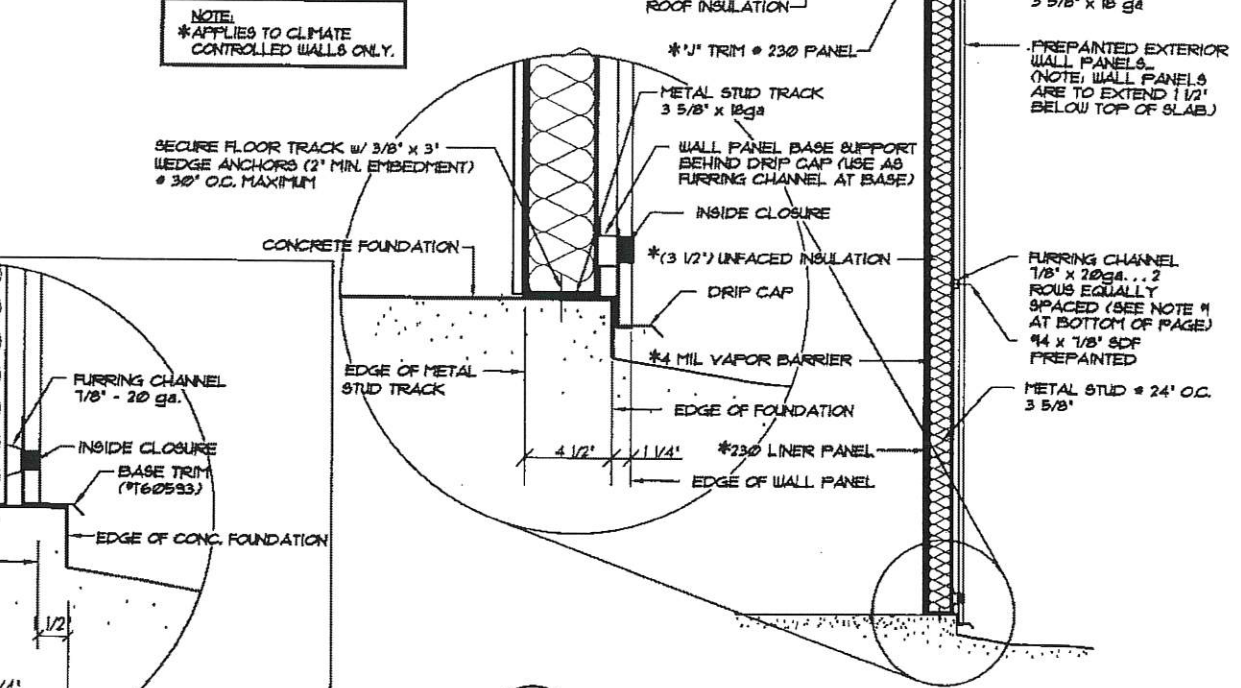
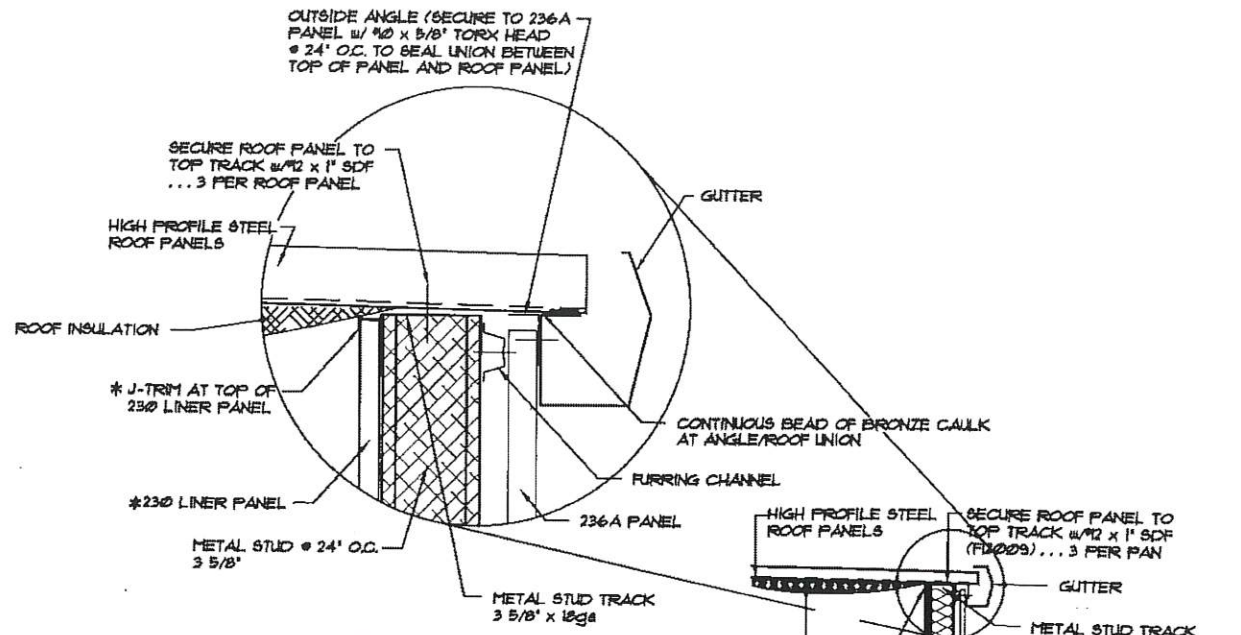
DRAWN BY: RS  
 APPROVED BY:  
 DATE: 11/02/00

DRAWING NUMBER:  
**ERC610X**

SCALE: NTS



**A**  
630 SECTION AT EXTERIOR WALL ENDWALL  
NOT TO SCALE

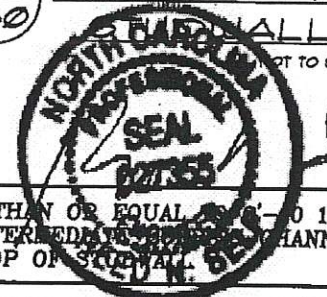


BASE CONDITION FOR STUDWALL IN RECESS

**B**  
630 SECTION AT EXTERIOR STUDWALL SIDEWALL  
NOT TO SCALE

NOTE #1: IF STUDWALL IS GREATER THAN OR EQUAL TO 1 1/2" HGT. 2 EQUALLY SPACED ROWS OF INTERMEDIATE FURRING CHANNELS ARE REQUIRED BETWEEN BASE AND TOP OF STUDWALL.

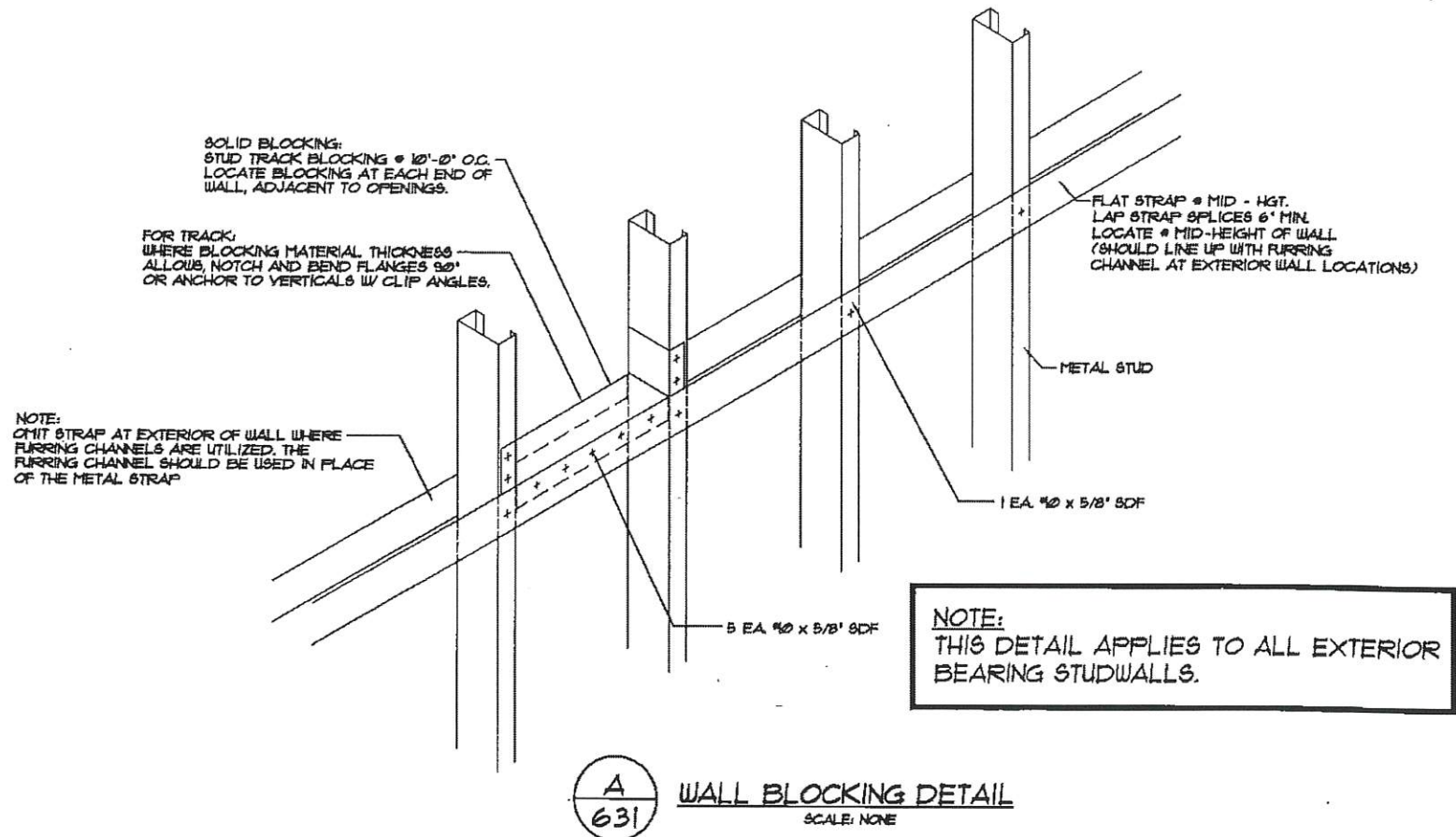
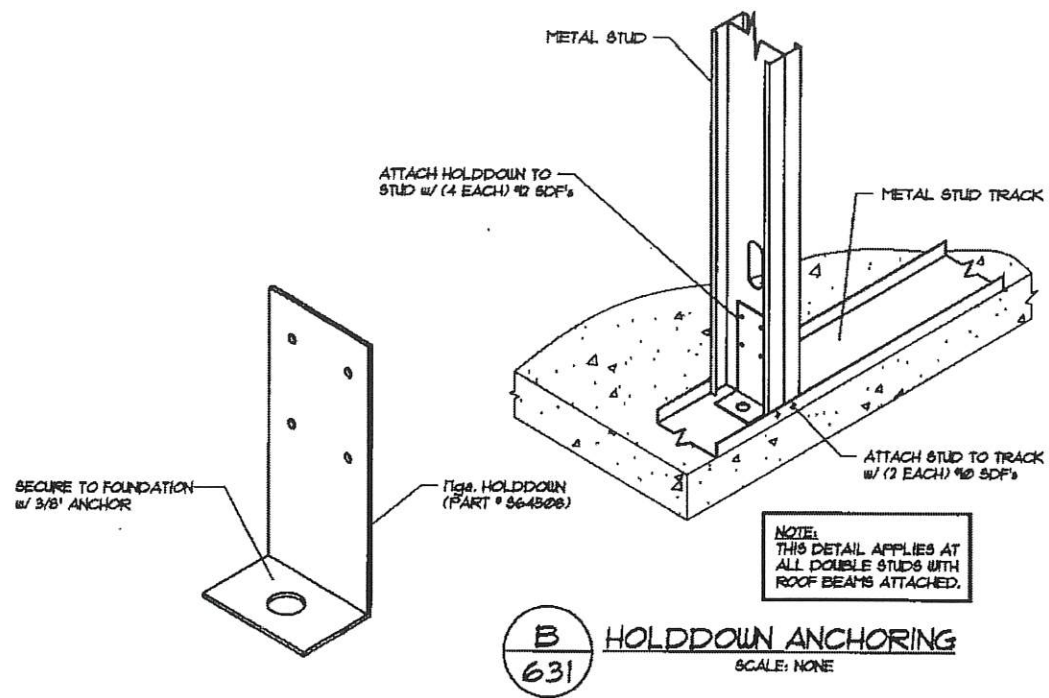
NOTE #2: NOT ALL BUILDINGS HAVE ROOF INSULATION, CHECK CROSS SECTION FOR INSULATION.



REVISIONS	DATE	BY

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228 COMMERCE BLVD.  
STATESVILLE, NC 28625  
(800)654-7813

SHEET TITLE: <b>Studwall Sections</b>		
DRAWN BY: JCM	APPROVED BY:	DRAWING NUMBER: ERC630X
SCALE: NTS	DATE: 11/8/11	



**NORTH CAROLINA**  
**PROFESSIONAL**  
**SEAL**  
**REGISTERED**  
**ENGINEER**  
**REED N. BELF**

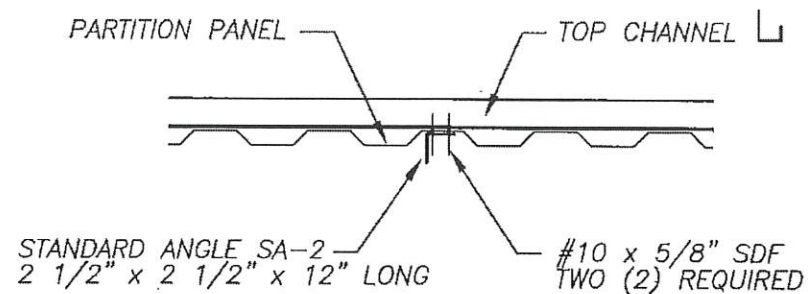
5-26-16

REVISIONS	DATE	BY

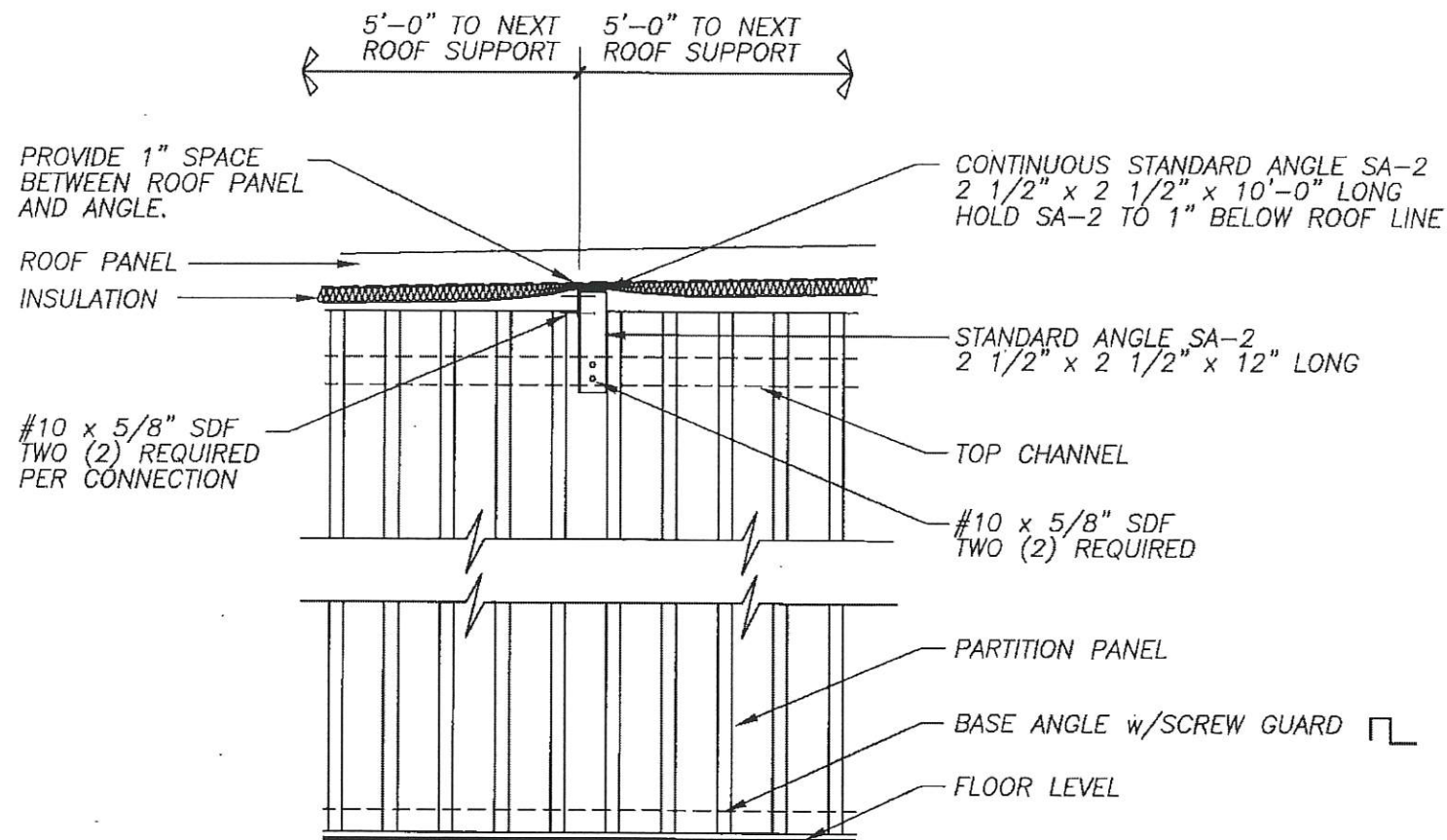
**BETCO**  
228 COMMERCE BLVD.  
STATESVILLE, NC 28625  
(800)654-7813

SHEET TITLE:  
**Studwall Details**

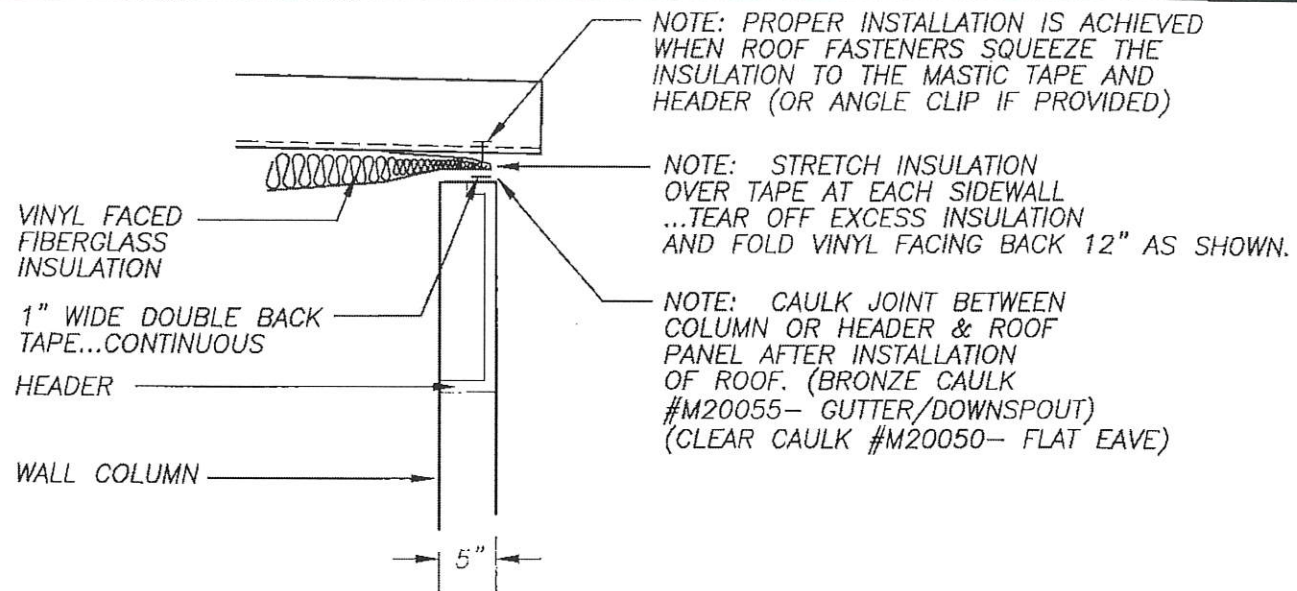
DRAWN BY: JCM	APPROVED BY:	DRAWING NUMBER:
SCALE: NTS	DATE: 11/8/11	<b>ERC631X</b>



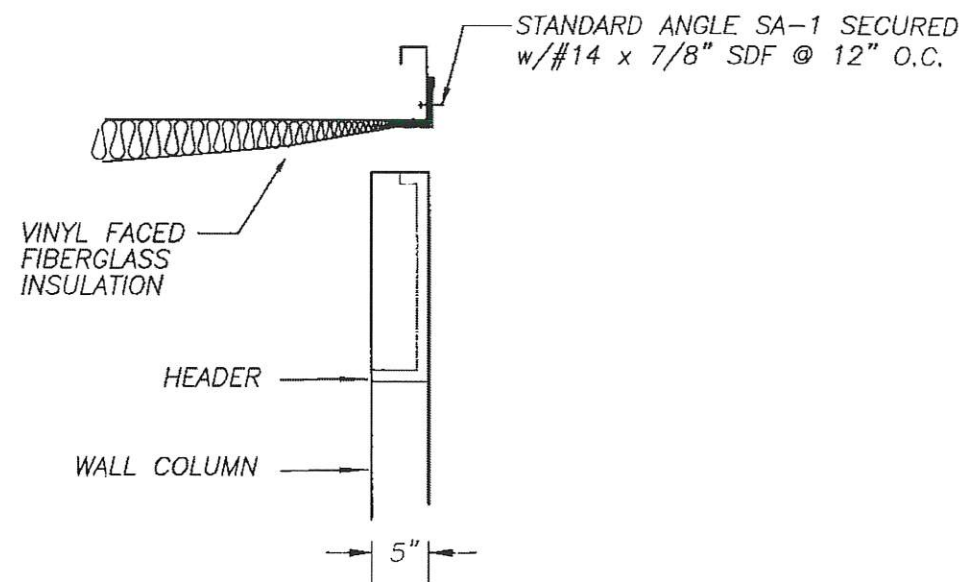
**PLAN VIEW**



**ELEVATION AT INTERMEDIATE INSULATION SUPPORT**



**INSULATION INSTALLATION @ SIDEWALL**



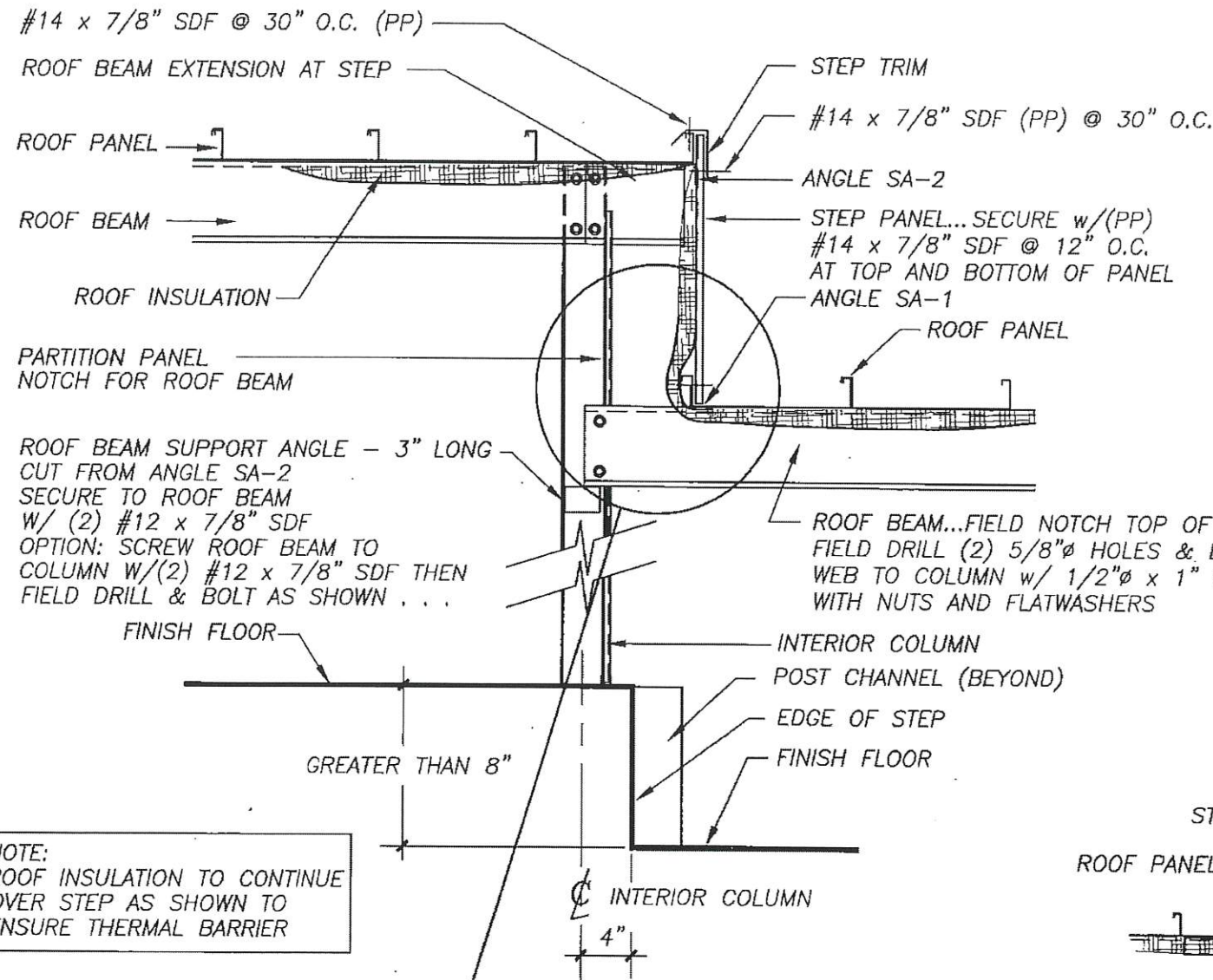
**INSULATION INSTALLATION AT END WALL**



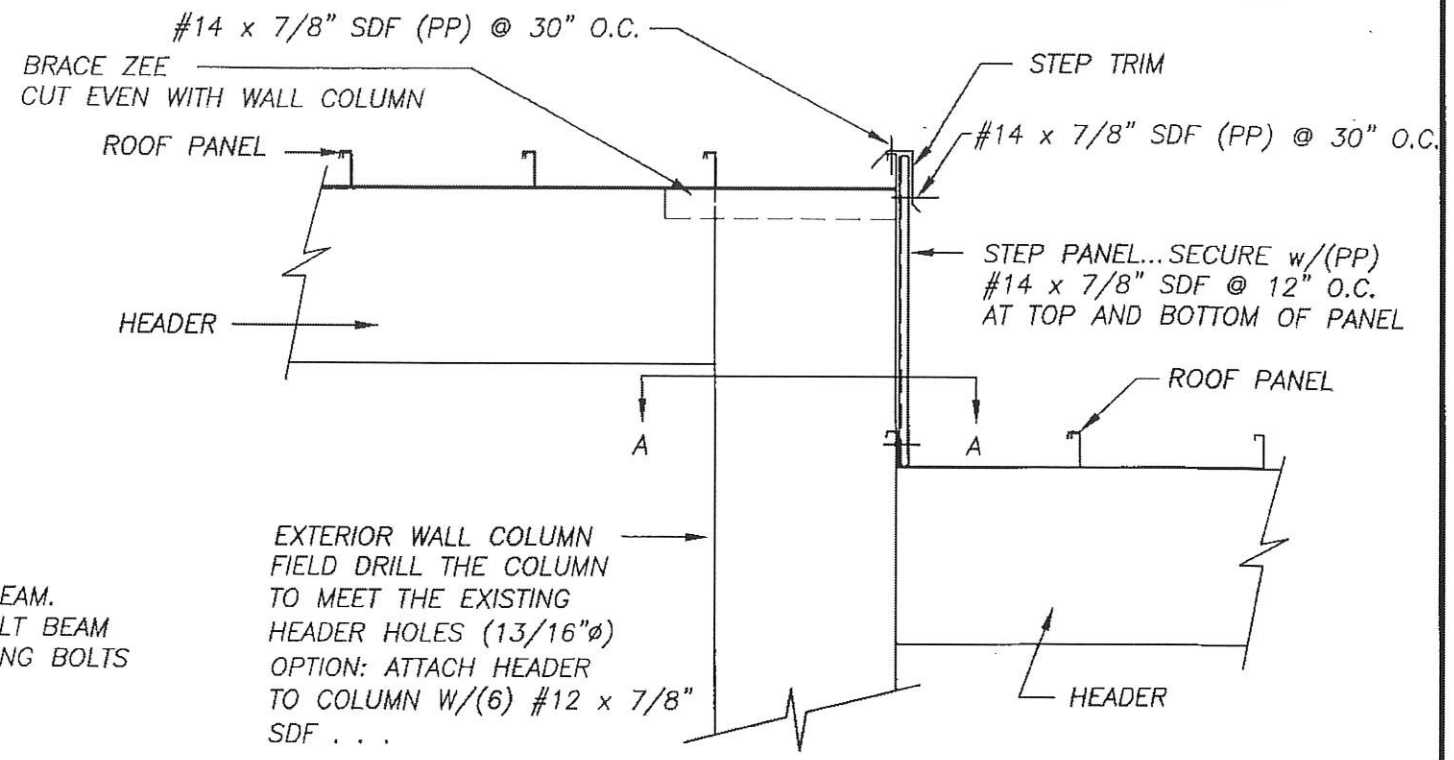
5-26-16

<p>REVISIONS</p>			<p>DATE BY</p>			<p><b>BETCO</b> 228 COMMERCE BLVD. STATESVILLE, NC 28625 (800)654-7813</p>	<p>SHEET TITLE: <b>Insulation installation</b></p>	
▲	ADDED ROOF FASTENER NOTE	4/17/03	JCM	<p>DRAWN BY: J Pope</p>			<p>APPROVED BY:</p>	
▲	REVISED SA-2 GAP	1/14/03	BAM	<p>SCALE: NTS</p>			<p>DATE: 6-27-94</p>	
▲	GENERAL REVISIONS	3-8-99	FOX	<p>DRAWING NUMBER: <b>ERC700X</b></p>				

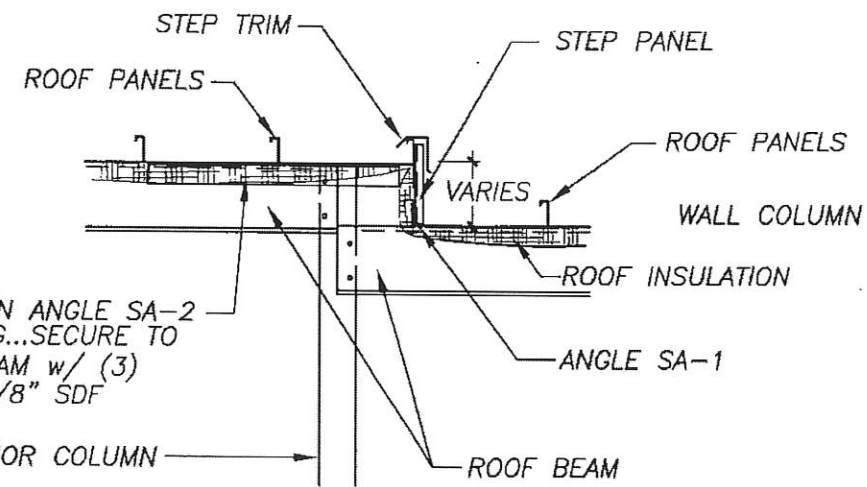




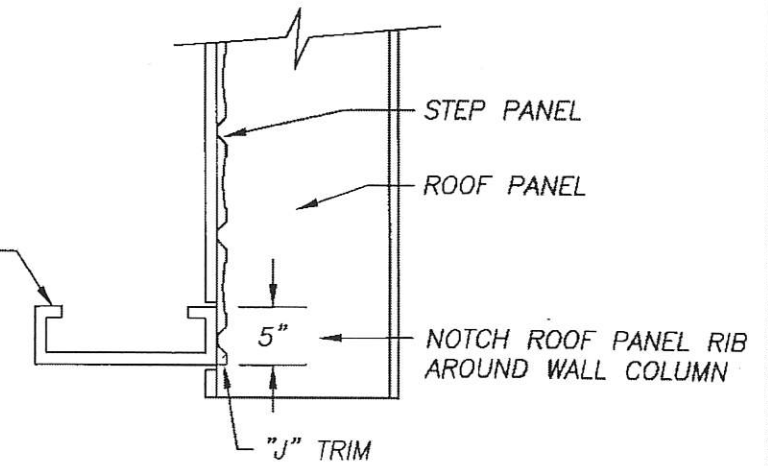
**TYPICAL STEPDOWN SECTION**



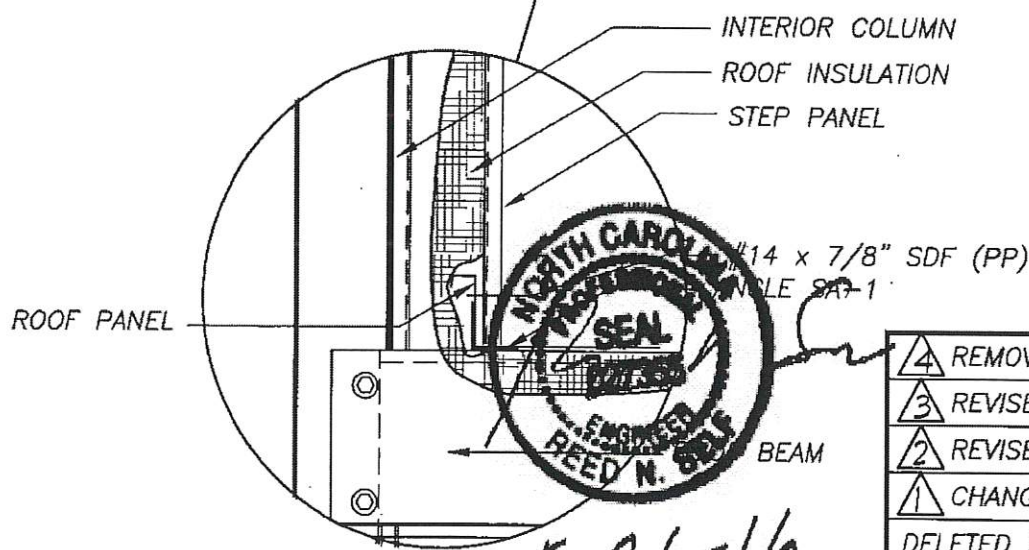
**TYPICAL STEPDOWN ELEVATION**



**DETAIL AT ROOF STEP 8" OR LESS**



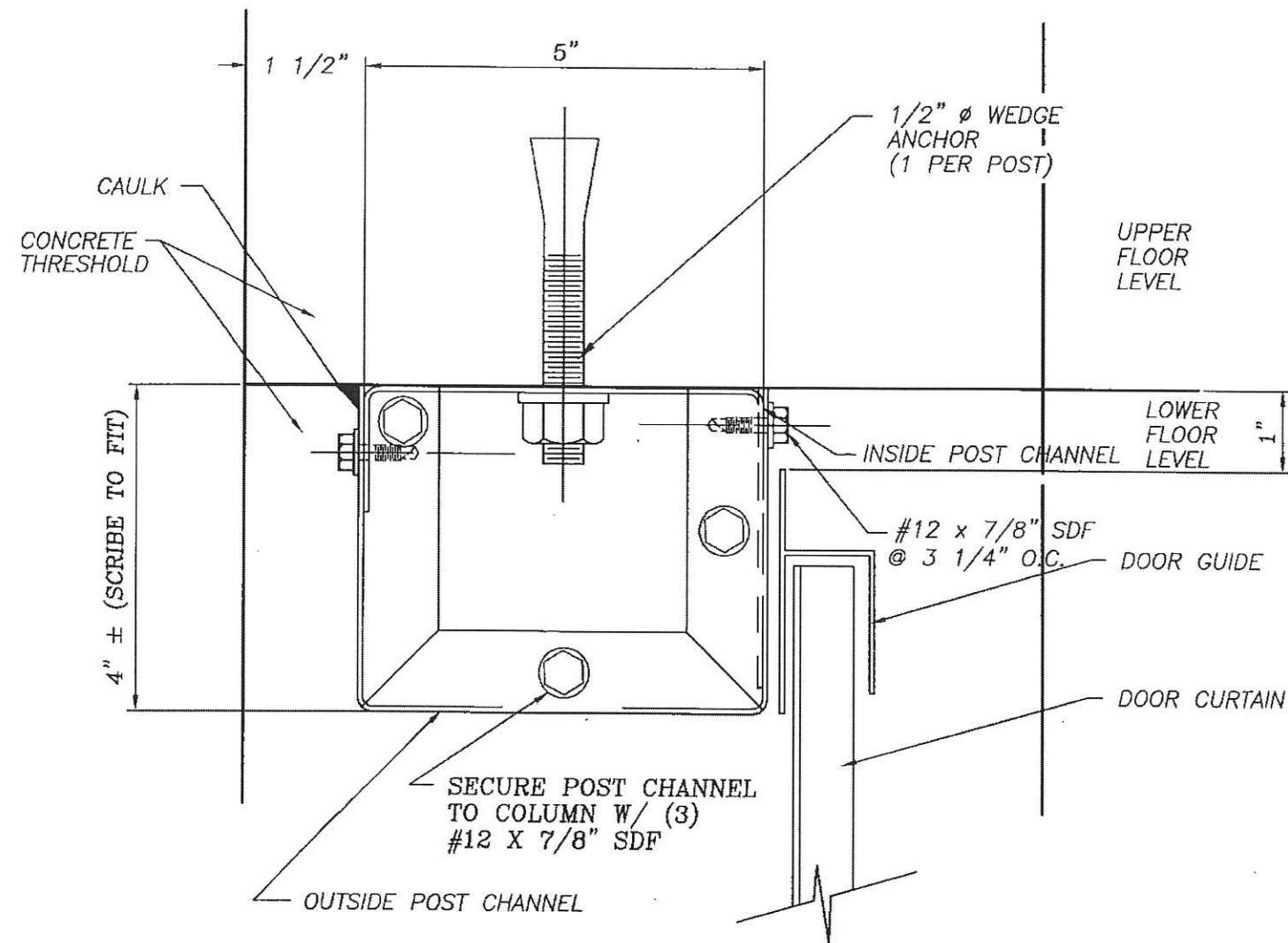
**SECTION A-A**



REVISIONS	DATE	BY
4	2/16/04	JCM
3	1/15/03	JCM
2	8/29/02	BAM
1	10-9-01	SBJ
REMOVED FLIPSHEET NOTE		
REVISED FASTENER SIZE		
REVISED INSULATION TYPE		
CHANGED 8" STEP TO 236A PANEL AND DELETED SA-1 AT TYPICAL STEP DOWN SECTION		

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SHEET TITLE: <b>STEPDOWN SECTIONS W/ INSULATION (Roof and Floor)</b>		
DRAWN BY: J Pope	APPROVED BY:	DRAWING NUMBER: ERC711X
SCALE: NTS	DATE: 6-29-94	



**PLAN VIEW @ POST CHANNEL**

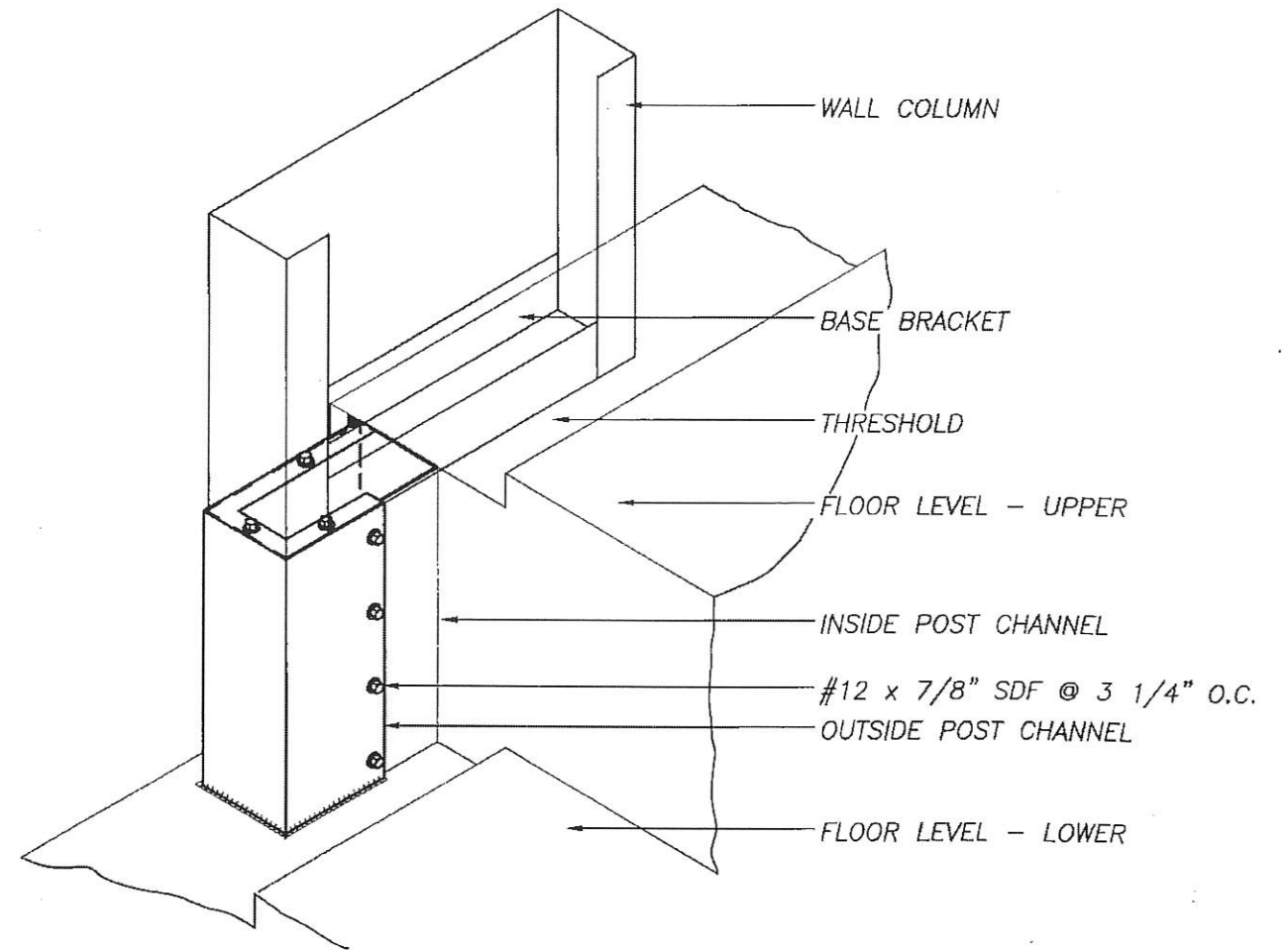
NOTE: POST CHANNEL CAN BE ATTACHED TO EXTERIOR WALL COLUMN AFTER FITTING POST CHANNEL TO CURTAIN AND BEFORE WALL COLUMN IS SET IN PLACE TO LESSEN THE DISTANCE OF INSTALLING #12 SCREWS.



5-26-16

REVISIONS	DATE	BY
△ REVISED FASTENER SIZE	1/15/03	JCM
△ GENERAL REVISIONS	3-8-99	FOX

**NOTE:** SCRIBE OUTSIDE POST CHANNEL (9" LEG) TO FIT AGAINST CONCRETE. THEN APPLY CAULK OVER SEAM TO SEAL CUT EDGES. TRIM BOTTOM AS NEEDED. CAULK AROUND BOTTOM TO SEAL CUT EDGE. FASTEN W/(4) PREPAINTED #14 X 7/8" SDF SCREWS @ 3 1/4" O.C. ON OUTSIDE FACE OF OUTSIDE POST CHANNEL. FASTEN OUTSIDE POST CHANNEL TO WALL COLUMN W/ (3) #12 X 7/8" S.D.F.



**POST CHANNEL DETAIL AT FLOOR STEP**

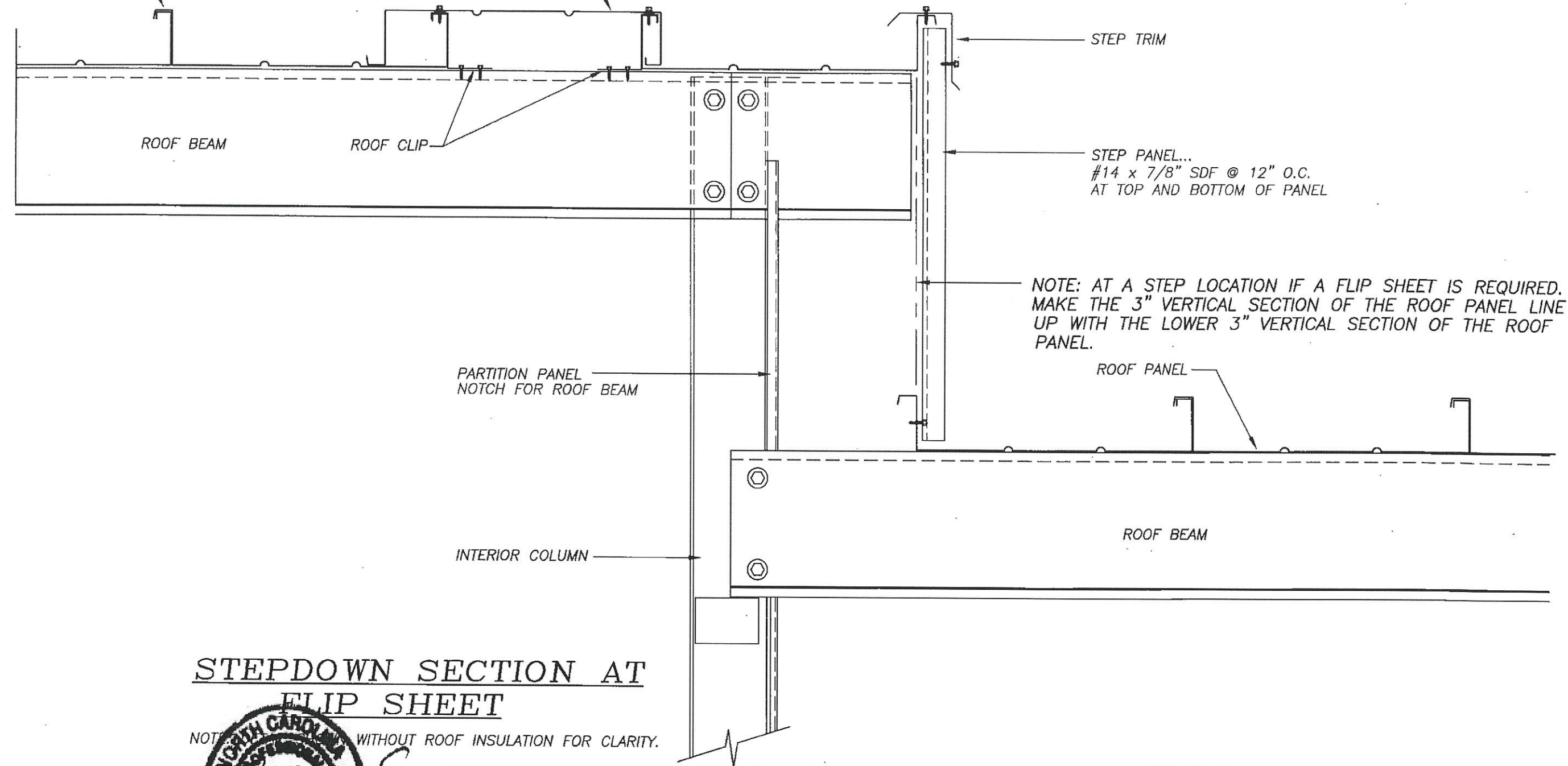


SHEET TITLE: <b>Post Channel Details</b>		
DRAWN BY: J Pope	APPROVED BY:	DRAWING NUMBER: <b>ERC712X</b>
SCALE: NTS	DATE: 6-28-94	

ROOF PANEL

FLIP SHEET

\* NOTE: SEE ERC710X AND/OR ERC711X FOR TYPICAL STEP DOWN DETAILS



### STEPDOWN SECTION AT FLIP SHEET

NOTE: DRAWN WITHOUT ROOF INSULATION FOR CLARITY.



5-26-16

REVISIONS	DATE	BY

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 STATESVILLE, NC 28625  
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SHEET TITLE: <b>STEPDOWN SECTION AT ROOF FLIP SHEET</b>		
DRAWN BY: JENKINS	APPROVED BY:	DRAWING NUMBER: ERC713X
SCALE: NTS	DATE: 10-10-01	