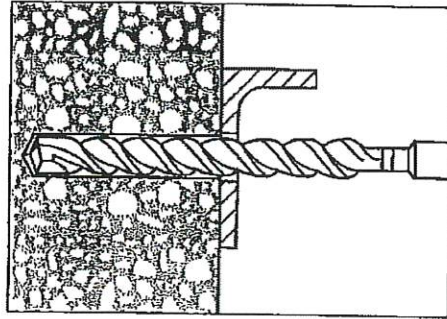
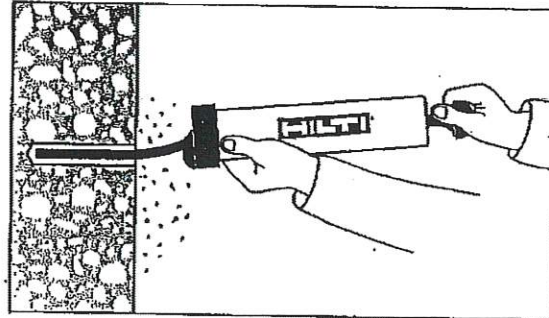


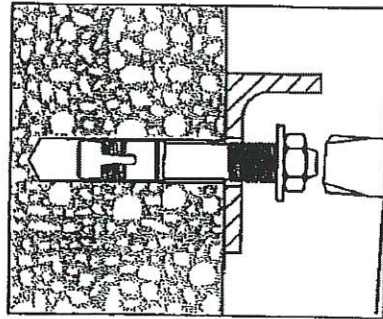
### Kwik Bolt 3 Expansion Anchor Installation Instructions



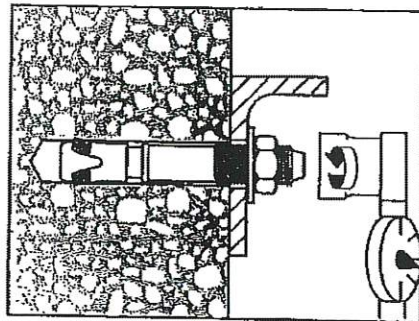
1. Hammer drill a hole to the same nominal diameter as the Kwik Bolt 3. The hole depth must exceed the anchor embedment by at least one diameter. The fixture may be used as a drilling template to ensure proper anchor location.



2. Clean hole.



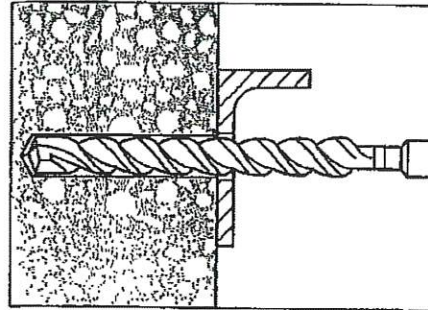
3. Drive the Kwik Bolt 3 into the hole using a hammer. The anchor must be driven until at least six threads are below the surface of the fixture.



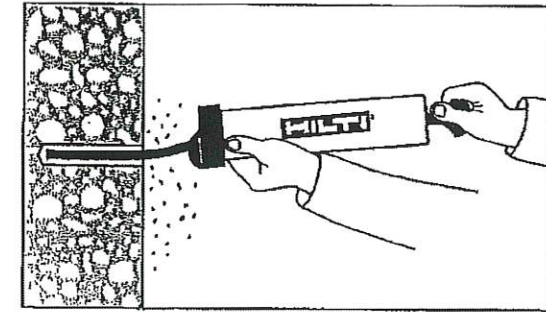
4. Tighten the nut to the recommended installation torque.

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)

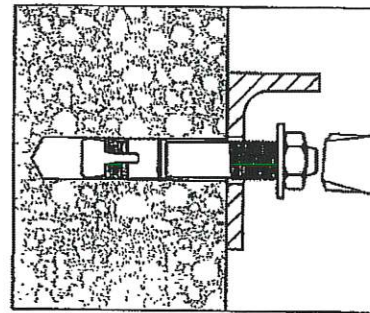
### Kwik Bolt TZ Anchor Installation Instructions into normal-weight and lightweight concrete



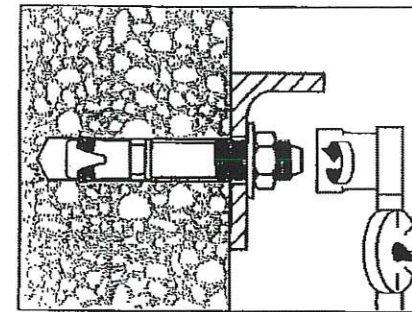
1. Hammer drill a hole to the same nominal diameter as the Kwik Bolt TZ. The hole depth must exceed the anchor embedment by at least 1/4 inch. The fixture may be used as a drilling template to ensure proper anchor location.



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)

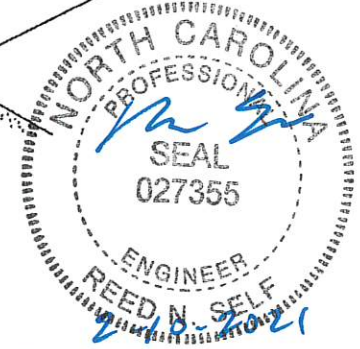
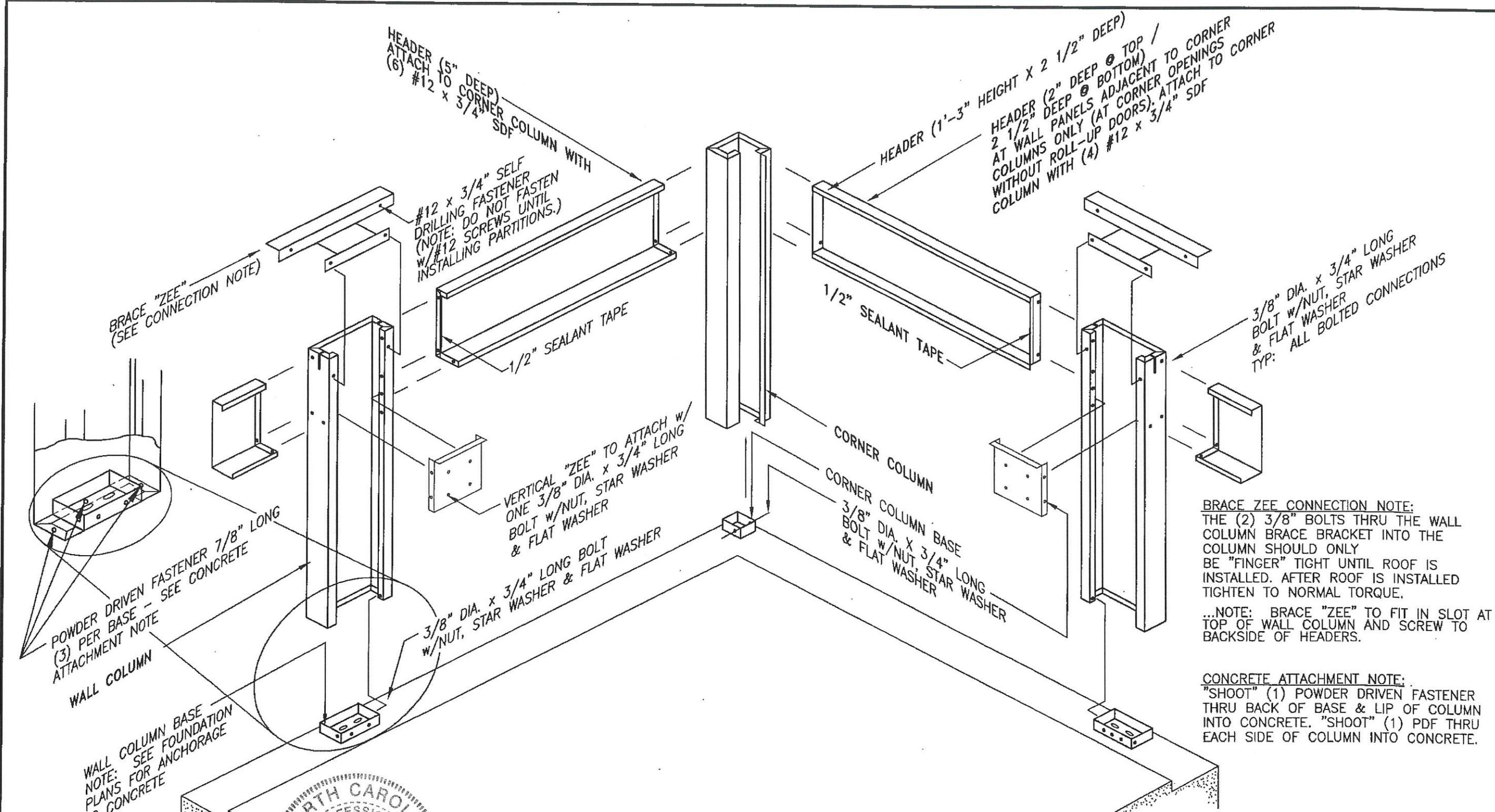


REVISIONS	DATE	BY



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

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



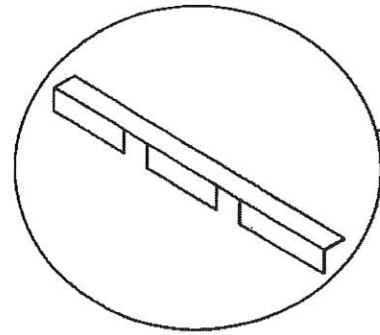
REVISIONS	DATE	BY

**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:
SCALE: NTS	DATE: 6/17/94	<b>ERC100X</b>

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

1/8" PDF (2) EA. SIDE

#12 x 7/8" SDF

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) 1/8" PDF...

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

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)

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

CONTROL JOINT COLUMN (HALF)

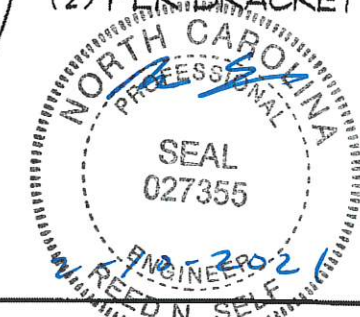
C.J.C. EXPANSION TRIM  
 BRACKET... (2) REQUIRED...  
 (1) AT 1/3 OF COLUMN HGT.  
 & (1) AT 2/3 OF COLUMN HGT.

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

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 LENGTH OF THE  
 BLDG. BY UP TO 2'. THIS GIVES YOU THE  
 ABILITY TO MAKE ADJUSTMENTS FOR A  
 SLAB THAT IS NOT EXACTLY THE  
 DIMENSIONS SPECIFIED.

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

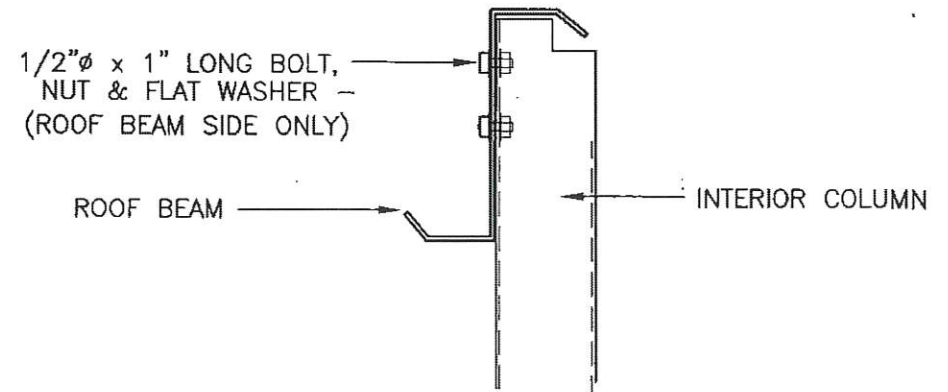
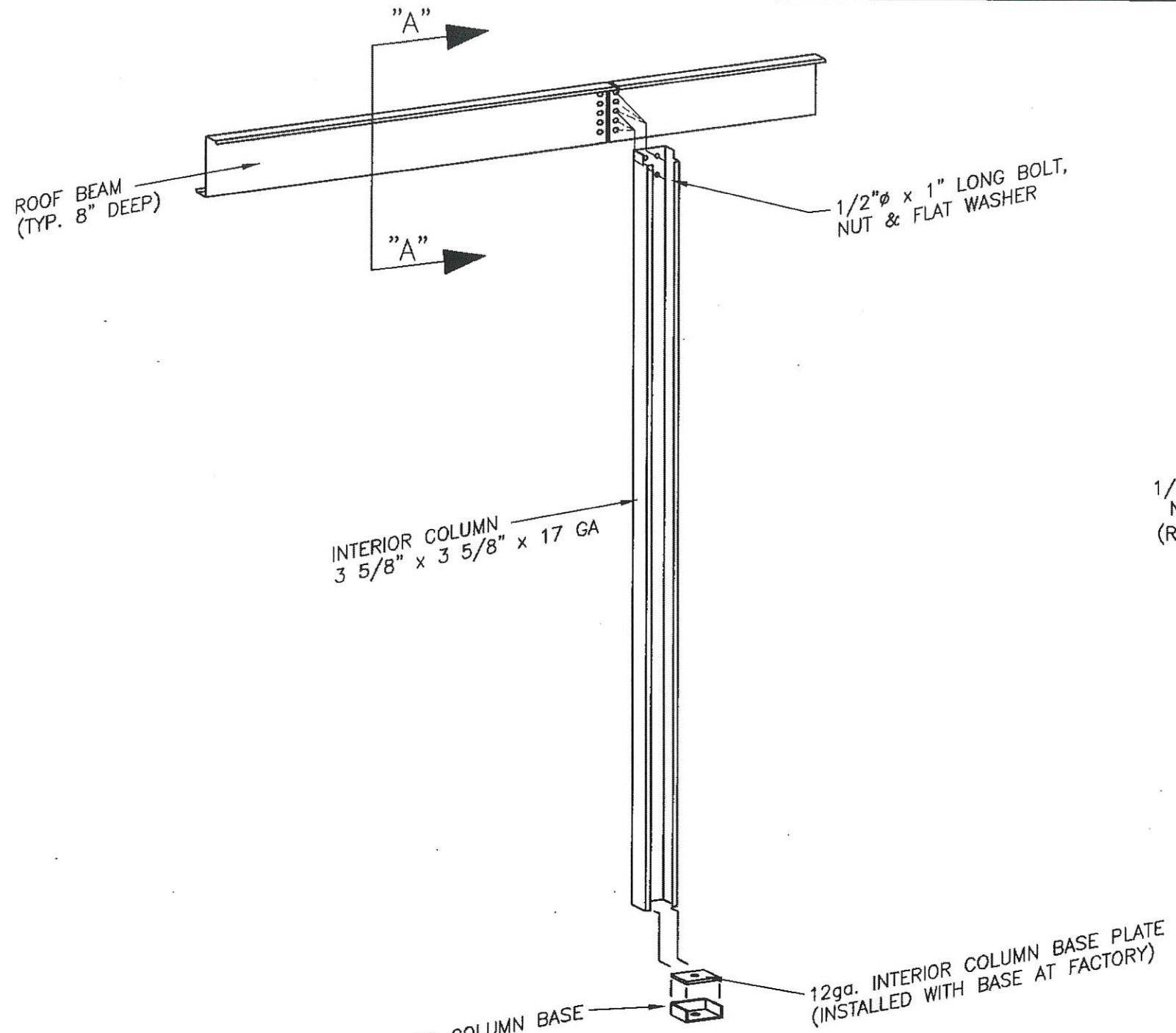


REVISIONS	DATE	BY
④ ADDED SDF'S TO CJC TRIM	11/15/05	JCM
③ CHANGED W/A LENGTH TO 3 3/4'	4/30/03	RSG
② GENERAL REVISIONS	1/22/99	JAB
① GENERAL REVISIONS	3-8-99	FOX



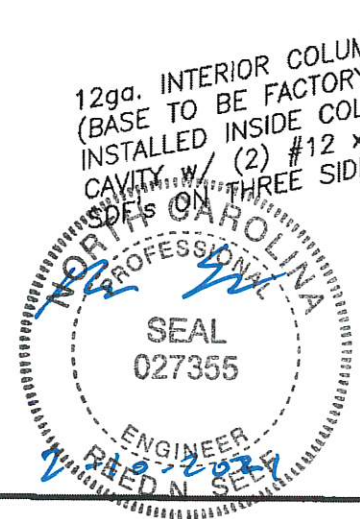
228 COMMERCE BLVD.  
 STATESVILLE, NC 28625  
 (800)654-7813

SHEET TITLE: <b>CONTROL JOINT COLUMN AND TRIM INSTALLATION</b>		
DRAWN BY: K.D.W.	APPROVED BY:	DRAWING NUMBER: ERC105X
SCALE: NTS	DATE: 8/1/94	



SECTION  
"A" - "A"

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



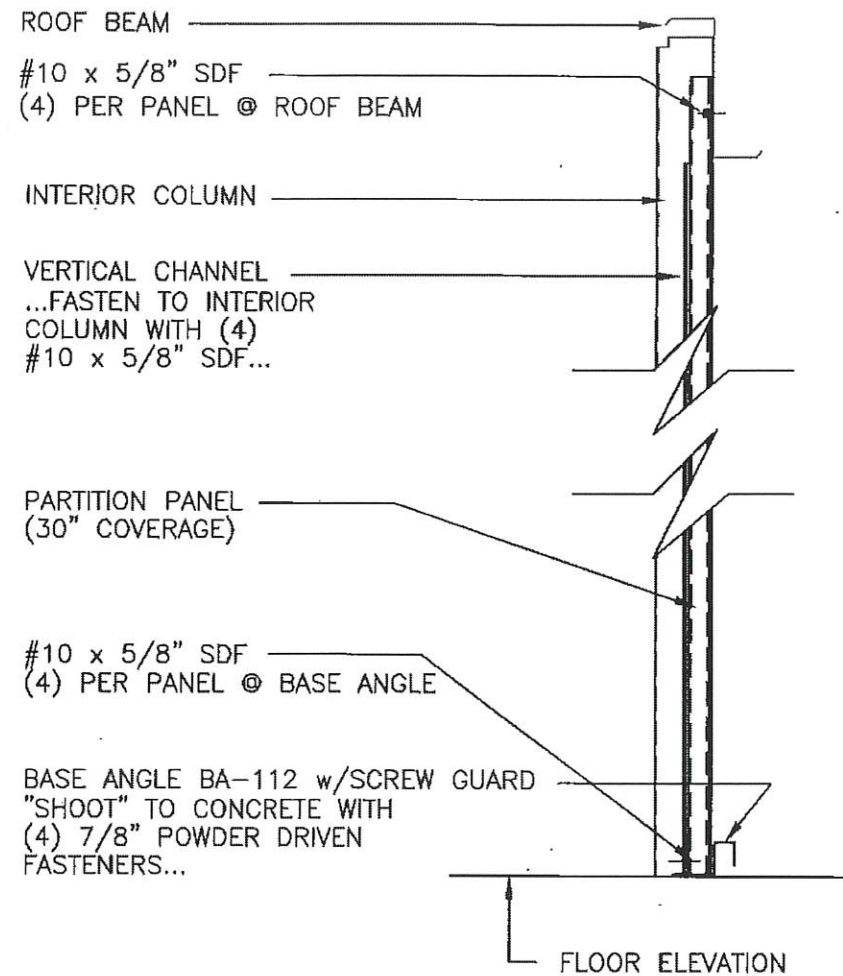
12ga. INTERIOR COLUMN BASE  
(BASE TO BE FACTORY INSTALLED INSIDE COLUMN CAVITY w/ (2) #12 x 7/8" SPSs ON THREE SIDES.)

12ga. INTERIOR COLUMN BASE PLATE  
(INSTALLED WITH BASE AT FACTORY)

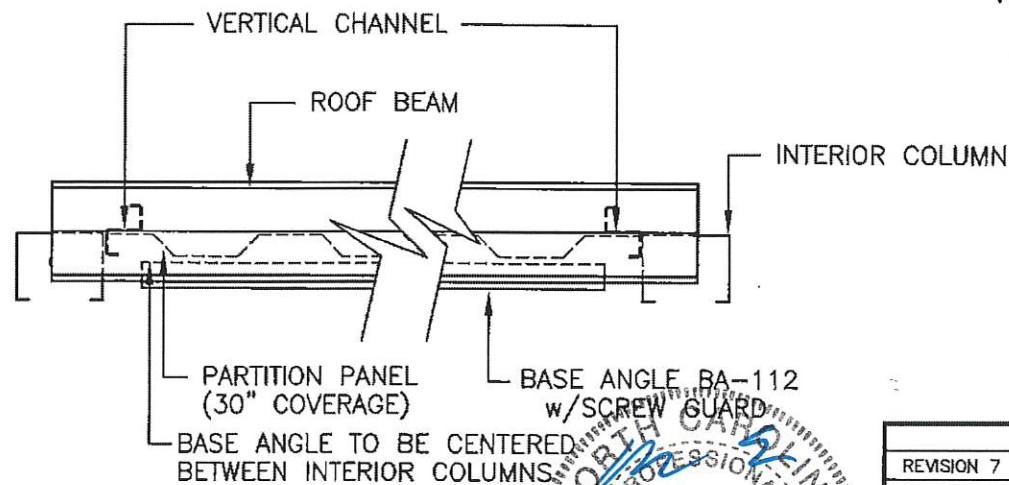
REVISIONS	DATE	BY
3	8-29-02	BAM
2	3-16-99	FOX
1	3-9-99	FOX

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

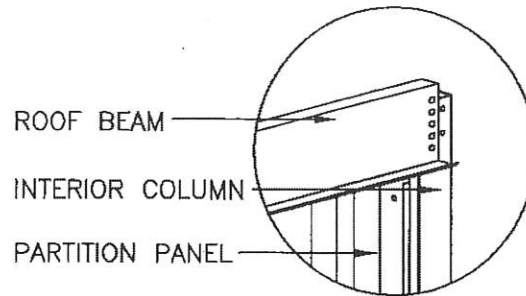
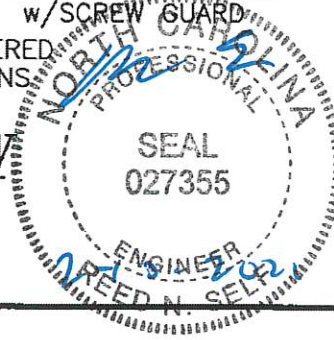
SHEET TITLE: <i>Interior Column Installation All Heights</i>		
DRAWN BY: J POPE	APPROVED BY:	DRAWING NUMBER: ERC110X
SCALE: NTS	DATE: 1/30/98	



**SECTION A-A**



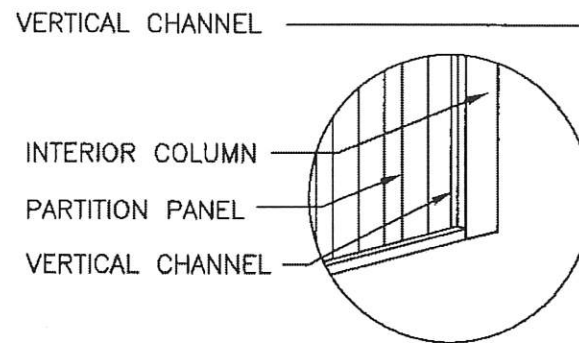
**PLAN VIEW**



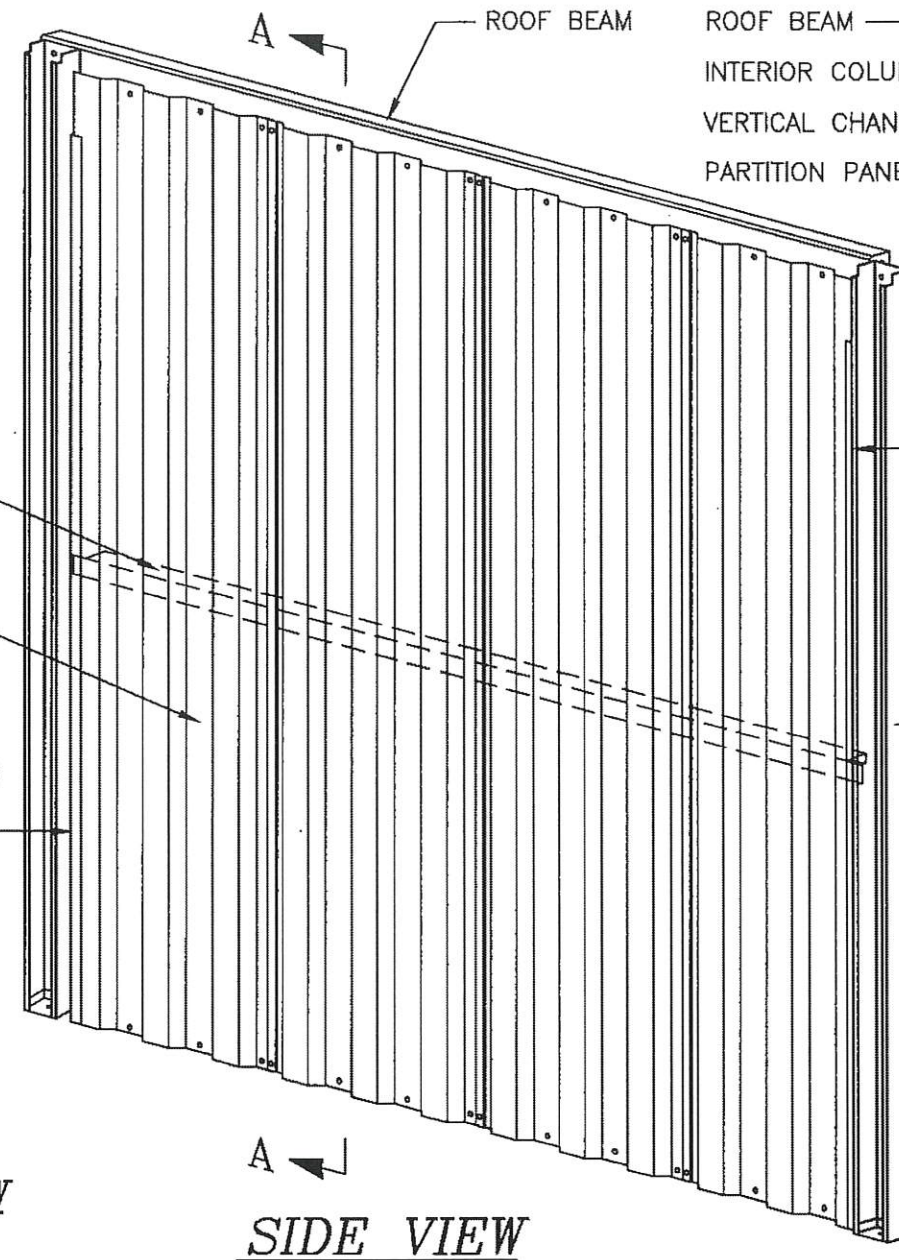
**OPPOSITE VIEW THIS CORNER**

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

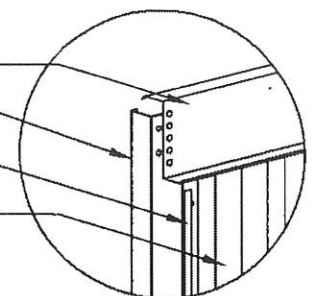
PARTITION PANEL (30" COVERAGE) FASTEN TO ROOF BEAM AND BASE ANGLE w/(4) #10 x 5/8" SDF EACH...(1) PER PAN SECTION AND (1) EACH SIDE OF LAP JOINT... FASTEN TO VERTICAL FRAMING w/(4) #10 x 5/8" SDF EACH - (SEE NOTE)



**OPPOSITE VIEW THIS CORNER**

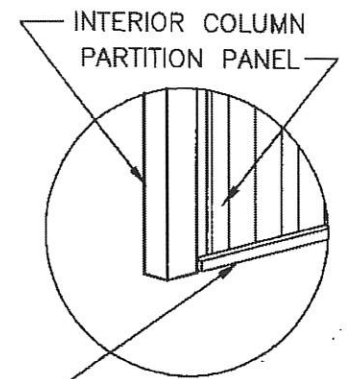


**SIDE VIEW**



**OPPOSITE VIEW THIS CORNER**

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



**OPPOSITE VIEW THIS CORNER**

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.

BASE ANGLE BA-112 w/SCREW GUARD

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

**BETCO**  
228 COMMERCE BLVD.  
STATESVILLE, NC 28625  
(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

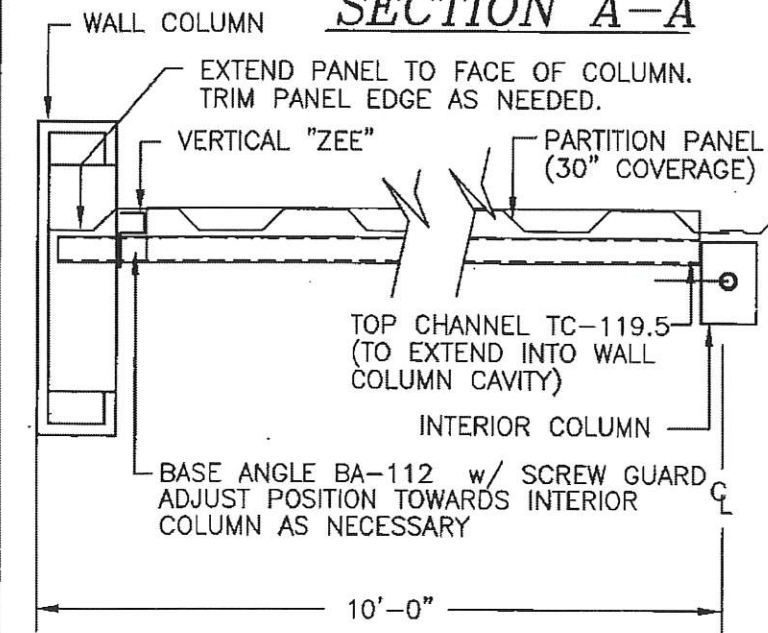
VERTICAL "ZEE"  
 ...FASTEN TO WALL COLUMN BASE  
 AND TO DOOR MOUNTING BRACKET  
 w/(1) 3/8"φ x 3/4" BOLT, NUT, STAR  
 WASHER & FLAT WASHER EACH END...

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...

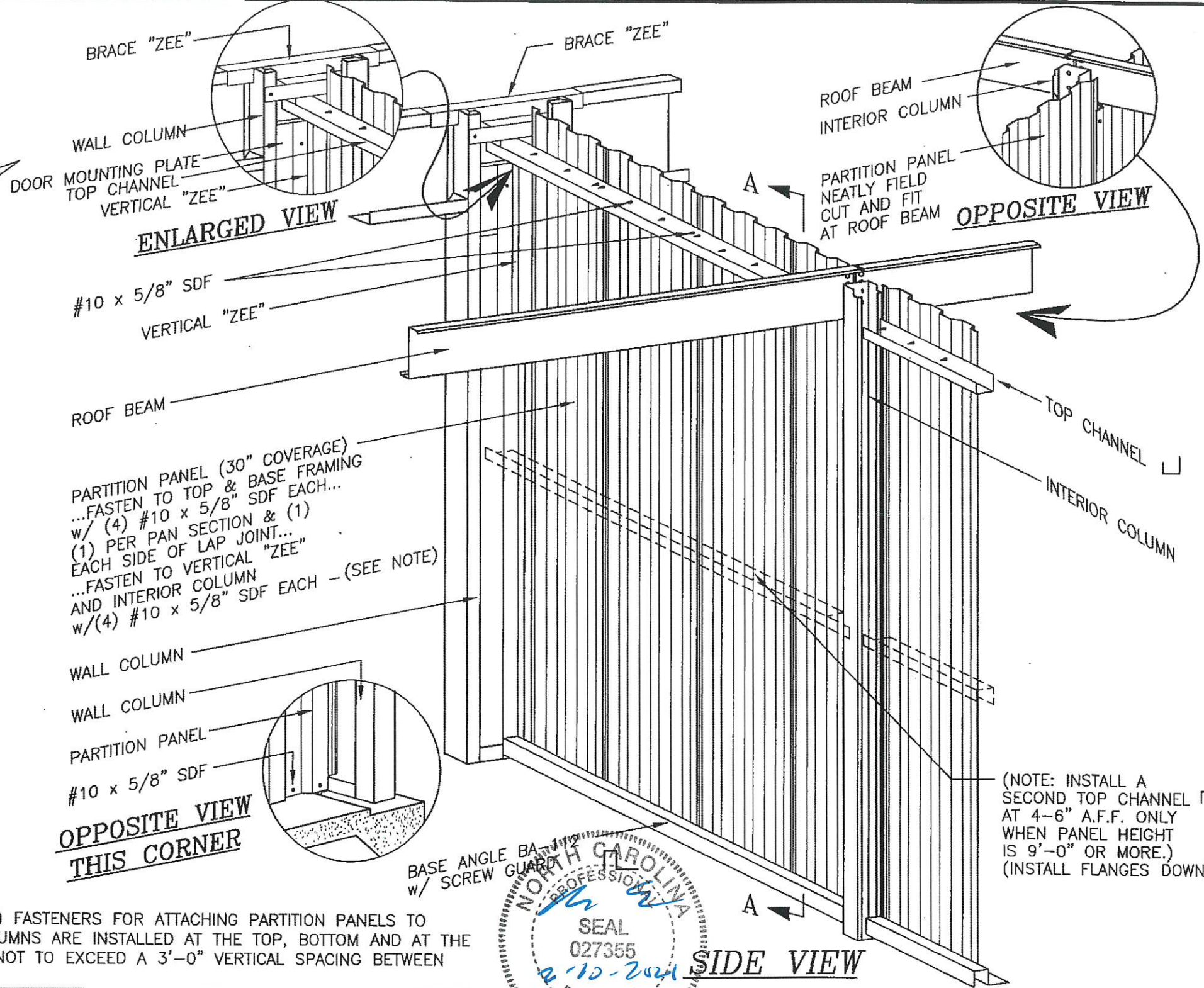
FLOOR ELEVATION  
 THRESHOLD ELEVATION

**SECTION A-A**



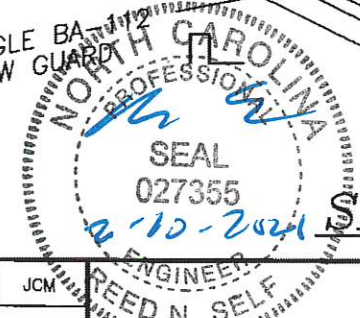
**PLAN VIEW**

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.



**OPPOSITE VIEW  
 THIS CORNER**

BASE ANGLE BA-112 w/ SCREW GUARD

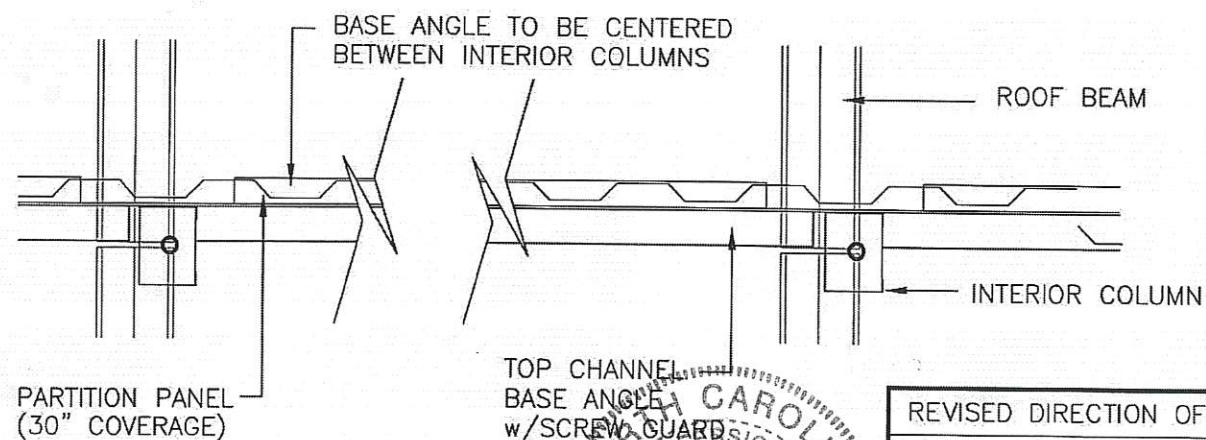
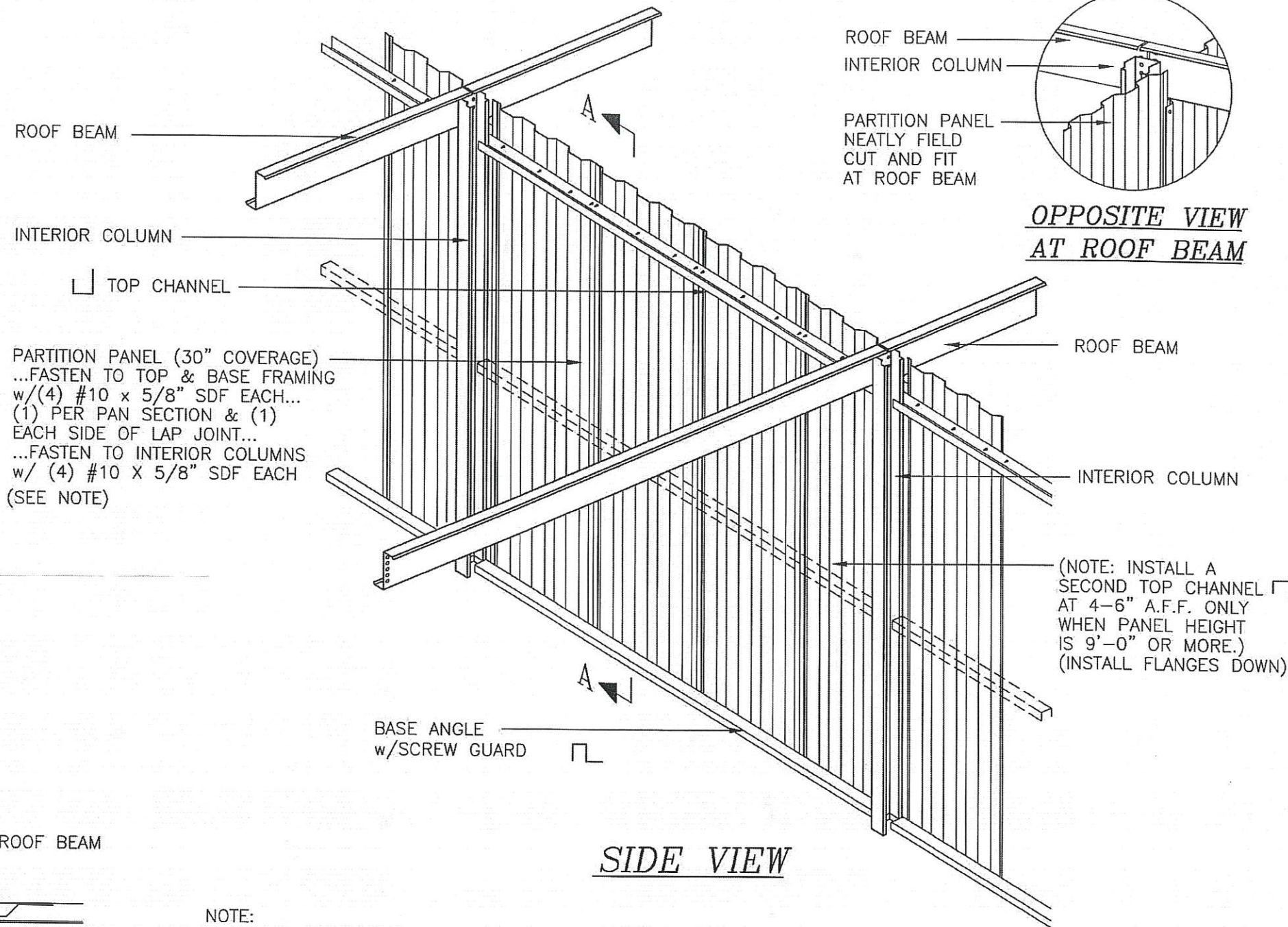
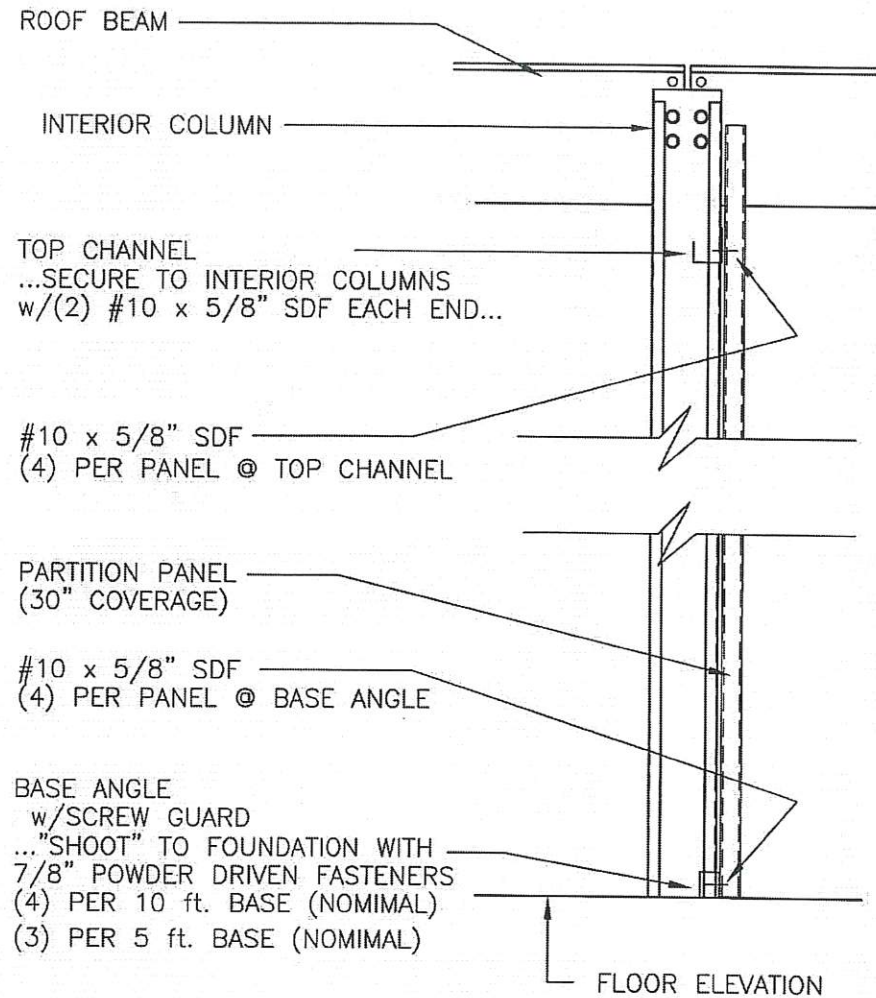


**SIDE VIEW**

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	BOL
ADDED NOTE FOR INTERIOR COLUMNS	4/2/01	TLR
GENERAL REVISIONS	4/12/99	CWM

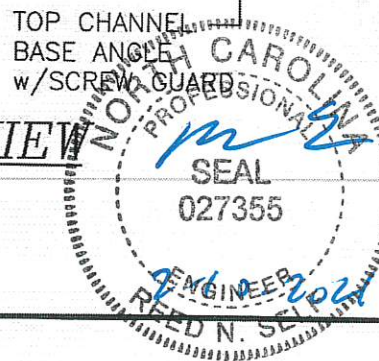
**BETCO**  
 228 COMMERCE BLVD.  
 STATESVILLE, NC 28625  
 (800)654-7813

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	



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

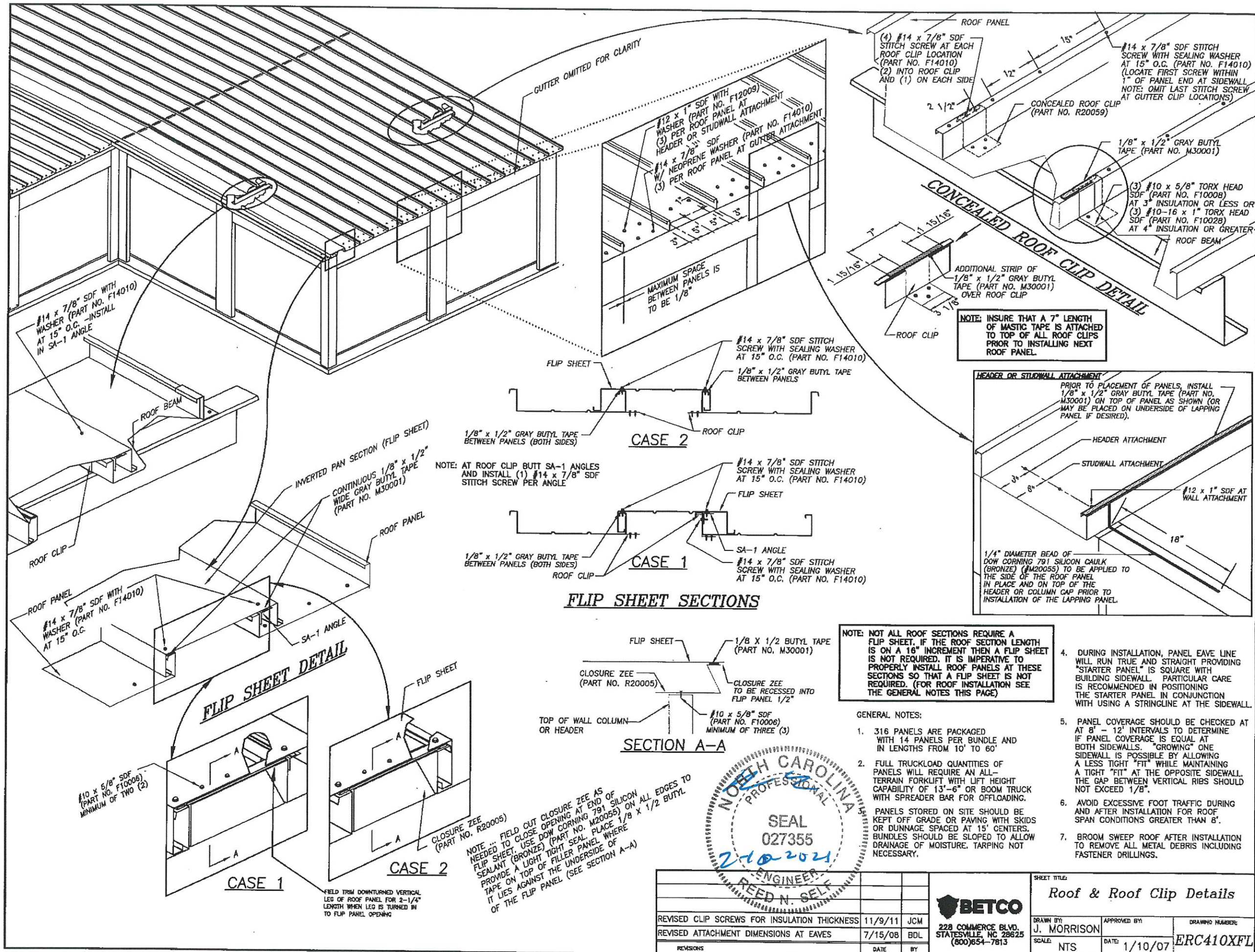


REVISIONS	DATE	BY
REVISED DIRECTION OF MID TOP CHANNEL	3/17/04	JCM
REVISED INTERIOR COLUMNS	8/29/02	BAM
ADDED TOP CHANNEL AT PANELS OVER 9'-0"	2/7/02	BDL
ADDED NOTE FOR INTERIOR COLUMNS	4/2/01	TLR
GENERAL REVISIONS	5/7/99	CJG



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

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



#14 x 7/8" SDF WITH WASHER (PART NO. F14010) AT 15" O.C. - INSTALL IN SA-1 ANGLE

#14 x 7/8" SDF WITH WASHER (PART NO. F14010) AT 15" O.C.

#10 x 5/8" SDF (PART NO. F10006) MINIMUM OF TWO (2)

GUTTER OMITTED FOR CLARITY

#12 x 1" SDF WITH WASHER (PART NO. F12009) (3) PER ROOF PANEL AT HEADER OR STUDWALL ATTACHMENT  
#14 x 7/8" SDF WITH NEOPRENE WASHER (PART NO. F14010) (3) PER ROOF PANEL AT GUTTER ATTACHMENT

MAXIMUM SPACE BETWEEN PANELS IS TO BE 1/8"

ROOF PANEL  
(4) #14 x 7/8" SDF STITCH SCREW WITH SEALING WASHER (PART NO. F14010) (2) INTO ROOF CLIP AND (1) ON EACH SIDE  
#14 x 7/8" SDF STITCH SCREW WITH SEALING WASHER AT 15" O.C. (PART NO. F14010) (LOCATE FIRST SCREW WITHIN 1" OF PANEL END AT SIDEWALL. NOTE: OMIT LAST STITCH SCREW AT GUTTER CLIP LOCATIONS)  
CONCEALED ROOF CLIP (PART NO. R20059)  
1/8" x 1/2" GRAY BUTYL TAPE (PART NO. M30001)

CONCEALED ROOF CLIP DETAIL  
(3) #10 x 5/8" TORX HEAD SDF (PART NO. F10008) AT 3" INSULATION OR LESS OR (3) #10-16 x 1" TORX HEAD SDF (PART NO. F10028) AT 4" INSULATION OR GREATER  
ROOF BEAM  
ADDITIONAL STRIP OF 1/8" x 1/2" GRAY BUTYL TAPE (PART NO. M30001) OVER ROOF CLIP  
ROOF CLIP  
NOTE: INSURE THAT A 7" LENGTH OF MASTIC TAPE IS ATTACHED TO TOP OF ALL ROOF CLIPS PRIOR TO INSTALLING NEXT ROOF PANEL.

HEADER OR STUDWALL ATTACHMENT  
PRIOR TO PLACEMENT OF PANELS, INSTALL 1/8" x 1/2" GRAY BUTYL TAPE (PART NO. M30001) ON TOP OF PANEL AS SHOWN (OR MAY BE PLACED ON UNDERSIDE OF LAPPING PANEL IF DESIRED).  
HEADER ATTACHMENT  
STUDWALL ATTACHMENT  
#12 x 1" SDF AT WALL ATTACHMENT  
18"  
1/4" DIAMETER BEAD OF DOW CORNING 791 SILICON CAULK (BRONZE) (M20055) TO BE APPLIED TO THE SIDE OF THE ROOF PANEL IN PLACE AND ON TOP OF THE HEADER OR COLUMN CAP PRIOR TO INSTALLATION OF THE LAPPING PANEL.

NOTE: AT ROOF CLIP BUTT SA-1 ANGLES AND INSTALL (1) #14 x 7/8" SDF STITCH SCREW PER ANGLE

NOTE: NOT ALL ROOF SECTIONS REQUIRE A FLIP SHEET. IF THE ROOF SECTION LENGTH IS ON A 16" INCREMENT THEN A FLIP SHEET IS NOT REQUIRED. IT IS IMPERATIVE TO PROPERLY INSTALL ROOF PANELS AT THESE SECTIONS SO THAT A FLIP SHEET IS NOT REQUIRED. (FOR ROOF INSTALLATION SEE THE GENERAL NOTES THIS PAGE)

- 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" OR BOOM TRUCK WITH SPREADER BAR FOR OFFLOADING. 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 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.



REVISIONS	DATE	BY
REVISED CLIP SCREWS FOR INSULATION THICKNESS	11/9/11	JCM
REVISED ATTACHMENT DIMENSIONS AT EAVES	7/15/08	BDL

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

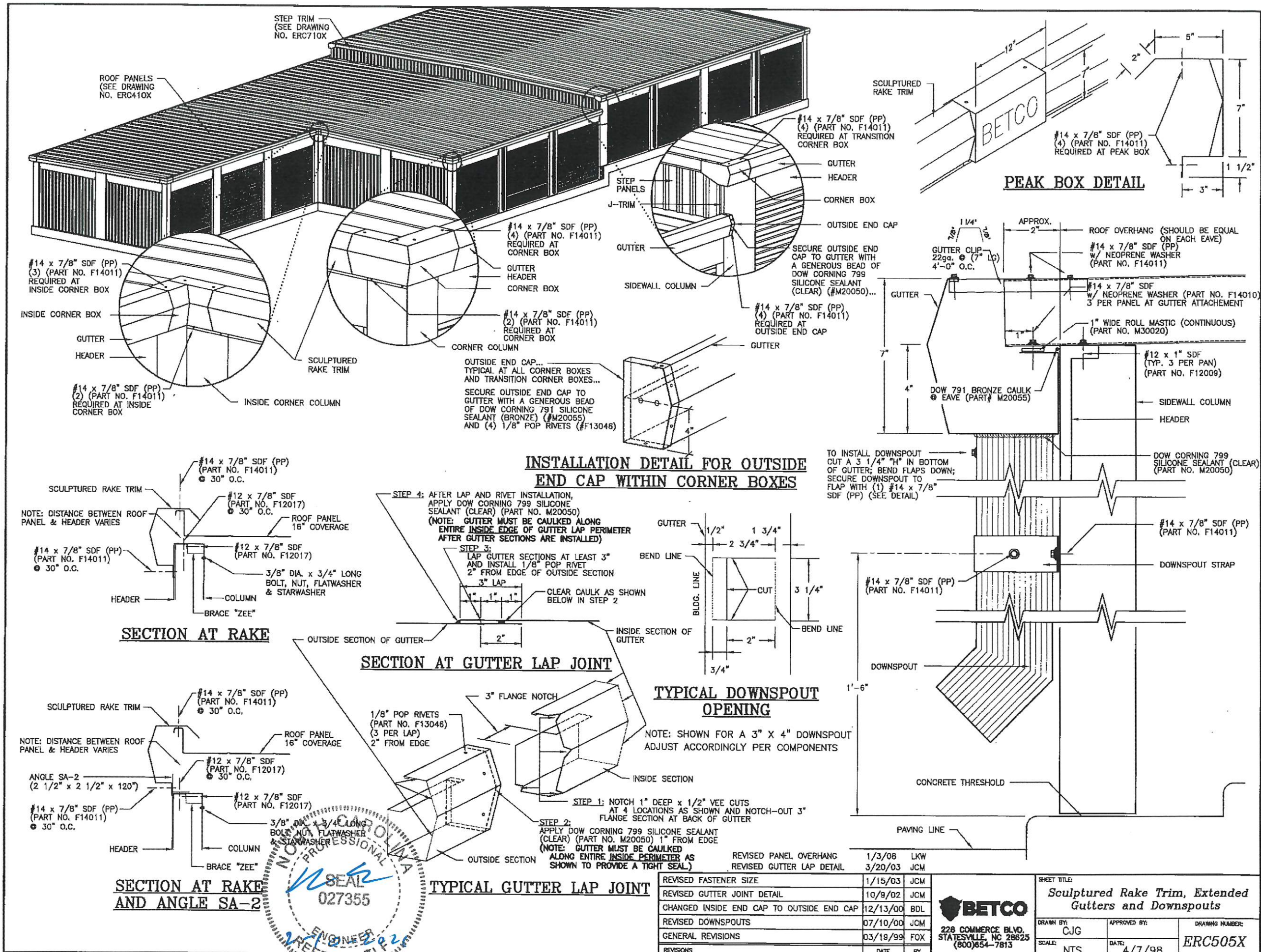
SHEET TITLE: **Roof & Roof Clip Details**

DRAWN BY: J. MORRISON  
APPROVED BY: [Signature]  
SCALE: NTS  
DATE: 1/10/07  
DRAWING NUMBER: ERC410XFL

NOTE: FIELD OUT CLOSURE ZEE AS NEEDED TO CLOSE OPENING AT END OF FLIP SHEET. USE DOW CORNING 791 SILICON SEALANT (BRONZE) (PART NO. M20055) ON ALL EDGES TO PROVIDE A LIGHT TIGHT SEAL. PLACE 1/8" x 1/2" BUTYL TAPE ON TOP OF FILLER PANEL WHERE IT LIES AGAINST THE UNDERSIDE OF THE FLIP PANEL (SEE SECTION A-A)

FIELD TRIM DOWNTURNED VERTICAL LEG OF ROOF PANEL FOR 2-1/4" LENGTH WHEN LEG IS TURNED IN TO FLIP PANEL OPENING



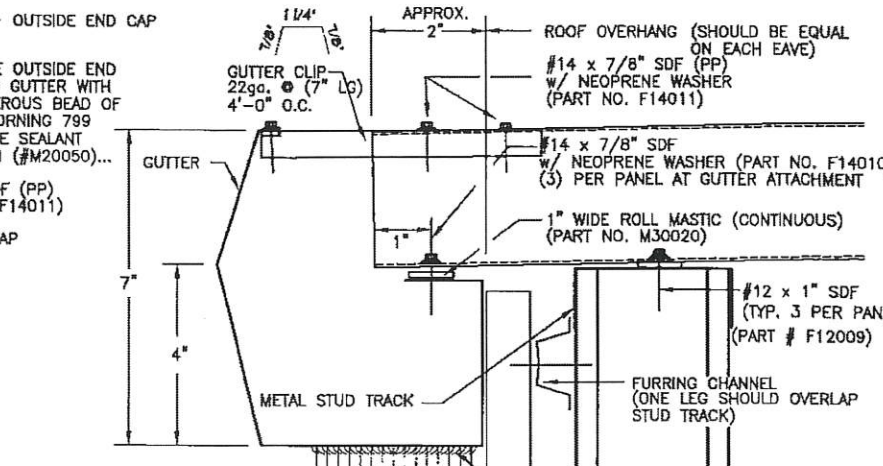
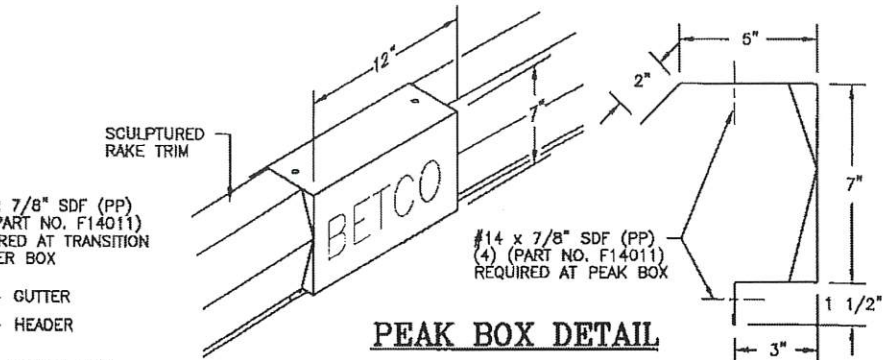
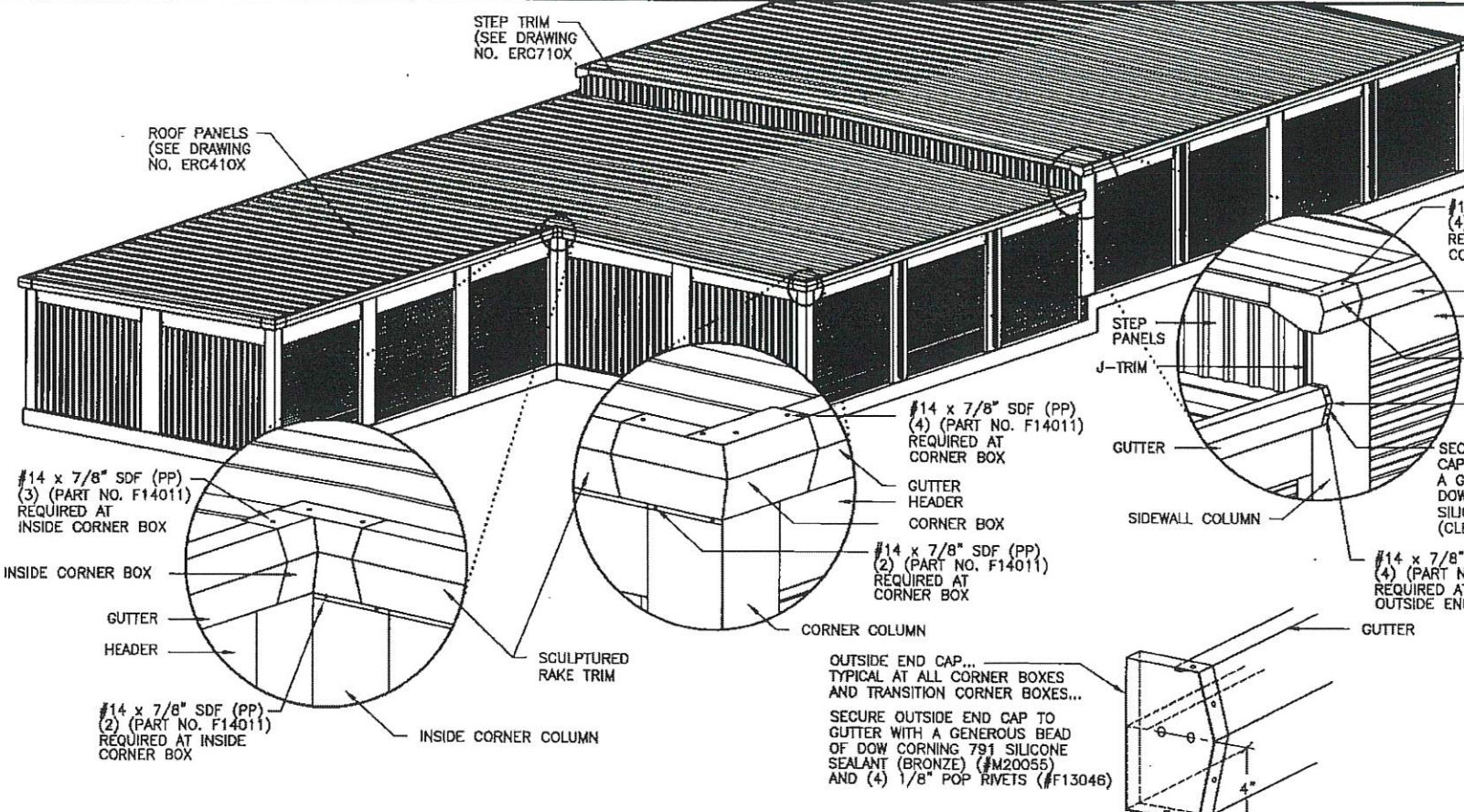
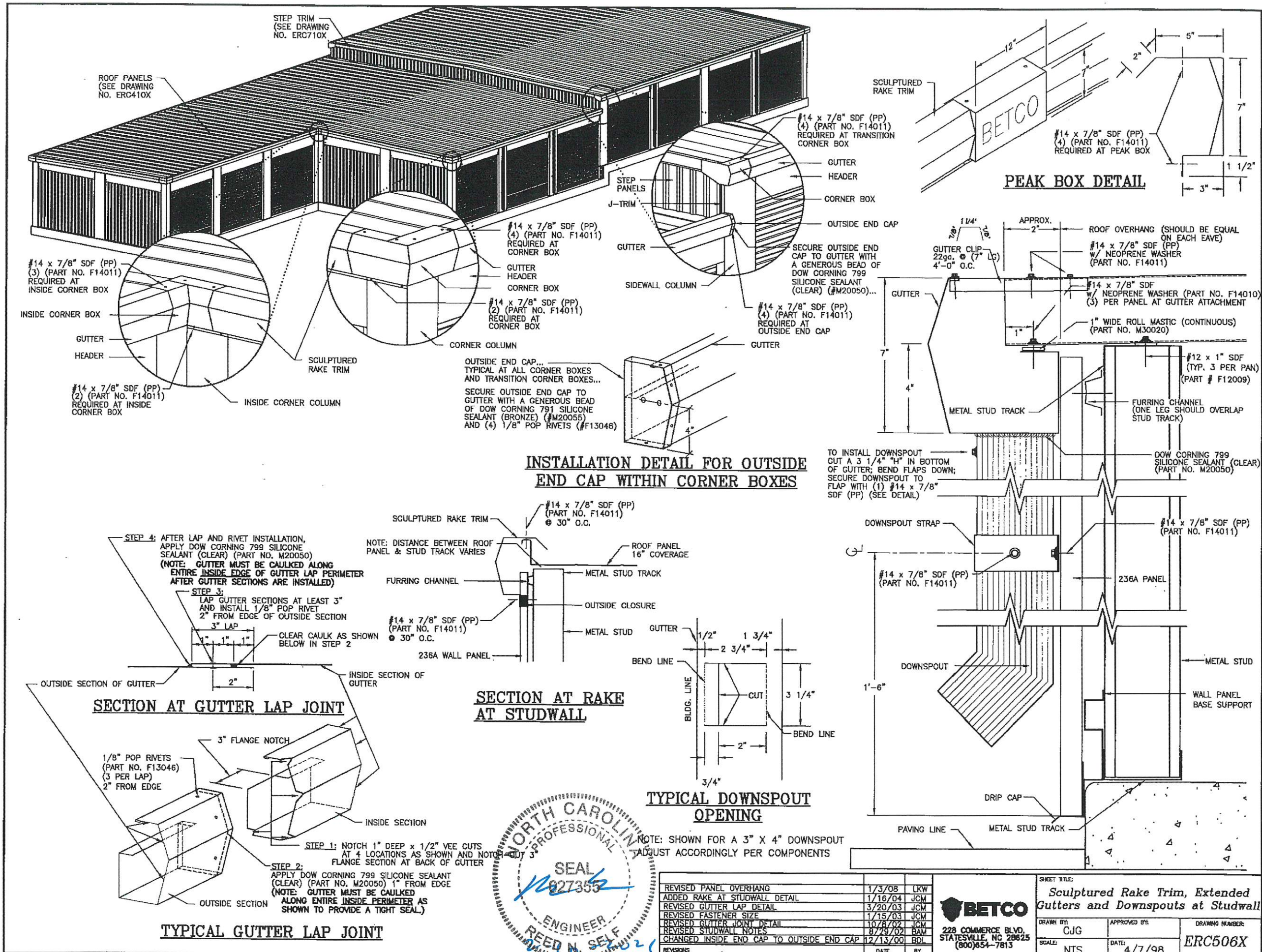


REVISED FASTENER SIZE	1/15/03	JCM
REVISED GUTTER JOINT DETAIL	10/9/02	JCM
CHANGED INSIDE END CAP TO OUTSIDE END CAP	12/13/00	BDL
REVISED DOWNSPOUTS	07/10/00	JCM
GENERAL REVISIONS	03/19/99	FOX
REVISIONS	DATE	BY

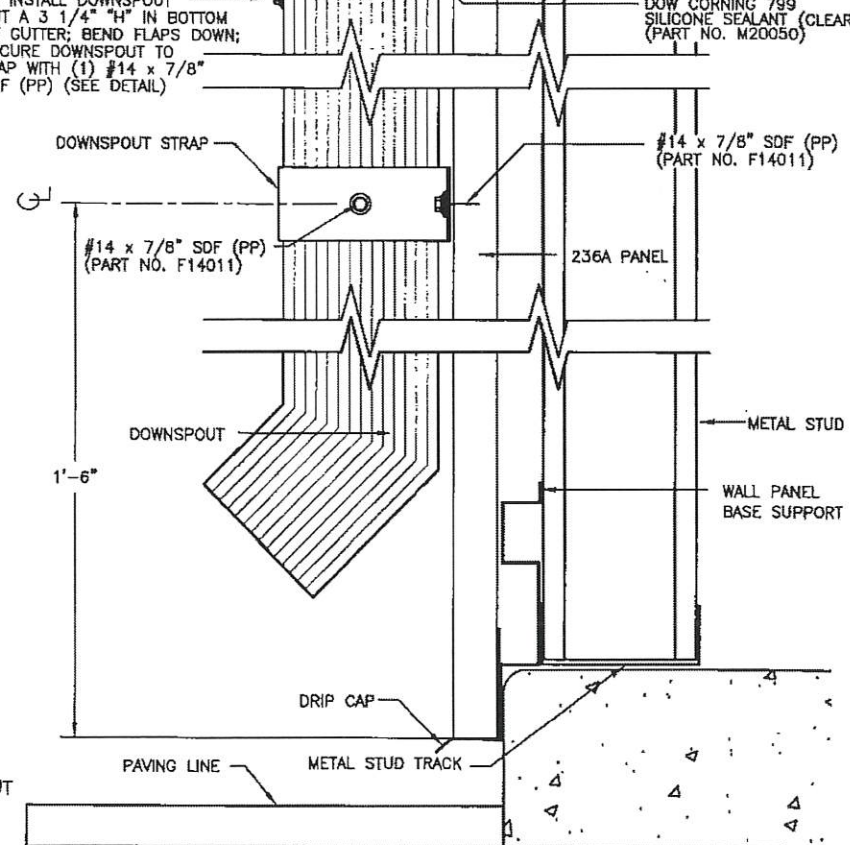
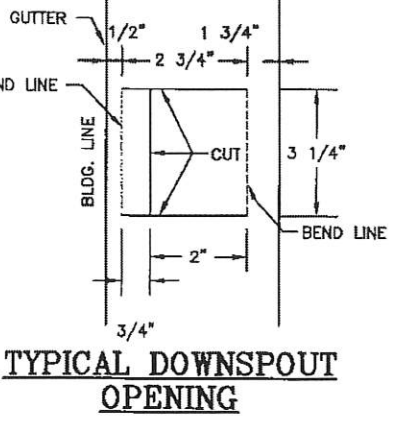
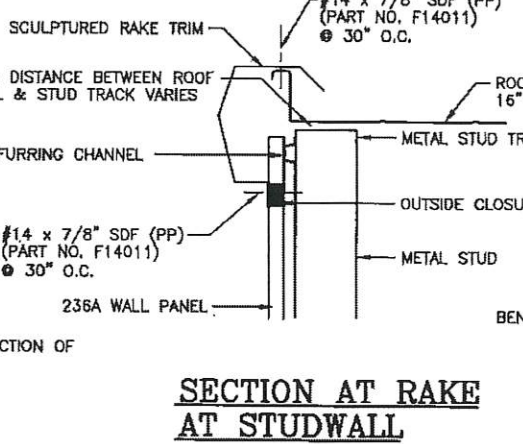
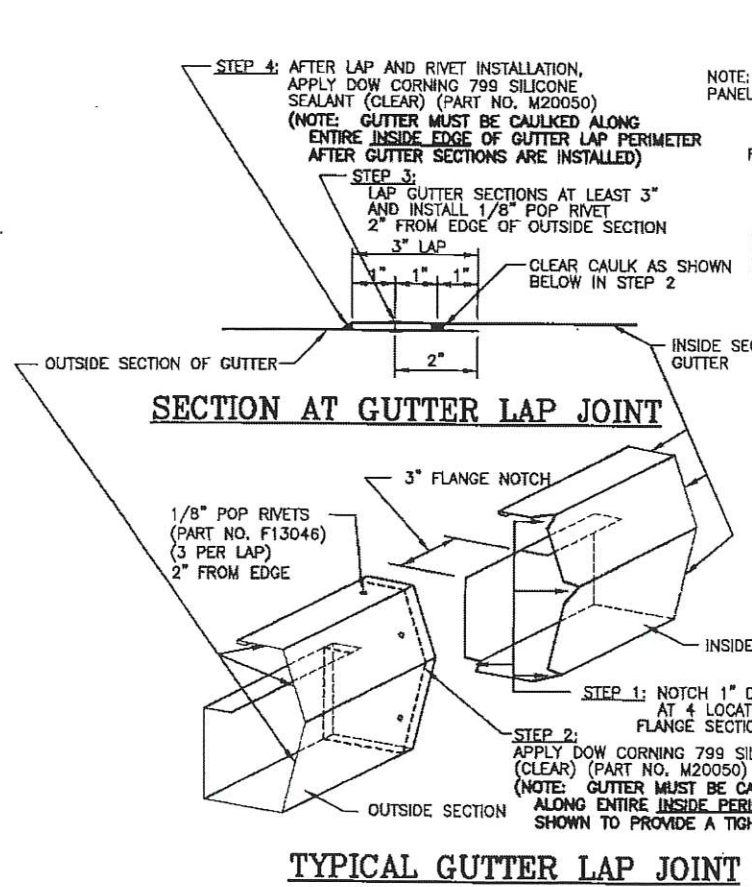


SHEET TITLE: <i>Sculptured Rake Trim, Extended Gutters and Downspouts</i>		
DRAWN BY: CJG	APPROVED BY:	DRAWING NUMBER: ERC505X
SCALE: NTS	DATE: 4/7/98	





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



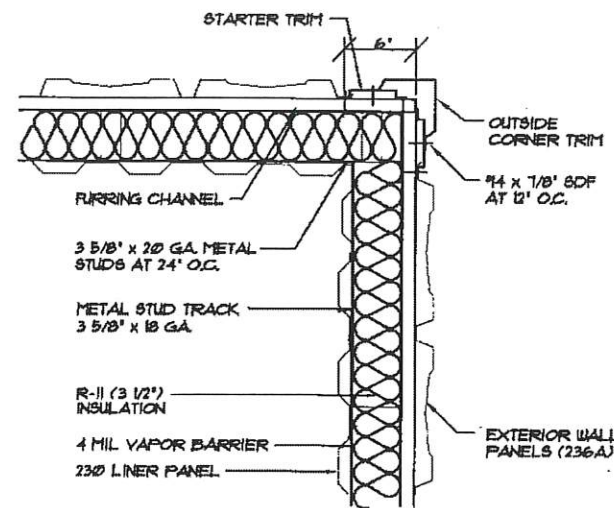
NOTE: SHOWN FOR A 3\"/>

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

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

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

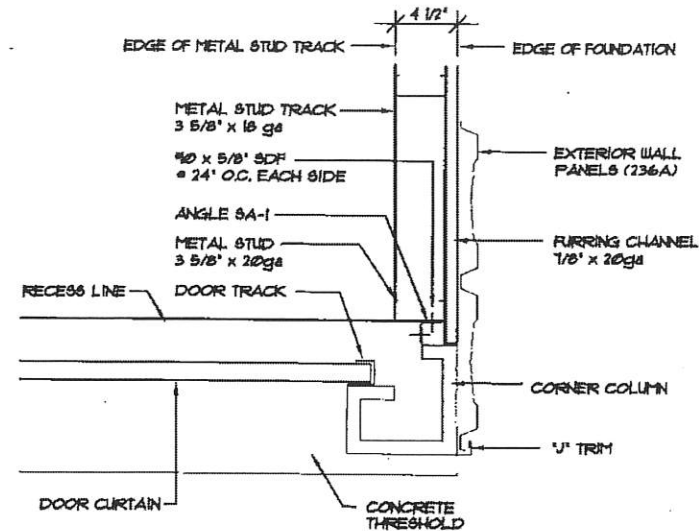
DRAWN BY: CJG      APPROVED BY:      DRAWING NUMBER: ERC506X  
 SCALE: NTS      DATE: 4/7/98



**INSULATED STUDWALL CORNER DETAIL**

**A**  
ERC600

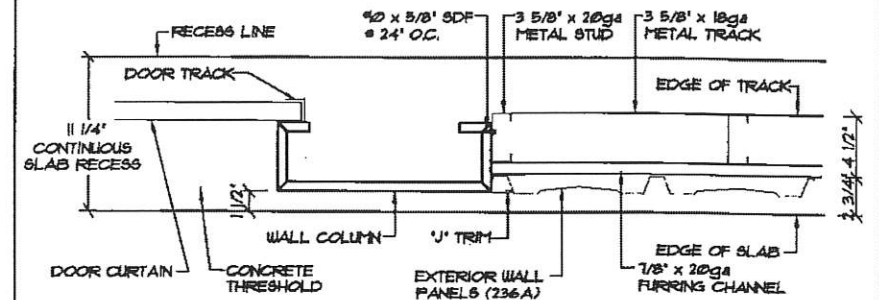
NOT TO SCALE



**STUDWALL CONSTRUCTION @ CORNER COLUMN**

**C**  
ERC600

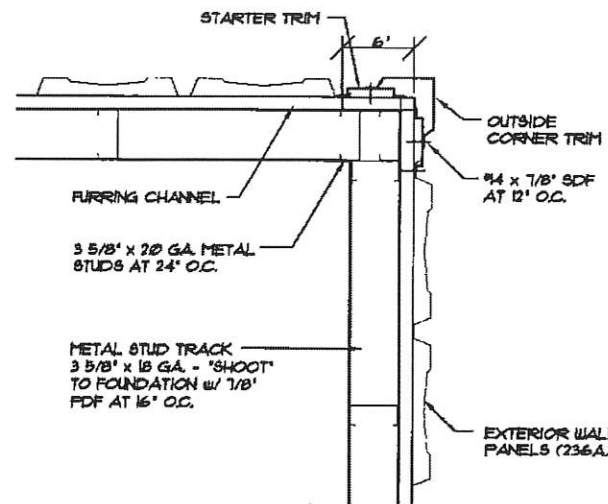
NOT TO SCALE



**STUDWALL CONSTRUCTION @ WALL COLUMN IN RECESS**

**E**  
ERC600

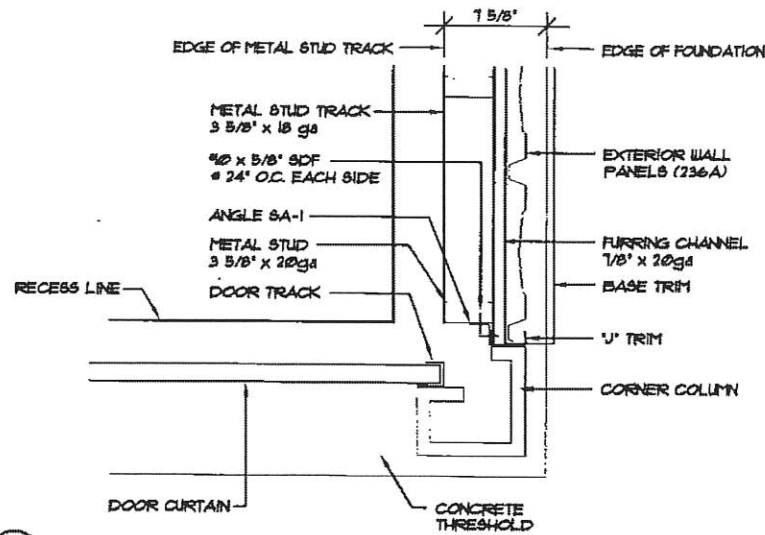
NOT TO SCALE



**UNINSULATED STUDWALL CORNER DETAIL**

**B**  
ERC600

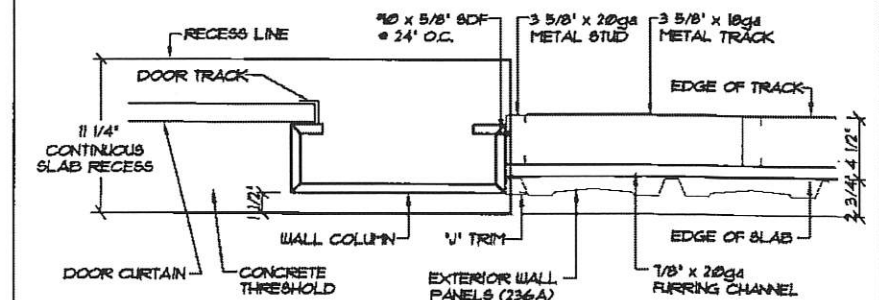
NOT TO SCALE



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

**D**  
ERC600

NOT TO SCALE



**STUDWALL CONSTRUCTION @ WALL COLUMN**

**F**  
ERC600

NOT TO SCALE

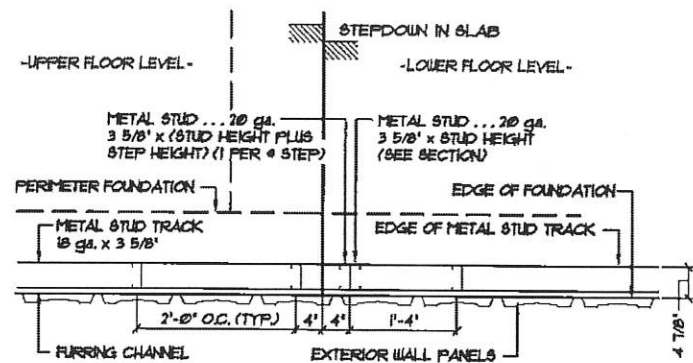


REVISIONS	DATE	BY
▲ REVISED STUD SIZE	8/29/02	BAM

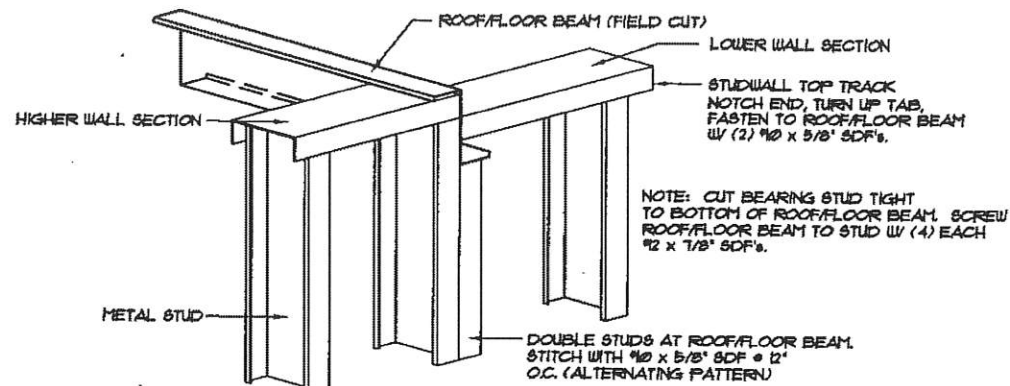


228 COMMERCE BLVD.  
STATESVILLE, NC 28625  
(800)654-7813

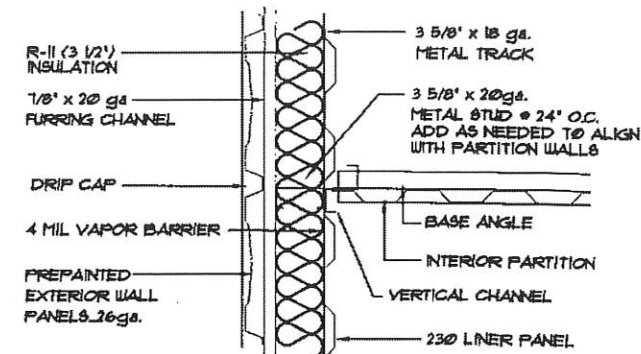
SHEET TITLE: <b>Studwall Details</b>		
DRAWN BY: CJG	APPROVED BY:	DRAWING NUMBER: ERC600X
SCALE: NTS	DATE: 4/14/00	



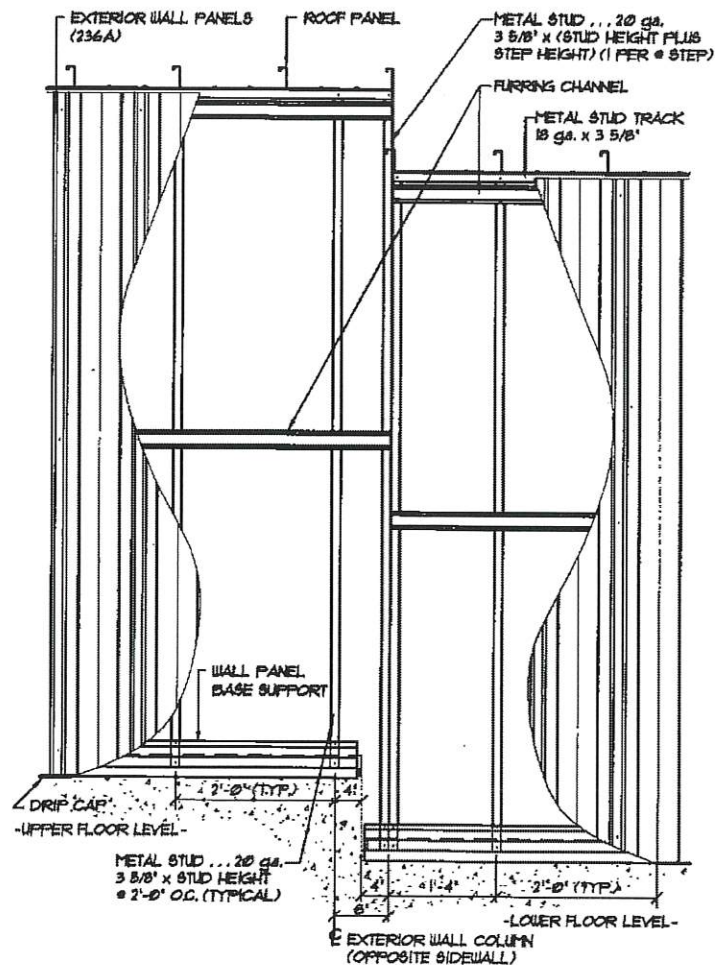
**A** PLAN VIEW OF STUDWALL @ FLOOR STEPDOWN  
NOT TO SCALE



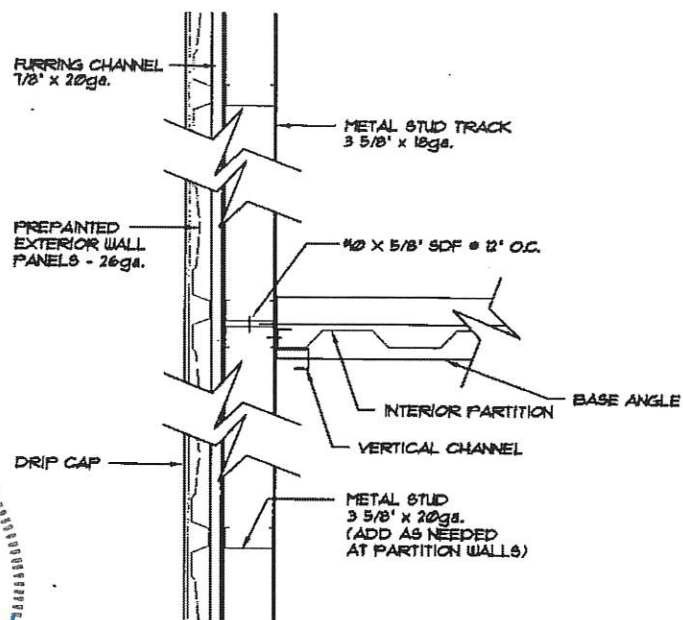
**C** ROOF/FLOOR BEAM @ STUDWALL  
NOT TO SCALE



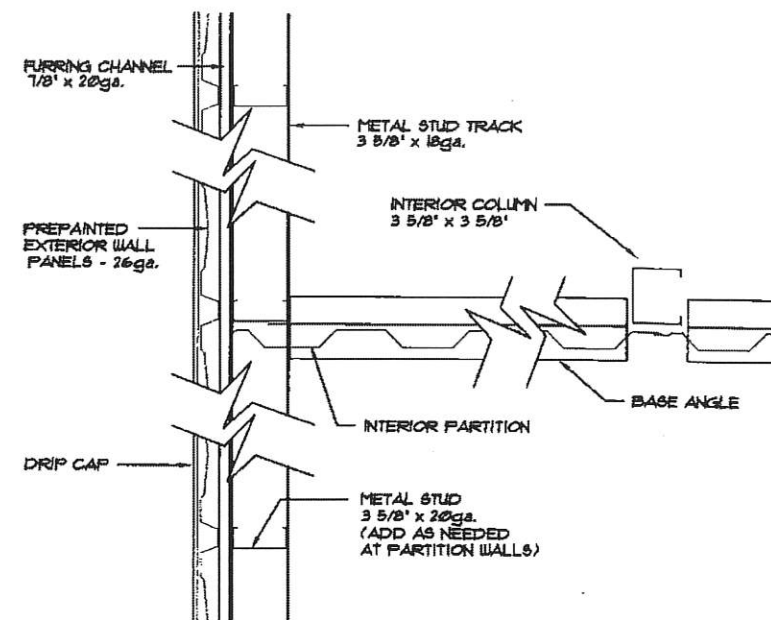
**E** PARTITION INSTALLATION AT INSULATED EXTERIOR STUDWALL  
NOT TO SCALE



**B** ELEVATION @ 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
3	5/1/03	JCM
2	4/17/03	JCM
1	8/29/02	BAM

**BETCO**  
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 • HVAC**  
**INSET/ALCOVE: (ERC 603X & 604X)**  
-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.

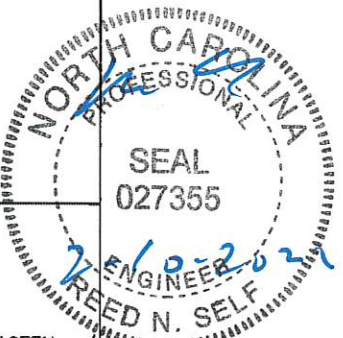
⑩ **EXTERIOR FIRE RESISTANT PARTITION • HVAC: INSET/ALCOVE**  
**UL • U423 . . . (1 HOUR RATED) (LOAD BEARING) (ERC 620X & 621X)**  
ONE HOUR FIREWALL CONSTRUCTION:  
-3 5/8" METAL STUDS @ 24" O.C. - 20ga.  
-3 5/8" CONTINUOUS FLOOR AND CEILING TRACK - 18ga. - FASTEN w/  
3/8" x 3" WEDGE ANCHOR (2" MIN. 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.

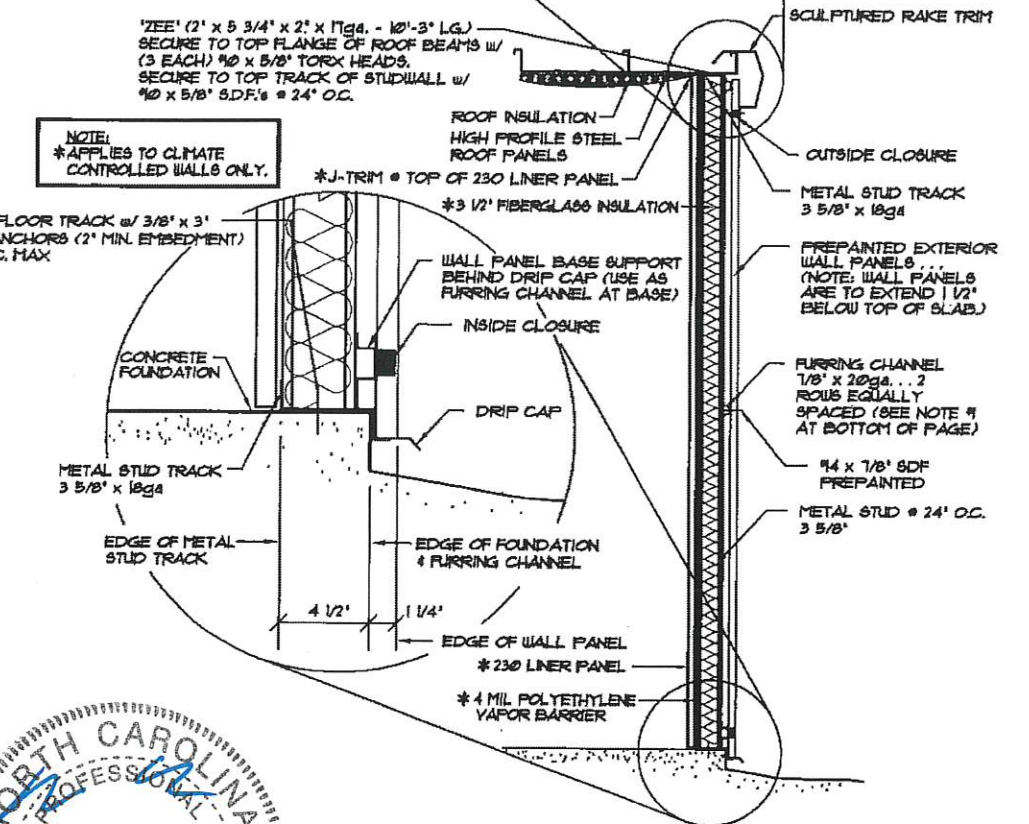
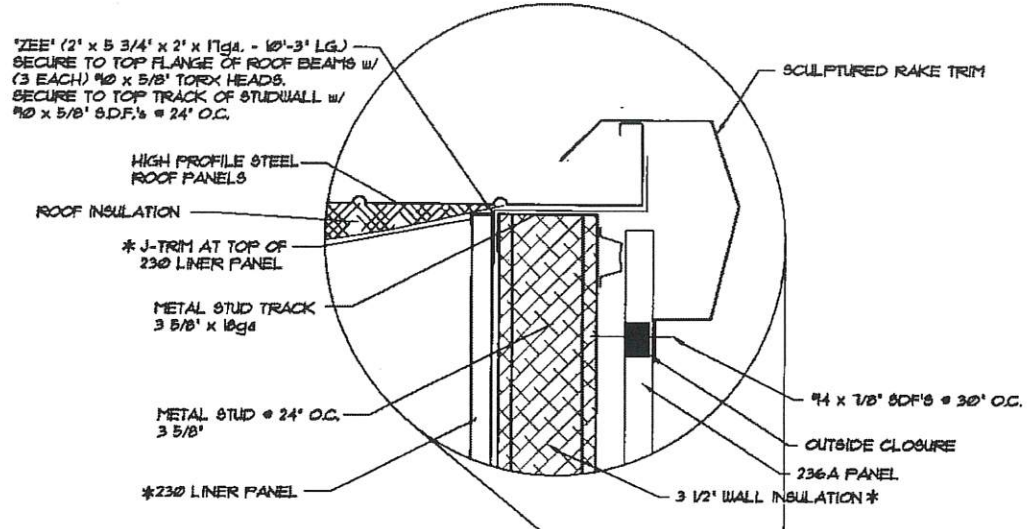
**NOTE #4:** GENERAL STUDWALL CONSTRUCTION:  
A) - ATTACH STUDS WITH #10 x 5/8" SDF'S EACH SIDE  
OF TRACK (4 PER STUD).  
B) - WALLS MUST EXTEND FROM FLOOR TO ROOF DECK  
AND INTO WALL COLUMN CAVITY.  
C) - TOP TRACK MUST FOLLOW SLOPE OF ROOF LINE.



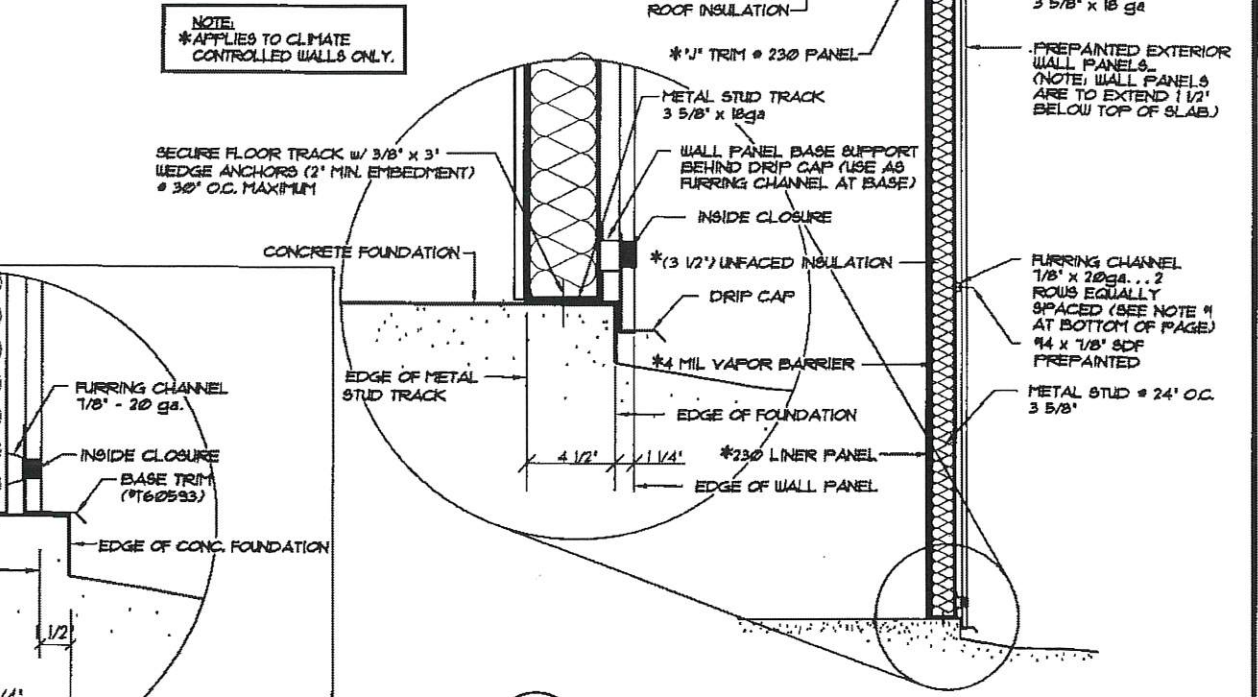
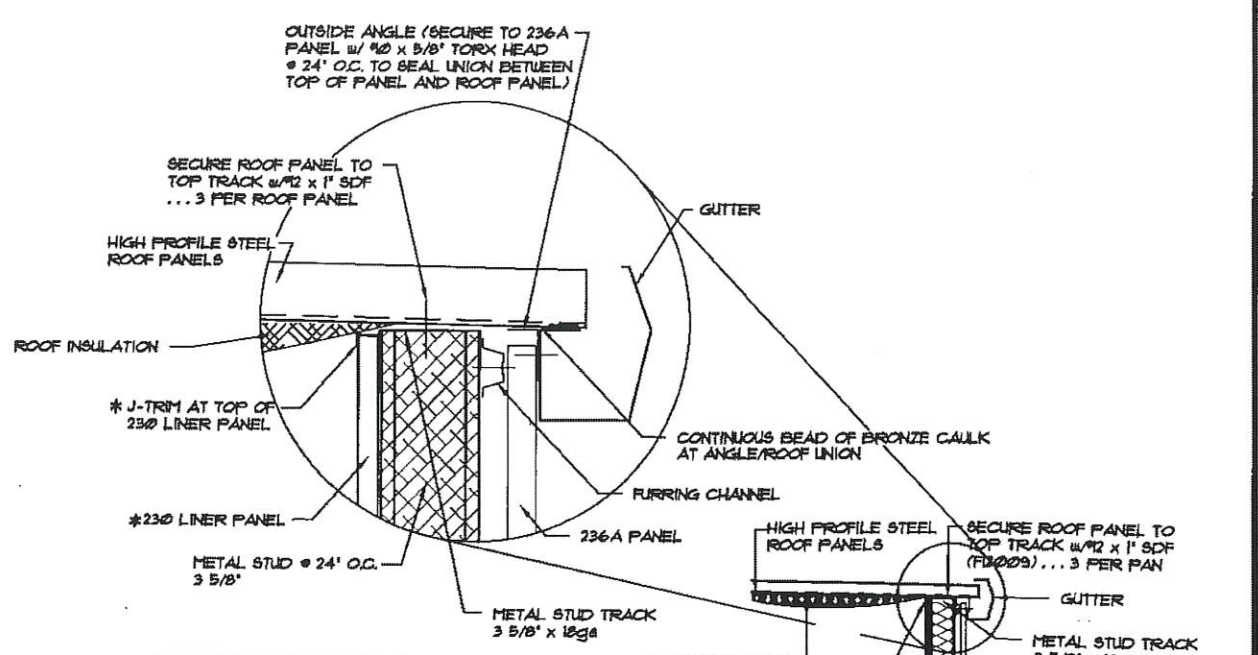
REVISIONS	DATE	BY
REVISED STUD TRACK FASTENERS TO CONCRETE	9/24/10	JCM
REVISED STUD TRACK FASTENERS	1/12/04	JCM
REVISED STUD SIZE	8/29/02	BAM
REVISE LAYERS, GYPSUM BOARD THICKNESS & UL ON NOTES #8, 9, 10	11/16/01	JRB
ADDED ERC 620X & 621X TO NOTE #10	08/28/01	JCM
CHANGED 5/8" TO (2 LAYERS 1/2")	02/21/01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

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

SHEET TITLE: <b>Studwall Notes</b>		
DRAWN BY: RS	APPROVED BY:	DRAWING NUMBER: ERC610X
SCALE: NTS	DATE: 11/02/00	



**A** SECTION AT EXTERIOR STUDWALL ENDWALL  
NOT TO SCALE



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

BASE CONDITION FOR STUDWALL IN RECESS



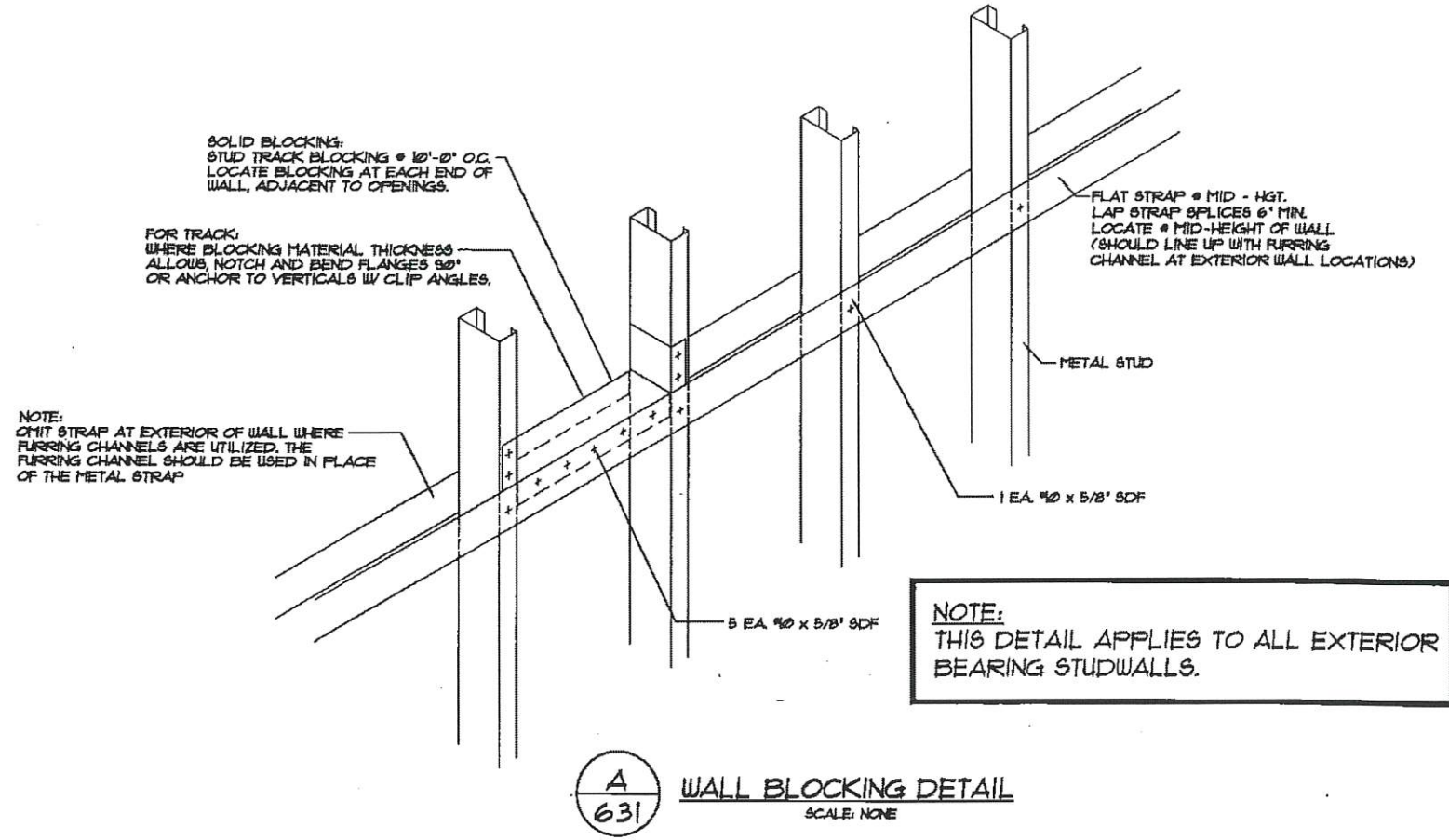
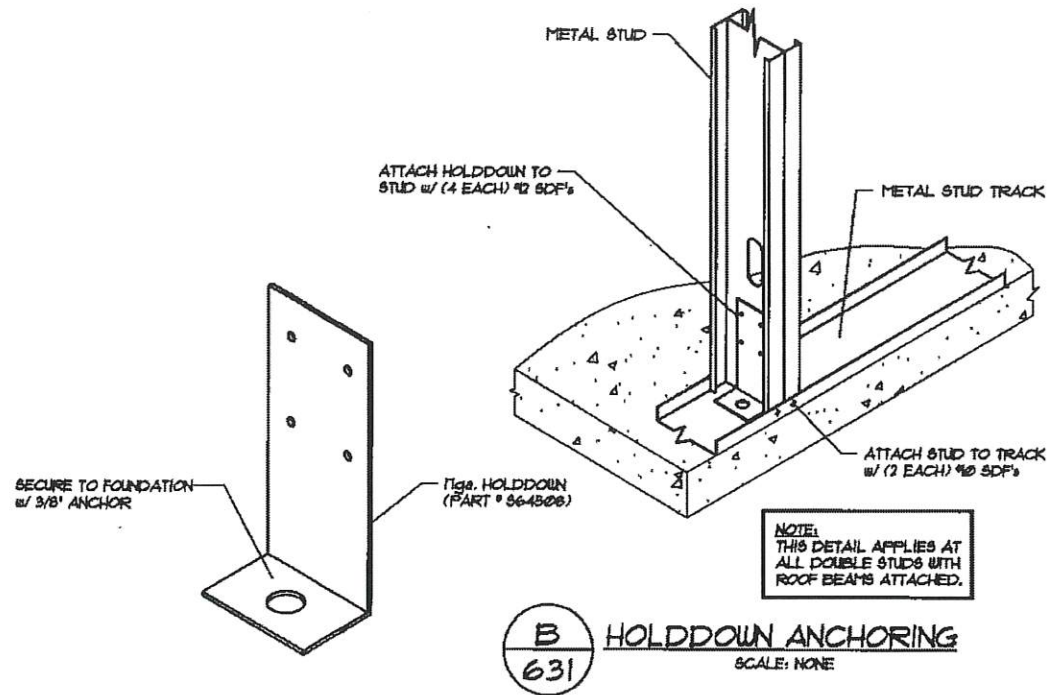
NOTE #1: IF STUDWALL IS GREATER THAN OR EQUAL TO 9'-10 1/2" HGT. 2 EQUALLY SPACED ROWS OF INTERMEDIATE FURRING CHANNELS ARE REQUIRED BETWEEN BASE AND TOP OF STUDWALL.

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

REVISIONS	DATE	BY

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

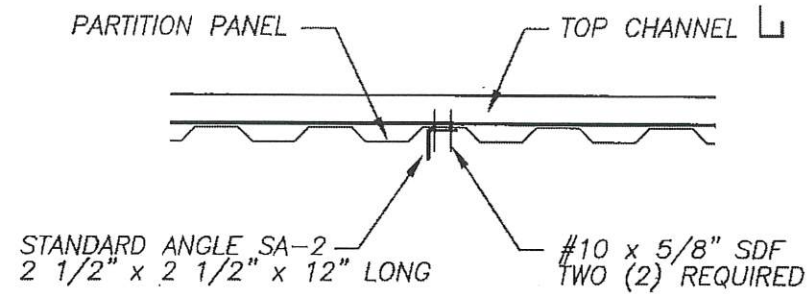
SHEET TITLE: <b>Studwall Sections</b>		
DRAWN BY: JCM	APPROVED BY:	DRAWING NUMBER: ERC630X
SCALE: NTS	DATE: 11/8/11	



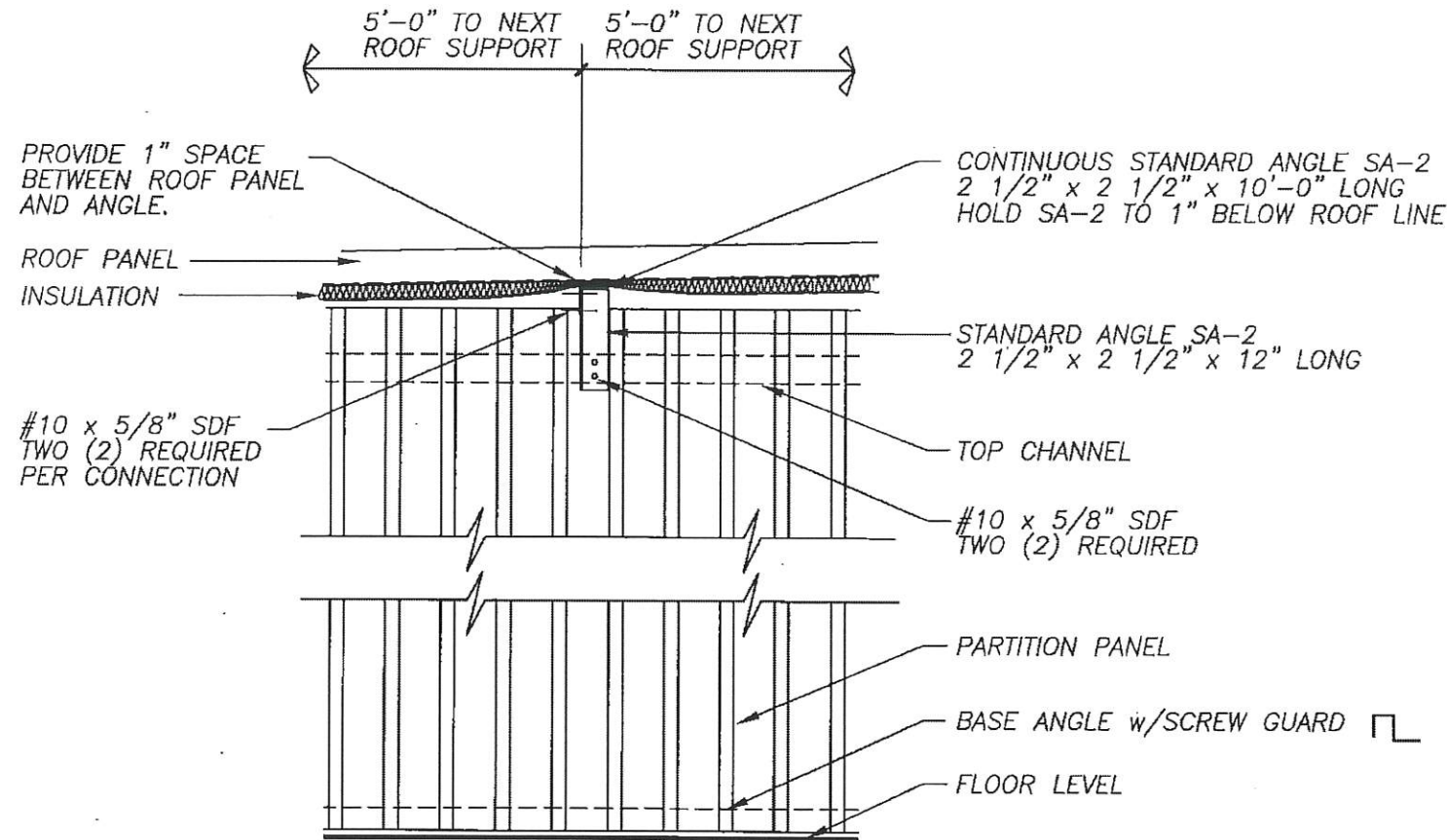
REVISIONS	DATE	BY

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

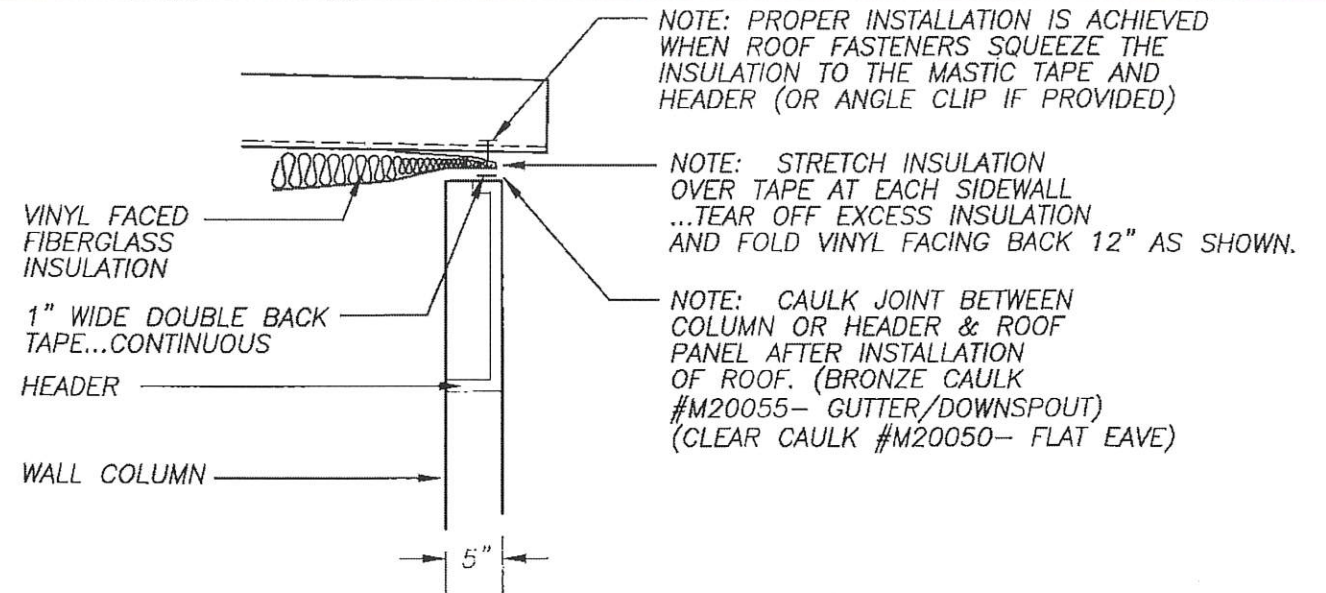
SHEET TITLE: <b>Studwall Details</b>		
DRAWN BY: JCM	APPROVED BY:	DRAWING NUMBER: ERC631X
SCALE: NTS	DATE: 11/8/11	



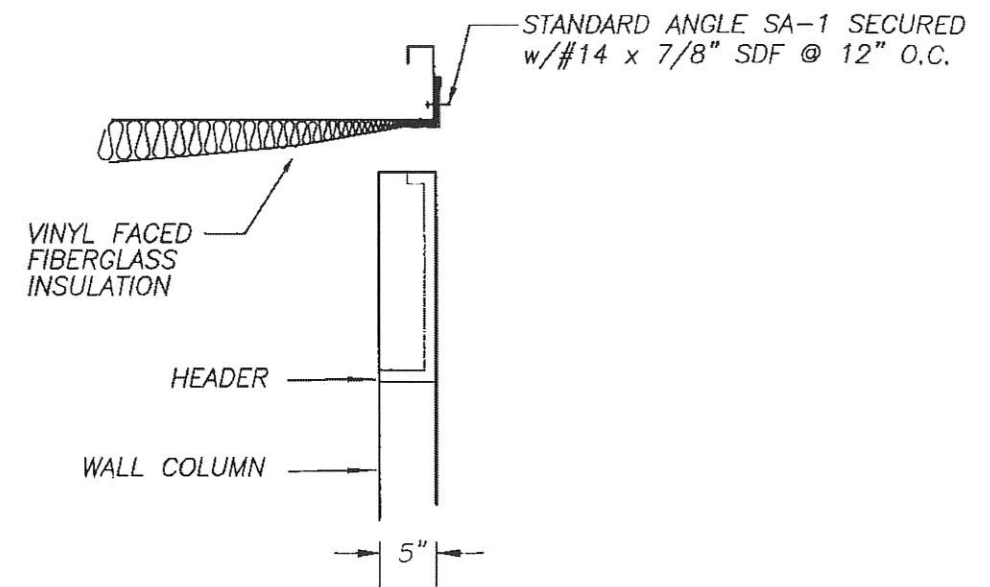
**PLAN VIEW**



**ELEVATION AT INTERMEDIATE INSULATION SUPPORT**



**INSULATION INSTALLATION @ SIDEWALL**



**INSULATION INSTALLATION AT END WALL**

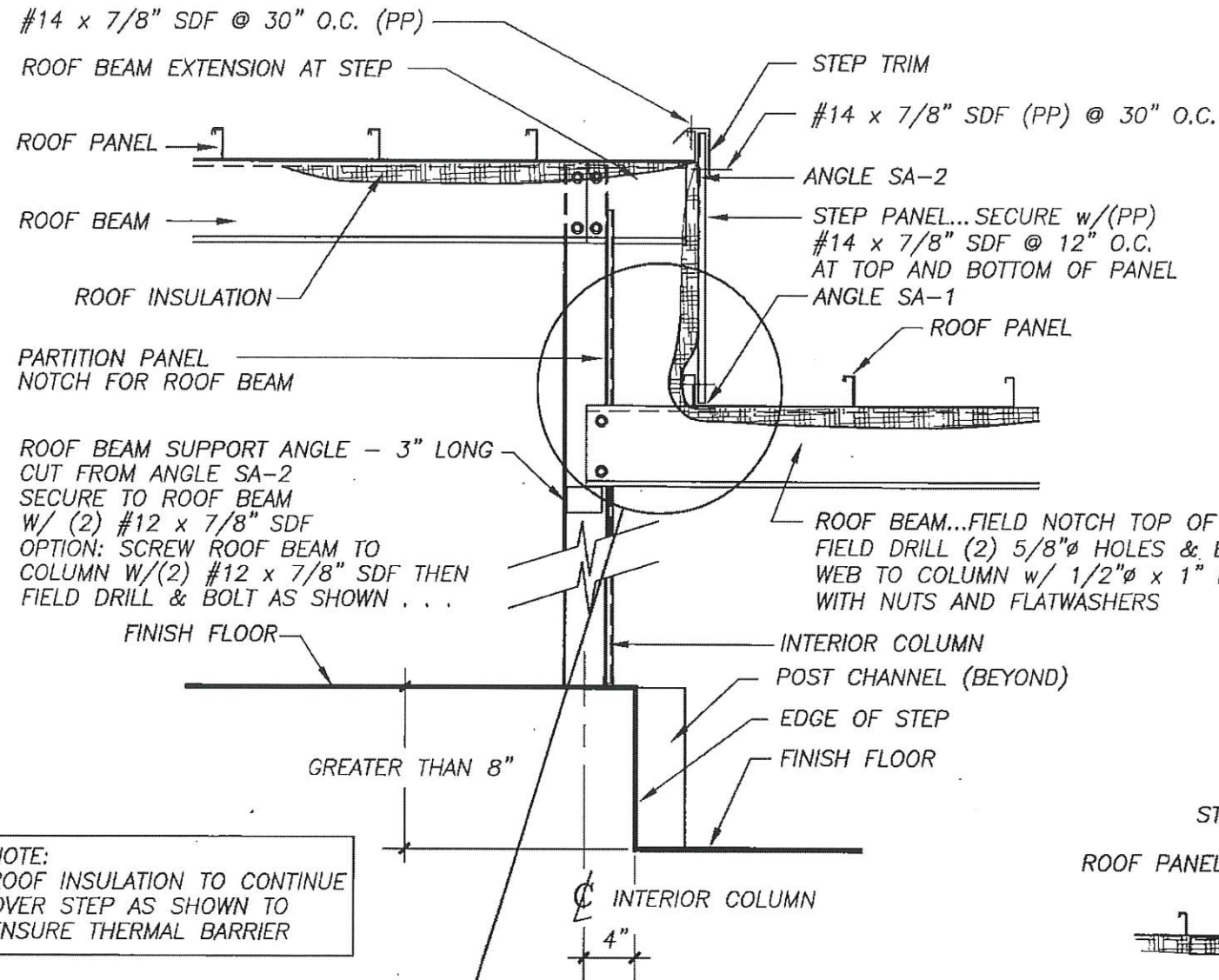


REVISIONS	DATE	BY
3	4/17/03	JCM
2	1/14/03	BAM
1	3-8-99	FOX

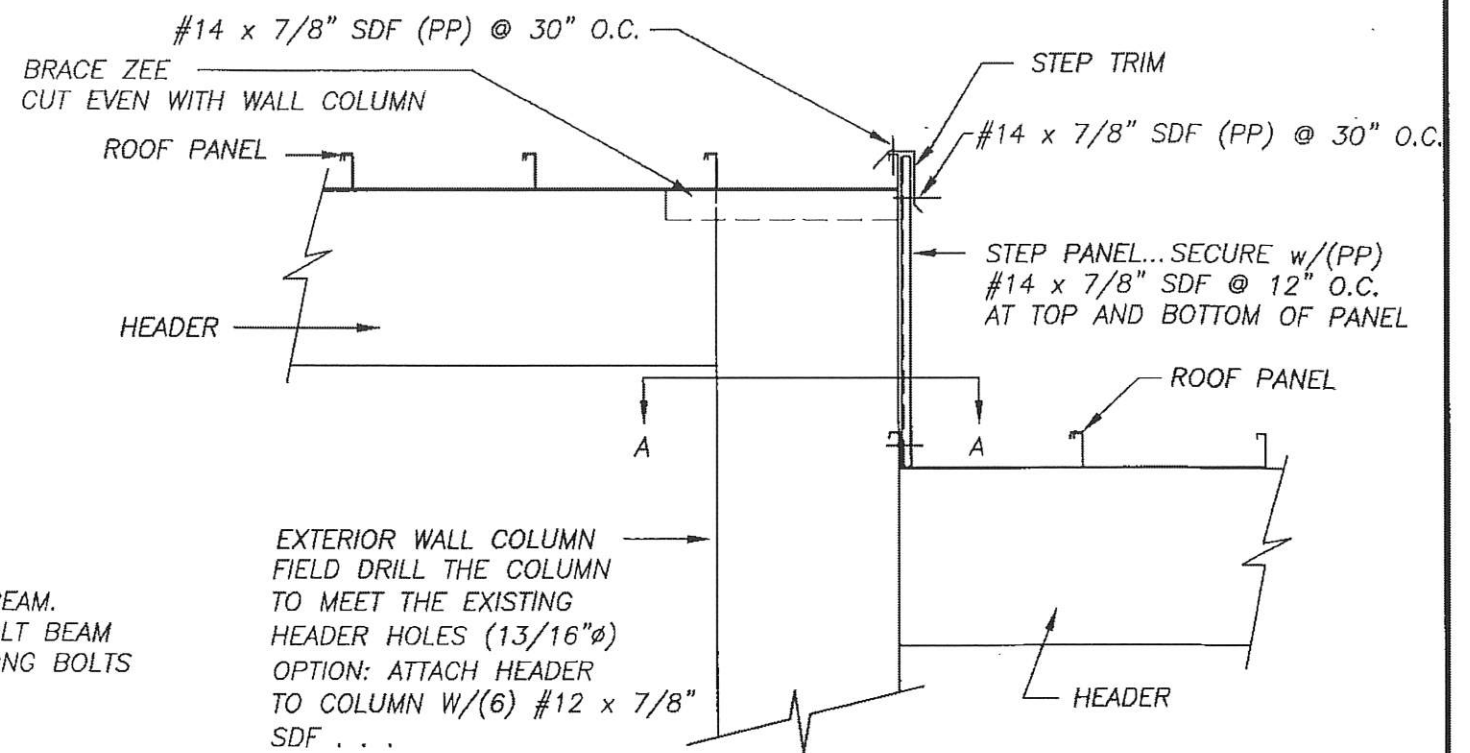
**BETCO**  
 228 COMMERCE BLVD.  
 STATESVILLE, NC 28625  
 (800)654-7813

SHEET TITLE: <b>Insulation installation</b>		
DRAWN BY: J Pope	APPROVED BY:	DRAWING NUMBER: <b>ERC700X</b>
SCALE: NTS	DATE: 6-27-94	

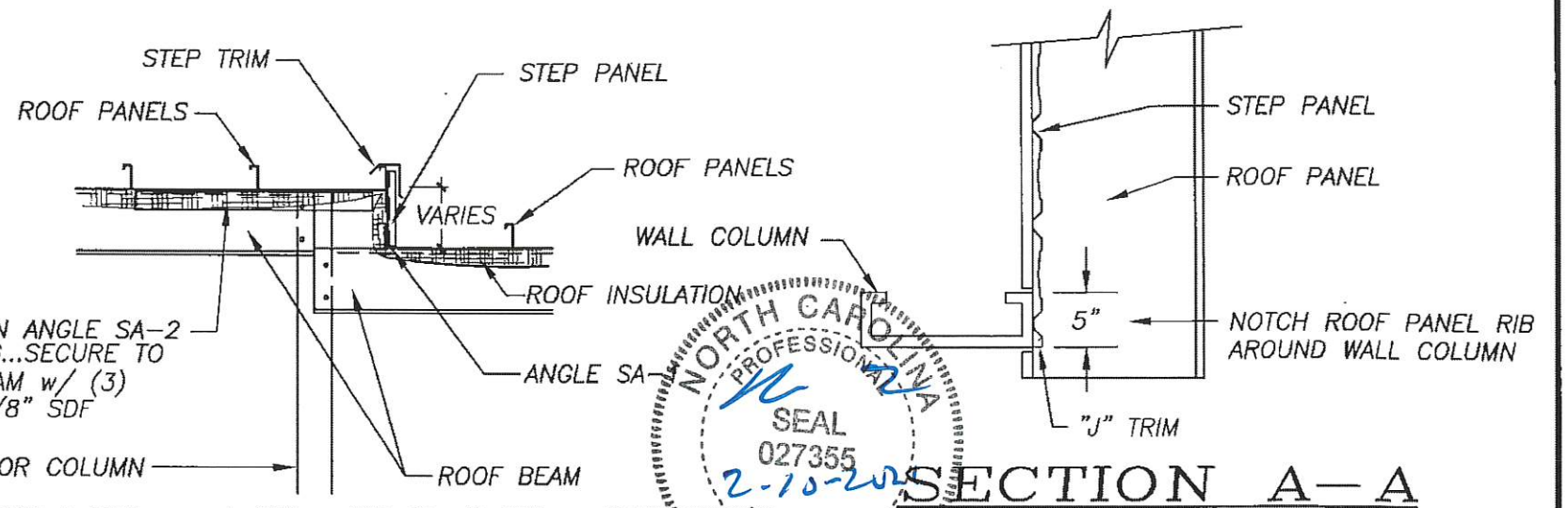




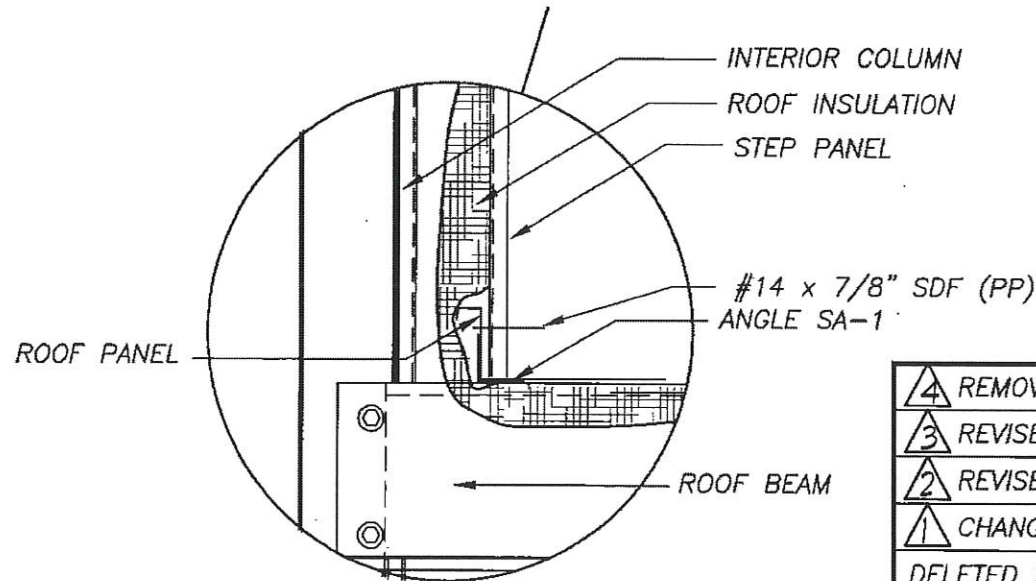
**TYPICAL STEPDOWN SECTION**



**TYPICAL STEPDOWN ELEVATION**



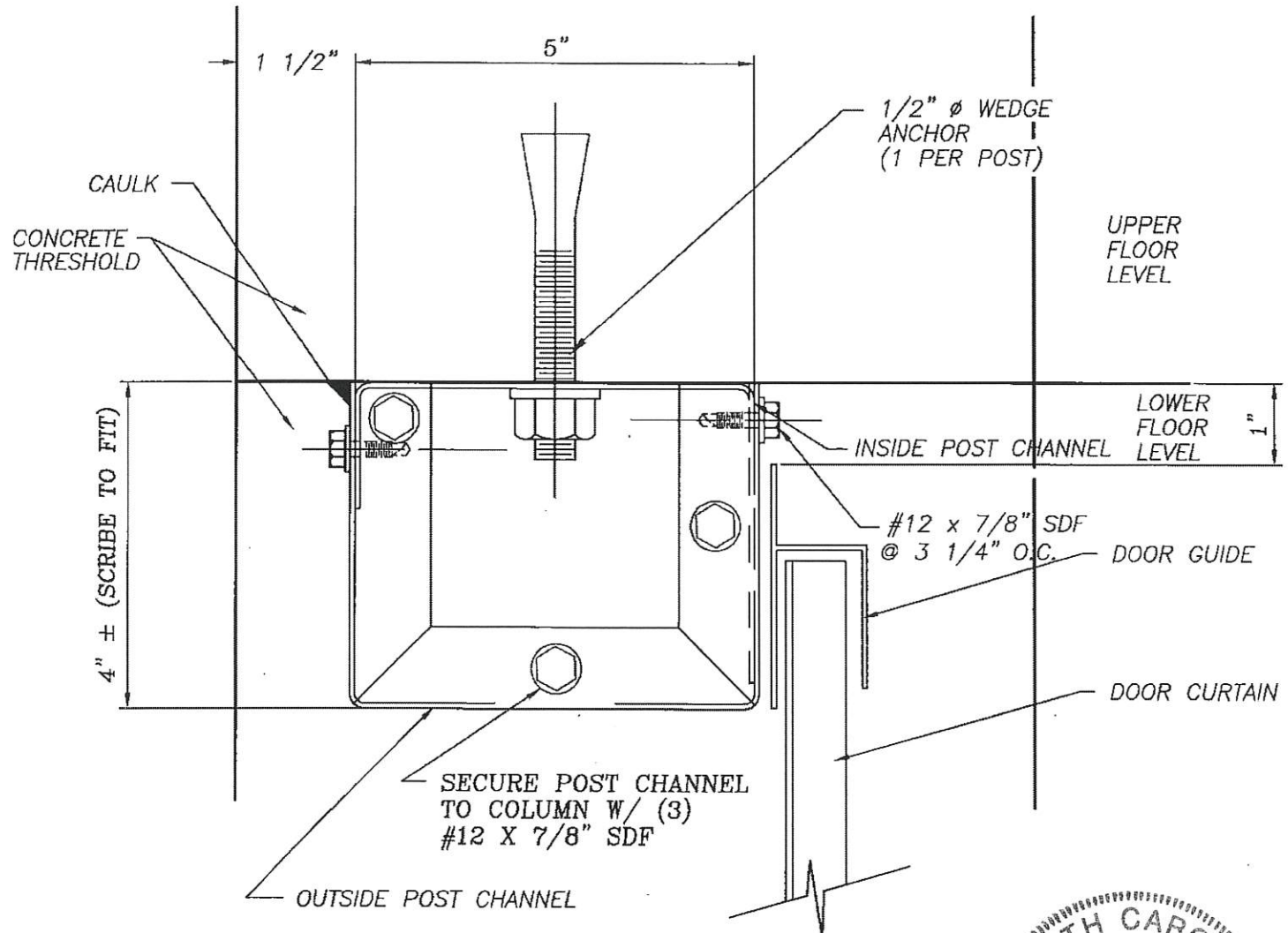
**DETAIL AT ROOF STEP 8" OR LESS**



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

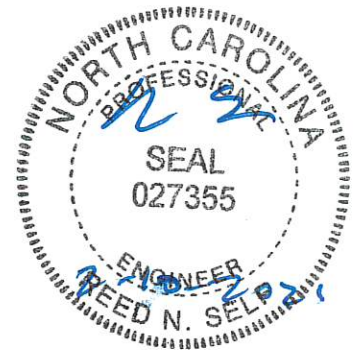
**BETCO**  
 228 COMMERCE BLVD.  
 STATESVILLE, NC 28625  
 (800)654-7813

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	



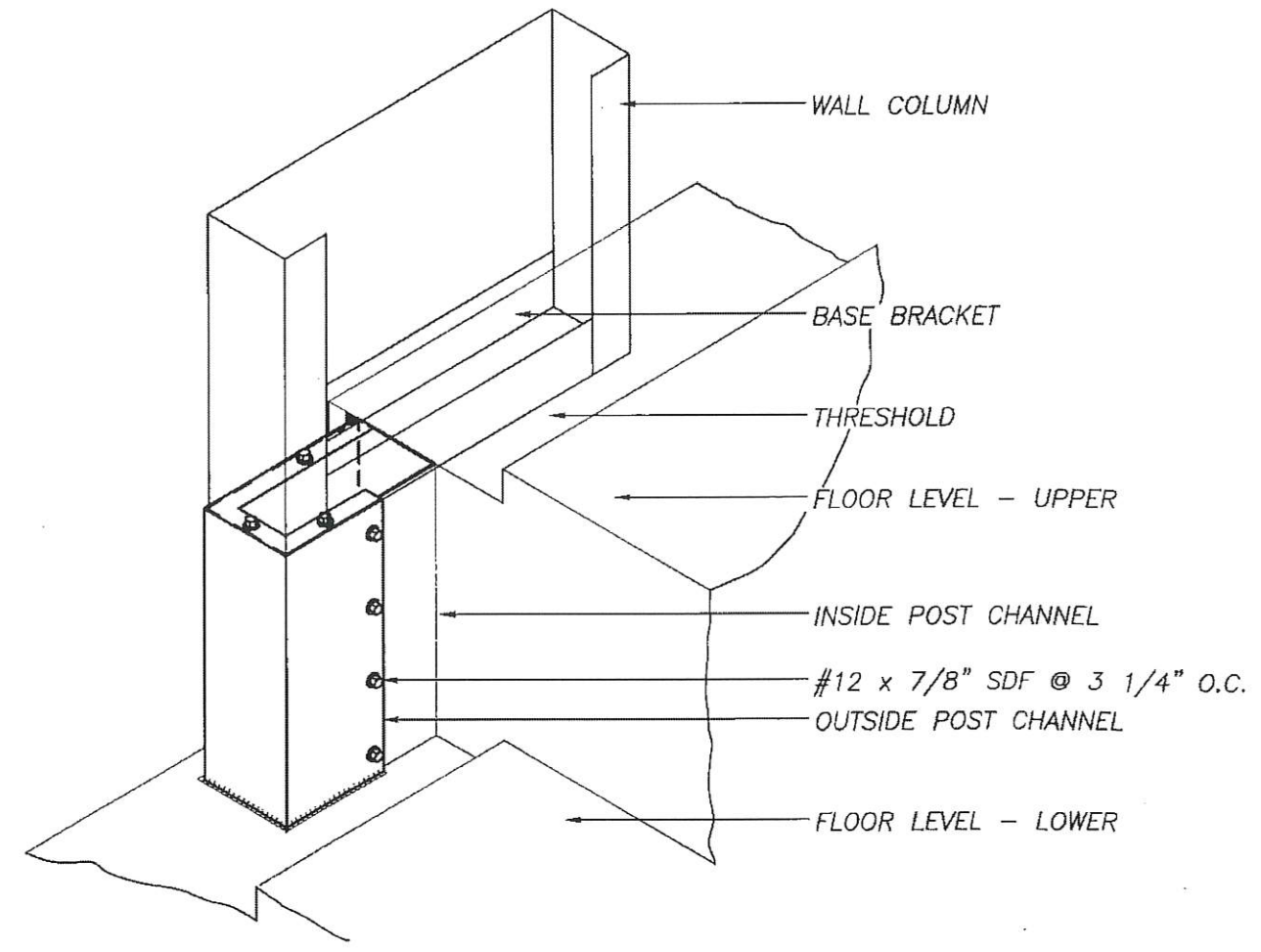
**PLAN VIEW @ POST CHANNEL**

NOTE: POST CHANNEL CAN BE ATTACHED TO EXTERIOR WALL COLUMN AFTER FITTING POST CHANNEL TO CONCRETE AND BEFORE WALL COLUMN IS BOLTED INTO PLACE TO LESSEN THE DIFFICULTY OF INSTALLING #12 SCREWS.



REVISIONS	DATE	BY
2	1/15/03	JCM
1	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.

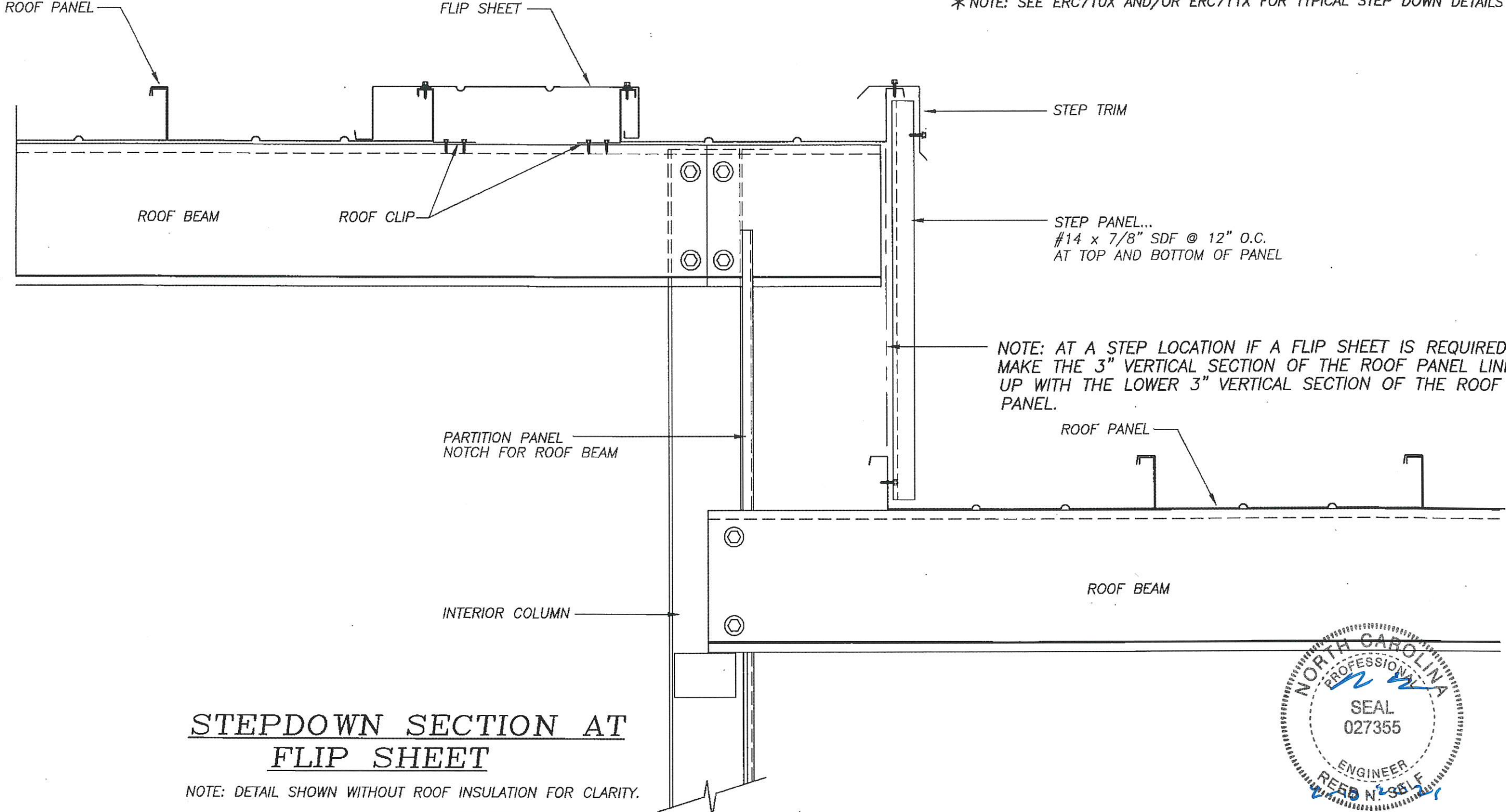


**POST CHANNEL DETAIL AT FLOOR STEP**



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

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



**STEPDOWN SECTION AT  
FLIP SHEET**

NOTE: DETAIL SHOWN WITHOUT ROOF INSULATION FOR CLARITY.



REVISIONS	DATE	BY

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

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