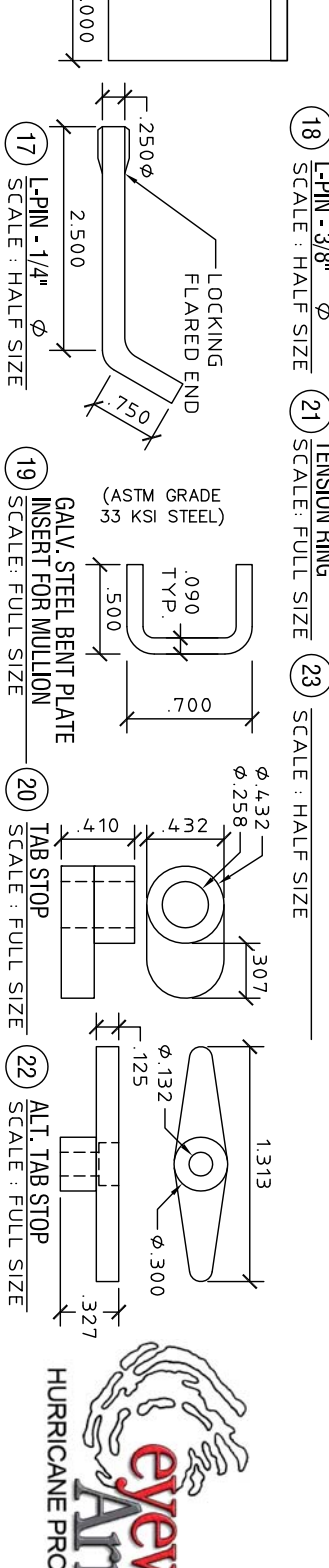
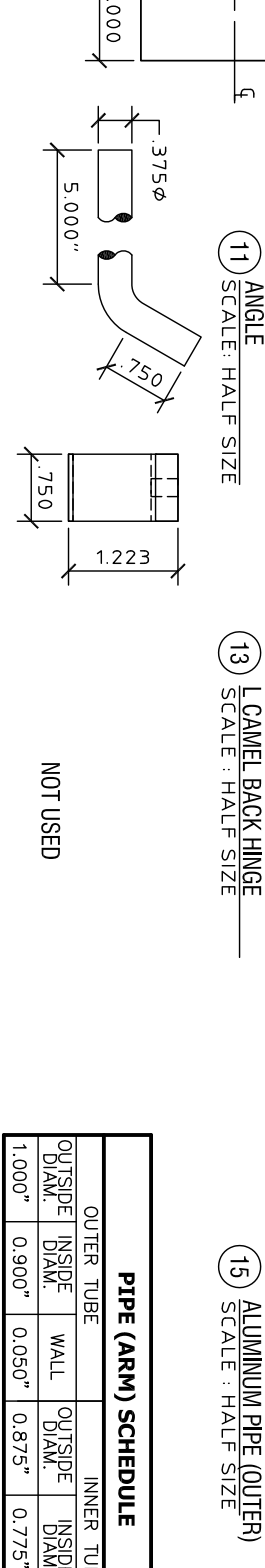
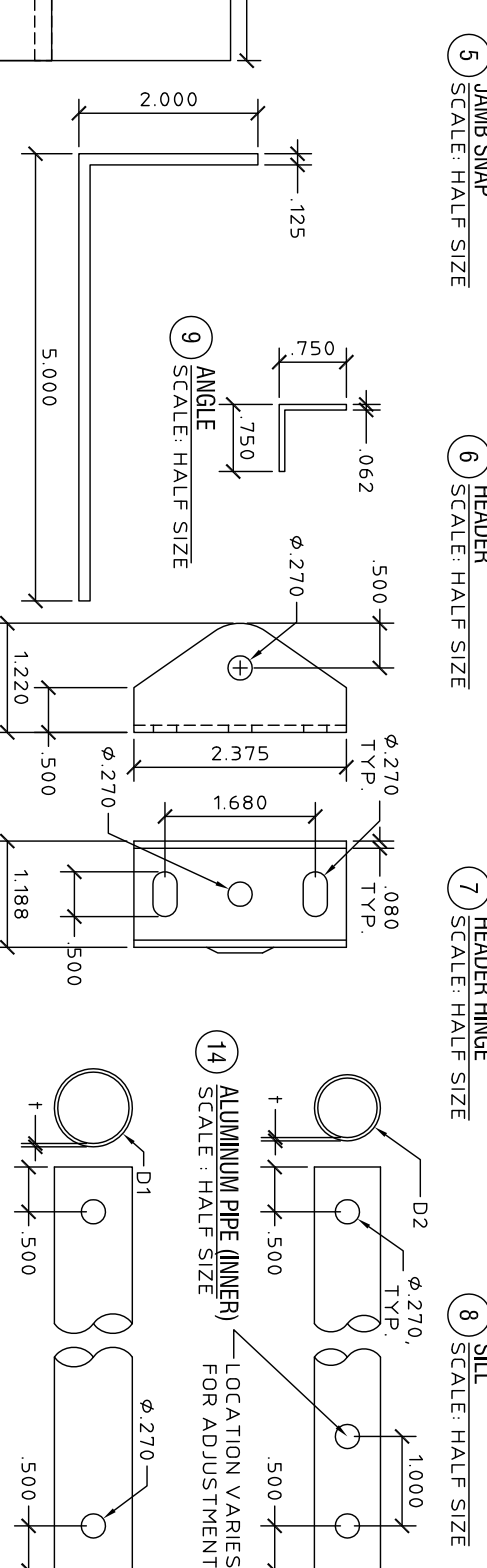
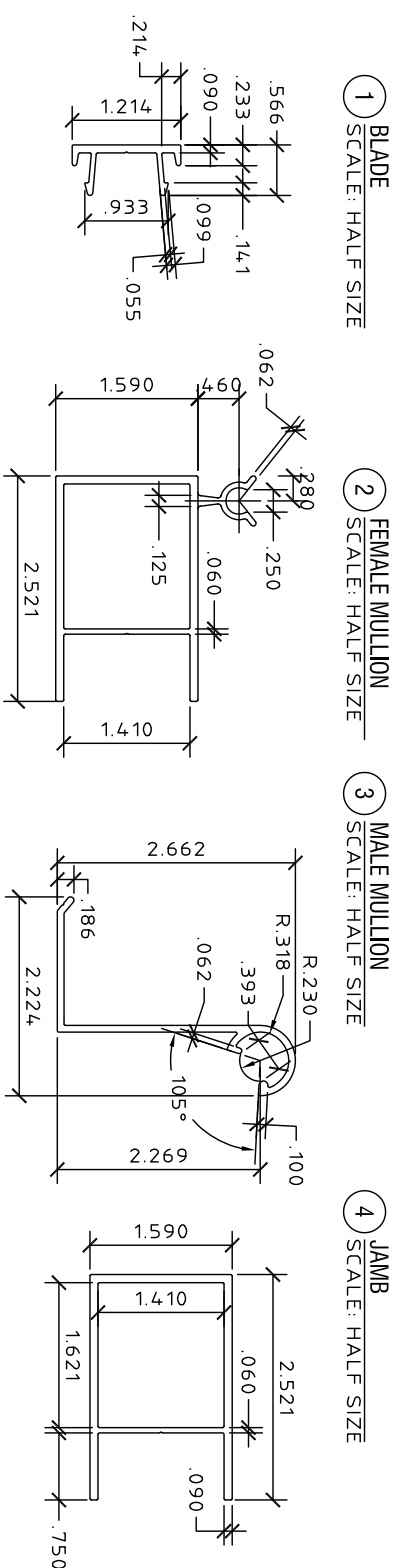
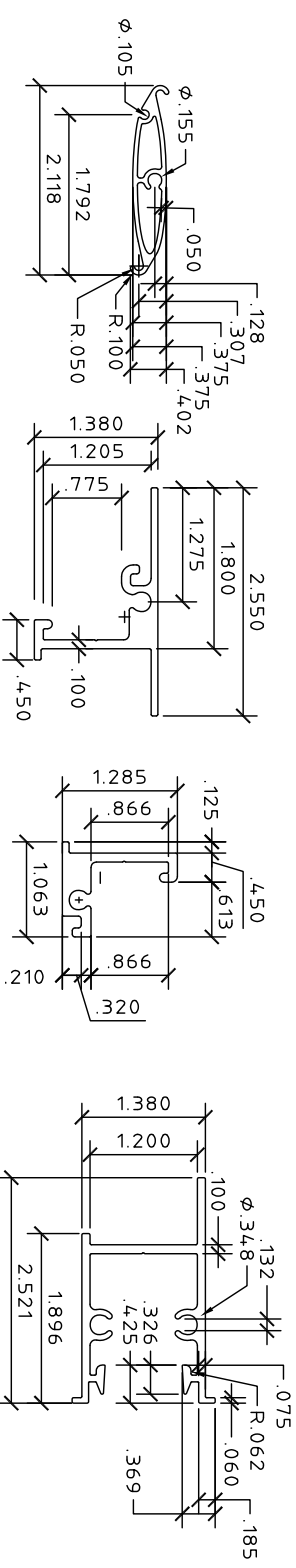


GENERAL NOTES:

1. THESE PRODUCT EVALUATION DOCUMENTS REPRESENT A SHUTTER SYSTEM DESIGNED AND TESTED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE. THIS PRODUCT IS NOT SUITABLE FOR USE IN THE HIGH VELOCITY HURRICANE ZONE (HVHZ).
2. THIS SHUTTER SYSTEM HAS BEEN TESTED FOR LARGE MISSILE IMPACT RESISTANCE AND CYCLIC PRESSURE LOADING IN CONFORMANCE WITH ASTM E1996 AND E1886 STANDARDS AND FOR UNIFORM STATIC AIR PRESSURE IN CONFORMANCE WITH ASTM E330 STANDARD. REFERENCED TEST REPORT IS REPORT NO. 0353-0215-04 & NO. 0353-0317-04, PREPARED BY HURRICANE TESTING LABORATORY.
3. NO INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS PRODUCT.
4. DETERMINE THE POSITIVE AND NEGATIVE DESIGN LOADS TO USE WHEN REFERENCING THESE DOCUMENTS IN ACCORDANCE WITH THE GOVERNING CODE. ASCE VERSION AND GOVERNING WIND SPEED AND WIND LOAD CALCULATIONS A DIRECTIONALITY FACTOR OF $K_d = 0.85$ SHALL BE USED.
5. THESE PRODUCT EVALUATION DOCUMENTS ARE PREPARED BY THE PRODUCT ENGINEER AND ARE GENERIC. THEY DO NOT INCLUDE INFORMATION PREPARED FOR A SPECIFIC SITE, FLORIDA ADMINISTRATIVE CODE.
6. USE OF THESE APPROVAL DOCUMENTS SHALL COMPLY WITH CHAPTER 61G15-23 OF THE FLORIDA ADMINISTRATIVE CODE.
7. THESE PRODUCT EVALUATION DOCUMENTS ARE SUITABLE TO BE APPLIED BY THE CONTRACTOR PROVIDED THE CONTRACTOR DOES NOT DEVIATE FROM THE CONDITIONS OF SUPPORTING THE SUPERIMPOSED LOADS.
8. ALTERATIONS OR ADDITIONS TO THIS DOCUMENT ARE NOT PERMITTED.
9. WHEN THE SITE CONDITIONS DEVIATE FROM THESE APPROVAL DOCUMENTS, THE BUILDING OFFICIAL MAY ELECT ONE OF THE FOLLOWING OPTIONS:
 - A) REQUIRE THAT SITE SPECIFIC DOCUMENTS BE PREPARED, SIGNED, DATED AND SEALED BY A LICENSED ENGINEER OR REGISTERED ARCHITECT, WHICH DETAIL AND JUSTIFY THE DEVIATION, AS A CONDITION TO THE BUILDING OFFICIAL GRANTING HIS/HER APPROVAL.
10. EACH SHUTTER SHALL BE HAVE A LABEL THAT READS AS FOLLOWS:
 TOWN & COUNTRY INDUSTRIES
 FT LAUDERDALE, FL
 ASTM MISSILE LEVEL D
 FBC APPROVED, ASTM E1886, E1996 & E330
11. MAXIMUM ALLOWABLE DESIGN PRESSURE = ± 50.0 P.S.F. FOR 8'-0" MAX. SPANS.
12. ALL BOLTS AND WASHERS SHALL BE GALVANIZED OR STAINLESS STEEL WITH A MINIMUM TENSILE STRENGTH OF 60 K.S.I. U.O.N.
13. ALL EXTRUSIONS SHALL BE 6063-T6 ALUMINUM ALLOY, U.O.N.
14. SHUTTER & BLADES MUST BE CLOSED & LOCKED FOR WIND AND IMPACT PROTECTION. DESIGN PRESSURES IN THE OPEN POSITION ARE BASED ON ASCE 7 (A WIND SPEED OF 75 MPH. IN THE OPEN POSITION), AND SHALL NOT EXCEED ± 18 P.S.F. WITHOUT SITE SPECIFIC ENGINEERING.
15. THE FOLLOWING LABEL MUST BE ADHERED TO THE UNDERSIDE OF EACH BAHAMA SHUTTER. THE LABEL MUST BE MADE TO BE PERMANENT:
 SHUTTER AND LOWERS TO BE CLOSED AND LOCKED
 WHEN HURRICANE WARNINGS ARE ISSUED.

BAHAMA SHUTTER



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Professional Engineer
 W. J. Knezevich
 No. 10983
 Florida exp. No. 27989

Scale: NOTED
 Date: 10/15/2008
 Project No.: 08-355

08-355
 10/15/2008

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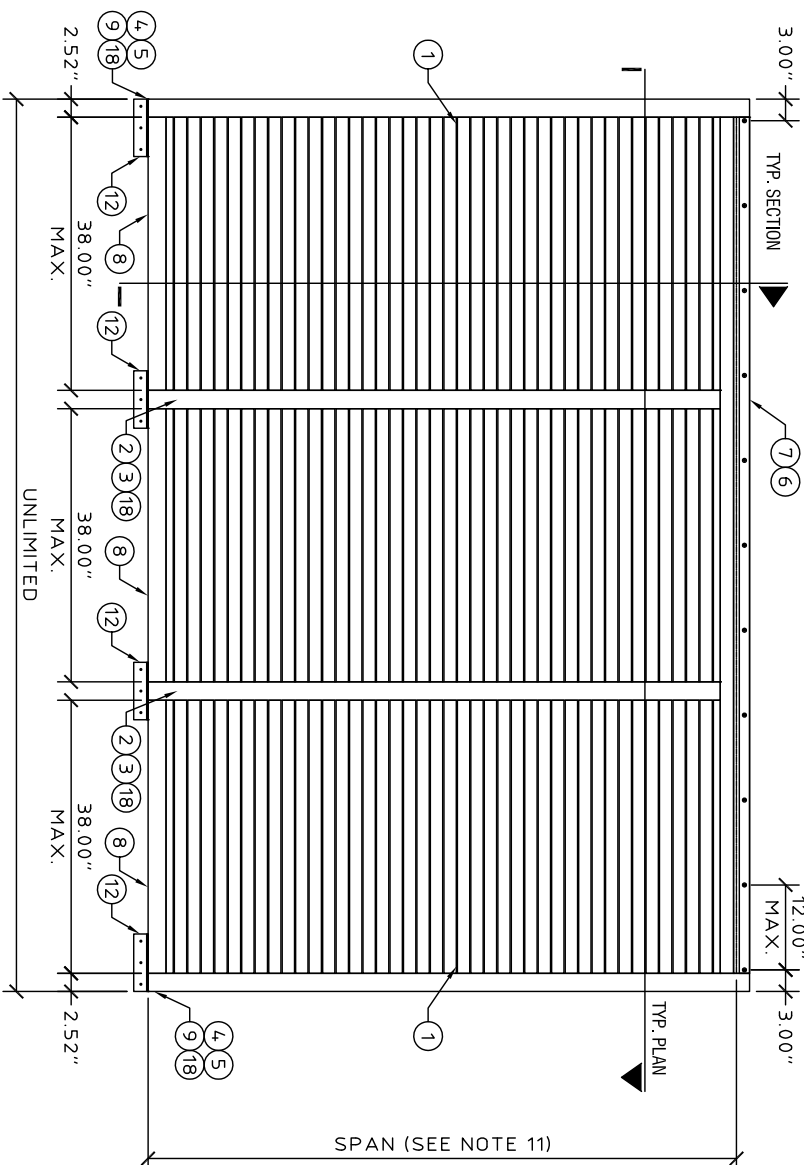
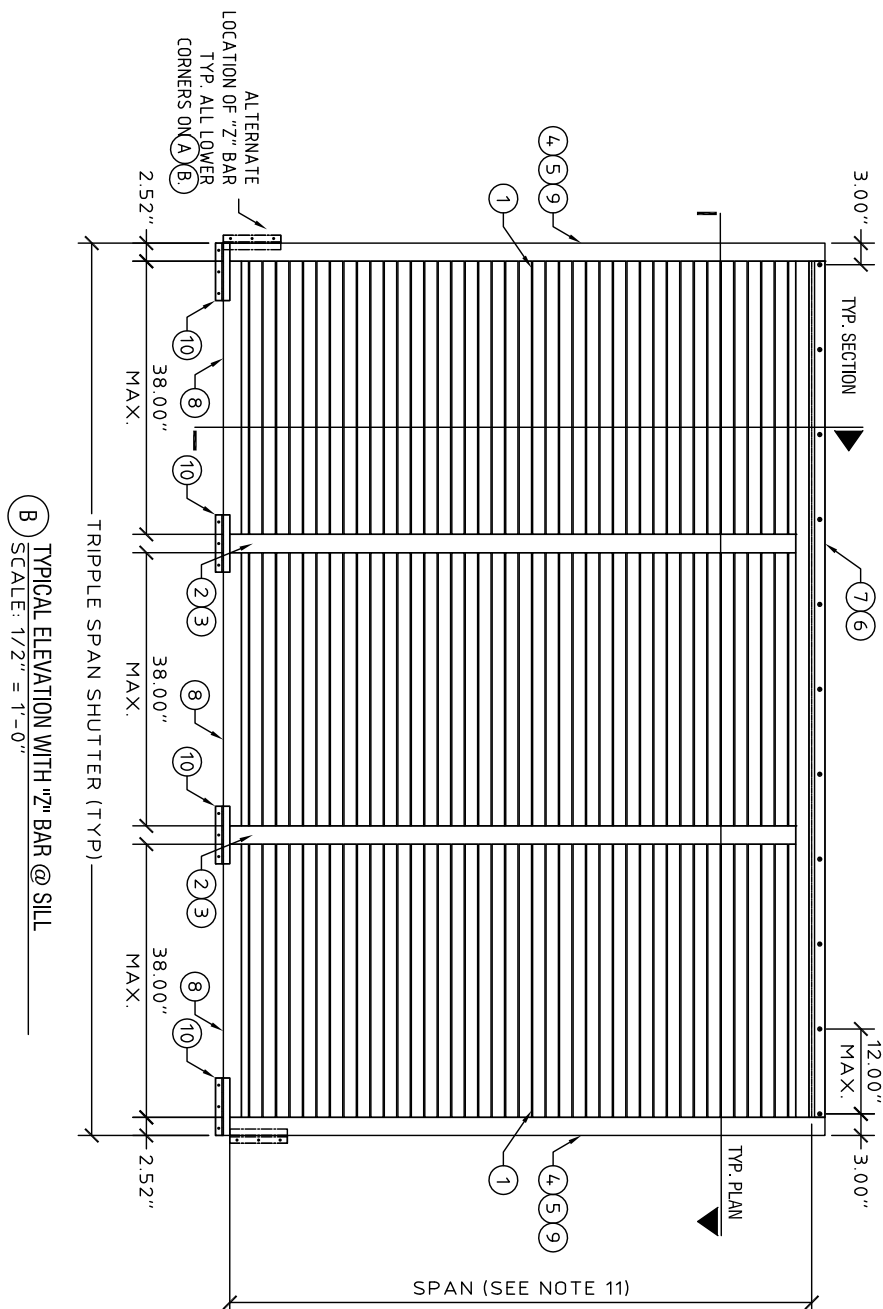
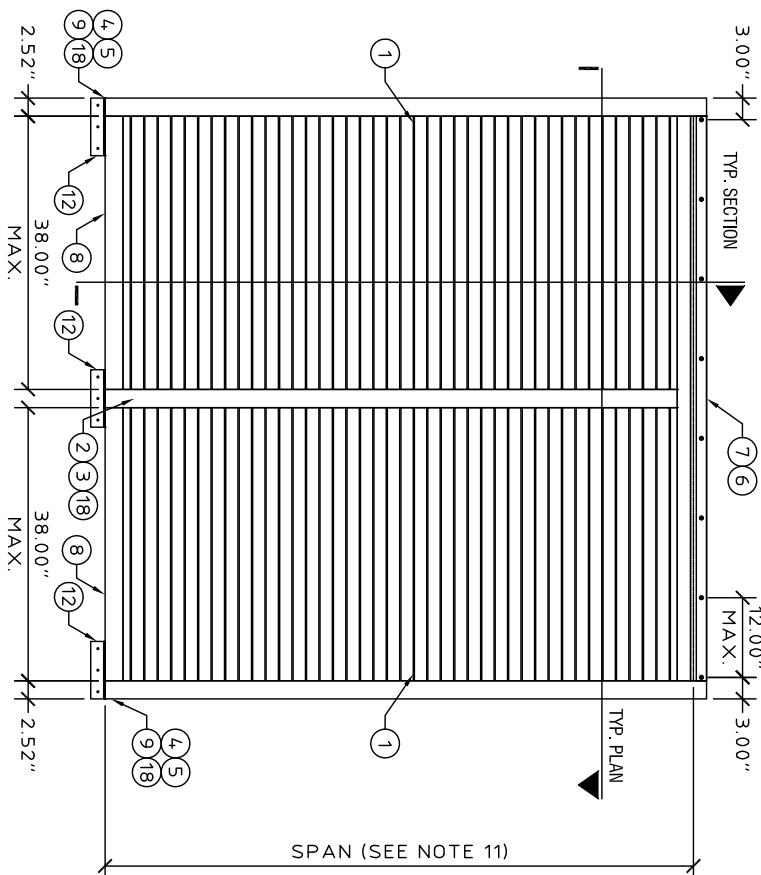
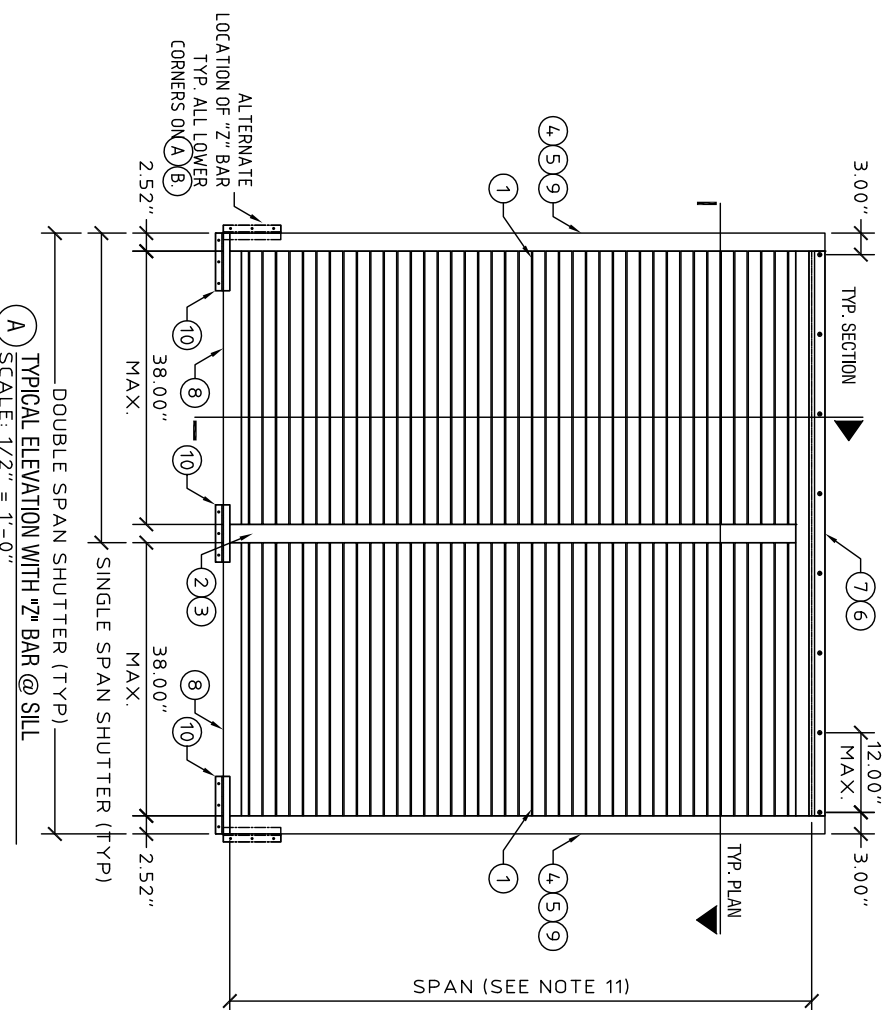
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BAHAMIA SHUTTER



C TYPICAL ELEVATION WITH ANGLE @ SILL
SCALE: 1/2" = 1'-0"

D TYPICAL ELEVATION WITH ANGLE @ SILL
SCALE: 1/2" = 1'-0"

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V.J. Knezevich
Professional Engineer
No. 10983
Florida - COA No. 27989

Project No. 08-355
Date: 10/15/2008
Scale: AS NOTED

PAGE 2 of 4

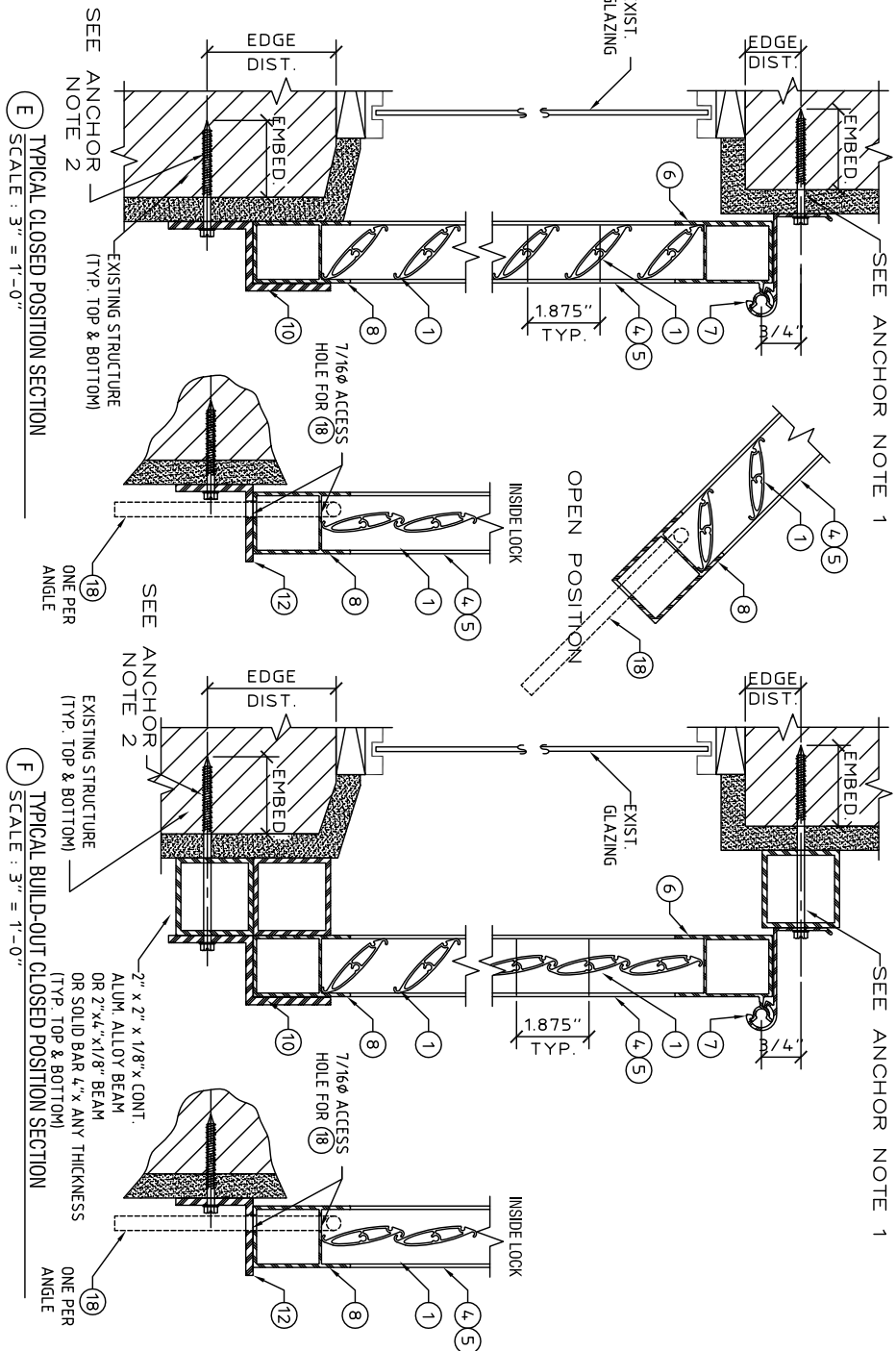
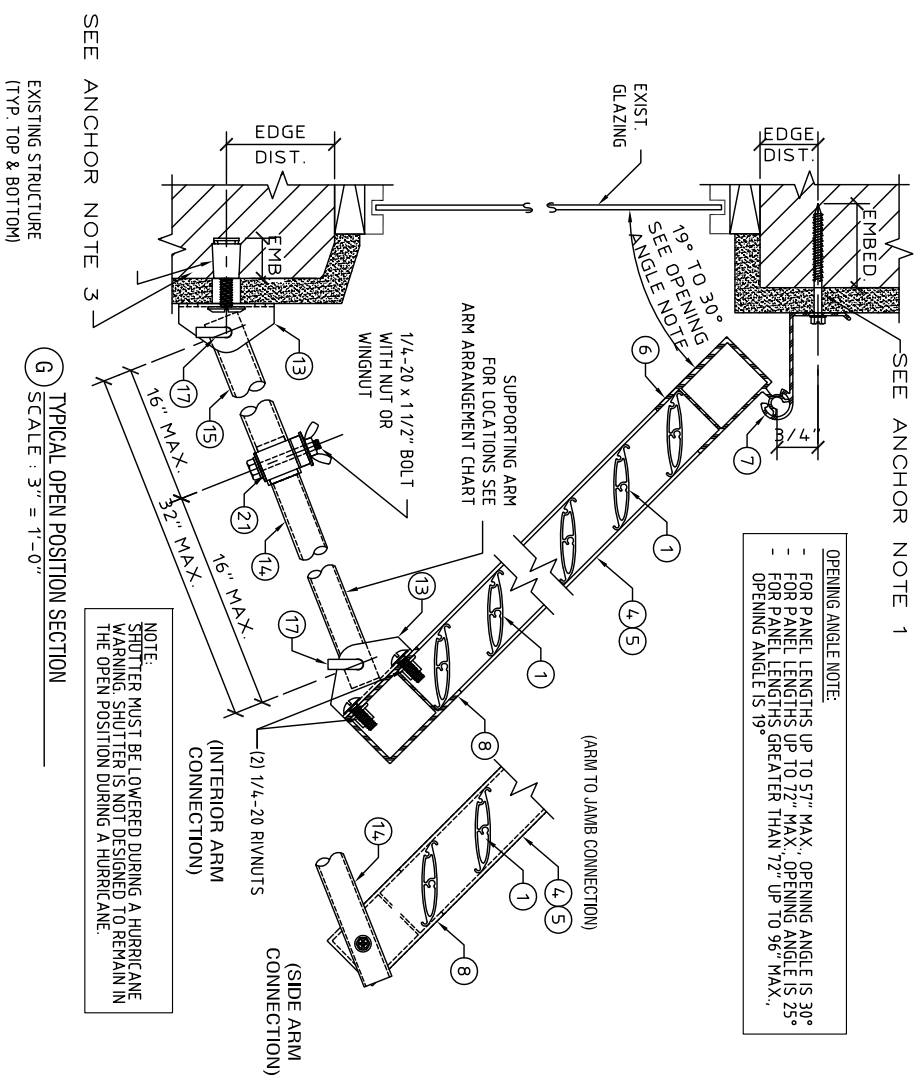
BAHAMA SHUTTER

- ANCHOR NOTE 1:**
- CONNECTION IN MIN. 3,35 KSI CONCRETE:
 - 1/4" ϕ ITW TAPCONS @ 12" O.C. WITH 1.75" MIN. EMBED. AND 2.50" MIN. EDGE DIST.
 - 1/4-20 M/F ELCO PANELMATE @ 12" O.C. WITH 1.75" MIN. EMBED. AND 2.50" MIN. EDGE DIST.
 - 1/4-20 ALL POINTS SOLID SET ANCHOR @ 12" O.C. WITH 0.875" MIN. EMBED. AND 2.00" MIN. EDGE DIST.
 - CONNECTION IN HOLLOW CONCRETE BLOCK:
 - 1/4" ϕ ITW TAPCONS @ 12" O.C. WITH 1.25" MIN. EMBED. AND 2.50" MIN. EDGE DIST.
 - 1/4-20 M/F ELCO PANELMATE @ 12" O.C. WITH 1.25" MIN. EMBED. AND 2.50" MIN. EDGE DIST.
 - 1/4-20 ALL POINTS SOLID SET ANCHOR @ 12" O.C. WITH 0.875" MIN. EMBED. AND 2.00" MIN. EDGE DIST.
 - CONNECTION IN WOOD G=0.42 MIN:
 - 1/4" ϕ ITW TAPCONS @ 12" O.C. WITH 1.50" MIN. EMBED. AND 0.75" MIN. EDGE DIST.
 - #14 SHEET METAL SCREW @ 12" O.C. WITH 1.50" MIN. EMBED. AND 0.75" MIN. EDGE DIST.

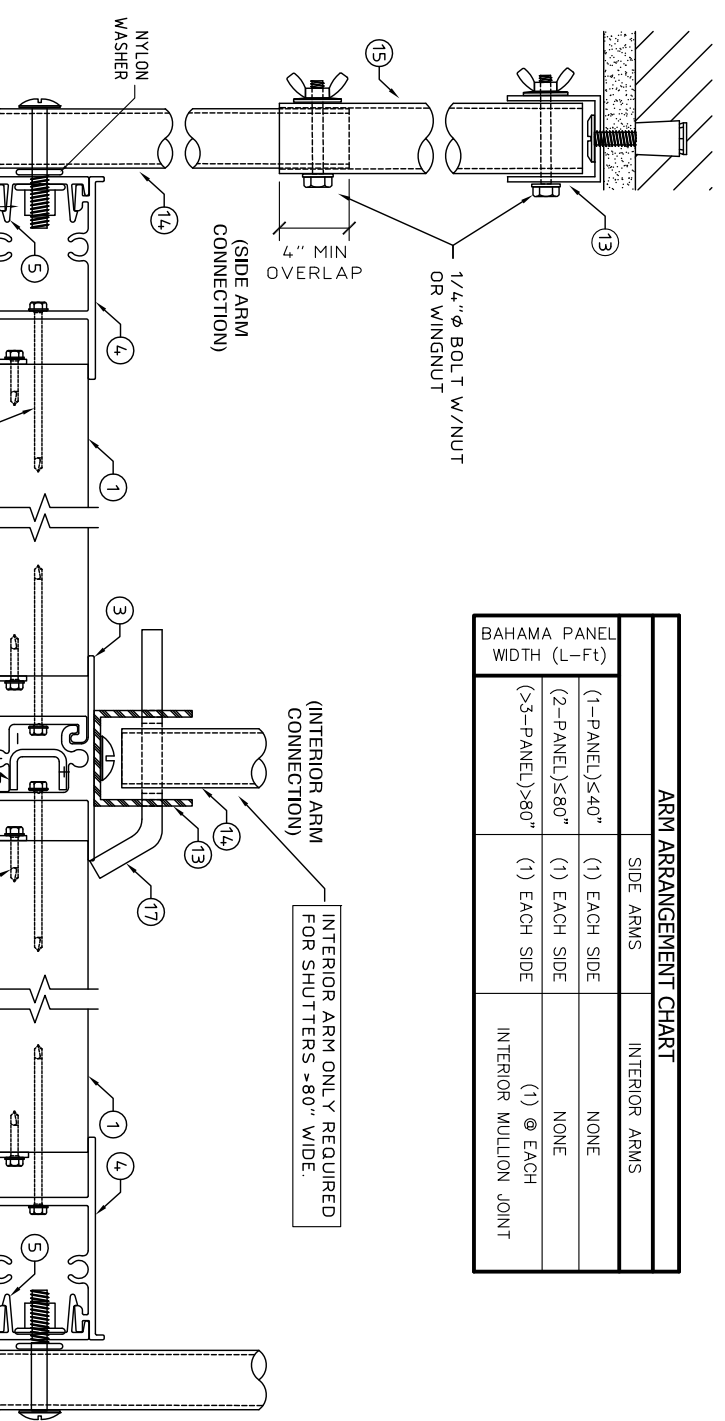
- ANCHOR NOTE 2:**
- CONNECTION IN MIN. 3,35 KSI CONCRETE:
 - (3) 1/4" ϕ ITW TAPCONS WITH 1.75" MIN. EMBED. AND 2.50" MIN. EDGE DIST.
 - (3) 1/4-20 M/F ELCO PANELMATES WITH 1.75" MIN. EMBED. AND 2.50" MIN. EDGE DIST.
 - (3) 1/4-20 ALL POINTS SOLID SET ANCHORS WITH 0.875" MIN. EMBED. AND 2.00" MIN. EDGE DIST.
 - CONNECTION IN HOLLOW CONCRETE BLOCK:
 - (3) 1/4" ϕ ITW TAPCONS WITH 1.25" MIN. EMBED. AND 2.50" MIN. EDGE DIST.
 - (3) 1/4-20 M/F ELCO PANELMATES WITH 1.25" MIN. EMBED. AND 2.00" MIN. EDGE DIST.
 - (3) 1/4-20 ALL POINTS SOLID SET ANCHORS WITH 0.875" MIN. EMBED. AND 2.00" MIN. EDGE DIST.
 - CONNECTION IN WOOD G=0.42 MIN:
 - (3) 1/4" ϕ ITW TAPCONS WITH 1.50" MIN. EMBED. AND 0.75" MIN. EDGE DIST.
 - (3) 1/4" ϕ ITW TAPCONS SG WITH 1.50" MIN. EMBED. AND 0.75" MIN. EDGE DIST.
 - (3) 1/4" ϕ STAINLESS STEEL HANGER BOLT WITH 1.25" MIN. EMBED. AND 0.75" MIN. EDGE DIST.

- ANCHOR NOTE 3:**
- CONNECTION IN MIN. 3,295 KSI CONCRETE:
 - (1) 1/4" ITW TAPCON WITH 1.75" MIN. EMBED. AND 2.50" MIN. EDGE DIST.
 - (1) 1/4" ALL POINTS SOLID SET WITH 0.875" MIN. EMBEDMENT AND 3.00" MIN. EDGE DIST.
 - CONNECTION IN HOLLOW CONCRETE BLOCK:
 - (2) 1/4" ELCO ULTRACONS WITH 1.25" EMBEDMENT AND 2.50" MIN. EDGE DIST.
 - (1) 1/4" ELCO ULTRACONS WITH 1.25" EMBEDMENT AND 2.50" MIN. EDGE DIST.
 - (1) 1/4" LAG SCREW WITH 1.75" MIN. EMBED. AND 0.75" MIN. EDGE DIST.
 - (1) #14 SHEET METAL SCREW WITH 1.50" MIN. EMBED. AND 0.75" MIN. EDGE DIST.

- OPENING ANGLE NOTE:**
- FOR PANEL LENGTHS UP TO 57" MAX. OPENING ANGLE IS 30°
 - FOR PANEL LENGTHS UP TO 72" MAX. OPENING ANGLE IS 25°
 - FOR PANEL LENGTHS GREATER THAN 72" UP TO 96" MAX. OPENING ANGLE IS 19°



ARM ARRANGEMENT CHART		
BAHAMA PANEL WIDTH (L-Ft)	SIDE ARMS	INTERIOR ARMS
(1-PANEL) $\leq 40"$	(1) EACH SIDE	NONE
(2-PANEL) $\leq 80"$	(1) EACH SIDE	NONE
(>3 -PANEL) $> 80"$	(1) EACH SIDE	(1) @ EACH INTERIOR MULLION JOINT



NOTE:
SHUTTER MUST BE LOWERED DURING A HURRICANE WARNING. SHUTTER IS NOT DESIGNED TO REMAIN IN THE OPEN POSITION DURING A HURRICANE.

SEE ANCHOR NOTE 3
TYPICAL OPEN POSITION SECTION
SCALE: 3" = 1'-0"

SEE ANCHOR NOTE 2
TYPICAL CLOSED POSITION SECTION
SCALE: 3" = 1'-0"

SEE ANCHOR NOTE 2
TYPICAL BUILD-OUT CLOSED POSITION SECTION
SCALE: 3" = 1'-0"

(H) TYPICAL PLAN VIEW
SCALE: HALF SIZE

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Professional Engineer Seal:
V. J. Knezevich
Professional Engineer
FL License No. 10983
FL Expire Date: 10/15/2008
FL Renewal Exam No. 27989

Revisions:

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Project No. 08-355
Date: 10/15/2008
Scale: 1/2" = 1'-0"

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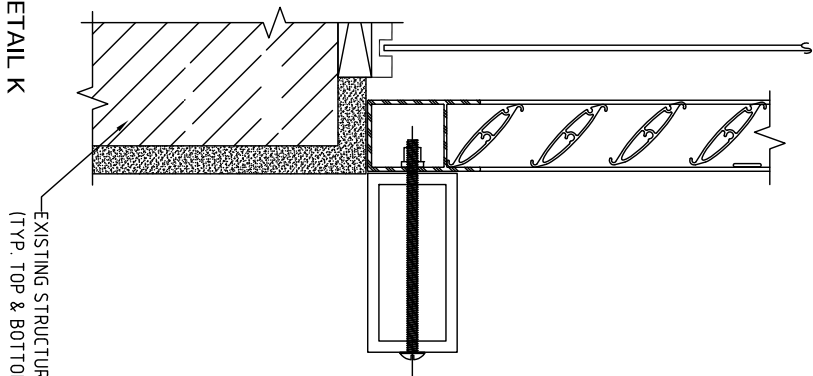
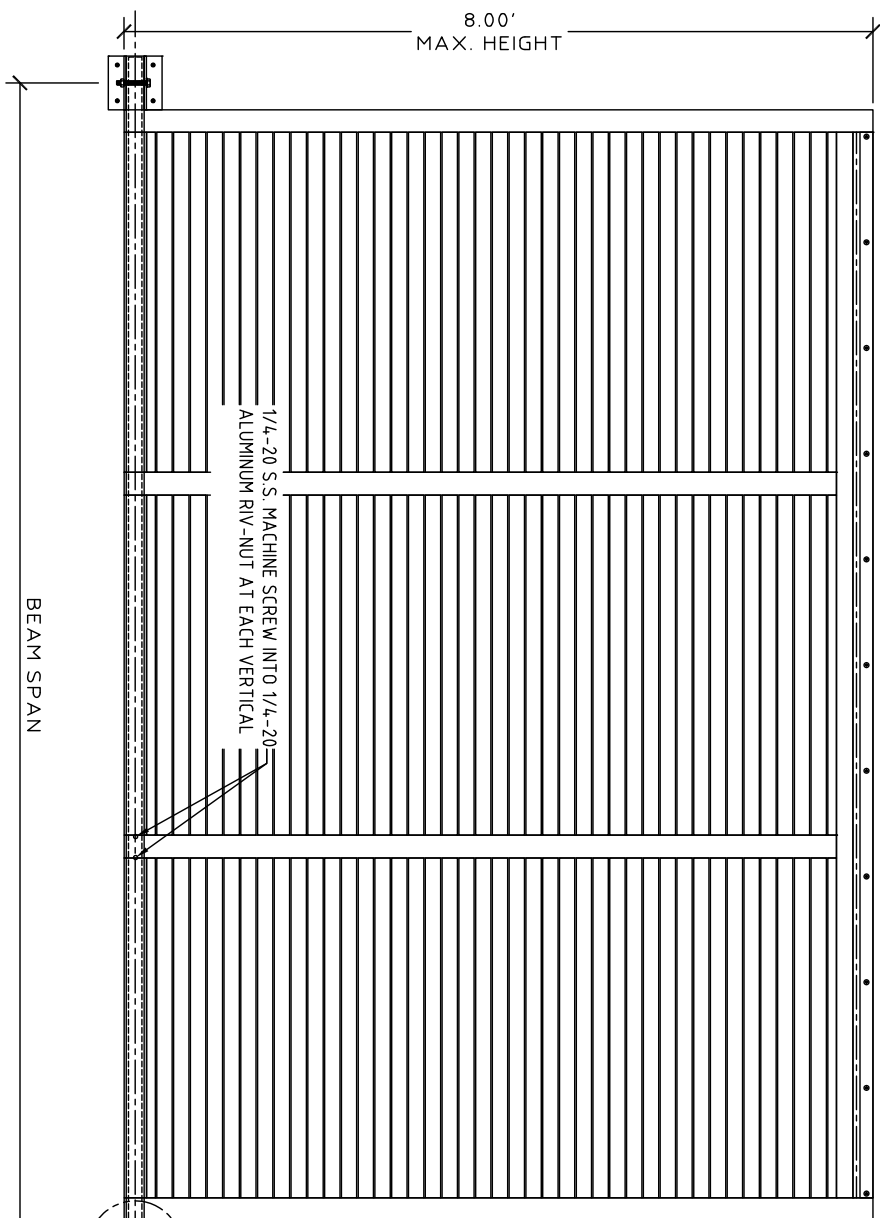
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BAHAMA SHUTTER



BEAM SCHEDULE

BEAM SIZE	ALUMINUM ALLOY	SHUTTER SPAN FT.-IN.	WALL BRACKET ANCHOR TYPES			
			BEAM SPAN FT.-IN.	CONCRETE	NORMAL WEIGHT HOLLOW CONCRETE BLOCK	WOOD
2'-X-3'-X-125"	6063-T6	8-0 6-8 5-10	6-0 6-4 6-8	A, B, C A, B, C A, B, C	A, B, C A, B, C A, B, C	B, C B, C B, C
2'-X-4'-X-125"	6063-T6	8-0 6-8 5-10	7-7 3/4 8-1 1/2 8-5 3/4	A, B, C A, B, C A, B, C	A, B, C A, B, C A, B, C	B, C B, C B, C
2'-X-5'-X-125"	6063-T6	8-0 6-8 5-10	9-2 1/2 9-9 3/8 10-2 3/4	A, B, C A, B, C A, B, C	A, B, C A, B, C A, B, C	B, C B, C B, C
2'-X-4'-X-25"	6061-T6	8-0 6-8 5-10	9-3 1/4 9-10 1/8 10-3 1/2	A, B, C A, B, C A, B, C	A, B, C A, B, C A, B, C	B, C B, C B, C

ANCHOR TYPES (FOUR REQUIRED AT EACH END OF BEAM)

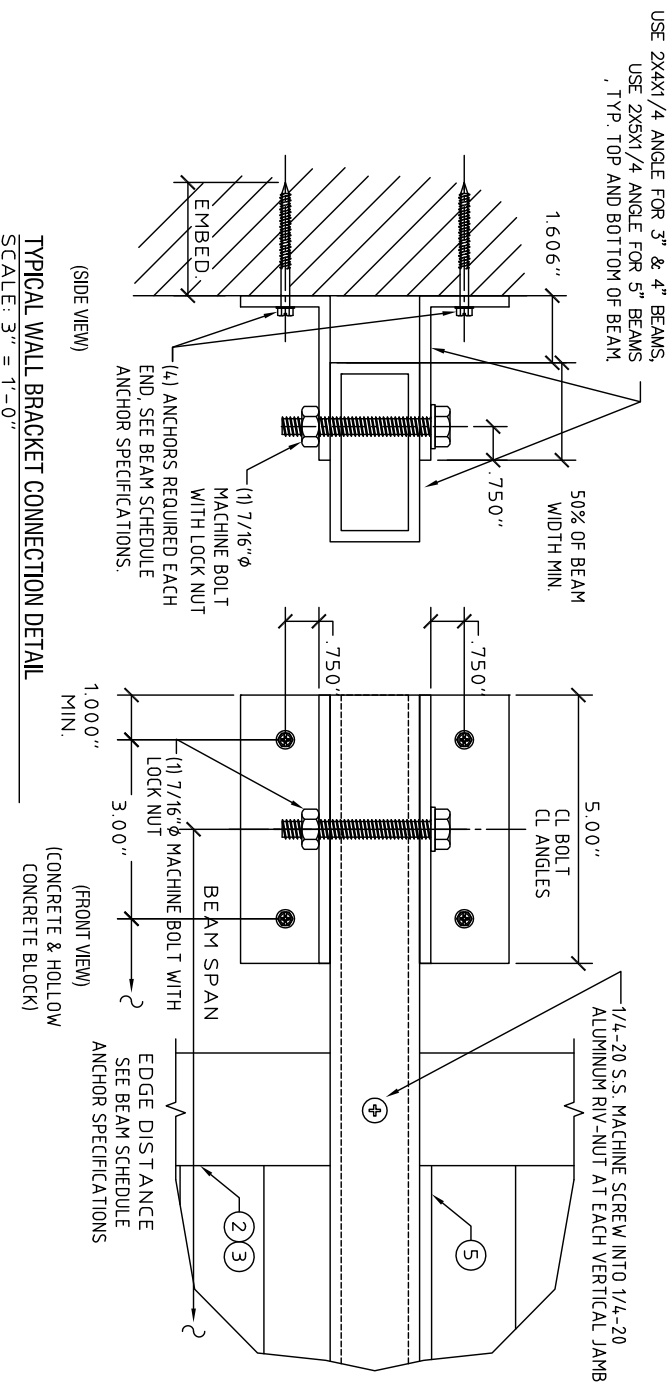
A 1/4"-20X1 ALL POINTS ANCHOR SOLID SET
3.0 KSI CONCRETE: 7/8" MIN. EMBEDMENT WITH 3" MIN. EDGE DISTANCE AND 3" MIN. SPACING
HOLLOW CONCRETE BLOCK: 7/8" MIN. EMBEDMENT WITH 3" MIN. EDGE DISTANCE AND 3" MIN. SPACING

B 1/4" ELCO CONSTRUCTION PRODUCTS MALE/FEMALE PANELMATE WITH 1/4-20 MACHINE SCREW OR NUT
3.35 KSI CONCRETE: 2" MIN. EMBEDMENT WITH 2 1/2" MIN. EDGE DISTANCE AND 3" MIN. SPACING
HOLLOW CONCRETE BLOCK: 1 1/4" MIN. EMBEDMENT WITH 2" MIN. EDGE DISTANCE AND 3" MIN. SPACING
WOOD (G=0.54 MIN.): 1 7/8" MIN. EMBEDMENT WITH 3/4" MIN. EDGE DISTANCE AND 1 1/2" MIN. SPACING

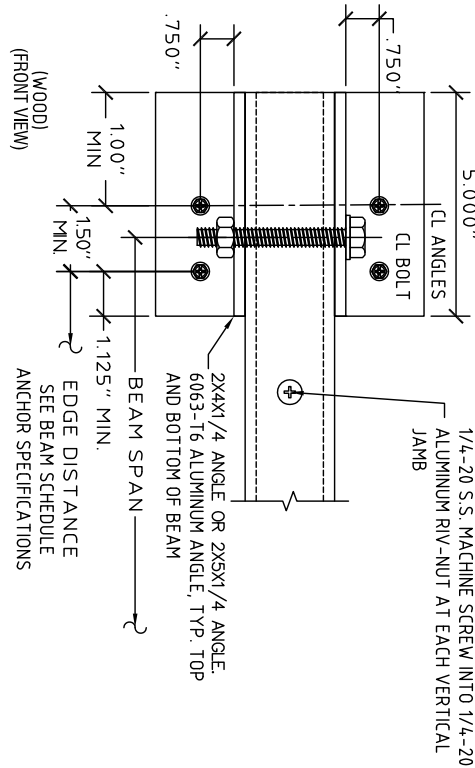
C 1/4" ITW TAPCON SG
3.295 KSI CONCRETE: 1 3/4" MIN. EMBEDMENT WITH 2 1/2" MIN. EDGE DISTANCE AND 3" MIN. SPACING
HOLLOW CONCRETE BLOCK: 1 1/4" MIN. EMBEDMENT WITH 2 1/2" MIN. EDGE DISTANCE AND 3" MIN. SPACING
WOOD (G=0.53 MIN.): 1 1/2" MIN. EMBEDMENT WITH 3/4" MIN. EDGE DISTANCE AND 1 1/2" MIN. SPACING

I TYPICAL ELEVATION WITH ANGLE @ SILL
SCALE: 1/2" = 1'-0"

J TYPICAL TRAP MOUNT
SCALE: 3" = 1'-0"



TYPICAL WALL BRACKET CONNECTION DETAIL
SCALE: 3" = 1'-0"



(WOOD)
FRONT VIEW

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V. J. Knezevich
Professional Engineer
No. 10983
Florida - COA No. 27989

Signature
Date: 10/15/2008
Project No.: 08-355

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