

**GENERAL NOTES:**

7. ROLL-UP SHUTTER SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) HAS BEEN VERIFIED FOR CODE COMPLIANCE IN ACCORDANCE WITH THE 2017 (8TH EDITION) OF THE FLORIDA BUILDING CODE. ROLL-UP SHUTTER SHALL NOT BE INSTALLED AT HIGH-VELOCITY HURRICANE ZONES (MIAMI-DADE/BROWARD COUNTIES).

DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1809 OF THE ABOVE MENTIONED CODE. FOR A BASIC WIND SPEED REQUIRED BY THE JURISDICTION WHERE SHUTTER WILL BE INSTALLED WITH A DIRECTIONALITY FACTOR  $K_d=0.85$ , USING ASCE 7-10 FOR INSTALLATIONS UNDER 2017 FBC AND SHALL NOT EXCEED THE MAXIMUM (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON NOTE 2 BELOW. IN ORDER TO VERIFY THE ABOVE CONDITION, ULTIMATE DESIGN WIND LOADS DETERMINED PER ASCE 7-10 SHALL BE FIRST REDUCED TO A.S.D. DESIGN WIND LOADS BY MULTIPLYING THEM BY 0.6 IN ORDER TO COMPARE THESE W/ MAX. (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON NOTE 2 BELOW.

IN ORDER TO VERIFY THAT ANCHORS ON THIS P.E.D. AS TESTED, WERE NOT OVERSTRESSED, A 33% INCREASE IN ALLOWABLE STRESS FOR WIND LOADS WAS NOT USED IN THEIR ANALYSIS. ROLL-UP SHUTTER'S ADEQUACY FOR IMPACT AND CYCLIC RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1809.1.2 OF THE ABOVE MENTIONED CODE AS PER ASTM E-1885, E-1998 & E-330 STANDARDS, MISSILE TYPE D (BASIC PROTECTION) PER SECTION 8.2.1.2; AS PER ARCHITECTURAL TESTING LAB REPORT # 49124.01-122-44. THIS SHUTTER SHALL NOT BE INSTALLED WITHIN HIGH VELOCITY HURRICANE ZONES (MIAMI-DADE/BROWARD COUNTIES), AND SHALL ONLY BE INSTALLED WITHIN WIND ZONES 1, 2 OR 3, AS DEFINED BY SECTION 6.2.2 OF THE ASTM E-1998 STANDARD.

2. MAXIMUM A.S.D. DESIGN PRESSURE RATING:

+50.0 PSF, -55.0 PSF

ANY DESIGN WIND LOAD, SLAT SPAN, SHUTTER HEIGHTS AND WIDTHS EQUAL OR SMALLER THAN MAXIMUM ALLOWABLE INDICATED IN THIS DRAWING ARE ACCEPTABLE FOR INSTALLATION.

3. ALL ALUMINUM EXTRUSIONS SHALL BE 6063-T5 ALLOY (UNLESS OTHERWISE NOTED).

4. ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 SERIES W/ 50 ksi YIELD STRENGTH AND 90 ksi TENSILE STRENGTH OR CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018 OR ASTM A 510-03 AND SHALL COMPLY WITH FLORIDA BUILDING CODE SECTION 2411.3.3.4.

5. BOLTS TO BE 2024-T4 ALUMINUM ALLOY, ASTM A-307 GALVANIZED OR AISI 304 SERIES STAINLESS STEEL WITH 35 ksi MINIMUM YIELD STRENGTH & SHALL COMPLY W/ FLORIDA BUILDING CODE SECTION 2411.3.3.4.

6. STORM BARS AT FLOOR AND CEILING MOUNTING INSTALLATIONS MAY BE REMOVABLE AT NON HURRICANE CONDITIONS. HOWEVER, EACH STORM BAR SHALL BEAR A PERMANENT LABEL IN A VISIBLE PLACE WITH A WARNING NOTE INSTRUCTING THE TENANT OR OWNER THAT STORM BARS MUST BE INSTALLED WITH CORRESPONDING HARDWARE DURING PERIODS OF HURRICANE WARNING AND THAT ROLL UP SHUTTERS WILL NOT OFFER HURRICANE PROTECTION UNLESS ALL STORM BARS ARE INSTALLED AS SPECIFIED.

7. REMOVABLE STORM BARS SHALL BE STORED IN A CONSPICUOUS PLACE WITH EASY AND IMMEDIATE ACCESS SO THAT THEY CAN BE REACHED AND INSTALLED ANY TIME (HURRICANE CONDITIONS OR NOT) SLATS ARE ROLLED DOWN. THE EFFECT OF THE SLATS ROLLED DOWN WITHOUT STORM BARS IS; THOSE SLATS WILL SLIP OUT OF TRACK DUE TO THE DEFLECTION CAUSED BY WIND FORCES.

8. PROTEUS<sup>®</sup> FLAME RETARDANT 180, IS A POLYPROPYLENE MANUFACTURED BY POLY HI SOLIDUR, INC., USED AT SPRING LOADED SYSTEM FOR REMOVABLE STORM BARS & COMPLES W/ THE FOLLOWING SPECIFICATIONS:

DESIGNATION	PROPERTIES	VALUE
ASTM D-792	DENSITY	59.51 lbs/ft <sup>3</sup> (AVERAGE)
ASTM D-638	YIELD POINT	3200 psi (AVERAGE)
ASTM D-638	TENSILE BREAK	3280 psi (AVERAGE)
ASTM D-638	ELONGATION AT BREAK	600 % (AVERAGE)
ASTM D-790	FLEXURAL MODULUS	145000 psi (AVERAGE)
ASTM D-4020	IZOD IMPACT	0.15 ft-lbs/inch (AVERAGE)
UL 94	BURN RATING	V-0/S-V0 (AVERAGE)
ASTM E-84	FLAME SPREAD INDEX	15 "F (AVERAGE)
ASTM E-84	SMOKE DEVELOPMENT INDEX	375 "F (AVERAGE)

9. ANCHORS TO WALL FOR SIDE RAILS & BOX CONNECTION SHALL BE AS FOLLOWS:

- 1/4"  $\phi$  TAPCON ANCHORS, AS MANUFACTURED BY I.T.W. BULDEX OR ELOCO CONSTRUCTION PRODUCTS.

NOTES:

A.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS INTO POUNED CONCRETE IS 1 3/4" NO EMBEDMENT INTO STUCCO SHALL BE CONSIDERED AS PART OF THE REQUIRED EMBEDMENT.

A.2) IN CASE THAT PRECAST STONE, PRECAST CONCRETE OR BRICK PANELS, VENEER OR PAVERS BE FOUND ON THE EXISTING WALL OR FLOOR, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH COVERS. ANCHORAGE SHALL BE AS INDICATED ON NOTE A.1 ABOVE.

(B) TO EXISTING CONCRETE A.S.T.M. C-90 BLOCK WALL:  
- 1/4"  $\phi$  TAPCON ANCHORS AS MANUFACTURED BY I.T.W. BULDEX OR ELOCO CONSTRUCTION PRODUCTS.

NOTES:

B.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS INTO CONCRETE BLOCK UNIT SHALL BE 1 1/4"

B.2) IN CASE THAT PRECAST STONE, PRECAST CONCRETE OR BRICK PANELS, VENEER OR PAVERS BE FOUND ON THE EXISTING WALL OR FLOOR, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH COVERS. ANCHORAGE SHALL BE AS INDICATED ON NOTE B.1 ABOVE.

(C) TO EXISTING WOOD FRAME WALL (MIN. SPECIFIC GRAVITY = 0.38):  
- 5/16"  $\phi$  WOOD SCREWS W/ 2" MIN. EMBEDMENT INTO WOOD BEYOND ANY WALL FINISH.

(D) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.

(E) ANCHORS REQUIRED FOR STORM BARS & HEADER CONNECTIONS SHALL BE AS SPECIFIED ON APPLICABLE SECTIONS SHOWN ON SHEETS 4 & 5 OF 5. POWER BOLT ANCHORS TO BE AS MANUFACTURED BY POWERS FASTENERS, INC., WOOD SCREWS SHALL BE COMPLY W/ THE NATIONAL DESIGN SPECIFICATION FROM AF&PA.

10. THE INSTALLATION CONTRACTOR IS TO SEAL/CAULK ALL SHUTTER COMPONENT EDGES WHICH REMAIN IN CONTINUOUS CONTACT WITH THE BUILDING TO PREVENT WIND/RAIN INTRUSION.

11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE WHERE SHUTTER IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE. THIS SHUTTER SHALL ONLY BE ATTACHED TO CONCRETE, CONCRETE BLOCK OR WOOD FRAME BUILDINGS.

12. SHUTTER'S INSTALLATION SHALL COMPLY WITH ALL SPECS INDICATED IN THIS DRAWING PLUS ANY BUILDING AND ZONING REGULATIONS PROVIDED BY THE JURISDICTION WHERE PERMIT IS APPLIED TO.

13. LIFTING MECHANISM NOT PART OF THIS APPROVAL, BUT SHALL BE CERTIFIED BY AN INDEPENDENT TESTING AGENCY.

14. (a) THIS P.E.D. PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; I.E. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.E.D.

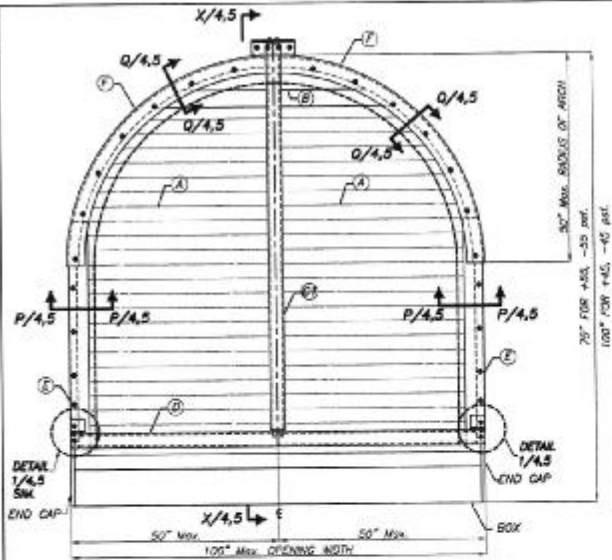
(b) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY OF THIS PRODUCT, BASED ON THIS P.E.D. PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT. CONSTRUCTION SAFETY AT SITE IS THE CONTRACTOR'S RESPONSIBILITY.

(c) THIS P.E.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.

(d) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA REGISTERED ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D. ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE P.E.D. ENGINEER, SHALL SUBMIT TO THIS LATTER THE SITE SPECIFIC DRAWINGS FOR REVIEW.

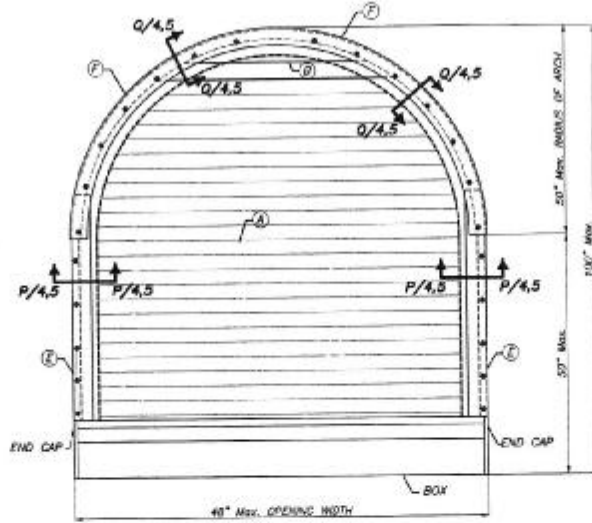
(e) THIS P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.

15. SHUTTER MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION AT ROLL-UP IN ACCORDANCE WITH SECTION 1708.9.3 OF FLORIDA BUILDING CODE. ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABELING TO COMPLY WITH SECTION 1708.9.2 OF THE FLORIDA BUILDING CODE.



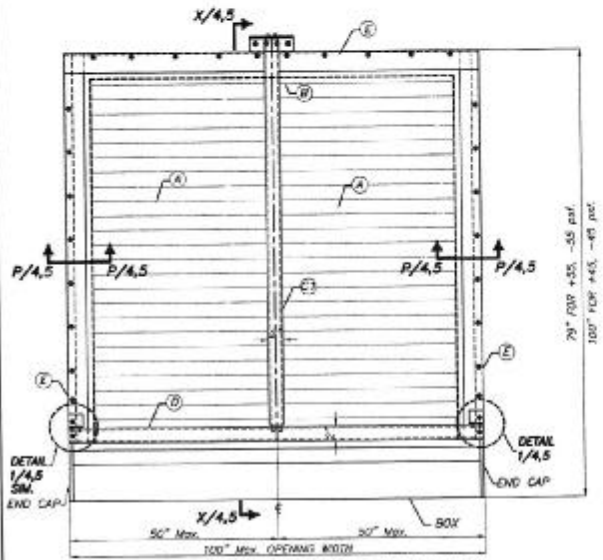
**TYPICAL DOUBLE UNIT ARCH ELEVATION (STORM BARS REQUIRED)**

NOTE: SEE SHEET 2 OF 3 FOR COMPONENTS NOMENCLATURE  
SCALE: 3/4"=1'



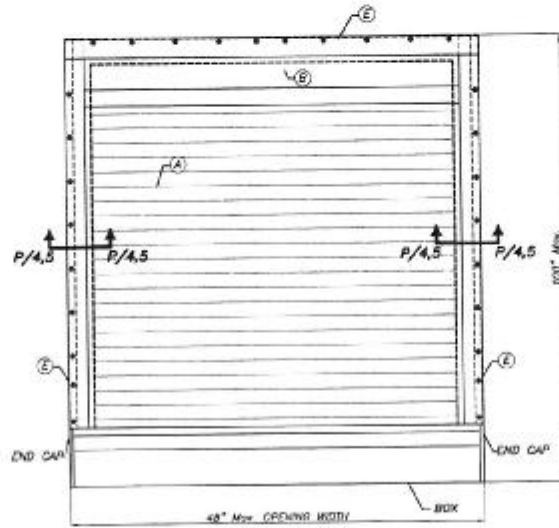
**TYPICAL SINGLE UNIT ARCH ELEVATION (NO STORM BARS REQUIRED)**

NOTE: SEE SHEET 2 OF 3 FOR COMPONENTS NOMENCLATURE  
SCALE: 3/4"=1'



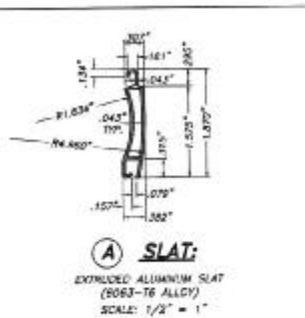
**TYPICAL DOUBLE UNIT ELEVATION (STORM BARS REQUIRED)**

NOTE: SEE SHEET 2 OF 3 FOR COMPONENTS NOMENCLATURE  
SCALE: 3/4"=1'

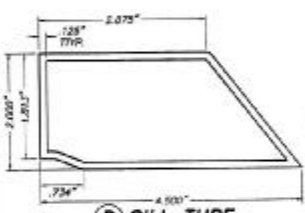


**TYPICAL SINGLE UNIT ELEVATION (NO STORM BARS REQUIRED)**

NOTE: SEE SHEET 2 OF 3 FOR COMPONENTS NOMENCLATURE  
SCALE: 3/4"=1'



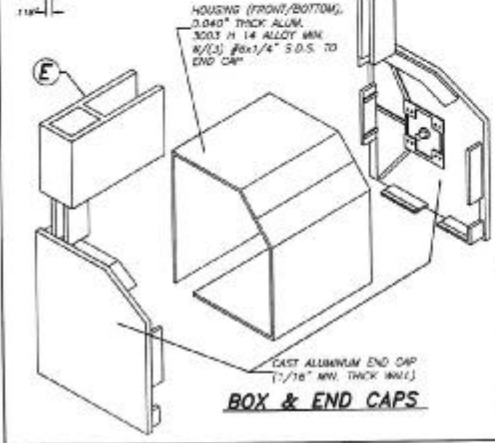
**A SLAT:**  
EXTRUDED ALUMINUM SLAT  
(6063-T6 ALLOY)  
SCALE: 1/2" = 1"



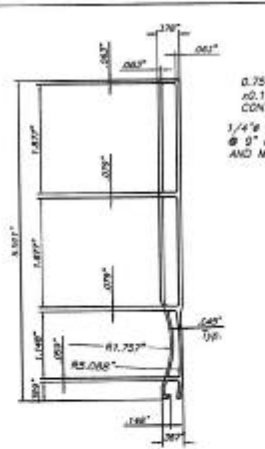
**D SILL TUBE:**  
6063-T6 ALUMINUM ALLOY  
SCALE: 1/2" = 1"



**F ARCH L-ANGLE STUDIO STAR**  
6063-T6 ALUM. ALLOY  
SCALE: 1/2" = 1"



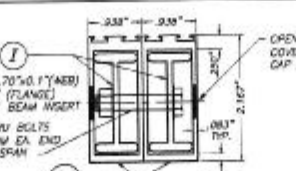
**BOX & END CAPS**



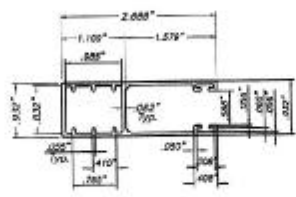
**B TOP SLAT FOR ARCH**  
EXTRUDED ALUMINUM SLAT  
(6063-T6 ALLOY)  
SCALE: 1/2" = 1"



**G ANCHOR SPACER AT ARCH**  
6063-T6 ALUM. ALLOY  
SCALE: 1" = 1"



**C1 STORM BAR**  
(2) 0.83" x 0.187" x 0.083" (WET) x 0.125" (FLANGE) (6063-T6 ALLOY) ALUMINUM TUBE WITH (2) 1" BEAM INSERTS



**E SIDE RAIL**  
6063-T6 ALUM. ALLOY  
SCALE: 1/2" = 1"

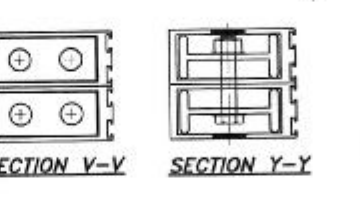
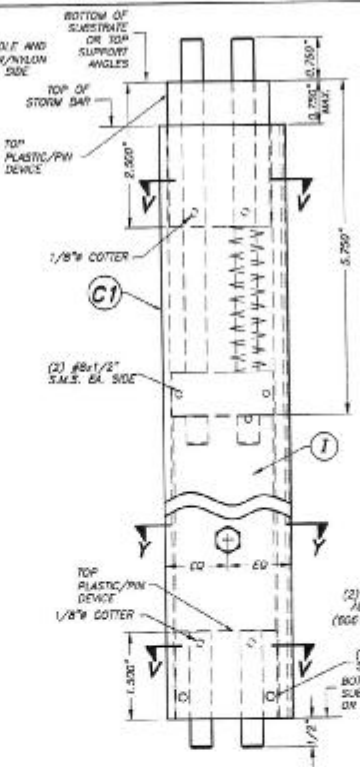


**PLASTIC BUSHING: DETAIL 1 (ISOMETRIC)**  
SCALE: 1" = 1"

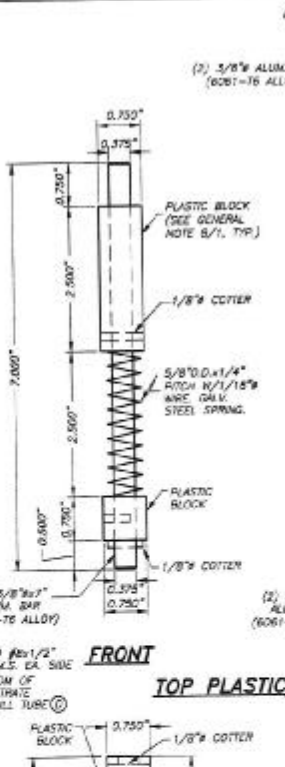


**ENGAGEMENT HOLE DETAIL (IN CONCRETE OR WOOD) FOR REMOVABLE STORM BARS**  
SCALE: 1" = 1"

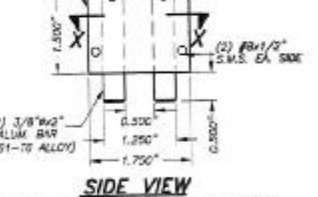
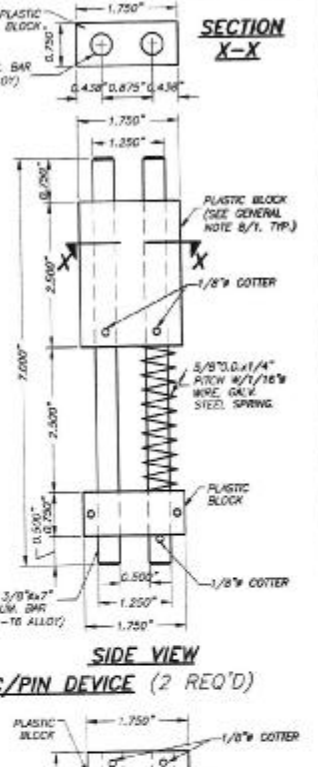
**NOTES:**  
(1) ENGAGEMENT HOLE DRILLED IN CONCRETE OR WOOD SUBSTRATES SHALL BE 5/8"x1" DEEP, 1/16" MAX. TOLERANCE IN BOTH DIAMETER & DEPTH.  
(2) ENGAGEMENT HOLE DRILLED IN CONCRETE OR WOOD SUBSTRATES SHALL BE PERMANENTLY PROTECTED BY FITTING PLASTIC BUSHING (SEE DETAIL 1) INTO HOLE. IT SHALL BE THE RESPONSIBILITY OF SHOOTER'S CARRY TO PERMANENTLY KEEP BUSHING FREE OF DUST & MOULD BY REMOVING IT FROM ENGAGEMENT HOLE, CLEANING IT AND REPOSITIONING IT INTO HOLE AS INDICATED ON ABOVE DETAIL.



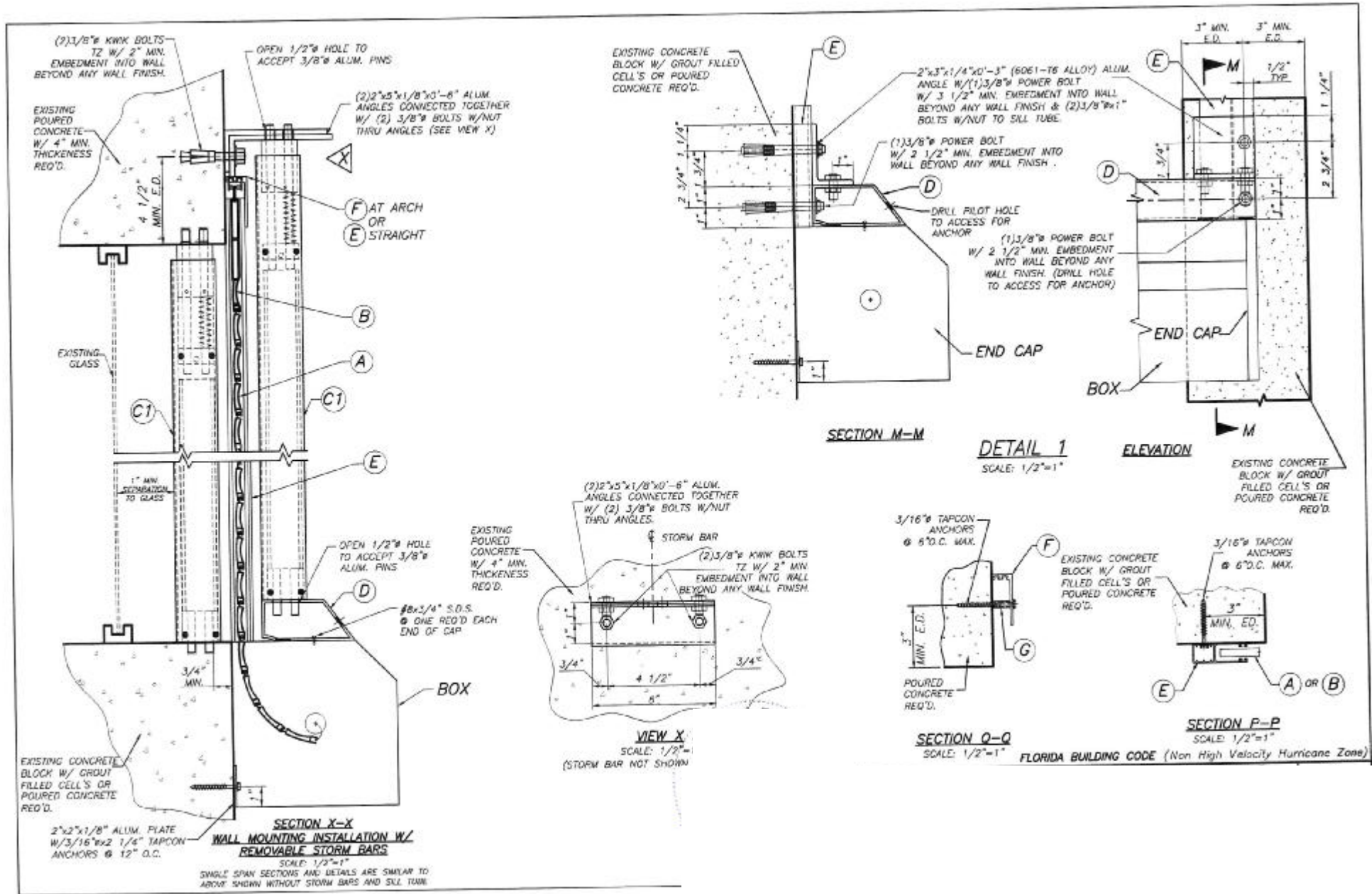
**TYPICAL PLASTIC/PIN DEVICE FOR REMOVABLE STORM BAR (C1)**



**BOTTOM PLASTIC/PIN DEVICE (2 REQUIRED)**



**SECTION X-X**



FLORIDA BUILDING CODE (Non High Velocity Hurricane Zone)

