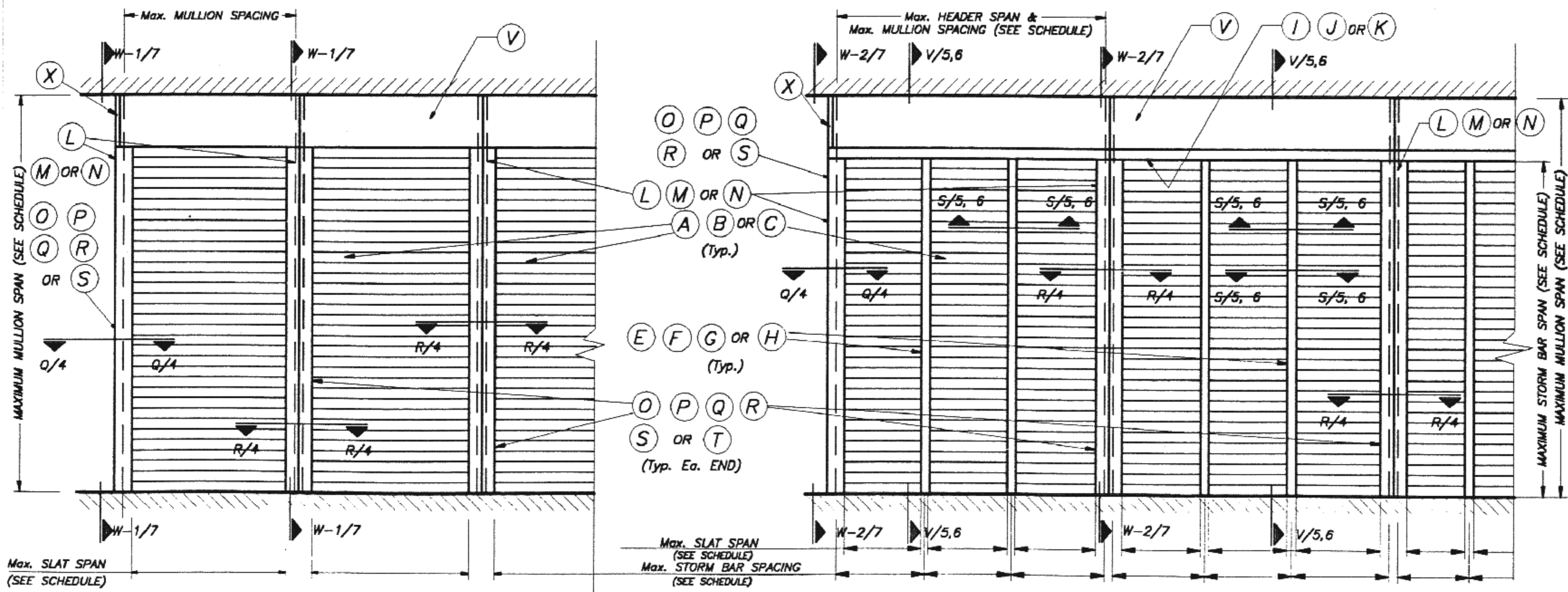


TYPICAL SINGLE UNIT ELEVATION (NO STORM BARS REQUIRED)

NOTE: SEE SHEET 2 & 3 OF 13 FOR COMPONENTS NOMENCLATURE.

TYPICAL MULTIPLE UNIT ELEVATION (STORM BARS REQUIRED)

NOTE: SEE SHEET 2 & 3 OF 13 FOR COMPONENTS NOMENCLATURE.



TYPICAL CONSECUTIVE SINGLE UNIT ELEVATION (NO STORM BARS REQUIRED)

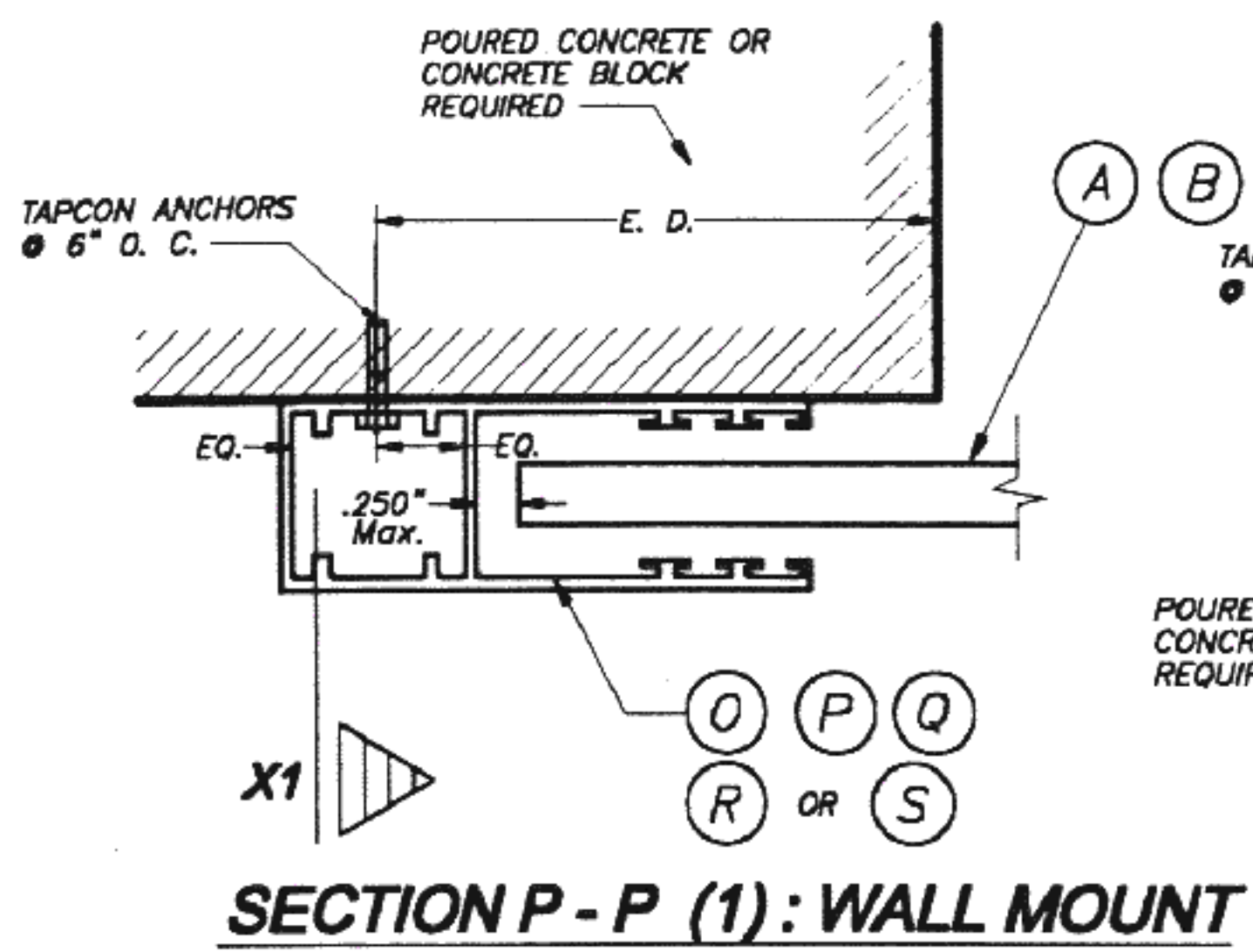
NOTE: SEE SHEET 2 & 3 OF 13 FOR COMPONENTS NOMENCLATURE.

TYPICAL CONSECUTIVE MULTIPLE UNIT ELEVATION (STORM BARS REQUIRED)

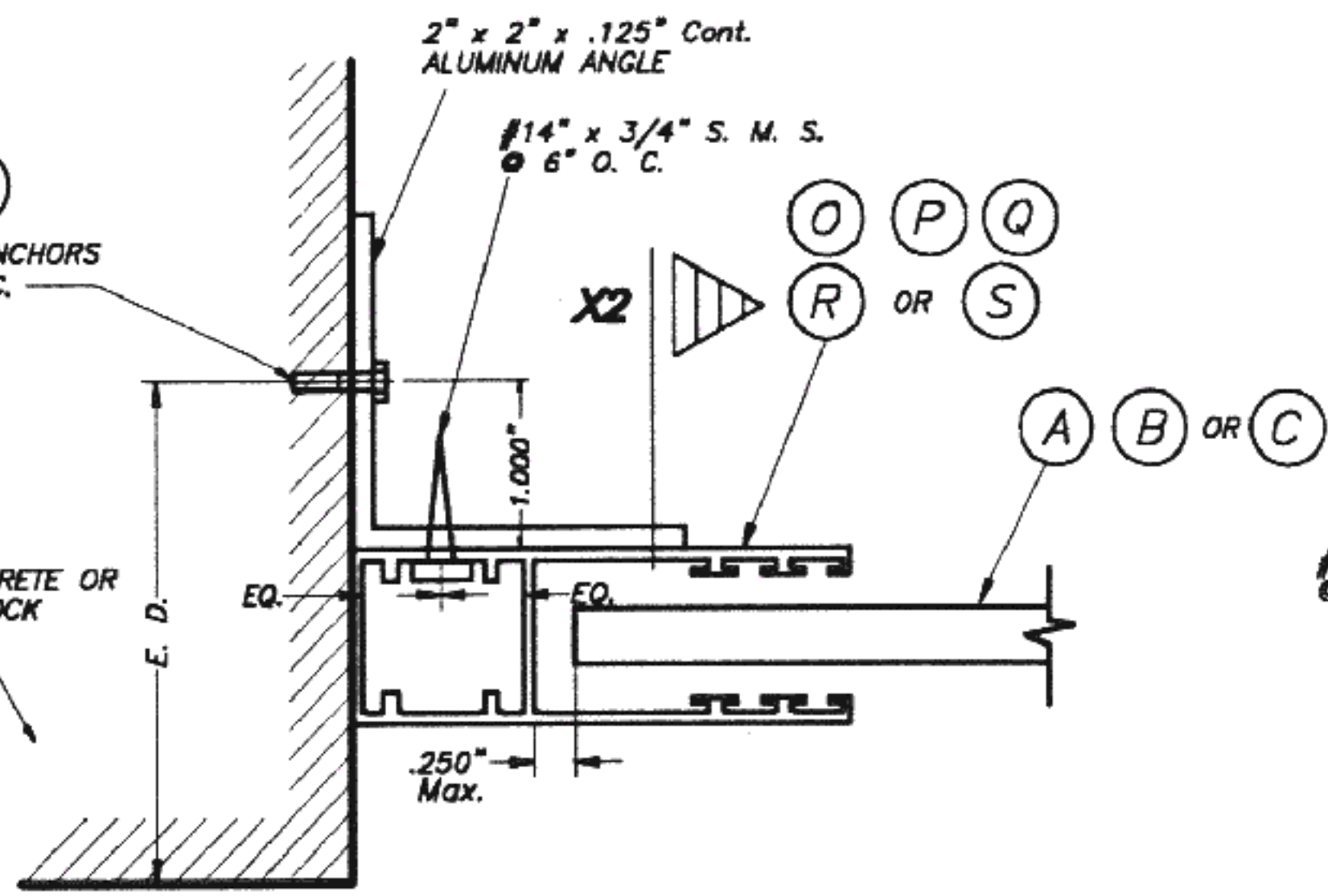
NOTE: SEE SHEET 2 & 3 OF 13 FOR COMPONENTS NOMENCLATURE.

GENERAL NOTES:

- ROLL-UP SHUTTER HAS BEEN DESIGNED IN ACCORDANCE WITH THE MONROE COUNTY, 1997 EDITION OF THE STANDARD BUILDING CODE. DESIGN LOADS SHALL BE DETERMINED FOR A BASIC WIND SPEED OF 155 m.p.h. WITH IMPORTANCE FACTORS AS REQUIRED BY ASCE 7-95. ROLL-UP SHUTTER'S ADEQUACY FOR IMPACT AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH S.S.T.D. 12-99 & A.S.T.M. E-330 STANDARDS AS PER HURRICANE TESTING LAB REPORTS # 0187-0405-99, 0187-0407-99, 0187-0408-99, 0187-0423-99, 0187-0413-99, 0187-0414-99.
- ALL ALUMINUM EXTRUSIONS SHALL BE 6063-T5 ALLOY (UNLESS OTHERWISE NOTED).
- ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 SERIES W/50 ksi YIELD POINT AND 90 ksi TENSILE STRENGTH OR CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018.
- BOLTS TO BE 2024-T4 ALUMINUM ALLOY, GALVANIZED OR STAINLESS STEEL WITH 36 ksi MINIMUM YIELD POINT.
- STORM BARS AT FLOOR OR 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 DIRECTED.
- ANCHORS TO WALL FOR SIDE RAILS & BOX CONNECTION SHALL BE AS FOLLOWS: (UNLESS OTHERWISE NOTED)
 - (A) TO EXISTING POURED CONCRETE:
 - 1/4" # TAPCON ANCHORS AS MANUFACTURED BY I.T.W./BULDEX OR ELCO TEXTRON
 - NOTES:
 - A.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS INTO POURED CONCRETE SHALL BE 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 PANELS, OR PAVERS BE FOUND ON THE EXISTING WALL OR FLOOR, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS.
 - (B) TO EXISTING CONCRETE BLOCK WALL:
 - 1/4" # TAPCON ANCHORS, AS MANUFACTURED BY I.T.W./BULDEX OR ELCO TEXTRON
 - NOTES:
 - B.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS, INTO THE CONCRETE BLOCK UNIT SHALL BE 1 1/4".
 - B.2) IN CASE THAT PRECAST STONE OR PRECAST CONCRETE PANELS BE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS.
 - (C) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.
 - (D) ANCHORS REQUIRED FOR STORM BARS, HEADERS & MULLION COONECTIONS SHALL BE AS SPECIFIED ON APPLICABLE SECTIONS SHOWN ON SHEETS 5 & 6 OF 13 RESPECTIVELY.
 - (E) ANCHORAGE TO WOOD SHALL BE AS INDICATED ON SHEET 8 OF 13. ANCHORAGE SHALL BE PERFORMED BEYOND ANY FINISH MATERIAL AT WALL LIKE BRICK VEENER, STUCCO OR ANY OTHER FINISH.
- A-200-H SLAT FOAM PLASTIC CORE SHALL CONSIST OF 100/100 PARTS BY WEIGHT OF ELASTOPOR® P12041 R(1.06 SPECIFIC GRAVITY) RESIN + ELASTOPOR® P1001 U (1.22 SPECIFIC GRAVITY) ISOCYANATE. SLATS FOAM PLASTIC CORE SURFACE BURNING CHARACTERISTICS HAVE BEEN VERIFIED IN ACCORDANCE WITH SECTION 2603.4 OF THE STANDARD BUILDING CODE AS PER CELOTEX CORPORATION TEST REPORT # 520274A.
- 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.
- ROLL-UP MECHANISM NOT PART OF THIS DESIGN.

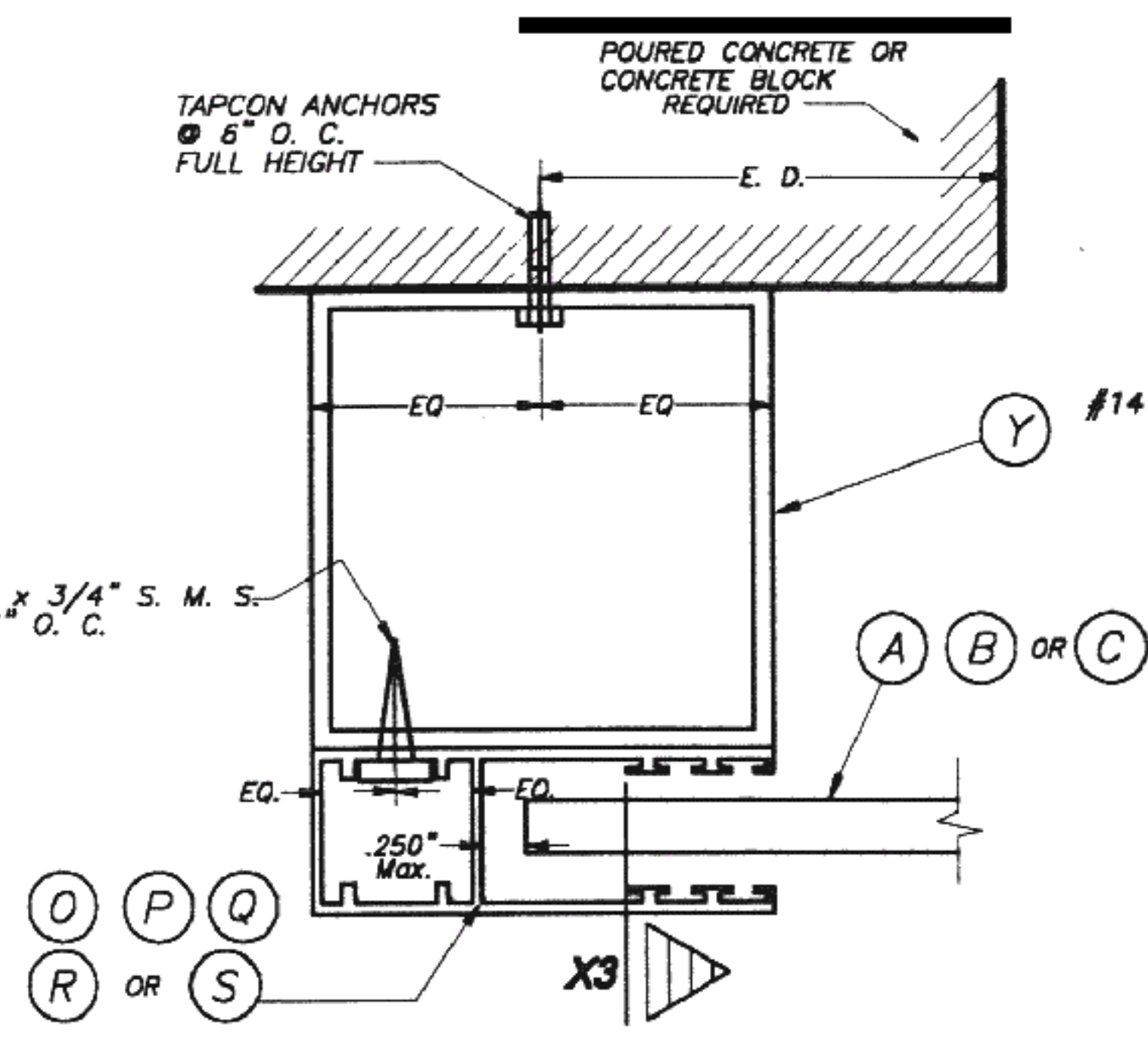


SCALE: FULL



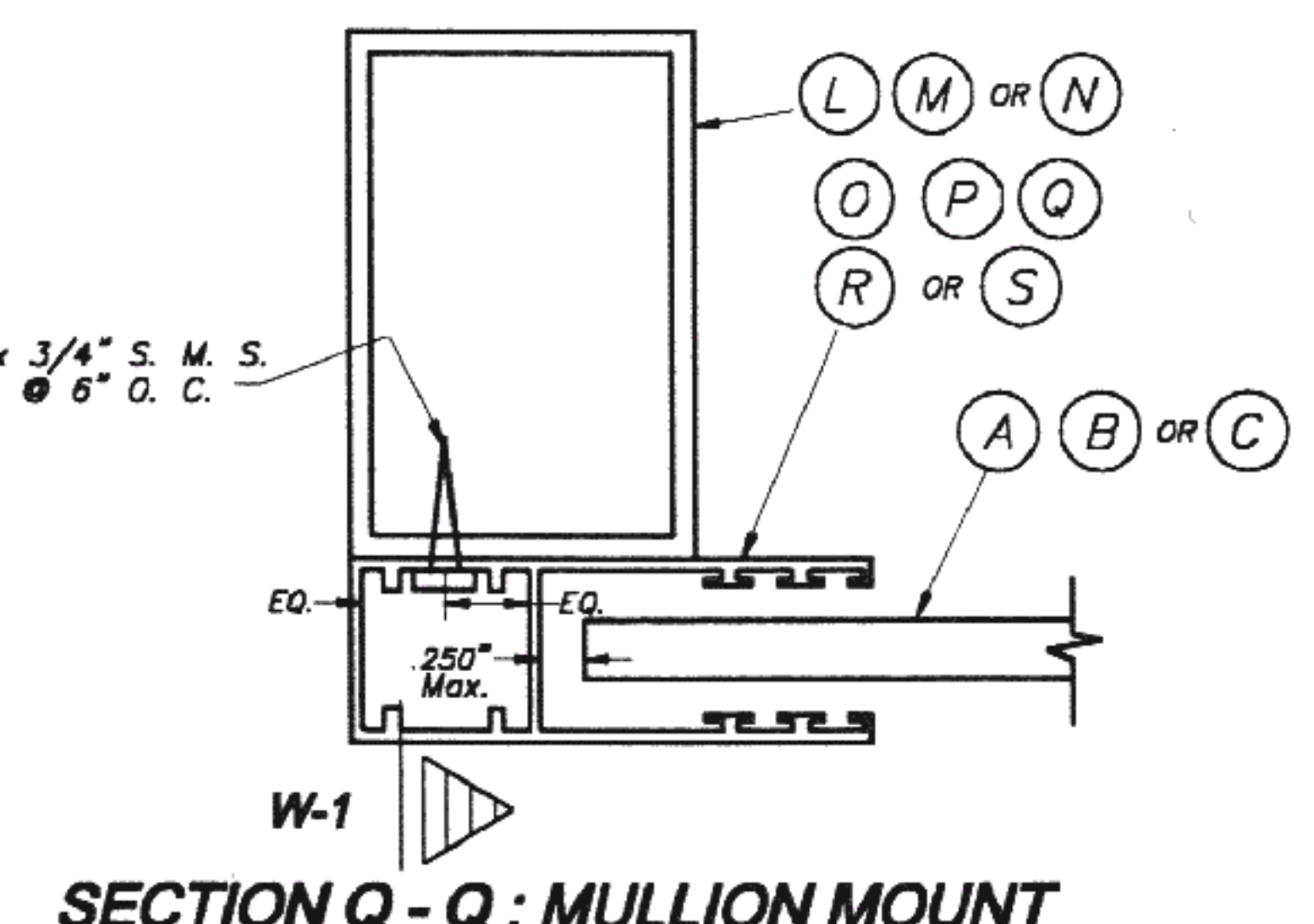
SECTION P - P (2) : SIDE WALL MOUNT

SCALE: 1/2" = 1"



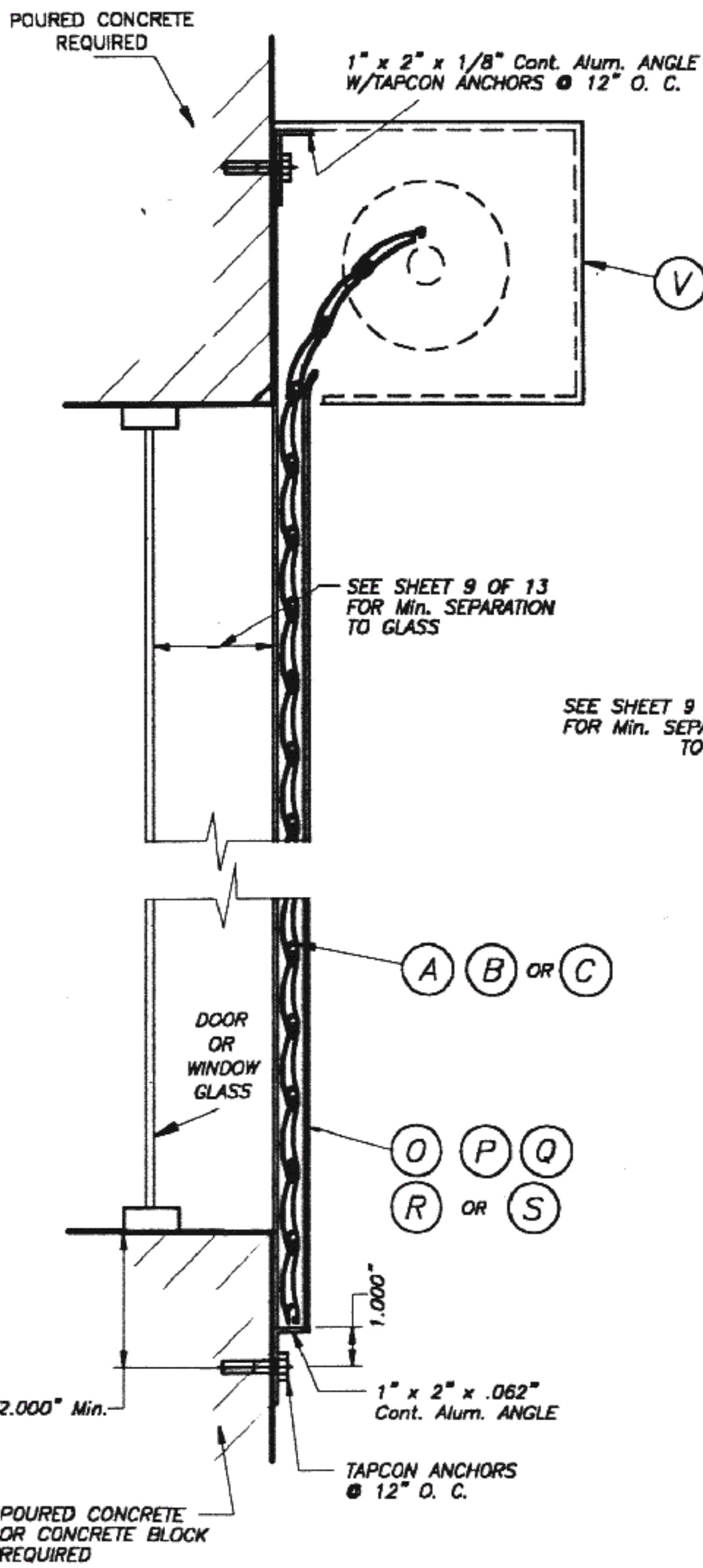
SECTION P - P (3) : BUILD-OUT

SCALE: 1/2" = 1"



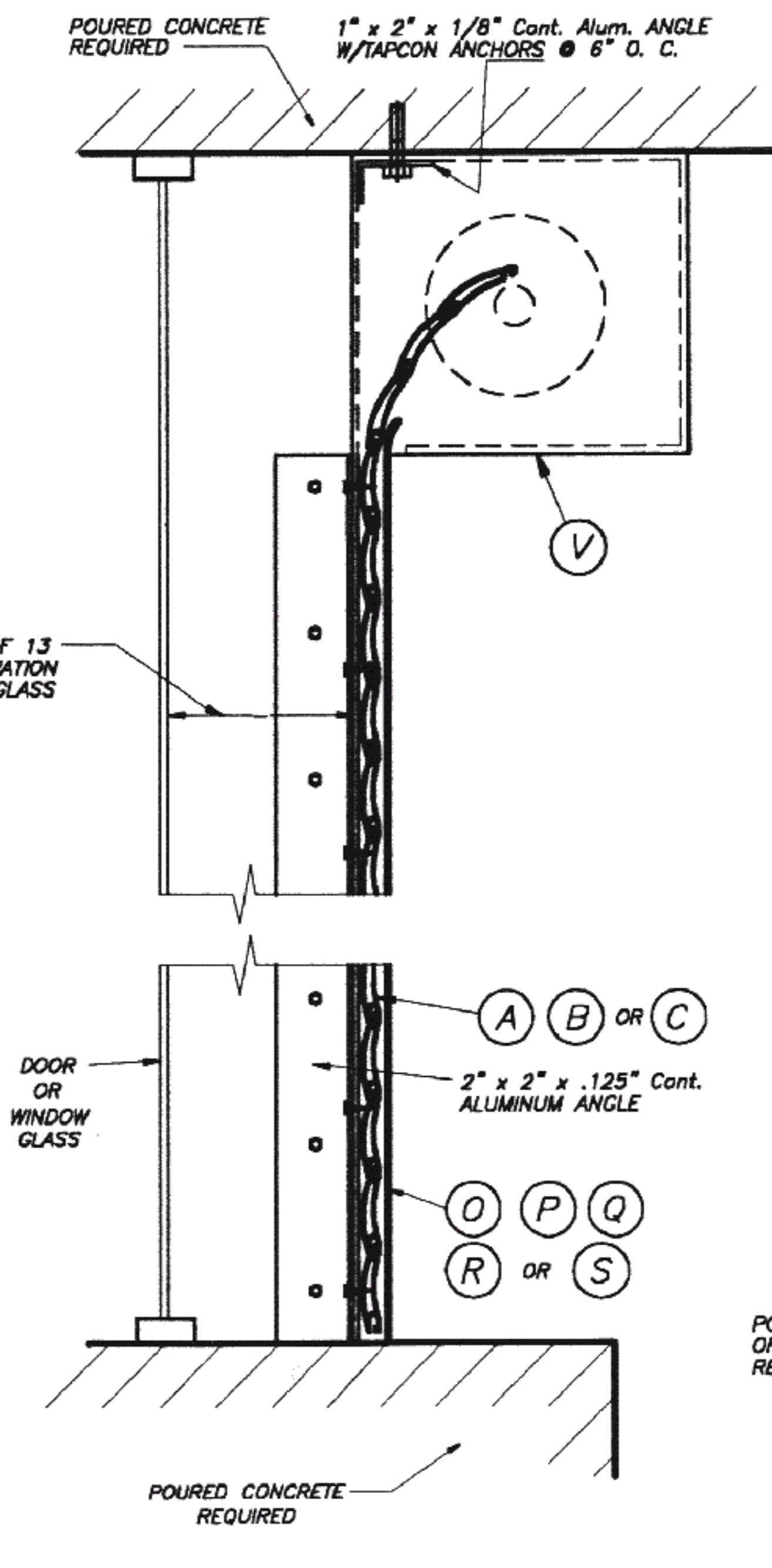
SECTION Q - Q : MULLION MOUNT

SCALE: 1/2" = 1"



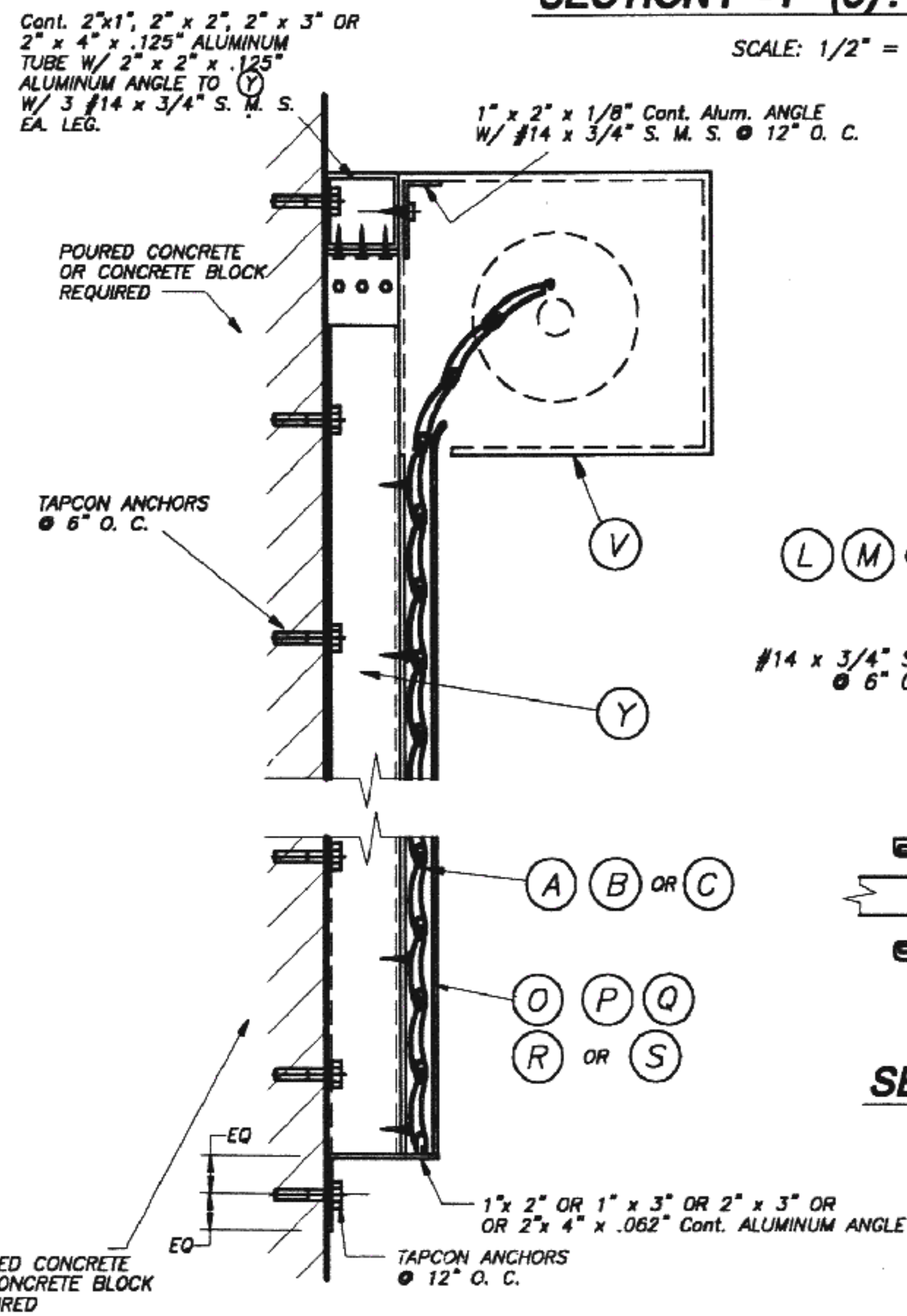
SECTION X - X (1)

N. T. S.



SECTION X - X (2)

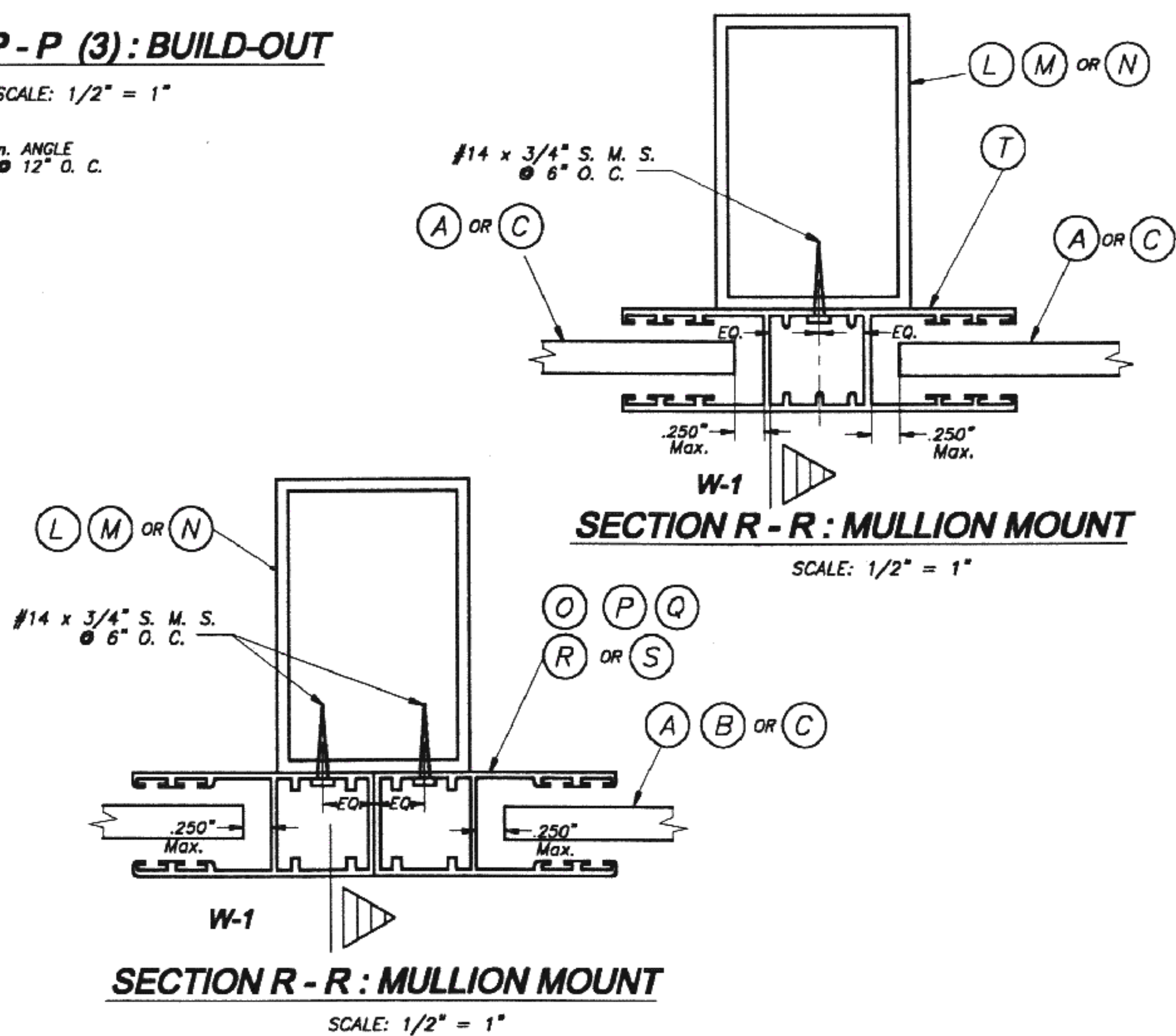
N. T. S.



SECTION X - X (3)

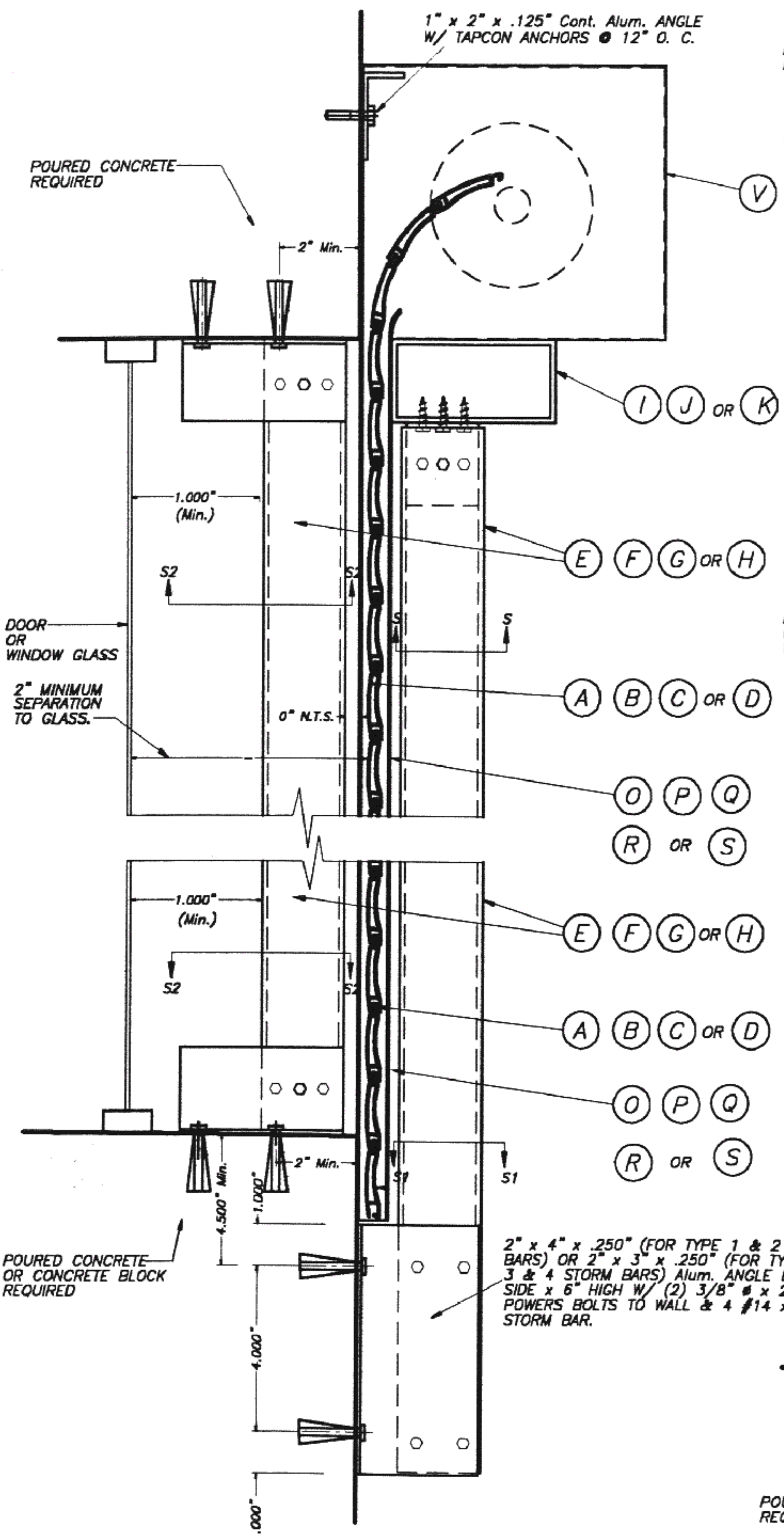
N. T. S.

Handwritten signature



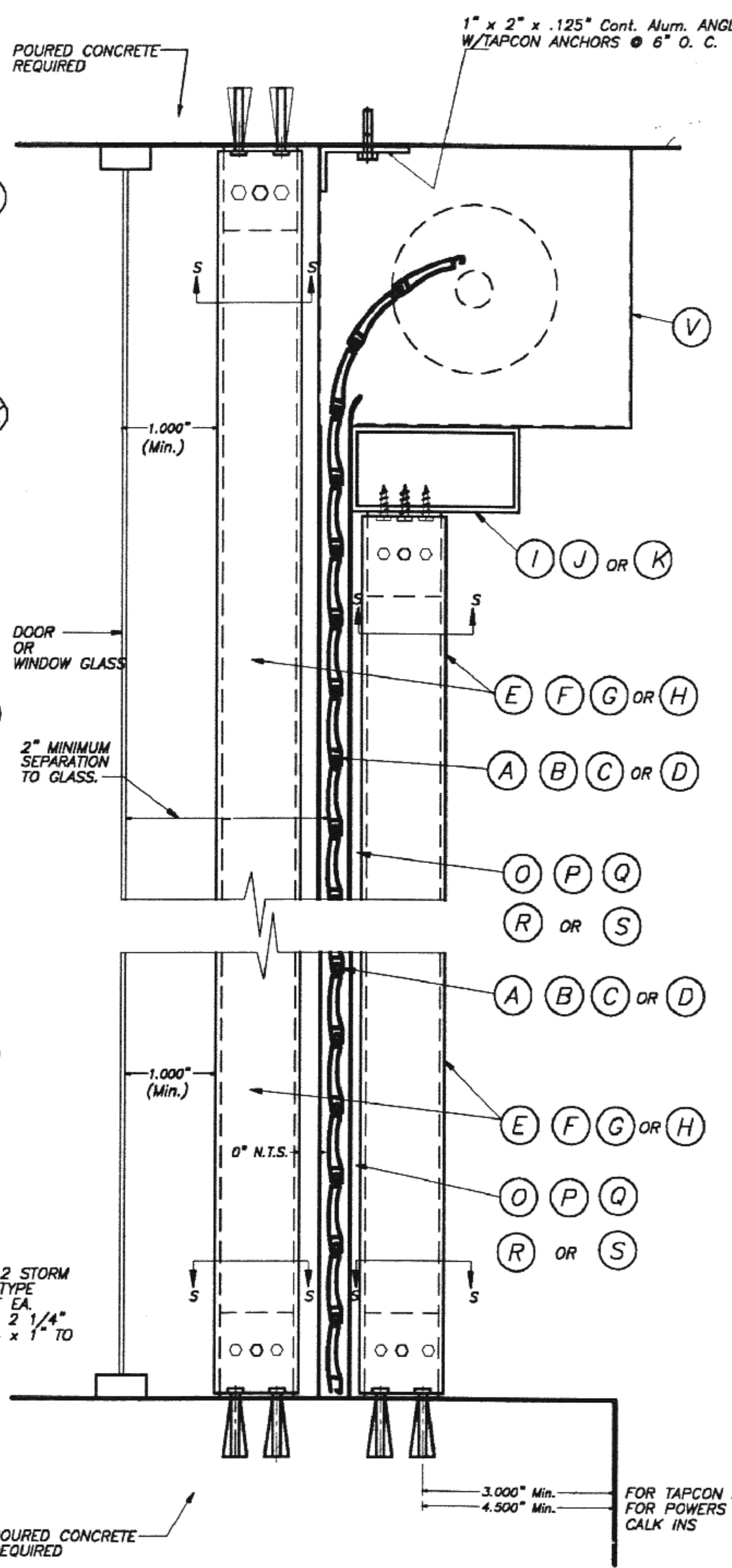
SECTION R - R : MULLION MOUNT

SCALE: 1/2" = 1"



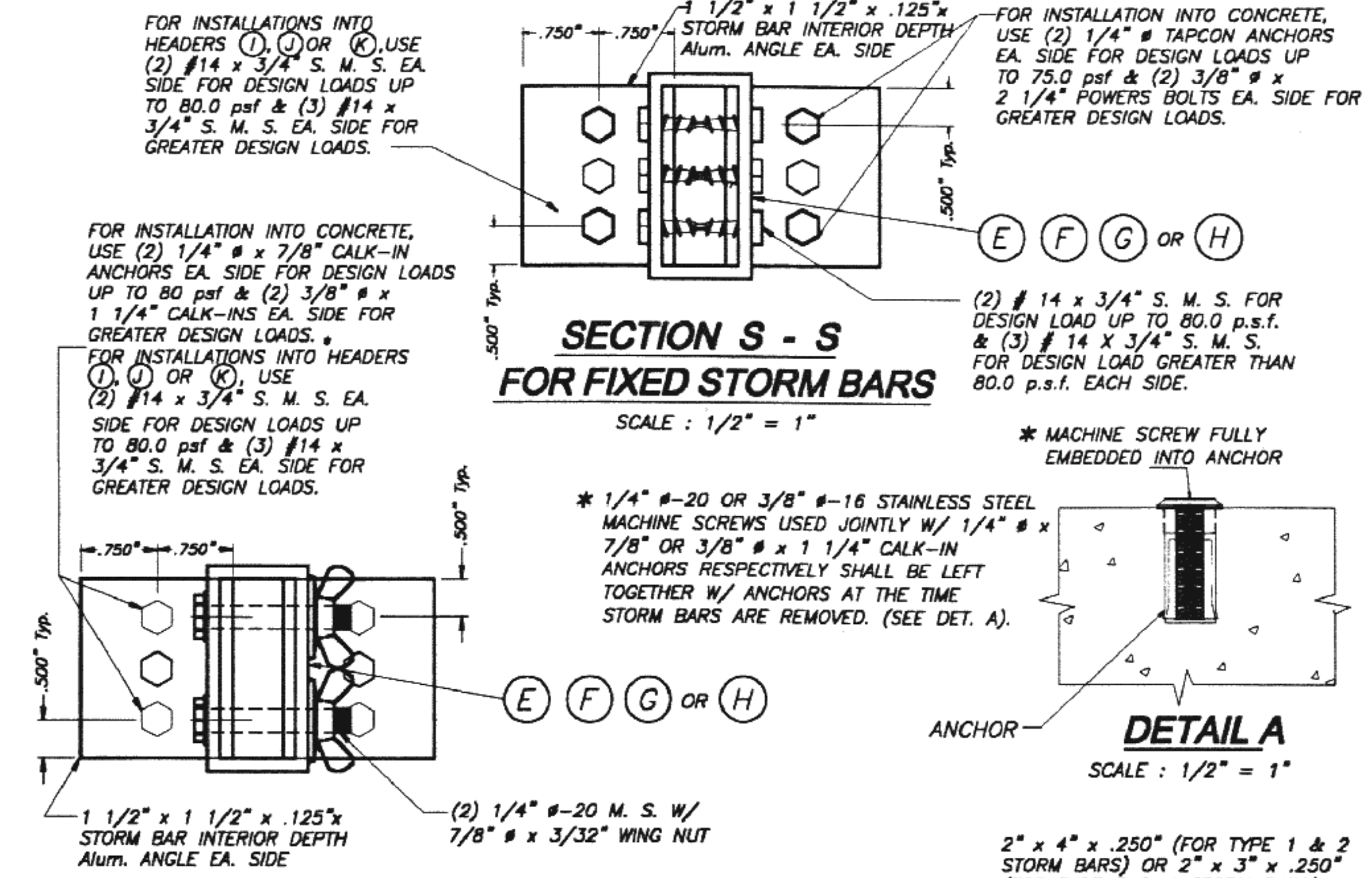
WALL MOUNTING: SECTION V - V(1)

SCALE: 1/4" = 1"



CEILING & FLOOR MOUNTING: SECTION V - V(2)

SCALE: 1/4" = 1"

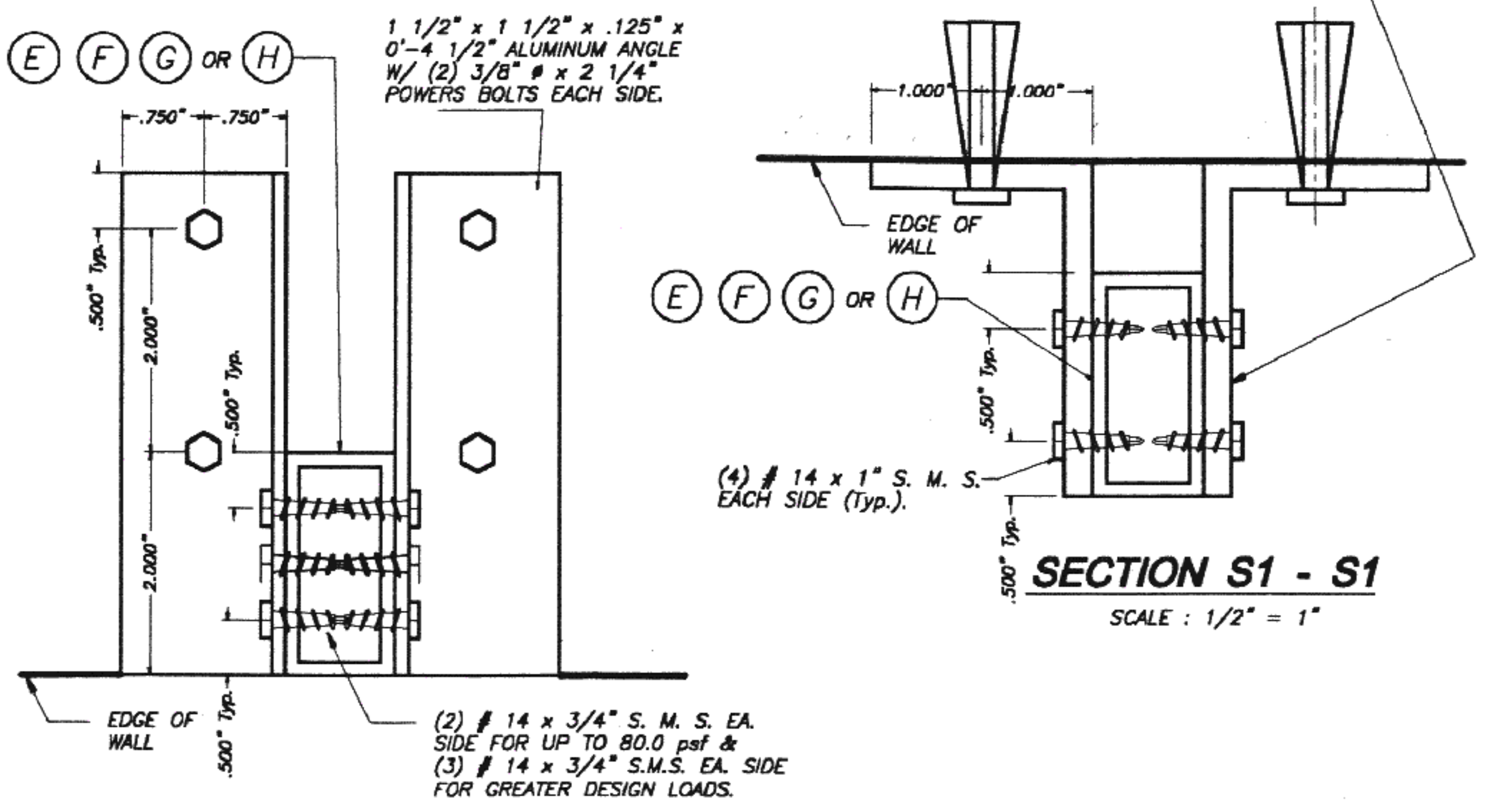


SECTION S - S FOR FIXED STORM BARS

SCALE: 1/2" = 1"

SECTION S - S (FOR REMOVABLE STORM BARS)

SCALE: 1/2" = 1"

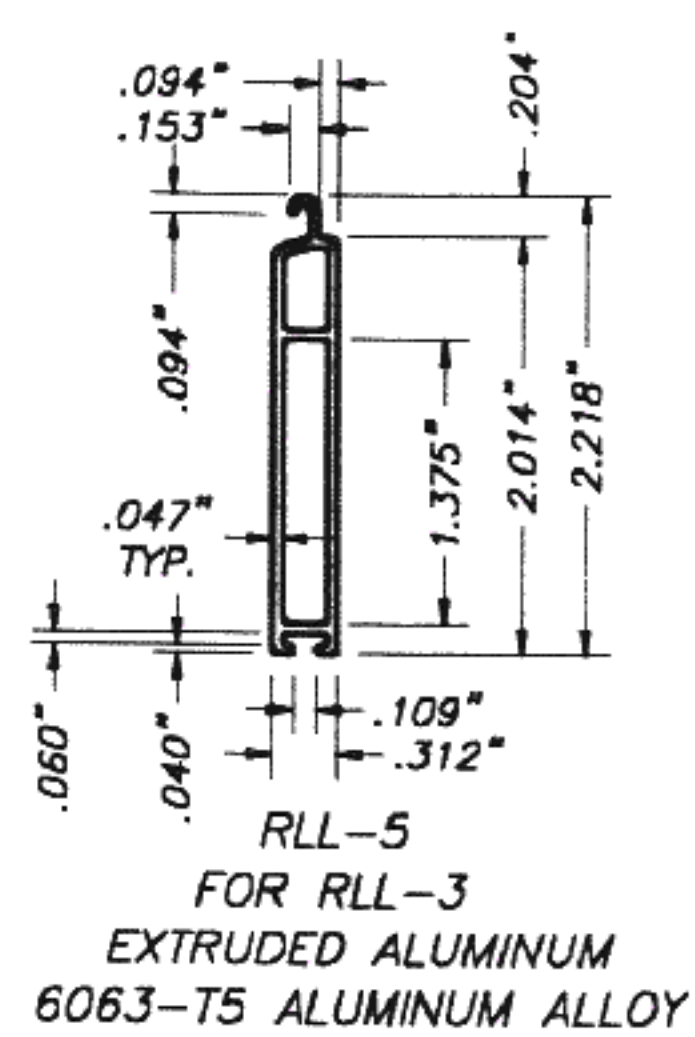
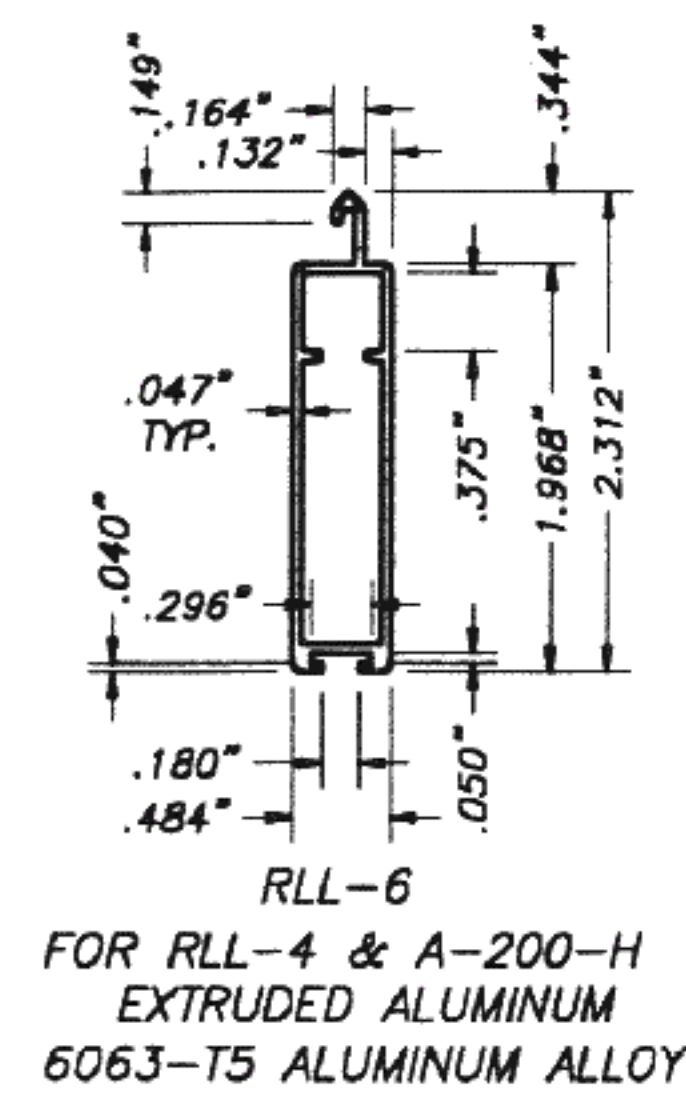


SECTION S1 - S1

SCALE: 1/2" = 1"

SECTION S2 - S2

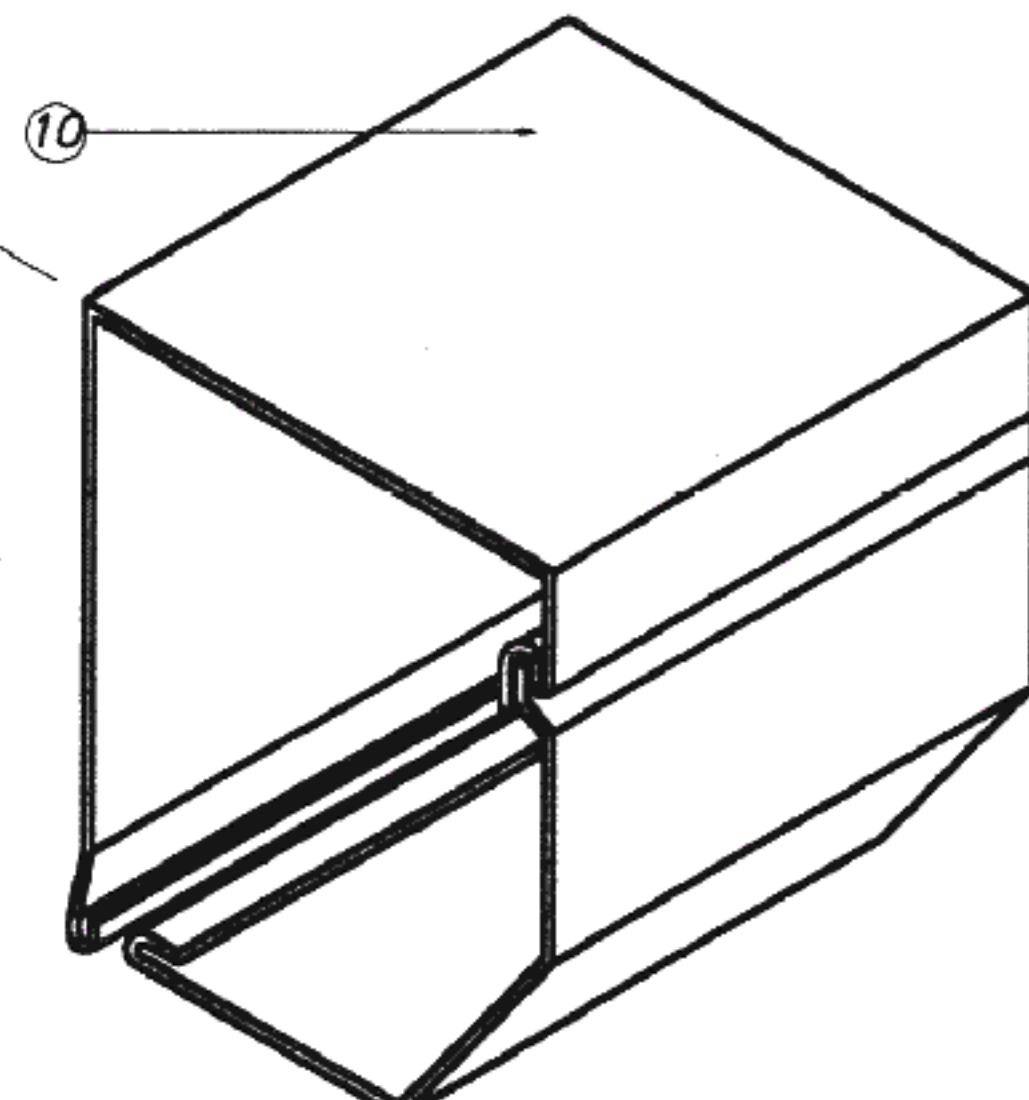
SCALE: 1/2" = 1"



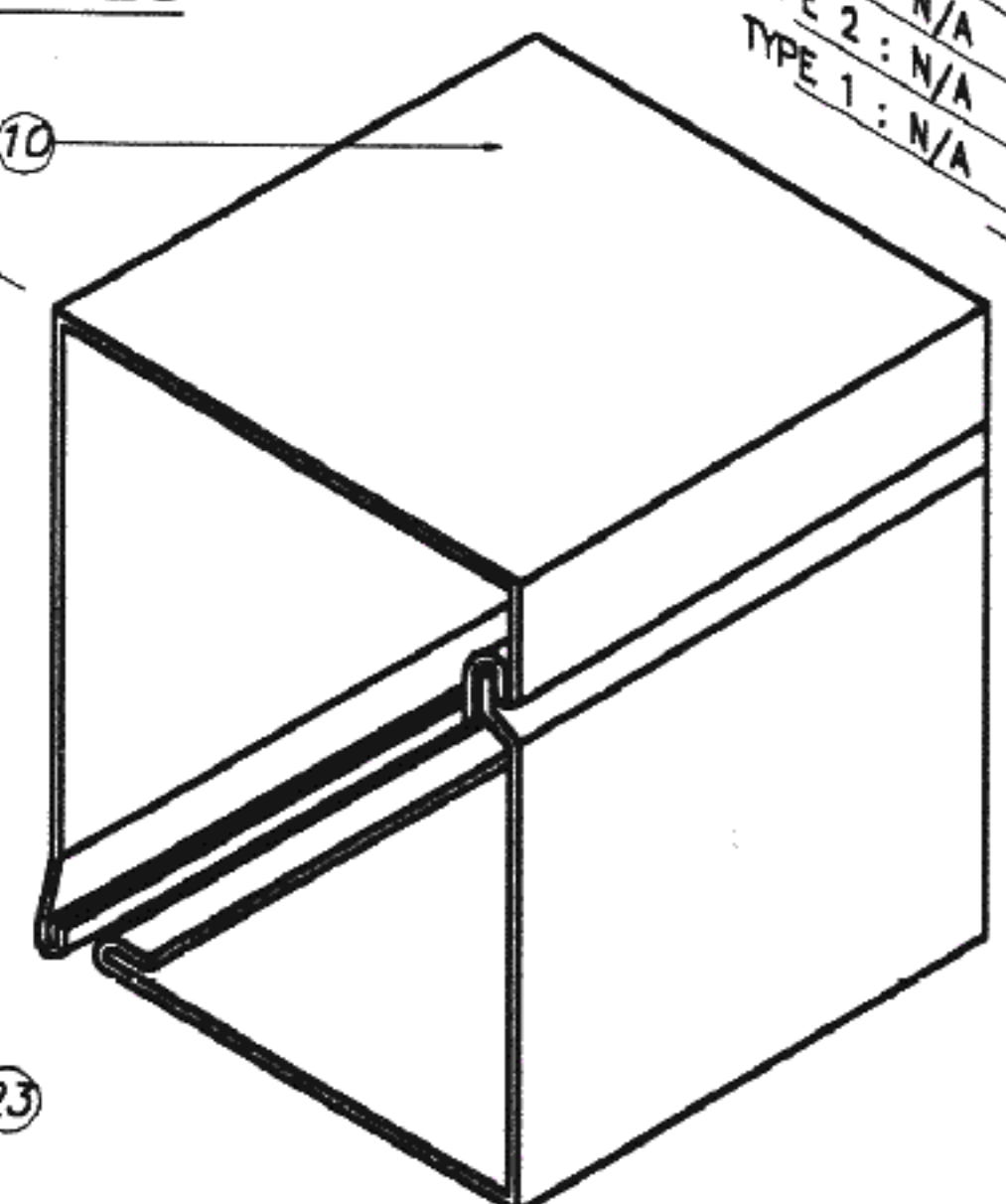
14 DETAILS

TYPE 10 : N/A
TYPE 9 : 10"
TYPE 8 : 8"
TYPE 7 : 8"
TYPE 6 : 7"
TYPE 5 : 6.5"
TYPE 4 : 6"
TYPE 3 : 5.5"
TYPE 2 : 5"
TYPE 1 : 4"

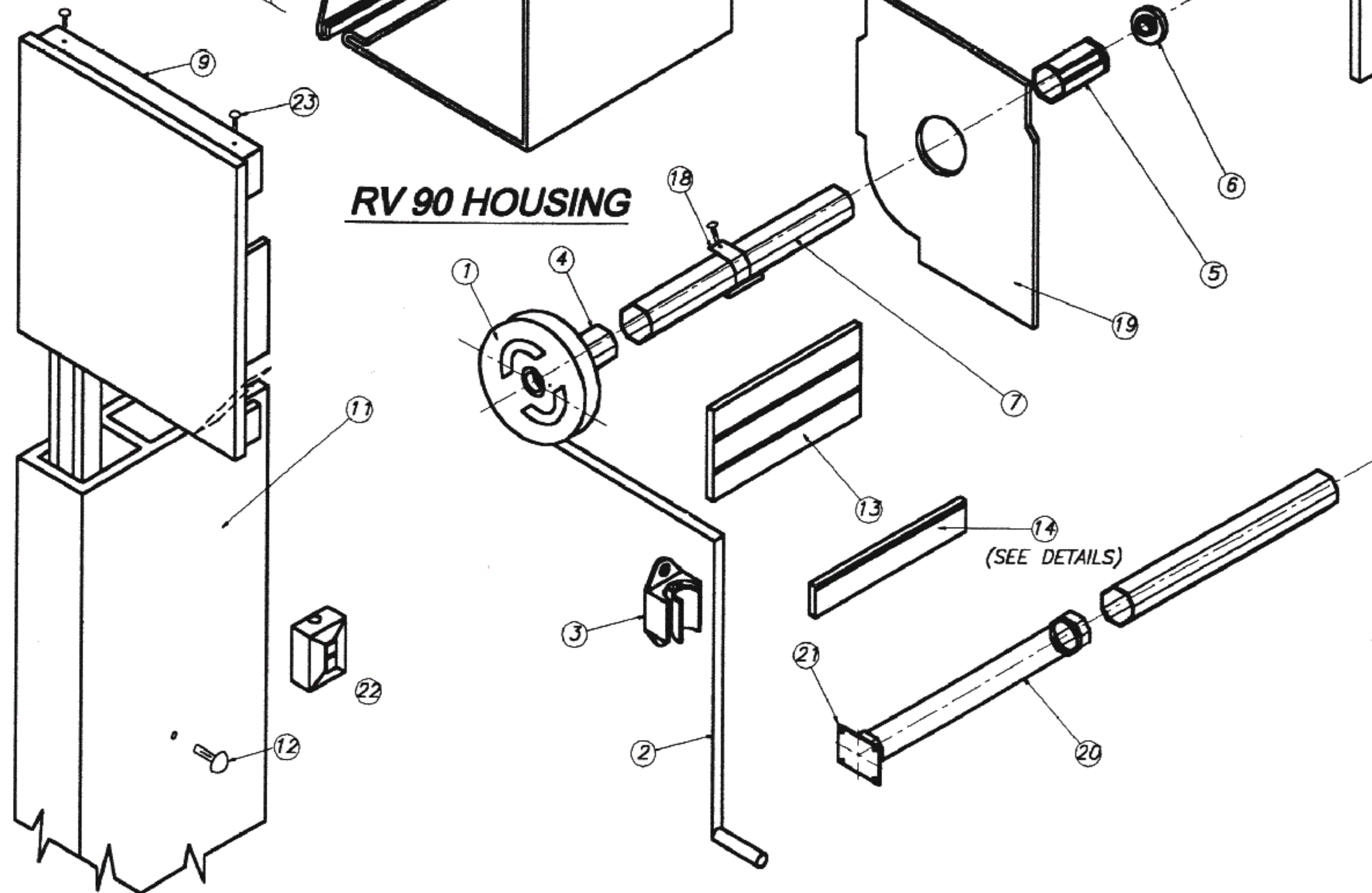
TYPE 10 : 12"
TYPE 9 : 10"
TYPE 8 : 8"
TYPE 7 : 8"
TYPE 6 : 7"
TYPE 5 : 6.5"
TYPE 4 : 6"
TYPE 3 : N/A
TYPE 2 : N/A
TYPE 1 : N/A



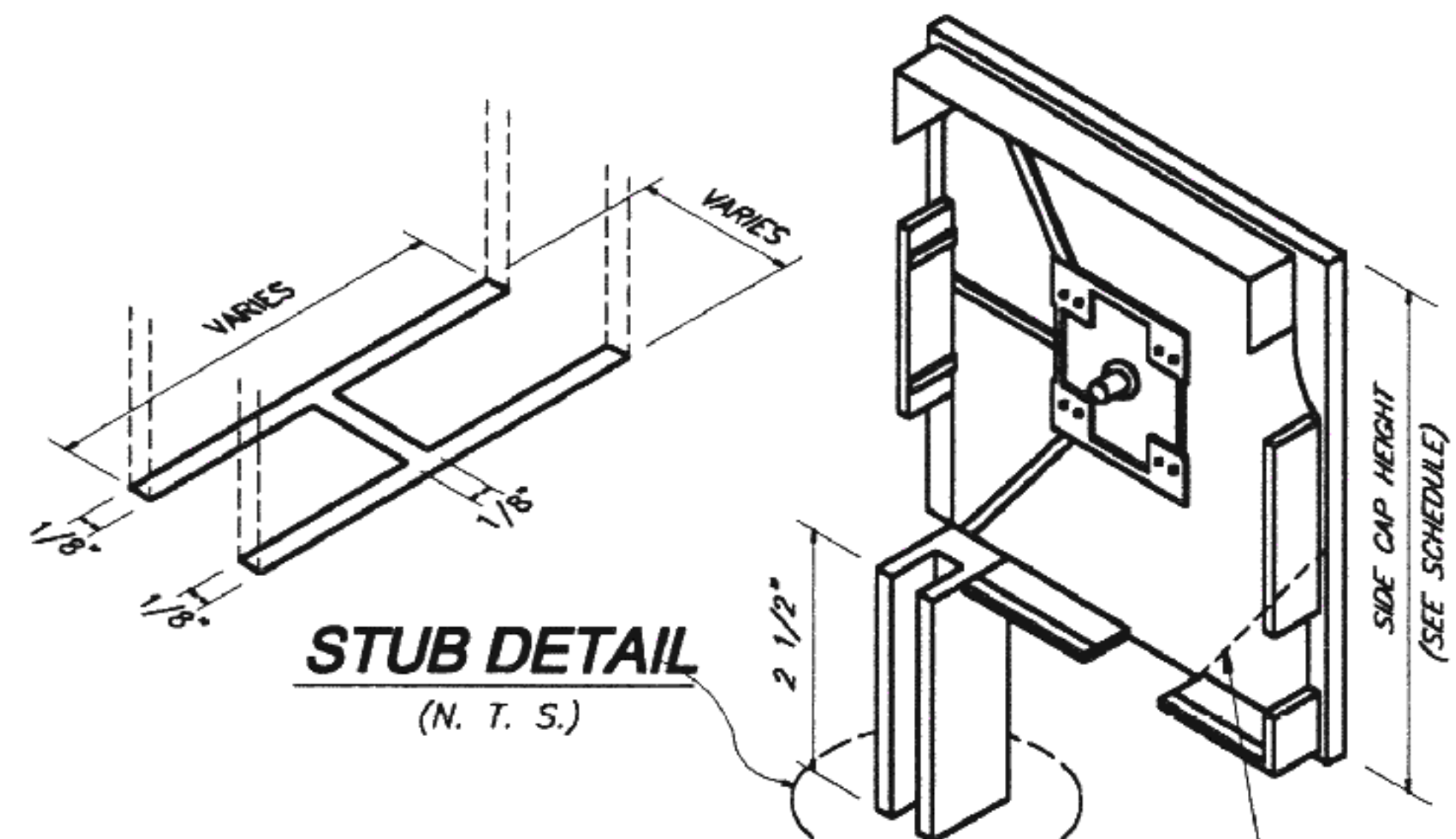
RV 45 & RV 45/S HOUSINGS



RV 90 HOUSING



V BOX COMPONENTS AND ASSEMBLY DETAIL



STUB DETAIL
(N. T. S.)

X SIDE CAPS:
BK 90, BK 45 & BK 45/S

45° CHAMFER
AS APPLICABLE

COMPONENTS FOR GEAR OPERATED SYSTEM

- ① - GEAR
- ② - UNIVERSAL & CRANK
- ③ - CRANK HOLDER(OPTIONAL)
- ④ - GEAR INSERT(GEAR TO AXLE CONNECTOR)
- ⑤ - IDLER INSERT
- ⑥ - BALL BEARING
- ⑦ - OCTAGONAL AXLE
- ⑧ - SIDE/END CAP
- ⑩ - HOUSING(FRONT & BOTTOM), 0.040" THICK
- ⑪ - SIDE RAIL
- ⑫ - PLUG-BUTTONS
- ⑬ - ALUMINUM SLATS
- ⑭ - BASE SLAT
- ⑮ - PLASTIC STOPS(OPTIONAL)
- ⑯ - SIDE LOCKS(OPTIONAL)
- ⑰ - STAPLES(OPTIONAL)
- ⑱ - SPRINGLOCK HANGER
- ⑲ - SAFETY PLATES

**ADDITIONAL COMPONENTS FOR
MOTORIZED OPERATED SYSTEM**

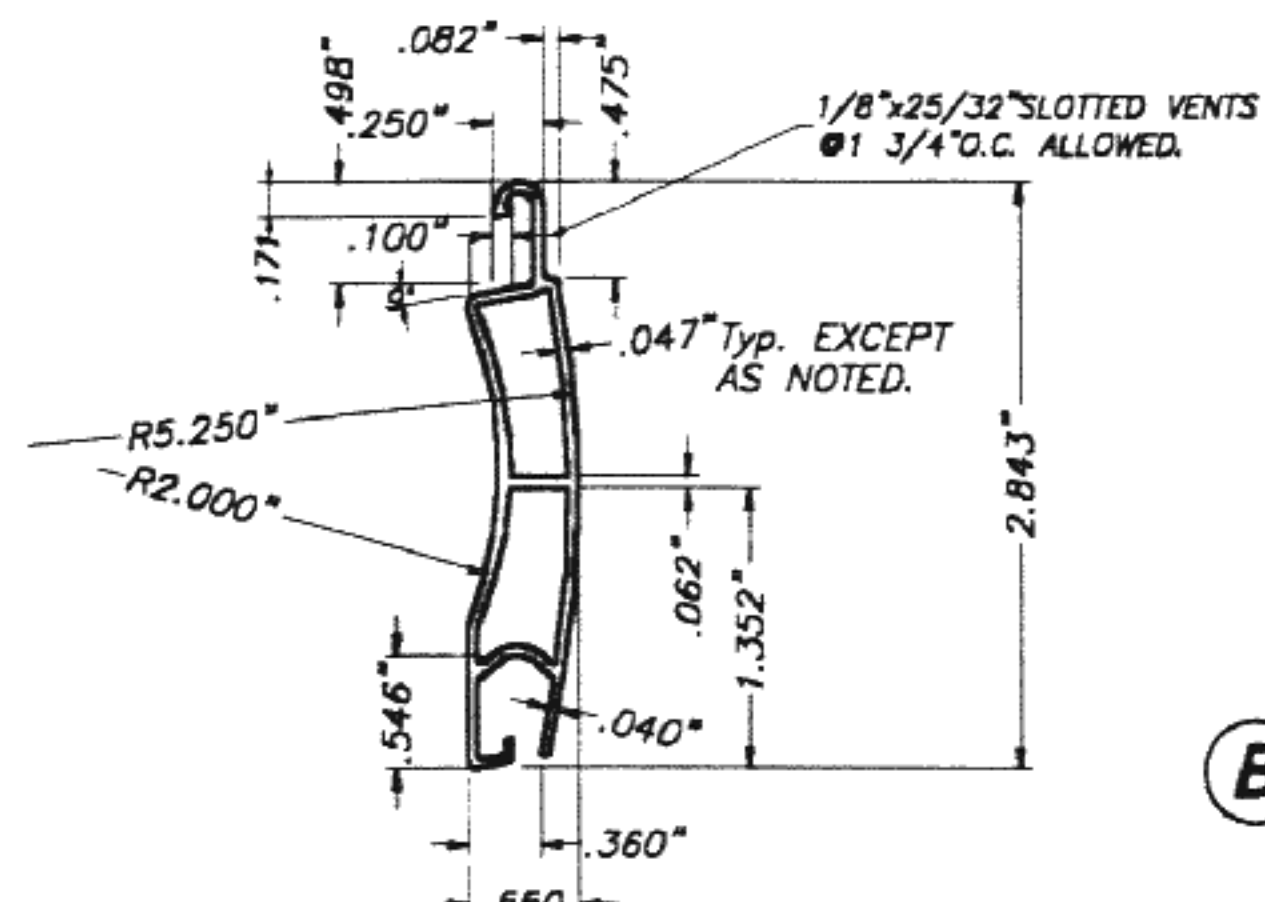
- ⑳ - TUBULAR MOTOR
- ㉑ - MOTOR BRACKET
- ㉒ - SWITCH

FASTENERS

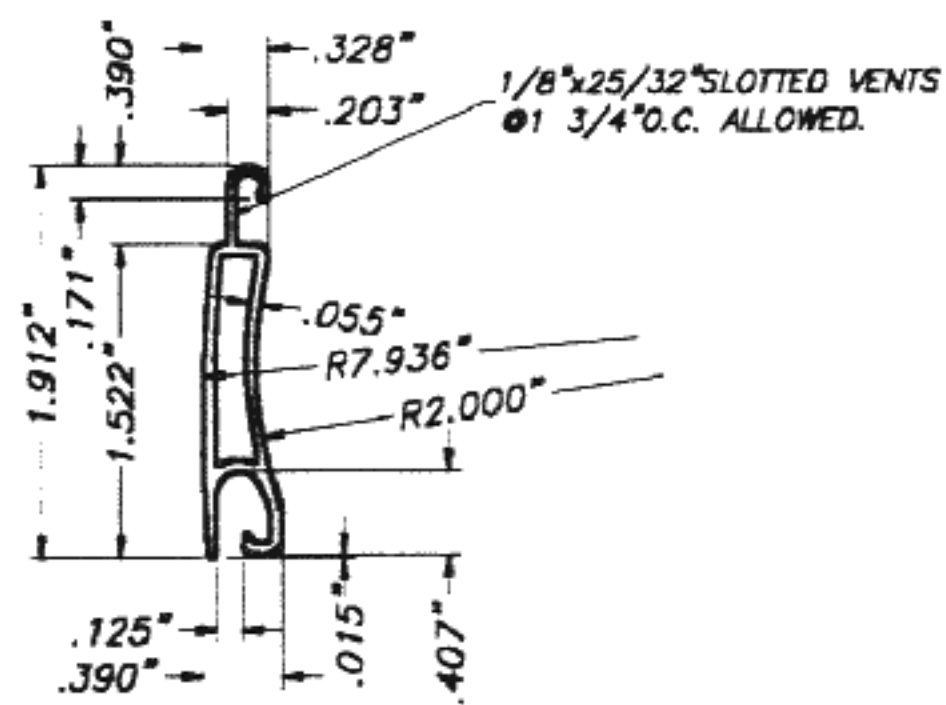
- ㉓ - 3/16" ALUMINUM POP RIVETS(6 REQ'D EA. SIDE CAP) : 2 @ TOP, 2 @ REAR, 2 @ BOTTOM

TYPE	90°	45°
1	4.0"	N/A
2	5.0"	N/A
3	5.5"	N/A
4	6.0"	6.0"
5	6.5"	6.5"
6	7.0"	7.0"
7	8.0"	8.0"
8	9.0"	9.0"
9	10.0"	10.0"
10	N/A	12.0"

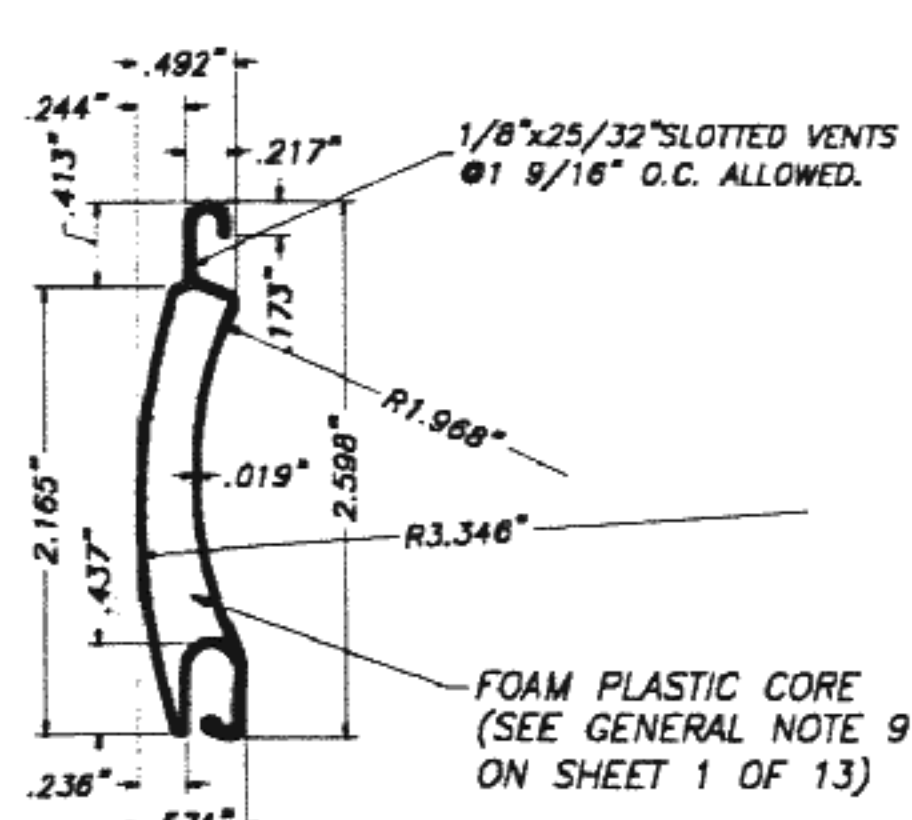
N/A = NOT APPLICABLE



(A) TYPE 1 SLAT:
RLL-4 SLAT
EXTRUDED ALUMINUM
6063-T5 ALUMINUM ALLOY
SCALE: 1/2" = 1"

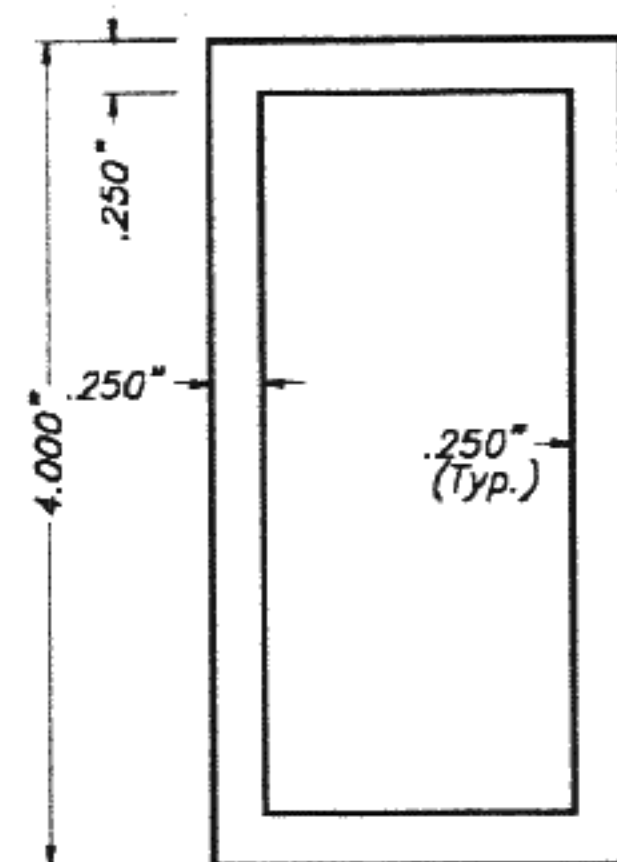


(B) TYPE 2 SLAT:
RLL-3 SLAT
EXTRUDED ALUMINUM
6063-T5 ALUMINUM ALLOY
SCALE: 1/2" = 1"

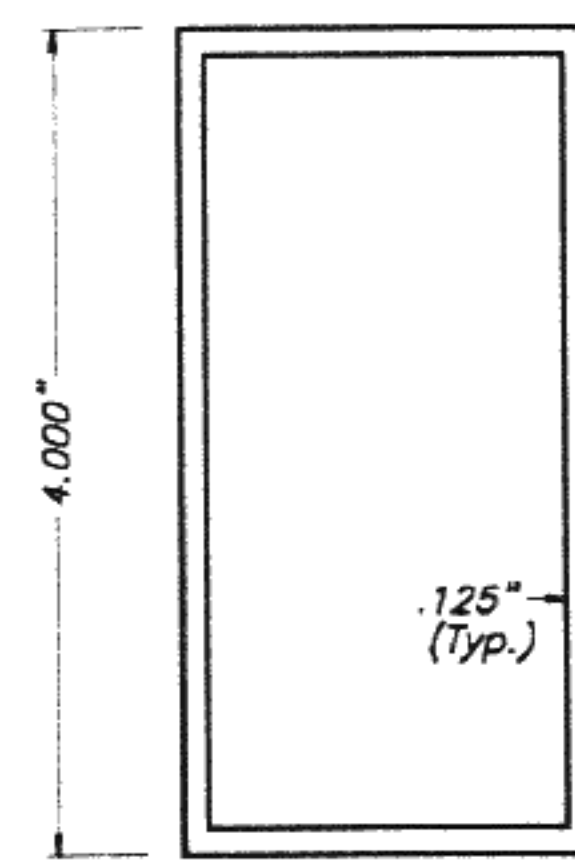


(C) TYPE 3 SLAT:
A-200-H SLAT
55mm (t = .019") HIGH
DENSITY FOAM PLASTIC CORE
SHEET METAL ALUMINUM SLAT
3005-H48 ALUMINUM ALLOY
SCALE: 1/2" = 1"

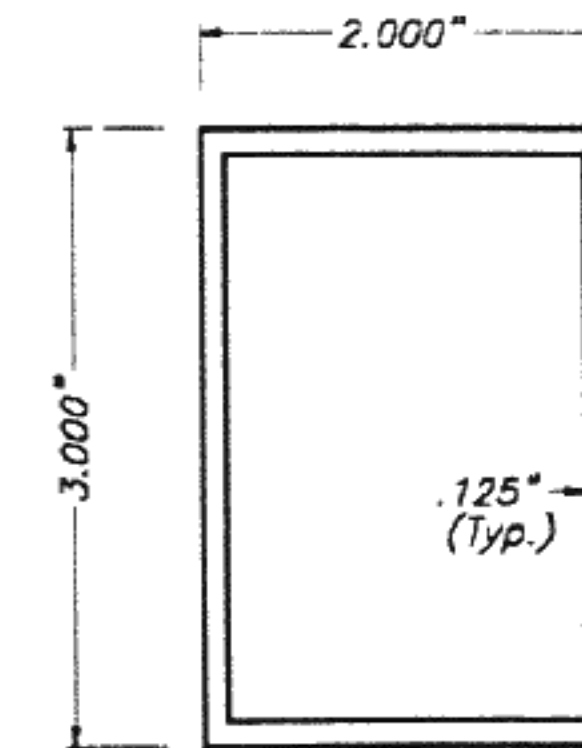
NOTE:
TYPE 1 THRU 4 SLATS SHALL BE INSTALLED
W/SIDE LOCKS AT EVERY OTHER SLAT.



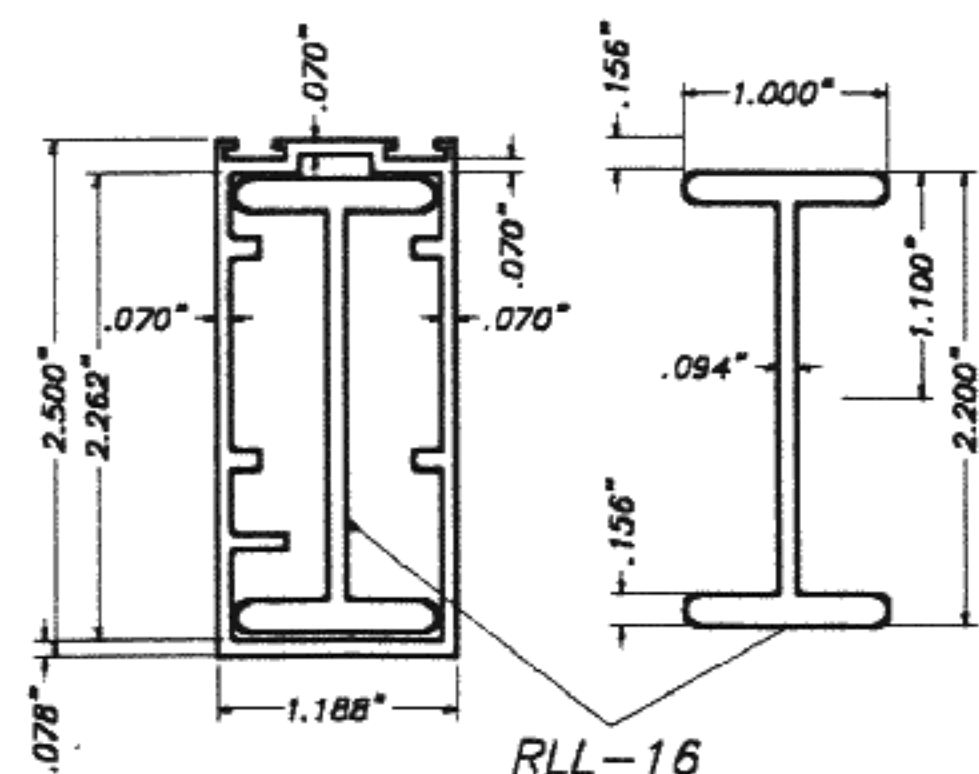
(E) TYPE 1 STORM BAR:
4" HEAVY EXTRUDED STORM BAR
6063-T6 ALUMINUM ALLOY
SCALE: 1/2" = 1"



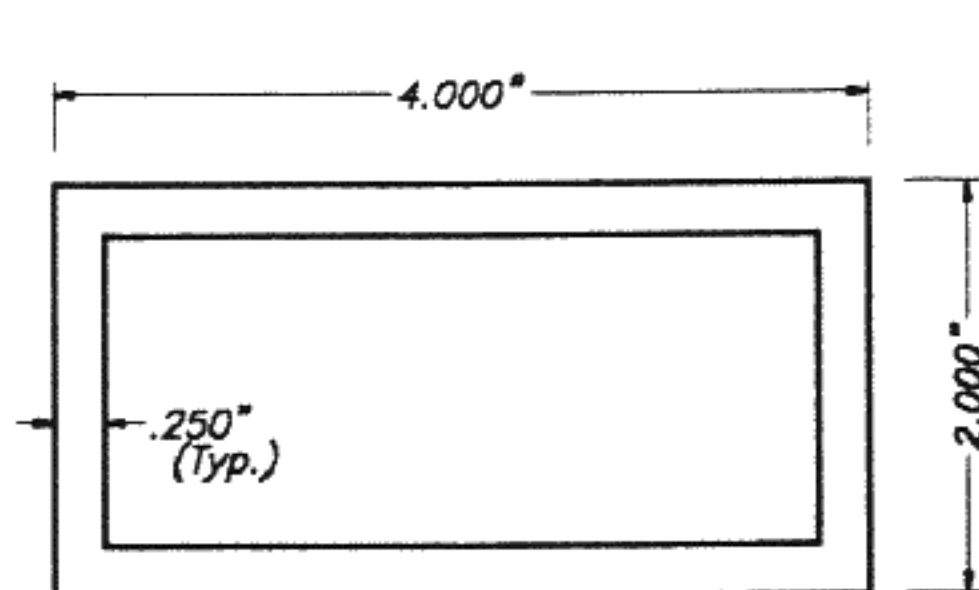
(F) TYPE 2 STORM BAR:
4" EXTRUDED STORM BARS
6063-T6 ALUMINUM ALLOY
SCALE: 1/2" = 1"



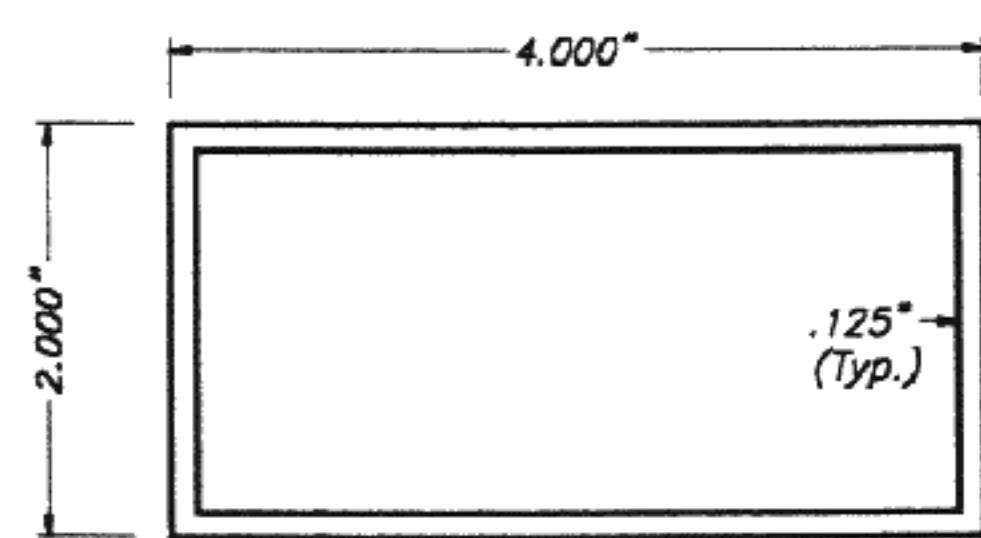
(G) TYPE 3 STORM BAR:
3" EXTRUDED STORM BARS
6063-T6 ALUMINUM ALLOY
SCALE: 1/2" = 1"



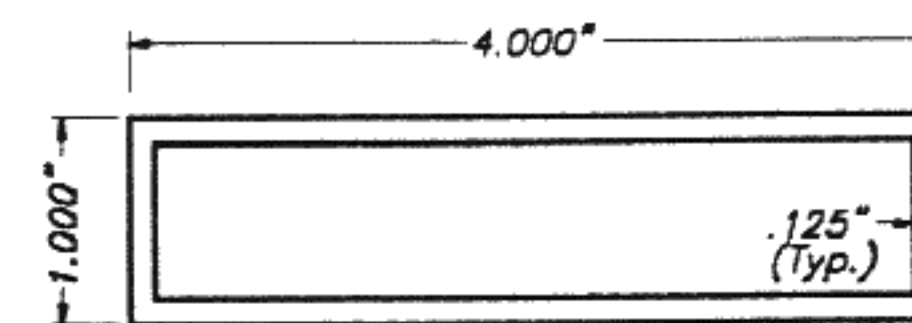
(H) TYPE 4 STORM BAR:
RLL-15 + RLL-16 EXTRUDED STORM BAR
6063-T5 ALUMINUM ALLOY
SCALE: 1/2" = 1"



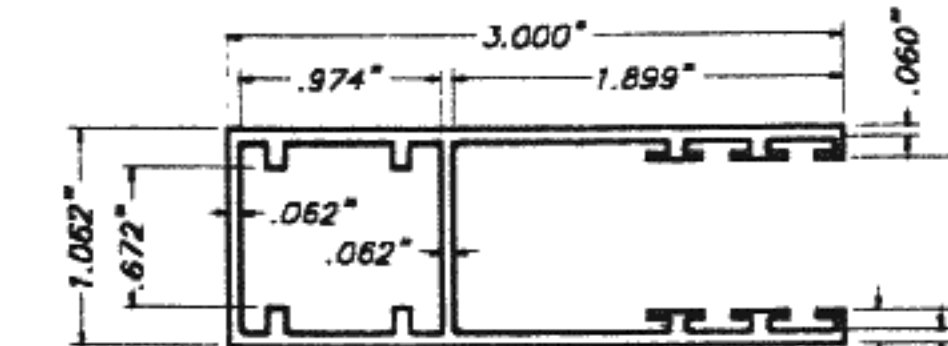
(I) TYPE 1 HEADER:
4" HEAVY EXTRUDED HEADER
6063-T6 ALUMINUM ALLOY
SCALE: 1/2" = 1"



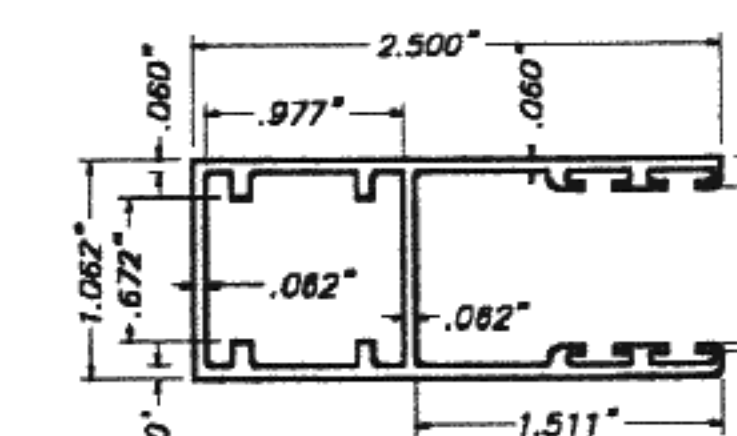
(J) TYPE 2 HEADER:
4" EXTRUDED HEADER
6063-T6 ALUMINUM ALLOY
SCALE: 1/2" = 1"



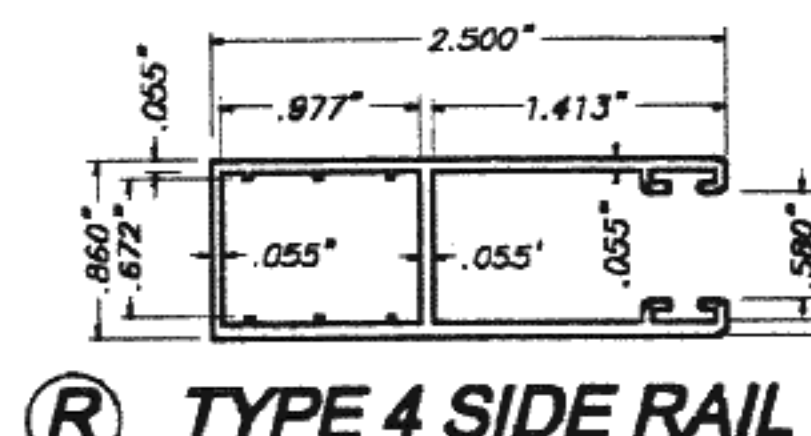
(K) TYPE 3 HEADER:
1"x4" EXTRUDED HEADER
6063-T5 ALUMINUM ALLOY
SCALE: 1/2" = 1"



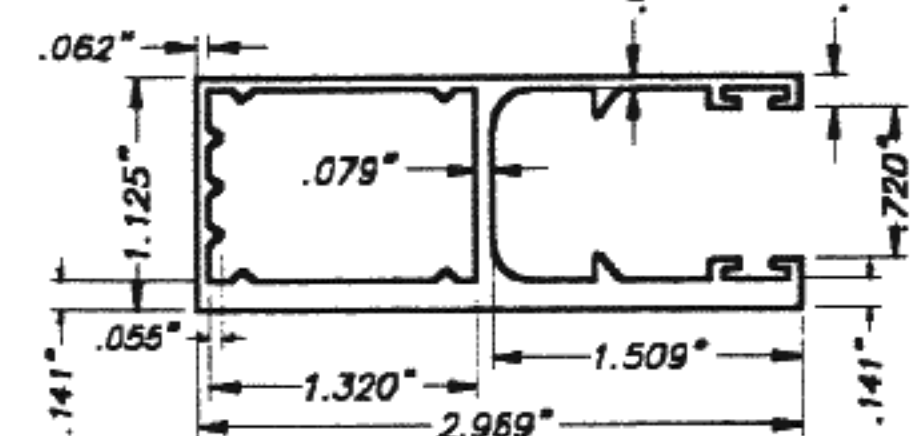
(O) TYPE 1 SIDE RAIL
RLL-25 SIDE RAIL
6063-T5 Alum. ALLOY
SCALE: 1/2" = 1"



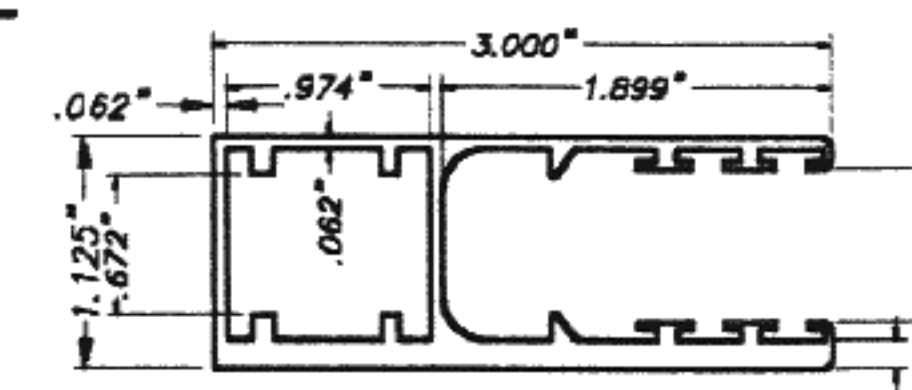
(Q) TYPE 3 SIDE RAIL
RLL-1 SIDE RAIL
6063-T5 Alum. ALLOY
SCALE: 1/2" = 1"



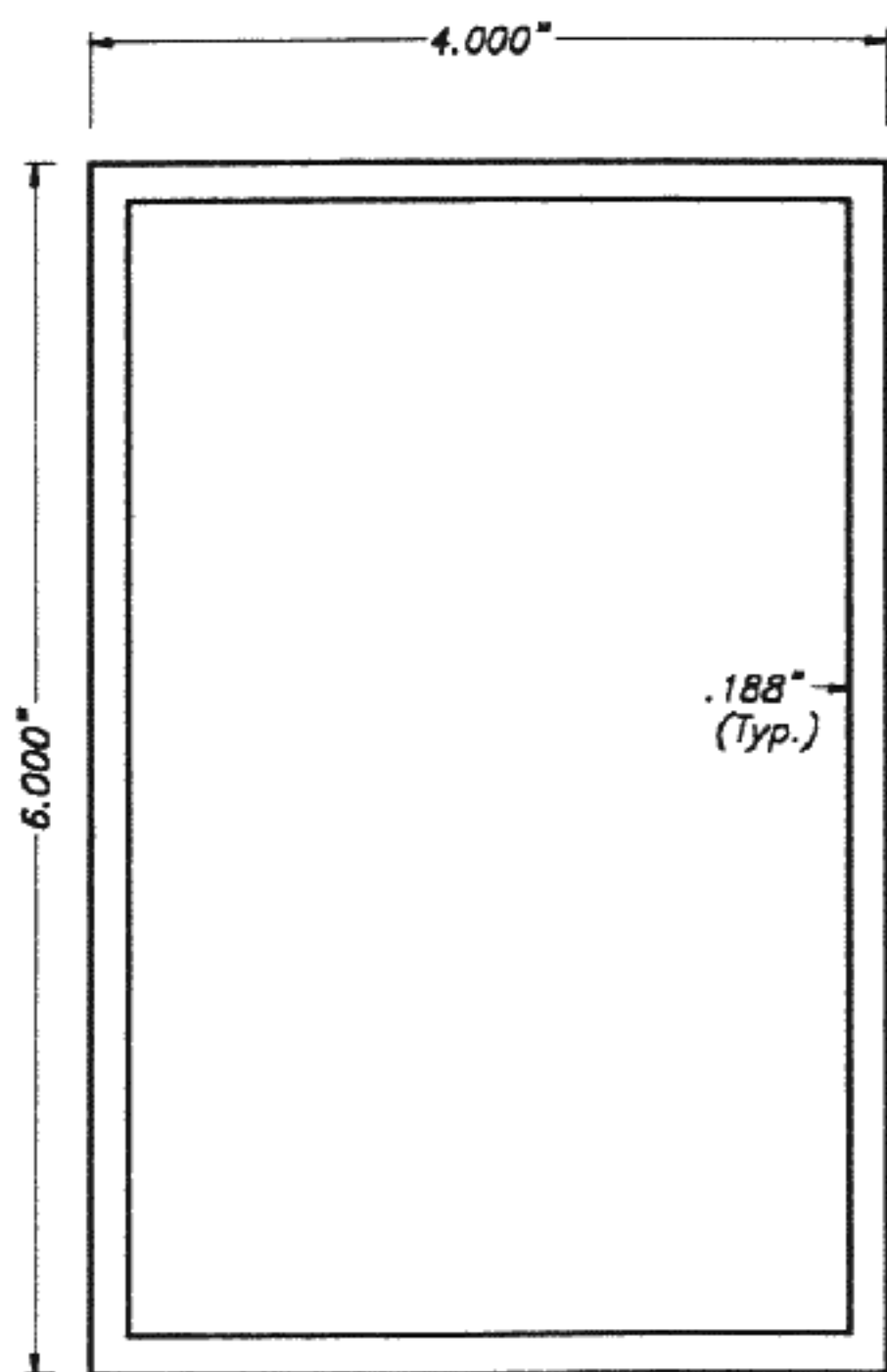
(R) TYPE 4 SIDE RAIL
RLL-32 SIDE RAIL
6063-T5 Alum. ALLOY
SCALE: 1/2" = 1"



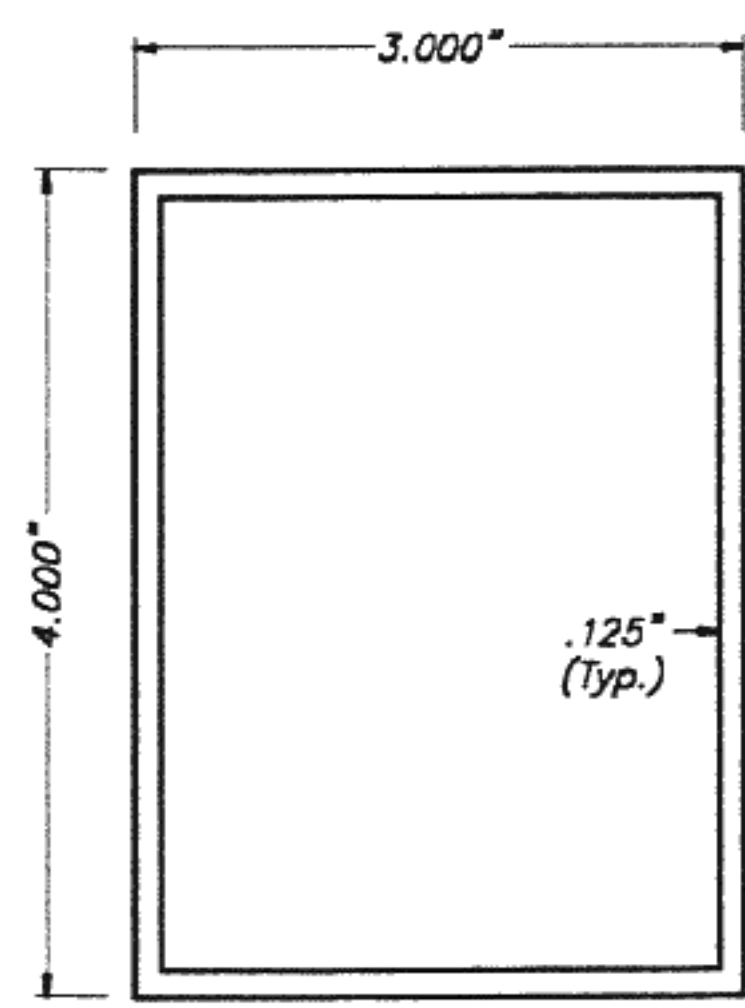
(P) TYPE 2 SIDE RAIL
RLL-40 SIDE RAIL
6063-T5 Alum. ALLOY
SCALE: 1/2" = 1"



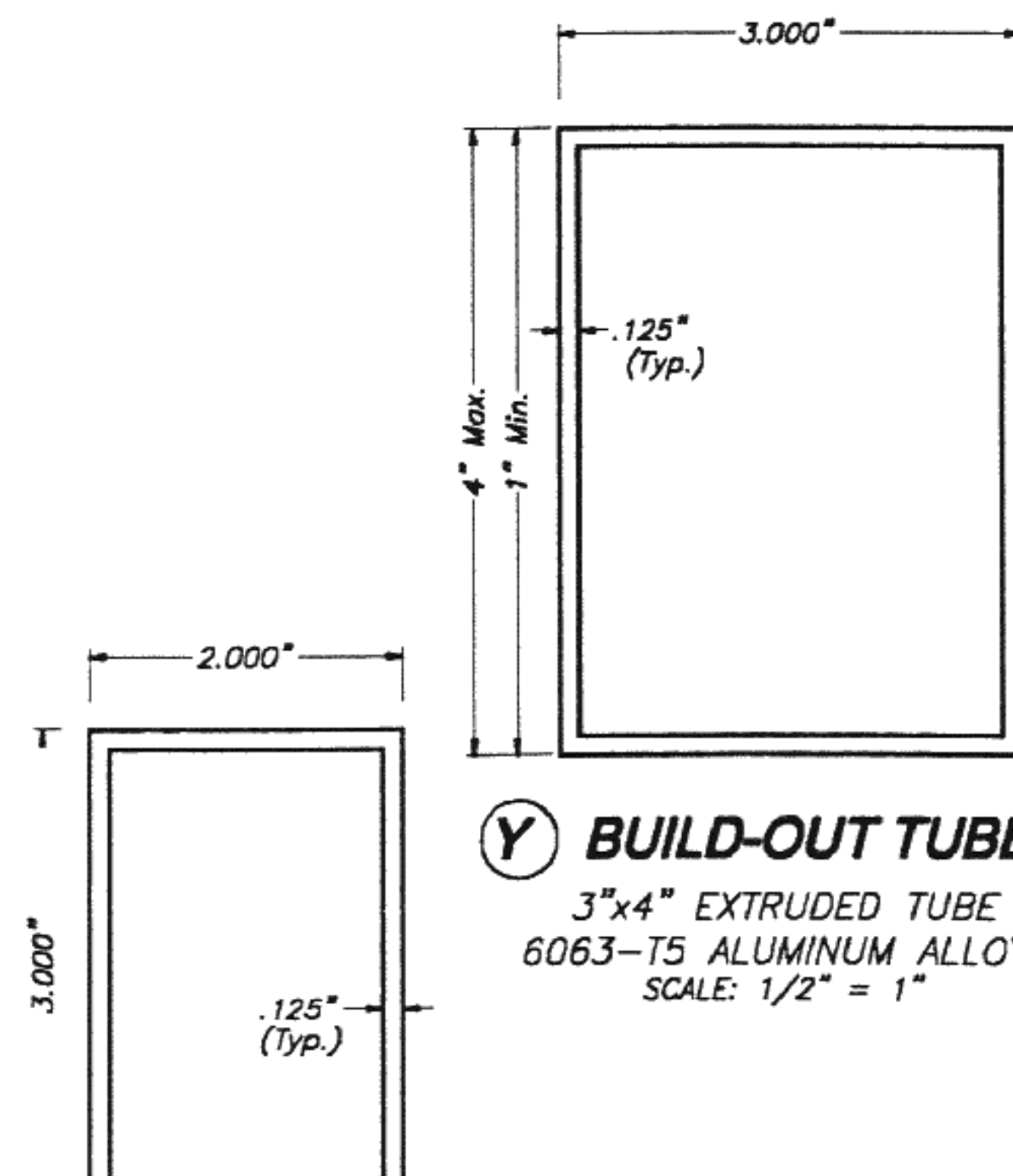
(S) TYPE 5 SIDE RAIL
RLL-54 SIDE RAIL
6063-T5 Alum. ALLOY
SCALE: 1/2" = 1"



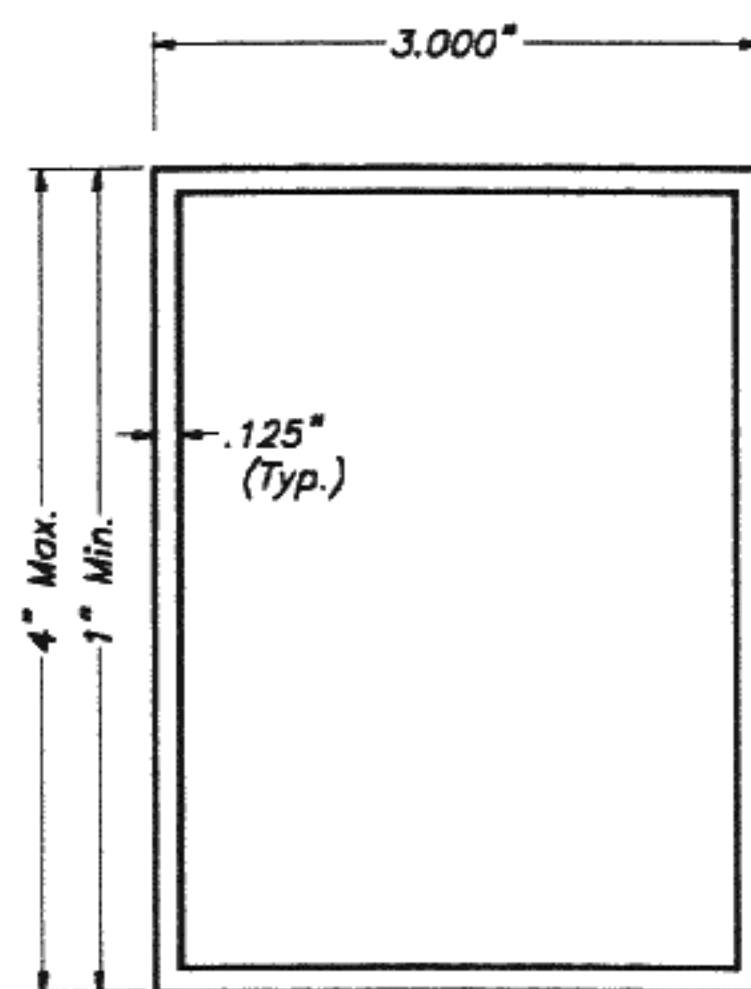
(L) TYPE 1 MULLION:
6" EXTRUDED MULLION
6063-T5 ALUMINUM ALLOY
SCALE: 1/2" = 1"



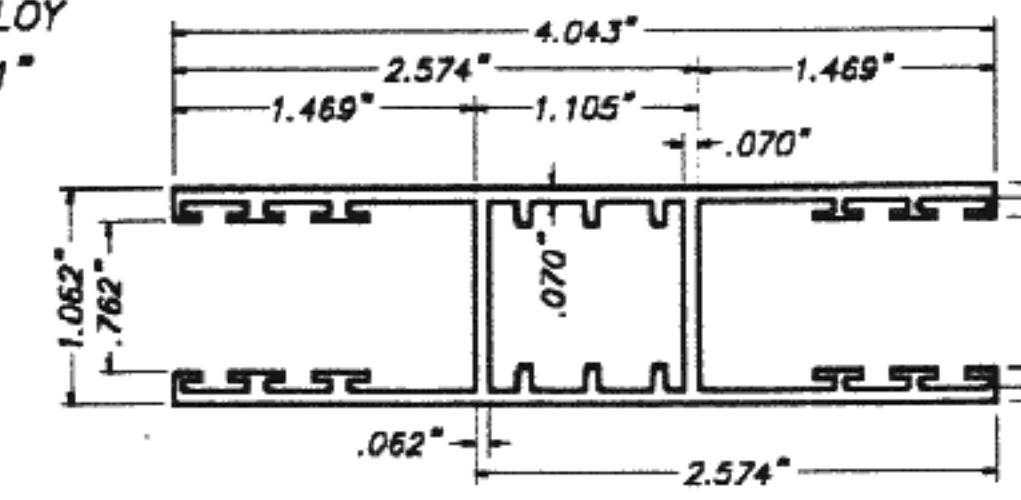
(M) TYPE 2 MULLION:
4" EXTRUDED MULLION
6063-T5 ALUMINUM ALLOY
SCALE: 1/2" = 1"



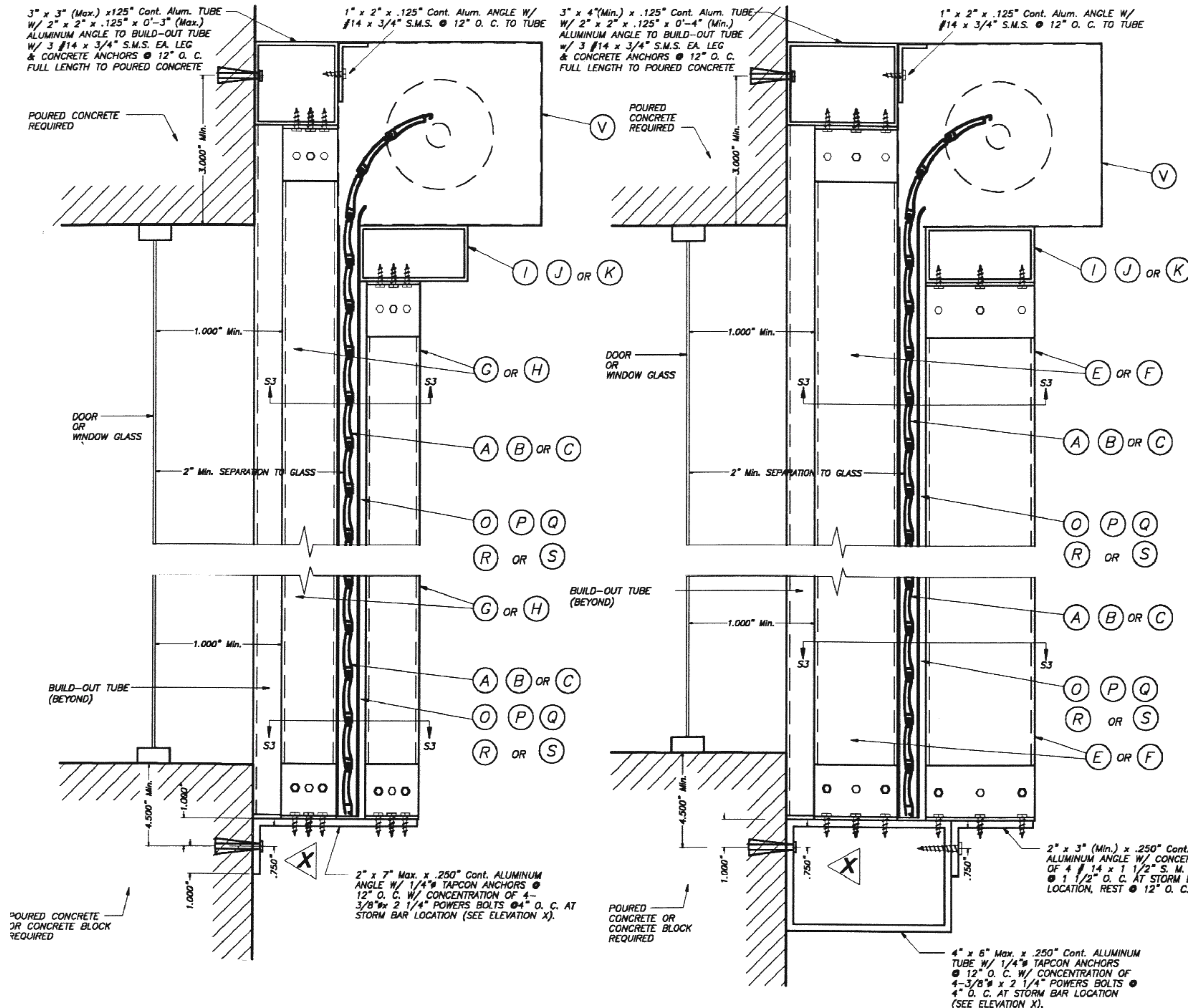
(N) TYPE 3 MULLION:
3" EXTRUDED MULLION
6063-T6 ALUMINUM ALLOY
SCALE: 1/2" = 1"



(Y) BUILD-OUT TUBES
3"x4" EXTRUDED TUBE
6063-T5 ALUMINUM ALLOY
SCALE: 1/2" = 1"



(T) MAXI CENTER RAIL
RLL-7 SIDE RAIL
6063-T5 Alum. ALLOY
SCALE: 1/2" = 1"

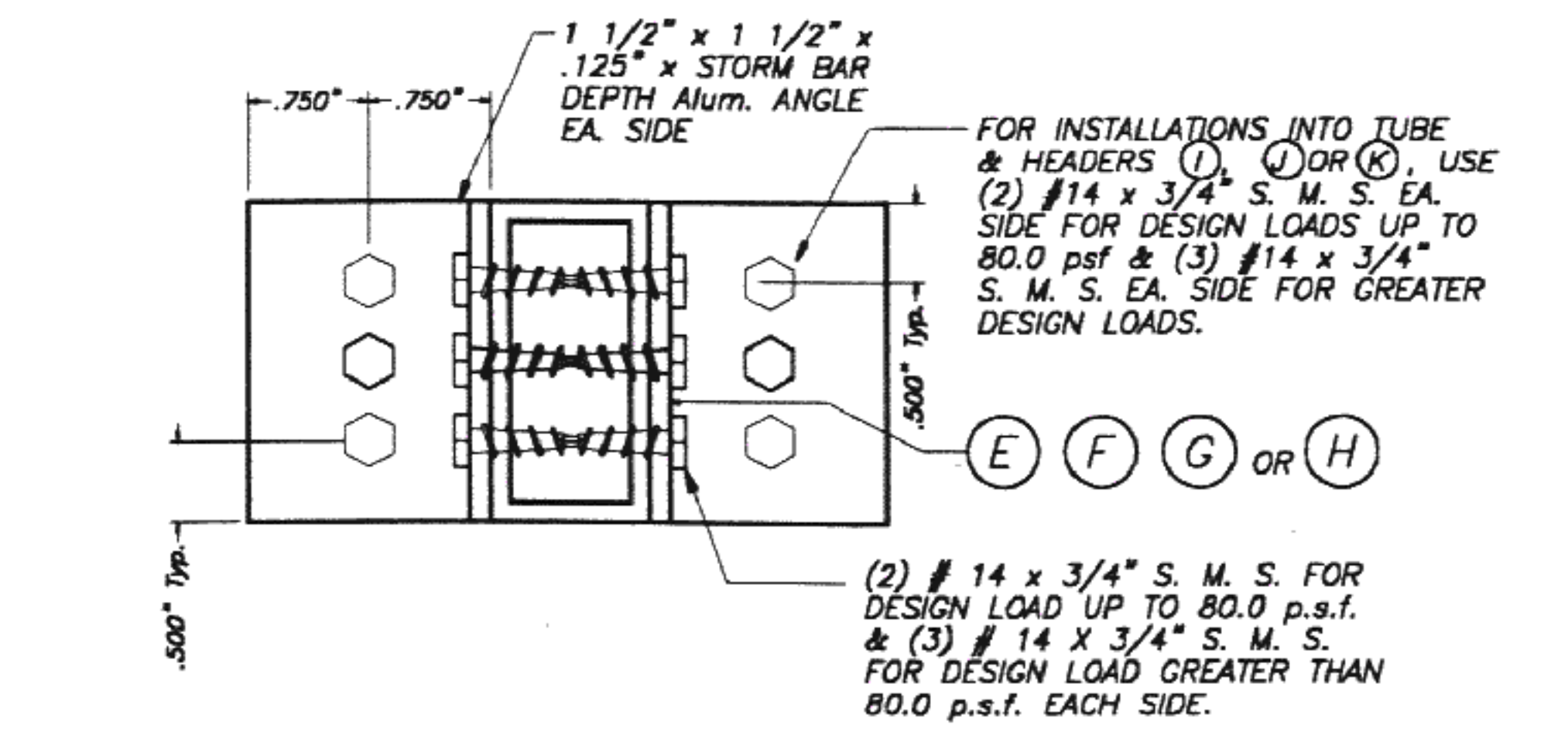


CASE I

CASE II

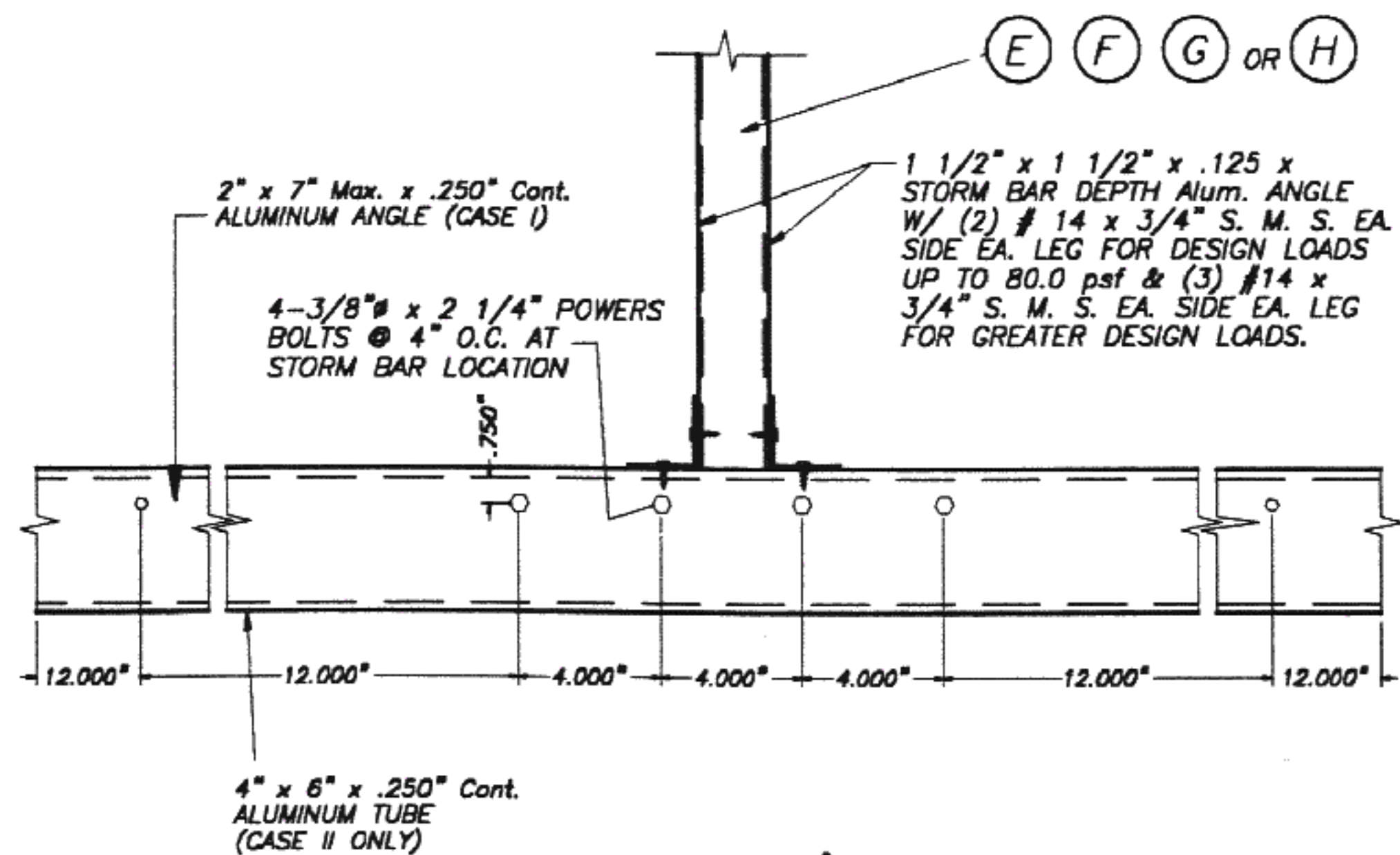
STORM BAR CONNECTION AT BUILD-OUT INSTALLATION : SECTIONS V - V (3)

SCALE : 1/4" = 1"



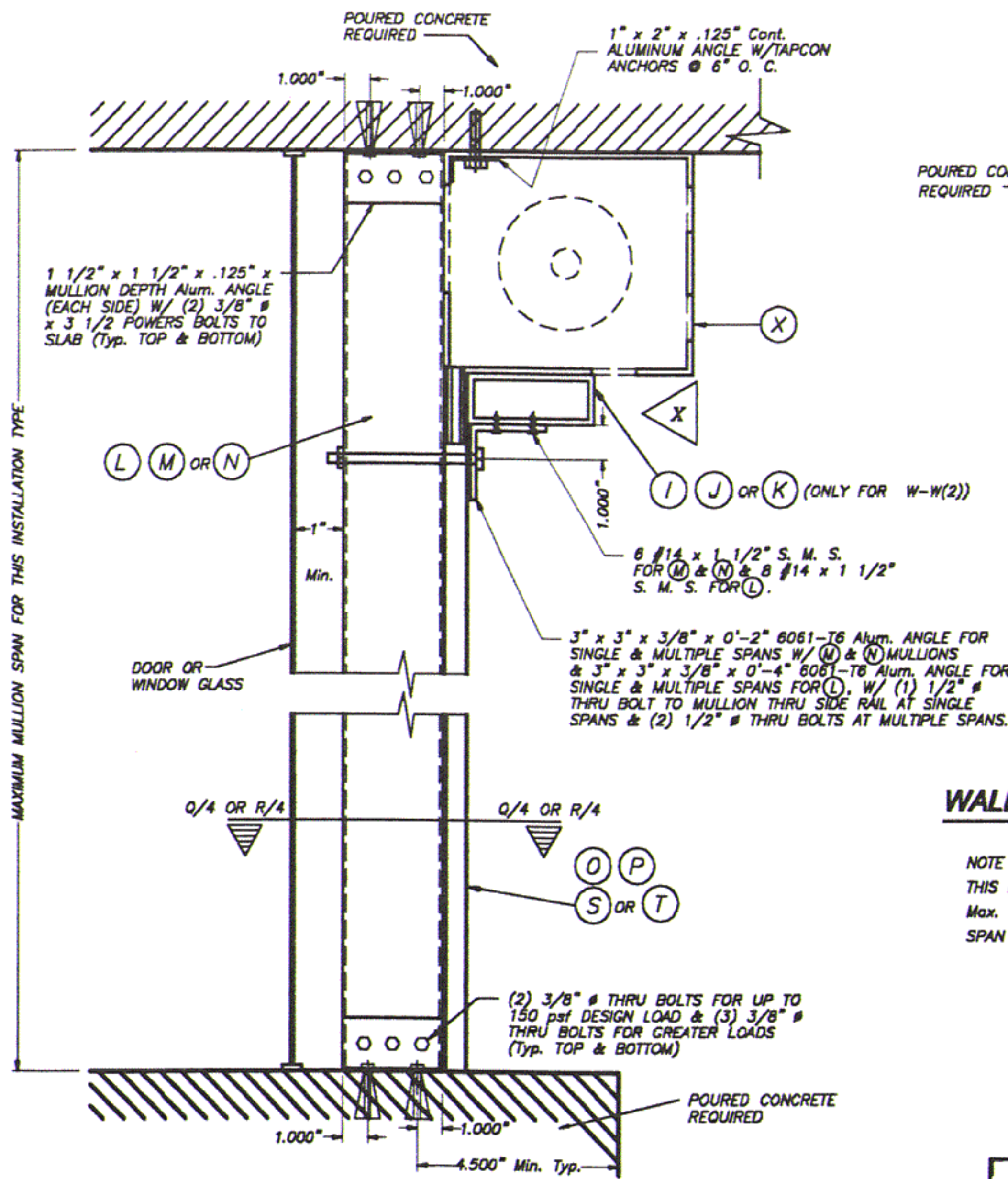
SECTION S3 - S3

SCALE : 1/2" = 1"



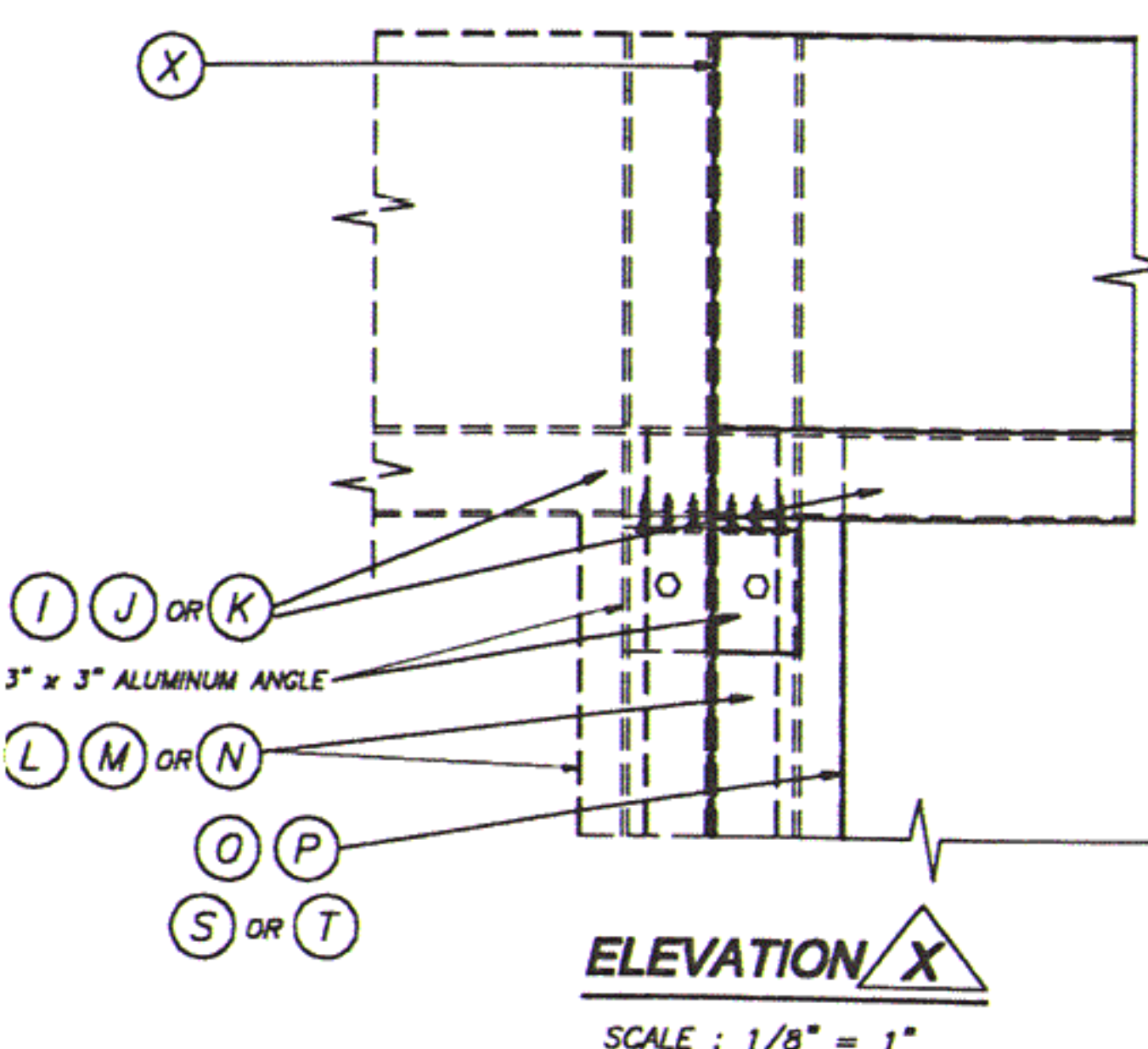
ELEVATION X

SCALE : 1/8" = 1"

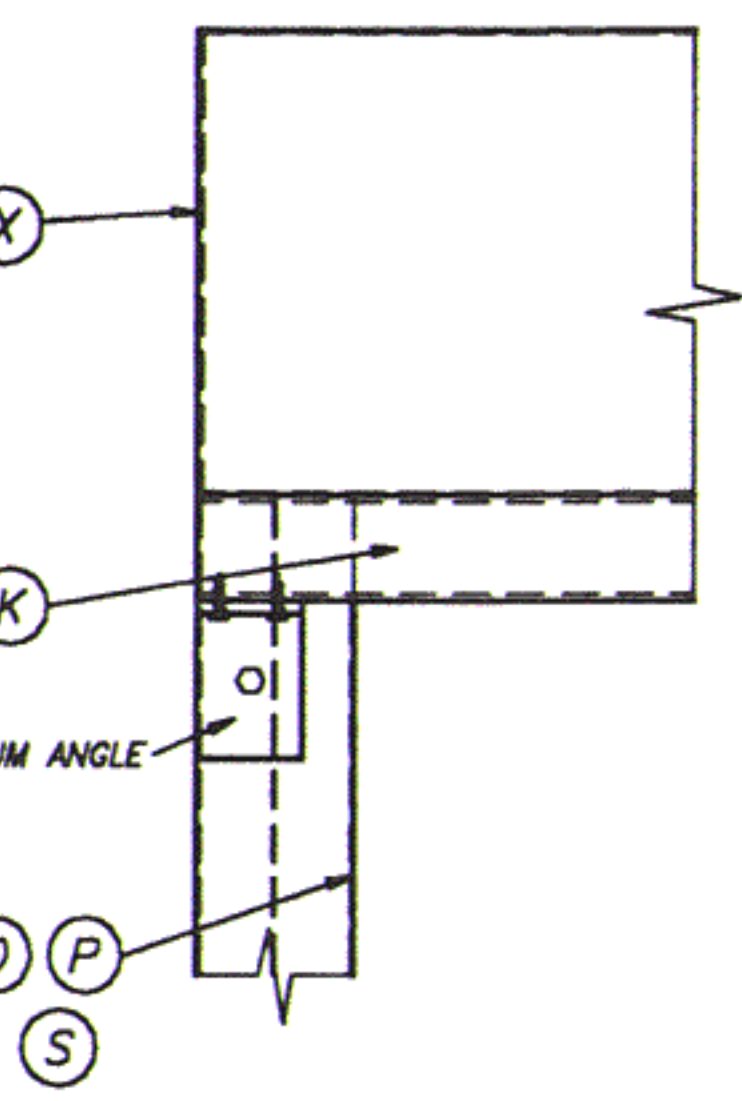


FLOOR/CEILING MOUNTING :
SECTION W-W (1), W/O HEADER
SECTION W-W (2), W/HEADER

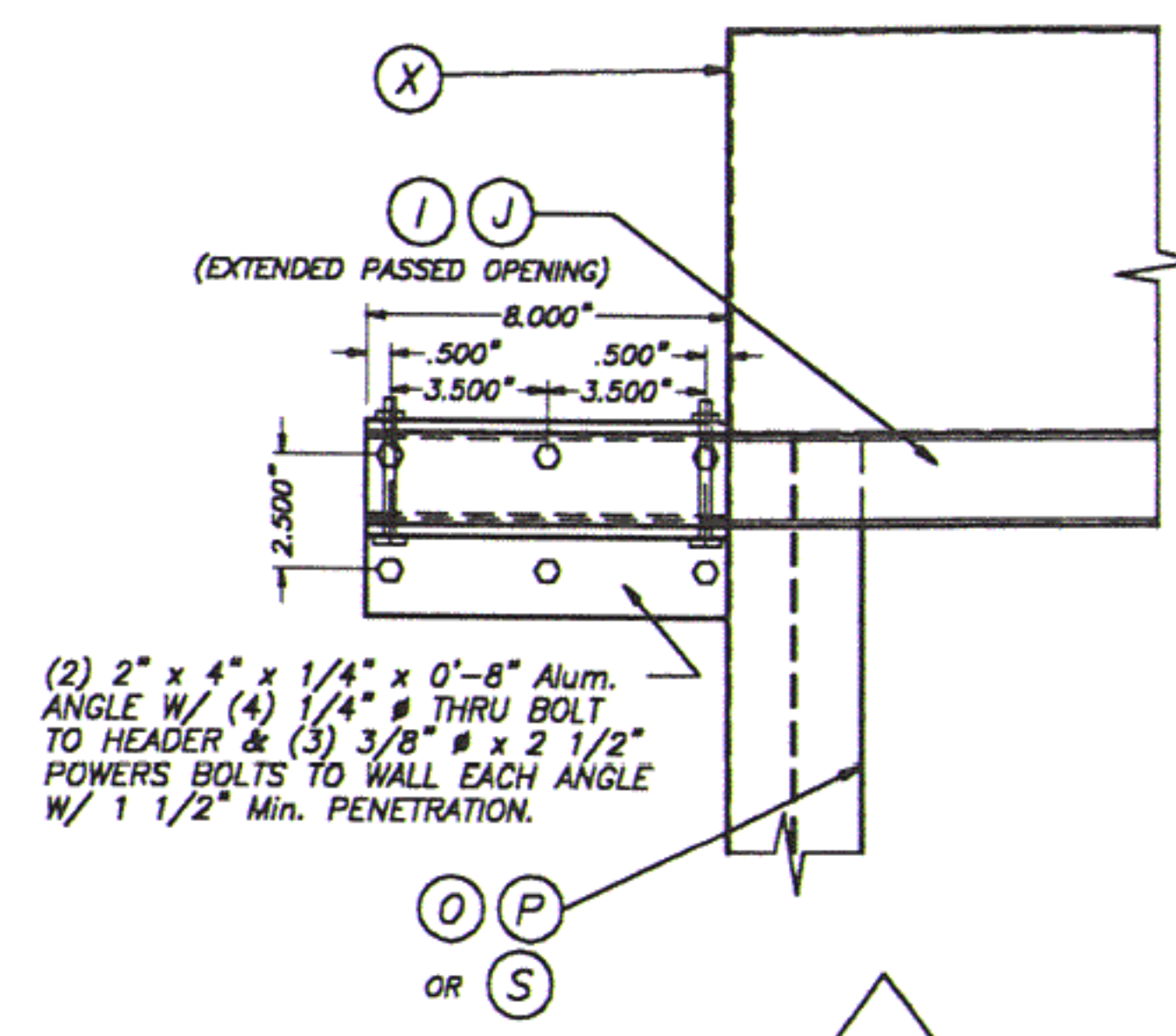
SCALE : 1/8" = 1"



ELEVATION X
 SCALE : 1/8" = 1"



ELEVATION X1
 SCALE : 1/8" = 1"



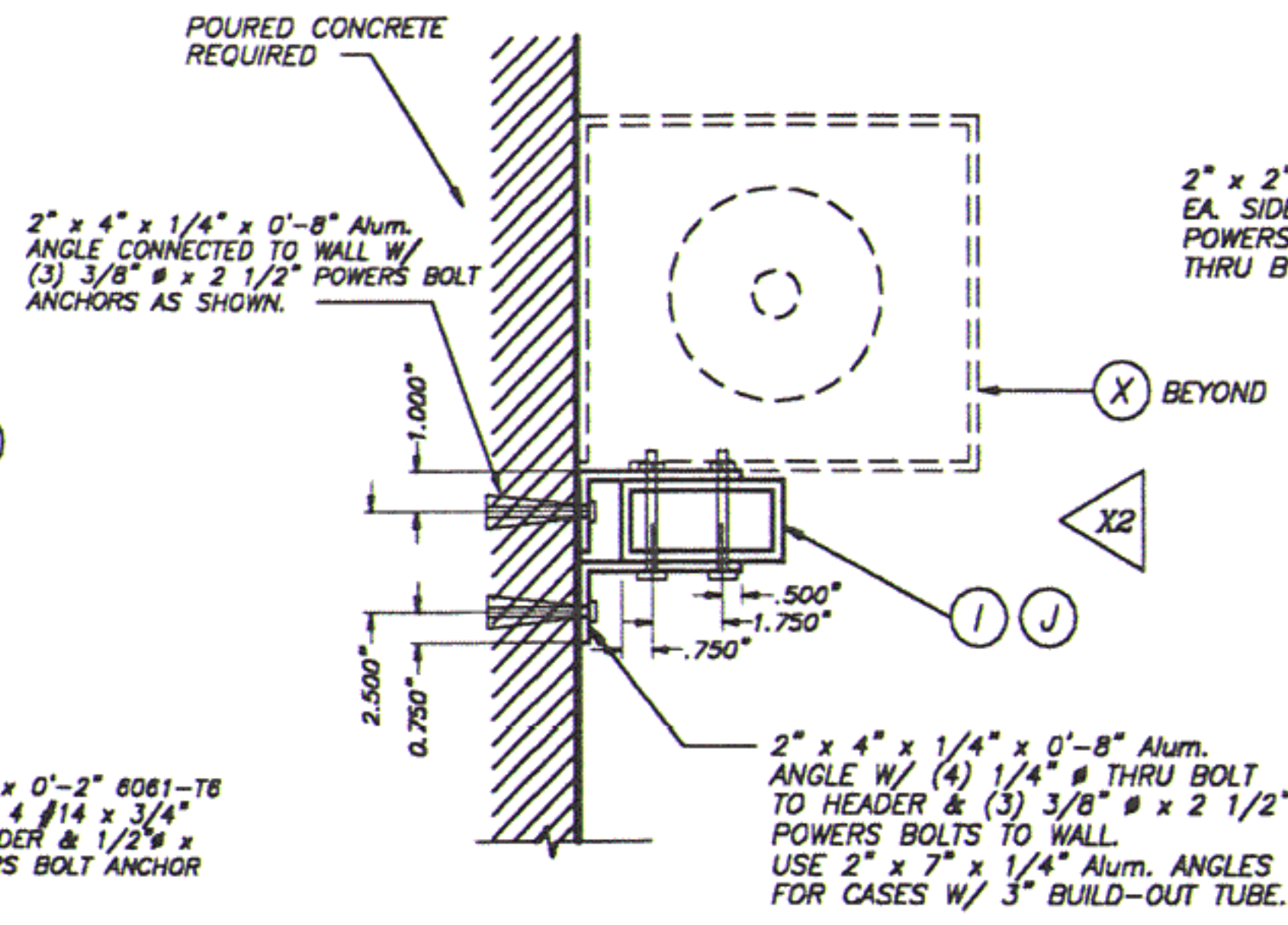
ELEVATION X2
 SCALE : 1/8" = 1"

TYPICAL HEADER CONNECTION AT ENDS:
SECTIONS W-W

WALL MOUNTING : SECTION W-W (3)

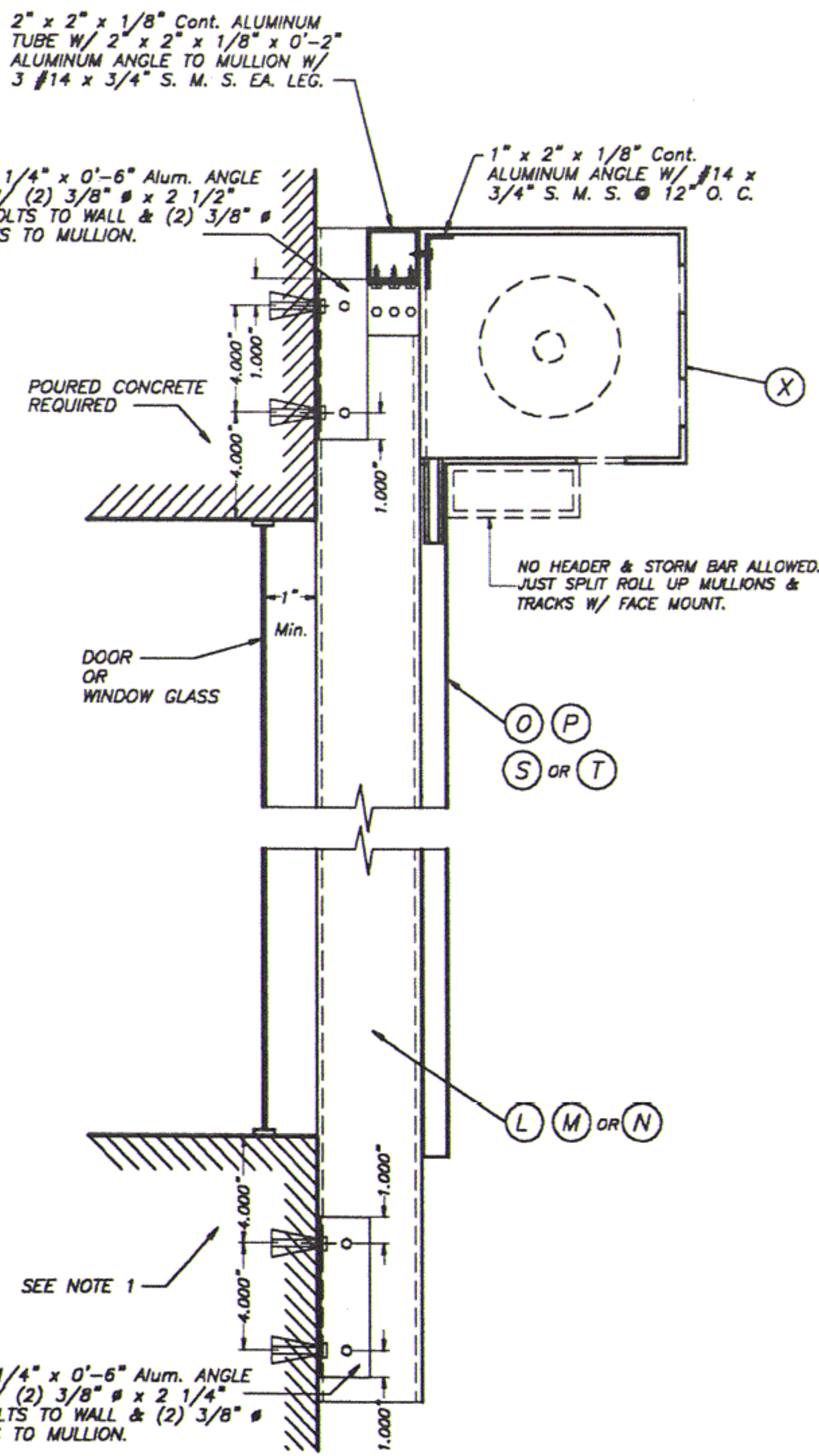
SCALE : 1/8" = 1"

NOTE :
 THIS INSTALLATION IS ONLY VALID FOR STORM BARS WITH
 Max. SPAN = 8'-0", HEADERS WITH 12'-0" Max. SINGLE
 SPAN & 80 psf MAXIMUM DESIGN LOAD.



WALL MOUNTING : SECTION W-W(3)

SCALE : 1/8" = 1"



WALL MOUNTING : MULLION CONNECTION
AT TOP & BOTTOM : SECTION W-W (1)

SCALE : 1/8" = 1"

NOTE 1 :
 EXISTING WALL MAY BE POURED CONCRETE OR CONCRETE BLOCK FOR
 DESIGN LOADS UP TO 80.0 psf AND SHALL BE POURED CONCRETE OR
 CONCRETE FILLED BLOCKS FOR GREATER LOADS.