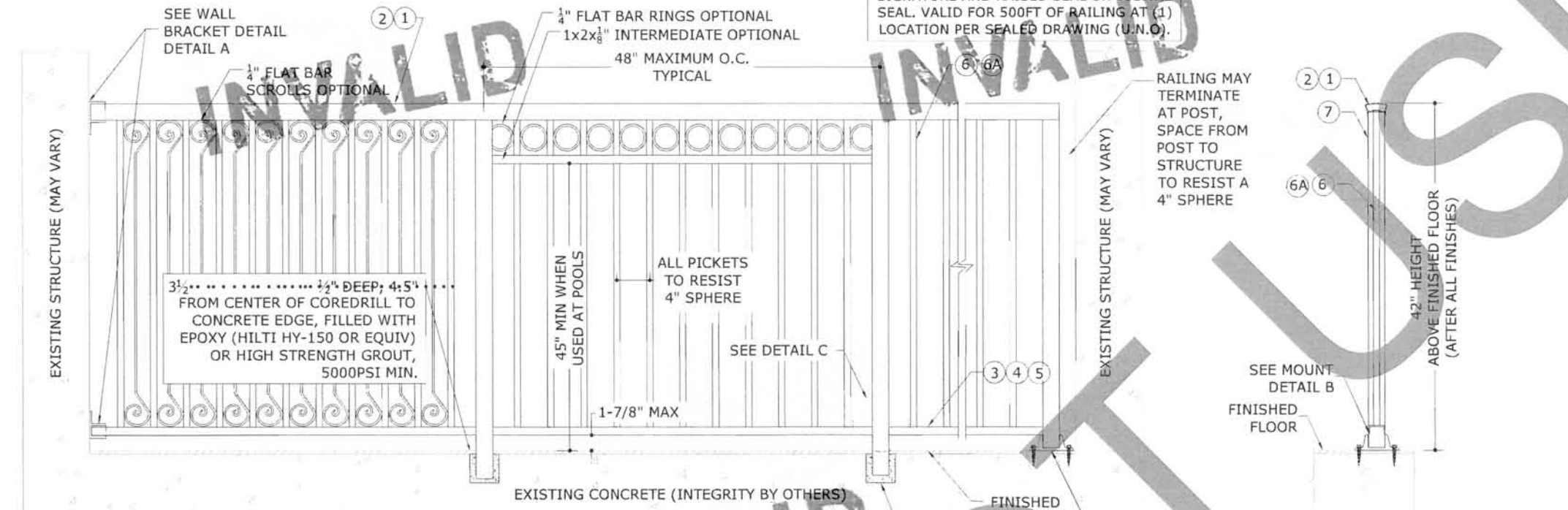


# WELDED ALUMINUM STRUCTURAL RAILING

ALL WELDED CONSTRUCTION U.N.O., N.T.S.

DRAWING VALID ONLY WITH ORIGINAL SIGNATURE AND RAISED SEAL OR DIGITAL SEAL. VALID FOR 500FT OF RAILING AT (1) LOCATION PER SEALED DRAWING (U.N.O.).



RAILING ELEVATION (MULTIPLE OPTIONS SHOWN)

## GENERAL NOTES

- THIS SYSTEM HAS BEEN DESIGNED AND SHALL BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE SIXTH EDITION (2017).
- THIS RAILING IS DESIGNED TO MEET SECTIONS OF THE CODE GOVERNING ELEVATED BALCONIES AND STRUCTURAL RAILINGS (200LB POINT LOAD, 50PLF TOPCAP LOAD, 50LB POINT LOAD UPON 1SF OF INFILL (NONHVHZ CRITERIA FBC 1607.8.1), RAILING DESIGNED FOR WIND LOADING PER CHAP 16 HVHZ, NON-HVHZ & THE PROVISIONS OF ASCE 7-10, Vult = 175 MPH, Vasd = 135.5 MPH, EXPOSURE 'D', AS AN 80% OPEN SIGN USING "ASO" METHODOLOGY.
- INSTALLATION HEIGHT <= 60 FEET GROUND TO TOP OF RAIL.
- ALL FLOOR FINISHES SHALL BE BY OTHERS AND SHALL NOT EXCEED 1/4" MAXIMUM, OTHERWISE THEY SHALL BE SEPARATELY CERTIFIED TO TRANSFER ALL LOADING TO THE PROJECT SUPERSTRUCTURE. DIMENSIONS ARE POST-FLOOR FINISHES.
- ALL FASTENERS TO BE #12 X 3/4" OR GREATER 2024-T4, 18-8 SERIES 300 NON-MAGNETIC STAINLESS STEEL, OR CADMIUM PLATED OR OTHERWISE CORROSION RESISTANT MATERIAL AND SHALL COMPLY WITH THE ALUMINUM ASSOCIATION, INC., & APPLICABLE FEDERAL, STATE, AND LOCAL CODES.
- ALL EXTRUDED MEMBERS SHALL BE ALUMINUM ALLOY TYPE 6061-T6 OR 6005-T5.
- ALL CONCRETE SHALL BE UNCRACKED ONLY WITH A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI U.N.O. AND SHALL BE MINIMUM 1.5X THICKER THAN ANY MEMBER EMBEDMENT. ALL EPOXY AND GROUT SHALL MEET 5000 PSI MIN. COMPRESSIVE STRENGTH AND SHALL BE IRON-FREE, NONSHRINK AND NONREACTIVE.
- FOR ALUMINUM ATTACHMENTS ALL ANCHORS SHALL BE SPACED WITH 2xDIAMETER END DISTANCE AND 2.5xDIAMETER MIN SPACING TO ADJACENT ANCHORS, UNLESS NOTED OTHERWISE. FOR STEEL ATTACHMENTS ALL ANCHORS SHALL BE SPACED WITH 3xDIAMETER MIN. SPACING TO ADJACENT ANCHORS AND 3xDIAMETER MIN END DISTANCE.
- ALUMINUM WELDING SHALL BE PERFORMED IN ACCORDANCE WITH 2017 FBC SECTION 2003.8.1.4 WITH WELD FILLER ALLOYS MEETING ANSI/AWS A5.10 STANDARDS TO ACHIEVE ULTIMATE DESIGN STRENGTH IN ACCORDANCE WITH THE ALUMINUM DESIGN MANUAL TABLE A.3.6. ALL ALUMINUM CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE TOLERANCES, QUALITY AND METHODS OF CONSTRUCTION AS SET FORTH IN FBC SECTION 2003.2. MINIMUM WELD IS 1/8" THROAT FULL PERIMETER FILLET WELD UNLESS OTHERWISE NOTED.
- THE CONTRACTOR IS RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
- ELECTRICAL GROUND, WHEN REQUIRED, TO BE DESIGNED & INSTALLED BY OTHERS.
- ENGINEER SEAL AFFIXED HERETO VALIDATES STRUCTURAL DESIGN AS SHOWN ONLY. USE OF THIS SPECIFICATION BY CONTRACTOR, ET AL. INDEMNIFIES & SAVES HARMLESS THIS ENGINEER FOR ALL COST & DAMAGES INCLUDING LEGAL FEES & APPELLATE FEES RESULTING FROM MATERIAL FABRICATION, SYSTEM ERECTION, CONSTRUCTION PRACTICES BEYOND THAT WHICH IS CALLED FOR BY LOCAL, STATE, & FEDERAL CODES & FROM DEVIATIONS OF THIS PLAN.
- THIS DOCUMENT IS GENERIC AND DOES NOT PERTAIN TO ANY SPECIFIC PROJECT SITE. ENGINEERING EXPRESS SHALL NOT BE HELD RESPONSIBLE OR LIABLE IN ANY WAY FOR ERRONEOUS OR INACCURATE DATA OR MEASUREMENTS. DIMENSIONS ARE SHOWN TO ILLUSTRATE DESIGN FORCES AND OTHER DESIGN CRITERIA. THEY MAY VARY SLIGHTLY, BUT MUST REMAIN WITHIN THE LIMITATIONS SPECIFIED HEREIN. WORK SHALL BE FIELD VERIFIED BY OTHERS PRIOR TO CONSTRUCTION. ENGINEERING EXPRESS SHALL BE NOTIFIED AND GIVEN AN OPPORTUNITY TO REEVALUATE OUR WORK UPON DISCOVERY OF ANY INACCURATE INFORMATION PRIOR TO MODIFICATION OF EXISTING FIELD CONDITIONS AND FABRICATION AND INSTALLATION OF MATERIALS, ALTERATIONS OR ADDITIONS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.
- EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.

02/19/2019

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VALID FOR 1 PERMIT ONLY U.N.O.  
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**WELDED ALUMINUM STRUCTURAL RAILING**  
 MASTER PLAN SHEET  
 ASCE 7-10 'OPEN SIGN METHOD' UP TO 60FT ABOVE GRADE  
 FLORIDA BUILDING CODE SIXTH EDITION (2017)

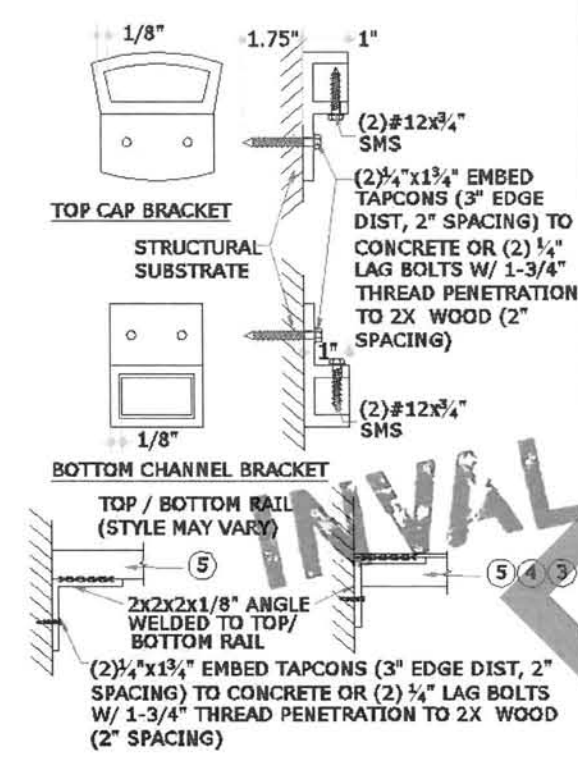
| REMARKS           | DATE     | DRWN | CHKD |
|-------------------|----------|------|------|
| INIT ISSUE        | 07/03/12 | FLB  | FLB  |
| REVISE FOR 10 FBC | 03/08/12 | TSB  | FLB  |
| REVISE FOR 14 FBC | 06/10/15 | JAC  | TSB  |
| REVISE FOR 17 FBC | 01/17/18 | LAO  | FLB  |

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MPS 18-5628  
 SCALE: NTS UNLESS NOTED

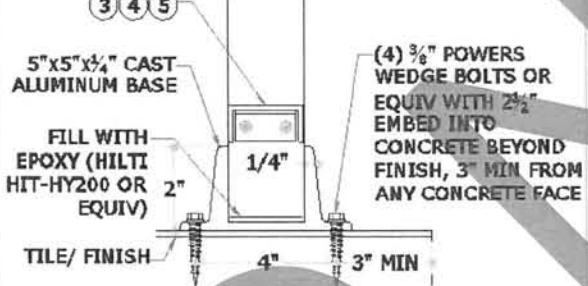
1

### DETAIL 'A' WALL CONNECTIONS

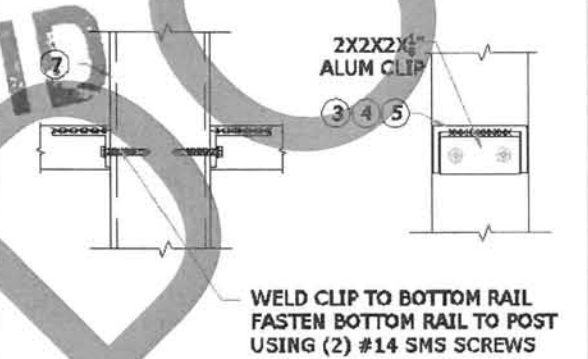


ALTERNATE RAIL CONNECTION DETAIL

### DETAIL 'B' ALUMINUM CASTING

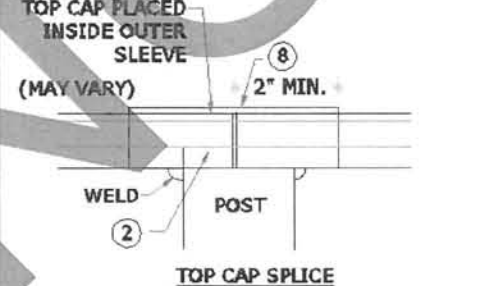


### DETAIL 'C' BOTTOM RAIL CONNECTION

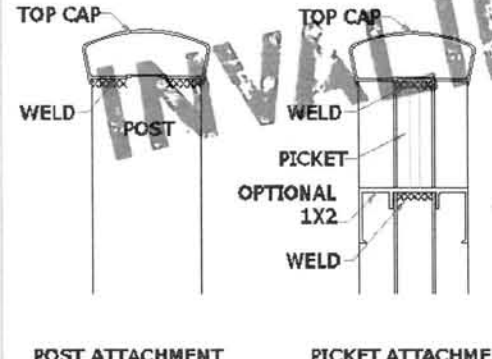


IT IS NOT PERMITTED WELD CLIP TO POST

### DETAIL 'D' TOP CAP CONNECTION



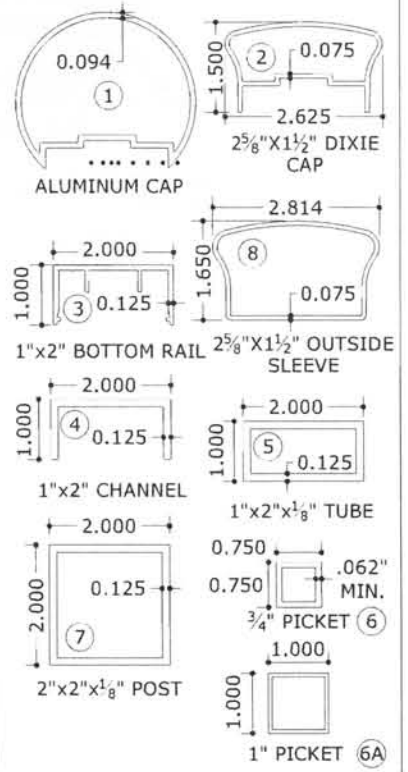
### TOP CAP SPlice



POST ATTACHMENT PICKET ATTACHMENT

### EXTRUSIONS

6061-T6, OR 6005-T5  
 EXTRUSION TOLERANCES TO BE PER INDUSTRY STANDARDS



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