DIVERSITECH CORP.

ACB ALUMINUM MECHANICAL EQUIPMENT WALL BRACKET
HVHZ / NON-HVHZ

NON-SITE-SPECIFIC STRUCTURAL PERFORMANCE EVALUATION. A DESIGN PROFESSIONAL SHALL BE RESPONSIBLE FOR CERTIFYING THE APPLICATION OF THIS INFORMATION TO ANY SITE-SPECIFIC LOCATION.

RICHARD NEET. P.E.
PE# 86488 CA# 9885

RICHARD NEET LICENSE No. P.E. 86488 STATE OF FLORIDA PROFESSIONAL ENGINEER

SPACE RESERVED FOR CERTIFYING ENGINEER'S SEAL OR PHYSICAL SEAL & DATE OF CERTIFICATION

Digitally signed by Richard Neet
Date: 2024.05.02 10:44:57-04'00'

FL 22529.1

DESIGN CRITERIA:

FLORIDA BUILDING CODE 8TH EDITION (2023) ASCE 7-22 LOAD COMBINATIONS

1. DEAD LOADING
   1.1. (SEE MECHANICAL UNIT WEIGHTS IN DESIGN SCHEDULES)
2. WIND LOADING INPUTS
   2.1. (SEE DESIGN SCHEDULES FOR MAXIMUM ALLOWABLE LATERAL AND UPLIFT PRESSURES)
3. SEISMIC LOADS
   3.1. SEISMIC DESIGN CATEGORY..... A & B
   3.1.1. (SEISMIC DESIGN DOES NOT CONTROL)

DESIGN, CODES. AND CALCULATIONS

DESIGN NOTES:

1. ALLOWABLE DESIGN PRESSURES UTILIZED IN THIS DOCUMENT HAVE BEEN CALCULATED PER THE REQUIREMENTS OF THE CODES AND STANDARDS STATED HEREIN USING ASCE 7-22 ALLOWABLE STRESS DESIGN METHODOLOGY WITH THE CRITERIA AS OUTLINED HEREIN. THE CONTRACTOR SHALL CONTACT THE AUTHORITY HAVING JURISDICTION TO ENSURE APPROPRIATE CRITERIA TO BE USED BEFORE CONSTRUCTION BEGINS.
2. DIMENSIONS ARE SHOWN TO ILLUSTRATE DESIGN FORCES AND OTHER DESIGN CRITERIA. IN SOME CASES, DETAILS MAY BE INTENTIONALLY ALTERED FOR PRESENTATION PURPOSES. DO NOT SCALE DIMENSIONS ELECTRONICALLY OR OTHERWISE. FIELD INSTALLATION MAY VARY SLIGHTLY BUT MUST REMAIN WITHIN 5% OF THE INTENDED DESIGN. CONTRACTOR IS TO VERIFY ALL FIELD DIMENSIONS PRIOR TO INSTALLATION.
3. THIS DRAWING SET IS PREPARED AS A GENERIC DESIGN AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
4. THE INTEGRITY OF ANY EXISTING STRUCTURE HAS NOT BEEN VERIFIED BY THIS ENGINEER. THESE PLANS ARE NOT TO BE USED FOR CONSTRUCTION UNTIL A DESIGN PROFESSIONAL APPROVES THE HOST STRUCTURE AS BEING ABLE TO ACCOMMODATE THE NEW DESIGN.
5. THIS DOCUMENT IS INTENDED TO CERTIFY THE FOLLOWING TO RESIST WIND AND DEAD LOADS ONLY:
   5.1. THE STRUCTURAL INTEGRITY THE MECHANICAL UNIT STANDS AS NOTED.
   5.2. THE STRUCTURAL INTEGRITY OF THE CONNECTION OF THE MECHANICAL UNIT STANDS TO THE HOST STRUCTURE AS NOTED.
6. THE STRUCTURAL INTEGRITY OF THE MECHANICAL UNITS DESCRIBED HEREIN IS NOT INCLUDED IN THE CERTIFICATION. IF REQUIRED BY THE AUTHORITY HAVING JURISDICTION, THE MECHANICAL UNIT INTEGRITY TO RESIST WIND, IMPACT OR ANY OTHER LOADS SHALL BE CERTIFIED BY OTHERS.

CODES & STANDARDS

1. THIS SYSTEM HAS BEEN DESIGNED AND SHALL BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF BUILDING CODES LISTED IN THE DESIGN CRITERIA. DESIGN CRITERIA OR SPANS BEYOND STATED HEREIN MAY REQUIRE ADDITIONAL SITE SPECIFIC SEALED ENGINEERING.
2. CONTRACTOR SHALL INVESTIGATE AND CONFORM TO ALL LOCAL BUILDING CODE AMENDMENTS WHICH MAY APPLY. DESIGN CRITERIA BEYOND AS STATED HEREIN MAY REQUIRE ADDITIONAL SITE-SPECIFIC SEALED ENGINEERING.

CALCULATIONS

1. NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM.
2. ANY EXISTING HOST STRUCTURE MUST BE CAPABLE OF SUPPORTING THE LOADED SYSTEM AS VERIFIED BY THE ENGINEER & OR ARCHITECT OF RECORD, et.al. THE HOST STRUCTURE WHICH IS DESIGNED, CERTIFIED, AND INSPECTED BY OTHERS MUST PROVIDE SUFFICIENT CAPACITY FOR THE SYSTEM & REACTIONS DETAILED HEREIN. NO WARRANTY OR GUARANTEE TO THESE CONDITIONS, EITHER EXPRESSED OR IMPLIED, IS OFFERED WITH THIS CERTIFICATION.

STRUCTURAL MATERIALS & CONNECTIONS

STRUCTURAL ALUMINUM & ALUMINUM WELDING:

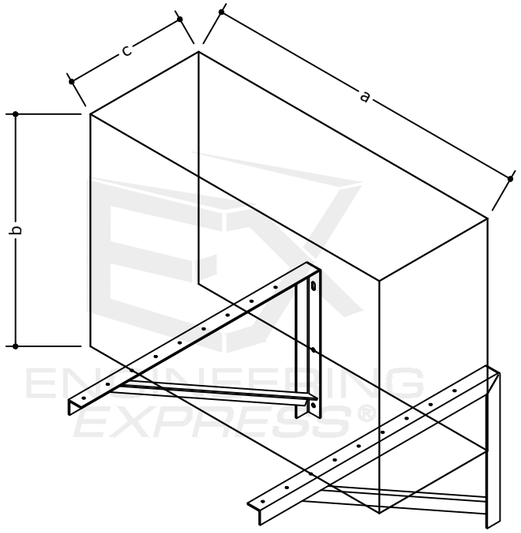
1. ALL COMPONENTS SHALL BE STRUCTURAL ALUMINUM (U.N.O.) AND SHALL BE FABRICATED AND ERECTED ACCORDING TO THE GOVERNING BUILDING CODE AND MATERIAL STANDARDS REFERENCED ON THIS SHEET.
2. ALL STRUCTURAL ALUMINUM SHALL BE MIN 1/8" THICK U.N.O. AND BE OF THE FOLLOWING ALLOY AND TEMPER:
   2.1. ALL STAND COMPONENTS ..... 6061-T6 OR EQUIVALENT (UNLESS NOTED OTHERWISE)
   2.2. FASTENERS ..... SAE GR 2 CS OR SS 316 MINIMUM (UNLESS NOTED OTHERWISE)
3. WHERE ALUMINUM IS IN CONTACT WITH OTHER METALS EXCEPT 300 SERIES STAINLESS STEEL, ZINC OR CADMIUM AND THE FAYING SURFACES ARE EXPOSED TO MOISTURE, THE OTHER METALS SHALL BE PAINTED OR COATED WITH ZINC, CADMIUM, OR ALUMINUM.
4. UNCOATED ALUMINUM SHALL NOT BE EXPOSED TO MOISTURE OR RUNOFF THAT HAS COME IN CONTACT WITH OTHER UNCOATED METALS EXCEPT 300 SERIES STAINLESS STEEL, ZINC, OR CADMIUM. ALUMINUM SURFACES TO BE PLACED IN CONTACT WITH MASONRY, CONCRETE, WOOD, FIBERBOARD, OR OTHER POROUS MATERIAL THAT ABSORBS WATER SHALL BE PAINTED.
5. FOR ALUMINUM IN CONTACT WITH CONCRETE: ACCEPTABLE PAINTS: PRIMING PAINT (ONE COAT), SUCH AS ZINC MOLYBDATE PRIMER IN ACCORDANCE WITH FEDERAL SPECIFICATION TT-P-645B ("GOOD QUALIITY", NO LEAD CONTENT). ALT: HEAVY COATING OF ALKALI RESISTANT BITUMINOUS PAINT. ALT: WRAP ALUMINUM WITH A SUITABLE PLASTIC TAPE APPLIED IN SUCH A MANNER AS TO PROVIDE ADEQUATE PROTECTION AT THE OVERLAPS.
6. BOLT HOLES SHALL BE DRILLED THE SAME NOMINAL DIAMETER AS THE BOLT + 1/16".
7. ALUMINUM WELDING SHALL BE PERFORMED IN ACCORDANCE WITH WELD FILLER ALLOYS MEETING ANSI/AWS A5.10 STANDARDS (5356 FILER MIN.) TO ACHIEVE ULTIMATE DESIGN STRENGTH IN ACCORDANCE WITH THE ALUMINUM DESIGN MANUAL PART I-A, TABLE 7.3.1. ALL ALUMINUM CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE TOLERANCES, QUALITY, AND METHODS OF CONSTRUCTION AS SET FORTH IN THE AMERICAN WELDING SOCIETY'S STRUCTURAL WELDING CODE-ALUMINUM (D1.2). MINIMUM WELD IS 1/8" THROAT FULL PERIMETER FILLET WELD UNLESS OTHERWISE NOTED.
8. STAINLESS STEEL FASTENERS SHALL BE 316 SERIES SS COLD WORKED CONDITION. PROVIDE (5) PITCHES MINIMUM PAST THE THREAD PLANE FOR ALL SCREW CONNECTIONS. ALL FASTENER CONNECTIONS TO METAL SHALL PROVIDE 2xDIAMETER EDGE DISTANCE AND 3xDIAMETER SPACING.
9. SELF-DRILLING SCREWS SHALL BE TEK BRAND / ALL POINTS FASTENERS OR EQUIVALENT OF SIZE #12 MINIMUM UNLESS OTHERWISE NOTED.
10. THE CONTRACTOR IS RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
11. ELECTRICAL GROUND, WHEN REQUIRED, TO BE DESIGNED & INSTALLED BY OTHERS.
12. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE AS NOTED HEREIN. MINIMUM EMBEDMENT AND EDGE DISTANCE ARE DEPTHS INTO SOLID SUBSTRATE AND DO NOT INCLUDE THICKNESS OF ANY HOST SUBSTRATE FINISHES. ALL CONCRETE ANCHORS SHALL BE INSTALLED TO NON-CRACKED CONCRETE UNLESS NOTED OTHERWISE.
13. ANCHOR QUANTITIES INDICATED IN DETAILS ARE FOR GRAPHICAL PURPOSES ONLY. DO NOT SCALE DIAMETER, LENGTH, OR PENETRATION(S). HEAD STYLE(S) ARE FREELY INTERCHANGEABLE.

NON-STRUCTURAL ELEMENTS:

1. THE INSTALLATION OF ANY ACCESSORIES THAT DO NOT AFFECT THE STRUCTURAL INTEGRITY OF THE STRUCTURE ARE OUTSIDE THE SCOPE OF THIS CERTIFICATION AND NOT REQUIRED TO BE CERTIFIED UNDER THIS STRUCTURAL DRAWING. THEY MAY BE INSTALLED WITHIN LIMITATIONS STATED HEREIN AND AS DESIRED PER MFR. SPECIFICATIONS. DETAILS PROVIDED HEREIN ARE FOR REFERENCE ONLY

GENERAL NOTES & DISCLAIMERS:

1. DIMENSIONS ARE SHOWN TO ILLUSTRATE DESIGN FORCES AND OTHER DESIGN CRITERIA. THEY MAY VARY SLIGHTLY, BUT SHALL REMAIN IN CONFORMANCE WITH THE LIMITATIONS OF THIS PLAN. THE CONTRACTOR IS TO VERIFY ALL FIELD DIMENSIONS PRIOR TO INSTALLATION, AND VERIFY THAT PROPOSED DIMENSIONS AND FIELD CONDITIONS AGREE WITH THIS PROPOSED PLAN.
2. USE OF THIS DOCUMENT CONSTITUTES ACCEPTANCE OF THE PROPOSED SYSTEM LAYOUT, COMPONENTS SELECTED, AND INSTALLATION. THESE DRAWINGS ARE NOT INTENDED TO BE USED AS FABRICATION OR SHOP DRAWINGS.
3. 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.
4. ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER MARKINGS TO THIS DOCUMENT ARE ONLY PERMITTED TO SHOW SITE-SPECIFIC CONDITIONS, HOWEVER ANY CHANGES, ALTERATIONS OR ADDITIONS MADE TO THE CONTENT OF THIS DOCUMENT WILL INVALIDATE THIS CERTIFICATION.
5. EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED DRAWING INDEX



TYPICAL ACB WALL BRACKET SYSTEM (ALUMINUM)

NOTE REGARDING USE OF THIS DOCUMENT & USE OUTSIDE FLORIDA:

NON-SITE-SPECIFIC STRUCTURAL PERFORMANCE EVALUATION. THIS PRODUCT EVALUATION IS VALID FOR USE IN **FLORIDA ONLY**. USE OF THIS EVALUATION REQUIRES A REVIEW & CERTIFICATION BY A LOCAL DESIGN PROFESSIONAL WHO SHALL BE RESPONSIBLE FOR THE PROPER ADAPTATION OF THIS GENERAL PERFORMANCE EVALUATION TO ANY SITE-SPECIFIC PROJECT. CONTACT THIS OFFICE AT **ENGINEERINGEXPRESS.COM/QUOTE** FOR ASSISTANCE WITH YOUR PROJECT-SPECIFIC NEEDS & FOR ADAPTATION & CERTIFICATION OF THIS DOCUMENT OUTSIDE OF FLORIDA.

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FOR SITE-SPECIFIC DEVIATIONS
& MORE INFORMATION ABOUT THIS DOCUMENT
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VISIT ENGINEERINGEXPRESS.COM/STORE
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TERMINOLOGY:

THE FOLLOWING ABBREVIATIONS APPEAR IN THIS APPROVAL: "ER" FOR "END RETENTION", "NER" FOR "NON-END RETENTION", "INC." FOR "INCORPORATION", "CORP." FOR "CORPORATION", "ALUM" FOR "ALUMINUM", "ASD" FOR "ALLOWABLE STRESS DESIGN", "ASTM" FOR "AMERICAN SOCIETY FOR TESTING AND MATERIALS", "CS" FOR "CARBON STEEL","CONN" FOR "CONNECTION", "EMBED" FOR "EMBEDMENT", "DIST." FOR "DISTANCE", "GA" FOR "GAUGE", "HVHZ" FOR "HIGH-VELOCITY HURRICANE ZONE", "LB" FOR "POUND", "MAX" FOR "MAXIMUM, "N.T.S." FOR "NOT TO SCALE", "PSF" FOR "POUNDS PER SQUARE FOOT (lb/ft²)", "SPECS" FOR "SPECIFICATIONS", "&" FOR "AND", "MAX" FOR "MAXIMUM", "W/" FOR "WITH", "EXIST" FOR "EXISTING, "STRUCT" FOR "STRUCTURE", "CONC." FOR "CONCRETE". CONTACT ENGINEERING EXPRESS FOR ADDITIONAL ABBREVIATION/TERMINOLOGY CLARIFICATIONS.

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ACB ALUMINUM MECHANICAL EQUIPMENT WALL BRACKET
FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL

REMARKS	DRWN	CHKD	DATE
INIT ISSUE	RN	RN	10-10-23

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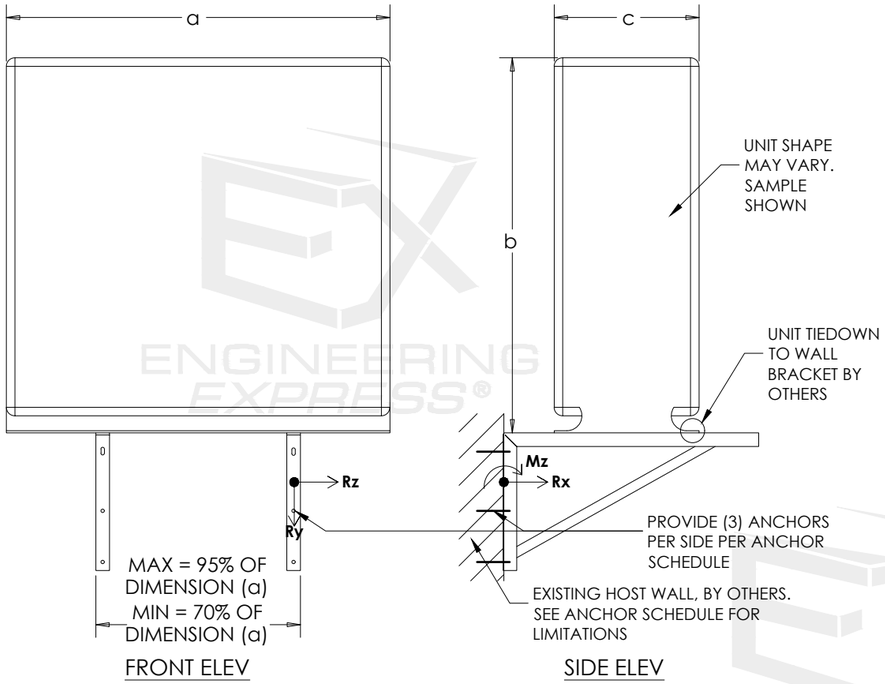
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1 ACB WALL BRACKET
NOT TO SCALE ELEV VIEW

DESIGN SCHEDULE

ITEM	ACB-30	ACB-36	ACB-42	ACB-48	MAX DESIGN PRESSURE (ASD)
MAX. LENGTH (a) IN.	26	30	36	36	±75 PSF
MAX. HEIGHT (b) IN.	54	50	46	42	
MAX. DEPTH (c) IN.	26	30	36	36	
MAX. FRONTAL AREA (a x b) SQ. IN.	1404	1500	1656	1512	
MAX. LATERAL AREA (b x c) SQ. IN.	1404	1500	1656	1512	
MAX. WEIGHT (LBS.)	600	600	600	600	

DESIGN SCHEDULE NOTES:

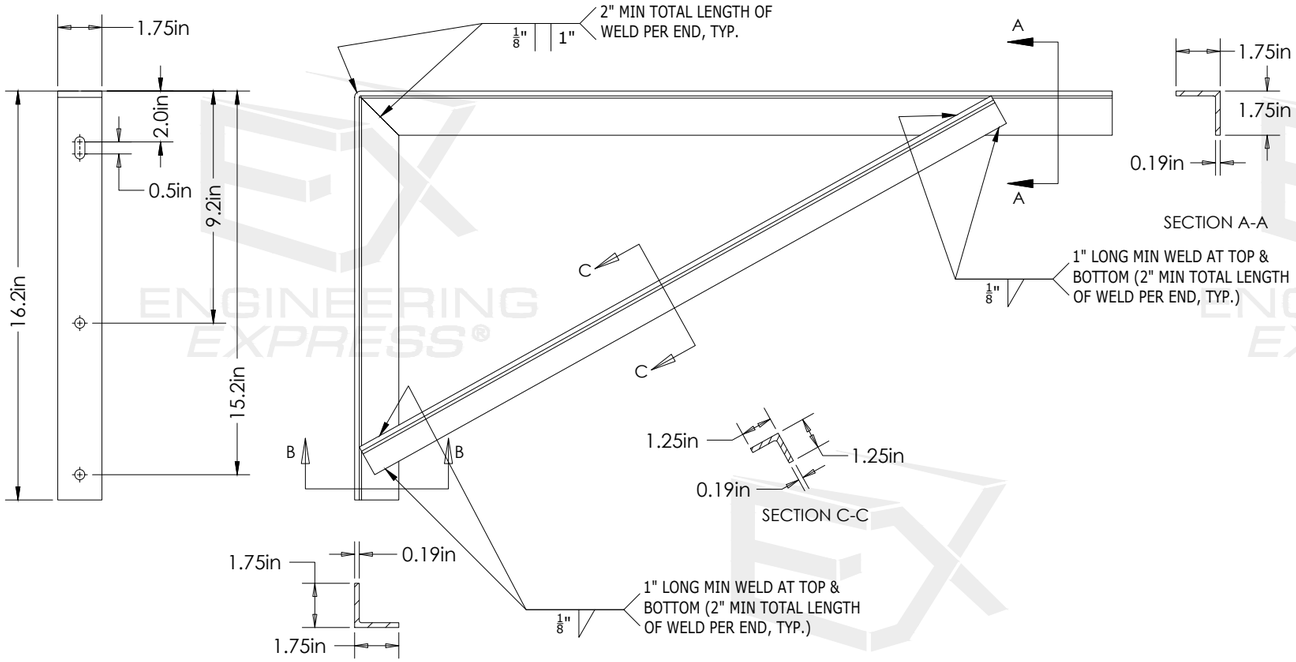
1. THE ALLOWABLE (ASD) DESIGN PRESSURES LISTED ARE LATERAL PRESSURES. WIND UPLIFT NOT CONSIDERED/APPROVED. IF WIND UPLIFT IS REQUIRED, SITE SPECIFIC ENGINEERING WILL BE REQUIRED.
2. BRACKETS SHALL NOT BE INSTALLED HIGHER THAN 15 FT FROM GRADE. HIGHER INSTALLATIONS CAN BE APPROVED THROUGH SITE SPECIFIC ENGINEERING.
3. FOR CONDITIONS THAT EXCEED THE ALLOWABLE PARAMETERS LISTED IN THIS DESIGN SCHEDULE, SEPARATE SITE SPECIFIC ENGINEERING WILL BE REQUIRED.
4. UNIT ATTACHMENT TO STAND SHALL BE PER SEPARATE ENGINEERING.

ANCHOR SCHEDULE

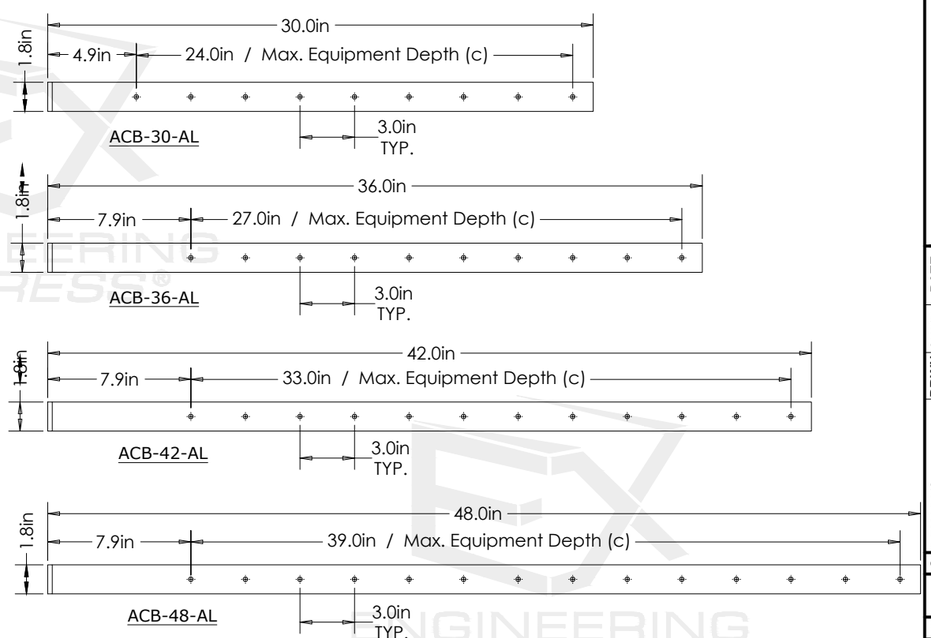
SUBSTRATE	ANCHOR
CONCRETE (4" THICK MIN., 3000PSI MIN.)	3/8"Ø DEWALT SCREW-BOLT+, 2 ½" EMBED TO NON-CRACKED CONCRETE, 4" MIN. EDGE DISTANCE, SPACING AS ILLUSTRATED IN ELEVATION/SECTION.
GROUT-FILLED CMU (SHALL CONFIORM TO ASTM C-90)	3/8"Ø DEWALT SCREW-BOLT+, 2 ½" EMBED TO NON-CRACKED GFB, 6" MIN. EDGE DISTANCE, SPACING AS ILLUSTRATED IN ELEVATION/SECTION.
WOOD (G=0.55 MIN)	3/8"Ø LAG SCREW, 3" MIN. EMBED TO WOOD MEMBER (2X4 MIN.), 2" MIN. FROM ANY WOOD END, CENTER SCREWS ALONG 2X FACE OF MEMBER. SPACING AS ILLUSTRATED IN ELEVATION/SECTION.
STEEL (Fy=33KSI MIN., 12 GA. MIN. THICKNESS)	3/8" SELF TAPPING UNC SCREW (DEWALT TAP-FLEX OR EQUIV.) OR ⅜" BOLT.SPACING AS ILLUSTRATED IN ELEVATION/SECTION.

ANCHOR SCHEDULE NOTES

1. THE ENGINEER OF RECORD FOR THE HOST WALL STRUCTURE SHALL CERTIFY THE HOST WALL CAN RESIST THE FOLLOWING SERVICE LOAD REACTIONS AT EACH BRACKET:
   - 1.1. Rx = 300 LB
   - 1.2. Ry = 300 LB
   - 1.3. Rz = 200 LB
   - 1.4. Mz = 600 LB-FT
2. EMBEDMENT AND EDGE DISTANCE EXCLUDES FINISHES, IF APPLICABLE.
3. ENSURE MINIMUM EDGE DISTANCE AS NOTED IN ANCHOR SCHEDULE.
4. INSTALL ALL ANCHORS PER MANUFACTURER'S SPECIFICATIONS.
5. PRE-DRILL WOOD LAGS TO AVOID SPLITTING OF WOOD MEMBERS.
6. ALTERNATE ANCHORS MAY BE USED IN LIEU OF THE OPTIONS SHOWN SO LONG AS THEY HAVE EQUAL OR GREATER TENSION AND SHEAR CAPACITIES THAN THE OPTIONS LISTED AS VERIFIED SEPARATELY.



2 ACB WALL BRACKET ASSEMBLY
NOT TO SCALE ELEV VIEW



3 ACB WALL BRACKET MOUNTING SURFACE
NOT TO SCALE PLAN VIEW

RICHARD NEET. P.E.
PE# 86488 CA# 9885

RICHARD NEET LICENSE No. P.E. 86488 STATE OF FLORIDA PROFESSIONAL ENGINEER

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MAY 1, 2024

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3039 Premiere Parkway, Suite 600
Duluth, GA 30097
(678) 542-3600

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REMARKS	DRWN	CHKD	DATE
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