PVC VINYL FENCING

STRUCTURAL INSTALLATION AND DESIGN STYLES MASTER PLAN

VALID AS A GENERIC SEALED MASTER PLAN ONLY FOR UP TO <u>500 FT</u> OF FENCING AT (1) RESIDENTIAL OR COMMERCIAL LOCATION. SITE SPECIFIC/ADDITIONAL ENGINEERING REQUIRED THEREAFTER.

PVC VI FLORIDA I

22-50266

SCALE: NTS UNLESS NOTE

WHEN PRINTED OR PHYSICALLY SEALED, SEAL OF CERTIFYING ENGINEER, AND





INDEX

SHEET & DESCRIPTION

- 1. COVER
- NOTES
- PVC FENCE (PRE-BUILT PANEL STYLE) 6' X 8' CLOSED PICKET TOP
 - 6' X 8' OPEN PICKET TOP 6' X 8' LATTICE TOP
- PVC FENCE
 - 6' X 8' PRIVACY PANEL
- PVC FENCE
- 6' X 8' LATTICE TOP PANEL
- 6. PVC FENCE (PRE-BUILT PANEL STYLE) 6' X 8' EMBLEM PANEL
- 7. PVC FENCE
 - 6' X 6' PRIVACY PANEL
- 8. PVC FENCE
 - 4' X 6' CLASSIC SCALLOP PANEL 4' X 6' DOGEAR SCALLOP PANEL
- 9. PVC FENCE
 - 4' X 6' CLASSIC STRAIGHT
 - 4' X 6' DOGEAR
 - 4' X 6' CLOSED TOP
- 10. PVC FENCE
 - 6' X 6' LATTICE TOP
 - 6' X 6' OPEN PICKET TOP
 - 6' X 6' CLOSED TOP
- 11. PVC FENCE (PRE-BUILT PANEL STYLE)
 - 6' X 6" DOGEAR SHADOWBOX 6" BRD





PREPARED BY



YOU DIG

VISIT ECALC.IO/50266

NOTE: THIS SUBMITTAL IS FOR STRUCTURAL DESIGN PURPOSES ONLY. THIS

INFORMATION NOT REFERENCED HEREIN SHALL FOLLOW MANUFACTURER'S

PRODUCT IS MANUFACTURED BY "BARRETTE OUTDOOR SOLUTIONS." ANY

SPECIFICATIONS FOR PRODUCTS WHICH ARE INCORPORATED HEREIN

FOR ENGINEER CERTIFIED ORIGINALS & MORE INFORMATION ABOUT THIS DOCUMENT OR SCAN THIS QR CODE

VISIT ENGINEERINGEXPRESS.COM/STORE
FOR ADDITIONAL PLANS, REPORTS & RESOURCES



RESULTANT WIND LOADING

LATERAL

ΝI	ND LOADING INPUTS	
.1.	METHODOLOGY	WALLS, SIGNS, FENC
1.2.	ULTIMATE WIND SPEED	UP TO 115 MPH
		(ASD = SQRT(0.6)*V
1.3.	WIND EXPOSURE FACTOR	B-C
.4.	DIRECTIONALITY/OTHER FACTORS	Kd=0.85, G=0.85,
	Kz=0.85, Kzt=1.0	
.5.	MAXIMUM SYSTEM HEIGHT	6 FEET
6	CVCTEM MOUNTING LEIGHT	O EEET (AT CDADE)

LIP TO 20 PSE

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 7-16 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.
- 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.
- THE SYSTEM DETAILED HEREIN IS GENERIC 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.
- THIS SUBMITTAL IS FOR STRUCTURAL DESIGN PURPOSES ONLY. THIS PRODUCT IS MANUFACTURED BY "BARRETTE OUTDOOR SOLUTIONS." ANY INFORMATION NOT REFERENCED HEREIN SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR PRODUCTS WHICH ARE INCORPORATED HEREIN

- THIS SYSTEM HAS BEEN DESIGNED AND SHALL BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE 7TH EDITION (2020). ALSO APPLICABLE FOR THE FBC 6TH EDITION (2017), IBC/IRC (2015 & 2018), AS WELL AS CURRENT VERSIONS OF THE MN, NC, NJ, NY, OH, SC, & VA BUILDING CODES AS APPLICABLE. CODE ENFORCED COMPLIES WITH STATE OF SEAL AND IF MULTIPLE VERSIONS ARE LISTED THEN MOST STRINGENT APPLIES. CONTRACTOR SHALL INVESTIGATE AND CONFORM TO ALL LOCAL BUILDING CODE AMENDMENTS WHICH MAY APPLY AND GOVERN. DESIGN SHALL UTILIZE ASD DESIGN METHOD USING ASCE 7-16 OR ASCE 7-10 CODES FOR SITE SPECIFIC APPLICATIONS AS APPLICABLE DESIGN CRITERIA OR SPANS BEYOND STATED HEREIN MAY REQUIRE ADDITIONAL SITE SPECIFIC SEALED ENGINEERING
- 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
- PRODUCT APPROVED FOR USE IN SEISMIC DESIGN CATEGORY A-B PER REQUIREMENTS OF ASCE 7 AND CALIFORNIA BUILDING CODE 2019. FOR SEISMIC DESIGN CATEGORY C-F AND ANY CONCRETE CONNECTIONS, ADDITIONAL REVIEW BY THIRD-PARTY ENGINEERS IS REQUIRED FOR THE VALIDITY OF THE DESIGN.
- NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM. WIND LOAD DURATION FACTOR Cd=1.6 HAS BEEN USED FOR WOOD ANCHOR DESIGN.

PVC FENCE INSTALLATION & USE

- THIS FENCE DESIGN TO BE INSTALLED AT GRADE ONLY.
- USE SHALL BE LIMITED TO DECORATIVE BARRIER PURPOSES ONLY THIS FENCE IS NOT INTENDED TO MEET CODES GOVERNING ELEVATED
- BALCONIES OR STRUCTURAL RAILINGS. POOL USE NOT INTENDED FOR THIS PRODUCT UNLESS ACCOMPANIED
- BY A LETTER FROM A PROFESSIONAL ENGINEER LISTING POOL LIMITATIONS & CONFORMANCE TO THE FOLLOWING STANDARDS NO POOL RAILING SHALL BE UTILIZED AS A LIFE-SAFETY BARRIER
- PER FBC 424.2.17.1.8: POOL ACCESS GATES WHEN PROVIDED
- MUST BE AT LEAST 48" ABOVE GRADE & EQUIPPED WITH A SELF CLOSING, SELF LATCHING LOCKING DEVICE NOT LESS THAN 54" FROM BOT OF GATE.
- GATE MUST OPEN OUTWARD AWAY FROM POOL & MUST HAVE NO OPENING >1/2" WITHIN 18" OF RELEASE MECHANISM.
- POOL LATCH INSTALLED PER MANUFACTURER'S RECOMMENDATION AND IS NOT INCLUDED IN THIS CERTIFICATION

- STRUCTURAL PVC & VINYL

 1. STRUCTURAL PVC & VINYL SHALL CONFORM TO MATERIAL SPECIFICATIONS AS DETAILED BELOW.
- ASTM D-792: SPECIFIC GRAVITY 1.45 (±0.02) FOR 0.125" SPECIMEN
- = 17.0 FT*LBS/IN NOTCH
- ASTM D-256: IZOD IMPACT = 17.0 FT*LE ASTM D-638: TENSILE YIELD STRENGTH = 6,200 PSI ASTM D-638: TENSILE MODULUS = 365,000 PSI
- ASTM D-790: FLEXURAL YIELD STRENGTH = 12,000 PSI ASTM D-790: FLEXURAL MODULUS = 410,000 PSI
- ASTM D-648: DTUL = 264 PSI @ 72° C TI02 - TITANIUM OXIDE UV INHIBITOR = 10/100

STRUCTURAL ALUMINUM & ALUMINUM WELDING:

- 1. ALL COMPONENTS SHALL BE STRUCTURAL ALLIMINUM (U.N.O.) AND SHALL BE FABRICATED AND ERECTED ACCORDING TO THE GOVERNING BUILDING CODE AND MATERIAL STANDARDS REFERENCED ON THIS
- 2. ALL STRUCTURAL ALUMINUM SHALL BE MIN 1/8" THICK U.N.O. AND BE OF THE FOLLOWING ALLOY AND TEMPER:
 - BEAMS, PURLINS, COLUMNS 6005-T5 (UNLESS NOTED OTHERWISE)
 - ALL OTHER EXTRUSIONS 6005-T5 (UNLESS NOTED OTHERWISE)
 - FASTENERS SS 316
- 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. UNCOATED ALUMINUM SHALL NOT BE EXPOSED TO MOISTURE
- 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.
- 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 QUALITY", 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 ADEOUATE PROTECTION AT THE OVERLAPS.
- ALUMINUM SHALL NOT BE EMBEDDED IN CONCRETE TO WHICH CORROSIVE COMPONENTS SUCH AS CHLORIDES HAVE BEEN ADDED IF THE ALUMINUM WILL BE ELECTRICALLY CONNECTED TO STEEL. EMBEDDED ALUMINUM ELEMENTS WILL BE COVERED WITH PLASTIC TAPE OR OTHERWISE PROTECTED AS PER 2015 ADM M.7.3.
- BOLT HOLES SHALL BE DRILLED THE SAME NOMINAL DIAMETER AS THE BOLT + 1/16".
- ALUMINUM WELDING SHALL BE PERFORMED IN ACCORDANCE WITH WELD FILLER ALLOYS MEETING ANSI/AWS A5.10 STANDARDS 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. 9. THE CONTRACTOR IS RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
- 10. ELECTRICAL GROUND, WHEN REQUIRED, TO BE DESIGNED 8 INSTALLED BY OTHERS.

- ALL FASTENERS TO BE #14 SAE GRADE 2 WITH APPROPRIATE CORROSION RESISTANCE UNLESS NOTED OTHERWISE (FY = 65 KSI MIN). FASTENERS SHALL BE ZINC-PLATED OR OTHERWISE CORROSION-RESISTANT MATERIAL AND SHALL COMPLY WITH "SPECIFICATIONS FOR ALUMINUM STRUCTURES" BY THE ALUMINUM ASSOCIATION, INC., & ANY APPLICABLE FEDERAL, STATE, AND/OR LOCAL CODES.
- ALL METAL CONNECTORS USED IN LOCATIONS EXPOSED TO WEATHER SHALL BE HOT-DIP GALVANIZED.
- ALL FASTENERS SHALL BE SPACED WITH 2x DIAMETER END DISTANCE AND 2.5xDIAMETER MIN. SPACING TO ADJACENT FASTENERS, UNLESS NOTED OTHERWISE. PROVIDE (5) PITCHES MINIMUM PAST THE THREAD PLANE FOR ALL FASTENERS.
- 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 STUCCO, FOAM, BRICK, AND OTHER WALL FINISHES. ALL CONCRETE ANCHORS SHALL BE INSTALLED TO NON-CRACKED CONCRETE ONLY.
- 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:

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.

FOUNDATIONS, CONCRETE, AND REINFORCEMENT

FOUNDATION & EARTHWORK

- 1. SURROUNDING SOIL TO BE WELL COMPACTED BY MECHANICAL MEANS TO 90% OPTIMUM DENSITY, BE FREE OF MUCK AND ORGANICS, AND ACHIEVE 2000 PSF MIN BEARING PRESSURE AND LATERAL BEARING PRESSURE BELOW NATURAL GRADE OF 150 PSF.
- **EXCAVATIONS NEAR ADJACENT FOOTINGS AND FOUNDATIONS SHALL** NOT REMOVE LATERAL SUPPORT WITHOUT FIRST UNDERPINNING OR PROTECTING THE THE FOOTING OR FOUNDATION AGAINST SETTLEMENT OR LATERAL TRANSLATION.
- SOIL SHALL BE CLASSIFIED OR VERIFIED BY OTHERS PRIOR TO CONSTRUCTION AS SAND CLASS OR BETTER. SHOULD OTHER CONDITIONS OR MATERIALS BE ENCOUNTERED THE ENGINEER OF RECORD MUST BE NOTIFIED.

- CONCRETE

 1. CONCRETE MIXTURES SHALL BE DESIGNED TO REACH A COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS.
- ALL MIXING, TRANSPORTING, PLACING, & CURING OF CONCRETE SHALL BE IN ACCORDANCE WITH ACI 318.
- 3. NO ADMIXTURES ARE TO BE USED WITHOUT THE WRITTEN APPROVAL OF THE ABOVE-SIGNED ENGINEER.
- CONCRETE SHALL BE TYPE 1 PORTLAND CEMENT MEETING THE REQUIREMENTS OF ASTM C150, AGGREGATES TO MEET ASTM C33 POTABLE WATER SHALL BE USED.
- SLUMP SHALL BE A MINIMUM OF 3" AND MAXIMUM OF 5" CONCRETE DURING AND IMMEDIATELY AFTER DEPOSITING SHALL BY THOROUGHLY COMPACTED BY MEANS OF MECHANICAL VIBRATION

REINFORCING STEEL

- 1. ALL REINFORCEMENT SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE NEW BILLET STEEL CONFORMING TO CURRENT REQUIREMENTS OF ASTM A615, GRADE 60 (U.O.N.), FREE FROM OIL, LOOSE SCALE AND LOOSE RUST AND BENT, LAPPED, PLACED, SUPPORTED AND FASTENED ACCORDING TO THE "ACI DETAILING MANUAL" (SP-66) AND THE ACI
- ALL WELDING WIRE FABRIC IS TO CONFORM TO ASTM A185 MINIMUM YIELD STRENGTH OF 85 KSI.
- CLEAR COVER FOR REINFORCEMENT SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
 - FOOTINGS PERMANENTLY EXPOSED TO EARTH: UNFORMED FACES EXPOSED TO EARTH:
- 4. SHOP DRAWINGS MAY BE REQUIRED BY THE CERTIFYING ENGINEER, E.O.R. OR BUILDING DEPARTMENT TO BE SUBMITTED FOR REVIEW AND APPROVAL BEFORE INSTALLATION

GENERAL NOTES & DISCLAIMERS

- 1. 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.
- ENGINEERING EXPRESS HAS NOT VISITED THIS JOBSITE. SUPPLIED DATA AND MEASUREMENTS. ENGINEERING EXPRESS SHALL NOT BE HELD RESPONSIBLE OR LIABLE IN ANY WAY FOR ERRONEOUS OR INACCURATE DATA OR MEASUREMENTS. WORK SHALL BE ETCLE. VERIFIED PRIOR TO CONSTRUCTION, THIS ENGINEERING 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.
- USE OF THIS SIGNED & SEALED DOCUMENT CONSTITUTES ACCEPTANCE OF THE PROPOSED SYSTEM LAYOUT, COMPONENTS SELECTED, AND INSTALLATION REQUIREMENTS.
- THIS DOCUMENT SHALL NOT BE USED OR REPRODUCED WITHOUT THE ORIGINAL SIGNATURE & RAISED SEAL OF THE CERTIFYING P.E. ALTERATIONS, ADDITIONS OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION. PHOTOCOPIES AND UNSEALED DOCUMENTS ARE NOT TO BE ACCEPTED.
- 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.
- 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
- EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED

SPACE RESERVED FOR DIGITAL SEAL

VHEN PRINTED OR PHYSICALLY SEALED, SEAL OF CERTIFYING ENGINEER, AND DATE OF CERTIFICATION SHALL BE SHOWN TO THE RIGHT.

IN ALL CASES, CERTIFYING ENGINEE IND CERT OF AUTH AS LISTED ON ST

POSTAL ADDRESS: 401 W. ATLANTIC AVE R10 #219 DELRAY BEACH, FL 33444 ENGINEERINGEXPRESS.COM

401 AN (2020) H

OUTDOOR LIVING
7830 FREEWAY CIRCLE
MIDDLEBURGH HEIGHTS, OH
(216) 644-3865 C VINYL FENCING MASTER PLA DA BUILDING CODE 7TH ED (; LOADING PER ASCE 7-16

PVC VI FLORIDA I

22-50266

STRUCTURAL MATERIALS & CONNECTIONS

















