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**PJD Beer Garden New Deck**

**Design Criteria**

**1. Live Loads (Per Section 1607 of FBC 2017)**

**Deck Floor.....100 psf**

**2. Dead Loads (Per Section 1606 of FBC 2017)**

**Bottom chord of floor joist....5 psf,  
 Top chord of floor joist.....10 psf  
 Deck Top Units , per Manufacturer**

**3A. Wind Loads (Per Section 1609 of FBC 2017)**

**Ultimate Design Wind Speed, Vult=130 mph, Wind Exposure “C”, Risk Category “II” Structure, GCPI=(+)Or(-)0.0 (OpenStructure), Flat Roof Structure MRH is less than 60 ft.**

**3B.1 Components & Cladding Design Pressures \*\*\* :  
 Roof: a = 3 ft.**

<u>Zone</u>	<u>Effective Wind Area (sq. ft.)</u>	<u>Pressure (psf)</u>	
1	<9	31.9	-29.2
1	>9 but ≤ 36	31.9	-29.2
1	> 36	31.9	-29.2
2	<9	47.8	-45.2
2	>9 but ≤ 36	47.8	-45.2
2	> 36	31.9	-29.2
3	< 9	63.4	-87.7
3	>9 but ≤ 36	47.8	-45.2
3	> 36	31.9	-29.2

**Roof Overhang, same as zone “3”**

**\*\*\* plus and minus signs indicate acting toward and away from the building surfaces respectively**

**3.2 MWFR System Design Wind Pressures per Simplified Method 2 of ASCE 7-2010 Edition**

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3. Roof Snow Load ( Per section 1608 of FBC 2017)  
Not Applicable,  $P_g = \text{zero}$

4. Seismic Design Criteria (per Section 1613 OF FBC 2017)

Risk Category II, Importance Factor  $I_e = 1.0$ ,  $S_s = 0.1$

$SD = 0.06$ , Site Class "D",  $F_a = 1.6$ ,  $F_v = 2.4$ ,  $SMS = 0.16$ ,

$SM1 = 0.144$ ,  $SDS = 0.107$ ,  $SD1 = 0.095$

Seismic Design Category "A" (Short Period)

Stud Frame Wood Bearing Walls,  $R = 6.5$

$C_s = (SDS) / (R/I_e) = 0.0165$  But Not Less Than  $(0.044)(SDS)(I_e) = 0.0047$

Or 0.01

$0.0165 > 0.01$  ; Thus,  $C_s = 0.0165$

$V = \text{Base Shear} = (0.0165)(W)$

At Roof Level,  $V = (\text{Roof dead load over Horizontal Tributary Area})(0.0165)$

+ (Half of Wall Dead Load Over Vertical Tributary Area)(0.0165)

General Structural Notes:

1. It is the intent of the Engineer that this work be in conformance with all requirements of the authorities having jurisdiction over this type of construction and occupancy. All Contractors shall do their work in conformance with all applicable codes and regulations.

2. The Contractor shall verify all conditions and dimensions at the job site prior to commencing work.

3. Contractor shall supply, locate and build into the work all inserts, anchors, angles, plates, openings, sleeves, hangers, slab

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depressions, and pitches as may be required to attach drawings and accommodate other work.

4. All details and sections shown on the drawings are intended to be typical and shall be construed to apply to any similar situation elsewhere in the work except where a different detail is shown.

5. Subsurface soil condition information is not available. Foundations are designed for 2000 psf soil bearing capacity. Contractor shall report any differing conditions to the Designer prior to commencing work.

6. It is the Contractor's sole responsibility to determine erection procedure and sequence to insure the safety of the building and its component parts during erection.

#### Construction Notes:

#### Foundations:

1. All concrete shall have a minimum of 3000 psi compressive strength at 28 days except for slab on grade which may be constructed with 2500 psi.

2. Footings shall bear upon undisturbed soil or upon structural fill compacted to a density of at 95% of Standard Proctor Maximum Dry Density (ASTM D1557) for a depth of at least one foot

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(1') below the bottom of the footing.

3. Reinforcing steel shall be ASTM A-615 Grade 60 steel conforming to ACI 301, ACI 315, ACI 318 and CRSI Manual of Standard Practice, latest editions.

5. All continuous vertical and horizontal reinforcing steel in footings shall be lap spliced a minimum of 48 bar diameters or 30", whichever is greater unless otherwise noted.

6. The following minimum concrete cover shall be provided for reinforcement:

Footings.....3 inches

Slab on grade.....Centered

7. Horizontal beam and footing bars shall be bent 1'-0" around corners or corner bars with 2'-0" lap shall be provided.

8. Contractor shall provide spacers, chairs, bolsters, etc. necessary to support reinforcing steel. Support items which bear on exposed concrete surfaces shall have ends which are plastic tipped or stainless steel.

**CONCRETE**

1. The latest edition of the following ACI Standards apply:

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**ACI 318 (CODE)**

**ACI 304 (PLACING)**

**ACI 306 (WINTER CONCRETING)**

**ACI 315 (DETAILING)**

**ACI 305 (HOT WEATHER CONCRETING)**

**ACI 347 (FORM WORK)**

**ACI 211.1 (MIX COMPRESIVE)**

**ACI 301 (SPECIFICATIONS)**

- 2. The required concrete strength based on age of 28 days for elements in the structure shall not be less than: 3000 PSI**
- 3. Mix proportions and design: proportion mixes complying with mix design procedures specified in ACI 301.**
  - a. Limit blast furnace slag (ASTM C989) (NEW CHEM) to not exceed 50% of content by weight.**
  - b. Limit use of fly ash (ASTM C618 TYPE C OR F) to not exceed 25% of Portland cement (ASTM C150 TYPE 1 OR 2) content by weight. Do not use flyash in conjunction with blast furnace slag.**
  - c. Design mixes to provide normal weight concrete with the following properties:**
    - 1) Water-cement ratio, 0.55 Maximum**
    - 2) Air entrainment (ASTM C 260): 3% +/- 1%**
  - d. Slump limits: proportion and design mixes to result in concrete slump at point of placement as follows:**
    - 1) Ramps and sloping surfaces; not more than 3 inches.**
    - 2) Other concrete: 4 inches +/- 1"**
  - e. Fine and course aggregates shall be per ASTM C33.**
- 4. Site added water is permitted within the 1<sup>st</sup> 15 minutes that the truck arrives on the job site provided that the water cement ratio and the**

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**slump limits are not exceeded however not more than one gallon of water per cubic yard of concrete may be used to adjust the mix at the jobsite.**

- 5. Consolidate all concrete, other than slabs on grade using mechanical vibrating equipment.**
- 6. Do not place concrete during rain or if rain is likely to occur prior to concrete hardening.**

### **REINFORCING STEEL**

- 1. CRSI and ACI standards apply.**
- 2. All deformed bars shall conform to ASTM A615, Grade 60.**
- 3. All welded wire fabric shall conform to ASTM A185.**
- 4. Submit for review shop drawings of reinforcing steel details prior to fabrication reinforcing steel.**
- 5. Lap all welded wire fabric a minimum distance of one cross wire spacing plus two inches.**
- 6. All reinforcing steel shall be supported on standard accessories, held rigidly and accurately in place, and protected against displacement before and during placement of concrete.**
- 7. Reinforcement chair legs that rest on concrete surfaces that will be exposed in the finished structure shall be fabricated of stainless steel or shall be plastic coated.**
- 8. Where splice lengths are not specified, use 50 bar diameter.**

### **ROUGH CARPENTRY**

- 1. All sawn lumber shall be visually graded No. 2 Southern pine @ 19% max moisture content.**
- 2. Provide light gauge metal fasteners indicated. Secure per fastening schedule published in the MFG. catalogue for the maximum capacity**

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**U.N.O. Fasteners exposed to ambient conditions shall be stainless steel and secured with stainless steel nails. Fasteners at all other locations shall be galvanized steel. Substitutions are permitted provided that they have an equal or greater capacity than the specified fasteners and catalogue data is submitted for approval by the architect.**

- 3. Install rough carpentry work to comply with N.F.P.A. 11 “Manual for wood frame construction,” Form E30- “APA Design/construction Guide- Residential and commercial,” and the recommendations of engineered wood products manufacturer.**
- 4. Use pressure treated lumber with water borne preservatives to comply with AWWA C2 for all members in contact with masonry or concrete, exposed framing, and all curbs and blocking used in connection roofing and waterproofing.**
- 5. Provide continuous wood framing members of size and spacing indicated. Do not splice structural members between supports.**

### **FASTENERS**

**Expansion bolts shall be HILTI KWIK BOLT 3 or approved equal.**

**Embedment in concrete or solid grouted masonry shall be 7 bolt diameters minimum, U.N.O.**

**Epoxy adhesive shall be HILTI HIT-HY 150 max cartridge system (HILTI HIT-RE 500, if hole is cored instead of drilled) or approved equal, UNO.**

**embedment shall be 12 bar diameters, UNO. Hole diameter shall be no greater than recommended by manuf. hole shall be brushed out with bottle brush and then blown out with air using a compressor with a functional oil trap. Installation shall be in accordance with manufacturers printed instructions.**

**Power actuated fasteners (PAF) shall be HILTI X-DNI 0.145” diameter or equal. embed min 1-1/4” into concrete and cmu. do not place within 1” of cmu mortar joint. PAF shall completely penetrate structural steel.**