



# DOTec CORP.

Customized Engineering Solutions

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September 27, 2016

Unirac, Inc.  
1411 Broadway Boulevard NE  
Albuquerque, New Mexico 87102-1545  
TEL: (505) 248-2702 (Technical Support)

Attn.: Engineering Department,

Re: Engineering Certification for Unirac's DGFT (Distribution Ground Fixed Tilt)

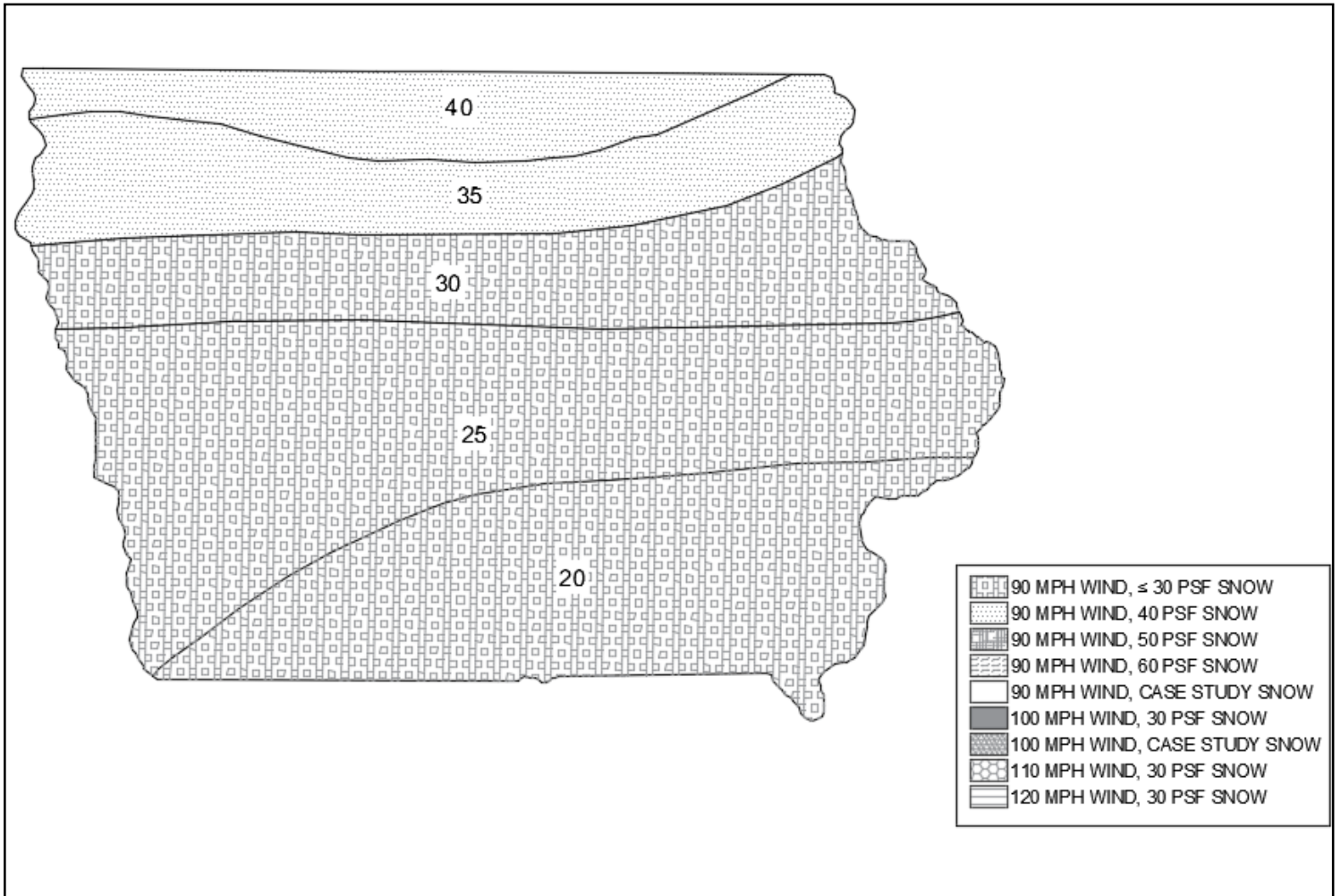
DOTec Engineering, Inc. has reviewed Unirac's DGFT design tool and design methodology. This approved design tool was utilized to develop the design tables listed below. The design methodology is acceptable for a code compliant, ground mount racking structure, supporting photovoltaic (PV) solar modules for residential/commercial.

All analysis and information included in the following DGFT design tables comply with the following:

1. 2009 International Building Code and 2012 International Building Code, by International Code Council, Inc., 2009 and 2012
2. ASCE/SEI 7-05 and ASCE/SEI 7-10 Minimum Design Loads and other Structures, by ASCE, 2006 and 2013
3. 2005 Aluminum Design Manual and 2010 Aluminum Design Manual (ADM), by the Aluminum Association, 2005 and 2010

This letter certifies that the structural analysis of the racking members, connections, and foundation designs (as listed in the following design tables) are in compliance with the above Codes.

See design tables on the following pages;



For Reference Only

| NOTES:  |
|---|
| 1. SEE SHEET SD-100 FOR TABLE/PILE REQUIREMENTS FOR A 60 CELL SOLAR PANEL.  |
| 2. REFER TO SHEET SD-300 FOR TABLE CROSS SECTIONAL DIMENSIONS AND PARTS LIST.   |
| 3. SEE DETAILS AND NOTES ON SHEETS SD-100 AND SD-400 FOR ADDITIONAL INFORMATION ON SOIL TYPES AND SELECTION OF PROPER FOUNDATION TYPE FOR EACH GFT INSTALLATION. THIS IS THE RESPONSIBILITY OF THE INSTALLER/PROJECT OWNER.   |
| 4. SEE SHEET SD-100 FOR RACKING DESIGN CRITERIA   |
| 5. SOLAR REQUIREMENTS (FROM OWNER):<br>TABLE TILT ANGLE = 30 DEGREES<br>LEADING EDGE HEIGHT = 30 IN (FROM TOP OF SOLAR PANEL TO GRADE)<br>ROW TO ROW SPACING = VERIFY WITH SOLAR DRAWINGS<br>SOLAR PANEL = BY OTHERS (SEE DIMENSION/WEIGHT LIMITS BELOW)<br>SOLAR PANEL DIM. = 76.5" to 78.46" LENGTH, 38.6" to 39.4" WIDTH, 1.37" TO 1.50" THICKNESS<br>SOLAR PANEL WEIGHT = 47.8 LBS TO 60 LBS<br>NOTE: UNIRAC AND THE ENGINEER OF RECORD ARE NOT RESPONSIBLE FOR THE SOLAR DESIGN, PERFORMANCE, SHADING, ETC. OF THE SOLAR SYSTEM. THIS BELONGS TO THE SOLAR ENGINEER OF RECORD. |

| 90 MPH Wind; ≤ 30 psf Snow; 72 Cell Module |            |         |              |            |          |              |            |          |              |            |          |              |
|--|------------|---------|--------------|------------|----------|--------------|------------|----------|--------------|------------|----------|--------------|
| Table Size                                 | Exposure C |         |              |            |          |              | Exposure B |          |              |            |          |              |
|  | Driven     |         |              | Concrete   |          |              | Driven     |          |              | Concrete   |          |              |
|  | # of Piles | Dim A   | Dim B        | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        |
| 2x4  | 2          | 8' - 0" | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  |
| 2x5  | 3          | 6' - 0" | 2' - 4 1/2"  | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      |
| 2x6  | 3          | 7' - 0" | 3' - 0 3/8"  | 3          | 7' - 0"  | 3' - 0 3/8"  | 2          | 11' - 9" | 4' - 1 7/8"  | 2          | 11' - 9" | 4' - 1 7/8"  |
| 2x7  | 3          | 8' - 3" | 3' - 5 1/8"  | 3          | 8' - 3"  | 3' - 5 1/8"  | 3          | 8' - 3"  | 3' - 5 1/8"  | 2          | 13' - 9" | 4' - 9 5/8"  |
| 2x8  | 4          | 7' - 0" | 2' - 10"     | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     |
| 2x9  | 4          | 7' - 9" | 3' - 4 2/8"  | 4          | 7' - 9"  | 3' - 4 1/4"  | 3          | 10' - 9" | 4' - 2 3/4"  | 3          | 10' - 9" | 4' - 2 3/4"  |
| 2x10                                       | 5          | 7' - 0" | 2' - 7 5/8"  | 4          | 8' - 9"  | 3' - 6 1/8"  | 3          | 11' - 9" | 4' - 10 5/8" | 3          | 11' - 9" | 4' - 10 5/8" |
| 2x11                                       | 5          | 7' - 6" | 3' - 3 1/2"  | 4          | 9' - 6"  | 4' - 0 1/2"  | 4          | 9' - 6"  | 4' - 0 1/2"  | 3          | 13' - 0" | 5' - 3 1/2"  |
| 2x12                                       | 6          | 6' - 9" | 3' - 0 3/4"  | 5          | 8' - 3"  | 3' - 5 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  |
| 2x13                                       | 6          | 7' - 6" | 2' - 10 1/8" | 5          | 9' - 0"  | 3' - 7 1/8"  | 4          | 11' - 3" | 4' - 8 5/8"  | 4          | 11' - 3" | 4' - 8 5/8"  |
| 2x14                                       | 6          | 8' - 0" | 3' - 2 7/8"  | 5          | 9' - 9"  | 3' - 8 7/8"  | 4          | 12' - 3" | 4' - 10 3/8" | 4          | 12' - 3" | 4' - 10 3/8" |
| 2x15                                       | 7          | 7' - 3" | 3' - 1 3/4"  | 5          | 10' - 3" | 4' - 4 3/4"  | 5          | 10' - 3" | 4' - 4 3/4"  | 4          | 13' - 0" | 5' - 4 3/4"  |
| 2x16                                       | 7          | 7' - 9" | 3' - 3 5/8"  | 6          | 9' - 0"  | 4' - 0 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  |
| 2x17                                       | 8          | 7' - 3" | 2' - 9 7/8"  | 6          | 9' - 9"  | 3' - 9 7/8"  | 6          | 9' - 9"  | 3' - 9 7/8"  | 5          | 11' - 9" | 4' - 8 3/8"  |
| 2x18                                       | 8          | 7' - 9" | 2' - 8 3/4"  | 6          | 10' - 3" | 4' - 2 3/4"  | 6          | 10' - 3" | 4' - 2 3/4"  | 5          | 12' - 6" | 4' - 10 1/4" |
| 2x19                                       | 8          | 8' - 0" | 3' - 6"      | 7          | 9' - 3"  | 3' - 9"      | 6          | 10' - 9" | 4' - 7 1/2"  | 5          | 13' - 0" | 5' - 6"      |
| 2x20                                       | 9          | 7' - 6" | 3' - 1 7/8"  | 7          | 9' - 9"  | 3' - 10 7/8" | 6          | 11' - 6" | 4' - 4 7/8"  | 6          | 11' - 6" | 4' - 4 7/8"  |
| 2x21                                       | 9          | 8' - 0" | 2' - 9 3/4"  | 7          | 10' - 3" | 4' - 0 3/4"  | 7          | 10' - 3" | 4' - 0 3/4"  | 6          | 12' - 0" | 4' - 9 3/4"  |
| 2x22                                       | 10         | 7' - 6" | 2' - 8 1/2"  | 8          | 9' - 3"  | 4' - 1"      | 7          | 10' - 9" | 4' - 2 1/2"  | 6          | 12' - 6" | 5' - 2 1/2"  |
| 2x23                                       | 10         | 7' - 9" | 3' - 2 7/8"  | 8          | 9' - 9"  | 3' - 11 7/8" | 7          | 11' - 3" | 4' - 4 3/8"  | 7          | 11' - 3" | 4' - 4 3/8"  |
| 2x24                                       | 11         | 7' - 3" | 3' - 6 1/8"  | 8          | 10' - 3" | 3' - 10 5/8" | 8          | 10' - 3" | 3' - 10 5/8" | 7          | 11' - 9" | 4' - 6 1/8"  |
| 2x25                                       | 11         | 7' - 9" | 2' - 8"      | 9          | 9' - 6"  | 3' - 5"      | 8          | 10' - 6" | 4' - 8"      | 7          | 12' - 3" | 4' - 8"      |
| 2x26                                       | 11         | 8' - 0" | 3' - 0 7/8"  | 9          | 9' - 9"  | 4' - 0 7/8"  | 8          | 11' - 0" | 4' - 6 7/8"  | 7          | 12' - 9" | 4' - 9 7/8"  |
| 2x27                                       | 12         | 7' - 6" | 3' - 5 5/8"  | 10         | 9' - 0"  | 4' - 2 5/8"  | 8          | 11' - 6" | 4' - 5 5/8"  | 8          | 11' - 6" | 4' - 5 5/8"  |
| 2x28                                       | 12         | 7' - 9" | 3' - 9"      | 10         | 9' - 6"  | 3' - 7 1/2"  | 9          | 10' - 6" | 4' - 4 1/2"  | 8          | 11' - 9" | 5' - 3"      |
| 2x29                                       | 13         | 7' - 6" | 3' - 0 1/4"  | 10         | 9' - 9"  | 4' - 1 3/4"  | 9          | 11' - 0" | 4' - 0 1/4"  | 8          | 12' - 3" | 5' - 1 3/4"  |
| 2x30                                       | 13         | 7' - 9" | 3' - 2 1/8"  | 10         | 10' - 0" | 4' - 8 1/8"  | 9          | 11' - 3" | 4' - 8 1/8"  | 8          | 12' - 9" | 5' - 0 5/8"  |

| 90 MPH Wind; ≤ 30 psf Snow; 60 Cell Module |            |          |              |            |          |              |            |          |              |            |          |              |
|--|------------|----------|--------------|------------|----------|--------------|------------|----------|--------------|------------|----------|--------------|
| Table Size                                 | Exposure C |          |              |            |          |              | Exposure B |          |              |            |          |              |
|  | Driven     |          |              | Concrete   |          |              | Driven     |          |              | Concrete   |          |              |
|  | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        |
| 2x4  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  |
| 2x5  | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      |
| 2x6  | 2          | 11' - 9" | 4' - 1 7/8"  | 2          | 11' - 9" | 4' - 1 7/8"  | 2          | 11' - 9" | 4' - 1 7/8"  | 2          | 11' - 9" | 4' - 1 7/8"  |
| 2x7  | 3          | 8' - 3"  | 3' - 5 1/8"  | 2          | 13' - 9" | 4' - 9 5/8"  | 2          | 13' - 9" | 4' - 9 5/8"  | 2          | 13' - 9" | 4' - 9 5/8"  |
| 2x8  | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     | 2          | 15' - 6" | 5' - 7"      |
| 2x9  | 3          | 10' - 9" | 4' - 2 3/4"  | 3          | 10' - 9" | 4' - 2 3/4"  | 3          | 10' - 9" | 4' - 2 3/4"  | 3          | 10' - 9" | 4' - 2 3/4"  |
| 2x10                                       | 4          | 8' - 9"  | 3' - 6 1/8"  | 3          | 11' - 9" | 4' - 10 5/8" | 3          | 11' - 9" | 4' - 10 5/8" | 3          | 11' - 9" | 4' - 10 5/8" |
| 2x11                                       | 5          | 7' - 6"  | 3' - 3 1/2"  | 3          | 13' - 0" | 5' - 3 1/2"  | 3          | 13' - 0" | 5' - 3 1/2"  | 3          | 13' - 0" | 5' - 3 1/2"  |
| 2x12                                       | 5          | 8' - 3"  | 3' - 5 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  | 3          | 14' - 3" | 5' - 8 1/4"  | 3          | 14' - 3" | 5' - 8 1/4"  |
| 2x13                                       | 5          | 9' - 0"  | 3' - 7 1/8"  | 4          | 11' - 3" | 4' - 8 5/8"  | 4          | 11' - 3" | 4' - 8 5/8"  | 4          | 11' - 3" | 4' - 8 5/8"  |
| 2x14                                       | 5          | 9' - 9"  | 3' - 8 7/8"  | 4          | 12' - 3" | 4' - 10 3/8" | 4          | 12' - 3" | 4' - 10 3/8" | 4          | 12' - 3" | 4' - 10 3/8" |
| 2x15                                       | 5          | 10' - 3" | 4' - 4 3/4"  | 4          | 13' - 0" | 5' - 4 3/4"  | 4          | 13' - 0" | 5' - 4 3/4"  | 4          | 13' - 0" | 5' - 4 3/4"  |
| 2x16                                       | 5          | 11' - 0" | 4' - 6 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  | 4          | 14' - 0" | 5' - 6 5/8"  | 4          | 14' - 0" | 5' - 6 5/8"  |
| 2x17                                       | 6          | 9' - 9"  | 3' - 9 7/8"  | 5          | 11' - 9" | 4' - 8 3/8"  | 5          | 11' - 9" | 4' - 8 3/8"  | 5          | 11' - 9" | 4' - 8 3/8"  |
| 2x18                                       | 7          | 8' - 9"  | 3' - 7 1/4"  | 5          | 12' - 6" | 4' - 10 1/4" | 5          | 12' - 6" | 4' - 10 1/4" | 5          | 12' - 6" | 4' - 10 1/4" |
| 2x19                                       | 7          | 9' - 3"  | 3' - 9"      | 6          | 10' - 9" | 4' - 7 1/2"  | 5          | 13' - 0" | 5' - 6"      | 5          | 13' - 0" | 5' - 6"      |
| 2x20                                       | 7          | 9' - 9"  | 3' - 10 7/8" | 6          | 11' - 6" | 4' - 4 7/8"  | 5          | 13' - 9" | 5' - 7 7/8"  | 5          | 13' - 9" | 5' - 7 7/8"  |
| 2x21                                       | 7          | 10' - 3" | 4' - 0 3/4"  | 6          | 12' - 0" | 4' - 9 3/4"  | 6          | 12' - 0" | 4' - 9 3/4"  | 6          | 12' - 0" | 4' - 9 3/4"  |
| 2x22                                       | 8          | 9' - 3"  | 4' - 1"      | 6          | 12' - 6" | 5' - 2 1/2"  | 6          | 12' - 6" | 5' - 2 1/2"  | 6          | 12' - 6" | 5' - 2 1/2"  |
| 2x23                                       | 8          | 9' - 9"  | 3' - 11 7/8" | 7          | 11' - 3" | 4' - 4 3/8"  | 6          | 13' - 0" | 5' - 7 3/8"  | 6          | 13' - 0" | 5' - 7 3/8"  |
| 2x24                                       | 8          | 10' - 3" | 3' - 10 5/8" | 7          | 11' - 9" | 4' - 6 1/8"  | 6          | 13' - 9" | 5' - 4 5/8"  | 6          | 13' - 9" | 5' - 4 5/8"  |
| 2x25                                       | 8          | 10' - 6" | 4' - 8"      | 7          | 12' - 3" | 4' - 8"      | 6          | 14' - 3" | 5' - 9 1/2"  | 6          | 14' - 3" | 5' - 9 1/2"  |
| 2x26                                       | 9          | 9' - 9"  | 4' - 0 7/8"  | 8          | 11' - 0" | 4' - 6 7/8"  | 7          | 12' - 9" | 4' - 9 7/8"  | 7          | 12' - 9" | 4' - 9 7/8"  |
| 2x27                                       | 9          | 10' - 3" | 3' - 8 5/8"  | 8          | 11' - 6" | 4' - 5 5/8"  | 7          | 13' - 3" | 4' - 11 5/8" | 7          | 13' - 3" | 4' - 11 5/8" |
| 2x28                                       | 10         | 9' - 6"  | 3' - 7 1/2"  | 8          | 11' - 9" | 5' - 3"      | 7          | 13' - 6" | 5' - 10 1/2" | 7          | 13' - 6" | 5' - 10 1/2" |
| 2x29                                       | 10         | 9' - 9"  | 4' - 1 3/4"  | 9          | 11' - 0" | 4' - 0 1/4"  | 8          | 12' - 3" | 5' - 1 3/4"  | 7          | 14' - 0" | 6' - 0 1/4"  |
| 2x30                                       | 10         | 10' - 0" | 4' - 8 1/8"  | 9          | 11' - 3" | 4' - 8 1/8"  | 8          | 12' - 9" | 5' - 0 5/8"  | 8          | 12' - 9" | 5' - 0 5/8"  |

NOTES:

- FOR DIMENSIONS A & B SEE 'PLAN VIEW OF TABLE' ON SHEET SD-300. THESE DIMENSIONS SHALL NOT BE EXCEEDED BY 2".
- DESIGN LOADS SHOWN ABOVE AND FINAL DESINGS ARE BASED ON ASCE 7-05.
- EXPOSURE B SHALL APPLY WHERE THE GROUND SURFACE ROUGHNESS CONDITION B PREVAILS FOR A DISTANCE OF 1,500 FEET.
- SURFACE ROUGHNESS B IS DEFINED AS URBAN AND SUBURBAN AREAS, WOODED AREAS, OR OTHER TERRAIN WITH NUMEROUS CLOSELY SPACED OBSTRUCTIONS HAVING THE SIZE OF SINGLE-FAMILY DWELLINGS OR LARGER.
- EXPOSURE C SHALL BE USED WHEN EXPOSURE B DOES NOT APPLY OR MEETS THE CRITERIA FOR SURFACE ROUGHNESS C PERTAINING TO OPEN TERRAIN WITH SCATTERED OBSTRUCTIONS.
- CONCRETE PILES AND PARTIAL CONCRETE CAN UTILIZE THE 12.5 FOOT TOTAL LENGTH PILE. DRIVEN PILES AND PARTIAL DRIVEN PILES REQUIRE THE 15.0 FOOT TOTAL LENGTH PILE.

| 90 MPH Wind; 40 psf Snow; 72 Cell Module |            |         |              |            |          |              |            |          |              |            |          |              |
|--|------------|---------|--------------|------------|----------|--------------|------------|----------|--------------|------------|----------|--------------|
| Table Size                               | Exposure C |         |              |            |          |              | Exposure B |          |              |            |          |              |
|  | Driven     |         |              | Concrete   |          |              | Driven     |          |              | Concrete   |          |              |
|  | # of Piles | Dim A   | Dim B        | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        |
| 2x4                                      | 2          | 8' - 0" | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  |
| 2x5                                      | 3          | 6' - 0" | 2' - 4 1/2"  | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      |
| 2x6                                      | 3          | 7' - 0" | 3' - 0 3/8"  | 3          | 7' - 0"  | 3' - 0 3/8"  | 2          | 11' - 9" | 4' - 1 7/8"  | 2          | 11' - 9" | 4' - 1 7/8"  |
| 2x7                                      | 3          | 8' - 3" | 3' - 5 1/8"  | 3          | 8' - 3"  | 3' - 5 1/8"  | 3          | 8' - 3"  | 3' - 5 1/8"  | 3          | 8' - 3"  | 3' - 5 1/8"  |
| 2x8                                      | 4          | 7' - 0" | 2' - 10"     | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     |
| 2x9                                      | 4          | 7' - 9" | 3' - 4 2/8"  | 4          | 7' - 9"  | 3' - 4 1/4"  | 3          | 10' - 9" | 4' - 2 3/4"  | 3          | 10' - 9" | 4' - 2 3/4"  |
| 2x10                                     | 5          | 7' - 0" | 2' - 7 5/8"  | 4          | 8' - 9"  | 3' - 6 1/8"  | 3          | 11' - 9" | 4' - 10 5/8" | 3          | 11' - 9" | 4' - 10 5/8" |
| 2x11                                     | 5          | 7' - 6" | 3' - 3 1/2"  | 4          | 9' - 6"  | 4' - 0 1/2"  | 4          | 9' - 6"  | 4' - 0 1/2"  | 4          | 9' - 6"  | 4' - 0 1/2"  |
| 2x12                                     | 6          | 6' - 9" | 3' - 0 3/4"  | 5          | 8' - 3"  | 3' - 5 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  |
| 2x13                                     | 6          | 7' - 6" | 2' - 10 1/8" | 5          | 9' - 0"  | 3' - 7 1/8"  | 4          | 11' - 3" | 4' - 8 5/8"  | 4          | 11' - 3" | 4' - 8 5/8"  |
| 2x14                                     | 6          | 8' - 0" | 3' - 2 7/8"  | 5          | 9' - 9"  | 3' - 8 7/8"  | 4          | 12' - 3" | 4' - 10 3/8" | 4          | 12' - 3" | 4' - 10 3/8" |
| 2x15                                     | 7          | 7' - 3" | 3' - 1 3/4"  | 6          | 8' - 6"  | 3' - 7 3/4"  | 5          | 10' - 3" | 4' - 4 3/4"  | 5          | 10' - 3" | 4' - 4 3/4"  |
| 2x16                                     | 7          | 7' - 9" | 3' - 3 5/8"  | 6          | 9' - 0"  | 4' - 0 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  |
| 2x17                                     | 8          | 7' - 3" | 2' - 9 7/8"  | 6          | 9' - 9"  | 3' - 9 7/8"  | 6          | 9' - 9"  | 3' - 9 7/8"  | 5          | 11' - 9" | 4' - 8 3/8"  |
| 2x18                                     | 8          | 7' - 9" | 2' - 8 3/4"  | 7          | 8' - 9"  | 3' - 7 1/4"  | 6          | 10' - 3" | 4' - 2 3/4"  | 6          | 10' - 3" | 4' - 2 3/4"  |
| 2x19                                     | 8          | 8' - 0" | 3' - 6"      | 7          | 9' - 3"  | 3' - 9"      | 6          | 10' - 9" | 4' - 7 1/2"  | 6          | 10' - 9" | 4' - 7 1/2"  |
| 2x20                                     | 9          | 7' - 6" | 3' - 1 7/8"  | 7          | 9' - 9"  | 3' - 10 7/8" | 6          | 11' - 6" | 4' - 4 7/8"  | 6          | 11' - 6" | 4' - 4 7/8"  |
| 2x21                                     | 9          | 8' - 0" | 2' - 9 3/4"  | 8          | 9' - 0"  | 3' - 3 3/4"  | 7          | 10' - 3" | 4' - 0 3/4"  | 6          | 12' - 0" | 4' - 9 3/4"  |
| 2x22                                     | 10         | 7' - 6" | 2' - 8 1/2"  | 8          | 9' - 3"  | 4' - 1"      | 7          | 10' - 9" | 4' - 2 1/2"  | 7          | 10' - 9" | 4' - 2 1/2"  |
| 2x23                                     | 10         | 7' - 9" | 3' - 2 7/8"  | 8          | 9' - 9"  | 3' - 11 7/8" | 7          | 11' - 3" | 4' - 4 3/8"  | 7          | 11' - 3" | 4' - 4 3/8"  |
| 2x24                                     | 11         | 7' - 3" | 3' - 6 1/8"  | 9          | 9' - 0"  | 3' - 9 1/8"  | 8          | 10' - 3" | 3' - 10 5/8" | 7          | 11' - 9" | 4' - 6 1/8"  |
| 2x25                                     | 11         | 7' - 9" | 2' - 8"      | 9          | 9' - 6"  | 3' - 5"      | 8          | 10' - 6" | 4' - 8"      | 7          | 12' - 3" | 4' - 8"      |
| 2x26                                     | 11         | 8' - 0" | 3' - 0 7/8"  | 9          | 9' - 9"  | 4' - 0 7/8"  | 8          | 11' - 0" | 4' - 6 7/8"  | 8          | 11' - 0" | 4' - 6 7/8"  |
| 2x27                                     | 12         | 7' - 6" | 3' - 5 5/8"  | 10         | 9' - 0"  | 4' - 2 5/8"  | 8          | 11' - 6" | 4' - 5 5/8"  | 8          | 11' - 6" | 4' - 5 5/8"  |
| 2x28                                     | 12         | 7' - 9" | 3' - 9"      | 10         | 9' - 6"  | 3' - 7 1/2"  | 9          | 10' - 6" | 4' - 4 1/2"  | 8          | 11' - 9" | 5' - 3"      |
| 2x29                                     | 13         | 7' - 6" | 3' - 0 1/4"  | 10         | 9' - 9"  | 4' - 1 3/4"  | 9          | 11' - 0" | 4' - 0 1/4"  | 9          | 11' - 0" | 4' - 0 1/4"  |
| 2x30                                     | 13         | 7' - 9" | 3' - 2 1/8"  | 10         | 10' - 0" | 4' - 8 1/8"  | 9          | 11' - 3" | 4' - 8 1/8"  | 9          | 11' - 3" | 4' - 8 1/8"  |

| 90 MPH Wind; 40 psf Snow; 60 Cell Module |            |          |              |            |          |              |            |          |              |            |          |              |
|--|------------|----------|--------------|------------|----------|--------------|------------|----------|--------------|------------|----------|--------------|
| Table Size                               | Exposure C |          |              |            |          |              | Exposure B |          |              |            |          |              |
|  | Driven     |          |              | Concrete   |          |              | Driven     |          |              | Concrete   |          |              |
|  | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        |
| 2x4                                      | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  |
| 2x5                                      | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      |
| 2x6                                      | 2          | 11' - 9" | 4' - 1 7/8"  | 2          | 11' - 9" | 4' - 1 7/8"  | 2          | 11' - 9" | 4' - 1 7/8"  | 2          | 11' - 9" | 4' - 1 7/8"  |
| 2x7                                      | 3          | 8' - 3"  | 3' - 5 1/8"  | 2          | 13' - 9" | 4' - 9 5/8"  | 2          | 13' - 9" | 4' - 9 5/8"  | 2          | 13' - 9" | 4' - 9 5/8"  |
| 2x8                                      | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     |
| 2x9                                      | 3          | 10' - 9" | 4' - 2 3/4"  | 3          | 10' - 9" | 4' - 2 3/4"  | 3          | 10' - 9" | 4' - 2 3/4"  | 3          | 10' - 9" | 4' - 2 3/4"  |
| 2x10                                     | 4          | 8' - 9"  | 3' - 6 1/8"  | 3          | 11' - 9" | 4' - 10 5/8" | 3          | 11' - 9" | 4' - 10 5/8" | 3          | 11' - 9" | 4' - 10 5/8" |
| 2x11                                     | 4          | 9' - 6"  | 4' - 0 1/2"  | 3          | 13' - 0" | 5' - 3 1/2"  | 3          | 13' - 0" | 5' - 3 1/2"  | 3          | 13' - 0" | 5' - 3 1/2"  |
| 2x12                                     | 4          | 10' - 6" | 4' - 2 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  |
| 2x13                                     | 5          | 9' - 0"  | 3' - 7 1/8"  | 4          | 11' - 3" | 4' - 8 5/8"  | 4          | 11' - 3" | 4' - 8 5/8"  | 4          | 11' - 3" | 4' - 8 5/8"  |
| 2x14                                     | 5          | 9' - 9"  | 3' - 8 7/8"  | 4          | 12' - 3" | 4' - 10 3/8" | 4          | 12' - 3" | 4' - 10 3/8" | 4          | 12' - 3" | 4' - 10 3/8" |
| 2x15                                     | 5          | 10' - 3" | 4' - 4 3/4"  | 5          | 10' - 4" | 4' - 4 3/4"  | 4          | 13' - 0" | 5' - 4 3/4"  | 4          | 13' - 0" | 5' - 4 3/4"  |
| 2x16                                     | 5          | 11' - 0" | 4' - 6 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  |
| 2x17                                     | 6          | 9' - 9"  | 3' - 9 7/8"  | 5          | 11' - 9" | 4' - 8 3/8"  | 5          | 11' - 9" | 4' - 8 3/8"  | 5          | 11' - 9" | 4' - 8 3/8"  |
| 2x18                                     | 6          | 10' - 3" | 4' - 2 1/4"  | 5          | 12' - 6" | 4' - 10 1/4" | 5          | 12' - 6" | 4' - 10 1/4" | 5          | 12' - 6" | 4' - 10 1/4" |
| 2x19                                     | 6          | 10' - 9" | 4' - 7 1/2"  | 6          | 10' - 9" | 4' - 7 1/2"  | 5          | 13' - 0" | 5' - 6"      | 5          | 13' - 0" | 5' - 6"      |
| 2x20                                     | 7          | 9' - 9"  | 3' - 10 7/8" | 6          | 11' - 6" | 4' - 4 7/8"  | 6          | 11' - 6" | 4' - 4 7/8"  | 6          | 11' - 6" | 4' - 4 7/8"  |
| 2x21                                     | 7          | 10' - 3" | 4' - 0 3/4"  | 6          | 12' - 0" | 4' - 9 3/4"  | 6          | 12' - 0" | 4' - 9 3/4"  | 6          | 12' - 0" | 4' - 9 3/4"  |
| 2x22                                     | 7          | 10' - 9" | 4' - 2 1/2"  | 6          | 12' - 6" | 5' - 2 1/2"  | 6          | 12' - 6" | 5' - 2 1/2"  | 6          | 12' - 6" | 5' - 2 1/2"  |
| 2x23                                     | 8          | 9' - 9"  | 3' - 11 7/8" | 7          | 11' - 3" | 4' - 4 3/8"  | 6          | 13' - 0" | 5' - 7 3/8"  | 6          | 13' - 0" | 5' - 7 3/8"  |
| 2x24                                     | 8          | 10' - 3" | 3' - 10 5/8" | 7          | 11' - 9" | 4' - 6 1/8"  | 7          | 11' - 9" | 4' - 6 1/8"  | 7          | 11' - 9" | 4' - 6 1/8"  |
| 2x25                                     | 8          | 10' - 6" | 4' - 8"      | 7          | 12' - 3" | 4' - 8"      | 7          | 12' - 3" | 4' - 8"      | 7          | 12' - 3" | 4' - 8"      |
| 2x26                                     | 9          | 9' - 9"  | 4' - 0 7/8"  | 8          | 11' - 0" | 4' - 6 7/8"  | 7          | 12' - 9" | 4' - 9 7/8"  | 7          | 12' - 9" | 4' - 9 7/8"  |
| 2x27                                     | 9          | 10' - 3" | 3' - 8 5/8"  | 8          | 11' - 6" | 4' - 5 5/8"  | 7          | 13' - 3" | 4' - 11 5/8" | 8          | 11' - 6" | 4' - 5 5/8"  |
| 2x28                                     | 9          | 10' - 6" | 4' - 4 1/2"  | 8          | 11' - 9" | 5' - 3"      | 8          | 11' - 9" | 5' - 3"      | 8          | 11' - 9" | 5' - 3"      |
| 2x29                                     | 10         | 9' - 9"  | 4' - 1 3/4"  | 9          | 11' - 0" | 4' - 0 1/4"  | 8          | 12' - 3" | 5' - 1 3/4"  | 8          | 12' - 3" | 5' - 1 3/4"  |
| 2x30                                     | 10         | 10' - 0" | 4' - 8 1/8"  | 9          | 11' - 3" | 4' - 8 1/8"  | 8          | 12' - 9" | 5' - 0 5/8"  | 8          | 12' - 9" | 5' - 0 5/8"  |

| 90 MPH Wind; ≤ 50 PSF Snow; 72 Cell Module |            |         |              |            |         |              |            |          |              |            |          |              |
|--|------------|---------|--------------|------------|---------|--------------|------------|----------|--------------|------------|----------|--------------|
| Table Size                                 | Exposure C |         |              |            |         |              | Exposure B |          |              |            |          |              |
|  | Driven     |         |              | Concrete   |         |              | Driven     |          |              | Concrete   |          |              |
|  | # of Piles | Dim A   | Dim B        | # of Piles | Dim A   | Dim B        | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        |
| 2x4  | 2          | 7' - 9" | 2' - 10 1/8" | 2          | 7' - 9" | 2' - 10 1/8" | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  |
| 2x5  | 3          | 6' - 0" | 2' - 4 1/2"  | 2          | 9' - 9" | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      |
| 2x6  | 3          | 7' - 0" | 3' - 0 3/8"  | 3          | 7' - 0" | 3' - 0 3/8"  | 2          | 11' - 9" | 4' - 1 7/8"  | 2          | 11' - 9" | 4' - 1 7/8"  |
| 2x7  | 4          | 6' - 0" | 2' - 8 1/8"  | 3          | 8' - 3" | 3' - 5 1/8"  | 3          | 8' - 3"  | 3' - 5 1/8"  | 3          | 8' - 3"  | 3' - 5 1/8"  |
| 2x8  | 4          | 7' - 0" | 2' - 10"     | 3          | 9' - 6" | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     |
| 2x9  | 4          | 7' - 9" | 3' - 4 1/4"  | 4          | 7' - 9" | 3' - 4 1/4"  | 3          | 10' - 9" | 4' - 2 3/4"  | 3          | 10' - 9" | 4' - 2 3/4"  |
| 2x10                                       | 5          | 7' - 0" | 2' - 7 5/8"  | 4          | 8' - 9" | 3' - 6 1/8"  | 4          | 8' - 9"  | 3' - 6 1/8"  | 4          | 8' - 9"  | 3' - 6 1/8"  |
| 2x11                                       | 5          | 7' - 6" | 3' - 3 1/2"  | 4          | 9' - 6" | 4' - 0 1/2"  | 4          | 9' - 6"  | 4' - 0 1/2"  | 4          | 9' - 6"  | 4' - 0 1/2"  |
| 2x12                                       | 6          | 6' - 9" | 3' - 0 3/4"  | 5          | 8' - 3" | 3' - 5 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  |
| 2x13                                       | 6          | 7' - 6" | 2' - 10 1/8" | 5          | 9' - 0" | 3' - 7 1/8"  | 4          | 11' - 3" | 4' - 8 5/8"  | 4          | 11' - 3" | 4' - 8 5/8"  |
| 2x14                                       | 7          | 6' - 9" | 2' - 11 7/8" | 5          | 9' - 9" | 3' - 8 7/8"  | 5          | 9' - 9"  | 3' - 8 7/8"  | 5          | 9' - 9"  | 3' - 8 7/8"  |
| 2x15                                       | 7          | 7' - 3" | 3' - 1 3/4"  | 6          | 8' - 6" | 3' - 7 3/4"  | 5          | 10' - 3" | 4' - 4 3/4"  | 5          | 10' - 3" | 4' - 4 3/4"  |
| 2x16                                       | 7          | 7' - 9" | 3' - 3 5/8"  | 6          | 9' - 0" | 4' - 0 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  |
| 2x17                                       | 8          | 7' - 3" | 2' - 9 7/8"  | 6          | 9' - 9" | 3' - 9 7/8"  | 6          | 9' - 9"  | 3' - 9 7/8"  | 6          | 9' - 9"  | 3' - 9 7/8"  |
| 2x18                                       | 8          | 7' - 9" | 2' - 8 3/4"  | 7          | 8' - 9" | 3' - 7 1/4"  | 6          | 10' - 3" | 4' - 2 3/4"  | 6          | 10' - 3" | 4' - 2 3/4"  |
| 2x19                                       | 9          | 7' - 3" | 2' - 6"      | 7          | 9' - 3" | 3' - 9"      | 6          | 10' - 9" | 4' - 7 1/2"  | 6          | 10' - 9" | 4' - 7 1/2"  |
| 2x20                                       | 9          | 7' - 6" | 3' - 1 7/8"  | 8          | 8' - 6" | 3' - 4 7/8"  | 6          | 11' - 6" | 4' - 4 7/8"  | 6          | 11' - 6" | 4' - 4 7/8"  |
| 2x21                                       | 10         | 7' - 0" | 3' - 3 3/4"  | 8          | 9' - 0" | 3' - 3 3/4"  | 7          | 10' - 3" | 4' - 0 3/4"  | 7          | 10' - 3" | 4' - 0 3/4"  |
| 2x22                                       | 10         | 7' - 6" | 2' - 8 1/2"  | 8          | 9' - 3" | 4' - 1"      | 7          | 10' - 9" | 4' - 2 1/2"  | 7          | 10' - 9" | 4' - 2 1/2"  |
| 2x23                                       | 11         | 7' - 0" | 3' - 1 3/8"  | 9          | 8' - 9" | 3' - 1 3/8"  | 7          | 11' - 3" | 4' - 4 3/8"  | 7          | 11' - 3" | 4' - 4 3/8"  |
| 2x24                                       | 11         | 7' - 3" | 3' - 6 1/8"  | 9          | 9' - 0" | 3' - 9 1/8"  | 8          | 10' - 3" | 3' - 10 5/8" | 8          | 10' - 3" | 3' - 10 5/8" |
| 2x25                                       | 11         | 7' - 9" | 2' - 8"      | 9          | 9' - 6" | 3' - 5"      | 8          | 10' - 6" | 4' - 8"      | 8          | 10' - 6" | 4' - 8"      |
| 2x26                                       | 12         | 7' - 3" | 3' - 2 3/8"  | 10         | 8' - 9" | 3' - 8 3/8"  | 8          | 11' - 0" | 4' - 6 7/8"  | 8          | 11' - 0" | 4' - 6 7/8"  |
| 2x27                                       | 12         | 7' - 6" | 3' - 5 5/8"  | 10         | 9' - 0" | 4' - 2 5/8"  | 8          | 11' - 6" | 4' - 5 5/8"  | 8          | 11' - 6" | 4' - 5 5/8"  |
| 2x28                                       | 12         | 7' - 9" | 3' - 9"      | 10         | 9' - 6" | 3' - 7 1/2"  | 9          | 10' - 6" | 4' - 4 1/2"  | 9          | 10' - 6" | 4' - 4 1/2"  |
| 2x29                                       | 13         | 7' - 6" | 3' - 0 1/4"  | 11         | 8' - 9" | 4' - 3 1/4"  | 9          | 11' - 0" | 4' - 0 1/4"  | 9          | 11' - 0" | 4' - 0 1/4"  |
| 2x30                                       | 14         | 7' - 3" | 2' - 6 5/8"  | 11         | 9' - 3" | 3' - 5 1/8"  | 9          | 11' - 3" | 4' - 8 1/8"  | 9          | 11' - 3" | 4' - 8 1/8"  |

| 90 MPH Wind; ≤ 50 PSF Snow; 60 Cell Module |            |          |              |            |          |              |            |          |              |            |          |              |
|--|------------|----------|--------------|------------|----------|--------------|------------|----------|--------------|------------|----------|--------------|
| Table Size                                 | Exposure C |          |              |            |          |              | Exposure B |          |              |            |          |              |
|  | Driven     |          |              | Concrete   |          |              | Driven     |          |              | Concrete   |          |              |
|  | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        |
| 2x4  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  |
| 2x5  | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      |
| 2x6  | 3          | 7' - 0"  | 3' - 0 3/8"  | 2          | 11' - 9" | 4' - 1 7/8"  | 2          | 11' - 9" | 4' - 1 7/8"  | 2          | 11' - 9" | 4' - 1 7/8"  |
| 2x7  | 3          | 8' - 3"  | 3' - 5 1/8"  | 3          | 8' - 3"  | 3' - 5 1/8"  | 2          | 13' - 9" | 4' - 9 5/8"  | 2          | 13' - 9" | 4' - 9 5/8"  |
| 2x8  | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     |
| 2x9  | 4          | 7' - 9"  | 3' - 4 1/4"  | 3          | 10' - 9" | 4' - 2 3/4"  | 3          | 10' - 9" | 4' - 2 3/4"  | 3          | 10' - 9" | 4' - 2 3/4"  |
| 2x10                                       | 4          | 8' - 9"  | 3' - 6 1/8"  | 4          | 8' - 9"  | 3' - 6 1/8"  | 3          | 11' - 9" | 4' - 10 5/8" | 3          | 11' - 9" | 4' - 10 5/8" |
| 2x11                                       | 4          | 9' - 6"  | 4' - 0 1/2"  | 4          | 9' - 6"  | 4' - 0 1/2"  | 4          | 9' - 6"  | 4' - 0 1/2"  | 4          | 9' - 6"  | 4' - 0 1/2"  |
| 2x12                                       | 5          | 8' - 3"  | 3' - 5 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  |
| 2x13                                       | 5          | 9' - 0"  | 3' - 7 1/8"  | 4          | 11' - 3" | 4' - 8 5/8"  | 4          | 11' - 3" | 4' - 8 5/8"  | 4          | 11' - 3" | 4' - 8 5/8"  |
| 2x14                                       | 5          | 9' - 9"  | 3' - 8 7/8"  | 5          | 9' - 9"  | 3' - 8 7/8"  | 4          | 12' - 3" | 4' - 10 3/8" | 4          | 12' - 3" | 4' - 10 3/8" |
| 2x15                                       | 5          | 10' - 3" | 4' - 4 3/4"  | 5          | 10' - 3" | 4' - 4 3/4"  | 5          | 10' - 3" | 4' - 4 3/4"  | 5          | 10' - 3" | 4' - 4 3/4"  |
| 2x16                                       | 6          | 9' - 0"  | 4' - 0 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  |
| 2x17                                       | 6          | 9' - 9"  | 3' - 9 7/8"  | 5          | 11' - 9" | 4' - 8 3/8"  | 5          | 11' - 9" | 4' - 8 3/8"  | 5          | 11' - 9" | 4' - 8 3/8"  |
| 2x18                                       | 6          | 10' - 3" | 4' - 2 3/4"  | 6          | 10' - 3" | 4' - 2 3/4"  | 5          | 12' - 6" | 4' - 10 1/4" | 5          | 12' - 6" | 4' - 10 1/4" |
| 2x19                                       | 7          | 9' - 3"  | 3' - 9"      | 6          | 10' - 9" | 4' - 7 1/2"  | 6          | 10' - 9" | 4' - 7 1/2"  | 6          | 10' - 9" | 4' - 7 1/2"  |
| 2x20                                       | 7          | 9' - 9"  | 3' - 10 7/8" | 6          | 11' - 6" | 4' - 4 7/8"  | 6          | 11' - 6" | 4' - 4 7/8"  | 6          | 11' - 6" | 4' - 4 7/8"  |
| 2x21                                       | 7          | 10' - 3" | 4' - 0 3/4"  | 7          | 10' - 3" | 4' - 0 3/4"  | 6          | 12' - 0" | 4' - 9 3/4"  | 6          | 12' - 0" | 4' - 9 3/4"  |
| 2x22                                       | 8          | 9' - 3"  | 4' - 1"      | 7          | 10' - 9" | 4' - 2 1/2"  | 7          | 10' - 9" | 4' - 2 1/2"  | 7          | 10' - 9" | 4' - 2 1/2"  |
| 2x23                                       | 8          | 9' - 9"  | 3' - 11 7/8" | 7          | 11' - 3" | 4' - 4 3/8"  | 7          | 11' - 3" | 4' - 4 3/8"  | 7          | 11' - 3" | 4' - 4 3/8"  |
| 2x24                                       | 8          | 10' - 3" | 3' - 10 5/8" | 8          | 10' - 3" | 3' - 10 5/8" | 7          | 11' - 9" | 4' - 6 1/8"  | 7          | 11' - 9" | 4' - 6 1/8"  |
| 2x25                                       | 9          | 9' - 6"  | 3' - 5"      | 8          | 10' - 6" | 4' - 8"      | 7          | 12' - 3" | 4' - 8"      | 7          | 12' - 3" | 4' - 8"      |
| 2x26                                       | 9          | 9' - 9"  | 4' - 0 7/8"  | 8          | 11' - 0" | 4' - 6 7/8"  | 8          | 11' - 0" | 4' - 6 7/8"  | 8          | 11' - 0" | 4' - 6 7/8"  |
| 2x27                                       | 9          | 10' - 3" | 3' - 8 5/8"  | 8          | 11' - 6" | 4' - 5 5/8"  | 8          | 11' - 6" | 4' - 5 5/8"  | 8          | 11' - 6" | 4' - 5 5/8"  |
| 2x28                                       | 10         | 9' - 6"  | 3' - 7 1/2"  | 9          | 10' - 6" | 4' - 4 1/2"  | 8          | 11' - 9" | 5' - 3"      | 8          | 11' - 9" | 5' - 3"      |
| 2x29                                       | 10         | 9' - 9"  | 4' - 1 3/4"  | 9          | 11' - 0" | 4' - 0 1/4"  | 8          | 12' - 3" | 5' - 1 3/4"  | 8          | 12' - 3" | 5' - 1 3/4"  |
| 2x30                                       | 10         | 10' - 0" | 4' - 8 1/8"  | 9          | 11' - 3" | 4' - 8 1/8"  | 9          | 11' - 3" | 4' - 8 1/8"  | 9          | 11' - 3" | 4' - 8 1/8"  |



| 100 MPH Wind; ≤ 30 PSF Snow; 72 Cell Module |            |         |              |            |         |              |            |         |              |            |          |              |
|---|------------|---------|--------------|------------|---------|--------------|------------|---------|--------------|------------|----------|--------------|
| Table Size                                  | Exposure C |         |              |            |         |              | Exposure B |         |              |            |          |              |
|   | Driven     |         |              | Concrete   |         |              | Driven     |         |              | Concrete   |          |              |
|   | # of Piles | Dim A   | Dim B        | # of Piles | Dim A   | Dim B        | # of Piles | Dim A   | Dim B        | # of Piles | Dim A    | Dim B        |
| 2x4   | 3          | 4' - 9" | 1' - 11 5/8" | 2          | 8' - 0" | 2' - 8 5/8"  | 2          | 8' - 0" | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  |
| 2x5   | 3          | 6' - 0" | 2' - 4 1/2"  | 3          | 6' - 0" | 2' - 4 1/2"  | 2          | 9' - 9" | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      |
| 2x6   | 4          | 5' - 3" | 2' - 1 7/8"  | 3          | 7' - 0" | 3' - 0 3/8"  | 3          | 7' - 0" | 3' - 0 3/8"  | 2          | 11' - 9" | 4' - 1 7/8"  |
| 2x7   | 4          | 6' - 0" | 2' - 8 1/8"  | 3          | 8' - 3" | 3' - 5 1/8"  | 3          | 8' - 3" | 3' - 5 1/8"  | 3          | 8' - 3"  | 3' - 5 1/8"  |
| 2x8   | 5          | 5' - 6" | 2' - 4"      | 4          | 7' - 0" | 2' - 10"     | 3          | 9' - 6" | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     |
| 2x9   | 5          | 6' - 3" | 2' - 5 3/4"  | 4          | 7' - 9" | 3' - 4 1/4"  | 4          | 7' - 9" | 3' - 4 1/4"  | 3          | 10' - 9" | 4' - 2 3/4"  |
| 2x10  | 6          | 5' - 9" | 2' - 3 1/8"  | 5          | 7' - 0" | 2' - 7 5/8"  | 4          | 8' - 9" | 3' - 6 1/8"  | 3          | 11' - 9" | 4' - 10 5/8" |
| 2x11  | 6          | 6' - 3" | 2' - 8"      | 5          | 7' - 6" | 3' - 3 1/2"  | 4          | 9' - 6" | 4' - 0 1/2"  | 4          | 9' - 6"  | 4' - 0 1/2"  |
| 2x12  | 7          | 5' - 9" | 2' - 8 1/4"  | 6          | 6' - 9" | 3' - 0 3/4"  | 5          | 8' - 3" | 3' - 5 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  |
| 2x13  | 7          | 6' - 3" | 2' - 10 1/8" | 6          | 7' - 6" | 2' - 10 1/8" | 5          | 9' - 0" | 3' - 7 1/8"  | 4          | 11' - 3" | 4' - 8 5/8"  |
| 2x14  | 8          | 6' - 0" | 2' - 2 7/8"  | 6          | 8' - 0" | 3' - 2 7/8"  | 5          | 9' - 9" | 3' - 8 7/8"  | 5          | 9' - 9"  | 3' - 8 7/8"  |
| 2x15  | 8          | 6' - 3" | 3' - 0 1/4"  | 7          | 7' - 3" | 3' - 1 3/4"  | 6          | 8' - 6" | 3' - 7 3/4"  | 5          | 10' - 3" | 4' - 4 3/4"  |
| 2x16  | 9          | 6' - 0" | 2' - 6 5/8"  | 7          | 7' - 9" | 3' - 3 5/8"  | 6          | 9' - 0" | 4' - 0 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  |
| 2x17  | 9          | 6' - 6" | 2' - 2 3/8"  | 8          | 7' - 3" | 2' - 9 7/8"  | 6          | 9' - 9" | 3' - 9 7/8"  | 5          | 11' - 9" | 4' - 8 3/8"  |
| 2x18  | 10         | 6' - 0" | 2' - 10 1/4" | 8          | 7' - 9" | 2' - 8 3/4"  | 7          | 8' - 9" | 3' - 7 1/4"  | 6          | 10' - 3" | 4' - 2 3/4"  |
| 2x19  | 10         | 6' - 6" | 2' - 3"      | 8          | 8' - 0" | 3' - 6"      | 7          | 9' - 3" | 3' - 9"      | 6          | 10' - 9" | 4' - 7 1/2"  |
| 2x20  | 11         | 6' - 0" | 3' - 1 7/8"  | 9          | 7' - 6" | 3' - 1 7/8"  | 7          | 9' - 9" | 3' - 10 7/8" | 6          | 11' - 6" | 4' - 4 7/8"  |
| 2x21  | 12         | 6' - 0" | 1' - 9 3/4"  | 9          | 8' - 0" | 2' - 9 3/4"  | 8          | 9' - 0" | 3' - 3 3/4"  | 7          | 10' - 3" | 4' - 0 3/4"  |
| 2x22  | 12         | 6' - 3" | 2' - 1"      | 10         | 7' - 6" | 2' - 8 1/2"  | 8          | 9' - 3" | 4' - 1"      | 7          | 10' - 9" | 4' - 2 1/2"  |
| 2x23  | 12         | 6' - 6" | 2' - 4 3/8"  | 10         | 7' - 9" | 3' - 2 7/8"  | 8          | 9' - 9" | 3' - 11 7/8" | 7          | 11' - 3" | 4' - 4 3/8"  |
| 2x24  | 13         | 6' - 3" | 2' - 3 1/8"  | 10         | 8' - 0" | 3' - 9 1/8"  | 9          | 9' - 0" | 3' - 9 1/8"  | 7          | 11' - 9" | 4' - 6 1/8"  |
| 2x25  | 13         | 6' - 6" | 2' - 5"      | 11         | 7' - 9" | 2' - 8"      | 9          | 9' - 6" | 3' - 5"      | 8          | 10' - 6" | 4' - 8"      |
| 2x26  | 14         | 6' - 3" | 2' - 5 3/8"  | 11         | 8' - 0" | 3' - 0 7/8"  | 9          | 9' - 9" | 4' - 0 7/8"  | 8          | 11' - 0" | 4' - 6 7/8"  |
| 2x27  | 14         | 6' - 6" | 2' - 5 5/8"  | 12         | 7' - 6" | 3' - 5 5/8"  | 10         | 9' - 0" | 4' - 2 5/8"  | 8          | 11' - 6" | 4' - 5 5/8"  |
| 2x28  | 15         | 6' - 3" | 2' - 7 1/2"  | 12         | 7' - 9" | 3' - 9"      | 10         | 9' - 6" | 3' - 7 1/2"  | 8          | 11' - 9" | 5' - 3"      |
| 2x29  | 15         | 6' - 6" | 2' - 6 1/4"  | 13         | 7' - 6" | 3' - 0 1/4"  | 10         | 9' - 9" | 4' - 1 3/4"  | 9          | 11' - 0" | 4' - 0 1/4"  |
| 2x30  | 16         | 6' - 3" | 2' - 9 5/8"  | 13         | 7' - 9" | 3' - 2 1/8"  | 11         | 9' - 3" | 3' - 5 1/8"  | 9          | 11' - 3" | 4' - 8 1/8"  |

| 100 MPH Wind; ≤ 30 PSF Snow; 60 Cell Module |            |         |              |            |          |              |            |          |              |            |          |              |
|---|------------|---------|--------------|------------|----------|--------------|------------|----------|--------------|------------|----------|--------------|
| Table Size                                  | Exposure C |         |              |            |          |              | Exposure B |          |              |            |          |              |
|   | Driven     |         |              | Concrete   |          |              | Driven     |          |              | Concrete   |          |              |
|   | # of Piles | Dim A   | Dim B        | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        | # of Piles | Dim A    | Dim B        |
| 2x4   | 2          | 8' - 0" | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  | 2          | 8' - 0"  | 2' - 8 5/8"  |
| 2x5   | 3          | 6' - 0" | 2' - 4 1/2"  | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      | 2          | 9' - 9"  | 3' - 6"      |
| 2x6   | 3          | 7' - 0" | 3' - 0 3/8"  | 3          | 7' - 0"  | 3' - 0 3/8"  | 2          | 11' - 9" | 4' - 1 7/8"  | 2          | 11' - 9" | 4' - 1 7/8"  |
| 2x7   | 3          | 8' - 3" | 3' - 5 1/8"  | 3          | 8' - 3"  | 3' - 5 1/8"  | 2          | 13' - 9" | 4' - 9 5/8"  | 2          | 13' - 9" | 4' - 9 5/8"  |
| 2x8   | 4          | 7' - 0" | 2' - 10"     | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     | 3          | 9' - 6"  | 3' - 10"     |
| 2x9   | 4          | 7' - 9" | 3' - 4 1/4"  | 3          | 10' - 9" | 4' - 2 3/4"  | 3          | 10' - 9" | 4' - 2 3/4"  | 3          | 10' - 9" | 4' - 2 3/4"  |
| 2x10  | 4          | 8' - 9" | 3' - 6 1/8"  | 4          | 8' - 9"  | 3' - 6 1/8"  | 3          | 11' - 9" | 4' - 10 5/8" | 3          | 11' - 9" | 4' - 10 5/8" |
| 2x11  | 5          | 7' - 6" | 3' - 3 1/2"  | 4          | 9' - 6"  | 4' - 0 1/2"  | 3          | 13' - 0" | 5' - 3 1/2"  | 3          | 13' - 0" | 5' - 3 1/2"  |
| 2x12  | 5          | 8' - 3" | 3' - 5 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  | 4          | 10' - 6" | 4' - 2 1/4"  |
| 2x13  | 6          | 7' - 6" | 2' - 10 1/8" | 4          | 11' - 3" | 4' - 8 5/8"  | 4          | 11' - 3" | 4' - 8 5/8"  | 4          | 11' - 3" | 4' - 8 5/8"  |
| 2x14  | 6          | 8' - 0" | 3' - 2 7/8"  | 5          | 9' - 9"  | 3' - 8 7/8"  | 4          | 12' - 3" | 4' - 10 3/8" | 4          | 12' - 3" | 4' - 10 3/8" |
| 2x15  | 6          | 8' - 6" | 3' - 7 3/4"  | 5          | 10' - 3" | 4' - 4 3/4"  | 4          | 13' - 0" | 5' - 4 3/4"  | 4          | 13' - 0" | 5' - 4 3/4"  |
| 2x16  | 7          | 7' - 9" | 3' - 3 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  | 5          | 11' - 0" | 4' - 6 5/8"  | 4          | 14' - 0" | 5' - 6 5/8"  |
| 2x17  | 7          | 8' - 3" | 3' - 5 3/8"  | 6          | 9' - 9"  | 3' - 9 7/8"  | 5          | 11' - 9" | 4' - 8 3/8"  | 5          | 11' - 9" | 4' - 8 3/8"  |
| 2x18  | 7          | 8' - 9" | 3' - 7 1/4"  | 6          | 10' - 3" | 4' - 2 3/4"  | 5          | 12' - 6" | 4' - 10 1/4" | 5          | 12' - 6" | 4' - 10 1/4" |
| 2x19  | 8          | 8' - 0" | 3' - 6"      | 6          | 10' - 9" | 4' - 7 1/2"  | 5          | 13' - 0" | 5' - 6"      | 5          | 13' - 0" | 5' - 6"      |
| 2x20  | 8          | 8' - 6" | 3' - 4 7/8"  | 7          | 9' - 9"  | 3' - 10 7/8" | 6          | 11' - 6" | 4' - 4 7/8"  | 5          | 13' - 9" | 5' - 7 7/8"  |
| 2x21  | 9          | 8' - 0" | 2' - 9 3/4"  | 7          | 10' - 3" | 4' - 0 3/4"  | 6          | 12' - 0" | 4' - 9 3/4"  | 6          | 12' - 0" | 4' - 9 3/4"  |
| 2x22  | 9          | 8' - 3" | 3' - 5 1/2"  | 7          | 10' - 9" | 4' - 2 1/2"  | 6          | 12' - 6" | 5' - 2 1/2"  | 6          | 12' - 6" | 5' - 2 1/2"  |
| 2x23  | 9          | 8' - 9" | 3' - 1 3/8"  | 8          | 9' - 9"  | 3' - 11 7/8" | 6          | 13' - 0" | 5' - 7 3/8"  | 6          | 13' - 0" | 5' - 7 3/8"  |
| 2x24  | 10         | 8' - 0" | 3' - 9 1/8"  | 8          | 10' - 3" | 3' - 10 5/8" | 7          | 11' - 9" | 4' - 6 1/8"  | 6          | 13' - 9" | 5' - 4 5/8"  |
| 2x25  | 10         | 8' - 6" | 3' - 2"      | 8          | 10' - 6" | 4' - 8"      | 7          | 12' - 3" | 4' - 8"      | 7          | 12' - 3" | 4' - 8"      |
| 2x26  | 10         | 8' - 9" | 3' - 8 3/8"  | 8          | 11' - 0" | 4' - 6 7/8"  | 7          | 12' - 9" | 4' - 9 7/8"  | 7          | 12' - 9" | 4' - 9 7/8"  |
| 2x27  | 11         | 8' - 3" | 3' - 5 5/8"  | 9          | 10' - 3" | 3' - 8 5/8"  | 8          | 11' - 6" | 4' - 5 5/8"  | 7          | 13' - 3" | 4' - 11 5/8" |
| 2x28  | 11         | 8' - 6" | 3' - 10 1/2" | 9          | 10' - 6" | 4' - 4 1/2"  | 8          | 11' - 9" | 5' - 3"      | 8          | 11' - 9" | 5' - 3"      |
| 2x29  | 12         | 8' - 0" | 4' - 0 1/4"  | 10         | 9' - 9"  | 4' - 1 3/4"  | 8          | 12' - 3" | 5' - 1 3/4"  | 8          | 12' - 3" | 5' - 1 3/4"  |
| 2x30  | 12         | 8' - 6" | 2' - 11 1/8" | 10         | 10' - 0" | 4' - 8 1/8"  | 8          | 12' - 9" | 5' - 0 5/8"  | 8          | 12' - 9" | 5' - 0 5/8"  |

For more information on the above tables, see the DGFT construction drawings, sheets SD-100, SD-300, SD-400, and SD-500. The analysis does not include specific corrosion requirements.

If you have any questions on the above, please contact Unirac, Inc. or DOTec Engineering, Inc.

Certification by:

Dr. Ildefonso "Al" Gonzalez, P.E. PhD

Iowa # 19094

DOTec Engineering, Inc.

St. Charles, MO

