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Concrete Anchor Dome 3 ft.

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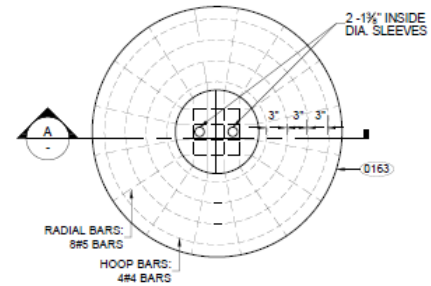
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July. 26, 2023	General format revision. Item 002-14544 shared with Transmission.

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Item No.: 002-14544
Asset Suite: 59071
Originating Department: Distribution Engineering



Concrete Anchor Dome-3 ft.

1. Introduction

This is a general specification that covers the minimum requirements for Concrete Anchor Dome to be used in the distribution and transmission system in Puerto Rico. Further information will be provided by LUMA Energy at the time of order placement and will provide information on site specific conditions, quantity, and other requirements. This document includes the general mechanical characteristics of the material.

2. Special Requirements

Samples shall be furnished as requested by LUMA Energy. Vendors that have supplied this material to LUMA on previous orders will not have to furnish samples at bid opening. The equipment/material will be received at the LUMA's general warehouse (011) at Palo Seco, Puerto Rico. Shipping will include transportation and unloading at the indicated warehouse.

3. Literature

Descriptive and technical literature must be supplied by the vendor at time of bidding. This literature may include, but is not limited to details of material, drawings, documented testing, and instructions for use and installation. Failure to submit documents on time will cause bidder disqualification. For products described in this specification as requiring qualification, awards will be made only for such products that, prior to the time for opening of bids, had been tested and/or approved by LUMA. Evidence of PREPA's and/or LUMA Energy's approval of the equipment/material shall be supplied by vendor if requested by LUMA Energy.

4. Markings

- 4.1. Containers shall be marked outside with LUMA Energy's purchase order and item number.
- 4.2. Packaging labels and tags shall be waterproof.
- 4.3. Each item must be marked with the manufacturer's identification number on the upper portion of the hub.

5. Compatible with

- 5.1. Precast Products Inc.
 - 5.2. These models are examples of the equipment/material described in this document and do not represent a preference. LUMA will evaluate equally any model not listed here during any acquisition event.
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6. Packaging

All material and equipment shall be packaged and marked in such a way as to facilitate handling and protection from damage and that the receiving warehouse can readily identify it and send it, in one complete unit, to a field location without opening crates or boxes to sort items and/or parts.

7. Number Per Package (Logistics)

7.1. Standard package: One (1) unit or as requested by LUMA.

7.2. Pallet quantity: One (1) unit or as requested by LUMA.

8. Acceptance Criteria

8.1. Test required: certified by external laboratories.

8.2. Latest applicable codes, standards, and other regulations:

9. Description

9.1. Specifications

a. Design, material, and workmanship shall be in accordance with the following codes and standards unless otherwise noted on drawings.

ACI 301 Specifications for structural concrete for buildings

ACI 318 Building code requirements for structural concrete

9.2. Concrete Mix

a. Concrete shall have a minimum of 3000 PSI compressive strength at 28 days.

Materials for concrete and proportioning shall conform to chapter 4 of 301, Portland cement shall be ASTM C150, type I or II as appropriate.



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b. Generally, the aggregate size shall be as follows:

Type of Structure	Maximum Size Coarse Aggregate(inches)
Foundation & Anchors	1"

c. Reference ASTM C33 for gradation, proportions of aggregate to cement for any concrete mix shall be such as to produce a mixture which, consistent with the method of placing, will work readily into corners and angles of the forms and around reinforcement without permitting the materials to segregate or excess water to collect on the surface.

d. Maximum water/cement ratios for concrete when strength data from field experience or trial mixtures are not available:

Concrete Strength	Non-Air Entrained Concrete	Air Entrained Concrete
3,000 PSI	0.50	0.46

e. Concrete Slump shall be as follows:

1. Reinforced Foundation & Anchors 4" Slump
2. Tolerance for concrete slump through 4" shall be plus or minus 1", per ASTM C94.

9.3. Reinforcement

- a. Reinforcing steel shall be deformed bars conforming to ASTM A615 grade 60.
- b. Field bending of reinforcing steel shall not be done without authorization of the engineer.
- c. All reinforcement shall be bent cold, unless otherwise permitted by the building official reinforcing steel shall not be bent or displaced for the convenience of other trades unless approved by the structural engineer.
- d. Provide a minimum cover of 3" for reinforcing steel when the concrete is cast against and permanently in contact with the earth.



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- e. Provide a minimum cover of 2" for bars larger than #5, and 1 ½" for #5 bars or smaller if after removal of forms the concrete is exposed to the weather or in contact with the earth.
 - f. The proper type and quantities of accessories shall be furnished to hold the reinforcing steel in place while the concrete is being placed. Reinforcement shall be tied off at a minimum of 50% of the intersections.
 - g. Splices shall be lapped 48 bar diameters unless detailed otherwise. Accordance with ASTM/ACI.
- 9.4. Accessories
- a. Permanently exposed embedded plates, rods, pins, and angles shall be hot dipped, galvanized after fabrication, unless otherwise noted. No loads or welds shall be placed on embedded plates or angles for a minimum of 7 days after casting.
- 9.5. Formwork
- a. Formwork shall be in accordance with ACI 301 and ACI 347.
 - b. AC1 Special Publication 4 shall be used as guide.
- 9.6. Construction
- a. Placing Concrete shall be in accordance with ACI 301 and ACI 304.
 - b. All exposed edges of concrete, including interior foundation walls and equipment foundations, shall have a ¼" chamfer at 45".
 - c. All concrete placed in hot weather (above 80°F) shall conform to requirements of ACI 305R.
 - d. Construction tolerances shall be in accordance with ACI 117. Anchor bolt placement tolerances shall be in accordance with AISC Code of Standard Practice, section 7.5.
- 9.7. Refer to drawing #1 for further details.



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10. Inspection

The acceptance of any material or equipment shall in no way relieve the vendor from his responsibility to meet all the requirements of this specification, and it would not prevent subsequent rejection if such materials were found later to be defective.

11. Proposal Information

11.1. Submitted proposals must include:

- a. Technical information
- b. Table of Compliance completed by the bidder with reference (see Appendix 1).

— End of Specification —



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APPENDICES



Equipment Specification

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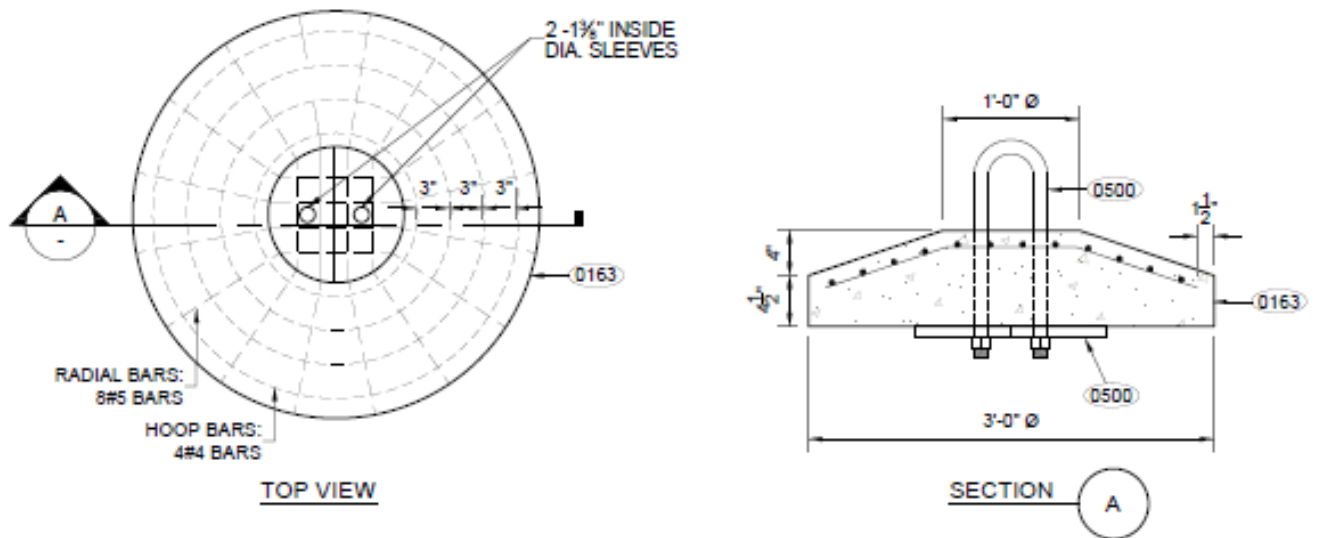
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Drawing #1: Concrete Anchor Dome-3 ft.





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Appendix 1: Table of Compliance

Line	Criteria	Description	Pass/Fail (P / F)	Comments
1	Specification	The Proponent complies with the corresponding specification document (4350.138)		
2	Industry Standards	The Proponent complies with the industry standards established in the specification document. (ACI/ASTM)		
3	Description	Concrete Anchor Dome to be used in the distribution system in Puerto Rico.		
4	Concrete Mix	Concrete shall have a minimum of 3000 PSI compressive strength at 28 days.		
5	Reinforcement	Reinforcing steel shall be deformed bars conforming to ASTM A615 grade 60. Provide a minimum cover of 3" for reinforcing steel when the concrete is cast against and permanently in contact with the earth. Provide a minimum cover of 2" for bars larger than #5, and 1 ½" for #5 bars or smaller if after removal of forms the concrete is exposed to the weather or in contact with the earth. Splices shall be lapped 48 bar diameters unless detailed otherwise.		
6	Foundation & Anchors	Maximum Size Coarse Aggregate(inches): 1 in.		
7	Concrete Slump	Reinforced Foundation & Anchors 4" Slump Tolerance for concrete slump through 4" shall be plus or minus 1"		
8	Accessories	Permanently exposed embedded plates, rods, pins, and angles shall be hot dipped, galvanized after fabrication, unless otherwise noted. No loads or welds shall be placed on embedded plates or angles for a minimum of 7 days after casting.		
9	Construction	All exposed edges of concrete, including interior foundation walls and equipment foundations, shall have a ¾" chamfer at 45".		












4350.138 3' Concrete Anchor Dome (7-27-2023)


Final Audit Report

2023-07-28

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 Signer ricardo.castro@lumapr.com entered name at signing as Riacrdo Castro Gómez

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 Document e-signed by Riacrdo Castro Gómez (ricardo.castro@lumapr.com)

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 Agreement completed.

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