

AGENDA SUMMARY ITEM

Agenda Item #: C- 2_

Agenda Item: Approval and authorization for the Mayor to sign the “Co-Location Agreement” between the Village of Royal Palm Beach and DISH Wireless, LLC regarding the cell tower site at 100 Sweet Bay Lane.

If approved, this Co-Location Agreement will allow DISH Wireless, LLC (“DISH”) to locate a wireless communication facility adjacent to the existing tower site managed by Crown Castle (Business Unit # 878206). DISH is proposing to lease 262 square feet of space from the Village to support its wireless communication facility. DISH has agreed to pay the Village \$86,486.20 for the initial five-year term of the Agreement (\$17,297.24 per year). Payment for the entire initial five-year term is due within thirty (30) days of execution of the Agreement by both parties. Subsequent payment amounts for renewal terms are outlined in the Agreement.

Recommended Action:

Staff recommends that the Village Council approve the Co-Location Agreement with DISH Wireless, LLC, and authorize the Mayor to sign.

Initiator	Village Manager Approval	Agenda Date	Village Council Action
Sharon Almeida Finance Director		December 7, 2023	

**SCHEDULE TO SHOW RENEWAL TERM AMOUNTS FOR CO-LOCATION AGREEMENT
(DISH NETWORK - KATZ FIELD)**

	<u>INITIAL TERM</u>	<u>FIRST RENEWAL</u>	<u>SECOND RENEWAL</u>	<u>THIRD RENEWAL</u>	<u>FOURTH RENEWAL</u>	<u>FIFTH RENEWAL</u>
\$	17,297.24	\$ 17,989.13	\$ 21,886.53	\$ 26,628.31	\$ 32,397.41	\$ 39,416.40
	17,297.24	18,708.69	22,761.99	27,693.44	33,693.30	40,993.05
	17,297.24	19,457.04	23,672.47	28,801.18	35,041.03	42,632.78
	17,297.24	20,235.32	24,619.37	29,953.22	36,442.68	44,338.09
	17,297.24	21,044.74	25,604.14	31,151.35	37,900.38	46,111.61
5 YEAR TOTAL	86,486.20	105,223.69	128,020.70	155,756.76	189,501.91	230,558.05

CO-LOCATION AGREEMENT

THIS CO-LOCATION AGREEMENT (this "Agreement") is entered into this ____ day of _____ 202_, effective immediately (the "Effective Date"), between the Village of Royal Palm Beach, a municipal corporation, ("Village") having its principal office located at 1050 Royal Palm Beach Boulevard, Royal Palm Beach, Florida, 33411; and DISH Wireless, L.L.C, a Colorado limited liability company, with its principal offices at 9601 South Meridian Boulevard, Englewood, CO 80112 ("DISH," and together with Village, the "Parties," each a "Party").

WHEREAS, the Village is the fee owner of the real property located at 100 Sweet Bay Lane, Royal Palm Beach (Palm Beach County), Florida 33411, and legally described and depicted as set forth on the attached Exhibit "A" (a/k/a Global Sign Site ID # 3019553, Sprint # MI03XC044 or FL 5505A) (hereinafter referred to as the "Premises"); and

WHEREAS, the Village, as landlord, and Sprint Spectrum L.P., a Delaware limited partnership ("Tenant"), entered into that certain Lease Agreement dated November 21, 1996 (the "Initial Lease") as amended by the "First Amendment to Lease Agreement" dated August 17, 2006 and "Second Amendment to Lease Agreement" dated April 6, 2012 (the "Amended Leases") regarding the lease of the Premises and ultimately merged into CCGS Holdings LLC ("Crown Castle") as of January 12, 2007 (hereinafter these documents are collectively referred to as the "Initial Lease"); and

WHEREAS, DISH seeks to lease ground space from the Village on its Premises in order to co-locate certain wireless communication facilities at that location; and

WHEREAS, the Village is willing to enter into a lease agreement with DISH for ground space in order to accommodate DISH's co-location of wire communication facilities.

NOW, THEREFORE, for and in consideration of the mutual covenants contained herein, as well as other good and valuable consideration outlined herein, the receipt and sufficiency of which are hereby acknowledged, the Village and DISH hereby agree as follows:

1. LEASE AREA AND USE. The Village agrees to allow DISH to co-locate certain of its facilities on a portion of the Village's Premises identified in the attached Exhibit "B" and consisting of approximately two hundred sixty-two (262) square feet of land (hereinafter referred to as the "Lease Area"). Tenant has no objection to such co-location of facilities on the Premises as such an arrangement was specifically agreed to in Section 6 of the Initial Lease and confirmed via Tenant's

Letter of No Objection dated January 23, 2023. The location and legal description of the Premises and the Lease Area are depicted on Exhibits "A" and "B", respectively. The location of non-exclusive easements for utilities and access to and from the Lease Area are described on Exhibit "A". The Lease Area will be used by DISH for the purpose of co-locating, installing, removing, replacing, maintaining and operating, at its sole expense, a wireless communication facility (hereinafter referred to as "WCF"), or other electronic signal transmission device or technology, including related antenna equipment and fixtures. Any WCF in the Lease Area which produces noise shall be sited and/or insulated in such a fashion as to minimize the audio impact on adjacent property and buildings, and shall not exceed fifty decibels (50 db) when measured from the nearest property line to such equipment; provided however, that the WCF may exceed such noise threshold in certain temporary situations when power is unavailable to the WCF, as a result of natural disasters or similar emergency circumstances where DISH must deploy a generator to the Lease Area to avoid interruption of power. DISH agrees to comply with the Village's emergency generator noise requirements contained in Section 26-101 of the Village Code in such situations. Any WCF in the Lease Area shall not exceed fifty (50) inches in height.

2. TERM. The Term of this Agreement (the "Initial Term") shall commence on the Effective Date and shall run for a period of five (5) years. This Agreement will be automatically renewed for five (5) additional renewal terms (each a "Renewal Term") of five (5) years each, unless either party provides notice of intention not to renew not less than one hundred eighty (180) days prior to the expiration of the Initial Term or any subsequent Renewal Term.

3. FEES.

A. INITIAL TERM FEE. The initial annual user fee for the Lease Area will be SEVENTEEN THOUSAND TWO HUNDRED NINETY-SEVEN DOLLARS AND TWENTY-FOUR CENTS (\$17,297.24), which is equivalent to One Thousand Four Hundred Forty-One Dollars and Forty-Three Cents (\$1,441.43) per month. The total fee due for the entire five (5) year Initial Term is **EIGHTY-SIX THOUSAND FOUR HUNDRED EIGHTY-SIX DOLLARS AND TWENTY CENTS (\$86,486.20)** (hereinafter the "Initial Term Fee"). DISH shall pay the Initial Term Fee to the Village within thirty (30) days after the Effective Date of this Agreement.

B. RENEWAL TERM FEES. The total fee for each of the Renewal Terms (the "Renewal Term Fee") shall be as follows:

\$105,223.69 for the First Renewal Term (\$21,044.73 X 5 Years)
\$128,020.70 for the Second Renewal Term (\$25,604.00 X 5 Years)
\$155,756.76 for the Third Renewal Term (\$31,151.35 X 5 Years)
\$189,501.91 for the Fourth Renewal Term (\$37,900.38 X 5 Years)
\$230,558.05 for the Fifth Renewal Term (\$46,558.05 X 5 Years)

The fee for the First Renewal Term is calculated by taking the fee for the last year of the Initial Term (\$17,297.24), increasing it at the effective rate of four percent (4%) a year compounded annually during the duration of the Initial Term and multiplying this annual compounded total amount for the last year by five (the number of years in the First Renewal Term).

Each Renewal Term Fee shall be payable in advance for the entire Renewal Term at the beginning of each, five (5) Year Renewal Term. DISH shall pay each Renewal Term Fee to the Village on or before the first day of the applicable Renewal Term.

4. TITLE AND QUIET POSSESSION. The Village represents and agrees as follows:

- (a) that it is the owner of the Lease Area;
- (b) that it has the right to enter into this Agreement;
- (c) that the person signing this Agreement on behalf of the Village has the authority to sign; and
- (d) that DISH is entitled to access to the Lease Area at all times and to the use of the Lease Area for the purposes set forth herein throughout the Initial Term and each Renewal Term so long as DISH is not in default beyond the expiration of any cure period.

5. ASSIGNMENT/SUBLETTING. DISH shall not assign or transfer this Agreement without the prior written consent of the Village, which consent will not be unreasonably withheld, delayed or conditioned; provided, however, that DISH may assign without the Village's prior written consent to any party controlling, controlled by or under common control with DISH or to any party which acquires substantially all of the assets of DISH; and further provided, however, that the Village may assign without DISH's prior written consent if the Village is selling or transferring ownership of the property underlying the Lease Area to another party so long as the purchaser or assignee specifically agrees in writing to comply with all the terms and conditions of this Agreement. DISH may sublet the Lease Area, but in such case shall remain fully liable to the Village under this Agreement.

6. USE OF ADJACENT PREMISES BY THIRD PARTIES. Subject to the interference provisions set forth in Section 10 hereunder, DISH hereby acknowledges and understands that additional third parties may be allowed by the Village at its sole discretion to co-locate their equipment in other areas adjacent to the Lease Area and/or the Premises and/or on the self supported structure managed by the Tenant under certain circumstances. Further, subject to the interference provisions set forth in Section 10 hereunder, it is also understood and agreed that the Village may utilize the self-supported structure on the Premises for the location of the Village telemetry system and other communications facilities, as needed at no cost to the Village.

7. NOTICES. All notices must be in writing and are effective when delivered via certified mail, or a nationally recognized courier service, to the address set forth below, or as otherwise provided by law.

Village of Royal Palm Beach	DISH Wireless, L.L.C.
1050 Royal Palm Beach Boulevard Royal Palm Beach, Florida 33411 Attn: Raymond C. Liggins, P.E., Village Manager	DISH Wireless, L.L.C. 5701 South Santa Fe Drive Littleton, Colorado 80120 Attn: Lease Administration, Site ID MIMIA00732A Send all utility documentation to: DISH Wireless, L.L.C. Attn: Utilities Management (MIMIA00732A) 5701 South Santa Fe Drive Littleton, Colorado 80120

8. IMPROVEMENTS. Subject to the interference provisions set forth in Section 10 hereinbelow, DISH may, at its expense, make such improvements on the Lease Area as it deems necessary from time to time for the operation of a transmitter Site for a wireless voice and data communications in cooperation with Tenant and in such a way as will not interfere with the Village's use of the Premises or the Village's other property. Within sixty (60) days of termination or expiration of this Agreement, DISH shall remove its equipment and improvements. DISH shall restore the Lease Area to the condition existing prior to the Effective Date of this Agreement (except for ordinary wear and tear and damage caused by natural disasters) within sixty (60) days of the expiration or termination of this Agreement.

9. COMPLIANCE WITH LAWS. The Village represents that the Village's property (including the Lease Area) and all improvements located thereon, are in compliance with building,

life/safety, disability and other laws, codes and regulations of applicable governmental authorities. During the Initial Term and each Renewal Term of this Agreement, DISH shall comply with all applicable laws relating to its possession and use of the Lease Area and understands that the Village may lease property surrounding the Lease Area to other tenants at a future time.

10. INTERFERENCE. DISH will resolve technical interference problems with other equipment located at the Premises upon the Effective Date of this Agreement. In addition, if DISH desires to add additional equipment to the Lease Area after its initial installation, DISH will resolve technical interference problems with other equipment installed at the Premises between the Effective Date of this Agreement and such future date. Likewise, the Village will not permit the installation of any future equipment, upgrades or enhancements by others which result in technical interference problems with DISH's equipment or creates structural problems with the self-support structure on the Premises.

11. UTILITIES. The Village represents that utilities adequate for DISH's use of the Lease Area are available. DISH will pay for all utilities used by it at the Lease Area. The Village will cooperate with DISH in DISH's efforts to obtain utilities from any location provided by the Village.

12. TERMINATION.

(a) Termination by DISH for Convenience. Notwithstanding any provision contained in this Agreement to the contrary, DISH may, at any time for any reason, terminate this Agreement by delivering thirty (30) days' written notice to the Village. In such instance, the Village shall retain the prepaid fees for the balance of the then-current year, plus the fees for one (1) additional year (the "Termination Fee"), and the Village shall promptly remit any additional prepaid fees to DISH within ninety (90) days from the date of the termination.

(b) Termination by DISH for Cause. In addition to the foregoing right of termination for convenience, DISH may terminate this Agreement, upon thirty (30) days written notice to the Village, without payment of the Termination Fee, in the following circumstances: (1) if DISH determines that the Village fails to have proper ownership of the Lease Area or the Lease Agreement has not been assigned in accordance with Section 5 above; (2) if DISH fails to obtain any license, permit, approval or authorization for the initial installation and setup of its WCF and related equipment and fixtures at the Lease Area at the beginning of this Agreement, failed to obtain any license, permit, approval or authorization for any future reasonable installation and setup of WCF-related equipment and fixtures at the Lease Area that complies with all federal, state and

local laws, or has any such approval revoked, canceled, expires or terminated by third parties having jurisdiction over same (i.e., FCC) despite diligent efforts by DISH; or (3) if the Village is in default under this Agreement and fails to cure such default within thirty (30) days of its receipt of DISH's notice of default. In such circumstances, the Village shall refund all unused Initial Term Fee or Renewal Term Fee, as applicable, prorated after the date of termination, to DISH within ninety (90) days from the date of termination.

(c) Nonrenewal by Either Party. Notwithstanding any other provision in this Agreement, either party may terminate this Agreement by providing the other party written notice of nonrenewal not less than one hundred eighty (180) days prior to the expiration of the Initial Term of any subsequent Renewal Term, including the final Fifth Renewal Term.

13. DEFAULT. If DISH is in default under this Agreement for a period of twenty (20) days following receipt of notice from the Village with respect to a default which may be cured solely by the payment of money, or is in default under this Agreement for a period of thirty (30) days following receipt of notice from the Village with respect to a default which may not be cured solely by the payment of money, then, in either event, this Agreement may, at the option of the Village, be terminated in which case the Village shall be entitled to retain all pre-paid monies. However, in the case of a default which may not be cured solely by the payment of money and which cannot reasonable be cured within the thirty (30) day period, if DISH shall commence the curing of such default within the thirty (30) day period and proceed diligently to completion, the Village agrees not to terminate this Agreement. The determination as to whether or not DISH is proceeding diligently shall be solely within the discretion of the Village. All improvements placed on the Lease Area by DISH shall be removed within thirty (30) days of the termination. If the Village is in default under this Agreement for a period of thirty (30) days following receipt of notice from DISH with respect to a non-monetary default, then this Agreement may, at the option of DISH, be terminated. The remedies provided in this Section 13 are not exclusive, and in the event of a default by either party, the non-defaulting party may pursue any available remedies under law or in equity.

14. INDEMNITY. The Village, subject to the limitations set forth below, and DISH each indemnifies the other against and holds the other harmless from any and all costs (including reasonable attorney's fees) and claims of liability or loss which arise out of the use and/or occupancy of the Lease Area by the indemnifying Party. This indemnity does not apply to any claims arising from the sole negligence or intentional misconduct of either Party. DISH hereby

acknowledges that it does not currently intend to use the Lease Area for propane tanks or generators. However, if in the future, DISH does intend to use the Lease Area for those purposes, then DISH specifically accepts all responsibility and liability, whatsoever, for those facilities and/or for any and all damages which may arise by virtue of the placement of those facilities in the Lease Area. The foregoing indemnification by the Village shall not constitute a waiver of sovereign immunity beyond the limits set forth in Section 768.28, Florida Statutes.

15. HAZARDOUS SUBSTANCES. The Village represents that it has no knowledge of any substance, chemical or waste on the Lease Area that is identified as hazardous, toxic or dangerous in any applicable federal, state or local law or regulation. Neither the Village nor DISH shall introduce or use any such substance on the Lease Area or the Premises in violation of any applicable law. Should the requisite authority, such as the FCC, OSHA, having jurisdiction over the same, determine that the WCF system is dangerous to the public's health, safety and welfare, and if DISH is unable or unwilling to correct or modify its WCF system in such a way as to remedy the dangerous determination within the timeframe provided by such government agency ("Agency Deadline"), then the Village shall have the unilateral right to terminate this Agreement for convenience upon thirty (30) days' prior written notice to DISH, and shall not be required to give DISH notice and opportunity to cure before termination, so long as such termination notice is given after the Agency Deadline, and the Village shall be entitled to retain the Termination Fee for breach of contract. DISH shall be required to cease operation immediately upon delivery of the Village's notice of termination, and shall remove its equipment and improvements within thirty (30) days after the termination date. The remedies provided in this Section 15 are not exclusive, and the Village shall have the right to pursue any additional remedies available under law or in equity.

16. MISCELLANEOUS.

(a) This Agreement applies to and binds the heirs, successors, executors, administrators and assigns of the Parties to this Agreement;

(b) This Agreement is governed by the laws of the State of Florida and venue for any lawsuits brought to enforce this Agreement shall be Palm Beach County;

(c) This Agreement constitutes the entire agreement between the Parties and supersedes all prior written and verbal agreements, representations, promises or understandings between the Parties. Any amendments to this Agreement must be in writing and executed by both Parties;

(d) If any provision of this Agreement is invalid or unenforceable with respect to any Party, the remainder of this Agreement or the application of such provision to persons other than those as to whom it is held invalid or unenforceable, will not be affected and each provision of this Agreement will be valid and enforceable to the fullest extent permitted by law; and

(e) The prevailing Party in any action or proceeding in court to enforce the terms of the Agreement is entitled to receive its reasonable attorneys' fees and other reasonable enforcement costs and expenses from the non-prevailing Party.

[Signature page to follow]

IN WITNESS WHEREOF, the parties have executed this Agreement of the day and year first above written.

WITNESSES:
By: [Signature]
Print Name: Alexise Fuller
By: [Signature]
Print Name: Joe LoSasso

DISH WIRELESS, L.L.C.
By: [Signature]
Name: Richard Leitao
Its: VP, National Development
Date: 11/27/2023

WITNESSES:
By: _____
Print Name: _____
By: _____
Print Name: _____

VILLAGE OF ROYAL PALM BEACH
By: _____
Name: Fred Pinto
Its: Mayor
Date: _____

ATTEST:

Diane DiSanto, Village Clerk

(SEAL)

PROPERTY

PARENT TRACT LEGAL DESCRIPTION:

(FOR VILLAGE TRACT 404, DESCRIPTION IS AS SUPPLIED BY VILLAGE OF ROYAL PALM BEACH, FLORIDA)

BEING A PORTION OF SECTION 27, TOWNSHIP 43 SOUTH, RANGE 41 EAST PALM BEACH COUNTY, FLORIDA MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SECTION 27, THENCE N 2°07'30" E. ALONG THE EAST LINE OF SAID SECTION 27, A DISTANCE OF 1057.01 FEET; THENCE N 87°57'53" W, A DISTANCE OF 220.15 FEET TO THE POINT OF BEGINNING, POINT BEING THE NORTHEAST CORNER OF THE CYPRESS TRAIL COMMUNITY ELEMENTARY SCHOOL PARCEL; THENCE N 87°57'53" W, ALONG THE NORTH LINE OF SAID CYPRESS TRAIL SCHOOL PARCEL, A DISTANCE OF 170.04 FEET TO THE NORTHWEST CORNER OF SAID CYPRESS TRAIL SCHOOL PARCEL; THENCE S. 0°10'34" W, ALONG THE WEST LINE OF SAID CYPRESS TRAIL SCHOOL PARCEL, A DISTANCE OF 894.12 FEET TO A POINT ON THE NORTH LINE OF BLOCK 8 OF RECORDED PLAT OF CRESTWOOD UNIT 3 (SAID PLAT NOT YET RECORDED AS OF THE DATE OF THIS SURVEY), AND ALSO BEING AT A POINT ON A CURVE CONCAVE TO THE SOUTH, HAVING A RADIUS OF 210.00 FEET AND A CENTRAL ANGLE OF 6°41'34"; THENCE SOUTHEAST ALONG THE ARC OF SAID CURVE, A DISTANCE OF 111.44 FEET; THENCE S. 83°28'18" W, CONTINUING ALONG THE NORTH LINE OF SAID BLOCK 8, A DISTANCE OF 331.94 FEET TO A POINT ON A CURVE CONCAVE TO THE NORTH, HAVING A RADIUS OF 830.00 FEET AND A CENTRAL ANGLE OF 33°36'34"; THENCE NORTHWEST ALONG THE ARC OF SAID CURVE A DISTANCE OF 313.43 FEET; THENCE N 60°54'48" W, A DISTANCE OF 234.46 FEET TO THE SOUTHWEST CORNER OF LOT 11, BLOCK 5 OF SAID CRESTWOOD UNIT 3; THENCE N 2°10'51" E. ALONG THE EAST LINE OF SAID BLOCK 5, A DISTANCE OF 104.33 FEET; THENCE N 47°43'44" E, A DISTANCE OF 270.46 FEET TO A POINT ON A CURVE CONCAVE TO THE WEST, HAVING A RADIUS OF 210.00 FEET AND A CENTRAL ANGLE OF 42°58'17"; THENCE NORTHEAST, NORTH AND NORTHWEST ALONG THE ARC OF SAID CURVE AND THE EAST LINE OF SAID BLOCK 5, A DISTANCE OF 334.11 FEET TO A POINT ON A CURVE CONCAVE TO THE SOUTH, HAVING A RADIUS OF 850.00 FEET AND A CENTRAL ANGLE OF 44°52'25"; THENCE WEST ALONG THE ARC OF SAID CURVE, A DISTANCE OF 154.30 FEET; THENCE S. 80°13'04" W, ALONG THE NORTH LINE OF SAID BLOCK 5, A DISTANCE OF 187.06 FEET TO A POINT ON A CURVE CONCAVE TO THE WEST, HAVING A RADIUS OF 250.00 FEET AND A CENTRAL ANGLE OF 27°17'27"; THENCE NORTH ALONG THE ARC OF SAID CURVE, A DISTANCE OF 180.07 FEET TO A POINT ON A REVERSE CURVE CONCAVE TO THE EAST, HAVING A RADIUS OF 100.00 FEET AND A CENTRAL ANGLE OF 74°00'00"; THENCE NORTH ALONG THE ARC OF SAID CURVE, A DISTANCE OF 107.88 FEET; THENCE N 47°03'11" E, A DISTANCE OF 250.00 FEET TO A POINT ON A CURVE CONCAVE TO THE SOUTH, HAVING A RADIUS OF 100.00 FEET AND A CENTRAL ANGLE OF 64°30'00"; THENCE EAST ALONG THE ARC OF SAID CURVE, A DISTANCE OF 125.7 FEET TO A POINT ON A REVERSE CURVE CONCAVE TO THE WEST, HAVING A RADIUS OF 250.00 FEET AND A CENTRAL ANGLE OF 203°00'00"; THENCE EAST, NORTH AND WEST ALONG THE ARC OF SAID CURVE, A DISTANCE OF 683.75 FEET TO A POINT ON A REVERSE CURVE CONCAVE TO THE NORTHEAST, HAVING A RADIUS OF 80.00 FEET AND A CENTRAL ANGLE OF 64°00'00"; THENCE NORTHWESTERLY ALONG ARC OF SAID CURVE, A DISTANCE OF 122.87 FEET; THENCE N 27°26'44" W, A DISTANCE OF 4.33 FEET TO A POINT ON A CURVE CONCAVE TO THE EAST HAVING A RADIUS OF 251.35 FEET AND CENTRAL ANGLE 0°12'27"; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 36.04 FEET TO A POINT ON A CURVE CONCAVE TO THE EAST, HAVING A RADIUS OF 290.00 FEET AND A CENTRAL ANGLE OF 51°57'15"; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 263.98 FEET; THENCE N 32°47'29" E, A DISTANCE OF 43.00 FEET TO A POINT ON A CURVE CONCAVE TO THE SOUTH, HAVING A RADIUS OF 50.00 FEET AND A CENTRAL ANGLE OF 85°05'10"; THENCE NORTHERLY AND NORTH-EASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 222.74 FEET; THENCE S. 82°14'49" E, A DISTANCE OF 85.00 FEET TO A POINT ON A CURVE CONCAVE TO THE NORTHWEST, HAVING A RADIUS OF 250.00 FEET AND A CENTRAL ANGLE OF 103°30'27"; THENCE SOUTHEAST, EAST AND NORTHEAST ALONG THE ARC OF SAID CURVE, A DISTANCE OF 433.43 FEET; THENCE N 13°32'44" E, A DISTANCE OF 444.03 FEET TO A POINT ON A CURVE CONCAVE TO THE NORTH, HAVING A RADIUS OF 100.00 FEET AND A CENTRAL ANGLE OF 17°04'18"; SAID POINT HAVING A TANGENT BEARING OF S. 73°10'24" E. AND SAID POINT ALSO BEING ON THE SOUTHERN RIGHT-OF-WAY LINE OF SPARROW DRIVE; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE AND THE SOUTHERN RIGHT-OF-WAY OF SAID SPARROW DRIVE, A DISTANCE OF 400.31 FEET TO THE NORTHWEST CORNER OF CRESTWOOD COMMUNITY PARKS SCHOOL PARCEL, SAID POINT HAVING A TANGENT BEARING OF S. 85°14'47" E; THENCE S. 13°32'44" W, ALONG THE WEST LINE OF SAID CRESTWOOD SCHOOL PARCEL, A DISTANCE OF 871.82 FEET TO A POINT ON A CURVE CONCAVE TO THE NORTHEAST, HAVING A RADIUS OF 450.00 FEET AND A CENTRAL ANGLE OF 101°34'10"; THENCE ALONG THE ARC OF SAID CURVE AND THE WEST, SOUTHWEST AND SOUTH LINE OF SAID CRESTWOOD SCHOOL PARCEL, A DISTANCE OF 800.34 FEET; THENCE S. 87°57'53" E. ALONG THE SOUTH LINE OF SAID CRESTWOOD SCHOOL PARCEL, A DISTANCE OF 636.47 FEET TO A POINT ON THE WEST RIGHT-OF-WAY LINE OF PARK ROAD NORTH; THENCE S. 2°07'30" W, ALONG THE WEST RIGHT-OF-WAY LINE OF SAID PARK ROAD NORTH, A DISTANCE OF 314.15 FEET TO THE POINT OF BEGINNING.

CONTAINING 7,830,387 SQUARE FEET EQUALING 60,365 ACRES, MORE OR LESS.

NOTE: BEARINGS STATED ARE RELATIVE TO THE SOUTH LINE OF SECTION 27, TOWNSHIP 43 SOUTH, RANGE 41 EAST, PALM BEACH COUNTY, FLORIDA, WHICH BEARS N89°44'43" W.

LEASE SITE LEGAL DESCRIPTION:

COMMENCE AT THE POINT OF BEGINNING OF THE ABOVE DESCRIBED PARENT TRACT, SAID POINT OF BEGINNING ALSO BEING THE NORTHEAST CORNER OF THE CYPRESS TRAIL COMMUNITY ELEMENTARY SCHOOL SITE; THENCE NORTH 87°58'45" WEST, ALONG THE NORTHERLY LINE OF SAID CYPRESS TRAIL COMMUNITY ELEMENTARY SCHOOL, A DISTANCE OF 641.9 FEET; THENCE NORTH 02°01'15" EAST, DEPARTING SAID NORTHERLY LINE, A DISTANCE OF 344.78 FEET, TO THE POINT OF BEGINNING OF THE FOLLOWING DESCRIBED PARCEL:

THENCE NORTH 87°58'06" WEST, A DISTANCE OF 10.00 FEET; THENCE NORTH 02°01'17" EAST, A DISTANCE OF 10.00 FEET; THENCE SOUTH 87°58'06" EAST, A DISTANCE OF 3.10 FEET; THENCE NORTH 45°36'33" EAST, A DISTANCE OF 33.16 FEET, TO POINT "A" TO BE REFERRED TO LATER HEREIN SAID POINT ALSO BEING THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHEAST AND HAVING A RADIUS OF 35.00 FEET; THENCE NORTHEASTERLY AND EASTERLY, 27.49 FEET, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 45°00'00", TO A POINT OF TANGENCY; THENCE SOUTH 89°23'27" EAST, A DISTANCE OF 29.69 FEET, TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST AND HAVING A RADIUS OF 15.00 FEET; THENCE EASTERLY, NORTHEASTERLY AND NORTHERLY, 23.56 FEET, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 90°00'00", TO A POINT OF TANGENCY; THENCE NORTH 00°36'33" EAST, A DISTANCE OF 2.38 FEET; THENCE NORTH 88°38'54" WEST, A DISTANCE OF 5.00 FEET; THENCE NORTH 01°21'06" EAST, A DISTANCE OF 20.00 FEET; THENCE SOUTH 88°38'54" EAST, A DISTANCE OF 20.00 FEET; THENCE SOUTH 01°21'06" WEST, A DISTANCE OF 20.00 FEET; THENCE NORTH 88°38'54" WEST, A DISTANCE OF 5.00 FEET; THENCE SOUTH 00°36'33" WEST, A DISTANCE OF 2.25 FEET, TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST AND HAVING A RADIUS OF 25.00 FEET; THENCE SOUTHERLY, SOUTHWESTERLY AND WESTERLY, 39.27 FEET, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 90°00'00", TO POINT "B" TO BE REFERRED TO LATER HEREIN, SAID POINT ALSO BEING A POINT OF TANGENCY; THENCE NORTH 89°23'27" WEST, A DISTANCE OF 29.69 FEET, TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHEAST AND HAVING A RADIUS OF 25.00 FEET; THENCE WESTERLY AND SOUTHWESTERLY, 19.63 FEET, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 45°00'00", TO A POINT OF TANGENCY; THENCE SOUTH 45°36'33" WEST, A DISTANCE OF 33.65 FEET; THENCE SOUTH 02°01'17" WEST, A DISTANCE OF 2.79 FEET, TO THE POINT OF BEGINNING.

CONTAINING 1,679 SQUARE FEET OR 0.0385 ACRES MORE OR LESS.

EXHIBIT "B"

SKETCH AND LEGAL DESCRIPTION OF RESERVED SPACE

[Attached on following pages]

SEE SHEET 2 OF 3 FOR PARENT TRACT DETAIL
SEE SHEET 3 OF 3 FOR COMPOUND DETAIL



VICINITY MAP
NEAR S 100 SWEET BAY LANE, ROYAL PALM BEACH, FL 33411
(NOT TO SCALE)

**LEGAL DESCRIPTION
(AS PROVIDED BY CLIENT)**

PARENT TRACT

THAT PORTION OF THE EAST HALF (E 1/2) OF SECTION 27, TOWNSHIP 43 SOUTH, RANGE 41 EAST, PALM BEACH COUNTY, FLORIDA, LYING SOUTH OF AND ADJACENT TO SPARROW DRIVE, LYING NORTHWESTERLY OF AND ADJACENT TO PARK ROAD, LESS AND EXCEPT THEREFROM THOSE PORTIONS THEREOF DESCRIBED IN OFFICIAL RECORDS BOOK 3189, PAGE 1328, AS CORRECTED IN OFFICIAL RECORDS BOOK 3454, PAGE 1221, IN OFFICIAL RECORDS BOOK 3577, PAGE 829, IN OFFICIAL RECORDS BOOK 5488, PAGE 302, IN OFFICIAL RECORDS BOOK 5497, PAGE 222, IN OFFICIAL RECORDS BOOK 5637, PAGE 690, PLAT BOOK 46, PAGE 64, AND PLAT BOOK 77, PAGE 171, ALL OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

**LEGAL DESCRIPTIONS
(AS PREPARED BY SURVEYOR)**

**DISH WIRELESS
LEASE AREA**

A PORTION OF SECTION 27, TOWNSHIP 43 SOUTH, RANGE 41 EAST, PALM BEACH COUNTY FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHEAST CORNER OF LOT 86 PER CRESTWOOD UNIT 3 - PLAT THREE, AS RECORDED IN PLAT BOOK 77 PAGE 171 IN PALM BEACH COUNTY, FLORIDA; THENCE NORTH 18°43'14" EAST, A DISTANCE OF 1174.28 FEET TO THE POINT OF BEGINNING; THENCE NORTH 01°43'17" EAST, A DISTANCE OF 10.00 FEET; THENCE SOUTH 88°16'43" EAST, A DISTANCE OF 10.00 FEET; THENCE SOUTH 01°43'17" WEST, A DISTANCE OF 10.00 FEET; THENCE NORTH 88°16'43" WEST, A DISTANCE OF 10.00 FEET TO THE POINT OF BEGINNING.

CONTAINING 0.0023 ACRES OR 100 SQUARE FEET, MORE OR LESS.

**DISH WIRELESS
5' UTILITY EASEMENT (POWER)**

A 5 FEET ACCESS EASEMENT LYING 2.5 FEET LEFT AND RIGHT OF A CENTERLINE BEING A PORTION OF SECTION 27, TOWNSHIP 43 SOUTH, RANGE 41 EAST, PALM BEACH COUNTY FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHEAST CORNER OF LOT 86 PER CRESTWOOD UNIT 3 - PLAT THREE, AS RECORDED IN PLAT BOOK 77 PAGE 171 IN PALM BEACH COUNTY, FLORIDA; THENCE NORTH 19°08'58" EAST, A DISTANCE OF 1179.62 FEET TO THE POINT OF BEGINNING OF SAID CENTERLINE; THENCE SOUTH 88°16'43" EAST, A DISTANCE OF 7.57 FEET; THENCE SOUTH 00°49'35" WEST, A DISTANCE OF 54.36 FEET; THENCE SOUTH 89°35'16" EAST, A DISTANCE OF 54.71 FEET; THENCE SOUTH 00°24'44" WEST, A DISTANCE OF 2.52 FEET TO THE POINT OF TERMINATION OF SAID CENTERLINE.

THE SIDELINES OF SAID EASEMENT ARE TO BE SHORTENED OR LENGTHENED TO FORM ONE CONTIGUOUS SHAPE.

CONTAINING 0.0137 ACRES OR 596 SQUARE FEET, MORE OR LESS.

SURVEYOR'S NOTES

1. THIS IS A SKETCH OF DESCRIPTION OF THE DISH WIRELESS LEASE PARCEL AND UTILITY EASEMENTS. THE PARENT TRACT INFORMATION SHOWN HEREON IS FOR INFORMATIONAL PURPOSES ONLY.
2. THE PROPOSED LEASE PARCEL DEPICTED HEREON LIES ENTIRELY WITHIN THE DESCRIBED PARENT TRACT.
3. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE SEARCH. THE SURVEYOR HAS REVIEWED THE RECORDED INFORMATION PROVIDED AND ALL PLOTTABLE MATTERS OF RECORD TITLE IDENTIFIED IN THE INFORMATION PROVIDED THAT ARE PERTINENT TO THE DISH WIRELESS LEASE PARCEL, AND ITS INGRESS/EGRESS AND UTILITY EASEMENT, IF APPLICABLE, HAVE BEEN SHOWN OR NOTED HEREON. THE SURVEYOR HAS RELIED SOLELY UPON THE INFORMATION PROVIDED WITH RESPECT TO EASEMENTS, RIGHTS OF WAY, SETBACK LINES, AGREEMENTS, RESERVATIONS, AND OTHER SIMILAR MATTERS. NO FURTHER RESEARCH OF THE PUBLIC RECORDS WAS PERFORMED BY THE SURVEYOR.
4. BEARINGS SHOWN HEREON ARE ASSUMED AND BASED ON THE NORTH LINE OF LOT 86, PER CRESTWOOD UNIT 3 - PLAT THREE, AS RECORDED IN PLAT BOOK 77 PAGE 171 IN PALM BEACH COUNTY, FLORIDA AS BEING SOUTH 89°49'06" EAST.
5. UNDERGROUND UTILITIES AND IMPROVEMENTS HAVE NOT BEEN LOCATED.
6. PARENT TRACT INTERIOR IMPROVEMENTS HAVE NOT BEEN LOCATED.
7. AFTER REVIEW OF FLOOD INSURANCE RATE MAP, COMMUNITY PANEL No. 12099C0553F, DATED OCTOBER 5, 2017 THE PROPOSED LEASE PARCEL DEPICTED HEREON LIES IN ZONE "X" AND ZONE "AE" (BASE FLOOD ELEVATION 16.5).
8. (D) DENOTES DESCRIPTION; (F) DENOTES FIELD MEASURED; (P) DENOTES PLAT; (C) DENOTES CALCULATED.
9. INCIDENTAL ELEVATIONS SHOWN HEREON ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988, IS TO THE THIRD ORDER OF ACCURACY, AND IS BASED ON MULTI FREQUENCY GNSS CORRECTIONS OBTAINED FROM THE FLORIDA DEPARTMENT OF TRANSPORTATION FLORIDA PERMANENT REFERENCE NETWORK (FPRN).
10. ALL GEODETIC AND VERTICAL DATA, DEPICTED HEREON IS WITHIN THE 1A ACCURACY TOLERANCES AS SET FORTH BY THE F.A.A.
11. SITE BENCHMARK IS THE CORNER OF A CONCRETE PAD ELEVATION = 17.45' N.A.V.D. 1988 AS DEPICTED HEREON. ALL ELEVATIONS SHOWN HEREON ARE ABOVE MEAN SEA LEVEL (A.M.S.L.).

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SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS SKETCH OF DESCRIPTION PERFORMED ON OCTOBER 26, 2023, IS IN ACCORDANCE WITH THE TECHNICAL STANDARDS AS REQUIRED BY CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, STANDARDS OF PRACTICE PURSUANT TO SECTION 472.023, FLORIDA STATUTES AND WAS PREPARED UNDER MY RESPONSIBLE CHARGE.

KIRK B. MITCHELL P.S.M. L.S.No.5682
CERTIFICATE OF AUTHORIZATION No. L.B.6885 HARD COPIES NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

CERTIFIED TO AND FOR THE EXCLUSIVE BENEFIT OF:
DISH WIRELESS
ITS AFFILIATES, SUBSIDIARIES AND LENDERS.

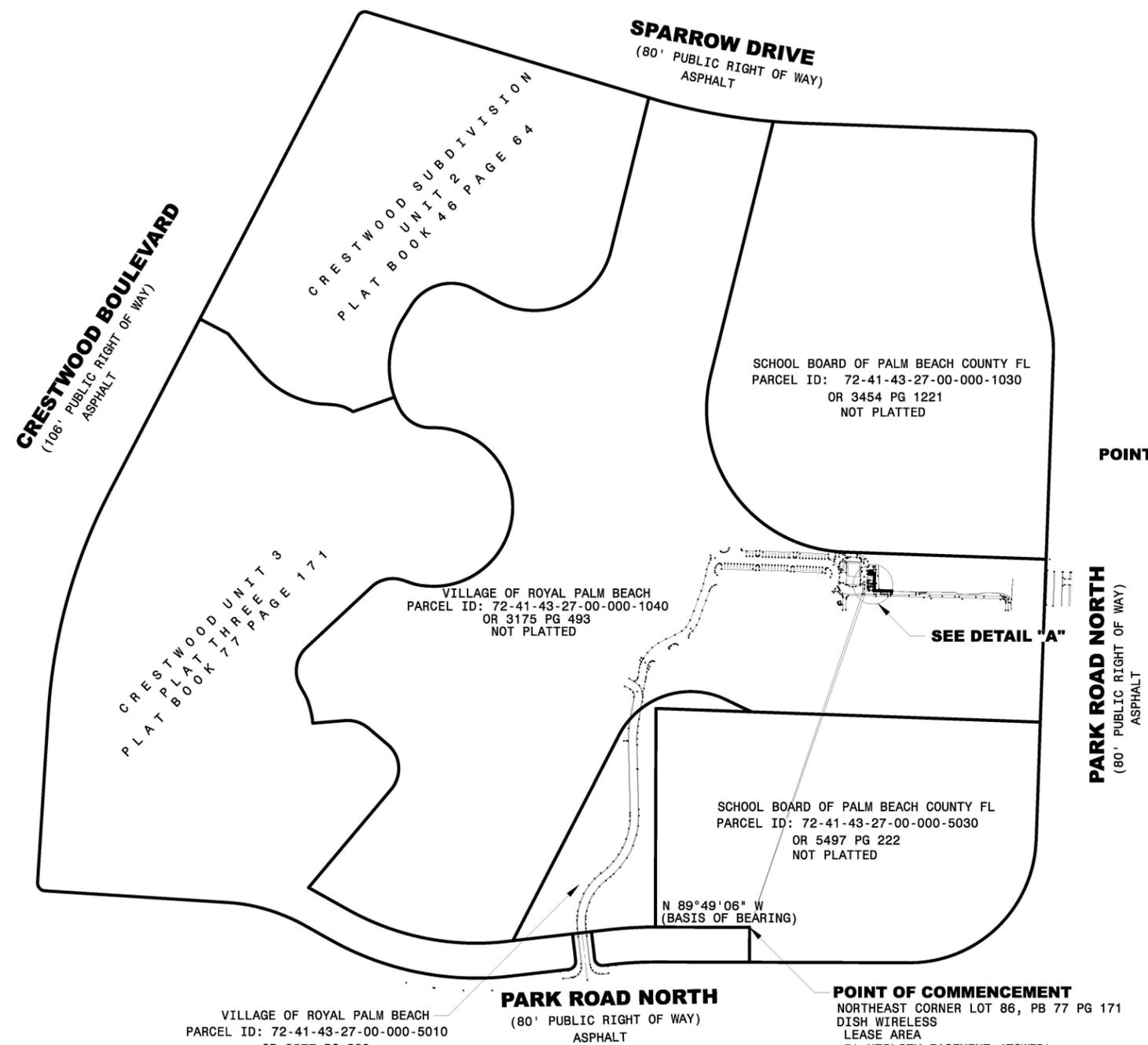
DATE	DATE	BY	DESCRIPTION

ADVANCED LAND SURVEYING
AND MAPPING, INC.
371 BRIGHTWATERS DRIVE COCOA BEACH, FLORIDA 32931
PH: (407) 509-2305

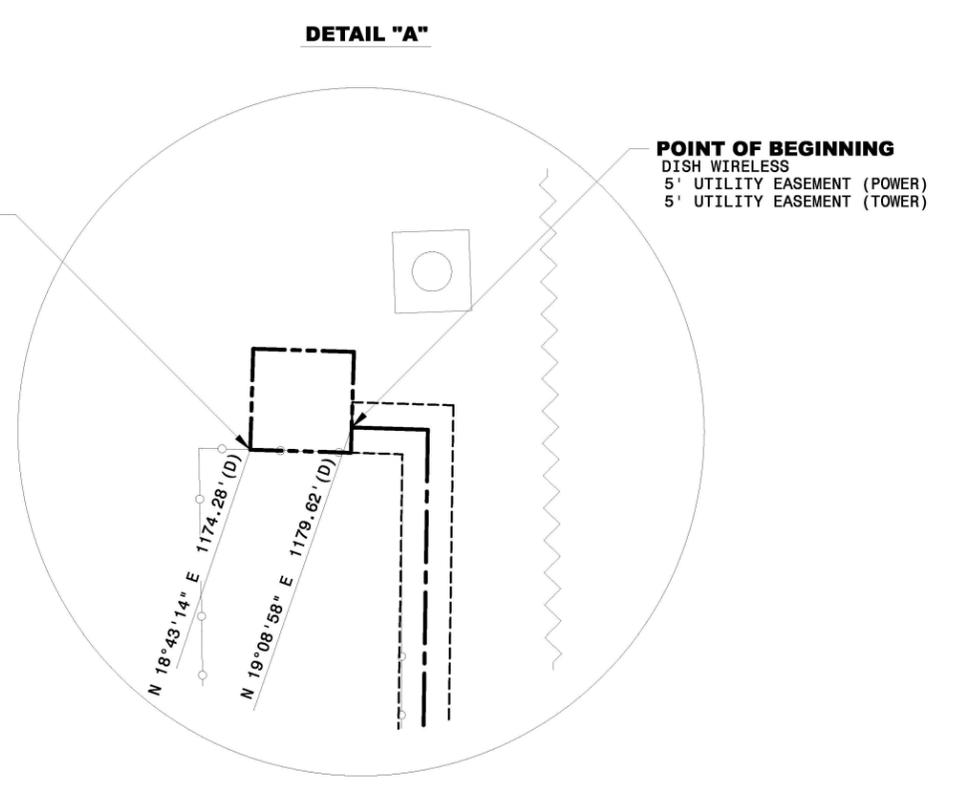
SKETCH OF DESCRIPTION
PREPARED FOR
DISH WIRELESS
MIMIA00732A
A PORTION OF SECTION 27, TOWNSHIP 43 SOUTH, RANGE 41 EAST
PALM BEACH COUNTY, FLORIDA

DRAWN	S. PETRAROLI
FIELD DATE	OCTOBER 26, 2023
FIELD BOOK	PRINT
SCALE	NO SCALE
PROJECT NO.	X
FILE NAME	MIMIA00732A.DWG
SHEET	1 OF 3

SEE SHEET 1 OF 3 FOR LEGAL DESCRIPTIONS
SEE SHEET 3 OF 3 FOR COMPOUND DETAIL



POINT OF BEGINNING
DISH WIRELESS
LEASE AREA



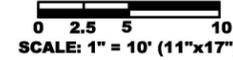
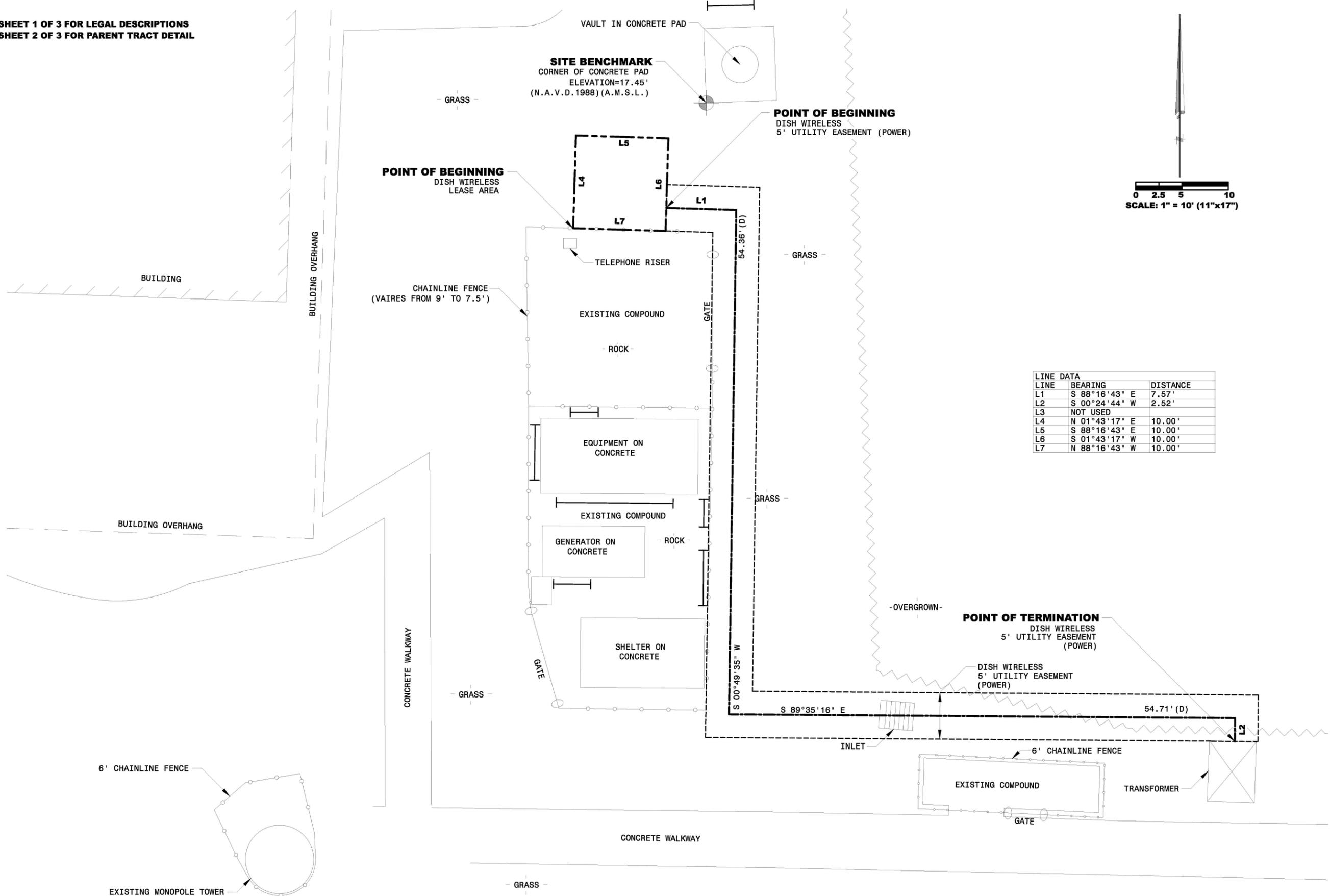
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ADVANCED
LAND SURVEYING
AND MAPPING, INC.
371 BRIGHTWATERS DRIVE COCOA BEACH, FLORIDA 32931
PH: (407) 509-2305

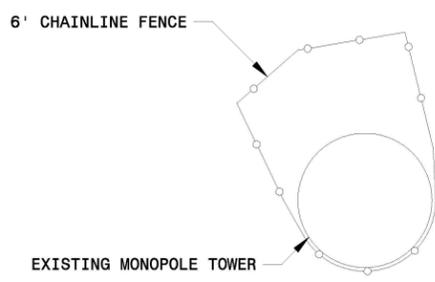
SKETCH OF DESCRIPTION
PREPARED FOR
DISH WIRELESS
MIMIA00732A
A PORTION OF SECTION 27, TOWNSHIP 43 SOUTH, RANGE 41 EAST
PALM BEACH COUNTY, FLORIDA

DRAWN	S. PETRAROLI
FIELD DATE	OCTOBER 26, 2023
FIELD BOOK	PRINT
SCALE	NOT TO SCALE
PROJECT NO.	X
FILE NAME	MIMIA00732A.DWG
SHEET	2 OF 3

SEE SHEET 1 OF 3 FOR LEGAL DESCRIPTIONS
SEE SHEET 2 OF 3 FOR PARENT TRACT DETAIL



LINE	BEARING	DISTANCE
L1	S 88°16'43" E	7.57'
L2	S 00°24'44" W	2.52'
L3	NOT USED	
L4	N 01°43'17" E	10.00'
L5	S 88°16'43" E	10.00'
L6	S 01°43'17" W	10.00'
L7	N 88°16'43" W	10.00'



DATE	DATE	BY	DESCRIPTION

ADVANCED LAND SURVEYING
AND MAPPING, INC.
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PH: (407) 509-2305

SKETCH OF DESCRIPTION
PREPARED FOR
DISH WIRELESS
MIMIA00732A
A PORTION OF SECTION 27, TOWNSHIP 43 SOUTH, RANGE 41 EAST
PALM BEACH COUNTY, FLORIDA

DRAWN	S. PETRAROLI
FIELD DATE	OCTOBER 27, 2023
FIELD BOOK	PRINT
SCALE	1" = 10'
PROJECT NO.	X
FILE NAME	MIMIA00732A.DWG
SHEET	3 OF 3



DISH WIRELESS L.L.C. SITE ID:

MIMIA00732A

DISH WIRELESS L.L.C. SITE ADDRESS:

**S. 100 SWEET BAY LANE
ROYAL PALM BEACH, FL 33411**

SCOPE OF WORK

THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

- TOWER SCOPE OF WORK:**
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
 - INSTALL (1) PROPOSED ANTENNA PLATFORM MOUNT
 - INSTALL PROPOSED JUMPERS
 - INSTALL (6) PROPOSED RRRs (2 PER SECTOR)
 - INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
 - INSTALL (1) PROPOSED HYBRID CABLE

- GROUND SCOPE OF WORK:**
- INSTALL (1) PROPOSED METAL PLATFORM
 - INSTALL (1) PROPOSED ICE BRIDGE
 - INSTALL (1) PROPOSED PPC CABINET
 - INSTALL (1) PROPOSED EQUIPMENT CABINET
 - INSTALL (1) PROPOSED POWER CONDUIT
 - INSTALL (1) PROPOSED TELCO CONDUIT
 - INSTALL (1) PROPOSED TELCO-FIBER BOX
 - INSTALL (1) PROPOSED GPS UNIT
 - INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)
 - INSTALL (1) PROPOSED METER SOCKET
 - INSTALL (1) PROPOSED FUSIBLE SAFETY SWITCH
 - EXISTING FENCE SECTION TO BE REMOVED
 - INSTALL PROPOSED FENCE AND GATE AROUND COMPOUND EXPANSION

SITE INFORMATION		PROJECT DIRECTORY	
PROPERTY OWNER:	VILLAGE OF ROYAL PALM BEACH	APPLICANT:	DISH WIRELESS L.L.C.
ADDRESS:	1050 ROYAL PALM BEACH BLVD ROYAL PALM BEACH FL, 33411		5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER TYPE:	MONOPOLE	TOWER OWNER:	CROWN CASTLE USA, INC. 2000 CORPORATE DRIVE CANONSBURG, PA 15317 877.486.9377
TOWER CO SITE ID:	878206	SITE DESIGNER:	POD 11490 BLUEGRASS PARKWAY LOUISVILLE, KY 40299 (502) 437-5252
TOWER APP NUMBER:	552009	SITE ACQUISITION:	SHAHZAD MAHMOOD SHAHZAD.MAHMOOD@DISH.COM
COUNTY:	PALM BEACH	CONSTRUCTION MANAGER:	JOSH VEGA JOSHUA.VEGA@DISH.COM
LATITUDE (NAD 83):	26° 41' 43.91" N 26.695531 N	RF ENGINEER:	CRIS RUBIO CRISTOFER.RUBIORAMI@DISH.COM
LONGITUDE (NAD 83):	80° 14' 11.64" W 80.236567 W		
ZONING JURISDICTION:	VILLAGE OF ROYAL PALM BEACH		
ZONING DISTRICT:	UNKNOWN		
PARCEL NUMBER:	72414327000001040		
OCCUPANCY GROUP:	U		
CONSTRUCTION TYPE:	II-B		
POWER COMPANY:	FP&L		
TELEPHONE COMPANY:	TBD		



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299



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DRAWN BY:	CHECKED BY:	APPROVED BY:
AJM	EEW	AH
RFDS REV #:		TBD

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
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3	04/28/2022	ISSUED FOR CONSTRUCTION
4	06/06/2022	ISSUED FOR CONSTRUCTION
5	06/28/2023	ISSUED FOR CONSTRUCTION
6	10/02/2023	ISSUED FOR CONSTRUCTION
7	11/16/2023	JURISDICTION REVISION

A&E PROJECT NUMBER
878206

DISH WIRELESS L.L.C. PROJECT INFORMATION
**MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411**

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

SITE PHOTO



UNDERGROUND SERVICE ALERT - SUNSHINE 811
UTILITY NOTIFICATION CENTER OF FLORIDA
(800) 432-4770
WWW.SUNSHINE811.COM
CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

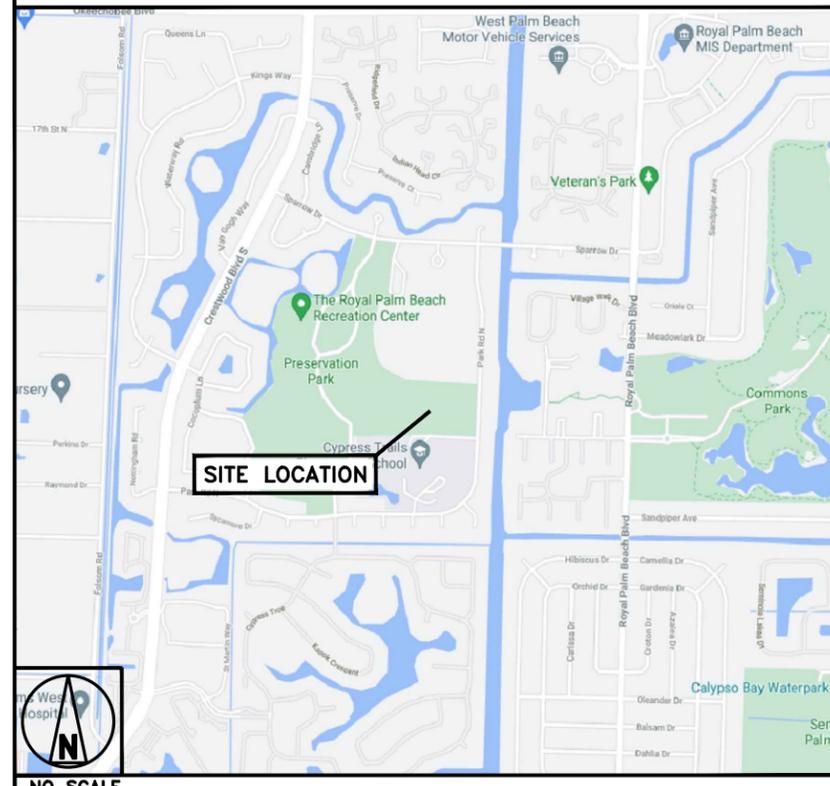
11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

DIRECTIONS

FROM BOCA RATON TAKE I-95 NORTH TO OKEECHOBEE BLVD (EXIT 52). GO WEST TO ROYAL PALM BEACH BLVD. GO SOUTH TO SPARROW DRIVE (FIRST LIGHT), THEN WEST TO RECREATION CENTER. FOLLOW SWEET BAY LANE TO SOCCER FIELD ON LEFT.

VICINITY MAP



FLORIDA - CODE COMPLIANCE

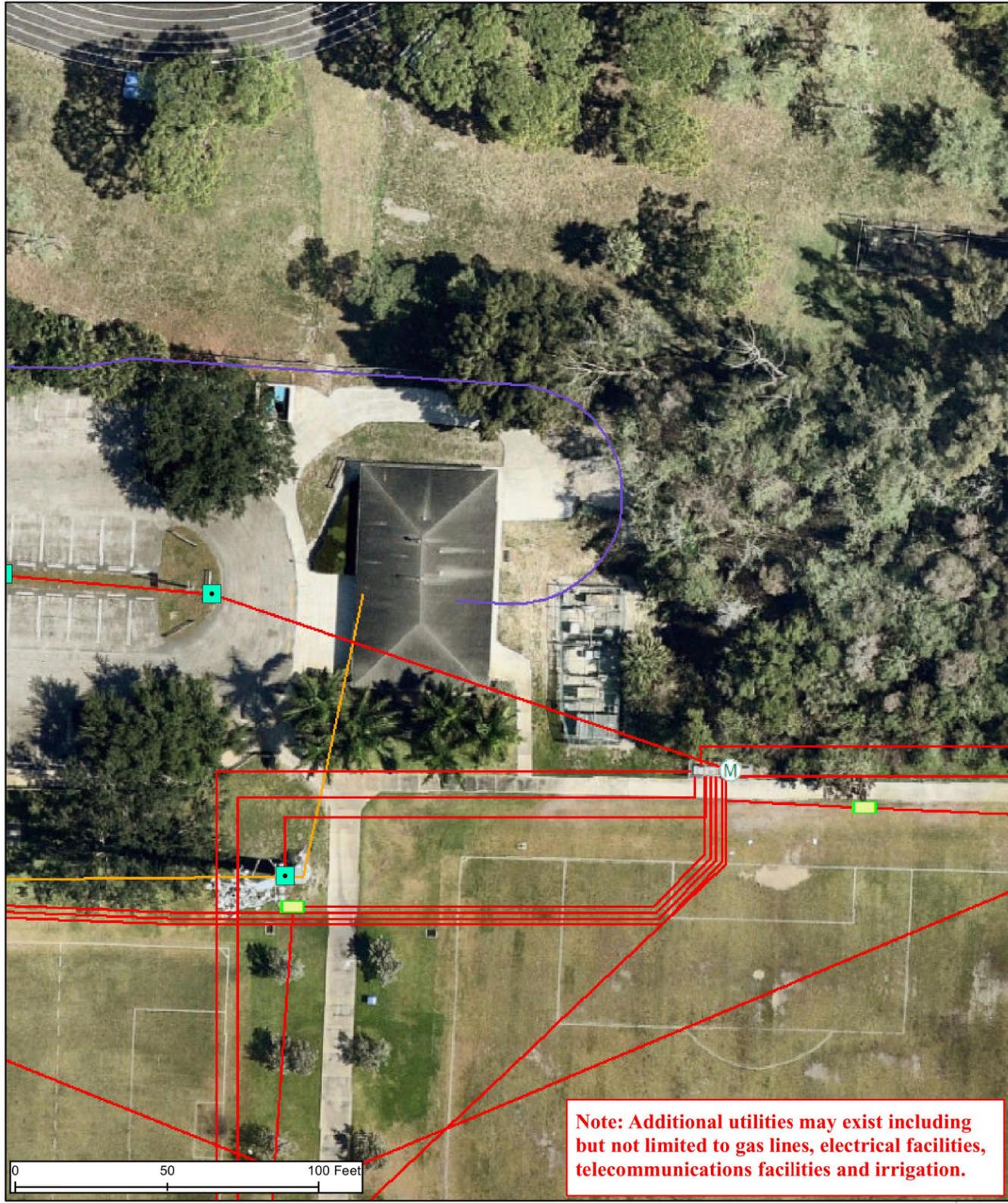
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2020 FLORIDA BUILDING CODE 7TH EDITION/2018 IBC
MECHANICAL	2020 FLORIDA BUILDING CODE 7TH EDITION/2018 IMC
ELECTRICAL	2020 FLORIDA BUILDING CODE 7TH EDITION/2017 NEC

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
U-1	EXISTING UTILITIES ELECTRIC AND TELECOMMUNICATIONS
U-2	EXISTING UTILITIES WATER, SEWER, AND DRAINAGE
A-1	OVERALL AND ENLARGED SITE PLAN
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT PLATFORM AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODES
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES

THE VILLAGE OF ROYAL PALM BEACH, FLORIDA



Note: Additional utilities may exist including but not limited to gas lines, electrical facilities, telecommunications facilities and irrigation.

EXISTING UTILITIES ELECTRIC AND TELECOMMUNICATIONS

ROADWAY LIGHTING MAINTENANCE

- FPL
- HOA
- Other
- PBC
- VRPB

SITE LIGHTING MAINTENANCE

- FPL
- VRPB
- PBC
- HOA
- Other

UNDERGROUND FACILITY POINT

■ <all other values>

TYPE

- Disconnect
- Electric Meter
- Electrical Outlet
- Electrical Panel
- Fiber Junction
- Handhole
- Junction Box
- Other
- Pull Box
- Service Point
- Transformer

UNDERGROUND FACILITY LINE

— <all other values>

TYPE

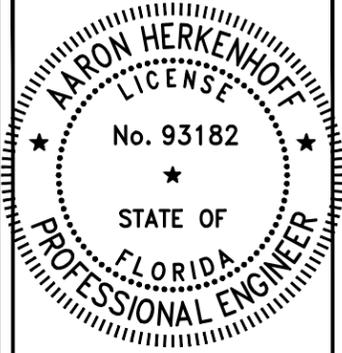
- Cable TV
- Electric
- Fiber Optic
- Other
- Phone
- Spare



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299



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DRAWN BY:	CHECKED BY:	APPROVED BY:
AJM	EEW	AH
RFDS REV #:	TBD	

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
2	01/10/2022	ISSUED FOR CONSTRUCTION
3	04/28/2022	ISSUED FOR CONSTRUCTION
4	06/06/2022	ISSUED FOR CONSTRUCTION
5	06/28/2023	ISSUED FOR CONSTRUCTION
6	10/02/2023	ISSUED FOR CONSTRUCTION
▲	11/16/2023	JURISDICTION REVISION

A&E PROJECT NUMBER
878206

DISH WIRELESS L.L.C.
PROJECT INFORMATION
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

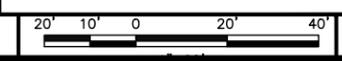
SHEET TITLE
EXISTING UTILITIES
ELECTRIC & TELECOM

SHEET NUMBER

U-1

NOTE

THIS SHEET WAS CREATED BY OTHERS. THE UTILITIES SHOWN HEREIN ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. POWER OF DESIGN ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL THE UTILITIES WITHIN THE LIMITS OF THE WORK.



THE VILLAGE OF ROYAL PALM BEACH, FLORIDA



Note: Additional utilities may exist including but not limited to gas lines, electrical facilities, telecommunications facilities and irrigation.

EXISTING UTILITIES

EXISTING UTILITIES WATER, SEWER, AND DRAINAGE

Water	
Subtype	Diameter
16-Air Release	UNK
rwSystemValve	3" RW
Subtype	5" RW
2-Butterfly	6" RW
4-Gate	8" RW
wControlValves	10" RW
Subtype	12" RW
16-Air Release	16" RW
6-Backflow Control	18" RW
8-Double Check	20" RW
Wells	
wFittings	wLateralLines
Subtype	Subtype
16-Blowoff	2-Fire Line
2-Cap	6-Hydrant Line
17-Plug	1-Service Line
7-Reducer	UNK
wHydrant	1" WM
wSiameseConnector	1.5" WM
wSystemValves	2" WM
Subtype	2.5" WM
1-Ball	3" WM
2-Butterfly	4" WM
4-Gate	6" WM
rwPressurizedMain	8" WM
	10" WM
	12" WM
	16" WM
	20" WM
	24" WM

Waste Water	
SUBTYPE	Diameter
10-Air Release	UNK
iqFitting	1" IQ
SUBTYPE	1.25" IQ
17-Plug	2" IQ
7-Reducer	2.5" IQ
iqSystemValve	4" IQ
SUBTYPE	UNK
5-Butterfly	6" SS
4-Gate	8" SS
SUBTYPE	10" SS
3-Air Release	12" SS
ssFitting	15" SS
SUBTYPE	16" SS
2-Cap	ssLateralLine
4-Cleanout	SUBTYPE
17-Plug	2-Cleanout Lateral
7-Reducer	1-Service Line
Lift Station	<all other values>
1-Manhole	1.5" FM
ssSystemValve	2" FM
Subtype	4" FM
1-Ball	6" FM
2-Butterfly	8" FM
4-Gate	10" FM
5-Plug	12" FM
iqPressurizedMain	14" FM
	16" FM
	20" FM
	24" FM
	30

Stormwater	
Curb_Inlets	Collar
Gutter_Inlets	Ditch Sediment Trap
Driveway_Drain	Endwall
Manholes	Flared End
Control_Structures	Flared End Section
	Headwall
	Mitered End Section
Fittings_Endwalls	
<all other values>	
TYPE	
Cap	Node
Cleanout	Open End
	Plug
	Reducer
	Rip-Rap Endwall
	Rip-Rap Headwall
	Rip-Rap Sump
	Sheet Endwall
	Sump
	Tee
	Thrust Block
	Wingwall
	Ditch_Bottom_Inlets
	Pipes_Culverts
	<all other values>
	Arched Box Culvert
	Breaching Trench
	Collector
	Concrete Span Culvert
	Culvert
	Double Box Culvert
	Exfiltration Trench
	French Drain
	Outfall
	Trench Drain
	Triple Box Culvert
	Underdrain
	Unknown

NOTE
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dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

POD
POWER OF DESIGN
11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299

AARON HERKENHOFF
LICENSE
No. 93182
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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AJM	EEW	AH
RFDS REV #:		TBD

CONSTRUCTION DOCUMENTS

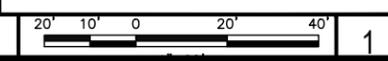
SUBMITTALS		
REV	DATE	DESCRIPTION
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6	10/02/2023	ISSUED FOR CONSTRUCTION
7	11/16/2023	JURISDICTION REVISION

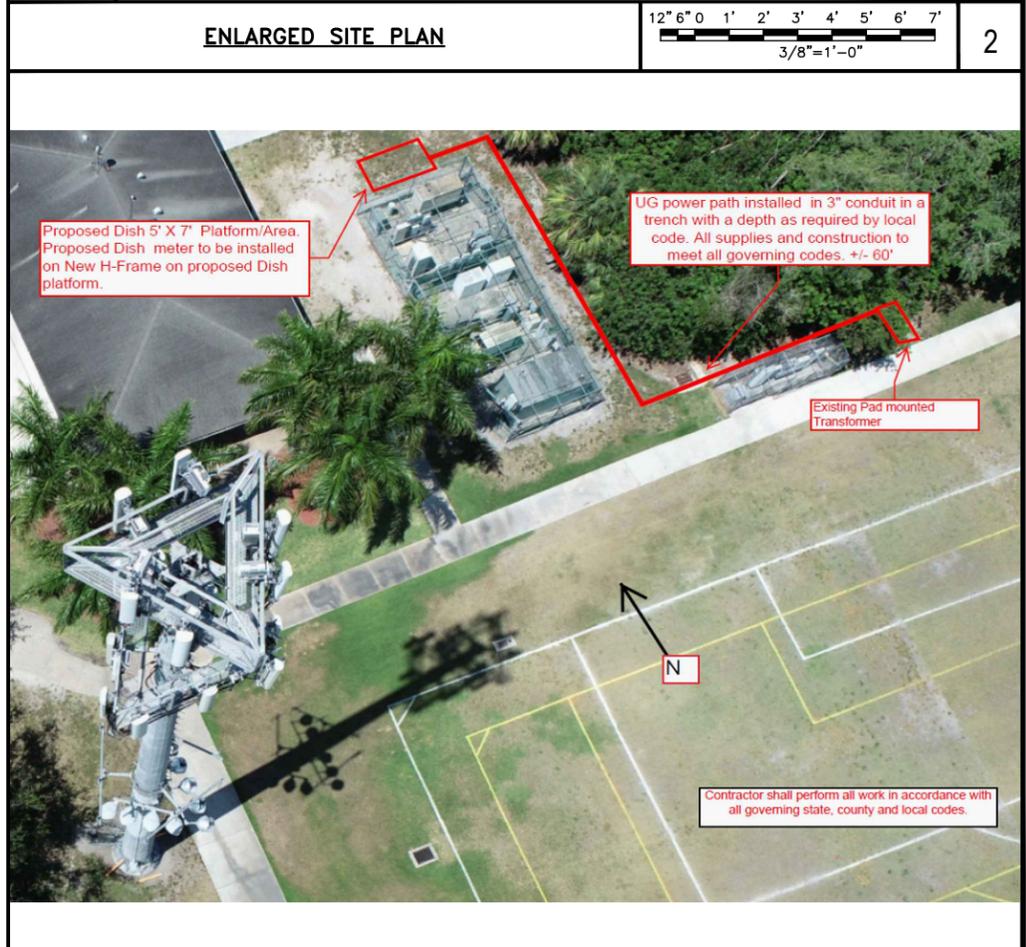
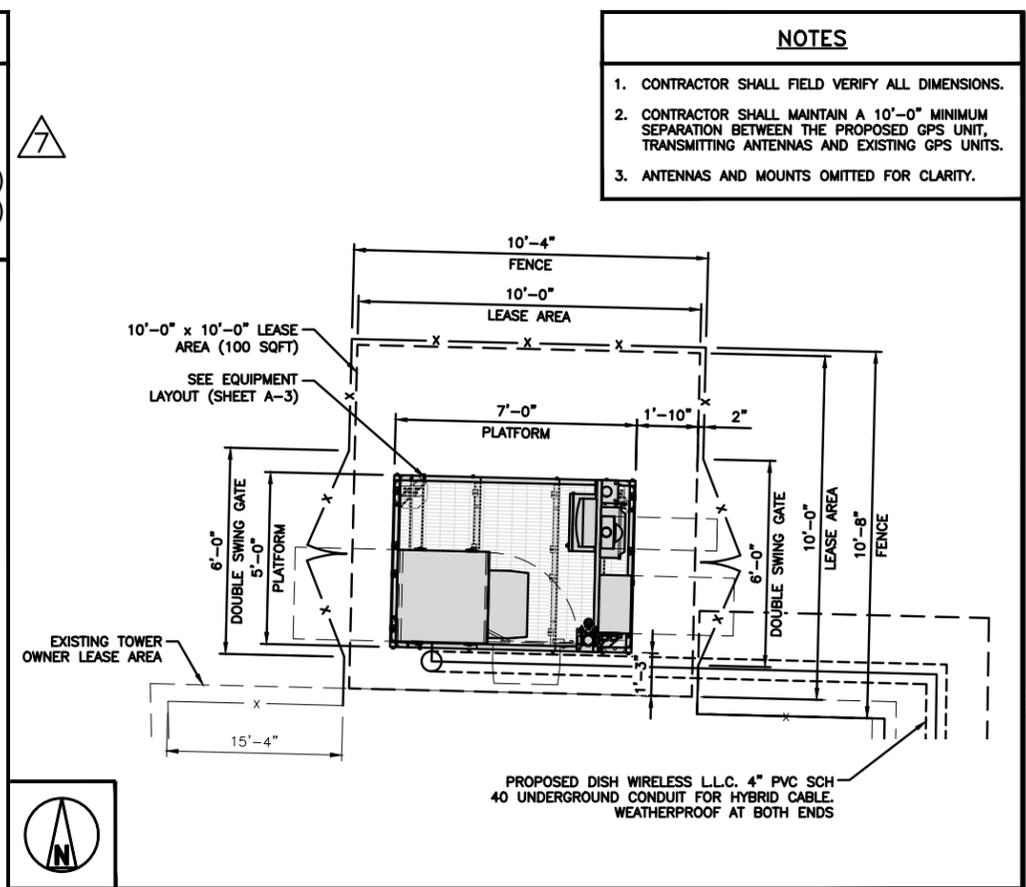
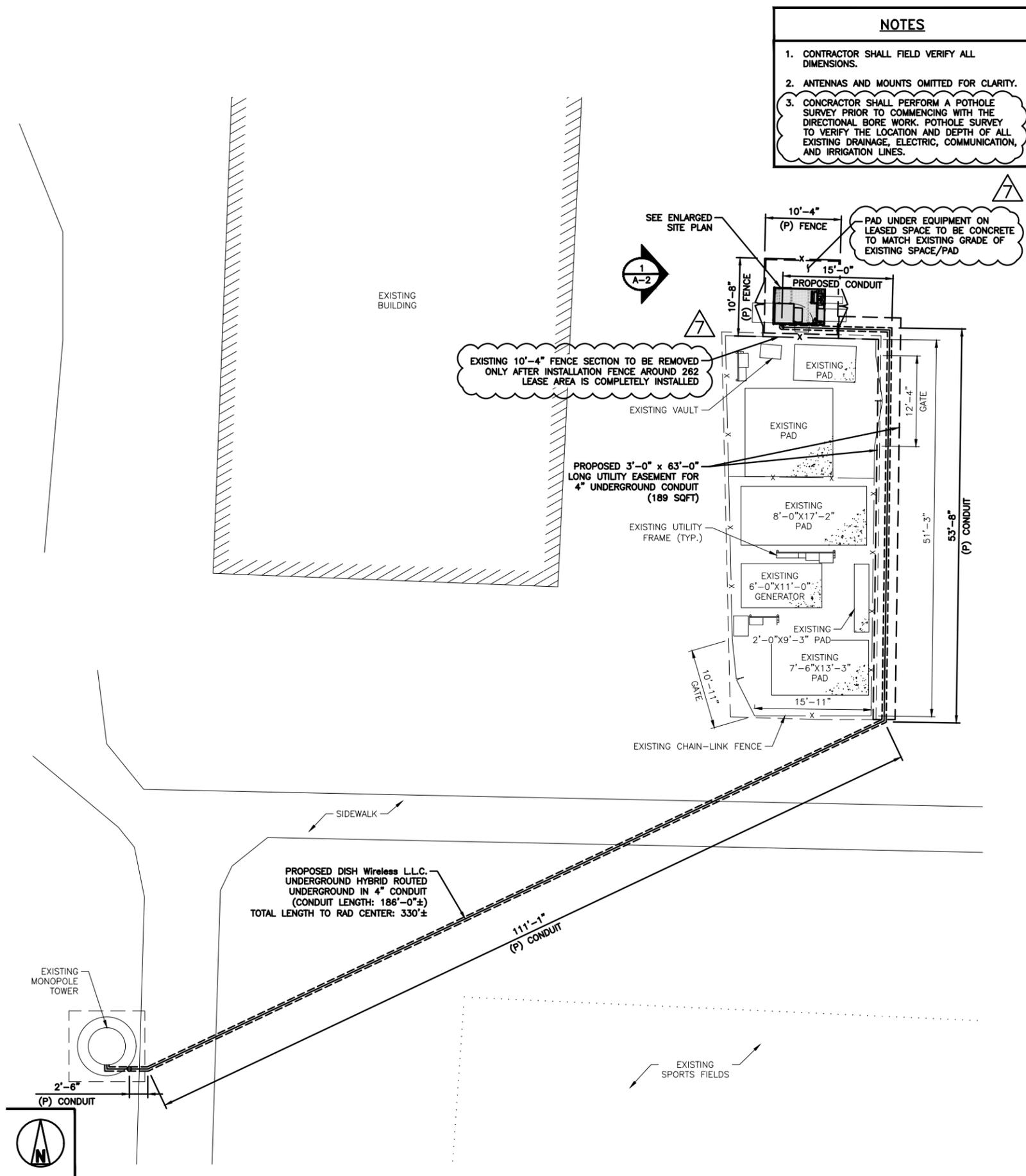
A&E PROJECT NUMBER
878206

DISH WIRELESS L.L.C.
PROJECT INFORMATION
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
EXISTING UTILITIES
WATER, SEWER & DRAINAGE

SHEET NUMBER
U-2





dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

POD
POWER OF DESIGN

11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299

AARON HERKENHOFF
LICENSE
No. 93182
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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CHECKED BY: EEW
APPROVED BY: AH

RFDS REV #: TBD

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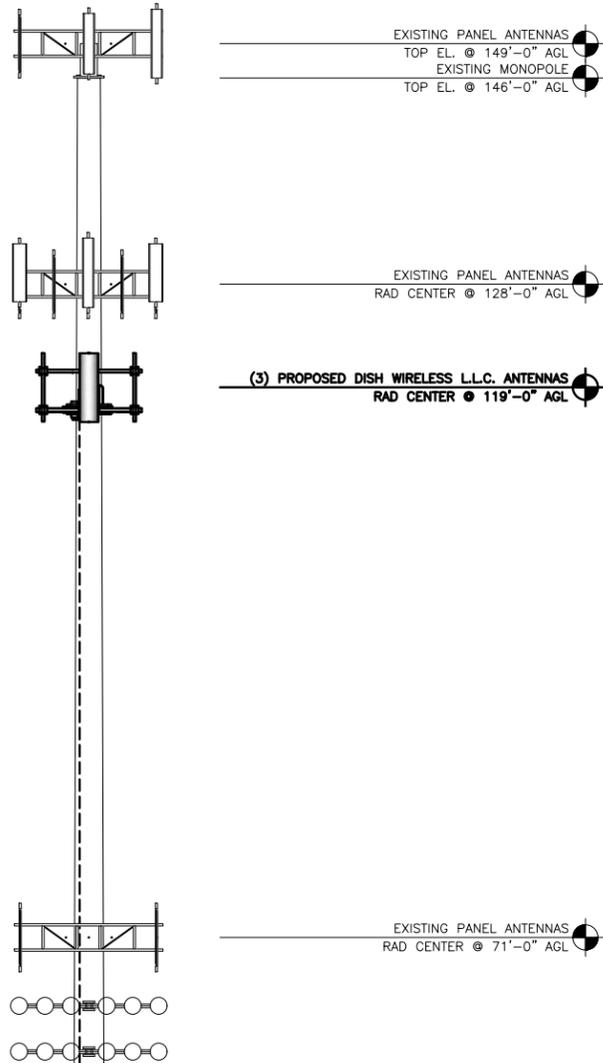
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
OVERALL AND ENLARGED
SITE PLAN

SHEET NUMBER
A-1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. FOR ANTENNA SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.
4. JACOBS HAS NOT EVALUATED OR CONFIRMED THE STRUCTURAL CAPACITY OF THE TOWER OR ANTENNA/RADIO MOUNTS. REFER TO LATEST STRUCTURAL ANALYSIS FOR VERIFICATION OF TOWER AND MOUNTING COMPONENTS PRIOR TO CONSTRUCTION. ANY MODIFICATIONS SHALL BE PERFORMED PRIOR TO THE INSTALLATION OF THE EQUIPMENT SHOWN IN THE DRAWING.



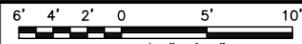
- PROPOSED DISH WIRELESS L.L.C. UNDERGROUND CONDUIT
- PROPOSED DISH WIRELESS L.L.C. EQUIPMENT ON PROPOSED STEEL PLATFORM
- PROPOSED DISH WIRELESS L.L.C. GPS UNIT

(1) PROPOSED DISH WIRELESS L.L.C. HYBRID CABLE ROUTED INSIDE POLE PER STRUCTURAL ANALYSIS

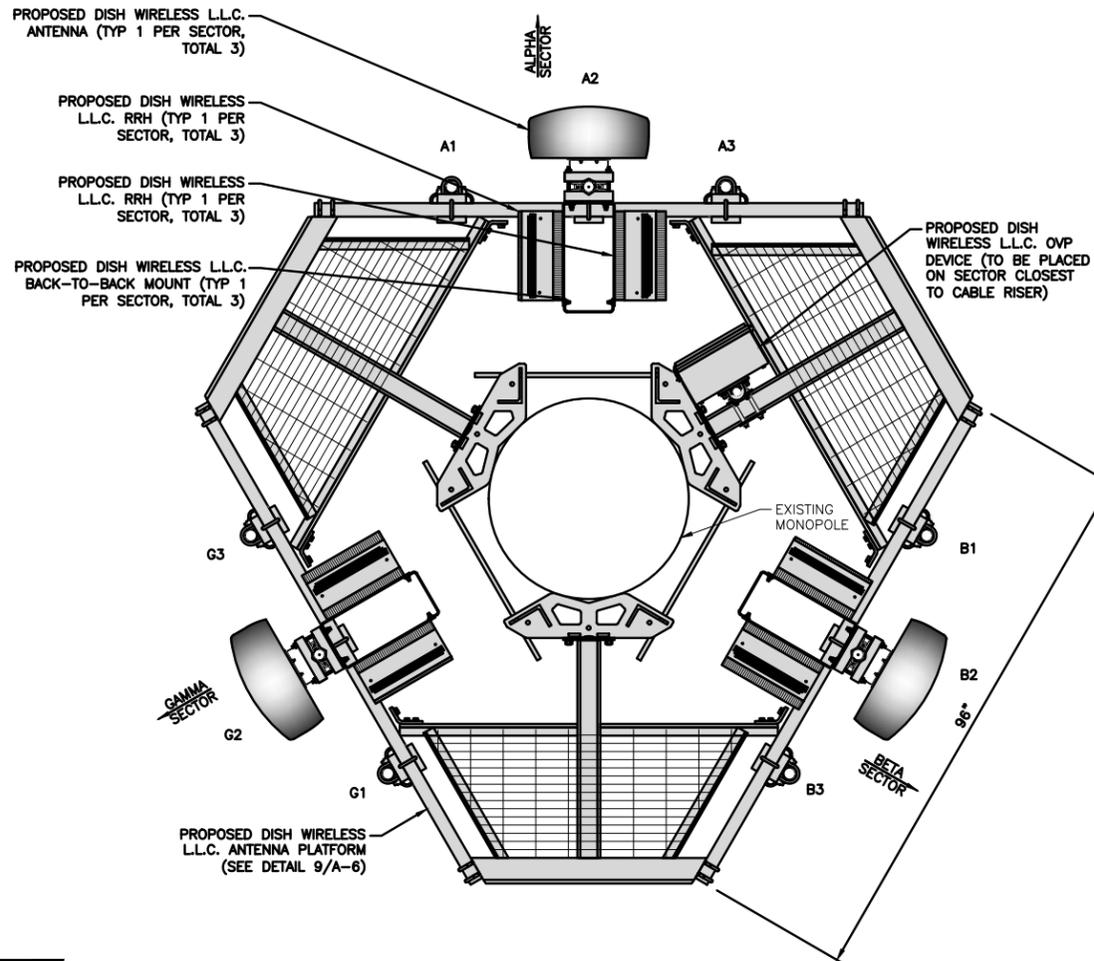
EXISTING MONOPOLE

EXISTING ENTRY PORT

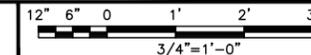
PROPOSED WEST ELEVATION



1



ANTENNA LAYOUT



2

SECTOR POS.	ANTENNA					RRH		OVP	TRANSMISSION CABLE
	EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECH	AZIMUTH	RAD CENTER	MANUFACTURER - MODEL NUMBER	TECH	MANUFACTURER MODEL	FEED LINE TYPE AND LENGTH
A1	---	---	---	---	---	---	---	---	(1) HIGH-CAPACITY HYBRID CABLE (330' LONG)
A2	PROPOSED	JMA WIRELESS - MX08FR0665-21	5G	0°	119'-0"	FUJITSU - TA08025-B604 FUJITSU - TA08025-B605	5G	RAYCAP RDIDC-9181-PF-48	
A3	---	---	---	---	---	---	---	---	
B1	---	---	---	---	---	---	---	---	SHARED W/ALPHA
B2	PROPOSED	JMA WIRELESS - MX08FR0665-21	5G	120°	119'-0"	FUJITSU - TA08025-B604 FUJITSU - TA08025-B605	5G	SHARED W/ALPHA	
B3	---	---	---	---	---	---	---	---	
G1	---	---	---	---	---	---	---	---	SHARED W/ALPHA
G2	PROPOSED	JMA WIRELESS - MX08FR0665-21	5G	240°	119'-0"	FUJITSU - TA08025-B604 FUJITSU - TA08025-B605	5G	SHARED W/ALPHA	
G3	---	---	---	---	---	---	---	---	

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

*SEE LATEST DISH RFDS FOR AZIMUTH INFORMATION AT TIME OF BUILD

ANTENNA SCHEDULE

NO SCALE

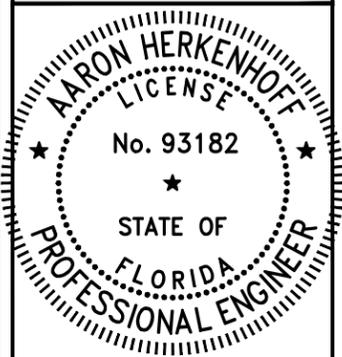
3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299



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DRAWN BY:	CHECKED BY:	APPROVED BY:
AJM	EEW	AH
RFDS REV #:	TBD	

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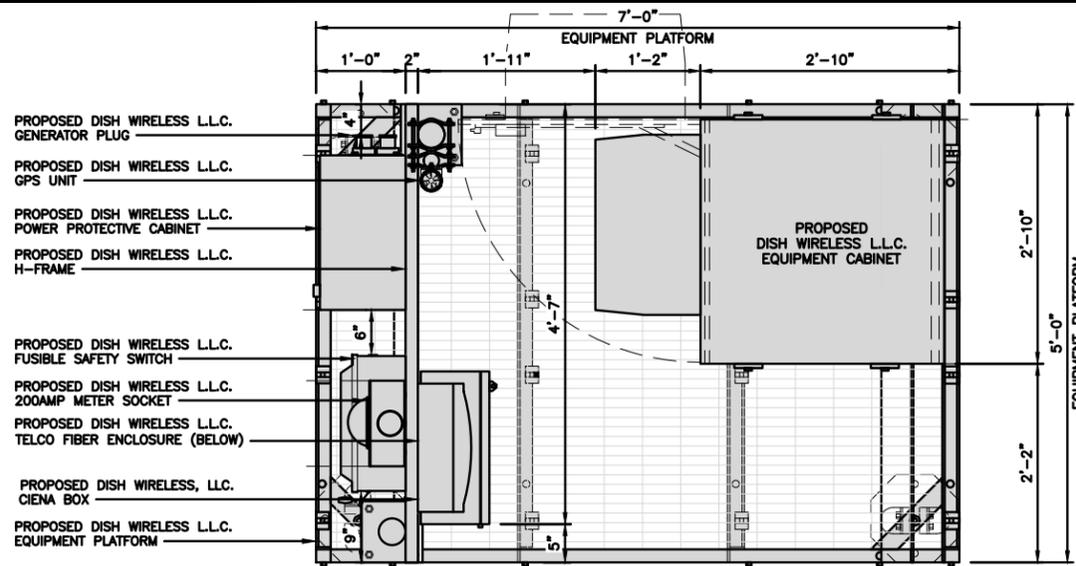
A&E PROJECT NUMBER
878206

DISH WIRELESS L.L.C.
PROJECT INFORMATION
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

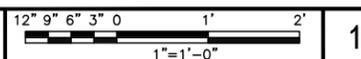
SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



PLATFORM EQUIPMENT PLAN

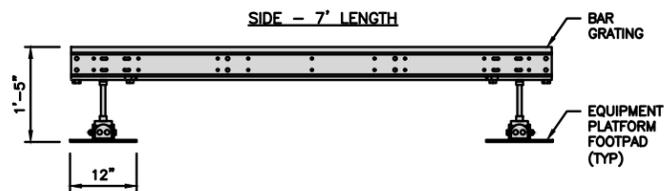
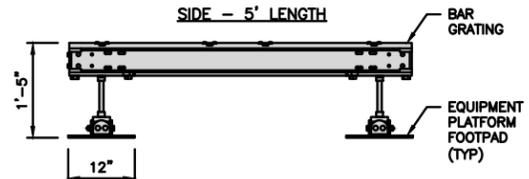
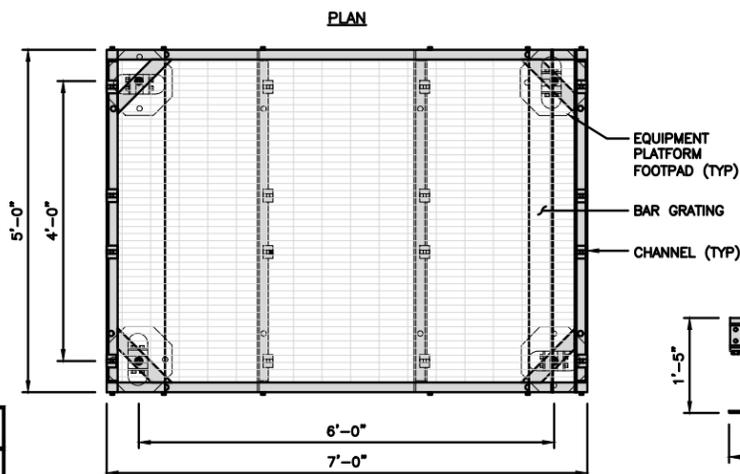


1

COMMSCOPE MTC4045LP
5X7 PLATFORM

DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

NOTE:
GC TO PROVIDE EXTENDED
THREAD FOR PLATFORM IF
REQUIRED HEIGHT EXCEEDS 17"



NOTES

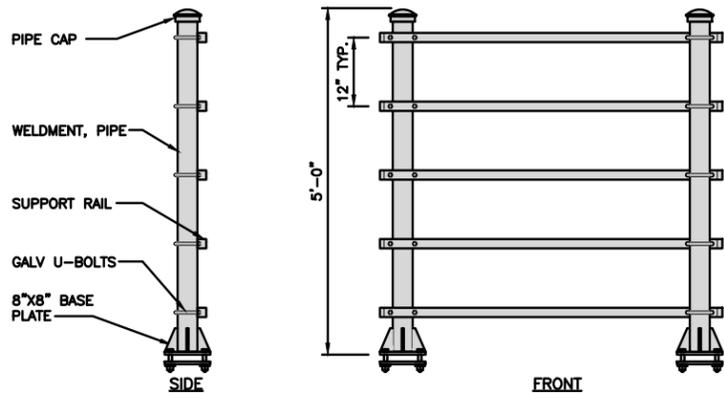
1. PLATFORM TO BE LEVELED TO NO MORE THAN +/- 1 DEGREE FROM HORIZONTAL ON BOTH PLANES.

PLATFORM DETAIL

NO SCALE 2

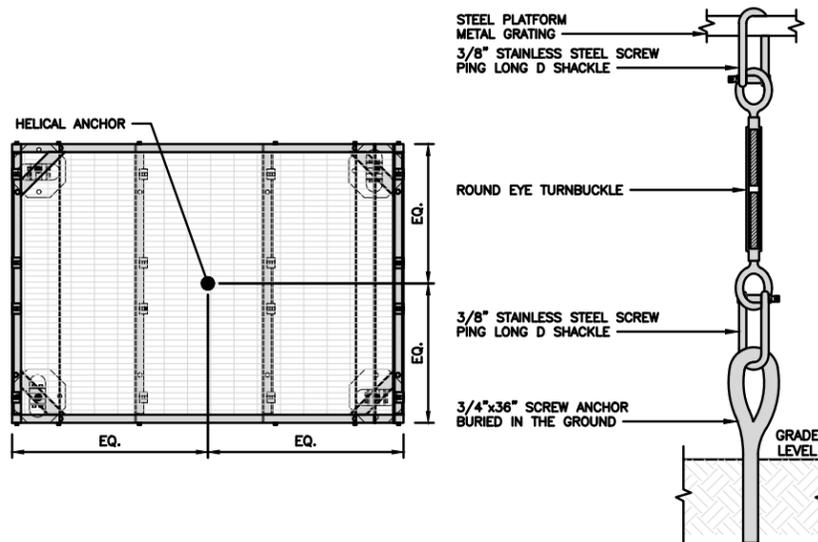
KENWOOD T1701KT5-5S
H-FRAME

UNISTRUT/SUPPORT RAIL	5
WEIGHT/ VOLUME	173.6 LBS



H-FRAME DETAIL

NO SCALE 3

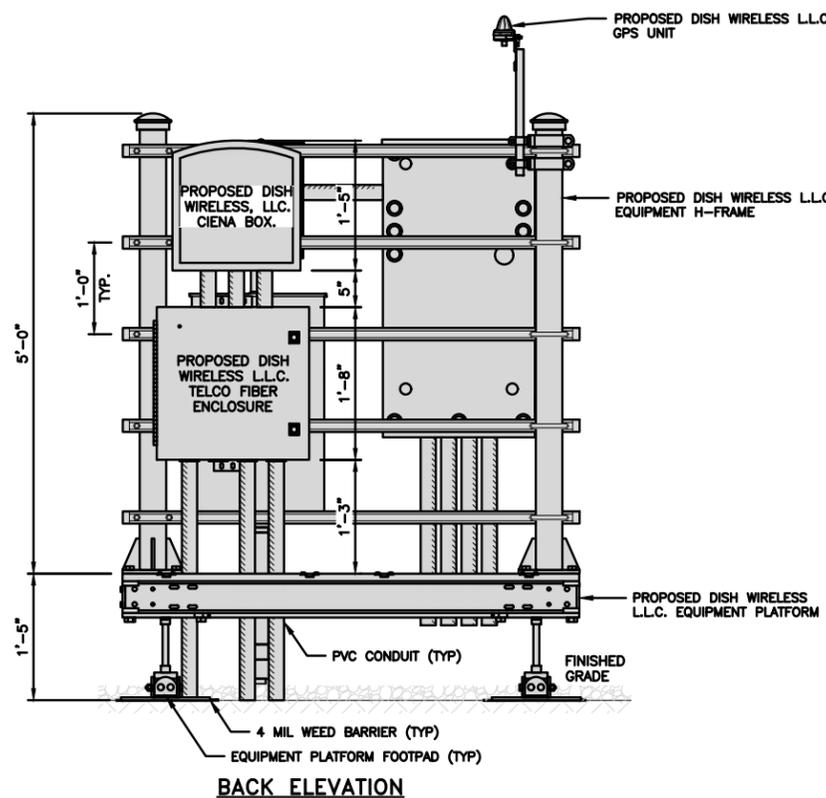
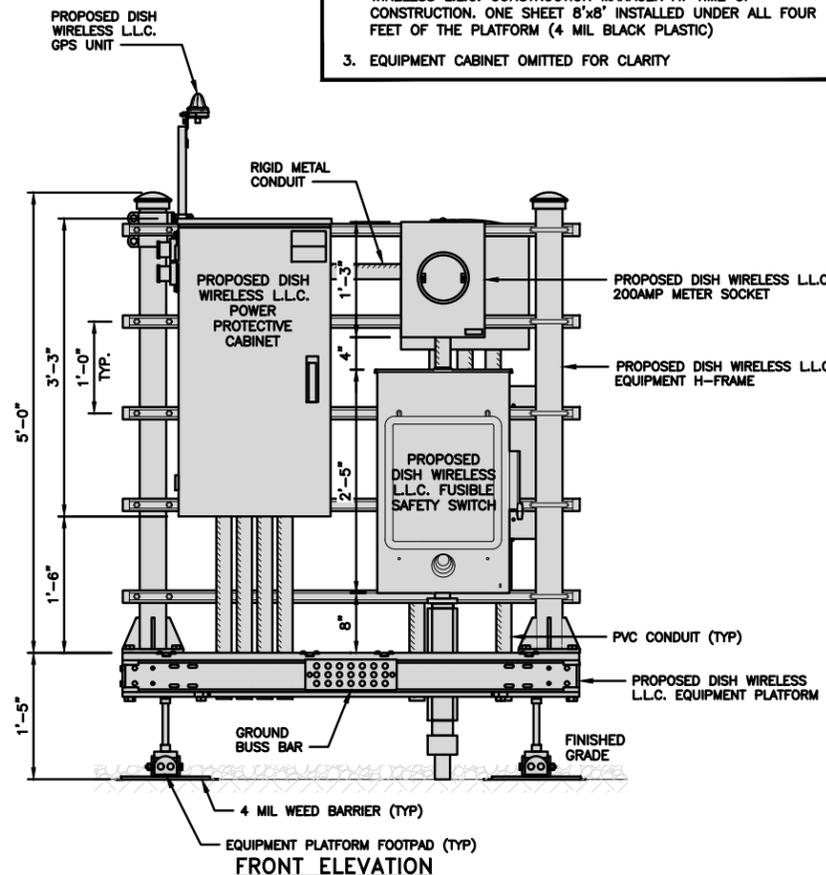


PLATFORM ANCHORAGE DETAIL

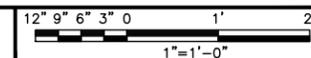
NO SCALE 4

NOTES

1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH WIRELESS L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
3. EQUIPMENT CABINET OMITTED FOR CLARITY



H-FRAME EQUIPMENT ELEVATION



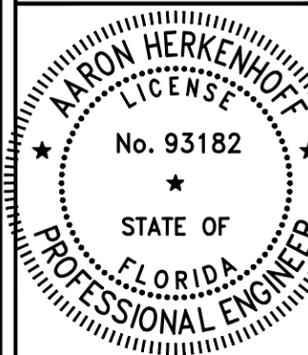
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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299



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AJM EEW AH

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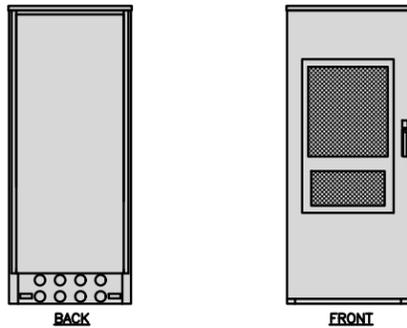
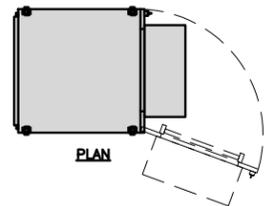
DISH WIRELESS L.L.C.
PROJECT INFORMATION
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER

A-3

ENERSYS HEX CABINET 2000005996	
DIMENSIONS (HxWxD):	73"x30"x32"
WEIGHT EMPTY:	376 lbs
HEATER	800W
POWER SYSTEM	-48V ALPHA/600A

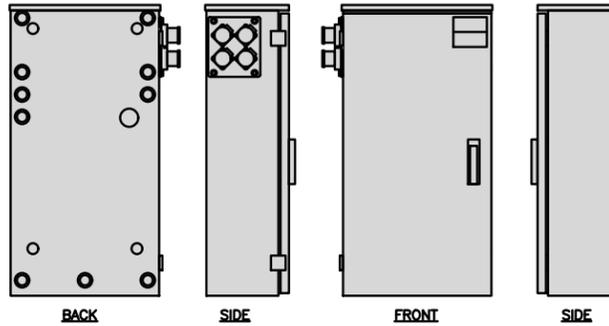
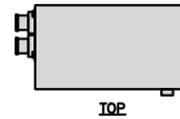


CABINET DETAIL

NO SCALE

1

RAYCAP PPC RDIAC-2465-P-240-MTS	
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G

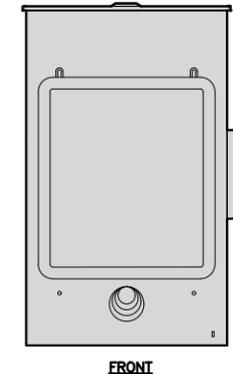
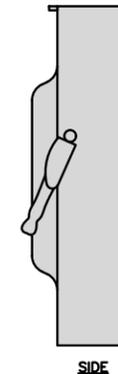
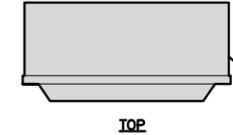


POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

2

SQUARE D FUSIBLE SAFETY SWITCH D224NRB	
ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E-2875

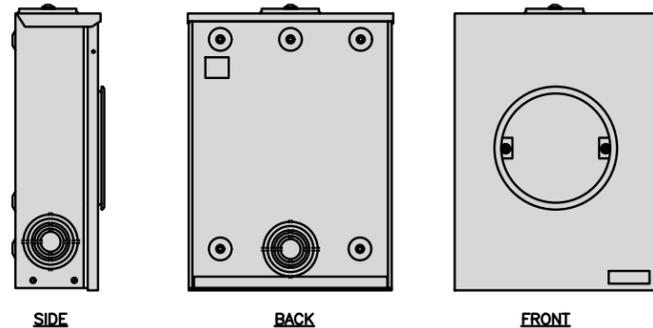
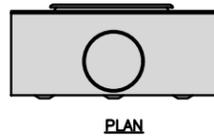


FUSIBLE SAFETY SWITCH DETAIL

NO SCALE

3

EATON METER SOCKET UNRRS213BEUSE	
METER SOCKET TYPE	RING
ENCLOSURE DIM (HxWxD)	16"x12"x6"
MAIN AMPERE RATING	200A
WEIGHT	18 LBS

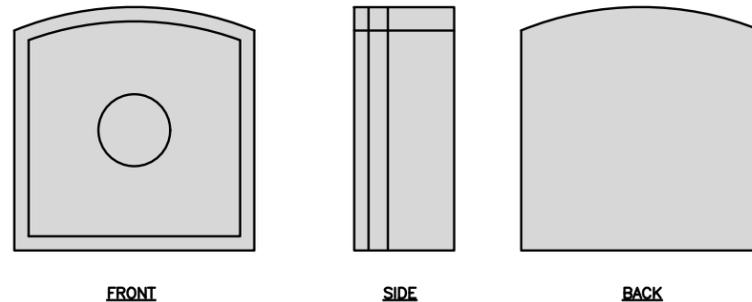
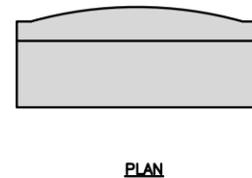


METER SOCKET DETAIL

NO SCALE

4

CIENA 3931 SERVICE DELIVERY SWITCH	
DIMENSIONS (HxWxD)	17.0"x16.8"x7.0" 431x427x178mm
WEIGHT	28.6 LBS/13.0 KG
POWER INPUT	60W MAX

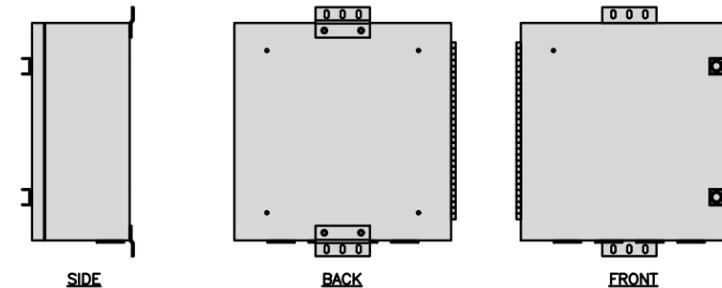


CIENA DETAIL

NO SCALE

5

CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



FIBER TELCO ENCLOSURE DETAIL

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299



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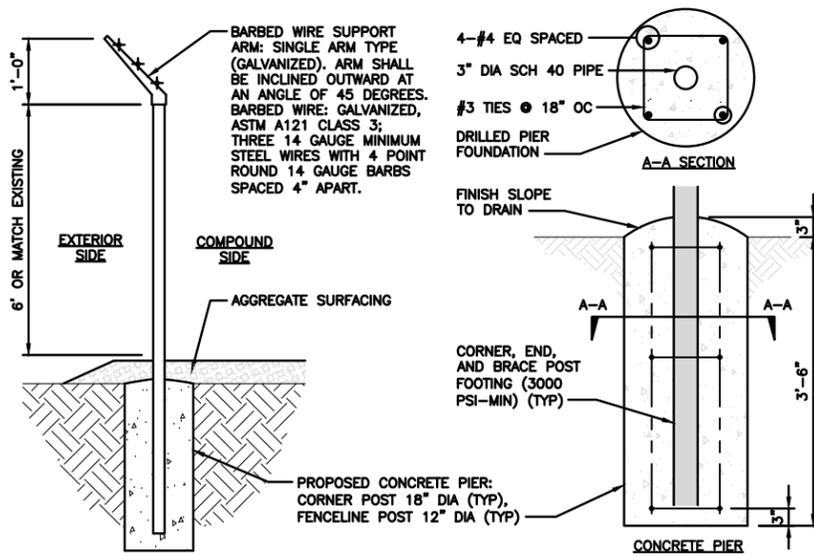
A&E PROJECT NUMBER
878206

DISH WIRELESS L.L.C.
PROJECT INFORMATION
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

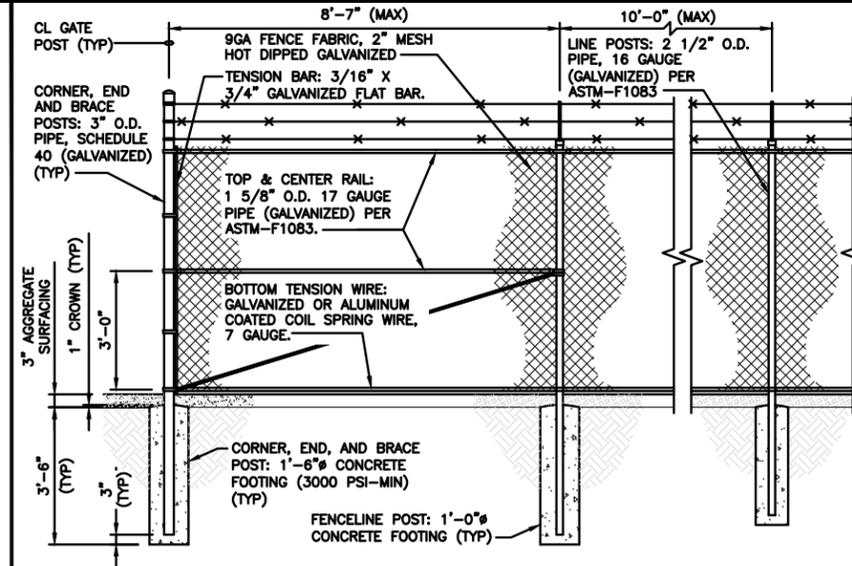
- 1 LINE POSTS: 2 1/2" O.D. PIPE, 16 GAUGE (GALVANIZED) PER ASTM-F1083.
- 2 CORNER, END AND BRACE POSTS: 3" O.D. PIPE, SCHEDULE 40 (GALVANIZED).
- 3 TOP RAIL: 1 5/8" O.D. 17 GAUGE PIPE (GALVANIZED) PER ASTM-F1083.
- 4 BRACE RAIL: 1 5/8" O.D. 17 GAUGE PIPE (GALVANIZED).
- 5 DIAGONAL TRUSS ROD: 3/8" GALVANIZED ROD WITH TURNBUCKLE.
- 6 TENSION BAR: 3/16" X 3/4" GALVANIZED FLAT BAR.
- 7 BOTTOM TENSION WIRE: GALVANIZED OR ALUMINUM COATED COIL SPRING WIRE, 7 GAUGE.
- 8 GATE POSTS: 2 7/8" O.D. SCHEDULE 40 PIPE (GALVANIZED).
- 9 COMBINATION PADLOCK ACCORDING TO DISH WIRELESS REQUIREMENTS.
- 10 GATE FRAMES: 1 7/8" O.D. SCHEDULE 40 PIPE (GALVANIZED).
- 11 BARBED WIRE SUPPORT ARM: SINGLE ARM TYPE (GALVANIZED). ARM SHALL BE INCLINED OUTWARD AT AN ANGLE OF 45 DEGREES.
- 12 BARBED WIRE: GALVANIZED, ASTM A121 CLASS 3; THREE 14 GAUGE MINIMUM STEEL WIRES WITH 4 POINT ROUND 14 GAUGE BARBS SPACED 4" APART.
- 13 9GA FENCE FABRIC, 2" MESH HOT DIPPED GALVANIZED
- 14 MISCELLANEOUS:
 - A. RAIL COUPLINGS: SLEEVE TYPE, 6" LONG EXPANSION SPRING EVERY FIFTH COUPLING.
 - B. POST TOPS: PRESSED STEEL, MALLEABLE IRON WITH PRESSED STEEL EXTENSION ARM, OR ONE-PIECE ALUMINUM CASTING; WITH HOLE FOR TOP, ALL DESIGNED TO FIT OVER THE OUTSIDE OF THE POSTS AND TO PREVENT ENTRY OF MOISTURE INTO TUBULAR POSTS.
 - C. LATCHES SHALL BE FORKED TYPE AND SHALL BE ARRANGED FOR PADLOCKING WITH THE PADLOCK ACCESSIBLE FROM BOTH SIDES OF THE GATE.
 - D. KEEPERS SHALL CONSIST OF MECHANICAL DEVICES FOR SECURING AND SUPPORTING THE FREE END OF THE GATES WHEN IN THE FULL OPEN POSITION. KEEPERS SHALL BE MOUNTED ON 2 7/8" O.D. PIPE POSTS FILLED WITH CONCRETE AND SET IN CONCRETE FOUNDATIONS.
 - E. INSTALL FENCING PER ASTM-F567.
 - F. INSTALL SWING GATES PER ASTM-F900.
 - G. LOCAL ORDINANCE OF BARBED WIRE PERMIT REQUIREMENT SHALL BE COMPLETED IF REQUIRED.
 - H. USE GALVANIZED HOG RING WIRE TO MOUNT ALL SIGNS.
 - I. ALL SIGNS MUST BE MOUNTED ON INSIDE OF FENCE.



TYPICAL FENCE & CONCRETE PIER SECTION

NO SCALE

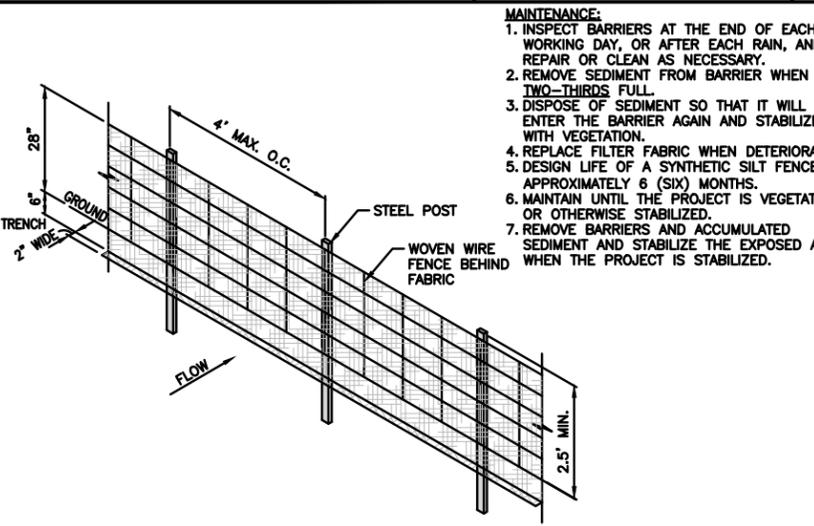
2



TYPICAL FENCE DETAIL

NO SCALE

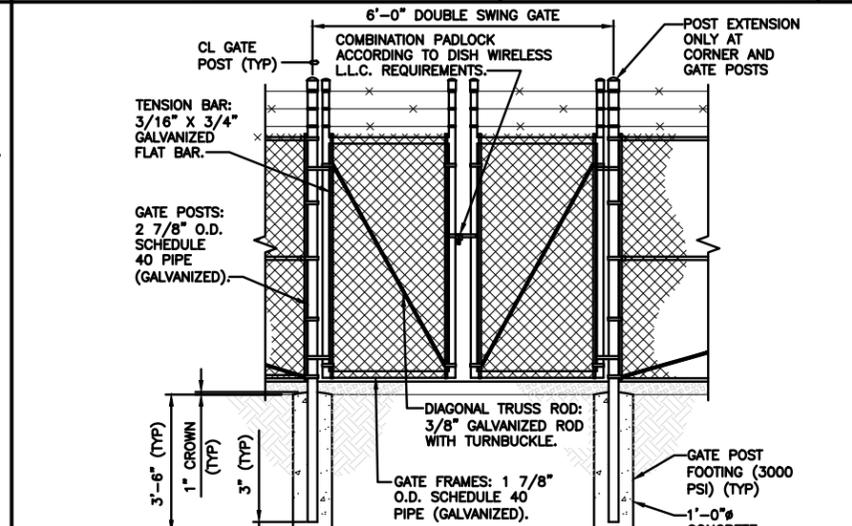
3



SD1 TYPE C SEDIMENTATION BARRIER DETAIL

NO SCALE

4



TYPICAL GATE ELEVATION DETAIL

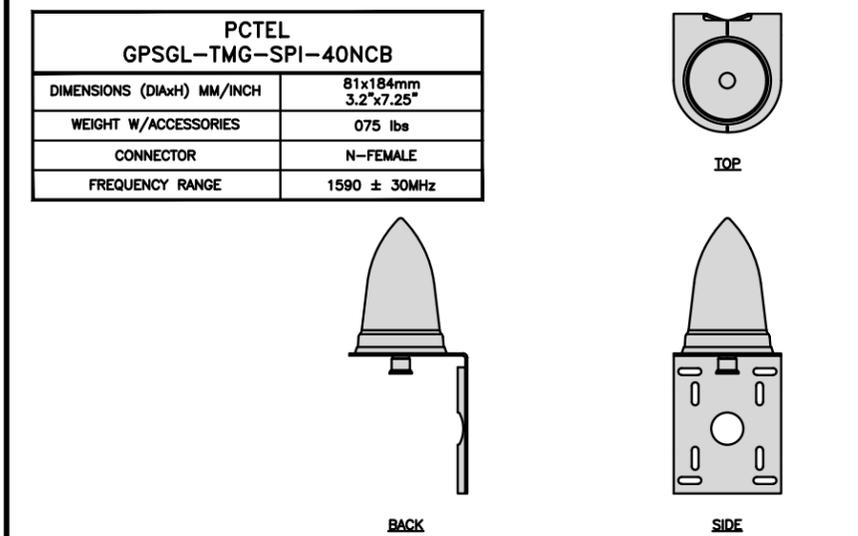
NO SCALE

5

MATERIAL DESCRIPTION

NO SCALE

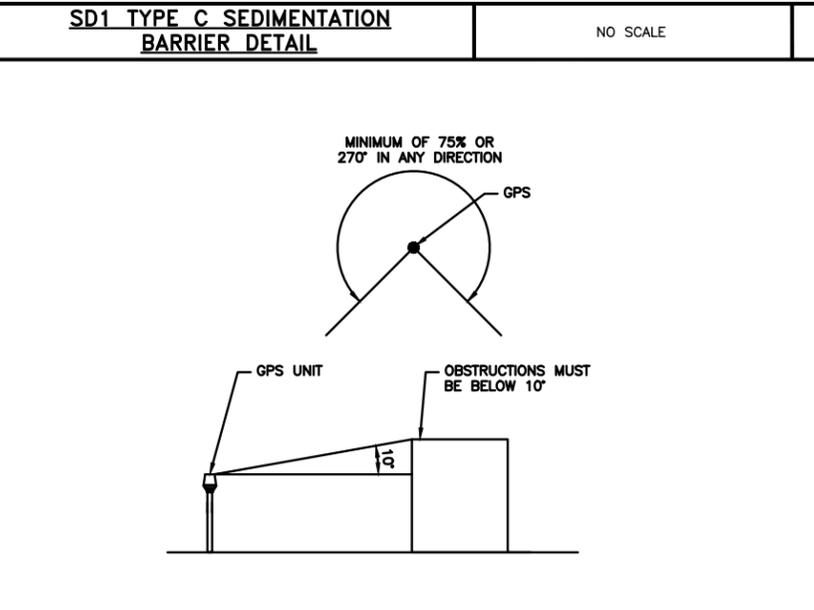
1



GPS DETAIL

NO SCALE

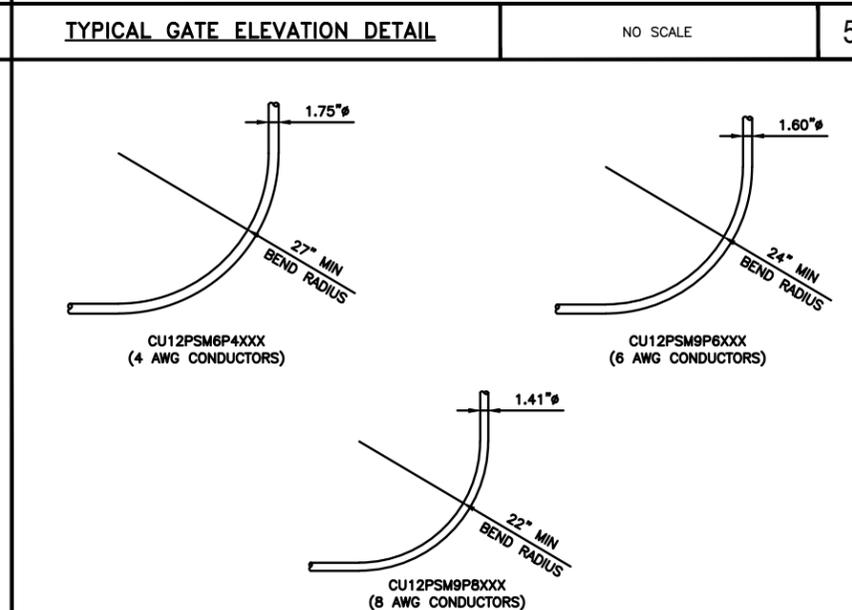
6



GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

7



CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUSSES

NO SCALE

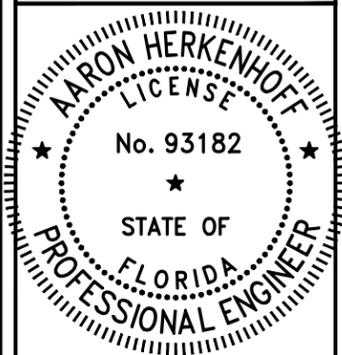
8



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299



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AJM EEW AH

RFDS REV #: TBD

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7	11/16/2023	JURISDICTION REVISION

A&E PROJECT NUMBER
878206

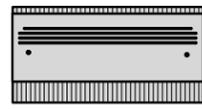
DISH WIRELESS L.L.C.
PROJECT INFORMATION
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
EQUIPMENT DETAILS

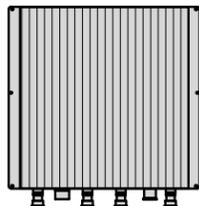
SHEET NUMBER

A-5

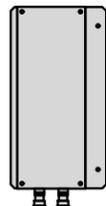
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



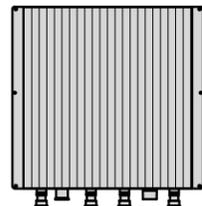
PLAN



BACK



SIDE



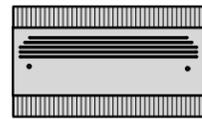
FRONT

REMOTE RADIO HEAD DETAIL (RRH)

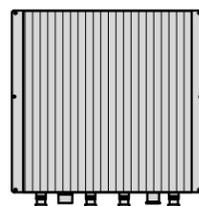
NO SCALE

1

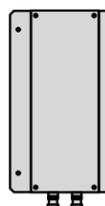
FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



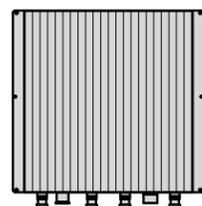
PLAN



BACK



SIDE



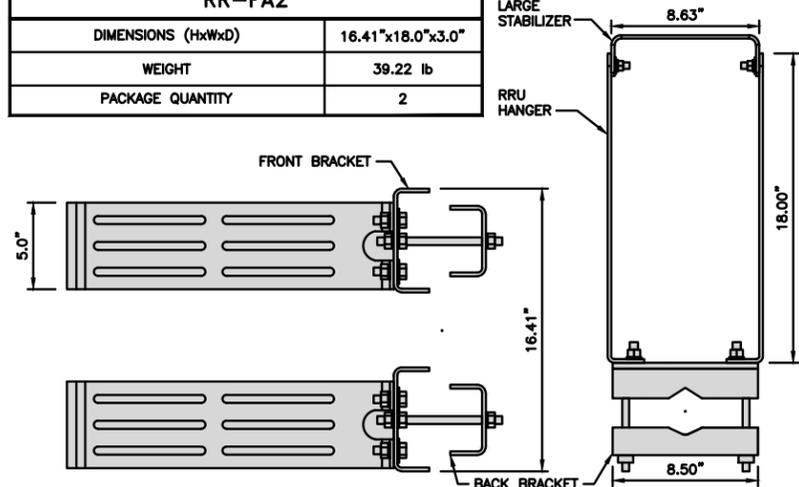
FRONT

REMOTE RADIO HEAD DETAIL (RRH)

NO SCALE

2

COMMSCOPE BACK-TO-BACK MOUNT RR-FA2	
DIMENSIONS (HxWxD)	16.41"x18.0"x3.0"
WEIGHT	39.22 lb
PACKAGE QUANTITY	2



NOTE:
OR DISH WIRELESS L.L.C.
APPROVED EQUIVALENT

REMOTE RADIO MOUNT DETAIL

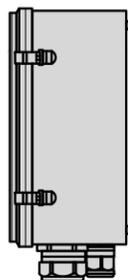
NO SCALE

3

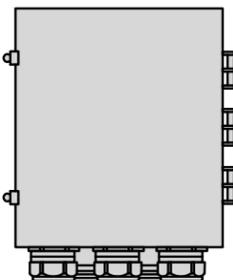
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



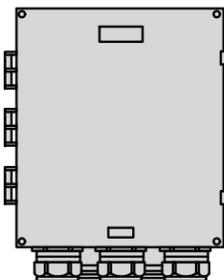
PLAN



SIDE



BACK



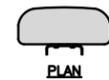
FRONT

SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

4

JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	64.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE



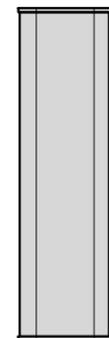
PLAN



BACK



SIDE



FRONT

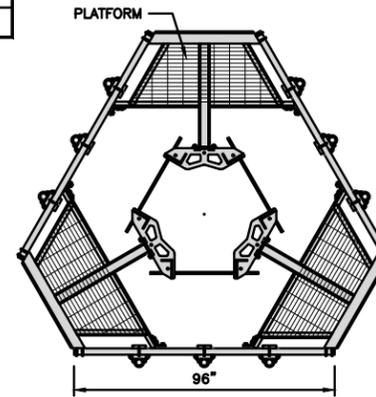
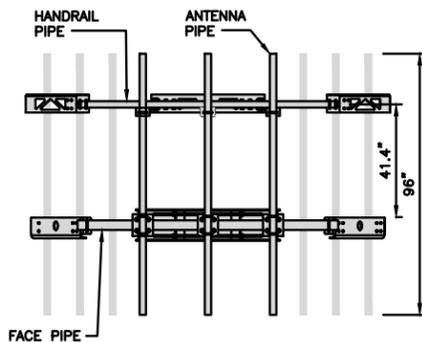
ANTENNA DETAIL

NO SCALE

5

COMMSCOPE MC-PK8-DSH	
FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	

NOTE:
OR DISH WIRELESS L.L.C.
APPROVED EQUIVALENT

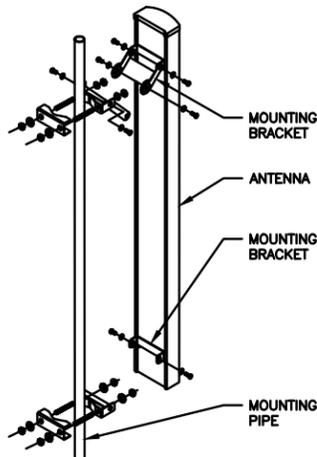


ANTENNA PLATFORM DETAIL

NO SCALE

9

M04 MOUNTING BRACKET HPA-33R-BUU-H4-K	
WIDTH	5"
DEPTH	2"
HEIGHT	8"
TOTAL WEIGHT	1.5 lbs
HOUSING MATERIAL	ASA/ABS/ALUMINUM
RADOME COLOR	LIGHT GRAY
CONNECTOR	1x8-PIN DAISY CHAIN



NOTE:
OR DISH WIRELESS L.L.C.
APPROVED EQUIVALENT

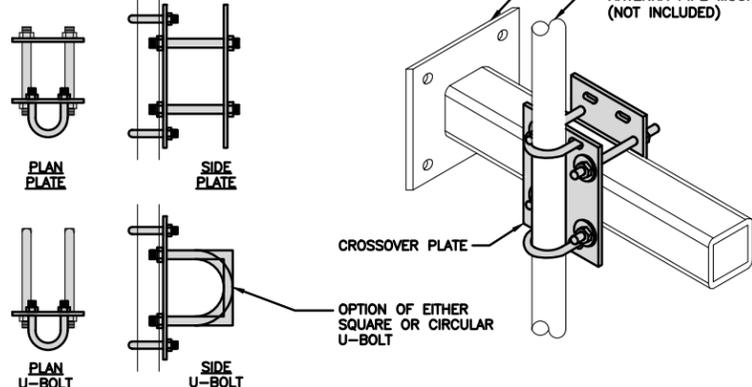
ANTENNA MOUNTING DETAIL

NO SCALE

7

COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 LBS

NOTE:
OR DISH WIRELESS L.L.C.
APPROVED EQUIVALENT



RRH/OVP MOUNT DETAIL

NO SCALE

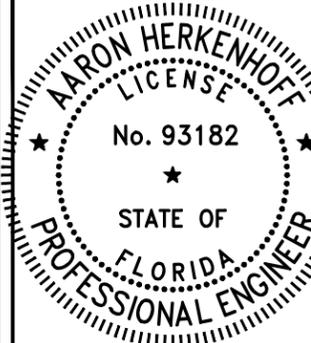
8



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299



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A&E PROJECT NUMBER
878206

DISH WIRELESS L.L.C.
PROJECT INFORMATION
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

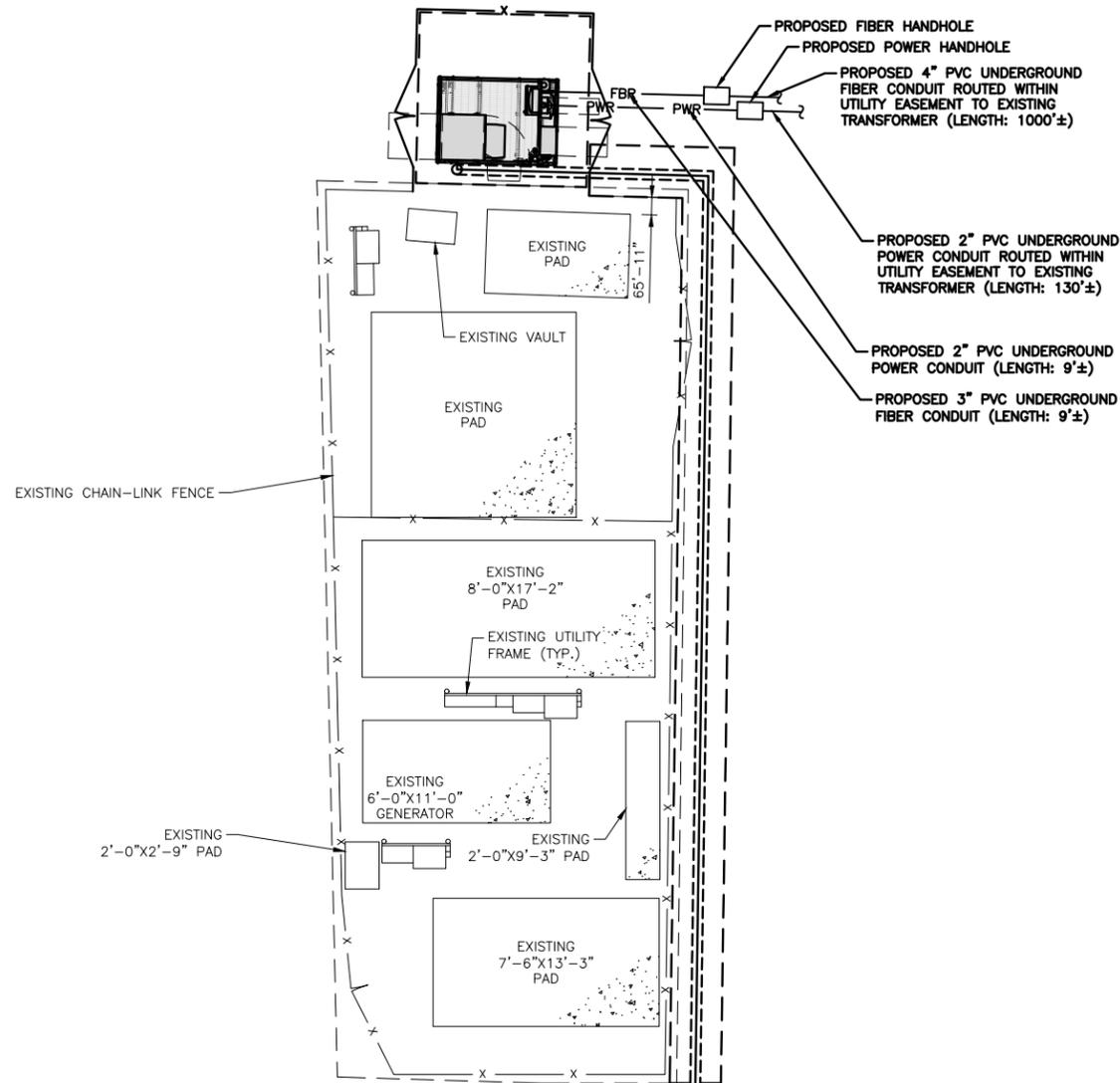
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-6

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. THE GROUND LEASE PROVIDES BROAD/BLANKET UTILITY RIGHTS. "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS NOT AN OPTION, PLEASE NOTIFY CROWN CASTLE REAL ESTATE AS FURTHER COORDINATION MAY BE NEEDED.



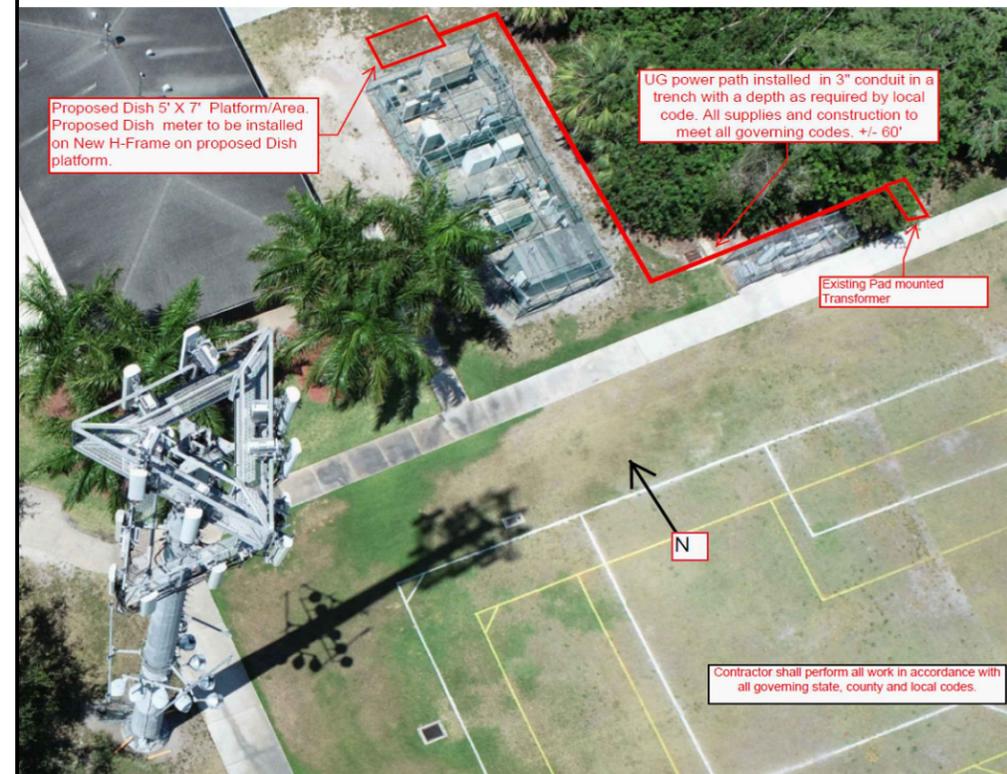
DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
4. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.
7. CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST-CONSTRUCTION EQUIPMENT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.
13. ALL TRENCHES IN COMPOUND TO BE HAND DUG.

ELECTRICAL NOTES

NO SCALE

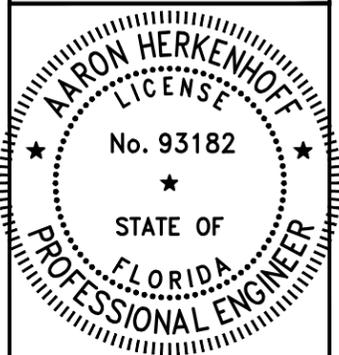
2



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299



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A&E PROJECT NUMBER
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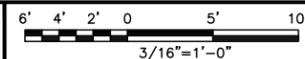
DISH WIRELESS L.L.C.
PROJECT INFORMATION
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER

E-1

UTILITY ROUTE PLAN



1

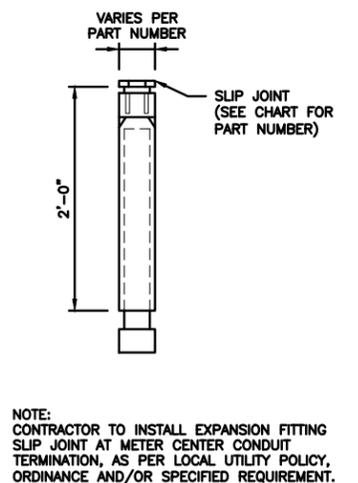
ESA

NO SCALE

3

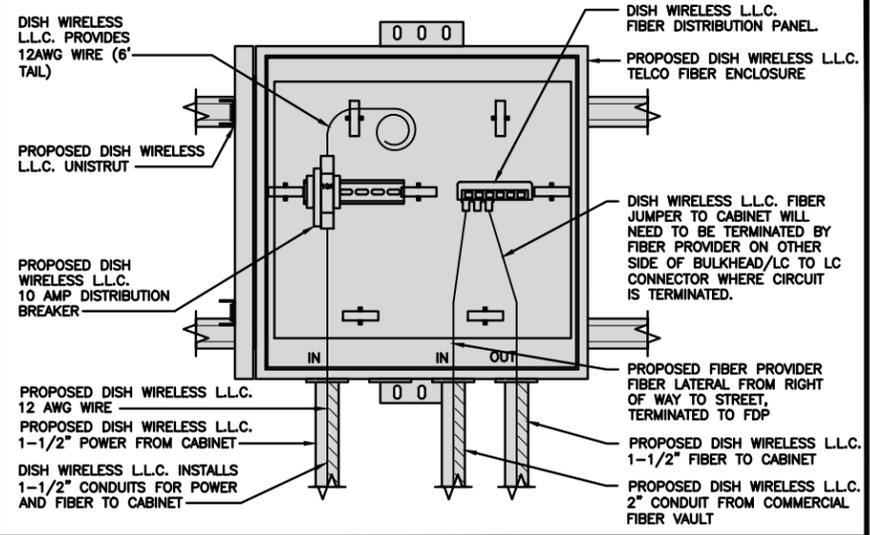
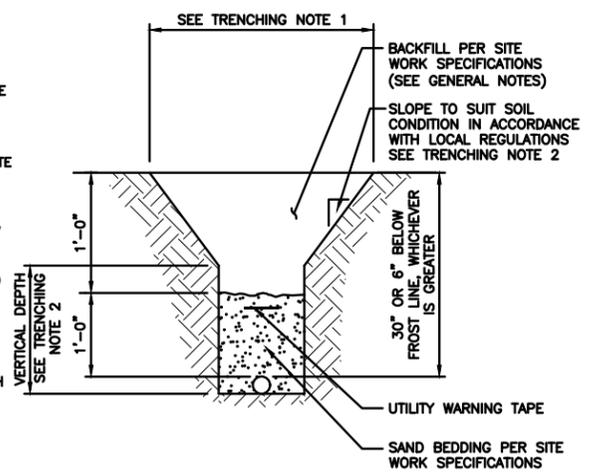
CARLON EXPANSION FITTINGS

COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N	E945NX	4"	5	8"
E945P	E945PX	5"	1	8"
E945R	E945RX	6"	1	8"



TRENCHING NOTES

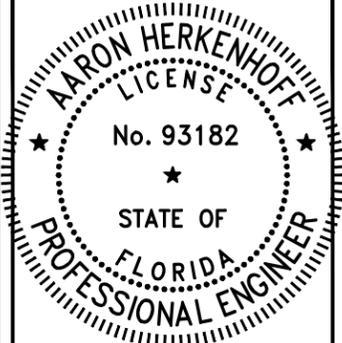
- CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
- TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
- ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.



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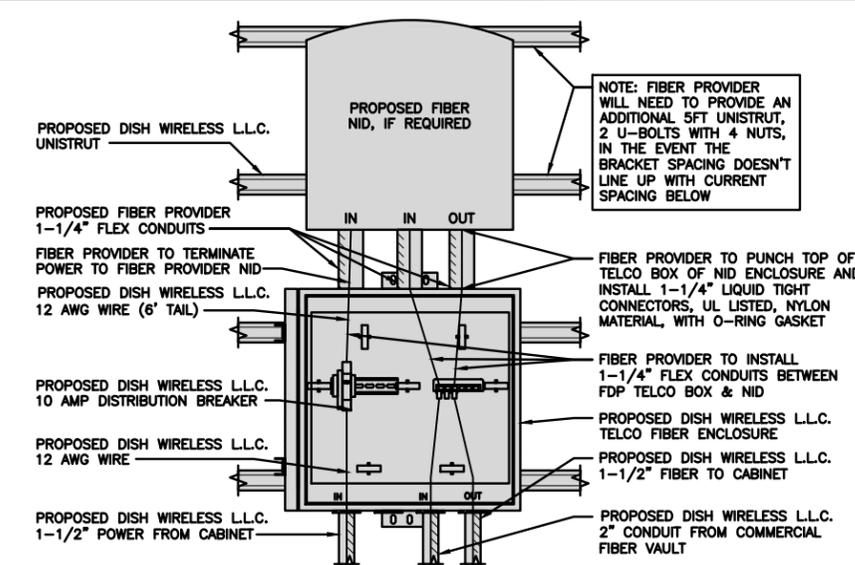
SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2

EXPANSION JOINT DETAIL NO SCALE 1

TYPICAL UNDERGROUND TRENCH DETAIL NO SCALE 2

DARK TELCO BOX - INTERIOR WIRING LAYOUT NO SCALE 3



LIT TELCO BOX - INTERIOR WIRING LAYOUT (OPTIONAL) NO SCALE 4

NOT USED NO SCALE 5

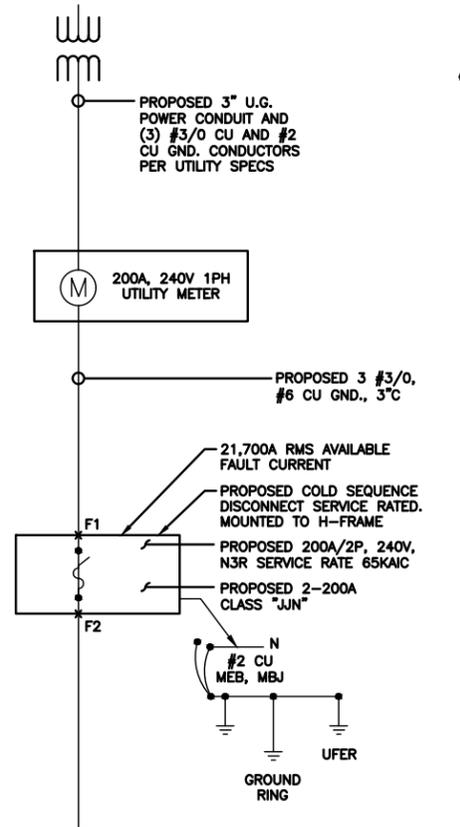
NOT USED NO SCALE 6

NOT USED NO SCALE 7

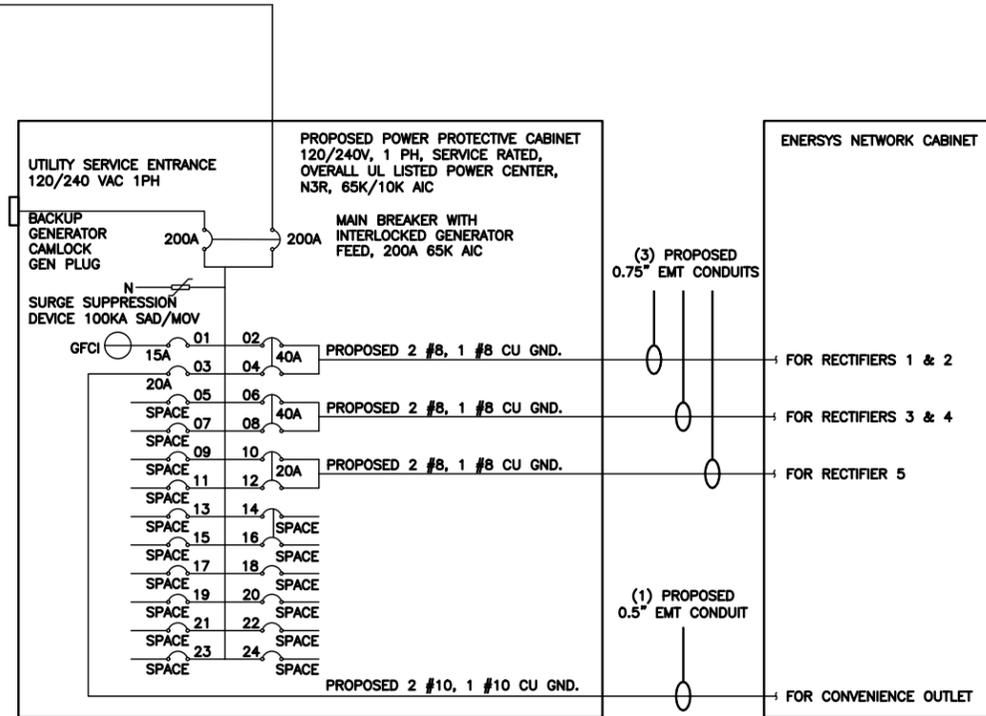
NOT USED NO SCALE 8

NOT USED NO SCALE 9

PROPOSED STEP-DOWN TRANSFORMER



(3) 3/0 WITH #6 GROUND IN 3" SCH 40 CONDUIT



NOTE: BRANCH CIRCUIT WIRING SUPPLYING RECTIFIERS ARE TO BE RATED UL1015, 105°C, 600V, AND PVC INSULATED, IN THE SIZES SHOWN IN THE ONE-LINE DIAGRAM. CONTRACTOR MAY SUBSTITUTE UL1015 WIRE FOR THWN-2 FOR CONVENIENCE OUTLET BRANCH CIRCUIT.

BREAKERS REQUIRED:
 (2) 40A, 2P BREAKER - SQUARE D P/N:Q0240
 (1) 20A, 2P BREAKER - SQUARE D P/N:Q0220
 (1) 20A, 1P BREAKER - SQUARE D P/N:Q0120

PPC ONE-LINE DIAGRAM

NO SCALE 1

PROPOSED ENERSYS PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS)		LOAD SERVED
	L1	L2						L1	L2	
PPC GFCI OUTLET	180	180	15A	1	A	2	40A	3840	3840	ENERSYS ALPHA CORDEX RECTIFIERS 1 & 2
ENERSYS GFCI OUTLET			20A	3	B	4	40A	3840	3840	ENERSYS ALPHA CORDEX RECTIFIER 3 & 4
-SPACE-				5	A	6	20A	1920	1920	ENERSYS ALPHA CORDEX RECTIFIER 5
-SPACE-				7	B	8				-SPACE-
-SPACE-				9	A	10				-SPACE-
-SPACE-				11	B	12				-SPACE-
-SPACE-				13	A	14				-SPACE-
-SPACE-				15	B	16				-SPACE-
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						9600	9600	
200A MCB, 1φ, 24 SPACE, 120/240V				L1	L2					
MB RATING: 65,000 AIC				9780	9780					VOLTAGE AMPS
				82	82					AMPS
										MAX AMPS
										MAX 125%

PANEL SCHEDULE

NO SCALE 2

NOT USED

NOTES

ELECTRICAL CONTRACTOR TO CALCULATE MAXIMUM AVAILABLE FAULT CURRENT AND LABEL PANEL IN ACCORDANCE WITH NEC AS REQUIRED BY JURISDICTION.

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUIT AND FEEDERS COMPLY WITH THE NEC (LISTED ON T-1) ARTICLE 210.19(A)(1) FPN NO. 4.

CONDUIT SIZING: AT 40% FILL PER NEC CHAPTER 9, TABLE 4, ARTICLE 358.
 0.5" CONDUIT - 0.122 SQ. IN AREA
 0.75" CONDUIT - 0.213 SQ. IN AREA
 2.0" CONDUIT - 1.316 SQ. IN AREA
 3.0" CONDUIT - 2.907 SQ. IN AREA

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.

#10 - 0.0211 SQ. IN X 2 = 0.0422 SQ. IN
 #10 - 0.0211 SQ. IN X 1 = 0.0211 SQ. IN <GROUND
 TOTAL = 0.0633 SQ. IN

0.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

RECTIFIER CONDUCTORS (3 CONDUITS): USING UL1015, CU.

#8 - 0.0552 SQ. IN X 2 = 0.1103 SQ. IN
 #8 - 0.0131 SQ. IN X 1 = 0.0131 SQ. IN <BARE GROUND
 TOTAL = 0.1234 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, CU.

3/0 - 0.2679 SQ. IN X 3 = 0.8037 SQ. IN
 #6 - 0.0507 SQ. IN X 1 = 0.0507 SQ. IN. <GROUND
 TOTAL = 0.8544 SQ. IN

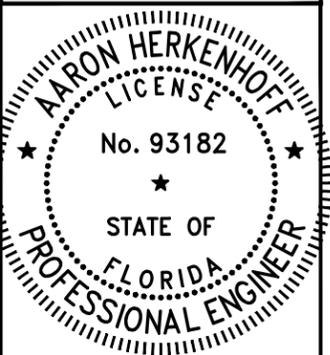
3.0" SCH 40 PVC CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (4) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299



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AJM EEW AH

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7	11/16/2023	JURISDICTION REVISION

A&E PROJECT NUMBER

878206

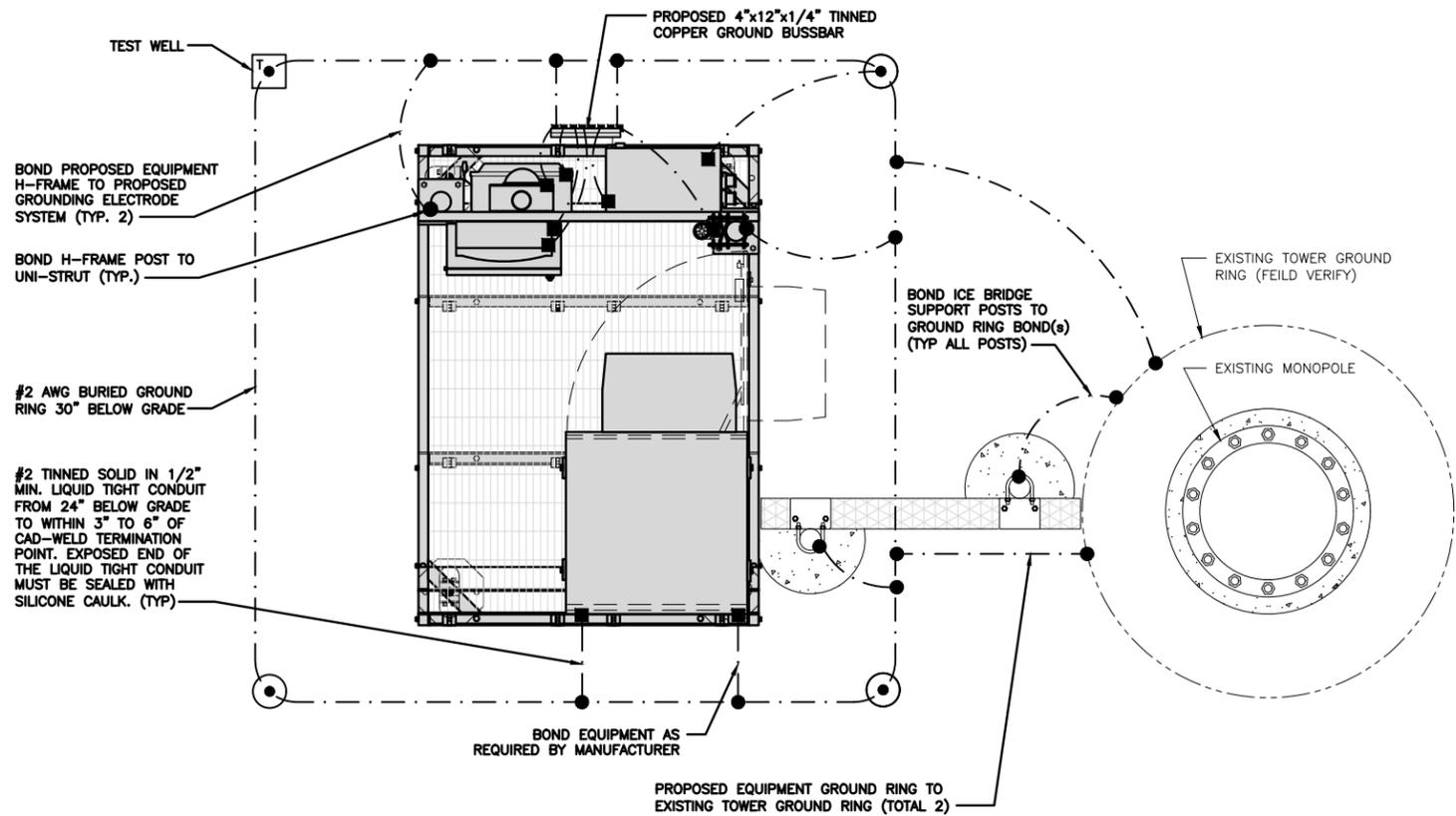
DISH WIRELESS L.L.C.
PROJECT INFORMATION

MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
ELECTRICAL ONE-LINE
& PANEL SCHEDULE

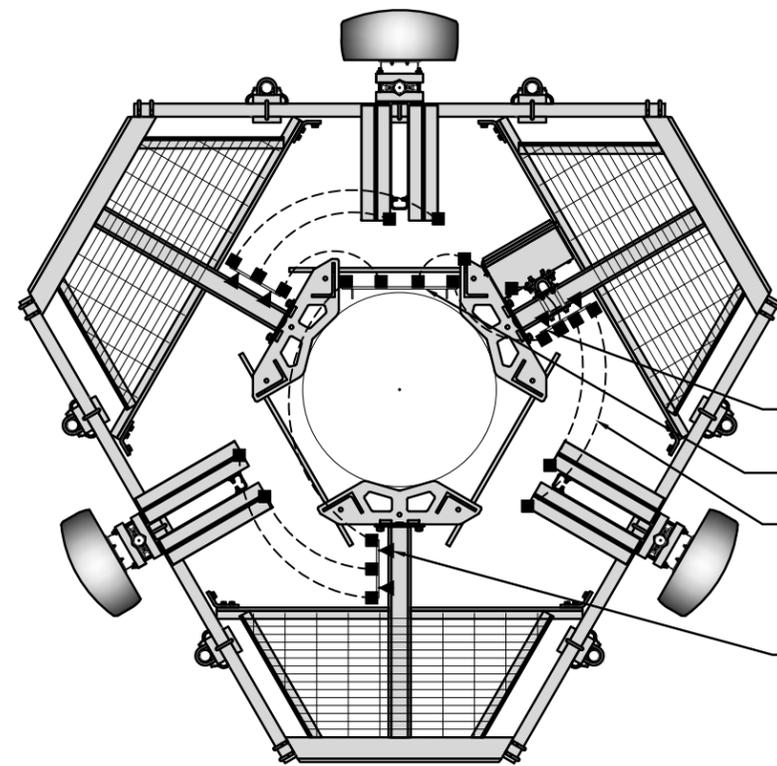
SHEET NUMBER

E-3



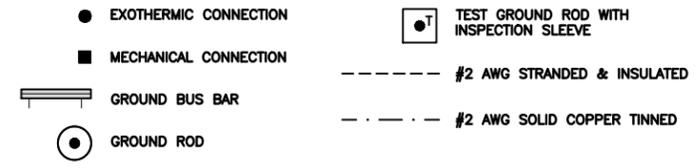
TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2



GROUNDING LEGEND

- GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
- CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH WIRELESS L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
- ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

- (A) **EXTERIOR GROUND RING:** #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- (B) **TOWER GROUND RING:** THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- (C) **INTERIOR GROUND RING:** #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- (D) **BOND TO INTERIOR GROUND RING:** #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.
- (E) **GROUND ROD:** UL LISTED COPPER CLAD STEEL, MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- (F) **CELL REFERENCE GROUND BAR:** POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- (G) **HATCH PLATE GROUND BAR:** BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- (H) **EXTERIOR CABLE ENTRY PORT GROUND BARS:** LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.
- (J) **TELCO GROUND BAR:** BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- (K) **FRAME BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- (L) **INTERIOR UNIT BONDS:** METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.
- (M) **FENCE AND GATE GROUNDING:** METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.
- (N) **EXTERIOR UNIT BONDS:** METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE
- (P) **ICE BRIDGE SUPPORTS:** EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.
- (Q) **DURING ALL DC POWER SYSTEM CHANGES** INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR
- (R) **TOWER TOP COLLECTOR BUSS BAR** IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR. REFER TO DISH WIRELESS L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES

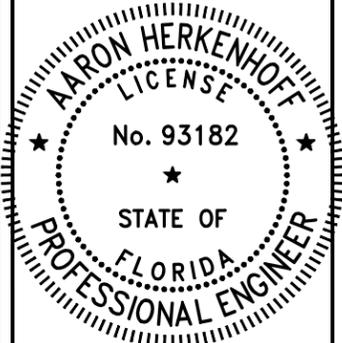
NO SCALE 3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299



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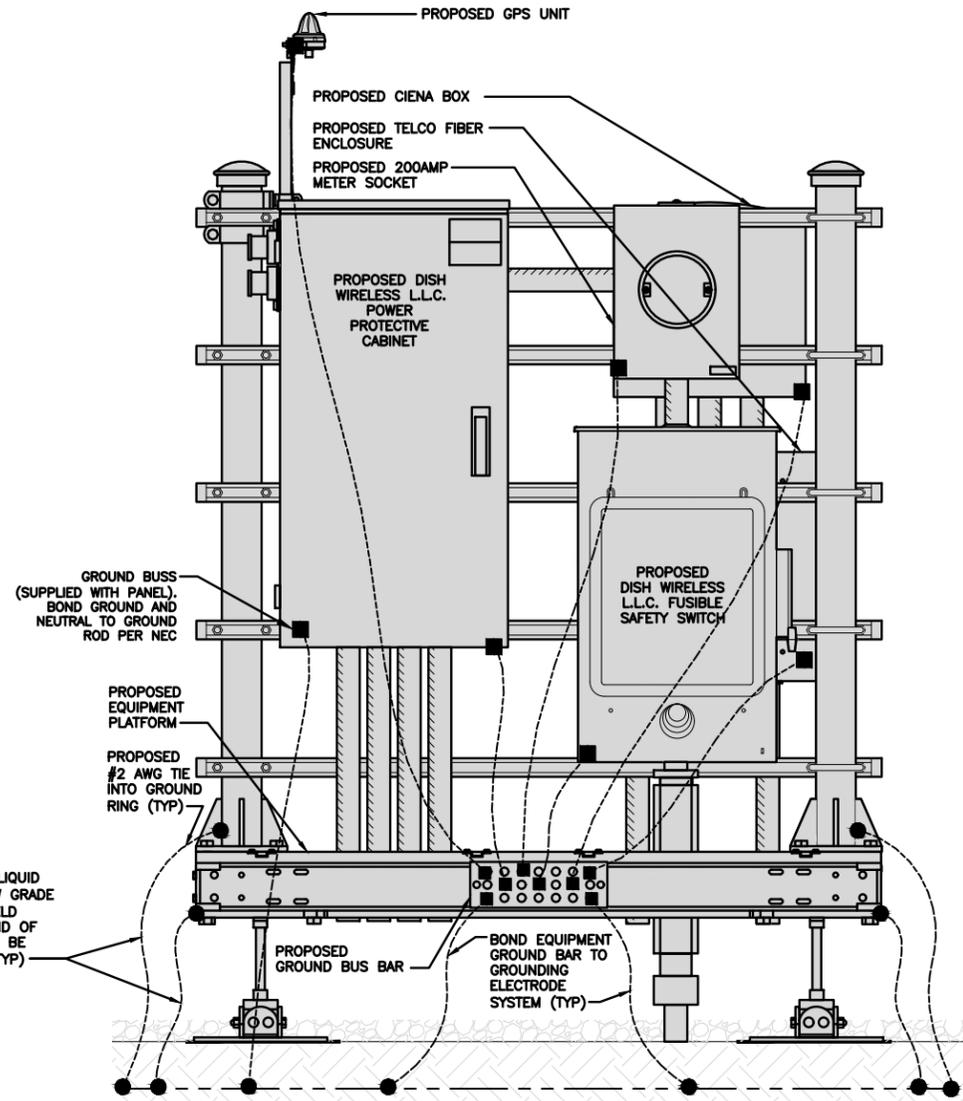
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PROJECT INFORMATION
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

G-1

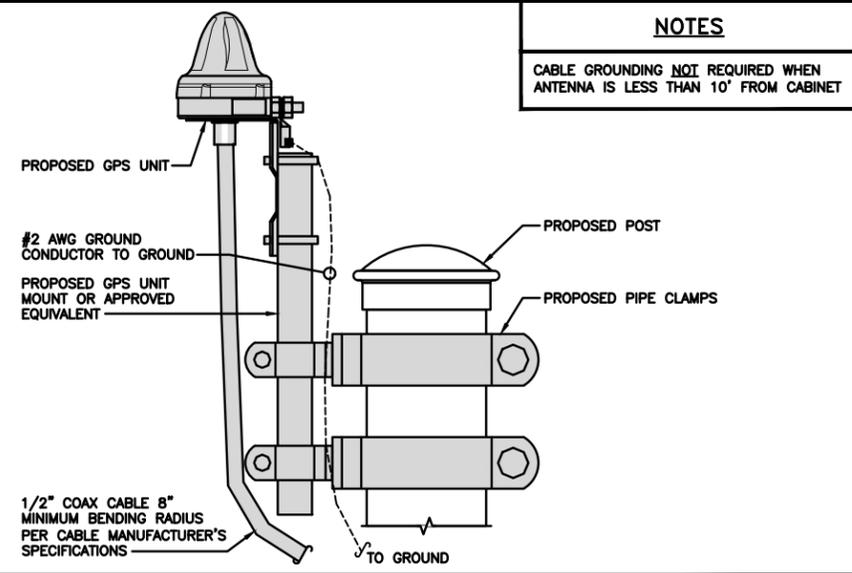
NOTES
EQUIPMENT CABINET OMITTED FOR CLARITY



#2 TINNED SOLID IN 1/2" MIN. LIQUID TIGHT CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE CAULK. (TYP)

H-FRAME GROUNDING DETAIL

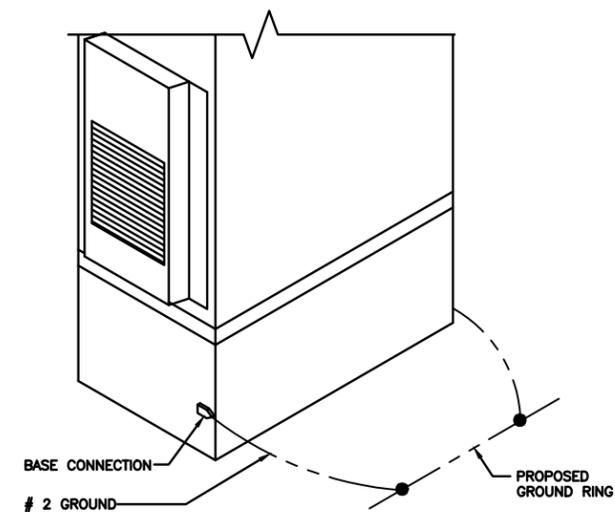
NO SCALE 1



NOTES
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET

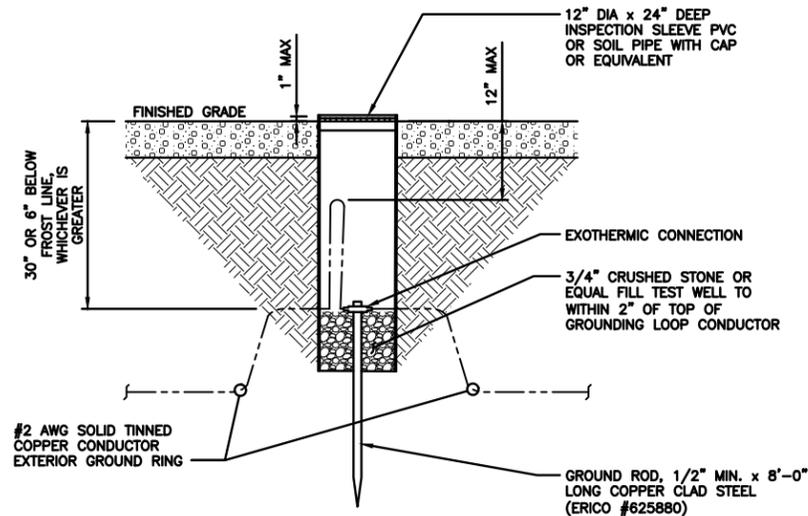
TYPICAL GPS UNIT GROUNDING

NO SCALE 2



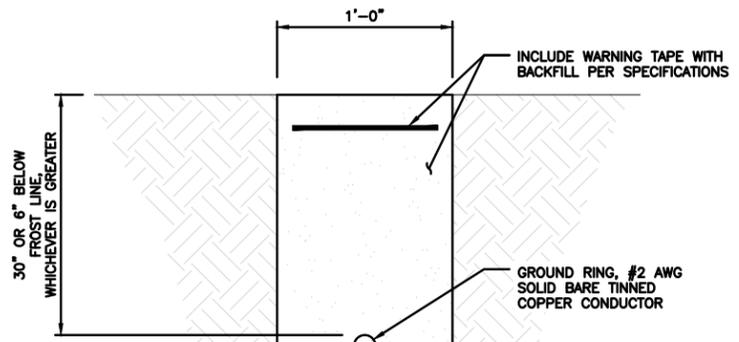
OUTDOOR CABINET GROUNDING

NO SCALE 3



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE 5



TYPICAL GROUND RING TRENCH

NO SCALE 6

NOT USED

NO SCALE 4



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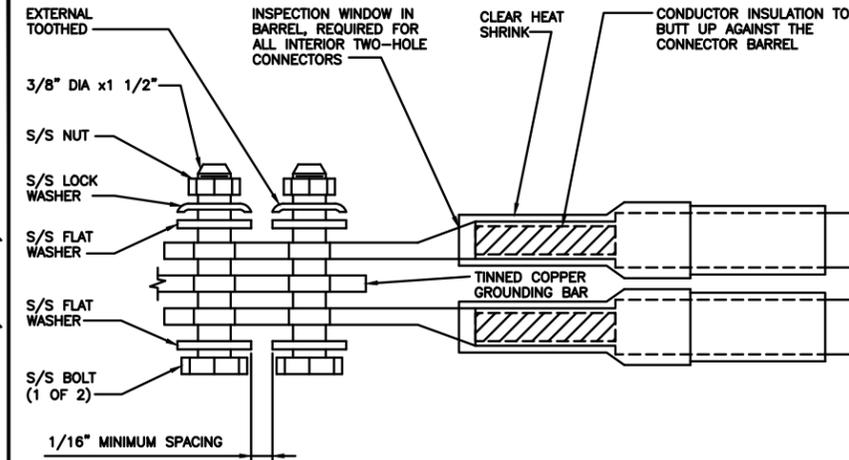
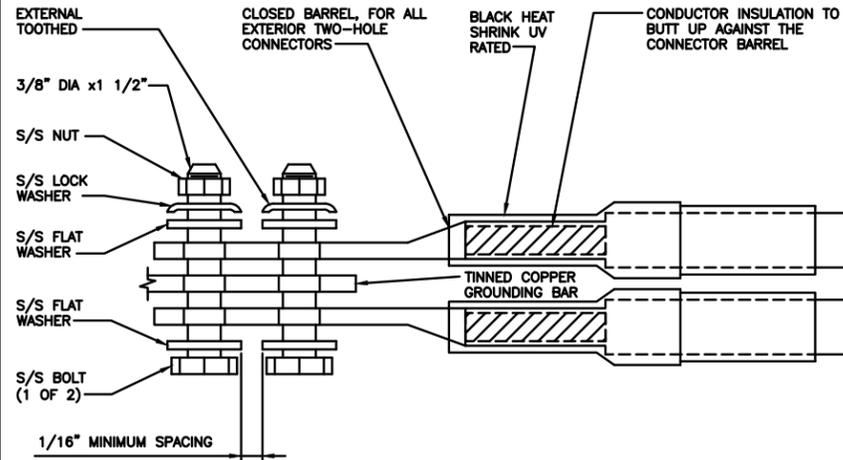
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PROJECT INFORMATION
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER

G-2

- EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
- ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
- FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
- DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
- NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.
- ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.
- ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).



TYPICAL GROUNDING NOTES

NO SCALE

1

TYPICAL EXTERIOR TWO HOLE LUG

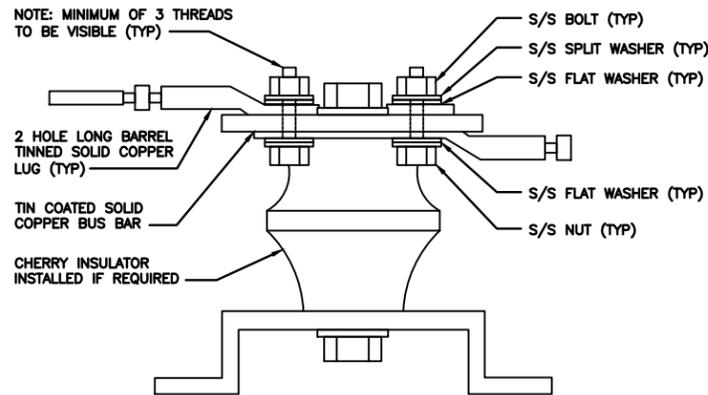
NO SCALE

2

TYPICAL INTERIOR TWO HOLE LUG

NO SCALE

3



LUG DETAIL

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

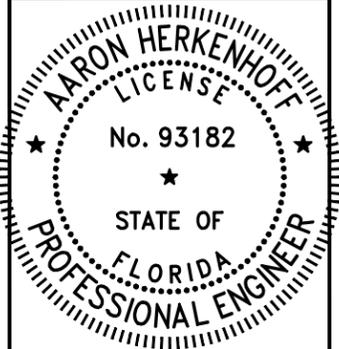
9

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

POD
POWER OF DESIGN

11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299



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PROJECT INFORMATION

MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER

G-3

RF JUMPER COLOR CODING

3/4" TAPE WIDTHS WITH 3/4" SPACING

LOW-BAND RRH - (600MHz N71 BASEBAND) + (850MHz N26 BAND) + (700MHz N29 BAND) - OPTIONAL PER MARKET

ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BANDS)

ALPHA RRH				BETA RRH				GAMMA RRH			
PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT
RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
ORANGE	ORANGE	RED	RED	ORANGE	ORANGE	BLUE	BLUE	ORANGE	ORANGE	GREEN	GREEN
	WHITE (-) PORT	ORANGE	ORANGE		WHITE (-) PORT	ORANGE	ORANGE		WHITE (-) PORT	ORANGE	ORANGE
			WHITE (-) PORT				WHITE (-) PORT				WHITE (-) PORT

MID-BAND RRH - (AWS BANDS N66+N70)

ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BANDS)

PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT
RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
PURPLE	PURPLE	RED	RED	PURPLE	PURPLE	BLUE	BLUE	PURPLE	PURPLE	GREEN	GREEN
	WHITE (-) PORT	PURPLE	PURPLE		WHITE (-) PORT	PURPLE	PURPLE		WHITE (-) PORT	PURPLE	PURPLE
			WHITE (-) PORT				WHITE (-) PORT				WHITE (-) PORT

HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS

EXAMPLE 1 - HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

EXAMPLE 2 - HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS

EXAMPLE 1	EXAMPLE 2	EXAMPLE 3
RED	RED	RED
BLUE	BLUE	
GREEN	GREEN	ORANGE
ORANGE	YELLOW	PURPLE
PURPLE		

FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

RET MOTORS AT ANTENNAS

ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"	ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"	ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

MICROWAVE RADIO LINKS

LINKS WILL HAVE A 1.5-2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE. ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.

MICROWAVE CABLES WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID'S

FORWARD AZIMUTH OF 0-120 DEGREES		FORWARD AZIMUTH OF 120-240 DEGREES		FORWARD AZIMUTH OF 240-360 DEGREES	
PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
RED	RED	BLUE	BLUE	GREEN	GREEN
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
	RED		BLUE		GREEN
	WHITE		WHITE		WHITE

RF CABLE COLOR CODES

NO SCALE

1

NOT USED

NO SCALE

4

LOW BANDS (N71+N26) OPTIONAL - (N29)
ORANGE

AWS (N66+N70+H-BLOCK)
PURPLE

CBRS TECH (3 GHz)
YELLOW

NEGATIVE SLANT PORT ON ANT/RRH
WHITE

ALPHA SECTOR

RED

BETA SECTOR

BLUE

GAMMA SECTOR

GREEN

COLOR IDENTIFIER

NO SCALE

2

NOTE: THE RF DESIGN OR ANY ASSOCIATED INFORMATION ON THIS SHEET HAS BEEN PREPARED AND DESIGNED BY OTHERS. POWER OF DESIGN GROUP DID NOT DESIGN OR PREPARE ANY RF.

NOT USED

NO SCALE

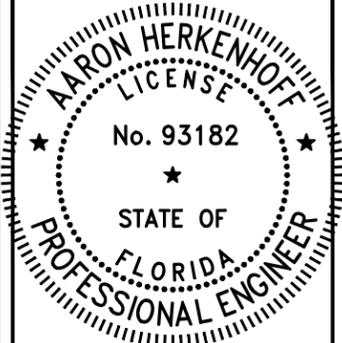
3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



11490 BLUEGRASS PKWY
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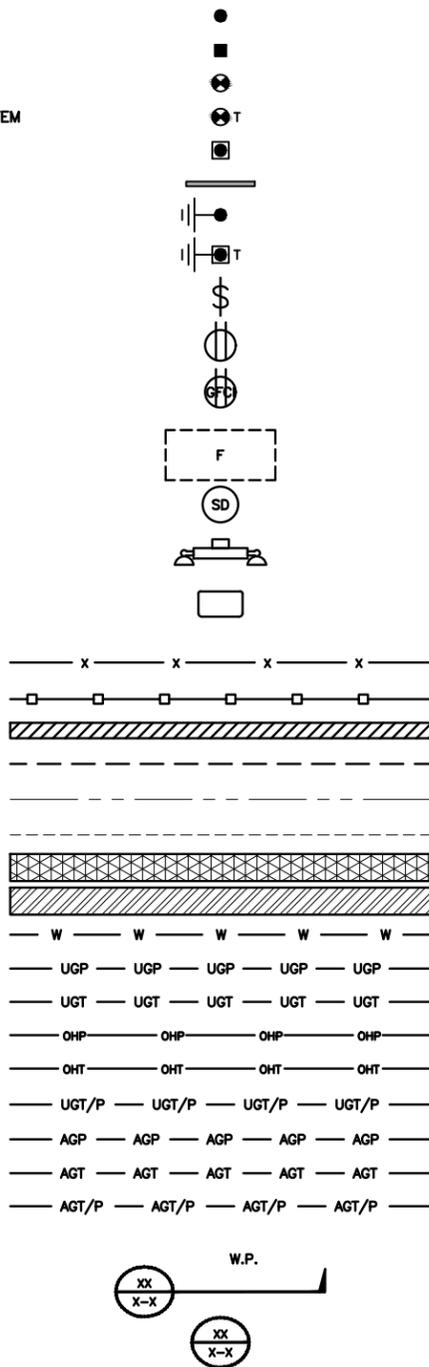
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S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

EXOTHERMIC CONNECTION
 MECHANICAL CONNECTION
 CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 EXOTHERMIC WITH INSPECTION SLEEVE
 GROUNDING BAR
 GROUND ROD
 TEST GROUND ROD WITH INSPECTION SLEEVE
 SINGLE POLE SWITCH
 DUPLEX RECEPTACLE
 DUPLEX GFCI RECEPTACLE
 FLUORESCENT LIGHTING FIXTURE
 (2) TWO LAMPS 48-T8
 SMOKE DETECTION (DC)
 EMERGENCY LIGHTING (DC)
 SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
 LED-1-25A400/51K-SR4-120-PE-DBBTXD
 CHAIN LINK FENCE
 WOOD/WROUGHT IRON FENCE
 WALL STRUCTURE
 LEASE AREA
 PROPERTY LINE (PL)
 SETBACKS
 ICE BRIDGE
 CABLE TRAY
 WATER LINE
 UNDERGROUND POWER
 UNDERGROUND TELCO
 OVERHEAD POWER
 OVERHEAD TELCO
 UNDERGROUND TELCO/POWER
 ABOVE GROUND POWER
 ABOVE GROUND TELCO
 ABOVE GROUND TELCO/POWER
 WORKPOINT
 SECTION REFERENCE
 DETAIL REFERENCE



LEGEND

AB	ANCHOR BOLT	IN	INCH
ABV	ABOVE	INT	INTERIOR
AC	ALTERNATING CURRENT	LB(S)	POUND(S)
ADDL	ADDITIONAL	LF	LINEAR FEET
AFF	ABOVE FINISHED FLOOR	LTE	LONG TERM EVOLUTION
AFG	ABOVE FINISHED GRADE	MAS	MASONRY
AGL	ABOVE GROUND LEVEL	MAX	MAXIMUM
AIC	AMPERAGE INTERRUPTION CAPACTY	MCL	MOUNT CENTER LINE
ALUM	ALUMINUM	MB	MACHINE BOLT
ALT	ALTERNATE	MECH	MECHANICAL
ANT	ANTENNA	MFR	MANUFACTURER
APPROX	APPROXIMATE	MGB	MASTER GROUND BAR
ARCH	ARCHITECTURAL	MIN	MINIMUM
ATS	AUTOMATIC TRANSFER SWITCH	MISC	MISCELLANEOUS
AWG	AMERICAN WIRE GAUGE	MTL	METAL
BATT	BATTERY	MTS	MANUAL TRANSFER SWITCH
BLDG	BUILDING	MW	MICROWAVE
BLK	BLOCK	NEC	NATIONAL ELECTRIC CODE
BLKG	BLOCKING	NM	NEWTON METERS
BM	BEAM	NO.	NUMBER
BTC	BARE TINNED COPPER CONDUCTOR	#	NUMBER
BOF	BOTTOM OF FOOTING	NTS	NOT TO SCALE
CAB	CABINET	OC	ON-CENTER
CANT	CANTILEVERED	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CHG	CHARGING	OPNG	OPENING
CLG	CEILING	P/C	PRECAST CONCRETE
CLR	CLEAR	PCS	PERSONAL COMMUNICATION SERVICES
COL	COLUMN	PCU	PRIMARY CONTROL UNIT
COMM	COMMON	PRC	PRIMARY RADIO CABINET
CONC	CONCRETE	PP	POLARIZING PRESERVING
CONSTR	CONSTRUCTION	PSF	POUNDS PER SQUARE FOOT
DBL	DOUBLE	PSI	POUNDS PER SQUARE INCH
DC	DIRECT CURRENT	PT	PRESSURE TREATED
DEPT	DEPARTMENT	PWR	POWER CABINET
DF	DOUGLAS FIR	QTY	QUANTITY
DIA	DIAMETER	RAD	RADIUS
DIAG	DIAGONAL	RECT	RECTIFIER
DIM	DIMENSION	REF	REFERENCE
DWG	DRAWING	REINF	REINFORCEMENT
DWL	DOWEL	REQ'D	REQUIRED
EA	EACH	RET	REMOTE ELECTRIC TILT
EC	ELECTRICAL CONDUCTOR	RF	RADIO FREQUENCY
EL.	ELEVATION	RMC	RIGID METALLIC CONDUIT
ELEC	ELECTRICAL	RRH	REMOTE RADIO HEAD
EMT	ELECTRICAL METALLIC TUBING	RRU	REMOTE RADIO UNIT
ENG	ENGINEER	RWY	RACEWAY
EQ	EQUAL	SCH	SCHEDULE
EXP	EXPANSION	SHT	SHEET
EXT	EXTERIOR	SIAD	SMART INTEGRATED ACCESS DEVICE
EW	EACH WAY	SIM	SIMILAR
FAB	FABRICATION	SPEC	SPECIFICATION
FF	FINISH FLOOR	SQ	SQUARE
FG	FINISH GRADE	SS	STAINLESS STEEL
FIF	FACILITY INTERFACE FRAME	STD	STANDARD
FIN	FINISH(ED)	STL	STEEL
FLR	FLOOR	TEMP	TEMPORARY
FDN	FOUNDATION	THK	THICKNESS
FOC	FACE OF CONCRETE	TMA	TOWER MOUNTED AMPLIFIER
FOM	FACE OF MASONRY	TN	TOE NAIL
FOS	FACE OF STUD	TOA	TOP OF ANTENNA
FOW	FACE OF WALL	TOC	TOP OF CURB
FS	FINISH SURFACE	TOF	TOP OF FOUNDATION
FT	FOOT	TOP	TOP OF PLATE (PARAPET)
FTG	FOOTING	TOS	TOP OF STEEL
GA	GAUGE	TOW	TOP OF WALL
GEN	GENERATOR	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TYP	TYPICAL
GLB	GLUE LAMINATED BEAM	UG	UNDERGROUND
GLV	GALVANIZED	UL	UNDERWRITERS LABORATORY
GPS	GLOBAL POSITIONING SYSTEM	UNO	UNLESS NOTED OTHERWISE
GND	GROUND	UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE	UPS	UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
HDG	HOT DIPPED GALVANIZED	VIF	VERIFIED IN FIELD
HDR	HEADER	W	WIDE
HGR	HANGER	W/	WITH
HVAC	HEAT/VENTILATION/AIR CONDITIONING	WD	WOOD
HT	HEIGHT	WP	WEATHERPROOF
IGR	INTERIOR GROUND RING	WT	WEIGHT

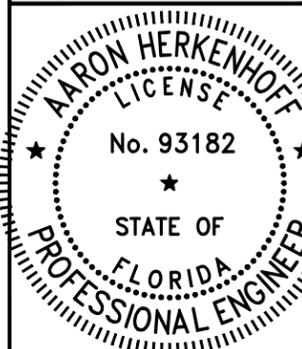
ABBREVIATIONS



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AJM	EEW	AH
RFDS REV #:		TBD

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▲	11/16/2023	JURISDICTION REVISION

A&E PROJECT NUMBER
878206

DISH WIRELESS L.L.C.
PROJECT INFORMATION
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
LEGEND AND
ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH WIRELESS L.L.C. AND TOWER OWNER NOC & THE DISH WIRELESS L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.
2. "LOOK UP" – DISH WIRELESS L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:
THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH WIRELESS L.L.C. AND DISH WIRELESS L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH WIRELESS L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH DISH WIRELESS L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH WIRELESS L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA-1019-A-2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH WIRELESS L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH WIRELESS L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

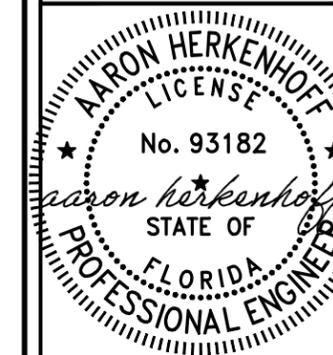
- 1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER:DISH WIRELESS L.L.C.
TOWER OWNER:TOWER OWNER
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH WIRELESS L.L.C. AND TOWER OWNER
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



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RFDS REV #:		TBD

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A&E PROJECT NUMBER
878206

DISH WIRELESS L.L.C.
PROJECT INFORMATION
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°F AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
 - #4 BARS AND SMALLER 40 ksi
 - #5 BARS AND LARGER 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
 - CONCRETE EXPOSED TO EARTH OR WEATHER:
 - #6 BARS AND LARGER 2"
 - #5 BARS AND SMALLER 1-1/2"
 - CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
 - SLAB AND WALLS 3/4"
 - BEAMS AND COLUMNS 1-1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- 4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. TIE WRAPS ARE NOT ALLOWED.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

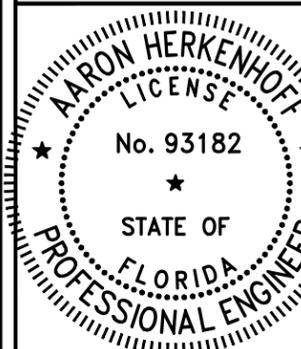
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECIMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH WIRELESS L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH WIRELESS L.L.C."
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299



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AJM	EEW	AH

RFDS REV #: TBD

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▲	11/16/2023	JURISDICTION REVISION

A&E PROJECT NUMBER
878206

DISH WIRELESS L.L.C.
PROJECT INFORMATION
MIMIA00732A
S. 100 SWEET BAY LANE
ROYAL PALM BEACH,
FL 33411

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-3

GROUNDING NOTES:

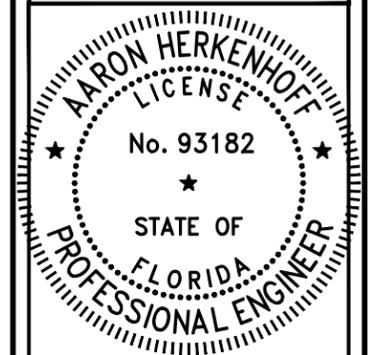
1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.



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