



DISH WIRELESS L.L.C. SITE ID:

**SFSFO00115A**

DISH WIRELESS L.L.C. SITE ADDRESS:

**4900 SONOMA HWY.  
SANTA ROSA, CA 95409**

**RECEIVED**

By Christian Candelaria at 8:29 am, Aug 17, 2023

**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 (3) PROPOSED ANTENNA T-ARM MOUNT
  - INSTALL PROPOSED JUMPERS
  - INSTALL (6) PROPOSED RRHs (2 PER SECTOR)
  - INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
  - INSTALL (1) PROPOSED HYBRID CABLE (LENGTH: 137'-0")

- GROUND SCOPE OF WORK:**
- REMOVE EXISTING FENCE SECTION
  - INSTALL PROPOSED FENCE AND GATE EXPANSION
  - INSTALL (1) PROPOSED CONCRETE PAD
  - 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 (2) PROPOSED METER MAINS (1 DISH, 1 FUTURE SERVICE)
  - INSTALL (1) PROPOSED PULL SECTION AND SERVICE GUTTER ON PROPOSED UTILITY FRAME
  - INSTALL (2) POLARUM SLB49-200-228-1U BATTERIES IN PROPOSED EQUIPMENT CABINET
  - INSTALL (1) PROPOSED BATTERY SAFETY SWITCH

**SITE INFORMATION**

PROPERTY OWNER: GRANT W. PATRICK, DVM (1)  
ADDRESS: 4900 SONOMA HWY  
SANTA ROSA, CA 95409

TOWER TYPE: MONOPINE

TOWER CO SITE ID: 815755

TOWER APP NUMBER: 562062

COUNTY: SONOMA

LATITUDE (NAD 83): 38° 27' 47.3" N  
38.463139° N

LONGITUDE (NAD 83): 122° 39' 56" W  
122.665556° W

ZONING JURISDICTION: CITY OF SANTA ROSA, CA

ZONING DISTRICT: COMMERCIAL

PARCEL NUMBER: 032-300-008

OCCUPANCY GROUP: U

CONSTRUCTION TYPE: II-B

POWER COMPANY: PG&E

TELEPHONE COMPANY: TBD

**PROJECT DIRECTORY**

APPLICANT: DISH WIRELESS L.L.C.  
5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120  
(303) 706-5008

TOWER OWNER: CROWN CASTLE USA, INC.  
2000 CORPORATE DRIVE  
CANONSBURG, PA 15317  
(877) 486-9377

SITE DESIGNER: FULLERTON ENGINEERING  
1100 E WOODFIELD, STE 500  
SCHAUMBURG, IL 60173  
(847) 908-8400

SITE ACQUISITION:  
JEFF MELVIN  
JEFF.MELVIN@CROWNCastle.COM

CONSTRUCTION MANAGER:  
TIMOTHY BROESSEL  
TIMOTHY.BROESSEL@DISH.COM

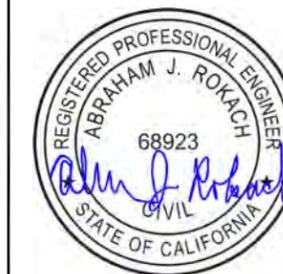
RF ENGINEER:  
CAROLINA MORALES  
CAROLINA.MORALES@DISH.COM



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



1100 E. WOODFIELD ROAD, SUITE 500  
SCHAUMBURG, ILLINOIS 60173  
TEL: 847-908-8400  
www.FullertonEngineering.com



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY: CHECKED BY: APPROVED BY:  
JES CJ CJ

RFDS REV #: 2

**CONSTRUCTION DOCUMENTS**

SUBMITTALS		
REV	DATE	DESCRIPTION
3	11/22/2022	LEASE AREA UPDATE
4	12/12/2022	ELEVATION UPDATE
5	02/02/2023	JDX REVISION
6	02/10/2023	JDX REVISION
7	04/19/2023	ADDED SURVEY
8	05/24/2023	UTILITY REVISION
9	07/28/2023	UTILITY REVISION

A&E PROJECT NUMBER  
2021.0025.815755

DISH WIRELESS L.L.C.  
PROJECT INFORMATION  
SFSFO00115A  
CA-CCI-T-815755  
4900 SONOMA HWY.  
SANTA ROSA, CA 95409

SHEET TITLE  
TITLE SHEET

SHEET NUMBER  
**T-1**

**CALIFORNIA - 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	2022 CALIFORNIA BUILDING CODE (CBC)/2021 IBC
MECHANICAL	2022 CALIFORNIA MECHANICAL CODE (CMC)/2021 UMC
ELECTRICAL	2022 CALIFORNIA ELECTRICAL CODE (CEC)/2020 NEC
FIRE	2022 CALIFORNIA FIRE CODE (CFC)/2021 IFC

**SHEET INDEX**

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
LS1	SITE SURVEY
A-1	OVERALL AND ENLARGED SITE PLAN
A-2.1	ELEVATION
A-2.2	ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT PAD AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
A-7	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE, FAULT CALCS, & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	RF SIGNAGE
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES
GN-5	GENERAL NOTES

**SITE PHOTO**

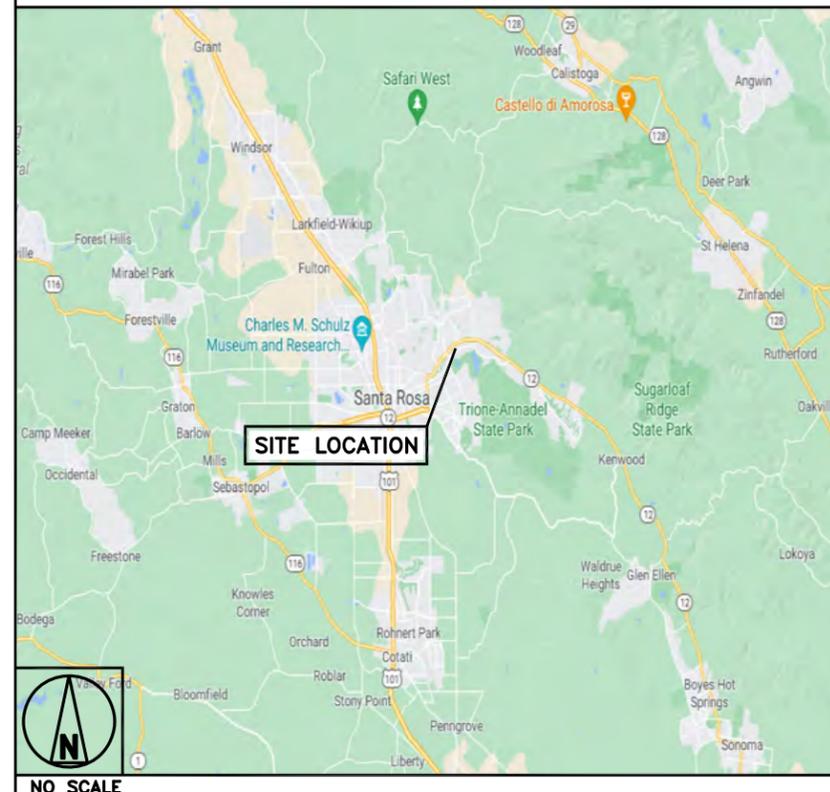


**DIRECTIONS**

**DIRECTIONS FROM CHARLES M. SCHULZ-SONOMA COUNTY AIRPORT:**

HEAD SOUTHEAST ON AIRPORT BLVD, TURN RIGHT TO STAY ON AIRPORT BLVD, TURN RIGHT TO MERGE ONTO US-101 S, MERGE ONTO US-101 S, USE THE 2ND FROM THE RIGHT LANE TO TAKE EXIT 490 FOR COLLEGE AVE, USE THE LEFT 2 LANES TO TURN LEFT ONTO COLLEGE AVE, USE ANY LANE TO TURN LEFT ONTO 4TH ST, TURN RIGHT, DESTINATION WILL BE ON THE RIGHT.

**VICINITY MAP**



UNDERGROUND SERVICE ALERT  
UTILITY NOTIFICATION CENTER OF CALIFORNIA  
(800) 642-2444  
WWW.CALIFORNIA811.ORG  
CALL 2-14 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.

# AS-BUILT SURVEY

## 815755

### RINCON VALLEY

4900 SONOMA HWY  
SANTA ROSA, CA 95409  
SONOMA COUNTY

#### LEGEND

Additional Land Building	IP / Rebar Monu	Transformes
Asphalt Pavement	IP / Rebar Monu- Found	Transformer Pid
Contour - Major	Cased Monu	Catch Basin
Contour - Minor	Cased Monu - Found	Infil.
Easement	Traverse Point	Culvert
Guiderail	Survey Point	Utility Vault
Jurisdiction Line	Gravel	Manhole
Property Line	Dirt	Handhole
Property Tie	Concrete	Pull box
Right of Way	Retaining Wall	Pedestal
Setback	Stairs	Riser
Treeline	Door / Gate	Meter
Wetland	Double Door / Gate	Valve
Railroad Tracks	Gate - Sliding	Cleanout
Centerline	Signs	Junction Box
Road Centerline	Mailbox	Pump Station
Stream	Column	Utility Box
Stream (Directional)	Utility Pole	Controller
Ditch	Guyed Pole	HVAC
Channel	Pole	Generator
Fence	Bollard	
Cable TV	Fire Hydrant	
Cable Underground	Flag Pole	
Combined Sewer	Shrub	
Cable TV & Elec	Tree - Palm	
Cable, Elec. & TV	Tree - Coniferous	
Electric	Tree - Deciduous	
Electric Underground	Metal Platform	
Fiber	Fuel Tanks	
Fiber Underground	Traffic Signal Controller	
Gas		
Sewer		
Storm		
Telephone		
Telephone Underground		
Unknown Utility		
Water		
Topo - High Point		
Topo - Low Point		
Breakline		
Match line		
Property Tie		

#### VICINITY MAP



#### SHEET INDEX

SHEET NAME	TITLE
V-01	COVER SHEET
V-02	PROPERTY OVERVIEW
V-03	SITE BOUNDARY
V-04	SITE DETAIL
V-05	LEGAL DESCRIPTIONS

#### SURVEY PROCEDURES & EQUIPMENT

The Accuracy Of This Survey Meets Or Exceeds The Minimum Standards As Required By [CA Requirements For Boundary Surveys] Instruments Used:  
-SPECTRA PRECISION SP80 W/ SMARTNET VIRTUAL NETWORK  
-TOPCON TOTAL STATION GPT-3005

#### AREA SUMMARY

AREA	SQ. FT	ACRES
PARENT PARCEL	±24,067	±0.553
TOWER LEASE AREA	±1,463	±0.033
ADDITIONAL LEASE AREA	±124	±0.002
ACCESS & UTILITY EASEMENT	±2,744	±0.063
UTILITY EASEMENT	±425	±0.009

#### COORDINATES

LABEL	LAT, LONG
FD. MON.	38° 27' 47.01", 122° 39' 54.79"
FD. MON.	38° 27' 44.38", 122° 39' 54.03"

For internal use:

SURVEY PERFORMED FOR:



1500 Corporate Drive  
Canonsburg, PA 15317

SURVEY COORDINATED BY:

GEOLINE SURVEYING, INC.  
13430 NW 10th Terrace, Suite A, Alachua, FL 32615  
Tel: (386) 418-0500 | Fax: (386) 462-9986

SURVEY PERFORMED BY:

SMITHCO SURVEYING ENGINEERING  
2005 AIRPORT DRIVE, BAKERSFIELD, CA 93308  
Tel: (661) 393-1217 | Fax: (661) 393-1218

DRWN BY: CJ | DWN BY: DA | JOB NO.: 71-618

SURVEYOR'S CERTIFICATION:

I hereby certify to Crown Castle GT Company LLC, Crown Castle USA Inc., including its parents, subsidiaries and affiliated entities, and Westcoast Land Title Insurance Company.

SURVEYOR NAME: DARIAGHAN ALBA



SIGNATURE

DATE

LEASE AREA ZONING:

CG GENERAL COMMERCIAL

LEASE AREA FLOOD NOTE:

THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD RATE MAP FOR COMMUNITY NO. 067381, PANEL NO. 0733E, DATED DECEMBER 2, 2008 SHOWS THAT THE LOCATION OF THIS SITE FALLS WITHIN ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BASIS OF NORTH:

ALL BEARINGS SHOWN HEREIN ARE GRID BEARINGS BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983 ZONE 2.

NOTES:

1. SURVEY PERFORMED ON 05/10/21.
2. HORIZONTAL DATA PROJECTED IN CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83) ZONE 2 (INTERNATIONAL ASSOCIATION OF OIL & GAS PRODUCERS' EPSG CODE 1226) ELEVATIONS SHOWN HEREIN ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. THE UNDERGROUND UTILITIES (IF ANY) THAT APPEAR ON THIS MAP HAVE BEEN LOCATED AND MARKED ON THE SURFACE BY AN INDEPENDENT PRIVATE UNDERGROUND LOCATING SERVICE. THESE MARKINGS HAVE BEEN SURVEYED AND SHOWN HEREON.
4. ALL VISIBLE TOWER EQUIPMENT AND IMPROVEMENTS ARE CONTAINED WITHIN THE DESCRIBED AREA.
5. NOT ALL SYMBOLS ARE DEPicted TO SCALE.
6. THIS SURVEY DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL.

REV	DATE	DESCRIPTION	DRWN
00	05/13/21	PRELIMINARY	EJ
09	08/05/22	REV. A/D	LA
10	08/19/22	REV. A/U	CJ
11	02/08/23	REVISIONS	CJ

SITE INFORMATION:

Name	RINCON VALLEY
BUN	815755
Address	4900 SONOMA HWY SANTA ROSA, CA 95409
County	SONOMA COUNTY

SITE LOCATED IN:  
RANCHO CABEZA DE SANTA ROSA

## AS-BUILT SURVEY

SHEET TITLE: COVER SHEET

SHT NAME: V-01 | SHT NO: 1 | OF 5

**PROPERTY INFORMATION**

**PARENT PARCEL**

① GRANT W. PATRICK, TRUSTEE OF THE GRANT W. PATRICK TRUST  
APN: 032-300-008

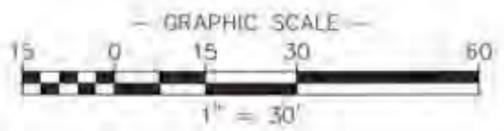
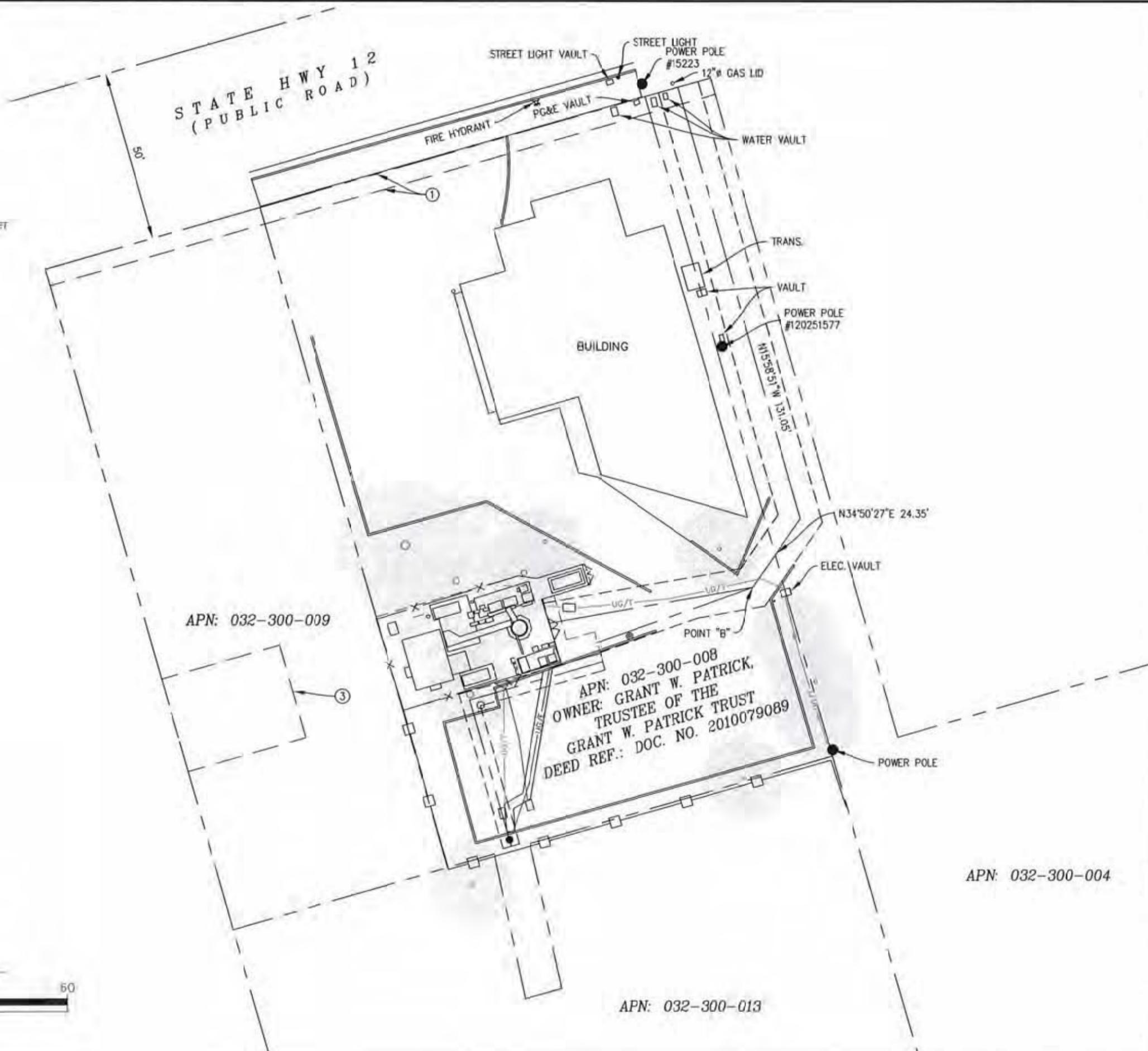
ADDRESS  
4900 SONOMA HWY  
SANTA ROSA, CA 95409

**ADJACENT PARCELS**

② LOGAN ROBERT ELLIS TR & LOGAN JANEET ELAINE TR  
APN: 032-300-004

③ STENGER JADINE L TOR  
APN: 032-000-013

④ 4890 SONOMA HIGHWAY LLC  
APN: 032-300-009



**SURVEY PERFORMED FOR:**  
  
 1500 Corporate Drive  
 Canonsburg, PA 15117

**SURVEY COORDINATED BY:**  
 GEOLINE SURVEYING, INC.  
 13430 NW 10th Terrace, Suite A, Alachua, FL 32615  
 Tele: (386) 418-0500 | Fax: (386) 462-9886

**SURVEY PERFORMED BY:**  
 SMITHCO SURVEYING ENGINEERING  
 2005 AIRPORT DRIVE, BAKERSFIELD, CA 93306  
 Tele: (861) 393-1217 | Fax: (861) 393-1218

DRAWN BY: EJ | CHK BY: DA | JOB NO.: 71-818

**SURVEYOR'S CERTIFICATION:**  
 I hereby certify to Crown Castle GT Company LLC, Crown Castle USA Inc. including its parents, subsidiaries and affiliated entities, and Wesicor Land Title Insurance Company.

SURVEYOR NAME: D'ARTAGHAN ALBY

LICENSED LAND SURVEYOR  
 D'ARTAGHAN ALBY  
 L.S. 9052  
 2-13-23  
 STATE OF CALIFORNIA

SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

**LEASE AREA ZONING:**  
 CC: GENERAL COMMERCIAL

**LEASE AREA FLOOD NOTE:**  
 THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD RATE MAP FOR COMMUNITY NO. 080301, PANEL NO. 0733E, DATED DECEMBER 2, 2008 SHOWS THAT THE LOCATION OF THIS SITE FALLS WITHIN ZONE 'X'. AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

**BASIS OF NORTH:**  
 ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983 ZONE 2.

**NOTES:**

1. SURVEY PERFORMED ON 05/10/23.
2. HORIZONTAL DATA PROJECTED IN CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83) ZONE 2 (INTERNATIONAL ASSOCIATION OF OIL & GAS PRODUCER'S EPSG CODE: 3124) ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. THE UNDERGROUND UTILITIES (IF ANY) THAT APPEAR ON THIS MAP HAVE BEEN LOCATED AND MARKED ON THE SURFACE BY AN INDEPENDENT PRIVATE UNDERGROUND LOCATING SERVICE. THESE MARKINGS HAVE BEEN SURVEYED AND SHOWN HEREON.
4. ALL VISIBLE TOWER EQUIPMENT AND IMPROVEMENTS ARE CONTAINED WITHIN THE DESCRIBED AREA.
5. NOT ALL SYMBOLS ARE DEPICTED TO SCALE.
6. THIS SURVEY DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL.

REV	DATE	DESCRIPTION	DRWN
00	05/13/23	PRELIMINARY	EJ
09	06/05/23	REV. A/U	LA
10	08/15/23	REV. A/LI	CJ
11	02/06/23	REVISIONS	CJ

**SITE INFORMATION:**

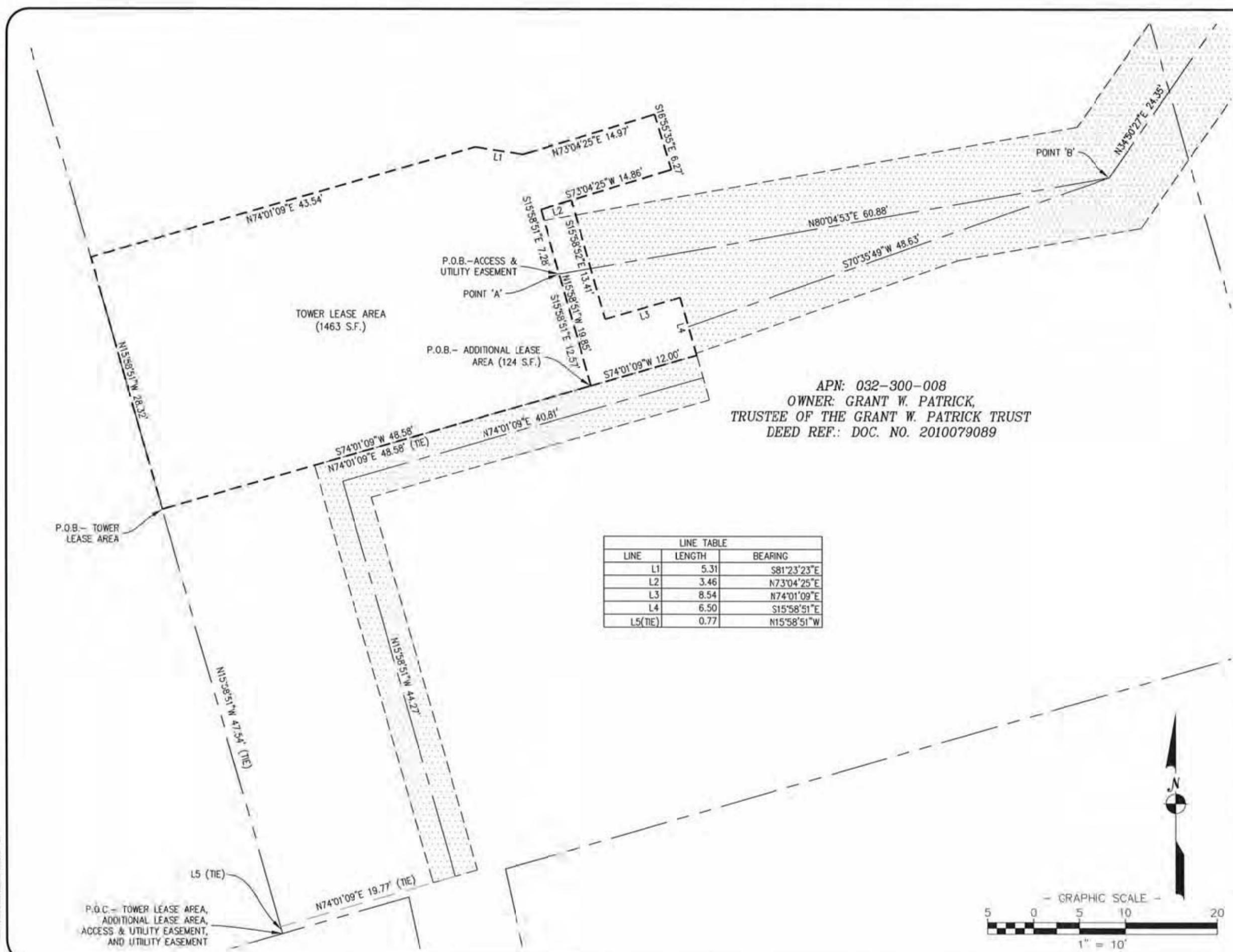
Name: RINCON VALLEY  
 BUN: 815755  
 Address: 4900 SONOMA HWY  
 SANTA ROSA, CA 95409  
 County: SONOMA COUNTY

**SITE LOCATED IN:**  
 RANCHO CABEZA DE SANTA ROSA

**AS-BUILT SURVEY**

SHEET TITLE: PROPERTY OVERVIEW

SHT NAME: V-02 | SHT NO: 2 | OF 5



APN: 032-300-008  
 OWNER: GRANT W. PATRICK,  
 TRUSTEE OF THE GRANT W. PATRICK TRUST  
 DEED REF.: DOC. NO. 2010079089

LINE TABLE		
LINE	LENGTH	BEARING
L1	5.31	S81°23'23"E
L2	3.46	N73°04'25"E
L3	8.54	N74°01'09"E
L4	6.50	S15°58'51"E
L5(TIE)	0.77	N15°58'51"W

**SURVEY PERFORMED FOR:**  
  
 1500 Corporate Drive,  
 Canonsburg, PA 15317

**SURVEY COORDINATED BY:**  
 GEOLINE SURVEYING, INC.  
 13430 NW 10th Terrace, Suite A, Alachua, FL 32615  
 Tele: (386) 418-0500 | Fax: (386) 482-9886

**SURVEY PERFORMED BY:**  
 SMITHCO SURVEYING ENGINEERING  
 2005 AIRPORT DRIVE, BAKERSFIELD, CA 93308  
 Tele: (661) 393-1217 | Fax: (661) 393-1218

**SURVEYOR'S CERTIFICATION:**  
 I hereby certify to Crown Castle GT Company LLC, Crown Castle USA Inc., including its parents, subsidiaries and affiliated entities, and Western Land Title Insurance Company,

SURVEYOR NAME: O'NEAGHAN ALISA  
  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

**LEASE AREA ZONING:**  
 CC - GENERAL COMMERCIAL

**LEASE AREA FLOOD NOTE:**  
 THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD RATE MAP FOR COMMUNITY NO. 060384, PANEL NO. 0733E, DATED DECEMBER 2, 2000 SHOWS THAT THE LOCATION OF THIS SITE FALLS WITHIN ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

**BASIS OF NORTH:**  
 ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983 ZONE 2.

- NOTES:**
1. SURVEY PERFORMED ON 10/10/21
  2. HORIZONTAL DATA PROJECTED IN CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83) ZONE 2 (INTERNATIONAL ASSOCIATION OF OIL & GAS PRODUCERS' EPSG CODE 4226) ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD83).
  3. THE UNDERGROUND UTILITIES (IF ANY) THAT APPEAR ON THIS MAP HAVE BEEN LOCATED AND MARKED ON THE SURFACE BY AN INDEPENDENT PRIVATE UNDERGROUND LOCATING SERVICE. THESE MARKINGS HAVE BEEN SURVEYED AND SHOWN HEREON.
  4. ALL VISIBLE TOWER EQUIPMENT AND IMPROVEMENTS ARE CONTAINED WITHIN THE DESCRIBED AREA.
  5. NOT ALL SYMBOLS ARE DEPICTED TO SCALE.
  6. THIS SURVEY DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL.

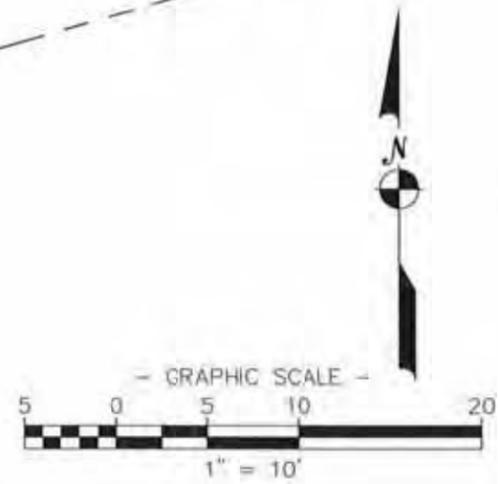
REV	DATE	DESCRIPTION	DRWN
00	05/13/21	PRELIMINARY	EJ
09	09/05/23	REV. A/11	LA
10	09/15/23	REV. A/11	CJ
11	02/06/23	REVISIONS	CJ

**SITE INFORMATION:**  
 Name: RINCON VALLEY  
 BUN: 815755  
 Address: 4900 SONOMA HWY  
 SANTA ROSA, CA 95409  
 County: SONOMA COUNTY

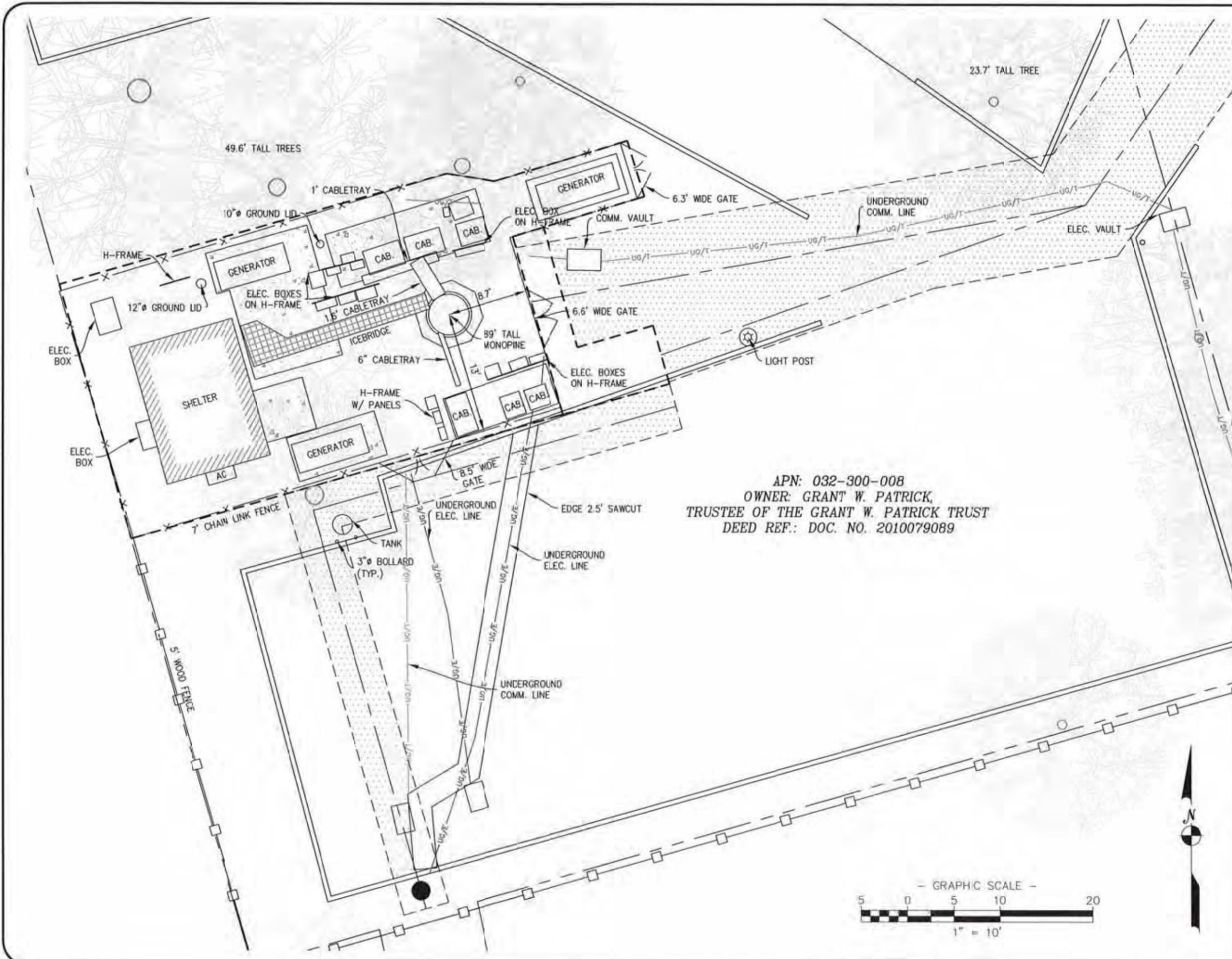
**SITE LOCATED IN:**  
 RANCHO CABEZA DE SANTA ROSA

**AS-BUILT SURVEY**

SHEET TITLE: SITE BOUNDARY  
 SHT NAME: V-63 SHT NO: 3 OF 5



DATE: 02/06/23, 09:59:59, Survey: 2023-09-11



APN: 032-300-008  
 OWNER: GRANT W. PATRICK,  
 TRUSTEE OF THE GRANT W. PATRICK TRUST  
 DEED REF.: DOC. NO. 2010079089

**SURVEY PERFORMED FOR:**  
  
 1500 Corporate Drive  
 Gannsburg, PA 15317

**SURVEY COORDINATED BY:**  
 GEOLINE SURVEYING, INC.  
 13430 NW 10th Terrace, Suite A, Alachua, FL 32615  
 Tele: (386) 418-0500 | Fax: (386) 462-9986

**SURVEY PERFORMED BY:**  
 SMITHCO SURVEYING ENGINEERING  
 2005 AIRPORT DRIVE, BAKERSFIELD, CA 93306  
 Tele: (861) 393-1217 | Fax: (861) 393-1218

DRAWN BY: EJ | CIB: BY: DA | JOB NO: 71-615

**SURVEYOR'S CERTIFICATION:**  
 I hereby certify to Crown Castle GT Company LLC, Crown Castle USA Inc. including its parents, subsidiaries and affiliated entities, and Westcoast Land Title Insurance Company.

SURVEYOR NAME: D'ANTAGIAN ALBY  
  
 SIGNATURE  
 DATE

**LEASE AREA ZONING:**  
 CC GENERAL COMMERCIAL

**LEASE AREA FLOOD NOTE:**  
 THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD RATE MAP FOR COMMUNITY NO. 060381, PANEL NO. 0733E, DATED DECEMBER 2, 2008 SHOWS THAT THE LOCATION OF THIS SITE FALLS WITHIN ZONE "A", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

**BASIS OF NORTH:**  
 ALL BEARINGS SHOWN HEREOF ARE GRID BEARINGS BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983 ZONE 2.

- NOTES:**
1. SURVEY PERFORMED ON 05/10/21.
  2. HORIZONTAL DATA PROJECTED IN CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83) ZONE 2 (INTERNATIONAL ASSOCIATION OF OIL & GAS PRODUCER'S E750 CODE 2228) ELEVATIONS SHOWN HEREOF ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
  3. THE UNDERGROUND UTILITIES (IF ANY) THAT APPEAR ON THIS MAP HAVE BEEN LOCATED AND MARKED ON THE SURFACE BY AN INDEPENDENT PRIVATE UNDERGROUND LOCATING SERVICE. THESE MARKINGS HAVE BEEN SURVEYED AND SHOWN HEREOF.
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REV	DATE	DESCRIPTION	DRWN
00	05/13/21	PRELIMINARY	EJ
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10	08/19/22	REV. A/V	CJ
11	02/06/23	REVISIONS	CJ

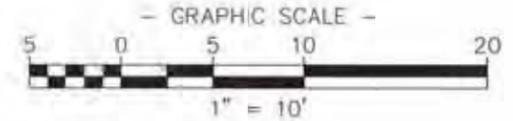
**SITE INFORMATION:**  
 Name: RINCON VALLEY  
 BUN: 815755  
 Address: 4900 SONOMA HWY  
 SANTA ROSA, CA 95409  
 County: SONOMA COUNTY

**SITE LOCATED IN:**  
 RANCHO CABEZA DE SANTA ROSA

**AS-BUILT SURVEY**

SHEET TITLE: SITE DETAIL

SHT NAME: V-01 | SHT NO: 4 OF 5



**PARENT PARCEL LEGAL DESCRIPTION**

PER QUITCLAIM DEED, DOCUMENT NO. 2010079089.

THE LAND HEREIN REFERRED TO IS SITUATED IN THE STATE OF CALIFORNIA, COUNTY OF SONOMA, CITY OF SANTA ROSA AND IS DESCRIBED AS FOLLOWS:

**PARCEL ONE**

LYING WITHIN RANCHO CABEZA DE SANTA ROSA AND BEING A PORTION OF THE LANDS CONVEYED TO HAROLD T. GUSTAFSON AND WIFE, BY DEED RECORDED JULY 30, 1952 UNDER RECORDER'S SERIAL NO. D-73128, SONOMA COUNTY RECORDS, SAID PORTION BEING DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE CENTER OF THE STATE HIGHWAY LEADING FROM SANTA ROSA TO SONOMA, SAID POINT BEING NORTH 16°36'-12" WEST, 30 FEET FROM THE NORTHWESTERLY CORNER OF THE 2 ACRE PARCEL OF LAND CONVEYED TO JAMES W. WHITEFORD AND WIFE, BY DEED RECORDED JUNE 28, 1944 IN BOOK 513 OF OFFICIAL RECORDS, PAGE 7, SONOMA COUNTY RECORDS, AND THE NORTHEASTERLY CORNER OF SAID LANDS CONVEYED TO HAROLD T. GUSTAFSON AND WIFE, SAID POINT BEING KNOWN AS STATION "P" 131+08.0 POINT ON TANGENT OF THE SURVEY OF SAID HIGHWAY; THENCE SOUTH 16° 36' 30" EAST A DISTANCE OF 20 FEET TO AN IRON PIPE SET IN THE SOUTHERN LINE OF SAID HIGHWAY; THENCE SOUTH 73° 20' 30" WEST AND ALONG THE SOUTHERN LINE OF SAID HIGHWAY, A DISTANCE OF 100 FEET TO AN IRON PIPE AND THE TRUE POINT OF BEGINNING; THENCE SOUTH 16° 36' 30" EAST AND ALONG THE WESTERN BOUNDARY LINE OF THE LAND CONVEYED BY HAROLD T. GUSTAFSON AND WIFE TO WALTER CEDARBERG, A SINGLE MAN, BY DEED DATED MARCH 9, 1953 AND RECORDED MARCH 18, 1953 IN THE OFFICE OF THE COUNTY RECORDER OF SONOMA COUNTY UNDER RECORDER'S SERIAL NO. 3-90508, A DISTANCE OF 200 FEET TO AN IRON PIPE; THENCE SOUTH 73° 20' 30" WEST A DISTANCE OF 92.70 FEET TO AN IRON PIPE; THENCE SOUTH 12° 56' EAST A DISTANCE OF 43 FEET TO AN IRON PIPE; THENCE SOUTH 73° 20' 30" WEST A DISTANCE OF 11 FEET TO AN IRON PIPE; THENCE NORTH 12° 56' WEST A DISTANCE OF 43 FEET TO AN IRON PIPE; THENCE SOUTH 73° 20' 30" WEST A DISTANCE OF 14.3 FEET TO AN IRON PIPE; THENCE NORTH 16° 36' 30" WEST A DISTANCE OF 200 FEET TO THE SOUTHERN LINE OF SAID HIGHWAY; THENCE NORTH 73° 20' 30" EAST, 118.0 FEET TO THE TRUE POINT OF BEGINNING. A.P. NO. 32-300-08

**PARCEL TWO**

AN EASEMENT FOR UNDERGROUND SEWER, DRAINAGE AND SURFACE WATER RUN OFF OVER THE WESTERLY 10 FEET OF PARCELS 2 AND 3 AS SHOWN ON CITY OF SANTA ROSA PARCEL MAP NO. 43, FILED AUGUST 17, 1972 IN BOOK 177 OF MAPS, PAGE 18, EXCEPTING THEREFROM THAT PORTION LYING WITHIN THE LANDS DESCRIBED IN DEED RECORDED JANUARY 25, 1978 IN BOOK 3345 OF OFFICIAL RECORDS, PAGE 985, SONOMA COUNTY RECORDS

**PARCEL THREE**

AN EASEMENT FOR UNDERGROUND SEWER, WATER RUN OFF AND DRAINAGE OVER THE SOUTHERLY 10 FEET OF PARCEL 1, AS SHOWN ON CITY OF SANTA ROSA PARCEL MAP NO. 43, FILED AUGUST 17, 1972 IN BOOK 177 OF MAPS, PAGE 18.

**PARCEL FOUR**

A NON-EXCLUSIVE EASEMENT AND RIGHT OF WAY FOR INGRESS AND EGRESS OF VEHICLES OVER THE WESTERLY 20 FEET OF THE LANDS OF ALBERTINE S. HARVEY, AS SAID EASEMENT AND LANDS ARE DESCRIBED IN DOCUMENT RECORDED DECEMBER 5, 1985 AS DOCUMENT NO. 85081688 AND RERECORDED JANUARY 28, 1986 AS DOCUMENT NO. 85005783, SONOMA COUNTY RECORDS

**ITEMS OF RECORD**

PER TOWER TITLE INSURANCE COMPANY, TITLE FILE NO. CCI-130702-PR, DATED APRIL 8, 2022:

- 1. EASEMENT DEED BETWEEN GRANT W. PATRICK, AND THE CITY OF SANTA ROSA, A MUNICIPAL CORPORATION, DATED APRIL 21, 1988 AND RECORDED APRIL 27, 1988 IN (INSTRUMENT) 89032981, IN SONOMA COUNTY, CALIFORNIA. >>> PLOTTED AS SHOWN HEREIN<<<
2. MEMORANDUM OF LEASE BETWEEN GRANT W. PATRICK, AND GTE MOBILNET OF CALIFORNIA LIMITED PARTNERSHIP, A CALIFORNIA LIMITED PARTNERSHIP BY GTE MOBILNET INCORPORATED ITS GENERAL PARTNER, DATED JANUARY 2, 1997 AND RECORDED MARCH 18, 1997 IN (INSTRUMENT) 1997 0021841, IN SONOMA COUNTY, CALIFORNIA

AFFECTED BY A(N) ASSIGNMENT AND ASSUMPTION AGREEMENT BETWEEN GTE MOBILNET OF CALIFORNIA LIMITED PARTNERSHIP, A CALIFORNIA LIMITED PARTNERSHIP DB/A VERIZON WIRELESS AND CROWN CASTLE GT COMPANY LLC, A DELAWARE LIMITED LIABILITY COMPANY, DATED JUNE 13, 2001 AND RECORDED OCTOBER 8, 2001 IN (INSTRUMENT) 2001136992, IN SONOMA COUNTY, CALIFORNIA.

AFFECTED BY A(N) MEMORANDUM OF SECOND AMENDMENT TO LAND LEASE AGREEMENT BETWEEN GRANT W. PATRICK, AND CROWN CASTLE GT COMPANY LLC, A DELAWARE LIMITED LIABILITY COMPANY, DATED JULY 16, 2001 AND RECORDED MARCH 6, 2002 IN (INSTRUMENT) 2002033980, IN SONOMA COUNTY, CALIFORNIA.

AFFECTED BY A(N) MEMORANDUM OF FOURTH AMENDMENT TO LAND LEASE AGREEMENT BETWEEN GRANT W. PATRICK, AN INDIVIDUAL DEALING WITH HIS SOLE AND SEPARATE PROPERTY, AND CROWN CASTLE GT COMPANY LLC, A DELAWARE LIMITED LIABILITY COMPANY, DATED SEPTEMBER 5, 2008 AND RECORDED SEPTEMBER 15, 2011 IN (INSTRUMENT) 2011078708, IN SONOMA COUNTY, CALIFORNIA.

AFFECTED BY A(N) MEMORANDUM OF FIFTH AMENDMENT TO LAND LEASE AGREEMENT BETWEEN GRANT W. PATRICK, TRUSTEE OF THE GRANT W. PATRICK TRUST AGREEMENT DATED SEPTEMBER 9, 2010, AND CROWN CASTLE GT COMPANY LLC, A DELAWARE LIMITED LIABILITY COMPANY, DATED NOVEMBER 18, 2016 AND RECORDED FEBRUARY 7, 2017 IN (INSTRUMENT) 2017016036, IN SONOMA COUNTY, CALIFORNIA. >>> LEASE IS ASSOCIATED WITH TOWER LEASE AREA <<<

3. EASEMENT AGREEMENT BETWEEN AMELIO FABBRI AND SILVIJA LEONAVICIUS-FABBRI, AND GTE MOBILNET OF CALIFORNIA LIMITED PARTNERSHIP, BY GTE MOBILNET INCORPORATED, ITS GENERAL PARTNER, DATED APRIL 16, 1997 AND RECORDED JUNE 26, 1997 IN (INSTRUMENT) 1997 0054354, IN SONOMA COUNTY, CALIFORNIA. >>> PLOTTED AS SHOWN HEREIN<<<

4. GRANT OF EASEMENT BETWEEN GRANT W. PATRICK, AND CABLE ONE, DATED FEBRUARY 19, 1998 AND RECORDED FEBRUARY 18, 1998 IN (INSTRUMENT) 1998 0016185, IN SONOMA COUNTY, CALIFORNIA. >>> NOT PLOTTABLE EXACT LOCATION CANNOT BE DETERMINED FROM THE REFERENCE DOCUMENT <<<

**TOWER LEASE AREA**

PREPARED BY THIS OFFICE

BEING A PORTION OF THE LAND AS DESCRIBED IN THE QUITCLAIM DEED, RECORDED SEPTEMBER 17, 2010 AS DOCUMENT NO. 2010079089, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEASTERLY MOST CORNER OF PARCEL 1 OF PARCEL MAP NO. 43, RECORDED IN BOOK 177 OF PARCEL MAPS, AT PAGE 18, SONOMA COUNTY RECORDS, THENCE ALONG THE EAST LINE OF SAID PARCEL 1, N 15°58'51" W (SHOWN ON SAID MAP AS S 16°36'30" E), A DISTANCE OF 47.54 FEET TO THE POINT OF BEGINNING:

- COURSE 1) THENCE CONTINUING ALONG SAID EAST LINE N 15°58'51" W, A DISTANCE OF 78.32 FEET;
COURSE 2) THENCE LEAVING SAID EAST LINE, N 74°01'09" E, A DISTANCE OF 43.54 FEET;
COURSE 3) THENCE S 81°23'23" E, A DISTANCE OF 5.31 FEET;
COURSE 4) THENCE N 73°04'25" E, A DISTANCE OF 14.97 FEET;
COURSE 5) THENCE S 18°55'35" E, A DISTANCE OF 6.27 FEET;
COURSE 6) THENCE S 73°04'25" W, A DISTANCE OF 14.86 FEET;
COURSE 7) THENCE S 15°58'51" E, A DISTANCE OF 7.28 FEET TO THE HEREINAFTER DESCRIBED POINT "A";
COURSE 8) THENCE S 15°58'51" E, A DISTANCE OF 12.57 FEET;
COURSE 9) THENCE S 74°01'09" W, A DISTANCE OF 48.58 FEET TO THE POINT OF BEGINNING.

CONTAINING 1.453 SQUARE FEET (0.033 ACRES), MORE OR LESS.

APN: 032-300-006
OWNER(S): GRANT W. PATRICK, TRUSTEE OF THE GRANT W. PATRICK TRUST
DEED REFERENCE: DOCUMENT NO. 2010079089

**ADDITIONAL LEASE AREA**

PREPARED BY THIS OFFICE

BEING A PORTION OF THE LAND AS DESCRIBED IN THE QUITCLAIM DEED, RECORDED SEPTEMBER 17, 2010 AS DOCUMENT NO. 2010079089, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEASTERLY MOST CORNER OF PARCEL 1 OF PARCEL MAP NO. 43, RECORDED IN BOOK 177 OF PARCEL MAPS, AT PAGE 18, SONOMA COUNTY RECORDS, THENCE ALONG THE EAST LINE OF SAID PARCEL 1, N 15°58'51" W (SHOWN ON SAID MAP AS S 16°36'30" E), A DISTANCE OF 47.54 FEET; THENCE LEAVING SAID EAST LINE, N 74°01'09" E, A DISTANCE OF 48.58 TO THE POINT OF BEGINNING.

- COURSE 1) THENCE CONTINUING N 15°58'51" W, A DISTANCE OF 19.85 FEET;
COURSE 2) THENCE N 73°04'25" E, A DISTANCE OF 3.46 FEET;
COURSE 3) THENCE S 15°58'52" E, A DISTANCE OF 13.91 FEET;
COURSE 4) THENCE N 74°01'09" E, A DISTANCE OF 8.54 FEET;
COURSE 5) THENCE S 15°58'51" E, A DISTANCE OF 6.50 FEET;
COURSE 6) THENCE S 74°01'09" W, A DISTANCE OF 12.00 FEET TO THE POINT OF BEGINNING.

CONTAINING 124 SQUARE FEET (0.002 ACRES), MORE OR LESS.

APN: 032-300-008
OWNER(S): GRANT W. PATRICK, TRUSTEE OF THE GRANT W. PATRICK TRUST
DEED REFERENCE: DOCUMENT NO. 2010079089

**ACCESS & UTILITY EASEMENT**

PREPARED BY THIS OFFICE

A 12.00 FOOT WIDE STRIP OF LAND OVER, ACROSS AND THROUGH A PORTION OF THE LAND AS DESCRIBED IN THE QUITCLAIM DEED, RECORDED SEPTEMBER 17, 2010 AS DOCUMENT NO. 2010079089, LYING 6.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

COMMENCING AT THE SOUTHEASTERLY MOST CORNER OF PARCEL 1 OF PARCEL MAP NO. 43, RECORDED IN BOOK 177 OF PARCEL MAPS, AT PAGE 18, SONOMA COUNTY RECORDS, THENCE ALONG THE EAST LINE OF SAID PARCEL 1, N 15°58'51" W (SHOWN ON SAID MAP AS S 16°36'30" E), A DISTANCE OF 47.54 FEET; THENCE LEAVING SAID EAST LINE, N 74°01'09" E, A DISTANCE OF 48.58 FEET; THENCE S 15°58'51" E, A DISTANCE OF 12.57 FEET TO POINT "A" AND TO THE POINT OF BEGINNING:

- COURSE 1) THENCE N 80°04'53" E, A DISTANCE OF 60.88 FEET TO POINT "B";
COURSE 2) THENCE N 34°50'27" E, A DISTANCE OF 24.35 FEET;
COURSE 3) THENCE N 15°58'51" W, A DISTANCE OF 131.05 FEET TO THE SOUTH LINE OF STATE HIGHWAY NO. 12 AND THE TERMINUS OF THIS DESCRIPTION.

A 6.00 FOOT WIDE STRIP OF LAND OVER, ACROSS AND THROUGH A PORTION OF THE LAND AS DESCRIBED IN THE QUITCLAIM DEED, RECORDED SEPTEMBER 17, 2010 AS DOCUMENT NO. 2010079089, LYING 3.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

BEGINNING AT THE ABOVE MENTIONED POINT "B":

- COURSE 1) THENCE S 70°35'49" W, A DISTANCE OF 48.63 FEET TO THE TERMINUS OF THIS DESCRIPTION.

CONTAINING 2.744 SQUARE FEET (0.063 ACRES), MORE OR LESS.

APN: 032-300-008
OWNER(S): GRANT W. PATRICK, TRUSTEE OF THE GRANT W. PATRICK TRUST
DEED REFERENCE: DOCUMENT NO. 2010079089

APN: 032-300-004
OWNER(S): ROBERT ELLIS LOGAN & JANET ELAINE LOGAN
DEED REFERENCE:

**UTILITY EASEMENT**

PREPARED BY THIS OFFICE

A 5.00 FOOT WIDE STRIP OF LAND OVER, ACROSS AND THROUGH A PORTION OF THE LAND AS DESCRIBED IN THE QUITCLAIM DEED, RECORDED SEPTEMBER 17, 2010 AS DOCUMENT NO. 2010079089, LYING 2.50 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

COMMENCING AT THE SOUTHEASTERLY MOST CORNER OF PARCEL 1 OF PARCEL MAP NO. 43, RECORDED IN BOOK 177 OF PARCEL MAPS, AT PAGE 18, SONOMA COUNTY RECORDS, THENCE ALONG THE EAST LINE OF SAID PARCEL 1, N 15°58'51" W (SHOWN ON SAID MAP AS S 16°36'30" E), A DISTANCE OF 0.77 FEET; THENCE LEAVING SAID EAST LINE, N 74°01'09" E, A DISTANCE OF 19.77 FEET TO THE POINT OF BEGINNING:

- COURSE 1) THENCE N 15°58'51" E, A DISTANCE OF 44.27 FEET;
COURSE 2) THENCE N 74°01'09" E, A DISTANCE OF 40.81 FEET;
COURSE 3) THENCE N 15°58'51" W, A DISTANCE OF 131.05 FEET TO THE TERMINUS OF THIS DESCRIPTION.

CONTAINING 425 SQUARE FEET (0.009 ACRES), MORE OR LESS.

APN: 032-300-008
OWNER(S): GRANT W. PATRICK, TRUSTEE OF THE GRANT W. PATRICK TRUST
DEED REFERENCE: DOCUMENT NO. 2010079089

APN: 032-300-004
OWNER(S): ROBERT ELLIS LOGAN & JANET ELAINE LOGAN
DEED REFERENCE:

SURVEY PERFORMED FOR:



1500 Corporate Drive
Canonsburg, PA 15317

SURVEY COORDINATED BY:

GEOLINE SURVEYING, INC.
13430 NW 10th Terrace, Suite A, Alachua, FL 32615
Tel: (386) 418-0500 | Fax: (386) 462-9986

SURVEY PERFORMED BY:

SMITHCO SURVEYING ENGINEERING
2005 AIRPORT DRIVE, BAKERSFIELD, CA 93308
Tel: (661) 393-1217 | Fax: (661) 393-1218

DRAWN BY: EJ

CHK BY: DA

JOB NO: 71-818

SURVEYOR'S CERTIFICATION:

I hereby certify to Crown Castle GT Company LLC, Crown Castle USA Inc., including its parents, subsidiaries and affiliated entities, and Wesicor Land Title Insurance Company,

SURVEYOR NAME: RYANAGHAN ALBA



SIGNATURE

DATE

LEASE AREA ZONING:

CC: GENERAL COMMERCIAL

LEASE AREA FLOOD NOTE:

THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD RATE MAP FOR COMMUNITY NO. 060351, PANEL NO. 0733E, DATED DECEMBER 2, 2005 SHOWS THAT THE LOCATION OF THIS SITE FALLS WITHIN ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BASIS OF NORTH:

ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983 ZONE 2.

NOTES:

- 1. SURVEY PERFORMED ON 05/10/23.
2. HORIZONTAL DATA PROJECTED IN CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83) ZONE 2 (INTERNATIONAL ASSOCIATION OF OIL & GAS PRODUCERS' EPSG CODE 3226) ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD83).
3. THE UNDERGROUND UTILITIES (IF ANY) THAT APPEAR ON THIS MAP HAVE BEEN LOCATED AND MARKED ON THE SURFACE BY AN INDEPENDENT PRIVATE UNDERGROUND LOCATING SERVICE. THESE MARKINGS HAVE BEEN SURVEYED AND SHOWN HEREON.
4. ALL WIRELESS TOWER EQUIPMENT AND IMPROVEMENTS ARE CONTAINED WITHIN THE DESCRIBED AREA.
5. NOT ALL SYMBOLS ARE EXPECTED TO SCALE.
6. THIS SURVEY DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL.

Table with 3 columns: REV, DATE, DESCRIPTION. Rows include preliminary and revision dates.

SITE INFORMATION:

Name: RINCON VALLEY
BUN: 815755
Address: 4900 SONOMA HWY, SANTA ROSA, CA 95409
County: SONOMA COUNTY

SITE LOCATED IN:

RANCHO CABEZA DE SANTA ROSA

**AS-BUILT SURVEY**

SHEET TITLE: LEGAL DESCRIPTION

SHT NAME: V-06 SHT NO: 5 OF 5

815755  
Rincon Valley

TOWER LEASE AREA (PREPARED BY THIS OFFICE):

BEING A PORTION OF THE LAND AS DESCRIBED IN THE QUITCLAIM DEED, RECORDED SEPTEMBER 17, 2010 AS DOCUMENT NO. 2010079089, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEASTERLY MOST CORNER OF PARCEL 1 OF PARCEL MAP NO. 43, RECORDED IN BOOK 177 OF PARCEL MAPS, AT PAGE 18, SONOMA COUNTY RECORDS, THENCE ALONG THE EAST LINE OF SAID PARCEL 1, N 15°58'51" W (SHOWN ON SAID MAP AS S 16°36'30" E), A DISTANCE OF 47.54 FEET TO THE POINT OF BEGINNING:

COURSE 1) THENCE CONTINUING ALONG SAID EAST LINE N 15°58'51" W, A DISTANCE OF 28.32 FEET;

COURSE 2) THENCE LEAVING SAID EAST LINE, N 74°01'09" E, A DISTANCE OF 43.54 FEET;

COURSE 3) THENCE S 81°23'23" E, A DISTANCE OF 5.31 FEET;

COURSE 4) THENCE N 73°04'25" E, A DISTANCE OF 14.97 FEET;

COURSE 5) THENCE S 16°55'35" E, A DISTANCE OF 6.27 FEET;

COURSE 6) THENCE S 73°04'25" W, A DISTANCE OF 14.86 FEET;

COURSE 7) THENCE S 15°58'51" E, A DISTANCE OF 7.28 FEET TO THE HEREINAFTER DESCRIBED POINT "A";

COURSE 8) THENCE S 15°58'51" E, A DISTANCE OF 12.57 FEET;

COURSE 9) THENCE S 74°01'09" W, A DISTANCE OF 48.58 FEET TO THE POINT OF BEGINNING.

CONTAINING 1,463 SQUARE FEET (0.033 ACRES), MORE OR LESS.

APN: 032-300-008

OWNER(S): GRANT W. PATRICK, TRUSTEE OF THE GRANT W. PATRICK TRUST

DEED REFERENCE: DOCUMENT NO. 2010079089



815755  
Rincon Valley

ADDITIONAL LEASE AREA (PREPARED BY THIS OFFICE):

BEING A PORTION OF THE LAND AS DESCRIBED IN THE QUITCLAIM DEED, RECORDED SEPTEMBER 17, 2010 AS DOCUMENT NO. 2010079089, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEASTERLY MOST CORNER OF PARCEL 1 OF PARCEL MAP NO. 43, RECORDED IN BOOK 177 OF PARCEL MAPS, AT PAGE 18, SONOMA COUNTY RECORDS, THENCE ALONG THE EAST LINE OF SAID PARCEL 1, N 15°58'51" W (SHOWN ON SAID MAP AS S 16°36'30" E), A DISTANCE OF 47.54 FEET; THENCE LEAVING SAID EAST LINE, N 74°01'09" E, A DISTANCE OF 48.58 TO THE POINT OF BEGINNING:

COURSE 1) THENCE CONTINUING N 15°58'51" W, A DISTANCE OF 19.85 FEET;

COURSE 2) THENCE N 73°04'25" E, A DISTANCE OF 3.46 FEET;

COURSE 3) THENCE S 15°58'52" E, A DISTANCE OF 13.91 FEET;

COURSE 4) THENCE N 74°01'09" E, A DISTANCE OF 8.54 FEET;

COURSE 5) THENCE S 15°58'51" E, A DISTANCE OF 6.50 FEET;

COURSE 6) THENCE S 74°01'09" W, A DISTANCE OF 12.00 FEET TO THE POINT OF BEGINNING.

CONTAINING 124 SQUARE FEET (0.002 ACRES), MORE OR LESS.

APN: 032-300-008

OWNER(S): GRANT W. PATRICK, TRUSTEE OF THE GRANT W. PATRICK TRUST

DEED REFERENCE: DOCUMENT NO. 2010079089



815755  
Rincon Valley

ACCESS & UTILITY EASEMENT DESCRIPTION (PREPARED BY THIS OFFICE):

A 12.00 FOOT WIDE STRIP OF LAND OVER, ACROSS AND THROUGH A PORTION OF THE LAND AS DESCRIBED IN THE QUITCLAIM DEED, RECORDED SEPTEMBER 17, 2010 AS DOCUMENT NO. 2010079089, LYING 6.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

COMMENCING AT THE SOUTHEASTERLY MOST CORNER OF PARCEL 1 OF PARCEL MAP NO. 43, RECORDED IN BOOK 177 OF PARCEL MAPS, AT PAGE 18, SONOMA COUNTY RECORDS, THENCE ALONG THE EAST LINE OF SAID PARCEL 1, N 15°58'51" W (SHOWN ON SAID MAP AS S 16°36'30" E), A DISTANCE OF 47.54 FEET; THENCE LEAVING SAID EAST LINE, N 74°01'09" E, A DISTANCE OF 48.58 FEET; THENCE S 15°58'51" E, A DISTANCE OF 12.57 FEET TO POINT "A" AND TO THE POINT OF BEGINNING:

COURSE 1) THENCE N 80°04'53" E, A DISTANCE OF 60.88 FEET TO POINT "B";  
COURSE 2) THENCE N 34°50'27" E, A DISTANCE OF 24.35 FEET;  
COURSE 3) THENCE N 15°58'51" W, A DISTANCE OF 131.05 FEET TO THE SOUTH LINE OF STATE HIGHWAY NO. 12 AND THE TERMINUS OF THIS DESCRIPTION.

A 6.00 FOOT WIDE STRIP OF LAND OVER, ACROSS AND THROUGH A PORTION OF THE LAND AS DESCRIBED IN THE QUITCLAIM DEED, RECORDED SEPTEMBER 17, 2010 AS DOCUMENT NO. 2010079089, LYING 3.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

BEGINNING AT THE ABOVE MENTIONED POINT "B":

COURSE 1) THENCE S 70°35'49" W, A DISTANCE OF 48.63 FEET TO THE TERMINUS OF THIS DESCRIPTION.

CONTAINING 2,744 SQUARE FEET (0.063 ACRES), MORE OR LESS.

APN: 032-300-008  
OWNER(S): GRANT W. PATRICK, TRUSTEE OF THE GRANT W. PATRICK TRUST  
DEED REFERENCE: DOCUMENT NO. 2010079089

APN: 032-300-004  
OWNER(S): ROBERT ELLIS LOGAN & JANET ELAINE LOGAN  
DEED REFERENCE:



815755  
Rincon Valley

UTILITY EASEMENT DESCRIPTION (PREPARED BY THIS OFFICE):

A 5.00 FOOT WIDE STRIP OF LAND OVER, ACROSS AND THROUGH A PORTION OF THE LAND AS DESCRIBED IN THE QUITCLAIM DEED, RECORDED SEPTEMBER 17, 2010 AS DOCUMENT NO. 2010079089, LYING 2.50 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

COMMENCING AT THE SOUTHEASTERLY MOST CORNER OF PARCEL 1 OF PARCEL MAP NO. 43, RECORDED IN BOOK 177 OF PARCEL MAPS, AT PAGE 18, SONOMA COUNTY RECORDS, THENCE ALONG THE EAST LINE OF SAID PARCEL 1, N 15°58'51" W (SHOWN ON SAID MAP AS S 16°36'30" E), A DISTANCE OF 0.77 FEET; THENCE LEAVING SAID EAST LINE, N 74°01'09" E, A DISTANCE OF 19.77 FEET TO THE POINT OF BEGINNING:

COURSE 1) THENCE N 15°58'51" E, A DISTANCE OF 44.27 FEET;  
COURSE 2) THENCE N 74°01'09" E, A DISTANCE OF 40.81 FEET;  
COURSE 3) THENCE N 15°58'51" W, A DISTANCE OF 131.05 FEET TO THE TERMINUS OF THIS DESCRIPTION.

CONTAINING 425 SQUARE FEET (0.063 ACRES), MORE OR LESS.

APN: 032-300-008  
OWNER(S): GRANT W. PATRICK, TRUSTEE OF THE GRANT W. PATRICK TRUST  
DEED REFERENCE: DOCUMENT NO. 2010079089

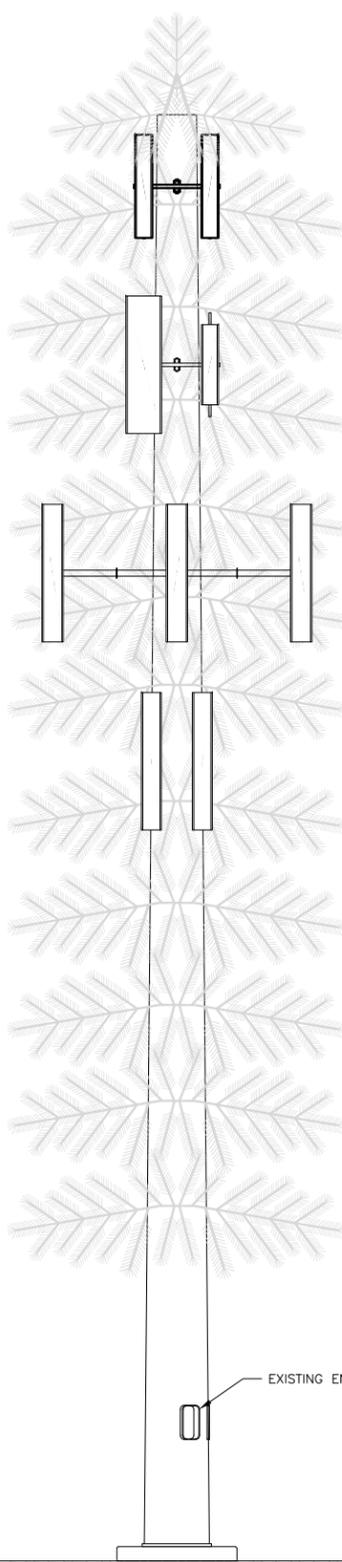
APN: 032-300-004  
OWNER(S): ROBERT ELLIS LOGAN & JANET ELAINE LOGAN  
DEED REFERENCE:





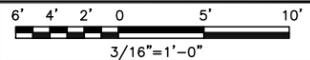
**NOTES**

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.

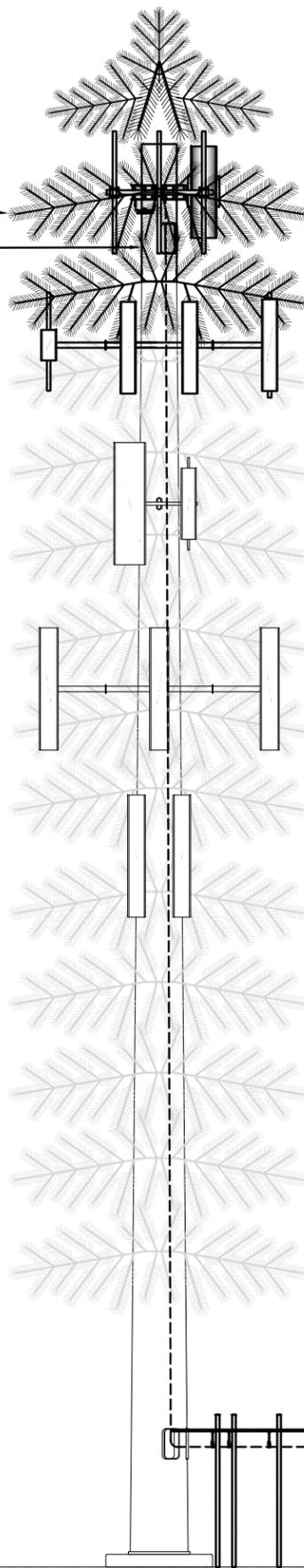


- EXISTING BRANCHES  
TOP EL. @ 89'-4" AGL
- EXISTING TOWER  
TOP EL. @ 83'-4" AGL
- EXISTING VERIZON PANEL ANTENNAS  
RAD CENTER @ 80'-0" AGL
- EXISTING PANEL ANTENNAS  
RAD CENTER @ 68'-9" AGL
- EXISTING PANEL ANTENNAS  
RAD CENTER @ 56'-8" AGL
- EXISTING PANEL ANTENNAS  
RAD CENTER @ 45'-8" AGL
- EXISTING ENTRY PORT

**EXISTING SOUTHEAST ELEVATION**



1

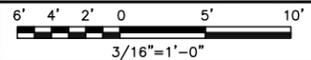


- PROPOSED BRANCHES
- PROPOSED TOWER EXTENSION  
(DESIGNED BY OTHERS)

- PROPOSED BRANCHES  
TOP EL. @ 99'-0" AGL
- PROPOSED MONOPINE EXPANSION  
TOP EL. @ 93'-2" AGL
- (3) PROPOSED DISH WIRELESS L.L.C. ANTENNAS  
RAD CENTER @ 90'-0" AGL
- PROPOSED DISH WIRELESS L.L.C. ENTRY PORT  
RAD CENTER @ 87'-0" AGL
- EXISTING TOWER  
TOP EL. @ 83'-4" AGL
- PROPOSED VERIZON PANEL ANTENNAS  
RAD CENTER @ 80'-0" AGL
- VERIZON SCOPE IS SHOWN FOR INFORMATION ONLY - DESIGNED AND INSTALLED BY OTHERS UNDER SEPARATE SCOPE OF WORK.
- EXISTING PANEL ANTENNAS  
RAD CENTER @ 68'-9" AGL
- EXISTING PANEL ANTENNAS  
RAD CENTER @ 56'-8" AGL
- EXISTING PANEL ANTENNAS  
RAD CENTER @ 45'-8" AGL

- PROPOSED DISH WIRELESS L.L.C. ICE BRIDGE
- PROPOSED DISH WIRELESS L.L.C. EQUIPMENT ON PROPOSED CONCRETE PAD
- PROPOSED DISH WIRELESS L.L.C. GPS UNIT

**PROPOSED SOUTHEAST ELEVATION**



2



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



1100 E. WOODFIELD ROAD, SUITE 500  
SCHAUMBURG, ILLINOIS 60173  
TEL: 847-908-8400  
www.FullertonEngineering.com



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JES	CJ	CJ

RFDS REV #: 2

**CONSTRUCTION DOCUMENTS**

SUBMITTALS		
REV	DATE	DESCRIPTION
3	11/22/2022	LEASE AREA UPDATE
4	12/12/2022	ELEVATION UPDATE
5	02/02/2023	JDX REVISION
6	02/10/2023	JDX REVISION
7	04/19/2023	ADDED SURVEY
8	05/24/2023	UTILITY REVISION
9	07/28/2023	UTILITY REVISION

A&E PROJECT NUMBER  
2021.0025.815755

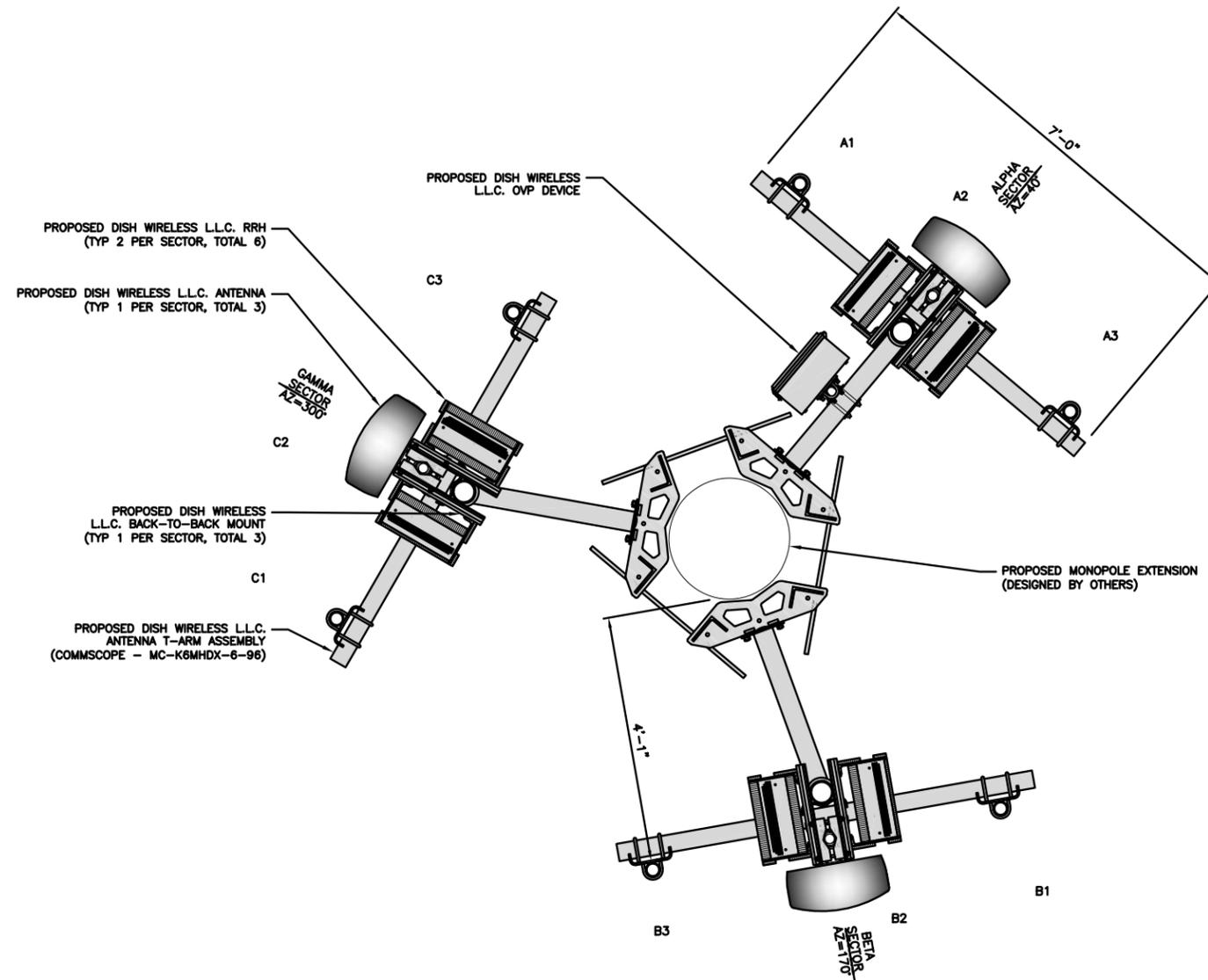
DISH WIRELESS L.L.C.  
PROJECT INFORMATION  
SFSF000115A  
CA-CCI-T-815755  
4900 SONOMA HWY.  
SANTA ROSA, CA 95409

SHEET TITLE  
EXISTING AND PROPOSED ELEVATIONS

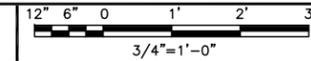
SHEET NUMBER  
**A-2.1**

**NOTES**

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



**ANTENNA LAYOUT**



1

SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECH	AZIMUTH	RAD CENTER		MANUFACTURER - MODEL NUMBER	TECH	POS.	
A1	--	--	--	--	--	(1) HIGH-CAPACITY HYBRID CABLE (137' LONG)	FUJITSU - TA08025-B604	MULTI	A2	RAYCAP - RDIDC-9181 -PF-48
A2	PROPOSED	JMA - MX08FRO665-20	NR	40°	90°-0°		FUJITSU - TA08025-B605	MULTI	A2	
A3	--	--	--	--	--		--	--	--	
B1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU - TA08025-B604	MULTI	B2	SHARED W/ALPHA
B2	PROPOSED	JMA - MX08FRO665-20	NR	170°	90°-0°		FUJITSU - TA08025-B605	MULTI	B2	
B3	--	--	--	--	--		--	--	--	
C1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU - TA08025-B604	MULTI	C2	SHARED W/ALPHA
C2	PROPOSED	JMA - MX08FRO665-20	NR	300°	90°-0°		FUJITSU - TA08025-B605	MULTI	C2	
C3	--	--	--	--	--		--	--	--	

- 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.
  3. VERIFY AZIMUTHS WITH LATEST DISH RFDS PRIOR TO INSTALLATION.

**ANTENNA SCHEDULE**

NO SCALE

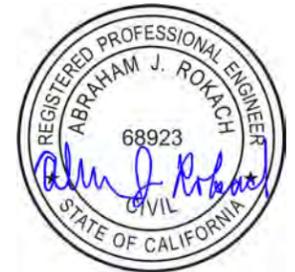
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CHECKED BY: CJ  
APPROVED BY: CJ

RFDS REV #: 2

**CONSTRUCTION DOCUMENTS**

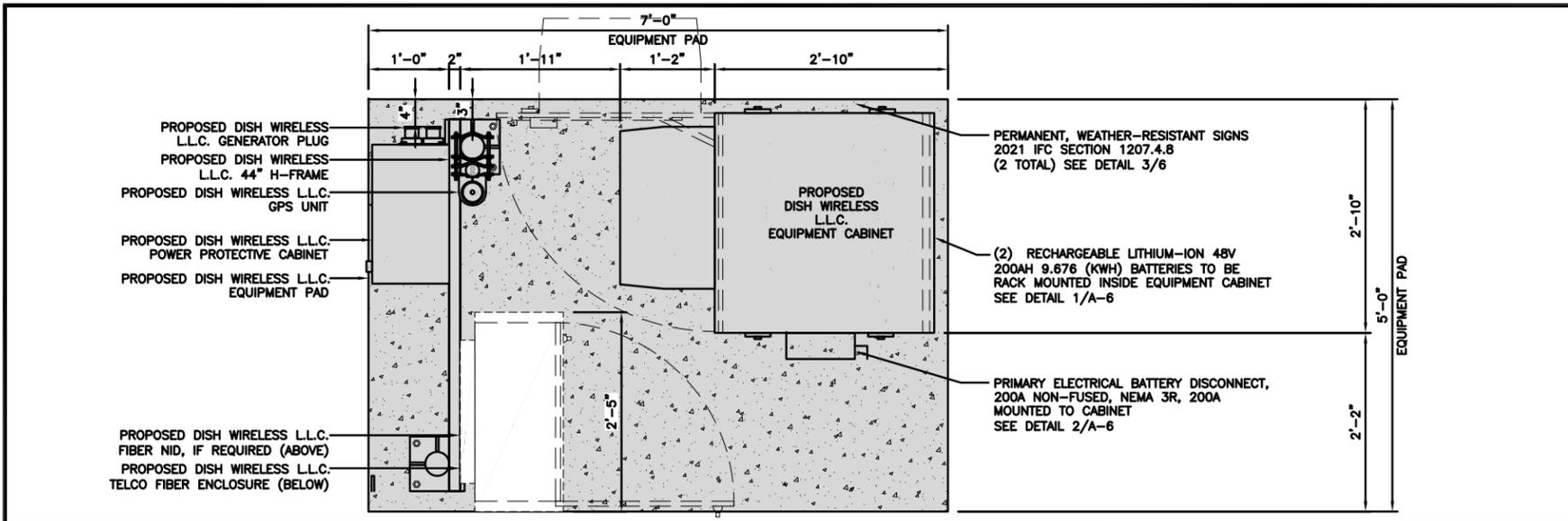
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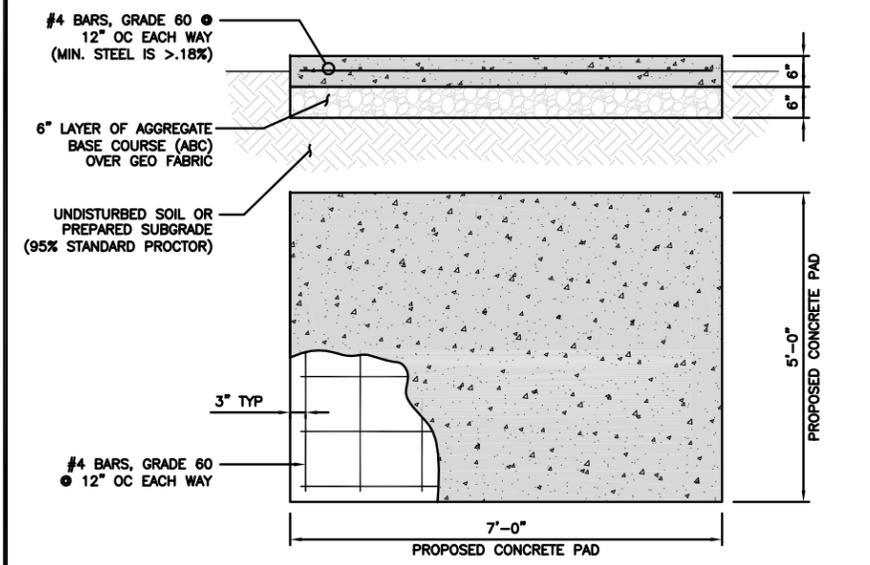
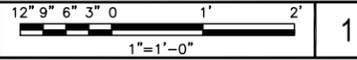
DISH WIRELESS L.L.C.  
PROJECT INFORMATION  
SFSF000115A  
CA-CCI-T-815755  
4900 SONOMA HWY.  
SANTA ROSA, CA 95409

SHEET TITLE  
ANTENNA LAYOUT  
AND SCHEDULE

SHEET NUMBER  
**A-2.2**

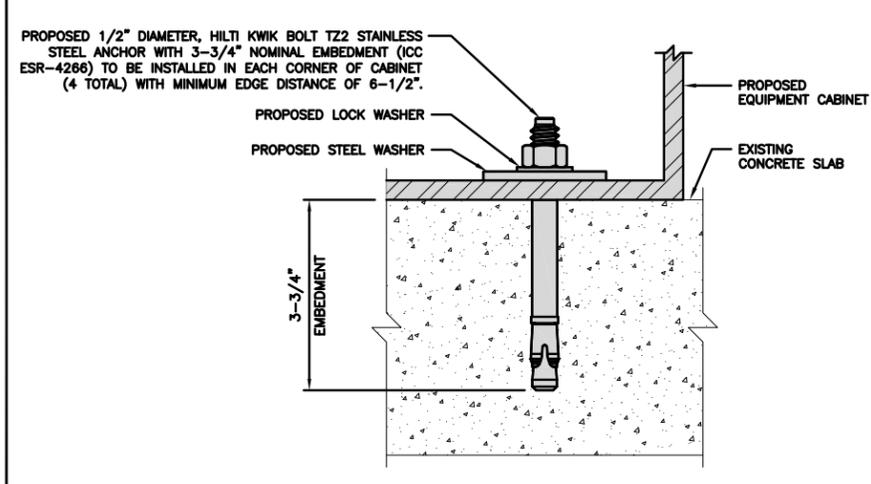


CONCRETE PAD EQUIPMENT PLAN



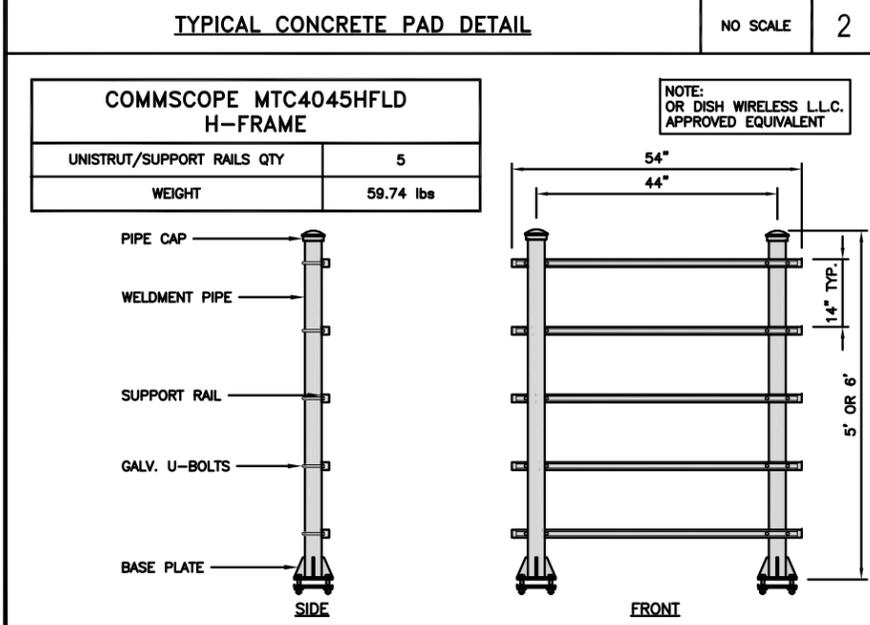
TYPICAL CONCRETE PAD DETAIL

NO SCALE 2



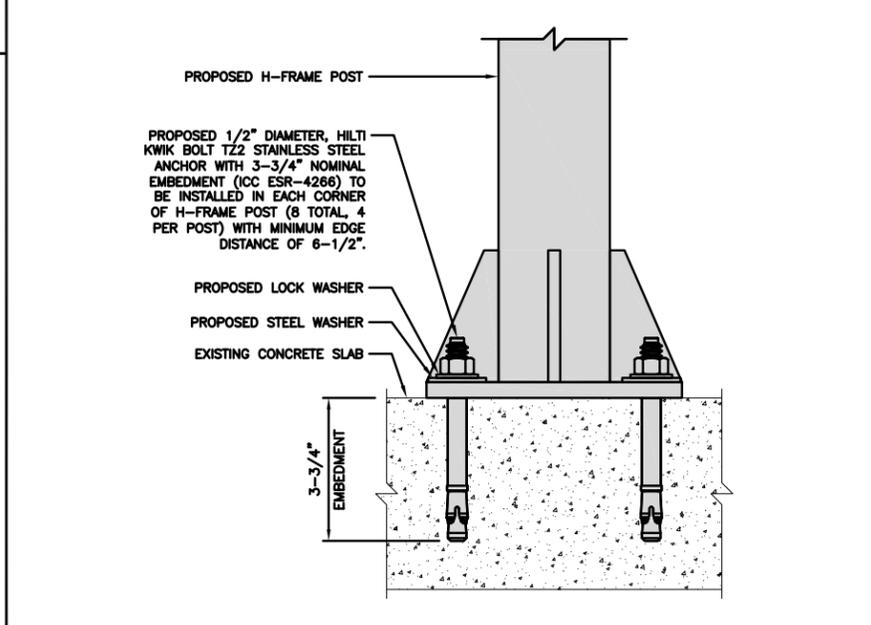
TYPICAL OUTDOOR EQUIPMENT CABINET TO CONCRETE SLAB ANCHORAGE

NO SCALE 3



H-FRAME DETAIL

NO SCALE 4

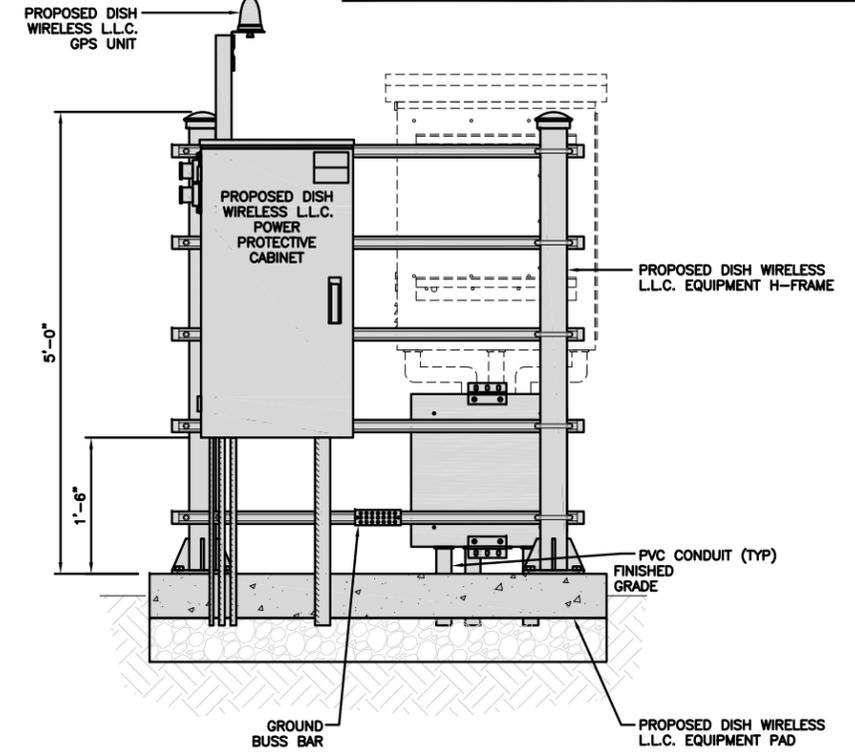


TYPICAL H-FRAME POST TO CONCRETE SLAB ANCHORAGE

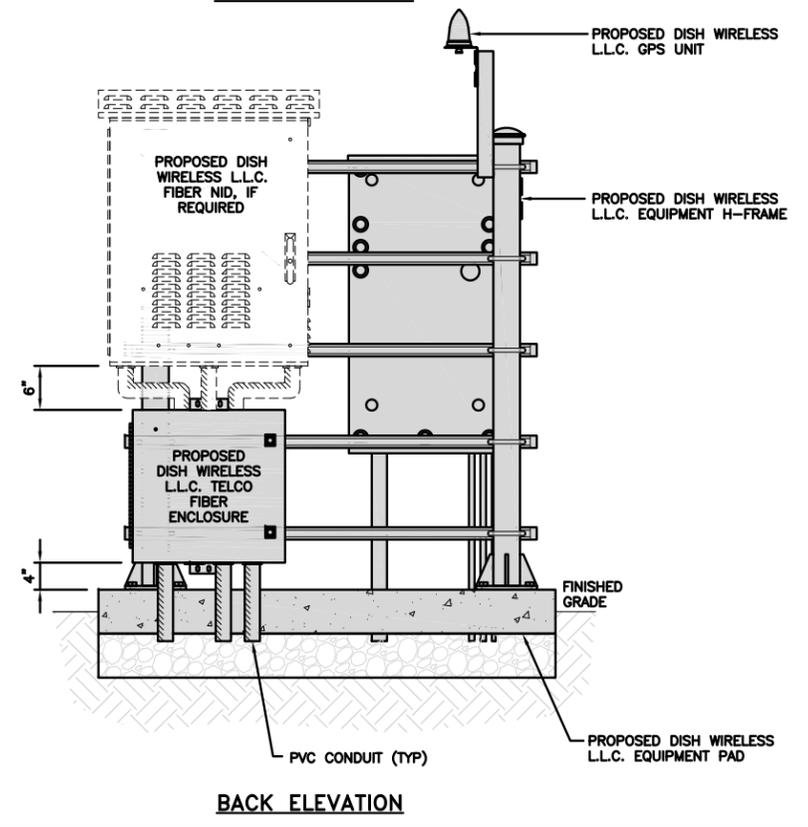
NO SCALE 5

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.

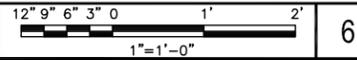


FRONT ELEVATION



BACK ELEVATION

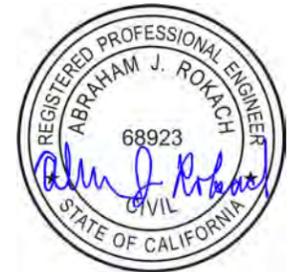
H-FRAME EQUIPMENT ELEVATION



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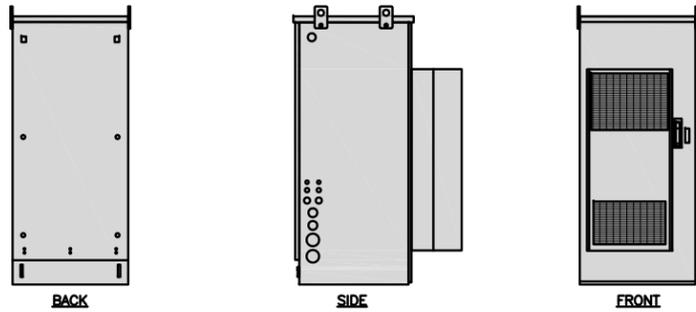
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PROJECT INFORMATION  
SFSF000115A  
CA-CCI-T-815755  
4900 SONOMA HWY.  
SANTA ROSA, CA 95409

SHEET TITLE  
EQUIPMENT PLATFORM AND  
H-FRAME DETAILS

SHEET NUMBER

A-3

CHARLES INDUSTRY HEX CUBE-PM639155N4	
DIMENSIONS (HxWxD)	74"x32"x32"
POWER PLANT	-48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 lbs

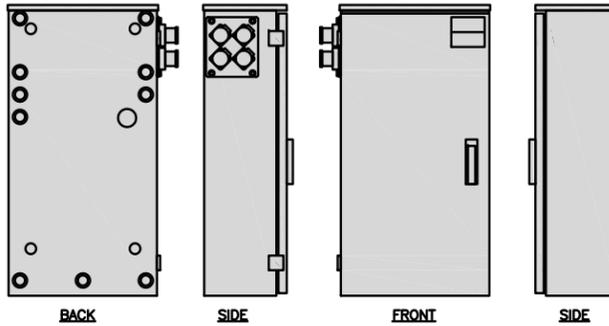
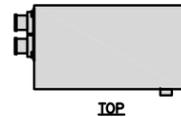


CABINET DETAIL

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

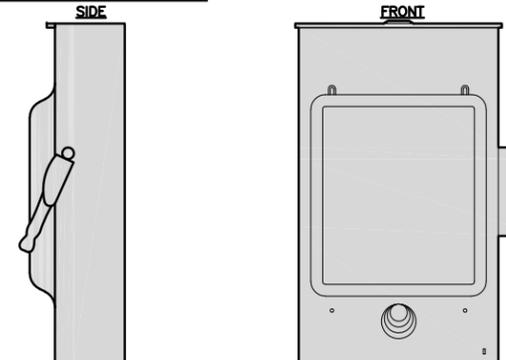
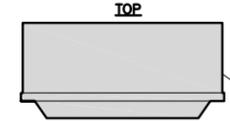


POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

2

SQUARE D SAFETY SWITCHES D224NRB	
ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
WEIGHT	53.51 LB
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E-2875



SAFETY SWITCH DETAIL

NO SCALE

3

EATON B-LINE METER MAIN 224-MTB	
ENCLOSURE DIM (HxWxD)	30.0"x22.0"x6.0"
WEIGHT	52.0 lbs
ENCLOSURE TYPE	NEMA 3R RAINPROOF
VOLTAGE	120/240V
SERVICE TYPE	1φ3W
AMPERAGE RATING	200 CONT. AMP
INTERRUPT RATING	10 kAIC
NUMBER OF JAWS	4
MAIN DISCONNECT	200A 2P CB

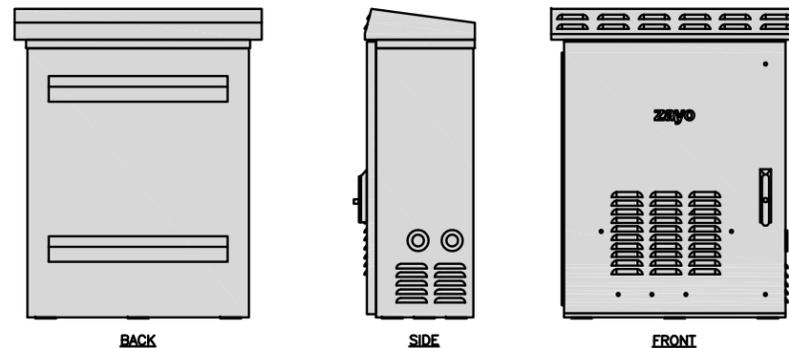
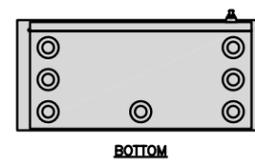


METER DETAIL

NO SCALE

4

ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs

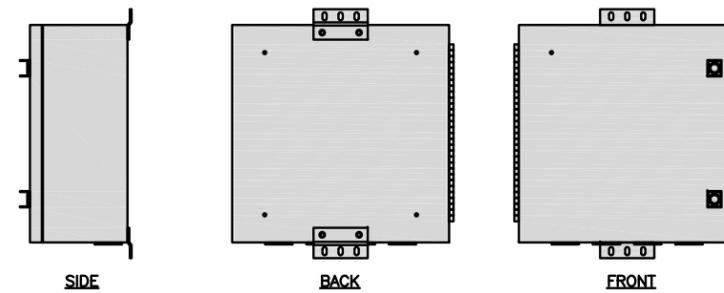


FIBER NID ENCLOSURE DETAIL

NO SCALE

5

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

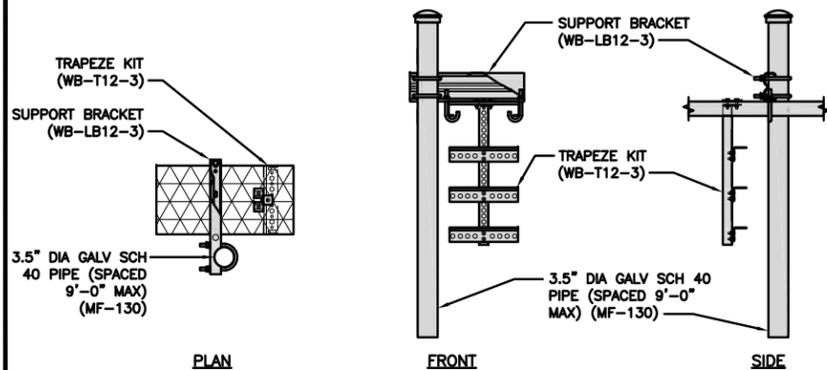


FIBER TELCO ENCLOSURE DETAIL

NO SCALE

6

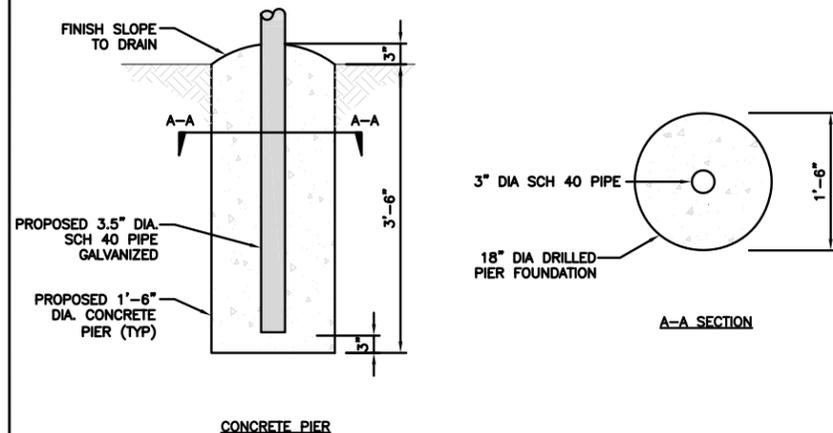
COMMSCOPE WB-K110-B WAVEGUIDE BRIDGE KIT		INCLUDED PRODUCTS: WB-T12-3 TRAPEZE KIT, 3 RUNGS WB-LB12-3 SUPPORT BRACKET MF-130 DIRECT BURIAL PIPE COLUMN, 13'-4"
DIMENSIONS (HxL)	160"x10'	
WEIGHT/ VOLUME	325.0 LBS	
CABLE RUN (QTY)	12	



ICE BRIDGE DETAIL

NO SCALE

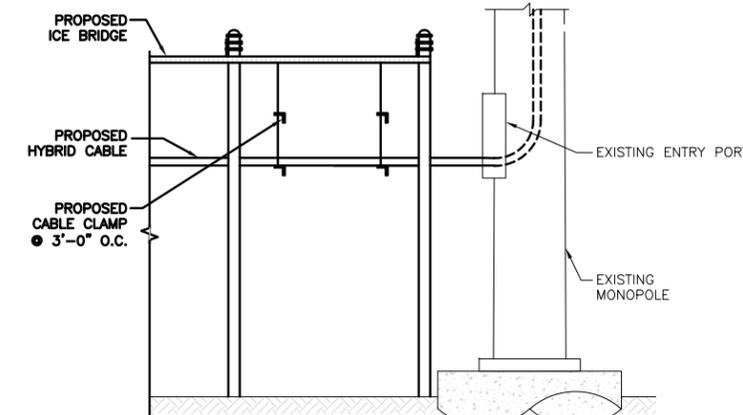
7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL

NO SCALE

8



HYBRID CABLE RUN

NO SCALE

9



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JES CJ CJ

RFDS REV #: 2

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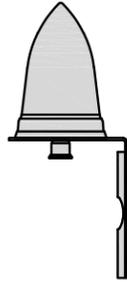
DISH WIRELESS L.L.C.  
PROJECT INFORMATION  
SFSF000115A  
CA-CCI-T-815755  
4900 SONOMA HWY.  
SANTA ROSA, CA 95409

SHEET TITLE  
EQUIPMENT DETAILS

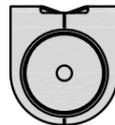
SHEET NUMBER

A-4

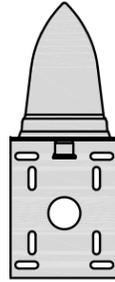
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



SIDE



TOP

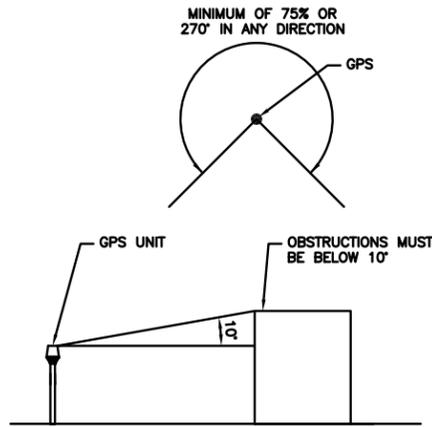


FRONT

GPS DETAIL

NO SCALE

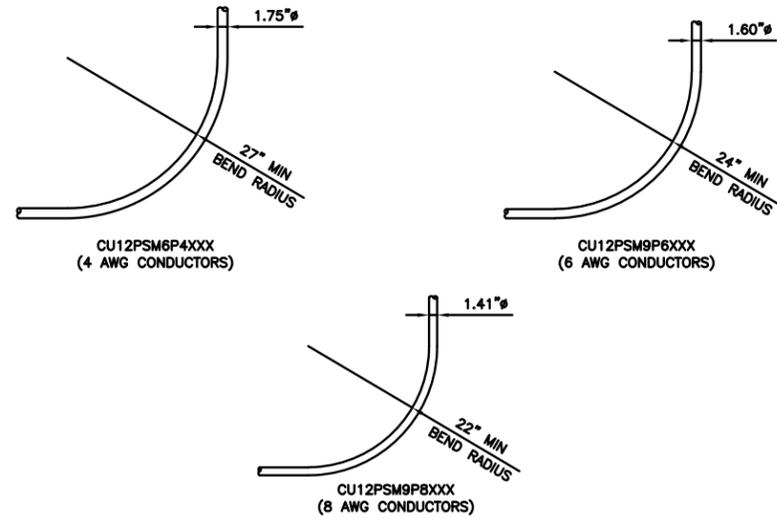
1



GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2

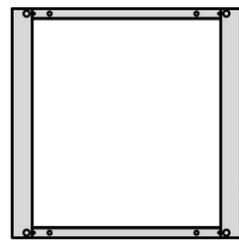


CABLES UNLIMITED HYBRID CABLE  
MINIMUM BEND RADIUSES

NO SCALE

3

CHARLES INDUSTRY LT-97-002422 PLINTH KIT	
DIMENSIONS (HxWxD):	6"x 32"x 32"
NOTE: GASKET AND MOUNTING HARDWARE INCLUDED	



PLAN



FRONT/BACK

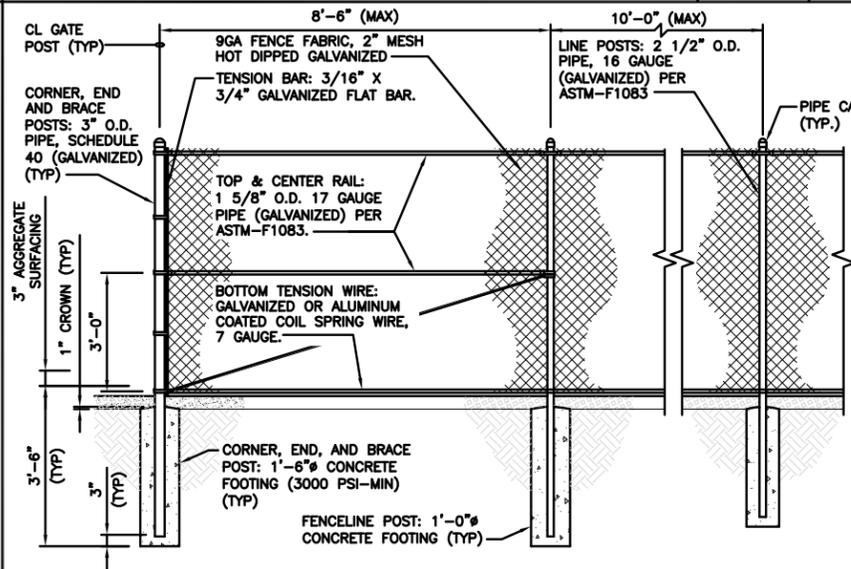


SIDE

CABINET DETAIL

NO SCALE

4

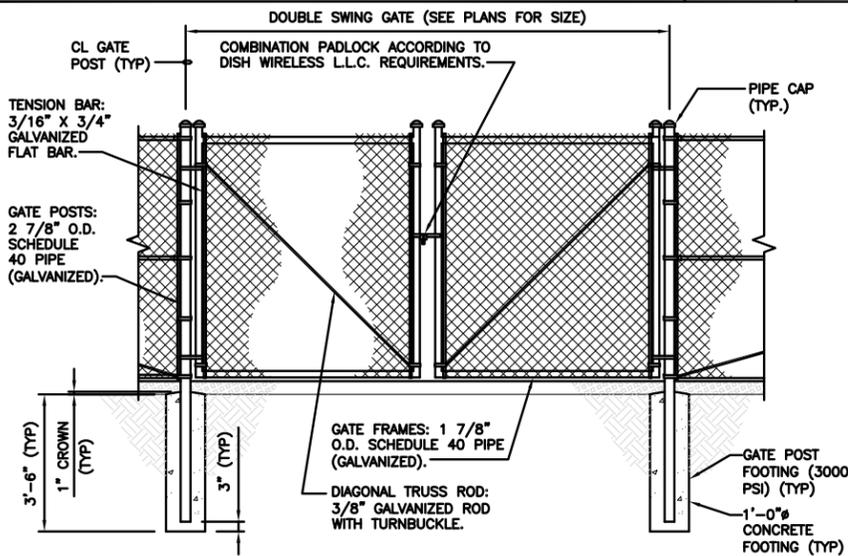


TYPICAL FENCE DETAIL

NO SCALE

5

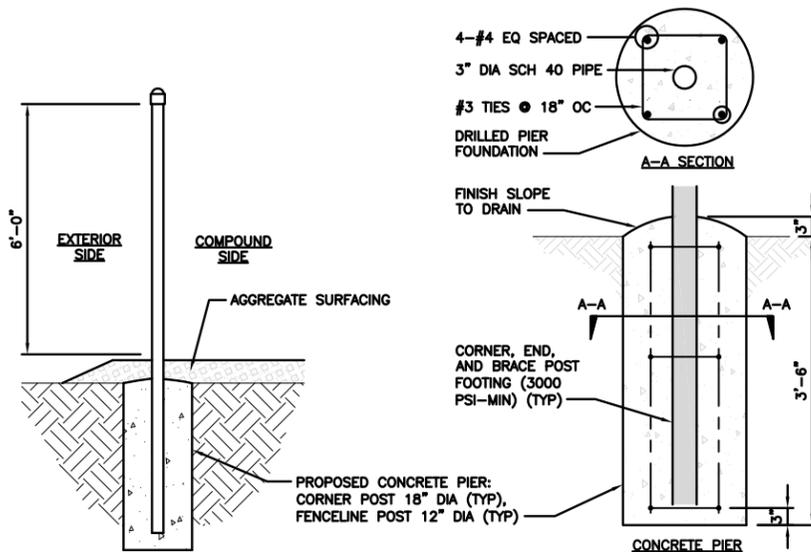
- ① LINE POSTS: 2 1/2" O.D. PIPE, 16 GAUGE (GALVANIZED) PER ASTM-F1083.
- ② CORNER, END AND BRACE POSTS: 3" O.D. PIPE, SCHEDULE 40 (GALVANIZED).
- ③ TOP RAIL: 1 5/8" O.D. 17 GAUGE PIPE (GALVANIZED) PER ASTM-F1083.
- ④ BRACE RAIL: 1 5/8" O.D. 17 GAUGE PIPE (GALVANIZED).
- ⑤ DIAGONAL TRUSS ROD: 3/8" GALVANIZED 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 L.L.C. 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 9GA FENCE FABRIC, 2" MESH HOT DIPPED GALVANIZED
- ⑬ 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 GATE ELEVATION DETAIL

NO SCALE

6



TYPICAL FENCE & CONCRETE PIER SECTION

NO SCALE

7

MATERIAL DESCRIPTION

NO SCALE

8

**dish**  
wireless.

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SHEET TITLE  
EQUIPMENT DETAILS

SHEET NUMBER

**A-5**

POLARIUM SLB48-200-228-1U	
ENCLOSURE SIZE	23" 2U
RATED VOLTAGE	48 V
DIMENSIONS (WxDxH)	21.4"x28.5"x3.4"
WEIGHT	APPROX. 53KG(116.8 LBS)
BATTERY TYPE	NMC
RATED ENERGY (kwh) PER BATTERY	9.676 KWH

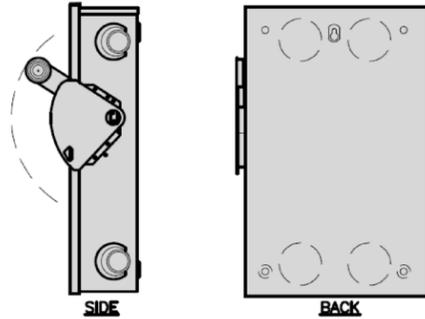
BATTERY INFORMATION	
- NUMBER OF BATTERIES = 2	
- (2) BATT IN ECAB	
- VOL ELECTROLYTE = 4.04 GALLON	
- CLASSIFICATION = VRLA VALUE	
- REGULATED LEAD ACID, HEALTH RATING 3, FIRE RATING 0, REACTIVE RATING 2	
- MODEL# POLARIUM SLB48-200-228-1U	



BATTERY

NO SCALE 1

EATON DG224URK-NPS SAFETY SWITCHES	
ENCLOSURE DIM (HxWxD)	19.56"x11.25"x9.5"
TOTAL WEIGHT (EMPTY)	67.00 LBS
VOLTAGE/AMPS/WATT	240VAC/250VDC/200A
ENCLOSURE RATING	OUTDOOR NEMA 3R



BATTERY SAFETY SWITCH

NO SCALE 2

**NOTICE**

This area contains energized battery systems  
This area contains energized electrical circuits  
The battery electrolyte solutions are corrosive liquids  
No smoking, spark producing devices or flames

BATTERY STORAGE SYSTEM SIGN



NFPA 704 HAZARD IDENTIFICATION PLACARD

COMPLIANCE SIGNAGE

NO SCALE 3

NOT USED

NO SCALE 4

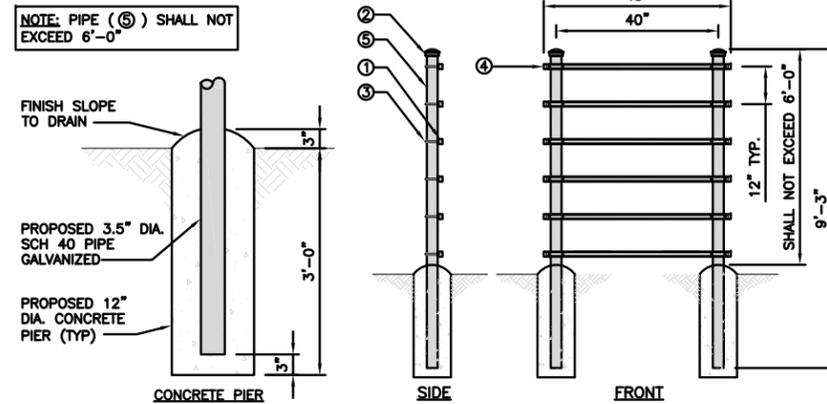
NOT USED

NO SCALE 5

H-FRAME	
UNISTRUT/SUPPORT RAIL	6
WEIGHT	273

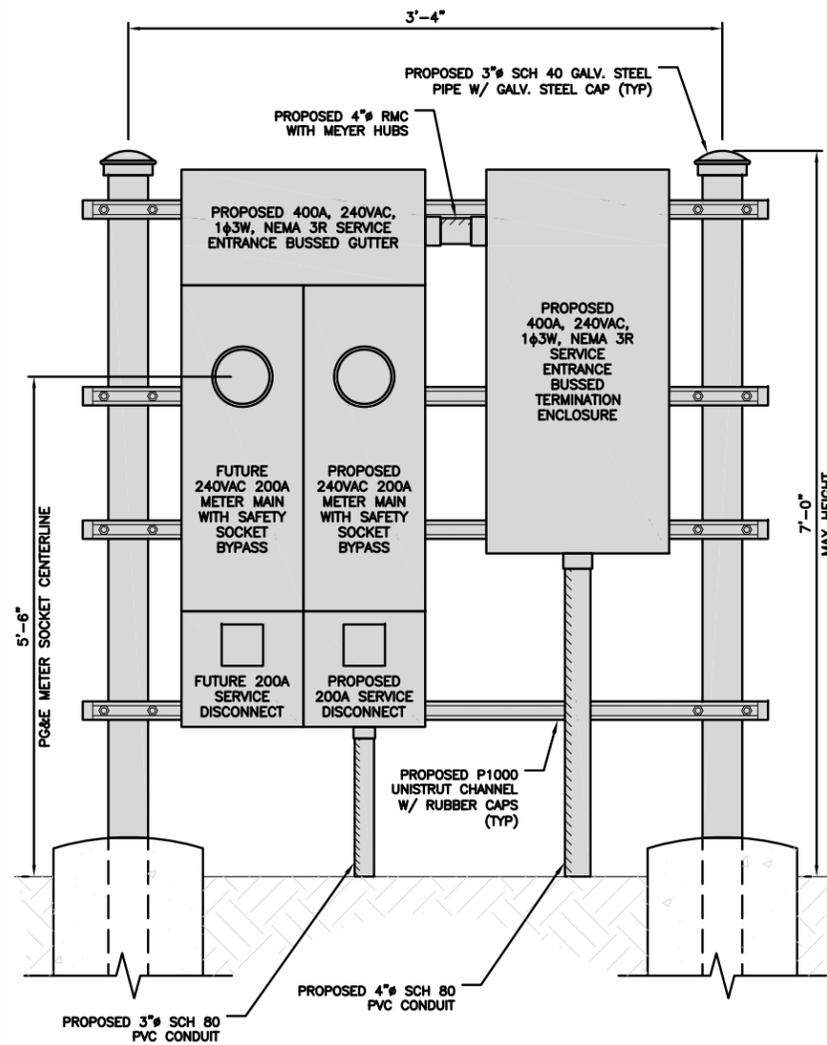
ITEM#	DESCRIPTION
1	UNISTRUT, 1-5/8"x1-5/8"x5", SLOTTED
2	PIPE CAP FOR 3.5" OD PIPE, HDG
3	U-BOLT KIT, 3.5" OD (1 U-BOLT)
4	END CAP, RED, 1-5/8" UNISTRUT
5	3.5" OD PIPE, 126" LONG

NOTE: PIPE (5) SHALL NOT EXCEED 6'-0"



H-FRAME CONCRETE PIER INSTALLATION DETAIL

NO SCALE 7



METER FRAME DETAIL

NO SCALE 8



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JES CJ CJ

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A&E PROJECT NUMBER  
2021.0025.815755

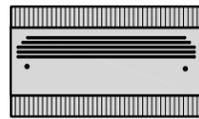
DISH WIRELESS L.L.C.  
PROJECT INFORMATION  
SFSF000115A  
CA-CCI-T-815755  
4900 SONOMA HWY.  
SANTA ROSA, CA 95409

SHEET TITLE  
EQUIPMENT DETAILS

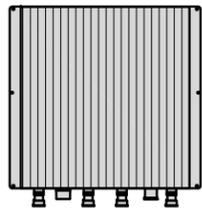
SHEET NUMBER

A-6

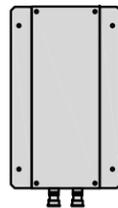
FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



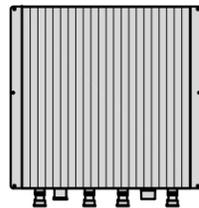
PLAN



BACK

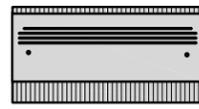


SIDE

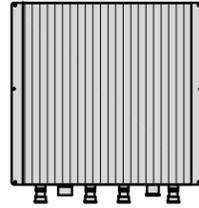


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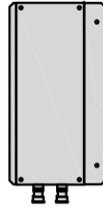
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



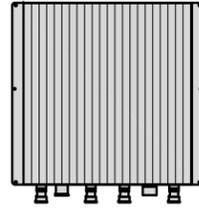
PLAN



BACK



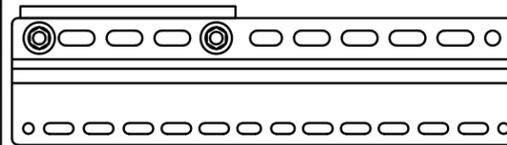
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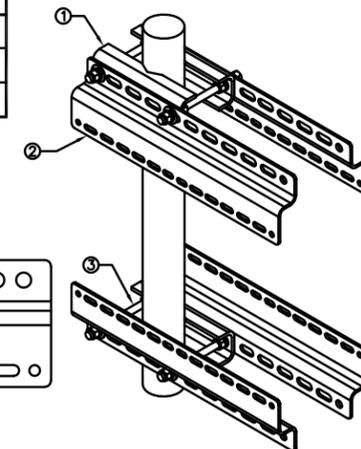
FRONT

SABRE DOUBLE Z-BRACKET C10123155	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



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



RRH DETAIL

NO SCALE

1

RRH DETAIL

NO SCALE

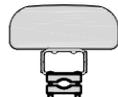
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RRH MOUNT DETAIL

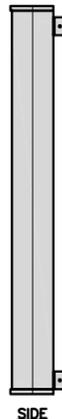
NO SCALE

3

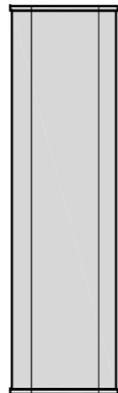
JMA MX08FRO665-21	
DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



PLAN



SIDE



FRONT

NO SCALE

4

NOT USED

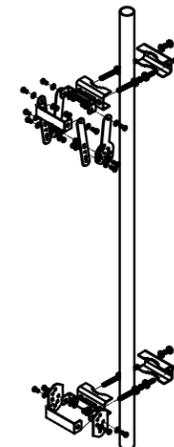
NO SCALE

5

JMA ANTENNA MOUNT BRACKET #91900318	
TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

NOTE:  
KIT #91900318: TOP AND BOTTOM BRACKETS  
FOR 4-, 6-, AND 8-FOOT ANTENNAS  
ANTENNA BRACKET NOT PART OF KIT

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



ANTENNA BRACKET DETAIL

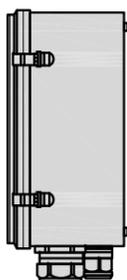
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6

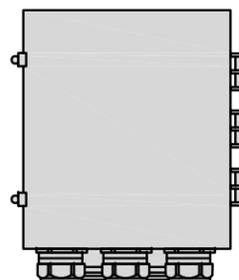
RAYCAP RDIC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



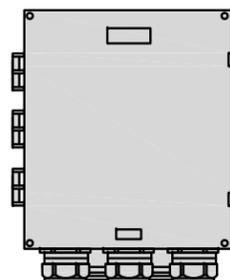
PLAN



SIDE



BACK



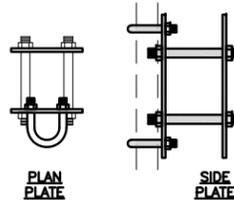
FRONT

NO SCALE

7

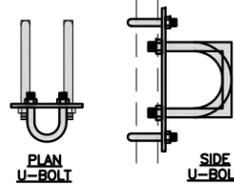
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

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



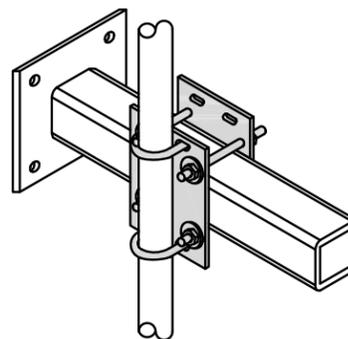
PLAN PLATE

SIDE PLATE



PLAN U-BOLT

SIDE U-BOLT



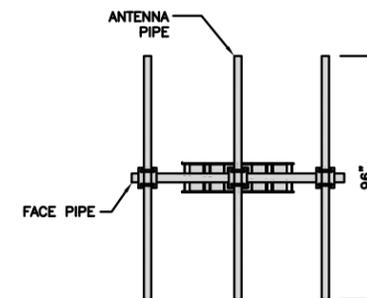
RRH/OVP MOUNT DETAIL

NO SCALE

8

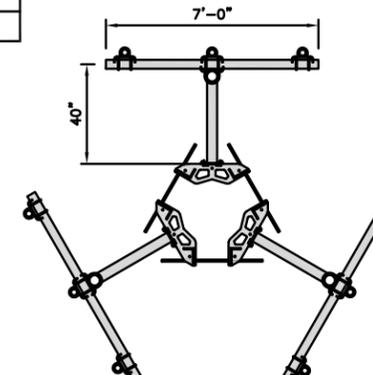
COMMSCOPE MC-K6MHDX-9-96	
FACE WIDTH	7'-0"
WEIGHT	1203.31 Lbs
NOTE: 15" TO 50" O.D.	

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



ANTENNA PIPE

FACE PIPE



T-ARM MOUNT DETAIL

NO SCALE

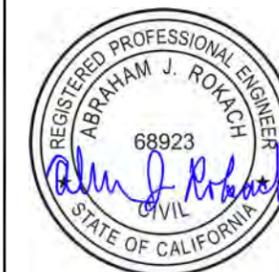
9



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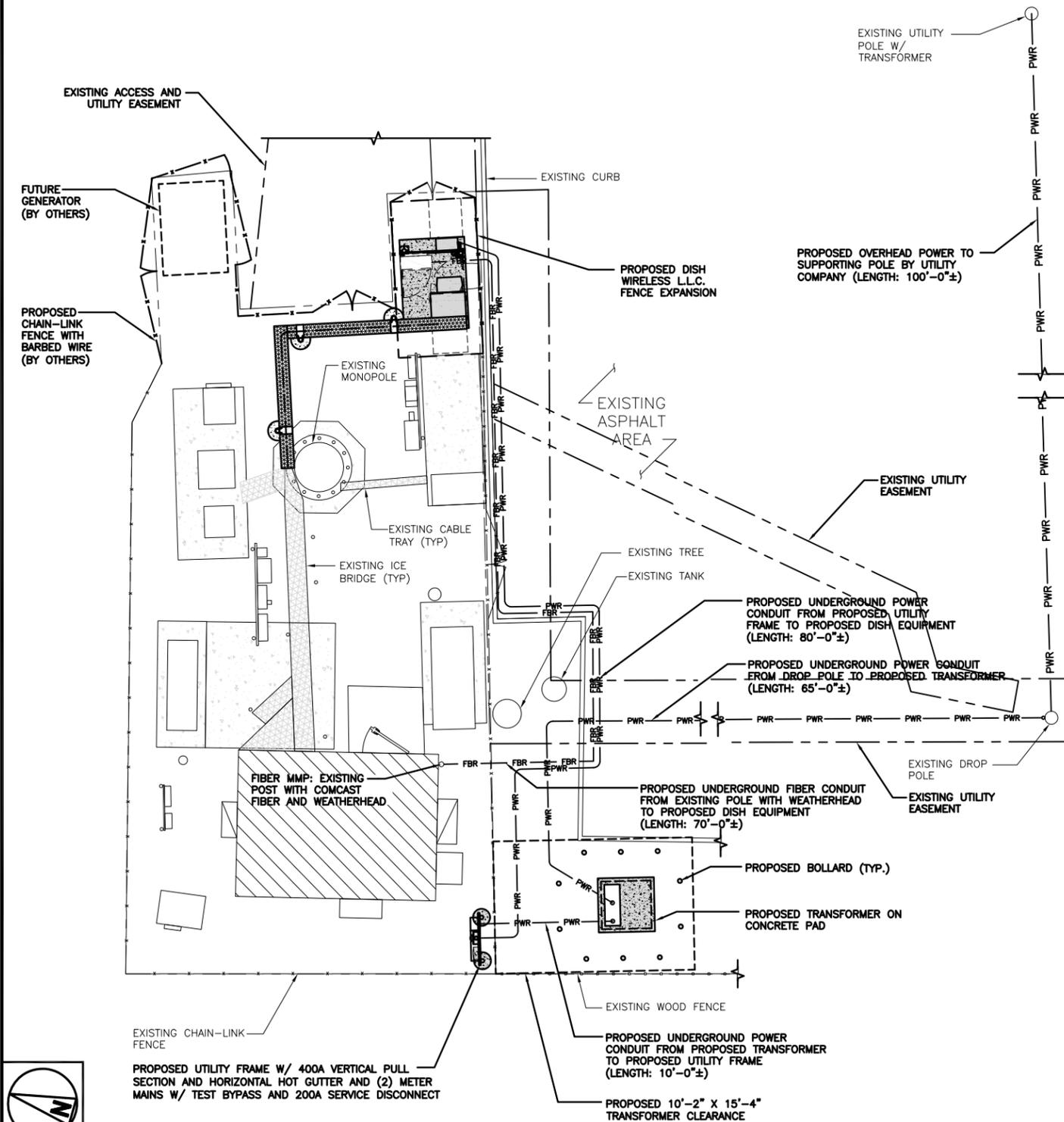
SHEET TITLE  
EQUIPMENT DETAILS

SHEET NUMBER

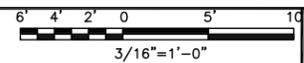
A-7

**NOTES**

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. DUE TO UTILITY EASEMENT RIGHTS SPECIFIED IN THE GROUND LEASE, CUSTOMER MAY INSTALL EQUIPMENT WITHIN SPECIFIED UTILITY EASEMENT AREA. "PWR" AND "FBR" PATHS DEPICTED ON A-1 AND E-1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO A SURVEY, EXHIBITS, MEETS AND BOUNDS OF THE UTILITY EASEMENT, 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 MATERIALLY INCONSISTENT WITH THE "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 AND SAID VARIANCE IS NOT NOTED ON CDs, PLEASE NOTIFY CORE AS FURTHER COORDINATION MAY BE NEEDED.



**UTILITY ROUTE PLAN**



1

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



**UTILITY ROUTE PLAN (OVERALL)**

NO SCALE

3



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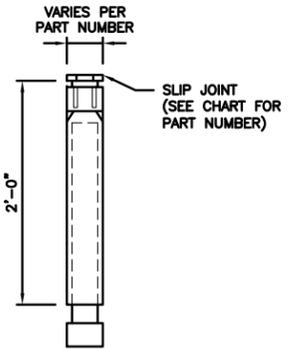
SHEET TITLE  
ELECTRICAL/FIBER ROUTE  
PLAN AND NOTES

SHEET NUMBER

**E-1**

**CARLON EXPANSION FITTINGS**

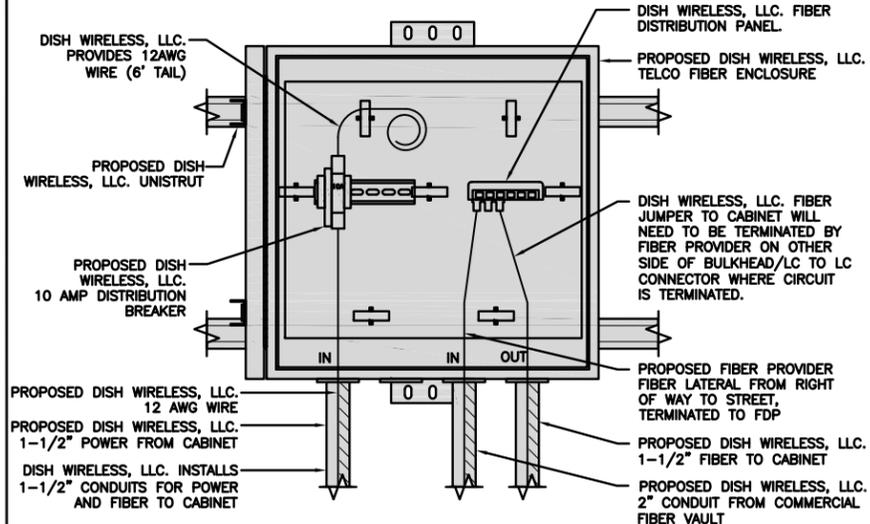
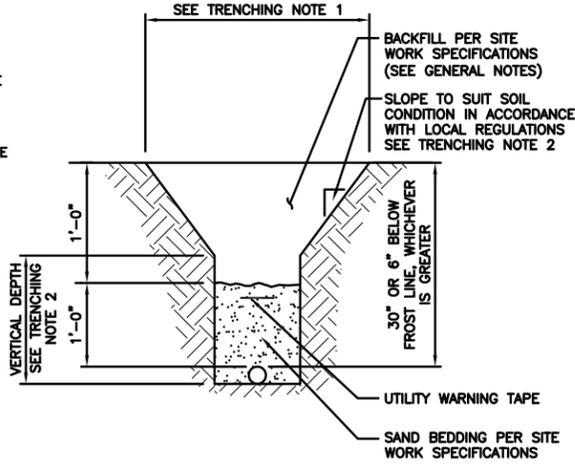
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N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



NOTE: CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

**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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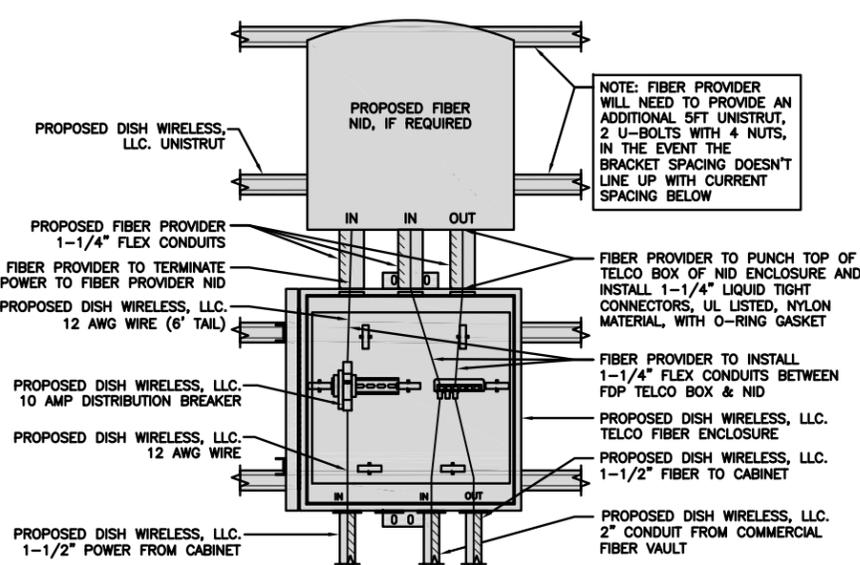
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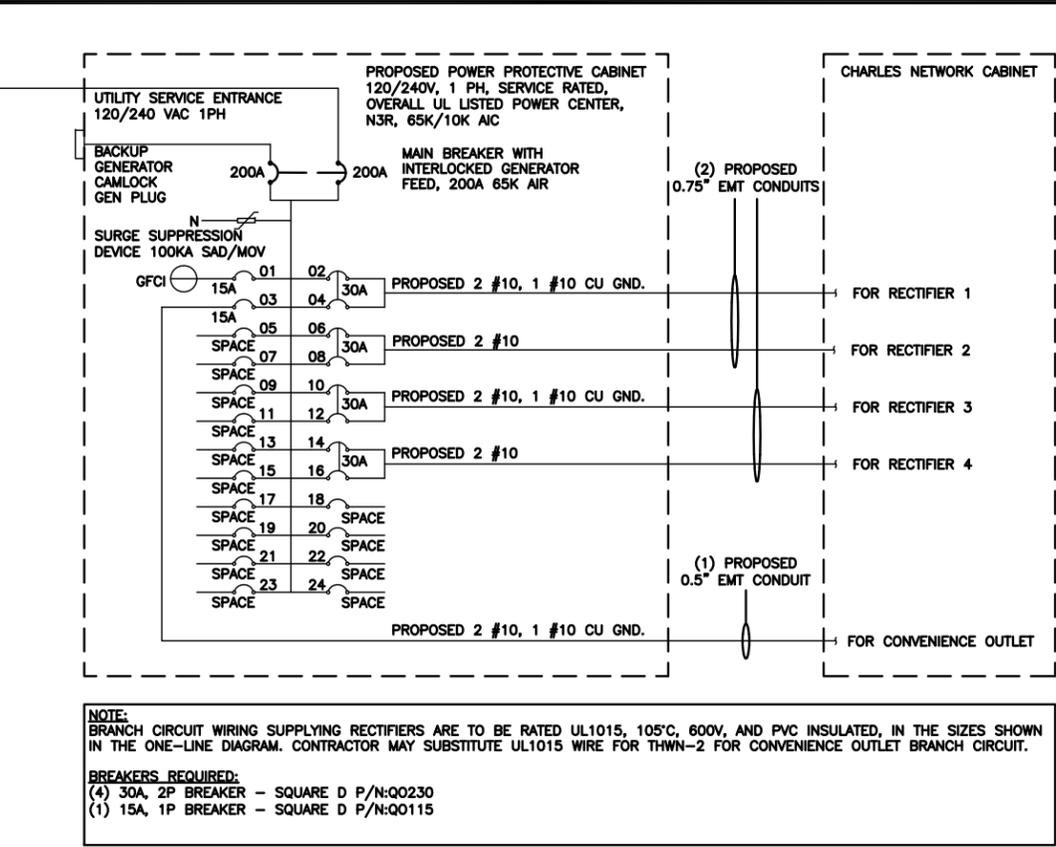
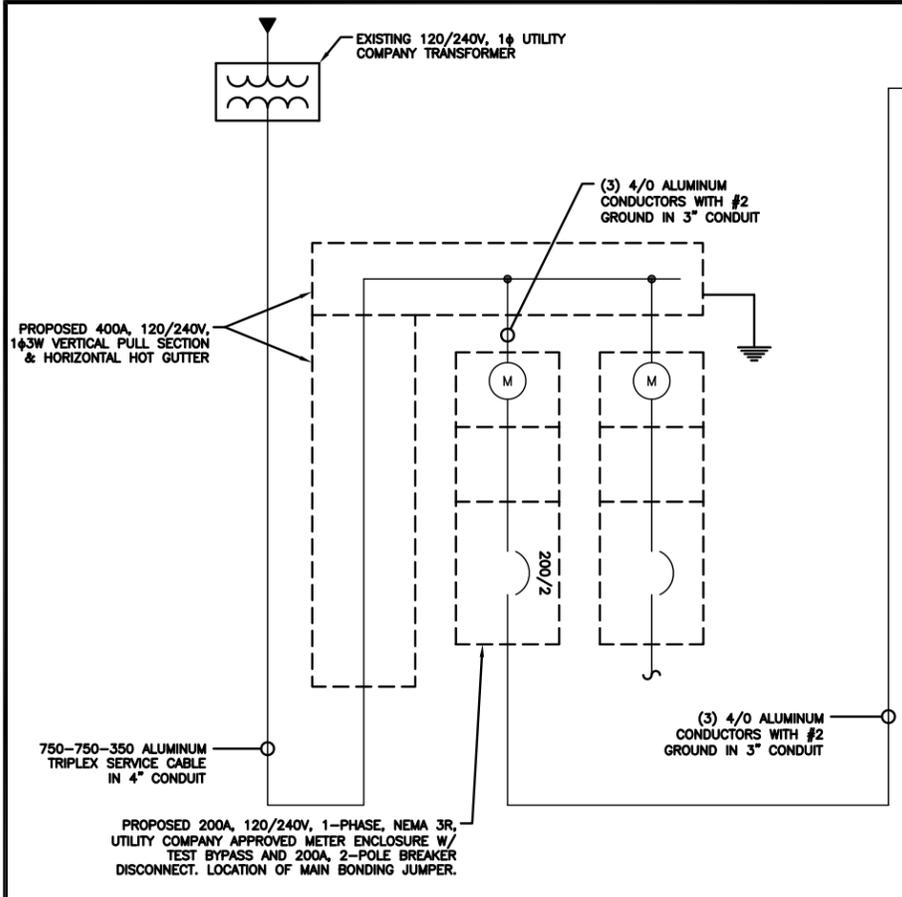
**E-2**

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
----------	----------	---	----------	----------	---	----------	----------	---



**NOTES**

THE (2) CONDUITS WITH (4) CURRENT CARRYING CONDUCTORS EACH, SHALL APPLY THE ADJUSTMENT FACTOR OF 80% PER 2014/17 NEC TABLE 310.15(B)(3)(g) OR 2020 NEC TABLE 310.15(C)(1) FOR UL1015 WIRE.

#12 FOR 15A-20A/1P BREAKER: 0.8 x 30A = 24.0A  
 #10 FOR 25A-30A/2P BREAKER: 0.8 x 40A = 32.0A  
 #8 FOR 35A-40A/2P BREAKER: 0.8 x 55A = 44.0A  
 #6 FOR 45A-60A/2P BREAKER: 0.8 x 75A = 60.0A

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

CONDUIT SIZING: AT 40% FILL PER NEC CHAPTER 9, TABLE 4, ARTICLE 353.  
 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

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

RECTIFIER CONDUCTORS (2 CONDUITS): USING UL1015, CU.

#10 - 0.0266 SQ. IN X 4 = 0.1064 SQ. IN  
 #10 - 0.0082 SQ. IN X 1 = 0.0082 SQ. IN <BARE GROUND  
 TOTAL = 0.1146 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (5) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN-2, AL.

#4/0 - 0.3237 SQ. IN X 3 = 0.9711 SQ. IN  
 #2 - 0.1158 SQ. IN X 1 = 0.1158 SQ. IN <GROUND  
 TOTAL = 1.0869 SQ. IN

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

PPC ONE-LINE DIAGRAM

NO SCALE 1

**PROPOSED CHARLES 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	30A	2880	2880	ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET			15A	3	B	4	30A	2880	2880	ABB/GE INFINITY RECTIFIER 1
-SPACE-				5	A	6	30A	2880	2880	ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8	30A	2880	2880	ABB/GE INFINITY RECTIFIER 2
-SPACE-				9	A	10	30A	2880	2880	ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12	30A	2880	2880	ABB/GE INFINITY RECTIFIER 3
-SPACE-				13	A	14	30A	2880	2880	ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16	30A	2880	2880	ABB/GE INFINITY RECTIFIER 4
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						11520	11520	
200A MCB, 1 $\phi$ , 24 SPACE, 120/240V	L1	L2								
MB RATING: 65,000 AIC	11700	11700						VOLTAGE AMPS		
	98	98						AMPS		
				98				MAX AMPS		
				123				MAX 125%		

PANEL SCHEDULE

NO SCALE 2

NOT USED

NO SCALE 3

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**CONSTRUCTION DOCUMENTS**

SUBMITTALS

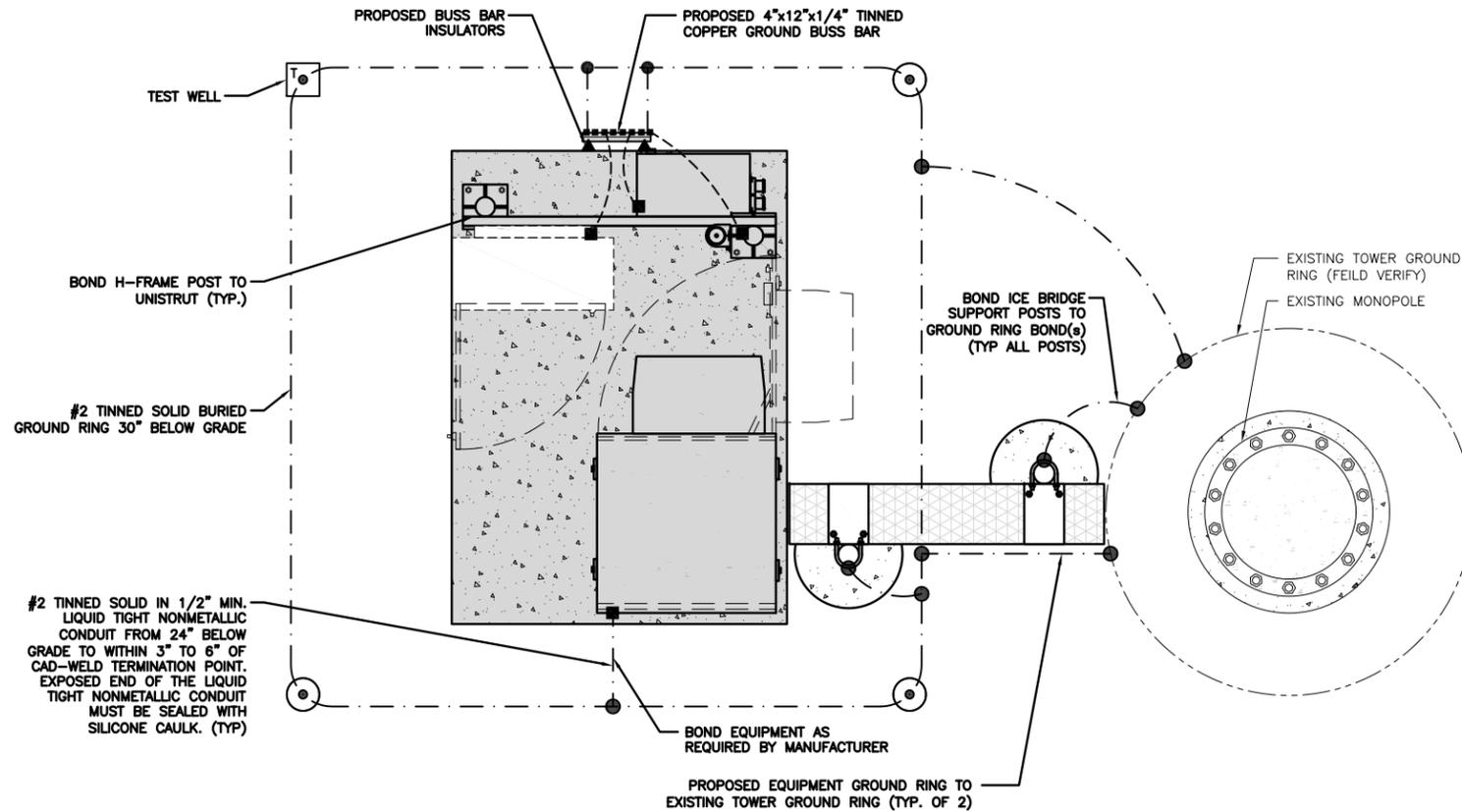
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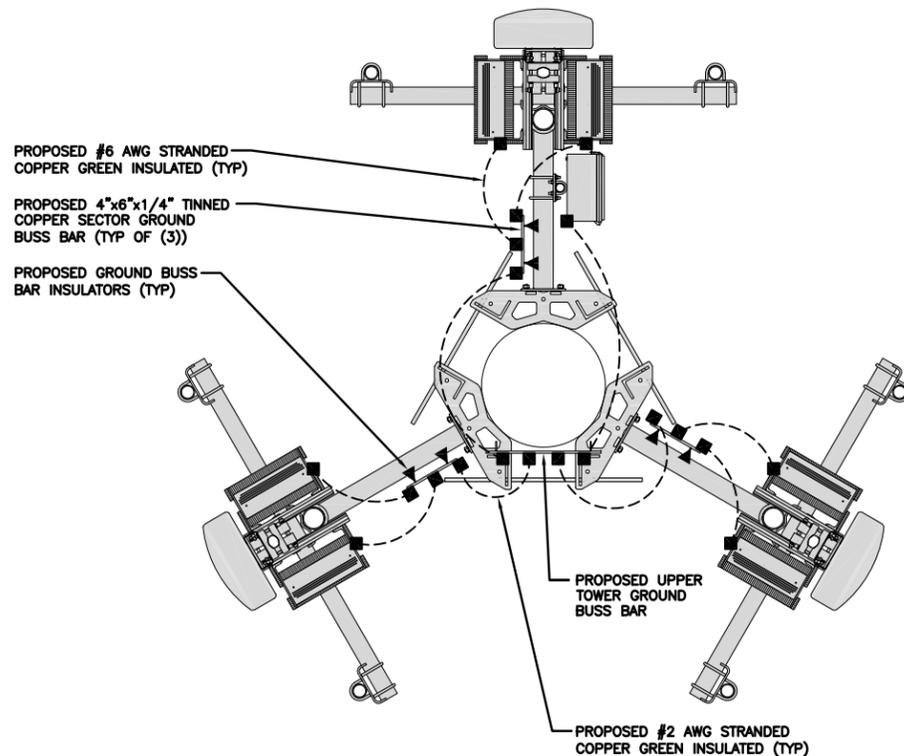
SHEET TITLE  
ELECTRICAL ONE-LINE, FAULT  
CALCS & PANEL SCHEDULE

SHEET NUMBER  
**E-3**



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- ▬ GROUND BUS BAR
- GROUND ROD
- T TEST GROUND ROD WITH INSPECTION SLEEVE
- #6 AWG STRANDED & INSULATED
- - - #2 AWG SOLID COPPER TINNED
- ▲ BUSS BAR INSULATOR

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, LLC. 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.
- (I) TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- (J) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- (K) 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.
- (L) 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.
- (M) 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.
- (N) 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.
- (O) 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.
- (P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR. REFER TO DISH WIRELESS, LLC. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE 3



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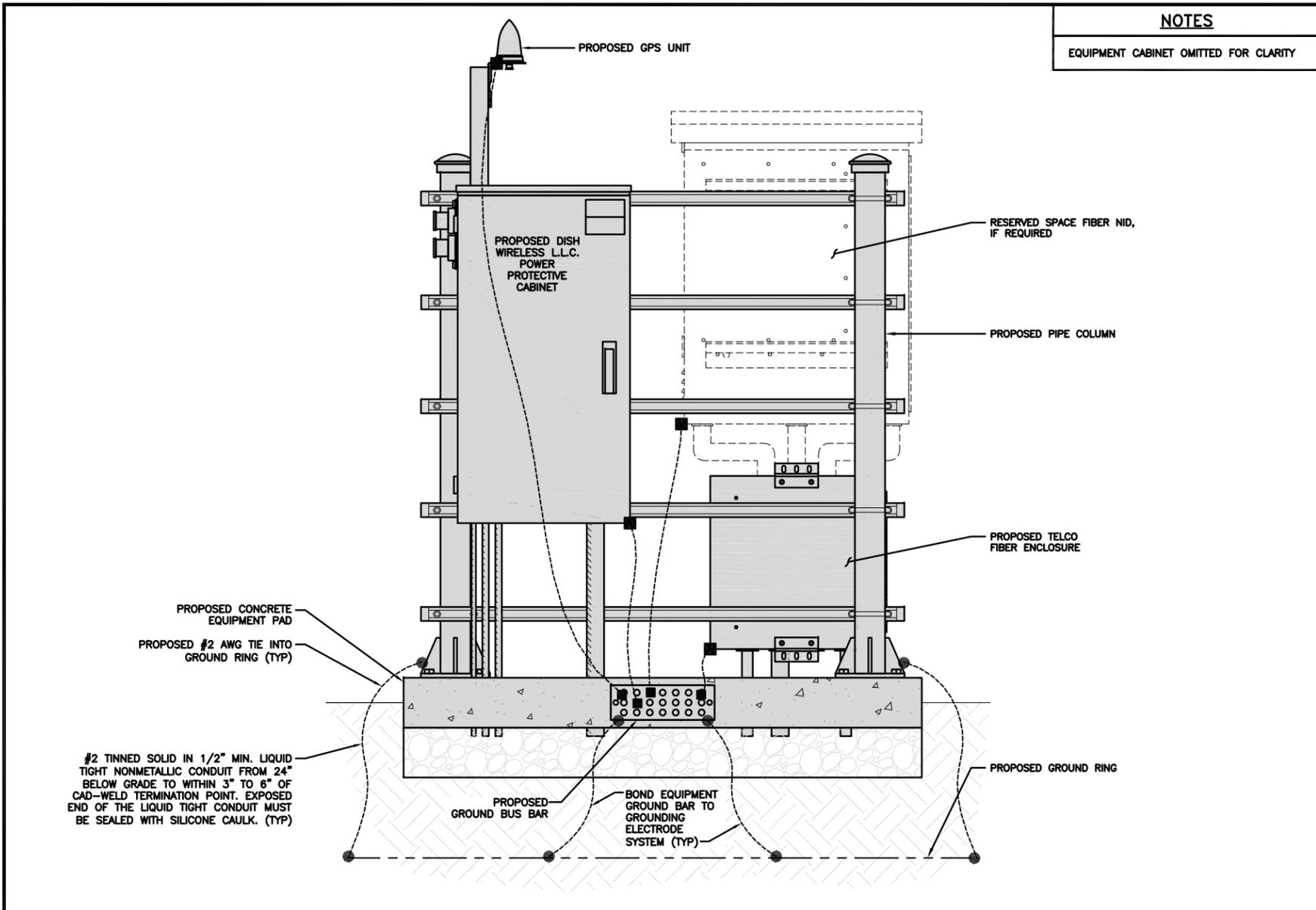
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SHEET TITLE  
GROUNDING PLANS  
AND NOTES

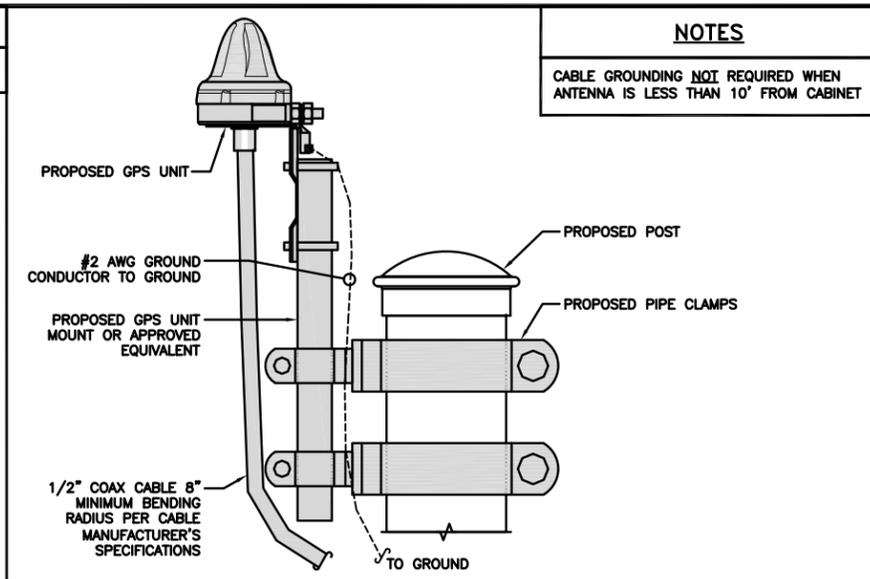
SHEET NUMBER

G-1



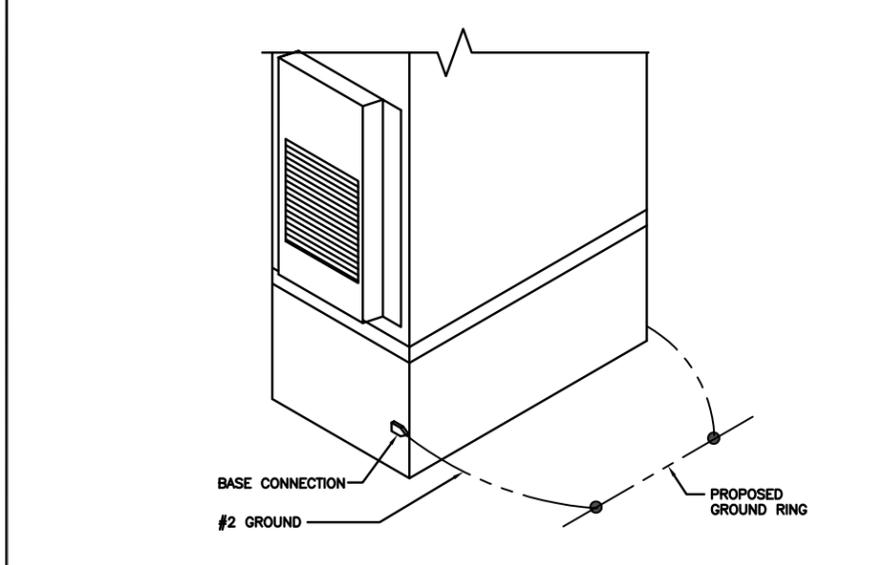
**H-FRAME GROUNDING DETAIL**

NO SCALE 1



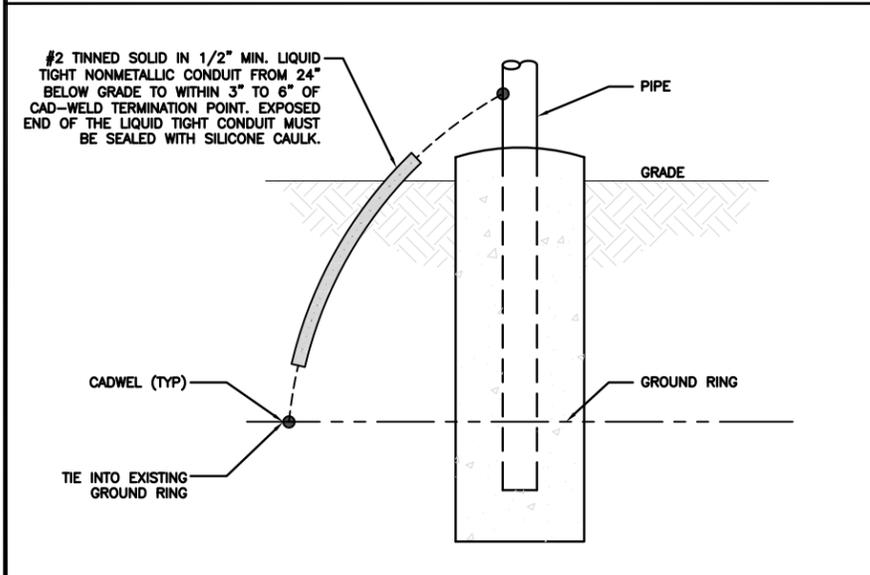
**TYPICAL GPS UNIT GROUNDING**

NO SCALE 2



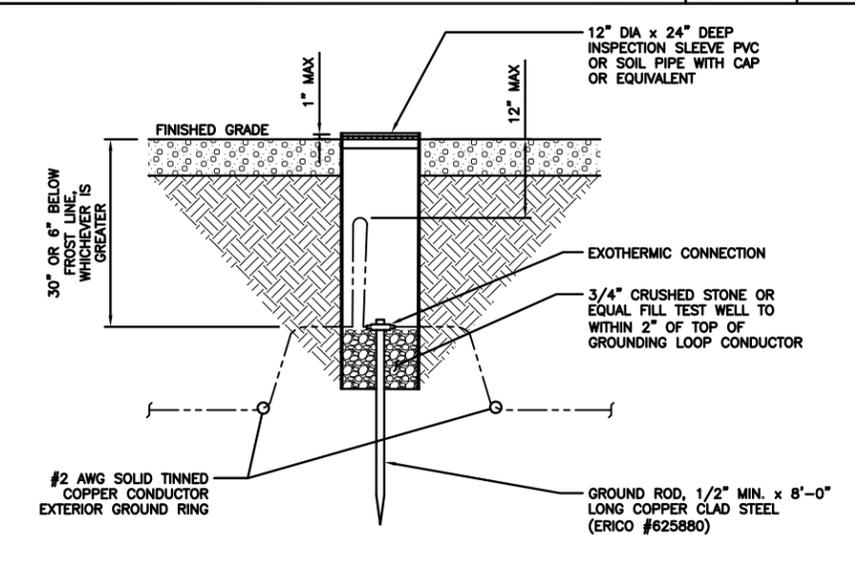
**OUTDOOR CABINET GROUNDING**

NO SCALE 3



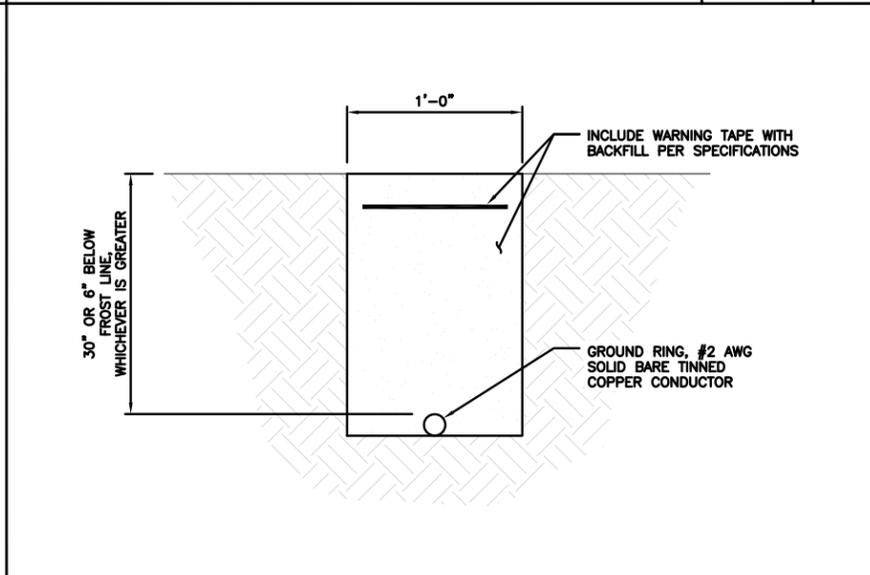
**TRANSITIONING GROUND DETAIL**

NO SCALE 4



**TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE**

NO SCALE 5



**TYPICAL GROUND RING TRENCH**

NO SCALE 6



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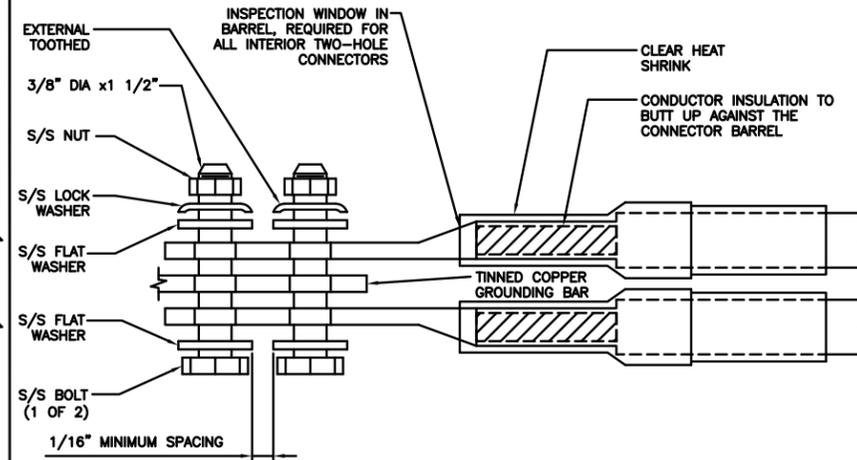
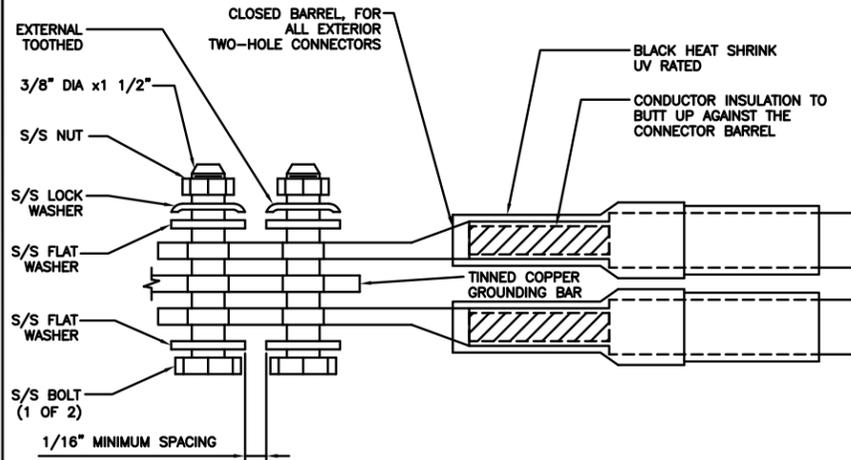
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SHEET TITLE  
GROUNDING DETAILS

SHEET NUMBER  
**G-2**

1. 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.
2. 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.
3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.
6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.
8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).



TYPICAL GROUNDING NOTES

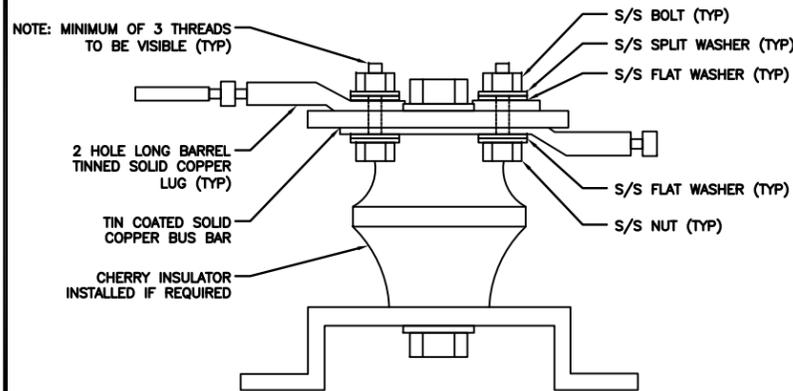
NO SCALE 1

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



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SHEET TITLE  
GROUNDING DETAILS

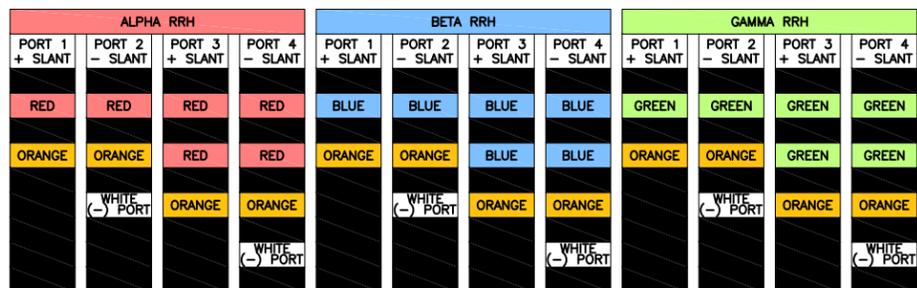
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G-3

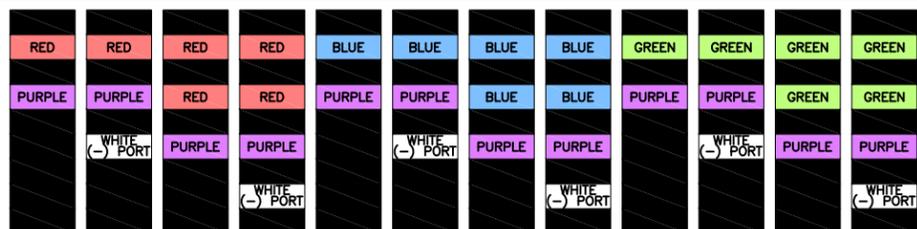
**HYBRID/DISCREET CABLES**

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

LOW-BAND RRH  
(600 MHz N71 BASEBAND) +  
(850 MHz N26 BAND) +  
(700 MHz N29 BAND) - OPTIONAL PER MARKET  
ADD FREQUENCY COLOR TO SECTOR BAND  
(CBRS WILL USE YELLOW BAND)



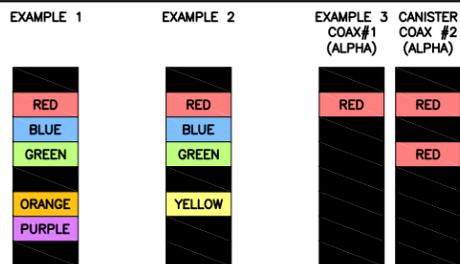
MID-BAND RRH  
(AWS BANDS N66+N70)  
ADD FREQUENCY COLOR TO SECTOR BAND  
(CBRS WILL USE YELLOW BANDS)



**HYBRID/DISCREET CABLES**

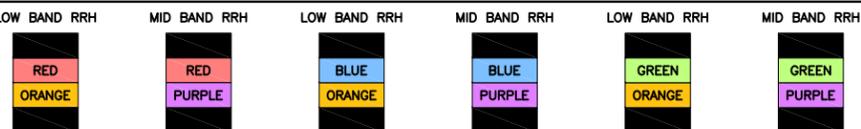
INCLUDE SECTOR BANDS BEING SUPPORTED  
ALONG WITH FREQUENCY BANDS.

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 3 - MAIN COAX WITH GROUND  
MOUNTED RRHS.



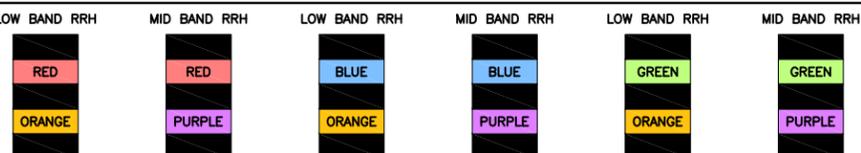
**FIBER JUMPERS TO RRHS**

LOW-BAND HHR FIBER CABLES HAVE SECTOR  
STRIPE ONLY.



**POWER CABLES TO RRHS**

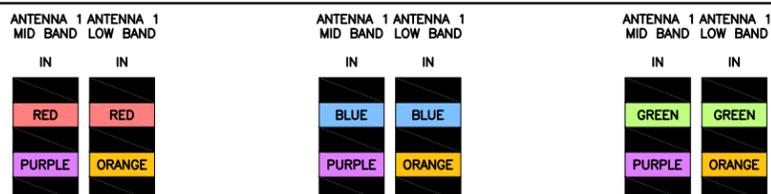
LOW-BAND RRH POWER CABLES HAVE SECTOR  
STRIPE ONLY.



**RET MOTORS AT ANTENNAS**

RET CONTROL IS HANDLED BY THE MID-BAND  
RRH WHEN ONE SET OF RET PORTS EXIST ON  
ANTENNA.

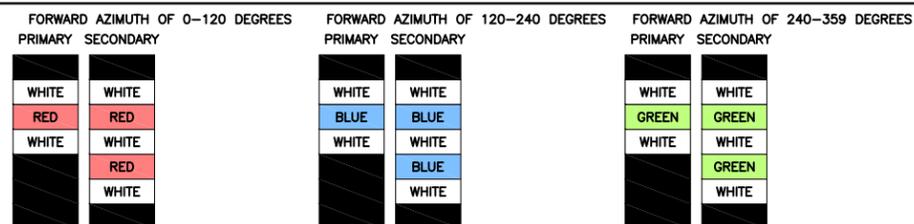
SEPARATE RET CABLES ARE USED WHEN  
ANTENNA PORTS PROVIDE INPUTS FOR BOTH  
LOW AND MID BANDS.



**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.



**RF CABLE COLOR CODES**

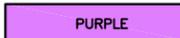
NO SCALE

1

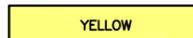
LOW BANDS (N71+N26)  
OPTIONAL - (N29)



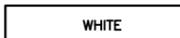
AWS  
(N66+N70+H-BLOCK)



CBRS TECH  
(3 GHz)



NEGATIVE SLANT PORT  
ON ANT/RRH



ALPHA SECTOR



BETA SECTOR



GAMMA SECTOR



COLOR IDENTIFIER

NO SCALE

2

NOT USED

NO SCALE

3

NOT USED

NO SCALE

4



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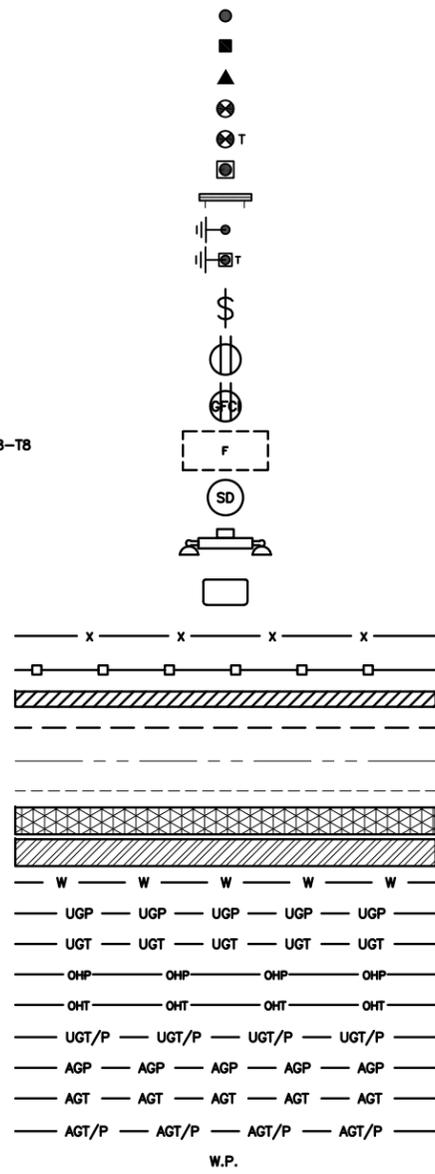
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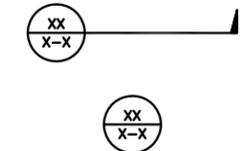
SHEET TITLE  
RF  
CABLE COLOR CODE

SHEET NUMBER  
**RF-1**

EXOTHERMIC CONNECTION  
 MECHANICAL CONNECTION  
 BUSS BAR INSULATOR  
 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-DOBTXD  
 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  
 ABV ABOVE  
 AC ALTERNATING CURRENT  
 ADDL ADDITIONAL  
 AFF ABOVE FINISHED FLOOR  
 AFG ABOVE FINISHED GRADE  
 AGL ABOVE GROUND LEVEL  
 AIC AMPERAGE INTERRUPTION CAPACITY  
 ALUM ALUMINUM  
 ALT ALTERNATE  
 ANT ANTENNA  
 APPROX APPROXIMATE  
 ARCH ARCHITECTURAL  
 ATS AUTOMATIC TRANSFER SWITCH  
 AWG AMERICAN WIRE GAUGE  
 BATT BATTERY  
 BLDG BUILDING  
 BLK BLOCK  
 BLKG BLOCKING  
 BM BEAM  
 BTC BARE TINNED COPPER CONDUCTOR  
 BOF BOTTOM OF FOOTING  
 CAB CABINET  
 CANT CANTILEVERED  
 CHG CHARGING  
 CLG CEILING  
 CLR CLEAR  
 COL COLUMN  
 COMM COMMON  
 CONC CONCRETE  
 CONSTR CONSTRUCTION  
 DBL DOUBLE  
 DC DIRECT CURRENT  
 DEPT DEPARTMENT  
 DF DOUGLAS FIR  
 DIA DIAMETER  
 DIAG DIAGONAL  
 DIM DIMENSION  
 DWG DRAWING  
 DWL DOWEL  
 EA EACH  
 EC ELECTRICAL CONDUCTOR  
 EL ELEVATION  
 ELEC ELECTRICAL  
 EMT ELECTRICAL METALLIC TUBING  
 ENG ENGINEER  
 EQ EQUAL  
 EXP EXPANSION  
 EXT EXTERIOR  
 EW EACH WAY  
 FAB FABRICATION  
 FF FINISH FLOOR  
 FG FINISH GRADE  
 FIF FACILITY INTERFACE FRAME  
 FIN FINISH(ED)  
 FLR FLOOR  
 FDN FOUNDATION  
 FOC FACE OF CONCRETE  
 FOM FACE OF MASONRY  
 FOS FACE OF STUD  
 FOW FACE OF WALL  
 FS FINISH SURFACE  
 FT FOOT  
 FTG FOOTING  
 GA GAUGE  
 GEN GENERATOR  
 GFCI GROUND FAULT CIRCUIT INTERRUPTER  
 GLB GLUE LAMINATED BEAM  
 GLV GALVANIZED  
 GPS GLOBAL POSITIONING SYSTEM  
 GND GROUND  
 GSM GLOBAL SYSTEM FOR MOBILE  
 HDG HOT DIPPED GALVANIZED  
 HDR HEADER  
 HGR HANGER  
 HVAC HEAT/VENTILATION/AIR CONDITIONING  
 HT HEIGHT  
 IGR INTERIOR GROUND RING

IN INCH  
 INT INTERIOR  
 LB(S) POUND(S)  
 LF LINEAR FEET  
 LTE LONG TERM EVOLUTION  
 MAS MASONRY  
 MAX MAXIMUM  
 MB MACHINE BOLT  
 MECH MECHANICAL  
 MFR MANUFACTURER  
 MGB MASTER GROUND BAR  
 MIN MINIMUM  
 MISC MISCELLANEOUS  
 MTL METAL  
 MTS MANUAL TRANSFER SWITCH  
 MW MICROWAVE  
 NEC NATIONAL ELECTRIC CODE  
 NM NEWTON METERS  
 NO. NUMBER  
 # NUMBER  
 NTS NOT TO SCALE  
 OC ON-CENTER  
 OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION  
 OPNG OPENING  
 P/C PRECAST CONCRETE  
 PCS PERSONAL COMMUNICATION SERVICES  
 PCU PRIMARY CONTROL UNIT  
 PRC PRIMARY RADIO CABINET  
 PP POLARIZING PRESERVING  
 PSF POUNDS PER SQUARE FOOT  
 PSI POUNDS PER SQUARE INCH  
 PT PRESSURE TREATED  
 PWR POWER CABINET  
 QTY QUANTITY  
 RAD RADIUS  
 RECT RECTIFIER  
 REF REFERENCE  
 REINF REINFORCEMENT  
 REQ'D REQUIRED  
 RET REMOTE ELECTRIC TILT  
 RF RADIO FREQUENCY  
 RMC RIGID METALLIC CONDUIT  
 RRH REMOTE RADIO HEAD  
 RRU REMOTE RADIO UNIT  
 RWY RACEWAY  
 SCH SCHEDULE  
 SHT SHEET  
 SIAD SMART INTEGRATED ACCESS DEVICE  
 SIM SIMILAR  
 SPEC SPECIFICATION  
 SQ SQUARE  
 SS STAINLESS STEEL  
 STD STANDARD  
 STL STEEL  
 TEMP TEMPORARY  
 THK THICKNESS  
 TMA TOWER MOUNTED AMPLIFIER  
 TN TOE NAIL  
 TOA TOP OF ANTENNA  
 TOC TOP OF CURB  
 TOF TOP OF FOUNDATION  
 TOP TOP OF PLATE (PARAPET)  
 TOS TOP OF STEEL  
 TOW TOP OF WALL  
 TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION  
 TYP TYPICAL  
 UG UNDERGROUND  
 UL UNDERWRITERS LABORATORY  
 UNO UNLESS NOTED OTHERWISE  
 UMTS UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM  
 UPS UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)  
 VIF VERIFIED IN FIELD  
 W WIDE  
 W/ WITH  
 WD WOOD  
 WP WEATHERPROOF  
 WT WEIGHT

**ABBREVIATIONS**



5701 SOUTH SANTA FE DRIVE  
 LITTLETON, CO 80120



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 TO ALTER THIS DOCUMENT.

DRAWN BY: JES  
 CHECKED BY: CJ  
 APPROVED BY: CJ

RFDS REV #: 2

**CONSTRUCTION DOCUMENTS**

SUBMITTALS		
REV	DATE	DESCRIPTION
3	11/22/2022	LEASE AREA UPDATE
4	12/12/2022	ELEVATION UPDATE
5	02/02/2023	JDX REVISION
6	02/10/2023	JDX REVISION
7	04/19/2023	ADDED SURVEY
8	05/24/2023	UTILITY REVISION
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A&E PROJECT NUMBER  
 2021.0025.815755

DISH WIRELESS L.L.C.  
 PROJECT INFORMATION  
 SFSF000115A  
 CA-CCI-T-815755  
 4900 SONOMA HWY.  
 SANTA ROSA, CA 95409

SHEET TITLE  
 LEGEND AND ABBREVIATIONS

SHEET NUMBER

**GN-1**

SIGN TYPES		
TYPE	COLOR	COLOR CODE PURPOSE
INFORMATION	GREEN	"INFORMATIONAL SIGN" TO NOTIFY OTHERS OF SITE OWNERSHIP & CONTACT NUMBER AND POTENTIAL RF EXPOSURE.
NOTICE	BLUE	"NOTICE BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
CAUTION	YELLOW	"CAUTION BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
WARNING	ORANGE/RED	"WARNING BEYOND THIS POINT" RF FIELDS AT THIS SITE EXCEED FCC RULES FOR HUMAN EXPOSURE. FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS COULD RESULT IN SERIOUS INJURY. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)

**SIGN PLACEMENT:**

- RF SIGNAGE PLACEMENT SHALL FOLLOW THE RECOMMENDATIONS OF AN EXISTING EME REPORT, CREATED BY A THIRD PARTY PREVIOUSLY AUTHORIZED BY DISH Wireless L.L.C.
- INFORMATION SIGN (GREEN) SHALL BE LOCATED ON EXISTING DISH Wireless L.L.C. EQUIPMENT.
  - A) IF THE INFORMATION SIGN IS A STICKER, IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C. EQUIPMENT CABINET.
  - B) IF THE INFORMATION SIGN IS A METAL SIGN IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C. H-FRAME WITH A SECURE ATTACH METHOD.
- IF EME REPORT IS NOT AVAILABLE AT THE TIME OF CREATION OF CONSTRUCTION DOCUMENTS; PLEASE CONTACT DISH Wireless L.L.C. CONSTRUCTION MANAGER FOR FURTHER INSTRUCTION ON HOW TO PROCEED.

**NOTES:**

1. FOR DISH Wireless L.L.C. LOGO, SEE DISH Wireless L.L.C. DESIGN SPECIFICATIONS (PROVIDED BY DISH Wireless L.L.C.)
2. SITE ID SHALL BE APPLIED TO SIGNS USING "LASER ENGRAVING" OR ANY OTHER WEATHER RESISTANT METHOD (DISH Wireless L.L.C. APPROVAL REQUIRED)
3. TEXT FOR SIGNAGE SHALL INDICATE CORRECT SITE NAME AND NUMBER AS PER DISH Wireless L.L.C. CONSTRUCTION MANAGER RECOMMENDATIONS.
4. CABINET/SHELTER MOUNTING APPLICATION REQUIRES ANOTHER PLATE APPLIED TO THE FACE OF THE CABINET WITH WATER PROOF POLYURETHANE ADHESIVE
5. ALL SIGNS WILL BE SECURED WITH EITHER STAINLESS STEEL ZIP TIES OR STAINLESS STEEL TECH SCREWS
6. ALL SIGNS TO BE 8.5"x11" AND MADE WITH 0.04" OF ALUMINUM MATERIAL

INFORMATION

This is an access point to an area with transmitting antennas.

Obey all signs and barriers beyond this point.  
Call the DISH Wireless L.L.C. NOC at 1-866-624-6874

Site ID: \_\_\_\_\_

THIS SIGN IS FOR REFERENCE PURPOSES ONLY



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LITTLETON, CO 80120



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DRAWN BY:	CHECKED BY:	APPROVED BY:
JES	CJ	CJ

RFDS REV #: \_\_\_\_\_ 2

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PROJECT INFORMATION  
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CA-CCI-T-815755  
4900 SONOMA HWY.  
SANTA ROSA, CA 95409

SHEET TITLE  
GENERAL NOTES

SHEET NUMBER  
**GN-2**

NOTICE

Transmitting Antenna(s)

Radio frequency fields beyond this point **MAY EXCEED** the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: \_\_\_\_\_

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

CAUTION

Transmitting Antenna(s)

Radio frequency fields beyond this point **MAY EXCEED** the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: \_\_\_\_\_

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

WARNING

Transmitting Antenna(s)

Radio frequency fields beyond this point **EXCEED** the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: \_\_\_\_\_

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

RF SIGNAGE

**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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SANTA ROSA, CA 95409

SHEET TITLE  
GENERAL NOTES

SHEET NUMBER  
GN-3

**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"
  - AGGREGATE SIZE NOT TO EXCEED 3/4 INCH
  - SLUMP IS TO BE 2" TO 5"
  - CONCRETE CROWNED WITH BROOM FINISH
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 SPECMATE 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.



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RFDS REV #: 2

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7	04/19/2023	ADDED SURVEY
8	05/24/2023	UTILITY REVISION
9	07/28/2023	UTILITY REVISION

A&E PROJECT NUMBER  
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DISH WIRELESS L.L.C.  
PROJECT INFORMATION  
SFSF000115A  
CA-CCI-T-815755  
4900 SONOMA HWY.  
SANTA ROSA, CA 95409

SHEET TITLE  
GENERAL NOTES

SHEET NUMBER  
**GN-4**

**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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