# dish wireless.

DISH Wireless L.L.C. SITE ID:

# CLFAY00349A

DISH Wireless L.L.C. SITE ADDRESS:

# **723 LASTAR ROAD BUNNLEVEL, NC 28323**

# NORTH CAROLINA CODE OF 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

2018 NC BUILDING CODES/2015 IBC W/ AMENDMENTS 2018 NC MECHANICAL CODES/2015 IMC W/ AMENDMENTS MECHANICAL 2017 NC ELECTRICAL CODES/2017 NEC W/ AMENDMENTS

SHEET INDEX						
SHEET NO.	SHEET TITLE					
T-1	TITLE SHEET					
T-2	APPENDIX B					
T-3	APPENDIX B & ANSI COMPLIANCE REPORT					
LS-1	SITE SURVEY					
A-1	OVERALL AND ENLARGED SITE PLAN					
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE					
A-3	EQUIPMENT PLATFORM AND H-FRAME DETAILS					
A-4	EQUIPMENT DETAILS					
A-5	EQUIPMENT DETAILS					
A-6	EQUIPMENT DETAILS					
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES					
E-2	ELECTRICAL DETAILS					
E-3	ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE					
G-1	GROUNDING PLANS AND NOTES					
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RF-1	RF CABLE COLOR CODE					
GN-1	LEGEND AND ABBREVIATIONS					
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THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION REMOVAL AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE



# 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:

- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
  INSTALL (3) PROPOSED ANTENNA SECTOR FRAMES

- INSTALL PROPOSED JUMPERS
  INSTALL (6) PROPOSED RRUS (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP) INSTALL (1) PROPOSED HYBRID CABLE

- GROUND SCOPE OF WORK:

   INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- 1) PROPOSED EQUIPMENT CABINET INSTALL
- INSTALL PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- PROPOSED TELCO-FIBER BOX
- INSTALL PROPOSED GPS UNIT
- INSTALL (1) PROPOSED SAFETY SWITCH (IF REQUIRED)
- PROPOSED FIBER NID (IF REQUIRED)
- INSTALL (1) PROPOSED METER SOCKET

# SITE PHOTO





NORTH CAROLINA 811 UTILITY NOTIFICATION CENTER OF NORTH CAROLINA (800) 632-4949 WWW.NC811.ORG

CALL 3-12 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 COMMERCIA

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

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

**DIRECTIONS** 

PROJECT DIRECTORY

TOWER OWNER: AMERICAN TOWER CORPORATION

DISH Wireless L.L.C.

LITTLETON, CO 80120

10 PRESIDENTIAL WAY

WOBURN, MA 01801

(781) 926-4500

TULSA, OK 74119

(918) 587-4630

RYLEE DIXON

TONY HARVEY

rvlee.dixon@dish.com

tony.harvey@dish.com

JAYESHKUMAR PATEL

jayeshkumar.patel@dish.com

SITE DESIGNER: B+T GROUP

SITE ACQUISITION:

CONST. MANAGER:

RF FNGINFFR:

5701 SOUTH SANTA FE DRIVE

1717 S. BOULDER AVE, SUITE 300

# DIRECTIONS FROM FAYETTEVILLE REGIONAL AIRPORT:

SOUTH RIVER EMO

SITE INFORMATION

ADDRESS:

TOWER TYPE:

COUNTY:

TOWER CO SITE ID:

LATITUDE (NAD 83):

LONGITUDE (NAD 83):

ZONING DISTRICT:

PARCEL NUMBER:

OCCUPANCY GROUP:

POWER COMPANY:

CONSTRUCTION TYPE: II-B

TELEPHONE COMPANY: T.B.D.

TOWER APP NUMBER: 13733077

GRAINGER RONALD &

JAMESTOWN, NC 27282

GRAINGER ALAN

PO BOX 511

GUYED TOWER

HARNETT

35° 16' 56.919" N 35.28247758 N

78° 54' 30.132" W

78.90836996 W

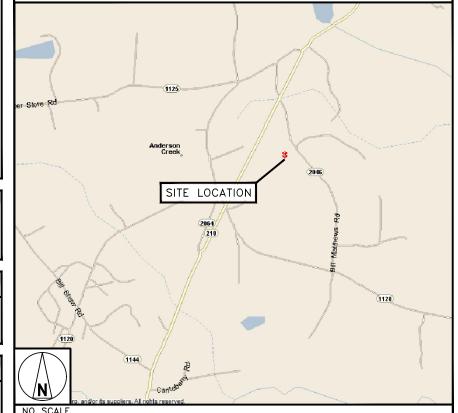
HARNETT COUNTY

AGRICULTURAL

6346748

HEAD EAST ON 2260/AIRPORT RD TOWARD CONTROL TOWER RD, TAKE ALL AMERICAN FWY N AND NC-210 N TO LASATER RD IN BUNNLEVEL. TURN RIGHT TO STAY ON 2260/AIRPORT RD, CONTINUE ONTO BLACK AND DECKER RD. CONTINUE ONTO MID PINE RD, CONTINUE ONTO NATAL ST. TURN RIGHT ONTO CUMBERLAND RD, USE THE LEFT 2 LANES TO TURN SHARPLY LEFT ONTO OWEN DR. CONTINUE ONTO ALL AMERICAN FWY N (SIGNS FOR OWEN DR), TAKE THE NC-87 N/NC-210 W/MURCHISON RD EXIT. MERGE WITH NC-210 N/NC-24/NC-87/MURCHISON RD. USE THE RIGHT 2 LANES TO TURN RIGHT ONTO NC-210 N, TURN RIGHT ONTO LASATER RD, ARRIVE AT CLFAY00349A.

# **VICINITY MAP**





5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120



www.btgrp.com



MTS ENGINEERING D.P.C. LIC: P-2387

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:
	SM	ANP	ANP
П	DEDG DEV	"	

# CONSTRUCTION DOCUMENTS

	SUBMITTALS									
REV	DATE	DESCRIPTION								
Α	10/8/21	ISSUED FOR REVIEW								
0	10/14/21	ISSUED FOR CONSTRUCTION								
	A&E F	PROJECT NUMBER								
ı										

156787.001.01

CLFAY00349A 723 LASTAR ROAD BUNNLEVEL, NC 28323

> SHEET TITLE TITLE SHEET

SHEET NUMBER

T-1

# 2018 APPENDIX B BUILDING CODE SUMMARY

FOR ALL COMMERCIAL PROJECTS

(EXCEPT 1	AND 2-FAM	ILY DWEL	LINGS AND	TOWNHOUS	ES
(Reproc	luce the follow	ing data on th	ne building plan	ns sheet 1 or 2)	

Owner/Authorized Agen	t: ATC	EVEL, NC Phone # (	) -	Zip Code E-Mail	28323	
Owned By:	City/0		Priva		State	-
Code Enforcement Juriso	diction: City_		⊠ Cour	nty HARNETT	State	
						_
CONTACT: DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL	
Architectural	FIRM	NAME	LICENSE #	()_	E-MAIL	
Civil				()		
Electrical Fire Alarm						
Plumbing						
Mechanical Sprinkler-Standpipe						
Structural						
Retaining Walls >5' High Other						
("Others" should include fi	irms and individuals	s such as truss, preca	ast, pre-engineer	ed, interior desi	igners, etc.)	_
2018 NC CODE FOR:	☐ New (	Construction 🛛	Addition	Renovation		_
		me Interior Compl		_		
	Shell/					
	_	d Construction – S	Shell/Core			
2010 NG EVICTING D	Renov		□ n ·		Cl + 14	
2018 NC EXISTING B		E: Prescriptive Level I	e Repair		Chapter 14 Level III	
	Anter auon:	Historic Pro	_	_	Change of Use	
CONSTRUCTE	D:(date)	ORIGINAL O				
RENOVATED:	(date)	_CURRENT OCC				
RISK CATEGORY (ta			⊠ II		□IV	
	P	roposed: 🗌 I	⊠ II		□IV	
DAGIC DUE PRICE	T.					-
BASIC BUILDING DA Construction Type:		II-A	III-A	□IV	□ V-A	
			III-B		□ V-B	
	Partial Yes		13 NFPA	. 13R 🔲 NF	PA 13D	
• • =	Yes Class		III Wet	-	_	
Fire District: No			ood Hazard Ai	rea: 🗵 No	Yes	
Special Inspections Requ		Yes				
2018 NC ADMINISTRATIVE C	ODE AND POLICIES			APPENDIX B I	FOR BUILDING	
		Gross Building				-
FLOOR CON EXISTI	MPOUND NG (SQ FT)	Gross Building	g Area: PLATFORM/CO EXTENSION	MPOUND (SQ FT)	SUB-TOTAL	_
FLOOR COMEXISTI 6th Floor 5th Floor			PLATFORM/CO	MPOUND (SQ FT)	SUB-TOTAL	•
FLOOR COMEXISTI 6th Floor 5th Floor 4th Floor 3rd Floor			PLATFORM/CO	MPOUND (SQ FT)	SUB-TOTAL	-
FLOOR COMEXISTI 6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor			PLATFORM/CO	MPOUND (SQ FT)	SUB-TOTAL	-
FLOOR COMEXISTI 6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor Mezzanine			PLATFORM/CO	MPOUND (SQ FT)	SUB-TOTAL  3,660 SF	
FLOOR COMEXISTI 6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor Mezzanine Grade 3,(	NG (SQ FT)	NEW (SQ FT)	PLATFORM/CO EXTENSION	MPOUND (SQ FT)	3,660 SF	-
FLOOR COMEXISTI 6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor Mezzanine Grade 3,0	NG (SQ FT)	NEW (SQ FT)	PLATFORM/CO EXTENSION	MPOUND (SQ FT)		-
FLOOR COMEXISTI 6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor Mezzanine Grade 3,( Basement	NG (SQ FT)	NEW (SQ FT)	PLATFORM/CO EXTENSION	MPOUND (SQ FT)	3,660 SF	
FLOOR COMEXISTI 6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor Mezzanine Grade 3,6 Basement TOTAL	NG (SQ FT)	0 SF	PLATFORM/CO EXTENSION	MPOUND (SQ FT)	3,660 SF	_
FLOOR COMEXISTI  6th Floor 5th Floor 5th Floor 2th Floor 2nd Floor 2nd Floor Mezzanine Grade 3,6 Basement TOTAL  Primary Occupancy Cl Assembly	NG (SQ FT)  660 SF  assification: SEL	0 SF  ALLOWABLE ECT ONE	PLATFORM/CO EXTENSION	MPOUND (SQ FT)	3,660 SF	-
FLOOR COMEXISTI 6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor Mezzanine Grade 3,6 Basement TOTAL  Primary Occupancy Cl Assembly A-1 Business A-1	NG (SQ FT)  660 SF  assification: SEL	0 SF  ALLOWABLE ECT ONE	PLATFORM/CO EXTENSION	MPOUND (SQ FT)	3,660 SF	
FLOOR COMEXISTI  6th Floor  5th Floor  4th Floor  3rd Floor  2nd Floor  Mezzanine  Grade 3,6  Basement  TOTAL  Primary Occupancy Cl  Assembly A-1  Business Educational Factory F-1 N	NG (SQ FT)  660 SF  assification: <u>SEI</u> A-2	0 SF  ALLOWABLE  ECT ONE  A-4   A-5	PLATFORMICO EXTENSION  0 SF	(SQ FT)	3,660 SF 3,660 SF	-
FLOOR COMEXISTI  6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor Mezzanine Grade 3,6 Basement TOTAL  Primary Occupancy Cl Assembly A-1 Business A-1 Educational Factory F-1? Hazardous H-1	NG (SQ FT)  660 SF  assification: SEI  A-2 A-3 [  Moderate Detonate	O SF  ALLOWABLE  ECT ONE  A-4   A-5	PLATFORMICO EXTENSION  0 SF	(SQ FT)	3,660 SF 3,660 SF	-
FLOOR COMEXISTI  6th Floor 5th Floor 4th Floor 2nd Floor 2nd Floor Mezzanine Grade 3,0 Basement TOTAL  Primary Occupancy CI Assembly A-1 Business Educational Factory F-17 Hazardous H-1 Institutional I-1-C	NG (SQ FT)  660 SF  assification: SEI  A-2 A-3 [  Moderate Detonate H-1	0 SF  ALLOWABLE  ECT ONE  A-4   A-5	PLATFORMICO EXTENSION  0 SF	(SQ FT)	3,660 SF 3,660 SF	_
FLOOR	Assification: SEI A-2 A-3   Moderate Detonate H-Ondition I	0 SF  ALLOWABLE  ECT ONE  A-4   A-5    F-2 Low -2 Deflagrate   1   2   2	PLATFORMICO EXTENSION  0 SF	(SQFT)	3,660 SF 3,660 SF	-
FLOOR COMEXISTI  6th Floor 5th Floor 5th Floor 4th Floor 2nd Floor 2nd Floor Mezzanine Grade 3,0 Basement TOTAL  Primary Occupancy CI Assembly A-1 Business Educational Factory F-1? Hazardous H-1 Institutional I-1-C Institutional I-1-C I-1-3 C	NG (SQ FT)	0 SF  ALLOWABLE  ECT ONE  A-4   A-5    F-2 Low -2 Deflagrate   1   2   2	PLATFORMICO EXTENSION  0 SF  C AREA  H-3 Combust	(SQFT)	3,660 SF 3,660 SF	_
FLOOR COMEXISTI  6th Floor 5th Floor 5th Floor 2nd Floor 2nd Floor Mezzanine Grade 3,0 Basement TOTAL  Primary Occupancy CI Assembly A-1 Business Educational Factory F-1,1 Hazardous H-1.1 Institutional 1-1.0 1-2.0 1-3.6 1-4 Mercantile Residential R-1	Assification: SEI A-2 A-3   Moderate Detonate H. Condition 1 Condition 1 Condition 1  R-2 R-3 [ R-2 R-3 [	0 SF  ALLOWABLE  ECT ONE  A-4   A-5    F-2 Low 2 Deflagrate   2   2   2   2   R-4	PLATFORMICO EXTENSION  0 SF  2 AREA  H-3 Combust	M-4 Health	3,660 SF 3,660 SF	_
FLOOR COMEXISTI 6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor Mezzanine Grade 3,6 Basement TOTAL  Primary Occupancy CI Assembly A-1 Business Educational Factory F-1,1 Hazardous H-1 Institutional 1-1 C	A-2	0 SF  ALLOWABLE ECT ONE A-4   A-5    F-2 Low 2 Deflagrate   1   2   2   2   2   R-4   S-2 Lo	PLATFORMICO EXTENSION  0 SF  C AREA  H-3 Combust    3	H-4 Healt	3,660 SF 3,660 SF	-
FLOOR COMEXISTI 6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor Mezzanine Grade 3,6 Basement TOTAL  Primary Occupancy CI Assembly A-1 Business Educational Factory F-1,1 Hazardous H-1 Institutional 1-1 C	Assification: SEI  A-2 A-3 [  Moderate Detonate H- Condition 1 Condition 2 Condition 1 Condition 2 Condition 3 Condition 2 Condition 3 Con	0 SF  ALLOWABLE ECT ONE A-4   A-5    F-2 Low 2 Deflagrate   1   2   2   2   2   R-4   S-2 Lo	PLATFORMICO EXTENSION  0 SF  CAREA  H-3 Combust    3	H-4 Healt	3,660 SF 3,660 SF	-
FLOOR COMEXISTI 6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor Mezzanine Grade 3,6 Basement TOTAL  Primary Occupancy Cl Assembly A-1 Business Educational Factory F-1,1 Hazardous H-1 Institutional 1-1 C	Assification: SEI  A-2 A-3   Moderate Detonate H- Condition 1  Condition 1  Moderate Detonate A-3   Moderate Detonate I- Condition I- Condition I- Condition I- Service I- Moderate Service I-	0 SF  ALLOWABLE  ECT ONE  A-4   A-5  F-2 Low 2 Deflagrate   2  2   2  R-4   S-2 Lo pen   Enclose	PLATFORMCO EXTENSION  0 SF  C AREA  H-3 Combust    3	H-4 Healt	3,660 SF 3,660 SF	_
FLOOR COMEXISTI  6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor Mezzanine Grade 3,6 Basement TOTAL  Primary Occupancy Cl Assembly A-1 Business Educational Factory F-1? Hazardous H-1 Institutional 1-1 C 1-2 C 1-3 C 1-3 C Mercantile Residential R-1 Storage S-1 N Utility and Miscellar Accessory Occupancy Cl Incidental Uses (Table 509	Moderate Detonate   H- Condition   1 Conditi	ALLOWABLE  LECT ONE  A-4   A-5    F-2 Low -2 Deflagrate   2   2   2   2   R-4   S-2 Lopen   Enclose	PLATFORMICO EXTENSION  0 SF  C AREA  H-3 Combust    3	H-4 Health	3,660 SF 3,660 SF	_
FLOOR COMEXISTI  6th Floor 5th Floor 5th Floor 4th Floor 3nd Floor Mezzanine Grade 3,6 Basement TOTAL  Primary Occupancy CI Assembly A-1 Business Aducational Factory F-1 Hazardous H-1 Institutional I-1 C I-3 G I-3 G Mercantile Residential R-1 Storage S-1 Park Utility and Miscellan Accessory Occupancy CI Incidental Uses (Table 50) Special Uses (Chapter 4-1)	Section   Set	ALLOWABLE  LECT ONE  A-4   A-5    F-2 Low 2 Deflagrate   2   2   2   2   2   R-4   S-2 Lopen   Enclose	PLATFORMCO EXTENSION  0 SF  C AREA  H-3 Combust    3	H-4 Health	3,660 SF 3,660 SF	_
FLOOR COMEXISTI 6th Floor 5th Floor 4th Floor 3nd Floor 2nd Floor Mezzanine Grade 3,6 Basement TOTAL  Primary Occupancy CI Assembly A-1 Business Educational Factory F-1? Hazardous H-1 Institutional 1-1-1 [-1-2 (	Assification: SEL  A-2 A-3   Moderate Detonate H. Condition 1 Condition 1 Condition 1 Condition 5 Condition 1 Condition 1 Condition 5 Condition 5 Condition 5 Condition 5 Condition 5 Condition 6 Condition 6 Condition 6 Condition 7 Cond	ALLOWABLE  ECT ONE  A-4   A-5    F-2 Low  2   Deflagrate   1  2   2   2    R-4   S-2 Lo  pen   Enclose	PLATFORMICO EXTENSION  0 SF  C AREA  H-3 Combust    3	H-4 Health	3,660 SF 3,660 SF	_
FLOOR COMEXISTI  6th Floor 5th Floor 5th Floor 4th Floor 3nd Floor Mezzanine Grade 3,6 Basement TOTAL  Primary Occupancy CI Assembly A-1 Business Aducational Factory F-1 Hazardous H-1 Institutional I-1 C I-3 G Hercantile Residential R-1 Storage S-1 Horizonal R-1 Storage Chapter 4—1 Special Uses (Chapter 4—1 Special Provisions: (Chapte Mixed Occupancy: Non-Separated Use	Moderate   Detonate   Detonate   Tondition   1   Condition	ALLOWABLE	PLATFORMCO EXTENSION  0 SF  C AREA  H-3 Combust    M	H-4 Health	3,660 SF 3,660 SF 3,660 SF	_
FLOOR COMEXISTI  6th Floor  5th Floor  4th Floor  3rd Floor  2nd Floor  Mezzanine  Grade 3,6  Basement  TOTAL  Primary Occupancy Cl  Assembly A-1  Business A-1  Business H-1  Institutional 1-1 C  1-2 C  1-3 C  1-4  Mercantile Residential Residential Residential Residential Residential Residential Storage S-1  Utility and Miscellan  Accessory Occupancy Ch  Incidental Uses (Table 509  Special Provisions: (Chapte 4 -1  Special Provisions: (Chapte 4 -1  Special Provisions: (Chapte Mixed Occupancy:  Mon-Separated Use The required type C	Assification: SEL  A-2 A-3   Moderate Detonate H- Condition 1  Condition 1  Condition 5  Bassification(s):  :: :: ::: ::: :::: :::: :::: ::::: ::::	ALLOWABLE  LECT ONE  A-4   A-5    F-2 Low  -2 Deflagrate   1   2   2   2   2      R-4   S-2 Lo  pen   Enclose  ctions):	PLATFORMICO EXTENSION  0 SF  C AREA  H-3 Combust    W   High- d   Repair  Hr. Exception:	H-4 Health  5  piled r Garage	3,660 SF  3,660 SF  1 [E-3] HPM	-
FLOOR COMEXISTI  6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor Mezzanine Grade 3,6 Basement TOTAL  Primary Occupancy Cl Assembly A-1 Business Beducational Factory Hazardous H-1 Institutional I-1 C I-2 C I-3 C I-3 C I-4 Mercantile Residential R-1 Storage S-1 N Utility and Miscellar Accessory Occupancy Cl Incidental Uses (Table 509) Special Uses (Chapter 4 – 1 Special Provisions: (Chapte Mixed Occupancy: Mixed Occupancy: Non-Separated Use The required type of for each of the appl	Assification: SEL  A-2 A-3   Moderate Detonate H- Condition 1  Condition 1  Condition 5  Bassification(s):  :: :: ::: ::: :::: :::: :::: ::::: ::::	ALLOWABLE  ALLOWABLE  ECT ONE  A-4   A-5    F-2 Low -2 Deflagrate   12   2   2   2   2    R-4   S-2 Lo pen   Enclose	PLATFORMICO EXTENSION  0 SF  C AREA  H-3 Combust    W   High- d   Repair  Hr. Exception:	H-4 Health  5  piled r Garage	3,660 SF  3,660 SF  1 [E-3] HPM	-
FLOOR COMEXISTI  6th Floor 5th Floor 4th Floor 3rd Floor 2nd Floor Mezzanine Grade 3,6 Basement TOTAL  Primary Occupancy Cl Assembly A-1 Business Educational Factory Hazardous H-1 Institutional I-1 C 1-2 C 1-3 C 1-3 C 1-4 Mercantile Residential R-1 Storage S-1 N Utility and Miscellar Accessory Occupancy Ch Incidental Uses (Table 509 Special Provisions: (Chapte Mixed Occupancy: Non-Separated Use The required type c for each of the appl determined, shall a Separated Use (Shapte	Moderate Detonate □ H- Condition □ 1 Condit	ALLOWABLE  ALLOWABLE  ECT ONE  A-4   A-5    F-2 Low 2 Deflagrate   1   2   2   2   2   3   2   4   S-2 Lopen   Enclose  tions):	PLATFORM(CO EXTENSION  0 SF  C AREA  H-3 Combust    W	H-4 Health  5  piled Garage	3,660 SF  3,660 SF  11-3 HPM  ght and area limitations construction, so	-
FLOOR EXISTI  6th Floor  5th Floor  4th Floor  2nd Floor  2nd Floor  Mezzanine  Grade 3,6  Basement  TOTAL  Primary Occupancy Cl  Assembly A-1  Business  Educational  Factory F-1?  Hazardous H-1  Institutional 1-1-1  [-1-2 (  -1-3 (  -1-3 (  -1-4  Mercantile Residential R-1  Storage S-1 N  Utility and Miscellar  Accessory Occupancy Cl  Incidental Uses (Table 509  Special Uses (Chapter 4 – 1  Special Total Chapter 4 – 1  Special Total Chapter 4 – 1  Special Uses (Chapter 4 – 1  Special Uses (Table 509  Special Uses (Sobspecial Uses (Table 509  Special Uses (Sobspecial Uses (	Section   Set	ALLOWABLE  ALLOWABLE  ECT ONE  A-4   A-5    F-2 Low -2 Deflagrate   12   2   2   2   2    R-4   S-2 Lo pen   Enclose	PLATFORMCO EXTENSION  0 SF  C AREA  H-3 Combust    W   High- d   Repair  Hr. Exception: determined by a g. The most rest the occupancy sl	H-4 Health  5  piled  Garage  pplying the heiricitive type of chall be such tha	3,660 SF  3,660 SF  3,660 SF  4 IE-3 HPM  The symmetry of the	_
FLOOR EXISTI  6th Floor  5th Floor  4th Floor  2nd Floor  2nd Floor  Mezzanine  Grade 3,6  Basement  TOTAL  Primary Occupancy Cl  Assembly A-1  Business  Educational F-1  Institutional I-1-1  Residential I-1-2  1-2 (  1-3 (  1-4 Mercantile  Residential R-1  Storage S-1  Mixed Occupancy  Utility and Miscellar  Accessory Occupancy Cl  Incidental Uses (Table 509  Special Uses (Chapter 4-1  Special Provisions: (Chapter Mixed Occupancy  Non-Separated Use  The required type of or each of the appl determined, shall a Separated Use (508  See below for area ratios of the actual	Section   Set	ALLOWABLE  ALLOWABLE  ECT ONE  A-4 A-5  F-2 Low 2 Deflagrate 2  2 2  2 2  R-4 S-2 Lo  pen Enclose  se Separation: to the entire building shall be to the entire building shall be sed wided by the al	PLATFORMCO EXTENSION  0 SF  C AREA  H-3 Combust     3	H-4 Health  ] 5  piled  Garage  pplying the heiricitive type of the delta to the same the sam	3,660 SF  3,660 SF  3,660 SF  4 IE-3 HPM  The symmetry of the	
FLOOR EXISTI  6th Floor  5th Floor  4th Floor  2nd Floor  2nd Floor  Mezzanine  Grade 3,6  Basement  TOTAL  Primary Occupancy Cl  Assembly A-1  Business  Educational  Factory F-1?  Hazardous H-1  Institutional 1-1-1  [-1-2 (  -1-3 (  -1-3 (  -1-4  Mercantile Residential R-1  Storage S-1 N  Utility and Miscellar  Accessory Occupancy Cl  Incidental Uses (Table 509  Special Uses (Chapter 4 – 1  Special Total Chapter 4 – 1  Special Total Chapter 4 – 1  Special Uses (Chapter 4 – 1  Special Uses (Table 509  Special Uses (Sobspecial Uses (Table 509  Special Uses (Sobspecial Uses (	Moderate Detonate ☐ H- Condition ☐ 1 Condit	ALLOWABLE  ECT ONE  A-4 A-5  F-2 Low 2 Deflagrate 2  2 2  R-4 S-2 Lo pen Enclose  tions): es Separation: he building shall be to the entire buildin gliding. h story, the area of the story, the area of the story.	PLATFORMICO EXTENSION  0 SF  0 AREA  H-3 Combust     3	H-4 Health  5  piled  Garage  pplying the heiricitive type of chall be such tha	3,660 SF  3,660 SF  3,660 SF  4 IE-3 HPM  The symmetry of the	
FLOOR COMEXISTI  6th Floor  5th Floor  5th Floor  4th Floor  3rd Floor  2nd Floor  Mezzanine  Grade  3.6  Basement  TOTAL  Primary Occupancy Cl  Assembly A-1  Business A-1  Business H-1  Institutional 1-1 C  1-2 C  1-3 C  1-4  Mercantile Residential R-1  Storage S-1 Park  Utility and Miscellan  Accessory Occupancy Cl  Incidental Uses (Table 509  Special Provisions: (Chapte Miscellan  Accessory Occupancy Cl  Incidental Uses (Chapter 4 - IS)  Special IVses (Chapter 4 - IS)  Special Provisions: (Chapter 509  Special Provisions: (Chapter 60)  Special Provisions: (Chapter 60)  Mixed Occupancy:    Non-Separated Use (So  Special Provisions: (Chapter 60)  Mixed Occupancy Cl  Incidental Uses (Table 509  Special Provisions: (Chapter 60)  Special Provisions: (Chapter 60)  Mixed Occupancy:    Non-Separated Use (So  Special Provisions: (Chapter 60)  Accual Area of 60	Moderate Detonate ☐ H- Condition ☐ 1 Condit	ALLOWABLE  LECT ONE  A-4   A-5    F-2 Low  2   2   2    R-4   S-2 Lo  Pen   Enclose  de to the entire building ilding.  h story, the area of see divided by the al  Actual Area of Allowable Are	PLATFORMCO EXTENSION  0 SF  0 AREA  H-3 Combust    3	H-4 Health  ] 5  piled  Garage  pplying the heiricitive type of the delta to the same the sam	3,660 SF  3,660 SF  1 [E-3] HPM  ght and area limitations construction, so  t the sum of the shall not exceed 1.	-

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.24 AREA	(C) AREA FOR FRONTAGE INCREASE1,5	(D) ALLOWABLE AREA PER STORY OR UNLIMITED2.
		STOKT (ACTUAL)	THE STATE OF THE S		
					ļ
	rea increases from Se	£ 506.2	1.1.1.		
		conditions of Sect			
4 The maxin	Building Area = total num area of open parl ncrease is based on th	I number of stories king garages must o e unsprinklered are	in the building x E comply with Table a value in Table	<i>ì</i>	CODE REFERENCE
4 The maxin 5 Frontage in Building H	num area of open parh ncrease is based on th	I number of stories king garages must o e unsprinklered are	in the building x E comply with Table a value in Table	<i>ì</i>	
4 The maxin 5 Frontage in Building H Building H	num area of open parl crease is based on th design time feet (Table 50- leight in Stories (Table :	I number of stories king garages must o e unsprinklered are	in the building x E comply with Table a value in Table	<i>ì</i>	CODE REFERENCE
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Building H Building H Brovide co	num area of open parl nerease is based on th leight in Feet (Table 50- leight in Stories (Table : de reference if the "St num height of air trafi	I number of stories king garages must o e unsprinklered are	in the building x E comply with Table a value in Table	<i>ì</i>	CODE REFERENCE
Building H Building H Brovide co	num area of open parl nerease is based on th leight in Feet (Table 50- leight in Stories (Table : de reference if the "St num height of air trafi	I number of stories king garages must o e unsprinklered are	in the building x E comply with Table a value in Table	<i>ì</i>	CODE REFERENCE

2018 NC ADMINISTRATIVE CODE AND POLICIES

# FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE		RATING	DETAIL #		DESIGN # FOR	DESIGN #
	SEPARATION	REQ'D	PROVIDED	AND	FOR	RATED	FOR
	DISTANCE		(W/*	SHEET #	RATED	PENETRATION	RATED
	(FEET)		REDUCTION)		ASSEMBLY		JOINTS
Structural Frame,							
including columns, girders,							
trusses							_
Bearing Walls							
Exterior							
North							
East							
West							
South							
Interior							
Nonbearing Walls and							
Partitions					l.		
Exterior walls				<u> </u>			
North				<b>└</b>			
East				<u></u>	_		
West				,		·	
South							
Interior walls and partitions			<u> </u>				
Floor Construction							
Including supporting beams							
and joists			,				
Floor Ceiling Assembly			MA	.∪	•		
Column Supporting Floors			11	4	_		
Roof Construction, including		•	47, 1		_		
supporting beams and joists			' ' '	<b>(</b>	1		
Roof Ceiling Assembly			~X,	_			
Column Supporting Roof			O.				
Shaft Enclosures - Exit	<b>T</b>		lacksquare				
Shaft Enclosures - Other		_\	$\mathbf{O}$				
- 11 - 1		7	• –	_			<del>                                     </del>
Corridor Separation	+	•		<del></del>	<b>-</b>	<b>-</b>	$\vdash$
Occupancy/Fire Barrier Separation	<u> </u>						
Party/Fire Wall Separation	<u> </u>						
Smoke Barrier Separation		_					<u> </u>
Smoke Partition		١					
Tenant/Dwelling Unit/ Sleeping Unit Separation							

# PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET FROM PERPERTY LINES	DEGREES OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)

2018 NC ADMINISTRATIVE CODE AND POLICIES

APPENDIX B FOR BUILDING

# LIFE SAFETY SYSTEM REQUIREMENTS Emergency Lighting: Exit Signs: Fire Alarm: Smoke Detection Systems: Carbon Monoxide Detection: LIFE SAFETY PLAN REQUIREMENTS Life Safety Plan Sheet #: Fire and/or smoke rated wall locations (Chapter 7) Assumed and real property line locations (if not on the site plan) Exterior wall opening area with respect to distance to assumed propert es (705.8) Occupancy types for each area as it relates to occupant load calcular 1004.1. Occupant loads for each area Exit access travel distances (1017) Common path of travel distances (1006.2.1 & 2006.3.2() Dead end lengths (1020.4) Clear exit widths for each exit door egress width (1005.3) Maximum calculated occupant load capacity er Actual occupant load for each exit door A separate schematic plan indicating whoccupancy separation and supporting Location of doors with panic hard-.ructure is provided for purposes of .on/smoke barrier. Location of doors with delayer ☐ Location of doors with elec Location of emerger ☐ The square footage ccupancy Classification I-2 (407.5) ave been utilized regarding the items above ☐ The square footage or

# ACCESSIBLE DWELLING UNITS (SECTION 1107)

				-		
ACCESSIBLE	ACCESSIBLE	TYPE A	TYPE A	TYPE B	TYPE B	TOTAL
UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	ACCESSIBLE UNITS
REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	PROVIDED
	UNITS	UNITS UNITS	UNITS UNITS UNITS	UNITS UNITS UNITS UNITS	UNITS UNITS UNITS UNITS UNITS	UNITS UNITS UNITS UNITS UNITS

2018 NC ADMINISTRATIVE CODE AND POLICIES

Note any code exceptions Section/Table/Note

(SECTION 1106)

LOT OR PARKING	TOTAL # OF PAI	RKING SPACES	# OF ACC	# OF ACCESSIBLE SPACES PROVIDED				
AREA	REQUIRED	PROVIDED	REGULAR WITH	VAN SPACE	S WITH	ACCESSIBLE		
	1		5' ACCESS	132" ACCESS	8' ACCESS	PROVIDED		
			AISLE	AISLE	AISLE			
TOTAL								

# PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE		,	WATERCLOS	ETS	URINALS		LAVATORI	ES	SHOWERS	DRINKING	FOUNTAINS
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX	/TUBS	REGULAR	ACCESSIBLE
SPACE	EXIST'G										
	NEW										
	REO'D										

# SPECIAL A

Special approval: (Local Jurisdiction, Department of In-

2018 NC ADMINISTRATIVE CODE AND POLICIES

CLFAY00349A 723 LASTAR ROAD

> SHEET TITLE APPENDIX B

SHEET NUMBER

T-2

DISH Wireless L.L.C. TEMPLATE VERSION 41 - 09/03/2021

2018 NC ADMINISTRATIVE CODE AND POLICIES

5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120





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SM ANP ANP	DRAWN	BY:	CHECKED	BY:	APPROVED	BY:
	SM		ANP		ANP	

RFDS REV #:

# CONSTRUCTION DOCUMENTS

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0	10/14/21	ISSUED FOR CONSTRUCTION			
A&E PROJECT NUMBER					

156787.001.01

BUNNLEVEL, NC 28323

# ENERGY SUMMARY ENERGY REQUIREMENTS: The following data shall be considered minimum and any special attribute required to meet the North Carolina largey Conservation Code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy Existing building envelope complies with code: No Yes (The remainder of this section is not applicable) Exempt Building: No Yes (Provide Code or Statutory reference): Climate Zone: 3A 4A 5A Method of Compliance: Energy Code ☐ Performance ASHRAE 90.1 ☐ Performance (If "Other" specify source here) THERMAL ENVELOPE (Prescriptive method only) Roof/ceiling Assembly (each assembly) Description of assembly: \_\_ U-Value of total assembly: R-Value of insulation: Skylights in each assembly: U-Value of skylip' Total square footage of Description of U-Value of R-Value Projectio. Door R-Vai. Walls below grade (each assembly) Description of assembly: U-Value of total assembly R-Value of insulation: Floors over unconditioned space (each assembly) Description of assembly: \_ U-Value of total assembly: R-Value of insulation Floors slab on grade Description of assembly U-Value of total assembly R-Value of insulation: Horizontal/Vertical requirement: Slab Heated:

# 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

2018 NC ADMINISTRATIVE CODE AND POLICIES

(PROV		TRUCTURAL STRUCTURAI	DESIGN L SHEETS IF AF	PPLICABLE)
DESIGN LOADS:				
Importance Factors:	Snow (IS) Seismic (IE)			
Live Loads:	Roof Mezzanine Floor	psi psi psi	f	
Ground Snow Load:	psf			
	timate Wind Sp posure Categor	peed Ty	1.	
SEISMIC DESIGN CATEGOR	Y:	~	.6	
Provide the following Seismic De Occupancy Category (Ta Spectral Response Acce Site Classification (ASC Do' Basic structural sy Analysis Procedure. Architectural, Mechan.	ble 160′ lerø′	AO .ne	D	ateral Force Dynamic
LATERAL DESIGN CONTRO	L:	-uake	Wind [	
SOIL BEARING CAPACITIES Field Test (provide copy Presumptive Bearing cap Pile size, type, and capac	of test report)			

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN (PROVIDE ON THE MECHANICL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone summer dry bulb: Interior design conditions winter dry bulb: relative humidity Building heating load: \_

Building cooling load: Mechanical Spacing Conditioning Sv Unitary description of unit:

List equipment ex

2018 NC ADMINISTRATIVE CODE AND POLICIES

## 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

C406.5 On-Site Rr C406.6 Dedica\*

Method of Compliance: Energy Code: □ Prescriptive □ Performance

ASHRAE 90.1: □ Prescriptive □ Performance

Lighting schedule (each fixture type) lamp type required in fixture number of lamps in fixture ballast type used in the fixture number of ballasts in fixture total wattage per fixture total interior wattage specified vs. allowed (wb/ total exterior wattage specified vs. allowed

MARNEE Additional Efficiency Package Options (When using the 2018 NCECC; not requi C406.2 More Efficient Mec1 C406.3 Reduced Lighting
C406.4 Enhanced Dig



July 2, 2021

Subject: ANSI Compliance Report

ATC Site Name: WESTS POND NO ATC Site Number: 21272 Dish Wireless Site Number: CLFAY00349A ATC Site Location: 723 LASTAR ROAD BUNNLEVEL, NC 28323 ATC Site Coordinates: 35° 16' 56.919" , 78° 54' 30.132"

To whom it may concern.

This letter is to certify that all proposed modifications within the project scope of work for the  $\,$  $telecommunications \ facility \ listed \ above \ are \ designed \ to \ meet \ or \ exceed \ all \ American \ National$ Standards Institute (ANSI) requirements. This scope of work includes the following:

- Installation of (3) new tower-mounted sector frames
- Installation of (3) new tower-mounted antennas
   Installation of (6) RRUs
- Installation of (1) OVP
- Installation of (1) Hybrid Cable

This scope of work will not increase the height of the existing tower

Respectfully submitted by, Brad Milanowski, P.E.

B+T GRP www.btgrp.com



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SM	ANP	ANP

RFDS REV #:

CONSTRUCTION DOCUMENTS

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REV	DATE	DESCRIPTION				
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0	10/14/21	ISSUED FOR CONSTRUCTION				
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A&E PROJECT NUMBER

156787.001.01

CLFAY00349A 723 LASTAR ROAD BUNNLEVEL, NC 28323

SHEET TITLE

APPENDIX B & ANSI COMPLIANCE REPORT

SHEET NUMBER

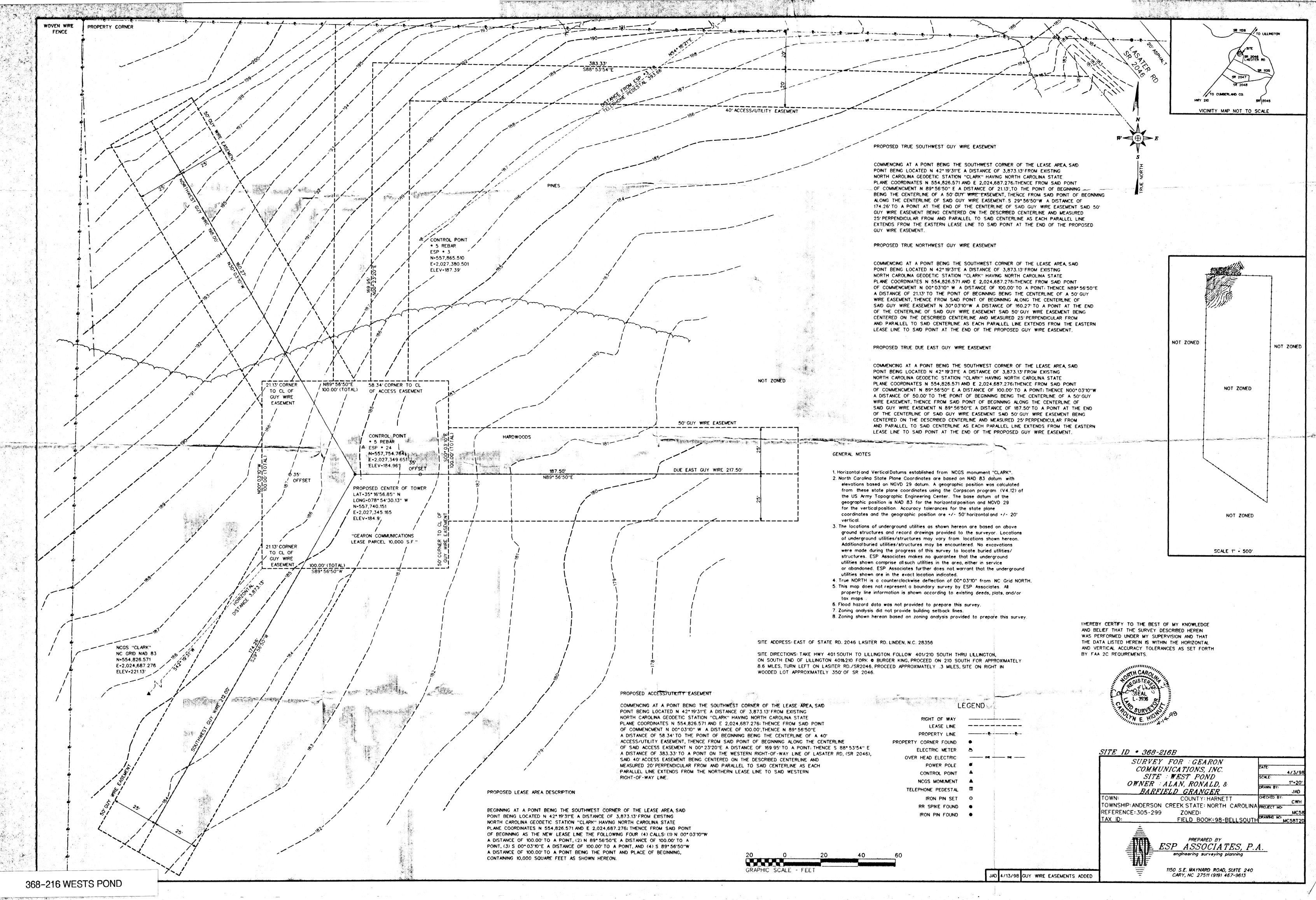
T-3

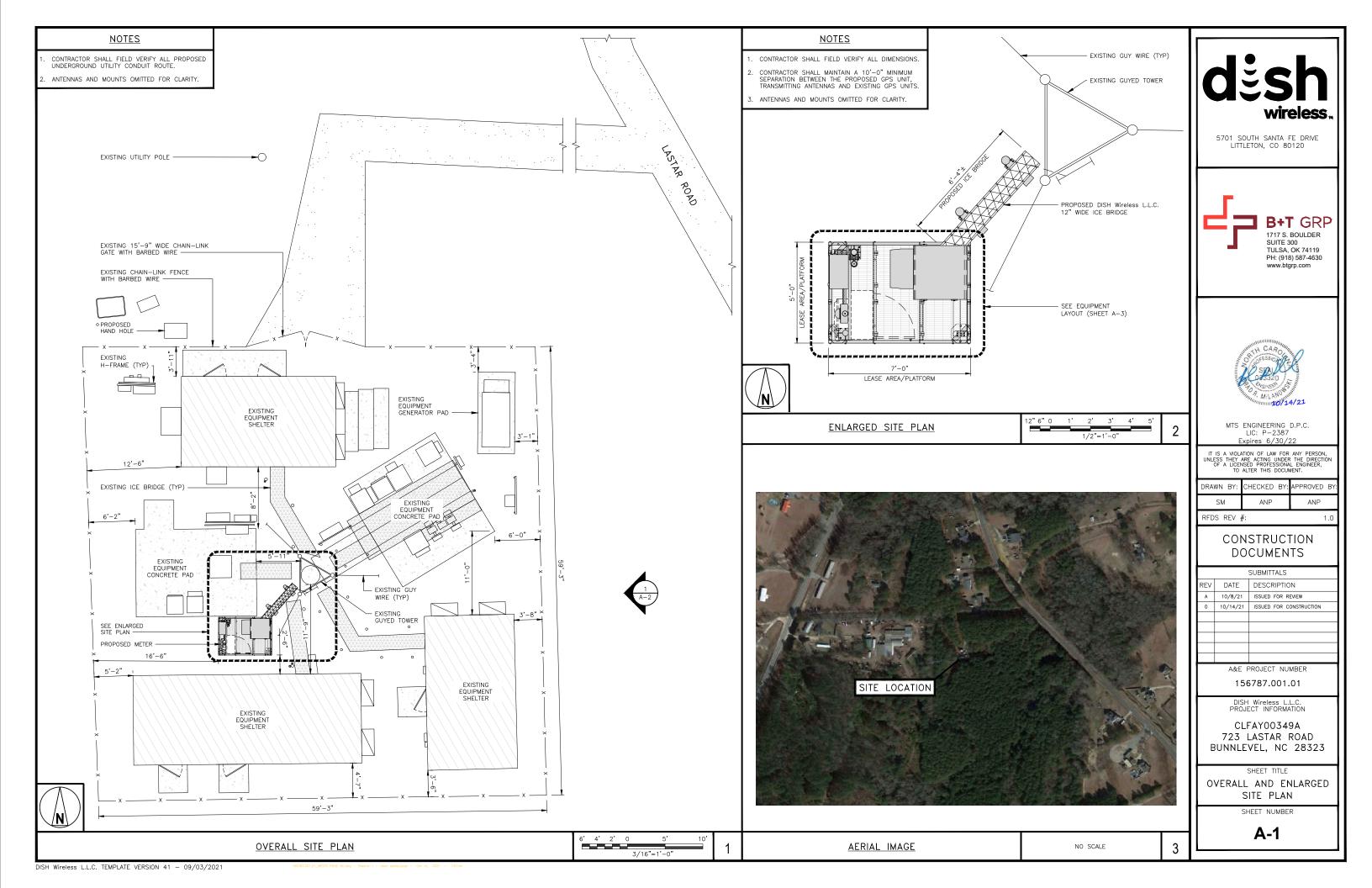
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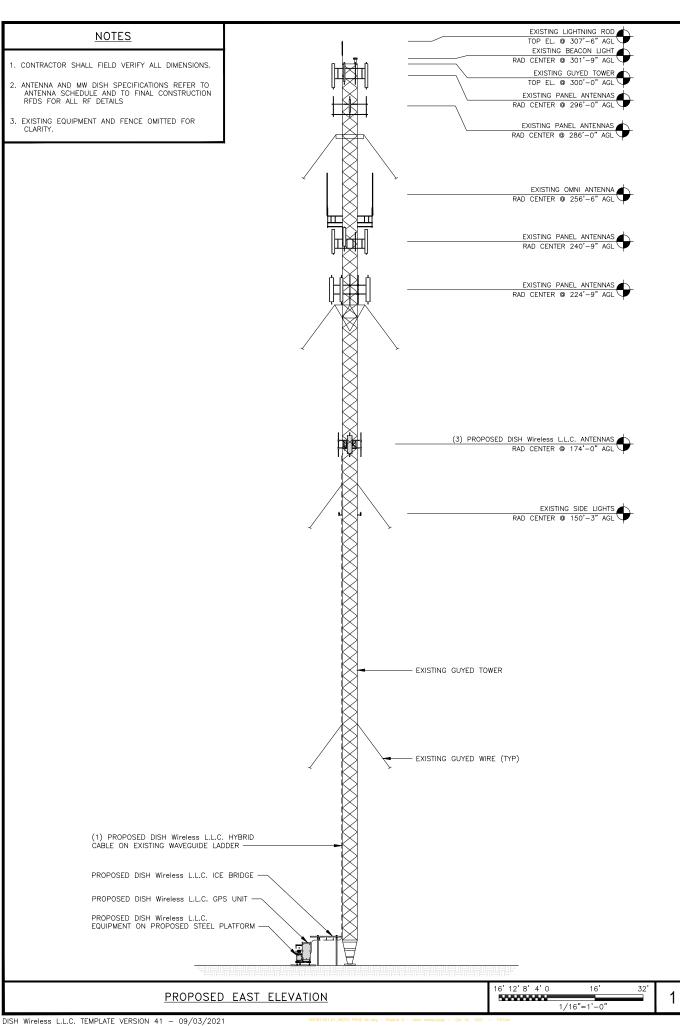
2018 NC ADMINISTRATIVE CODE AND POLICIES

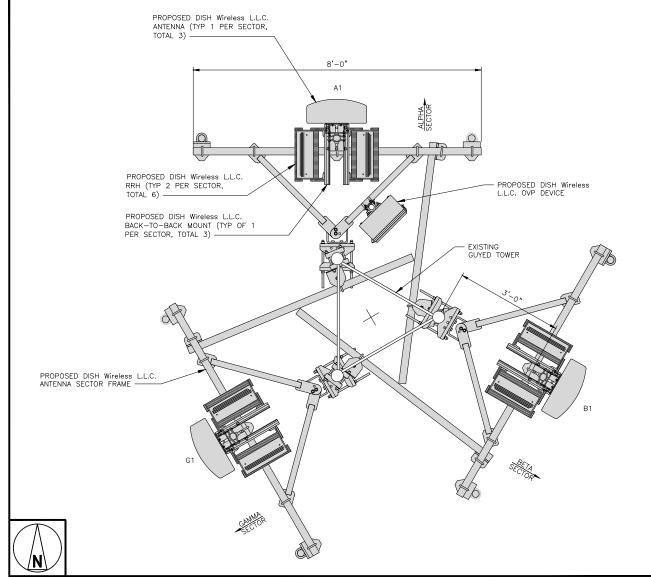
2018 NC ADMINISTRATIVE CODE AND POLICIES

APPENDIX B FOR BUILDING









ANTENNA TRANSMISSION CABLE SECTOR POSITION MANUFACTURER - MODEL FEED LINE TYPE AND LENGTH EXISTING OR RAD CENTER TECHNOLOGY SIZE (HxW) A7IMLITH A1 PROPOSED JMA WIRELESS-MX08FR0665-21 5G 72.0" × 20.0" 174'-0" ) HIGH-CAPACITY HYBRID CABLE BETA B1 PROPOSED 5G 72.0" x 20.0" 120° 174'-0" JMA WIRELESS-MX08FR0665-21 (205' LONG) 174'-0" GAMMA G1 PROPOSED JMA WIRELESS-MX08FR0665-21 5G 72.0" x 20.0" 240°

NOTES

		RRH			
SECTOR	POSITION	MANUFACTURER — MODEL NUMBER	TECHNOLOGY		
ALPHA	A1	FUJITSU - TA08025-B605	5G		
ALFIIA	A1	FUJITSU - TA08025-B604	5G		
BETA	B1	FUJITSU - TA08025-B605	5G		
BEIA	B1	FUJITSU - TA08025-B604	5G		
GAMMA	G1	FUJITSU - TA08025-B605	5G		
GAIVIVIA	G1	FUJITSU - TA08025-B604	5G		

ANTENNA LAYOUT

CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF

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.

dësh wireless.

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	SM		ANP		ANP	
	RFDS F	REV	#:			1.0

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DISH Wireless L.L.C. PROJECT INFORMATION

CLFAY00349A 723 LASTAR ROAD BUNNLEVEL, NC 28323

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

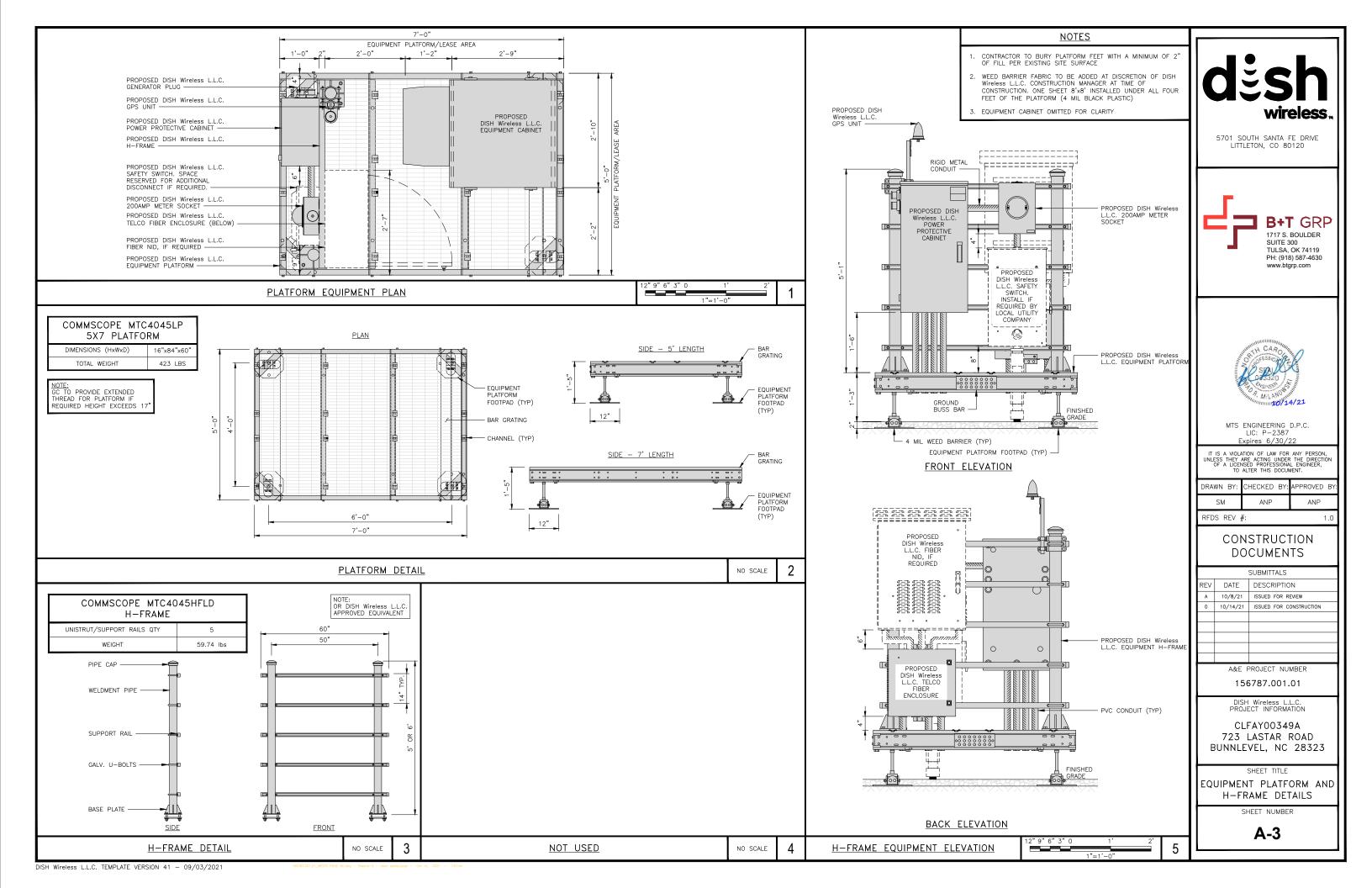
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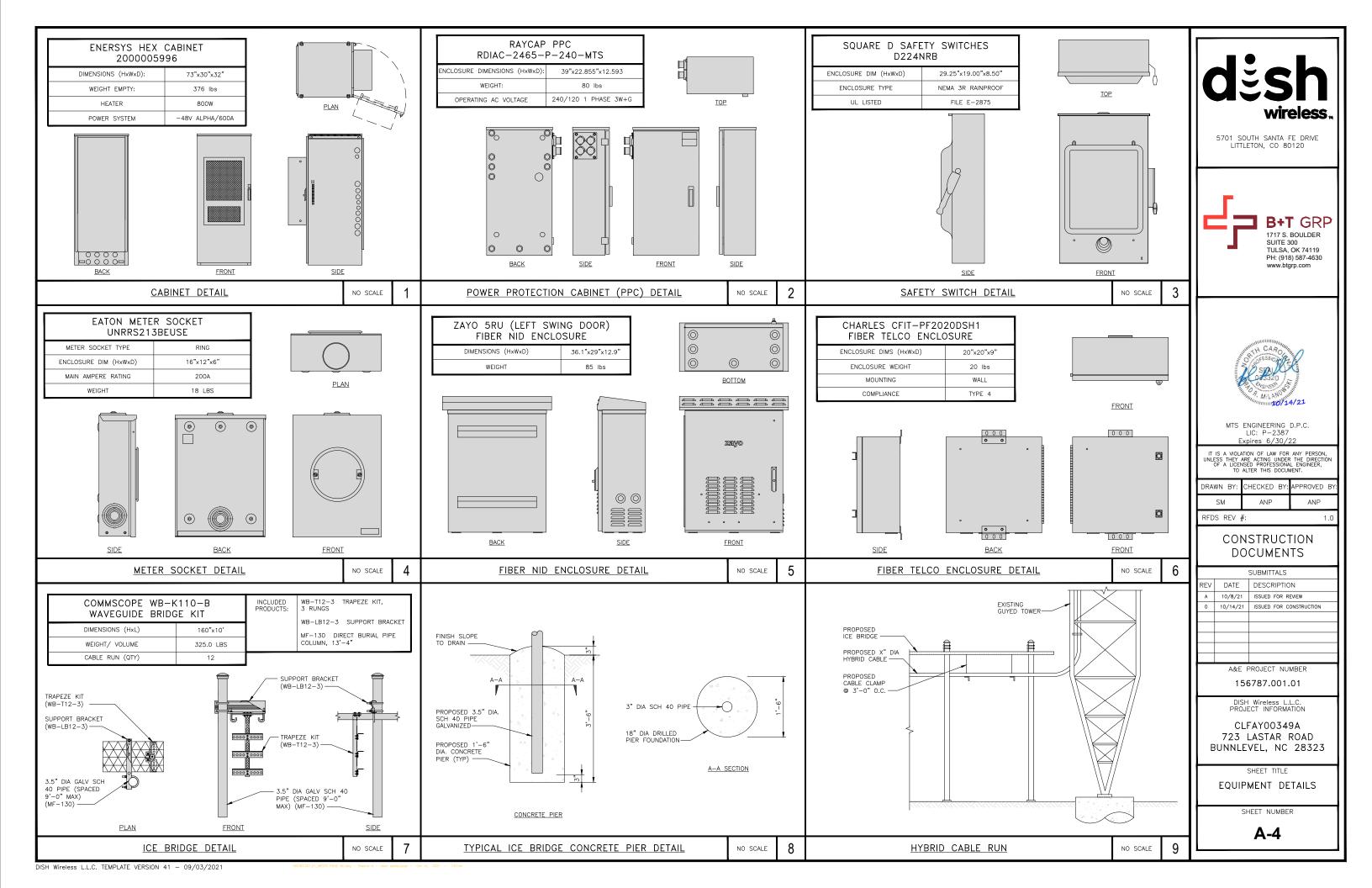
**A-2** 

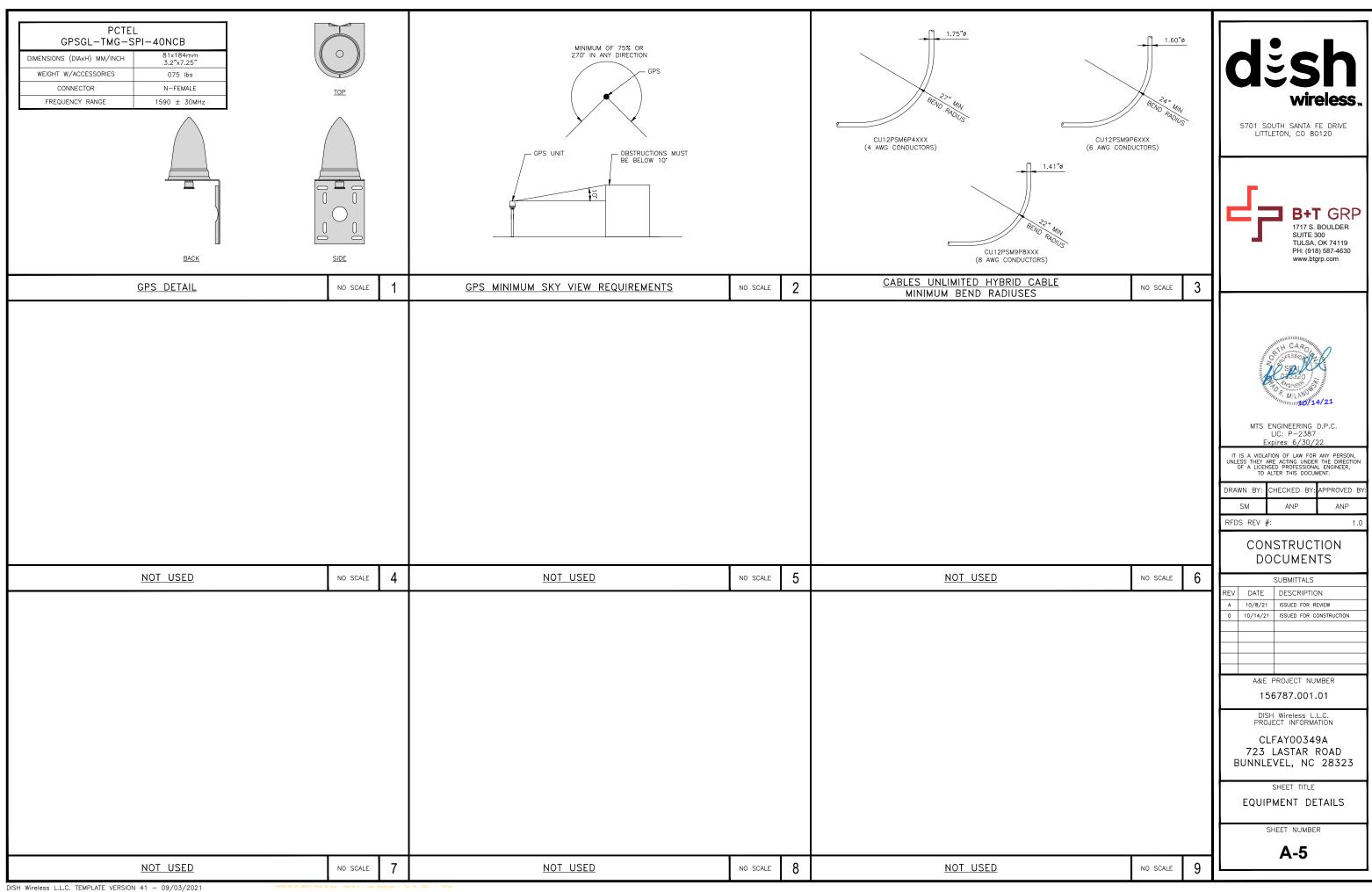
ANTENNA SCHEDULE

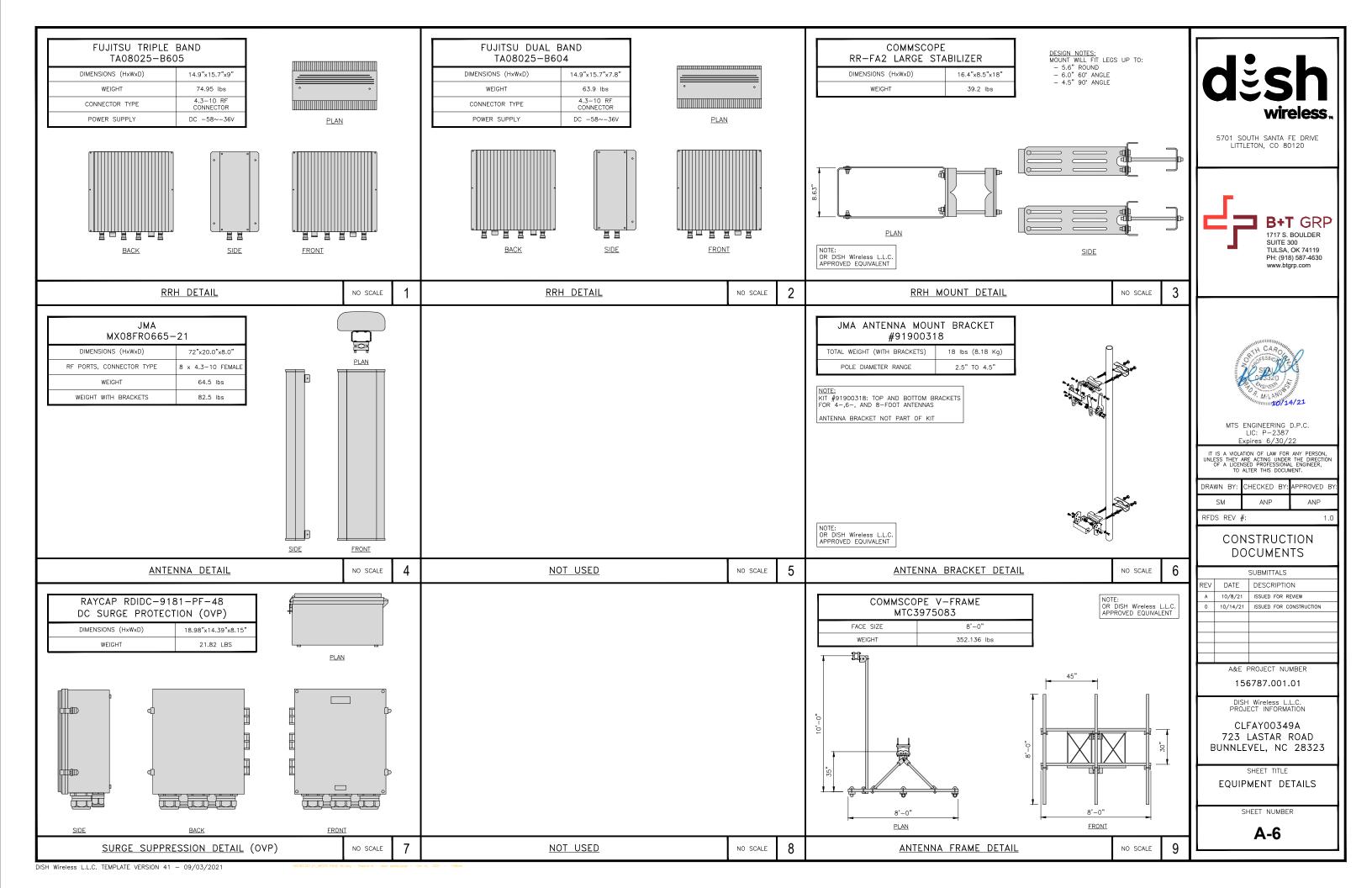
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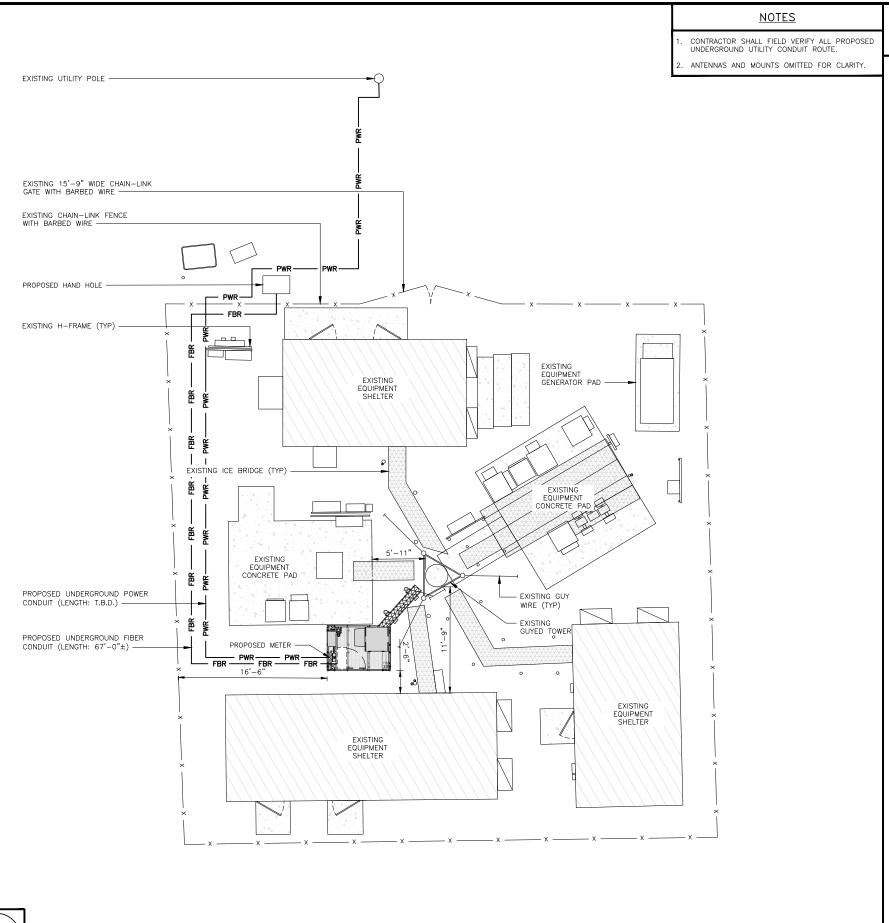
3/4"=1"











**UTILITY ROUTE PLAN** 

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

- 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.
- 14. CONSTRUCTION CONTRACTOR MUST FIELD VERIFY THAT THE PROPOSED UTILITY ROUTES ARE WITHIN ATC'S EASEMENT. REFER TO SURVEY ATTACHED FOR EASEMENT LOCATIONS.

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	SM	ANP	ANP
П	DEDG DEV	"	

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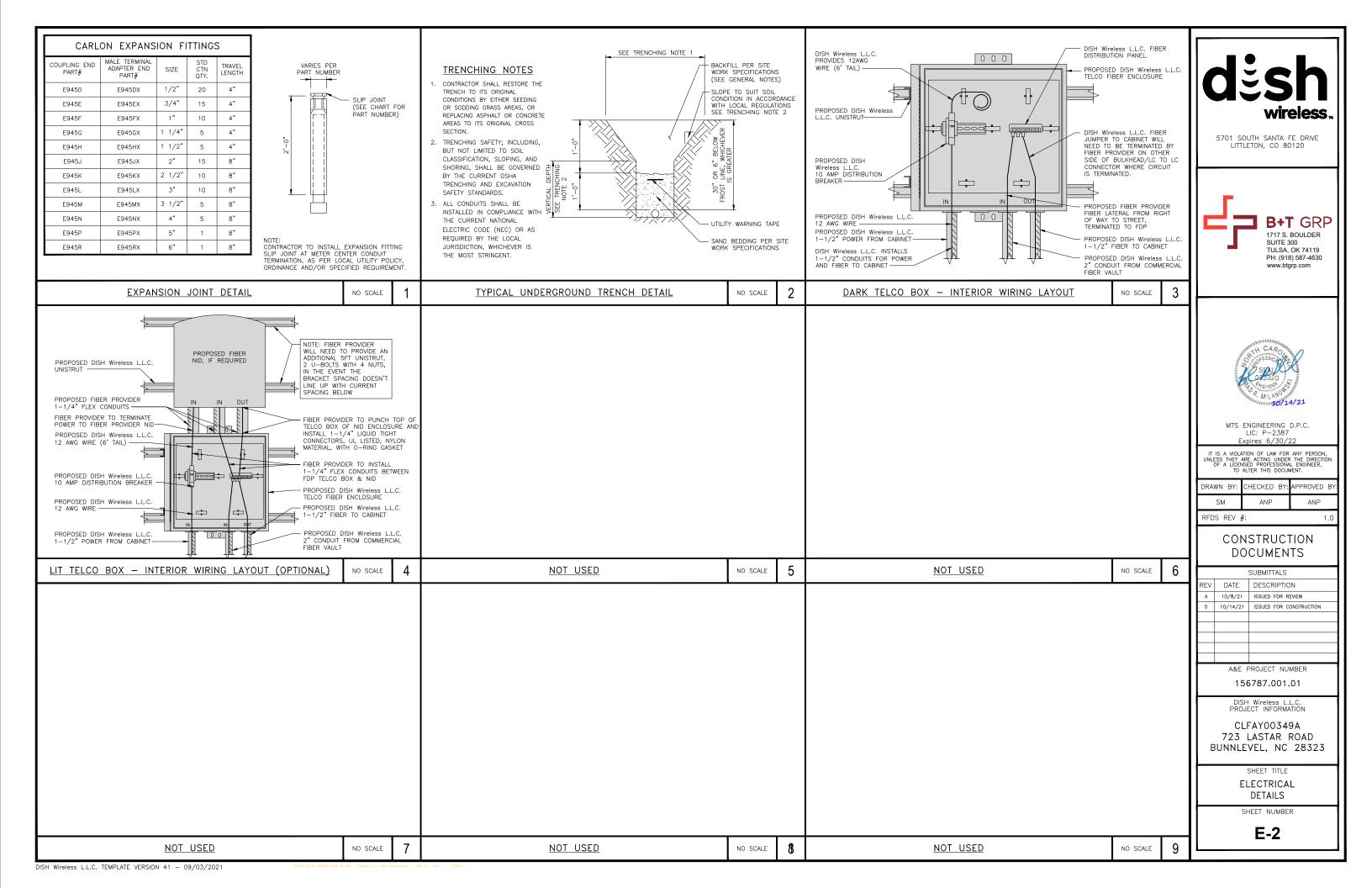
SHEET TITLE

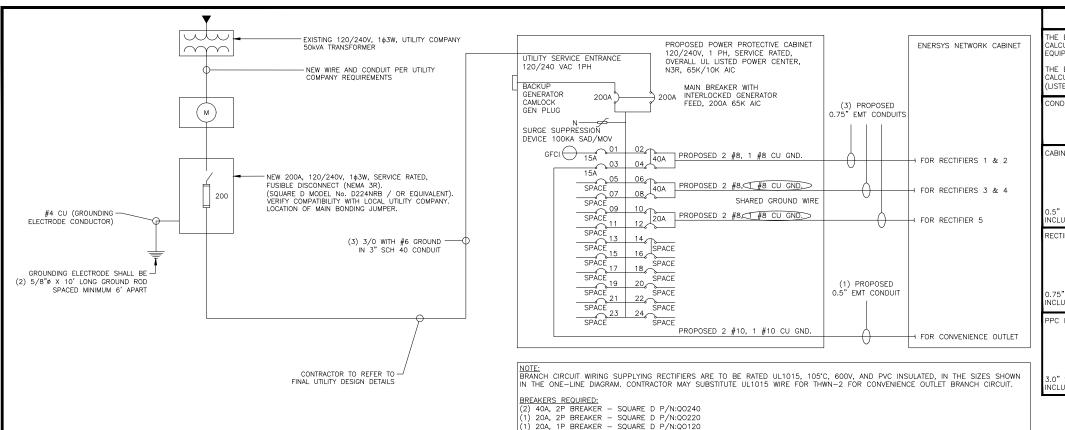
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER

E-1

SITE LOCATION





NOTES

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS FOR EACH DEVICE IS ADEQUATE TO PROTECT TH EQUIPMENT AND THE ELECTRICAL SYSTEM.

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

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

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

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

D.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, NCLUDING GROUND WIRE, AS INDICATED ABOVE.

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

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

= 0.0633 SQ. IN

NO SCALE

TOTAL

D.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, NCLUDING GROUND WIRE, AS INDICATED ABOVE.

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

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

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

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# CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER

156787.001.01

DISH Wireless L.L.C. PROJECT INFORMATION

CLFAY00349A 723 LASTAR ROAD BUNNLEVEL, NC 28323

SHEET TITLE

ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER

E-3

PROPOSED ENERSYS PANEL SCHEDULE LOAD SERVED (WATTS) LOAD SERVED NERSYS ALPHA CORDEX RECTIFIERS 1 & 2 40A ENERSYS ALPHA CORDEX
RECTIFIER 3 & 4 40A ENERSYS ALPHA CORDEX 20A RECTIFIER 5 -SPACE--SPACE--SPACE--SPAC VOLTAGE AMPS 180 180 200A MCB, 1φ, 24 SPACE, 120/240V MB RATING: 65,000 AIC VOLTAGE AMPS
AMPS
MAX AMPS
MAX 125%

PANEL SCHEDULE

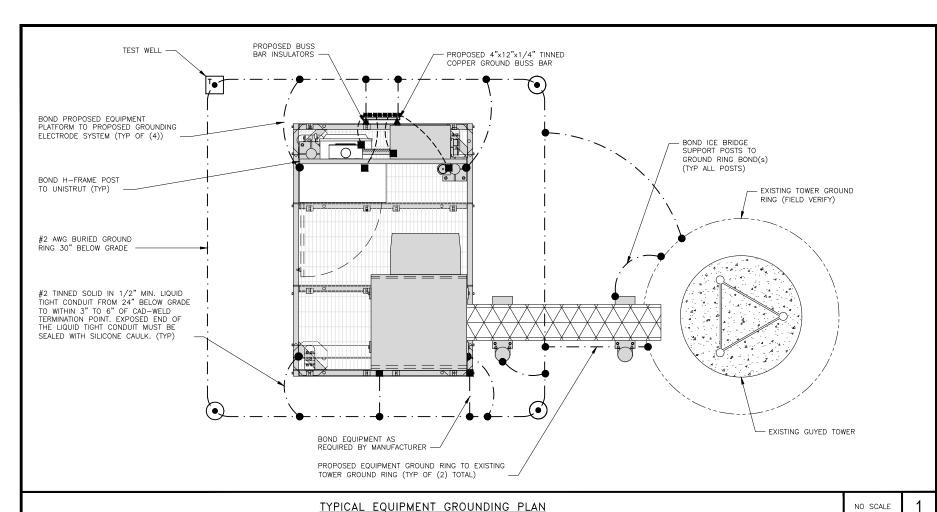
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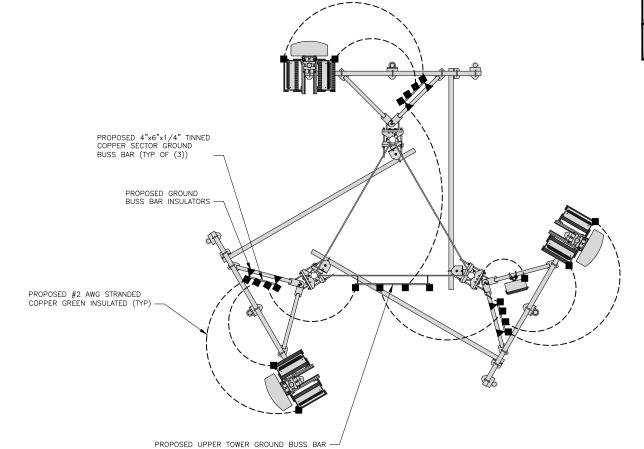
2

PPC ONE-LINE DIAGRAM

NOT USED

NO SCALE





TYPICAL ANTENNA GROUNDING PLAN

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION GROUND BUS BAR

GROUND ROD

(ullet)

TEST GROUND ROD WITH INSPECTION SLEEVE

---- #6 AWG STRANDED & INSULATED

- · - #2 AWG SOLID COPPER TINNED

A BUSS BAR INSULATOR

# **GROUNDING LEGEND**

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

# **GROUNDING KEY NOTES**

- (A) <u>EXTERIOR GROUND RING:</u> #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.
- TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, B TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED ANDOND AN ATTEMPT TOWER AND THE 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, 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.
- © 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
- 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
- $\underline{\text{GROUND ROD:}}$  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.
- 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.
- 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 (G) USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- (H) <u>EXTERIOR CABLE ENTRY PORT GROUND BARS:</u> 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
- ( | 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 <u>INTERIOR UNIT BONDS:</u> 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
- 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
- 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 TOWER STEEL.

REFER TO DISH Wireless L.L.C. GROUNDING NOTES

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SM		ANP		ANP	

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# CONSTRUCTION **DOCUMENTS**

	SUBMITTALS					
REV	DATE	DESCRIPTION				
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	A&E F	PROJECT NUMBER				

156787.001.01

DISH Wireless L.L.C. PROJECT INFORMATION

CLFAY00349A 723 LASTAR ROAD BUNNLEVEL, NC 28323

SHEET TITLE

GROUNDING PLANS AND NOTES

SHEET NUMBER

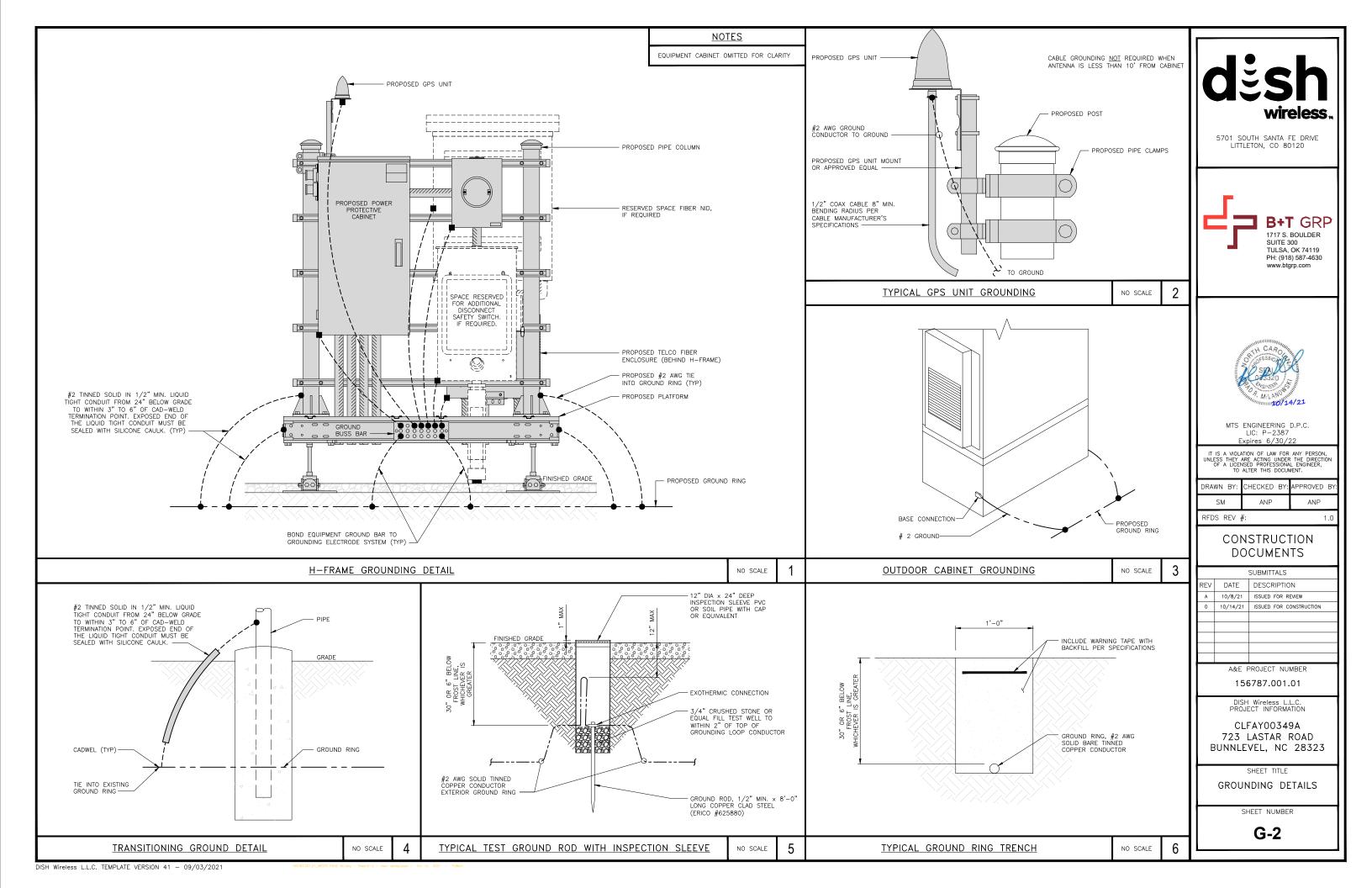
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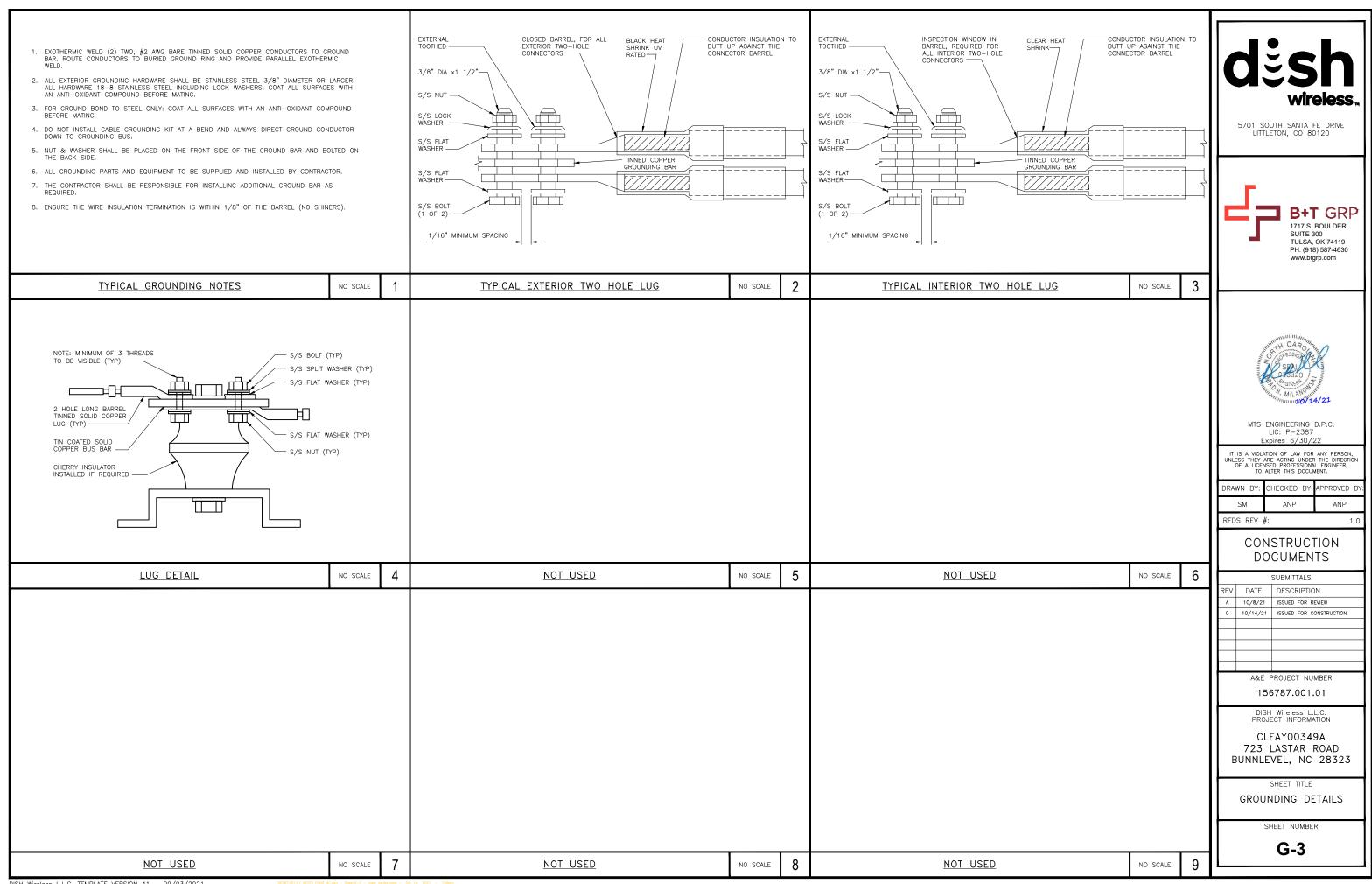
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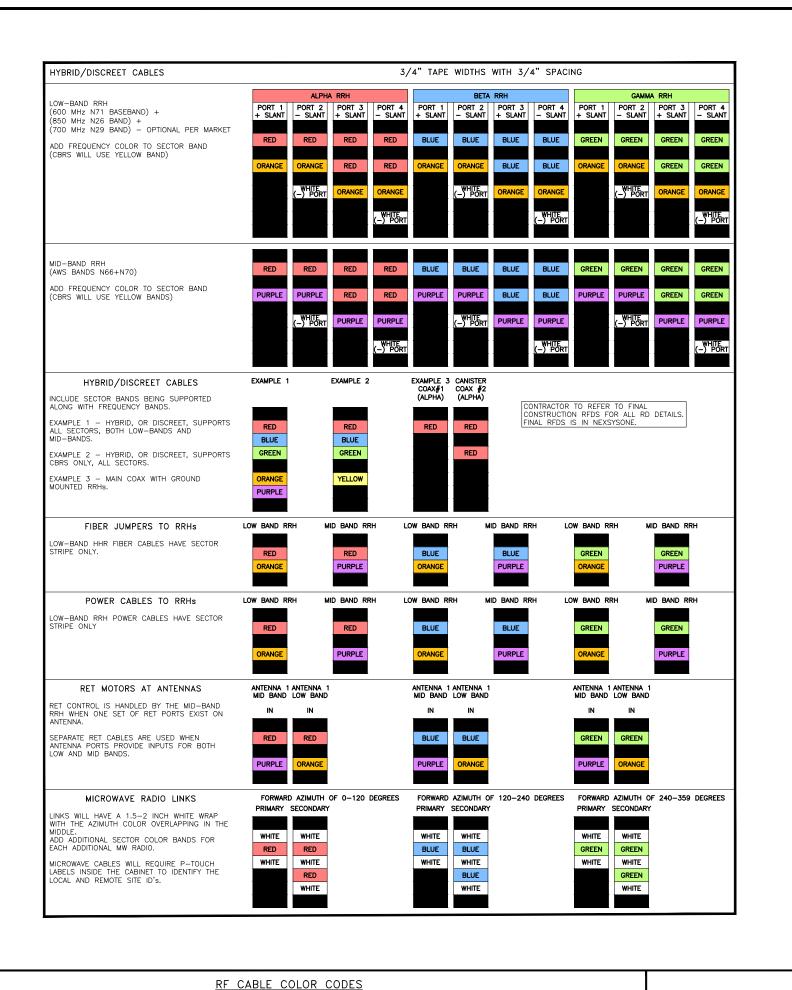
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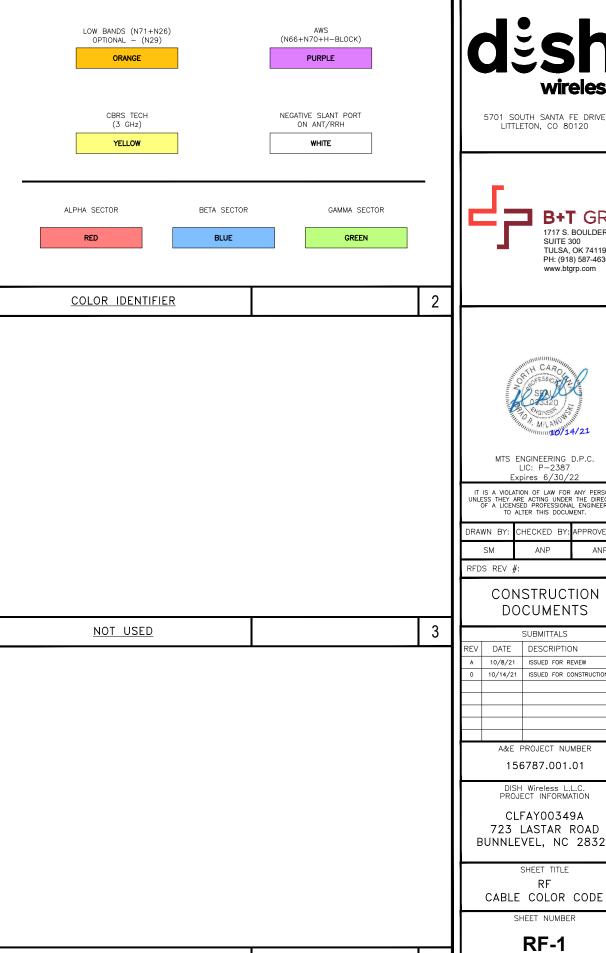
ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT REFERENCING TO A SPECIFIC MANUFACTURER. THIS LAYOUT IS FOR REFERENCE PURPOSES ONLY

**GROUNDING KEY NOTES** 









NOT USED



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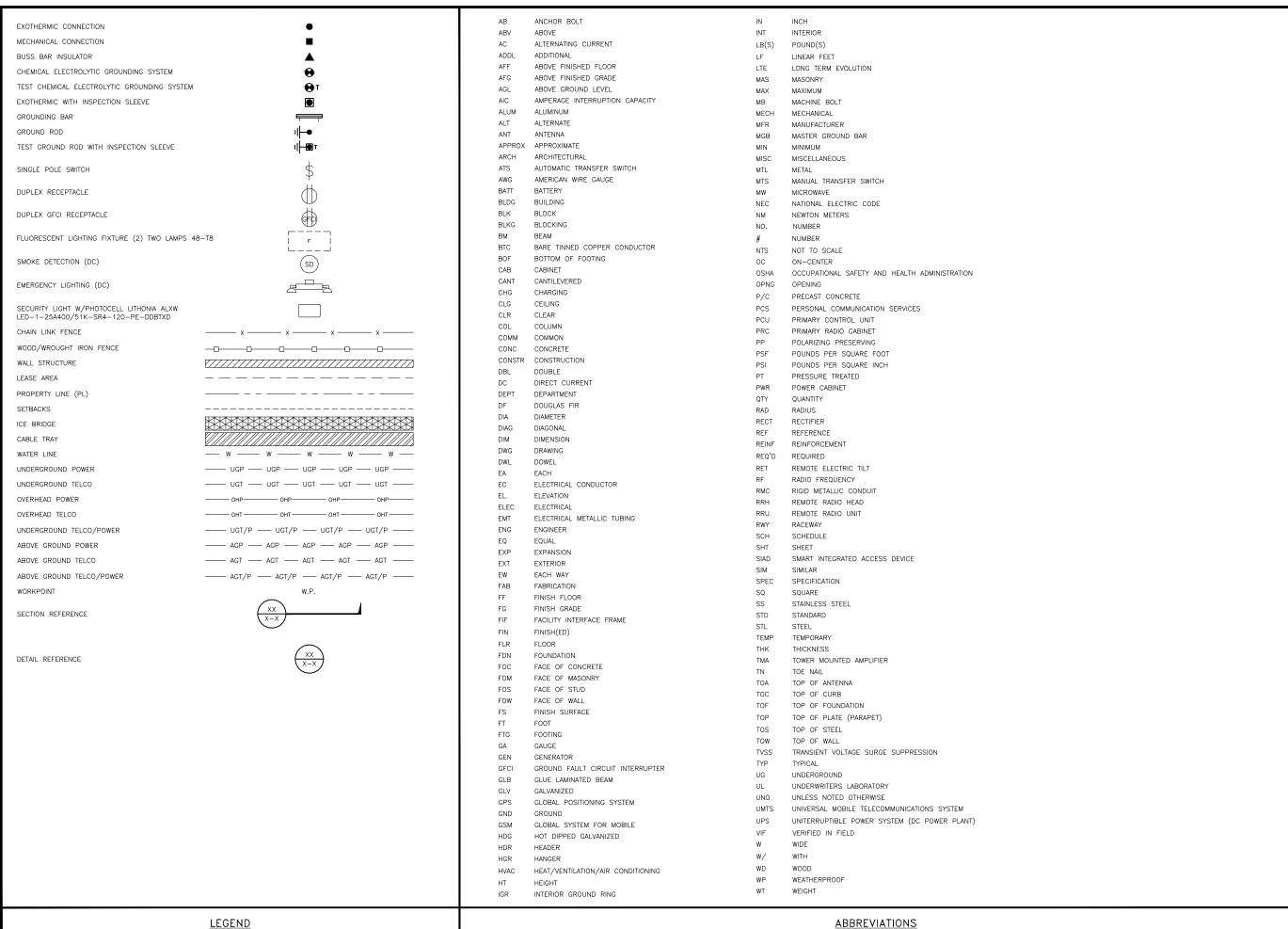
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SHEET TITLE

SHEET NUMBER

RF-1





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# CONSTRUCTION DOCUMENTS

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PROJECT INFORMATIO

CLFAY00349A 723 LASTAR ROAD BUNNLEVEL, NC 28323

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

## SITE ACTIVITY REQUIREMENTS:

- 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.
- "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.

- 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
- 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).
- 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."
- 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.
- 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.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER AUTILITIES 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**
- ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS. LATEST APPROVED REVISION.
- 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.
- 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.
- 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.
- 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
- 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.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY RASIS
- 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

- 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.
- 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.
- 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.
- 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
- 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.
- 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.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- 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
- 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
- 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
- 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



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MTS ENGINEERING D.P.C. LIC: P-2387

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CONSTRUCTION DOCUMENTS

	SUBMITTALS						
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156787.001.01

CLFAY00349A 723 LASTAR ROAD BUNNLEVEL, NC 28323

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

# CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

- 6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
- CONCRETE EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER 2"
- #5 BARS AND SMALLER 1-1/2"
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- SLAB AND WALLS 3/4"
- BEAMS AND COLUMNS 1-1/2"
- 7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

## **ELECTRICAL INSTALLATION NOTES:**

- 1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
- 2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
- 3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- 4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- 4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY 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.

- 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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DISH Wireless L.L.C. PROJECT INFORMATION

CLFAY00349A 723 LASTAR ROAD BUNNLEVEL, NC 28323

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## **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—POTENTAL 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 FOUIPMENT.
- 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/O 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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