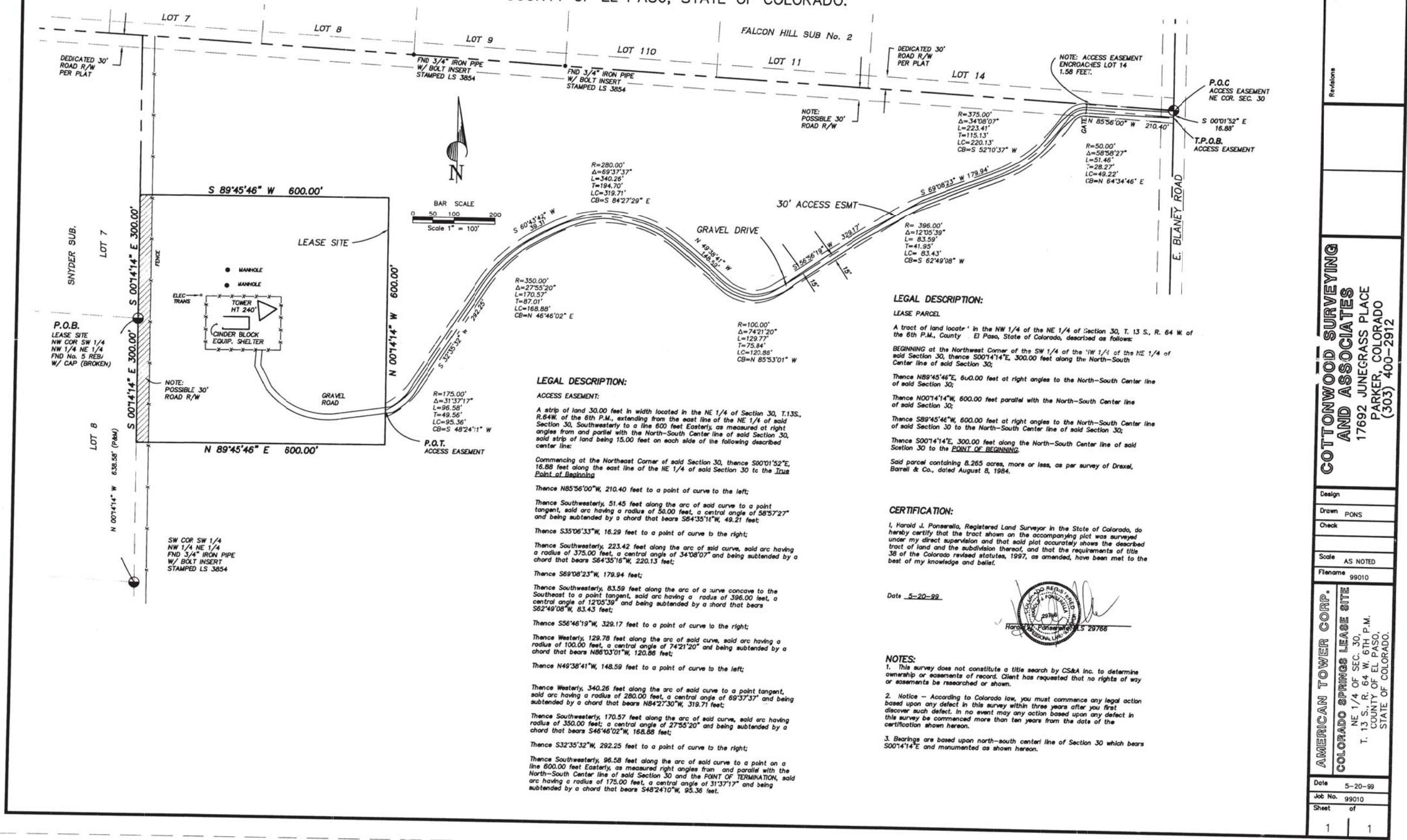






AMERICAN TOWER CORPORATION  
COLORADO SPRINGS SITE

A PARCEL OF LAND SITUATE IN THE NORTHEAST 1/4 OF SECTION 30,  
TOWNSHIP 13 SOUTH, RANGE 64 WEST OF THE 6TH P.M.,  
COUNTY OF EL PASO, STATE OF COLORADO.



LEGAL DESCRIPTION:

LEASE PARCEL

A tract of land located in the NW 1/4 of the NE 1/4 of Section 30, T. 13 S., R. 64 W. of the 6th P.M., County of El Paso, State of Colorado, described as follows:

BEGINNING at the Northwest Corner of the SW 1/4 of the NW 1/4 of the NE 1/4 of said Section 30, thence S00°14'14"E, 300.00 feet along the North-South Center line of said Section 30;

Thence N89°45'46"E, 600.00 feet at right angles to the North-South Center line of said Section 30;

Thence N00°14'14"W, 600.00 feet parallel with the North-South Center line of said Section 30;

Thence S89°45'46"W, 600.00 feet at right angles to the North-South Center line of said Section 30 to the North-South Center line of said Section 30;

Thence S00°14'14"E, 300.00 feet along the North-South Center line of said Section 30 to the POINT OF BEGINNING.

Said parcel containing 8.265 acres, more or less, as per survey of Drexel, Barrell & Co., dated August 8, 1984.

CERTIFICATION:

I, Harold J. Ponsarola, Registered Land Surveyor in the State of Colorado, do hereby certify that the tract shown on the accompanying plat was surveyed under my direct supervision and that said plat accurately shows the described tract of land and the subdivision thereof, and that the requirements of title 38 of the Colorado revised statutes, 1997, as amended, have been met to the best of my knowledge and belief.

Date 5-20-99

NOTES:

1. This survey does not constitute a title search by CS&A Inc. to determine ownership or easements of record. Client has requested that no rights of way or easements be researched or shown.

2. Notice - According to Colorado law, you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.

3. Bearings are based upon north-south center line of Section 30 which bears S00°14'14"E and monumented as shown hereon.

COTTONWOOD SURVEYING  
AND ASSOCIATES  
17692 JUNEGRASS PLACE  
PARKER, COLORADO  
(303) 400-2912

Design

Drawn PONS

Check

Scale AS NOTED

Filename 99010

AMERICAN TOWER CORP.  
COLORADO SPRINGS LEASE SITE  
NE 1/4 OF SEC. 30,  
T. 13 S., R. 64 W. 6TH P.M.,  
COUNTY OF EL PASO,  
STATE OF COLORADO.

Date 5-20-99

Job No. 99010

Sheet of

1

NO SCALE

1

dish  
wireless.

5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



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2500 W. HIGGINS RD., SUITE 500  
HOFFMAN ESTATES, IL 60169  
PHONE: 847-648-4068 | FAX: 518-690-0793  
WWW.INFINIGY.COM

FOR  
REFERENCE  
ONLY

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DRAWN BY: CHECKED BY: APPROVED BY:

SP PP CW

RFDS REV #: 0

CONSTRUCTION  
DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	06/29/21	ISSUED FOR REVIEW
0	06/30/21	ISSUED FOR CONSTRUCTION
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2	12/06/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER  
30300-13689453

DISH Wireless L.L.C.  
PROJECT INFORMATION  
DNDEN00043A  
COLORADO SPRINGS  
4490 EAST BLANEY RD  
PEYTON, CO 80831

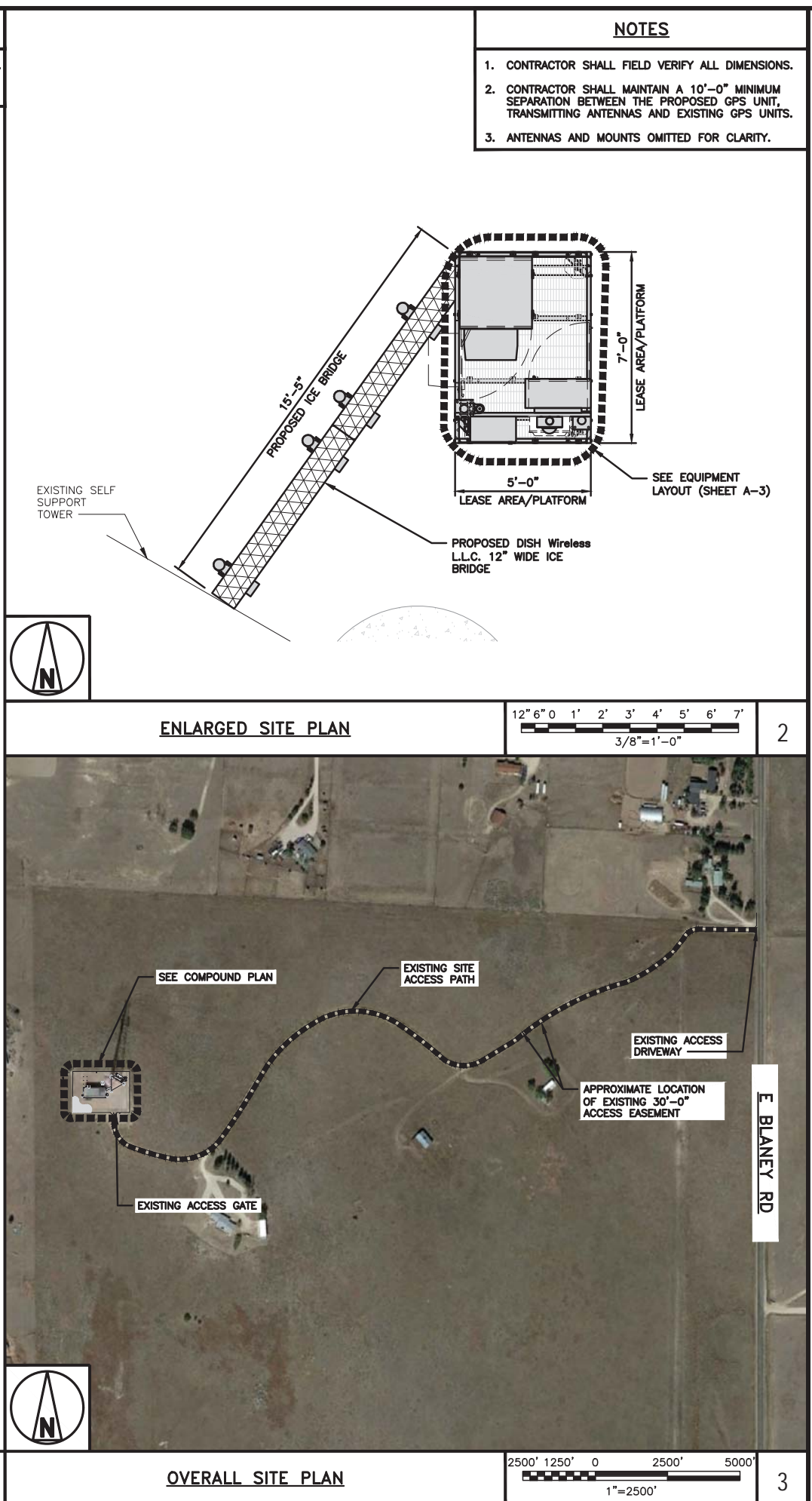
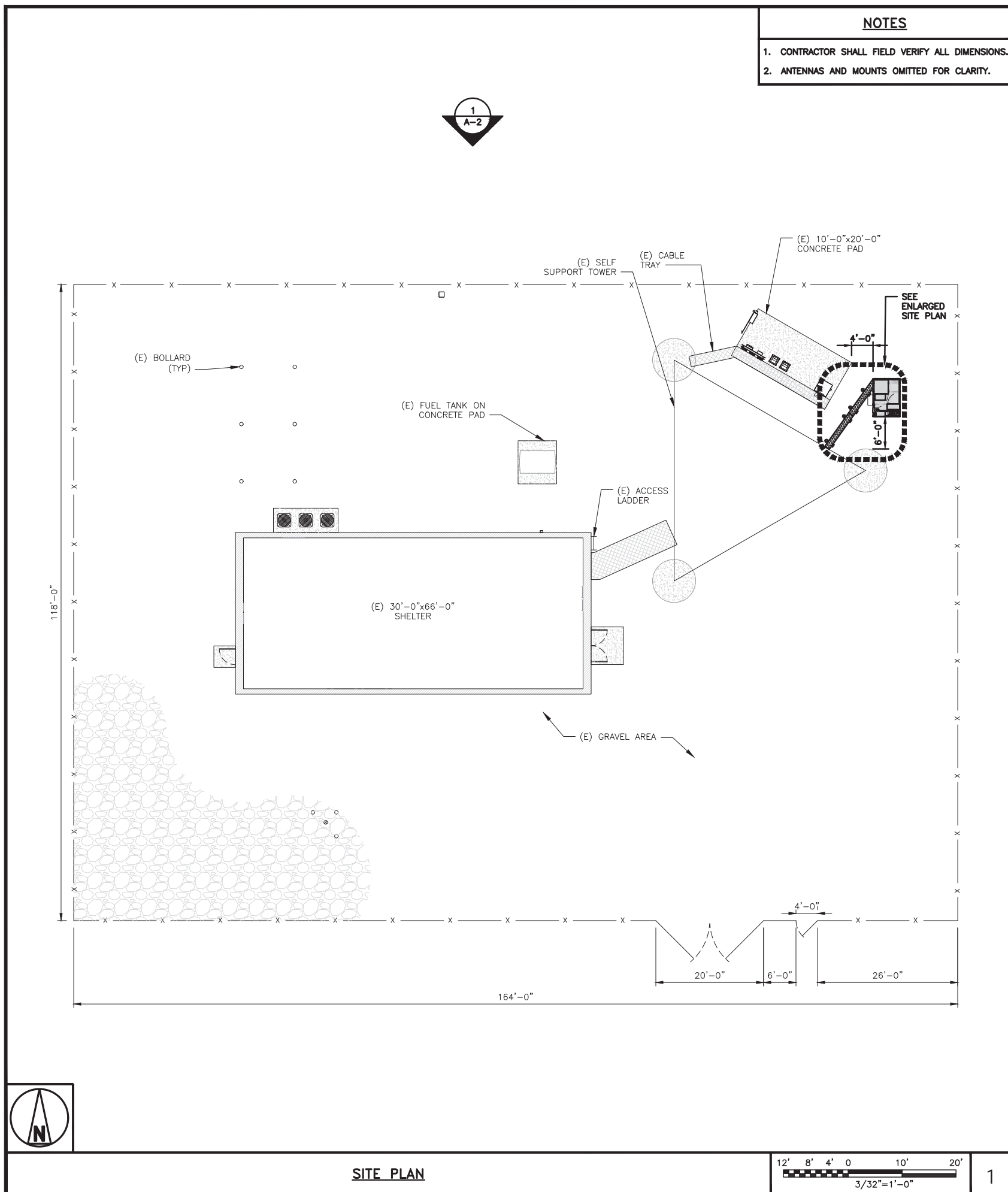
SHEET TITLE  
SITE SURVEY

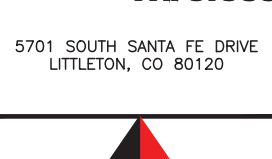
SHEET NUMBER

A-0

EXISTING SURVEY








**dish**  
**wireless.**

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DISH Wireless L.L.C.  
PROJECT INFORMATION

**DNDEN00043A**

**COLORADO SPRINGS**

**4490 EAST BLANEY RD**  
**PEYTON, CO 80831**

SHEET TITLE

**COMPOUND, ACCESS &  
ENLARGED SITE PLANS**

SHEET NUMBER

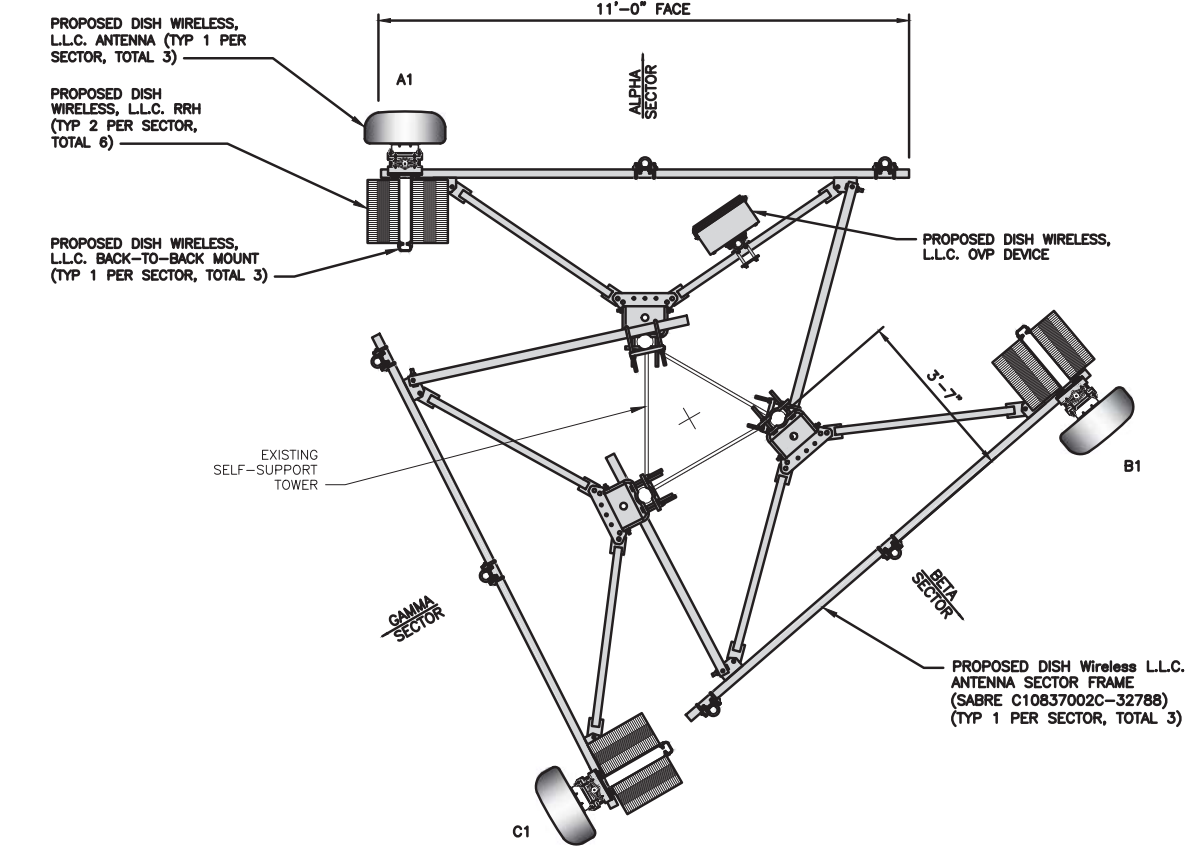
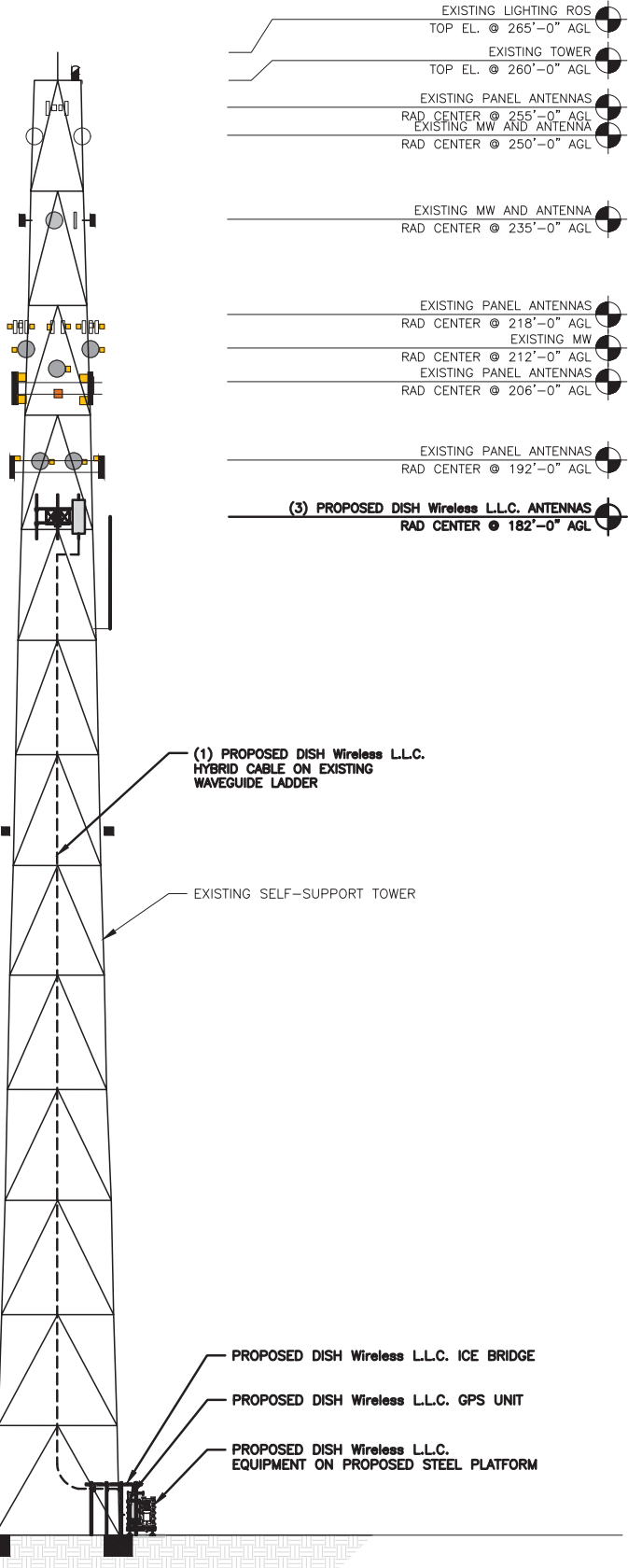
**A-1**

- NOTES
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

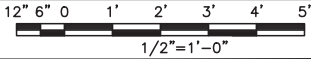
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS

3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.

4. INFINIGY HAS NOT EVALUATED THE TOWER OR MOUNT STRUCTURE AND ASSUMES NO RESPONSIBILITY FOR THEIR STRUCTURAL INTEGRITY REGARDING PROPOSED LOADINGS. FINAL INSTALLATION SHALL COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSES PERFORMED BY OTHERS.



ANTENNA LAYOUT

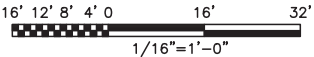


2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA - MX08FR0665-21	5G	20.0" x 8.0"	SEE RFDS	182'-0"	(1) HIGH-CAPACITY HYBRID CABLE (225' LONG)
BETA	B1	PROPOSED	JMA - MX08FR0665-21	5G	20.0" x 8.0"	SEE RFDS	182'-0"	
GAMMA	C1	PROPOSED	JMA - MX08FR0665-21	5G	20.0" x 8.0"	SEE RFDS	182'-0"	

SECTOR	POSITION	RRH		NOTES
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY	
ALPHA	A1	FUJITSU - TA08025-B605	5G	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.
	A1	FUJITSU - TA08025-B604	5G	
BETA	B1	FUJITSU - TA08025-B605	5G	
	B1	FUJITSU - TA08025-B604	5G	
GAMMA	C1	FUJITSU - TA08025-B605	5G	
	C1	FUJITSU - TA08025-B604	5G	

PROPOSED NORTH ELEVATION



1

ANTENNA SCHEDULE

NO SCALE

3



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SP PP CW

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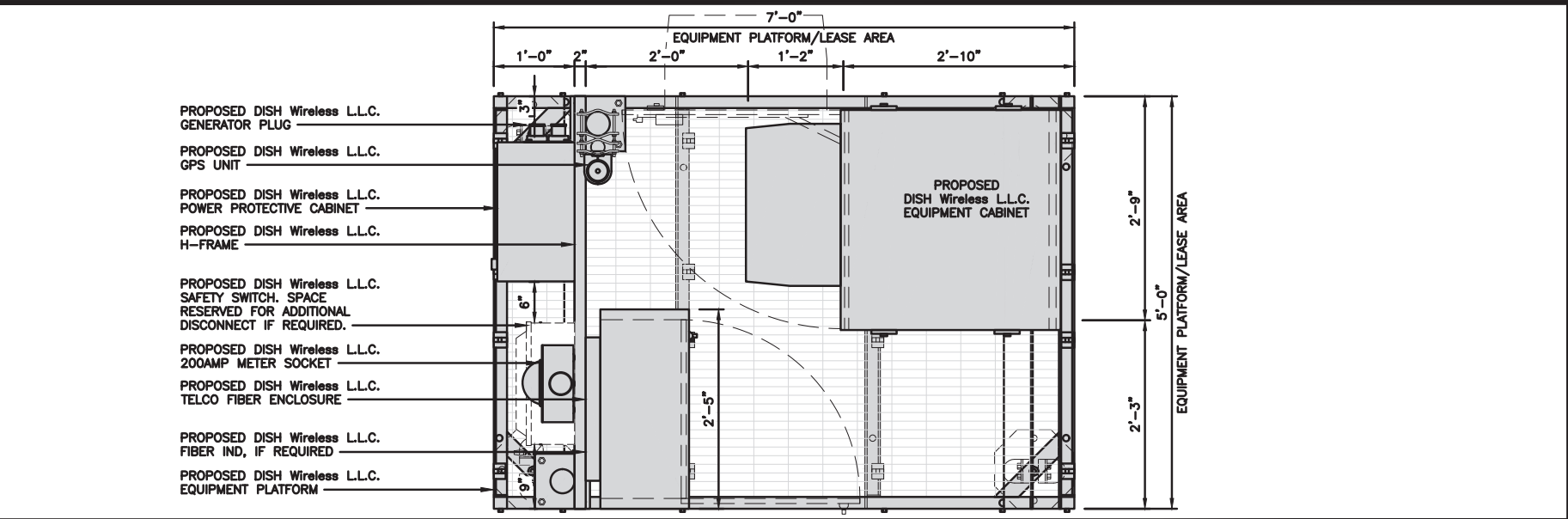
A&E PROJECT NUMBER  
30300-13689453

DISH Wireless L.L.C.  
PROJECT INFORMATION  
DNDEN00043A  
COLORADO SPRINGS  
4490 EAST BLANEY RD  
PEYTON, CO 80831

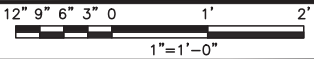
SHEET TITLE  
ELEVATION, ANTENNA  
LAYOUT AND SCHEDULE

SHEET NUMBER  
**A-2**





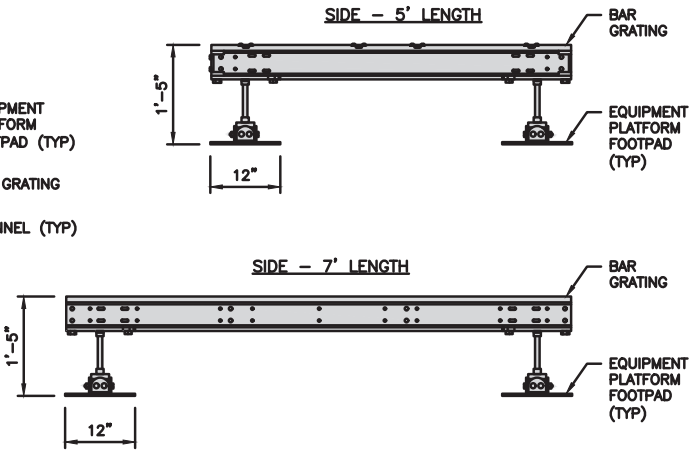
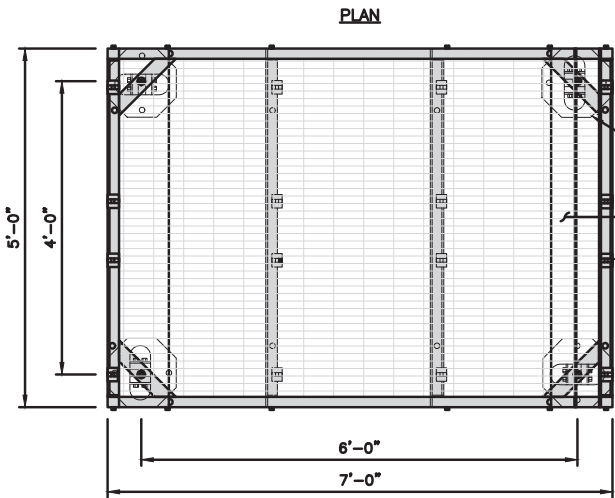
PLATFORM EQUIPMENT PLAN



1

COMMSCOPE MTC4045LP 5X7 PLATFORM	
DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

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

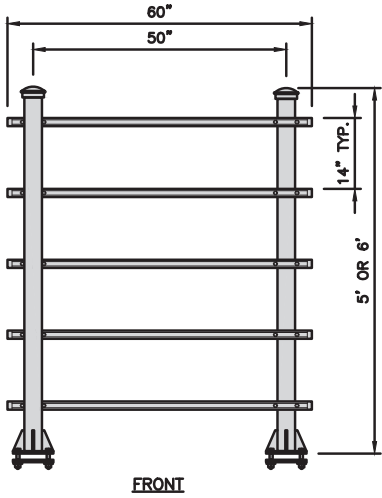
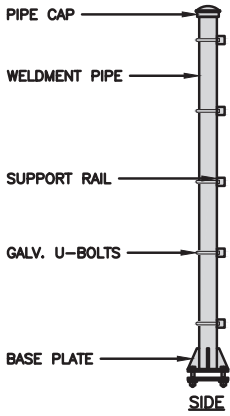


PLATFORM DETAIL

NO SCALE

2

COMMSCOPE MTC4045HFLD H-FRAME	
UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs



H-FRAME DETAIL

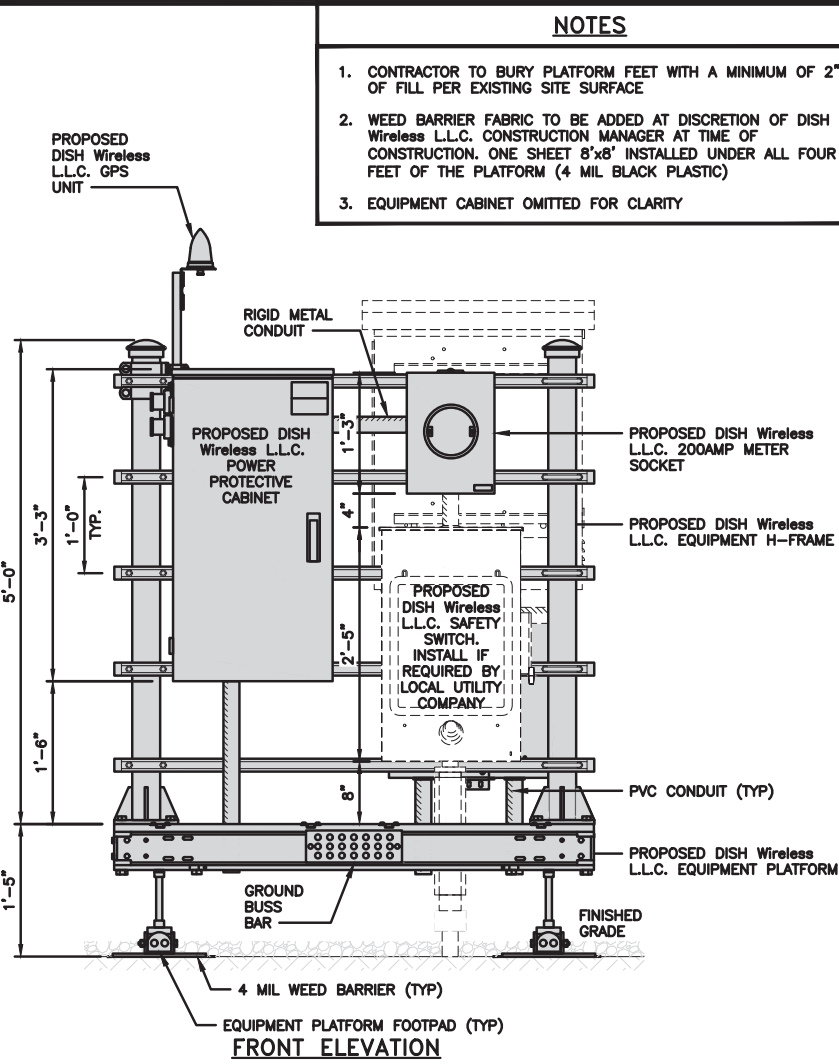
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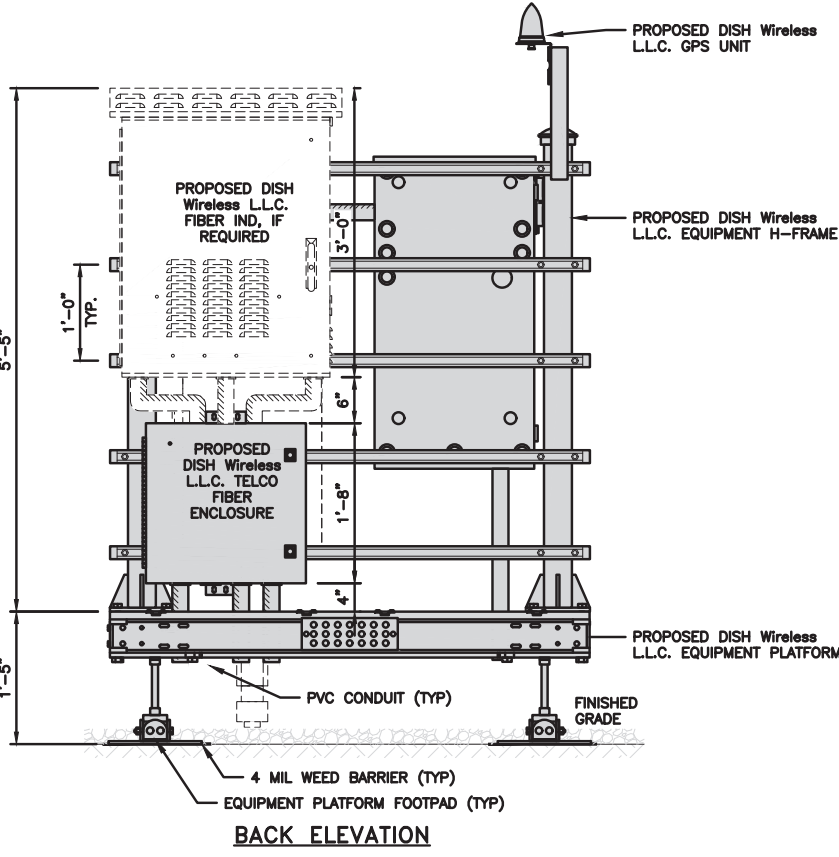
NOT USED

NO SCALE

4

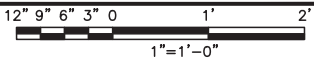


FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION



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



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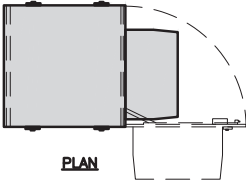
DISH Wireless L.L.C.  
PROJECT INFORMATION  
DNDEN00043A  
COLORADO SPRINGS  
4490 EAST BLANEY RD  
PEYTON, CO 80831

SHEET TITLE  
EQUIPMENT PLATFORM AND  
H-FRAME DETAILS

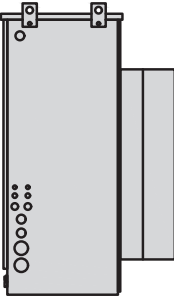
SHEET NUMBER  
**A-3**

CHARLES INDUSTRY  
PM639155N4 HEX CABINET

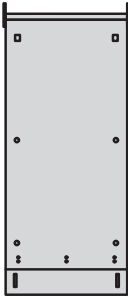
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	48VDC ABB
HVAC	6000W DC
TOTAL WEIGHT (EMPTY)	394 LBS



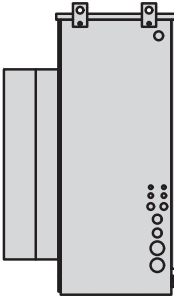
PLAN



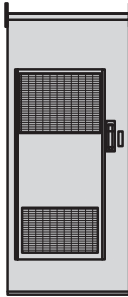
SIDE



BACK



SIDE



FRONT


CABINET DETAIL

NO SCALE

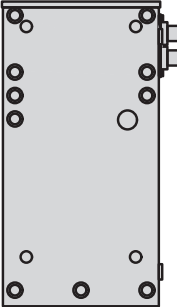
1

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



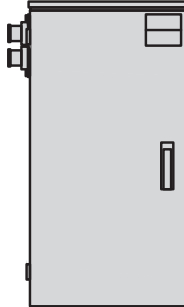
TOP




BACK



SIDE



FRONT



SIDE

POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

2

NOT USED


NOT USED

NO SCALE

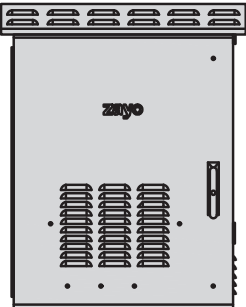
3

ZAYO 5RU CABINET  
LEFT SWING DOOR ("LIT" SITES)

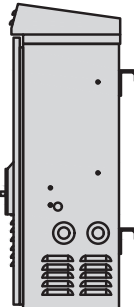
DIMENSIONS (HxWxD)	36.115"x29"x12.9"
WEIGHT	85 LBS
POWER INPUT	20A, -48VDC



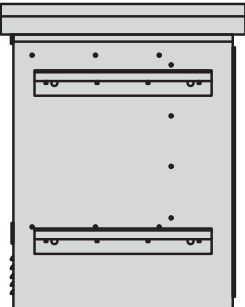
PLAN



FRONT



SIDE



BACK


NETWORK INTERFACE UNIT DETAIL

NO SCALE

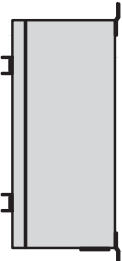
5

CHARLES CFIT-PF2020DSH1  
FIBER TELCO ENCLOSURE

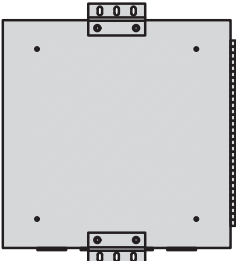
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



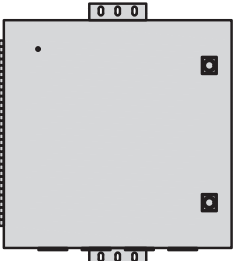
FRONT



SIDE



BACK



FRONT

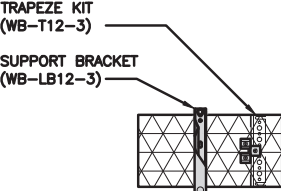
FIBER TELCO ENCLOSURE DETAIL

NO SCALE

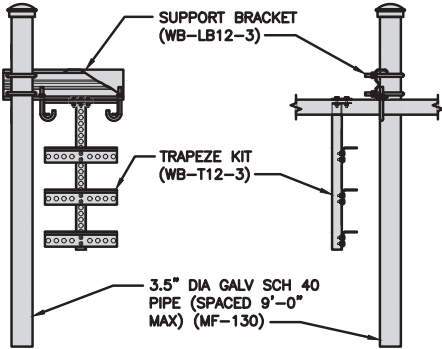
6

COMMSCOPE WB-K110-B  
WAVEGUIDE BRIDGE KIT

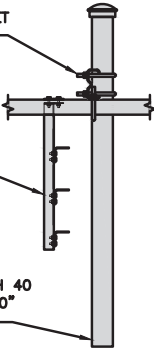
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12



PLAN



FRONT



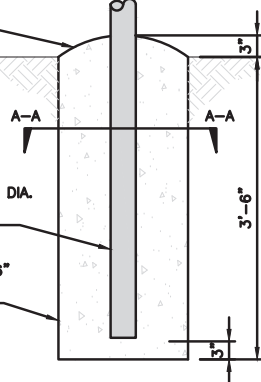
SIDE

ICE BRIDGE DETAIL

NO SCALE

7

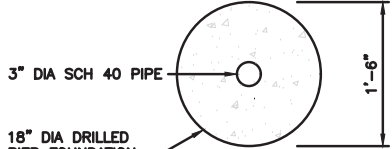
FINISH SLOPE TO DRAIN



PROPOSED 3.5" DIA. SCH 40 PIPE GALVANIZED

PROPOSED 1'-6" DIA. CONCRETE PIER (TYP)

CONCRETE PIER



3" DIA SCH 40 PIPE

18" DIA DRILLED PIER FOUNDATION

A-A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL

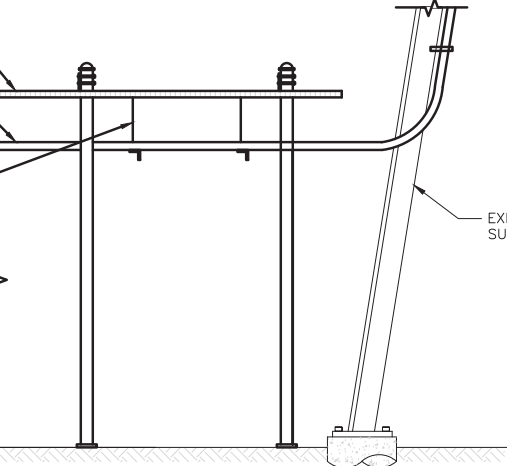
NO SCALE

8

PROPOSED ICE BRIDGE

PROPOSED X" DIA HYBRID CABLE

PROPOSED CABLE CLAMP @ 3'-0" O.C.



EXISTING SELF SUPPORT TOWER


HYBRID CABLE RUN

NO SCALE

9

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COLORADO LICENSED  
CHRISTOPHER J. WARREN  
47849  
12/6/21  
PROFESSIONAL ENGINEER

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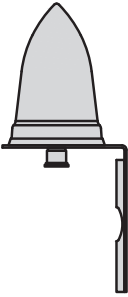

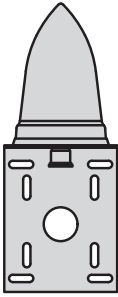
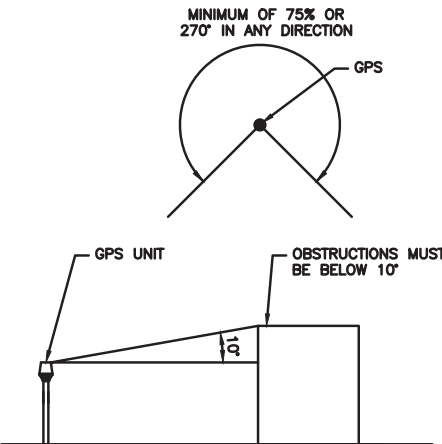
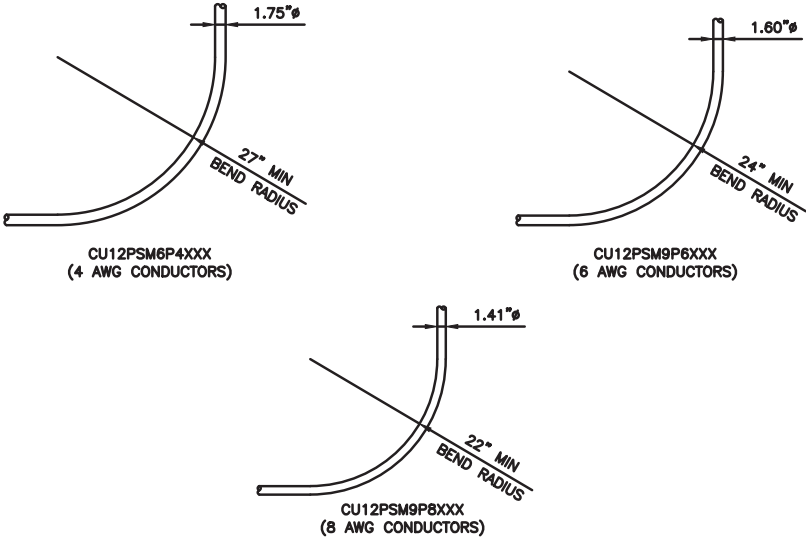
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SHEET TITLE  
EQUIPMENT DETAILS

SHEET NUMBER  
A-4

PCD FILE NO, PPR-21-059

<table><tr><td colspan="2">PCTEL GPSGL-TMG-SPI-40NCB</td></tr><tr><td>DIMENSIONS (DIAxH) MM/INCH</td><td>81x184mm 3.2"x7.25"</td></tr><tr><td>WEIGHT W/ACCESSORIES</td><td>075 lbs</td></tr><tr><td>CONNECTOR</td><td>N-FEMALE</td></tr><tr><td>FREQUENCY RANGE</td><td>1590 ± 30MHz</td></tr></table> <div><p>BACK</p></div> <div><p>SIDE</p></div> <div><p>TOP</p></div>			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	 <p>MINIMUM OF 75% OR 270° IN ANY DIRECTION</p> <p>GPS</p> <p>GPS UNIT</p> <p>OBSTRUCTIONS MUST BE BELOW 10'</p>			 <p>1.75"ø</p> <p>27" MIN BEND RADIUS</p> <p>CU12PSM6P4XXX (4 AWG CONDUCTORS)</p> <p>1.60"ø</p> <p>24" MIN BEND RADIUS</p> <p>CU12PSM9P6XXX (6 AWG CONDUCTORS)</p> <p>1.41"ø</p> <p>22" MIN BEND RADIUS</p> <p>CU12PSM9P8XXX (8 AWG CONDUCTORS)</p>										
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																									
GPS DETAIL			NO SCALE			1			GPS MINIMUM SKY VIEW REQUIREMENTS			NO SCALE			2			CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUSES			NO SCALE			3		
NOT USED			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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RFDS REV #: 0

CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER  
30300-13689453

DISH Wireless L.L.C.  
PROJECT INFORMATION  
DNDEN00043A  
COLORADO SPRINGS  
4490 EAST BLANEY RD  
PEYTON, CO 80831

SHEET TITLE  
EQUIPMENT DETAILS

SHEET NUMBER  
A-5

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

BACK

SIDE

FRONT

PLAN

RRH DETAIL

NO SCALE

1

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

BACK

SIDE

FRONT

PLAN

RRH DETAIL

NO SCALE

2

COMMSCOPE BACK-TO-BACK MOUNT  
RR-FA2

DIMENSIONS (HxWxD)	16.41"x18.0"x3.0"
WEIGHT	39.22 lb
PACKAGE QUANTITY	2

FRONT BRACKET

BACK BRACKET

LARGE STABILIZER

RRU HANGER

8.63"

18.00"

8.50"

16.41"

5.0"

REMOTE RADIO MOUNT DETAIL

NO SCALE

3

RAYCAP RDIDC-9181-PF-48  
DC SURGE PROTECTION (OVP)

DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS

SIDE

BACK

FRONT

PLAN

SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

4

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

SIDE

FRONT

PLAN

ANTENNA DETAIL

NO SCALE

5

JMA 91900318 MOUNTING BRACKET

WIDTH	8.3" (211mm)
DEPTH	7.5" (191mm)
HEIGHT	11.2" (284mm)
TOTAL WEIGHT (WITH BRACKETS)	18.5 LBS (8.4 Kg)
HOUSING MATERIAL	GALV. HIGH STRENGTH STEEL

ANTENNA BRACKET, TYP. (NOT A PART)

TOP MOUNTING BRACKET (TYP)

CENTER MOUNTING BRACKET (TYP)

MOUNTING PIPE

ANTENNA MOUNTING DETAIL

NO SCALE

6

SABRE INDUSTRIES C10837002C-32788  
THD V-BOOM ASSEMBLY WITH TIEBACK

FACE SIZE	10'-0"
WEIGHT	610 LB
TOWER LEG SIZE	1-1/2" TO 5-9/16" DIA ROUND LEG

SIDE

FRONT

PLAN

3'-0"

10'-0"

8'-0"

2'-11 9/16"

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

ANTENNA FRAME DETAIL

NO SCALE

7

NO SCALE

8

NO SCALE

9

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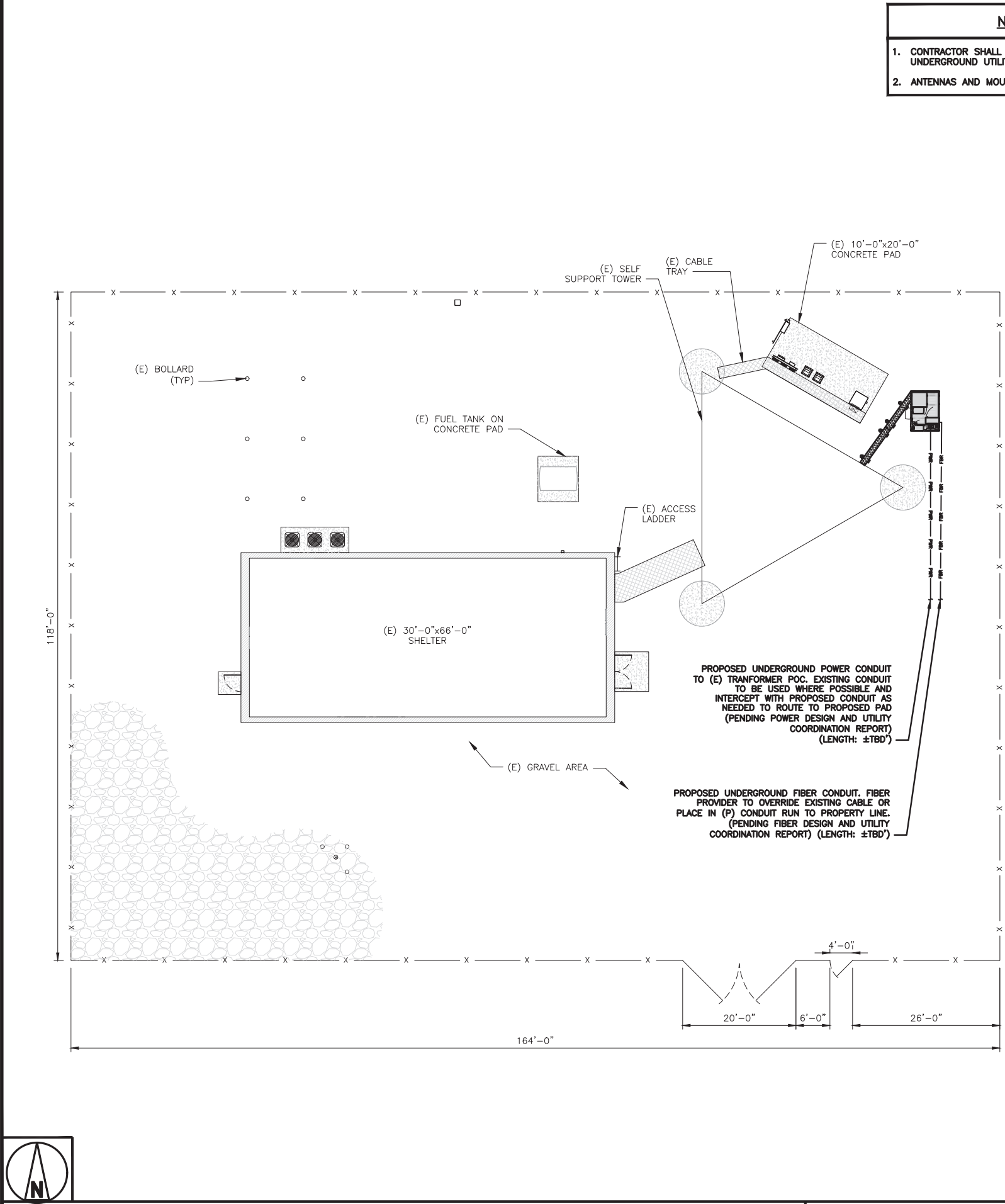
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COLORADO SPRINGS  
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PEYTON, CO 80831

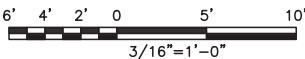
SHEET TITLE  
EQUIPMENT DETAILS

SHEET NUMBER  
A-6

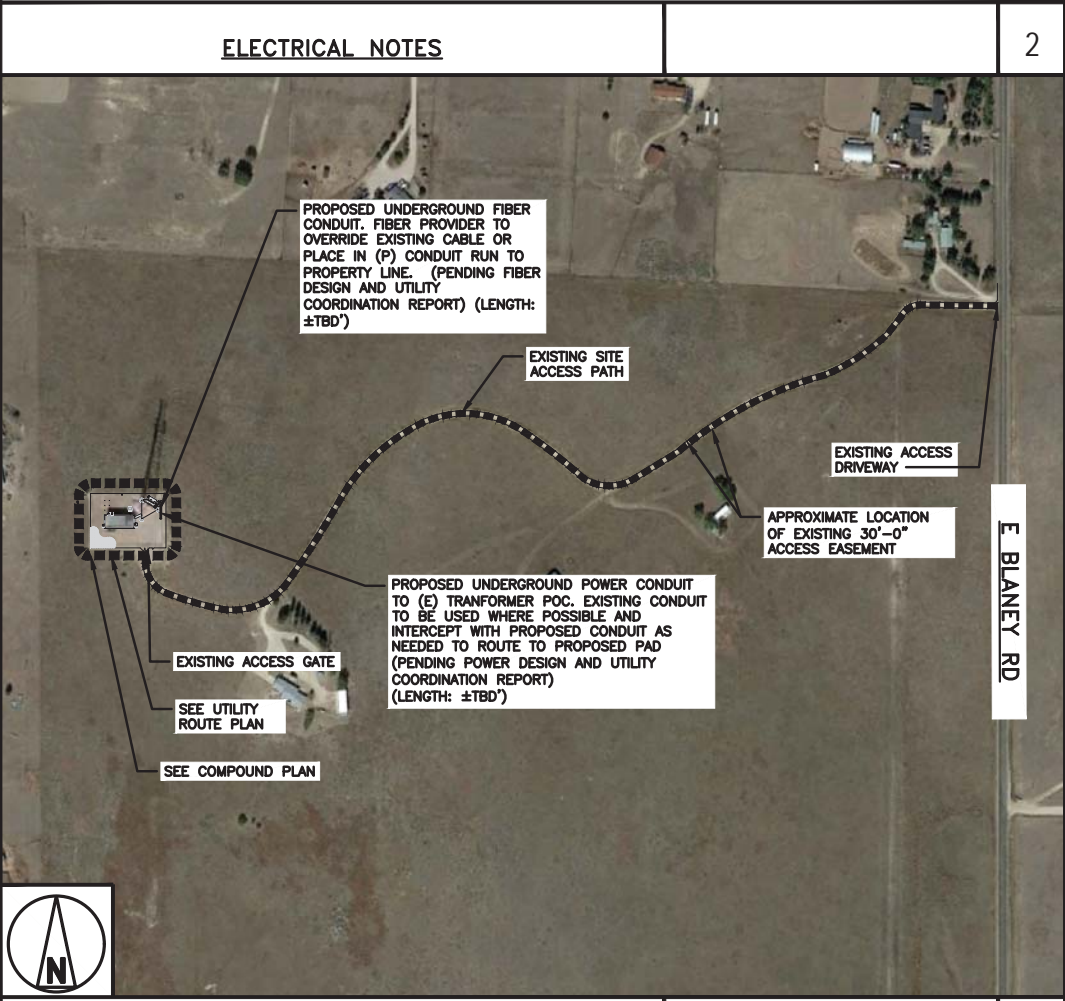




UTILITY ROUTE PLAN



- NOTES**
1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
  2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
- 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.



OVERALL UTILITY ROUTE PLAN



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COLORADO SPRINGS  
4490 EAST BLANEY RD  
PEYTON, CO 80831

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"

VARIES PER PART NUMBER

2'-0"

SLIP JOINT (SEE CHART FOR PART NUMBER)

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

1. 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.

2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.

3. 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.

SEE TRENCHING NOTE 1

BACKFILL PER SITE WORK SPECIFICATIONS (SEE GENERAL NOTES)

SLOPE TO SUIT SOIL CONDITION IN ACCORDANCE WITH LOCAL REGULATIONS SEE TRENCHING NOTE 2

30" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER

UTILITY WARNING TAPE

SAND BEDDING PER SITE WORK SPECIFICATIONS

VERTICAL DEPTH SEE TRENCHING NOTE 2

1'-0"

1'-0"

DISH Wireless L.L.C. PROVIDES 12AWG WIRE (6' TAIL)

PROPOSED DISH Wireless L.L.C. UNISTRUT

PROPOSED DISH Wireless L.L.C. 10 AMP DISTRIBUTION BREAKER

PROPOSED DISH Wireless L.L.C. 12 AWG WIRE

PROPOSED DISH Wireless L.L.C. 1-1/2" POWER FROM CABINET

DISH Wireless L.L.C. INSTALLS 1-1/2" CONDUITS FOR POWER AND FIBER TO CABINET

DISH Wireless L.L.C. FIBER DISTRIBUTION PANEL

PROPOSED DISH Wireless L.L.C. TELCO FIBER ENCLOSURE

DISH Wireless L.L.C. FIBER JUMPER TO CABINET WILL NEED TO BE TERMINATED BY FIBER PROVIDER ON OTHER SIDE OF BULKHEAD/LC TO LC CONNECTOR WHERE CIRCUIT IS TERMINATED.

PROPOSED FIBER PROVIDER FIBER LATERAL FROM RIGHT OF WAY TO STREET, TERMINATED TO FDP

PROPOSED DISH Wireless L.L.C. 1-1/2" FIBER TO CABINET

PROPOSED DISH Wireless L.L.C. 2" CONDUIT FROM COMMERCIAL FIBER VAULT

0 0 0

IN

IN

OUT

0 0

A

A

A

EXPANSION JOINT DETAIL

NO SCALE

1

PROPOSED DISH Wireless, L.L.C. UNISTRUT

PROPOSED FIBER PROVIDER 1-1/4" FLEX CONDUITS FIBER PROVIDER TO TERMINATE POWER TO FIBER PROVIDER NID PROPOSED DISH Wireless, L.L.C. 12 AWG WIRE (6' TAIL)

PROPOSED DISH Wireless, L.L.C. 10 AMP DISTRIBUTION BREAKER

PROPOSED DISH Wireless, L.L.C. 12 AWG WIRE

PROPOSED DISH Wireless, L.L.C. 1-1/2" POWER FROM CABINET

NOTE: FIBER PROVIDER WILL NEED TO PROVIDE AN ADDITIONAL 5FT UNISTRUT, 2 U-BOLTS WITH 4 NUTS, IN THE EVENT THE BRACKET SPACING DOESN'T LINE UP WITH CURRENT SPACING BELOW

FIBER PROVIDER TO PUNCH TOP OF TELCO BOX OF NID ENCLOSURE AND INSTALL 1-1/4" LIQUID TIGHT CONNECTORS, UL LISTED, NYLON MATERIAL, WITH O-RING GASKET

FIBER PROVIDER TO INSTALL 1-1/4" FLEX CONDUITS BETWEEN FDP TELCO BOX & NID

PROPOSED DISH Wireless, L.L.C. TELCO FIBER ENCLOSURE

PROPOSED DISH Wireless, L.L.C. 1-1/2" FIBER TO CABINET

PROPOSED DISH Wireless, L.L.C. 2" CONDUIT FROM COMMERCIAL FIBER VAULT

PROPOSED FIBER PROVIDER NID, IF REQUIRED

IN

IN

OUT

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

dish  
wireless.

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LITTLETON, CO 80120

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COLORADO LICENSED  
CHRISTOPHER J. WARREN  
47849  
12/6/21  
PROFESSIONAL ENGINEER

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PROJECT INFORMATION

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COLORADO SPRINGS  
4490 EAST BLANEY RD  
PEYTON, CO 80831

SHEET TITLE

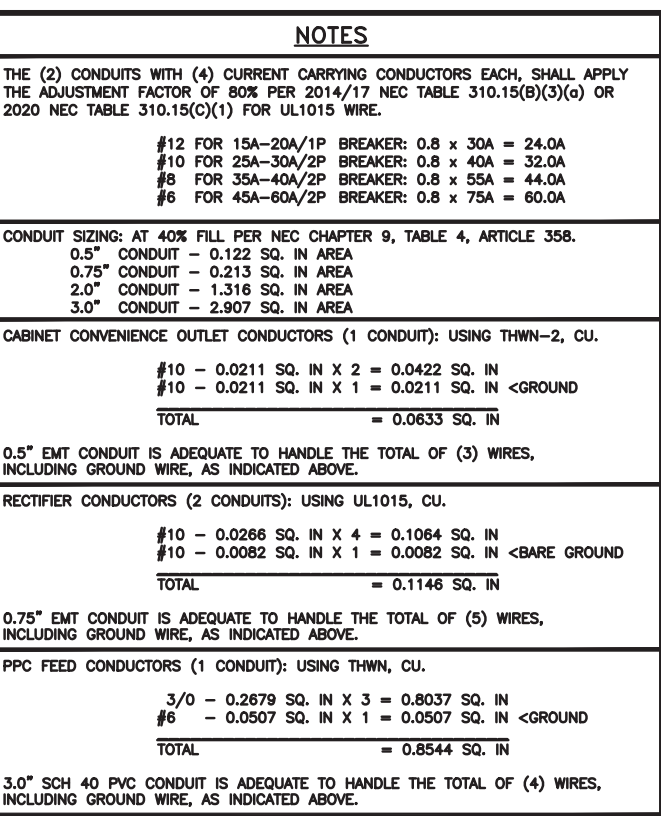
ELECTRICAL  
DETAILS

SHEET NUMBER

E-2

PCD FILE NO, PPR-21-059





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

SHEET NUMBER

**E-3**

### 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		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET		180	15A	3	B	4			2880	
-SPACE-				5	A	6		2880		ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8	30A		2880	
-SPACE-				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12			2880	
-SPACE-				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16			2880	
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180							11520	11520	
200A MCB, 1ø, 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**

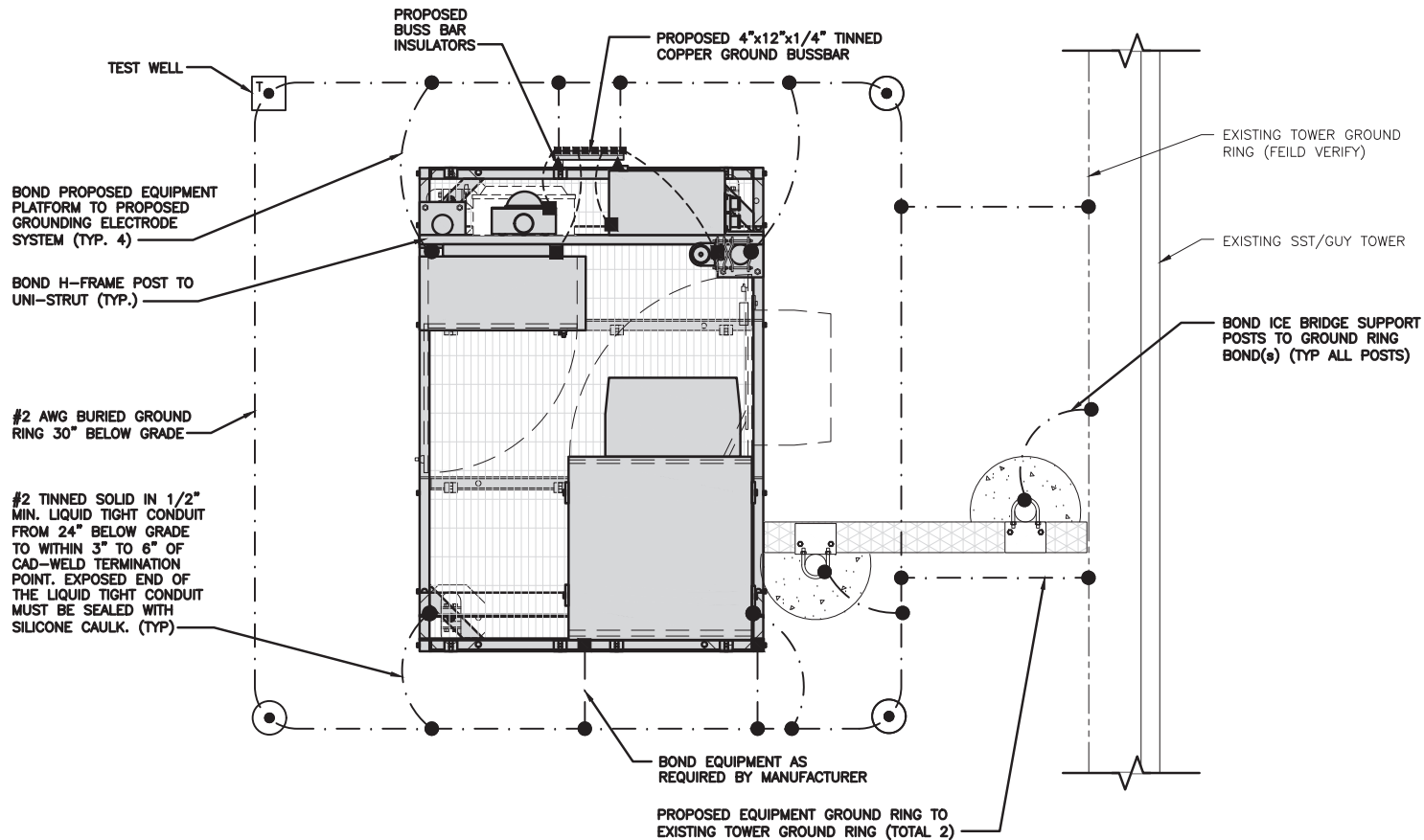
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**NOT USED**

**NO SCALE**

3

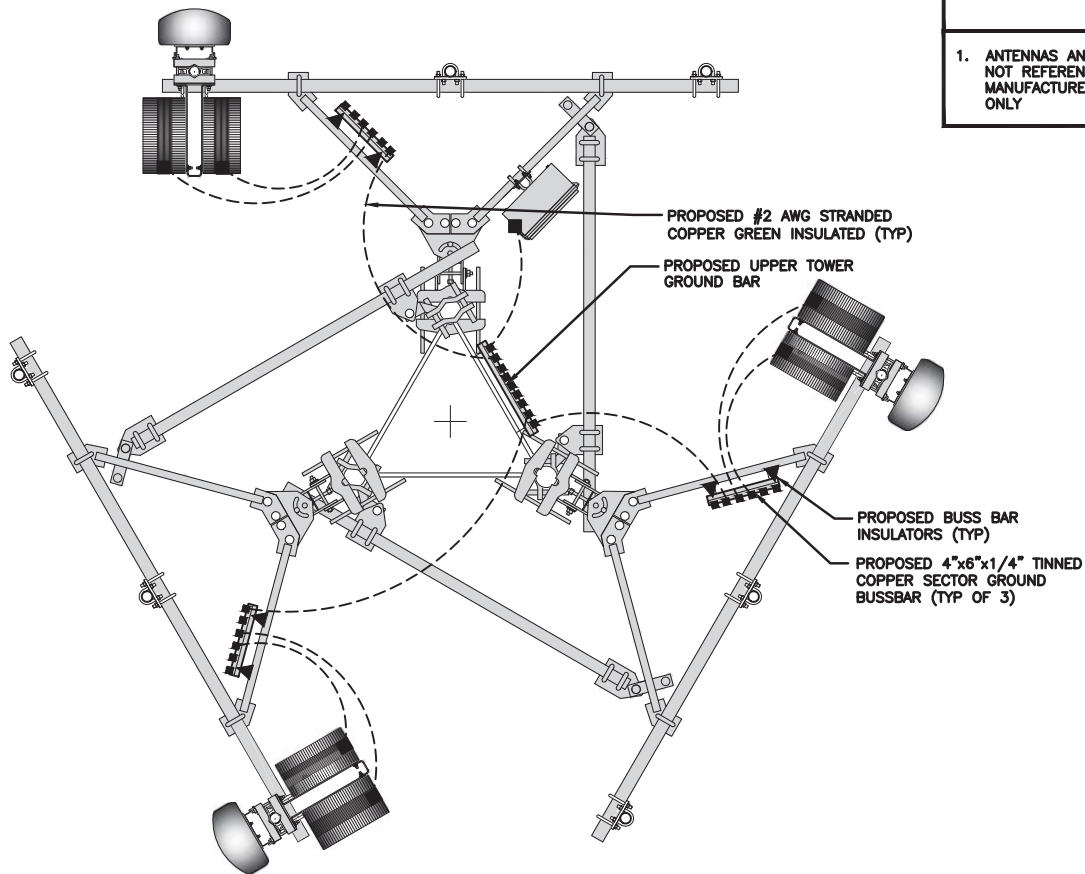




TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE

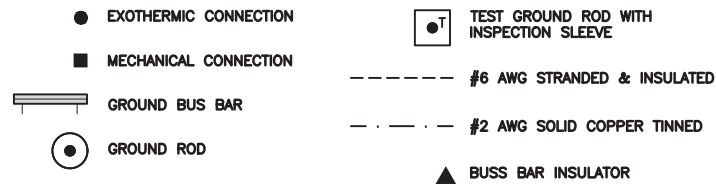
1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE

2



GROUNDING LEGEND

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

GROUNDING KEY NOTES

- (A) **EXTERIOR GROUND RING:** #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- (B) **TOWER GROUND RING:** THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- (C) **INTERIOR GROUND RING:** #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- (D) **BOND TO INTERIOR GROUND RING:** #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.
- (E) **GROUND ROD:** UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- (F) **CELL REFERENCE GROUND BAR:** POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE. STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- (G) **HATCH PLATE GROUND BAR:** BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- (H) **EXTERIOR CABLE ENTRY PORT GROUND BARS:** LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.
- (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 TOWER STEEL.

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

GROUNDING KEY NOTES

NO SCALE

3

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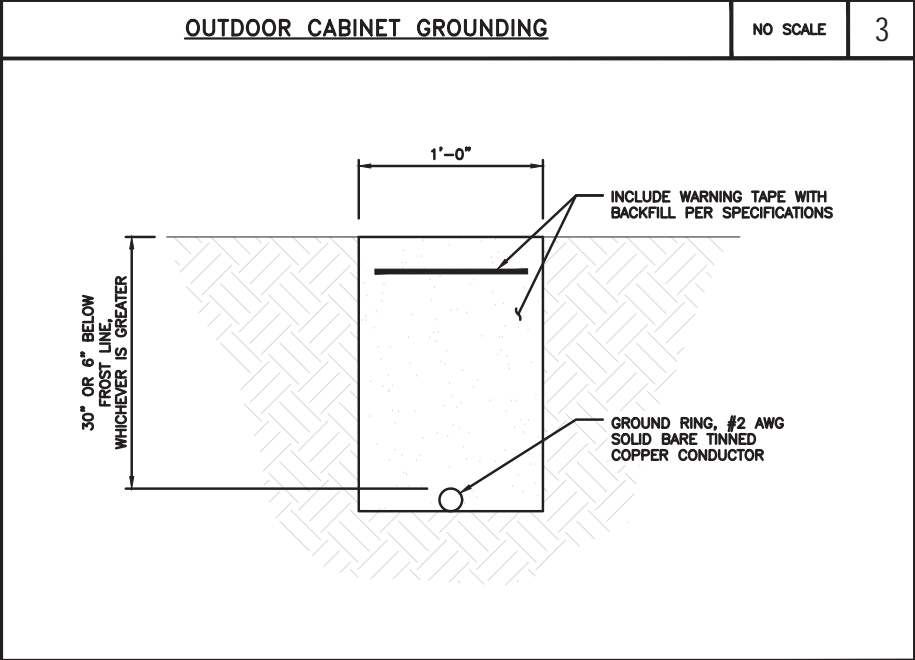
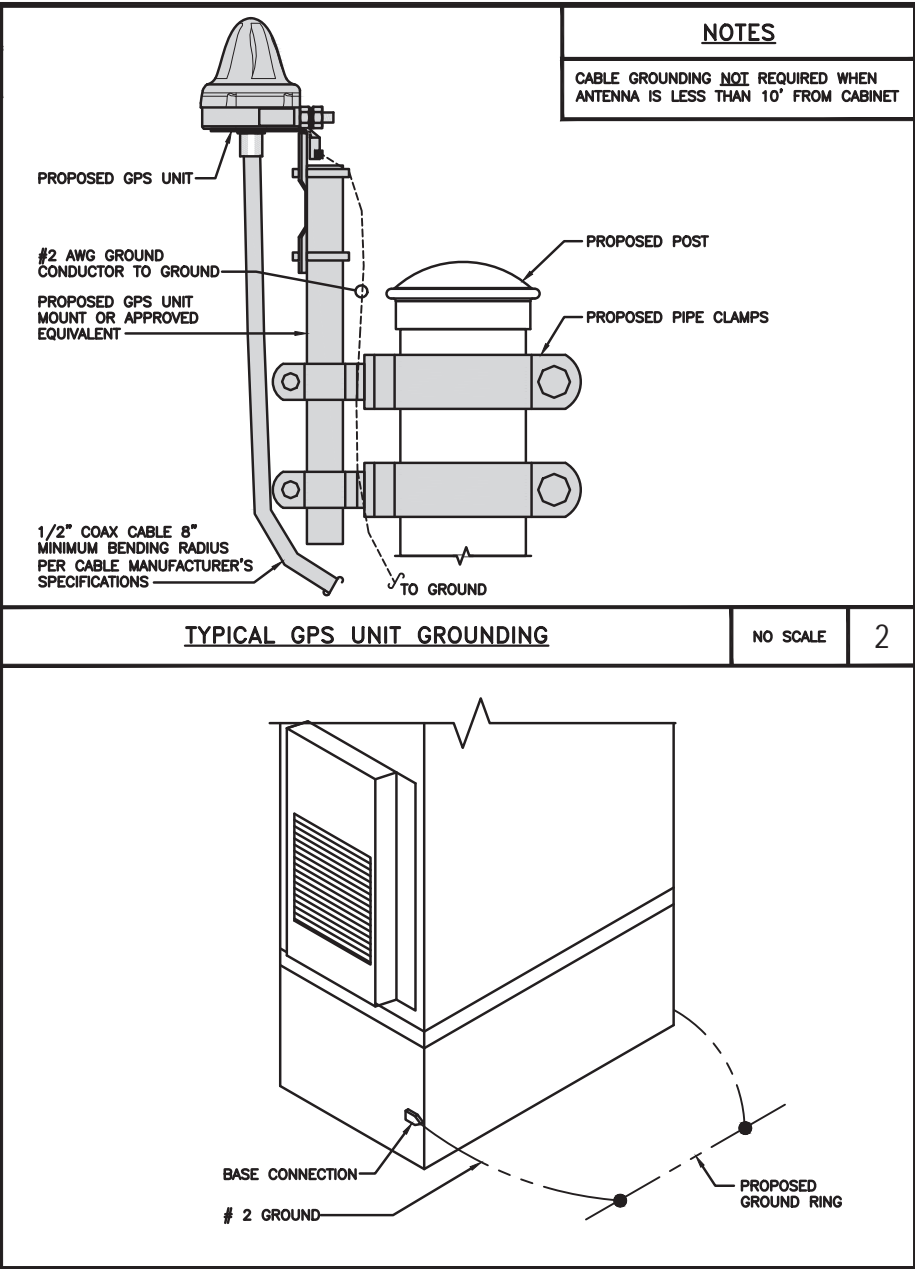
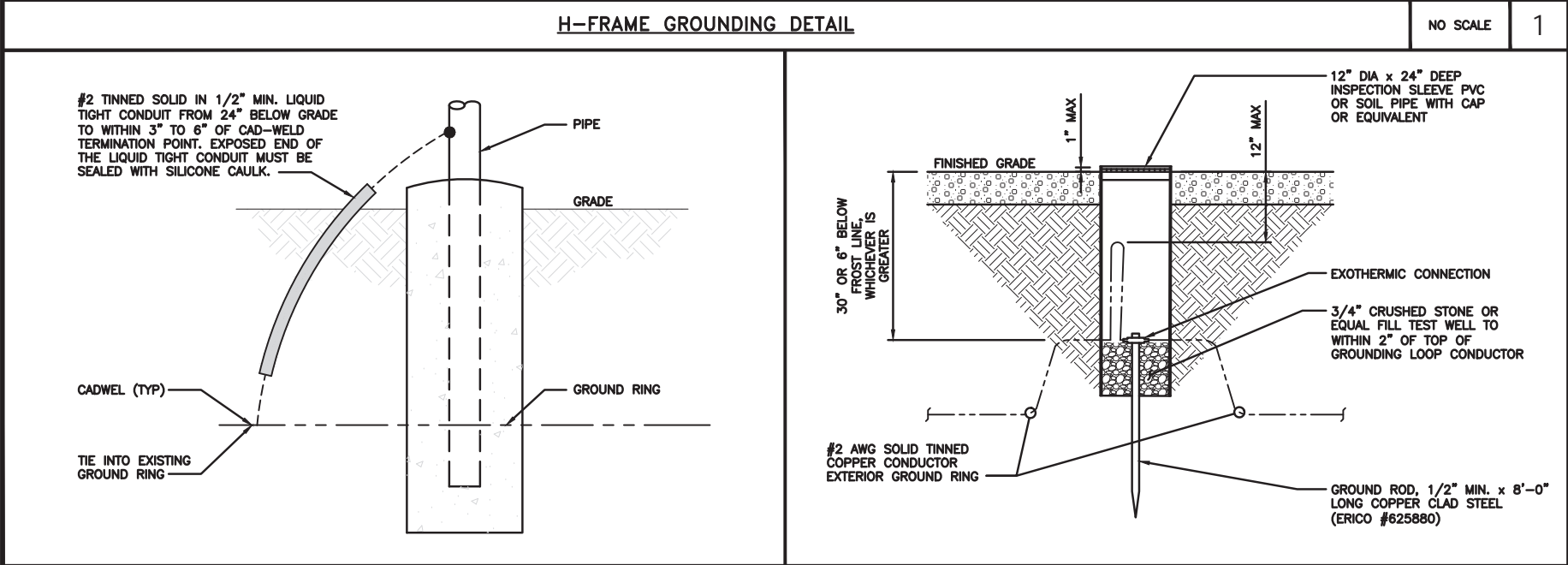
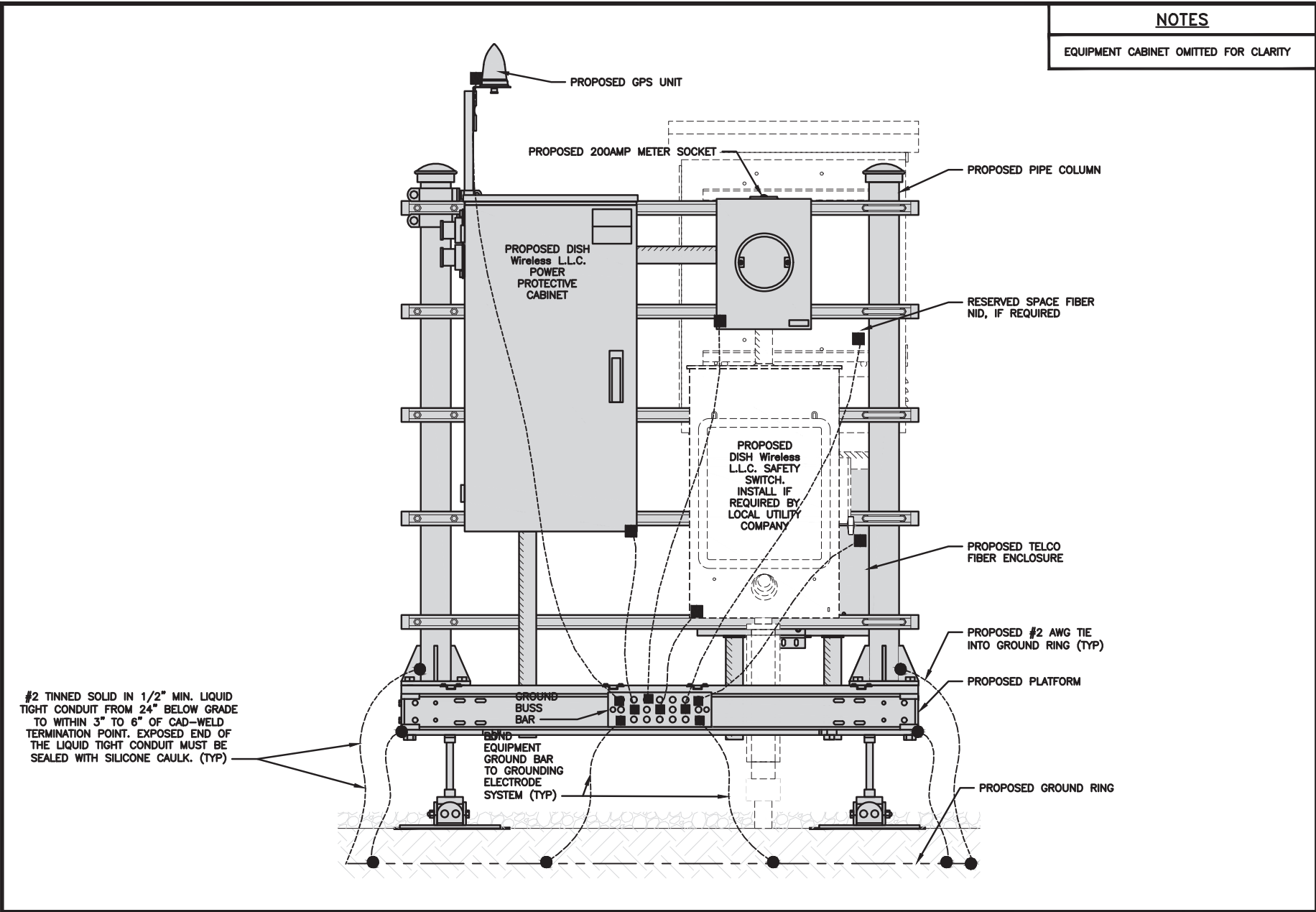
A&E PROJECT NUMBER  
30300-13689453

DISH Wireless L.L.C.  
PROJECT INFORMATION  
DNDEN00043A  
COLORADO SPRINGS  
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PEYTON, CO 80831

SHEET TITLE  
GROUNDING PLANS  
AND NOTES

SHEET NUMBER

G-1



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CHRISTOPHER J. WARREN  
47849  
12/6/21  
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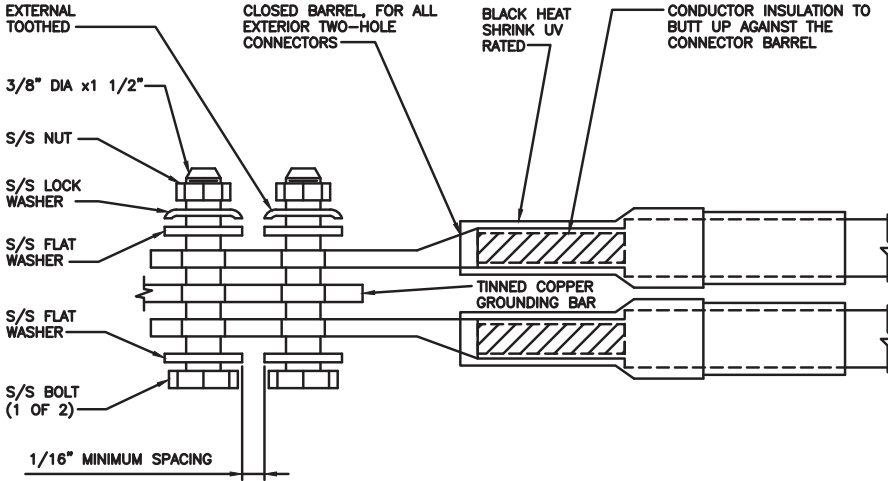
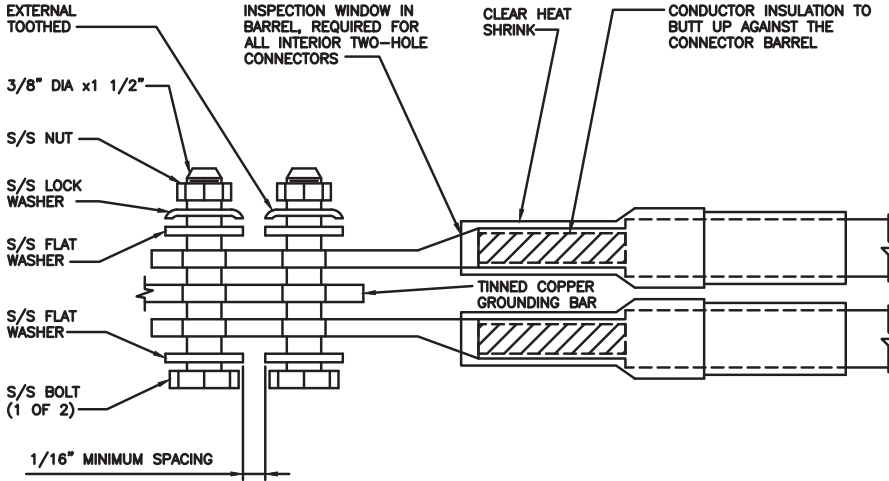
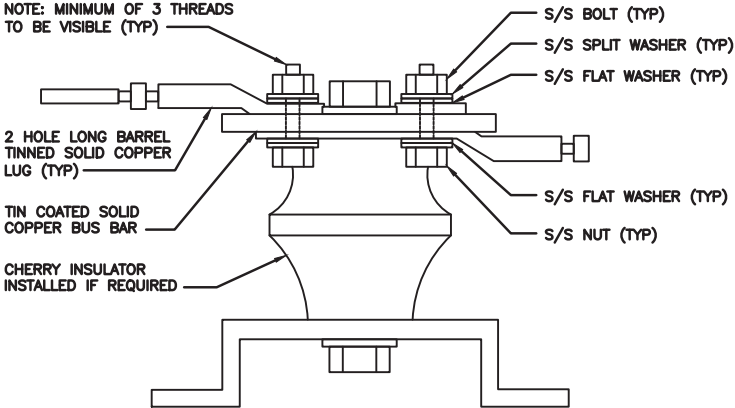
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PROJECT INFORMATION  
DNDEN00043A  
COLORADO SPRINGS  
4490 EAST BLANLEY RD  
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SHEET TITLE  
GROUNDING DETAILS


SHEET NUMBER  
G-2

PCD FILE NO, PPR-21-059


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

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COLORADO SPRINGS  
4490 EAST BLANEY RD  
PEYTON, CO 80831

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

G-3

PCD FILE NO, PPR-21-059



HYBRID/DISCREET CABLES				3/4" TAPE WIDTHS WITH 3/4" SPACING											
<p>LOW-BAND RRH (600 MHz N71 BASEBAND) + (850 MHz N26 BAND) + (700 MHz N29 BAND) – OPTIONAL PER MARKET</p> <p>ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BAND)</p>				ALPHA RRH				BETA RRH				GAMMA RRH			
				PORT 1 + SLANT	PORT 2 – SLANT	PORT 3 + SLANT	PORT 4 – SLANT	PORT 1 + SLANT	PORT 2 – SLANT	PORT 3 + SLANT	PORT 4 – SLANT	PORT 1 + SLANT	PORT 2 – SLANT	PORT 3 + SLANT	PORT 4 – SLANT
				RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
				ORANGE	ORANGE	RED	RED	ORANGE	ORANGE	BLUE	BLUE	ORANGE	ORANGE	GREEN	GREEN
<p>MID-BAND RRH (AWS BANDS N66+N70)</p> <p>ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BANDS)</p>					WHITE (–) PORT	ORANGE	ORANGE		WHITE (–) PORT	ORANGE	ORANGE		WHITE (–) PORT	ORANGE	ORANGE
							WHITE (–) PORT				WHITE (–) PORT				WHITE (–) PORT
				RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
				PURPLE	PURPLE	RED	RED	PURPLE	PURPLE	BLUE	BLUE	PURPLE	PURPLE	GREEN	GREEN
<p>HYBRID/DISCREET CABLES</p> <p>INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.</p> <p>EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS.</p> <p>EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS.</p> <p>EXAMPLE 3 – MAIN COAX WITH GROUND MOUNTED RRHs.</p>				EXAMPLE 1		EXAMPLE 2		EXAMPLE 3 COAX #1 (ALPHA)		CANISTER COAX #2 (ALPHA)					
				RED		RED		RED		RED					
				BLUE		BLUE									
				GREEN		GREEN									
<p>FIBER JUMPERS TO RRHs</p> <p>LOW-BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.</p>				LOW BAND RRH		MID BAND RRH		LOW BAND RRH		MID BAND RRH		LOW BAND RRH		MID BAND RRH	
				RED		RED		BLUE		BLUE		GREEN		GREEN	
				ORANGE		PURPLE		ORANGE		PURPLE		ORANGE		PURPLE	
<p>POWER CABLES TO RRHs</p> <p>LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY</p>				LOW BAND RRH		MID BAND RRH		LOW BAND RRH		MID BAND RRH		LOW BAND RRH		MID BAND RRH	
				RED		RED		BLUE		BLUE		GREEN		GREEN	
				ORANGE		PURPLE		ORANGE		PURPLE		ORANGE		PURPLE	
<p>RET MOTORS AT ANTENNAS</p> <p>RET CONTROL IS HANDLED BY THE MID-BAND RRH WHEN ONE SET OF RET PORTS EXIST ON ANTENNA.</p> <p>SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.</p>				ANTENNA 1 MID BAND		ANTENNA 1 LOW BAND		ANTENNA 1 MID BAND		ANTENNA 1 LOW BAND		ANTENNA 1 MID BAND		ANTENNA 1 LOW BAND	
				IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
				RED	RED	BLUE	BLUE	GREEN	GREEN	PURPLE	PURPLE	ORANGE	ORANGE	ORANGE	ORANGE
				PURPLE	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE
<p>MICROWAVE RADIO LINKS</p> <p>LINKS WILL HAVE A 1.5–2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE.</p> <p>ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.</p> <p>MICROWAVE CABLES WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.</p>				FORWARD AZIMUTH OF 0–120 DEGREES				FORWARD AZIMUTH OF 120–240 DEGREES				FORWARD AZIMUTH OF 240–359 DEGREES			
				PRIMARY		SECONDARY		PRIMARY		SECONDARY		PRIMARY		SECONDARY	
				WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
				RED	RED	BLUE	BLUE	GREEN	GREEN	WHITE	WHITE	GREEN	GREEN	WHITE	WHITE

RF CABLE COLOR CODES

1

NOT USED

4

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

ORANGE

AWS  
(N66+N70+H-BLOCK)

PURPLE

CBRS TECH  
(3 GHz)

YELLOW

NEGATIVE SLANT PORT  
ON ANT/RRH

WHITE

ALPHA SECTOR

RED

BETA SECTOR

BLUE

GAMMA SECTOR

GREEN

COLOR IDENTIFIER

2

NOT USED

3

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30300–13689453

DISH Wireless L.L.C.  
PROJECT INFORMATION  
DNDEN00043A  
COLORADO SPRINGS  
4490 EAST BLANEY RD  
PEYTON, CO 80831

SHEET TITLE  
RF  
CABLE COLOR CODE

SHEET NUMBER

RF-1





SITE ACTIVITY REQUIREMENTS:

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

GENERAL NOTES:

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



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DRAWN BY:	CHECKED BY:	APPROVED BY:
SP	PP	CW

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	06/29/21	ISSUED FOR REVIEW
0	06/30/21	ISSUED FOR CONSTRUCTION
1	10/11/21	ISSUED FOR CONSTRUCTION
2	12/06/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER  
30300–13689453

DISH Wireless L.L.C.  
PROJECT INFORMATION  
DNDEN00043A  
COLORADO SPRINGS  
4490 EAST BLANEY RD  
PEYTON, CO 80831

SHEET TITLE  
GENERAL NOTES

SHEET NUMBER  
GN-2





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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