



DISH Wireless L.L.C. SITE ADDRESS:

**1565 N ELMIRA ST, UNIT DISH  
AURORA, CO 80010**

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

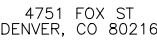
CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

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

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.

## NO SCALE

5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



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OF A LICENSED PROFESSIONAL ENGINEER,  
TO ALTER THIS DOCUMENT.

## SUBMITTALS

DNDEN00437A

DISH Wireless L.L.C.  
PROJECT INFORMATION

DNDEN00437A

1565 N FILMIRA ST

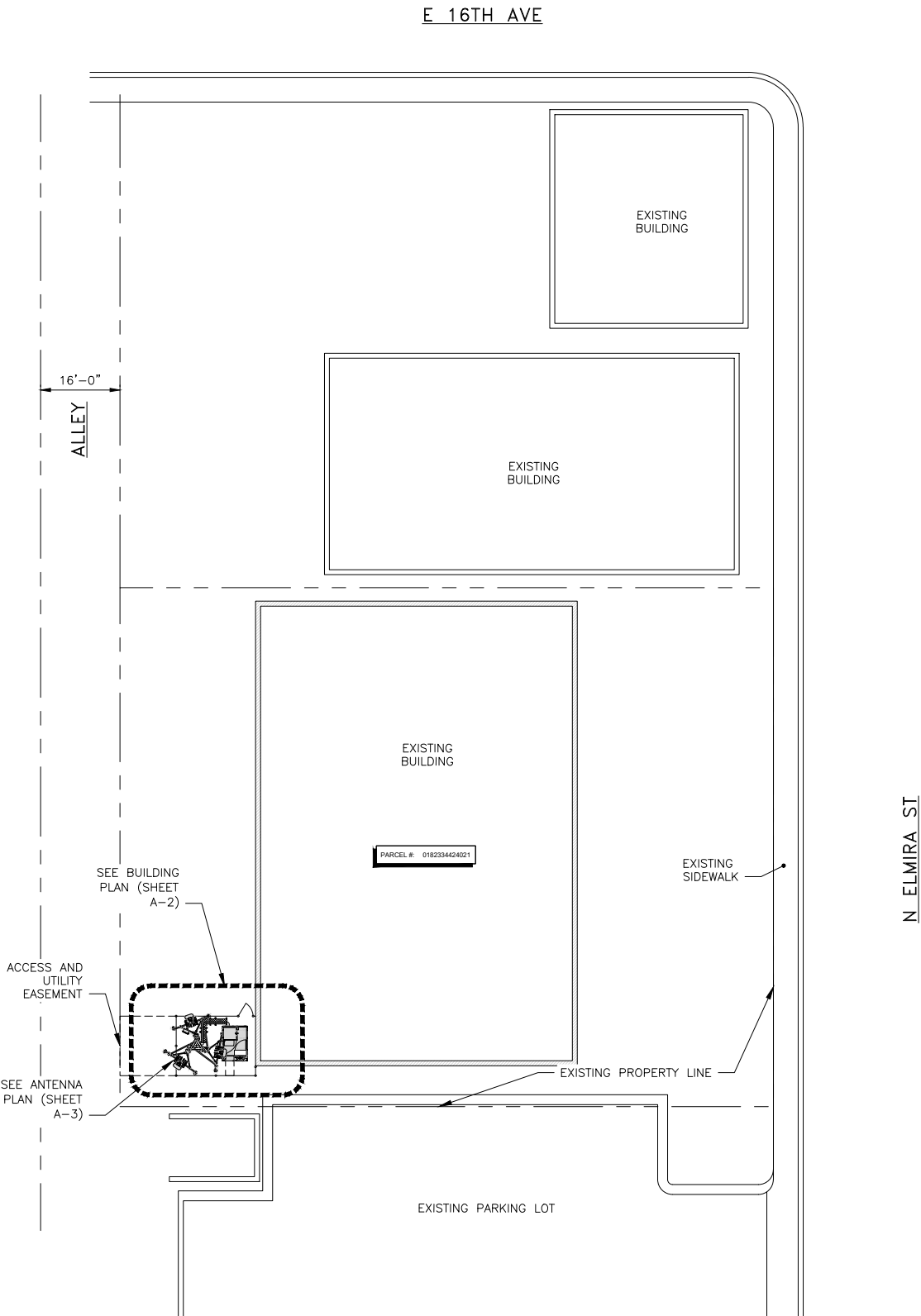
1565 N ELMIRA ST  
UNIT DISH  
AURORA, CO 80010

SHEET TITLE

# TITLE SHEET

SHEET NUMBER

**T-1**



OVERALL SITE PLAN

NOTES

- 1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
- 2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



4751 FOX ST  
DENVER, CO 80216

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DRAWN BY: CHECKED BY: APPROVED BY:

MM ML RG

RFDS REV #: 09/11/2024

PRELIMINARY DOCUMENTS

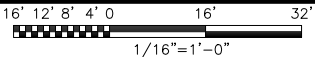
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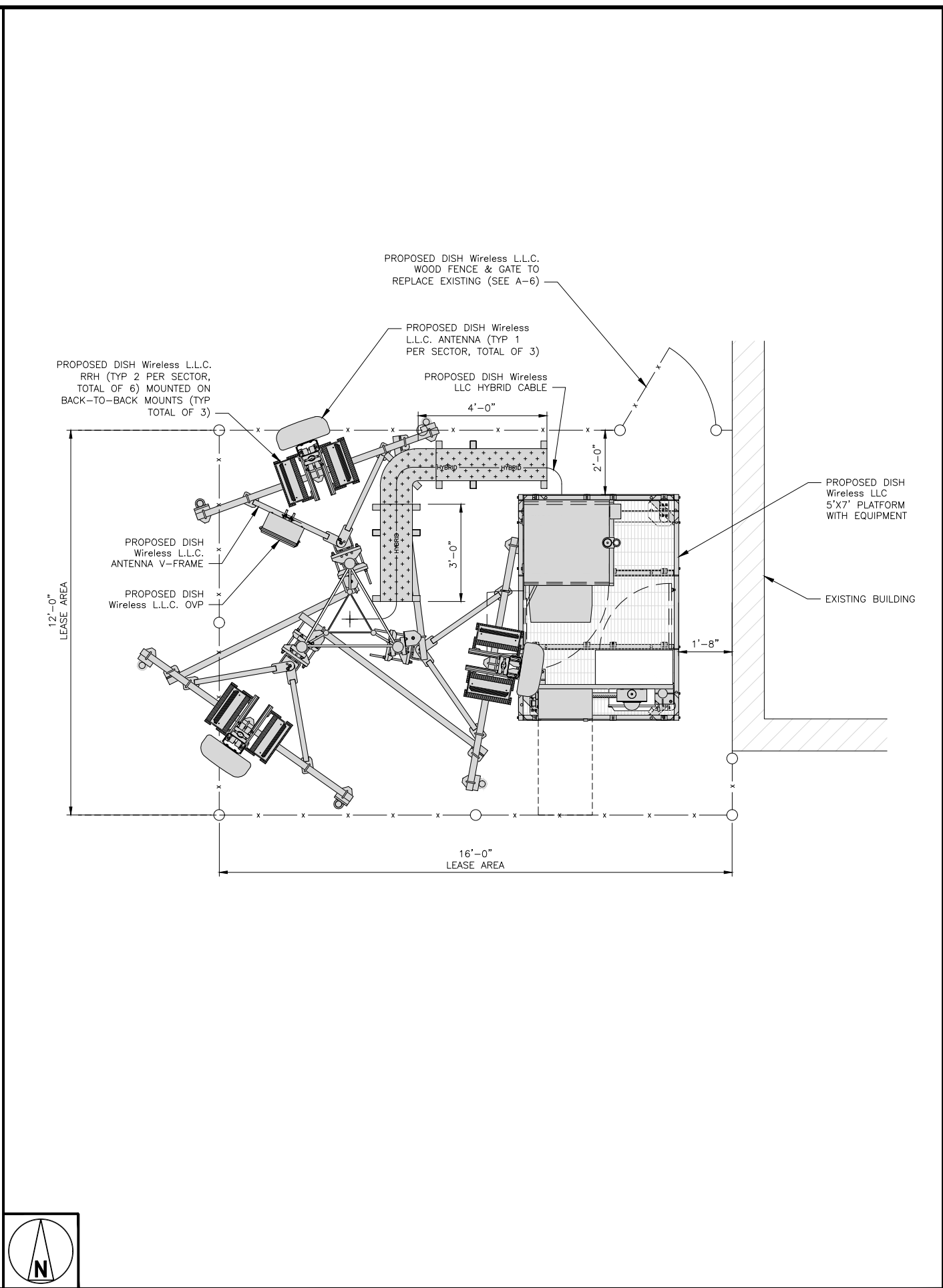
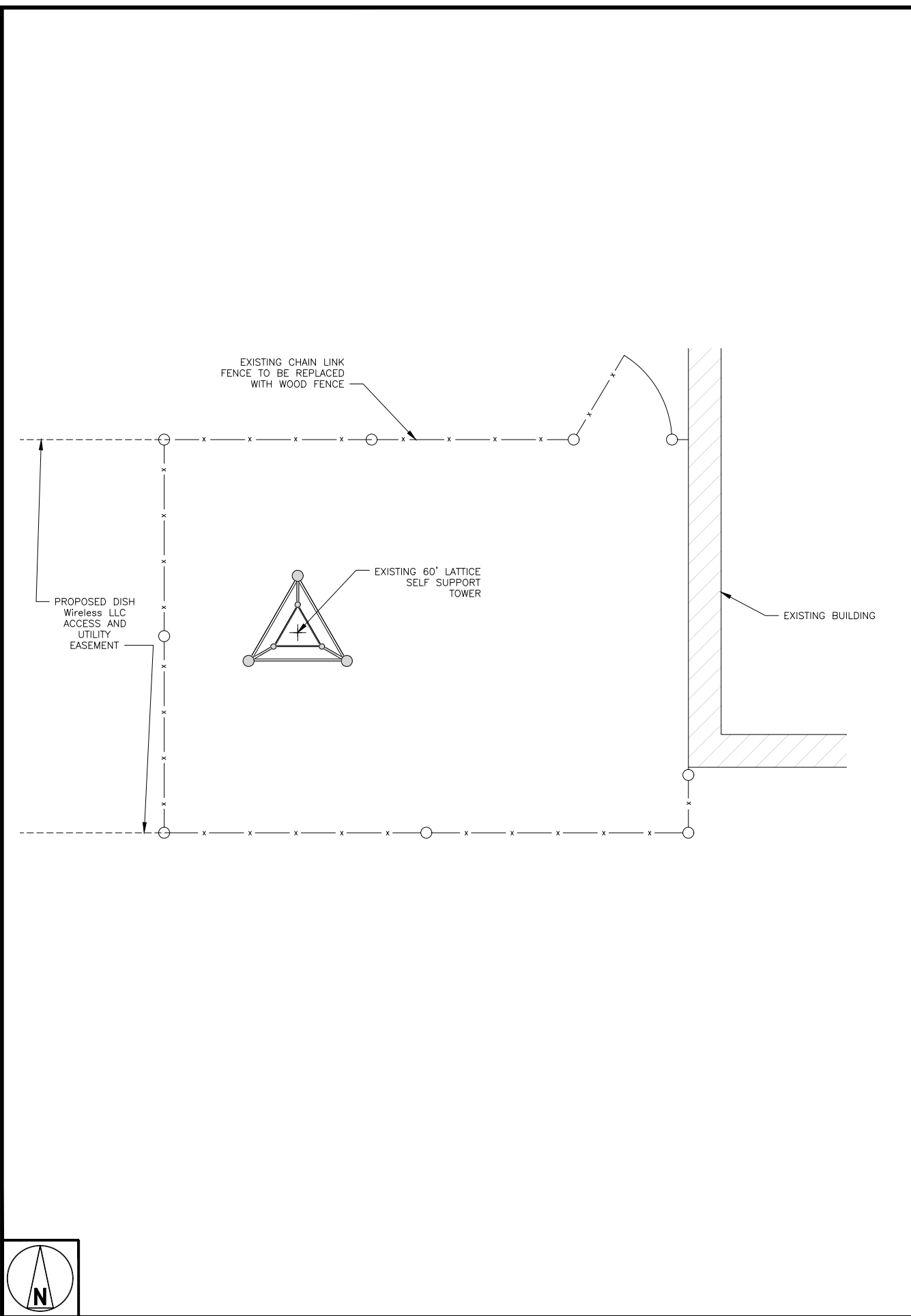
A&E PROJECT NUMBER  
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DISH Wireless L.L.C.  
PROJECT INFORMATION  
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SHEET TITLE  
OVERALL  
SITE PLAN

SHEET NUMBER  
A-1





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PROJECT INFORMATION  
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1565 N ELMIRA ST  
UNIT DISH  
AURORA, CO 80010

SHEET TITLE  
FENCED AREA  
LAYOUT

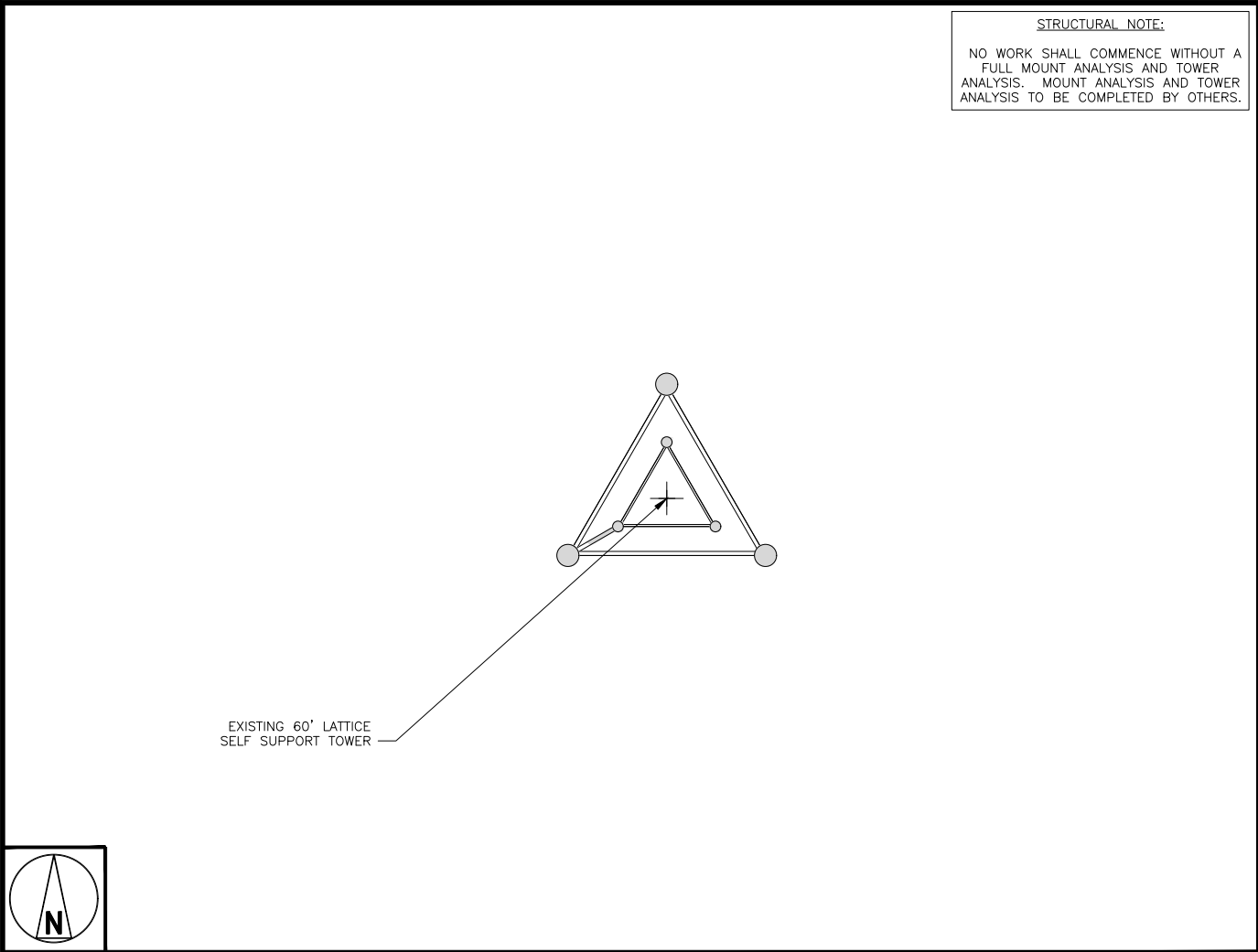
SHEET NUMBER  
**A-2**



EXISTING FENCED AREA LAYOUT



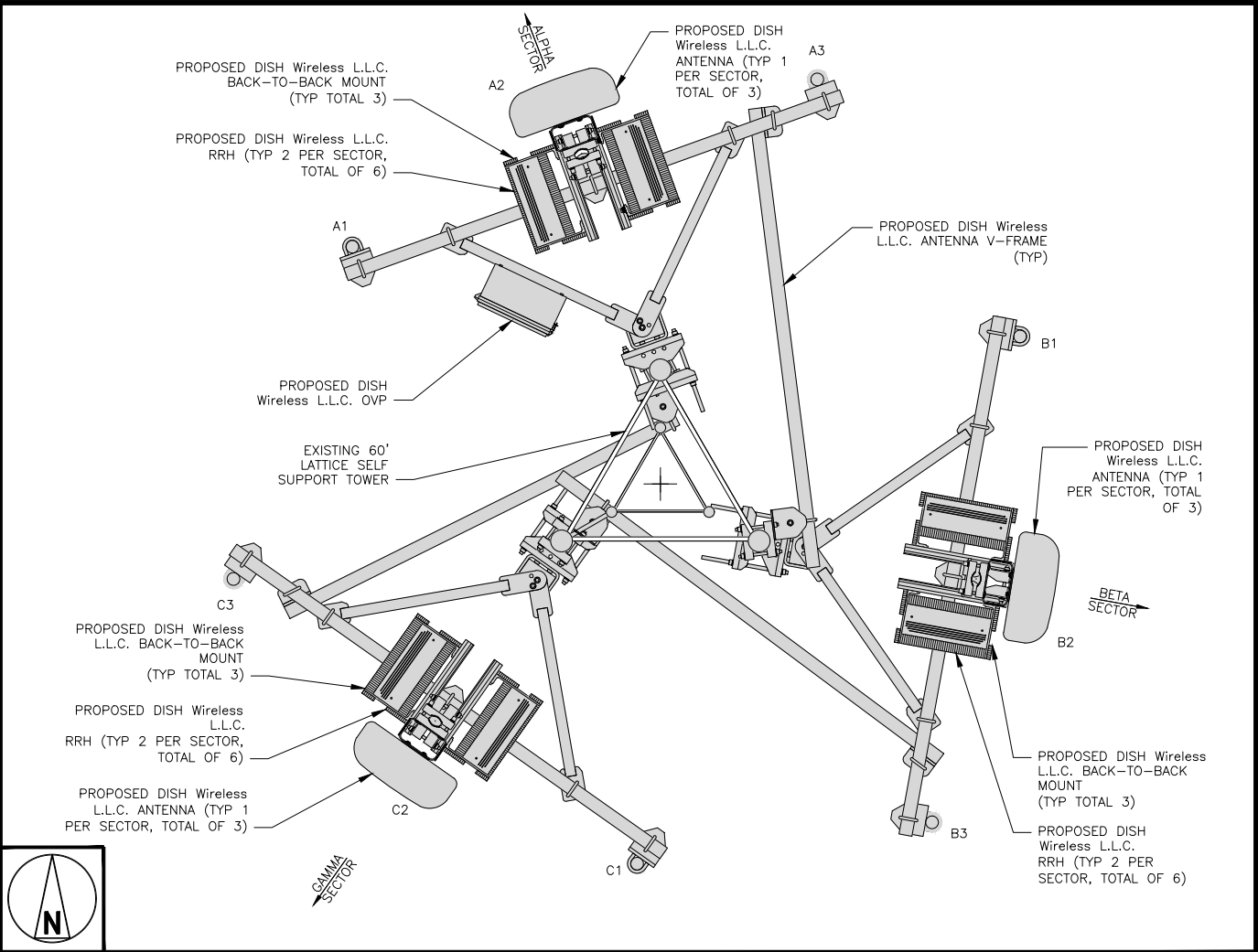
PROPOSED FENCED AREA LAYOUT (LEASE AREA)



EXISTING ANTENNA LAYOUT

SECTOR	POSITION	RRH		NOTES
		MANUFACTURER — MODEL NUMBER	TECHNOLOGY	
ALPHA	A2	FUJITSU TA08025-B604	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.
	A2	FUJITSU TA08025-B605	5G	
BETA	B2	FUJITSU TA08025-B604	5G	
	B2	FUJITSU TA08025-B605	5G	
GAMMA	C2	FUJITSU TA08025-B604	5G	
	C2	FUJITSU TA08025-B605	5G	

RRU SCHEDULE



PROPOSED ANTENNA LAYOUT

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE	
		EXISTING OR PROPOSED	MANUFACTURER — MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH	
ALPHA	A2	PROPOSED	JMA MX08FR0665-21	5G	72.0" x 20.0"	REFER TO FINAL RFDS	61'-0"	(1) POWER CABLE (75' LONG) (1) FIBER CABLE (75' LONG)	
BETA	B2	PROPOSED	JMA MX08FR0665-21	5G	72.0" x 20.0"	REFER TO FINAL RFDS	61'-0"		
GAMMA	C2	PROPOSED	JMA MX08FR0665-21	5G	72.0" x 20.0"	REFER TO FINAL RFDS	61'-0"		

ANTENNA SCHEDULE



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DENVER, CO 80216

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DISH Wireless L.L.C.  
PROJECT INFORMATION  
DNDEN00437A  
1565 N ELMIRA ST  
UNIT DISH  
AURORA, CO 80010

SHEET TITLE  
ANTENNA LAYOUT  
AND SCHEDULE

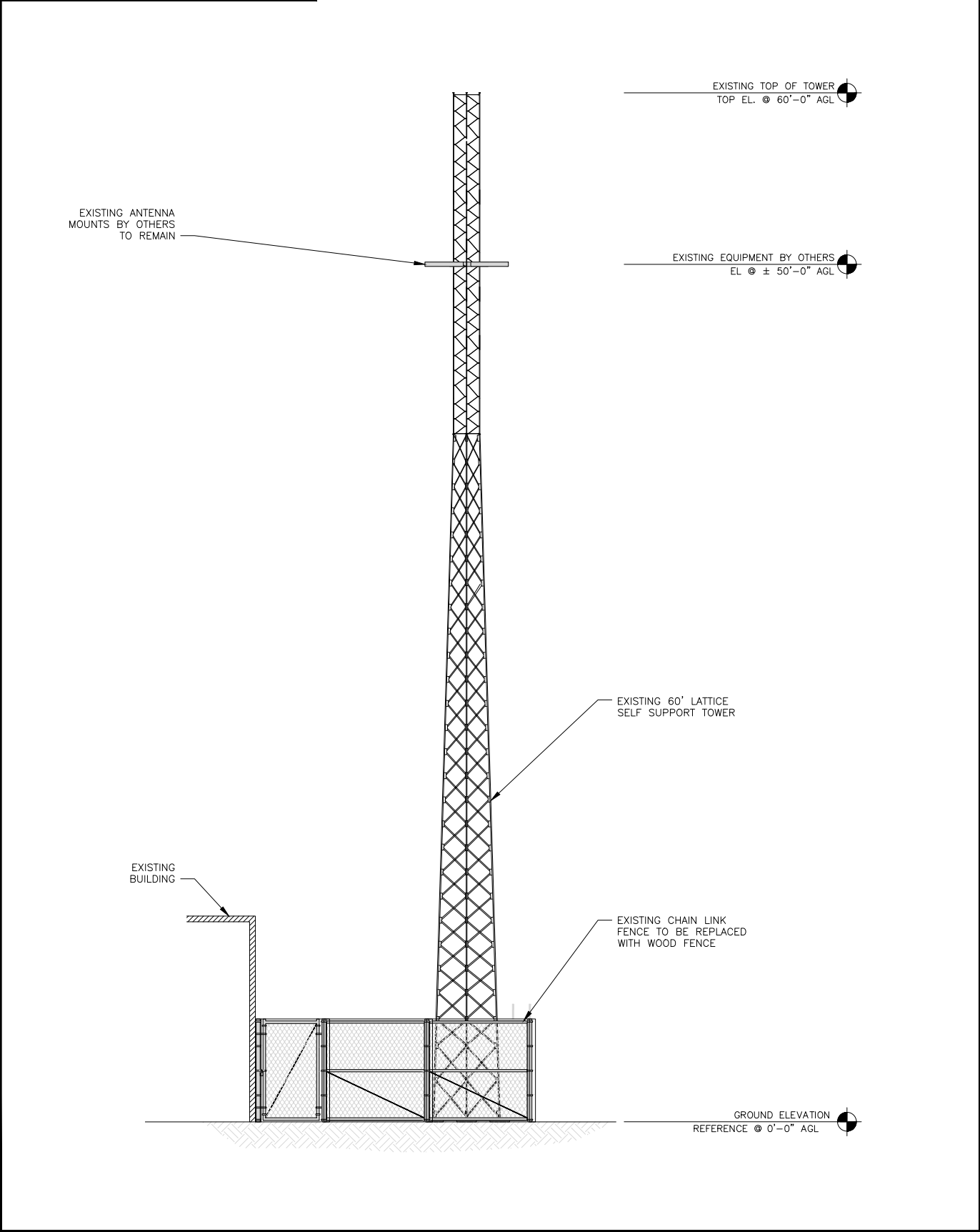
SHEET NUMBER

A-3



- NOTES
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

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

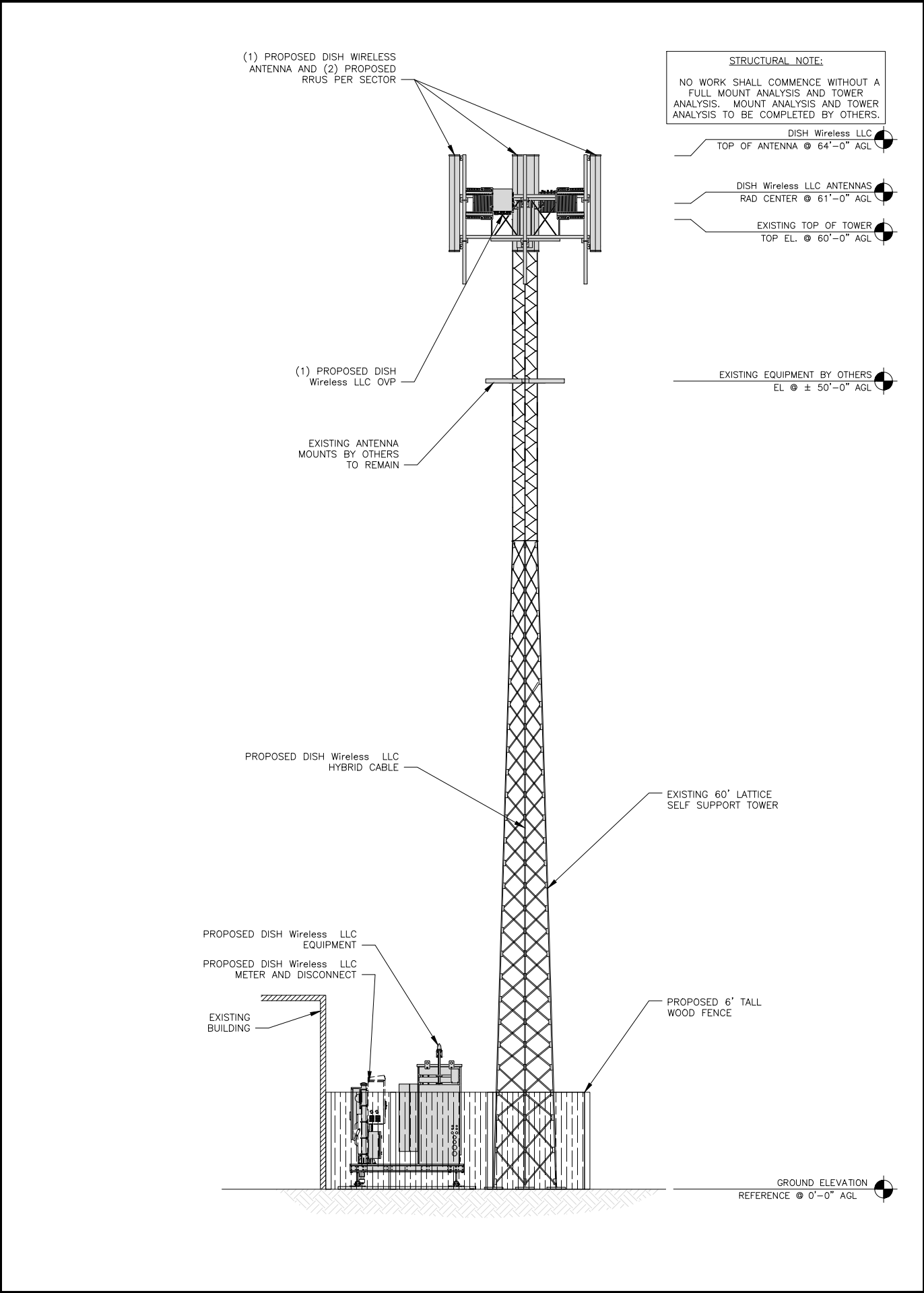


EXISTING NORTH ELEVATION

4' 2' 0 4' 8'

1/4"=1'-0"

1



PROPOSED NORTH ELEVATION

4' 2' 0 4' 8'

1/4"=1'-0"

2

dish

wireless.

5701 SOUTH SANTA FE DRIVE  
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UCI<sup>2</sup>

CONSTRUCTION SERVICES, LLC

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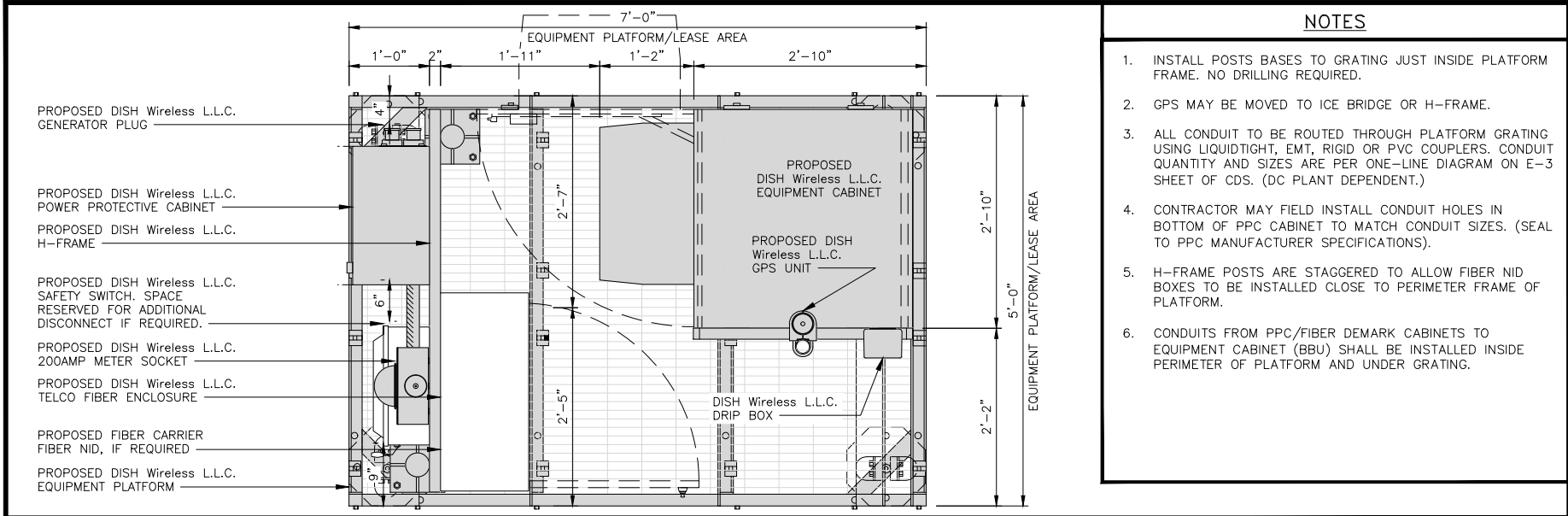
DNDEN00437A  
1565 N ELMIRA ST  
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AURORA, CO 80010

SHEET TITLE

NORTH  
ELEVATION

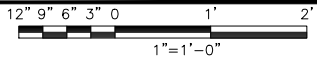
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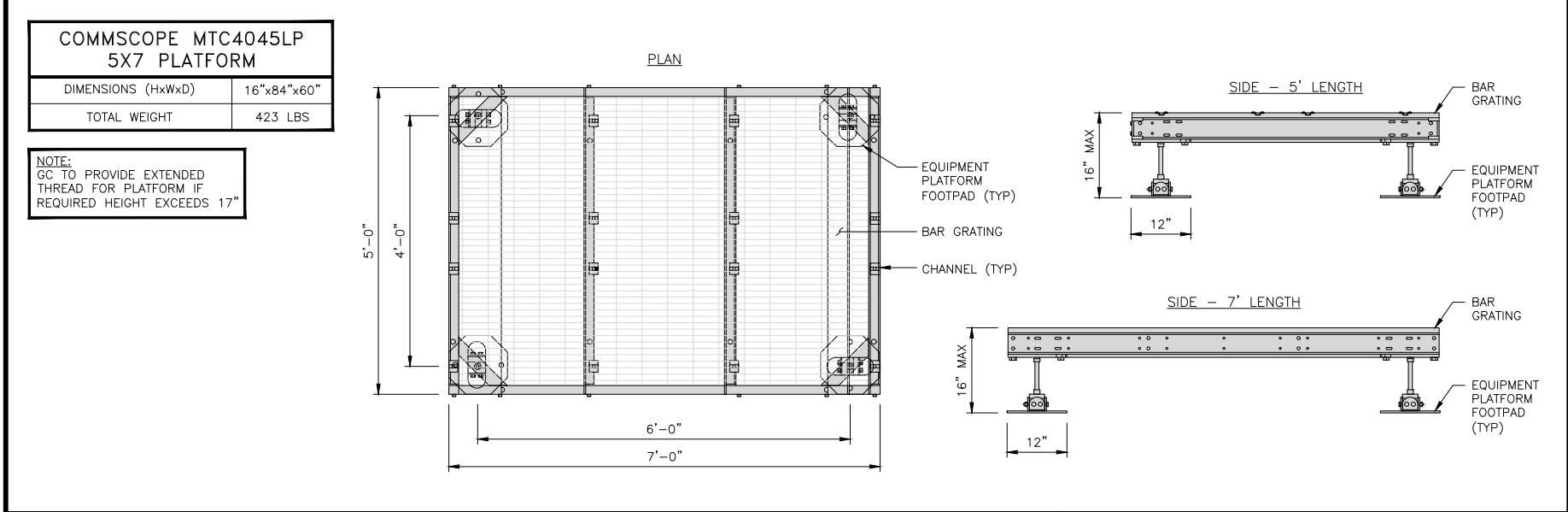


- NOTES**
1. INSTALL POSTS BASES TO GRATING JUST INSIDE PLATFORM FRAME. NO DRILLING REQUIRED.
  2. GPS MAY BE MOVED TO ICE BRIDGE OR H-FRAME.
  3. ALL CONDUIT TO BE ROUTED THROUGH PLATFORM GRATING USING LIQUIDTIGHT, EMT, RIGID OR PVC COUPLERS. CONDUIT QUANTITY AND SIZES ARE PER ONE-LINE DIAGRAM ON E-3 SHEET OF CDS. (DC PLANT DEPENDENT).
  4. CONTRACTOR MAY FIELD INSTALL CONDUIT HOLES IN BOTTOM OF PPC CABINET TO MATCH CONDUIT SIZES. (SEAL TO PPC MANUFACTURER SPECIFICATIONS).
  5. H-FRAME POSTS ARE STAGGERED TO ALLOW FIBER NID BOXES TO BE INSTALLED CLOSE TO PERIMETER FRAME OF PLATFORM.
  6. CONDUITS FROM PPC/FIBER DEMARK CABINETS TO EQUIPMENT CABINET (BBU) SHALL BE INSTALLED INSIDE PERIMETER OF PLATFORM AND UNDER GRATING.

PLATFORM EQUIPMENT PLAN



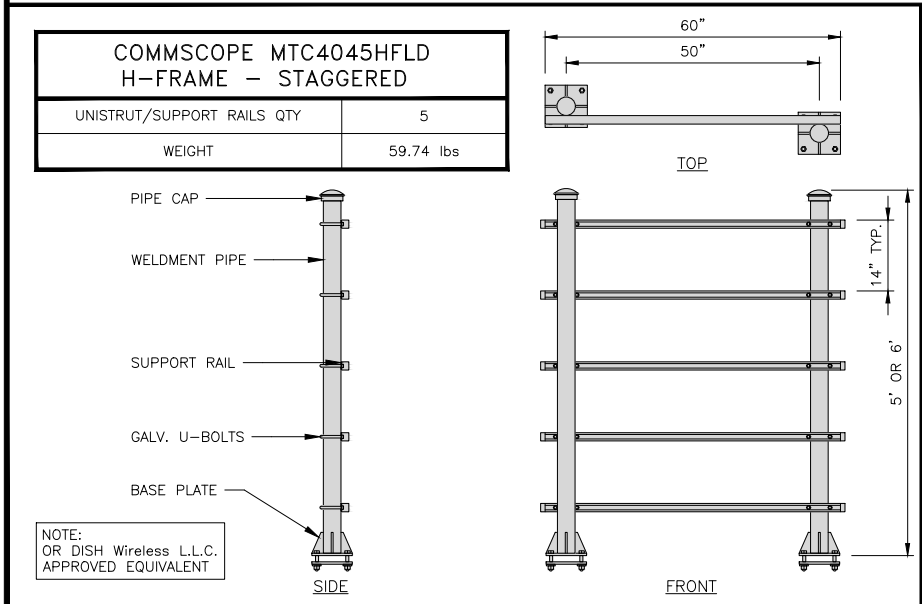
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PLATFORM DETAIL

NO SCALE

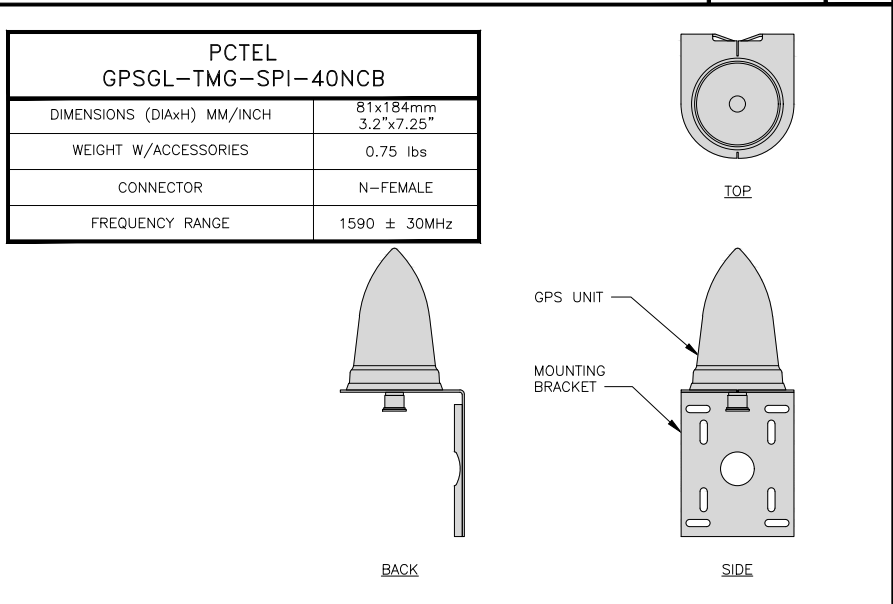
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H-FRAME DETAIL

NO SCALE

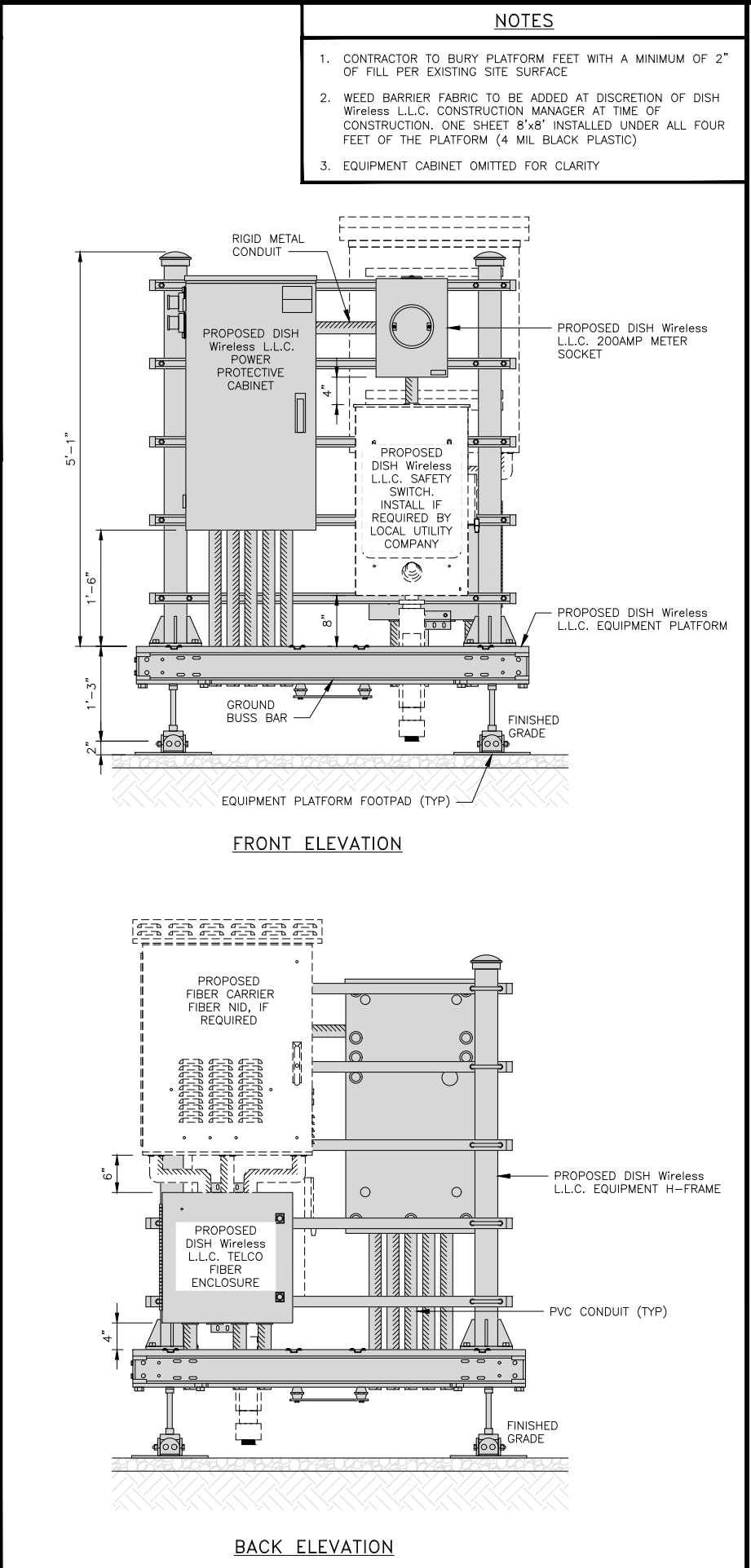
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PCTEL GPSGL-TMG-SPI-40NCB

NO SCALE

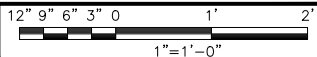
4



FRONT ELEVATION

BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION



5

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SHEET TITLE  
**EQUIPMENT PLATFORM AND H-FRAME DETAILS**

SHEET NUMBER  
**A-5**

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

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

PLAN

SIDE

BACK

FRONT

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

CHARLES INDUSTRY HVAC  
CUBE-PM63915IN4

DIMENSIONS (HxWxD)	74"x32"x32"
POWER PLANT	-48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	383 lbs

PLAN

BACK

SIDE

FRONT

SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

1

POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

2

CABINET DETAIL

NO SCALE

3

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

COMMSCOPE RT-CB4D  
COVER KIT

DIMENSIONS (HxWxL)	7"x 11.25"x 96"
WEIGHT/ VOLUME	85.98 LBS
CABLE RUN (QTY)	4

END

SIDE

PLAN

MOUNTING

NON-PENETRATING

INCLUDED PRODUCTS:

RTCB4D.01 CHANNEL (1)

MT-F1598 SLEEPERS (3)

RTCUH HARDWARE

RTHC.01 HOLD-DOWN CLAMPS (6)

FIBER TELCO ENCLOSURE DETAIL

NO SCALE

4

CABLE TRAY DETAIL

NO SCALE

5

WOOD FENCE DETAIL

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9

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LITTLETON, CO 80120

UCI<sup>2</sup>  
CONSTRUCTION SERVICES, LLC

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APPROVED BY:

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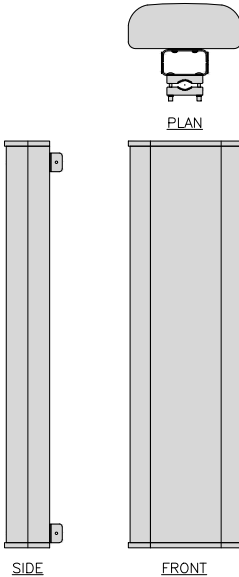
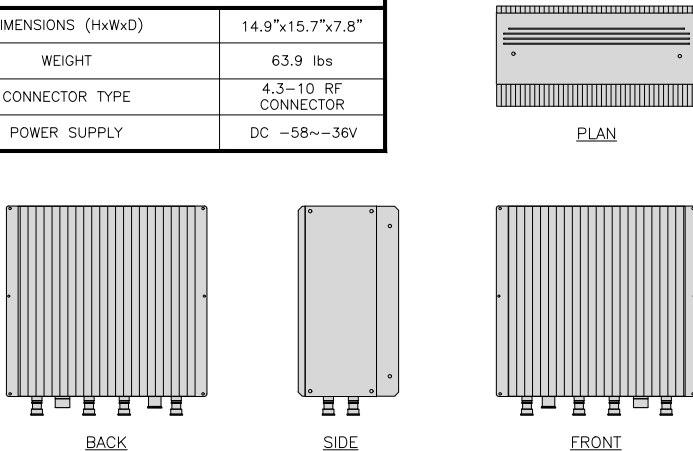
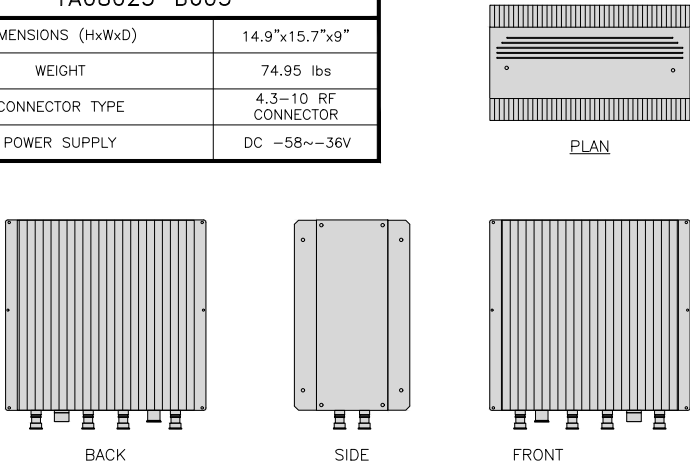
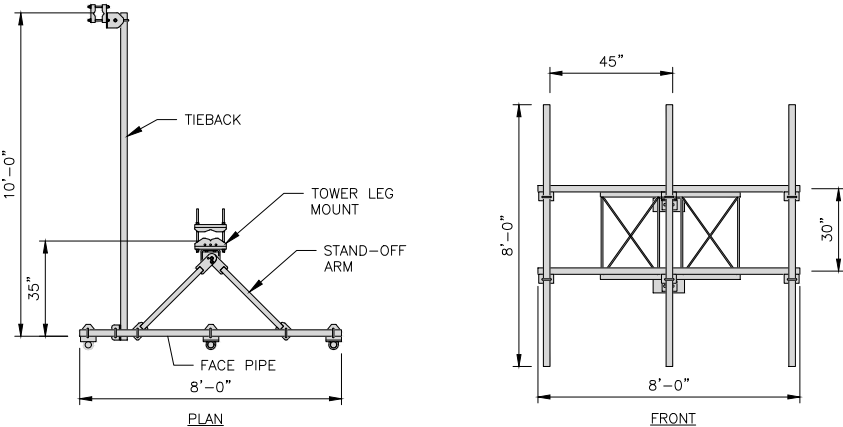
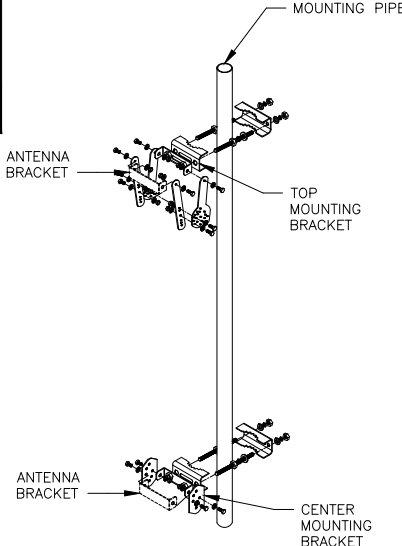
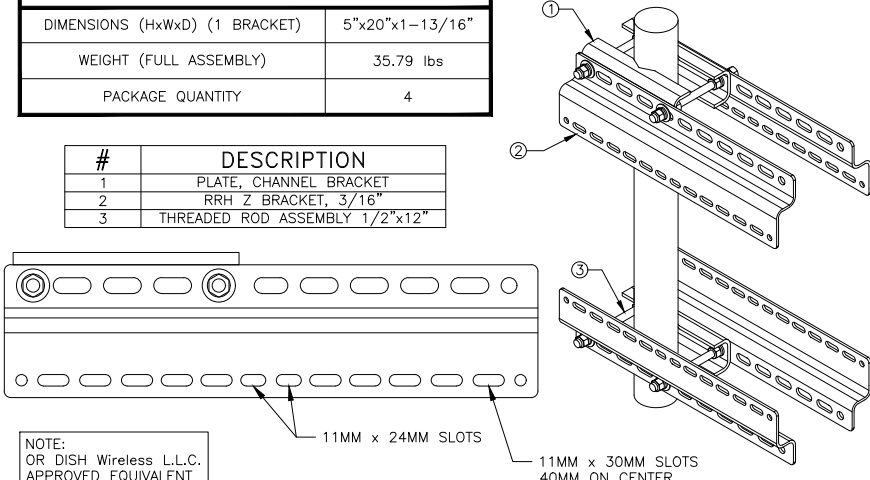
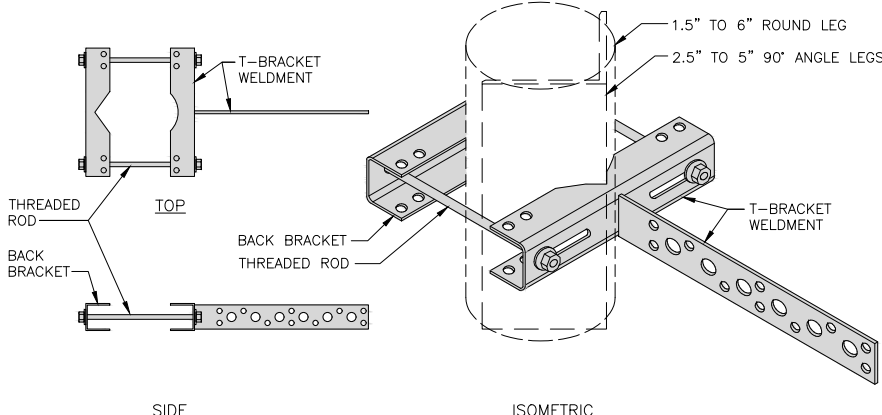
SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

A-6

DISH Wireless L.L.C. TEMPLATE VERSION 55 - 06/30/2023

<table><tr><td colspan="2">JMA MX08FR0665-21</td></tr><tr><td>DIMENSIONS (HxWxD)</td><td>72"x20"x8"</td></tr><tr><td>ANTENNA WEIGHT</td><td>64.5 lbs</td></tr><tr><td>WEIGHT WITH BRACKETS</td><td>82.5 lbs</td></tr></table> <div></div>			JMA MX08FR0665-21		DIMENSIONS (HxWxD)	72"x20"x8"	ANTENNA WEIGHT	64.5 lbs	WEIGHT WITH BRACKETS	82.5 lbs	<table><tr><td colspan="2">FUJITSU DUAL BAND TA08025-B604</td></tr><tr><td>DIMENSIONS (HxWxD)</td><td>14.9"x15.7"x7.8"</td></tr><tr><td>WEIGHT</td><td>63.9 lbs</td></tr><tr><td>CONNECTOR TYPE</td><td>4.3-10 RF CONNECTOR</td></tr><tr><td>POWER SUPPLY</td><td>DC -58~-36V</td></tr></table> <div></div>			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	<table><tr><td colspan="2">FUJITSU TRIPLE BAND TA08025-B605</td></tr><tr><td>DIMENSIONS (HxWxD)</td><td>14.9"x15.7"x9"</td></tr><tr><td>WEIGHT</td><td>74.95 lbs</td></tr><tr><td>CONNECTOR TYPE</td><td>4.3-10 RF CONNECTOR</td></tr><tr><td>POWER SUPPLY</td><td>DC -58~-36V</td></tr></table> <div></div>			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
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ANTENNA DETAIL		NO SCALE	1	RRH DETAIL		NO SCALE	2	RRH DETAIL		NO SCALE	3																									
<table><tr><td colspan="2">COMMSCOPE V-FRAME MTC3975083</td></tr><tr><td>FACE SIZE</td><td>8'-0"</td></tr><tr><td>WEIGHT</td><td>352.136 lbs</td></tr></table> <div></div> <div>NOTE: OR DISH Wireless L.L.C. APPROVED EQUIVALENT</div>			COMMSCOPE V-FRAME MTC3975083		FACE SIZE	8'-0"	WEIGHT	352.136 lbs	<table><tr><td colspan="2">JMA ANTENNA MOUNT BRACKET #91900318</td></tr><tr><td>TOTAL WEIGHT (WITH BRACKETS)</td><td>18 lbs (8.18 Kg)</td></tr><tr><td>POLE DIAMETER RANGE</td><td>2.5" TO 4.5"</td></tr></table> <div></div> <div>NOTE: KIT #91900318: TOP AND BOTTOM BRACKETS FOR 4-, 6-, AND 8-FOOT ANTENNAS ANTENNA BRACKET NOT PART OF KIT</div> <div>NOTE: OR DISH Wireless L.L.C. APPROVED EQUIVALENT</div>			JMA ANTENNA MOUNT BRACKET #91900318		TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)	POLE DIAMETER RANGE	2.5" TO 4.5"	<table><tr><td colspan="2">SABRE DOUBLE Z-BRACKET C10123155</td></tr><tr><td>DIMENSIONS (HxWxD) (1 BRACKET)</td><td>5"x20"x1-13/16"</td></tr><tr><td>WEIGHT (FULL ASSEMBLY)</td><td>35.79 lbs</td></tr><tr><td>PACKAGE QUANTITY</td><td>4</td></tr></table> <table><tr><th>#</th><th>DESCRIPTION</th></tr><tr><td>1</td><td>PLATE, CHANNEL BRACKET</td></tr><tr><td>2</td><td>RRH Z BRACKET, 3/16"</td></tr><tr><td>3</td><td>THREADED ROD ASSEMBLY 1/2"x12"</td></tr></table> <div></div> <div>NOTE: OR DISH Wireless L.L.C. APPROVED EQUIVALENT</div>			SABRE DOUBLE Z-BRACKET C10123155		DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"	WEIGHT (FULL ASSEMBLY)	35.79 lbs	PACKAGE QUANTITY	4	#	DESCRIPTION	1	PLATE, CHANNEL BRACKET	2	RRH Z BRACKET, 3/16"	3	THREADED ROD ASSEMBLY 1/2"x12"
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3	THREADED ROD ASSEMBLY 1/2"x12"																																			
ANTENNA FRAME DETAIL		NO SCALE	4	ANTENNA BRACKET DETAIL		NO SCALE	5	RRH MOUNT DETAIL		NO SCALE	6																									
<table><tr><td colspan="2">SITEPR01 T600 UNIVERSAL T-BRACKET</td></tr><tr><td>DIMENSIONS (HxWxL)</td><td>2.25"x10.0"x15.25"</td></tr><tr><td>WEIGHT/ VOLUME</td><td>5.60 LBS</td></tr></table> <div></div>			SITEPR01 T600 UNIVERSAL T-BRACKET		DIMENSIONS (HxWxL)	2.25"x10.0"x15.25"	WEIGHT/ VOLUME	5.60 LBS	NOT USED			NOT USED			NOT USED																					
SITEPR01 T600 UNIVERSAL T-BRACKET																																				
DIMENSIONS (HxWxL)	2.25"x10.0"x15.25"																																			
WEIGHT/ VOLUME	5.60 LBS																																			
VERTICAL CABLE SUPPORT DETAIL		NO SCALE	7	NOT USED		NO SCALE	8	NOT USED		NO SCALE	9																									



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



4751 FOX ST  
DENVER, CO 80216

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DRAWN BY:	CHECKED BY:	APPROVED BY:
MM	ML	RG

RFDS REV #: 09/11/2024

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A&E PROJECT NUMBER  
DNDEN00437A

DISH Wireless L.L.C.  
PROJECT INFORMATION  
DNDEN00437A  
1565 N ELMIRA ST  
UNIT DISH  
AURORA, CO 80010

SHEET TITLE  
EQUIPMENT DETAILS

SHEET NUMBER  
A-7



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

RF CABLE COLOR CODES

NO SCALE

1

NOT USED

NO SCALE

4

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

ORANGE

CBRS TECH  
(3 GHz)

YELLOW

AWS  
(N66+N70+H-BLOCK)

PURPLE

NEGATIVE SLANT PORT  
ON ANT/RRH

WHITE

ALPHA SECTOR

RED

BETA SECTOR

BLUE

GAMMA SECTOR

GREEN

COLOR IDENTIFIER

NO SCALE

2

NOT USED

NO SCALE

3

dish  
wireless

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UCI<sup>2</sup>  
CONSTRUCTION SERVICES, LLC

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DNDEN00437A

















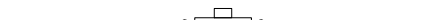




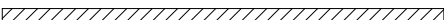
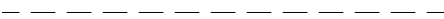
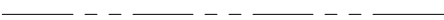
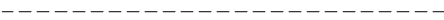


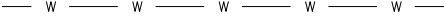

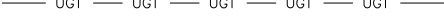






1565 N ELMIRA ST  
UNIT DISH  
AURORA, CO 80010

SHEET TITLE

RF  
CABLE COLOR CODE

SHEET NUMBER

RF-1

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

LEGEND

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

ABBREVIATIONS



**dish**  
wireless™

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DISH Wireless L.L.C.  
PROJECT INFORMATION  
DNDEN00437A  
1565 N ELMIRA ST  
UNIT DISH  
AURORA, CO 80010

SHEET TITLE	
LEGEND AND ABBREVIATIONS	

SHEET NUMBER  
**GN-1**

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

SIGN PLACEMENT:

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

NOTES:

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

# INFORMATION

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

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

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



THIS SIGN IS FOR REFERENCE PURPOSES ONLY

## NOTICE



Transmitting Antenna(s)

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

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

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

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

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

## CAUTION



Transmitting Antenna(s)

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dish

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## WARNING



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

dish

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dish  
wireless™

5701 SOUTH SANTA FE DRIVE  
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1565 N ELMIRA ST  
UNIT DISH  
AURORA, CO 80010

SHEET TITLE

RF  
SIGNAGE

SHEET NUMBER

GN-2

RF SIGNAGE

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.
2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:  
  
THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER 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.
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.



5701 SOUTH SANTA FE DRIVE  
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4751 FOX ST  
DENVER, CO 80216

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:
MM	ML	RG

RFDS REV #: 09/11/2024

PRELIMINARY DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09/20/2024	ISSUED FOR REVIEW
B	09/20/2024	ISSUED FOR REVIEW

A&E PROJECT NUMBER  
  
DNDEN00437A

DISH Wireless L.L.C.  
PROJECT INFORMATION  
  
DNDEN00437A  
1565 N ELMIRA ST  
UNIT DISH  
AURORA, CO 80010

SHEET TITLE  
  
GENERAL NOTES

SHEET NUMBER  
  
GN-3



CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

• CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"

• CONCRETE EXPOSED TO EARTH OR WEATHER:

• #6 BARS AND LARGER 2"

• #5 BARS AND SMALLER 1-1/2"

• CONCRETE NOT EXPOSED TO EARTH OR WEATHER:

• SLAB AND WALLS 3/4"

• BEAMS AND COLUMNS 1-1/2"

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.
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.

18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.

21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).

22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).

23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.

25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.

29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".

30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.
- 
- 5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120
- 
- 4751 FOX ST  
DENVER, CO 80216
- 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:
- MM ML RG
- RFDS REV #: 09/11/2024
- PRELIMINARY DOCUMENTS
- | SUBMITTALS |             |                   |
|------------|-------------|-------------------|
| REV        | DATE        | DESCRIPTION       |
| A          | 09/20/2024  | ISSUED FOR REVIEW |
| B          | 09/205/2024 | ISSUED FOR REVIEW |
|            |             |                   |
|            |             |                   |
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|            |             |                   |
|            |             |                   |
- A&E PROJECT NUMBER  
DNDEN00437A
- DISH Wireless L.L.C.  
PROJECT INFORMATION  
DNDEN00437A  
1565 N ELMIRA ST  
UNIT DISH  
AURORA, CO 80010
- SHEET TITLE  
GENERAL NOTES
- SHEET NUMBER  
GN-4
- DISH Wireless L.L.C. TEMPLATE VERSION 55 – 06/30/2023

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 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.



5701 SOUTH SANTA FE DRIVE  
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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:

MM	ML	RG
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RFDS REV #: 09/11/2024

PRELIMINARY  
DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09/20/2024	ISSUED FOR REVIEW
B	09/205/2024	ISSUED FOR REVIEW

A&E PROJECT NUMBER

DNDEN00437A

DISH Wireless L.L.C.  
PROJECT INFORMATION

DNDEN00437A  
1565 N ELMIRA ST  
UNIT DISH  
AURORA, CO 80010

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-5