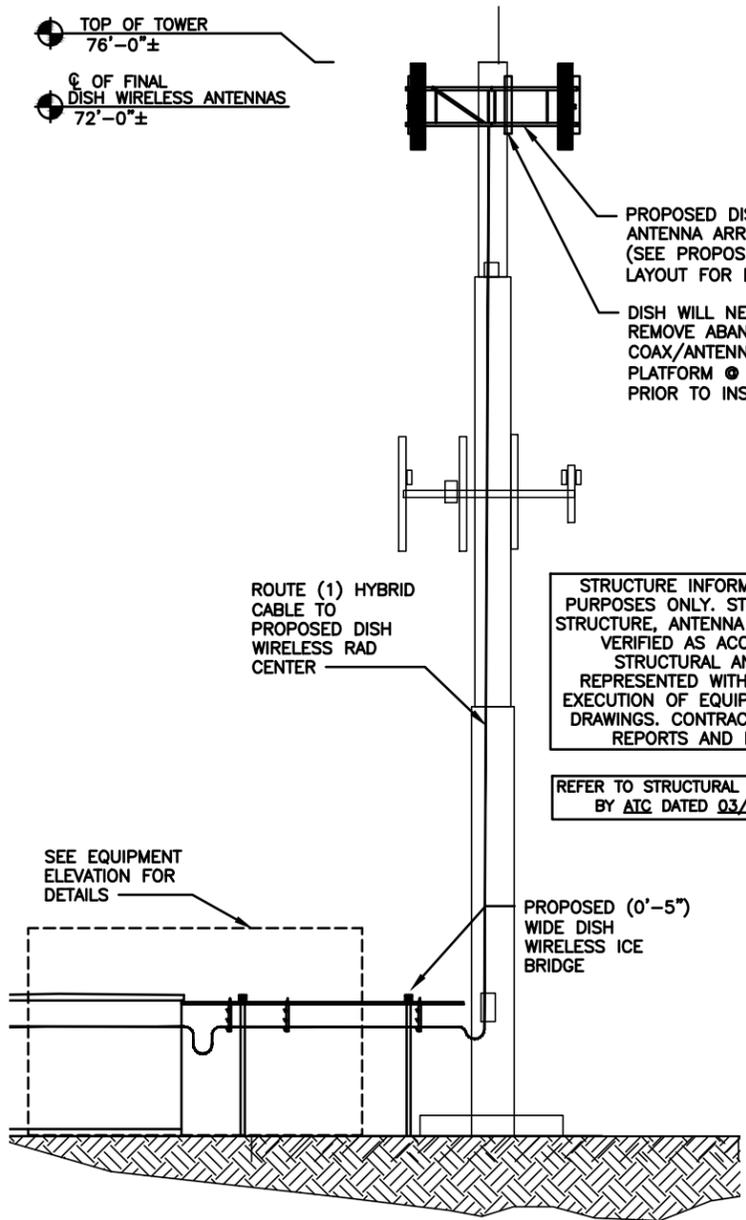


- NOTES:**
1. DISH WIRELESS TO CONFIRM WITH TOWER OWNER THE VERTICAL LEASE AREA RIGHTS AVAILABLE PRIOR TO CONSTRUCTION. EXISTING EQUIPMENT MAY OBSTRUCT DESIRED DISH WIRELESS RAD-CENTER.
 2. TOWER FACE WIDTH/DIAMETER IS AN ESTIMATE FROM STRUCTURAL ANALYSIS.

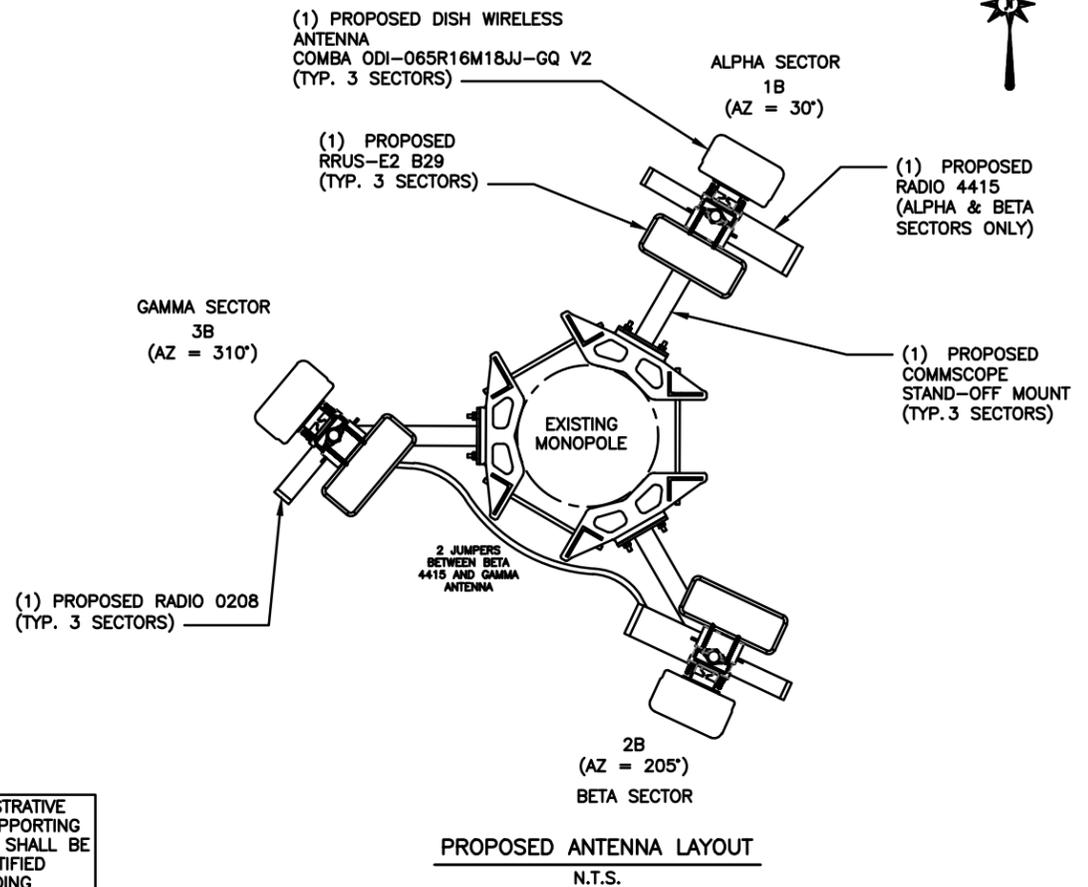
RAD CENTER	FACE WIDTH OR DIAMETER
72'-0"±	2'-0"±



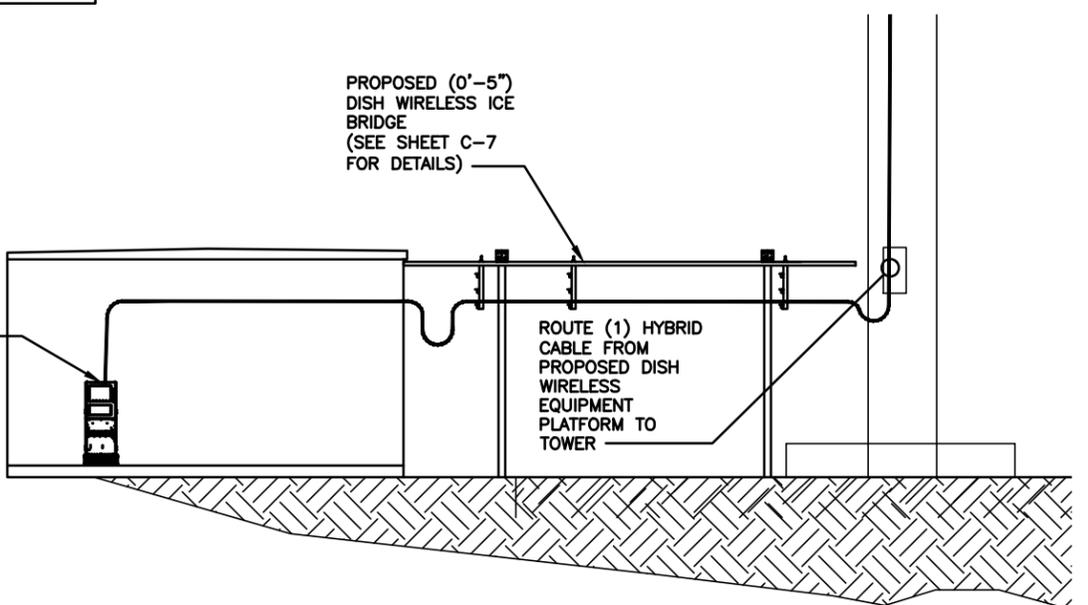
FINAL TOWER ELEVATION
N.T.S.

STRUCTURE INFORMATION IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. STRUCTURAL INTEGRITY OF SUPPORTING STRUCTURE, ANTENNA MOUNTS, AND FOUNDATION SHALL BE VERIFIED AS ACCEPTABLE BY ENGINEER CERTIFIED STRUCTURAL ANALYSIS, UTILIZING THE LOADING REPRESENTED WITHIN THESE DRAWINGS PRIOR TO THE EXECUTION OF EQUIPMENT CHANGES CONTAINED IN THESE DRAWINGS. CONTRACTOR SHALL OBTAIN ALL STRUCTURAL REPORTS AND FOLLOW ALL RECOMMENDATIONS.

REFER TO STRUCTURAL EVALUATION BY ATC DATED 03/07/19



PROPOSED ANTENNA LAYOUT
N.T.S.



EQUIPMENT ELEVATION
N.T.S.

ANTENNA LAYOUT NOTES:

1. THIS ANTENNA ORIENTATION PLAN IS A SCHEMATIC. THE CONTRACTOR SHALL VERIFY TOWER ORIENTATION AND FIELD COORDINATE REQUIRED ADJUSTMENTS TO ACHIEVE THE DESIRED ANTENNA AZIMUTHS.
2. ANTENNA CENTERLINE HEIGHT REFERENCED FROM GROUND AT BASE OF TOWER, ASSUMING HEIGHT OF 0'-0" AT SAID REFERENCE POINT.
3. ALL ANTENNAS, CABLES AND MOUNTS SHALL BE INSTALLED IN ACCORDANCE WITH THE TOWER ENGINEER'S RECOMMENDATIONS IN A MANNER CONSISTENT WITH THE STRUCTURAL ANALYSIS REPORT.
4. ALL ANTENNA BRACKETS PER ANTENNA MANUFACTURER, OR EQUAL. CONTRACTOR TO COORDINATE REQUIRED MECHANICAL DOWN TILT WITH DISH WIRELESS.
5. ALL ANTENNA INFORMATION TO BE CONFIRMED WITH DISH WIRELESS RF DESIGN PRIOR TO INSTALLATION.
6. VERIFY POSITIONS AND AZIMUTH OF ANTENNAS WITH DISH WIRELESS PRIOR TO INSTALLATION.
7. SECTOR FRAMES AND ANTENNAS SHOULD HAVE IDENTIFYING TORQUE MARKS SHOWN AFTER INSTALLATION.
8. ALL CLOSE-OUT PHOTOS ADHERE TO CLOSE-OUT DOCUMENTATION.
9. THE SIZE, HEIGHT, AND DIRECTION OF ALL ANTENNAS SHALL BE ADJUSTED TO MEET SYSTEM REQUIREMENTS DEPICTED BY THE LATEST APPROVED RFDS.

EQUIPMENT TESTING:

CONTRACTOR SHALL COMPLETE THE FOLLOWING REQUIREMENTS:

1. ANTENNAS & RF JUMPERS:
 - ALL RF JUMPERS & ANTENNA PORTS MUST HAVE DOCUMENTED PASSING SYSTEM SWEEP TEST.
 - PIM TESTING IS REQUIRED FOR ALL INSTALLED ANTENNAS & FEEDLINES.
 - SYSTEM SWEEPS SHALL BE AT A RETURN LOSS OF ≤ -16db.
 - ALL SWEEPS MUST BE PROVIDED IN A PDF AS WELL AS ANRITSU (OR EQUAL) DATA FILE FORMAT.
 - FINAL ACCEPTANCE: PERFORM ALL TECHNICAL TESTS SPECIFIED IN THE CONSTRUCTION SOW, SECTION XIV
2. HYBRID CABLES:
 - ALL FIBER PAIRS MUST HAVE A DOCUMENTED PASSING POWER & A FIBER INSPECTION SCOPE TEST.
 - PASSING POWER TEST SHALL BE ≤ 3db.
 - REQUIRED FIBER TEST GEAR SHALL BE VIAVI JDSU FIT-SD103; P5000i FIBER SCOPE DIGITAL INSPECTION KIT; VIAVI 2303/11, OLS-35 OPTICAL LASER LIGHT SOURCE 1310/1550 NM, SM, INTERCHANGEABLE ADAPTER OR EQUAL.
 - ALL FIBER TEST RESULTS MUST BE PROVIDED IN PDF FORMAT.
 - FINAL ACCEPTANCE: PERFORM ALL TECHNICAL TESTS SPECIFIED IN THE CONSTRUCTION SOW, SECTION XIV

INSTALLER NOTES:

1. SCHEMATIC LAYOUT ONLY. REFER TO SHEETS C-1 AND C-2 FOR EXACT EQUIPMENT LAYOUT, SIZES AND LOCATIONS OF ICE BRIDGE.
2. ALL CABLE SUPPORTS SHOULD BE BLOCKS WITH GROMMETS, NO SNAP-INS ARE ALLOWED.

PREPARED FOR:



7171 West 95th Street, Suite 600
Overland Park, Kansas 66212
Phone: 913-438-7700
Fax: 913-438-7777

ENGINEERING LICENSE:

STATE OF COLORADO
STATE CERTIFICATE OF AUTHORIZATION # 20041302439
ENGINEER: PE#: DISCIPLINE:
K/M/V KEVIN M. VANMAELE 53946 CIVIL C
REJ ROBERT E. JENSEN 54720 CIVIL E
T/M/S TERRANCE M. SUPER 36490 ELECTRICAL
S/D/K SHELTON D. KEISLING 49643 ELECTRICAL E

DRAWN BY: MGH
CHECKED BY: TW
APP'VD:

SUBMITTALS				
DATE	DESCRIPTION	REV	ISSUED BY	
04/11/19	ISSUED FOR REVIEW	A	MGH	
04/14/19	REVISED PER COMMENTS	1	MGH	
04/22/19	ISSUED FOR CONST.	2	MGH	
06/24/19	REVISED PER COMMENTS	3	MGH	
07/03/19	REVISED PER COMMENTS	4	MGH	

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DISH WIRELESS SITE ID:
CO1410011A

TOWER OWNER SITE ID:
302459

SITE ADDRESS:
2867 AKERS DR
COLORADO SPRINGS, CO 80922

SHEET TITLE:
TOWER ELEVATION &
ANTENNA LAYOUT

SHEET NUMBER:
C-3 (TWR19-001)