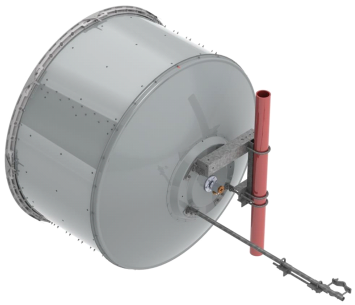
USX6-6W-6GR



1.8m | 6ft Sentinel® Ultra High Performance, Super High XPD Antenna, dual-polarized, 5.925 – 7.125 GHz, grey, CPR137G flange

Product Classification

Brand	Sentinel®
Product Type	Microwave antenna

General Specifications

Antenna Type	USX - Sentinel® Ultra High Performance, Super High XPD Antenna, dual-polarized
Diameter, nominal	1.8 m | 6 ft
Packing	Standard pack
Radome Color	Gray
Radome Material	Fabric
Reflector Construction	One-piece reflector
Antenna Input	CPR137G
Antenna Color	Gray
Antenna Type	USX - Sentinel® Ultra High Performance, Super High XPD Antenna, dual-polarized
Diameter, nominal	1.8 m | 6 ft
Polarization	Dual

Electrical Specifications

Operating Frequency Band	5.925 – 7.125 GHz
Beamwidth, Horizontal	1.8 °
Beamwidth, Vertical	1.8 °
Boresite Cross Polarization Discrimination (XPD)	40 dB
Electrical Compliance	ACMA FX03_6b, 6p7b | ETSI 302 217 Class 4 | IC 3059A | IC 3064A | US FCC Part 101A
Front-to-Back Ratio	76 dB
Gain, Low Band	38.3 dBi
Gain, Mid Band	38.8 dBi
Gain, Top Band	39.3 dBi
Operating Frequency Band	5.925 – 7.125 GHz
Radiation Pattern Envelope Reference (RPE)	7373
Return Loss	26.0 dB

USX6-6W-6GR

VSWR	1.10

Electrical Specifications (Band 2)

Beamwidth, Horizontal	2.0 °
Beamwidth, Vertical	2.0 °
Gain, Mid Band	38.4 dBi
Operating Frequency Band	5.725 – 5.850 GHz

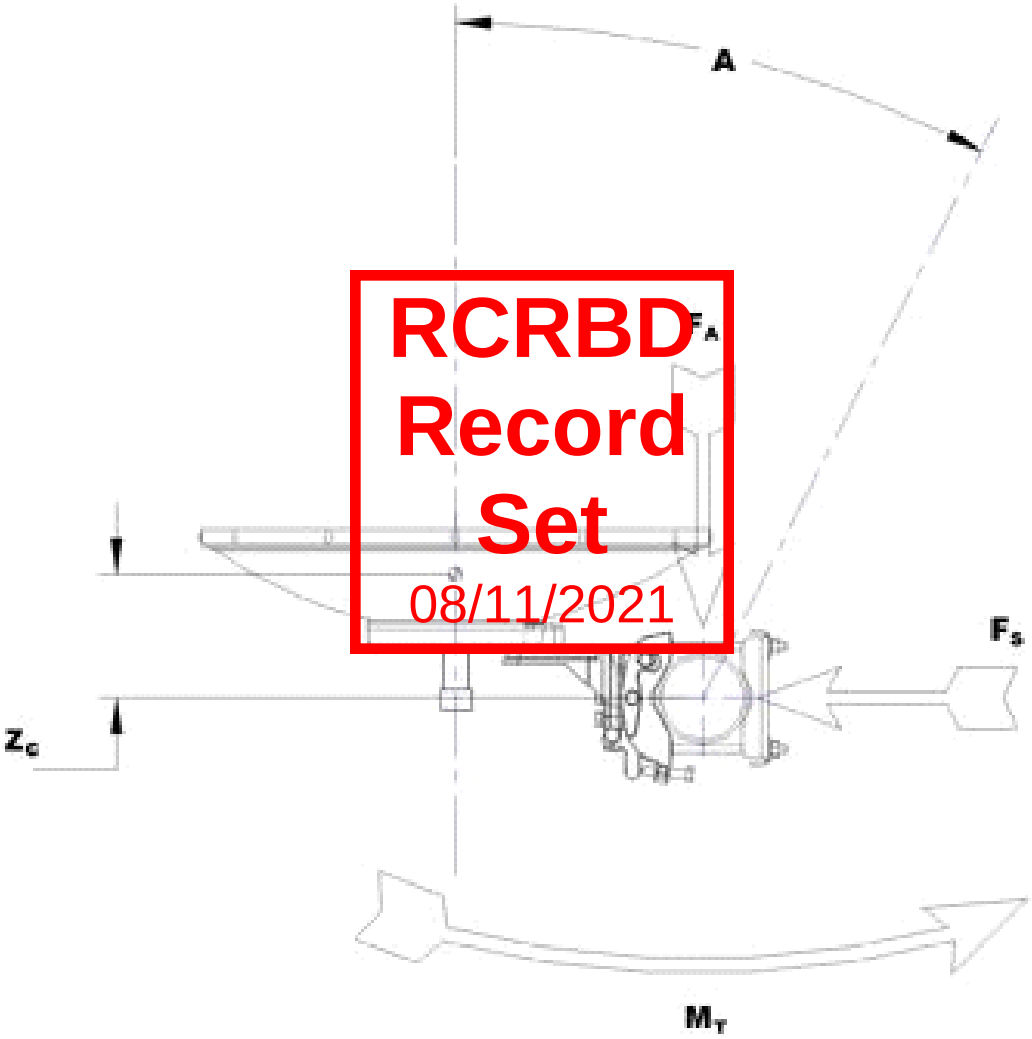
Mechanical Specifications

Fine Azimuth Adjustment	±15°
Fine Elevation Adjustment	±5°
Mounting Pipe Diameter	115 mm–120 mm | 4.5 in–4.7 in
Net Weight	90 kg | 198 lb
Side Struts, Included	1
Side Struts, Optional	1
Wind Velocity Operational	180 km/h | 112 mph
Wind Velocity Survival Rating	200 km/h | 124 mph

Wind Forces At Wind Velocity Survival Rating

Angle α for MT Max	-130 °
Axial Force (FA)	6960 N | 1565 lbf
Force on Inboard Strut Side	6187 N | 1391 lbf
Side Force (FS)	2049 N | 461 lbf
Twisting Moment (MT)	4948 N-m | 3649 ft lb
Weight with 1/2 in (12 mm) Radial Ice	291 kg | 642 lb
Zcg with 1/2 in (12 mm) Radial Ice	689 mm | 27 in
Zcg without Ice	498 mm | 20 in

Wind Forces At Wind Velocity Survival Rating Image

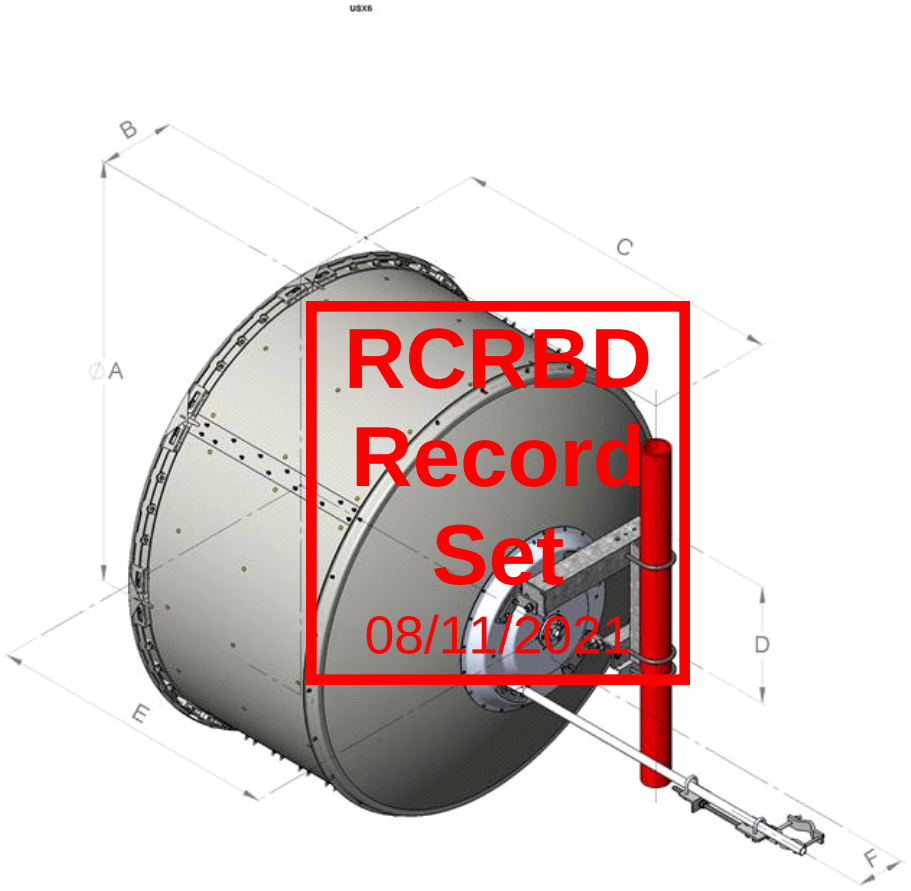


RCRBD Record Set
08/11/2021

Packed Dimensions

Gross Weight, Packed Antenna	150.0 kg | 330.7 lb
Height	2110.0 mm | 83.1 in
Length	2000.0 mm | 78.7 in
Volume	2.5 m^3
Width	600.0 mm | 23.6 in

Antenna Dimensions And Mounting Information



Dimensions in inches (mm)						
Antenna size, ft (m)	A	B	C	D	E	F
6 (1.8)	74.8 (1899)	13.4 (340)	59.8 (1520)	20.9 (530)	51.8 (1315)	8.4 (214)

Regulatory Compliance/Certifications

Agency	Classification
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system

* Footnotes

Axial Force (FA)
Maximum forces exerted on a supporting structure as a result of wind from the most critical direction for this parameter. The individual maximums specified may not occur simultaneously. All forces are referenced to the mounting pipe.

Boresite Cross Polarization Discrimination (XPD)
The difference between the peak of the co-polarized main beam and the maximum cross-polarized signal over an angle twice the 3 dB beamwidth of the co-polarized main beam.

Front-to-Back Ratio
Denotes highest radiation relative to the main beam, at 180° ±40°, across the band. Production antennas do not exceed rated values by more than 2 dB unless stated otherwise.

Gain, Mid Band
For a given frequency band, gain is primarily a function of antenna size. The gain of Andrew antennas is determined by either gain by comparison or by computer integration of the measured antenna patterns.

Operating Frequency Band
Bands correspond with CCIR recommendations or common allocations used throughout the world. Other ranges can be accommodated on special order.

Packing
Andrew standard packing is suitable for export. Antennas are shipped as standard in totally recyclable cardboard or wire-bound crates (dependent on product). For your convenience, Andrew offers heavy duty export packing options.

Radiation Pattern Envelope Reference (RPE)
Radiation patterns define an antenna's ability to discriminate against unwanted signals. Under still dry conditions, production antennas will not have any peak exceeding the current RPE by more than 3dB, maintaining an angular accuracy of +/-1° throughout

Return Loss
The figure that indicates the proportion of radio waves incident upon the antenna that are rejected as a ratio of those that are accepted.

Side Force (FS)
Maximum side force exerted on the mounting pipe as a result of wind from the most critical direction for this parameter. The individual maximums specified may not occur simultaneously. All forces are referenced to the mounting pipe.

Twisting Moment (MT)
Maximum forces exerted on a supporting structure as a result of wind from the most critical direction for this parameter. The individual maximums specified may not occur simultaneously. All forces are referenced to the mounting pipe.

VSWR
Maximum; is the guaranteed Peak Voltage-Standing-Wave-Ratio within the operating band.

Wind Velocity Operational
The wind speed where the antenna deflection is equal to or less than 0.1 degrees. In the case of ValuLine antennas, it is defined as a maximum deflection of 0.3 x the 3 dB beam width of the antenna.

Wind Velocity Survival Rating
The maximum wind speed the antenna, including mounts and radomes, where applicable, will withstand without permanent deformation. Realignment may be

required. This wind speed is applicable to antenna with the specified amount of radial ice.

RCRBD
Record
Set
08/11/2021

COMMSCOPE®

PROJECT INDEX

APPLICANT:
UNION TELEPHONE COMPANY
850 N HIGHWAY 414
PO BOX 160
MOUNTAIN VIEW, WY 82939

SITE ACQUISITION:
CONTACT: TYLER THOLL
PHONE: (307) 782-4804
EMAIL: TTHOLL@UNIONWIRELESS.COM

ENGINEER/DESIGNER:
CONTACT: MATTHEW FISHER
PHONE: (307) 782-4099
EMAIL: mfisher@unionwireless.com

CONSTRUCTION MANAGER:
CONTACT: JUSTIN HAWS
PHONE: (307) 747-7054
EMAIL: jhaws@unionwireless.com

SURVEYOR:
PLANS NOT VERIFIED BY A LICENSED SURVEYOR.

PROPERTY OWNER:
PEABODY COAL
701 MARKET St. SUITE 731
St. LOUIS, MISSOURI 63101

CONTACT: MIKE BERDINE
PHONE: (970) 870-2782

POWER COMPANY:
YAMPA VALLEY ELECTRIC ASSOCIATION
3715 EAST US HWY 40
P.O. BOX 217
CRAIG, CO 81626

CONTACT:
PHONE: (970) 824-6593

TELEPHONE COMPANY:
SITE CONNECTED TO UNION NETWORK VIA MICROWAVE RADIO.

DRAWING INDEX

SHEET	TITLE	REV
T1	TITLE SHEET	H2
C3	MICROWAVE ELEVATION	H2

Union Wireless

OAK CREEK COAL

COMMUNICATION SITE

29920 COUNTY ROAD 27, HAYDEN,
ROUTT COUNTY, COLORADO 80467

80' SELF SUPPORTING TOWER

MW ADD TO NORTH CLARK - TOWER WORK

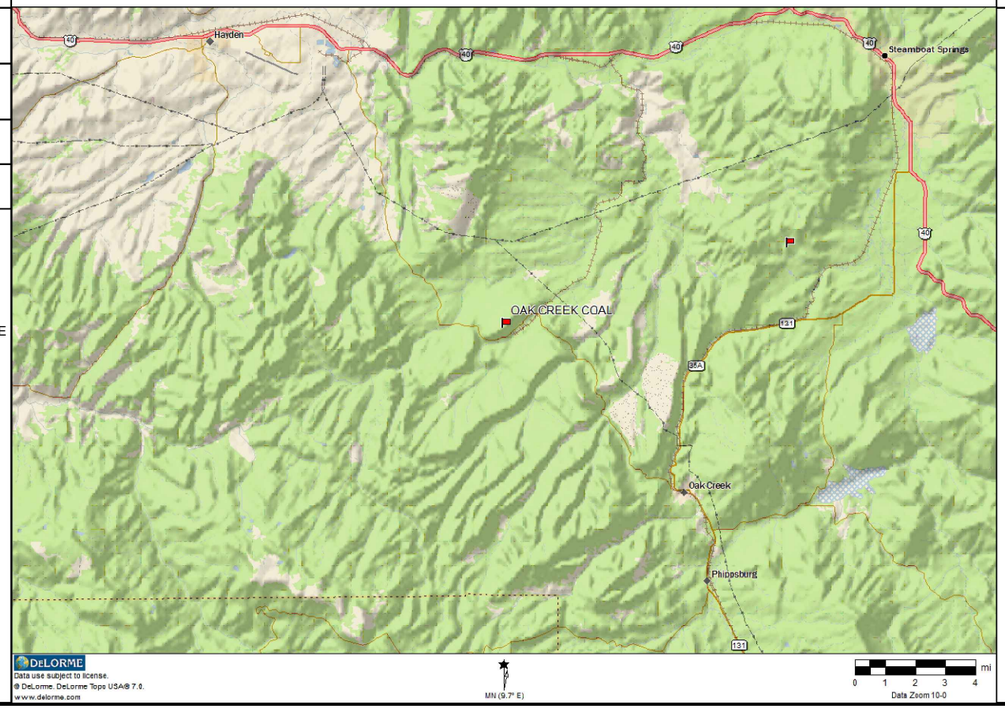
RCRBD Record Set 08/11/2021

SITE DESCRIPTION

1	LEGAL DESCRIPTION: SE¼ OF SE¼ SECTION 30 T5N R86W 6THPM
2	GEOGRAPHIC COORDINATES (NAD83): 40°21'14.8"N 107°4'21.3"W
3	ELEVATION: 7490' AMSL
4	ASR: N/A
5	PROJECT NOTES:

1. UNION WIRELESS IS ADDING A 6' MICROWAVE DISH TO THE TOWER AT NORTH CLARK.
2. (2) LINES OF ½" COAX TO BE INSTALLED FROM THE DISH TO THE BUILDING.
3. AN ICE GUARD IS TO BE INSTALLED ABOVE THE DISH.

VICINITY MAP



DRIVING DIRECTIONS

HEADING EAST OUT OF THE TOWN OF HAYDEN, COLORADO TOWARD STEAMBOAT SPRINGS, CLOCK 4.5 MILES TO THE JUNCTION WITH COUNTY ROAD NO. 27.

TURN RIGHT ON COUNTY ROAD NO.27 AND CLOCK 12.1 MILES ALONG THE COUNTY ROAD NO. 27.

TURN LEFT ON A DIRT ROAD HEADING NORTHEASTERLY AND CLOCK 0.3 MILES TO A TWO-TRACK ROAD ON THE RIGHT.

TURN RIGHT AND FOLLOW THE TWO TRACK ABOUT A MILE TO THE TOP OF TWENTYMILE RIDGE.

THE COMMUNICATION SITE IS LOCATED ABOUT 150 FEET NORTHEAST OF THE EXISTING POLE ANTENNA MOUNT AND BUILDING BELONGING TO PEABODY COAL COMPANY.

CONTACT PERSON FOR PEABODY COAL IS MIKE BERDINE (MINE MANAGER) AT 970-870-2782 OR RICK STILLION, (ELECTRICAL SUPERVISOR) AT 970-870-2788.

DRAWINGS ISSUED BY: MATTHEW FISHER

TITLE: PROJECT ENGINEER

DATE: 04 AUGUST 2021

Union WIRELESS

850 N. HIGHWAY 414
PO BOX 160
MOUNTAIN VIEW, WY 82939

CURRENT REV	DATE
H2	03/25/2020

DESIGNER: MATTHEW FISHER

REVIEWER: N/A

APPROVED FOR PERMITTING
04 AUGUST 2021

PROJECT NAME: OAK CREEK COAL

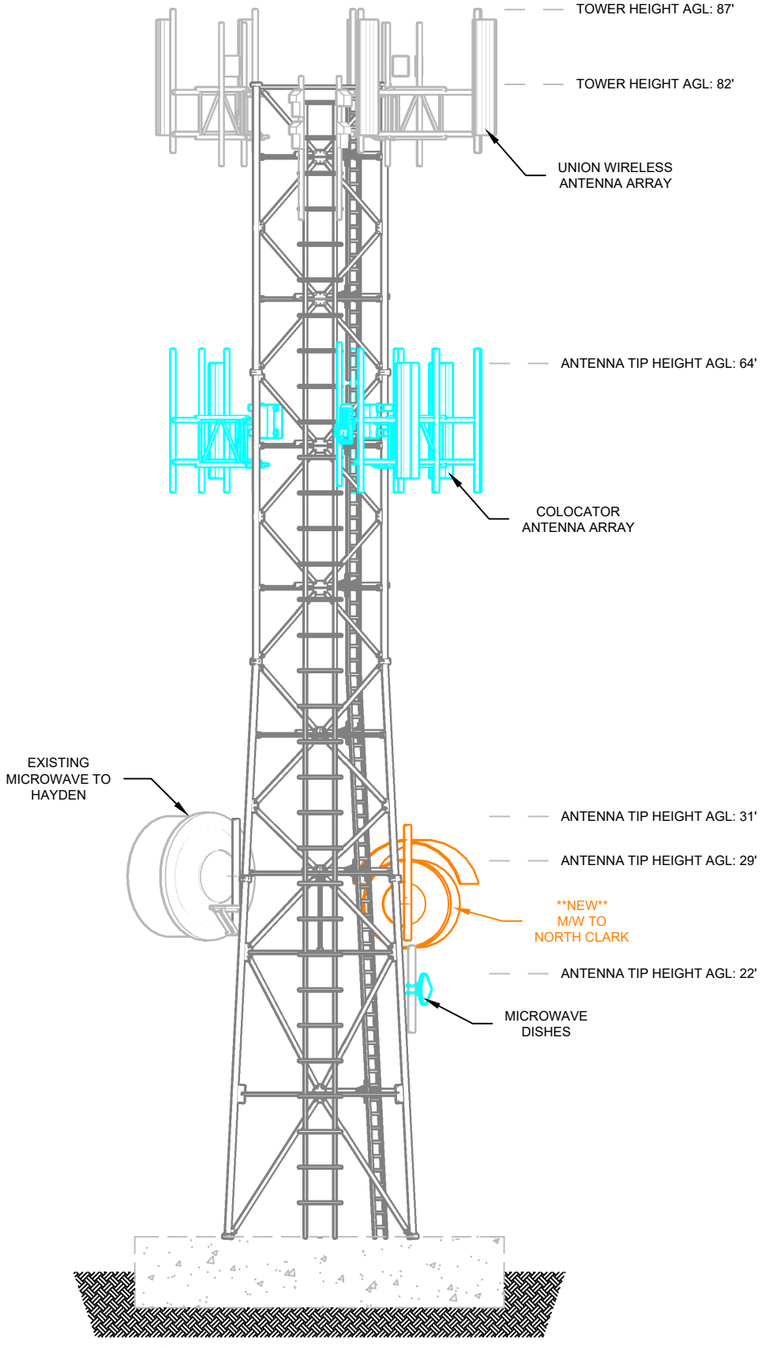
PROJECT ADDRESS:
29920 COUNTY ROAD 27
OAK CREEK, CO 80467
ROUTT COUNTY

SHEET TITLE: TITLE SHEET

SHEET NUMBER: T1

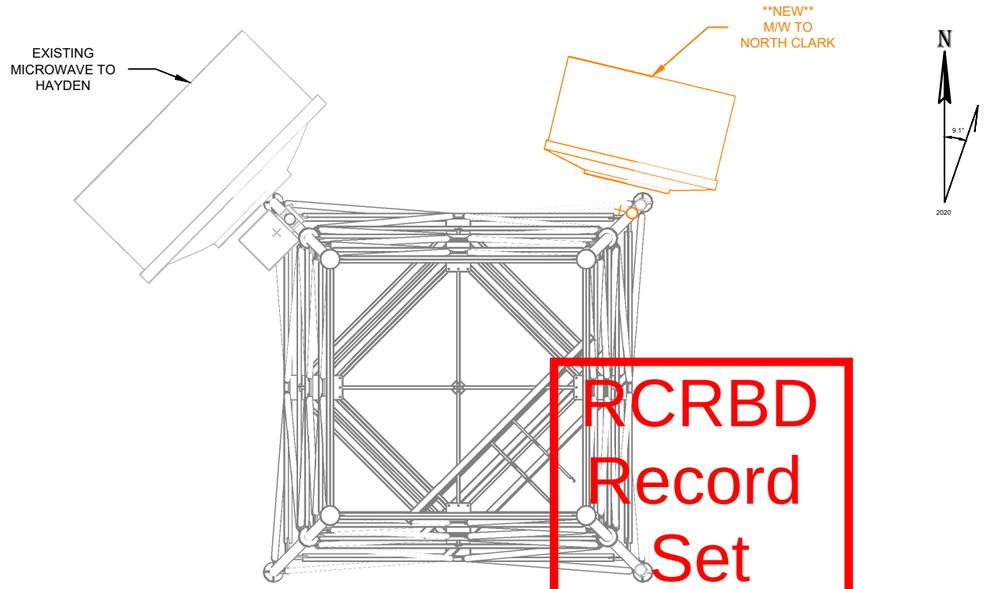
LEGEND

- NEW EQUIPMENT
- RETIRE EQUIPMENT
- COLO EQUIPMENT



1/C3 SOUTH FACE ELEVATION

SCALE: 3/32"=1'



RCRBD Record Set 08/11/2021

2/C3 ANTENNA DETAILS

SCALE: 3/16"=1'

MW TO HAYDEN	ANTENNA MANUFACTURER & MODEL:	HPX8 - 65D
	AZIMUTH:	305° MAG (314.7° TRUE)
	HEIGHT ABOVE CONCRETE LEVEL:	25'
	POLARIZATION:	TX: V&H, RX: V&H
	TECHNOLOGY/FREQUENCY:	LICENSED MW / 6 GHZ
	WAVEGUIDE SPECIFICATIONS:	(2x) EW63 FEEDS
MW TO CATHEDRAL BLUFFS	PATH:	CATHEDRAL BLUFFS
	ANTENNA MANUFACTURER & MODEL:	ANDREW USX6-6W
	AZIMUTH:	4° MAG (13.49° TRUE)
	HEIGHT ABOVE CONCRETE LEVEL:	26'
	POLARIZATION:	Tx:V&H Rx:V&H
	ODU PLACEMENT HORIZONTAL POLARIZATION:	POLE MOUNT - RFU-HP
	ODU PLACEMENT VERTICAL POLARIZATON:	POLE MOUNT - RFU-HP
	TECHNOLOGY & FREQUENCY:	LICENSED 6 GHz
	WAVEGUIDE SPECIFICATIONS:	(2) LDF4-50A

Union WIRELESS

850 N. HIGHWAY 414
PO BOX 160
MOUNTAIN VIEW, WY 82939

CURRENT REV	DATE
H2	03/25/2020

DESIGNER: MATTHEW FISHER

REVIEWER: N/A

APPROVED FOR PERMITTING

04 AUGUST 2021

PROJECT NAME:

OAK CREEK COAL

PROJECT ADDRESS:

29920 COUNTY ROAD 27
OAK CREEK, CO 80467
ROUTT COUNTY

SHEET TITLE: MICROWAVE ELEVATION

SHEET NUMBER: C3