

## PROJECT DESCRIPTION

**11-6-19 SDCL Review Applicant:** "WVC License LLC, a Delaware limited liability company, d/b/a Alltel", by Faulk & Foster

**Project Description:** Placement of 3 antenna panels at a centerline of 136' above ground level on an existing 150' monopole and an associated 11'5" x 16' equipment shelter within an extension of the existing fenced compound as shown in the drawings submitted

**Location:** 1400 Turbine Drive in Rushmore Regional Industrial Park

**Legal Description:** Part of Lot 1, Block 3, Rushmore Regional Industrial Park located in the E ½ of Section 4, T1N, R8E of the Black Hills Meridian, Pennington County, SD

**Land Owner:** Green Tree Servicing LLC

**Zoning:** LI – Light Industrial

This is a capacity site with the objective of offloading increasing call traffic from Alltel's existing RapidCityS and Rapid CityE sites and establishing a dominant signal for callers on Highway 44 and Elk Vale Road and in the surrounding neighborhoods and business areas.

The target search area was centered in the residential neighborhood to the southeast. However, because of zoning limitations and a desire to avoid undue impact on a residential neighborhood Alltel was willing to pursue location on the existing Green Tree Servicing monopole in the industrial park.

This existing facility is on the north side of the parking lot north of the Green Tree building and just south of the cul-de-sac for Jet Drive. The existing monopole tower is 149' 2" tall and has an 8' diameter microwave dish at the top which serves Green Tree's operations. At the base of the monopole is an existing 8'8" x 7'3" Green Tree equipment shelter within a 32' 8" x 21'7" fenced compound.

Alltel proposes to place 3 Antel BXA-80063 panel antennas on the existing monopole at an antenna centerline of 136' above ground level. A specification sheet for the antenna model is attached. The antenna mount will be a "flush mount" as shown on sheet C-4 which will keep the antennas close to the pole and minimize visual impact.

Alltel proposes to extend the fence line of the Green Tree compound an additional 20' westward to accommodate its 11'5" x 16" equipment shelter as shown on sheet C-2. Access will be from the existing parking lot with the asphalt to be extended as shown on sheet C-2.

As a co-location on an existing tower in an industrial district away from any residential uses, this proposal is in harmony with the letter and spirit of Rapid City's zoning regulations and Alltel respectfully requests approval for this project.

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Antennas for Concealment Configurations  
Slant +/- 45° Dual Polarized, Panel 63°/16 dBd

**BXA-80063/8 \_ 5° FP**

When ordering, replace ' \_ ' with connector type.

**Mechanical specifications**

Length	2405 mm	94.7 in
Width	285 mm	11.2 in
Depth	114 mm	4.5 in
<sup>4)</sup> Weight	10.89 kg	24.0 lbs

Antenna consisting of aluminum alloy with brass feed-lines covered by a UV safe fiberglass radome.

**Mounting:**

U-Bolt bracket kit included for mounting on pipe. See notes (below, right) regarding minimum diameters of mounting pipe and concealment radome

**Equipment requirements**

Due to limited space in concealed configurations, it is necessary to order 90° elbow connectors for jumper cables.

**Electrical specifications**

Frequency Range	806-900 MHz*
Impedance	50Ω
Connector	N, DIN**
<sup>1)</sup> VSWR	≤ 1.4:1
Polarization	Slant ± 45°
<sup>1)</sup> Isolation Between Ports	< -30 dB
<sup>1)</sup> Gain	16 dBd
<sup>2)</sup> Power Rating	500 W
<sup>1)</sup> Half Power Angle	
H-Plane	63°
E-Plane	7°
<sup>1)</sup> Electrical Downtilt	5°
<sup>1)</sup> Null Fill	5%
Lightning Protection	Direct Ground

\* Also available up to 960 MHz. Consult your sales director for more information.

\*\*Elongated connectors (NE, E-DIN) cannot be used with this antenna model.

Patented Dipole Design: U.S. Patent No. 6,608,600 B2

<sup>1)</sup> Typical Values

<sup>2)</sup> Power Rating limited by connector only

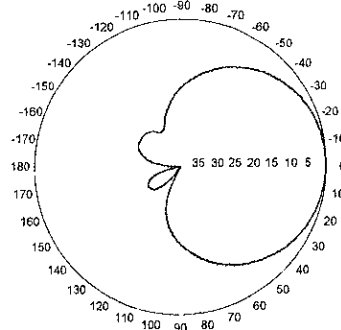
<sup>3)</sup> NE indicates an elongated N Connector

E-DIN indicates an elongated DIN Connector

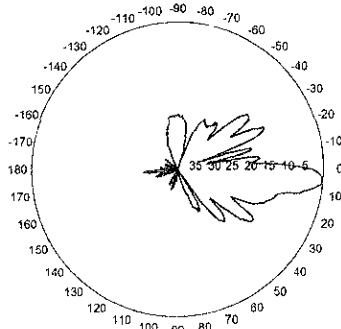
<sup>4)</sup> The antenna weight listed above does not include the bracket weight.

Improvements to mechanical and/or electrical performance of the antenna may be made without notice.

**Radiation-pattern<sup>1)</sup>**



Horizontal

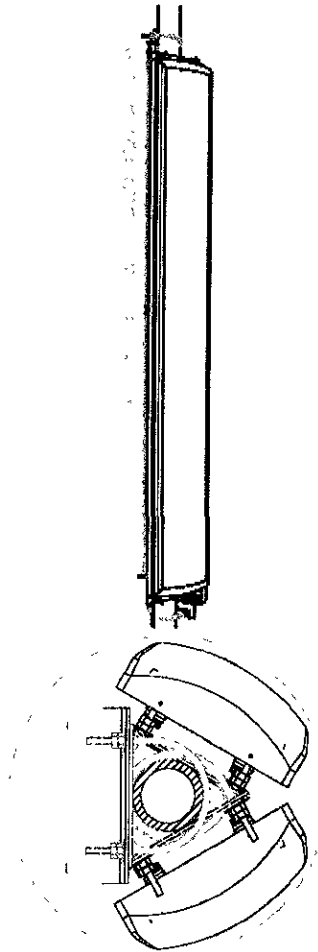


Vertical

Radiation patterns for all antennas are measured with the antenna mounted on a fiberglass pole

Mounting on a metal pole will typically improve the Front-to-Back Ratio.

Typical 3-antenna array using three BXA-80063/8 \_ 5° FP antennas



The BXA-80063/8 \_ 5° FP can be used in a 3-Antenna Array with the following specifications

Outside Diameter of Mounting Pipe		Inside Diameter of Concealment Radome	
101.6 mm	4 in	457.2 mm	18 in
127.0 mm	5 in	482.6 mm	19 in
152.4 mm	6 in	508.0 mm	20 in

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Revision Date: 6/3/04