

1. DESCRIPTION OF DIRECTIONAL ANTENNA SYSTEM

DA- 2

No. and Type of Elements: **Five uniform cross-section, guyed, series excit vertical steel radiators.**

Height above Insulators: **180' (89.6°)**

Overall Height: **185'**

Spacing and Orientation: **Five towers in a X configuration with tower #1 as the common tower to both the daytime and nighttime array Daytime towers #1, #2 & #3 spaced 180.9' (90°) on a bearing of 100° true. Nighttime towers #1, #4 & #5 spaced 180.9' (90°) on a bearing of 357° true**

Non-Directional Antenna: **None used**

Ground System consists of **120-181'** equally spaced, buried copper radials about the base of each tower. Intersecting radials shortened and bonded to transverse copper strap midway between towers.

2. THEORETICAL SPECIFICATIONS

	Tower	#1 (C)	#2 (W)	#3 (E)	#4 (S)	#5 (N)
Phasing:	Night	0°	-	-	-162°	163°
	Day	0°	-120°	170°	-	-
	Field Ratio:	Night	1.0	-	-	0.7
	Day	1.0	0.6	0.6	-	-

3. OPERATING SPECIFICATIONS

Phase Indication*:	Night	0°	-	-	-46°	-7°
	Day	0°	154°	-58°	-	-
Antenna Base Current Ratio:	Night	1.0	-	-	0.60	0.53
	Day	1.0	0.56	0.65	-	-
Current Ratio:	Night	1.0	-	-	1.44	1.20
	Day	1.0	0.520	0.668	-	-

*As indicated by **Delta DAM-1 (3-218) antenna monitor**

Field measuring equipment shall be available at all times, and the field intensity at each of the monitoring points shall be measured at least once every thirty days and an appropriate record kept of all measurements made.

DESCRIPTION OF AND FIELD INTENSITY AT MONITORING POINTS:

Direction of 9° true North. From transmitter site, follow driveway (North St. Ext.) 0.3 mile to the intersection of North and Walnut Sts. Drive left 0.05 mile on Walnut, then right 0.03 mile on North, then left 0.12 on Water, then right 0.05 on Front to the intersection of Front and N. Coal Sts. Turn left and drive 0.1 mile to Mill Creek Ave. Turn left and drive 0.6 mile to the intersection of Mill Creek Ave. and US 122. Turn left and follow US 122 for 1.35 miles to the traffic light at Second St. in St. Clair. Turn left and follow US 122 (2nd St.) 0.7 mile to Sherman St. where US 122 curves right. Turn right and follow Sherman St. 0.15 mile to end at intersection of N. Nichols. Walk in baseball field approximately 50 yards to monitoring point near catcher's mound. The distance to the point is 1.8 miles. The field intensity measured at this point should not exceed 61 mv/m, Day.

Direction of 72° true North. From transmitter site drive 0.55 mile to the intersection of Front and N. Coal Sts. Turn left and drive 0.1 mile on N. Coal St. to Mill Creek Ave. Turn left and follow Mill Creek Ave. 0.6 mile to US 122. Continue east on Mill Creek Ave. 0.85 mile to the Port Carbon-St. Clair Rd. Turn left and drive 0.3 mile to the point where road bends right. The monitor point is on the left (west) side of road. The distance to the point is 1.05 miles. The field intensity measured at this point should not exceed 147 mv/m Day.

Direction of 100° true North. From transmitter site, drive 0.55 mile to the intersection of Front and N. Coal Sts. Turn left and drive 0.1 mile on N. Coal St. to Mill Creek Ave. Turn left and follow Mill Creek Ave. 0.6 mile to US 122. Continue east on Mill Creek Ave. 0.85 mile to Port Carbon-St. Clair Rd. Turn right and drive 0.5 mile to Pike St. in Port Carbon where road bends left. Follow Pike St. 0.3 mile to right bend in road. Continue 0.03 mile to point where US 209 curves left and a street continues straight ahead. Continue on this street 0.07 mile to Main Street where Liberty Oil Company building is straight ahead and a Sears Building is just east of the Liberty Oil Company building. The monitor point is in the Sears parking lot. The distance to the point is 1.76 miles. The field intensity measured at this point should not exceed 87 mv/m, Day.

Direction of 165° true North. From transmitter site, drive 0.55 mile to the intersection of Front and N. Coal Sts. Turn right and drive 0.05 mile to N. Centre St. Turn left and drive south on N. Centre St. 1.5 miles. Bear left and under railroad overpass 0.1 mile to the junction with US 122. Turn right and proceed approximately 50 yards to the monitor point which is on the south side of the Atlantic Service Station located at the SW corner of the road intersection. The distance to the point is 1.93 miles. The field intensity measured at this point should not exceed 46 mv/m, Day.

DESCRIPTION OF AND FIELD INTENSITY AT MONITORING POINTS: (Continued)

Direction of 58° true North. From transmitter site, drive 0.55 mile to the intersection of Front and N. Coal Sts. Turn left and drive 0.1 mile on N. Coal St. to Mill Creek Ave. Turn left and drive 0.6 mile to US 122. Continue east on Mill Creek Ave. 0.85 mile to Port Carbon-St. Clair Rd. Turn left and drive 0.6 mile to point where road bends left at an Atlantic Service Station on the east and a cleared area on the west. The monitor point is opposite the Atlantic Service Station approximately 50 yards in the cleared area. The distance to the point is 1.17 miles. The field intensity measured at this point should not exceed 11 mv/m Night.

Direction of 76° true North. From transmitter site, drive 0.55 mile to the intersection of Front and N. Coal Sts. Turn left and drive 0.1 mile on N. Coal St. to Mill Creek Ave. Turn left and drive 0.6 mile to US 122. Continue east on Mill Creek Ave. 0.85 mile to Port Carbon-St. Clair Rd. Turn left and drive 0.18 mile to driveway on right and guard rail on the left. The monitor point is on the west side of the road approximately 10 ft. north of the end of the guard rail. The distance to the point is 1.07 miles. The field intensity measured at this point should not exceed 16.5 mv/m Night.

Direction of 262° true North. From transmitter site, drive 0.55 mile to Front and N. Coal Sts. Turn right and drive 0.05 mile to N. Centre St. Turn left and drive 0.05 mile to Peacock St. Turn right and drive 0.95 mile to the intersection of Peacock St. and N. 16th St. Turn left on N. 16th and drive 0.35 mile to Mt. Hope Rd. Turn right and follow Mt. Hope Rd. 1.25 miles to a crossroad. Continue on across the road and approximately 200 ft. to a double garage on the left. The monitor point is on the left side of the road and approximately 15 ft. south of the garage. The distance to the point is 2.0 miles. The field intensity measured at this point should not exceed 3.3 mv/m Night.

Direction of 297° true North. From transmitter site drive 0.55 mile to the intersection of Front & N. Coal Sts. Turn right and drive 0.05 mile to N. Centre St. Turn right and drive 1.50 miles to the entrance of a new cemetery on the right. The monitor point is in the cemetery approximately 50 yards. The distance to the point is 1.05 miles. The field intensity measured at this point should not exceed 12 mv/m Night.

Direction of 357° true North. From transmitter site drive 0.55 mile to the intersection of Front and N. Coal Sts. Turn left and drive 0.1 mile to Mill Creek Ave. Turn left and drive 0.6 mile to US 122. Turn left and follow US 122 for 1.35 miles to the traffic light in St. Clair. Turn left and drive 0.5 mile to Hancock St. Turn left 0.25 mile to a street on the right where there is an American Oil Company Service Station on the northeast corner. A dirt driveway west of the service station running in a northwest direction leads to the monitor point, which is 0.05 mile in from the road junction and approximately 20 ft. from a large tree. The distance to the point is 1.38 miles. The field intensity measured at this point should not exceed 51 mv/m Night.