Propagation Systems, Inc.
Quality Broadcast Antenna Systems

Directional FM Antenna
WGDQ
Unity Broadcasters
Sumrall, MS

A standard model PSIFM circular polarized antenna element was used in conjunction with the customer's 24" face triangular tower to create the necessary directional radiation pattern. The final antenna consists of eight radiating elements each secured to the tower with a leg-mount bracket with one horizontal parasitic and two vertical parasitic elements per bay. The antenna bays are full wave spaced. The antenna array is fed from a 1-5/8" rigid inter-bay transmission line, which distributes equal power and phase to each radiating element.

Pattern testing was performed using a 1/3 scale model element and tower. The azimuth plane measurements were taken on a ground reflection test range. This type of test range utilizes the reflected signal and direct signal from the source antenna to form an interference pattern on the antenna under test. The antenna and tower structure under test was mounted to a turntable that allowed the structure to be rotated 360° in the azimuth plane. The source antenna was located approximately 75 ft. from the antenna under test. The source height above ground was adjusted to peak the first lobe of the interference pattern at the antenna under test.

The test antenna was mounted in the center of rotation of the turntable. The entire structure was rotated clockwise while data was recorded in a counter clockwise direction. All feed cables to the antenna were secured and grounded during pattern measurements. A Hewlett Packard 8753A-network analyzer operating at 279.3 MHz was used as both the source and receiver. The level of the received signal was compared with a standard dipole to establish the directivity of the final pattern. The final pattern measured does not exceed the envelope pattern and is 86% of the envelope RMS.

PO Box 113 • 719 Pensacola Rd • Ebensburg • PA • 15931 • Phone (814) 472-5540 • Fax (814) 472-5676
www.psibroadcast.com

The antenna is to be mounted to the northeast tower leg as shown in drawing J906FM-557-002. The antenna center of radiation is to be 340.6 ft above ground level. At this elevation, the center of radiation will be within the +2/-4m tolerance allowed by the FCC. No other antenna can be mounted at the same elevation or within 10 ft. of any radiating element. The antenna is to be positioned 64° True. The distance the antenna is mounted from the tower is fixed according to the supplied mounting brackets. It is recommended that a broadcast engineer is present to supervise the installation of the antenna and that he or she certifies the antenna has been installed according to the enclosed instructions.

An input power level of 4.62 kW will be required at the antenna input in order to reach the licensed 25.0 kW ERP. The transmitter output power requirements are dependent upon the transmission line size and length used to feed the antenna.

Antenna Specifications

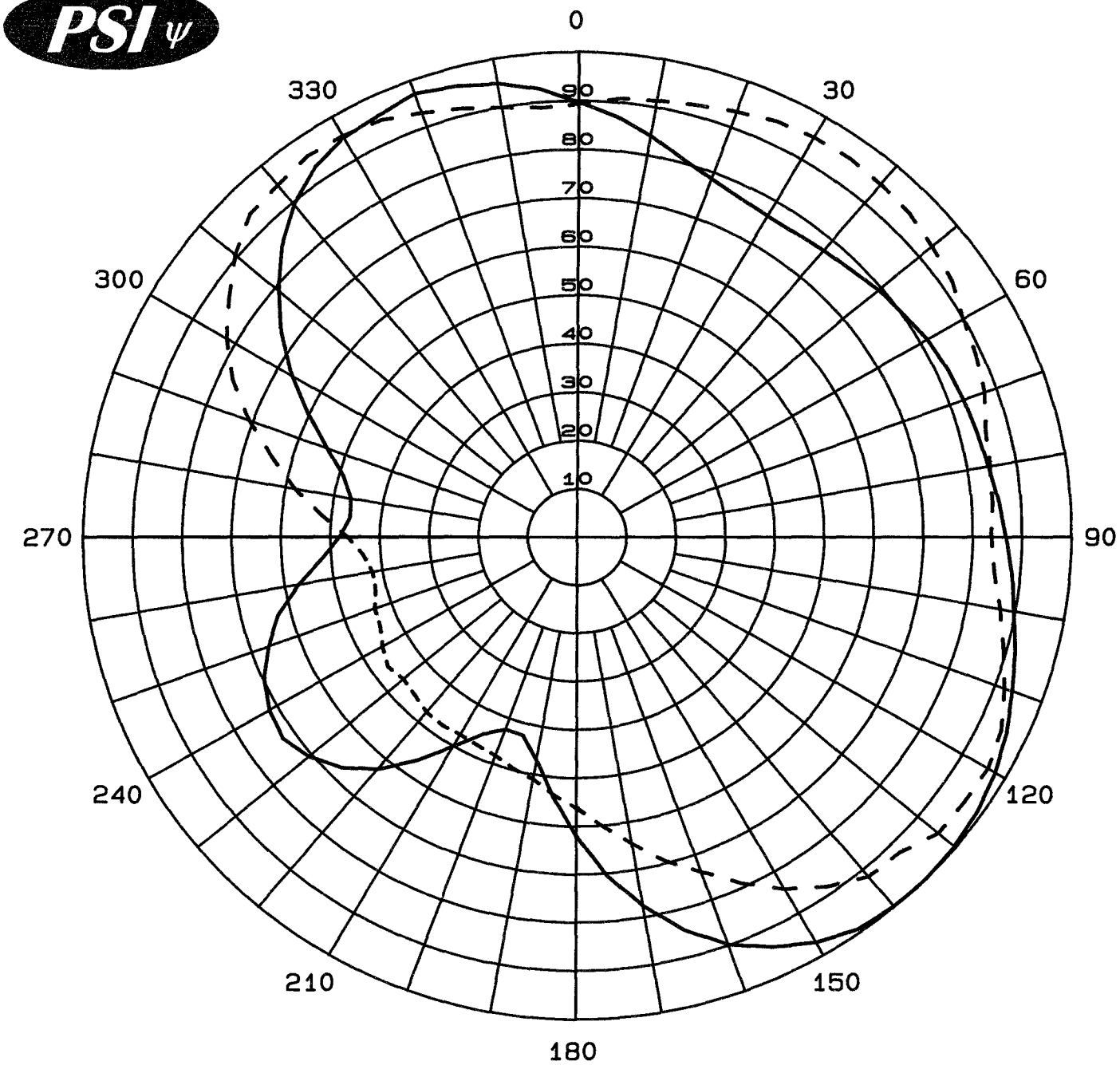
Antenna Model	PSIFM-8C-DA
Type	8-bay directional FM antenna
Frequency	93.1 MHz
Polarization	Circular
Envelope RMS	.97
Composite RMS	.83
Gain (h-pol)	5.41 (7.33 dB)
RMS (h-pol)	.79
Gain (v-pol)	4.99 (6.98 dB)
RMS (v-pol)	.82
Input	1-5/8" EIA center fed input
Power rating	12 kW
Length	79 ft. 2-13/16 in.

Statement of Certification

This is to certify the antenna has been designed, fabricated and tested under my supervision and it meets the required envelope pattern limitations set forth in the stations construction permit.

Douglas A. Ross 1/5/07

Douglas A. Ross
President
Propagation Systems Inc.



Measured Relative Field
Azimuth Plane Pattern
Antenna: PSIFM-8C-DA
Type: 8-Bay Directional FM
H-pol Gain (solid): 5.41 (7.22 dB)
V-pol Gain (dash): 4.99 (6.98 dB)
Frequency: 93.1 MHz
WGDQ Sumrall, MS

Propagation Systems Inc.
PO Box 113
Ebensburg, PA 15931

Measured Relative Field Tabulation

Antenna: PSIFM-8C-DA
Unity Broadcasters
Station: WGDQ
Frequency: 93.1 MHz
Location: Sumrall, MS

Horizontal Polarization

Angle	Relative Field	Power Gain	Gain (dB)
0	0.897	4.354	6.39
10	0.840	3.816	5.82
20	0.786	3.344	5.24
30	0.765	3.168	5.01
40	0.772	3.222	5.08
50	0.793	3.400	5.32
60	0.815	3.595	5.56
70	0.829	3.722	5.71
80	0.842	3.837	5.84
90	0.866	4.056	6.08
100	0.896	4.346	6.38
110	0.937	4.745	6.76
120	0.976	5.156	7.12
130	0.996	5.364	7.29
140	0.998	5.392	7.32
150	0.970	5.088	7.07
160	0.899	4.373	6.41
170	0.777	3.269	5.14
180	0.621	2.083	3.19
190	0.470	1.196	0.78
200	0.423	0.968	-0.14
210	0.498	1.344	1.28
220	0.628	2.132	3.29
230	0.707	2.704	4.32
240	0.719	2.794	4.46
250	0.666	2.400	3.80
260	0.574	1.782	2.51
270	0.482	1.259	1.00
280	0.466	1.176	0.71
290	0.541	1.582	1.99
300	0.669	2.420	3.84
310	0.793	3.399	5.31
320	0.897	4.350	6.38
330	0.952	4.904	6.91
340	0.973	5.117	7.09
350	0.950	4.878	6.88

Maximum Value

Field	1.00
Gain	5.41 (7.33 dB)
Azimuth Bearing	135 degrees

Minimum Field

Field	0.423
Gain	.968 (-.14 dB)
Azimuth Bearing	200 degrees

Vertical Polarization

Angle	Relative Field	Power Gain	Gain (dB)
0	0.893	4.310	6.35
10	0.914	4.516	6.55
20	0.934	4.717	6.74
30	0.952	4.903	6.90
40	0.950	4.884	6.89
50	0.932	4.700	6.72
60	0.898	4.359	6.39
70	0.874	4.136	6.17
80	0.845	3.865	5.87
90	0.836	3.783	5.78
100	0.868	4.078	6.10
110	0.919	4.567	6.60
120	0.959	4.973	6.97
130	0.954	4.927	6.93
140	0.918	4.560	6.59
150	0.843	3.840	5.84
160	0.739	2.954	4.70
170	0.646	2.260	3.54
180	0.562	1.709	2.33
190	0.510	1.408	1.49
200	0.482	1.258	1.00
210	0.473	1.211	0.83
220	0.474	1.214	0.84
230	0.460	1.144	0.59
240	0.456	1.123	0.51
250	0.437	1.034	0.14
260	0.421	0.958	-0.19
270	0.465	1.171	0.69
280	0.582	1.831	2.63
290	0.709	2.720	4.35
300	0.823	3.666	5.64
310	0.908	4.458	6.49
320	0.948	4.860	6.87
330	0.957	4.950	6.95
340	0.931	4.692	6.71
350	0.899	4.371	6.41

Maximum Value

Field	0.96
Gain	4.99 (6.98 dB)
Azimuth Bearing	325 degrees

Minimum Field

Field	0.421
Gain	.958 (-.19 dB)
Azimuth Bearing	260 degrees

ERP Tabulation

Antenna: PSIFM-8C-DA
Unity Broadcasters
Station: WGDQ
Frequency: 93.1 MHz
Location: Sumrall, MS
Maximum ERP: 25 kW (13.98 dBk)

Horizontal Polarization

Angle	Relative Field	ERP (kW)	ERP (dBk)
0	0.897	20.12	13.04
10	0.840	17.64	12.46
20	0.786	15.45	11.89
30	0.765	14.64	11.65
40	0.772	14.89	11.73
50	0.793	15.71	11.96
60	0.815	16.61	12.20
70	0.829	17.20	12.35
80	0.842	17.73	12.49
90	0.866	18.74	12.73
100	0.896	20.08	13.03
110	0.937	21.93	13.41
120	0.976	23.82	13.77
130	0.996	24.79	13.94
140	0.998	24.92	13.96
150	0.970	23.51	13.71
160	0.899	20.21	13.06
170	0.777	15.10	11.79
180	0.621	9.63	9.83
190	0.470	5.52	7.42
200	0.423	4.48	6.51
210	0.498	6.21	7.93
220	0.628	9.85	9.93
230	0.707	12.50	10.97
240	0.719	12.91	11.11
250	0.666	11.09	10.45
260	0.574	8.23	9.16
270	0.482	5.82	7.65
280	0.466	5.44	7.35
290	0.541	7.31	8.64
300	0.669	11.18	10.49
310	0.793	15.71	11.96
320	0.897	20.10	13.03
330	0.952	22.66	13.55
340	0.973	23.64	13.74
350	0.950	22.54	13.53

Maximum Value (H-pol)

Field	1.00
ERP	25 kW (13.98 dBk)
Azimuth Bearing	135 degrees

Minimum Field (H-pol)

Field	0.423
ERP	4.48 kW (6.51 dBk)
Azimuth Bearing	200 degrees

Vertical Polarization

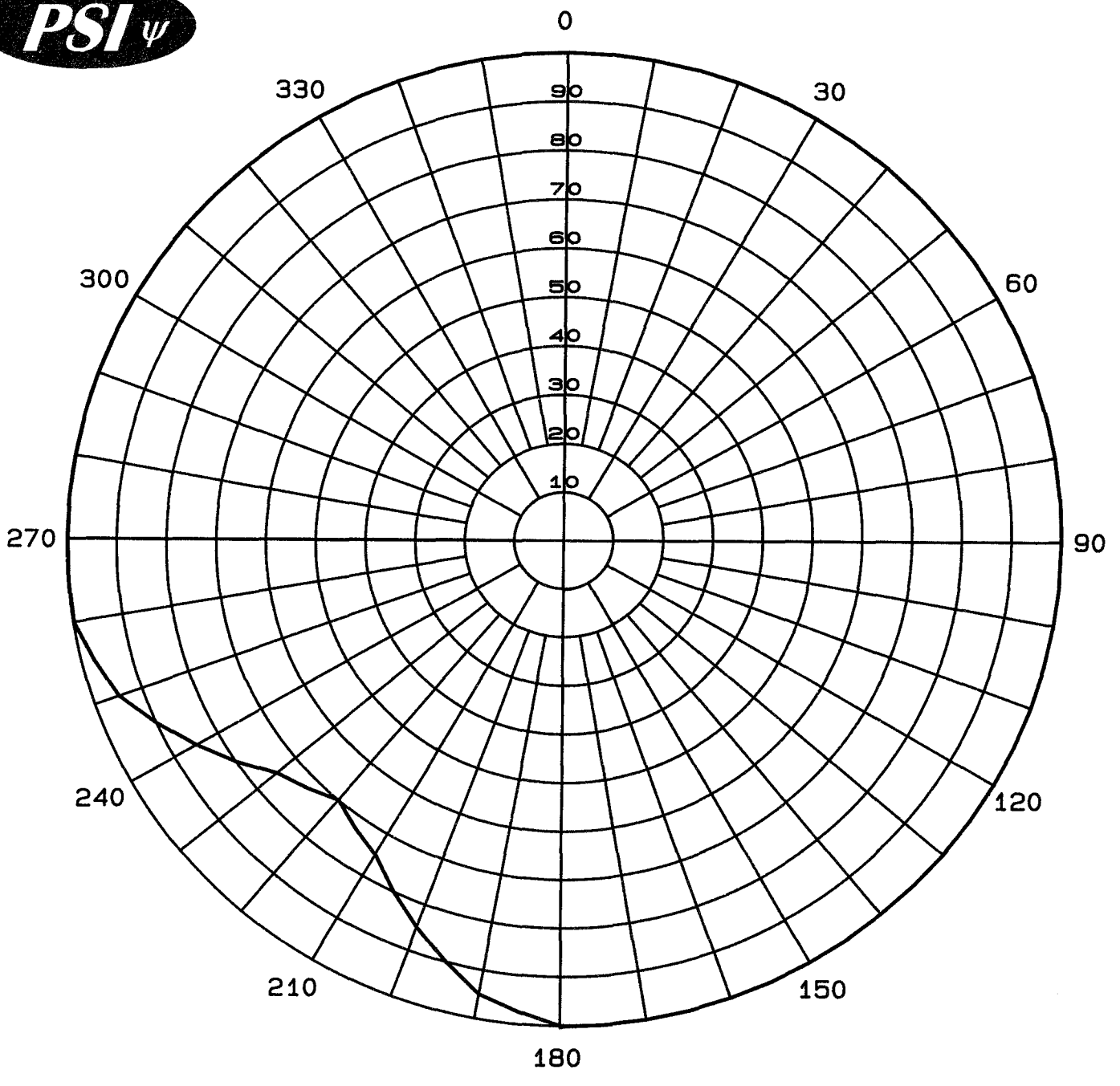
Angle	Relative Field	ERP (kW)	ERP (dBk)
0	0.893	19.92	12.99
10	0.914	20.87	13.19
20	0.934	21.80	13.38
30	0.952	22.66	13.55
40	0.950	22.57	13.53
50	0.932	21.72	13.37
60	0.898	20.14	13.04
70	0.874	19.11	12.81
80	0.845	17.86	12.52
90	0.836	17.48	12.43
100	0.868	18.84	12.75
110	0.919	21.10	13.24
120	0.959	22.98	13.61
130	0.954	22.77	13.57
140	0.918	21.07	13.24
150	0.843	17.75	12.49
160	0.739	13.65	11.35
170	0.646	10.44	10.19
180	0.562	7.90	8.98
190	0.510	6.51	8.13
200	0.482	5.81	7.64
210	0.473	5.60	7.48
220	0.474	5.61	7.49
230	0.460	5.29	7.23
240	0.456	5.19	7.15
250	0.437	4.78	6.79
260	0.421	4.42	6.46
270	0.465	5.41	7.33
280	0.582	8.46	9.27
290	0.709	12.57	10.99
300	0.823	16.94	12.29
310	0.908	20.60	13.14
320	0.948	22.46	13.51
330	0.957	22.87	13.59
340	0.931	21.68	13.36
350	0.899	20.20	13.05

Maximum Value (V-pol)

Field	0.96
ERP	23 kW (13.62 dBk)
Azimuth Bearing	325 degrees

Minimum Field (V-pol)

Field	0.421
ERP	4.42 kW (6.46 dBk)
Azimuth Bearing	260 degrees



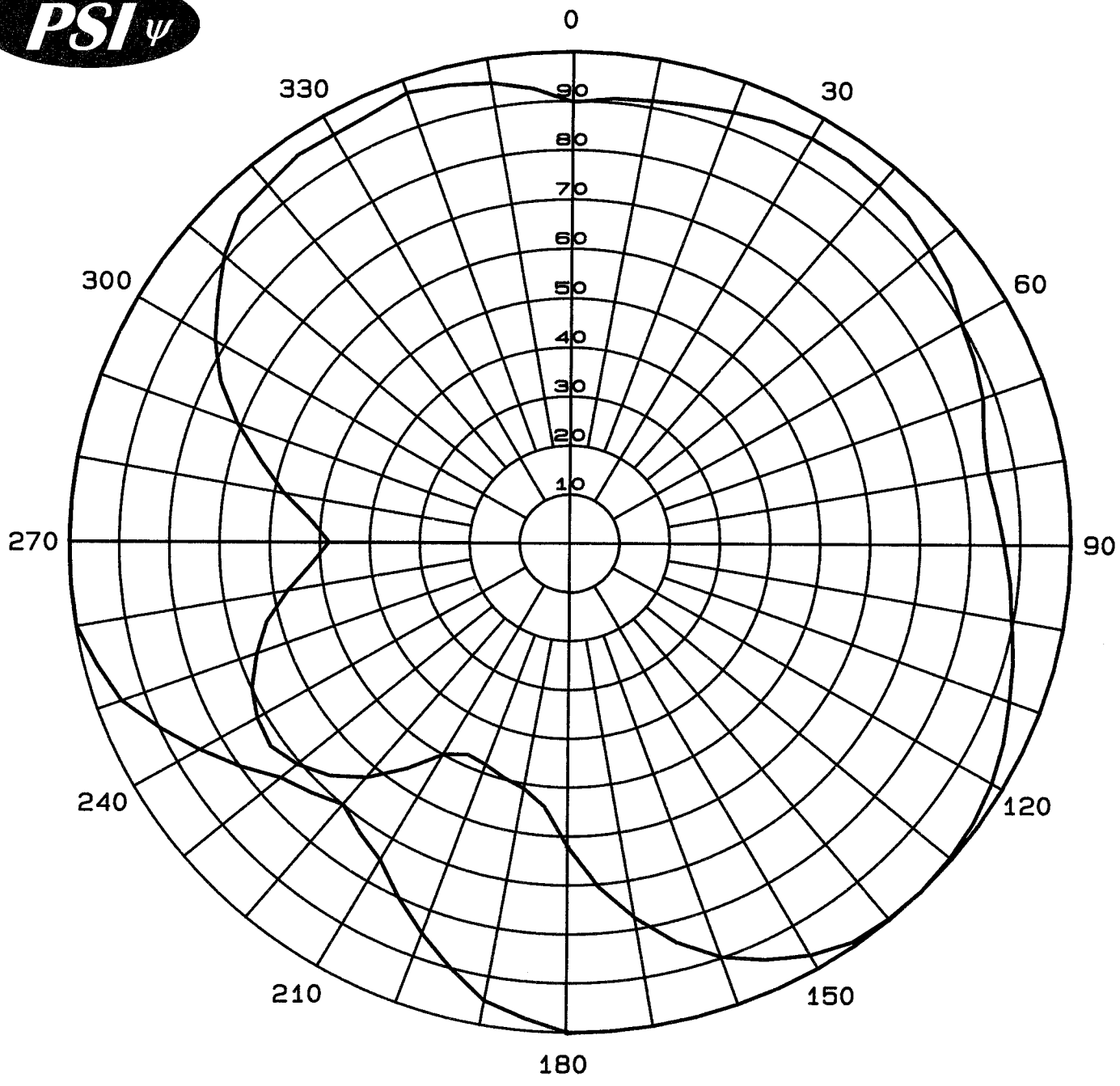
Maximum Envelope
Azimuth Plane Pattern
Antenna: PSIFM-8C-DA
Type: 8-Bay Directional FM
Polarization: Circular
Peak ERP: 25.0 kW (13.98 dBk)
Frequency: 93.1 MHz
WGDQ Sumrall, MS

Propagation Systems Inc.
PO Box 113
Ebensburg, PA 15931

Maximum Envelope Tabulation

Antenna: PSIFM-8C-DA
Unity Broadcasters
Station: WGDQ
Frequency: 93.1 MHz
Location: Sumrall, MS
Maximum ERP: 25 kW (13.98 dBk)

Angle	Relative Field	ERP (kW)	ERP (dBk)
0	1.000	25.00	13.98
10	1.000	25.00	13.98
20	1.000	25.00	13.98
30	1.000	25.00	13.98
40	1.000	25.00	13.98
50	1.000	25.00	13.98
60	1.000	25.00	13.98
70	1.000	25.00	13.98
80	1.000	25.00	13.98
90	1.000	25.00	13.98
100	1.000	25.00	13.98
110	1.000	25.00	13.98
120	1.000	25.00	13.98
130	1.000	25.00	13.98
140	1.000	25.00	13.98
150	1.000	25.00	13.98
160	1.000	25.00	13.98
170	1.000	25.00	13.98
180	1.000	25.00	13.98
190	0.950	22.56	13.53
200	0.850	18.06	12.57
210	0.750	14.06	11.48
220	0.700	12.25	10.88
230	0.750	14.06	11.48
240	0.850	18.06	12.57
250	0.950	22.56	13.53
260	1.000	25.00	13.98
270	1.000	25.00	13.98
280	1.000	25.00	13.98
290	1.000	25.00	13.98
300	1.000	25.00	13.98
310	1.000	25.00	13.98
320	1.000	25.00	13.98
330	1.000	25.00	13.98
340	1.000	25.00	13.98
350	1.000	25.00	13.98



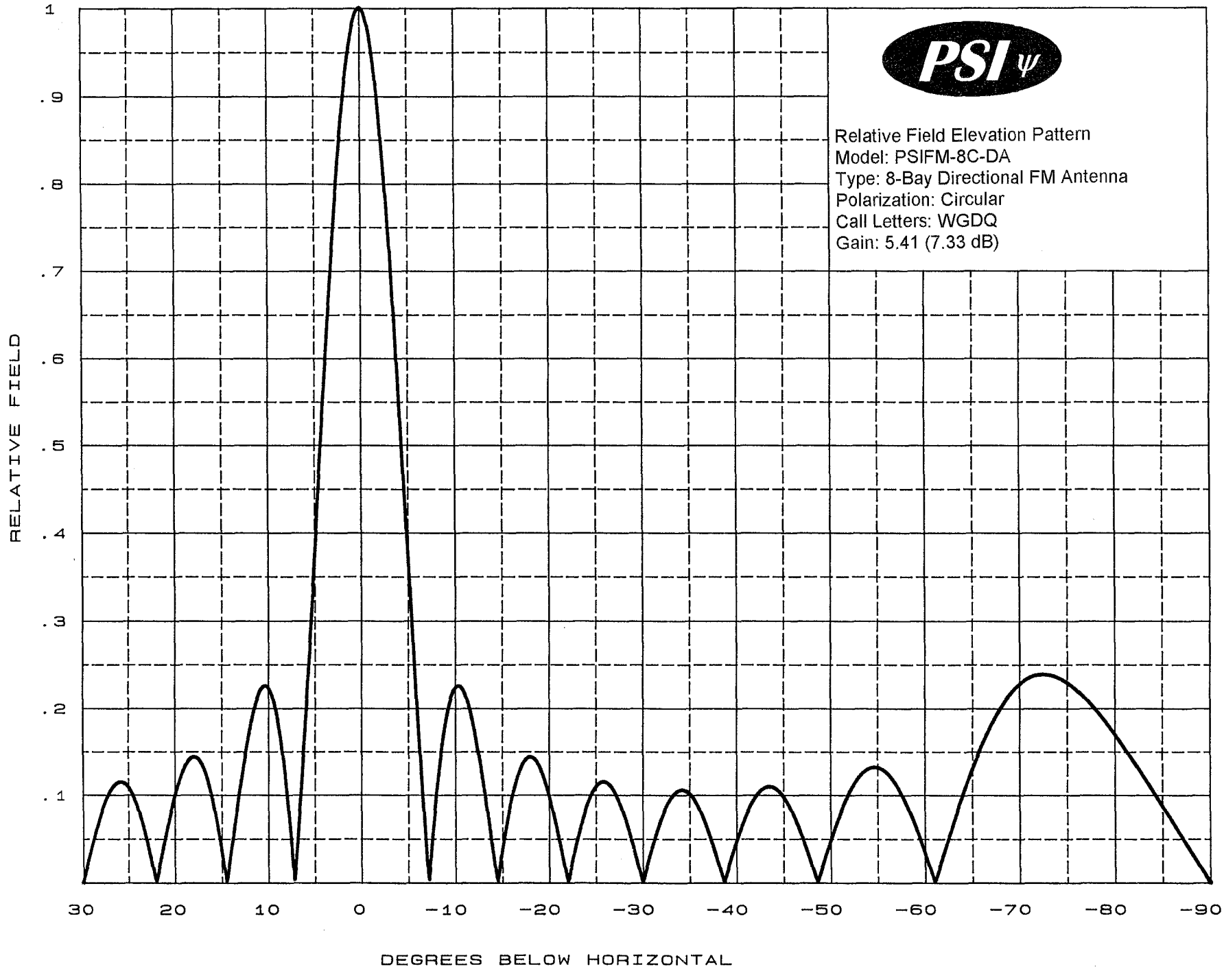
Maximum Envelope and
Composite Pattern
Antenna: PSIFM-8C-DA
Type: 8-Bay Directional FM
Polarization: Circular
Peak ERP: 25.0 kW (13.98 dBk)
Frequency: 93.1 MHz
WGDQ Sumrall, MS

Propagation Systems Inc.
PO Box 113
Ebensburg, PA 15931

Composite Pattern Tabulation

Antenna: PSIFM-8C-DA
Unity Broadcasters
Station: WGDQ
Frequency: 93.1 MHz
Location: Sumrall, MS
Maximum ERP: 25 kW (13.98 dBk)

Angle	Relative Field	ERP (kW)	ERP (dBk)
0	0.897	20.12	13.04
10	0.914	20.87	13.19
20	0.934	21.80	13.38
30	0.952	22.66	13.55
40	0.950	22.57	13.53
50	0.932	21.72	13.37
60	0.898	20.14	13.04
70	0.874	19.11	12.81
80	0.845	17.86	12.52
90	0.866	18.74	12.73
100	0.896	20.08	13.03
110	0.937	21.93	13.41
120	0.976	23.82	13.77
130	0.996	24.79	13.94
135	1.000	25.00	13.98
140	0.998	24.92	13.96
150	0.970	23.51	13.71
160	0.899	20.21	13.06
170	0.777	15.10	11.79
180	0.621	9.63	9.83
190	0.510	6.51	8.13
200	0.482	5.81	7.64
210	0.498	6.21	7.93
220	0.628	9.85	9.93
230	0.707	12.50	10.97
240	0.719	12.91	11.11
250	0.666	11.09	10.45
260	0.574	8.23	9.16
270	0.482	5.82	7.65
280	0.582	8.46	9.27
290	0.709	12.57	10.99
300	0.823	16.94	12.29
310	0.908	20.60	13.14
320	0.948	22.46	13.51
330	0.957	22.87	13.59
340	0.973	23.64	13.74
350	0.950	22.54	13.53


PSI ψ
Relative Field Elevation Pattern
Model: PSIFM-8C-DA
Type: 8-Bay Directional FM Antenna
Polarization: Circular
Call Letters: WGDQ
Gain: 5.41 (7.33 dB)
RELATIVE FIELD
1
.9
.8
.7
.6
.5
.4
.3
.2
.1
30
20
10
0
−10
−20
−30
−40
−50
−60
−70
−80
−90
DEGREES BELOW HORIZONTAL

Uncrating

When uncrating the antenna system, open each crate carefully so that the crates may be used to return any merchandise that may have been damaged in shipping. Separate all parts and confirm that all items on the packing list have been received. If any parts are missing, notify PSI or it's agent prior to assembling the antenna. If any parts are damaged through shipment or are missing, **promptly** notify the shipping carrier.

General Notes

1. Review antenna elevation and plan the installation. The antenna brackets have been designed for tower leg mount. All guy wires in the aperture of the antenna should be replaced with the appropriate fiberglass substitute.
2. All bays are to be aligned to the same azimuth angle.
3. Exercise care when assembling the inner conductors of the coaxial line. The bullet should fit firmly in the inner conductor in order to assure a proper connection.
4. The feed points are in the up position.
5. Install one bay/inter-bay assembly at a time.
6. Keep all transmission lines free from dirt and moisture. All Teflon insulators must be clean and dry.
7. The antenna requires pressurization.
8. The antenna has been tuned at the factory and should not require field adjustment.
9. The antenna system should be tested before the erector leaves the premises to insure that the complete antenna system is functioning properly.

Installation Instructions

Step One

Review the enclosed drawings and read all steps for a general overview of the antenna installation. Plan the installation before erecting. It may be necessary to measure the antenna layout on the tower to avoid any conflicts that might arise with the mounting brackets. Bay one is to mount approximately 29" below the tower top. The instructions have been written based on starting with bay one. The antenna can be installed starting with bay eight at the tower crew's discretion.

Step Two

Starting with bay one, attach the radiating element to inter-bay one using the supplied O-ring and 5/16-18 x 7/8" bolts and lock washers. Next attach the end cap to the inter-bay tee block. Attach a bay bracket to the horizontal boom of the radiating element using the supplied #28 hose clamps. Attach an inter-bay bracket approximately 12-18" below the bay using the supplied #28 hose clamps. The top bay (element one) is to be mounted approximately 29" below the top of the tower. Hoist the assembled bay and inter-bay to the appropriate elevation and secure to the northeast tower leg with the supplied 1/2-13 x 6" bolts and back plates. **Use caution when erecting. The inter-bay inner conductor**

is not captivated. Secure the inner conductor before erecting the assembly. The element feed point must be positioned with the Teflon insulator up. After securing the brackets to the tower, align the bay 64 degrees true.

Attach a horizontal parasitic to the tower leg directly behind the antenna bay using the supplied 3/8-16 x 2" ID U-bolt. The horizontal parasitic must be perpendicular to the boom of the bay. Next attach the vertical parasitic elements to the southeast and northwest tower legs. Attach the 51" long vertical parasitic, drawing J906FM-557-010, to the northwest leg and the 53.1 parasitic to the southeast leg. The parasitic elements must be at the same elevation of element boom. Position the vertical elements according to the dimensions in drawing J906FM-557-002.

Step Three

Follow the same procedure for bay two. Attach bay two to it's corresponding inter-bay and attach the bay and inter-bay brackets. Hoist the assembly and connect bay two/inter-bay assembly to inter-bay one using the supplied O-ring and 5/16-18 x 7/8" bolts and lock washers. **Use caution when erecting. The inter-bay inner conductor is not captivated. Secure the inner conductor before erecting the assembly.** Use caution not to split the anchor insulator connector when assembling the line sections. The element feed point must be positioned with the Teflon insulator up. Attach the parasitic elements to the tower legs.

Step Four

Follow the same procedure for bay three and bay four. Inter-bay four has been shipped pre-assembled to the center tee section and inter-bay five. The black band on the center tee section must be up. It may be necessary to disconnect inter-bay five. **Use caution when erecting.** For best support, attach inter-bay four bracket between the input elbow and bay four. The elbow that attaches to the center tee must be at a right angle to the antenna boom. Continue stacking the antenna. It may be necessary to invert a bay bracket to avoid tower members.

Step Five

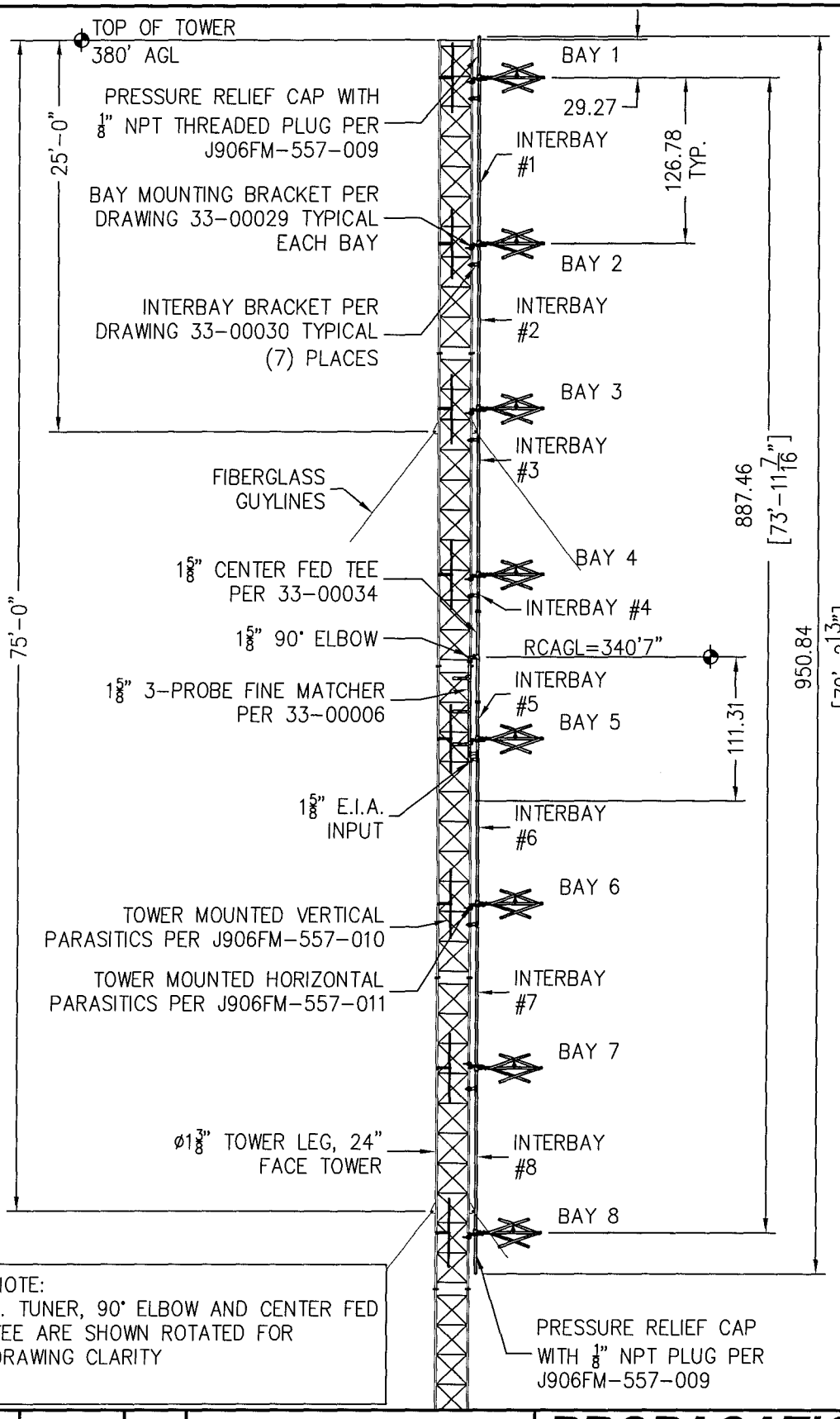
Connect the 1-5/8" elbow to the center tee section. The center tee section should be positioned to allow the elbow to pass on the outside of the bay bracket. Connect the fine matcher to the elbow. Attach the end of the fine matcher with the black band to the 1-5/8" elbow.

Step Six

Check all bolted connections for tightness. Connect the main transmission line to the antenna input located at the base of the fine matcher. **Do not allow the weight of the feed line to be supported by antenna.** The antenna system should be tested before the erector leaves the premises to insure that the complete antenna system is functioning properly. The antenna has been tested and tuned at the factory. It should not require tuning, however the antenna has been supplied with a fine matcher that can be adjusted for optimum VSWR. Consult the factory before making adjustments to the fine matcher. The system should be tested before the tower crew leaves the site. The antenna requires pressurization with dry air or nitrogen to a maximum of 5 psi.

Drawing Index

Drawing Number	Description
J906FM-557-001	Antenna Elevation
J906FM-557-002	Antenna Orientation
J906FM-557-013	Bay 1 and Bay 2 Side View
J906FM-557-016	Parasitic Elevation
J906FM-557-014	Bay 4 and Bay 5 Side View
J906FM-557-015	Bay 7 and Bay 8 Side View
33-00034B	Center Tee Section
35-00006	Fine Matcher
J906FM-557-011	Horizontal Parasitic
J906FM-557-010	Vertical Parasitic
J906FM-557-009	End Cap
33-00029	Bay Mounting Bracket
33-00030	Inter-bay Mounting Bracket
33-50032	Tuner/Center Tee Bracket



NOTE:
1. TUNER, 90° ELBOW AND CENTER FED TEE ARE SHOWN ROTATED FOR DRAWING CLARITY

SPECIFICATIONS	
FREQUENCY:	93.1 MHz
BAY SPACING:	126.78" (1.0λ)
LENGTH:	79.24 Ft.
APERATURE:	73.96 Ft.
RATING:	12 kW
GAIN:	5.41 (7.33 dB)
WEIGHT:	648.9 Lb
WINDAREA: (NO ICE)	52.69 Sq. Ft.

REV.	MADE BY / CHECKED BY	DATE	CHANGE

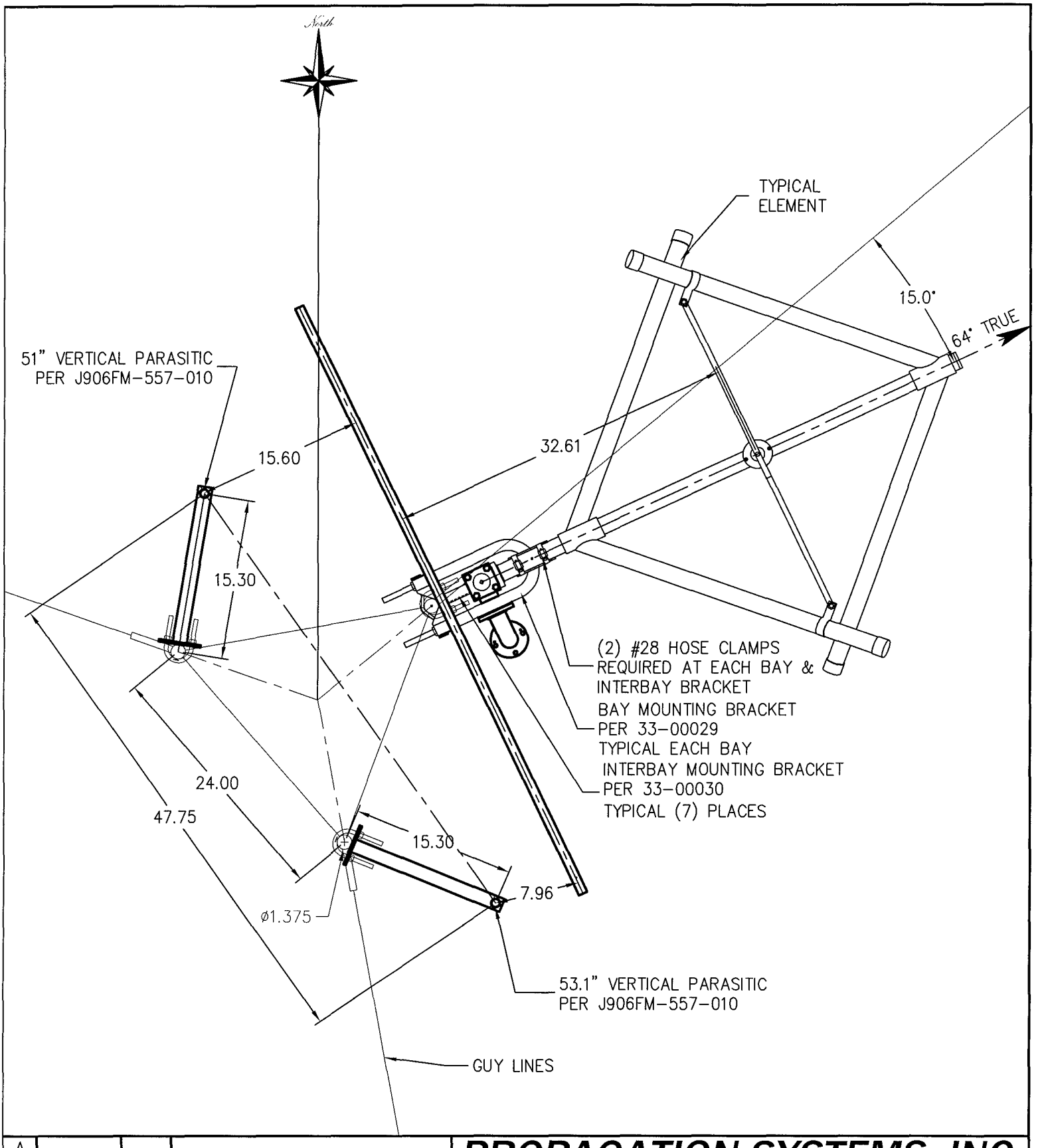
SIZE: A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

ANTENNA ELEVATIONS AND SPECIFICATIONS

MODEL:	DRAWN BY:	DATE:
PSIFM-8C-DA	D.G. Kellar	9/18/06
CHANNEL/ FREQUENCY: 93.1 MHz	APPROVED BY:	DATE:
SCALE: 1:120	DRAWING NO.: J906FM-557-001	REV. 0



REV.	MADE BY CHECKED BY	DATE	CHANGE
A			

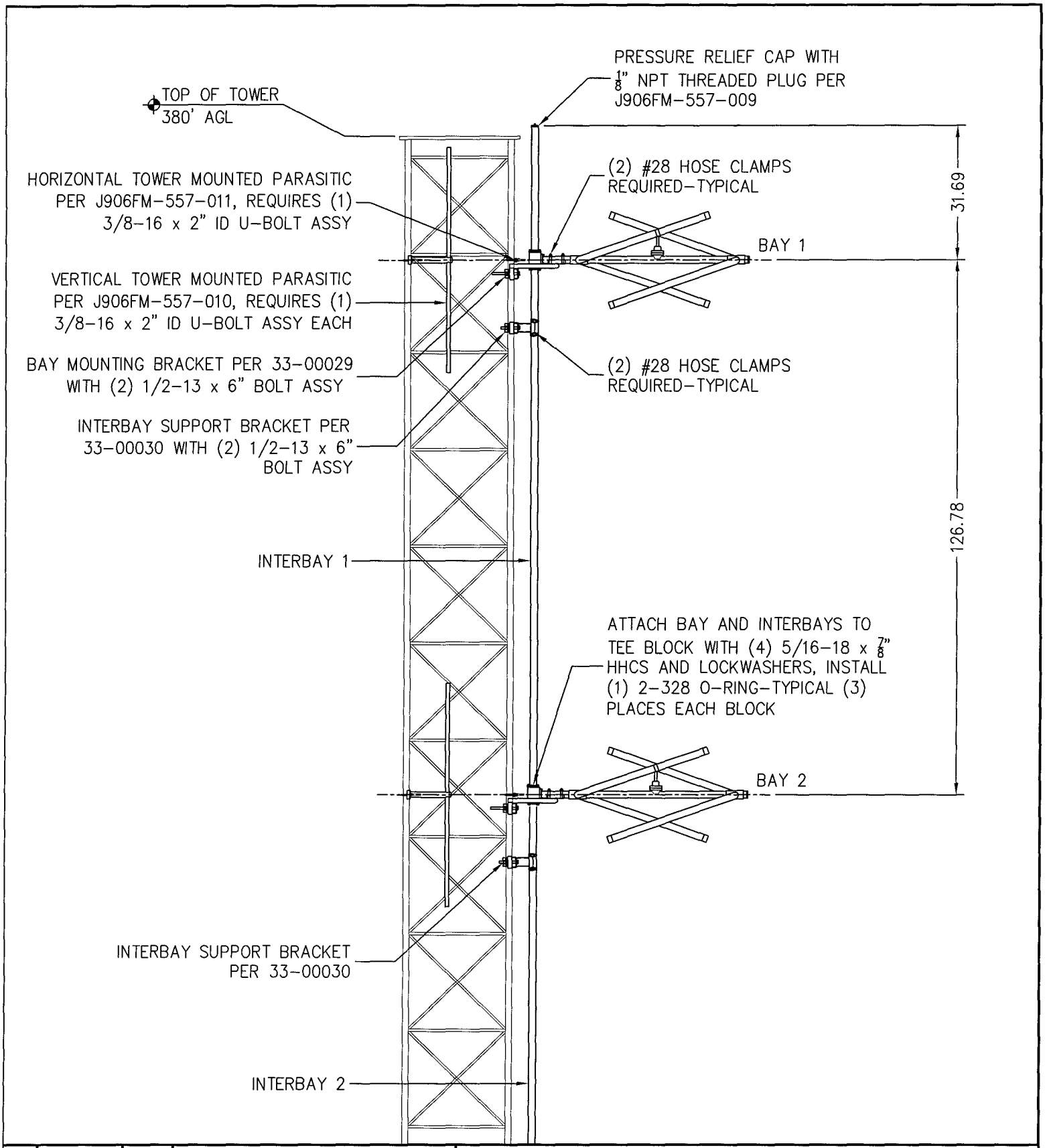
SIZE: A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

TYPICAL BAY #1 PLAN VIEW

MODEL: PSIFM-8C-DA	DRAWN BY: D.G. Kellar	DATE: 9/19/06	
CHANNEL/FREQUENCY: 93.1 MHz	APPROVED BY:	DATE:	
SCALE: 1:12	DRAWING NO.: J906FM-557-002	REV. 0	



REV.	MADE BY / CHECKED BY	DATE	CHANGE

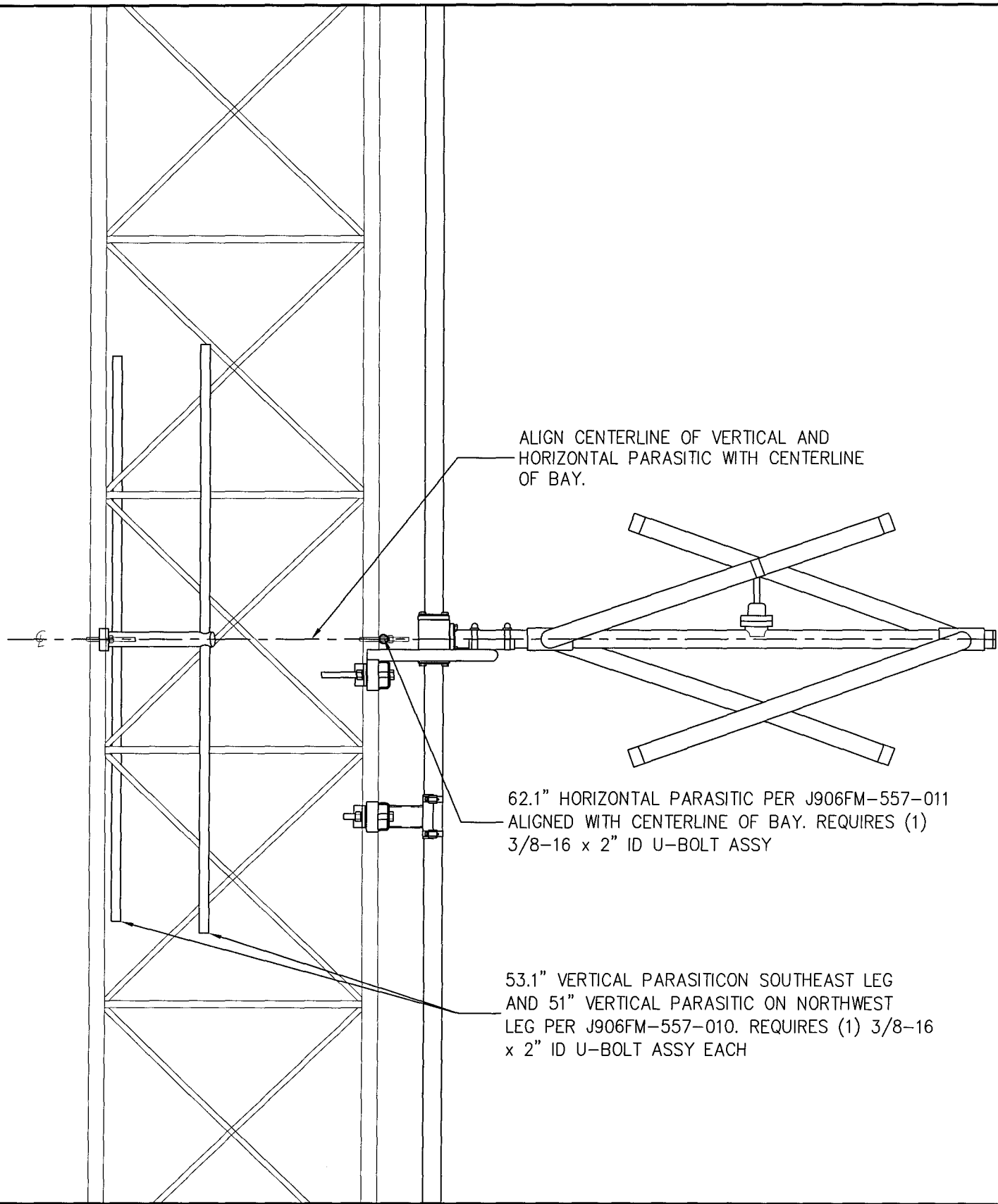
SIZE: A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

BAY 1 AND 2 ELEVATONS AND ASSEMBLY

MODEL:	DRAWN BY:	DATE:
PSIFM-8C-DA	D.G. Kellar	1/25/07
CHANNEL/ FREQUENCY: 93.1 MHz	APPROVED BY:	DATE:
SCALE: 1:30	DRAWING NO.: J906FM-557-013	REV. 0



REV.	MADE BY / CHECKED BY	DATE	CHANGE

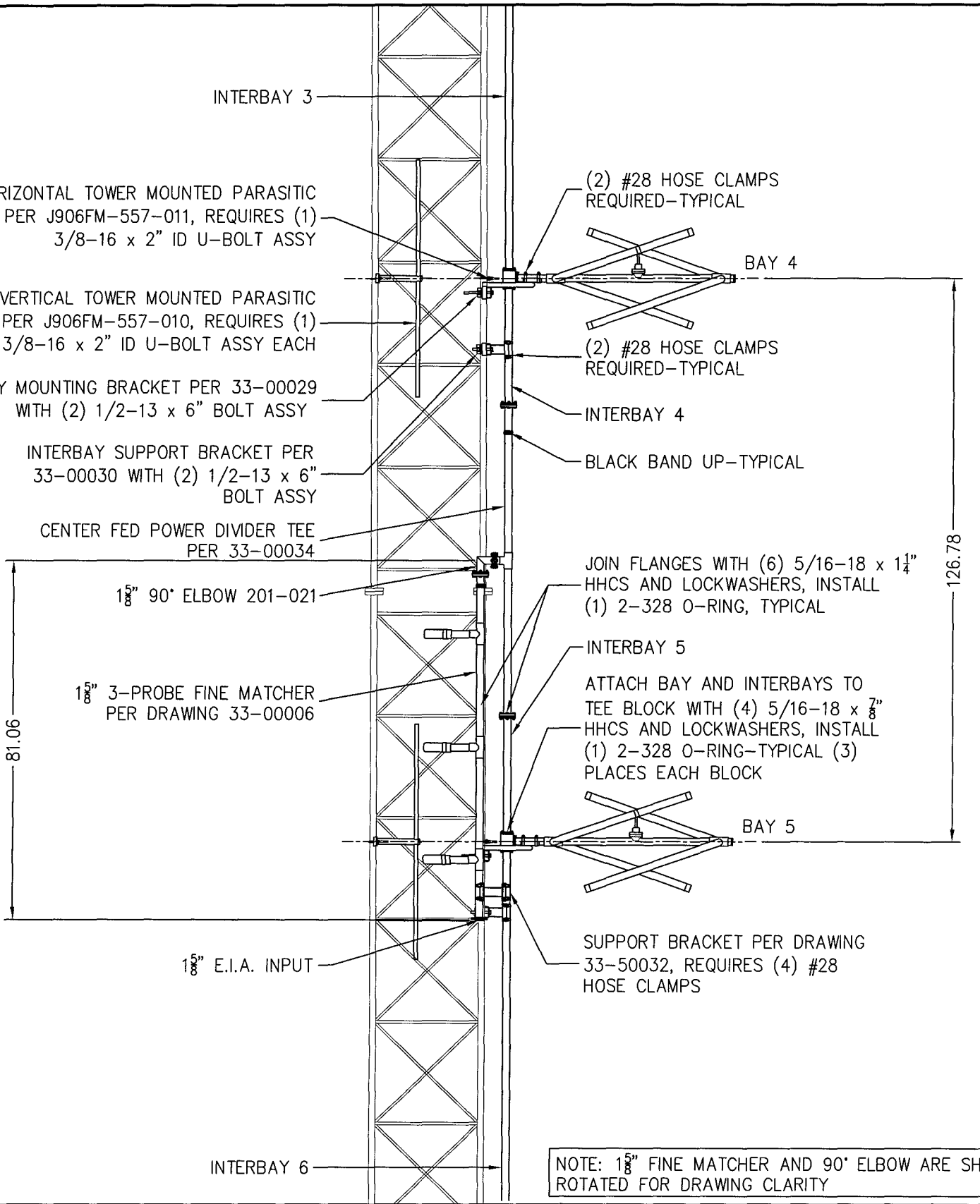
SIZE: A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

PARASITIC ELEMENT LOCATION DETAILS

MODEL: PSIFM-8C-DA	DRAWN BY: D.G. Kellar	DATE: 1/25/07
CHANNEL/FREQUENCY: 93.1 MHz	APPROVED BY:	DATE:
SCALE: 1:12	DRAWING NO.: J906FM-557-016	REV. 0



NOTE: 1 5/8" FINE MATCHER AND 90° ELBOW ARE SHOWN ROTATED FOR DRAWING CLARITY

REV.	MADE BY / CHECKED BY	DATE	CHANGE

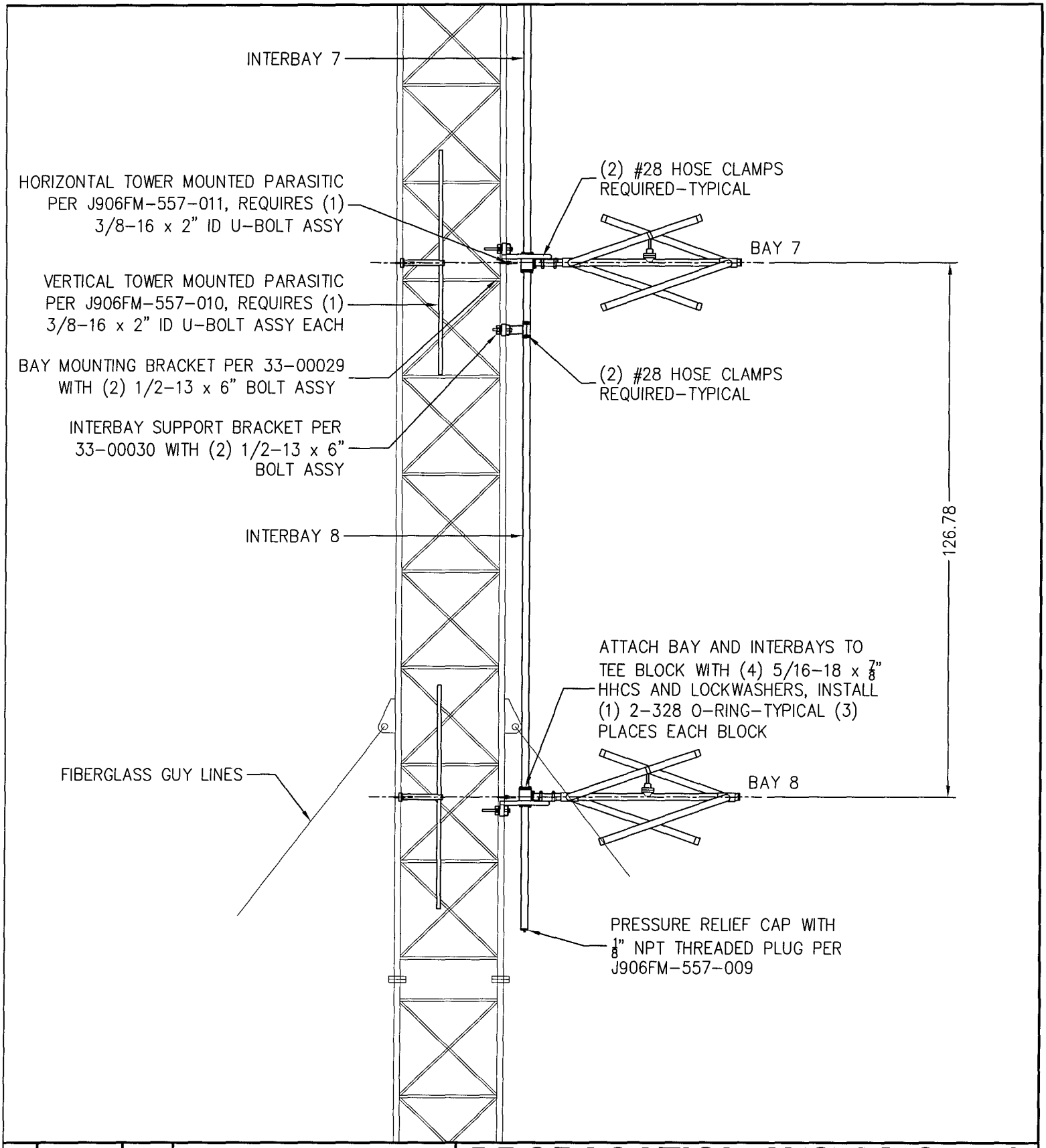
SIZE: A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

BAY 4 AND 5 ELEVATONS AND ASSEMBLY

MODEL:	DRAWN BY:	DATE:
PSIFM-8C-DA	D.G. Kellar	1/25/07
CHANNEL/FREQUENCY: 93.1 MHz	APPROVED BY:	DATE:
SCALE: 1:30	DRAWING NO.: J906FM-557-014	REV. 0



REV.	MADE BY / CHECKED BY	DATE	CHANGE

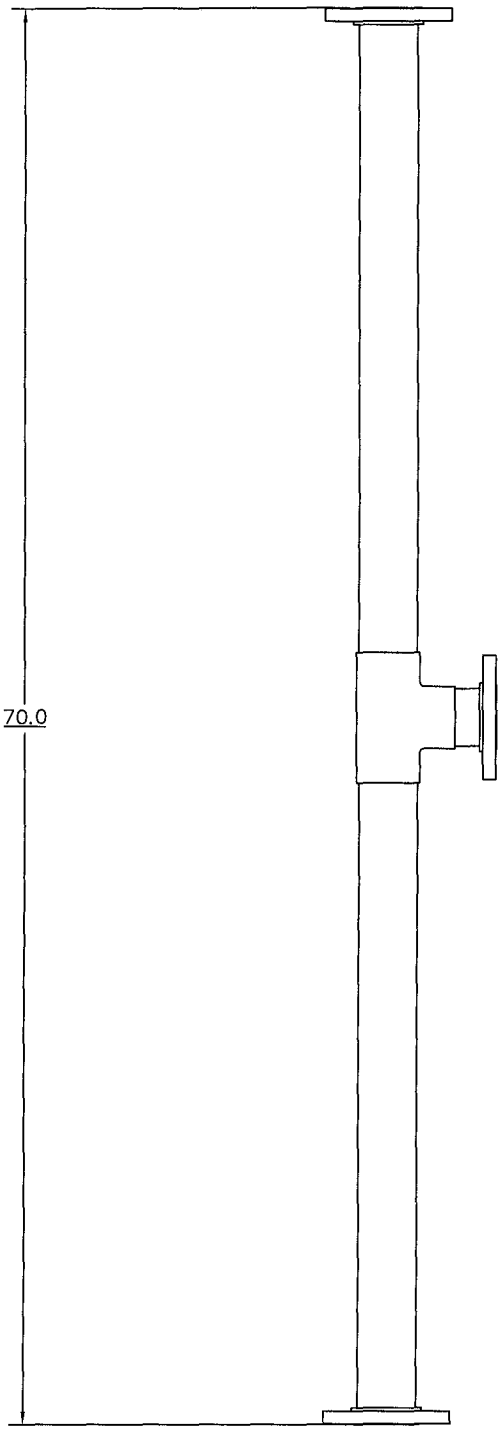
SIZE: A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

BAY 7 AND 8 ELEVATONS AND ASSEMBLY

MODEL: PSIFM-8C-DA	DRAWN BY: D.G. Kellar	DATE: 1/25/07	
CHANNEL/ FREQUENCY: 93.1 MHz	APPROVED BY:	DATE:	
SCALE: 1:30	DRAWING NO.: J906FM-557-015	REV. 0	



REV.	MADE BY / CHECKED BY	DATE	CHANGE

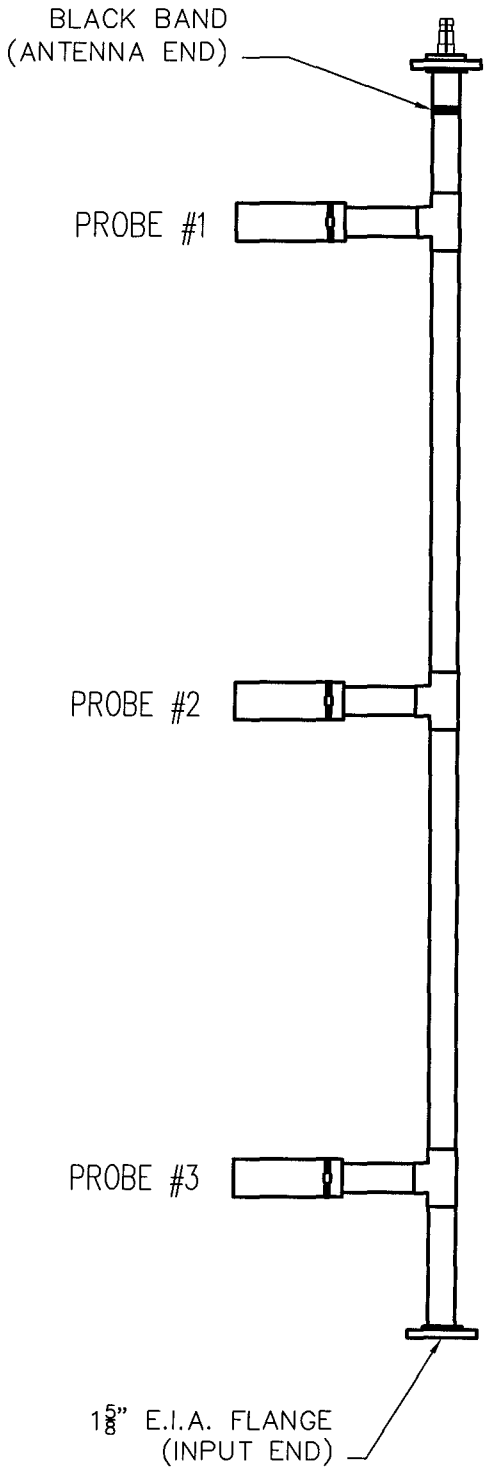
SIZE: A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

1-5/8" CENTER FED POWER DIVIDER TEE OUTLINE

MODEL:	DRAWN BY:	DATE:
PSIFM	D.G. Kellar	9/13/04
CHANNEL/ FREQUENCY:	APPROVED BY:	DATE:
SCALE: 1:5.33	DRAWING NO.: 33-00034B	REV. 0



REV.	MADE BY / CHECKED BY	DATE	CHANGE

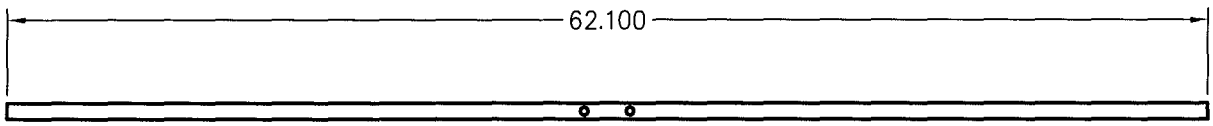
SIZE: A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

3 PROBE TUNER ASSEMBLY

MODEL:	DRAWN BY: D. RICHEY	DATE: 1-28-98
CHANNEL/ FREQUENCY:	APPROVED BY:	DATE:
SCALE: 1:16	DRAWING NO.: 33-00006	REV. 0



NOTES: (8) REQUIRED, APPROX WT: 8.7 LB/EACH, TO BE HOT DIP GALVANIZED

REV.	MADE BY / CHECKED BY	DATE	CHANGE

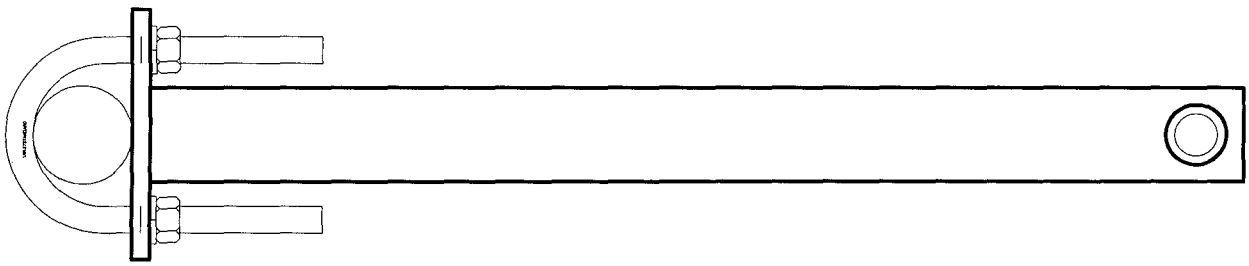
SIZE: A

PROPAGATION SYSTEMS, INC.

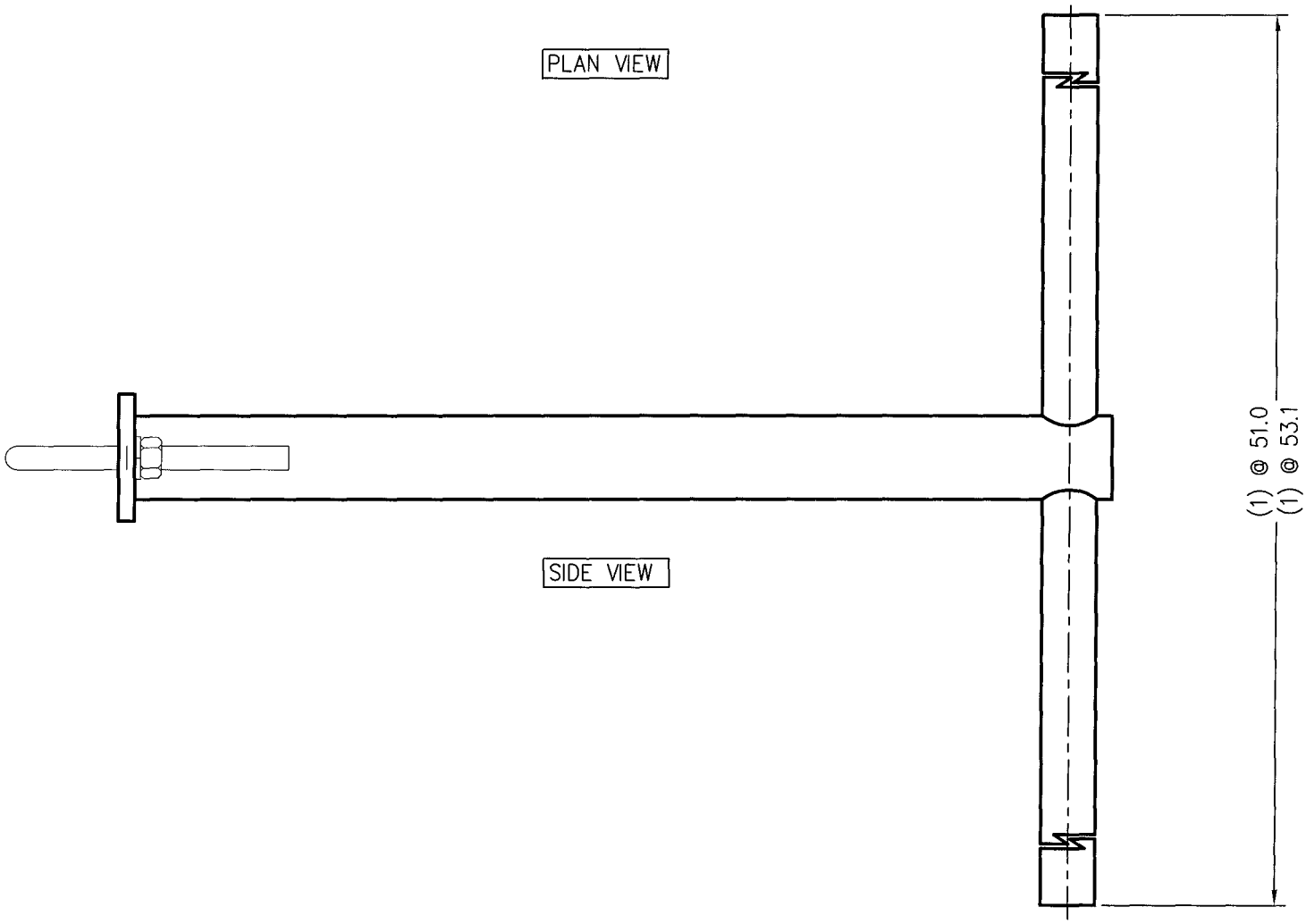
Ebensburg, Pennsylvania USA 814-472-5540

HORIZONTAL PARASITIC DETAILS

MODEL: PSIFM-8C-DA	DRAWN BY: D.G. Kellar	DATE: 12/07/06	
CHANNEL/FREQUENCY: 93.1 MHz	APPROVED BY:	DATE:	
SCALE: 1:10	DRAWING NO.: J906FM-557-011	REV. 0	



PLAN VIEW



SIDE VIEW

NOTES: (8) EACH REQUIRED, (16) TOTAL APPROX WT: 9.7 LB/EACH, TO BE HOT DIP GALVANIZED

REV.	MADE BY / CHECKED BY	DATE	CHANGE

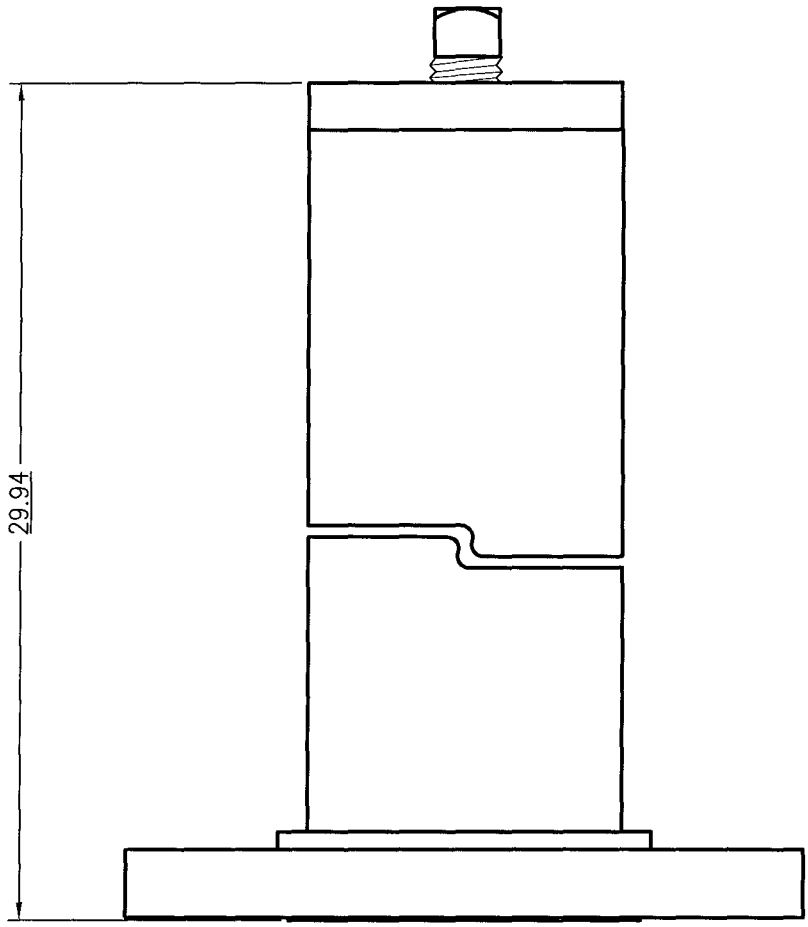
SIZE: A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

TOWER MOUNTED VERTICAL PARASITIC

MODEL: PSIFM-8C-DA	DRAWN BY: D.G. Kellar	DATE: 12/07/06
CHANNEL/FREQUENCY: 93.1 MHz	APPROVED BY:	DATE:
SCALE: 1:2.66	DRAWING NO.: J906FM-557-010	REV. 0



REV.	MADE BY / CHECKED BY	DATE	CHANGE

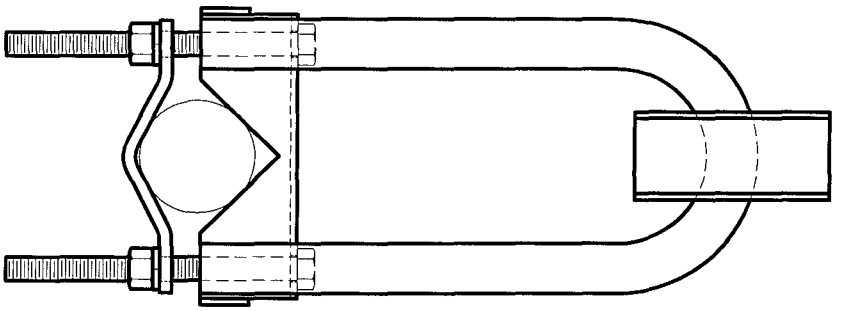
SIZE: A

PROPAGATION SYSTEMS, INC.

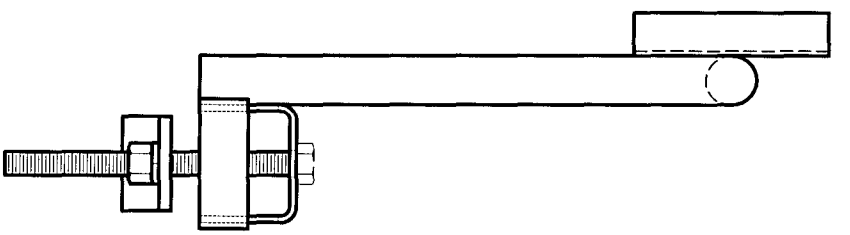
Ebensburg, Pennsylvania USA 814-472-5540

EXTENDED PRESSURE CAP

MODEL: PSIFM-8C-DA	DRAWN BY: D.G. Kellar	DATE: 10/04/06
CHANNEL/FREQUENCY: 93.1 MHz	APPROVED BY:	DATE:
SCALE: 1:1	DRAWING NO.: J906FM-557-009	REV. 0



PLAN VIEW



SIDE VIEW

REV.	MADE BY / CHECKED BY	DATE	CHANGE

MATERIAL:

TOLERANCES
UNLESS OTHERWISE NOTED
FRACTIONS X/X ±1/16"
DECIMALS XX ± .01"
DECIMALS XXX ± .005"
ANGLES ± 3°

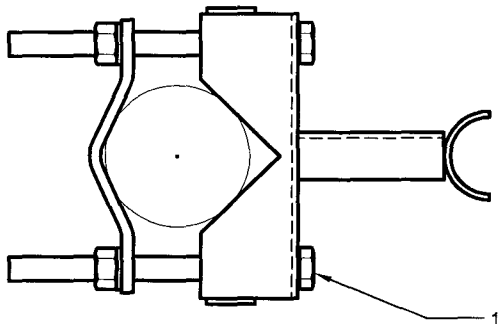
SIZE: A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA

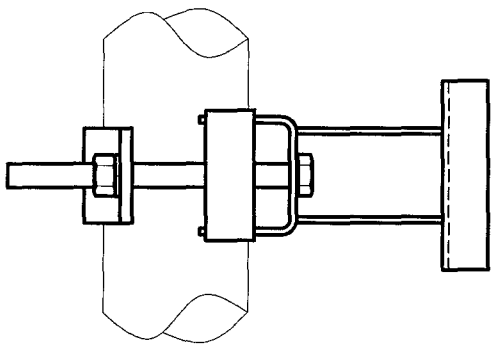
FM MOUNTING BRACKET ASSEMBLY

MODEL:	DRAWN BY: D. RICHEY	DATE: 6-24-98
CHANNEL/ FREQUENCY:	APPROVED BY:	DATE:
SCALE: 1: 4	PART NO.: 33-00029	DRAWING NO.: 33-00029 REV. A

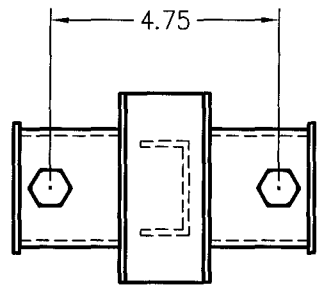


1/2-13 x 6" GALVANIZED HEXHEAD BOLT
HEXNUT AND HELICAL LOCKWASHERS
(2) PLACES EACH BRACKET

PLAN VIEW



SIDE VIEW



FRONT VIEW

REV.	MADE BY / CHECKED BY	DATE	CHANGE

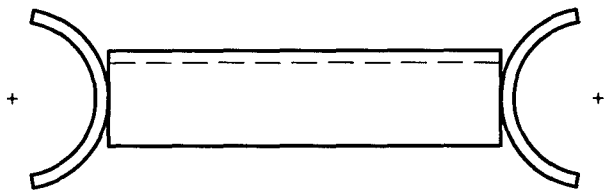
SIZE: A

PROPAGATION SYSTEMS, INC.

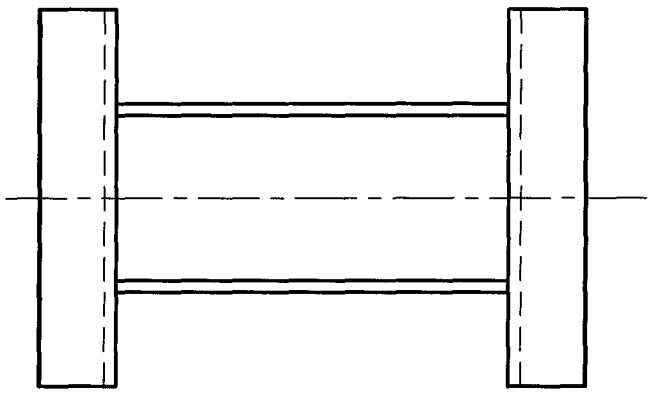
Ebensburg, Pennsylvania USA 814-472-5540

SUPPORT BRACKET OUTLINE

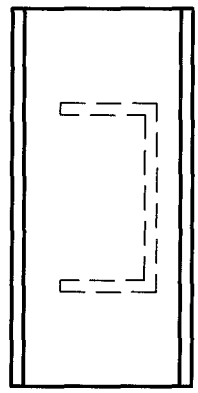
MODEL:	DRAWN BY: P. MCINTOSH	DATE: 12-19-00
CHANNEL / FREQUENCY:	APPROVED BY:	DATE:
SCALE: 1:4	DRAWING NO.: 33-00030	REV. 0



PLAN VIEW



SIDE VIEW



END VIEW

REV.	MADE BY / CHECKED BY	DATE	CHANGE

MATERIAL:

ALL COMPONANTS SHOWN ARE MILD STEEL, HOT DIP GALVANIZED

TOLERANCES
UNLESS OTHERWISE NOTED
FRACTIONS X/X ±1/16"
DECIMALS XX ± .01"
DECIMALS XXX ± .005"
ANGLES ± 3°

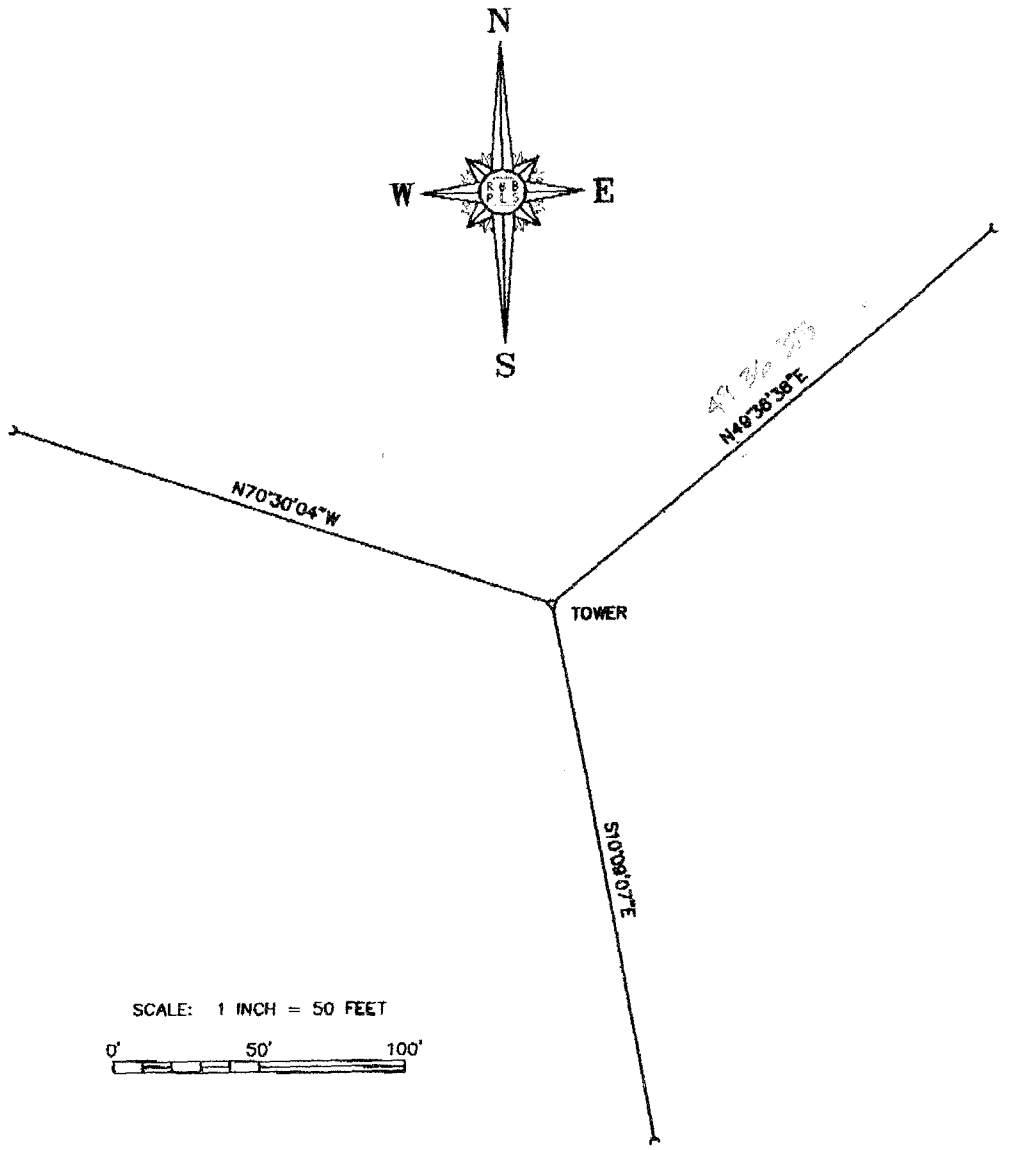
SIZE: A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA

TUNER BRACKET FOR CENTER FEED

MODEL:		DRAWN BY: P. MCINTOSH	DATE: 9-3-99
CHANNEL/ FREQUENCY:		APPROVED BY:	DATE:
SCALE: 1:2	PART NO.: 33-50032	DRAWING NO.: 33-50032	REV. 0



WJMG TOWER ORIENTATION,
LAKEWOOD LOOP, HATTIESBURG,
FORREST COUNTY, MISSISSIPPI.

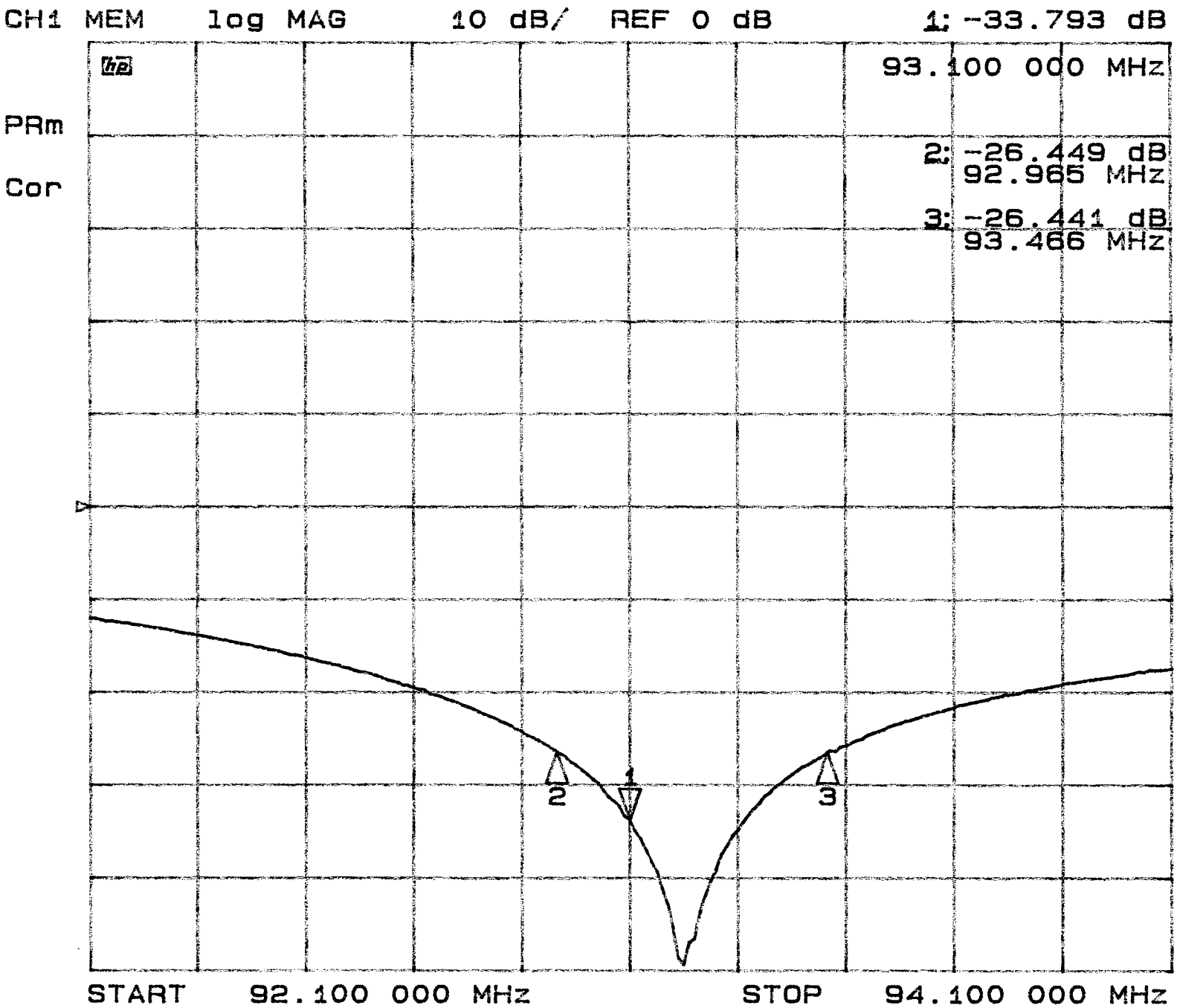
Richard B. Brantley, PLS, Inc.
Land Surveying and Mapping
103 Broad Street
Hattiesburg, Mississippi 39401
(601) 544-1825

CLIENT: WJMG	INFORMATION SOURCE	BASIS OF BEARING
SURVEY CLASSIFICATION: N/A		
SERIAL NUMBER: 117-06		
DRAWING NUMBER: 3847	N/A	SOLAR OBSERVATION
DATE: OCTOBER 23, 2006		
DRAWN BY: B. BRANTLEY		

RICHARD B. BRANTLEY
PROFESSIONAL LAND SURVEYOR
1795
STATE OF MISSISSIPPI

537

Final


CH1 MEM log MAG 10 dB/ REF 0 dB
1: -33.793 dB
93.100 000 MHz
PRm
Cor
2: -26.449 dB
92.965 MHz
3: -26.441 dB
93.466 MHz
START 92.100 000 MHz
STOP 94.100 000 MHz