



Propagation Systems, Inc.

Quality Broadcast Antenna Systems

**Directional FM Antenna
WLKM-FM
Impact Radio, LLC
Three Rivers, MI**

A standard model PSIFM antenna with parasitic elements was used in conjunction with a model of the customer's round support mast to create the necessary directional radiation pattern. The final antenna consists of three radiating elements each secured to the mast with a custom-mounting bracket. The antenna bays are full wavelength spaced and there is one horizontal parasitic element per bay. The antenna array is end fed. Each radiating element receives equal power and phase.

Pattern testing was performed using a 1/3-scale model element and mast. 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 mast 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 antenna and mounting structure were 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 287.7 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 92% of the envelope RMS.

The antenna is to be mounted 123.4 meters (405 ft) above ground level per the construction permit. A deviation of +2/-4 meters from the approved center of radiation is allowed. No other antenna can be installed within 10 ft of any radiating element. The antenna is to be mounted to the support mast and positioned 135° True and certified by a licensed surveyor. 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 1.56 kW will be required at the antenna input in order to reach the licensed 3.6 kW ERP. The transmitter output power requirements are dependent upon the transmission line size and length used to feed the antenna. The final length of transmission line must be determined after installation.

Antenna Specifications

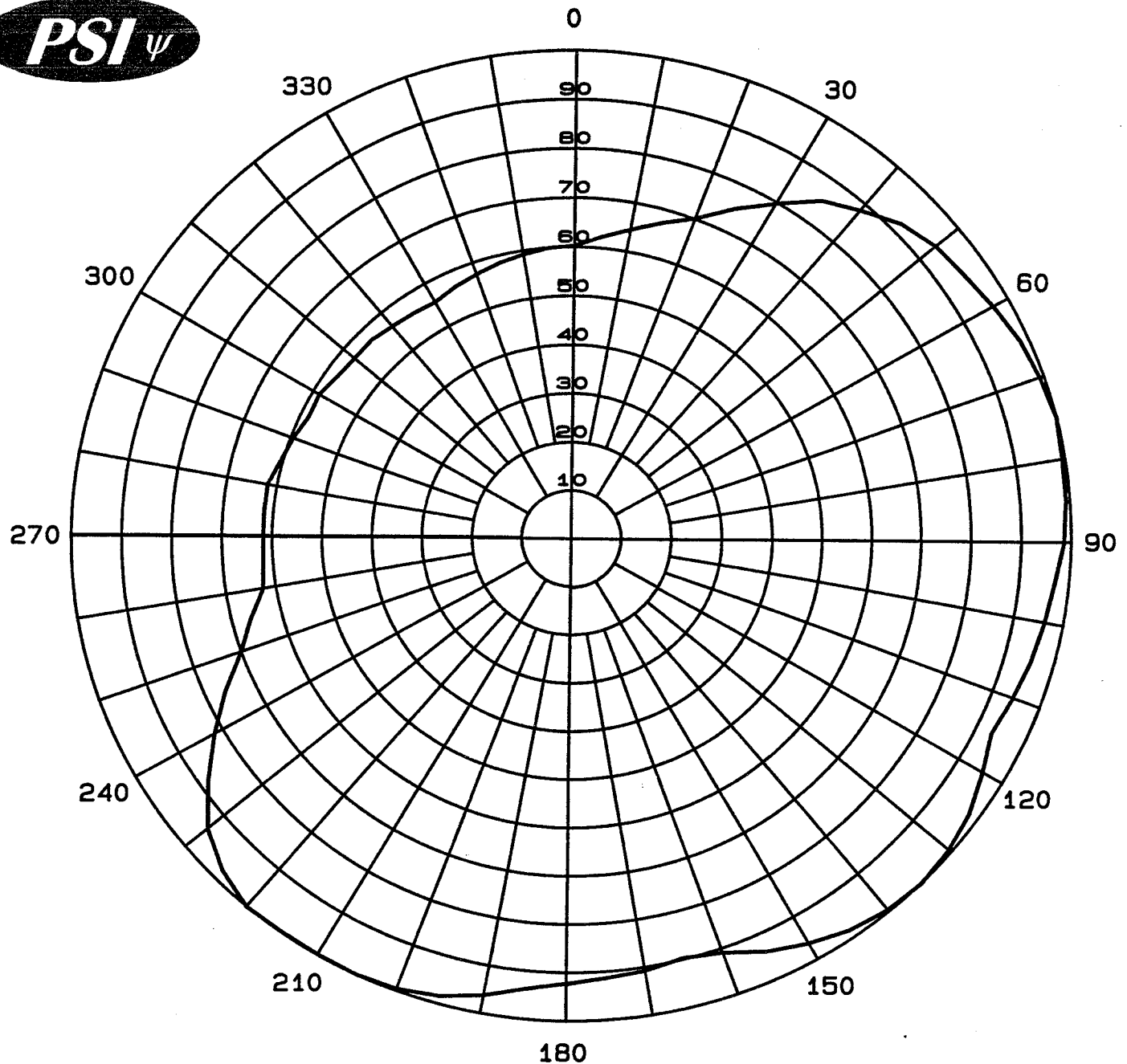
Antenna Model	PSIFM-3-DA
Type	3-bay directional FM antenna
Bay Spacing	Full wavelength spaced elements
Frequency	95.9 MHz
Polarization	Circular
Envelope RMS	.907
Composite RMS	.834
Gain (h-pol)	2.31 (3.64 dB)
Gain (v-pol)	2.31 (3.64 dB)
Input	1-5/8" EIA end fed input
Input power	1.56 kW
Power rating	9 kW
Length	32.3 ft.
Weight	244 lbs.
Wind Area	18.91 sq. ft.

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.

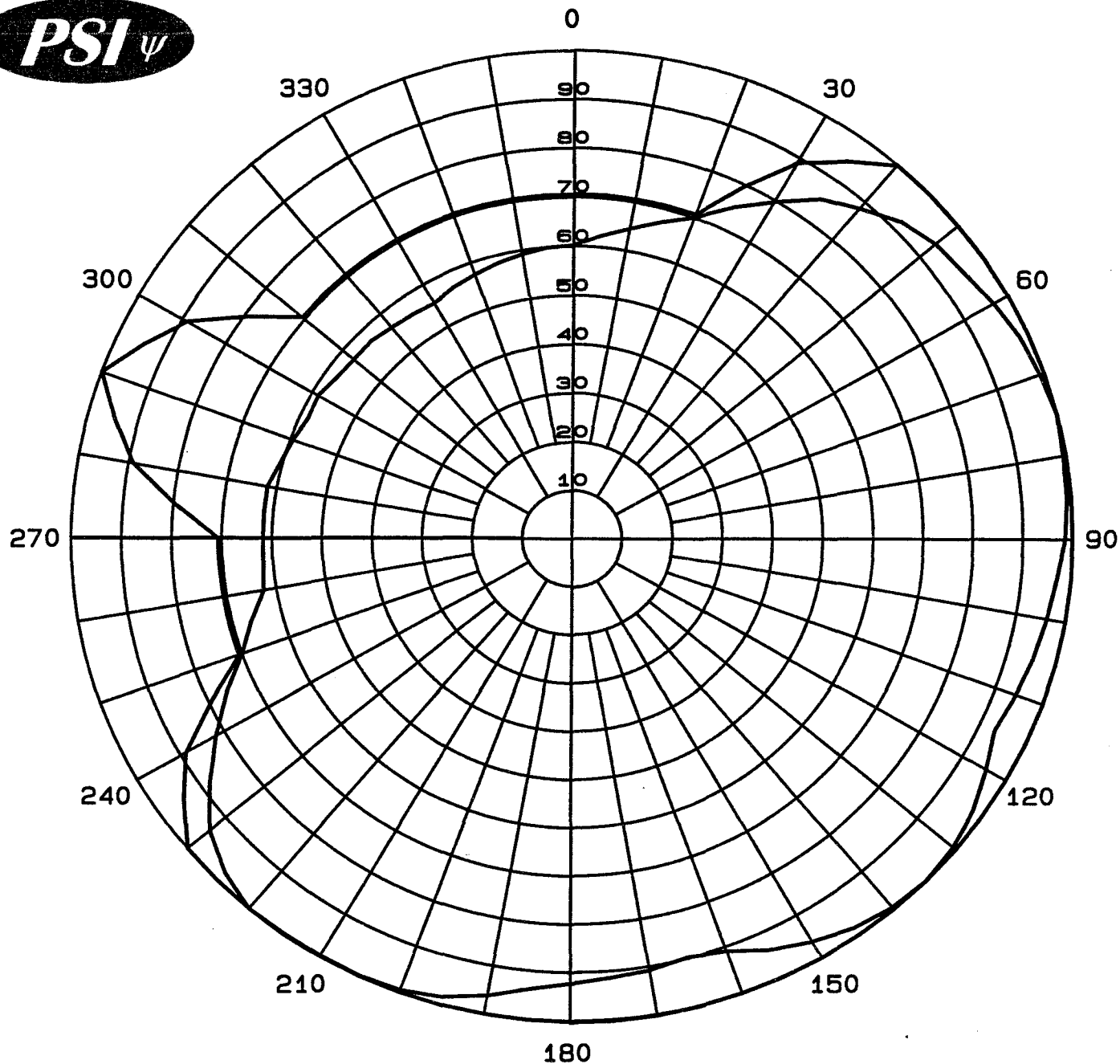


Douglas A. Ross
President
Propagation Systems Inc.



Measured Composite Pattern
Azimuth Plane Pattern
Antenna: PSIFM-3-DA
Type: 3-Bay Directional FM Antenna
ERP: 3.6 kW (5.56 dBK)
RMS envelope: .907
RMS composite: .834
WLKM Three Rivers, MI

Propagation Systems Inc.
PO Box 113
Ebensburg, PA 15931



Maximum Envelope and
Measured Composite Pattern
Antenna: PSIFM-3-DA
Type: 3-Bay Directional FM Antenna
ERP: 3.6 kW (5.56 dBK)
RMS envelope: .907
RMS composite: .834
WLKM Three Rivers, MI

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Composite Pattern Tabulation

Antenna: PSIFM-3-DA

Impact Radio, LLC

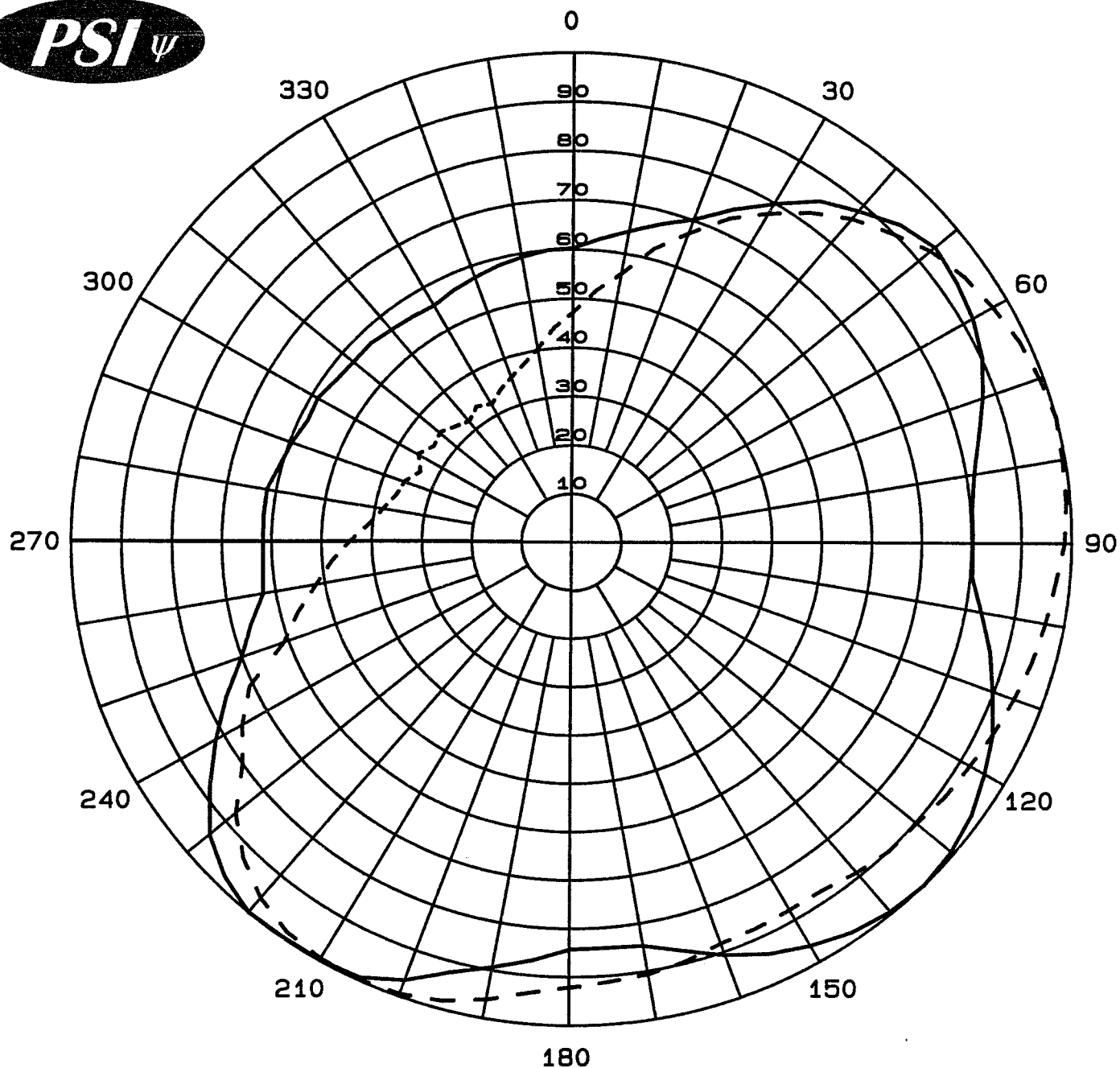
Station: WLKM

Frequency: 95.9 MHz

Location: Three Rivers, MI

Maximum ERP: 3.6 kW (5.56 dBk)

Angle	Relative Field	ERP (kW)	ERP (dBk)
0	0.602	1.305	1.15
10	0.645	1.498	1.75
20	0.701	1.769	2.48
30	0.798	2.292	3.60
40	0.885	2.820	4.50
50	0.942	3.195	5.04
60	0.967	3.366	5.27
70	0.991	3.535	5.48
80	0.994	3.557	5.51
90	0.985	3.493	5.43
100	0.962	3.332	5.23
110	0.942	3.195	5.04
120	0.955	3.283	5.16
130	0.993	3.550	5.50
140	0.995	3.564	5.52
150	0.962	3.332	5.23
160	0.908	2.968	4.72
170	0.905	2.948	4.70
180	0.920	3.047	4.84
190	0.961	3.325	5.22
200	0.995	3.564	5.52
210	0.998	3.586	5.55
220	1.000	3.600	5.56
230	0.943	3.201	5.05
240	0.821	2.427	3.85
250	0.702	1.774	2.49
260	0.627	1.415	1.51
270	0.618	1.375	1.38
280	0.619	1.379	1.40
290	0.596	1.279	1.07
300	0.587	1.240	0.94
310	0.572	1.178	0.71
320	0.566	1.153	0.62
330	0.558	1.121	0.50
340	0.576	1.194	0.77
350	0.592	1.262	1.01



Measured Relative Field
Azimuth Plane Pattern
Antenna: PSIFM-3-DA
Type: 3-Bay Directional FM Antenna
Polarization: Circular
Gain H-pol (solid): 2.31 (3.64 dB)
Gain V-pol (dash): 2.31 (3.64 dB)
WLKM Three Rivers, MI

Propagation Systems Inc.
PO Box 113
Ebensburg, PA 15931

Measured Relative Field Tabulation

Antenna: PSIFM-3-DA
Impact Radio, LLC
Station: WLKM
Frequency: 95.9 MHz
Location: Three Rivers , MI

Horizontal Polarization

Angle	Relative Field	Power Gain	Gain (dB)
0	0.602	0.837	-0.77
10	0.645	0.961	-0.17
20	0.701	1.135	0.55
30	0.798	1.471	1.68
40	0.885	1.809	2.57
50	0.942	2.050	3.12
60	0.921	1.959	2.92
70	0.872	1.756	2.45
80	0.815	1.534	1.86
90	0.801	1.482	1.71
100	0.832	1.599	2.04
110	0.897	1.859	2.69
120	0.955	2.107	3.24
130	0.993	2.278	3.58
140	0.995	2.287	3.59
150	0.962	2.138	3.30
160	0.908	1.905	2.80
170	0.845	1.649	2.17
180	0.841	1.634	2.13
190	0.892	1.838	2.64
200	0.965	2.151	3.33
210	0.998	2.301	3.62
220	1.000	2.310	3.64
230	0.943	2.054	3.13
240	0.821	1.557	1.92
250	0.702	1.138	0.56
260	0.627	0.908	-0.42
270	0.618	0.882	-0.54
280	0.619	0.885	-0.53
290	0.596	0.821	-0.86
300	0.587	0.796	-0.99
310	0.572	0.756	-1.22
320	0.566	0.740	-1.31
330	0.558	0.719	-1.43
340	0.576	0.766	-1.16
350	0.592	0.810	-0.92

Maximum Value

Field 1.00
Gain 2.31 (3.64 dB)
Azimuth Bearing 135,220 degrees

Minimum Field

Field 0.558
Gain .719 (-1.43 dB)
Azimuth Bearing 330 degrees

Vertical Polarization

Angle	Relative Field	Power Gain	Gain (dB)
0	0.471	0.512	-2.90
10	0.559	0.722	-1.42
20	0.671	1.040	0.17
30	0.776	1.391	1.43
40	0.864	1.724	2.37
50	0.930	1.998	3.01
60	0.967	2.160	3.34
70	0.991	2.269	3.56
80	0.994	2.282	3.58
90	0.985	2.241	3.50
100	0.962	2.138	3.30
110	0.942	2.050	3.12
120	0.921	1.959	2.92
130	0.902	1.879	2.74
140	0.890	1.830	2.62
150	0.876	1.773	2.49
160	0.881	1.793	2.54
170	0.905	1.892	2.77
180	0.920	1.955	2.91
190	0.961	2.133	3.29
200	0.995	2.287	3.59
210	0.995	2.287	3.59
220	0.962	2.138	3.30
230	0.875	1.769	2.48
240	0.760	1.334	1.25
250	0.612	0.865	-0.63
260	0.519	0.622	-2.06
270	0.444	0.455	-3.42
280	0.385	0.342	-4.65
290	0.357	0.294	-5.31
300	0.357	0.294	-5.31
310	0.347	0.278	-5.56
320	0.322	0.240	-6.21
330	0.325	0.244	-6.13
340	0.360	0.299	-5.24
350	0.403	0.375	-4.26

Maximum Value

Field 1.00
Gain 2.31 (3.64 dB)
Azimuth Bearing 75 degrees

Minimum Field

Field 0.322
Gain .240 (-6.21 dB)
Azimuth Bearing 320 degrees

ERP Tabulation

Antenna: PSIFM-3-DA
Impact Radio, LLC
Station: WLKM
Frequency: 95.9 MHz
Location: Three Rivers , MI
Maximum ERP: 3.6 kW (5.56 dBk)

Horizontal Polarization

Angle	Relative Field	ERP (kW)	ERP (dBk)
0	0.602	1.305	1.15
10	0.645	1.498	1.75
20	0.701	1.769	2.48
30	0.798	2.292	3.60
40	0.885	2.820	4.50
50	0.942	3.195	5.04
60	0.921	3.054	4.85
70	0.872	2.737	4.37
80	0.815	2.391	3.79
90	0.801	2.310	3.64
100	0.832	2.492	3.97
110	0.897	2.897	4.62
120	0.955	3.283	5.16
130	0.993	3.550	5.50
140	0.995	3.564	5.52
150	0.962	3.332	5.23
160	0.908	2.968	4.72
170	0.845	2.570	4.10
180	0.841	2.546	4.06
190	0.892	2.864	4.57
200	0.965	3.352	5.25
210	0.998	3.586	5.55
220	1.000	3.600	5.56
230	0.943	3.201	5.05
240	0.821	2.427	3.85
250	0.702	1.774	2.49
260	0.627	1.415	1.51
270	0.618	1.375	1.38
280	0.619	1.379	1.40
290	0.596	1.279	1.07
300	0.587	1.240	0.94
310	0.572	1.178	0.71
320	0.566	1.153	0.62
330	0.558	1.121	0.50
340	0.576	1.194	0.77
350	0.592	1.262	1.01

Maximum Value (H-pol)

Field 1.00
ERP 3.6 kW (5.56 dBk)
Azimuth Bearing 135,220 degrees

Minimum Field (H-pol)

Field 0.558
ERP 1.121 kW (0.5 dBk)
Azimuth Bearing 330 degrees

Vertical Polarization

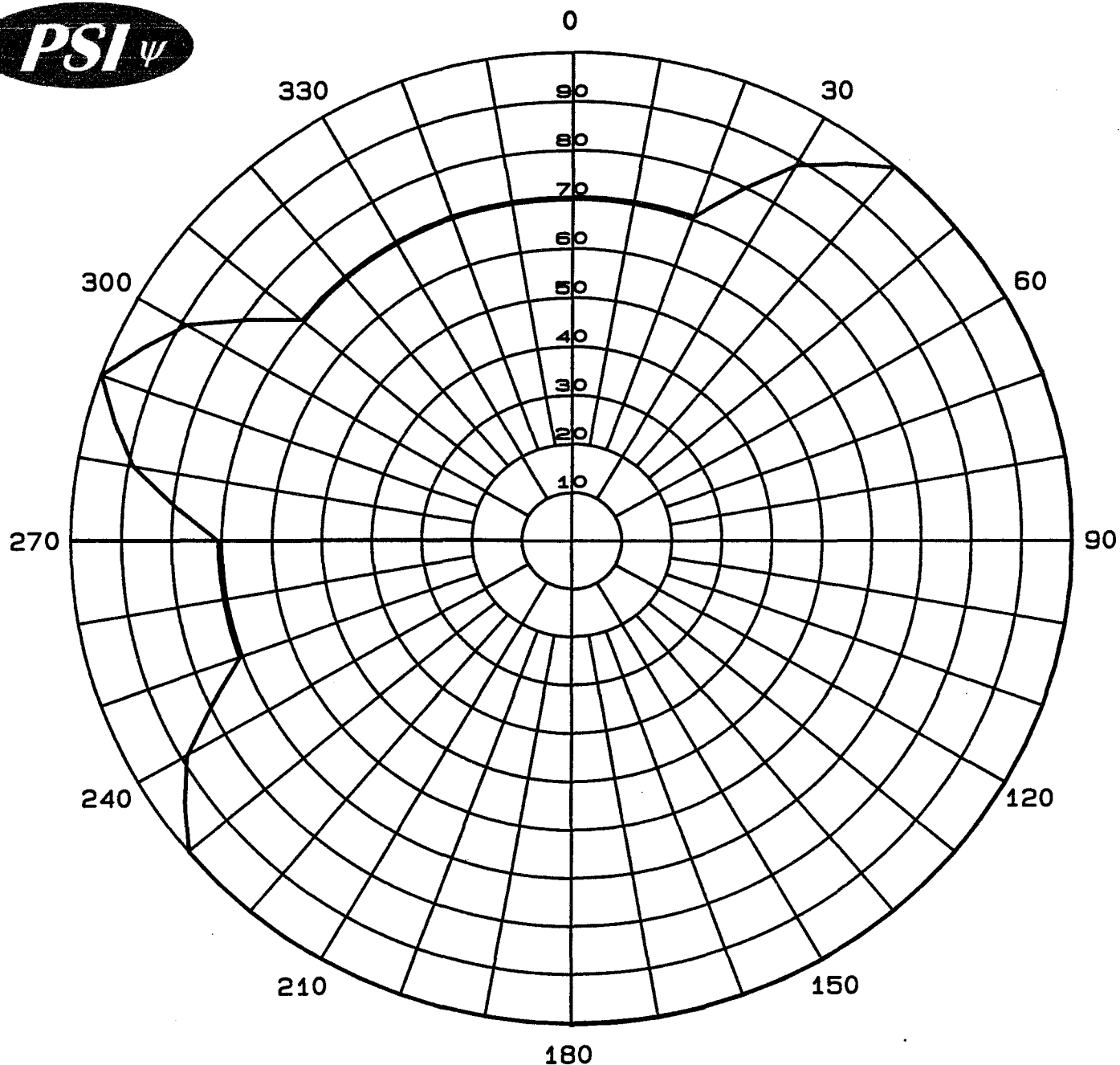
Angle	Relative Field	ERP (kW)	ERP (dBk)
0	0.471	0.799	-0.98
10	0.559	1.125	0.51
20	0.671	1.621	2.10
30	0.776	2.168	3.36
40	0.864	2.687	4.29
50	0.930	3.114	4.93
60	0.967	3.366	5.27
70	0.991	3.535	5.48
80	0.994	3.557	5.51
90	0.985	3.493	5.43
100	0.962	3.332	5.23
110	0.942	3.195	5.04
120	0.921	3.054	4.85
130	0.902	2.929	4.67
140	0.890	2.852	4.55
150	0.876	2.763	4.41
160	0.881	2.794	4.46
170	0.905	2.948	4.70
180	0.920	3.047	4.84
190	0.961	3.325	5.22
200	0.995	3.564	5.52
210	0.995	3.564	5.52
220	0.962	3.332	5.23
230	0.875	2.756	4.40
240	0.760	2.079	3.18
250	0.612	1.348	1.30
260	0.519	0.970	-0.13
270	0.444	0.710	-1.49
280	0.385	0.534	-2.73
290	0.357	0.459	-3.38
300	0.357	0.459	-3.38
310	0.347	0.433	-3.63
320	0.322	0.373	-4.28
330	0.325	0.380	-4.20
340	0.360	0.467	-3.31
350	0.403	0.585	-2.33

Maximum Value (V-pol)

Field 1.00
ERP 3.6 kW (5.56 dBk)
Azimuth Bearing 75 degrees

Minimum Field (V-pol)

Field 0.322
ERP .373 kW (-4.28 dBk)
Azimuth Bearing 320 degrees



Maximum Envelope
Azimuth Plane Pattern
Antenna: PSIFM-3-DA
Type: 3-Bay Directional FM Antenna
Polarization: Circular
ERP: 3.6 (5.56 dBk)
Frequency: 95.9 MHz
WLKM Three Rivers, MI

Propagation Systems Inc.
PO Box 113
Ebensburg, PA 15931

Maximum Envelope Tabulation

Antenna: PSIFM-3-DA

Impact Radio, LLC

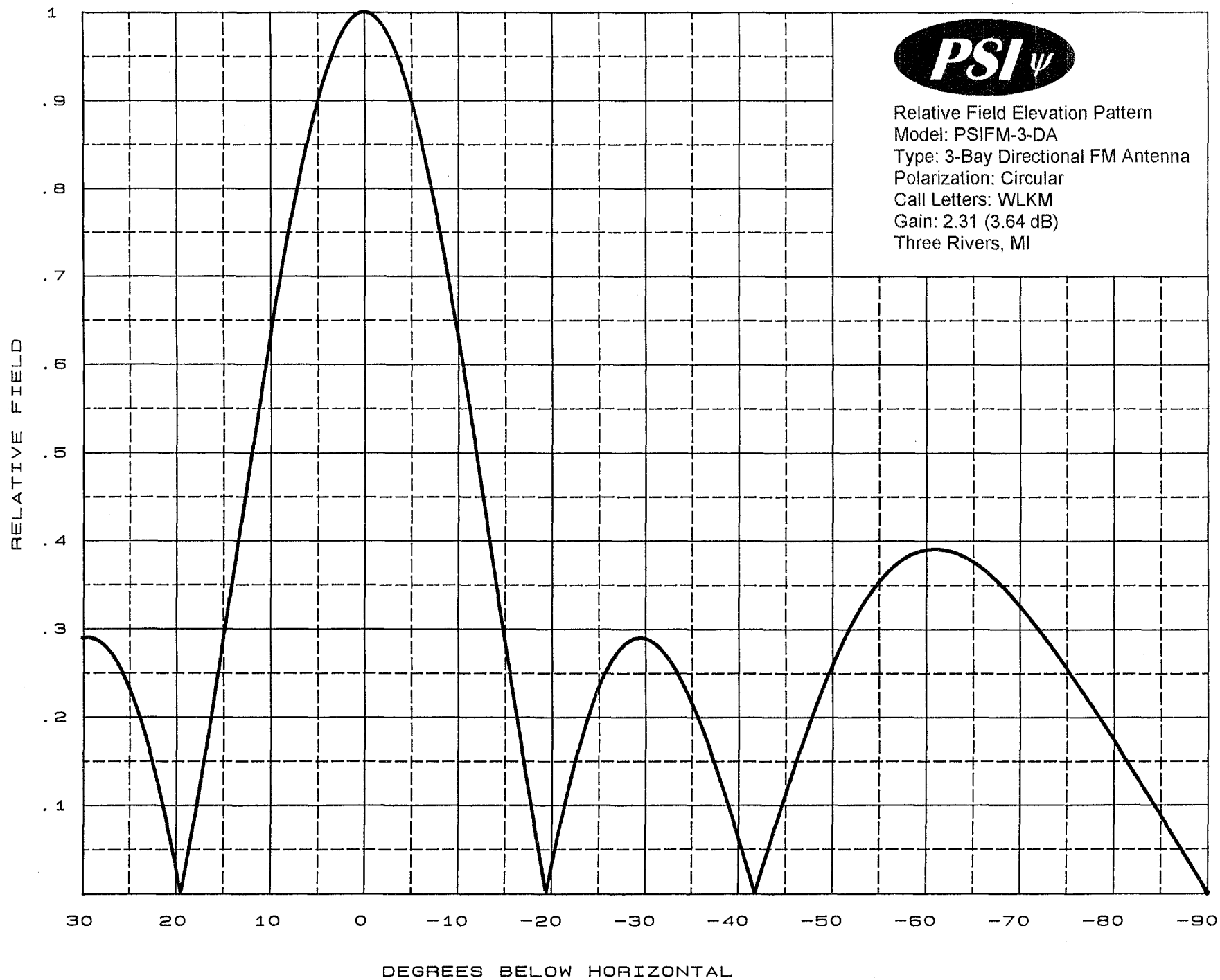
Station: WLKM

Frequency: 95.9 MHz

Location: Three Rivers, MI

Maximum ERP: 3.6 kW (5.56 dBk)

Angle	Relative Field	ERP (kW)	ERP (dBk)
0	0.707	1.799	2.55
10	0.707	1.799	2.55
20	0.707	1.799	2.55
30	0.890	2.852	4.55
40	1.000	3.600	5.56
50	1.000	3.600	5.56
60	1.000	3.600	5.56
70	1.000	3.600	5.56
80	1.000	3.600	5.56
90	1.000	3.600	5.56
100	1.000	3.600	5.56
110	1.000	3.600	5.56
120	1.000	3.600	5.56
130	1.000	3.600	5.56
140	1.000	3.600	5.56
150	1.000	3.600	5.56
160	1.000	3.600	5.56
165	1.000	3.600	5.56
170	1.000	3.600	5.56
180	1.000	3.600	5.56
190	1.000	3.600	5.56
200	1.000	3.600	5.56
210	1.000	3.600	5.56
220	1.000	3.600	5.56
230	1.000	3.600	5.56
240	0.890	2.852	4.55
250	0.707	1.799	2.55
255	0.707	1.799	2.55
260	0.707	1.799	2.55
270	0.707	1.799	2.55
280	0.890	2.852	4.55
290	1.000	3.600	5.56
300	0.890	2.852	4.55
310	0.707	1.799	2.55
320	0.707	1.799	2.55
330	0.707	1.799	2.55
340	0.707	1.799	2.55
350	0.707	1.799	2.55



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 are for a 12-3/4" diameter support mast. Be aware of possible mounting conflicts such as climbing pegs, flanges, conduits etc. and plan accordingly.
2. All bays are to be aligned to the same azimuth angle.
3. Use only the supplied hardware and O-ring at all 1-5/8" flange connections.
4. 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.
5. Check a bracket on the tower for proper fit.
6. Install one bay/inter-bay assembly at a time.
7. Keep all transmission lines free from dirt and moisture. All Teflon insulators must be clean and dry.
8. The antenna must be pressurized with dry air or nitrogen.
9. The antenna has been tuned at the factory and should not require field adjustment. However a fine matcher has been supplied and if the antenna requires tuning, consult the factory before adjustments are made.
10. The antenna system should be tested before the erector leaves the premises to insure that the complete antenna system is functioning properly.

Installation Procedure

Step One

The antenna must be installed one bay/inter-bay assembly at a time. Starting with bay 1, attach the element and end cap to inter-bay 1 block. Use only the supplied 5/16-18 x 7/8" hardware and O-ring. The element feed point must be in the up position. Refer to drawing J309FM-751-010. Next attach the bay-mounting bracket J309FM-751-003 to the boom of bay 1 using the supplied hose clamps. Attach the inter-bay bracket J309FM-751-005 to the extended pressure cap as shown in drawing J309FM-751-010. The first bay/inter-bay assembly is now ready to be installed on the tower. **The inter-bay inner conductor is not captivated. Take precautions to secure all inner conductors during erection.** Carefully hoist the first bay/inter-bay assembly to the correct location on the tower and secure the brackets to the support mast using the 5/8-11 x 12-7/8" ID U-bolts, nuts and locks. The bay is to be positioned 135 degrees true. To avoid mounting conflicts determine the bracket locations on the support mast before proceeding and plan accordingly. It may be necessary to move the antenna up or down on the

mast to avoid mounting conflicts. The bay brackets maybe inverted to provide additional mounting flexibility. Next attach the horizontal parasitic to the support mast with the supplied chain and J-bolts. Position the parasitic perpendicular to the antenna boom as shown in drawing J309FM-751-002.

Step Two

Follow the same procedure with bay 2 and 3. Attach the element to the corresponding inter-bay, attach the bay mounting bracket and hoist the assembly connecting the inter-bays on the support mast using the supplied 5/16-18 x 7/8" hardware and O-ring. Inter-bay 3 (input section) has been pre assembled to the input fine matcher. The fine matcher must be positioned with the black band up. Attach an inter-bay bracket near the base of the fine matcher using the supplied hose clamps.

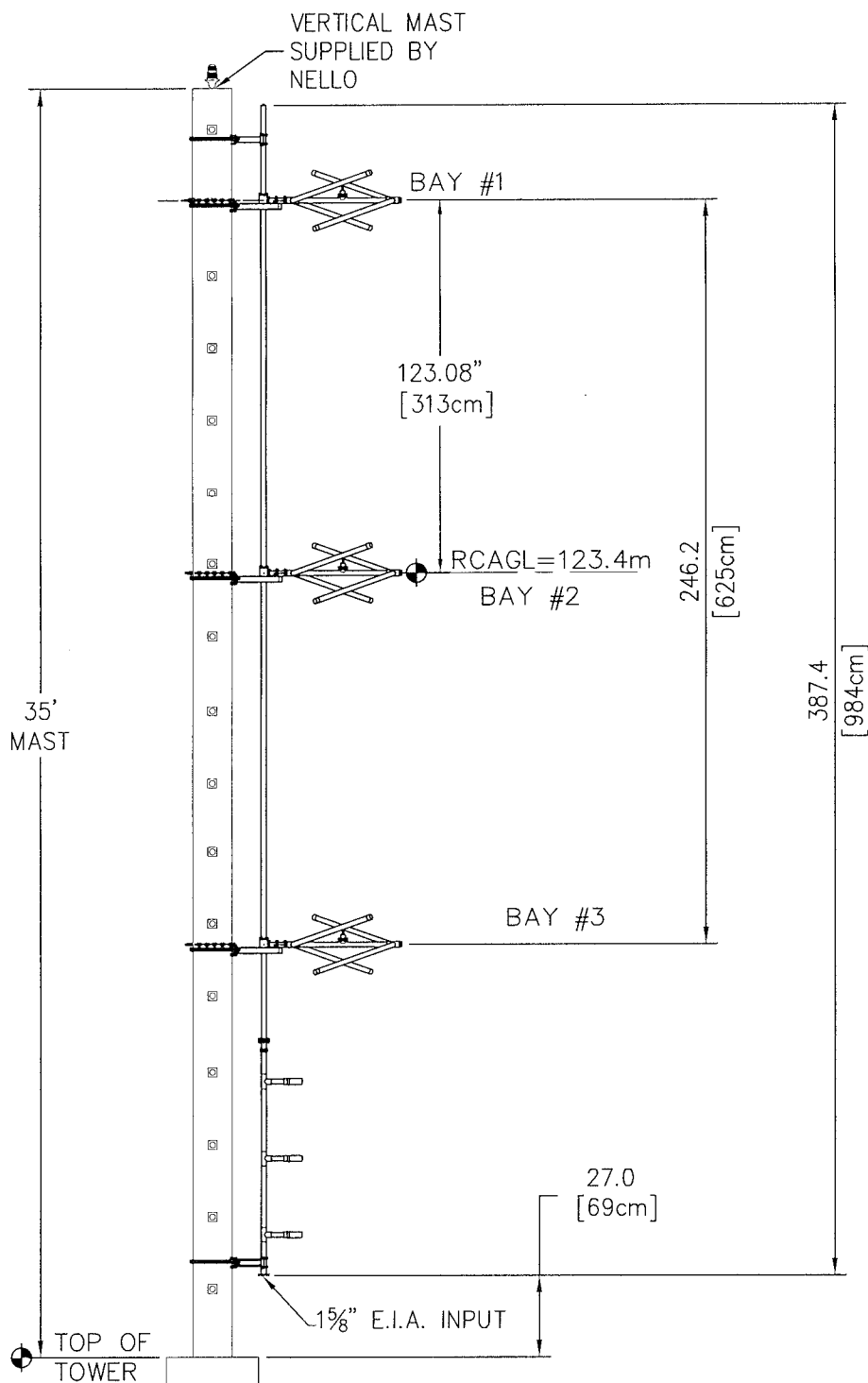
Step Three

Check all bolted connections for tightness. Connect the main transmission line to the antenna input located at the fine matcher base. Do not allow the weight of the feed line to be supported by the antenna. Pressurize the antenna system to a maximum of 5 lbs. with dry air or nitrogen. 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 at the factory and the tuner has been adjusted for optimum match conditions, see attached test data. If the antenna-input match (VSWR) is greater than a 1.1:1, confirm the antenna was installed properly. If the VSWR is greater than 1.15:1 contact the factory for instructions before applying power to the antenna. If the VSWR is greater than 1.1:1 but less than 1.15:1 the tuner can be adjusted, using the appropriate test equipment, for minimum reflected power.

Drawing Index

<u>Drawing</u>	<u>Title</u>
J309FM-751-001	Antenna Elevations and Specifications
J309FM-751-002	Antenna Planview and Orientation
J309FM-751-010	Elevations and Assembly at Bays 1 and 2
J309FM-751-011	Elevations and Assembly at input
J309FM-751-009	Horizontal Parasitic
J309FM-751-003	Bracket, Bay Mounting
J309FM-751-005	Bracket, Inter-bay Support
33-00024	End Cap
33-00028	Input Section
33-00006	3 Probe Tuner Assembly
12-00013	1-5/8" Inter-bay Block Assembly
12-00014	1-5/8" Inter-bay Flange Assembly

VERTICAL MAST
SUPPLIED BY
NELLO



SPECIFICATIONS

SPACING: 1.0λ
LENGTH: 32.28 Ft [9.84M]
APERTURE: 20.52 Ft [6.25M]
RATING: 9 kW
GAIN: 2.31 (3.64 dB)
WEIGHT: 244 Lb [111.1 Kg]
WIND AREA: 18.91 Ft ²
TIA-222-F (NO ICE)

NOTE:

1. REF. J309FM-751-010 FOR ASSEMBLY DETAILS AT BAYS 1 AND 2
2. REF. J309FM-751-011 FOR ASSEMBLY DETAILS AT INPUT

REV.	MADE BY	CHECKED BY	DATE	CHANGE

This drawing is loaned subject to the express understanding and agreement that the drawing and information therein contained are, and shall remain the property of PSI, and will not be otherwise utilized or disposed of, directly or indirectly, and will not be used in whole or in part or assist in making or finish any reproductions hereof, or for the design or making of any item, parts, object, apparatus or parts thereof, except upon the written permissions of PSI first obtained. The acceptance of this drawing will be construed as an acceptance of the forgoing agreement.

SIZE

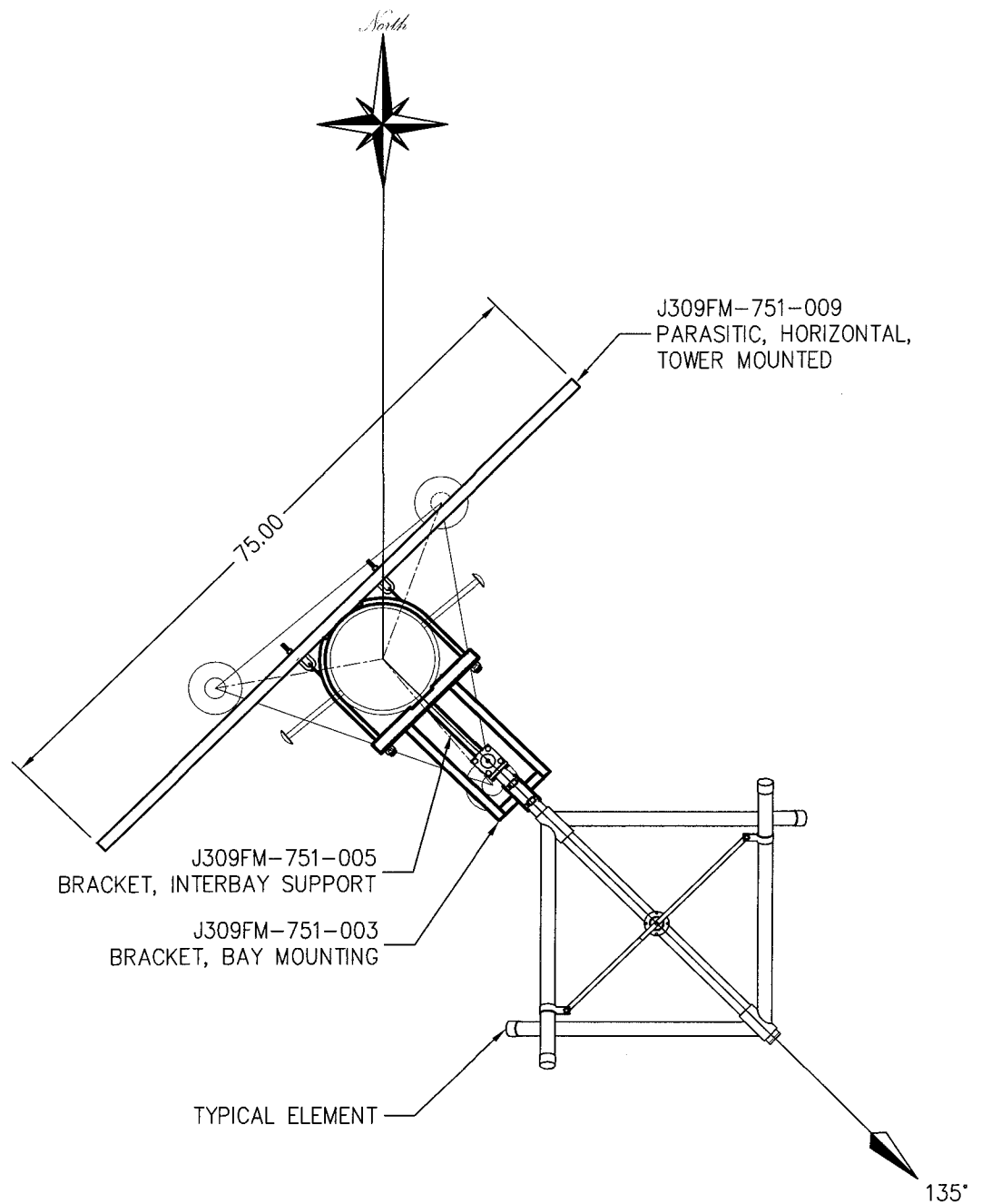
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PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

ANTENNA ELEVATIONS AND SPECIFICATIONS

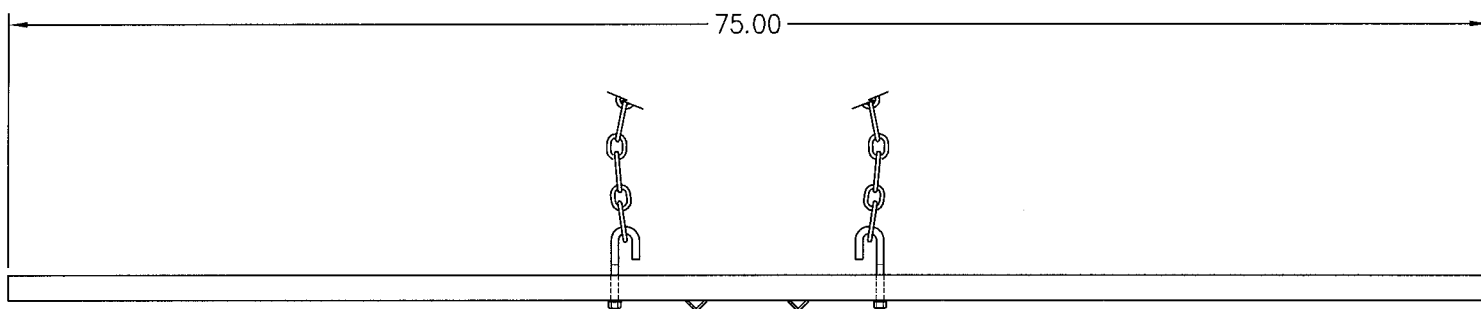
MODEL: PSIFM-3-DA	DRAWN BY: D.G. Kellar	DATE: 3/26/09
CHANNEL/FREQUENCY: 95.9 MHz	APPROVED BY:	DATE:
SCALE: 1:60	DRAWING NO.: J309FM-751-001	REV.



				PROPAGATION SYSTEMS, INC.			
				Ebensburg, Pennsylvania USA 814-472-5540			
				ANTENNA PLANVIEW AND ORIENTATION			
REV.	MADE BY	DATE	CHANGE	MODEL:	DRAWN BY:	DATE:	
				PSIFM-3-DA	D.G. Kellar	3/26/09	
				CHANNEL/ FREQUENCY:	APPROVED BY:	DATE:	
				95.9 MHz			
				SCALE:	DRAWING NO.:	REV.	
				1:20	J309FM-751-002		

This drawing is loaned subject to the express understanding and agreement that the drawing and information therein contained are, and shall remain the property of PSI, and will not be otherwise utilized or disposed of, directly or indirectly, and will not be used in whole or in part or assist in making or finish any information for the making of drawings, prints or other reproductions hereof, or for the design or making of any item, parts, object, apparatus or parts thereof, except upon the written permissions of PSI first obtained. The acceptance of this drawing will be construed as an acceptance of the forgoing agreement.

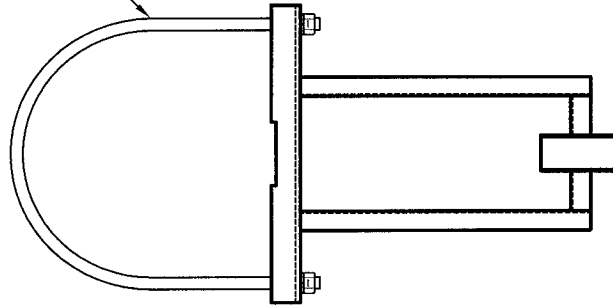
SIZE
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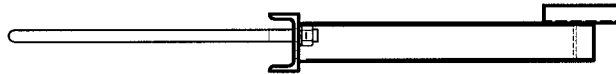
- NOTES:
1. (3) REQUIRED
 2. WEIGHT: 7.21 LB [3.27 Kg]
 3. WIND AREA: .82 Ft²
 4. HOT DIP GALVANIZED
 5. 3/8-16 J-BOLT AND 3/4" CHAIN SUPPLIED

REV.		MADE BY		DATE		CHANGE	
<p>This drawing is loaned subject to the express understanding and agreement that the drawing and information therein contained are, and shall remain the property of PSI, and will not be otherwise utilized or disposed of, directly or indirectly, and will not be used in whole or in part or assist in making or finish any reproductions hereof, or for the design or making of any item, parts, object, apparatus or parts thereof, except upon the written permissions of PSI first obtained. The acceptance of this drawing will be construed as an acceptance of the forgoing agreement.</p>							
SIZE		<p>PROPAGATION SYSTEMS, INC. Ebensburg, Pennsylvania USA 814-472-5540 PARASITIC, HORIZONTAL, MAST MOUNTED</p>					
A		MODEL:		PSIFM-3-DA		DRAWN BY: D.G. Kellar	
		CHANNEL/FREQUENCY:		95.9 MHz		APPROVED BY:	
		SCALE:		1:10		DRAWING NO.: J309FM-751-009	
						DATE: 3/31/09	
						REV.	

5/8-11 x 12⁷/₈"
I.D. U-BOLT



TOP VIEW



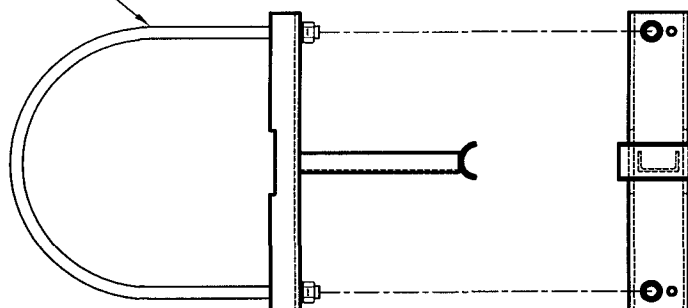
SIDE VIEW

NOTES:

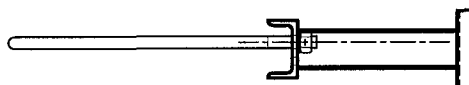
1. HOT DIP GALVANIZED
2. (3) REQUIRED
3. MOUNTED TO A UNIFORM $\phi 12\frac{3}{4}$ " DIAMETER VERTICAL MAST
4. WINDAREA: .62 Ft²
5. WEIGHT COMPLETE: 7.8 Lb (BRACKET ONLY)

<h2 style="margin: 0;">PROPAGATION SYSTEMS, INC.</h2> <p style="margin: 0;">Ebensburg, Pennsylvania USA 814-472-5540</p>																					
BRACKET, BAY MOUNTING																					
REV.	MADE BY	DATE	CHANGE																		
This drawing is loaned subject to the express understanding and agreement that the drawing and information therein contained are, and shall remain the property of PSI, and will not be otherwise utilized or disposed of, directly or indirectly, and will not be used in whole or in part or assist in making or finish any reproductions hereof, or for the design or making of any item, parts, object, apparatus or parts thereof, except upon the written permissions of PSI first obtained. The acceptance of this drawing will be construed as an acceptance of the forgoing agreement.		SIZE <div style="font-size: 2em; font-weight: bold;">A</div>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 2px;">MODEL:</td> <td style="width: 30%; padding: 2px;">PSIFM-3-DA</td> <td style="width: 20%; padding: 2px;">DRAWN BY:</td> <td style="width: 20%; padding: 2px;">D.G. Kellar</td> <td style="width: 10%; padding: 2px;">DATE:</td> <td style="width: 10%; padding: 2px;">3/23/09</td> </tr> <tr> <td style="padding: 2px;">CHANNEL/ FREQUENCY:</td> <td style="padding: 2px;">95.9 MHz</td> <td style="padding: 2px;">APPROVED BY:</td> <td colspan="3" style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">SCALE:</td> <td style="padding: 2px;">1:10</td> <td style="padding: 2px;">DRAWING NO.:</td> <td colspan="2" style="padding: 2px;">J309FM-751-003</td> <td style="padding: 2px;">REV.</td> </tr> </table>	MODEL:	PSIFM-3-DA	DRAWN BY:	D.G. Kellar	DATE:	3/23/09	CHANNEL/ FREQUENCY:	95.9 MHz	APPROVED BY:				SCALE:	1:10	DRAWING NO.:	J309FM-751-003		REV.
MODEL:	PSIFM-3-DA	DRAWN BY:	D.G. Kellar	DATE:	3/23/09																
CHANNEL/ FREQUENCY:	95.9 MHz	APPROVED BY:																			
SCALE:	1:10	DRAWING NO.:	J309FM-751-003		REV.																

5/8-11 x 12⁷/₈"
I.D. U-BOLT



TOP VIEW



SIDE VIEW

NOTES:

1. ASSEMBLY TO BE HOT DIP GALVANIZED
2. QUANTITIES SHOWN ARE FOR (1) BRACKET; (2) REQUIRED
3. MOUNTED TO A UNIFORM $\phi 12\frac{3}{4}$ " VERTICAL MAST
4. WINDAREA: .45 Ft²
5. WEIGHT COMPLETE: 8.54 Lb (BRACKET ONLY)

REV.	MADE BY CHECKED BY	DATE	CHANGE

This drawing is loaned subject to the express understanding and agreement that the drawing and information therein contained are, and shall remain the property of PSI, and will not be otherwise utilized or disposed of, directly or indirectly, and will not be used in whole or in part or assist in making or finish any reproductions hereof, or for the design or making of any item, parts, object, apparatus or parts thereof, except upon the written permissions of PSI first obtained. The acceptance of this drawing will be construed as an acceptance of the forgoing agreement.

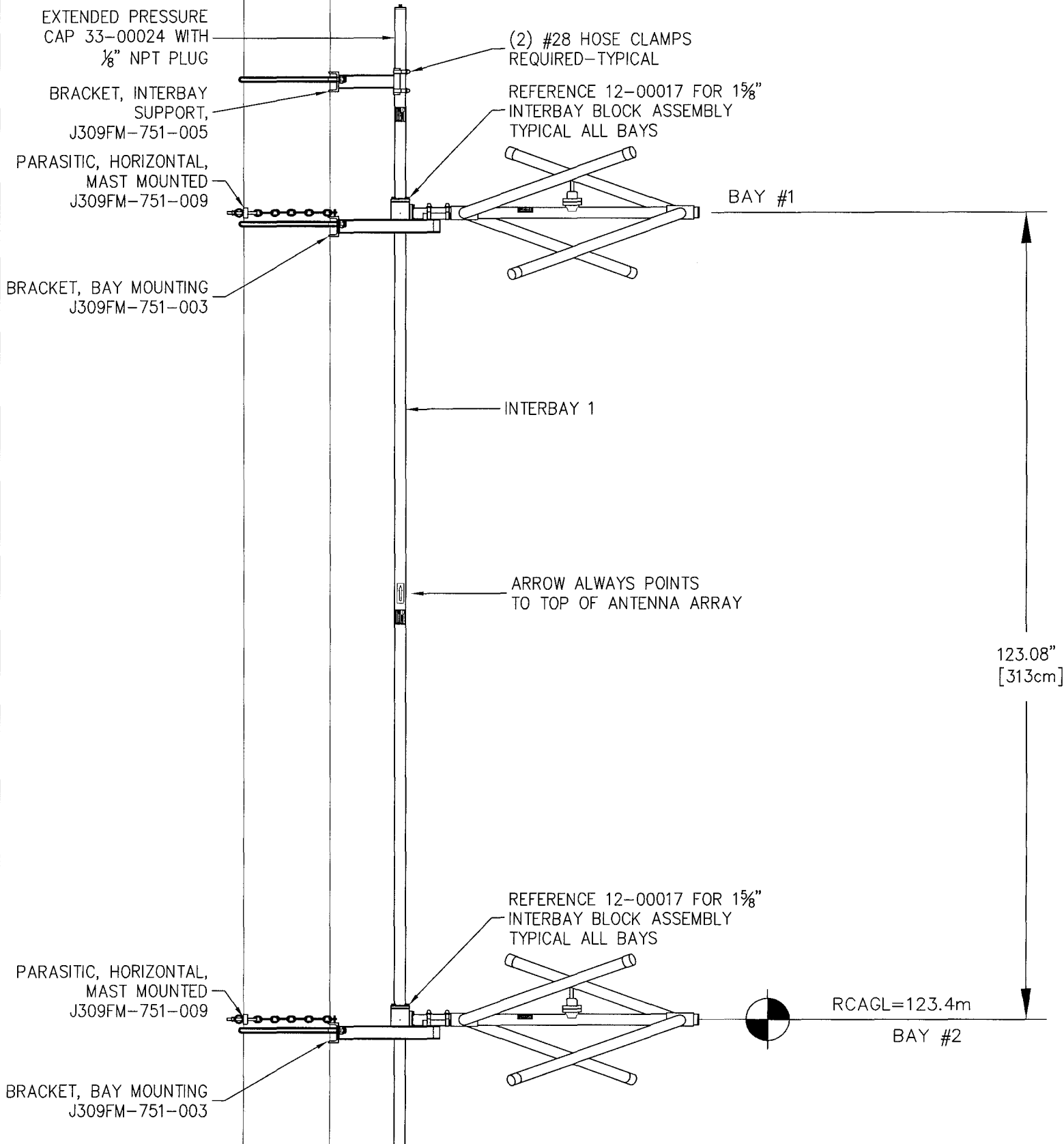
SIZE
A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

BRACKET, INTERBAY SUPPORT

MODEL: PSIFM-3-DA	DRAWN BY: D.G. Kellar	DATE: 3/23/09
CHANNEL/FREQUENCY: 95.9 MHz	APPROVED BY:	DATE:
SCALE: 1:10	DRAWING NO.: J309FM-751-005	REV.



PROPAGATION SYSTEMS, INC. Ebensburg, Pennsylvania USA 814-472-5540 ELEVATIONS AND ASSEMBLY AT BAYS 1 AND 2			
REV.	MADE BY CHECKED BY	DATE	CHANGE
This drawing is loaned subject to the express understanding and agreement that the drawing and information therein contained are, and shall remain the property of PSI, and will not be otherwise utilized or disposed of, directly or indirectly, and will not be used in whole or in part or assist in making or finish any information for the making of drawings, prints or other reproductions hereof, or for the design or making of any item, parts, object, apparatus or parts thereof, except upon the written permissions of PSI first obtained. The acceptance of this drawing will be construed as an acceptance of the forgoing agreement.			SIZE A
MODEL: PSIFM-3-DA		DRAWN BY: D.G. Kellar	DATE: 3/31/09
CHANNEL/FREQUENCY: 95.9 MHz		APPROVED BY:	DATE:
SCALE: 1:20		DRAWING NO.: J309FM-751-010	REV.

PARASITIC, HORIZONTAL,
MAST MOUNTED
J309FM-751-009

BRACKET, BAY MOUNTING,
J309FM-751-003

1 5/8" INPUT SECTION
33-00028

3-PROBE TUNER ASSEMBLY
33-00006 (BLACK BAND
UP)

BRACKET, INTERBAY
SUPPORT,
J309FM-751-005

REFERENCE 12-00017 FOR 1 5/8"
INTERBAY BLOCK ASSEMBLY
TYPICAL ALL BAYS
(2) #28 HOSE CLAMPS

BAY #2

REFERENCE 12-00014 FOR 1 5/8"
ROUND FLANGE ASSEMBLY

(2) #28 HOSE CLAMPS

1 5/8" INPUT

110.0
[279cm]

27.0
[69cm]

TOP OF
TOWER

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

ELEVATIONS AND ASSEMBLY AT INPUT

This drawing is loaned subject to the express understanding and agreement that the drawing and information therein contained are, and shall remain the property of PSI, and will not be otherwise utilized or disposed of, directly or indirectly, and will not be used in whole or in part or assist in making or finish any information for the making of drawings, prints or other reproductions hereof, or for the design or making of any item, parts, object, apparatus or parts thereof, except upon the written permissions of PSI first obtained. The acceptance of this drawing will be construed as an acceptance of the forgoing agreement.

SIZE

A

MODEL:

PSIFM-3-DA

DRAWN BY:

D.G. Kellar

DATE:

3/31/09

CHANNEL/
FREQUENCY:

95.9 MHz

APPROVED BY:

DATE:

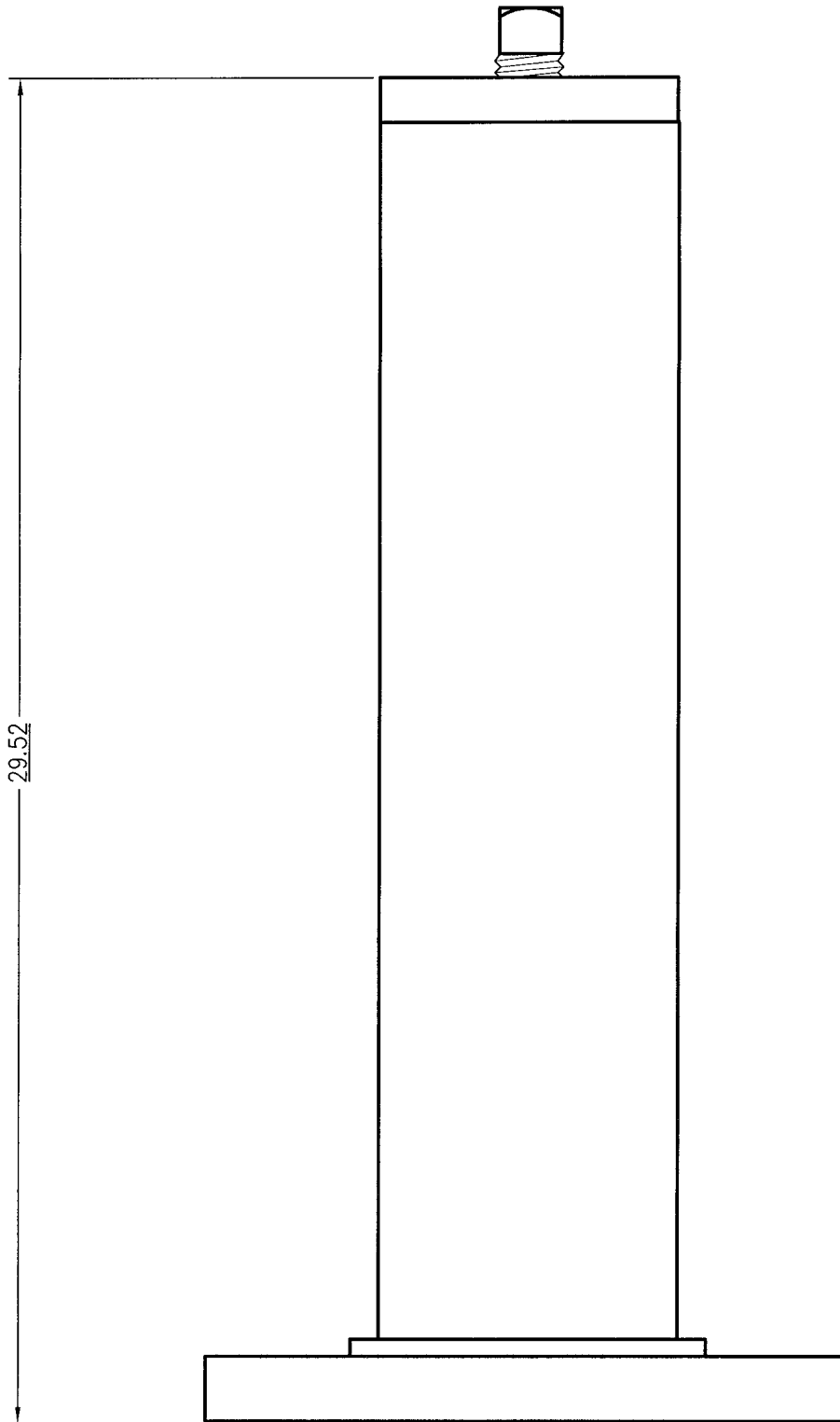
SCALE:

1:20

DRAWING NO.:

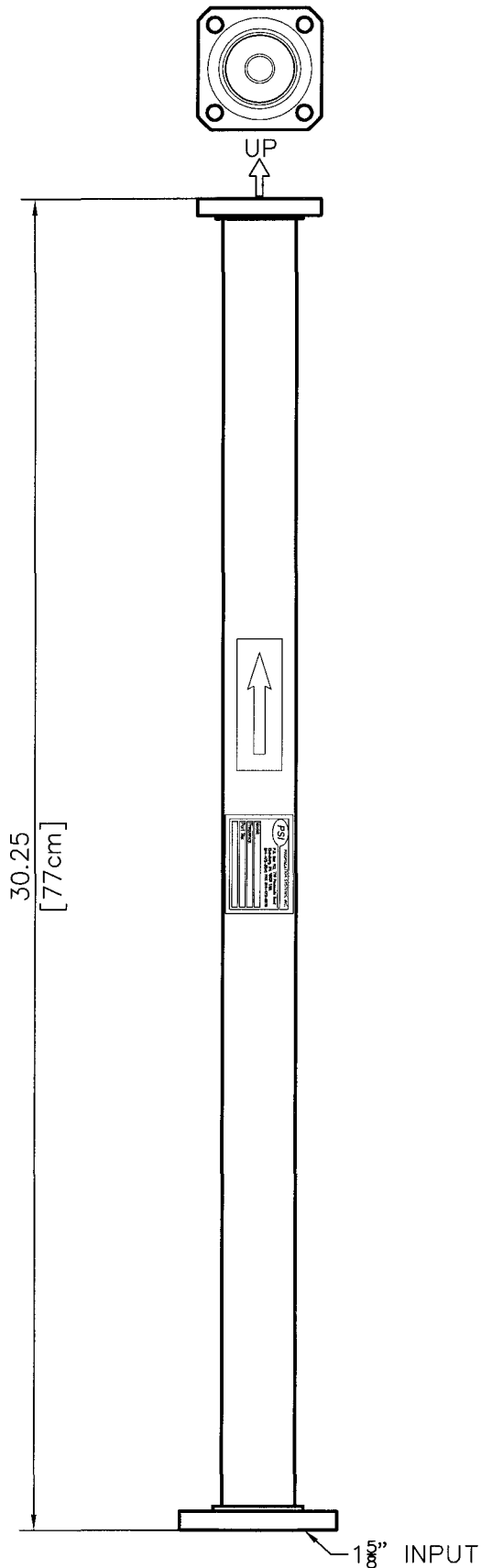
J309FM-751-011

REV.

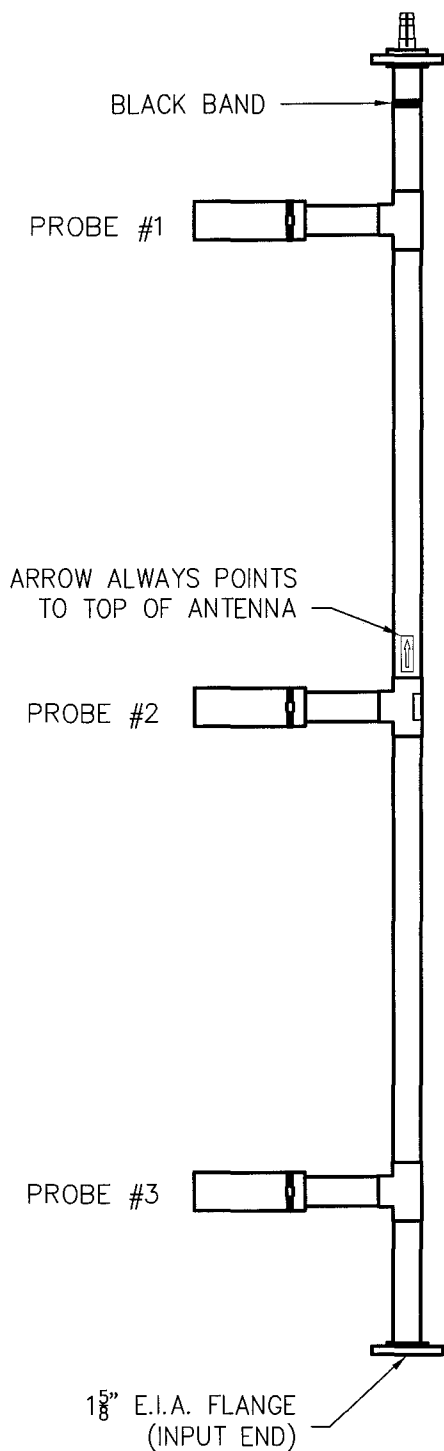


29.52

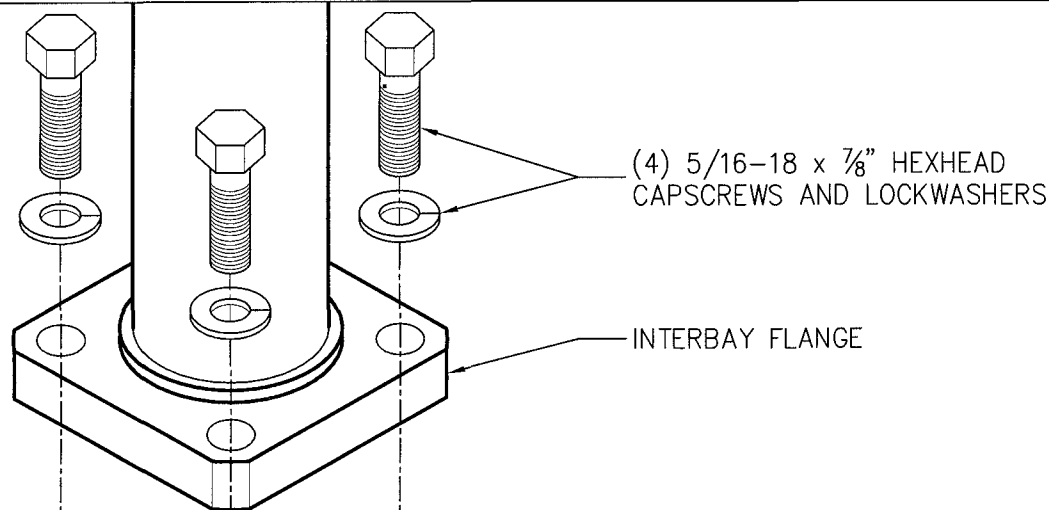
				MATERIAL:		PROPAGATION SYSTEMS, INC.					
						Ebensburg, Pennsylvania USA					
						PRESSURE CAP, EXTENDED					
REV.	MADE BY CHECKED BY	DATE	CHANGE			MODEL:	DRAWN BY: D.G. Kellar	DATE: 8/19/04			
<p>This drawing is loaned subject to the express understanding and agreement that the drawing and information therein contained are, and shall remain the property of PSI, and will not be otherwise utilized or disposed of, directly or indirectly, and will not be used in whole or in part or assist in making or finish any information for the making of drawings, prints or other reproductions hereof, or for the design or making of any item, parts, object, apparatus or parts thereof, except upon the written permissions of PSI first obtained. The acceptance of this drawing will be construed as an acceptance of the forgoing agreement.</p>				TOLERANCES UNLESS OTHERWISE NOTED FRACTIONS X/X ±1/16" DECIMALS XX ±.01" DECIMALS XXX ±.005" ANGLES ± 3'		SIZE A		CHANNEL/ FREQUENCY:		APPROVED BY:	DATE:
						SCALE: 1:1	PART NO.:	DRAWING NO.: 33-00024	REV.		



REV.		MADE BY		DATE	CHANGE
This drawing is loaned subject to the express understanding and agreement that the drawing and information therein contained are, and shall remain the property of PSI, and will not be otherwise utilized or disposed of, directly or indirectly, and will not be used in whole or in part or assist in making or finish any reproductions hereof, or for the design or making of any item, parts, object, apparatus or parts thereof, except upon the written permissions of PSI first obtained. The acceptance of this drawing will be construed as an acceptance of the forgoing agreement.					
SIZE <div style="font-size: 2em; text-align: center;">A</div>					PROPAGATION SYSTEMS, INC. Ebensburg, Pennsylvania USA 814-472-5540 1-5/8" INPUT SECTION OUTLINE
MODEL:			DRAWN BY: D.G. Kellar		DATE: 8-25-98
CHANNEL/FREQUENCY:			APPROVED BY:		DATE:
SCALE: 1:4			DRAWING NO.: 33-00028		REV.



			PROPAGATION SYSTEMS, INC.	
			Ebensburg, Pennsylvania USA 814-472-5540	
REV.	MADE BY CHECKED BY	DATE	CHANGE	
This drawing is loaned subject to the express understanding and agreement that the drawing and information therein contained are, and shall remain the property of PSI, and will not be otherwise utilized or disposed of, directly or indirectly, and will not be used in whole or in part or assist in making or finish any reproductions hereof, or for the design or making of any item, parts, object, apparatus or parts thereof, except upon the written permissions of PSI first obtained. The acceptance of this drawing will be construed as an acceptance of the forgoing agreement.			SIZE A	3 PROBE TUNER ASSEMBLY MODEL: CHANNEL/ FREQUENCY: SCALE: 1:16
			DRAWN BY: D. RICHEY APPROVED BY: DRAWING NO.: 33-00006	DATE: 1-28-98 DATE: REV.



(4) 5/16-18 x 7/8" HEXHEAD
CAPSCREWS AND LOCKWASHERS

INTERBAY FLANGE

2-328 O-RING

1 5/8" ANCHOR INSULATOR
CONNECTOR ATTACHED TO
INTERBAY BLOCK

INTERBAY BLOCK

INTERBAY FLANGE
SHOWN ATTACHED

ELEMENT BOOM
SHOWN ATTACHED

NOTES:

1. ASSURE INNER CONDUCTOR SEATS FIRMLY ON THE ANCHOR INSULATOR CONNECTOR.
2. TAKE CARE NOT TO "SPLIT" THE BULLET DURING ASSEMBLY. INNER CONDUCTOR IS **NOT** CAPTIVE IN THE INTERBAY.
3. ASSURE CONNECTION IS DRY AND CLEAN
4. ALL CONNECTIONS SHOWN ARE SIMILAR

REV.	MADE BY	CHECKED BY	DATE	CHANGE

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SIZE

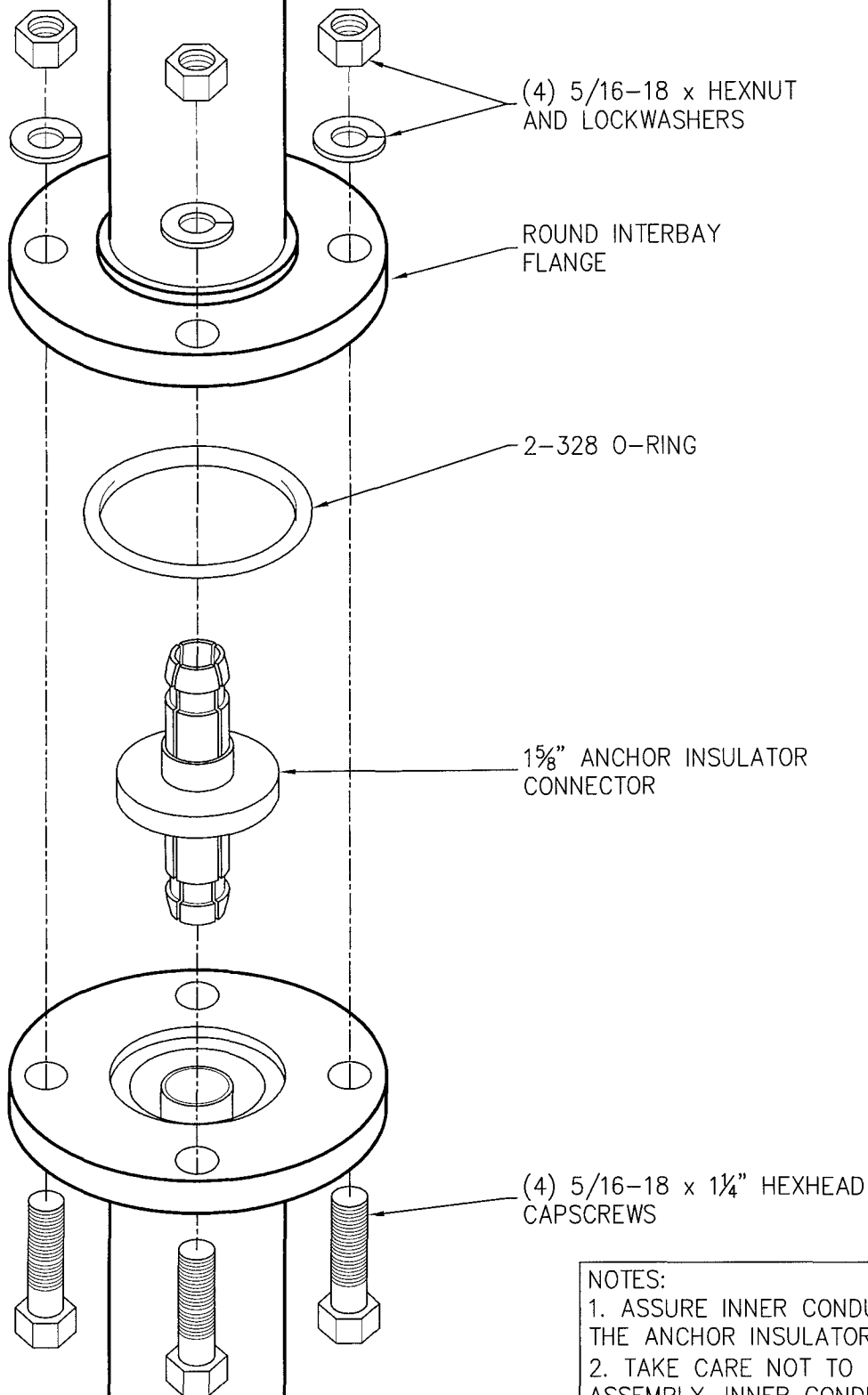
A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

1-5/8" INTERBAY BLOCK ASSEMBLY

MODEL:	DRAWN BY: D.G. Kellar	DATE: 4/03/08
CHANNEL/ FREQUENCY:	APPROVED BY:	DATE:
SCALE: 1:2	DRAWING NO.: 12-00013	REV.



↑
TOP OF ANTENNA

NOTES:

1. ASSURE INNER CONDUCTOR SEATS FIRMLY ON THE ANCHOR INSULATOR CONNECTOR.
2. TAKE CARE NOT TO "SPLIT" THE BULLET DURING ASSEMBLY. INNER CONDUCTOR IS **NOT** CAPTIVE IN THE INTERBAY.
3. ASSURE CONNECTION IS DRY AND CLEAN

REV.	MADE BY	CHECKED BY	DATE	CHANGE

This drawing is loaned subject to the express understanding and agreement that the drawing and information therein contained are, and shall remain the property of PSI, and will not be otherwise utilized or disposed of, directly or indirectly, and will not be used in whole or in part or assist in making or finish any reproductions hereof, or for the design or making of any item, parts, object, apparatus or parts thereof, except upon the written permissions of PSI first obtained. The acceptance of this drawing will be construed as an acceptance of the foregoing agreement.

SIZE

A

PROPAGATION SYSTEMS, INC.

Ebensburg, Pennsylvania USA 814-472-5540

1 5/8" INTERBAY FLANGE ASSEMBLY

MODEL:	DRAWN BY: D.G. Kellar	DATE: 4/03/08
CHANNEL/FREQUENCY:	APPROVED BY:	DATE:
SCALE: 1:2	DRAWING NO.: 12-00014	REV.

4.22.09

J309FM-75-1

FM-3-D11

FM-91

