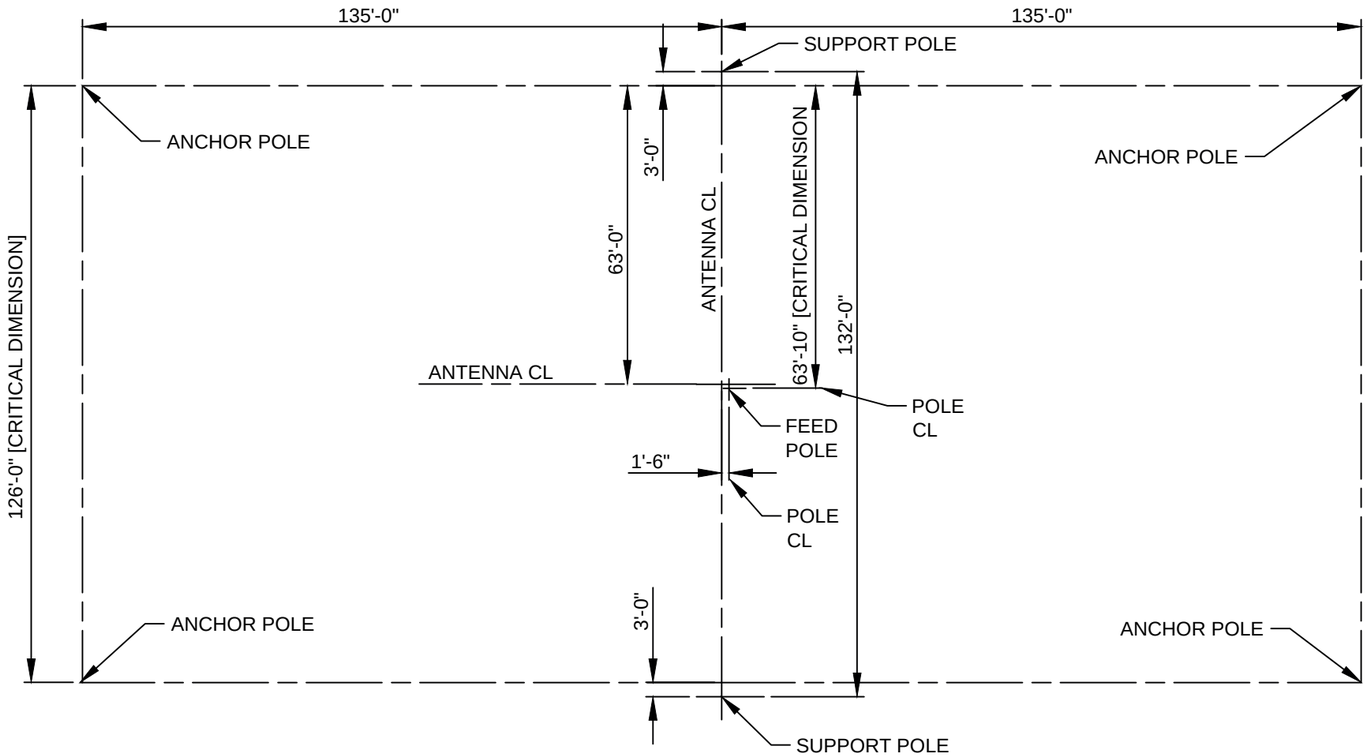
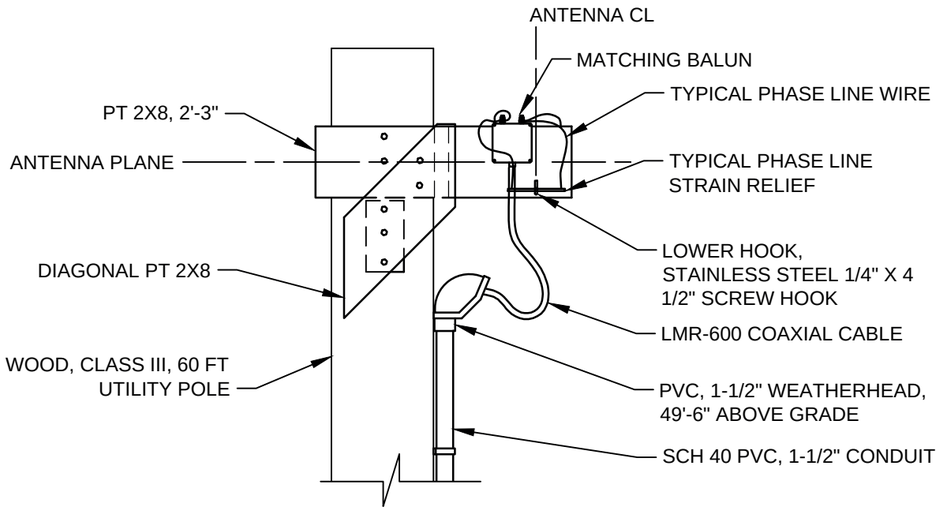


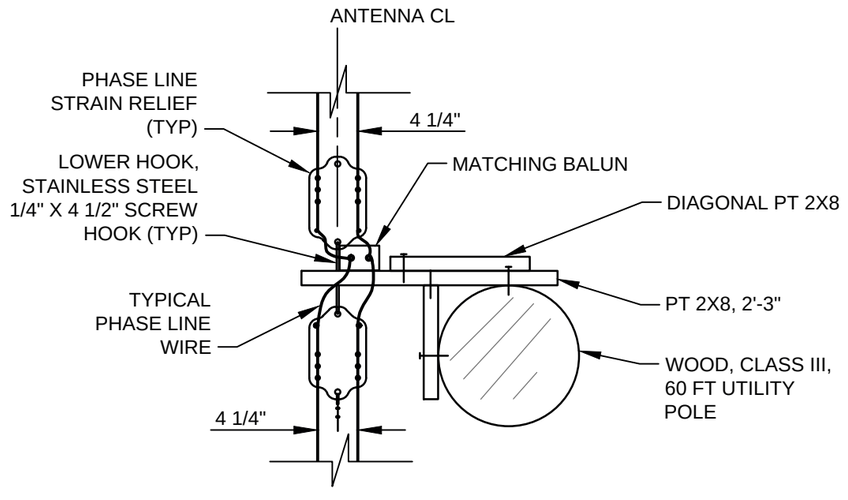
POLE LAYOUT PLAN

SCALE: NTS



FEED POLE - FEED POINT DETAIL

SCALE: NTS



FEED POLE - FEED POINT PLAN VIEW

SCALE: NTS

ANTENNA NOTES:

1. COAXIAL CABLE, 50 OHM IMPEDANCE.
2. MATCHING BALUN IMPEDANCE 200 OHMS.
3. PHASE LINE IMPEDANCE IS ±600 OHMS.

GENERAL NOTES:

1. ANTENNA PLANE IS 52'-0" ABOVE FINISHED GRADE. IF THE TOPOGRAPHY IS NOT FLAT. ASSUME THE ANTENNA PLANE IS A SLOPED SURFACE, PARALLEL TO THE FINISHED GRADE.
2. DESIGN FREQUENCY IS 3.800 MHz.
3. ALL EXTERIOR COAX CABLE CONNECTORS WILL BE SEALED WITH ONE LAYER OF SCOTCH 130C, LINERLESS RUBBER SPLICING TAPE AND THEN TWO LAYERS OF SCOTCH SUPER 33+, VINYL ELECTRICAL TAPE.
4. TIMES MICROWAVE LMR-600 COAX CABLE WILL BE ONE CONTINUOUS PIECE FROM ANTENNA FEED POINT TO SINGLE POINT ENTRY SURGE ARRESTOR.
5. CONTRACTOR WILL PROVIDE ALL HARDWARE, ACCESSORIES AND APPURTENANCES REQUIRED TO COMPLETE INSTALLATION OF A FUNCTIONING ANTENNA SYSTEM.
6. CONTRACTOR WILL PROVIDE A SMITH CHART OF MEASURED ANTENNA PERFORMANCE AT 3.800 MHz.
7. ALL PHASE LINE WIRES MUST BE THE SAME LENGTH.
8. ADJUST ANTENNA ELEMENT WIRES FOR RESONANCE ON 3.800 MHz.
9. TOTAL LENGTH OF EACH PHASE LINE WIRE IS 63'-0", WHICH INCLUDES PIGTAIL AND LENGTH OF 600 OHM PHASE WIRE.

MATERIAL NOTES:

1. MATCHING BALUN: BALUN DESIGNS, 4116T, 4:1 HYBRID BALUN, STUDS ON TOP, 3kW.
2. PHASE LINE WIRE: 14 AWG, BARE, STRANDED 7X1, HARD DRAWN COPPER.
3. ANTENNA ELEMENT WIRE: 14 AWG, BARE, STRANDED 7X1, HARD DRAWN COPPER.
4. STRAIN RELIEF: POLYCARBONATE: 3/16" THICK; TENSILE STRENGTH: 9,000 psi; IMPACT STRENGTH: 16 ft-lb/in; SPECIFICATION: UL 972; CLEAR; UV RESISTANT

DUVAL AMATEUR RADIO EMERGENCY SERVICE®
PLANS FOR CONSTRUCTION OF

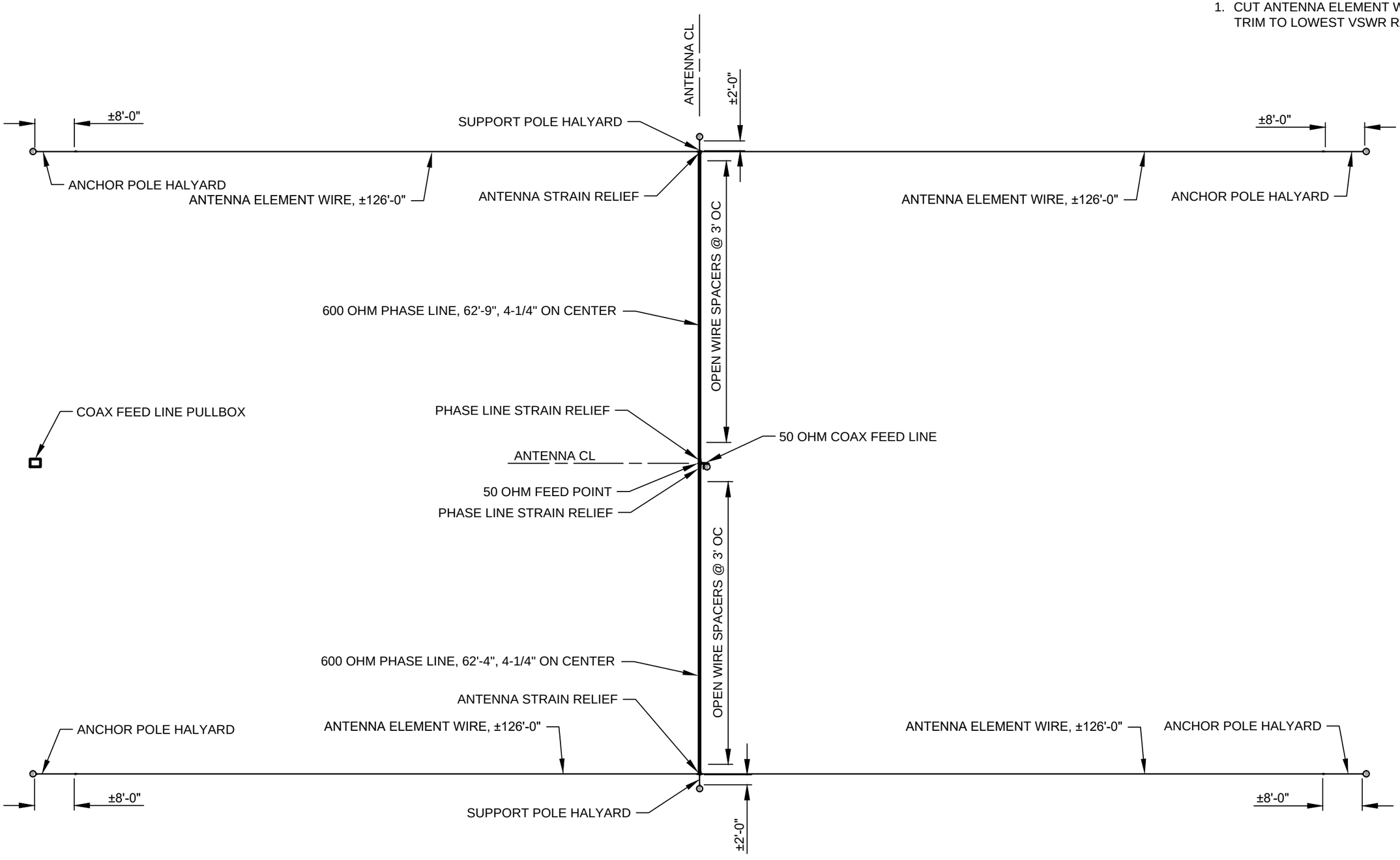
JAMAICA NVIS ARRAY

LAYOUT PLAN & FEED POINT DETAIL

DWG NO. ARES10002
SCALE: AS SHOW DATE: MAY 2026
SHEET 1 OF 7 SIZE: ANSI B

GENERAL NOTES:

1. CUT ANTENNA ELEMENT WIRE 129'-0" AND THEN TRIM TO LOWEST VSWR RATIO.

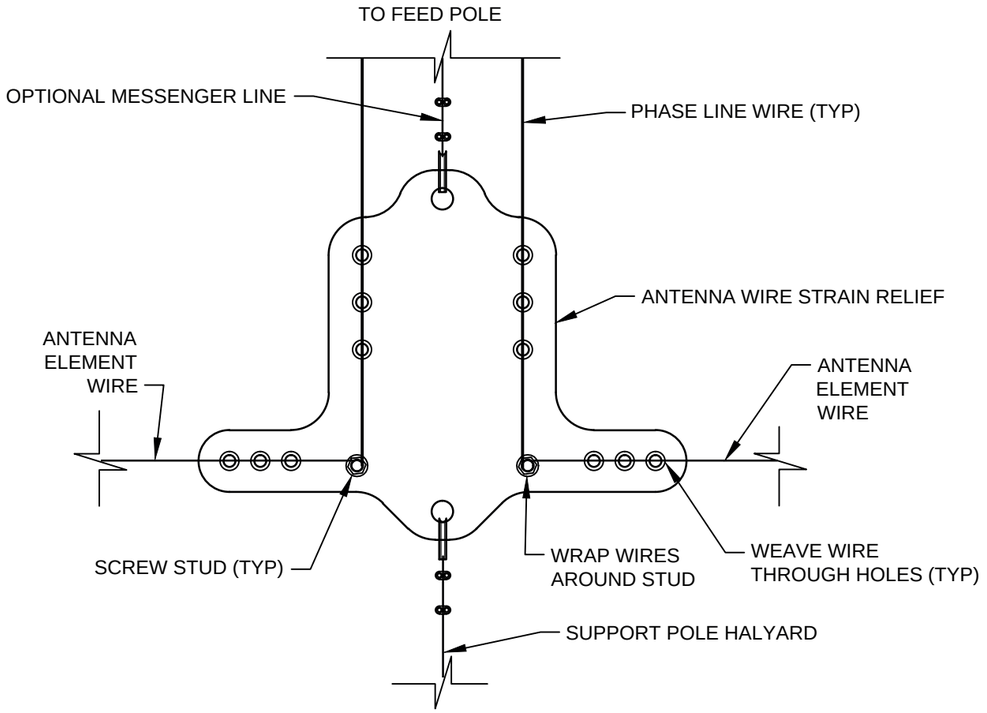


ANTENNA PLAN VIEW

SCALE: NTS

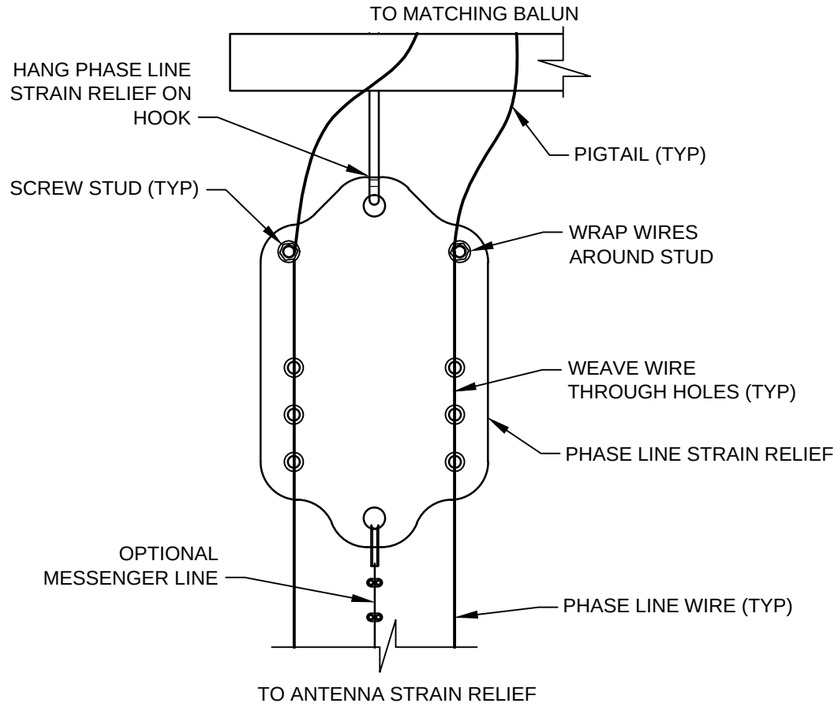
DUVAL AMATEUR RADIO EMERGENCY SERVICE®
PLANS FOR CONSTRUCTION OF
JAMAICA NVIS ARRAY
PLAN VIEW

DWG NO. ARES10002
SCALE: AS SHOW DATE: MAY 2026
SHEET 2 OF 7 SIZE: ANSI B



ANTENNA ELEMENT WIRE DETAIL

SCALE: NTS



PHASE LINE WIRE DETAIL

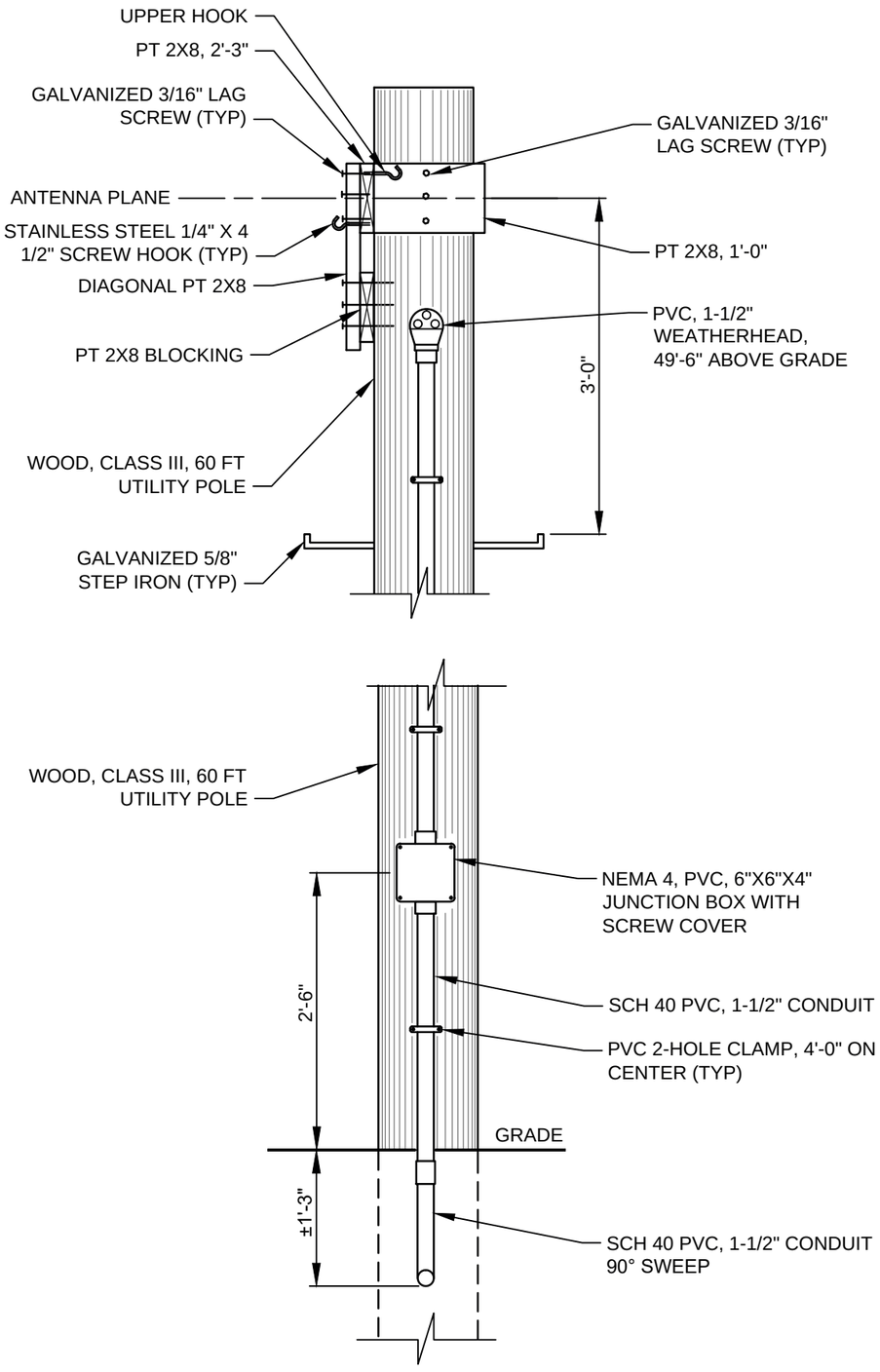
SCALE: NTS

DUVAL AMATEUR RADIO EMERGENCY SERVICE®
PLANS FOR CONSTRUCTION OF

JAMAICA NVIS ARRAY

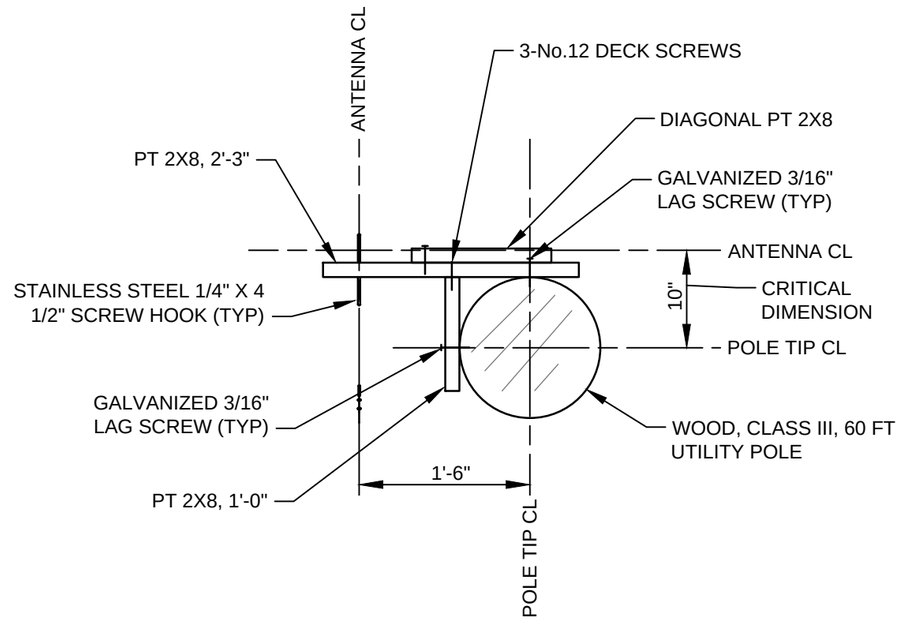
ANTENNA WIRE & PHASE LINE DETAILS

DWG NO. ARES10002
SCALE: AS SHOW DATE: MAY 2026
SHEET 3 OF 7 SIZE: ANSI B



FEED POLE - SIDE VIEW

SCALE: NTS



FEED POLE - TOP VIEW

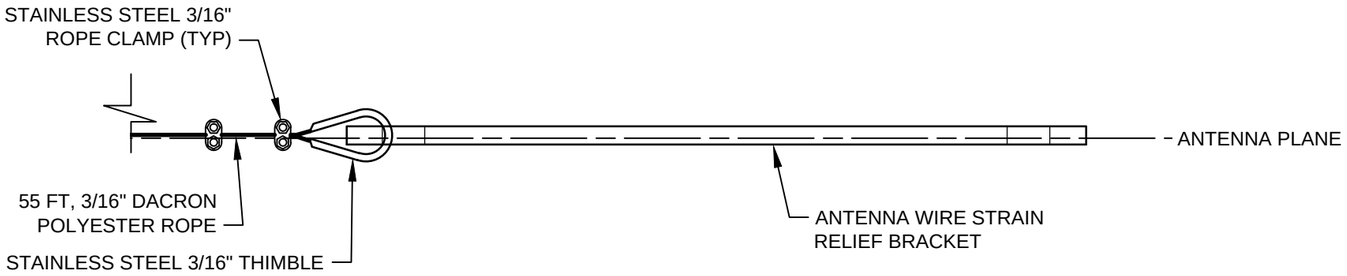
SCALE: NTS

DUVAL AMATEUR RADIO EMERGENCY SERVICE®
PLANS FOR CONSTRUCTION OF

JAMAICA NVIS ARRAY

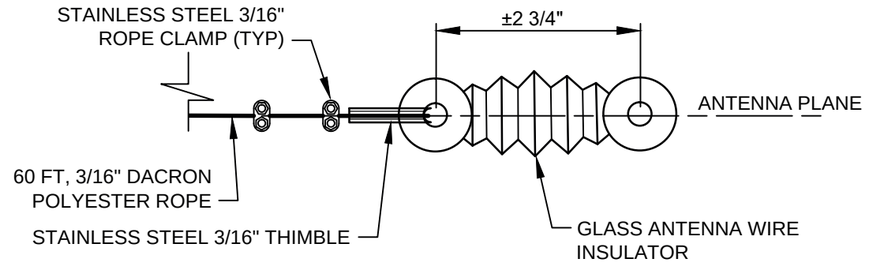
FEED POLE DETAILS

DWG NO. ARES10002
SCALE: AS SHOW DATE: MAY 2026
SHEET 4 OF 7 SIZE: ANSI B



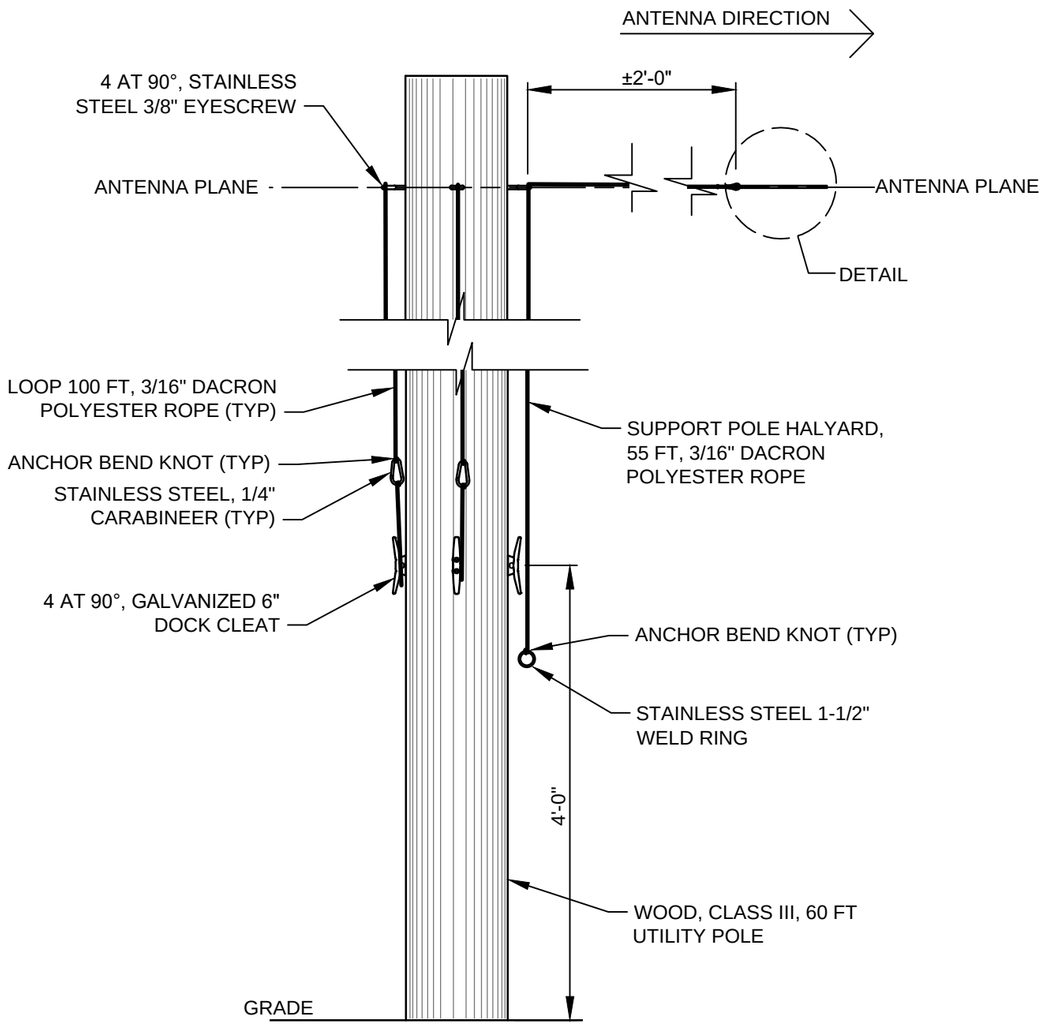
ANTENNA STRAIN RELIEF DETAIL

SCALE: NTS



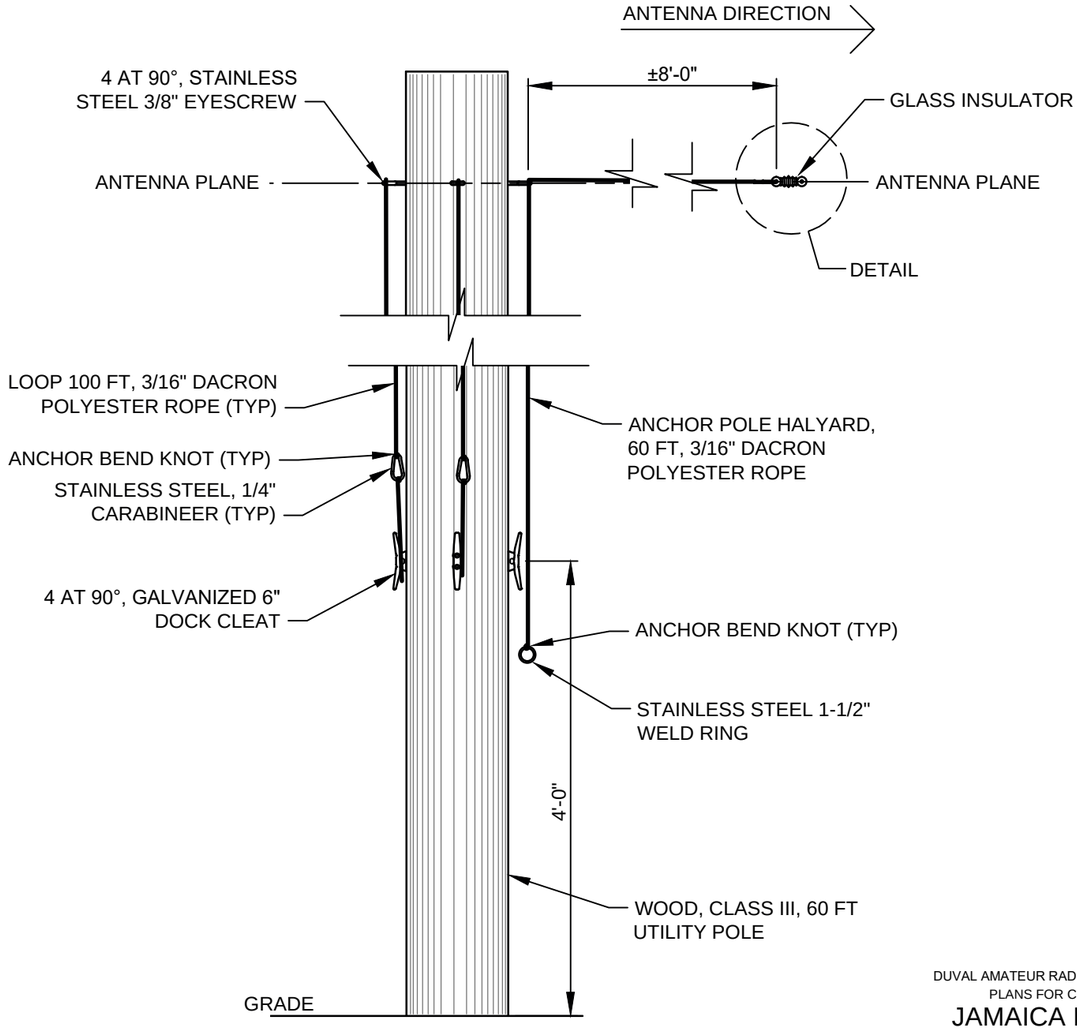
ANTENNA WIRE INSULATOR DETAIL

SCALE: NTS



TYPICAL SUPPORT POLE DETAIL

SCALE: NTS

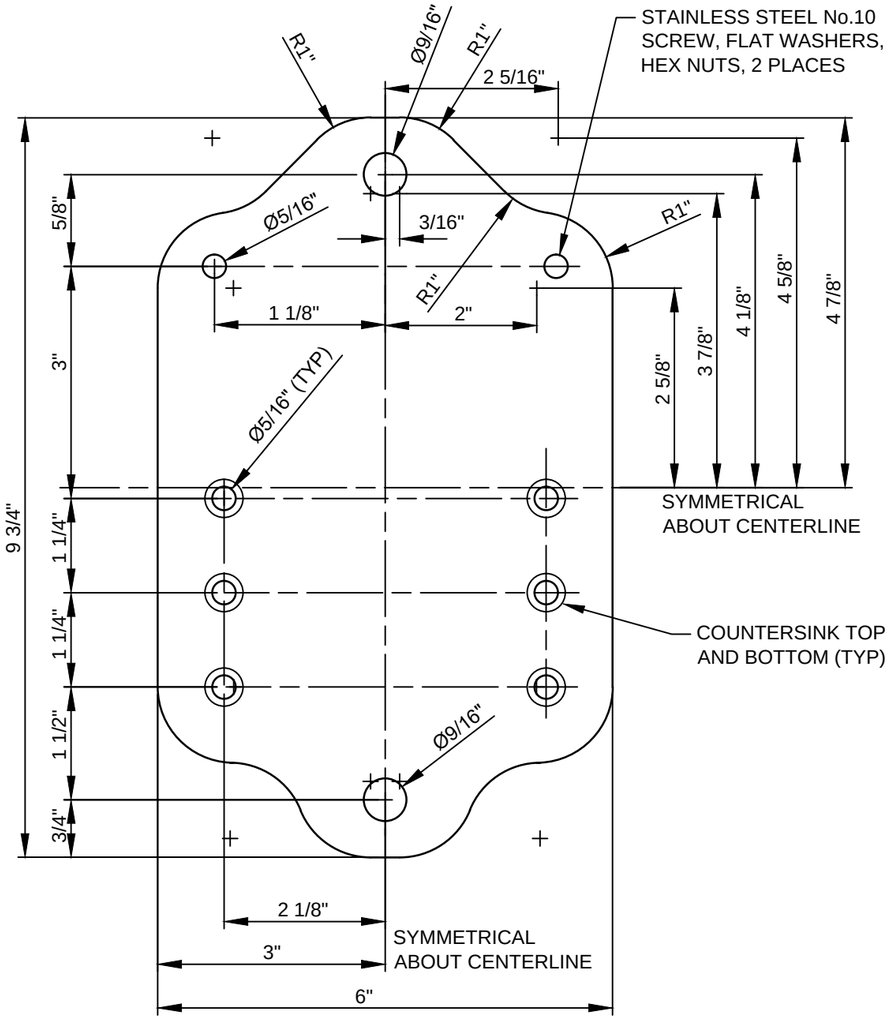


TYPICAL ANCHOR POLE DETAIL

SCALE: NTS

DUVAL AMATEUR RADIO EMERGENCY SERVICE®
PLANS FOR CONSTRUCTION OF
JAMAICA NVIS ARRAY
SUPPORT & ANCHOR POLE DETAILS

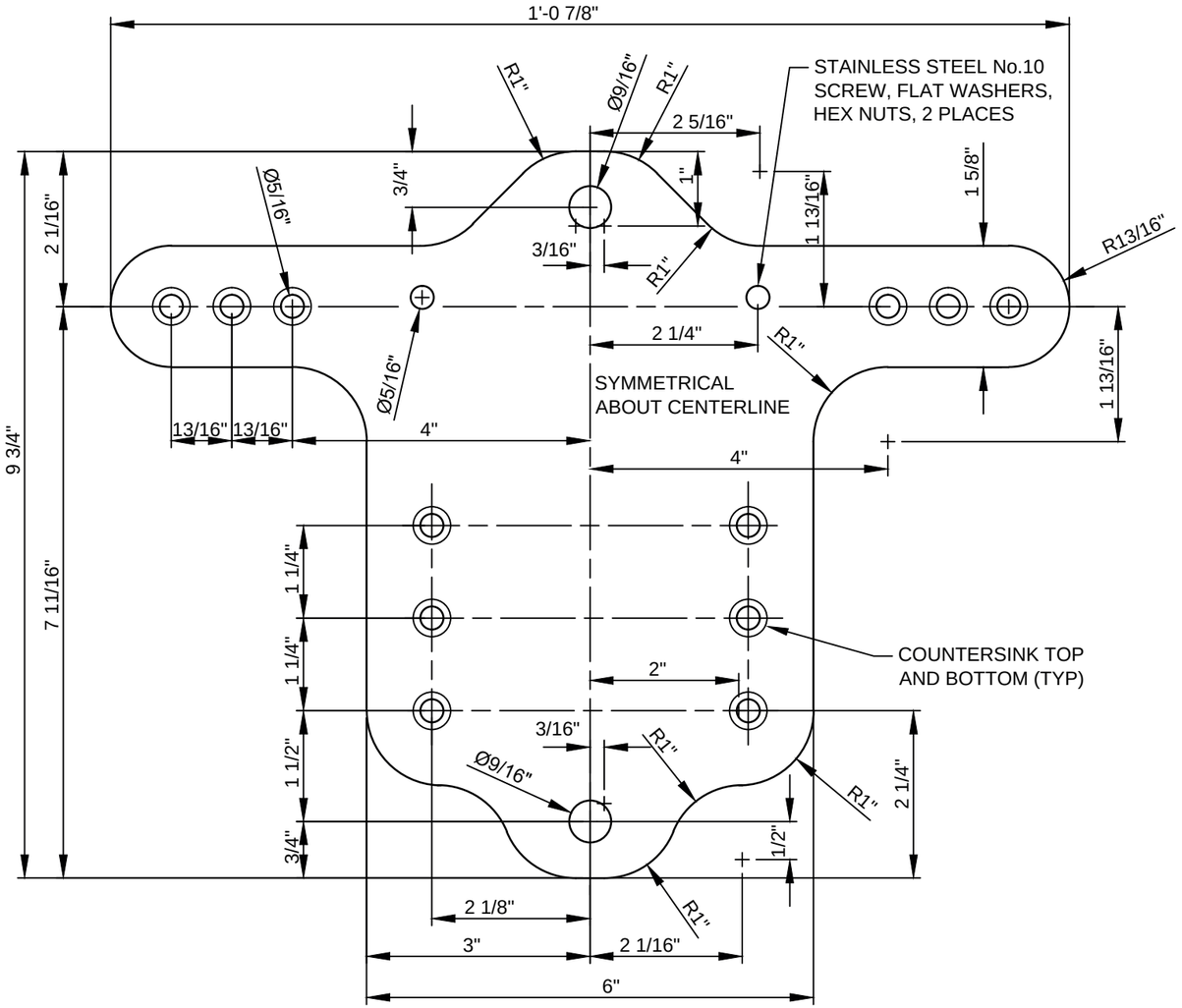
DWG NO. ARES10002
SCALE: AS SHOW DATE: MAY 2026
SHEET 5 OF 7 SIZE: ANSI B



QTY: 2 REQUIRED

PHASE LINE STRAIN RELIEF DETAIL

SCALE: NTS



QTY: 2 REQUIRED

ANTENNA WIRE STRAIN RELIEF DETAIL

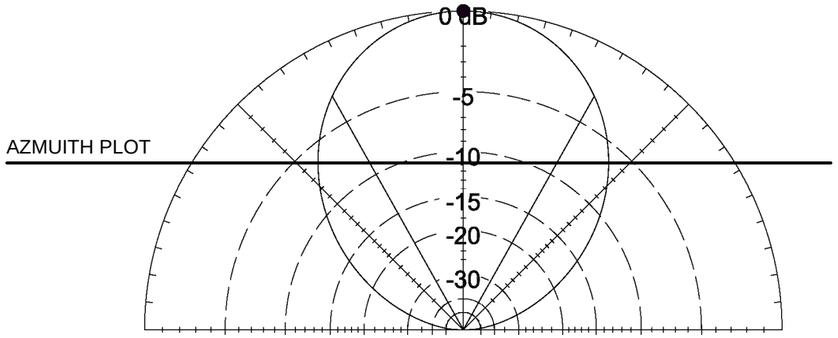
SCALE: NTS

DUVAL AMATEUR RADIO EMERGENCY SERVICE®
PLANS FOR CONSTRUCTION OF

JAMAICA NVIS ARRAY

PHASE LINE & ANTENNA WIRE STRAIN
RELIEF DETAILS

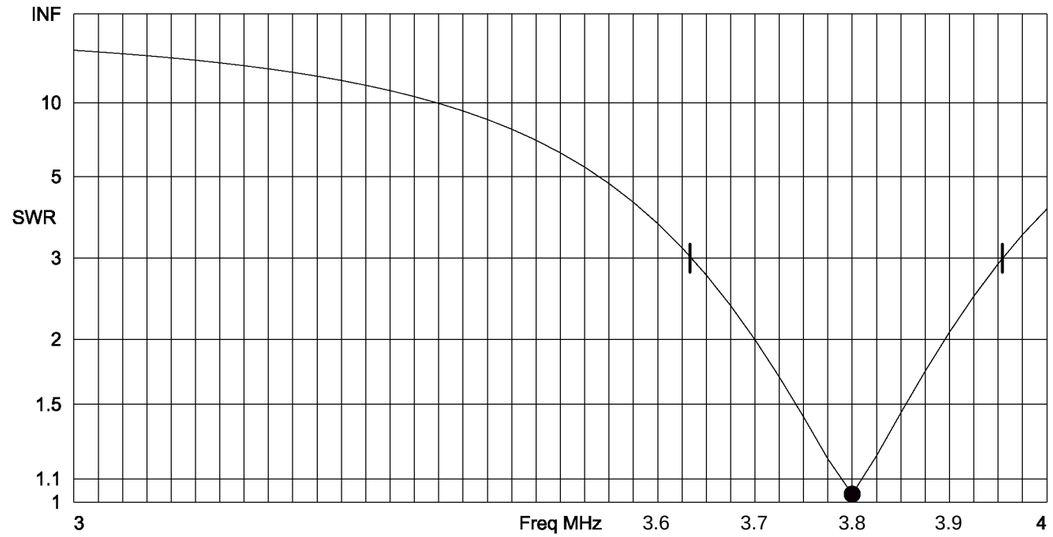
DWG NO. ARES10002
SCALE: AS SHOW DATE: MAY 2026
SHEET 6 OF 7 SIZE: ANSI B



Jamaica NVIS Array 3.85 MHz

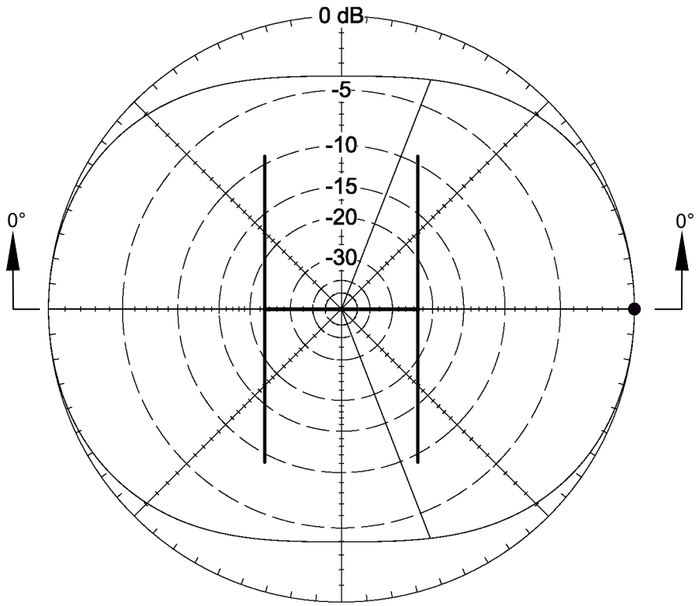
Elevation Plot		Cursor Elev	90.0 deg.
Azimuth Angle	0.0 deg.	Gain	10.04 dBi
Outer Ring	10.04 dBi		0.0 dBmax

Slice Max Gain	10.04 dBi @ Elev Angle = 90.0 deg.
Beamwidth	58.6 deg.; -3dB @ 60.7, 119.3 deg.
Sidelobe Gain	< -100 dBi
Front/Sidelobe	> 100 dB



Jamaica NVIS Array

Freq	3.8 MHz	Source #	1
SWR	**1.033**	Z0	50 ohms
Z	51.59 at 0.43 deg.		
	= 51.59 + j 0.3853 ohms		
Refl Coeff	0.0161 at 13.41 deg.		
	= 0.01566 + j 0.003734		
Ret Loss	35.9 dB		



Jamaica NVIS Array 3.85 MHz

Azimuth Plot		Cursor Az	0.0 deg.
Elevation Angle	49.4 deg.	Gain	3.93 dBi
Outer Ring	3.93 dBi		0.0 dBmax

Slice Max Gain	3.93 dBi @ Az Angle = 0.0 deg.
Front/Side	3.94 dB
Beamwidth	137.5 deg.; -3dB @ 291.2, 68.7 deg.
Sidelobe Gain	3.93 dBi @ Az Angle = 180.0 deg.
Front/Sidelobe	0.0 dB

---------- WIRES ----------

No.	End 1 Coord. (ft)				End 2 Coord. (ft)				Dia (in)	Segs	Insulation	
	Conn.	X	Y	Z	Conn.	X	Y	Z			Diel C	Thk(in)
1	W3E1	63,	0.2,	52		63,	126,	52	#14	23	1	0
2	W4E1	63,	-0.2,	52		63,	-126,	52	#14	23	1	0
3	W1E1	63,	0.2,	52	W5E1	0,	0.2,	52	#14	11	1	0
4	W2E1	63,	-0.2,	52	W5E2	0,	-0.2,	52	#14	11	1	0
5	W8E2	0,	0.2,	52	W9E2	0,	-0.2,	52	#14	3	1	0
6	W8E1	-63,	0.2,	52		-63,	126,	52	#14	23	1	0
7	W9E1	-63,	-0.2,	52		-63,	-126,	52	#14	23	1	0
8	W6E1	-63,	0.2,	52	W3E2	0,	0.2,	52	#14	11	1	0
9	W7E1	-63,	-0.2,	52	W4E2	0,	-0.2,	52	#14	11	1	0

DUVAL AMATEUR RADIO EMERGENCY SERVICE®
PLANS FOR CONSTRUCTION OF

JAMAICA NVIS ARRAY

FAR FIELD MODEL PLOTS

DWG NO. ARES10002
SCALE: AS SHOW DATE: MAY 2026
SHEET 7 OF 7 SIZE: ANSI B