Dielectric®

Antenna Model: **THV-9A10/VP-R 04**

Proposal Number:	C-70519-1
Date:	15-Mar-17
Customer:	Nexstar
Location:	Huntington, WV

Electrical Specifications

Polarization:	Elliptical		
Azimuth Pattern:	Omni		
Antenna Input:	3-1/8"	50 Ohm	EIA/DCA
VSWR:	Channel	1.08 : 1	
Bandwidth:	6 MHz		
Rated Input Power:	15 kW	(11.76 dBk)	Maximum Average Power

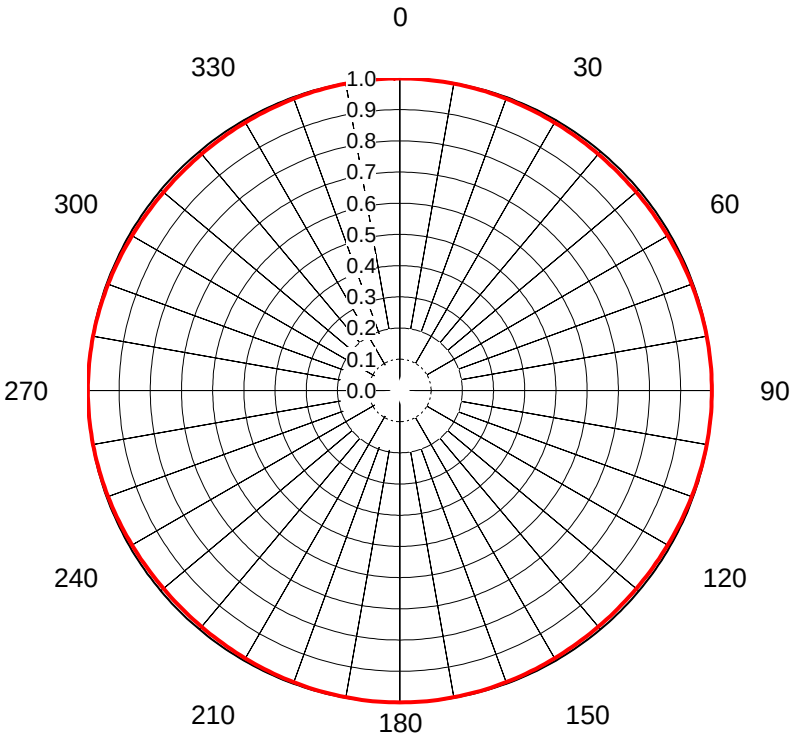
Mechanical Specifications

Mounting:	Top Mounted				
Environmental Protection:	Full Radome				
Height:	51.3 ft (15.6m)	less Lightning Protector	55.3 ft (16.9m)	with Lightning Protector	
Weight:	6110 lb (2.8t)				
Effective Projected Area:	94.1 ft² (8.7m²)	TIA/EIA-222-F	**Basic Wind Speed:**	70 m/h (112.7 km/h)	

Channel Specifications

Call	CH	Freq	Hpol ERP	Vpol ERP	TPO	RMS Main Lobe Hpol Gain	RMS Main Lobe Vpol Gain	RMS at Horizontal Hpol Gain	RMS at Horizontal Vpol Gain
WOWK	10	195 MHz	37.0 kW (15.68 dBk)	37.0 kW (15.68 dBk)	10.6 kW (10.27 dBk)	4.50 (6.53dB)	4.50 (6.53dB)	4.35 (6.38dB)	4.35 (6.38dB)

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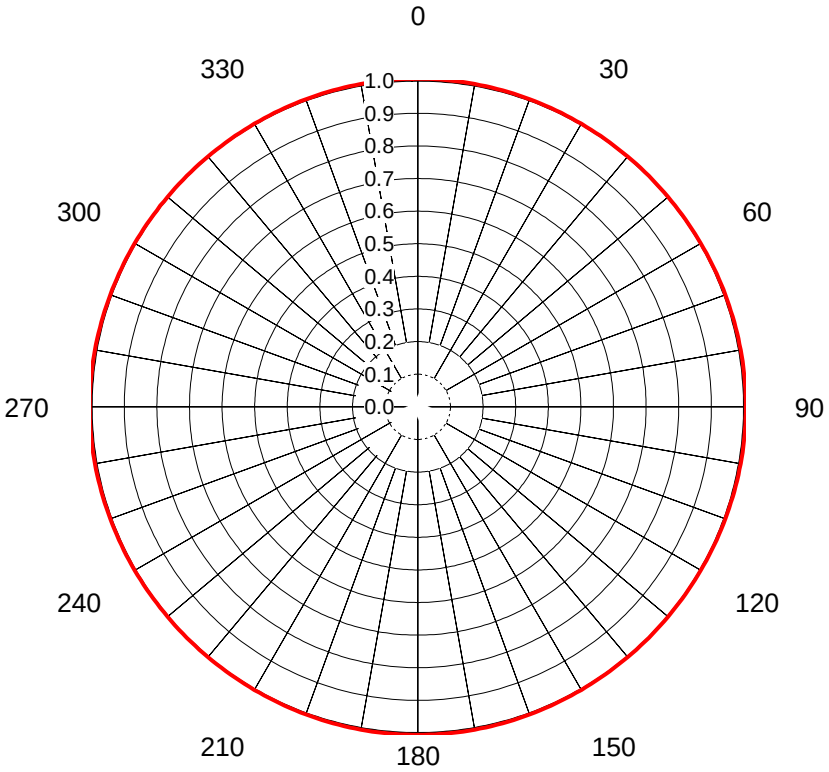
AZIMUTH PATTERN
Horizontal Polarization

Proposal No.	**C-70519-1**
Date	**15-Mar-17**
Call Letters	**WOWK**
Channel	**10**
Frequency	**195 MHz**
Antenna Type	**THV-9A10/VP-R 04**
Gain	**1.01 (0.05dB)**
	Calculated
Circularity	**+/- 1.0 dB**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	1.000	36	0.990	72	0.996	108	0.996	144	0.990	180	1.000	216	0.990	252	0.996	288	0.996	324	0.990
1	1.000	37	0.989	73	0.996	109	0.996	145	0.990	181	1.000	217	0.989	253	0.996	289	0.996	325	0.990
2	1.000	38	0.989	74	0.997	110	0.995	146	0.990	182	1.000	218	0.989	254	0.997	290	0.995	326	0.990
3	1.000	39	0.989	75	0.997	111	0.995	147	0.990	183	1.000	219	0.989	255	0.997	291	0.995	327	0.990
4	1.000	40	0.989	76	0.997	112	0.994	148	0.991	184	1.000	220	0.989	256	0.997	292	0.994	328	0.991
5	1.000	41	0.989	77	0.998	113	0.994	149	0.991	185	1.000	221	0.989	257	0.998	293	0.994	329	0.991
6	0.999	42	0.989	78	0.998	114	0.994	150	0.991	186	1.000	222	0.989	258	0.998	294	0.994	330	0.991
7	0.999	43	0.989	79	0.998	115	0.993	151	0.992	187	0.999	223	0.989	259	0.998	295	0.993	331	0.992
8	0.999	44	0.989	80	0.999	116	0.993	152	0.992	188	0.999	224	0.989	260	0.999	296	0.993	332	0.992
9	0.999	45	0.989	81	0.999	117	0.992	153	0.993	189	0.999	225	0.989	261	0.999	297	0.992	333	0.992
10	0.999	46	0.989	82	0.999	118	0.992	154	0.993	190	0.999	226	0.989	262	0.999	298	0.992	334	0.993
11	0.998	47	0.989	83	0.999	119	0.992	155	0.993	191	0.998	227	0.989	263	0.999	299	0.992	335	0.993
12	0.998	48	0.989	84	0.999	120	0.991	156	0.994	192	0.998	228	0.989	264	0.999	300	0.991	336	0.994
13	0.998	49	0.989	85	1.000	121	0.991	157	0.994	193	0.998	229	0.989	265	1.000	301	0.991	337	0.994
14	0.997	50	0.989	86	1.000	122	0.991	158	0.994	194	0.997	230	0.989	266	1.000	302	0.991	338	0.994
15	0.997	51	0.989	87	1.000	123	0.990	159	0.995	195	0.997	231	0.989	267	1.000	303	0.990	339	0.995
16	0.997	52	0.989	88	1.000	124	0.990	160	0.995	196	0.997	232	0.989	268	1.000	304	0.990	340	0.995
17	0.996	53	0.989	89	1.000	125	0.990	161	0.996	197	0.996	233	0.989	269	1.000	305	0.990	341	0.996
18	0.996	54	0.990	90	1.000	126	0.990	162	0.996	198	0.996	234	0.990	270	1.000	306	0.990	342	0.996
19	0.996	55	0.990	91	1.000	127	0.989	163	0.996	199	0.996	235	0.990	271	1.000	307	0.989	343	0.996
20	0.995	56	0.990	92	1.000	128	0.989	164	0.997	200	0.995	236	0.990	272	1.000	308	0.989	344	0.997
21	0.995	57	0.990	93	1.000	129	0.989	165	0.997	201	0.995	237	0.990	273	1.000	309	0.989	345	0.997
22	0.994	58	0.991	94	1.000	130	0.989	166	0.997	202	0.994	238	0.991	274	1.000	310	0.989	346	0.997
23	0.994	59	0.991	95	1.000	131	0.989	167	0.998	203	0.994	239	0.991	275	1.000	311	0.989	347	0.998
24	0.994	60	0.991	96	0.999	132	0.989	168	0.998	204	0.994	240	0.991	276	0.999	312	0.989	348	0.998
25	0.993	61	0.992	97	0.999	133	0.989	169	0.998	205	0.993	241	0.992	277	0.999	313	0.989	349	0.998
26	0.993	62	0.992	98	0.999	134	0.989	170	0.999	206	0.993	242	0.992	278	0.999	314	0.989	350	0.999
27	0.992	63	0.992	99	0.999	135	0.989	171	0.999	207	0.992	243	0.992	279	0.999	315	0.989	351	0.999
28	0.992	64	0.993	100	0.999	136	0.989	172	0.999	208	0.992	244	0.993	280	0.999	316	0.989	352	0.999
29	0.992	65	0.993	101	0.998	137	0.989	173	0.999	209	0.992	245	0.993	281	0.998	317	0.989	353	0.999
30	0.991	66	0.994	102	0.998	138	0.989	174	1.000	210	0.991	246	0.994	282	0.998	318	0.989	354	0.999
31	0.991	67	0.994	103	0.998	139	0.989	175	1.000	211	0.991	247	0.994	283	0.998	319	0.989	355	1.000
32	0.991	68	0.994	104	0.997	140	0.989	176	1.000	212	0.991	248	0.994	284	0.997	320	0.989	356	1.000
33	0.990	69	0.995	105	0.997	141	0.989	177	1.000	213	0.990	249	0.995	285	0.997	321	0.989	357	1.000
34	0.990	70	0.995	106	0.997	142	0.989	178	1.000	214	0.990	250	0.995	286	0.997	322	0.989	358	1.000
35	0.990	71	0.996	107	0.996	143	0.989	179	1.000	215	0.990	251	0.996	287	0.996	323	0.989	359	1.000

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AZIMUTH PATTERN
Vertical Polarization

Proposal No.	**C-70519-1**
Date	**15-Mar-17**
Call Letters	**WOWK**
Channel	**10**
Frequency	**195 MHz**
Antenna Type	**THV-9A10/VP-R 04**
Gain	**1 (0.02dB)** Calculated
Circularity	**+/- 1.0 dB**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	1.006	36	1.002	72	1.004	108	1.004	144	1.002	180	1.006	216	1.002	252	1.004	288	1.004	324	1.002
1	1.006	37	1.002	73	1.004	109	1.004	145	1.002	181	1.006	217	1.002	253	1.004	289	1.004	325	1.002
2	1.006	38	1.002	74	1.004	110	1.003	146	1.002	182	1.006	218	1.002	254	1.004	290	1.003	326	1.002
3	1.006	39	1.002	75	1.004	111	1.003	147	1.002	183	1.006	219	1.002	255	1.004	291	1.003	327	1.002
4	1.006	40	1.001	76	1.004	112	1.003	148	1.002	184	1.006	220	1.001	256	1.004	292	1.003	328	1.002
5	1.006	41	1.001	77	1.005	113	1.003	149	1.002	185	1.006	221	1.001	257	1.005	293	1.003	329	1.002
6	1.005	42	1.001	78	1.005	114	1.003	150	1.002	186	1.005	222	1.001	258	1.005	294	1.003	330	1.002
7	1.005	43	1.001	79	1.005	115	1.003	151	1.002	187	1.005	223	1.001	259	1.005	295	1.003	331	1.002
8	1.005	44	1.001	80	1.005	116	1.003	152	1.002	188	1.005	224	1.001	260	1.005	296	1.003	332	1.002
9	1.005	45	1.001	81	1.005	117	1.002	153	1.002	189	1.005	225	1.001	261	1.005	297	1.002	333	1.002
10	1.005	46	1.001	82	1.005	118	1.002	154	1.003	190	1.005	226	1.001	262	1.005	298	1.002	334	1.003
11	1.005	47	1.001	83	1.005	119	1.002	155	1.003	191	1.005	227	1.001	263	1.005	299	1.002	335	1.003
12	1.005	48	1.001	84	1.005	120	1.002	156	1.003	192	1.005	228	1.001	264	1.005	300	1.002	336	1.003
13	1.005	49	1.001	85	1.006	121	1.002	157	1.003	193	1.005	229	1.001	265	1.006	301	1.002	337	1.003
14	1.004	50	1.001	86	1.006	122	1.002	158	1.003	194	1.004	230	1.001	266	1.006	302	1.002	338	1.003
15	1.004	51	1.002	87	1.006	123	1.002	159	1.003	195	1.004	231	1.002	267	1.006	303	1.002	339	1.003
16	1.004	52	1.002	88	1.006	124	1.002	160	1.003	196	1.004	232	1.002	268	1.006	304	1.002	340	1.003
17	1.004	53	1.002	89	1.006	125	1.002	161	1.004	197	1.004	233	1.002	269	1.006	305	1.002	341	1.004
18	1.004	54	1.002	90	1.006	126	1.002	162	1.004	198	1.004	234	1.002	270	1.006	306	1.002	342	1.004
19	1.004	55	1.002	91	1.006	127	1.002	163	1.004	199	1.004	235	1.002	271	1.006	307	1.002	343	1.004
20	1.003	56	1.002	92	1.006	128	1.002	164	1.004	200	1.003	236	1.002	272	1.006	308	1.002	344	1.004
21	1.003	57	1.002	93	1.006	129	1.002	165	1.004	201	1.003	237	1.002	273	1.006	309	1.002	345	1.004
22	1.003	58	1.002	94	1.006	130	1.001	166	1.004	202	1.003	238	1.002	274	1.006	310	1.001	346	1.004
23	1.003	59	1.002	95	1.006	131	1.001	167	1.005	203	1.003	239	1.002	275	1.006	311	1.001	347	1.005
24	1.003	60	1.002	96	1.005	132	1.001	168	1.005	204	1.003	240	1.002	276	1.005	312	1.001	348	1.005
25	1.003	61	1.002	97	1.005	133	1.001	169	1.005	205	1.003	241	1.002	277	1.005	313	1.001	349	1.005
26	1.003	62	1.002	98	1.005	134	1.001	170	1.005	206	1.003	242	1.002	278	1.005	314	1.001	350	1.005
27	1.002	63	1.002	99	1.005	135	1.001	171	1.005	207	1.002	243	1.002	279	1.005	315	1.001	351	1.005
28	1.002	64	1.003	100	1.005	136	1.001	172	1.005	208	1.002	244	1.003	280	1.005	316	1.001	352	1.005
29	1.002	65	1.003	101	1.005	137	1.001	173	1.005	209	1.002	245	1.003	281	1.005	317	1.001	353	1.005
30	1.002	66	1.003	102	1.005	138	1.001	174	1.005	210	1.002	246	1.003	282	1.005	318	1.001	354	1.005
31	1.002	67	1.003	103	1.005	139	1.001	175	1.006	211	1.002	247	1.003	283	1.005	319	1.001	355	1.006
32	1.002	68	1.003	104	1.004	140	1.001	176	1.006	212	1.002	248	1.003	284	1.004	320	1.001	356	1.006
33	1.002	69	1.003	105	1.004	141	1.002	177	1.006	213	1.002	249	1.003	285	1.004	321	1.002	357	1.006
34	1.002	70	1.003	106	1.004	142	1.002	178	1.006	214	1.002	250	1.003	286	1.004	322	1.002	358	1.006
35	1.002	71	1.004	107	1.004	143	1.002	179	1.006	215	1.002	251	1.004	287	1.004	323	1.002	359	1.006

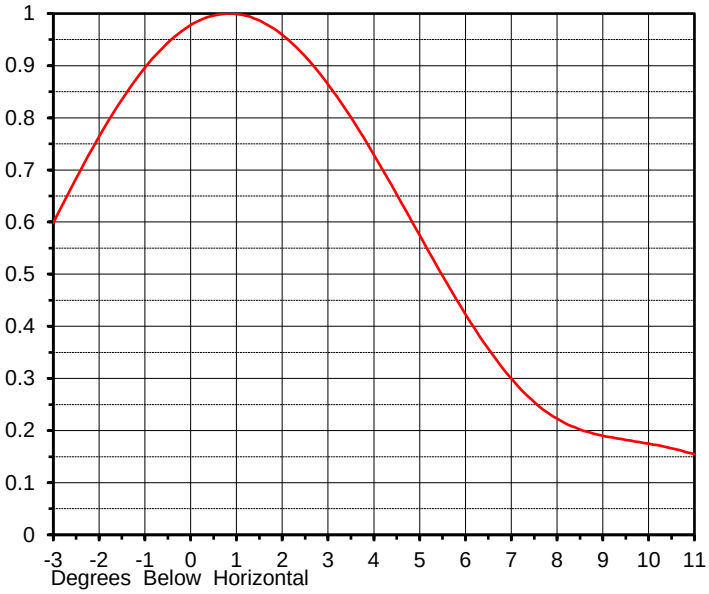
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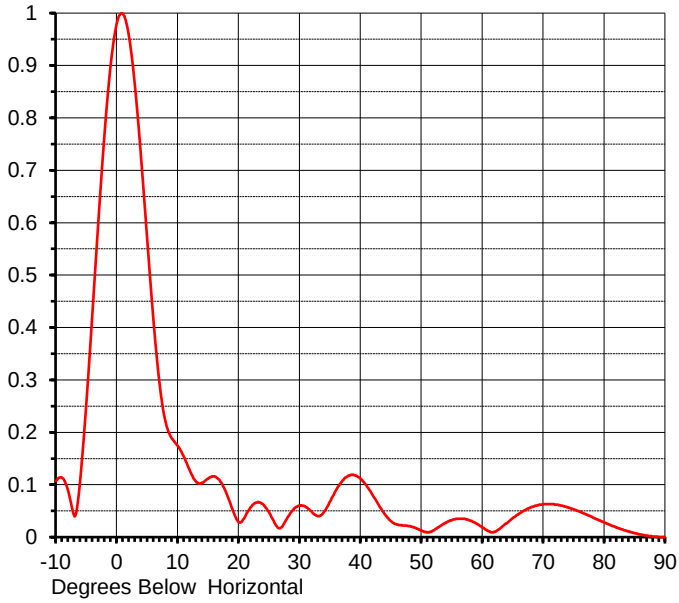
ELEVATION PATTERN

Proposal No.	**C-70519-1**
Date	**15-Mar-17**
Call Letters	**WOWK**
Channel	**10**
Frequency	**195 MHz**
Antenna Type	**THV-9A10/VP-R 04**

RMS Directivity at Main Lobe	**9.0 (9.54 dB)**	Beam Tilt	**0.75 deg**
RMS Directivity at Horizontal	**8.6 (9.34 dB)**	Pattern Number	**09V090075**

Calculated





Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.107	10.0	0.173	30.0	0.060	50.0	0.012	70.0	0.063
-9.0	0.113	11.0	0.152	31.0	0.057	51.0	0.009	71.0	0.063
-8.0	0.087	12.0	0.125	32.0	0.048	52.0	0.013	72.0	0.062
-7.0	0.040	13.0	0.105	33.0	0.040	53.0	0.021	73.0	0.060
-6.0	0.116	14.0	0.104	34.0	0.049	54.0	0.028	74.0	0.057
-5.0	0.263	15.0	0.112	35.0	0.069	55.0	0.033	75.0	0.053
-4.0	0.437	16.0	0.116	36.0	0.091	56.0	0.035	76.0	0.048
-3.0	0.616	17.0	0.105	37.0	0.108	57.0	0.035	77.0	0.043
-2.0	0.779	18.0	0.082	38.0	0.117	58.0	0.031	78.0	0.038
-1.0	0.907	19.0	0.051	39.0	0.118	59.0	0.026	79.0	0.033
0.0	0.983	20.0	0.028	40.0	0.111	60.0	0.018	80.0	0.028
1.0	0.998	21.0	0.039	41.0	0.097	61.0	0.011	81.0	0.023
2.0	0.952	22.0	0.058	42.0	0.079	62.0	0.010	82.0	0.018
3.0	0.852	23.0	0.066	43.0	0.060	63.0	0.018	83.0	0.014
4.0	0.714	24.0	0.062	44.0	0.043	64.0	0.027	84.0	0.011
5.0	0.559	25.0	0.046	45.0	0.030	65.0	0.037	85.0	0.007
6.0	0.409	26.0	0.024	46.0	0.024	66.0	0.045	86.0	0.005
7.0	0.290	27.0	0.019	47.0	0.022	67.0	0.052	87.0	0.003
8.0	0.218	28.0	0.038	48.0	0.021	68.0	0.057	88.0	0.001
9.0	0.188	29.0	0.054	49.0	0.017	69.0	0.061	89.0	0.000
								90.0	0.000

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MECHANICAL SPECIFICATIONS

Proposal No.	**C-70519-1**
Date	**15-Mar-17**
Call Letters	**WOWK**
Channel	**10**
Frequency	**195 MHz**
Antenna Type	**THV-9A10/VP-R 04**

Preliminary Specifications

Top Mounted

Without ice TIA/EIA-222-F

Height AGL	1100 ft (335.3 m)
Basic Wind Speed	70 m/h (112.7 km/h)

Mechanical Specifications

Height with Lightning Protector	H4	55.3 ft (16.9m)
Height less Lightning Protector	H2	51.3 ft (15.6m)
Height of Center of Radiation	H3	25.6 ft (7.8m)
Force Coeff. x Projected Area	CaAc	94.1 ft² (8.7m²)
Moment Arm	D1	28.9 ft (8.8m)
Weight	W	6110 lb (2.8t)

Antenna designed in accordance with AISC specifications for design of structural steel as prescribed by TIA/EIA-222-F

Prepared by:	KLP	**Date:**	15-Mar-17	**ME:**	**EE:**
Rev. No.1 by:	CAB	**Date:**	28-Oct-17		

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Summary

Proposal No.	**C-70519-1**
Date	**15-Mar-17**
Call Letters	**WOWK**
Channel	**10**
Frequency	**195 MHz**
Antenna Type	**THV-9A10/VP-R 04**

Antenna

	Hpol		Vpol	
ERP:	37.0 kW	**(15.68 dBk)**	37.0 kW	**(15.68 dBk)**
RMS Gain*	4.50	(6.53 dB)	4.50	(6.53 dB)

Antenna Input Power

8.2 kW **(9.15 dBk)**

Transmission Line

Type:	**Rigid**	Attenuation:	**(1.12 dB)**
Size:	**4-1/16"**	Efficiency:	**77.2%**
Impedance:	**50 Ohm**		
Length:	**1200 ft**	**365.8 m**	

Transmitter Output

10.6 kW **(10.27 dBk)**

Transmitter filter losses not included

* Directivity and Gain are with respect to half wave dipole. The gain includes feed system losses

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