

Channel Study

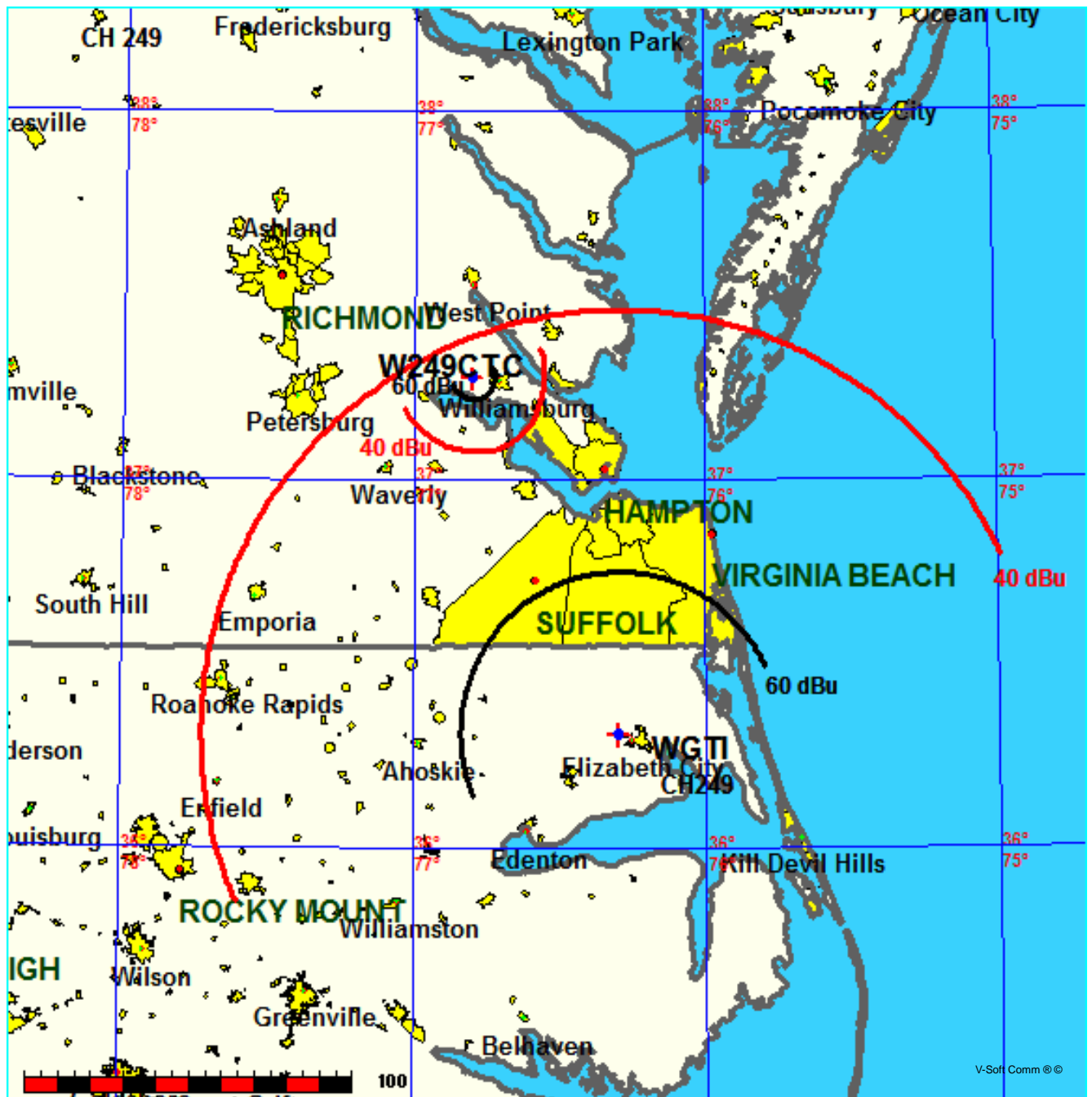
REFERENCE		CH# 249D - 97.7 MHz, Pwr= 0.013 kW, HAAT= 113.7 M, COR= 126 M								DISPLAY DATES	
37 16 53.9 N.		Average Protected F(50-50)= 6.6 km								DATA 10-20-14	
76 47 48.7 W.		Omni-directional								SEARCH 10-27-14	
CH CITY	CALL	TYPE STATE	ANT	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
249D Williamsburg	W249CT	CP	C	100.3	13.59	37 15 35.0	0.090	29.8	9.0	-22.8*	-17.2
			VA	280.4	BNPFT20130826AIU	76 38 46.0	90	96	Educational Media Foundati		
249C2 Winfall	WGTT	LIC	NCX	157.3	116.71	36 18 40.0	31.000	128.1	48.8	-18.3*<	44.7
			NC	337.6	BLD20120308ABW	76 17 34.0	157	157	Educational Media Foundati		
247B Newport News	WGH-FM	LIC	CN	135.9	49.21	36 57 47.0	74.000	6.0	65.0	36.3	-16.3*<
			VA	316.2	BMLH19851227KC	76 24 42.0	120	123	Mhr License Llc		
251B Richmond	WTVR-FM	LIC	HN	298.0	67.98	37 33 60.0	50.000	8.0	77.2	53.3	-9.8*<
			VA	117.6	BLH1944	77 28 36.0	256	307	Cc Licenses, Llc		
249D Bellwood	W249CI	LIC	C	292.6	68.05	37 30 52.5	0.240	53.7	16.8	7.6	28.7
			VA	112.2	BLFT20140314AAE	77 30 28.1	147	201	Delmarva Educational Assoc		
250D Newport News	W250BQ	LIC	DV	126.0	38.44	37 04 41.5	0.075	14.4	10.2	17.3	18.6
			VA	306.2	BLFT20121108AJK	76 26 47.2	124	125	Educational Media Foundati		
249A Lexington Park	WMDM	LIC	CX	10.5	113.04	38 16 58.0	6.000	87.6	29.0	19.4	63.9
			MD	190.6	BLH20051221ALT	76 33 39.0	100	114	Somar Communications, Inc.		
250D Portsmouth	W250AE	LIC	DV	138.2	70.76	36 48 22.0	0.250	10.1	7.1	53.7	54.0
			VA	318.5	BLFT20031205AWF	76 16 01.0	16	17	Virginia Beach Educational		
250D Portsmouth	W250AE	CP	DV	138.2	70.76	36 48 22.0	0.250	10.1	7.1	53.7	54.0
			VA	318.5	BPFT20120314AAD	76 16 01.0	16	17	Virginia Beach Educational		
252D Virginia Beach	W252CB	LIC	C	134.3	73.97	36 48 57.0	0.250	1.1	13.3	66.0	60.4
			VA	314.6	BLFT20110504ABF	76 12 07.0	106	107	Liberty University, Inc.		

Terrain database is NGDC 30 SEC, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM
Contour distances are on direct line to and from reference station. Reference Zone= East Zone, Co to 3rd adjacent.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
***affixed to 'IN' or 'OUT' values = site inside protected contour.
< = Contour Overlap
Reference station has protected zone issue:

FMCommander Single Allocation Study - 10-27-2014 - NGDC 30 SEC
W249CT.C's Overlaps (In= -18.26 km, Out= 44.74 km)

W249CT.C CH 249 D
Lat= 37 16 53.9, Lng= 76 47 48.7
0.013 kW 113.7 M HAAT, 126 M COR
Prot.= 60 dBu, Intef.= 40 dBu

WGTI CH 249 C2 73.215 N BLED20120308ABW
Lat= 36 18 40.0, Lng= 76 17 34.0
31.0 kW 157 M HAAT, 157 M COR
Prot.= 60 dBu, Intef.= 40 dBu



FMCommander Single Allocation Study - 10-27-2014 - NGDC 30 SEC
W249CT.C's Overlaps (In= 7.57 km, Out= 28.65 km)

W249CT.C CH 249 D

Lat= 37 16 53.9, Lng= 76 47 48.7

0.013 kW 113.7 M HAAT, 126 M COR

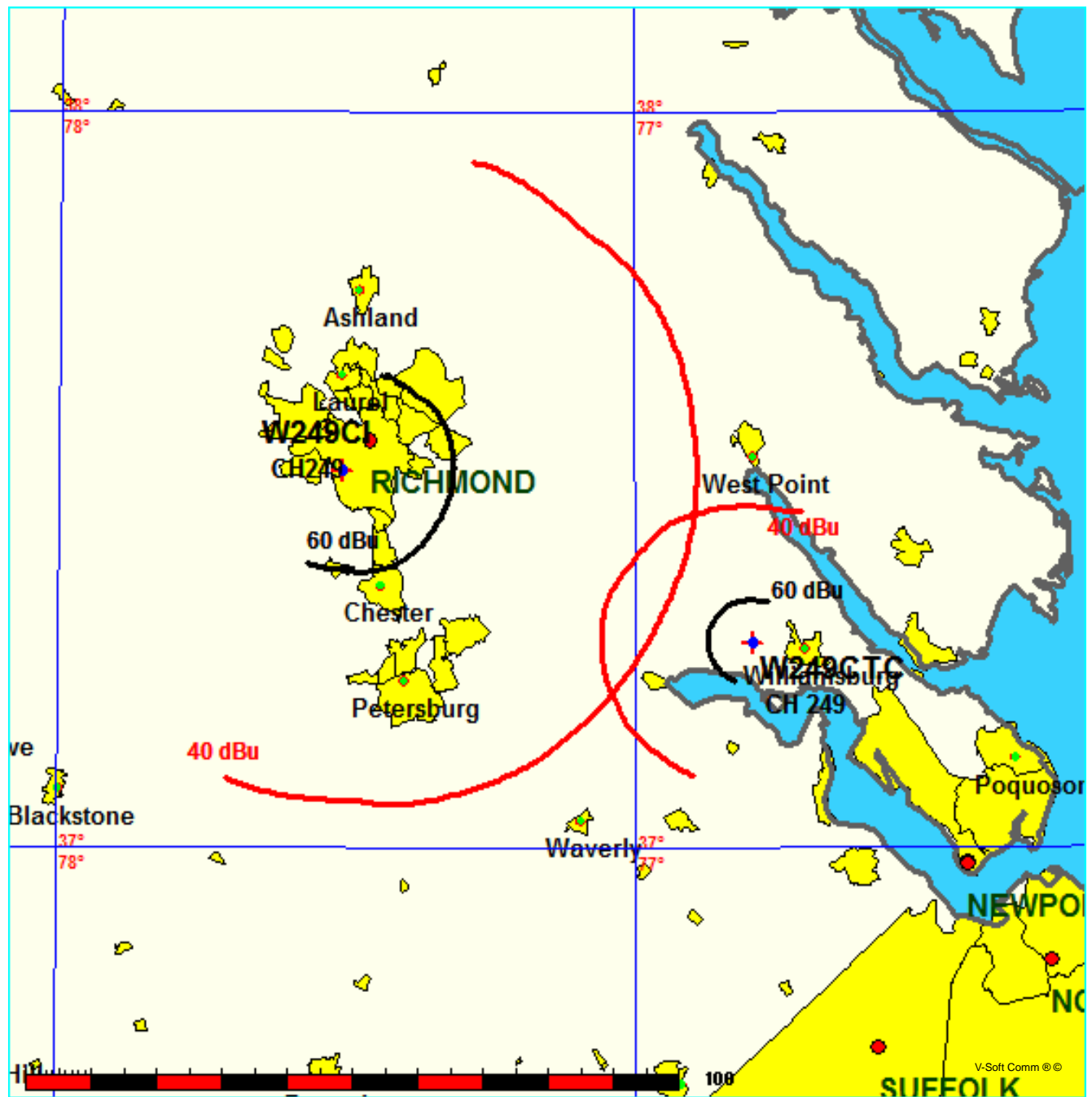
Prot.= 60 dBu, Intef.= 40 dBu

W249CI CH 249 D BLFT20140314AAE

Lat= 37 30 52.5, Lng= 77 30 28.1

0.24 kW 146.9 M HAAT, 201 M COR

Prot.= 60 dBu, Intef.= 40 dBu



Educational Media Foundation

5700 W Oaks Blvd
Rocklin, CA 95765

Exhibit 13-A
Williamsburg, VA

Compliance with C.F.R. 74.1204

The proposed FM Translator is located within the protected 54dBu contour of second adjacent channel station WGH-FM, channel 247B, Newport News, VA. According to 74.1204(a)(3), in order to protect second and third adjacent facilities, the difference in dbu between the two facilities must not exceed 40dBu.

The proposed ERP for W249CT.P:	13 watts
The proposed COR for W249CT.P:	110 meters
WGH-FM F(50/50) contour at proposed site:	61.3dBu
The F(50/10) contour of proposed W249CT.P:	101.3dBu

The predicted distance to the 101.3dbu interfering contour is 217.8 meters. Taking into account the vertical elevation pattern of the Jampro two bay halfwaved spaced antenna and the height above ground of 110M, it has been determined that the interfering contour of 101.3dbu does not reach the ground. As seen in Exhibit 13-A1, the lowest elevation for this interfering contour is 45.326M above ground at a distance of 129m from the antenna.

As can be seen in Exhibit 13-A2 there are no surrounding structures which are tall enough to enter the interfering contour within the 217.8m distance from the antenna.

Therefore, EMF respectfully requests a waiver of C.F.R. 74.1204 based on no population within the area of predicted interference.

EXHIBIT 13 - A1
74.1204(d) Showing
W249CT
Williamsburg, VA

ERP (kw): 0.013
Height of Antenna above Ground (m): 110
Translator's IX Contour: 101.3
Antenna Type: Jampro JLCP-2BAY HALF WAVE

Depression Angle from Horizon	Antenna Relative Field	ERP (kw) from the Antenna RF	Dist. To IX Contour (m)	Height IX Contour Above Ground (m)
0	1.000	0.0130	217.757	110.000
5	0.984	0.0126	214.273	91.325
10	0.939	0.0115	204.474	74.494
15	0.863	0.0097	187.924	61.362
20	0.782	0.0079	170.286	51.759
25	0.693	0.0062	150.905	46.225
30	0.594	0.0046	129.348	45.326
35	0.478	0.0030	104.088	50.298
40	0.378	0.0019	82.312	57.091
45	0.289	0.0011	62.932	65.501
50	0.216	0.0006	47.035	73.969
55	0.146	0.0003	31.792	83.957
60	0.094	0.0001	20.469	92.273
65	0.056	0.0000	12.194	98.948
70	0.030	0.0000	6.533	103.861
75	0.013	0.0000	2.831	107.266
80	0.004	0.0000	0.871	109.142
85	0.001	0.0000	0.218	109.783
90	0.001	0.0000	0.218	109.782

Educational Media Foundation

5700 W Oaks Blvd
Rocklin, CA 95765

Exhibit 13-A
Williamsburg, VA

Compliance with C.F.R. 74.1204

The proposed FM Translator is located within the protected 54dBu contour of second adjacent channel station WTVR-FM, channel 251B, Richmond, VA. According to 74.1204(a)(3), in order to protect second and third adjacent facilities, the difference in dBu between the two facilities must not exceed 40dBu.

The proposed ERP for W249CT.P:	13 watts
The proposed COR for W249CT.P:	110 meters
WTVR-FM F(50/50) contour at proposed site:	58.0dBu
The F(50/10) contour of proposed W249CT.P:	98.0dBu

The predicted distance to the 98.0dbu interfering contour is 318.4 meters. Taking into account the vertical elevation pattern of the Jampro two bay halfwaved spaced antenna and the height above ground of 110M, it has been determined that the interfering contour of 98.0dbu does not reach the ground. As seen in Exhibit 13-A1, the lowest elevation for this interfering contour is 15.436M above ground at a distance of 189m from the antenna.

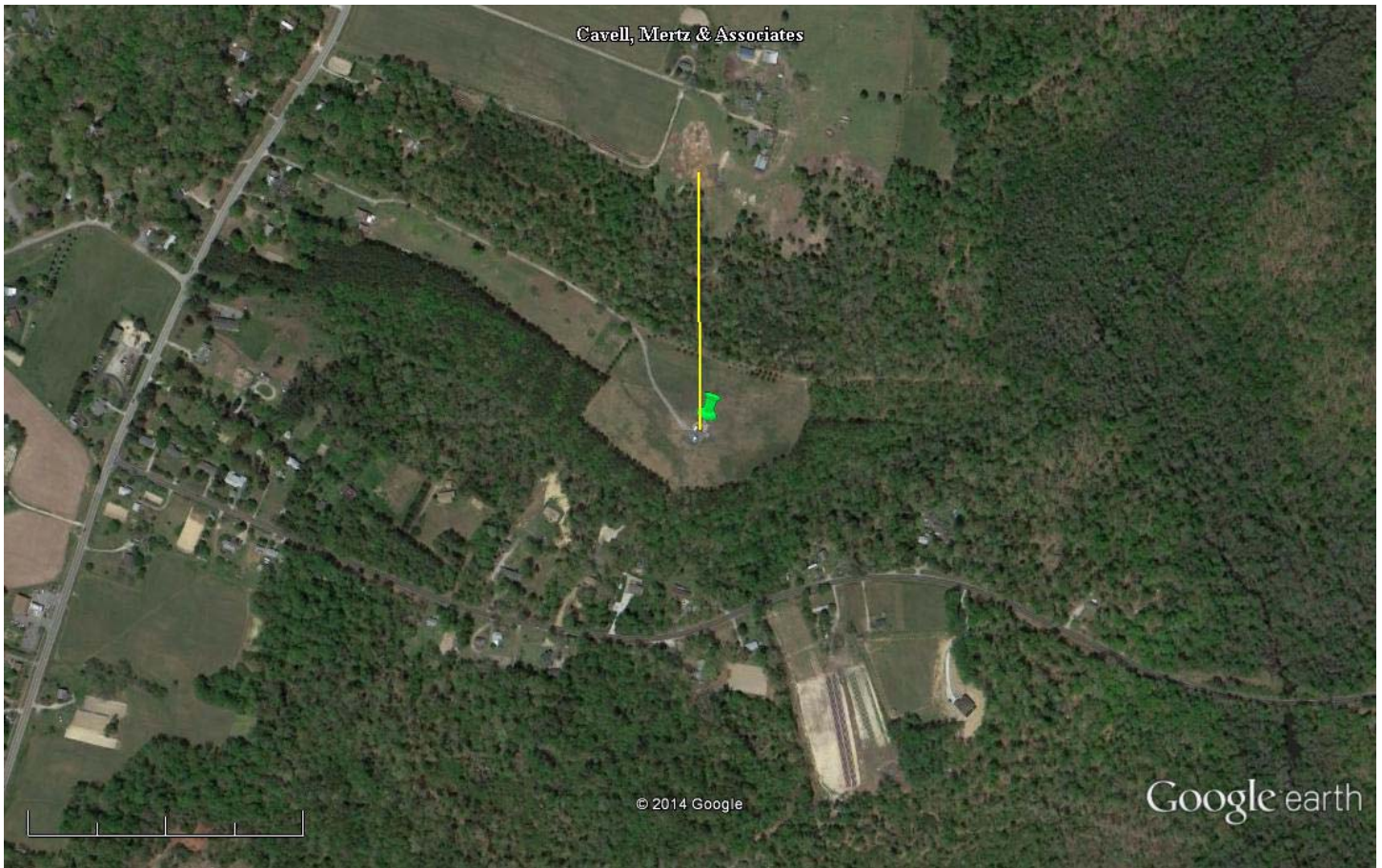
As can be seen in Exhibit 13–A2 there are no surrounding structures which are tall enough to enter the interfering contour within the 318.4m distance from the antenna.

Therefore, EMF respectfully requests a waiver of C.F.R. 74.1204 based on no population within the area of predicted interference.

EXHIBIT 13 - A1
74.1204(d) Showing
W249CT
Williamsburg, VA

ERP (kw): 0.013
Height of Antenna above Ground (m): 110
Translator's IX Contour: 98
Antenna Type: Jampro JLCP-2BAY HALF WAVE

Depression Angle from Horizon	Antenna Relative Field	ERP (kw) from the Antenna RF	Dist. To IX Contour (m)	Height IX Contour Above Ground (m)
0	1.000	0.0130	318.399	110.000
5	0.984	0.0126	313.305	82.694
10	0.939	0.0115	298.977	58.083
15	0.863	0.0097	274.778	38.882
20	0.782	0.0079	248.988	24.841
25	0.693	0.0062	220.650	16.749
30	0.594	0.0046	189.129	15.436
35	0.478	0.0030	152.195	22.705
40	0.378	0.0019	120.355	32.637
45	0.289	0.0011	92.017	44.934
50	0.216	0.0006	68.774	57.316
55	0.146	0.0003	46.486	71.921
60	0.094	0.0001	29.930	84.080
65	0.056	0.0000	17.830	93.840
70	0.030	0.0000	9.552	101.024
75	0.013	0.0000	4.139	106.002
80	0.004	0.0000	1.274	108.746
85	0.001	0.0000	0.318	109.683
90	0.001	0.0000	0.318	109.682



Google earth

feet
meters



Green Pin Marker:

NAD27

37 16' 53.9" N

76 47' 48.7" W

Yellow Marker: 318m at zero degrees true north