

### Channel Study

REFERENCE		CH# 296D - 107.1 MHz, Pwr= 0.25 kW DA, HAAT= 71.8 M, COR= 254 M								DISPLAY DATES	
42 30 40.7 N.		Average Protected F(50-50)= 11.0 km								DATA 01-09-17	
82 57 34.1 W.		Standard Directional								SEARCH 01-12-17	
CH CITY	CALL	TYPE STATE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
294B Detroit	WDTW-FM	LIC	CN MI	199.4 19.4	21.13 BMLH19890804KA	42 19 55.0 83 02 42.0	61.000 155	6.3 338	66.9 Amfm Radio Licenses, L.l.c	8.2	-46.7*<
298B Detroit	WGPR	LIC	CX MI	207.0 26.9	19.14 BLH20040422ABP	42 21 28.0 83 03 55.0	50.000 124	5.5 316	61.5 Wgpr, Inc.	8.2	-43.0*<
296D Detroit	W296CG!	LIC	DV MI	0.0 0.0	0.00 BLFT20160712AAV	42 30 40.7 82 57 34.1	0.250	22.6 254	6.8 Educational Media Foundati	-29.6	-29.9
296A Port Huron	WSAQ	LIC	CN MI	37.8 218.1	65.71 BLH19910806KA	42 58 37.0 82 27 52.0	6.000 91	86.0 286	27.8 Liggett Communications, L.	-22.9*<	29.6
296A Ann Arbor	WQKL	LIC	CN MI	248.3 67.8	69.46 BLH19911119KA	42 16 41.0 83 44 32.0	3.000 88	75.0 350	23.7 Cumulus Licensing Llc	-13.0*<	20.8
242B Detroit	WDVD	LIC	CN MI	249.1 69.0	17.98 BLH19861112KB	42 27 13.0 83 09 50.0	20.000 240	78.0 440	65.0 Radio License Holdings Llc	15.0R	3.0M
296A Saginaw	WTLZ	LIC	CN MI	320.5 139.9	122.01 BMLH19900416KA	43 21 14.0 83 55 06.0	4.900 110	85.1 294	28.2 Alpha Media Licensee Llc	26.7	59.7
297B Elyria	WNWV	LIC	CX OH	149.9 330.5	159.08 BLH20041102AEC	41 16 10.0 82 00 16.0	20.000 238	79.9 493	67.6 Rubber City Radio Group, I	67.6	67.2

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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 restricted contour.

< = Station meets FCC minimum distance spacing for its class.

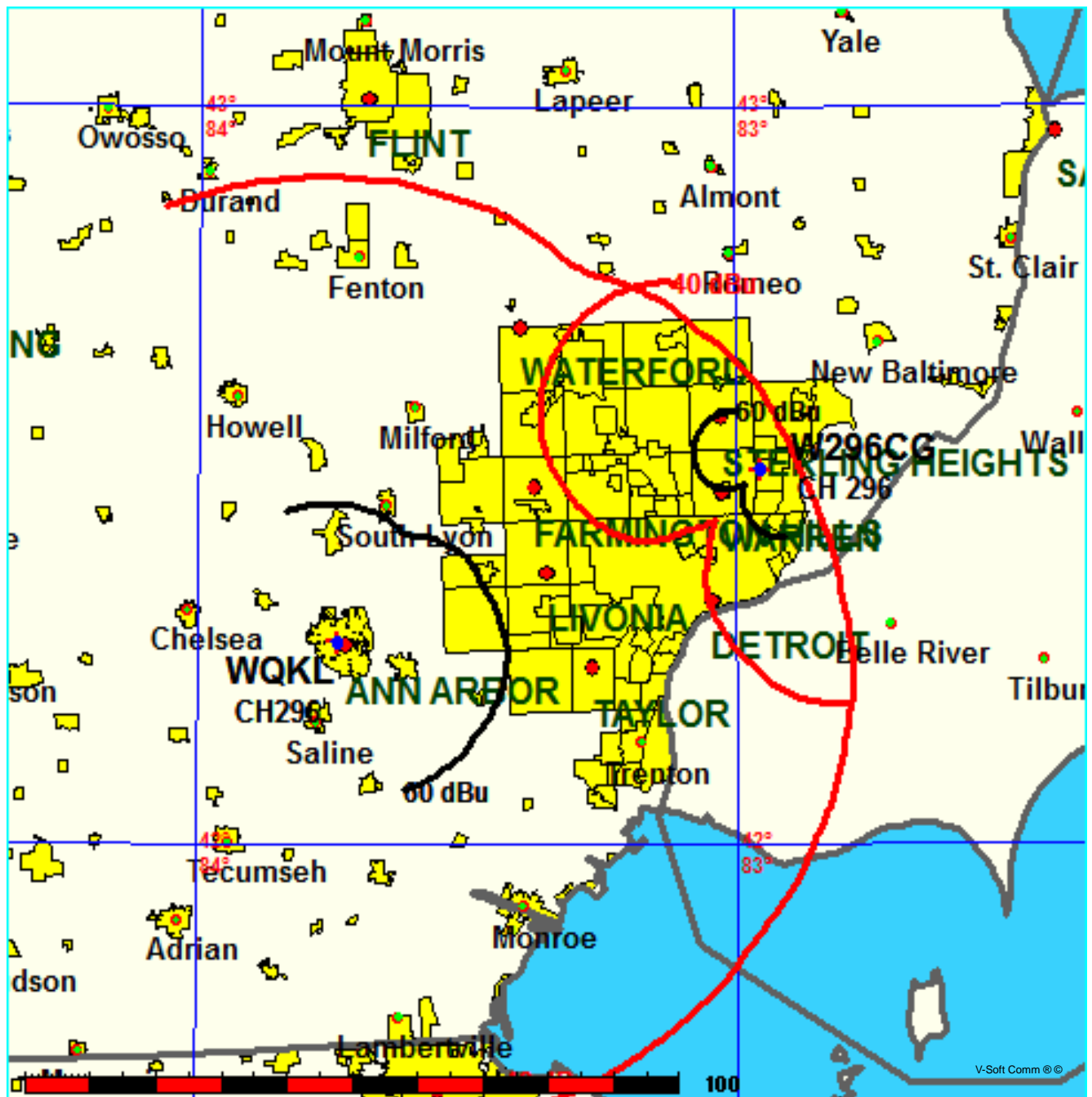
< = Contour Overlap

Reference station has protected zone issue: Canada

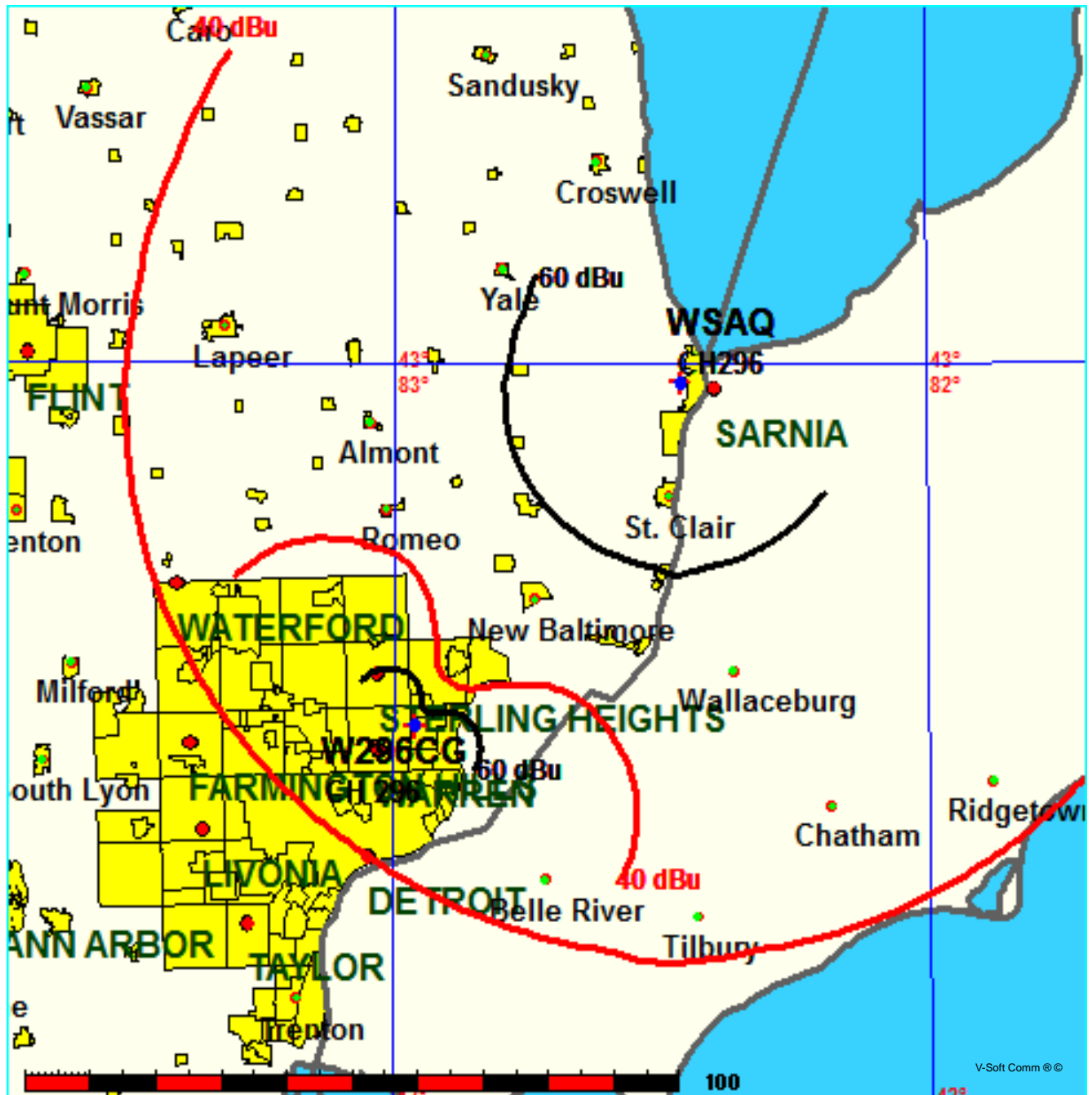
FMCommander Single Allocation Study - 01-12-2017 - NGDC 30 SEC  
W296CG's Overlaps (In= -13.02 km, Out= 20.83 km)

W296CG CH 296 D DA  
Lat= 42 30 40.7, Lng= 82 57 34.1  
0.25 kW 71.8 m HAAT, 254 m COR  
Prot.= 60 dBu, Intef.= 40 dBu

WQKL CH 296 A BLH19911119KA  
Lat= 42 16 41.0, Lng= 83 44 32.0  
3.0 kW 88 m HAAT, 350 m COR  
Prot.= 60 dBu, Intef.= 40 dBu



WSAQ CH 296 A BLH19910806KA  
Lat= 42 58 37.0, Lng= 82 27 52.0  
6.0 kW 91 m HAAT, 286 m COR  
Prot.= 60 dBu, Intef.= 40 dBu



**Educational Media Foundation**

5700 W Oaks Blvd  
Rocklin, CA 95765

*Exhibit 13-A  
Detroit, MI*

**Compliance with C.F.R. 74.1204**

The proposed FM Translator to operate on channel 296 is located within the protected 54dBu contour of second adjacent channel station WTDW-FM, channel 294B, Detroit, MI. 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 W296CG.P:	250 watts
The proposed COR for W296CG.P:	66 meters
WTDW-FM F(50/50) contour at proposed site:	79.0dBu
The F(50/10) contour of proposed W296CG.P:	119.0dBu

The predicted distance to the 119.0dbu interfering contour is 124.4 meters. Taking into account the vertical elevation pattern of the Scala CL vertically polarized antenna and the height above ground of 66m, it has been determined that the interfering contour of 119.0dbu does not reach the ground. As seen in Exhibit 13-A1, the lowest elevation for this interfering contour is 28.4m above ground at a distance of 58m 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 124.4m 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  
W296CG  
Detroit, MI

ERP (kw): 0.25  
Height of Antenna above Roof (m): 66  
Translator's IX Contour: 119  
Antenna Type: Scala CL-V

<u>Depression Angle from Horizon</u>	<u>Antenna Relative Field</u>	<u>ERP (kw) from the Antenna RF</u>	<u>Dist. To IX Contour (m)</u>	<u>Height IX Contour Above Ground (m)</u>
0	1.000	0.2500	124.4429	66.000
5	0.980	0.2401	121.9540	55.371
10	0.950	0.2256	118.2207	45.471
15	0.895	0.2003	111.3764	37.174
20	0.820	0.1681	102.0432	31.099
25	0.735	0.1351	91.4655	27.345
30	0.645	0.1040	80.2656	25.867
35	0.563	0.0791	69.9991	25.850
40	0.470	0.0552	58.4881	28.405
45	0.360	0.0324	44.7994	34.322
50	0.250	0.0156	31.1107	42.168
55	0.155	0.0060	19.2886	50.200
60	0.085	0.0018	10.5776	56.839
65	0.045	0.0005	5.5999	60.925
70	0.020	0.0001	2.4889	63.661
75	0.010	0.0000	1.2444	64.798
80	0.010	0.0000	1.2444	64.774
85	0.010	0.0000	1.2444	64.760
90	0.010	0.0000	1.2444	64.756

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*Exhibit 13-A  
Detroit, MI*

**Compliance with C.F.R. 74.1204**

The proposed FM Translator to operate on channel 296 is located within the protected 54dBu contour of second adjacent channel station WGPR, channel 298B, Detroit, MI. 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 W296CG.P:	250 watts
The proposed COR for W296CG.P:	66 meters
WGPR F(50/50) contour at proposed site:	78.5dBu
The F(50/10) contour of proposed W296CG.P:	118.5dBu

The predicted distance to the 118.5dbu interfering contour is 131.8 meters. Taking into account the vertical elevation pattern of the Scala CL vertically polarized antenna and the height above ground of 66m, it has been determined that the interfering contour of 118.5dbu does not reach the ground. As seen in Exhibit 13-A1, the lowest elevation for this interfering contour is 26.2m above ground at a distance of 62m from the antenna.

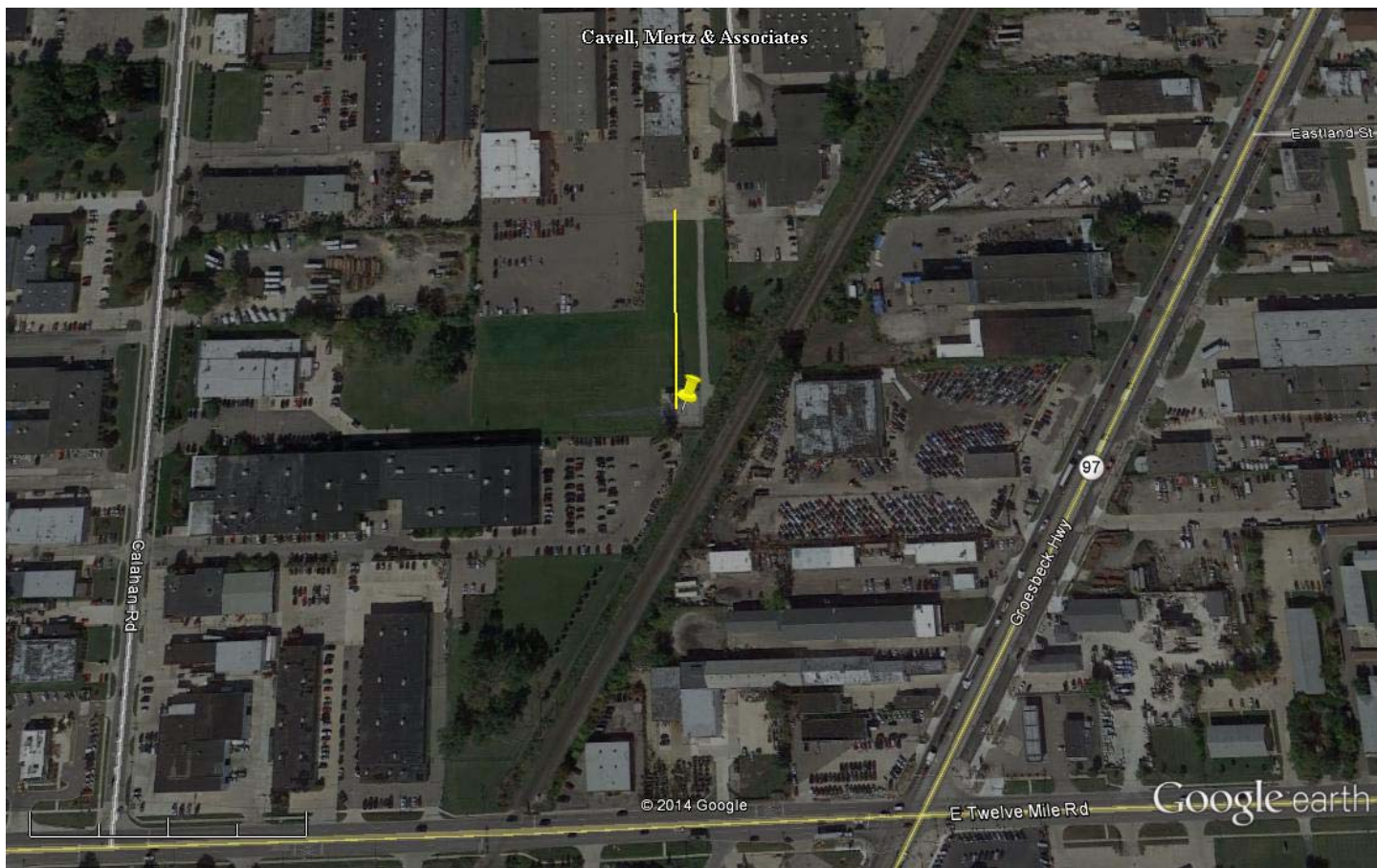
As can be seen in Exhibit 13-A2 there are no surrounding structures which are tall enough to enter the interfering contour within the 131.8m distance from the antenna.

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  
W296CG  
Detroit, MI

ERP (kw): 0.25  
Height of Antenna above Roof (m): 66  
Translator's IX Contour: 118.5  
Antenna Type: Scala CL-V

<u>Depression Angle from Horizon</u>	<u>Antenna Relative Field</u>	<u>ERP (kw) from the Antenna RF</u>	<u>Dist. To IX Contour (m)</u>	<u>Height IX Contour Above Ground (m)</u>
0	1.000	0.2500	131.8166	66.000
5	0.980	0.2401	129.1802	54.741
10	0.950	0.2256	125.2257	44.255
15	0.895	0.2003	117.9758	35.466
20	0.820	0.1681	108.0896	29.031
25	0.735	0.1351	96.8852	25.055
30	0.645	0.1040	85.0217	23.489
35	0.563	0.0791	74.1468	23.471
40	0.470	0.0552	61.9538	26.177
45	0.360	0.0324	47.4540	32.445
50	0.250	0.0156	32.9541	40.756
55	0.155	0.0060	20.4316	49.263
60	0.085	0.0018	11.2044	56.297
65	0.045	0.0005	5.9317	60.624
70	0.020	0.0001	2.6363	63.523
75	0.010	0.0000	1.3182	64.727
80	0.010	0.0000	1.3182	64.702
85	0.010	0.0000	1.3182	64.687
90	0.010	0.0000	1.3182	64.682



Google earth

feet 1000  
meters 300



Yellow Pin:

NAD27

42 30' 40.7" N

82 57' 34.2" W

Yellow Marker: 131m at zero degrees true north