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ENGINEERING EXHIBIT

EFFECT OF THE

ADDITION OF ANTENNAS

BY RADIO STATION W201CP

ON EXISTING TOWER

GLOBAL SIGNAL Site # 3002671

BINGHAMTON, NEW YORK

January 8, 2007



W201CP / Global Signal Tower

Binghamton, New York

INTRODUCTION

This engineering report is written on behalf of Calvary Chapel of Twin Falls, Incorporated, (W201CP) to demonstrate its compliance with the “Special operating conditions or restrictions” in its current Construction Permit BMPFT-20061023AAV, condition number four (4). This condition is based upon 47 C.F.R. 73.154 (a), which requires AM coordination with all directional broadcast stations within 3.2 kilometers from the constructed or modified tower for directional broadcast stations, and 0.80 kilometers for non-directional broadcast stations. This special operating condition required notification and pre- and post-construction field strength measurements on two broadcast stations, WNBF and WYOS, both of Binghamton, New York.

W201CP has added its antennas and additional feed line to an existing tower owned by Global Signal Incorporated. The tower is located at North Latitude 42° 03' 45.00”, West Longitude 75° 56' 37.00” (ASRN 1017801). The physical address of the site is 203 Ingraham Hill Road, Binghamton, New York.

WNBF is licensed to Binghamton, New York. The station operates on an assigned frequency of 1290 kilohertz with a daytime transmitter output power of 9.30 kilowatts, non-directional, and a nighttime transmitter output power of 5.00 kilowatts, directional. The Global Signal / W201CP tower is located 1.0 kilometers at a bearing of 60.44-degrees from WNBF.

WYOS is also licensed to Binghamton, New York. The station operates on an assigned frequency of 1360 kilohertz with a daytime transmitter output power of 5.0 kilowatts, a nighttime transmitter output power of 0.50 kilowatts, both directional with separate directional antenna patterns. The Global Signal tower is located at a distance of 3.13 kilometers at a bearing of 260.94-degrees from WYOS.

PRE AND POST-CONSTRUCTION FIELD STRENGTH MEASUREMENTS

WNBF and WYOS are both owned and operated by Citadel Broadcasting Corporation. Mr. Rick Elliker, Chief Engineer for Citadel Broadcasting in Binghamton, was notified by telephone of the requirement for pre- and post-construction field strength measurements of both WNBF and WYOS. Mr. Elliker agreed to provide copies of past partial proof of performances

of the stations to this firm to allow the measurements to be taken at previous locations. However, prior to taking the measurements, while scheduling times to operate the stations in the nighttime directional antenna mode during daytime hours, we were informed that the station management had refused to allow us to operate the stations in the nighttime mode during the daytime hours. Mr. Elliker informed us that a partial proof would have to be taken after sundown.

WNBF normally operates non-directional during the daytime and directional at nighttime. However, currently, WNBF is operating a "Station Temporary Authority (STA) number BSTA-20060629AGV. This STA was to expire October 14, 2006, but it is assumed that the STA was extended. The STA allowed the station to operate its normal non-directional power during the daytime, and also allowed it to operate non-directional at nighttime at reduced power. The station was performing a major renovation of the directional antenna system by changing sample lines, re-grounding towers, etc. The only method for the station to switch to directional operation was by physically going to the transmitter site and manually putting the station in directional mode. This was scheduled for the evening of December 27, 2006; however, upon arriving in Binghamton on the afternoon of the scheduled date, it was found that WNBF was off the air with technical problems. Numerous attempts were made to contact Mr. Elliker, however it was later learned that there is no cell phone service of any kind on Ingraham Hill Road where there are a number of broadcast towers; therefore, Mr. Elliker was not reached until the following day.

On Thursday, December 28, 2006, additional information was obtained to perform the required pre-construction field strength measurements on WYOS. WYOS operates directional both daytime and nighttime. The nighttime pattern is not identical to the daytime pattern, but it does closely resemble the daytime pattern with some shared monitored radials. At this time I discussed with Mr. Elliker the reality that it would be almost impossible to perform a nighttime partial proof of performance on WYOS because its transmitter output power was only 0.500 kilowatts, and some of the monitor points were less than 1.0 mV/m. The sky wave at this time of year would be far greater than the station signal itself, especially at extended ranges of 15.0 kilometers as required by 73.154. The station would still not operate the nighttime pattern during the daytime hours, and Mr. Elliker indicated that just daytime measurements would be adequate.

The problem with WNBF was again discussed. At this point the Corporate Engineering did not want to violate its conditions of its STA and operate outside the parameters set forth in this STA, that is, they only wanted to operate in a non-directional mode, and did not want to switch to a directional mode, even during nighttime hours. WNBF is outside the FCC coordination distance of 0.80 kilometers as specified in 73.154 (a) for non-directional broadcast stations. I felt that these measurements would be meaningless, notwithstanding not required. I also believed that even if the station was operated in the directional mode, they would be continuing to perform maintenance on the system, and there was no way to verify if the pattern even was within tolerance. Therefore, a decision was made by this firm that because of the STA, the station could not operate in a directional mode, and since no measurements were required with non-directional operation and this was a long term existing tower that had caused no problems to WNBF in the past, it was determined that no measurements would be taken on WNBF. Additionally, because of road conditions in the vicinity of WYOS / WNBF, it was thought to be too dangerous to attempt to perform nighttime partial proof measurements on either station.

It was requested by this firm for W201CP to place additional grounding on the installation of coax during the installation at the Global Signal Tower. This was only done as precautionary measure in ensure there would be no problems. W201CP only installed a one-half (1/2) inch coax on the tower. Grounding was placed approximately every 75-feet.

Pre- and post-construction field strength measurements were therefore performed on the daytime directional antenna pattern for WYOS. Because of the delays in performing measurements on WNBF, W201CP had scheduled an engineer and tower climbers to be on site at the Global Signal tower on Friday, December 29, 2006. Pre-construction field strength measurements were completed on this date in the morning for WYOS, at which time the construction personnel were notified that they could begin construction. Because of the simplicity of the construction, it was completed by late Friday evening. Post-construction measurements were completed on Saturday, December 30, 2006.

ANALYSIS

Table 1 of this engineering report is a summation of the four measured radials. This summation demonstrates that all measurements were well within the range of repeatability of field strength measurements. Tables 2 to 5 are the actual measurements, showing the ratio of the pre- and post-construction field strength measurements. Figures 1 to 5 are Street Atlas maps showing the approximate locations of all measurements. There has been no attempt to evaluate the measurements as to the standard pattern. The purpose of the measurements was to only demonstrate that there was no change between the pre- and post-construction field strength measurements that was caused by the construction of W201CP on the existing Global Signal Tower. These tables show that the ratios of the pre- and post-construction field strength measurements were well within the range of repeatability of field strength measurements, thus verifying that there was no adverse effect caused to WYOS from the installation of W201CP.

SUMMARY

W201CP has added a new FM broadcast antenna to an existing tower owned by Global Signal Corporation. The tower was within the FCC coordination distance of 3.20 kilometers for AM directional broadcast antennas and 0.80 kilometers for non-directional broadcast stations. Pre- and post-construction field strength measurements were completed for the WYOS daytime directional antenna pattern. Partial proof of performance measurements were completed in accordance with 47 C.F.R. 73.154. Pre- and post-construction field strength measurements were not completed for the WYOS nighttime directional antenna pattern. Although the patterns are not identical, they share some of the same monitored radials, and the management of Citadel Broadcasting in Binghamton would not authorize the operation of the WYOS nighttime directional antenna pattern during daytime hours. The Citadel Chief Engineer, Mr. Rick Elliker, expressed the opinion that daytime only measurements on WYOS would be necessary. It would have been virtually impossible to perform a partial proof of performance on the WYOS nighttime pattern after sunset because of the very low transmitter output power and sky wave

conditions at the required distance of 15.0-kilometers. For WNBF, nighttime directional pre- and post-construction field strength measurements were not taken. WNBF is currently operating under a Station Temporary Authority which allows them to operate at a reduced power non-directional at nighttime hours while major repairs are undertaken at the transmitter site. It was not possible to switch to the nighttime pattern remotely. In addition, the Citadel Corporate Engineering did not desire to operate outside the conditions of its STA of non-directional operation, either during daytime or nighttime. Furthermore, the Citadel Binghamton management would not authorize the station to be operated in nighttime directional mode during the daytime hours regardless of the opinion expressed by Corporate Engineering. Therefore, since the directional antenna pattern was not operational, and the station was outside the FCC coordination distance of 0.80 kilometers for non-directional broadcast stations as designated in 73.154, no measurements were taken of WNBF. It was requested, as an additional precaution by this firm, for W201CP to install additional grounding on its coax installation. This was accomplished at the time of the installation. This engineering report thus demonstrates that the installation of W201CP on the existing Global Signal Tower has not had an adverse effect on the operation of WYOS, Binghamton, New York. This report also demonstrates that every reasonable effort was made to comply with pre- and post-construction field strength measurements on WNBF, Binghamton, New York, even though no measurements were taken.

I, William E. McBride, am a self-employed broadcast/wireless consultant with over thirty years of broadcast related engineering experience. My qualifications are a matter of record with the FCC. This engineering statement and the attached figures comply with the Rules and Regulations of the Federal Communications Commission, and were prepared by me, and are believed to be true and correct to the best of my knowledge.



William E. McBride
Broadcast/Wireless Consultant

Table 1

**Ratio's of Pre- and Post-Construction Field
Strength Measurements**

WYOS Daytime Directional Pattern

Radial	Ratio
96.0	1.012
106.0	0.989
139.0	0.989
289.9	0.975

Table 2
Field Strength Measurements
WYOS, 1360 kHz
Binghamton, New York
96.0-degree Radial

Radial / Pt. #	Day	Distance (Km)	FCC mV/m	Date	Time	Pre (mV/m)	Date	Time	Post (mV/m)	Ratio
26	X	3.09	NA	12/29/06	0949	44.0	12/30/06	1021	42.0	0.954
27 (MP)	X	3.20	70.95	"	0954	47.5	"	1024	45.5	0.957
28	X	5.01	NA	"	1000	22.1	"	1035	22.0	0.995
30	X	6.49	"	"	1015	7.0	"	1044	7.1	1.014
31	X	8.14	"	"	1033	5.90	"	1050	5.8	0.983
33	X	9.87	"	"	1044	4.4	"	1111	4.55	1.034
34	X	11.15	"	"	1052	4.7	"	1117	4.70	1.00
36	X	17.96	"	"	1105	0.96	"	1144	1.12	1.166
										1.012

- 26. 4182 Murphy by mailbox.
- 27. Per license description – beginning of bend in road on Coleman.
- 28. 635 Powers road by mailbox.
- 30. 880 Powers Road
- 31. Across from 1194 Conklin Road.
- 32. N42 3 28.69, W75 47 15.09-Brink road across from 40 MPH sign
- 33. Top of hill on Kutalek road by large dead tree.
- 34. N42 3 9.90, w75 43 38.12

Table 3
Field Strength Measurements
WYOS, 1360 kHz
Binghamton, New York
106.0-degree Radial

Radial / Pt. #	Day	Distance (Km)	FCC mV/m	Date	Time	Pre (mV/m)	Date	Time	Post (mV/m)	Ratio
34	X	14.98	NA	12/28/06	1451	1.65	12/30/06	1148	1.63	0.987
33	X	11.94	“	“	1512	2.71	“	1126	2.74	1.011
32	X	9.82	“	“	1529	6.2	“	1106	5.70	0.919
31	X	9.27	“	“	1535	5.8	“	1101	5.80	1.000
30	X	8.59	“	“	1544	6.6	“	1055	6.40	0.969
29	X	6.44	“	“	1557	12.1	“	1041	12.1	1.000
28	X	3.70	“	“	1603	29.0	“	1027	29.5	1.017
17	X	2.11	“	“	1611	47.5	“	1017	48.0	1.010
									AVERAGE	0.989

- 34. N42 1 42.89, W75 43 55.44; top of hill.
- 33. 211 Burts Road
- 32. Intersection of Cedarhurst drive and North 81 ramp by 2 I81 signs.
- 31. Kirwood Village Rd by 209 sign just past small overpass.
- 30. 1295 SR 7 by mailbox.
- 29. 141 Ketchum Rd by mailbox
- 28. 4315 CR 157 before mailbox.
- 17. Intersection Pierce Creek and Roberts.

Table 4
Field Strength Measurements
WYOS, 1360 kHz
Binghamton, New York

139.0-degree Radial

Radial / Pt. #	Day	Distance (Km)	FCC mV/m	Date	Time	Pre (mV/m)	Date	Time	Post (mV/m)	Ratio
34	X	12.26	NA	12/28/06	1451	1.65	12/30/06	1148	1.63	0.987
33	X	10.94	“	“	1512	2.71	“	1126	2.74	1.011
32	X	8.77	“	“	1529	6.2	“	1106	5.70	0.919
31	X	7.81	“	“	1535	5.8	“	1101	5.80	1.000
30	X	6.34	“	“	1544	6.6	“	1055	6.40	0.969
29	X	5.95	“	“	1557	12.1	“	1041	12.1	1.000
28	X	5.34	“	“	1603	29.0	“	1027	29.5	1.017
17	X	2.17	“	“	1611	47.5	“	1017	48.0	1.015
									AVERAGE	0.989

- 34. N42 1 42.89, W75 43 55.44; top of hill.
- 33. 11 Burts Road
- 32. Intersection of Cedarhurst drive and North 81 ramp by 2 I81 signs.
- 31. Kirwood Village Rd by 209 sign just past small overpass.
- 30. 1295 SR 7 by mailbox.
- 29. 141 Ketchum Rd by mailbox
- 28. 4315 CR 157 before mailbox.
- 17. Intersection Pierce Creek and Roberts.

Table 5

**Field Strength Measurements
WYOS, 1360 kHz
Binghamton, New York**

289.5-degree Radial

Radial / Pt. #	Day	Distance (Km)	FCC mV/m	Date	Time	Pre (mV/m)	Date	Time	Post (mV/m)	Ratio
25 (MP)	X	3.85	44.0	12/28/06	1048	49.0	12/30/06	0856	49.5	1.010
26	X	4.62	NA	"	1111	29.1	"	0901	28.5	0.979
28	X	6.97	"	"	1143	30.1	"	0913	28.2	0.936
29	X	7.98	"	"	1150	5.60	"	0918	5.20	0.928
30	X	8.56	"	"	1157	9.60	"	0921	9.60	1.000
31	X	9.58	"	"	1206	12.1	"	0926	12.0	0.991
32	X	10.46	"	"	1232	7.5	"	0930	7.4	0.986
33	X	11.35	"		1246	7.2	"	0945	7.0	0.972
									AVERAGE	0.975

- 25. At small gravel pulloff 200 feet of house
- 26. Intersection of Murray Hill Road and Salem Drive by stop sign.
- 28. N42 5 16.18, w75 59 6.55.
- 29. Intersection of Colgate and Briarcliff Streets.
- 30. 329 Fordham – by hydrant (does not follow SA)
- 31. Home Goods Parking Lot in front of small police station,
- 32. Intersection Oak and Pearl by exit ramp one way sign.
- 33. 2114 Riverview Drive by hydrant

Figure 1
WYOS Daytime Measurement Locations

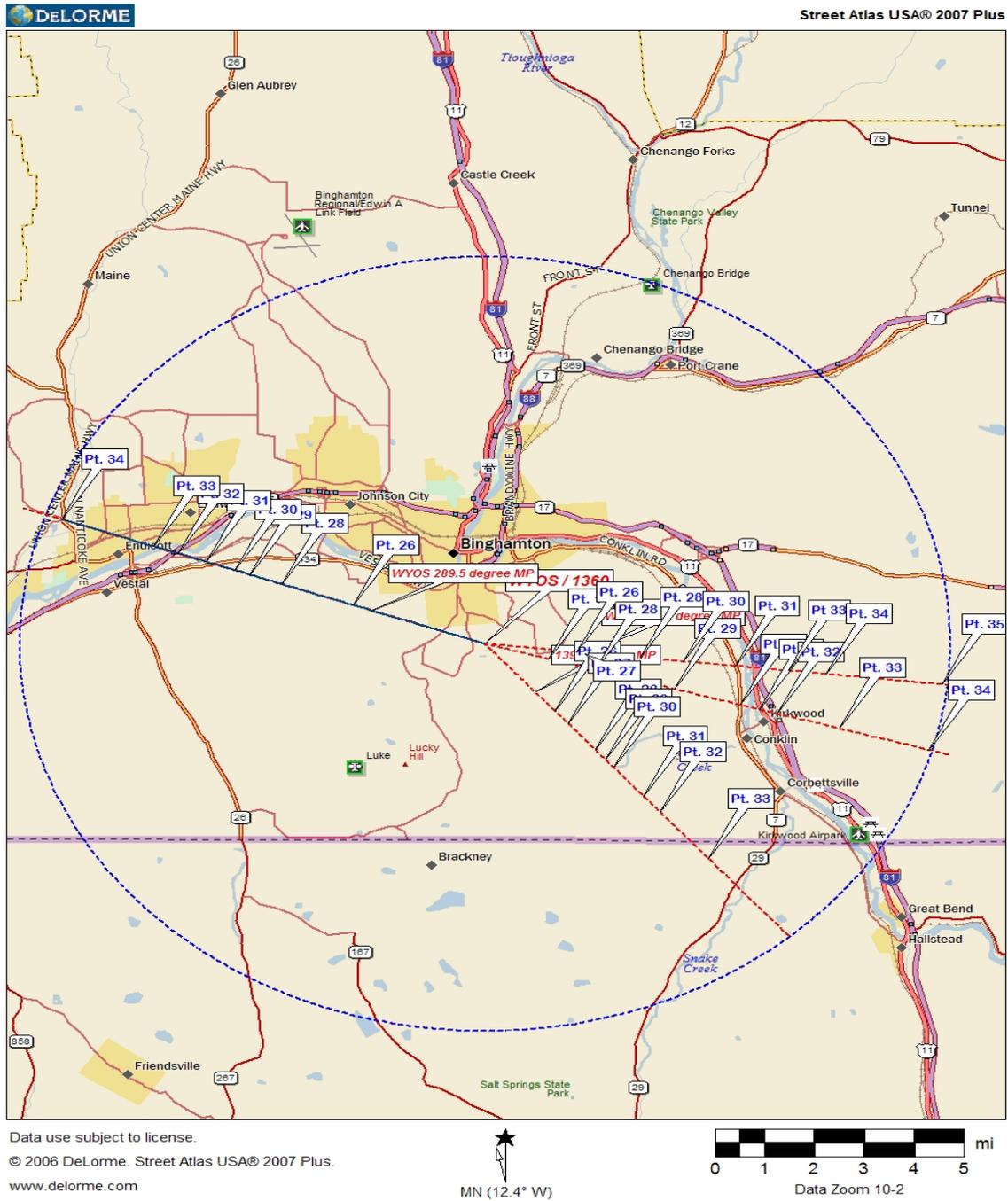
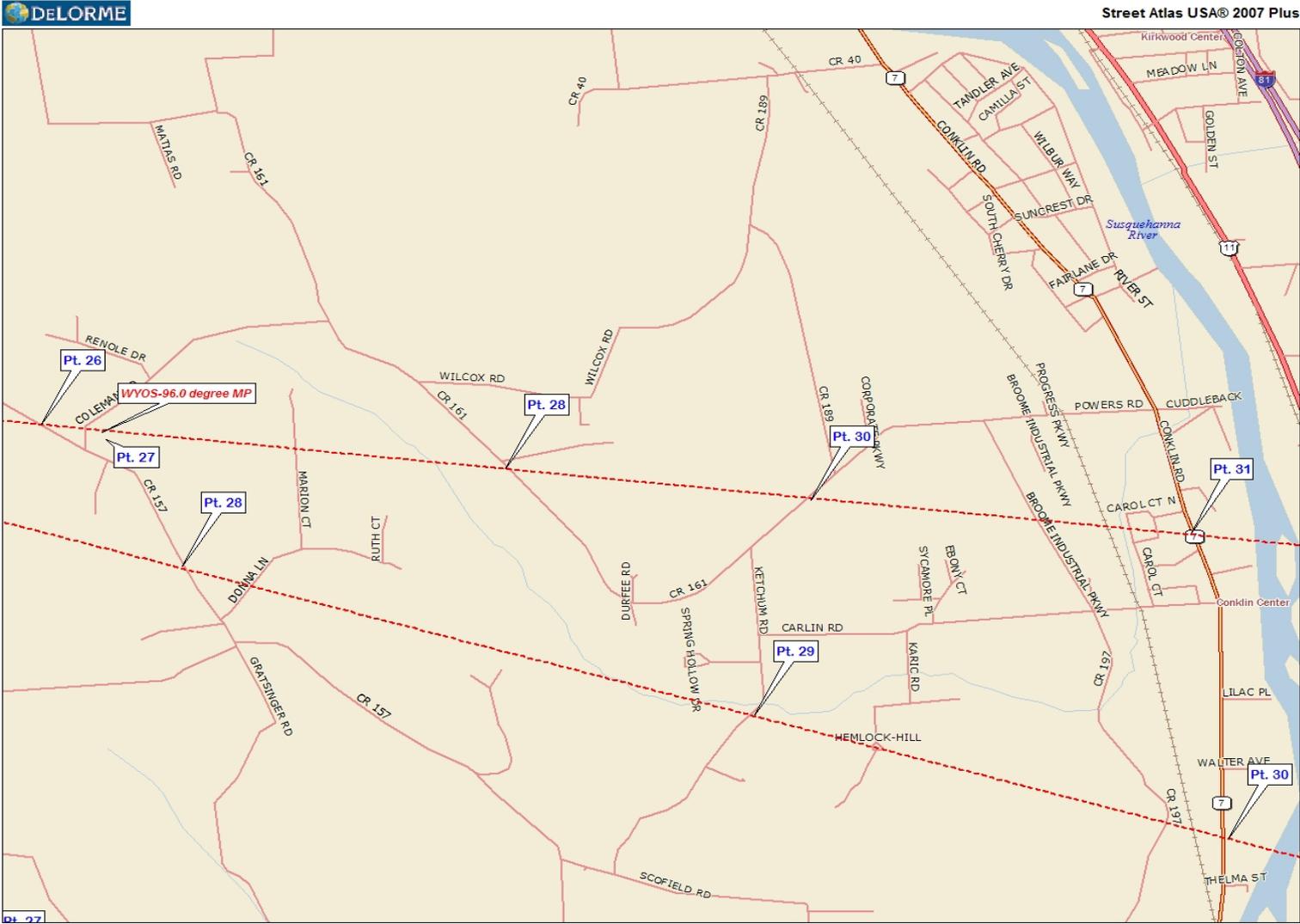


Figure 2A
WYOS 96.0-degree Radial

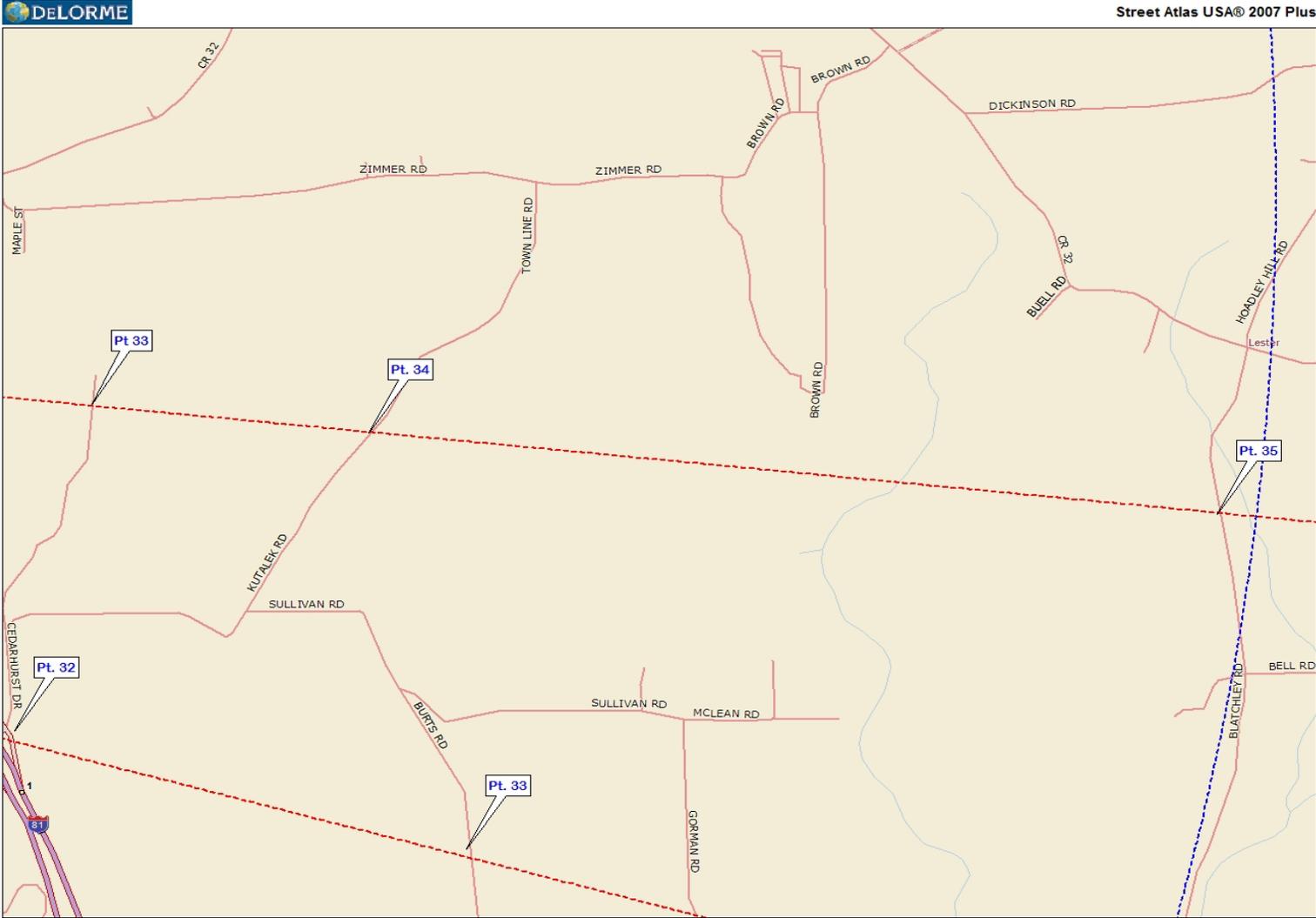


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Data Zoom 13-1

Figure 2B
WYOS 96.0-degree Radial

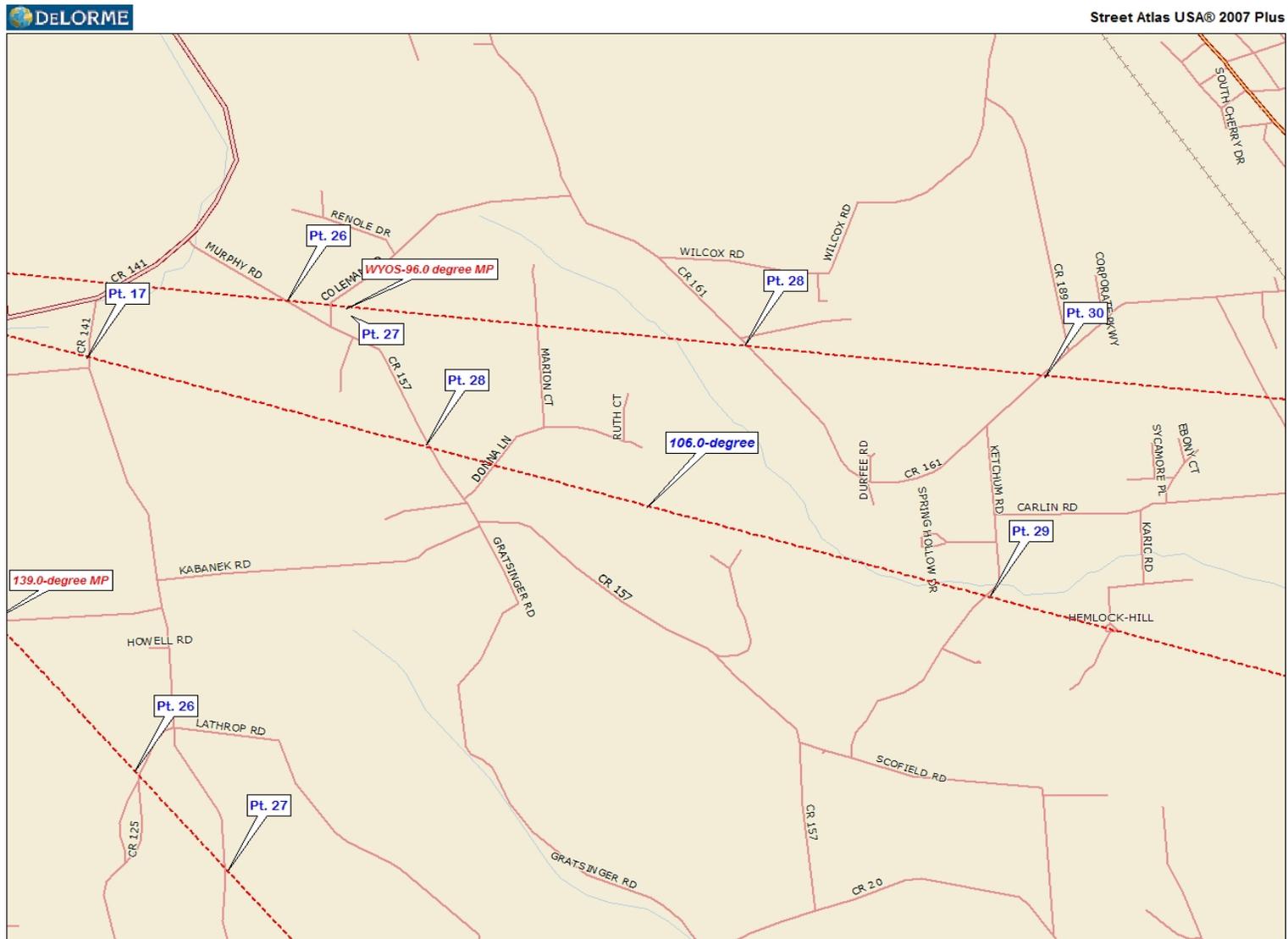


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Data Zoom 13-1

Figure 3A
WYOS 106.0-degree Radial



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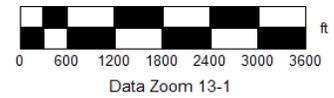
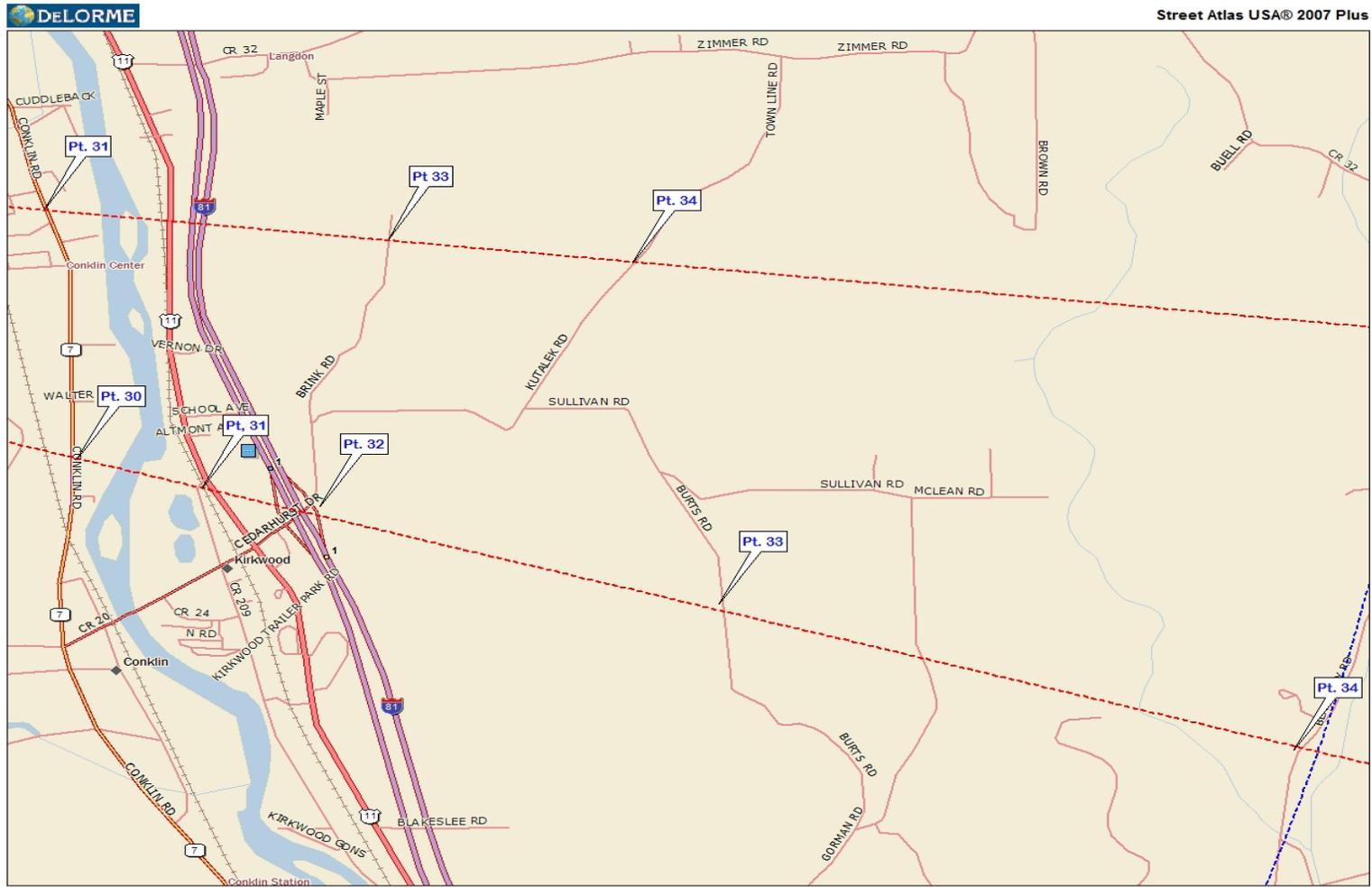


Figure 3B
WYOS 106.0-degree Radial



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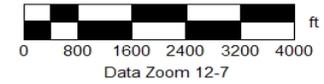


Figure 4A
WYOS 139.0-degree Radial



Figure 4B
WYOS 139.0-degree Radial

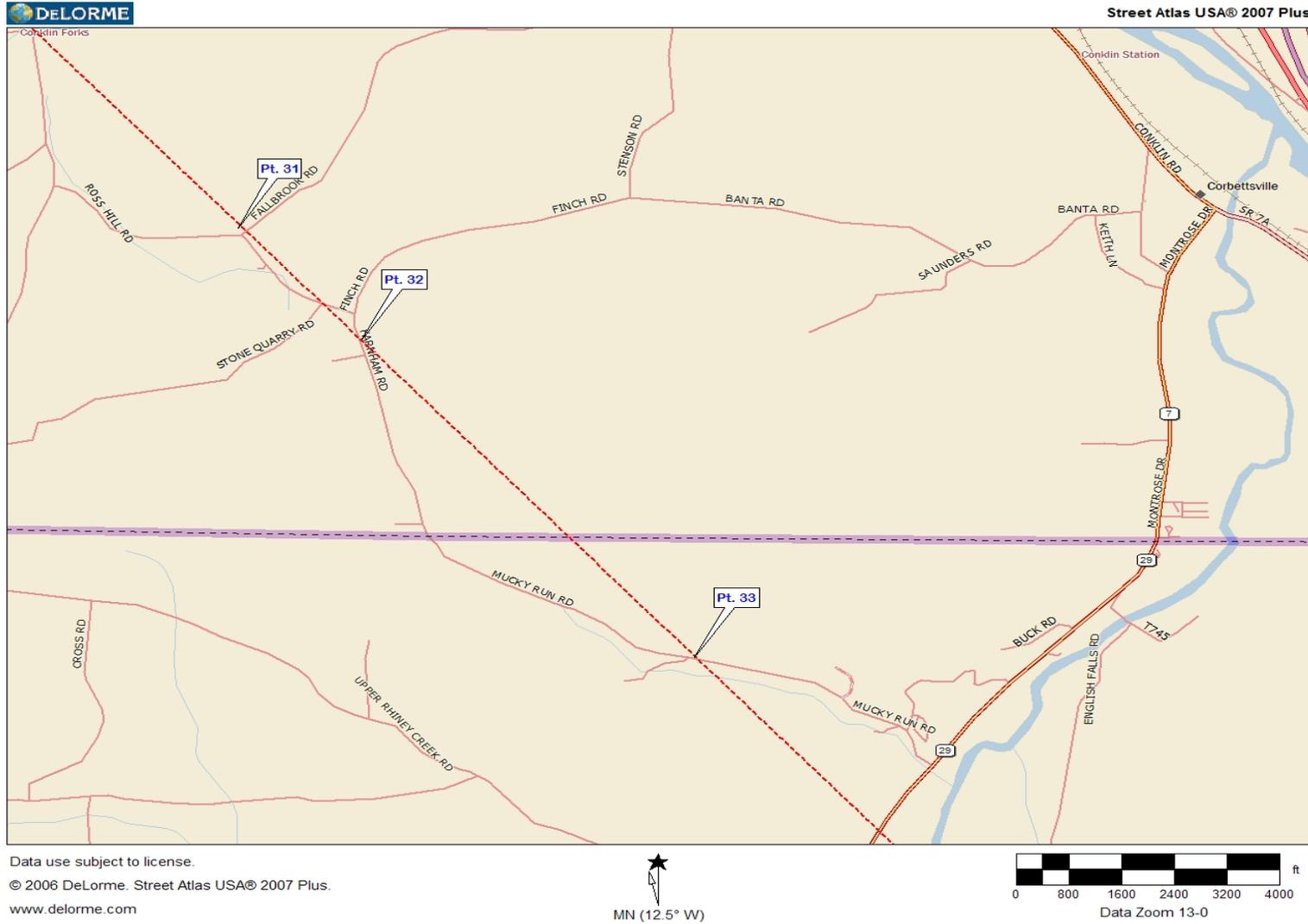
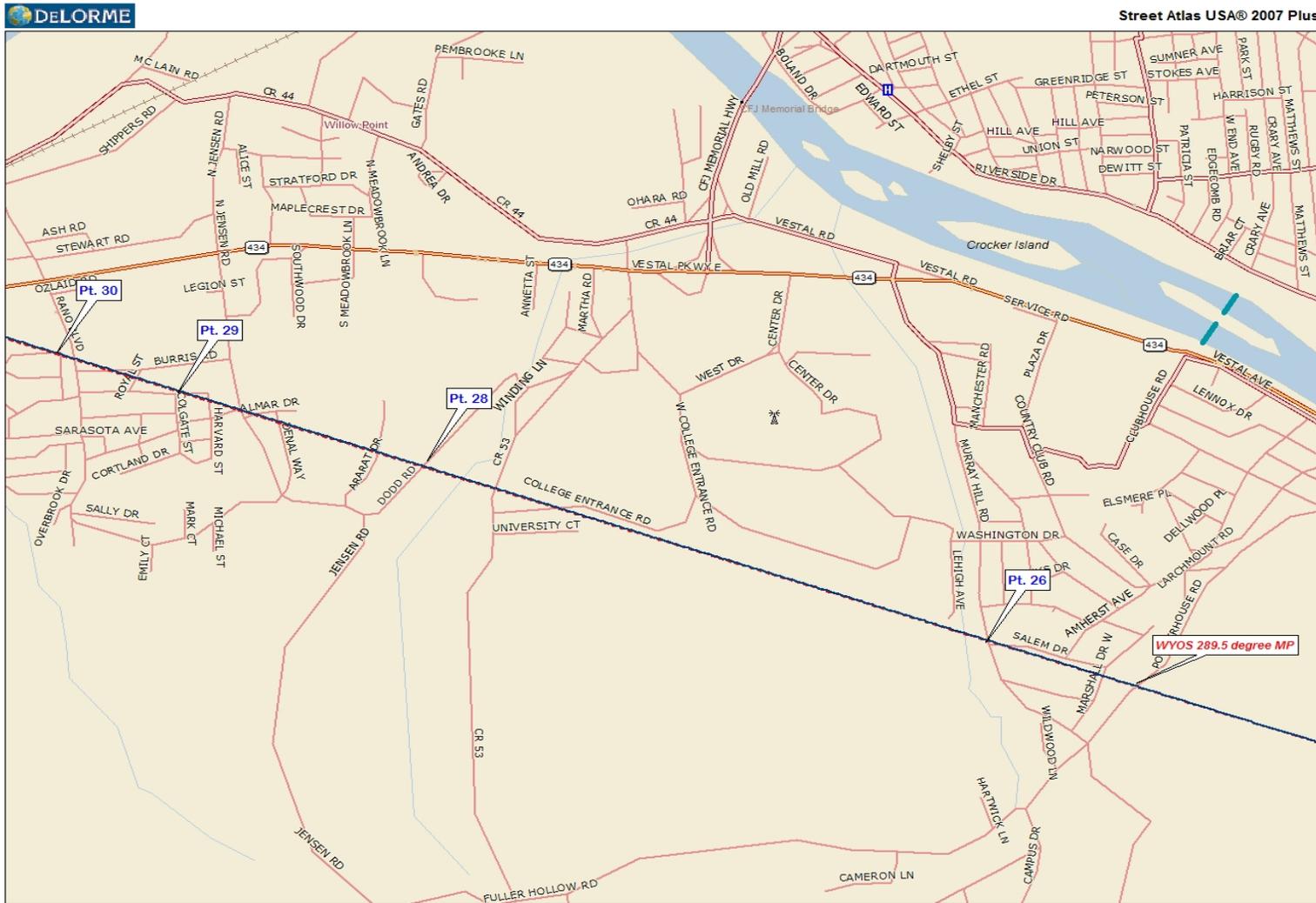


Figure 5A
WYOS 289.5-degree Radial

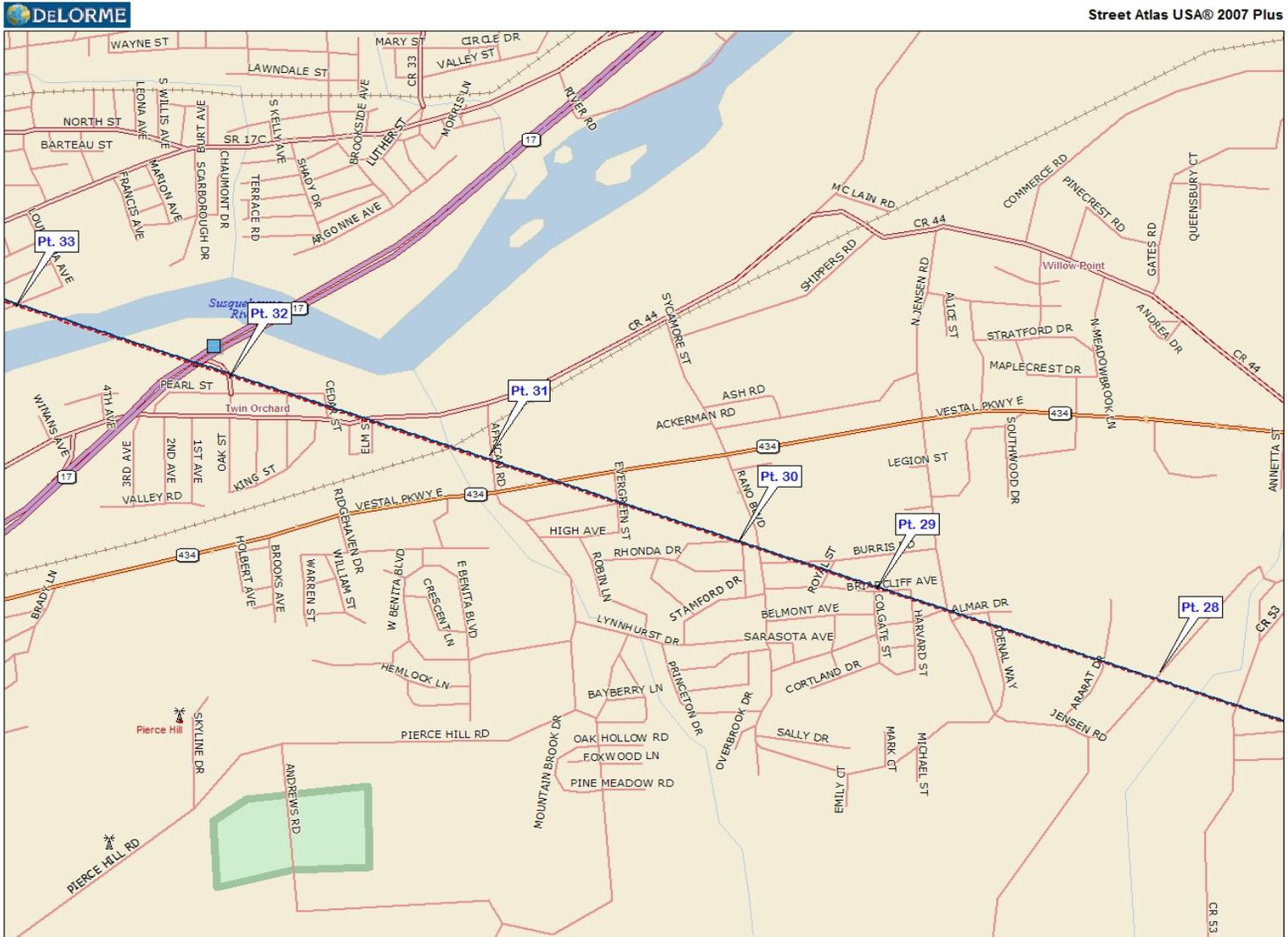


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★
 MN (12.4° W)

0 600 1200 1800 2400 3000 3600 ft
 Data Zoom 13-2

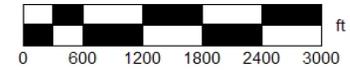
Figure 5B
WYOS 289.5-degree Radial



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