

A

TORNADO PROJECT SUMMARY SHEET

F=0

ONT

1. DATE AND TIME THURSDAY SEPT 10, 1981 1820 EST ± 15 min

2. LOCATION OR PATH (attach map) HOWE ISLAND (NW-SE) 0698129

3. PATH LENGTH  NOT KNOWN  <1mi;  1-4mi;  5-10mi;  11-50mi;  LENGTH IF > 50

4. PATH WIDTH at (3) 80m BUT AT LEAST 2.3 km (4) 5m 5. TORNADO PART OF SQUALL LINE?  YES;  NO;  UNKNOWN

6. ANY UNUSUAL COLORATION?  YES;  NO;  UNKNOWN

7. ANY UNUSUAL SOUND?  YES;  NO;  UNKNOWN

8. IF ANSWER TO 6 OR 7 YES, ELABORATE;

9. LIST ANY ASSOCIATED PHENOMENA (Such as hail, vivid lightning heavy rain, no rain, etc.) From OTTAWA CAPP RADAR, AVERAGE CELL MOTION from 306°/46 km/h.

10. TOTAL DAMAGE ESTIMATE \$ UNK 11. TOTAL DEATHS NONE

12. TOTAL INJURED NONE 13. TOTAL HOMELESS NONE

14. LIST ALL REFERENCES Survey by M.J. Newark and P.J. Elms, Sept 11, 1981. WILG-STANDARD, KINGSTON SEPT 11, 1981.

15. SUMMARIZE REMARKS PERTAINING TO (a) FUNNEL; (b) INTERESTING OR CAPRICIOUS EVENTS.

(a) "Transparent funnel making a swirl on the water of Johnson Bay" according to Greta Koritnik. Passenger on the "Tow Island Queen" saw 3 funnels forming into one at about 1830 EST over Bateau Channel. The funnel then moved southeastwards towards Howe Island.

(b) Trees broken and uprooted. Grass and weeds flattened. Aluminium boat (filled with water) lifted out of the water and thrown upside down onto a dock.

A



## TORNADO PROJECT SUMMARY SHEET

F = ?

ONT

1. DATE AND TIME THURSDAY SEPT 10, 1981 1910 EST ± 15 mi
2. LOCATION OR PATH (attach map) ADOLPHUS REACH (TORNADO WATERSPOUT) 0698131
3. PATH LENGTH  NOT KNOWN  <1 mi;  1-4 mi;  5-10 mi;  11-50 mi;  LENGTH IF > 50
4. PATH WIDTH  UNK 5. TORNADO PART OF SQUALL LINE?  YES;  NO;  UNKNOWN
6. ANY UNUSUAL COLORATION?  YES;  NO;  UNKNOWN
7. ANY UNUSUAL SOUND?  YES;  NO;  UNKNOWN
8. IF ANSWER TO 6 OR 7 YES, ELABORATE;
9. LIST ANY ASSOCIATED PHENOMENA (Such as hail, vivid lightning heavy rain, no rain, etc.) FROM OTTAWA CAPPI RADAR, CELL MOTION FROM 302°/39 km/h
10. TOTAL DAMAGE ESTIMATE \$ NONE 11. TOTAL DEATHS NONE
12. TOTAL INJURED NONE 13. TOTAL HOMELESS NONE
14. LIST ALL REFERENCES PETER VANDENBURGH, (613) 476-5060
15. SUMMARIZE REMARKS PERTAINING TO (a) FUNNEL; (b) INTERESTING OR CAPRICIOUS EVENTS.
- (a) Mr Vandenburg, a commercial fisherman, living at Printer's Cove, Prince Edward County, was just leaving home when he saw a funnel shaped cloud reaching the surface of the water in Adolphus Reach to the north of here. He estimated that it was in about mid-channel, <sup>lifting water</sup> and moving eastwards. After a few moments he lost sight of it in rain.
- (b) no damage known.

**TORNADO SUMMARY**

GEOGRAPHICAL LOCATION **ADOLPHUS REACH, ONTARIO**

(1) IDENTITY NUMBER

(5-7) DATE **SEPTEMBER 10, 1981.**

$\pm 10 \text{ mi}$  (9)

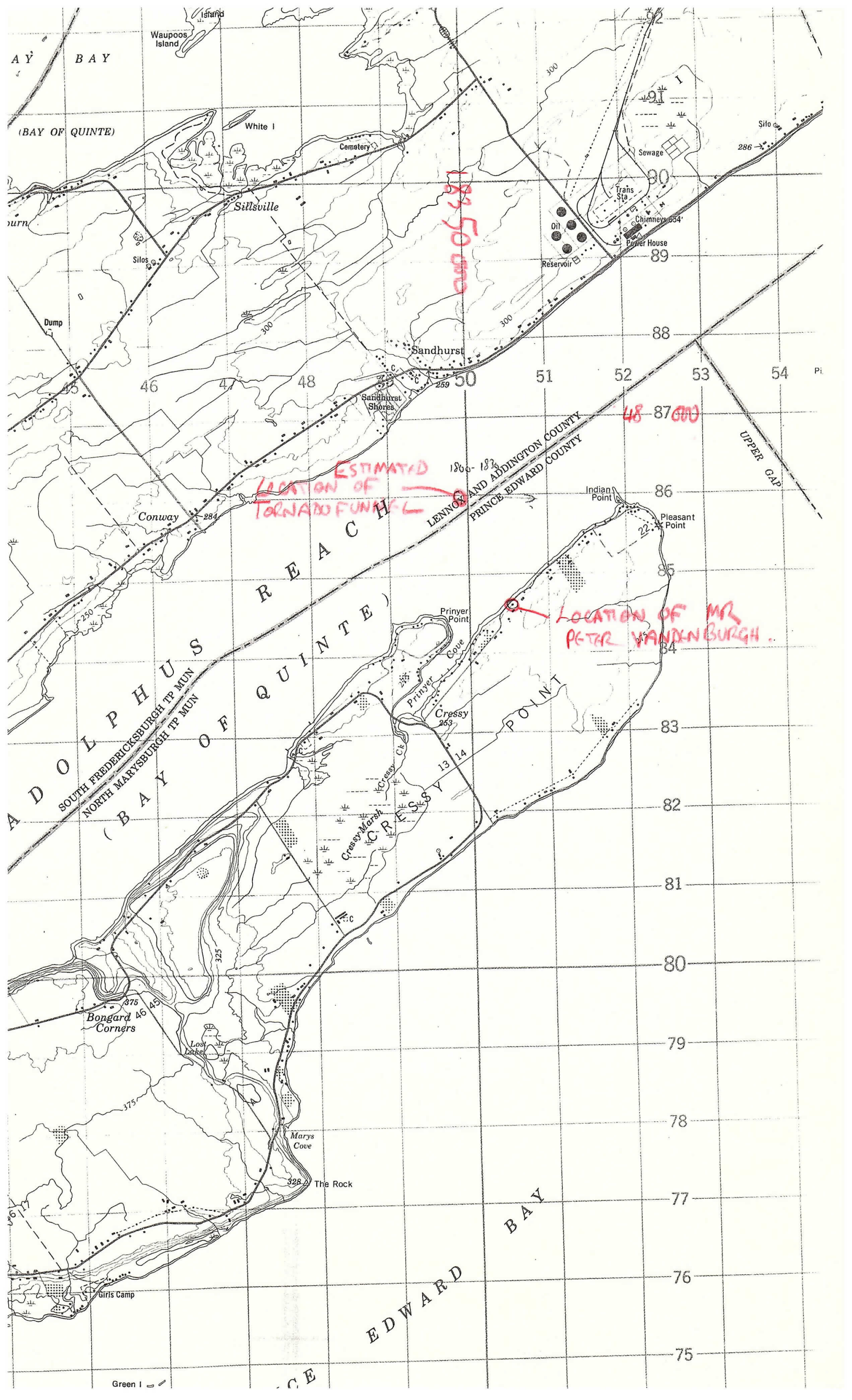
- (9) TIME at start point
- (12-13) UTM CO-ORDINATES of start point (Zone and easting, northing)
- (15) DIRECTION OF TRACK (from start point to end point)
- (17) F-SCALE NUMBER
- (18) LENGTH OF TRACK (Straight line from start point to end point)
- (18A) DAMAGE LENGTH
- (18B) DAMAGE AREA
- (20) MAXIMUM DAMAGE WIDTH
- (21) AVERAGE DAMAGE WIDTH
- (26) NUMBER OF FATALITIES
- (27) NUMBER OF INJURIES
- (29) VALUE OF PROPERTY DAMAGE
- (36.1) MAXIMUM SIZE OF HAIL
- (36.2) AVERAGE TRANSLATIONAL SPEED
- (36.3) RADAR STORM TOP

QUANTITY VALUE	ESTIMATED STANDARD ERROR	ERROR DISTRIBUTION CODE <sup>a</sup>
1910 EST	6 min	S
18 350000 48 86000	750 m.	O
270°	23°	S
UNKNOWN	NOT APPLICABLE	
UNKNOWN		
U		
U		
U		
NONE		
NONE		
UNKNOWN		
U		
U		
U		

$r = 1500 \text{ m.}$   
 $l = 80^\circ$

TABLE 3. Summary of tornado physical dimensions.

(a) S = Square uniform; R = Rectangular uniform; O = circular uniform;  
E = elliptical normal; C = circular normal; B = bimodal; Q = unknown;  
T = other; Blank = no error.



AY BAY  
(BAY OF QUINTE)

ADOLPHUS  
SOUTH FREDERICKSBURGH TP MUN  
NORTH MARYSBURGH TP MUN  
(BAY OF QUINTE)

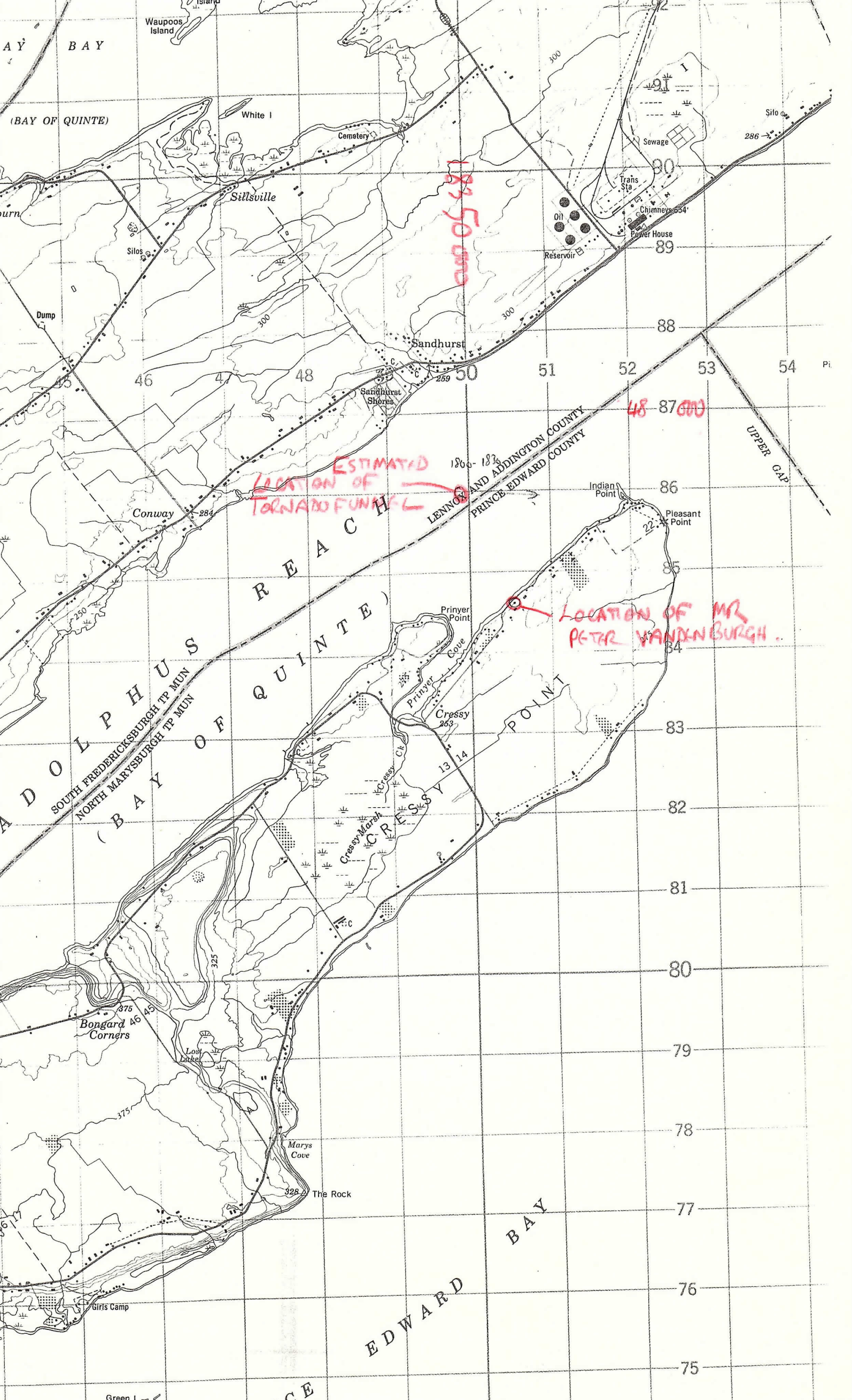
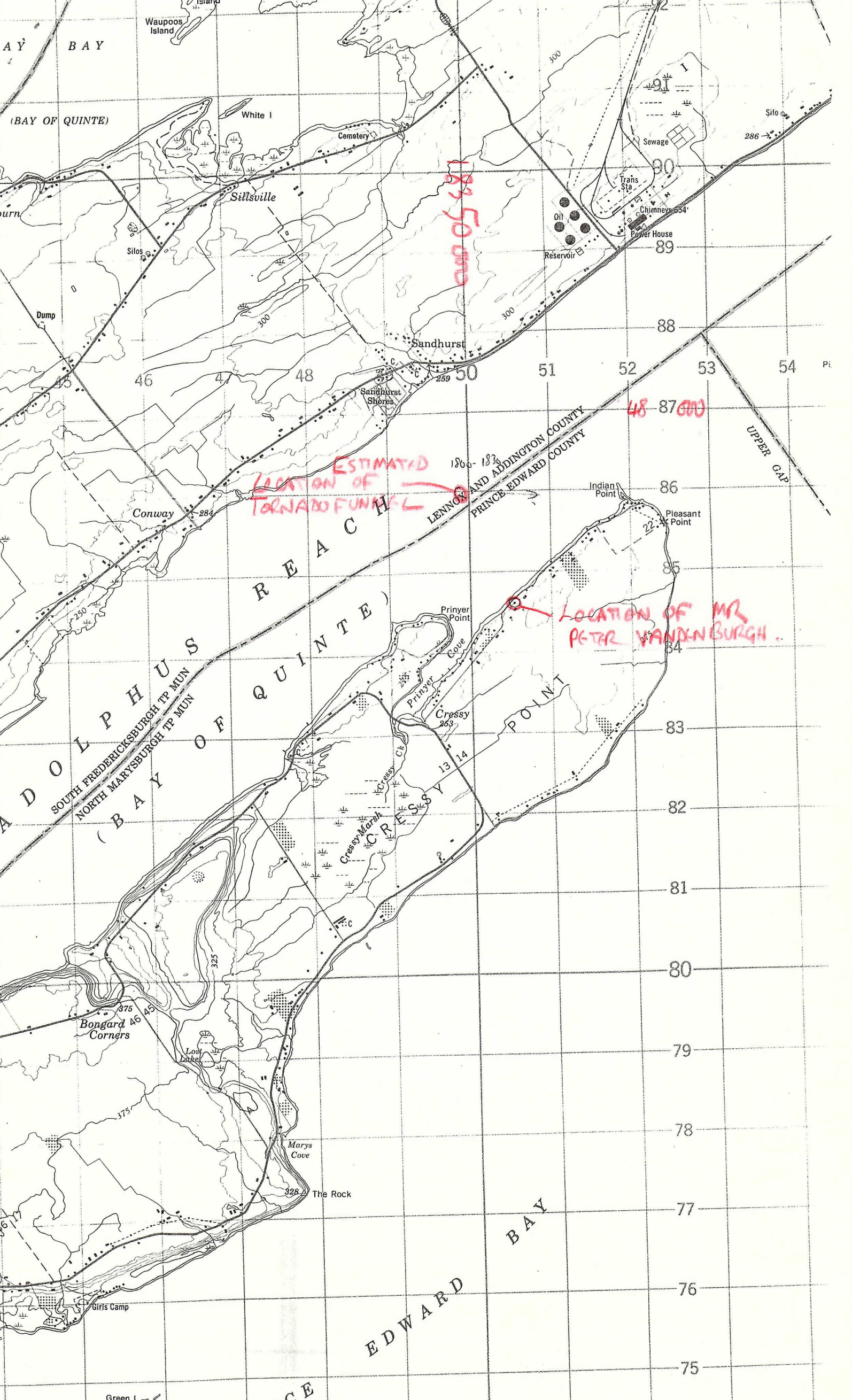
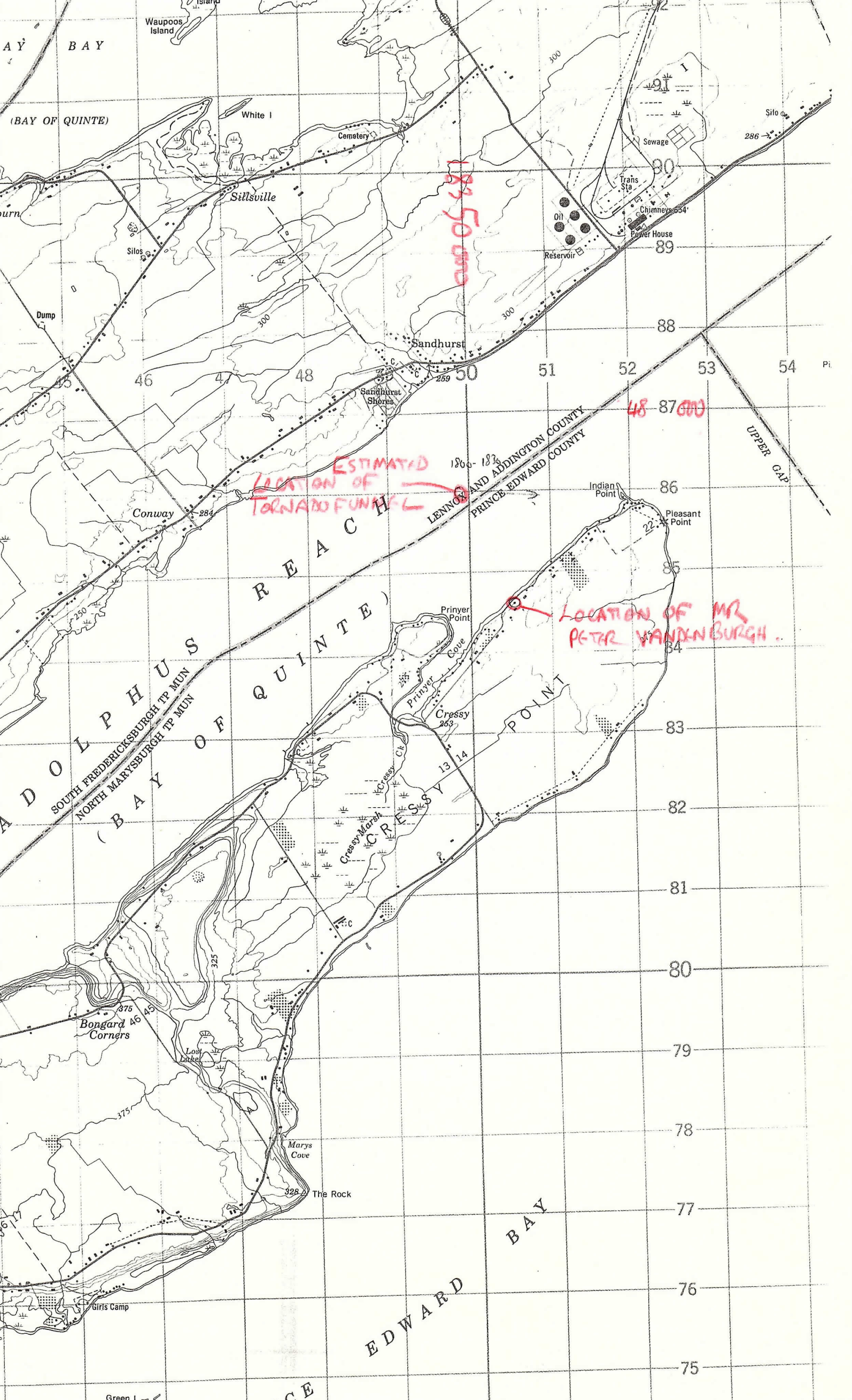
ESTIMATED  
LOCATION OF  
TORNADO FUNNEL

183 50 000

LOCATION OF MR  
PETER VANDENBURGH

48 87 000

EDWARD BAY



1000

$1 \text{ km}^2 = 10^6 \text{ m}^2$

$.58 \times 10^4$

$.005^2$

**TORNADO SUMMARY**

GEOGRAPHICAL LOCATION **HOWE ISLAND, ONTARIO**

(1) IDENTITY NUMBER

(5-7) DATE **SEPTEMBER 10, 1981**

$\pm 10 \text{ min}$

- (9) TIME at start point
- (12-13) UTM CO-ORDINATES of start point (Zone and easting, northing)
- (15) DIRECTION OF TRACK (from start point to end point)
- (17) F-SCALE NUMBER
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- (26) NUMBER OF FATALITIES
- (27) NUMBER OF INJURIES
- (29) VALUE OF PROPERTY DAMAGE
- (36.1) MAXIMUM SIZE OF HAIL
- (36.2) AVERAGE TRANSLATIONAL SPEED
- (36.3) RADAR STORM TOP

$(80 + 5 + 5) / 3 = \pm 20 \text{ m}$

QUANTITY VALUE	ESTIMATED STANDARD ERROR	ERROR DISTRIBUTION CODE <sup>a</sup>
182065T	6 min	S
18398600, 4906300	500 m	O
296°	11.3°	C
0	NOT APPLICABLE	
2504/m	501 m	O
0.08 km <sup>2</sup>	6012 m <sup>2</sup>	O
80 m	12 m	S
30 m	12 m	S
NONE		
NONE		
UNKNOWN		
NONE		
UNKNOWN		
UNKNOWN		

TABLE 1. Summary of tornado physical dimensions.

(a) S = Square uniform; R = Rectangular uniform; O = circular uniform;  
 E = elliptical normal; C = circular normal; B = bimodal; Q = unknown;  
 T = other; Blank = no error.

Howe Island.

WORKSHEET  
IDTO

① ORIGIN  $x$  18398600  
 $y$  4906300

⑤ Standard Error  $S_x$  500  $\phi$

② LIFT-OFF  $x_1$  18400850  
 $y_1$  4905200

⑥ Standard Error  $S_y$  30  $C$

③  $(x_1 - x) = 2250$

④  $(y_1 - y) = 1100$

⑦ DAMAGE LENGTH

$L = [(x_1 - x)^2 + (y_1 - y)^2]^{1/2}$  ⑧  $\alpha = \tan^{-1} \frac{|y_1 - y|}{|x_1 - x|}$

③+④  $\rightarrow r, \theta = 2504 \text{ m}$

$x \leftrightarrow y = 26^\circ$

⑨ Standard Error  $S_L = (S_x^2 + S_y^2)^{1/2}$

⑤+⑥  $\rightarrow r, \theta = 501 \text{ m}, \phi$

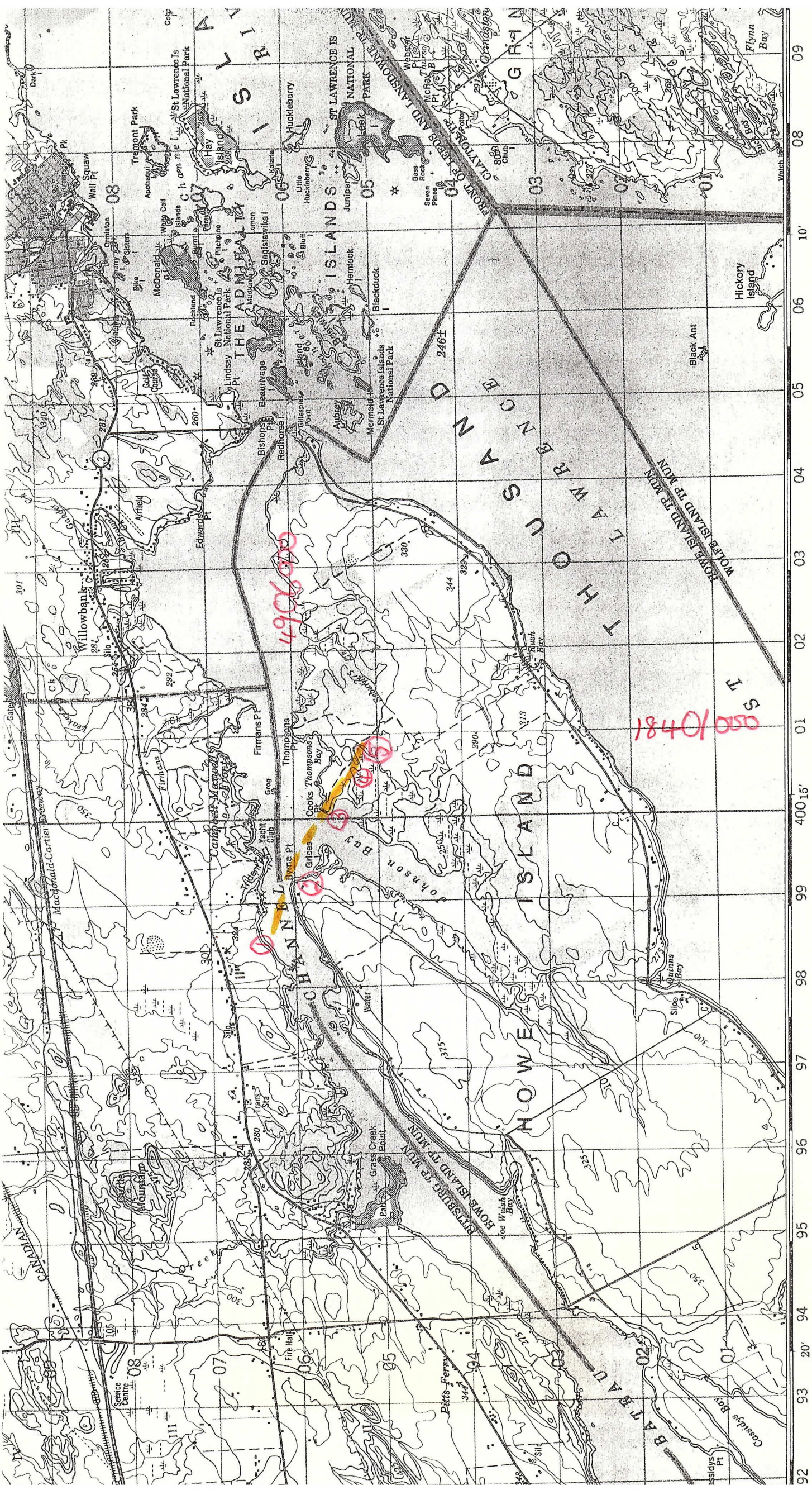
⑩  $\beta = \frac{\tan^{-1} S_L}{L}$

⑦+⑨  $\rightarrow r, \theta$   
 $x \leftrightarrow y = 11.3^\circ$

NE Quad  $\phi = 90 - \alpha$   
NW Quad  $\phi = 270 + \alpha$   
SW Quad  $\phi = 270 - \alpha$

SE Quad  $\phi = 90 + \alpha$

⑪  $\phi = 296^\circ$



Jan 30th 1982

Dear Mr and Mrs Koritnik:

You must be thinking that we have forgotten all about you and the tornado of September 10, 1981. Just to show you that matters are still proceeding, I have enclosed a draft copy of a paper concerning the event. This manuscript has been forwarded for publication, and when the printed version is available I will send you copies. This will take some time because of the fact that a french translation must be made, and included in the published version.

The photographs in this draft copy have not reproduced clearly, but they will be much better quality in the printed version. I have used colour to try and enhance the effect of converging winds in photo no. 1 (page 3), and arrows in photo no. 2 to show the track of flattened cattails through the swamp.

As you will see from the paper, your tornado was one of three which occurred that day. The tornado near Shannonville was actually more damaging.

Please accept our thanks for your co-operation and hospitality to us. Your kindness made our tornado survey work a pleasure.

Yours very truly  
Michael J. Newark and  
Peter J. Elms.



# TORNADO SURVEY FORM

NAME OF INVESTIGATOR <b>NEWARK AND GLMS</b>	INVESTIGATOR'S PHONE <b>676-4540</b>	DATE OF INVESTIGATION <b>SEPT 11, 1981</b>	LOCATION NUMBER <b>3</b>
INVESTIGATOR'S ADDRESS <b>O.W.C. T.L.A.</b>	PERSONAL SURVEY <input checked="" type="checkbox"/> UTM ZONE TELEPHONE INTERVIEW <input type="checkbox"/>	EASTING <b>18 400110</b>	NORTHING <b>4905690</b>

1. NAME(S) OF PERSON(S) INTERVIEWED  
**FRANZ + GRETA KORITNIK (PO BOX 205, GANANOQUE, ONT. K7G 2T7)**

2. ADDRESS (NOT RR#) OF THIS LOCATION  
**COOKS POINT LOT 21, HOWE ISLAND TP. FRONTENAC CTY**  
Lot Con. Twp. Co. or # Street, Town, Prov. or Section, Township, Range, Meridian

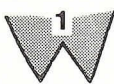
3. PHONE NUMBER OF PERSON INTERVIEWED  
**(613) 542-0315**  
Area Code Number

4. (a) TIME AND DATE OF THE EVENT AT THIS LOCATION  
**1800 TO 1830 EST 10 SEPT 1981**  
Standard Time, Time Zone Day Month Year


(b) HOW WAS THE TIME DETERMINED (STOPPED CLOCK, POWER FAILURE, MEMORY, A TIME-FIXING EVENT ETC.)  
**" AFTER THE NEWS AND BEFORE SUNSET."**

5. (a) FUNNEL SEEN  Y or N **TRANSPARENT FUNNEL MAKING A SWIRL ON THE WATER**


(b) FUNNEL TYPE (CIRCLE)




1  
Multiple



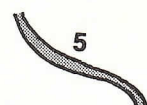
2  
Smoke-like



3  
Columnar




4  
Cone



5  
Rope-like

6  
Unknown



7  
Other

(c) IF MULTIPLE, HOW MANY? (d) FROM WHICH DIRECTION?  
**NORTHWEST**

6. UNUSUAL NOISE?  Y or N IF YES, DESCRIBE **" TOO NOISY FOR SUCH A SMALL DISTURBANCE"**

7. UNUSUAL SKY COLOUR?  Y or N IF YES, DESCRIBE

8. (a) HAIL?  Y or  N (b) DID HAIL PRECEDE  AND/OR FOLLOW  THE TORNADO?

(c) HAIL SIZE (CIRCLE)

PEA	GRAPE	WALNUT	GOLF BALL
TENNIS BALL	OTHER	UNKNOWN	OR DIAMETER (mm)

9. (a) RAIN, HOW MUCH? **YES** (b) DID THE RAIN FALL BEFORE  AND/OR AFTER  THE TORNADO, AT THE TIME OF  NONE   
**UNTIL 1400 EST**

10. (a) NUMBER OF HUMAN FATALITIES **NONE** (b) NUMBER OF ANIMAL FATALITIES **NONE**

(c) NUMBER OF HUMAN INJURIES **NONE** (d) NUMBER OF ANIMAL INJURIES **NONE**

11. (a) ARE PHOTOS AVAILABLE? (TAKEN EITHER BY PERSON INTERVIEWED OR ACQUAINTANCES)  Y or  N (b) IF YES, GIVE NAMES AND ADDRESSES WHERE THEY ARE AVAILABLE

12.

**DAMAGE UNDERLINE ITEMS AS APPROPRIATE, AND ADD INFORMATION AS APPROPRIATE.**

FO (64 - 115 km/h) T.V. antennae bent. A few roof shingles removed from houses and roofing stripped from barns. Patches of siding removed from houses, awnings or canopies damaged. Aluminum garden sheds moved or buckled and garden furniture blown around. Fences blown down. Trees broken or uprooted (intermittently in heavily treed bush lots).

F1 (116 - 179 km/h) Large areas of roofing material stripped from homes or industrial buildings. Barn roofs entirely removed and boards or siding removed from barn walls. Some impact damage from flying missiles. Unanchored buildings twisted on their foundations. Steel hydro-electric transmission towers knocked down. Summer cottages moved off their foundation.

F2 (180 - 251 km/h) Structural failure of roofs and porches. Barns demolished to the foundation. Empty stave concrete silos blown over or the upper portions of partly filled stave silos demolished. Unanchored 1 - storey houses moved entirely off their foundation. Cottages rolled over or carried short distances. Farm wagons or equipment carried short distances. Areas of total damage in heavily treed bush lots. Considerable impact damage from flying missiles.

F3 (252 - 330 km/h) Upper storeys of brick houses destroyed. Extensive structural damage to frame houses. Heavy farm machinery and automobiles moved or upset. Unanchored 2 - storey frame houses moved entirely off their foundation. Tombstones blown over or carried short distances. House trailers entirely demolished. Extensive impact damage from flying missiles.

F4 (331 - 416 km/h) Two-storey brick homes almost completely destroyed. Empty poured concrete silos blown down. Automobiles, vans, heavy farm equipment carried long distances through the air. Extensive structural failure of industrial buildings.

F5 (417 - 509 km/h) Little remains intact.

13.

**DAMAGE SPECIFICS REQUIRED (SHOW THE UNITS OF MEASUREMENT) IN ORDER TO CALCULATE WIND VELOCITY WHEN STRUCTURES OR OBJECTS HAVE BEEN MOVED, TIPPED OR CARRIED.**

(a) Name of object or structure

(b) Predominant material used in its construction

(c) Was it anchored, and how?

(d) Estimated weight

(e) Dimensions

Length (L)  
Height (H)

Width (W)  
Diameter (D)

(f) Angle ( $\theta$ ) between the wind direction and the normal plane.

(g) Sketch of the object or structure (show L, W, H, D or other dimensions or quantities).

14. Damage sketch for this location. — Need not be to scale but should indicate numerical dimensions (metric units preferred) and orientation with respect to north. Positions where photographs were taken should be located.

