A

TORNADO PROJECT SUMMARY SHEET

F=2 ONT

1. DATE AND TIME: AUG 30 1970 1800 EST

2. LOCATION OR PATH (attach map): TORONTO INT'L AIRPORT — ETOBICOKE. 0697010

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

4. PATH WIDTH ☐ 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.)

10. TOTAL DAMAGE ESTIMATE $ 4 million 11. TOTAL DEATHS NONE

12. TOTAL INJURED NONE SERIOUSLY 13. TOTAL HOMELESS U

14. LIST ALL REFERENCES

Toronto Star, Aug 31, 1970
Toronto Telegram, Aug 31, 1970
Globe + Mail, Toronto Aug 31, 1970
Summary of events, Toronto Weather Office Aug 30, 1970

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

(a) Miss Adamus, grade 13 student, was in the Aero Inn dining room, "we could see the twister moving across the parking lot. All you could see was a wall of water moving in a circle like a cyclone. It moved some cars then".

(b) The swath of damage began with a privately owned DC-3 which was thrown against the Imperial Oil Ranger, demolishing it plane & damaging the Ranger. The roof was taken off the Aero Inn, and a billboard hurled thru the window of one of the rooms, narrowly missing the occupant, John Borland. A tractor trailer transport at 401 and 27 highways was blown off the road. Dozens of homes and factories unroofed, utility poles shredded, trees uprooted.

WORKSHEET

IDTO 0697010

(1) ORIGIN x 17608700
y 4838450

(2) LIFT-OFF x_1 17617500
y_1 4836200

(3) $(x_1 - x)$ = 8800

(4) $(y - y_1)$ = 2250

(5) Standard Error S_x C100

(6) Standard Error S_y C100

(7) DAMAGE LENGTH

$$L = [(x_1 - x)^2 + (y - y_1)^2]^{1/2}$$

(3)+(4) $\boxed{\rightarrow r,\theta}$ = 9083 m

(8) $\alpha = \tan^{-1} \dfrac{|y - y_1|}{|x - x_1|}$

$\boxed{x \leftrightarrow y}$ = 14°

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

(5)+(6) $\boxed{\rightarrow r,\theta}$ = 14.1 m C

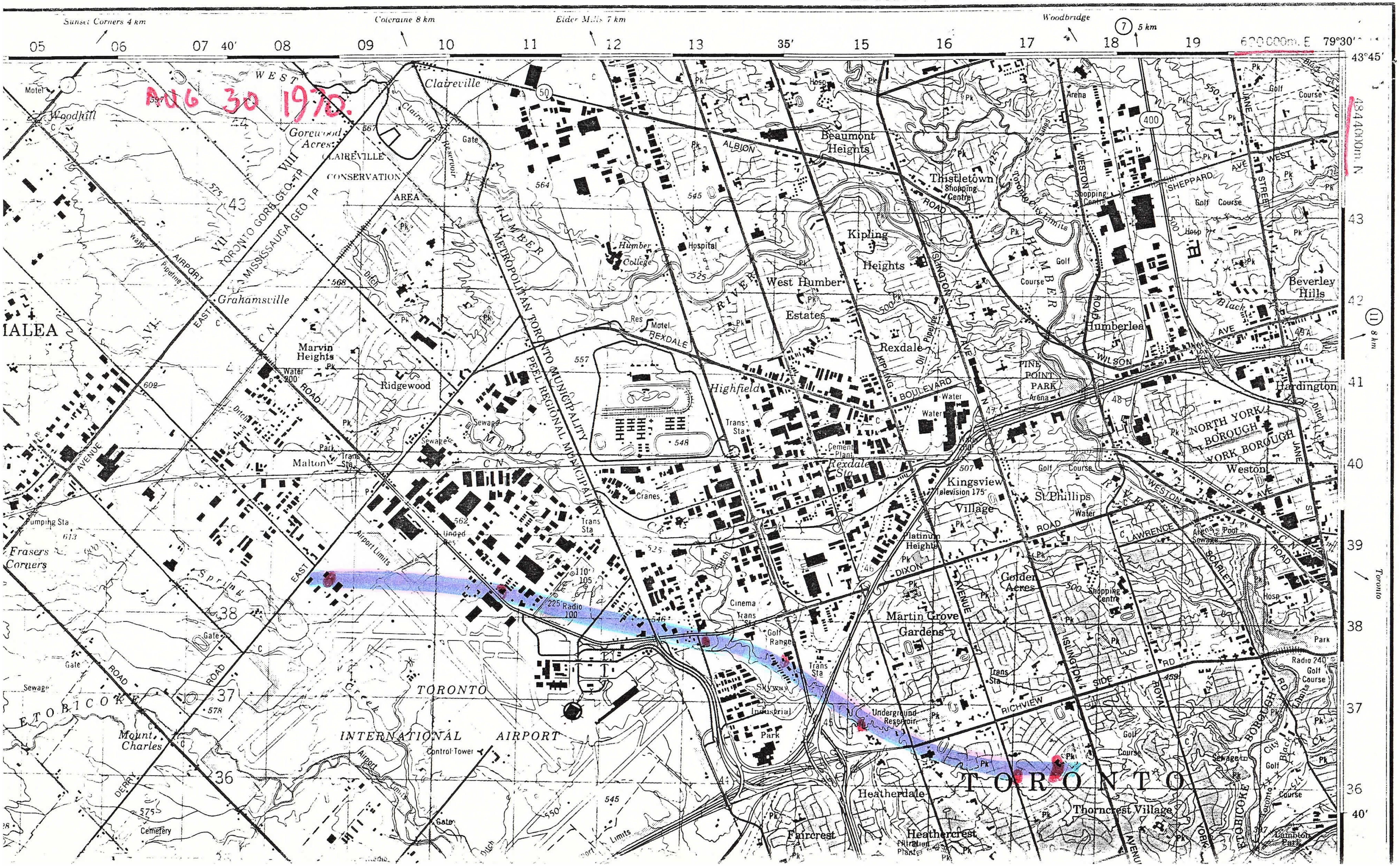
(10) $\beta = \dfrac{\tan^{-1} S_L}{L}$

(7)+(9) $\boxed{\rightarrow r,\theta}$
$\boxed{x \leftrightarrow y}$ = 1°

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

SE quad $\phi = 90 + \alpha$

(11) ϕ = 284°



AUG 30 1970.
Sunset Corners 4 km
Coraine 8 km
Elder Mills 7 km
Woodbridge
5 km
8 km
Toronto
05
06
07
40'
08
09
10
11
12
13
35'
15
16
17
18
19
620000m. E
79°30'
43°45'
4844000m. N
43
42
41
40
39
38
37
36
40'
Claireville
Woodhill
Gorewood Acres
CLAIREVILLE CONSERVATION AREA
Reservoir
Gate
Motel
WEST
VIII
VII
TORONTO GORE GEO. TP
MISSISSAUGA GEO TP
AIRPORT
EAST
ROAD
Grahamsville
MALEA
Marvin Heights
Ridgewood
Malton
Trans Sta
Sewage
Humber College
Hospital
HUMBER
RIVER
METROPOLITAN TORONTO MUNICIPALITY
PEEL REGIONAL MUNICIPALITY
ALBION
REXDALE
Highfield
Beaumont Heights
Thistletown
Shopping Centre
Kipling Heights
West Humber Estates
Rexdale
BOULEVARD
KIPLING
ISLINGTON
Rexdale Sta
Cement Plant
Kingsview Village
Television 175'
St Phillips
Platinum Heights
DIXON
Golden Acres
Martin Grove Gardens
Shopping Centre
RICHVIEW
SIDE
RD
Underground Reservoir
Skyway
Industrial
Park
Golf Range
Cinema
Radio 100
TORONTO
INTERNATIONAL AIRPORT
Control Tower
Airport Limits
Cranes
Unused Res
Spring
Creek
Frasers Corners
Pumping Sta
ETOBICOKE
Mount Charles
DERRY
Cemetery
Heatherdale
Faircrest
Heathercrest
Filtration Plant
Thorncrest Village
TORONTO
ETOBICOKE BOROUGH
Golf Course
Cambton Park
Radio 240'
Park
Hosp
Scarlett
LAWRENCE
WESTON
Weston
NORTH YORK BOROUGH
YORK BOROUGH
Hardington
WILSON
PINE POINT PARK
Arena
Humberlea
Beverley Hills
SHEPPARD
AVE
JANE
STREET
Golf Course
Black Cr
400
401
WESTON ROAD
Toronto City Limits
3 Lims
Pipeline
Oil Pipeline
Water
Ditch
Dixie

Summary of Events
Toronto Weather Office
Sunday - August 30, 1970

9:30 am: Call to Hydrometeorologist (Conservation Authority) regarding rainfalls greater than one inch at Toronto International and Alarton and to alert him to potential.

10:00 am: Analysis of local 850 mb chart shows very strong low level winds at Green Bay, Wis. (data confirmed). They appeared too strong but could not be ignored. We are aware of tornado activity Saturday night in the Dakotas.

11:00 am: Call received from refuelling supervisor (Toronto International Airport) regarding death of a man on the ramp who was struck by lightning. (Occurred at about 10:15 am).

11:30 am: Prepared initial warning for severe weather for southwestern Ontario. Warning then held for supporting evidence.

1:00 pm: WW WKC 301637Z received - Number 518. It gave a tornado watch area covering most of lower Michigan.

1:15 pm: Timing was found to be compatible with our ideas and severe weather warning for southwestern Ontario was released. It was issued early so that it could be included in the afternoon FT. Further the strong winds mentioned above suggested that onset time might be sooner than anticipated.

1:00 pm: Hydro official called regarding WW WKC No. 518 and he was referred to our weather warning. Timing and areas involved were also discussed.

2:00 pm: Tapes were given to CHUM and CFRB radio stations.

2:15 pm: Call received from CHCH in Hamilton. More detail was requested. Drew attention to the timing and mentioned that little activity was likely until about 6:00 pm.

2:45 pm: Constant monitoring of observations discloses little activity occurring along the cold front during the afternoon. No messages received from Detroit.

3:00 pm: Further talk with Hydro (re. tomorrow)

3:30 pm: Brief evening shift.

fjb

(W. J. Brunskin),
Supervisor.

Evening Shift August 30

3:40 pm: Prelim scan of radar shows cell formation beginning to line up NE-SW from Parry Sound to Bruce Peninsula. Cells are well separated and tops below 30 thousand.

4:15 pm: Three consultations provided up to this time:

(1) C.N.E.

(2) Toronto Hydro

(3) Official of Province of Ontario Bldg at C.N.E.

Situation discussed - local effects of severe weather explained andour inability to pin-point precise localities affected. Telephone numbers taken and promises given to call as situation develops.

5:00 pm: Intensification of line noted and advisory issued in an attempt to delineate sphere of activity more closely than in original warning.
(This step considered necessary in face of growing public concern evidenced in many phone calls. The term tornado had in some manner crept into radio and TV announcements e.g. interruption of football telecast on CFTO.

At this time Grey, Simcoe, Dufferin and Muskoka counties singled out for special attention.

5:00 pm: Shortly after 5:30 almost explosive vertical development in a cellular complex to the southeast of Mount Forest is witnessed. Tops climb above 50 thousand feet within 15 minutes and heavy serration or scallaping on the southeast side of the radar returns suggest hail. Some protuberances observed at this time are not unlike many observed in the literature by the writer as being associated with tornado producing storms.

5:00 pm: Another bulletin issued - the existance of severe weather on radar is now disclosed and identified as such. Waterloo, Halton, Peel and York counties added to warning. Grey and Muskoka counties are deleted.

5:45 pm: Flashes of lightning in north shortly after 6:00 pm warning. It turns very dark, rains very intensely and at 6:48 power failure occurs. Pointer on U2A anemometer reached and stuck at 50 mph. In the press of general development and consultation with airways forecaster in issuing Signets 3, 4 and 5 I only found time to call one of the three agencies that phoned in around 4:00 p.m. (C.N.E.).

48 9:15 - No Power.

Evening Shift (cont'd)

7:15 pm or so - I went in the briefing room and encountered a female reporter interviewing staff and taking notes. Introduced myself as supervisor and offered to scrutinize her notes for possible inaccuracy. She politely declined asked my name and left in a waiting taxi.

Phone calls from police - fire departments, Etobicoke township, hydro and a citizen reporting damage on Richview and Martingrove intersection. Considering circumstances however calls were far fewer than I anticipated. I concluded the storm moved very rapidly over the city with a minimum of damage after hitting airport.

About 8:00 pm. or so, phoned S. Pincock, E. Met, to discuss ramification of power blackout.

2300Z Ftl and 2's phoned to Met Headquarters for transmission on CMT 170. We were preparing to call Montreal to provide an amendment service to terminal forecasts when power restored.

Marine and Public Weather Forecasts prepared and in Teletype before 10:00 pm but unable to transmit on Cross Ckt. E. Cake confirms press in receipt of "warning over" in Public Weather Forecasts on 11:00 pm news.

ww/or

(G. . . Gee),
Shift Supervisor.