

WIND ENGINEERING STUDY OF  
ONE WILLIAMS CENTER, TULSA

by

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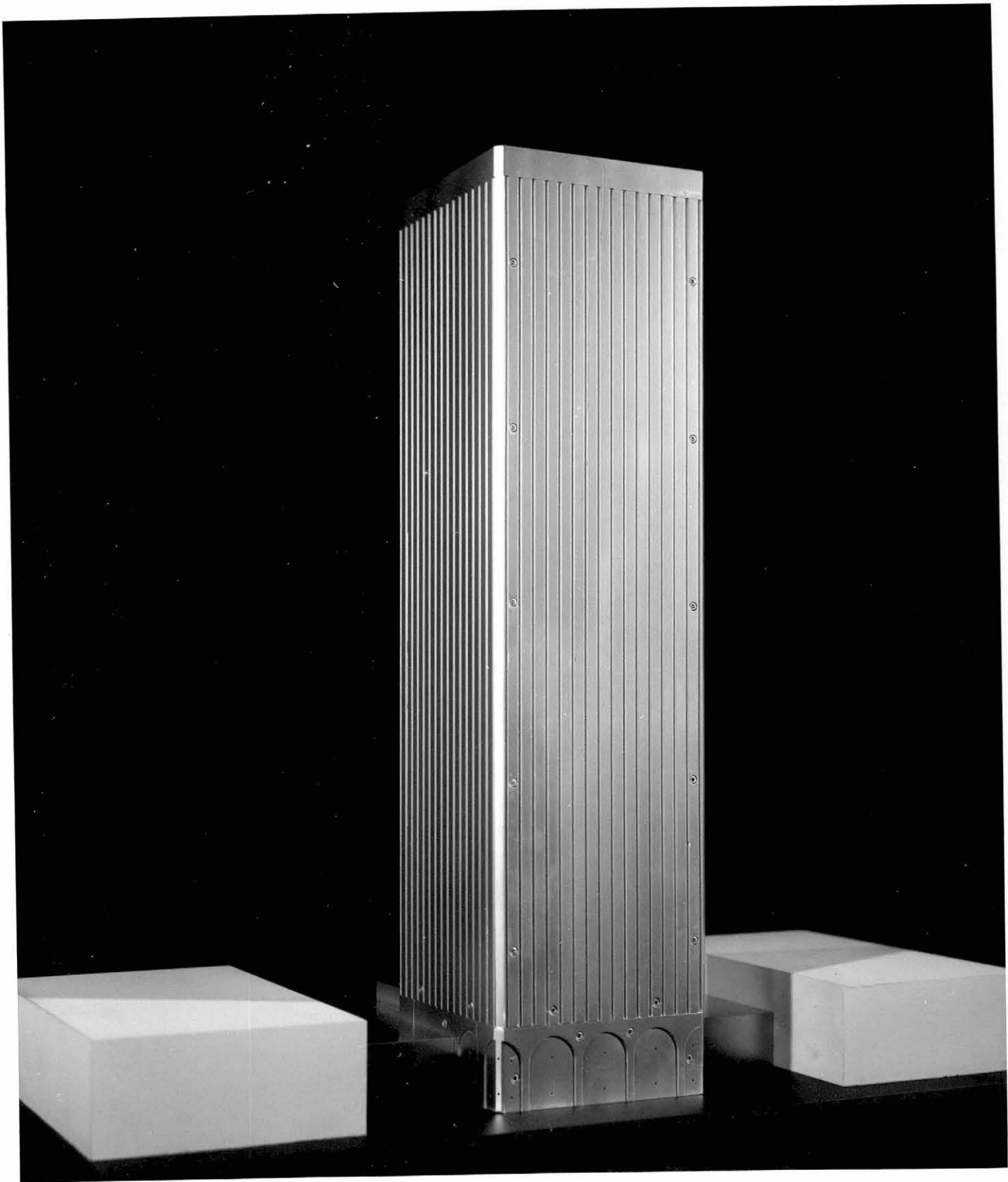
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ONE WILLIAMS CENTER - TULSA

(1:300 Scale Model)

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## TABLE OF CONTENTS

<u>Chapter</u>		<u>Page</u>
	ACKNOWLEDGMENTS. . . . .	i
	LIST OF TABLES . . . . .	iii
	LIST OF FIGURES. . . . .	iv
	LIST OF SYMBOLS. . . . .	v
1	INTRODUCTION . . . . .	1
	1.1 General . . . . .	1
	1.2 One Williams Center . . . . .	2
2	EXPERIMENTAL CONFIGURATION . . . . .	3
	2.1 Wind Tunnel . . . . .	3
	2.2 Model . . . . .	3
3	INSTRUMENTATION AND DATA ACQUISITION . . . . .	5
	3.1 Flow Visualization. . . . .	5
	3.2 Pressures . . . . .	5
	3.3 Velocity. . . . .	7
4	RESULTS. . . . .	9
	4.1 Flow Visualization. . . . .	9
	4.2 Velocity. . . . .	9
	4.3 Pressures . . . . .	11
5	CONCLUSIONS. . . . .	14
	REFERENCES . . . . .	15
	TABLES . . . . .	17
	FIGURES. . . . .	45
	APPENDIX A . . . . .	82

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	MOTION PICTURE SCENE GUIDE . . . . .	17
2	MEAN AND FLUCTUATING VELOCITIES AROUND THE BASE OF THE BUILDING. . . . .	18
3	LARGEST POSITIVE MEAN PRESSURE COEFFICIENTS. . . . .	30
4	LARGEST POSITIVE PEAK PRESSURE COEFFICIENTS. . . . .	35
5	LARGEST NEGATIVE MEAN PRESSURE COEFFICIENTS. . . . .	40
6	LARGEST NEGATIVE PEAK PRESSURE COEFFICIENTS. . . . .	45

## LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
1	Industrial Aerodynamics Wind Tunnel. . . . .	50
2	Pressure Tap Locations . . . . .	51
3	Completed Model. . . . .	57
4	Data Sampling Time Verification. . . . .	58
5	Plaza Velocity Measurement Locations . . . . .	59
6	Mean Velocity Profile Approaching the Model. . . . .	60
7	Mean Velocity Profiles at Model Location . . . . .	62
8	Turbulence Intensity Profiles. . . . .	63
9	Mean Velocity and Turbulence Intensity at Site 1 . . . .	64
10	Mean Velocity and Turbulence Intensity at Site 2 . . . .	65
11	Mean Velocity and Turbulence Intensity at Site 3 . . . .	66
12	Mean Velocity and Turbulence Intensity at Site 4 . . . .	67
13	Mean Velocity and Turbulence Intensity at Site 5 . . . .	68
14	Mean Velocity and Turbulence Intensity at Site 6 . . . .	69
15	Mean Velocity and Turbulence Intensity at Site 7 . . . .	70
16	Mean Velocity and Turbulence Intensity at Site 8 . . . .	71
17	Mean Velocity and Turbulence Intensity at Site 9 . . . .	72
18	Mean Velocity and Turbulence Intensity at Site 10. . . .	73
19	Mean Velocity and Turbulence Intensity at Site 11. . . .	74
20	Mean Velocity and Turbulence Intensity at Site 12. . . .	75
21	Mean Velocity and Turbulence Intensity at Site 13. . . .	76
22	Mean Velocity and Turbulence Intensity at Site 14. . . .	77
23	Mean Velocity and Turbulence Intensity at Site 16. . . .	78
24	Mean Velocity and Turbulence Intensity at Site 17. . . .	79

## LIST OF SYMBOLS

<u>Symbol</u>	<u>Definition</u>
U	Local mean velocity
D	Characteristic dimension (building height, width, etc.)
$\nu$	Kinematic viscosity of approach flow
$\frac{UD}{\nu}$	Reynolds number
E	Mean voltage
A	Constant
B	Constant
n	Constant
$U_{rms}$	Root-mean-square of fluctuating velocity
$E_{rms}$	Root-mean-square of fluctuating voltage
$U_{\infty}$	Reference mean velocity outside the boundary layer
Y	Height above surface
$\delta$	Height of boundary layer
$T_u$	Turbulence intensity $U_{rms}/U_{\infty}$
$C_{P_{mean}}$	Mean pressure coefficient, $\frac{(p-p_{\infty})_{mean}}{\frac{1}{2} \rho U_{\infty}^2}$
$C_{P_{rms}}$	Root-mean-square pressure coefficient, $\frac{((p-p_{\infty}) - (p-p_{\infty})_{mean})_{rms}}{\frac{1}{2} \rho U_{\infty}^2}$
$C_{P_{max}}$	Peak maximum pressure coefficient, $\frac{(p-p_{\infty})_{max}}{\frac{1}{2} \rho U_{\infty}^2}$
$C_{P_{min}}$	Peak minimum pressure coefficient, $\frac{(p-p_{\infty})_{min}}{\frac{1}{2} \rho U_{\infty}^2}$
$\rho$	Density of approach flow
$( )_{min}$	Minimum value during data record

LIST OF SYMBOLS (Cont.)

<u>Symbol</u>	<u>Definition</u>
$( )_{\max}$	Maximum value during data record
$p$	Fluctuating pressure at a pressure tap on the structure
$p_{\infty}$	Static pressure in the wind tunnel above the model



## 1. INTRODUCTION

### 1.1 General

A significant characteristic of modern tall building design is lighter cladding and more flexible frames. These features combine to produce an increased vulnerability of glass lights and cladding to wind damage. In addition, increased use of pedestrian plazas has brought about a need to consider wind and gustiness in the design of these areas. Techniques have been developed during the past decade for wind-tunnel modeling of proposed structures which allow the prediction of wind pressures on cladding and wind environment about the building. Knowledge of pressures on the structure permits adequate but economical selection of window strength to meet selected maximum design winds while information on sidewalk level gustiness allows plaza areas to be protected by design changes before the structure is constructed.

Modeling the aerodynamic loading on a structure requires special consideration of flow conditions in order to guarantee similitude between model and prototype. A detailed discussion of the similarity requirements and their wind-tunnel implementation can be found in References [1], [2], and [3]. In general, the requirements are that the model and prototype be scaled in geometry, that the approach mean velocity at the building site have a vertical profile shape similar to the full-scale flow, that the turbulence characteristics of the flows be similar, and that the Reynolds number for the model and prototype be equal.

These criteria are satisfied by constructing a scale model of the structure and its surroundings and performing the wind tests in a wind tunnel specifically designed to model atmospheric boundary layer flows. Reynolds number similarity requires that the quantity  $UD/v$  be

similar for model and prototype. Since  $\nu$ , the kinematic viscosity of air, is identical for both, Reynolds numbers cannot be made precisely equal with reasonable wind velocities. Wind velocity in the wind tunnel would have to be the model scale factor times the prototype wind. However, for sufficiently high Reynolds number ( $>10^5$ ) a pressure coefficient at any location on the structure will be essentially constant with Reynolds number. Typical values encountered are  $10^8$  for the full scale and  $10^6$  for the wind-tunnel model. Thus acceptable flow similarity is achieved without precise Reynolds number equality.

## 1.2 One Williams Center

A wind engineering study was performed for the proposed One Williams Center bank building in Tulsa, Oklahoma. The 654 ft high building was modeled (Frontispiece) at a 1:300 scale. The objectives of the wind engineering study were to obtain mean and fluctuating pressures on the buildings as well as wind velocity and gustiness in the area adjacent to the structure. In addition, a flow visualization study was performed to define overall flow patterns and regions where local flow features might cause difficulties in panel loading or pedestrian discomfort.

The One Williams Center building will be located in downtown Tulsa, Oklahoma. The location is within a 9 block urban renewal project. The surrounding terrain is essentially flat. The flow approaching the structure passes over low buildings except for a narrow range of approach directions where the main downtown area is located immediately upstream.

## 2. EXPERIMENTAL CONFIGURATION

### 2.1 Wind Tunnel

The wind engineering study was performed in the Industrial Aerodynamics Wind Tunnel located in the Fluid Dynamics and Diffusion Laboratory at Colorado State University, Figure 1. The tunnel is a closed circuit facility driven by a 75 h.p. variable-pitch propeller. The test section is nominally 6 ft square and 62 ft long fed through a 4-to-1 contraction ratio. The roof is adjustable to maintain a zero pressure gradient along the test section. The mean velocity can be adjusted continuously from 1 to 65 fps.

### 2.2 Model

In order to obtain an accurate assessment of local pressures using piezometer taps, the model was constructed to the largest scale that would not produce serious blockage in the wind tunnel. A 1:300 scale model of the One Williams Center bank building was constructed from 3/4 in. Lucite plastic. Recent studies indicate that the mullion scale in the direction perpendicular to the building should be larger than that of the structure to correctly include the local pressure effects caused by the mullions (4). For this reason, a scale of 1:150 was selected for the slots in the building face resulting in a model slot depth of 0.04 in. compared to the depth of 0.02 in. that would have resulted from a 1:300 scale.

Piezometer taps (1/16 in. dia.) were drilled normal to the exterior surface at 95 locations on the building tower and pedestal. The location of the taps on the structure is shown in Figures 2a to 2g. The tower portion of the building was constructed so that it could be rotated to 4 positions with respect to the base. In this way, only one

side of the tower was instrumented with pressure taps and data from other sides was obtained by rotation of the tower portion of the structure. Thus, for each approach wind direction studied, the 104 pressure ports yielded information at 266 locations on the structure.

An area of 2000 ft radius surrounding the building site was modeled in detail. Structures within the modeled region were made from styrofoam cut to the individual building geometries. The One Williams Center model was mounted on a 63 in. dia. turntable centered 55 ft from the test section entrance. The turntable indicated azimuthal orientation to  $\pm 0.1$  degree.

The region upstream from the modeled area was covered with a randomized roughness constructed from 1 in. cubes. Spires at the test section entrance provided a thicker boundary layer than would otherwise be available. The distribution of 1 in. roughness was designed to provide a boundary layer thickness of approximately 4 ft, a velocity profile power law exponent similar to that for the Tulsa area, and a logarithmic velocity profile with a realistic roughness length. A photograph of the complete model is shown in Figure 3. The wind-tunnel ceiling was adjusted after placement of the model to obtain a zero pressure gradient along the test section.

### 3. INSTRUMENTATION AND DATA ACQUISITION

#### 3.1 Flow Visualization

Visualization of the flow in the vicinity of the model is helpful in understanding and interpreting mean and fluctuating pressures, in defining zones of separated flow and reattachment where pressure coefficients may be expected to be high, and in indicating areas where pedestrian discomfort may be a problem. Titanium tetrachloride smoke was released from sources on and near the model and motion picture records made. Conclusions obtained from these smoke studies are discussed in section 4.1.

#### 3.2 Pressures

Mean and fluctuating pressures were obtained at each of the pressure ports on the wind-tunnel model. A 12 in. length of 1/16 I.D. plastic tubing connected 68 pressure ports at a time to a 72 tap pressure switch mounted inside the model. The switch was designed and fabricated in the Fluid Dynamics and Diffusion Laboratory to minimize the attenuation of pressure fluctuations across the switch. Each of the 68 measurement ports was directed in turn by the switch to one of the 4 pressure transducers mounted close to the switch. The switch was operated manually by means of a shaft projecting through the floor of the wind tunnel. A mechanical indexing feature locked the switch into each of the 18 required positions while a potentiometer provided an indication of the switch position of a digital voltmeter. The 4 pressure switch input taps not used for transmitting building pressures were connected to a common tube leading outside the wind tunnel. This arrangement provided both a means of performing in-place calibration of the

transducers and a means of automatically monitoring the tunnel speed using this valve position.

The pressure transducers used were Statham differential strain-gage transducers (Model PM283TC) with a 0.15 psid range. They were selected for the stability and linearity in the working range required. The resonant frequency of the transducers was approximately 2000 Hz so that resonance effects could be ignored. A reference pressure was obtained by connecting the reference side of the transducer with plastic tubing to the static side of a pitot tube mounted in the wind tunnel free stream above the model building. In this way the transducer measured the instantaneous difference between the local surface pressure and the static pressure in the free stream above the model.

Each pressure transducer bridge was monitored by a Honeywell Accudata 118 Gage Control/Amplifier unit which provided excitation to the bridge and amplified the bridge output. These instruments are characterized by a very stable excitation voltage and amplifier gain. Output from the Honeywell signal conditioners was fed to an on-line 8 channel System Development, Inc., analog-to-digital conversion unit. The data was processed onto digital tape for later data analysis by computer. Resolution of conversion was  $\pm 0.0016$  in pressure coefficient. All 4 transducers were recorded simultaneously for 16 seconds at a 250 sample per second rate. The results of an experiment to determine the length of record required to obtain stable mean and rms pressures and to determine overall accuracy of the pressure data acquisition system is shown in Figure 4. A typical pressure port record was integrated for a number of time periods to obtain the data shown. Examination of a large number of pressure taps showed that the overall accuracy for a

16 second average are, in pressure coefficient form, 0.03 for mean pressures, 0.1 for peak pressures and 0.01 for rms pressures. Pressure coefficients are defined in section 4.3.

Reduction of the raw data to usable form was performed on the Colorado State University CDC 6400 computer as described in section 4.3.

### 3.3 Velocity

Velocity and turbulence intensity profiles were measured upstream of the model and at the building location with the model removed but with the surrounding buildings in place. In addition, mean velocity and turbulence intensity measurements were made 0.3 in. (7.5 ft prototype) above the surface at 17 locations near the building for 24 wind directions, Figure 5. The surface measurements are indicative of the environment to which a pedestrian in the plaza area would be subjected.

Measurements were made with a single hot-wire anemometer mounted with its axis vertical. The instrumentation used was a DISA constant temperature anemometer (Model 55D05) with a 0.001 in. dia. platinum film sensing element 0.020 in. long. Output was read from a Hewlett-Packard integrating digital voltmeter (Model 2401C) for mean voltage and a DISA RMS meter (Model 55D35) for rms voltage.

Calibration of the hot-wire anemometer was performed using a Thermo-Systems Calibrator (Model 1125). The calibration data was fit to a variable exponent King's Law relationship

$$E^2 = A + BU^n$$

where  $E$  is the hot-wire output voltage,  $U$  the approach velocity and  $A$ ,  $B$  and  $n$  are coefficients selected to fit the data. The above relationship was used to recover the mean velocity at measurement points

from the measured mean voltage. The fluctuating velocity in the form  $U_{\text{rms}}$  (root-mean-square velocity) was obtained from

$$U_{\text{rms}} = \frac{2 E E_{\text{rms}}}{B n U^{n-1}}$$

where  $E_{\text{rms}}$  is the root-mean-square voltage output from the anemometer. All turbulence measurements were divided by both local mean velocity  $U$  and mean velocity outside the boundary layer  $U_{\infty}$ . Division by  $U$  gives an indication of the relative unsteadiness at the location while division by  $U_{\infty}$  permits easy determination of the actual magnitude of rms velocity fluctuations at a point for various approach velocities.



## 4. RESULTS

### 4.1 Flow Visualization

An 800 ft film is included as part of the report showing the characteristics of flow about the structure using smoke to make the flow visible. A listing of contents of the film is shown in Table 1. Several features can be noted from the visualization. Flow about the upper portion of the structure showed no areas of concern except possibly on the corner diagonals. With flow approaching perpendicular to a side, high velocity flow passes around the corners of the building such that separation may occur on the upwind diagonals resulting in large negative pressures. Visualization of flow about the base of the structure showed some possible areas of concern. For some wind directions, predominantly northerly, the flow in the plaza area south of the tower showed a rather turbulent and possibly high velocity region covering half or more of the plaza. For southerly winds, the flow descending the windward face of the tower appeared to have a high vertical velocity and could cause discomfort on the pedestrian bridge approaching the tower or on the sidewalk below. For easterly winds, the pedestrian area near measurement location 17 (See Figure 5) indicated a possible high velocity.

### 4.2 Velocity

Approach velocity profiles are shown in Figures 6a and 6b. These profiles were taken upstream from the model and are characteristic of the boundary layer approaching the model. The boundary layer thickness,  $\delta$ , was 44 in corresponding to a prototype value of 1100 ft. This is a reasonable value for the Tulsa area. In the form

$$\frac{U}{U_{\infty}} = \left[ \frac{y}{\delta} \right]^n$$

the velocity profile has an exponent  $n$  of 0.24 for the approach flow which is an acceptable value for city environments such as Tulsa with moderate building heights extending for a distance outward from the city center. The profile plotted in Figure 6b is shown in semilogarithmic form. The effective roughness height  $Y_0$  indicated by the zero velocity intercept of the best fit line is 7.0 ft, which is slightly large but not unreasonable for the site modeled. The velocity profiles measured at the building site with the model removed for wind azimuths  $70^\circ$  and  $170^\circ$  are shown in Figure 7. These profiles very dramatically illustrate the effect of the surrounding buildings on the velocity at the building site. The upstream approach for wind azimuth  $170^\circ$  contains numerous large buildings while the approach for wind azimuth  $70^\circ$  is relatively flat with low buildings.

Profiles of longitudinal turbulence intensity are shown in Figure 9 for both the upstream and model removed conditions. Modifications to the profiles due to structures located upwind are evident. For the purpose of this report, turbulence intensity is defined as the root-mean-square of the longitudinal velocity fluctuations divided by the reference mean velocity  $U_\infty$  at the outer edge of the boundary layer,

$$Tu_1 = \frac{U_{rms}}{U_\infty},$$

or as the rms velocity divided by the local mean velocity,

$$Tu_2 = \frac{U_{rms}}{U}.$$

Mean velocity and turbulence intensity at locations 1-17 shown in Figure 5 for 24 wind directions are listed in Table 2 and are plotted in Figures 9-24. Measurements were taken 0.3 in. (7.5 ft prototype)

above the surface. A site map is superimposed on the polar plots to aid in visualization of the effects of structures and topography on the results. For the points lying farthest from the main structure, certain wind directions caused the points to lie too close to the wind-tunnel wall for valid data to be obtained. No data was recorded when a plaza measurement point was closer than 10 in. from the side wall. The largest mean velocities were recorded at point 7 for a wind azimuth of  $010^\circ$  with  $0.8 U_\infty$ . The largest values of fluctuating velocity were recorded at point 7 for  $000^\circ$  wind azimuth. The rms velocity at that point was  $0.28 U_\infty$ . The combination of large velocity and turbulence intensity at point 7 for winds in the range of  $0-10^\circ$  may cause a measure of pedestrian discomfort. The highest "gustiness" values ( $U_{\text{rms}}/U$ ) were slightly under  $0.6U$  at a number of sites. Large values of gustiness must be interpreted in terms of the magnitude of mean velocity since a low local wind velocity can lead to large values as effectively as large rms velocities.

#### 4.3 Pressures

For each of the pressure ports examined (9576 total), the data record was analyzed to obtain 4 separate pressure coefficients. The first was the mean pressure coefficient

$$C_{p_{\text{mean}}} = \frac{(p - p_\infty)_{\text{mean}}}{\frac{1}{2}\rho U_\infty^2}$$

where the symbols are as defined in the List of Symbols. It represents the mean of the instantaneous pressure difference between building pressure port and static pressure in the wind tunnel outside the boundary layer non-dimensionalized by the dynamic pressure  $\frac{1}{2}\rho U_\infty^2$

outside the boundary layer. The magnitude of the fluctuating pressure was obtained by the rms pressure coefficient

$$C_{p_{rms}} = \frac{[(p - p_{\infty}) - (p - p_{\infty})_{mean}]_{rms}}{\frac{1}{2}\rho U_{\infty}^2}$$

in which the numerator is the root-mean-square of the instantaneous pressure difference about the mean.

If the pressure fluctuations followed a Gaussian probability distribution, no additional data would be required to predict the frequency with which any given pressure level would be observed. However, the pressure fluctuations do not follow a Gaussian probability distribution so that additional information is required to show the extreme values of pressure expected. The peak maximum and peak minimum pressure coefficients are used to determine these values:

$$C_{p_{max}} = \frac{(p - p_{\infty})_{max}}{\frac{1}{2}\rho U_{\infty}^2}$$

$$C_{p_{min}} = \frac{(p - p_{\infty})_{min}}{\frac{1}{2}\rho U_{\infty}^2}$$

The values of  $p - p_{\infty}$  which were digitized at 250 samples-per-second for 16 seconds were examined individually by the computer to obtain the most positive and most negative values during the 16 second period. These were converted to  $C_{p_{max}}$  and  $C_{p_{min}}$  by non-dimensionalizing with the free stream dynamic pressure.

The four pressure coefficients were calculated by the CSU CDC 6400 computer and tabulated on microfilm. The list of coefficients for both structures is included as Appendix A. The tap code number in the

Appendix is given in Figure 2. In addition the Appendix includes the approach wind azimuth in degrees from true north.

In order to determine the largest loads acting at any point on the structure, the data for all wind directions was searched to obtain, at any pressure tap, the largest positive and negative mean values and the largest positive and negative peak values. These values are tabulated, with their associated peak and rms or mean and rms values, in Tables 3-6. Table 3 provides pressure coefficients for the largest positive mean coefficients. Table 4 provides pressure coefficients for the largest positive peak coefficients. Table 5 provides pressure coefficients for the largest negative mean coefficients. Table 6 provides pressure coefficients for the largest negative peak coefficients. The largest positive mean values were between 0.6 and 0.65 on the upper portion of the tower while the largest positive peaks were in the range 1.0 to 1.1 in the same areas. The largest loads on the structure occurred as negative pressures on the corner diagonals of the building. Near the top of the tower, mean pressure coefficients between -1.7 and -1.8 were recorded with some minimum peaks slightly larger in magnitude than -3.0. Negative peaks in the center of the tower sides generally did not exceed -2.1 to -2.2. Pressure coefficients about the base of the structure were moderate except at the corner diagonals (taps 516, 522, 527, 533) where unusually large coefficients occurred for a portion of the structure so close to the ground. The indication is that rather large velocities are induced very near the surface.

## 5. CONCLUSIONS

A simulated atmospheric boundary layer flow over the One Williams Center model was established whose characteristics compare favorably with the expected flow over the Tulsa area. Flow visualization showed fluctuating separation features on the tower corner diagonals suggesting high values of pressure coefficient in those regions. Smoke observation of the flow in the vicinity of the base of the building showed limited areas where pedestrian discomfort might be expected.

Measurements of fluctuating velocity near the ground in plaza or street areas indicated the largest value of fluctuating velocities occurred at location 7 for 000 degree wind azimuth with an rms velocity 28 percent of the reference velocity above the boundary layer. This corresponds to a local turbulence intensity of 52 percent of the local mean velocity. The same location at essentially the same wind azimuth ( $010^\circ$ ) recorded the largest local mean velocity at  $0.8 U_\infty$ . This combination of large velocity and fluctuations may cause significant pedestrian discomfort at that location for moderately strong winds from the North. Some protection for the plaza area for North winds may be of benefit.

Pressure measurements on the structure supported the flow visualization conclusion that the corner diagonals on the tower portion of the structure near the flow separation point would have large negative pressures. The negative pressures on the corner diagonals reached rather large values of -3.0. Generally, peak pressures on the building sides did not exceed -2.1 to -2.2. Pressures on the pedestal structure were moderate with few values exceeding -1.5 except on the corner diagonals where large values again occurred.

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TABLE 1

## MOTION PICTURE SCENE GUIDE

Scene	Azimuth	Wind Velocity fps		Smoke Source
1	020	10	Upwind	E1 450'
2	035	10	Upwind	E1 450'
3	050	10	Upwind	E1 450'
4	065	10	Upwind	E1 450'
5	080	10	Upwind	E1 450'
6	095	10	Upwind	E1 450'
7	020	10	Ground	"Various locations"
8	060	10	Ground	"Various locations"
9	110	10	Ground	"Various locations"
10	150	10	Ground	"Various locations"
11	200	10	Ground	"Various locations"
12	240	10	Ground	"Various locations"
13	290	10	Ground	"Various locations"
14	330	10	Ground	"Various locations"



TABLE 2  
 MEAN AND FLUCTUATING VELOCITIES AROUND  
 THE BASE OF THE BUILDING

<u>Wind Azimuth</u>	<u>Building Location</u>	<u>U/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U Percent</u>
0	1	21.6	9.8	45.4
	2	21.6	8.5	39.6
	3	34.6	16.2	46.8
	4	34.5	19.5	56.5
	5	28.0	12.8	45.7
	6	20.8	12.1	57.9
	7	54.0	28.0	51.7
	8	46.6	20.5	43.9
	9	28.5	15.7	55.0
	10	17.1	6.5	38.2
	11	55.0	15.9	28.9
	12	27.5	12.1	43.8
	13	38.9	13.5	34.8
	14	54.9	10.2	18.5
	15	---	---	---
	16	---	---	---
	17	25.0	10.2	40.9
10	1	24.2	9.1	37.5
	2	20.9	7.4	35.3
	3	31.6	13.5	42.8
	4	21.6	12.1	55.8
	5	28.5	13.3	46.6
	6	23.1	12.0	52.0
	7	77.2	19.4	25.1
	8	57.3	15.3	26.7
	9	20.3	11.2	55.0
	10	15.2	5.9	38.8
	11	45.9	13.1	28.6
	12	18.3	8.9	48.8
	13	32.9	11.6	35.1
	14	48.9	8.5	17.4
	15	---	---	---
	16	---	---	---
	17	28.6	8.3	29.2

TABLE 2

(Continued)

<u>Wind Azimuth</u>	<u>Building Location</u>	<u>U/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U Percent</u>
30	1	27.9	9.1	32.5
	2	25.0	8.6	34.2
	3	38.2	12.6	33.1
	4	15.2	7.5	49.2
	5	21.7	12.2	56.3
	6	37.4	14.6	39.0
	7	56.7	20.2	35.6
	8	39.1	14.5	37.2
	9	19.4	10.1	52.0
	10	14.1	6.2	43.8
	11	34.7	9.0	26.0
	12	15.7	6.9	43.7
	13	32.3	11.3	35.0
	14	50.9	9.5	18.6
	15	---	---	---
	16	46.2	14.2	30.8
	17	41.0	8.3	20.4
40	1	31.2	7.6	24.4
	2	29.3	9.4	31.9
	3	54.0	17.7	32.7
	4	31.1	17.4	56.1
	5	21.4	12.1	56.5
	6	35.7	14.5	40.7
	7	45.6	17.0	37.3
	8	24.0	12.1	50.2
	9	21.9	10.8	49.2
	10	11.8	5.8	49.2
	11	28.8	9.3	32.3
	12	21.9	9.1	41.3
	13	30.7	10.0	32.6
	14	55.7	10.3	18.5
	15	---	---	---
	16	49.7	13.0	26.2
	17	48.4	8.7	18.0

TABLE 2  
(Continued)

<u>Wind Azimuth</u>	<u>Building Location</u>	<u>U/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U Percent</u>
60	1	32.9	7.5	22.8
	2	35.8	13.0	36.3
	3	56.7	11.6	20.5
	4	60.3	15.7	26.0
	5	17.8	10.5	59.0
	6	34.3	12.9	37.5
	7	20.3	11.4	56.1
	8	14.1	7.3	51.7
	9	22.1	9.2	41.4
	10	22.9	12.1	52.7
	11	21.3	7.9	37.0
	12	27.3	9.9	36.4
	13	27.9	9.7	34.8
	14	35.9	13.5	37.5
	15	---	---	---
	16	35.1	9.2	26.2
	17	64.8	13.3	20.6
70	1	32.2	8.1	25.1
	2	42.0	13.8	32.8
	3	56.0	12.1	21.7
	4	53.2	15.0	28.2
	5	15.5	8.4	53.9
	6	25.1	10.5	41.7
	7	18.6	9.9	53.0
	8	13.7	6.4	46.9
	9	24.4	8.9	36.3
	10	19.5	8.7	44.8
	11	20.5	7.8	38.3
	12	34.5	11.2	32.3
	13	26.5	10.4	39.3
	14	25.0	10.8	43.2
	15	---	---	---
	16	34.6	9.7	28.0
	17	65.6	17.6	26.8

TABLE 2  
(Continued)

<u>Wind Azimuth</u>	<u>Building Location</u>	<u>U/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U Percent</u>
90	1	38.4	10.6	27.6
	2	48.4	17.6	36.3
	3	42.1	10.4	24.8
	4	40.3	9.1	22.7
	5	20.0	8.5	42.4
	6	17.7	7.7	43.7
	7	16.0	8.1	50.6
	8	17.1	7.7	45.0
	9	29.4	7.8	26.6
	10	16.6	8.4	50.5
	11	19.9	7.4	36.9
	12	44.0	10.0	22.7
	13	13.8	6.5	47.0
	14	22.6	10.5	46.3
	15	---	---	---
	16	39.4	11.5	29.2
	17	33.5	16.6	49.6
100	1	42.0	10.2	24.4
	2	51.6	17.7	34.3
	3	36.1	12.0	33.3
	4	35.9	8.1	22.6
	5	---	---	---
	6	12.9	6.0	46.6
	7	17.1	9.0	52.8
	8	16.7	7.7	45.8
	9	27.7	10.0	35.9
	10	10.1	4.8	48.0
	11	19.0	7.0	36.6
	12	47.8	9.6	20.2
	13	14.1	6.1	43.1
	14	16.7	7.2	43.0
	15	---	---	---
	16	37.5	11.9	31.6
	17	23.7	11.6	49.1

TABLE 2  
(Continued)

<u>Wind Azimuth</u>	<u>Building Location</u>	<u>U/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U Percent</u>
120	1	27.6	12.0	43.5
	2	47.1	17.5	37.1
	3	21.4	10.6	49.6
	4	24.8	9.7	39.3
	5	9.5	4.1	42.7
	6	10.5	5.3	49.8
	7	20.8	11.6	55.6
	8	17.5	8.7	49.6
	9	23.2	8.4	36.3
	10	12.1	5.3	43.7
	11	27.2	9.9	36.4
	12	47.8	8.3	17.4
	13	12.6	5.3	42.0
	14	14.5	6.9	47.5
	15	---	---	---
	16	51.6	12.4	24.0
	17	16.7	8.4	50.3
130	1	19.5	9.8	50.2
	2	41.4	16.4	39.6
	3	21.9	10.6	48.4
	4	24.4	9.6	39.4
	5	7.0	3.0	42.1
	6	10.0	4.9	48.6
	7	17.5	9.3	53.2
	8	20.7	9.2	44.6
	9	44.6	13.5	30.3
	10	10.5	4.8	45.3
	11	24.4	9.7	39.7
	12	47.4	8.7	18.4
	13	13.2	5.7	43.5
	14	12.7	6.0	47.2
	15	---	---	---
	16	44.9	11.3	25.2
	17	16.2	7.9	48.9

TABLE 2  
(Continued)

<u>Wind Azimuth</u>	<u>Building Location</u>	<u>U/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U Percent</u>
150	1	8.3	3.2	39.0
	2	15.6	8.1	51.8
	3	17.1	7.7	44.9
	4	25.3	11.8	46.5
	5	14.0	6.2	44.3
	6	9.5	4.7	49.3
	7	13.2	6.6	49.8
	8	9.9	4.3	43.1
	9	9.9	4.3	43.5
	10	9.0	3.8	42.9
	11	23.6	7.1	30.1
	12	26.2	6.3	24.1
	13	13.1	5.3	40.8
	14	17.8	8.2	45.8
	15	---	---	---
	16	---	---	---
	17	25.8	11.5	44.7
160	1	10.4	4.1	39.6
	2	16.5	8.0	48.8
	3	17.6	7.6	43.0
	4	24.5	11.8	48.2
	5	13.2	6.5	49.7
	6	18.8	8.6	45.7
	7	21.6	9.4	43.4
	8	8.7	4.6	52.3
	9	12.9	6.3	48.8
	10	8.1	3.3	40.6
	11	31.9	9.3	29.2
	12	18.5	6.0	32.4
	13	17.0	5.6	32.9
	14	15.8	6.7	42.6
	15	---	---	---
	16	---	---	---
	17	29.2	12.4	42.5

TABLE 2  
(Continued)

<u>Wind Azimuth</u>	<u>Building Location</u>	<u>U/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U Percent</u>
180	1	20.4	8.0	39.1
	2	22.9	12.1	52.9
	3	18.3	7.9	43.5
	4	22.6	9.7	42.7
	5	18.4	8.3	45.3
	6	14.6	5.6	38.6
	7	24.7	10.1	40.8
	8	14.3	7.2	50.3
	9	27.4	7.8	28.3
	10	13.4	6.8	50.7
	11	32.3	7.7	23.7
	12	13.0	6.2	47.9
	13	21.1	8.4	39.9
	14	15.2	6.1	40.3
	15	28.1	13.2	46.9
	16	---	---	---
	17	41.9	17.3	41.3
190	1	22.8	8.6	37.5
	2	36.1	14.7	40.8
	3	27.8	11.6	41.7
	4	20.0	7.3	36.7
	5	22.7	8.7	38.4
	6	15.2	6.4	42.4
	7	28.3	11.3	40.0
	8	14.5	7.1	48.9
	9	31.6	9.1	28.7
	10	24.9	8.0	32.0
	11	38.4	7.6	19.8
	12	18.9	9.3	49.1
	13	25.9	9.2	35.5
	14	28.4	8.4	29.7
	15	22.5	11.2	49.6
	16	---	---	---
	17	47.7	19.9	41.8

TABLE 2  
(Continued)

<u>Wind Azimuth</u>	<u>Building Location</u>	<u>U/U<sub>∞</sub></u> Percent	<u>U<sub>rms</sub>/U<sub>∞</sub></u> Percent	<u>U<sub>rms</sub>/U</u> Percent
210	1	16.6	8.1	48.8
	2	44.5	17.6	39.5
	3	43.5	12.0	27.6
	4	30.6	8.6	28.0
	5	19.8	8.2	41.6
	6	15.0	6.7	44.4
	7	45.4	15.2	33.4
	8	18.2	9.9	54.1
	9	36.1	9.5	26.4
	10	---	---	---
	11	42.8	9.4	21.9
	12	29.0	13.2	45.4
	13	39.5	10.3	26.0
	14	---	---	---
	15	30.1	10.6	35.3
	16	30.3	10.9	36.1
	17	38.4	20.5	53.3
220	1	20.0	8.5	42.3
	2	32.9	13.6	41.4
	3	35.0	12.2	34.9
	4	25.9	9.1	35.2
	5	19.1	8.8	45.9
	6	16.7	7.0	41.7
	7	35.9	15.1	42.0
	8	17.0	8.9	52.3
	9	30.9	9.9	32.1
	10	---	---	---
	11	39.5	9.4	23.8
	12	20.8	9.8	47.3
	13	36.4	11.2	30.7
	14	---	---	---
	15	36.3	12.0	33.1
	16	29.2	9.6	32.9
	17	48.4	20.7	42.9



TABLE 2  
(Continued)

<u>Wind Azimuth</u>	<u>Building Location</u>	<u>U/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U Percent</u>
240	1	21.5	7.6	35.4
	2	33.6	11.6	34.6
	3	61.6	13.1	21.3
	4	55.2	16.2	29.3
	5	20.1	8.4	41.7
	6	12.9	5.0	39.1
	7	25.4	11.0	43.4
	8	14.9	7.6	51.1
	9	20.5	6.1	29.9
	10	15.4	7.8	50.4
	11	26.5	10.3	39.0
	12	30.3	8.8	29.0
	13	31.0	10.6	34.3
	14	13.5	6.1	45.0
	15	25.9	11.5	44.4
	16	30.1	7.7	25.7
	17	62.3	12.8	20.6
250	1	18.7	7.0	37.5
	2	33.7	11.8	34.9
	3	64.5	12.7	19.6
	4	52.3	18.6	35.6
	5	22.9	8.9	38.8
	6	9.5	4.1	43.0
	7	24.6	11.5	46.9
	8	14.8	6.9	46.6
	9	18.7	6.7	35.5
	10	23.9	9.9	41.5
	11	29.8	11.4	38.3
	12	31.7	7.5	23.6
	13	31.1	11.0	35.2
	14	20.6	7.5	36.5
	15	---	---	---
	16	29.5	7.4	25.1
	17	60.2	11.6	19.2

TABLE 2  
(Continued)

<u>Wind Azimuth</u>	<u>Building Location</u>	<u>U/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U Percent</u>
270	1	18.4	7.1	38.6
	2	24.8	8.5	34.2
	3	59.1	12.4	21.0
	4	51.9	18.5	35.7
	5	---	---	---
	6	11.1	5.3	47.5
	7	23.8	12.4	52.0
	8	33.1	12.5	37.7
	9	24.8	10.6	42.6
	10	19.8	9.5	48.2
	11	30.1	11.9	39.6
	12	35.8	7.6	21.2
	13	33.3	10.1	30.5
	14	14.3	6.6	46.3
	15	---	---	---
	16	27.7	8.2	29.6
	17	40.5	10.9	26.8
280	1	13.0	6.4	49.5
	2	23.2	9.3	39.9
	3	51.4	13.0	25.4
	4	41.8	19.0	45.4
	5	---	---	---
	6	10.8	5.1	46.7
	7	30.6	16.0	52.4
	8	42.8	12.6	29.5
	9	16.3	8.0	49.1
	10	10.8	5.0	46.7
	11	31.3	12.4	39.7
	12	34.8	8.8	25.3
	13	31.2	9.7	30.9
	14	14.6	6.1	41.8
	15	---	---	---
	16	30.5	8.2	27.0
	17	31.9	9.9	31.0

TABLE 2  
(Continued)

<u>Wind Azimuth</u>	<u>Building Location</u>	<u>U/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U Percent</u>
300	1	11.4	5.8	50.8
	2	17.3	8.3	47.8
	3	41.7	14.3	34.2
	4	23.4	13.6	58.3
	5	26.0	10.0	38.2
	6	15.7	7.1	44.9
	7	58.3	13.6	23.3
	8	54.8	13.0	23.7
	9	19.8	10.6	53.5
	10	11.6	5.5	47.2
	11	17.8	9.5	53.6
	12	38.5	9.5	24.6
	13	14.3	7.0	49.0
	14	14.0	6.1	43.9
	15	---	---	---
	16	32.4	7.5	23.1
	17	26.6	10.0	37.7
310	1	11.4	5.6	48.6
	2	14.7	6.7	45.2
	3	32.8	11.2	34.2
	4	18.2	9.3	51.3
	5	11.7	5.9	49.9
	6	15.2	7.4	49.0
	7	57.3	17.3	30.1
	8	49.3	12.7	25.8
	9	19.5	11.1	56.7
	10	10.6	5.3	49.5
	11	18.7	10.4	55.7
	12	42.6	10.3	24.2
	13	31.0	15.6	50.3
	14	12.4	6.8	54.4
	15	---	---	---
	16	30.6	7.7	25.2
	17	20.3	9.4	46.5

TABLE 2

(Continued)

<u>Wind Azimuth</u>	<u>Building Location</u>	<u>U/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U<sub>∞</sub> Percent</u>	<u>U<sub>rms</sub>/U Percent</u>
330	1	11.4	5.4	47.5
	2	16.9	7.6	45.0
	3	17.4	9.3	53.6
	4	18.1	9.9	54.6
	5	11.0	5.8	52.3
	6	14.7	8.5	58.1
	7	34.0	17.5	51.4
	8	29.4	13.3	45.1
	9	22.6	11.1	49.3
	10	10.4	4.6	44.0
	11	20.0	9.0	44.7
	12	38.8	11.0	28.4
	13	20.1	10.1	50.4
	14	38.6	8.2	21.3
	15	---	---	---
	16	---	---	---
	17	16.8	8.9	52.8
340	1	14.3	7.3	50.9
	2	16.4	7.4	45.0
	3	21.3	11.4	53.8
	4	20.4	12.0	58.8
	5	17.5	8.0	45.8
	6	21.8	12.8	58.6
	7	26.6	15.3	57.5
	8	24.4	12.6	51.8
	9	18.1	9.4	51.9
	10	9.8	4.3	43.9
	11	20.6	8.8	43.0
	12	28.5	10.3	36.1
	13	25.9	9.8	37.6
	14	36.6	7.5	20.6
	15	---	---	---
	16	---	---	---
	17	16.9	8.7	51.4

TABLE 3

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MAXIMUM MEAN PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	20	.546	.145	.935	-.166
102	10	.607	.132	.985	.152
103	0	.575	.131	.999	.171
104	350	.587	.135	1.008	.073
105	340	.555	.122	.934	.137
106	320	.590	.123	.908	.163
107	320	.573	.123	.913	.104
108	310	.600	.136	1.040	.202
109	300	.562	.133	.978	.084
111	20	.569	.143	1.022	.094
112	10	.604	.133	.950	.141
113	0	.600	.132	.953	.133
114	350	.610	.131	1.088	.212
115	340	.598	.133	.949	.110
116	330	.598	.130	.934	.147
117	330	.572	.135	.965	.142
118	310	.618	.128	1.036	.196
119	300	.577	.131	.952	.111
121	20	.478	.141	.892	.051
122	10	.522	.140	.975	.101
123	0	.506	.137	.905	.027
124	350	.524	.132	.971	.146
125	330	.528	.132	.946	.099
126	330	.541	.132	.926	.073
127	330	.512	.128	.897	.055
128	310	.538	.128	.900	.165
129	300	.464	.131	.901	.096
131	20	.364	.140	.860	-.071
132	10	.449	.140	.880	.034
133	0	.436	.138	.848	.084
134	0	.445	.131	.850	.120
135	340	.422	.133	.870	.012
136	320	.432	.125	.919	.107
137	330	.395	.176	.808	-1.447
138	310	.418	.132	.889	.081
139	300	.351	.136	.833	-.027
141	20	.245	.139	.697	-.312
142	10	.293	.116	.710	-.083
143	0	.303	.122	.718	.010
144	0	.314	.117	.726	.034
145	350	.295	.119	.814	.030
146	350	.288	.116	.790	.034
147	310	.255	.108	.660	-.079
148	310	.282	.110	.697	-.031
149	300	.213	.132	.843	-.127
151	20	.131	.108	.544	-.340
152	10	.199	.100	.542	-.079
153	10	.260	.103	.670	.023
154	350	.293	.107	.799	.027
155	350	.298	.111	.781	.022
156	320	.305	.110	.682	.060
157	310	.250	.112	.676	-.007
158	310	.250	.101	.662	.007
159	300	.126	.111	.657	-.123

TABLE 3 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MAXIMUM MEAN PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMNER	WIND DIRECTION	MFAN PRESSURE COEFFICIENT	PMS PRESSURE COEFFICIENT	MAXIMUM PRFSSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
201	110	.592	.126	.954	.019
202	100	.601	.133	.994	.161
203	90	.591	.134	.961	.088
204	80	.581	.130	.965	.153
205	70	.575	.126	.971	.111
206	60	.578	.128	.957	.164
207	60	.568	.126	.952	.144
208	40	.599	.124	.946	.152
209	30	.580	.127	.983	.149
211	110	.560	.138	1.005	-.016
212	100	.610	.123	.933	.251
213	90	.601	.130	1.042	.222
214	80	.606	.129	.942	.175
215	70	.609	.123	.971	.263
216	50	.625	.128	1.015	.196
217	60	.582	.136	.988	.190
218	40	.633	.134	1.037	.183
219	30	.573	.130	.961	.166
221	110	.488	.139	.932	-.124
222	100	.522	.125	.975	.167
223	90	.529	.137	.934	.157
224	70	.527	.132	.975	.139
225	70	.524	.133	.924	.167
226	50	.537	.137	.942	.158
227	50	.519	.136	.928	.142
228	40	.535	.123	.943	.183
229	30	.501	.139	.935	.086
231	110	.347	.174	.880	-.608
232	100	.413	.129	.936	.033
233	90	.437	.136	.862	.089
234	70	.442	.126	.854	.063
235	70	.458	.126	.883	.095
236	70	.453	.127	.871	.085
237	50	.429	.128	.872	.077
238	40	.441	.132	.851	.109
239	30	.410	.130	.819	.089
241	100	.216	.151	.685	-.660
242	100	.306	.119	.731	-.050
243	90	.316	.118	.748	-.027
244	80	.329	.130	.777	.034
245	70	.339	.118	.769	.016
246	70	.334	.118	.756	.023
247	50	.306	.112	.737	.020
248	40	.328	.124	.745	.036
249	30	.306	.120	.717	-.001
251	100	.047	.082	.330	-.358
252	100	.117	.079	.473	-.109
253	80	.131	.083	.464	-.062
254	70	.184	.085	.541	0.000
255	70	.232	.093	.583	.025
256	70	.255	.098	.618	.022
257	60	.238	.101	.751	.024
258	40	.223	.084	.538	.037
259	30	.195	.101	.635	-.047

TABLE 3 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MAXIMUM MEAN PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MFAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	200	.544	.128	.965	-.060
302	190	.567	.141	.977	-.157
303	160	.562	.127	.938	.141
304	160	.617	.128	.999	.172
305	160	.596	.134	.995	.021
306	140	.617	.123	.950	.221
307	140	.602	.124	.935	.166
308	130	.630	.132	.961	.140
309	120	.623	.122	.995	.215
311	200	.536	.145	.910	-.017
312	190	.576	.146	1.041	-.049
313	160	.516	.141	.999	.022
314	160	.582	.144	1.018	.120
315	140	.584	.119	1.012	.180
316	140	.649	.122	1.049	.224
317	140	.610	.129	1.116	.176
318	130	.659	.122	1.045	.286
319	120	.587	.130	.997	.231
321	200	.439	.144	.863	-.161
322	190	.395	.152	.945	-.121
323	170	.385	.134	.834	-.154
324	140	.448	.120	.842	.112
325	140	.449	.128	1.069	.086
326	140	.524	.132	1.053	.141
327	130	.524	.126	.918	.204
328	130	.568	.131	.953	.226
329	120	.510	.127	.906	.108
331	200	.337	.142	.764	-.253
332	200	.259	.129	.656	-.240
333	170	.261	.134	.893	-.070
334	130	.287	.099	.686	.025
335	130	.331	.107	.767	.043
336	130	.414	.115	.859	.126
337	130	.426	.114	.966	.099
338	130	.479	.117	.996	.143
339	120	.405	.128	.811	.014
341	200	.071	.104	.527	-.401
342	200	.035	.090	.409	-.352
343	170	.070	.094	.527	-.224
344	130	.165	.082	.468	-.032
345	130	.190	.091	.563	-.046
346	130	.268	.098	.657	.029
347	130	.266	.105	.645	.015
348	130	.309	.113	.686	.035
349	120	.241	.127	.762	-.076
351	190	-.113	.057	.063	-.529
352	170	-.019	.059	.296	-.225
353	120	.017	.063	.253	-.170
354	120	.113	.069	.373	-.091
355	120	.127	.075	.390	-.090
356	130	.175	.078	.542	-.013
357	130	.133	.082	.493	-.056
358	130	.151	.083	.533	-.053
359	130	.056	.073	.396	-.163

TABLE 3 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MAXIMUM MEAN PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
401	290	.559	.140	.931	.069
402	280	.619	.136	.967	.190
403	270	.588	.133	.959	.126
404	260	.602	.135	.977	.194
405	260	.573	.124	.992	.072
406	230	.580	.127	1.024	.145
407	230	.596	.129	.967	.142
408	220	.602	.127	1.030	.209
409	210	.614	.134	1.008	.157
411	290	.558	.142	.983	.057
412	280	.586	.135	.970	.190
413	270	.588	.127	1.008	.158
414	260	.634	.130	1.105	.215
415	260	.610	.127	1.059	.205
416	250	.596	.131	1.049	.135
417	230	.592	.140	.960	.173
418	220	.613	.134	1.039	.228
419	210	.580	.128	.938	.154
421	290	.284	.176	.780	-.733
422	270	.440	.142	.891	-.046
423	270	.520	.132	1.000	.107
424	270	.534	.129	1.019	.129
425	250	.517	.129	.947	.144
426	250	.527	.127	.971	.165
427	250	.482	.122	.918	.135
428	210	.516	.129	.968	.133
429	210	.498	.127	.909	.103
431	280	-.115	.232	.606	-1.167
432	270	.127	.126	.583	-.406
433	260	.341	.137	.782	-.018
434	250	.420	.126	.889	.122
435	250	.427	.127	.861	.120
436	250	.429	.128	.837	.113
437	240	.379	.127	.815	.019
438	200	.332	.096	.629	.072
439	200	.363	.116	.694	-.049
441	300	-.112	.182	.550	-.972
442	260	.056	.110	.503	-.313
443	260	.252	.117	.760	-.055
444	260	.303	.117	.856	-.016
445	250	.300	.112	.809	.040
446	250	.306	.111	.805	.033
447	250	.264	.109	.775	-.034
448	250	.202	.106	.680	-.113
449	210	.161	.106	.575	-.159
451	290	-.064	.121	.351	-.579
452	280	.047	.061	.297	-.187
453	260	.175	.088	.552	-.018
454	260	.245	.049	.624	.042
455	260	.230	.087	.609	.015
456	200	.238	.063	.482	.045
457	200	.127	.061	.397	-.048
458	210	.107	.067	.348	-.145
459	210	.099	.065	.294	-.237



TABLE 3 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MAXIMUM MEAN PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBR	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	290	-.138	.090	.171	-.494
502	280	-.066	.082	.208	-.387
503	180	-.335	.085	.006	-.852
504	20	-.170	.110	.199	-.548
505	20	-.113	.098	.162	-.577
506	190	-.360	.115	.023	-.971
507	110	-.147	.100	.223	-.488
508	100	-.103	.097	.193	-.606
509	190	-.311	.074	-.007	-.603
510	190	-.136	.110	.226	-.591
511	190	-.032	.092	.358	-.414
512	180	-.376	.108	-.075	-.851
513	130	.232	.107	.683	-.074
514	200	.224	.075	.492	-.036
515	200	.164	.060	.371	-.036
516	200	.061	.067	.288	-.250
517	200	.085	.067	.351	-.189
518	130	.162	.066	.416	0.000
519	130	.295	.106	.708	.040
520	130	.209	.076	.532	.040
521	130	.122	.061	.444	-.070
522	120	.032	.062	.288	-.260
523	100	.105	.048	.343	-.021
524	90	.183	.072	.503	0.000
525	210	.244	.101	.719	-.002
526	200	.177	.072	.514	-.035
527	200	.106	.076	.363	-.520
528	200	.112	.075	.365	-.419
529	130	.171	.075	.480	.003
530	130	.037	.079	.367	-.290
531	130	.287	.105	.769	.031
532	130	.192	.081	.582	-.046
533	120	.071	.073	.403	-.242
534	90	.163	.078	.500	-.272
535	90	.258	.105	.733	-.015
536	200	.272	.133	.754	-.153
537	200	.327	.133	.826	-.090
538	330	.072	.067	.394	-.126
539	330	.095	.077	.403	-.187
540	350	.156	.087	.622	-.084
541	300	.036	.073	.332	-.357
542	300	.071	.101	.435	-.307
543	300	.110	.081	.445	-.280
544	350	.131	.085	.527	-.146
545	350	.132	.091	.618	-.219
546	350	.155	.093	.521	-.119
547	350	.131	.079	.562	-.088
548	350	.153	.090	.607	-.066
549	350	.160	.090	.682	-.098
550	10	.047	.056	.417	-.078

TABLE 4

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MAXIMUM PEAK PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	20	.546	.145	.935	-.166
102	10	.607	.132	.985	.152
103	350	.562	.133	1.011	.053
104	350	.587	.135	1.008	.073
105	330	.537	.125	.974	.127
106	340	.556	.123	.980	.139
107	330	.545	.125	.974	.133
108	310	.600	.136	1.040	.202
109	300	.562	.133	.978	.084
111	20	.569	.143	1.022	.094
112	10	.604	.133	.950	.141
113	350	.544	.131	.987	.126
114	350	.610	.131	1.088	.212
115	350	.597	.126	1.061	.206
116	350	.579	.122	1.033	.200
117	320	.561	.133	1.006	.188
118	310	.618	.128	1.036	.196
119	300	.577	.131	.952	.111
121	20	.478	.141	.892	.051
122	10	.522	.140	.975	.101
123	350	.462	.129	.951	.105
124	350	.524	.132	.971	.146
125	330	.528	.132	.946	.099
126	320	.503	.129	.929	.160
127	320	.470	.130	.905	.125
128	320	.464	.131	.908	.090
129	300	.464	.131	.901	.096
131	20	.364	.140	.860	-.071
132	10	.449	.140	.880	.034
133	10	.392	.124	.883	.076
134	340	.409	.135	.883	.051
135	340	.422	.133	.870	.012
136	320	.432	.125	.919	.107
137	310	.362	.126	.838	.038
138	310	.418	.132	.889	.081
139	300	.351	.136	.833	-.027
141	30	.099	.186	.750	-.862
142	20	.252	.122	.747	-.228
143	0	.303	.122	.718	.010
144	340	.267	.121	.807	.016
145	350	.295	.119	.814	.030
146	340	.283	.118	.800	-.039
147	340	.245	.113	.755	-.081
148	290	.164	.124	.765	-.200
149	300	.213	.132	.843	-.127
151	20	.131	.108	.544	-.340
152	0	.123	.114	.662	-.171
153	340	.169	.100	.706	-.081
154	340	.262	.113	.804	.034
155	340	.281	.117	.894	.036
156	340	.276	.114	.858	.036
157	310	.259	.112	.676	-.007
158	310	.250	.101	.662	.007
159	300	.126	.111	.657	-.123

TABLE 4 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MAXIMUM PEAK PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
201	110	.592	.126	.954	.019
202	100	.601	.133	.994	.161
203	80	.566	.132	.992	.091
204	80	.581	.130	.965	.153
205	70	.575	.126	.971	.111
206	70	.573	.124	.994	.099
207	70	.545	.122	.966	.086
208	50	.587	.131	.952	.107
209	50	.406	.132	1.045	-.093
211	110	.560	.138	1.005	-.016
212	90	.529	.130	.971	.091
213	90	.601	.130	1.042	.222
214	60	.550	.123	1.002	.127
215	60	.586	.126	.988	.117
216	50	.625	.128	1.015	.196
217	60	.582	.136	.988	.190
218	40	.633	.134	1.037	.183
219	40	.541	.132	.976	.115
221	110	.488	.139	.932	-.124
222	100	.522	.125	.975	.167
223	90	.529	.137	.934	.157
224	70	.527	.132	.975	.139
225	80	.519	.126	.962	.081
226	50	.537	.137	.942	.158
227	50	.519	.136	.928	.142
228	50	.516	.133	.987	.107
229	30	.501	.139	.935	.086
231	110	.347	.174	.880	-.608
232	90	.394	.135	.937	-.017
233	90	.437	.136	.862	.089
234	80	.419	.125	.917	.059
235	80	.406	.123	.928	.059
236	80	.386	.121	.893	.031
237	60	.394	.126	.917	.067
238	30	.410	.123	.858	.084
239	30	.410	.130	.819	.089
241	100	.216	.151	.685	-.660
242	90	.281	.123	.789	-.042
243	90	.316	.118	.748	-.027
244	70	.313	.116	.789	.020
245	70	.339	.118	.769	.016
246	50	.322	.112	.756	.046
247	40	.284	.120	.738	-.003
248	50	.314	.112	.790	.029
249	30	.306	.120	.717	-.001
251	100	.047	.082	.330	-.358
252	90	.094	.081	.488	-.129
253	70	.122	.082	.501	-.088
254	70	.184	.085	.541	0.000
255	50	.174	.086	.590	-.026
256	50	.249	.094	.699	.029
257	60	.238	.101	.751	.024
258	60	.172	.090	.637	-.013
259	30	.195	.101	.635	-.047

TABLE 4 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MAXIMUM PEAK PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	190	.494	.159	1.041	-.254
302	190	.567	.141	.977	-.157
303	170	.487	.165	1.130	-.042
304	170	.514	.167	1.035	-.050
305	160	.596	.134	.995	.021
306	150	.617	.127	1.065	.149
307	150	.574	.124	.995	.116
308	140	.622	.125	1.026	.165
309	120	.623	.122	.995	.215
311	190	.470	.177	.958	-.272
312	190	.576	.146	1.041	-.049
313	160	.516	.141	.999	.022
314	160	.582	.144	1.018	.120
315	150	.574	.140	1.028	.110
316	140	.649	.122	1.049	.224
317	140	.610	.129	1.116	.176
318	140	.617	.127	1.056	.127
319	120	.587	.130	.997	.231
321	200	.439	.144	.863	-.161
322	190	.395	.152	.945	-.121
323	160	.371	.160	.946	-.098
324	150	.425	.147	1.001	.085
325	140	.449	.128	1.069	.086
326	140	.524	.132	1.053	.141
327	140	.505	.133	.990	.091
328	140	.509	.133	.966	.087
329	120	.510	.127	.906	.108
331	200	.337	.142	.764	-.253
332	180	.152	.113	.774	-.175
333	170	.261	.134	.893	-.070
334	170	.280	.130	.764	-.045
335	130	.331	.107	.767	.043
336	130	.414	.115	.859	.126
337	130	.426	.114	.966	.099
338	130	.479	.117	.996	.143
339	120	.405	.128	.811	.014
341	200	.071	.104	.527	-.401
342	160	-.056	.103	.450	-.356
343	170	.070	.094	.527	-.224
344	170	.088	.091	.544	-.158
345	130	.190	.091	.563	-.046
346	130	.268	.098	.657	.029
347	120	.224	.102	.647	-.014
348	130	.309	.113	.686	.035
349	120	.241	.127	.762	-.076
351	220	-.140	.093	.247	-.642
352	170	-.019	.059	.296	-.225
353	170	-.019	.051	.335	-.168
354	120	.113	.069	.373	-.091
355	130	.127	.072	.432	-.061
356	130	.175	.078	.542	-.013
357	130	.133	.082	.493	-.056
358	130	.151	.083	.533	-.053
359	130	.056	.073	.396	-.163

TABLE 4 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MAXIMUM PEAK PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
401	290	.559	.140	.931	.069
402	270	.569	.136	.994	.094
403	270	.588	.133	.959	.126
404	270	.567	.128	1.065	.095
405	230	.545	.123	1.008	.139
406	230	.580	.127	1.024	.145
407	220	.565	.120	.970	.215
408	230	.588	.132	1.052	.116
409	210	.614	.134	1.008	.157
411	290	.558	.142	.983	.057
412	280	.586	.135	.970	.190
413	270	.588	.127	1.008	.158
414	260	.634	.130	1.105	.215
415	260	.610	.127	1.059	.205
416	250	.596	.131	1.049	.135
417	220	.590	.129	1.038	.199
418	220	.613	.134	1.039	.228
419	200	.527	.136	.969	-.022
421	280	.204	.221	.960	-.832
422	270	.440	.142	.891	-.046
423	270	.520	.132	1.000	.107
424	270	.534	.129	1.019	.129
425	230	.454	.132	.954	.026
426	230	.470	.137	1.068	.023
427	230	.454	.142	1.150	.013
428	230	.401	.147	1.049	-.029
429	200	.472	.119	.996	.091
431	280	-.115	.232	.606	-1.167
432	260	.122	.118	.615	-.217
433	270	.251	.114	.800	-.051
434	250	.420	.126	.889	.122
435	250	.427	.127	.861	.120
436	270	.297	.112	.839	-.007
437	240	.379	.127	.815	.019
438	210	.327	.119	.746	-.037
439	210	.342	.138	.786	-.103
441	300	-.112	.182	.550	-.972
442	260	.056	.110	.503	-.313
443	260	.252	.117	.760	-.055
444	260	.303	.117	.856	-.016
445	250	.300	.112	.809	.040
446	250	.306	.111	.805	.033
447	250	.264	.109	.775	-.034
448	250	.202	.106	.680	-.113
449	210	.161	.106	.575	-.159
451	300	-.074	.165	.470	-1.020
452	230	-.092	.103	.417	-.429
453	250	.159	.086	.587	-.047
454	240	.227	.099	.632	-.054
455	240	.227	.101	.615	-.051
456	240	.193	.096	.562	-.064
457	250	.113	.080	.510	-.086
458	240	.033	.082	.468	-.167
459	210	.009	.065	.294	-.237

TABLE 4 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MAXIMUM PEAK PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	110	-.764	.352	.310	-1.799
502	280	-.066	.082	.208	-.387
503	150	-.633	.191	.209	-1.342
504	120	-.571	.144	.277	-1.115
505	330	-.486	.140	.189	-1.041
506	340	-.734	.175	.145	-1.545
507	160	-.253	.138	.276	-.919
508	110	-.122	.097	.292	-.644
509	180	-.333	.152	.022	-1.142
510	160	-.375	.175	.385	-1.132
511	190	-.032	.092	.358	-.414
512	60	-.695	.161	.036	-1.370
513	120	.226	.125	.804	-.151
514	210	.206	.086	.551	-.017
515	220	.051	.064	.418	-.161
516	160	-.099	.064	.425	-.581
517	210	.036	.066	.360	-.231
518	120	.121	.068	.460	-.096
519	120	.239	.101	.920	-.004
520	120	.166	.071	.592	-.073
521	130	.122	.061	.444	-.070
522	100	.008	.078	.304	-.407
523	90	.100	.047	.352	-.033
524	90	.183	.072	.503	0.000
525	210	.244	.101	.719	-.002
526	210	.176	.081	.529	-.042
527	0	-.440	.192	.435	-1.034
528	130	.037	.064	.374	-.331
529	200	.158	.082	.502	-.114
530	130	.037	.079	.367	-.290
531	130	.287	.105	.769	.031
532	140	.113	.070	.764	-.123
533	110	.058	.062	.459	-.148
534	90	.163	.078	.500	-.272
535	200	-.088	.140	.754	-.651
536	210	.188	.128	.798	-.176
537	210	.290	.137	.868	-.108
538	350	.047	.060	.419	-.231
539	350	.063	.070	.421	-.264
540	350	.156	.087	.622	-.084
541	350	.013	.066	.394	-.225
542	310	-.026	.110	.525	-.451
543	320	.071	.085	.472	-.382
544	320	.113	.091	.580	-.173
545	350	.132	.091	.618	-.219
546	340	.122	.095	.580	-.169
547	330	.129	.084	.620	-.118
548	350	.153	.090	.607	-.066
549	350	.160	.090	.682	-.098
550	320	.027	.057	.488	-.135

TABLE 5

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MINIMUM MEAN PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	340	-1.763	.370	-.485	-2.810
102	60	-1.227	.245	-.436	-2.273
103	60	-1.041	.251	-.216	-2.035
104	60	-.772	.226	-.151	-1.557
105	70	-.642	.165	-.060	-1.409
106	250	-.688	.204	-.063	-1.405
107	250	-.840	.207	-.091	-1.584
108	250	-.995	.249	-.107	-1.965
109	250	-1.169	.261	-.357	-2.336
111	50	-1.569	.442	-.156	-2.717
112	60	-1.018	.228	-.305	-2.014
113	60	-.980	.231	-.192	-2.199
114	60	-.893	.258	-.021	-2.000
115	60	-.765	.276	.013	-1.817
116	250	-.795	.245	-.009	-1.818
117	250	-.880	.235	-.122	-1.903
118	250	-.913	.226	-.222	-1.938
119	260	-1.030	.209	-.359	-1.970
121	50	-1.372	.481	-.023	-2.933
122	60	-.934	.258	-.343	-3.027
123	60	-.900	.246	-.205	-2.568
124	60	-.834	.258	0.000	-1.834
125	60	-.711	.279	-.003	-2.076
126	250	-.751	.253	.104	-1.721
127	250	-.832	.246	-.004	-2.073
128	250	-.883	.244	-.131	-2.133
129	260	-.964	.222	-.300	-2.120
131	50	-1.228	.470	-.070	-2.933
132	60	-.943	.270	-.335	-2.476
133	60	-.861	.259	-.240	-2.108
134	60	-.754	.250	-.136	-1.674
135	60	-.637	.247	-.051	-1.433
136	250	-.689	.227	-.088	-1.584
137	250	-.786	.231	-.050	-1.844
138	250	-.842	.226	-.248	-2.007
139	260	-.886	.225	-.340	-1.851
141	340	-1.138	.372	-.237	-2.731
142	60	-.855	.244	-.344	-2.076
143	60	-.753	.247	-.214	-1.897
144	60	-.639	.254	-.027	-1.801
145	210	-.636	.125	-.368	-1.395
146	210	-.599	.119	-.324	-1.323
147	250	-.654	.220	-.112	-1.625
148	250	-.763	.230	-.167	-1.912
149	250	-.879	.260	-.341	-2.544
151	340	-1.068	.381	-.243	-3.055
152	60	-.743	.271	-.150	-1.882
153	70	-.611	.174	-.173	-1.539
154	100	-.580	.078	-.381	-1.055
155	210	-.597	.120	-.179	-1.439
156	100	-.591	.072	-.430	-1.376
157	210	-.603	.136	-.319	-1.476
158	100	-.568	.081	-.222	-.770
159	250	-.772	.270	-.242	-2.053

TABLE 5 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MINIMUM MEAN PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
201	70	-1.591	.424	-.475	-2.739
202	150	-1.137	.233	-.326	-2.131
203	150	-1.025	.253	-.270	-1.964
204	150	-.754	.246	-.037	-1.587
205	330	-.628	.158	.254	-1.417
206	340	-.712	.210	-.154	-1.516
207	340	-.873	.221	-.123	-1.654
208	340	-1.039	.260	-.171	-2.335
209	350	-1.172	.223	-.445	-2.262
211	140	-1.500	.430	.033	-2.827
212	150	-.909	.223	-.319	-1.986
213	150	-.923	.231	-.150	-1.937
214	150	-.796	.253	.018	-1.919
215	340	-.706	.246	.129	-1.543
216	340	-.810	.250	.050	-1.795
217	340	-.884	.249	-.034	-1.850
218	340	-.908	.232	-.077	-2.102
219	350	-1.077	.218	-.424	-2.194
221	140	-1.438	.455	-.109	-2.711
222	150	-.910	.265	-.171	-2.089
223	150	-.827	.278	-.056	-2.079
224	150	-.654	.292	.077	-1.819
225	340	-.725	.254	-.015	-1.672
226	340	-.806	.249	-.009	-1.837
227	340	-.863	.247	-.089	-2.169
228	340	-.898	.256	-.199	-2.319
229	350	-1.027	.244	-.388	-2.370
231	70	-1.127	.360	-.332	-2.661
232	150	-.756	.245	-.102	-1.965
233	160	-.611	.197	-.113	-2.026
234	330	-.622	.179	.017	-1.355
235	330	-.654	.183	-.065	-1.502
236	340	-.687	.241	-.093	-1.723
237	340	-.804	.259	-.110	-1.801
238	340	-.882	.263	-.224	-2.117
239	340	-.941	.304	-.315	-2.628
241	70	-1.068	.343	-.180	-2.497
242	300	-.580	.086	-.317	-.963
243	300	-.632	.094	-.365	-1.014
244	300	-.626	.102	-.356	-1.037
245	300	-.665	.103	-.346	-1.250
246	330	-.654	.181	-.118	-1.715
247	330	-.691	.191	-.113	-1.739
248	340	-.768	.242	-.254	-1.964
249	340	-.913	.266	-.343	-2.076
251	60	-.858	.271	-.218	-2.314
252	190	-.584	.207	-.068	-1.479
253	220	-.655	.165	-.285	-1.616
254	190	-.545	.127	-.156	-1.193
255	300	-.601	.106	-.333	-1.207
256	290	-.628	.132	-.339	-1.397
257	290	-.712	.127	-.402	-1.437
258	290	-.720	.152	-.366	-1.567
259	340	-.849	.289	-.292	-2.325



TABLE 5 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MINIMUM MEAN PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	240	-1.579	.491	-.481	-2.997
302	240	-1.192	.279	-.462	-2.382
303	240	-1.021	.260	-.297	-2.158
304	240	-.760	.214	-.221	-1.557
305	70	-.599	.214	.114	-1.369
306	70	-.729	.223	-.057	-1.400
307	70	-.863	.230	.001	-2.106
308	70	-.997	.251	-.269	-2.000
309	70	-1.052	.266	-.220	-2.258
311	230	-1.695	.427	.001	-2.980
312	230	-1.039	.189	-.390	-2.302
313	240	-.913	.253	-.193	-1.956
314	240	-.840	.256	-.078	-1.831
315	240	-.743	.259	.045	-1.640
316	70	-.776	.236	-.028	-1.748
317	70	-.859	.239	-.051	-1.770
318	70	-.889	.227	-.072	-2.062
319	80	-.943	.196	-.170	-1.866
321	230	-1.321	.491	.303	-2.887
322	230	-.902	.233	.031	-1.932
323	240	-.845	.270	-.076	-2.249
324	240	-.786	.260	-.060	-1.869
325	240	-.726	.236	-.056	-1.671
326	70	-.757	.252	.021	-1.723
327	70	-.826	.248	-.043	-1.997
328	70	-.881	.253	-.122	-2.180
329	70	-.903	.279	-.202	-2.524
331	230	-.864	.376	.356	-2.827
332	240	-.762	.257	-.243	-2.116
333	240	-.729	.234	-.139	-2.072
334	240	-.701	.215	-.010	-1.924
335	240	-.653	.203	-.016	-1.624
336	70	-.637	.255	.031	-1.717
337	70	-.748	.276	-.122	-1.877
338	70	-.860	.274	-.201	-2.051
339	70	-.932	.290	-.255	-2.144
341	240	-.780	.253	-.255	-1.992
342	240	-.690	.194	-.237	-1.711
343	240	-.687	.196	-.154	-1.948
344	240	-.655	.193	-.054	-1.779
345	280	-.637	.138	-.281	-1.212
346	60	-.616	.164	-.082	-1.359
347	60	-.651	.163	-.086	-1.453
348	70	-.687	.275	-.085	-2.040
349	70	-.909	.297	-.242	-2.339
351	240	-.824	.288	-.275	-2.513
352	240	-.687	.204	-.258	-2.041
353	300	-.686	.133	-.374	-1.340
354	300	-.663	.136	-.355	-1.438
355	300	-.682	.126	-.386	-1.511
356	300	-.624	.112	-.266	-1.101
357	50	-.657	.127	-.215	-1.171
358	50	-.630	.119	-.218	-1.233
359	60	-.707	.200	-.279	-1.760

TABLE 5 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MINIMUM MEAN PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
401	250	-1.738	.406	-.535	-2.838
402	330	-1.241	.235	-.411	-2.092
403	330	-1.045	.249	-.342	-2.098
404	330	-.770	.233	-.163	-1.612
405	340	-.680	.185	-.106	-1.800
406	340	-.655	.178	-.064	-1.547
407	150	-.625	.178	.003	-1.533
408	160	-.836	.277	.016	-1.924
409	160	-1.108	.245	-.286	-2.184
411	320	-1.638	.473	.060	-3.017
412	330	-1.038	.237	-.394	-2.310
413	330	-1.009	.243	-.182	-2.500
414	330	-.898	.255	-.086	-2.051
415	330	-.765	.267	-.075	-1.627
416	330	-.633	.260	.003	-1.670
417	160	-.683	.311	.138	-1.807
418	160	-.843	.281	.217	-2.128
419	160	-.965	.244	-.241	-2.178
421	320	-1.483	.479	-.193	-2.999
422	330	-.979	.268	-.322	-2.137
423	330	-.924	.266	-.238	-2.120
424	330	-.823	.280	-.014	-1.911
425	330	-.754	.270	-.017	-2.026
426	330	-.647	.250	.018	-1.720
427	150	-.657	.224	.007	-2.002
428	160	-.707	.319	-.026	-2.118
429	160	-.940	.278	-.172	-2.140
431	320	-1.302	.470	-.186	-3.017
432	330	-.996	.288	-.339	-2.253
433	330	-.882	.270	-.131	-2.206
434	330	-.773	.265	-.134	-1.637
435	330	-.669	.260	-.063	-1.628
436	340	-.633	.186	.022	-1.685
437	150	-.607	.201	-.097	-1.728
438	150	-.610	.205	-.089	-1.499
439	160	-.679	.240	-.063	-1.815
441	330	-1.184	.408	-.194	-2.874
442	330	-.896	.246	-.358	-2.134
443	330	-.738	.256	-.173	-1.934
444	340	-.674	.189	-.108	-1.510
445	350	-.656	.108	-.325	-1.168
446	350	-.641	.106	-.318	-1.110
447	0	-.637	.079	-.378	-1.056
448	0	-.621	.079	-.376	-1.069
449	0	-.632	.082	-.402	-1.052
451	330	-1.021	.339	-.266	-2.560
452	340	-.825	.264	-.300	-2.298
453	350	-.698	.151	-.357	-1.394
454	350	-.655	.125	-.335	-1.215
455	0	-.624	.087	-.386	-1.012
456	0	-.635	.074	-.369	-.980
457	110	-.611	.089	-.318	-1.017
458	120	-.631	.094	-.299	-1.099
459	10	-.639	.098	-.319	-1.149

TABLE 5 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MINIMUM MEAN PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	100	-.986	.330	.038	-1.764
502	110	-1.082	.193	-.464	-1.688
503	340	-.823	.147	-.230	-1.375
504	180	-.784	.218	.120	-1.672
505	200	-1.027	.195	-.350	-1.769
506	70	-.786	.141	-.187	-1.341
507	280	-.922	.324	.074	-1.783
508	290	-1.102	.194	-.205	-1.714
509	150	-.754	.167	-.063	-1.555
510	10	-.900	.194	-.023	-1.590
511	20	-1.214	.213	-.477	-1.900
512	340	-.803	.150	-.195	-1.488
513	0	-.583	.110	0.000	-1.138
514	0	-.554	.101	-.162	-.901
515	0	-.634	.125	-.018	-1.112
516	270	-.752	.213	-.181	-1.759
517	290	-.654	.159	-.297	-1.558
518	300	-.568	.116	-.271	-1.096
519	300	-.566	.113	-.186	-1.193
520	40	-.569	.122	-.295	-1.329
521	50	-.664	.155	-.259	-1.556
522	50	-.751	.212	-.268	-1.834
523	310	-.416	.105	-.088	-1.030
524	210	-.378	.104	-.008	-.730
525	20	-.494	.078	-.141	-.796
526	30	-.488	.067	-.184	-.764
527	240	-.766	.290	-.086	-2.646
528	290	-.680	.173	-.191	-1.428
529	30	-.537	.066	-.345	-.825
530	30	-.567	.075	-.387	-.910
531	20	-.517	.073	-.294	-.964
532	50	-.590	.169	-.193	-1.448
533	50	-.686	.212	-.239	-1.969
534	310	-.381	.097	-.079	-.843
535	310	-.371	.091	-.065	-.684
536	260	-.422	.084	-.133	-.812
537	310	-.409	.104	-.046	-.843
538	90	-.407	.101	-.156	-.896
539	90	-.439	.107	-.105	-.950
540	200	-.502	.104	.082	-.879
541	100	-.455	.056	-.282	-.721
542	50	-.531	.162	-.158	-1.179
543	130	-.534	.115	-.278	-1.244
544	200	-.591	.093	-.313	-1.032
545	120	-.538	.094	-.269	-.971
546	100	-.644	.099	-.420	-1.237
547	200	-.462	.083	-.125	-.913
548	120	-.390	.086	-.150	-.764
549	100	-.517	.075	-.258	-.881
550	120	-.243	.046	-.119	-.479

TABLE 6

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MINIMUM PEAK PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	60	-1.669	.459	-.546	-3.053
102	60	-1.227	.245	-.436	-2.273
103	60	-1.041	.251	-.216	-2.035
104	60	-.772	.226	-.151	-1.557
105	240	-.575	.167	-.009	-1.503
106	70	-.630	.166	.020	-1.435
107	250	-.840	.207	-.091	-1.584
108	250	-.995	.249	-.107	-1.965
109	250	-1.169	.261	-.357	-2.336
111	60	-1.239	.472	-.368	-3.014
112	60	-1.018	.228	-.305	-2.014
113	60	-.980	.231	-.192	-2.199
114	60	-.893	.258	-.021	-2.000
115	60	-.765	.276	.013	-1.817
116	250	-.745	.245	-.009	-1.818
117	250	-.880	.235	-.122	-1.903
118	250	-.913	.226	-.222	-1.938
119	250	-.920	.234	-.313	-2.198
121	60	-1.087	.435	-.338	-3.051
122	60	-.934	.258	-.343	-3.027
123	60	-.900	.246	-.205	-2.568
124	60	-.834	.258	0.000	-1.834
125	60	-.711	.279	-.003	-2.076
126	250	-.751	.253	.104	-1.721
127	250	-.832	.246	-.004	-2.073
128	250	-.883	.244	-.131	-2.133
129	250	-.917	.263	-.347	-2.308
131	60	-1.130	.437	-.377	-3.066
132	60	-.943	.270	-.335	-2.476
133	60	-.861	.259	-.240	-2.108
134	70	-.611	.175	-.164	-1.822
135	70	-.601	.170	-.057	-1.920
136	250	-.689	.227	-.088	-1.584
137	250	-.786	.231	-.050	-1.844
138	250	-.842	.226	-.248	-2.007
139	250	-.844	.253	-.366	-2.249
141	60	-1.073	.388	-.356	-2.756
142	60	-.855	.244	-.344	-2.076
143	60	-.753	.247	-.214	-1.897
144	60	-.639	.254	-.027	-1.801
145	80	-.547	.106	-.332	-1.492
146	60	-.419	.183	.010	-1.425
147	250	-.654	.220	-.112	-1.625
148	250	-.763	.230	-.167	-1.912
149	250	-.879	.250	-.341	-2.544
151	340	-1.068	.381	-.243	-3.055
152	60	-.742	.271	-.150	-1.882
153	70	-.611	.174	-.173	-1.539
154	210	-.540	.119	-.051	-1.600
155	210	-.547	.120	-.179	-1.439
156	210	-.566	.121	-.302	-1.844
157	210	-.603	.136	-.319	-1.476
158	240	-.557	.175	-.218	-1.438
159	240	-.712	.270	-.242	-2.053

TABLE 6 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MINIMUM PEAK PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
201	150	-1.562	.431	-.333	-2.784
202	150	-1.137	.233	-.326	-2.131
203	150	-1.025	.253	-.270	-1.964
204	150	-.754	.246	-.037	-1.587
205	150	-.527	.215	.126	-1.798
206	150	-.365	.169	.063	-1.575
207	340	-.873	.221	-.123	-1.654
208	340	-1.039	.260	-.171	-2.335
209	340	-1.130	.274	-.380	-2.298
211	140	-1.500	.430	.033	-2.827
212	150	-.909	.223	-.319	-1.986
213	150	-.923	.231	-.150	-1.937
214	150	-.796	.253	.018	-1.919
215	150	-.691	.261	.061	-1.604
216	340	-.810	.250	.050	-1.795
217	340	-.884	.249	-.034	-1.850
218	340	-.908	.232	-.077	-2.102
219	350	-1.077	.218	-.424	-2.194
221	150	-1.207	.463	-.298	-2.784
222	150	-.910	.265	-.171	-2.089
223	150	-.827	.278	-.056	-2.079
224	150	-.654	.292	.077	-1.819
225	150	-.550	.276	.140	-1.713
226	340	-.306	.249	-.009	-1.837
227	340	-.863	.247	-.089	-2.169
228	340	-.898	.256	-.199	-2.319
229	350	-1.027	.244	-.388	-2.370
231	70	-1.127	.360	-.332	-2.661
232	150	-.756	.245	-.102	-1.965
233	160	-.611	.147	-.113	-2.026
234	160	-.574	.141	-.080	-1.612
235	340	-.593	.214	-.055	-1.715
236	340	-.687	.241	-.093	-1.723
237	330	-.663	.169	-.217	-1.839
238	340	-.882	.263	-.224	-2.117
239	340	-.941	.304	-.315	-2.628
241	70	-1.068	.343	-.180	-2.497
242	230	-.422	.124	-.188	-2.288
243	230	-.432	.097	-.244	-1.507
244	330	-.530	.159	-.090	-1.259
245	330	-.606	.177	-.116	-1.477
246	330	-.654	.181	-.118	-1.715
247	330	-.691	.141	-.113	-1.739
248	340	-.768	.242	-.254	-1.964
249	330	-.748	.222	-.336	-2.242
251	70	-.844	.331	-.099	-2.604
252	220	-.530	.142	-.070	-1.727
253	220	-.655	.165	-.285	-1.616
254	220	-.534	.141	-.199	-1.284
255	300	-.601	.106	-.333	-1.207
256	240	-.622	.132	-.339	-1.397
257	70	-.201	.245	.645	-1.564
258	240	-.720	.152	-.366	-1.567
259	330	-.415	.254	-.274	-2.977

TABLE 6 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MINIMUM PEAK PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	240	-1.579	.491	-.481	-2.997
302	240	-1.192	.279	-.462	-2.382
303	240	-1.021	.260	-.297	-2.158
304	240	-.760	.214	-.221	-1.557
305	250	-.569	.155	-.056	-1.486
306	250	-.553	.152	.113	-1.432
307	70	-.863	.230	.001	-2.106
308	70	-.997	.251	-.269	-2.000
309	70	-1.052	.266	-.220	-2.258
311	240	-1.119	.409	-.269	-2.997
312	230	-1.039	.189	-.390	-2.302
313	240	-.913	.253	-.193	-1.956
314	240	-.840	.256	-.078	-1.831
315	70	-.688	.235	-.007	-1.646
316	70	-.776	.236	-.028	-1.748
317	70	-.859	.239	-.051	-1.770
318	60	-.500	.117	-.158	-2.114
319	70	-.884	.229	-.169	-2.078
321	240	-1.015	.437	-.263	-2.987
322	240	-.873	.288	-.158	-2.747
323	240	-.845	.270	-.076	-2.249
324	240	-.786	.260	-.060	-1.869
325	70	-.663	.258	.239	-1.765
326	70	-.757	.252	.021	-1.723
327	70	-.826	.248	-.043	-1.997
328	70	-.881	.253	-.122	-2.180
329	70	-.903	.279	-.202	-2.524
331	230	-.864	.376	.356	-2.827
332	240	-.762	.257	-.243	-2.116
333	240	-.729	.234	-.139	-2.072
334	240	-.701	.215	-.010	-1.924
335	240	-.653	.203	-.016	-1.624
336	70	-.637	.255	.031	-1.717
337	70	-.748	.276	-.122	-1.877
338	70	-.860	.274	-.201	-2.051
339	70	-.932	.290	-.255	-2.144
341	230	-.568	.252	.077	-2.156
342	230	-.488	.197	.063	-1.935
343	240	-.687	.196	-.154	-1.948
344	250	-.567	.145	-.144	-1.787
345	290	-.616	.121	-.365	-1.427
346	70	-.428	.230	-.025	-1.538
347	70	-.534	.258	-.088	-1.720
348	70	-.687	.275	-.085	-2.040
349	70	-.909	.247	-.242	-2.339
351	240	-.824	.288	-.275	-2.513
352	240	-.687	.204	-.258	-2.041
353	240	-.675	.197	-.162	-1.651
354	310	-.546	.113	-.340	-1.747
355	300	-.582	.126	-.386	-1.511
356	30	-.603	.049	-.397	-1.332
357	70	-.348	.178	-.007	-1.348
358	70	-.442	.213	-.079	-1.670
359	70	-.685	.252	-.119	-1.981

TABLE 6 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MINIMUM PEAK PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
401	330	-1.695	.446	-.387	-2.978
402	330	-1.241	.235	-.411	-2.092
403	330	-1.045	.249	-.342	-2.098
404	330	-.770	.233	-.163	-1.612
405	340	-.680	.185	-.106	-1.800
406	340	-.655	.178	-.064	-1.547
407	150	-.625	.178	.003	-1.533
408	160	-.836	.277	.016	-1.924
409	160	-1.108	.245	-.286	-2.184
411	330	-1.268	.485	-.424	-3.082
412	330	-1.038	.237	-.394	-2.310
413	330	-1.009	.243	-.182	-2.500
414	330	-.898	.255	-.086	-2.051
415	340	-.631	.176	-.058	-1.657
416	150	-.572	.202	.146	-1.792
417	150	-.609	.200	.188	-1.832
418	160	-.843	.281	.217	-2.128
419	160	-.965	.244	-.241	-2.178
421	330	-1.184	.471	-.325	-3.055
422	330	-.979	.268	-.322	-2.137
423	330	-.924	.266	-.238	-2.120
424	330	-.823	.280	-.014	-1.911
425	330	-.754	.270	-.017	-2.026
426	150	-.610	.219	.177	-1.928
427	150	-.657	.224	.007	-2.002
428	160	-.707	.319	-.026	-2.118
429	150	-.664	.241	-.212	-2.360
431	330	-1.201	.472	-.396	-3.082
432	330	-.996	.288	-.339	-2.253
433	330	-.822	.270	-.131	-2.206
434	340	-.676	.198	-.073	-1.991
435	330	-.669	.260	-.063	-1.628
436	340	-.633	.186	.022	-1.685
437	150	-.607	.201	-.097	-1.728
438	160	-.422	.208	-.063	-1.509
439	150	-.663	.230	-.227	-1.823
441	330	-1.184	.408	-.194	-2.874
442	340	-.756	.226	-.348	-2.336
443	330	-.738	.256	-.173	-1.934
444	330	-.590	.240	-.175	-1.544
445	330	-.480	.210	-.102	-1.690
446	30	-.596	.077	-.363	-1.417
447	150	-.445	.140	-.076	-1.185
448	140	-.482	.102	-.219	-1.216
449	150	-.548	.164	-.189	-1.391
451	340	-.939	.312	-.284	-2.742
452	330	-.817	.280	-.248	-2.432
453	340	-.637	.194	-.236	-1.807
454	340	-.533	.167	-.207	-1.412
455	40	-.613	.106	-.391	-1.228
456	140	-.427	.099	-.039	-1.026
457	80	-.449	.105	-.250	-1.144
458	80	-.565	.117	-.285	-1.365
459	130	-.532	.154	-.114	-1.773

TABLE 6 (Cont'd)

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION AT WHICH MINIMUM PEAK PRESSURE COEFFICIENT  
OCCURRED FOR EACH TAP AND THE CORRESPONDING  
VALUES ASSOCIATED WITH THAT DIRECTION

TAP NUMBER	WIND DIRECTION	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	110	-.764	.352	.310	-1.799
502	100	-1.072	.223	-.439	-1.729
503	70	-.787	.144	-.319	-1.583
504	190	-.650	.372	.068	-2.036
505	190	-1.023	.221	-.354	-1.852
506	330	-.711	.181	.026	-1.602
507	280	-.922	.324	.074	-1.783
508	290	-1.102	.194	-.205	-1.714
509	240	-.746	.213	-.136	-2.997
510	20	-.768	.347	.081	-1.726
511	20	-1.219	.213	-.477	-1.900
512	250	-.765	.146	-.209	-1.589
513	0	-.583	.110	0.000	-1.138
514	350	-.475	.112	-.025	-.995
515	0	-.634	.125	-.018	-1.112
516	240	-.741	.274	-.196	-2.920
517	340	-.485	.145	-.031	-1.751
518	280	-.494	.128	-.147	-1.536
519	310	-.540	.103	-.322	-1.381
520	50	-.567	.149	-.113	-1.514
521	350	-.336	.146	.103	-1.589
522	50	-.751	.212	-.268	-1.834
523	200	-.352	.105	-.041	-1.271
524	310	-.376	.097	-.061	-.829
525	0	-.472	.100	-.024	-.866
526	130	-.266	.096	.009	-1.063
527	240	-.756	.290	-.086	-2.646
528	240	-.619	.224	-.032	-1.827
529	270	-.368	.116	-.093	-1.143
530	40	-.502	.103	-.066	-.945
531	50	-.444	.130	.110	-1.255
532	40	-.557	.136	-.229	-1.740
533	60	-.579	.243	-.037	-2.211
534	200	-.322	.125	.090	-1.635
535	320	-.366	.102	-.087	-.784
536	250	-.328	.094	.018	-.984
537	320	-.374	.099	-.093	-.887
538	70	-.232	.072	.011	-.993
539	120	-.343	.083	-.105	-1.310
540	170	-.275	.097	.038	-.906
541	80	-.393	.084	-.062	-.800
542	40	-.432	.155	-.074	-1.437
543	110	-.510	.105	-.141	-1.486
544	200	-.591	.093	-.313	-1.032
545	200	-.472	.097	-.214	-1.270
546	110	-.622	.098	-.378	-1.264
547	200	-.452	.083	-.125	-.913
548	190	-.341	.071	-.152	-.800
549	120	-.515	.086	-.242	-.961
550	120	-.283	.046	-.119	-.479



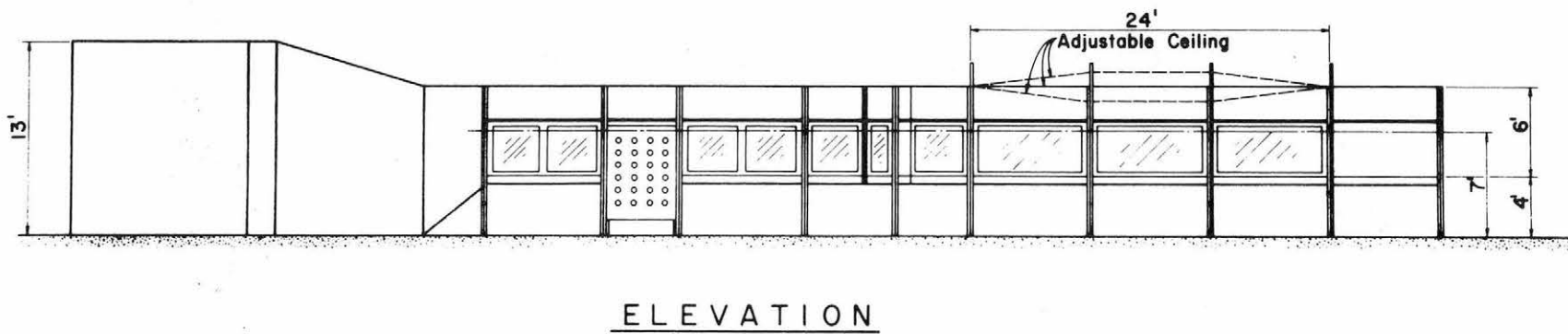
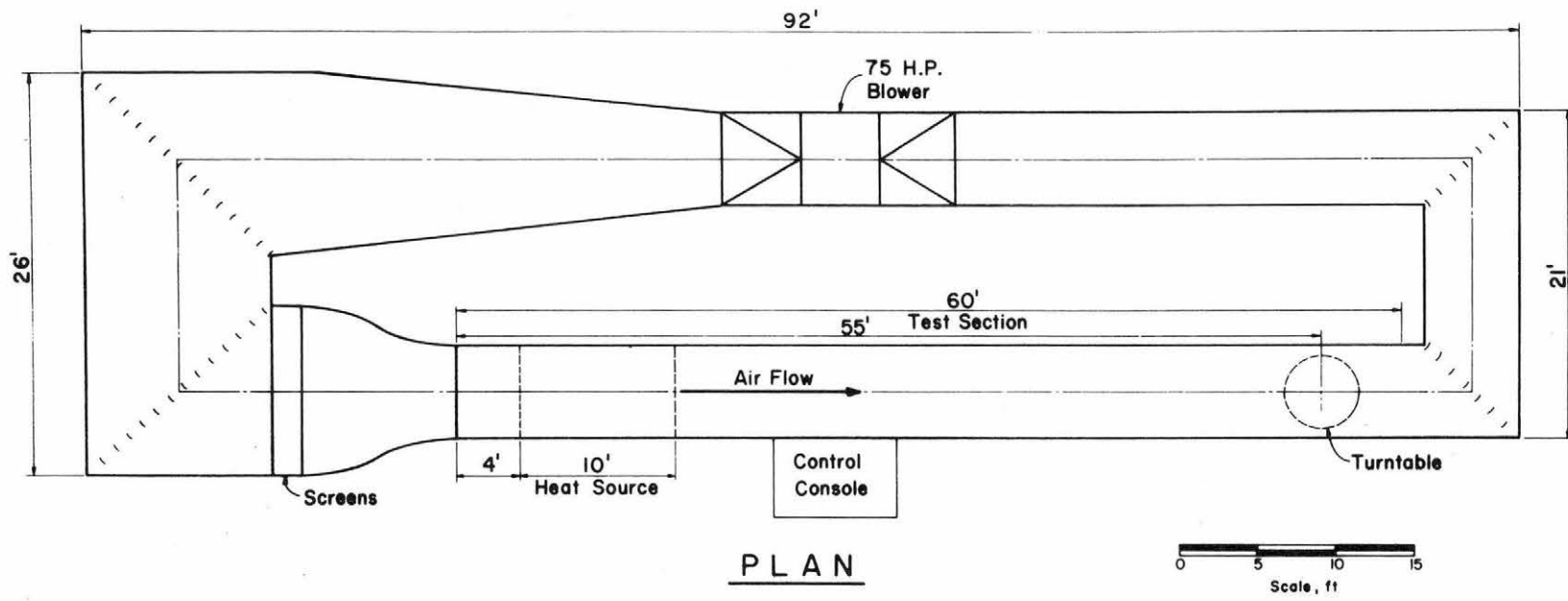
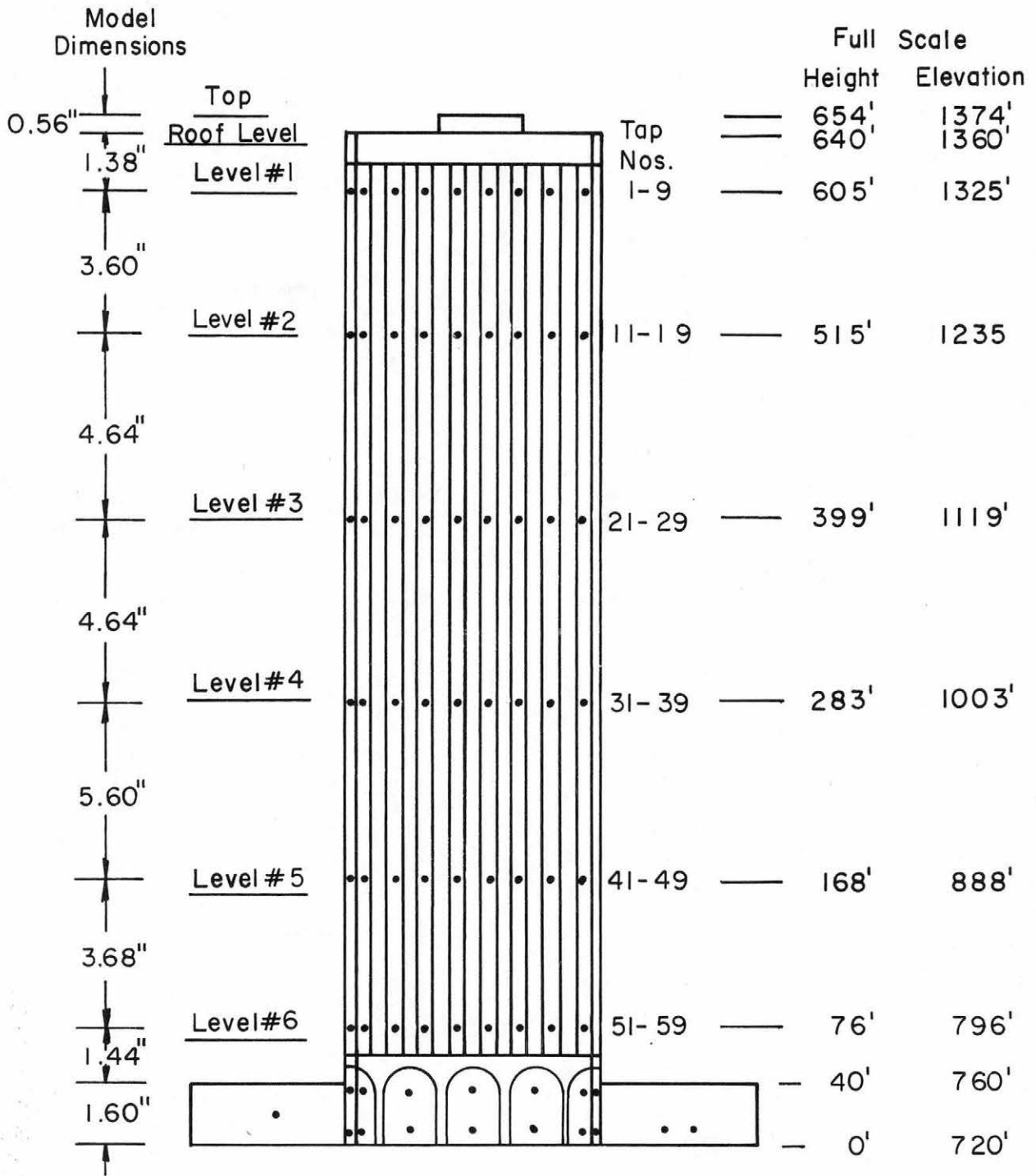


Figure 1. Industrial Aerodynamics Wind Tunnel



Tower Tap Locations - Side 3

Figure 2a. Pressure Tap Locations

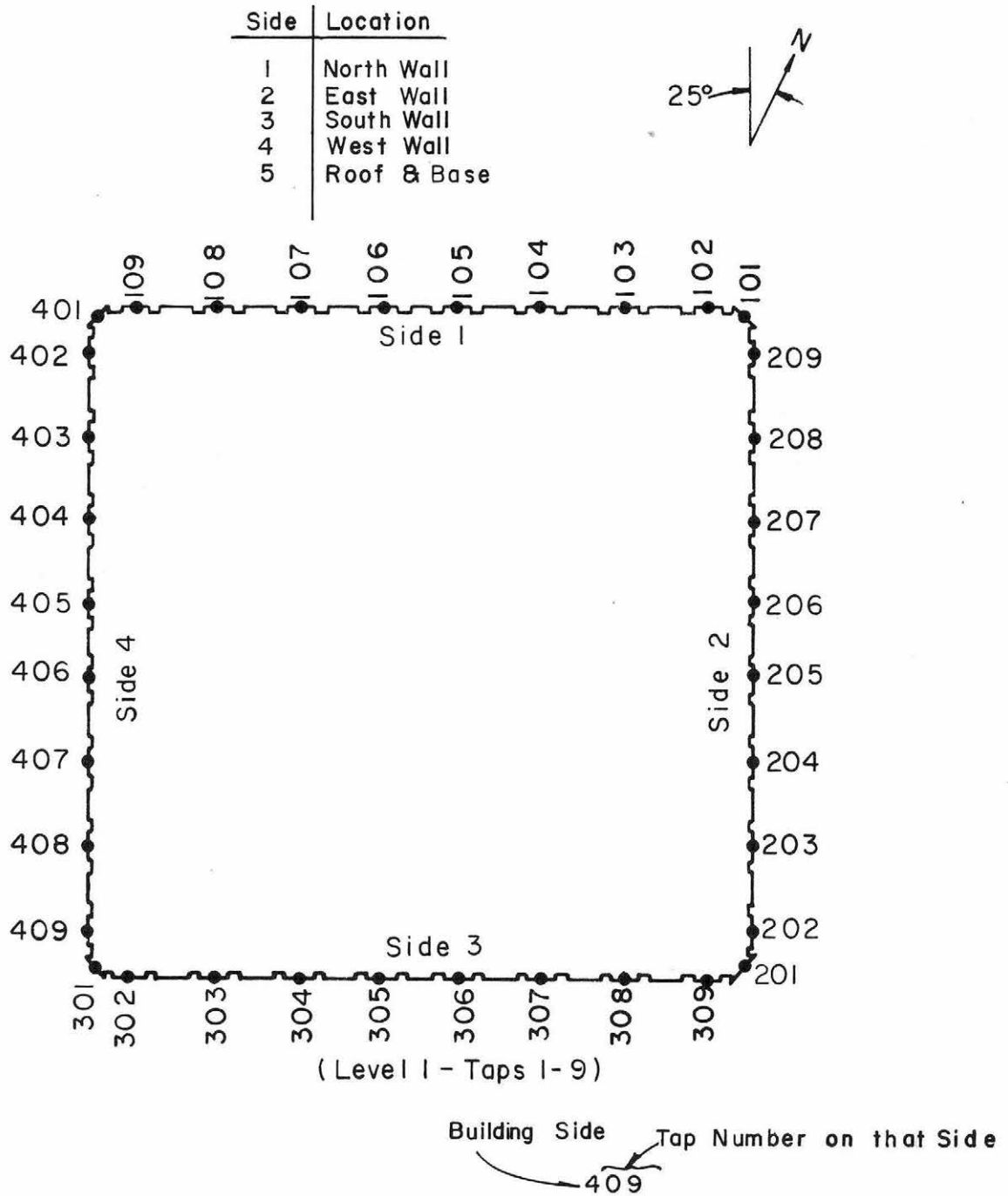
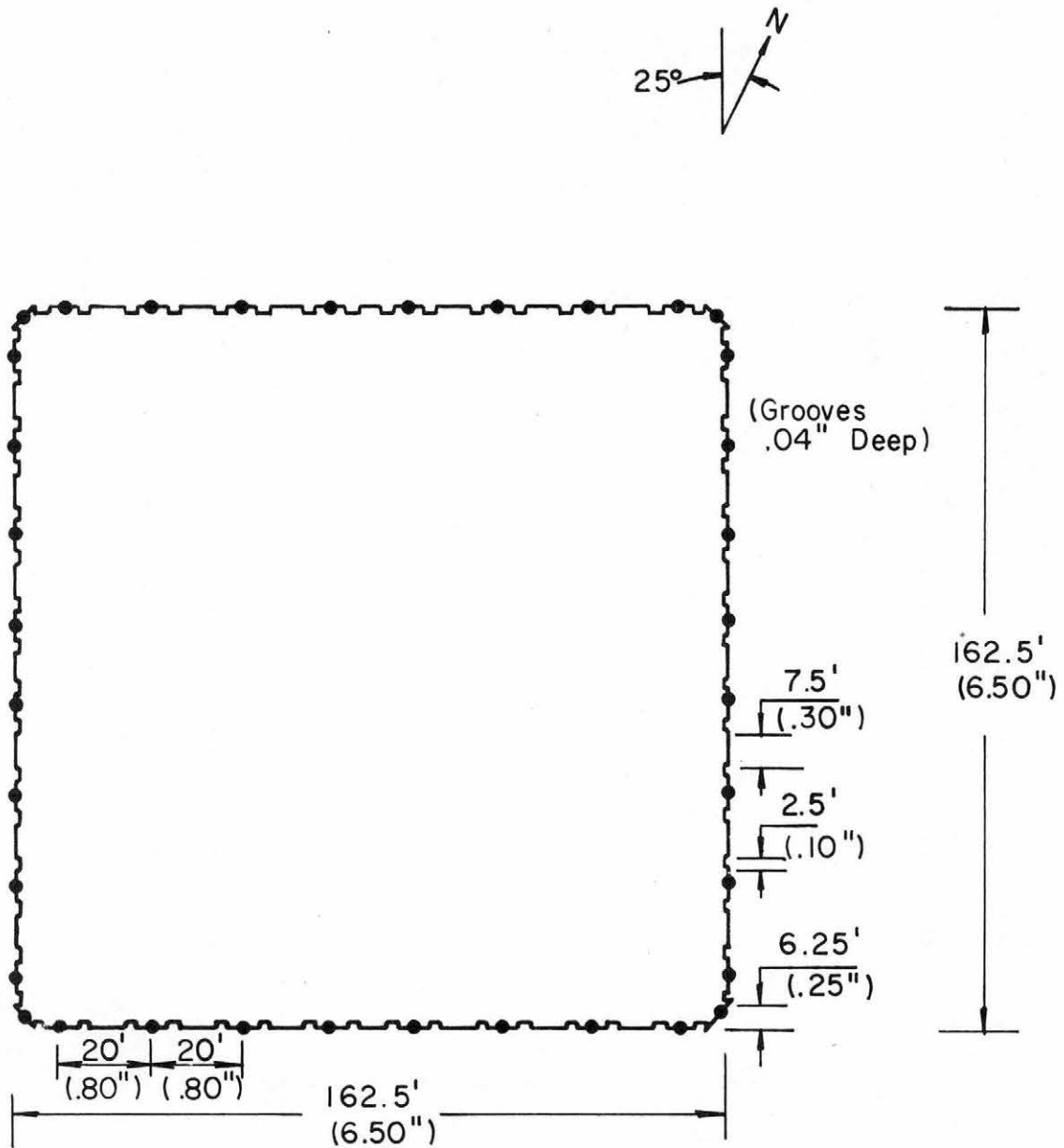
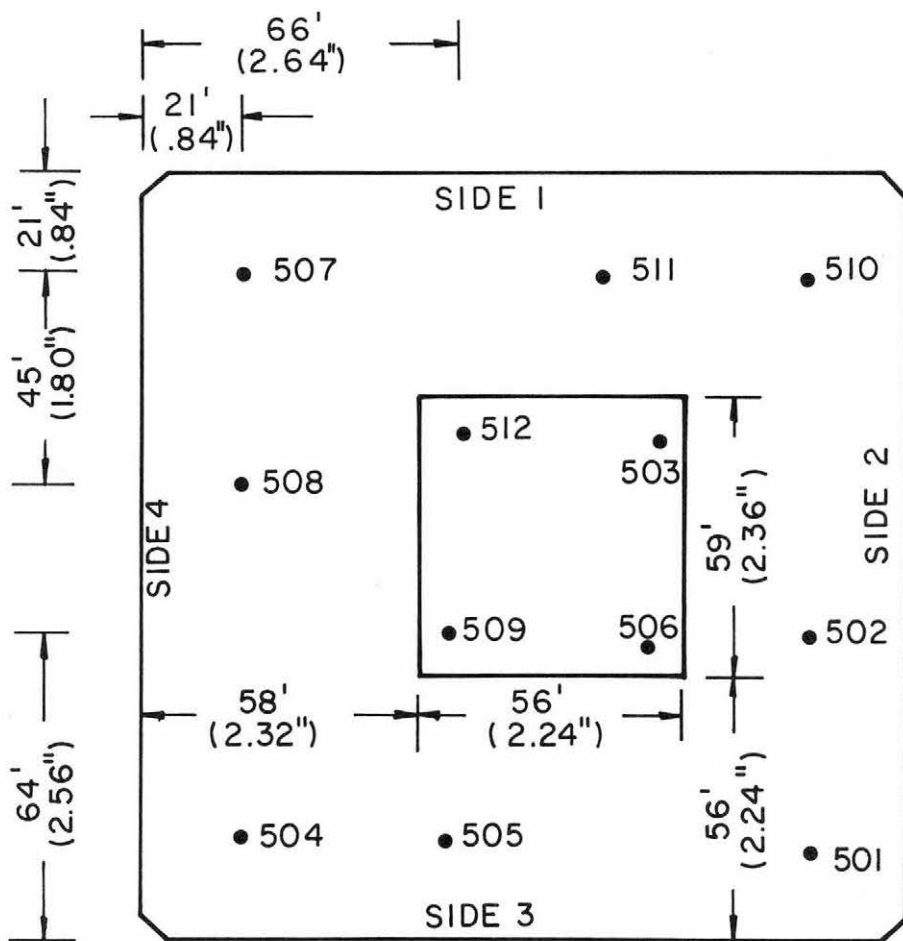
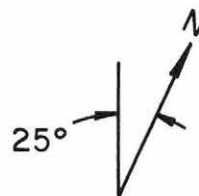


Figure 2b. Pressure Tap Locations



Dimensions of Tower  
(Model Dimensions in Parenthesis)

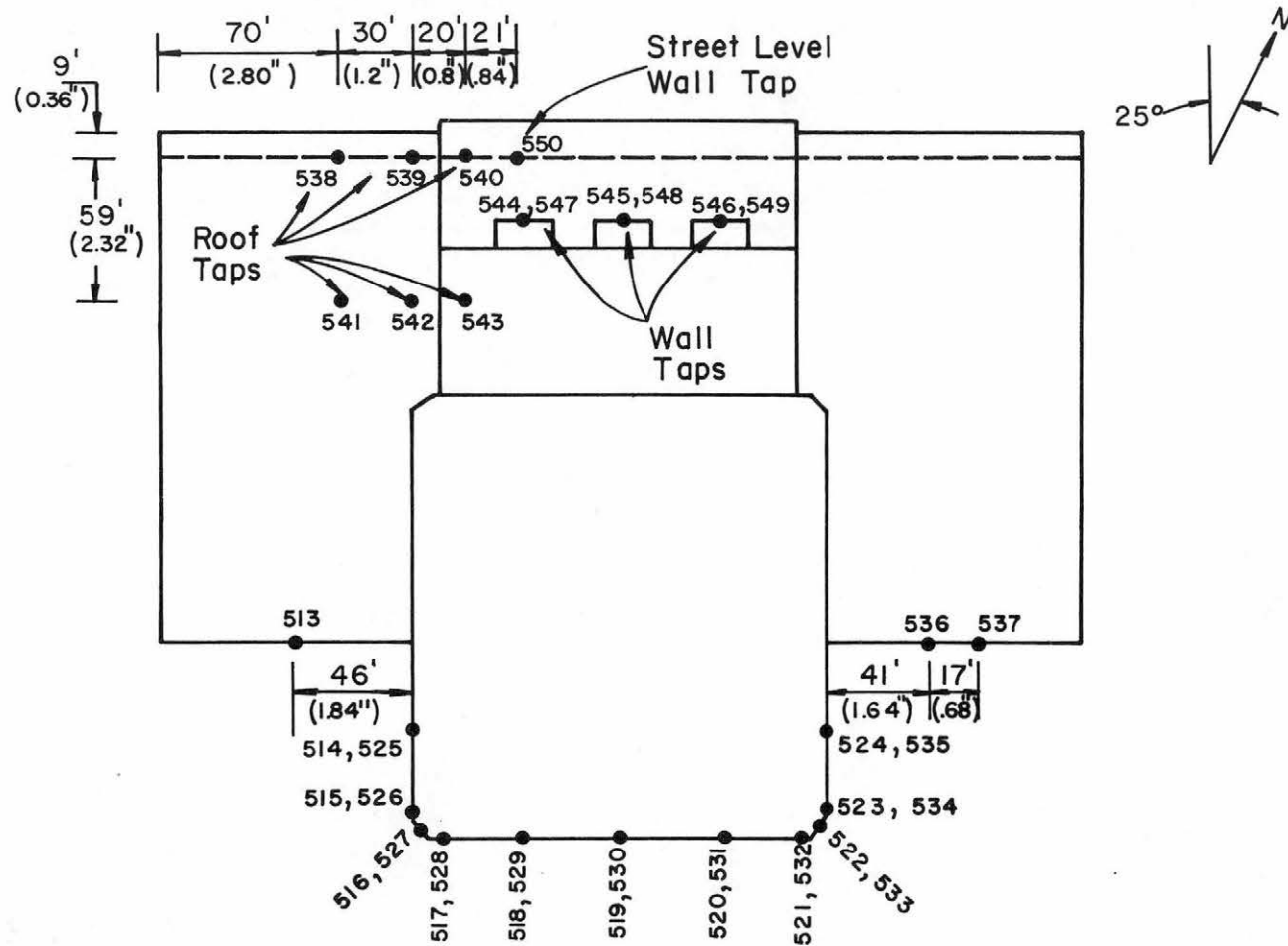
Figure 2c. Pressure Tap Locations



( Model Dimensions in Parenthesis)

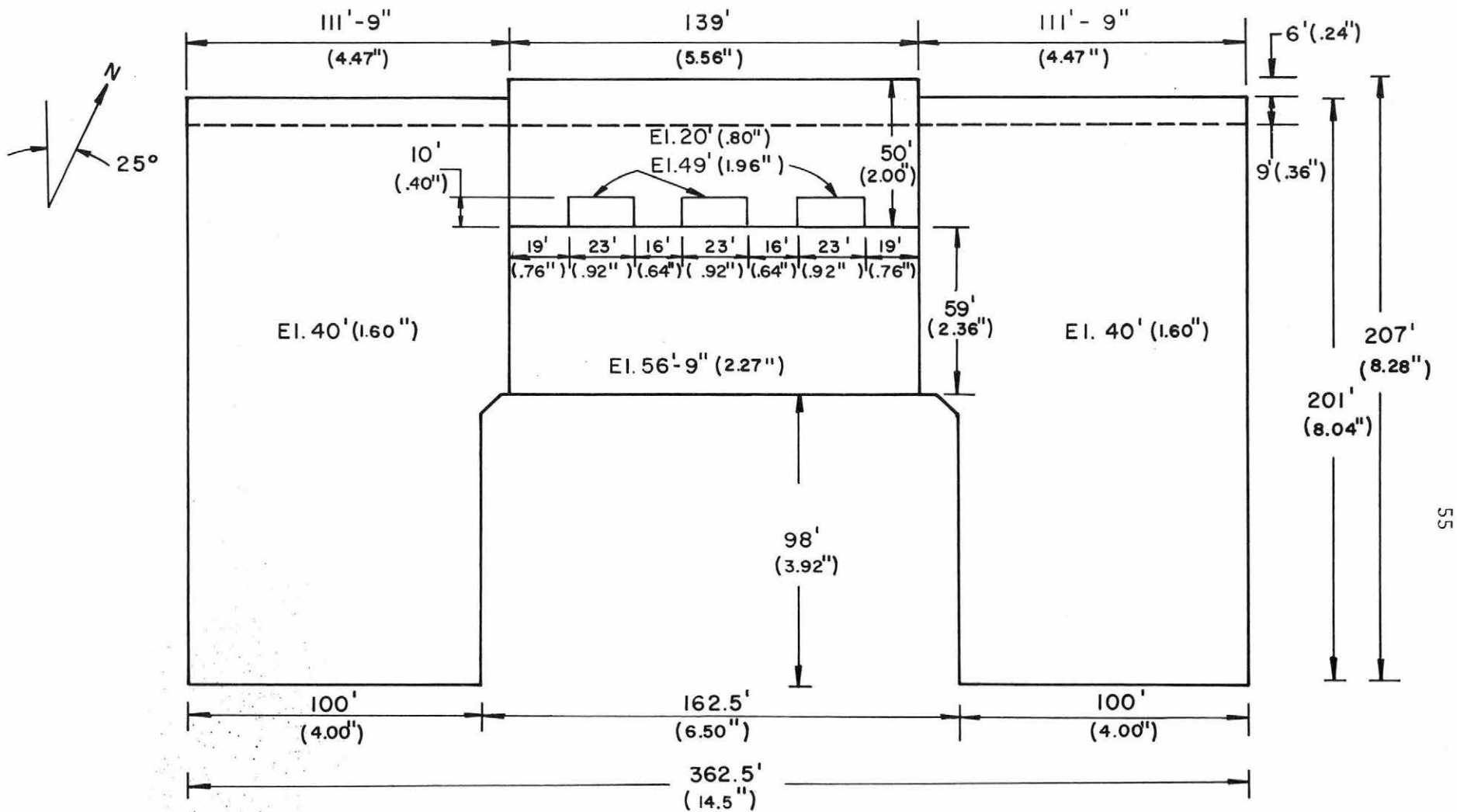
Tower Roof Taps

Figure 2d. Pressure Tap Locations



Tap Locations on Base Structure  
(Model Dimensions in Parentheses)

Figure 2e. Pressure Tap Locations



(Model Dimensions in Parentheses)

### Dimensions of Base Structure

Figure 2f. Pressure Tap Locations

## TAP ELEVATIONS FOR ROOF AND BASE

<u>Tap #</u>	<u>Full-scale Elevation (ft)</u>	<u>Full-scale Height (ft)</u>	<u>Model Height (in)</u>
501	1360	640	25.60
502	1360	640	25.60
503	1374	654	26.16
504	1360	640	25.60
505	1360	640	25.60
506	1374	654	26.16
507	1360	640	25.60
508	1360	640	25.60
509	1374	654	26.16
510	1360	640	25.60
511	1360	640	25.60
512	1374	654	26.16
513	740	20	.80
514	754	34	1.36
515	754	34	1.36
516	754	34	1.36
517	754	34	1.36
518	754	34	1.36
519	754	34	1.36
520	754	34	1.36
521	754	34	1.36
522	754	34	1.36
523	754	34	1.36
524	754	34	1.36
525	730	10	.40
526	730	10	.40
527	730	10	.40
528	730	10	.40
529	730	10	.40
530	730	10	.40
531	730	10	.40
532	730	10	.40
533	730	10	.40
534	730	10	.40
535	730	10	.40
536	730	10	.40
537	730	10	.40
538	760	40	1.60
539	760	40	1.60
540	740	20	.80
541	760	40	1.60
542	760	40	1.60
543	777	57	2.27
544	748	28	1.12
545	748	28	1.12
546	748	28	1.12
547	760	40	1.60
548	760	40	1.60
549	760	40	1.60
550	726	6	0.24

Figure 2g. Pressure Tap Locations





Figure 3. Completed Model

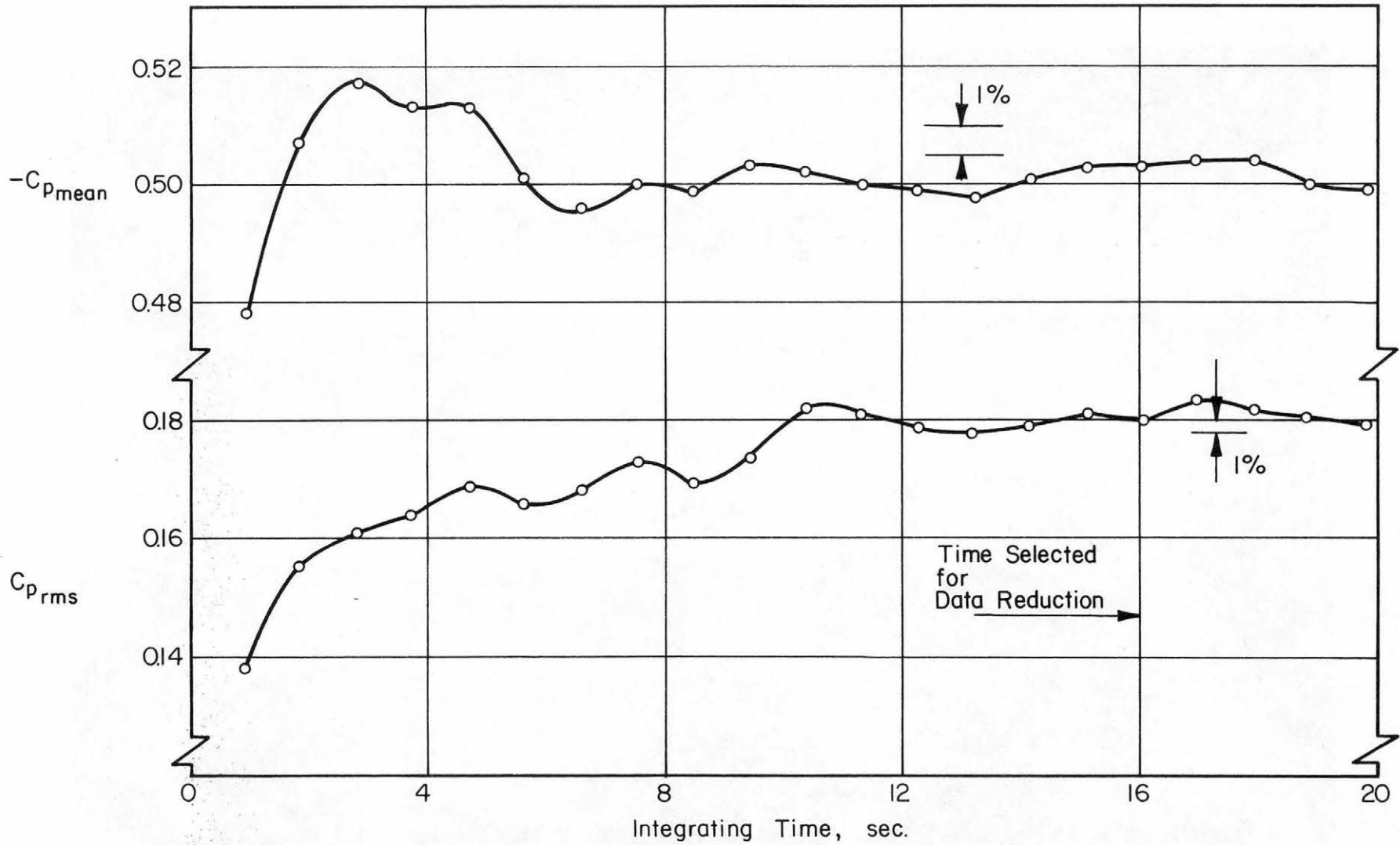
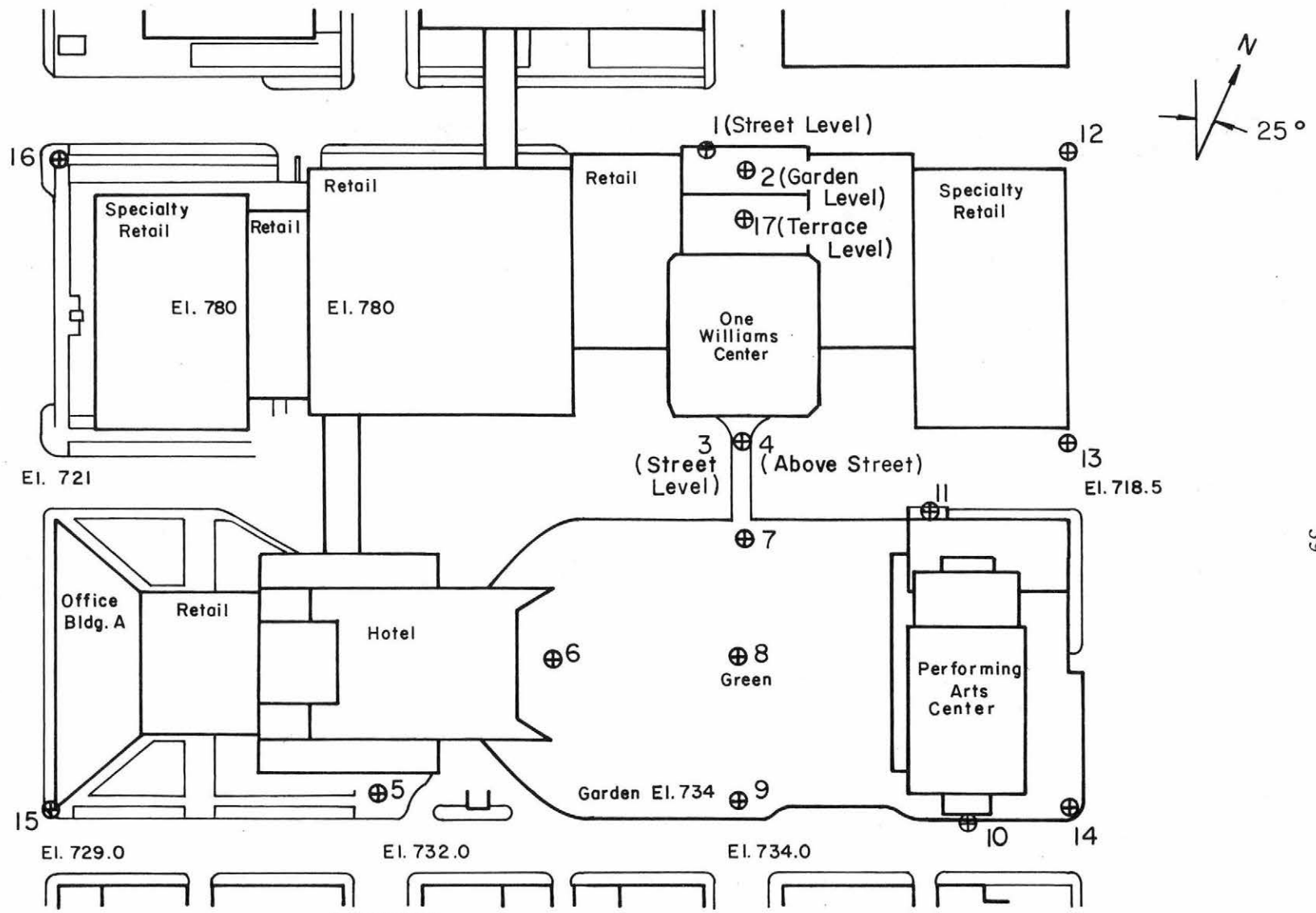


Figure 4 Data Sampling Time Verification



**LEGEND**

⊕ Location of Measurements of Surface Wind Speeds

Figure 5. Plaza Velocity Measurement Locations

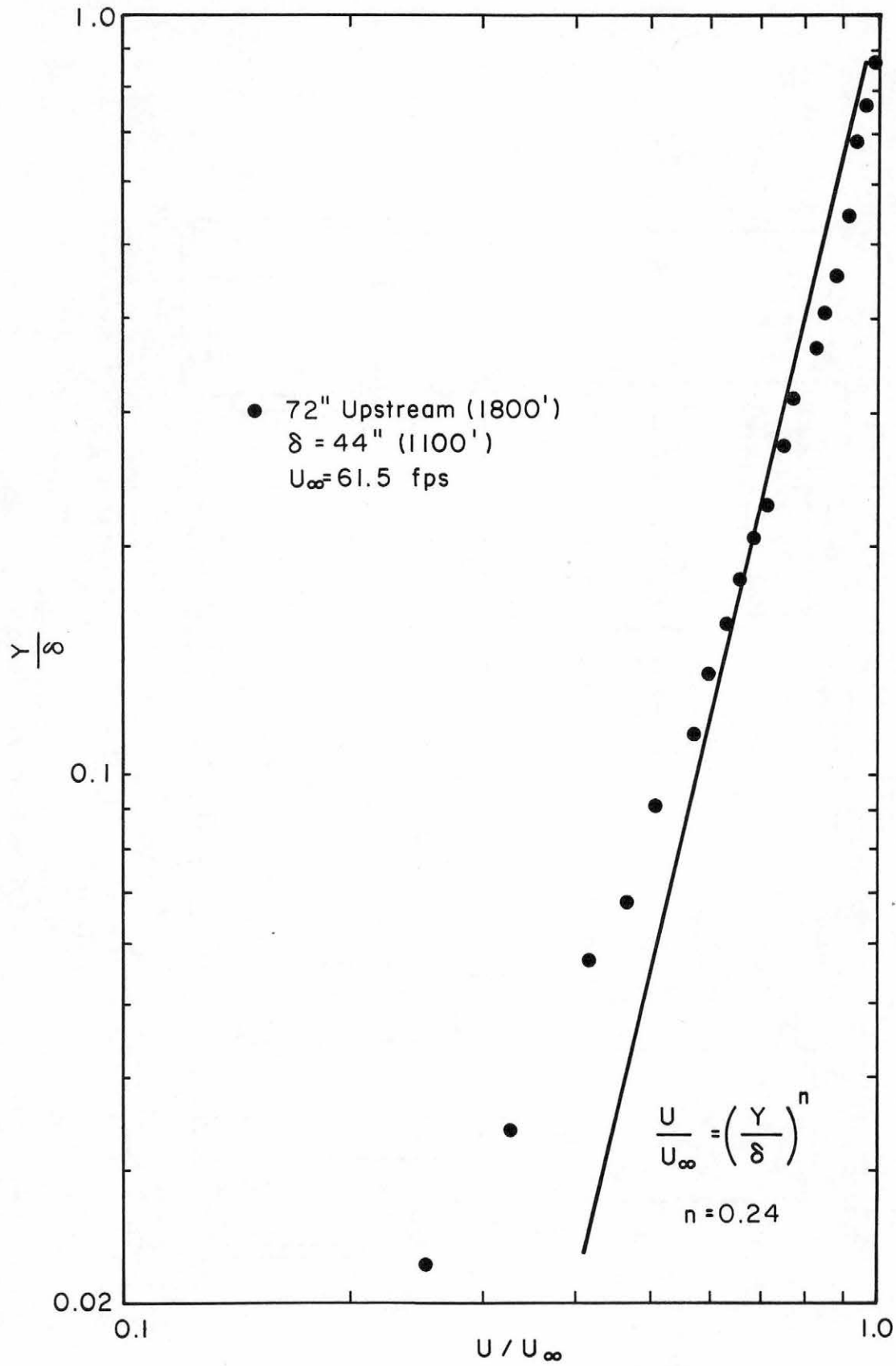


Figure 6a. Mean Velocity Profile Approaching the Model

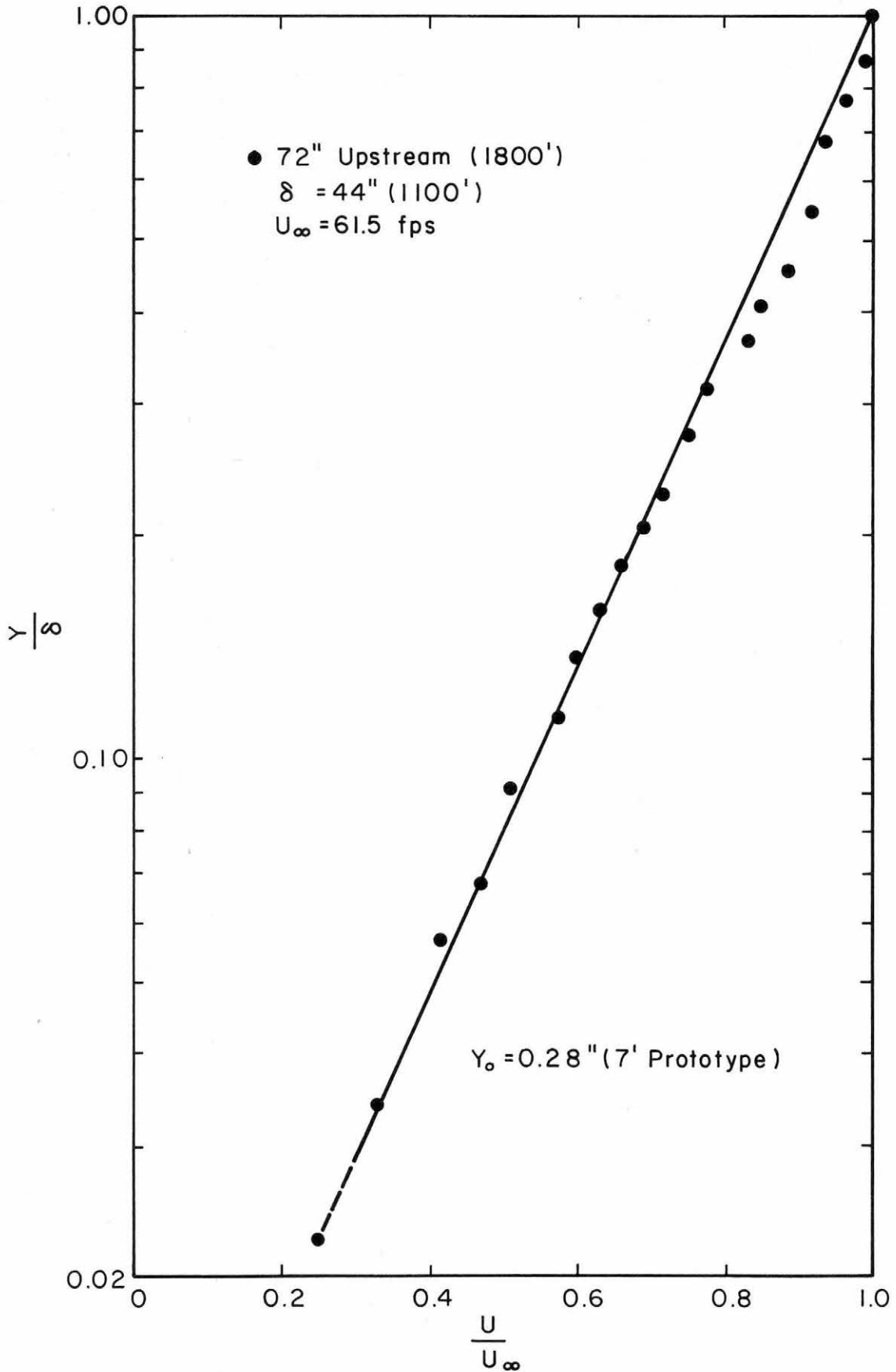


Figure 6b. Mean Velocity Profile Approaching the Model

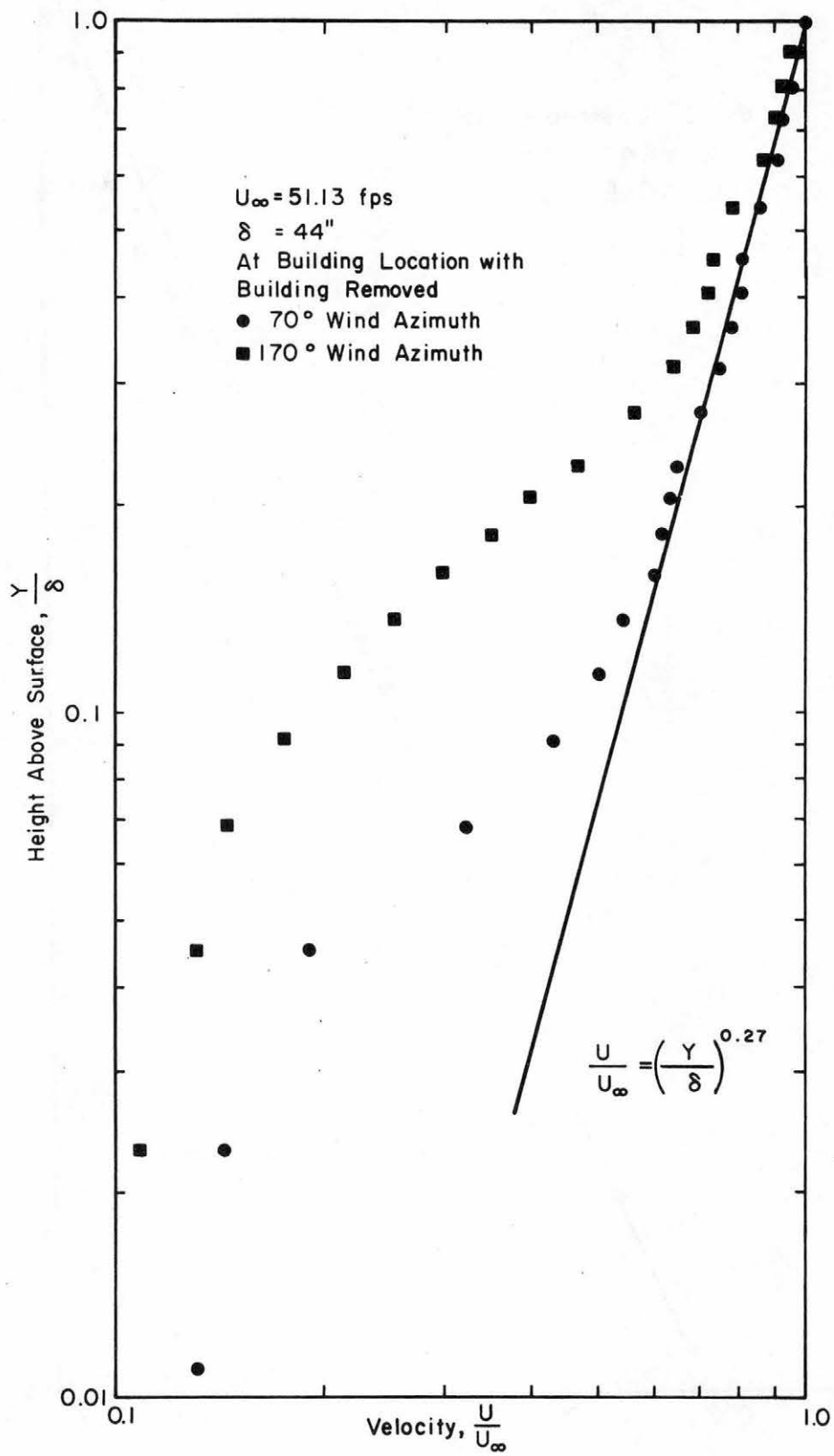


Figure 7. Mean Velocity Profiles at Model Location

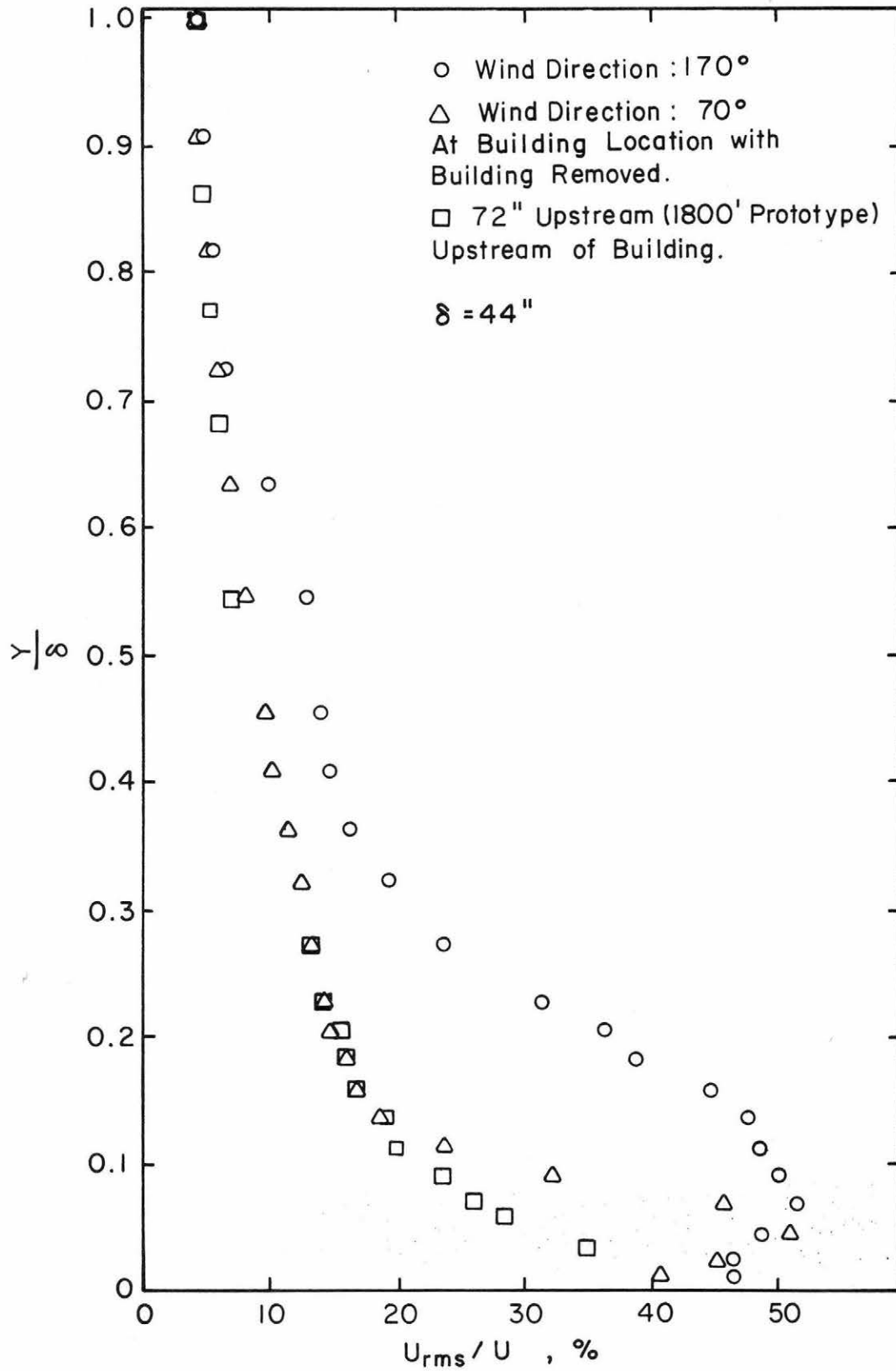


Figure 8. Turbulence Intensity Profiles

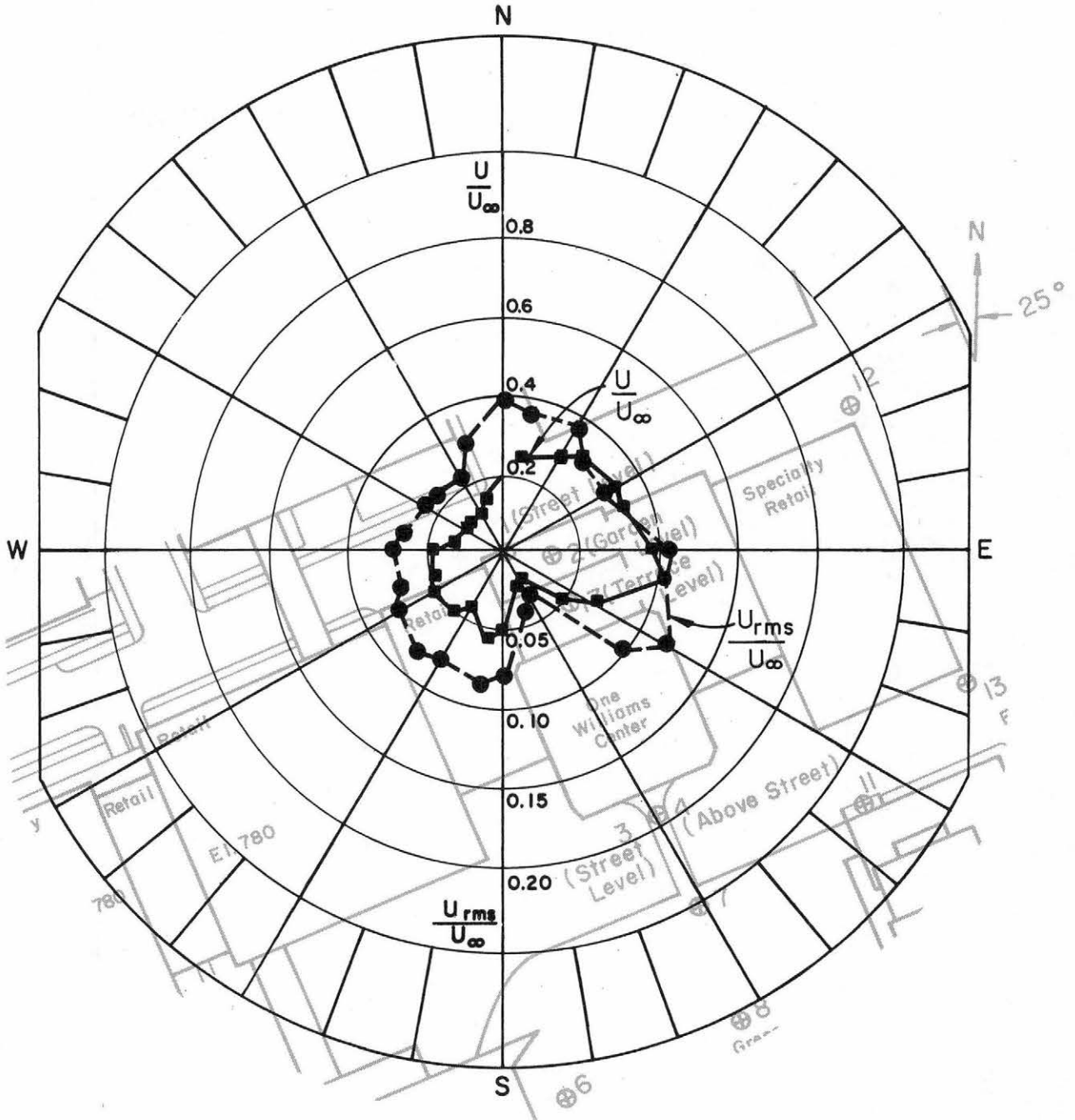


Figure 9. Mean Velocity and Turbulence Intensity at Site 1



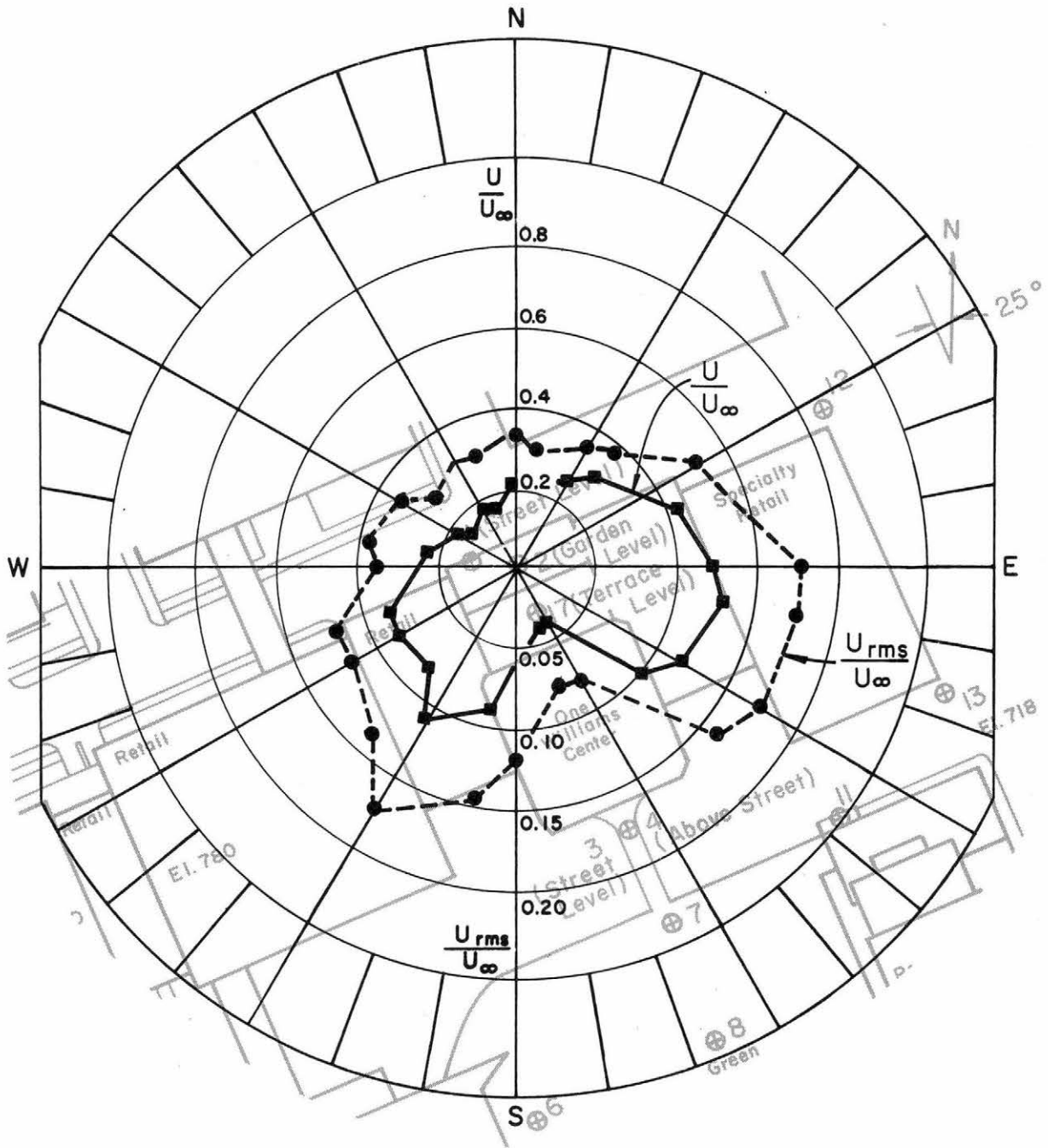


Figure 10. Mean Velocity and Turbulence Intensity at Site 2

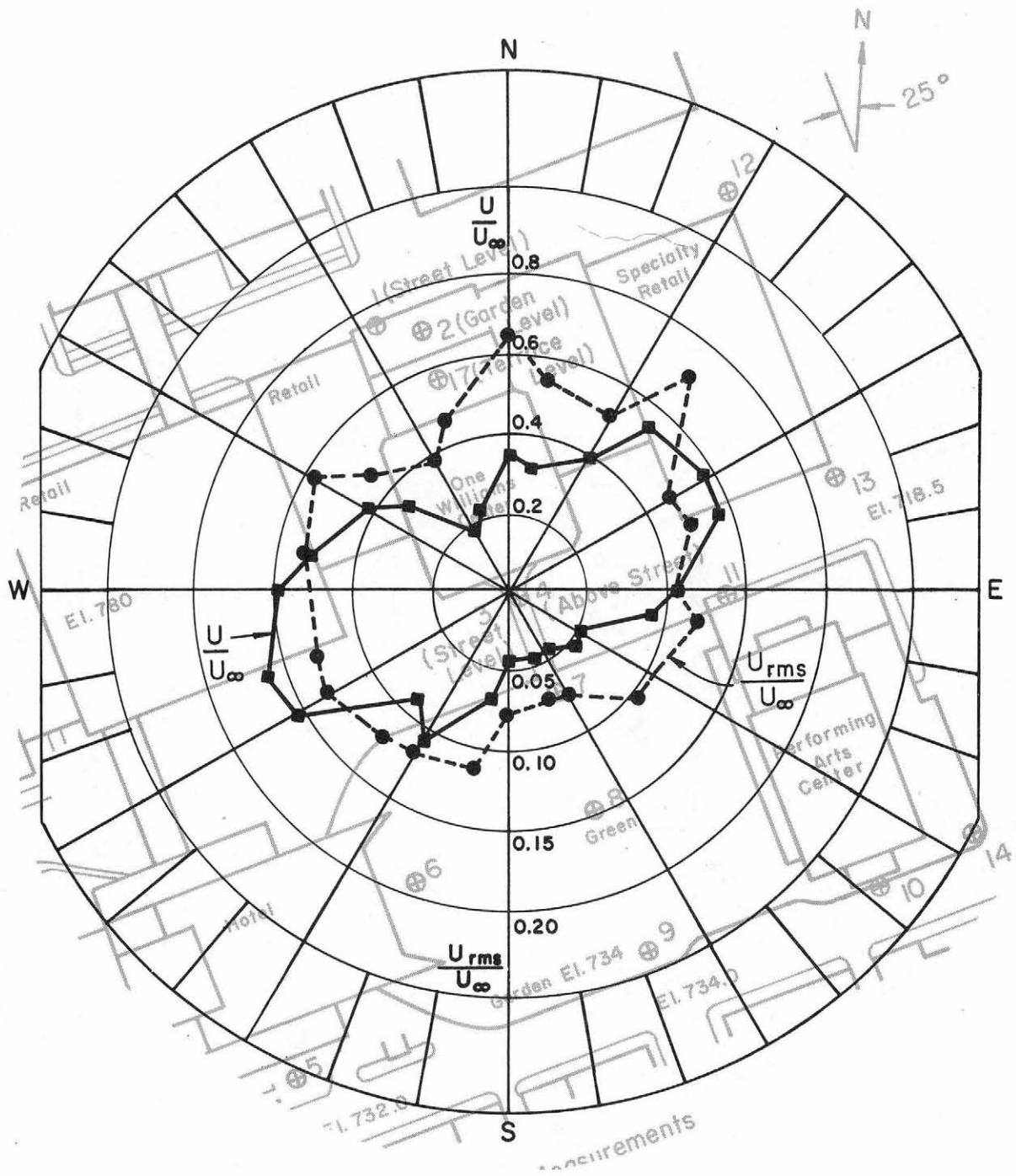


Figure 11. Mean Velocity and Turbulence Intensity at Site 3

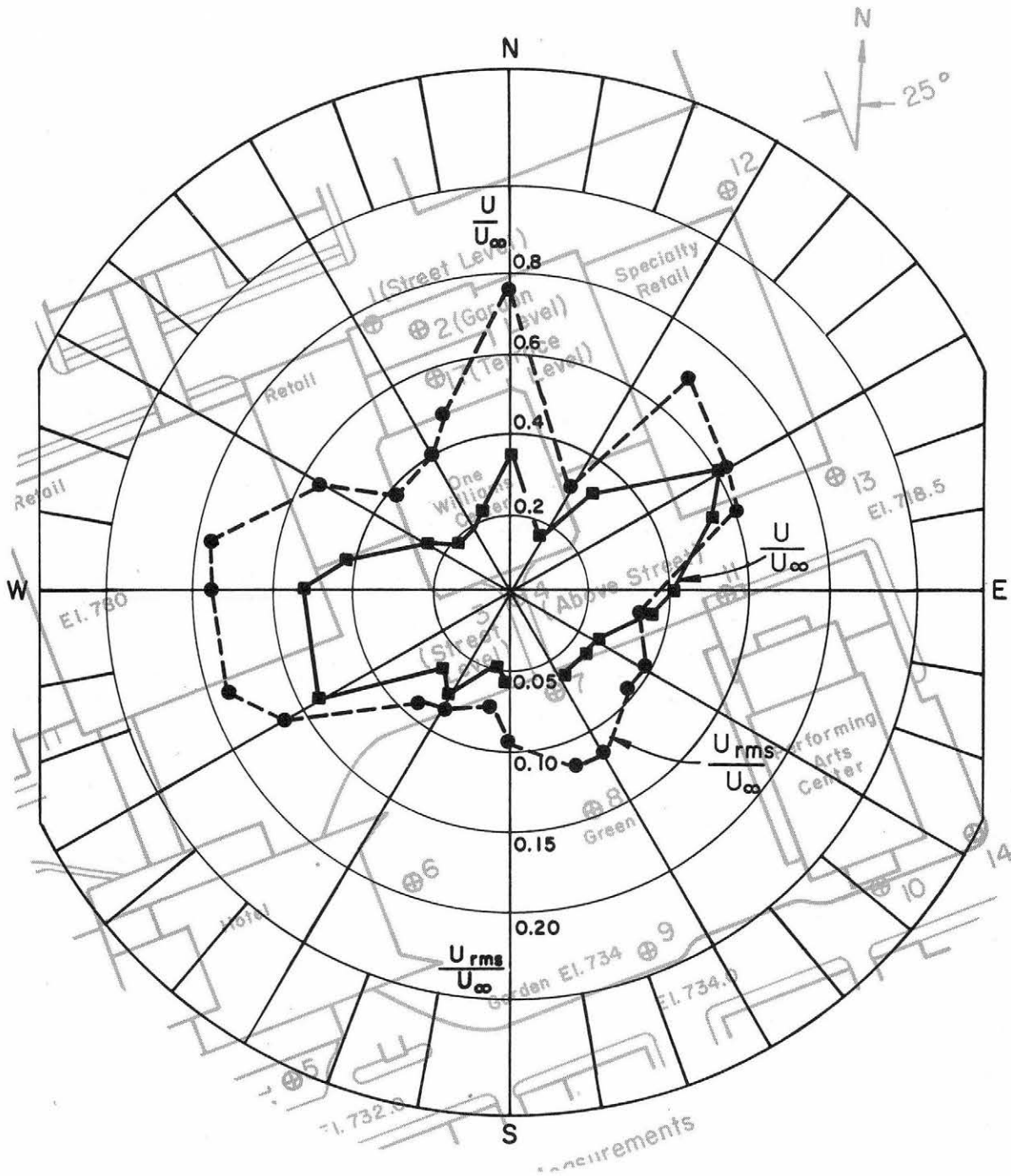


Figure 12. Mean Velocity and Turbulence Intensity at Site 4

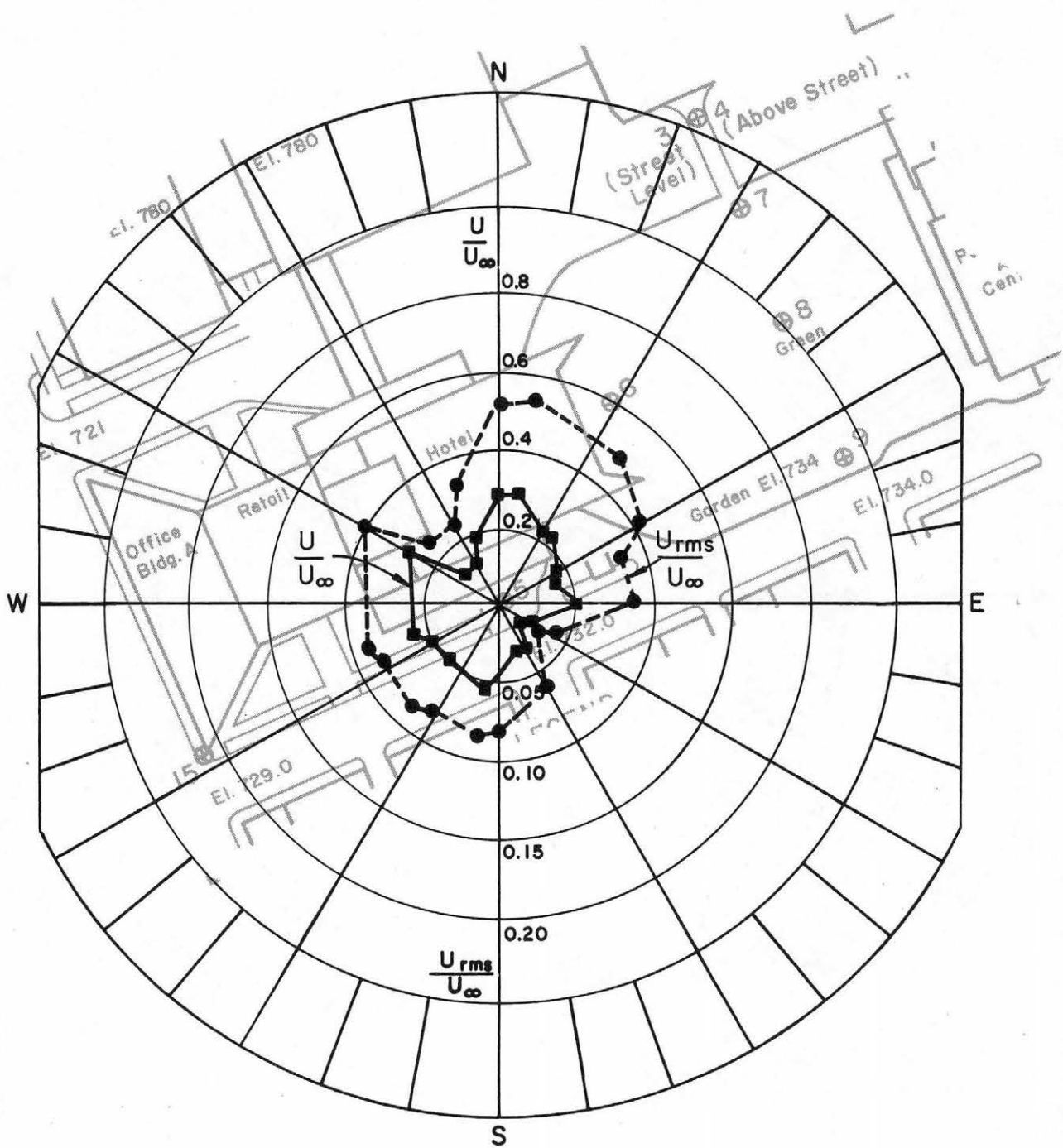


Figure 13. Mean Velocity and Turbulence Intensity at Site 5

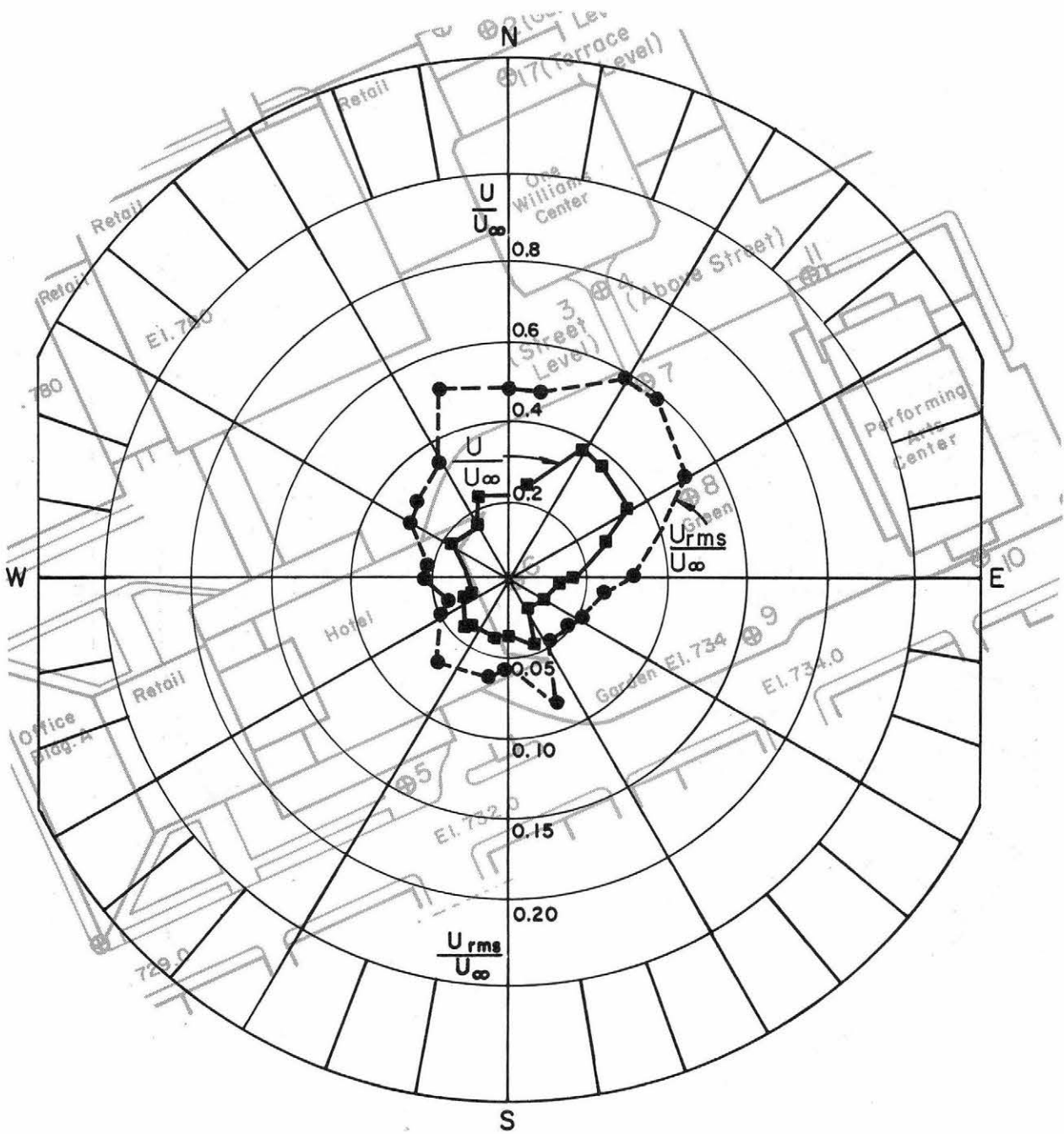


Figure 14. Mean Velocity and Turbulence Intensity at Site 6

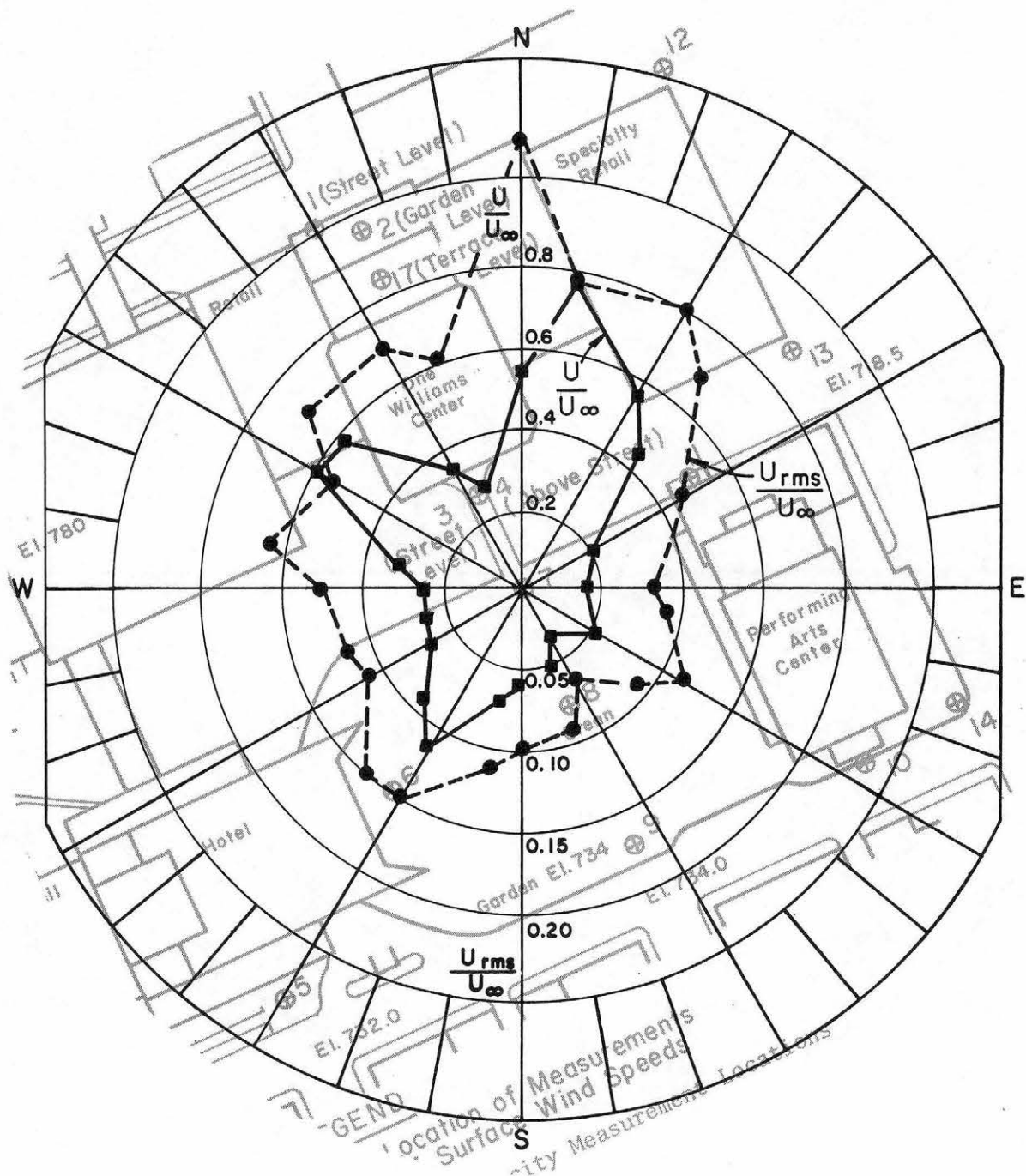


Figure 15. Mean Velocity and Turbulence Intensity at Site 7

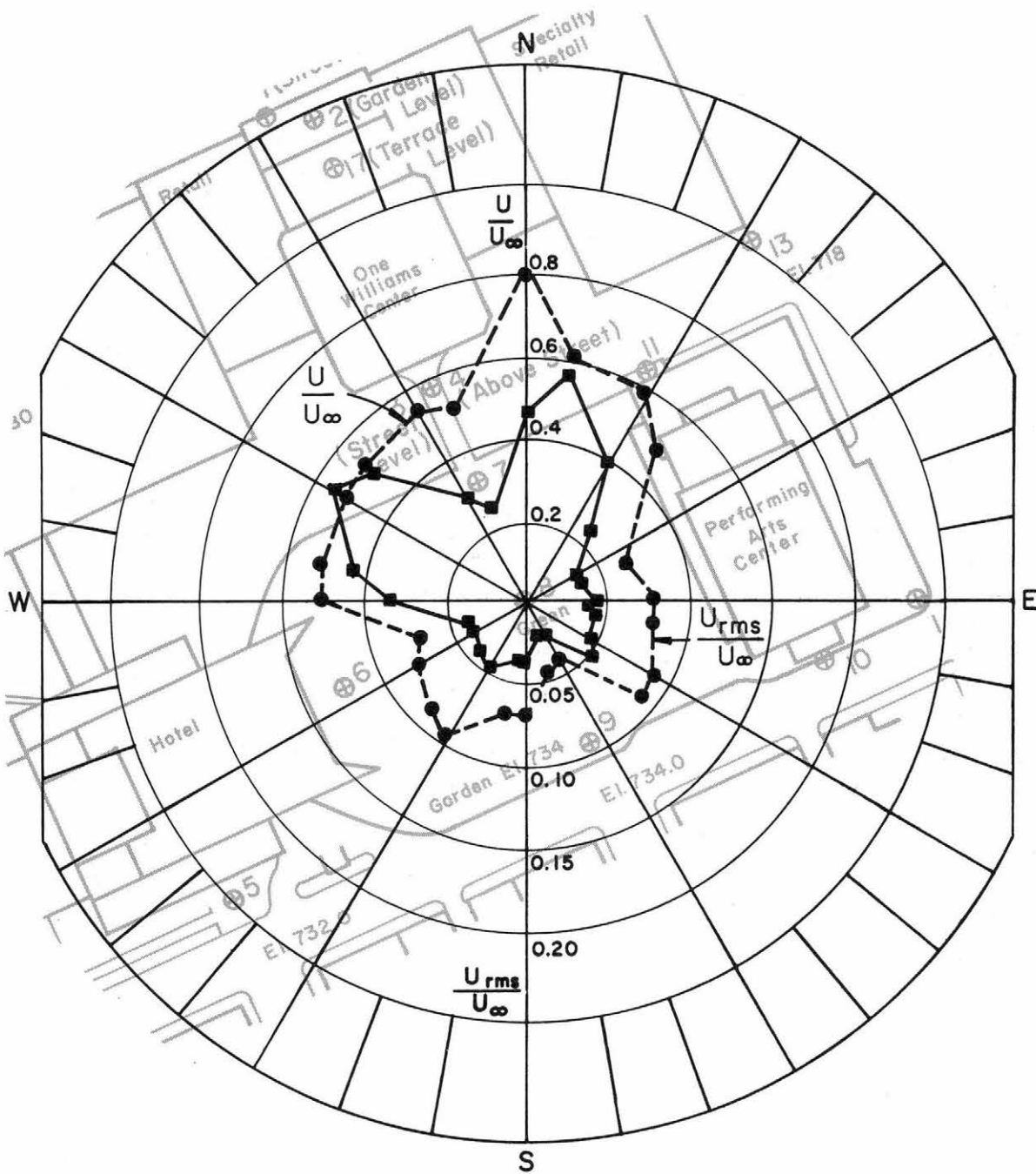


Figure 16. Mean Velocity and Turbulence Intensity at Site 8

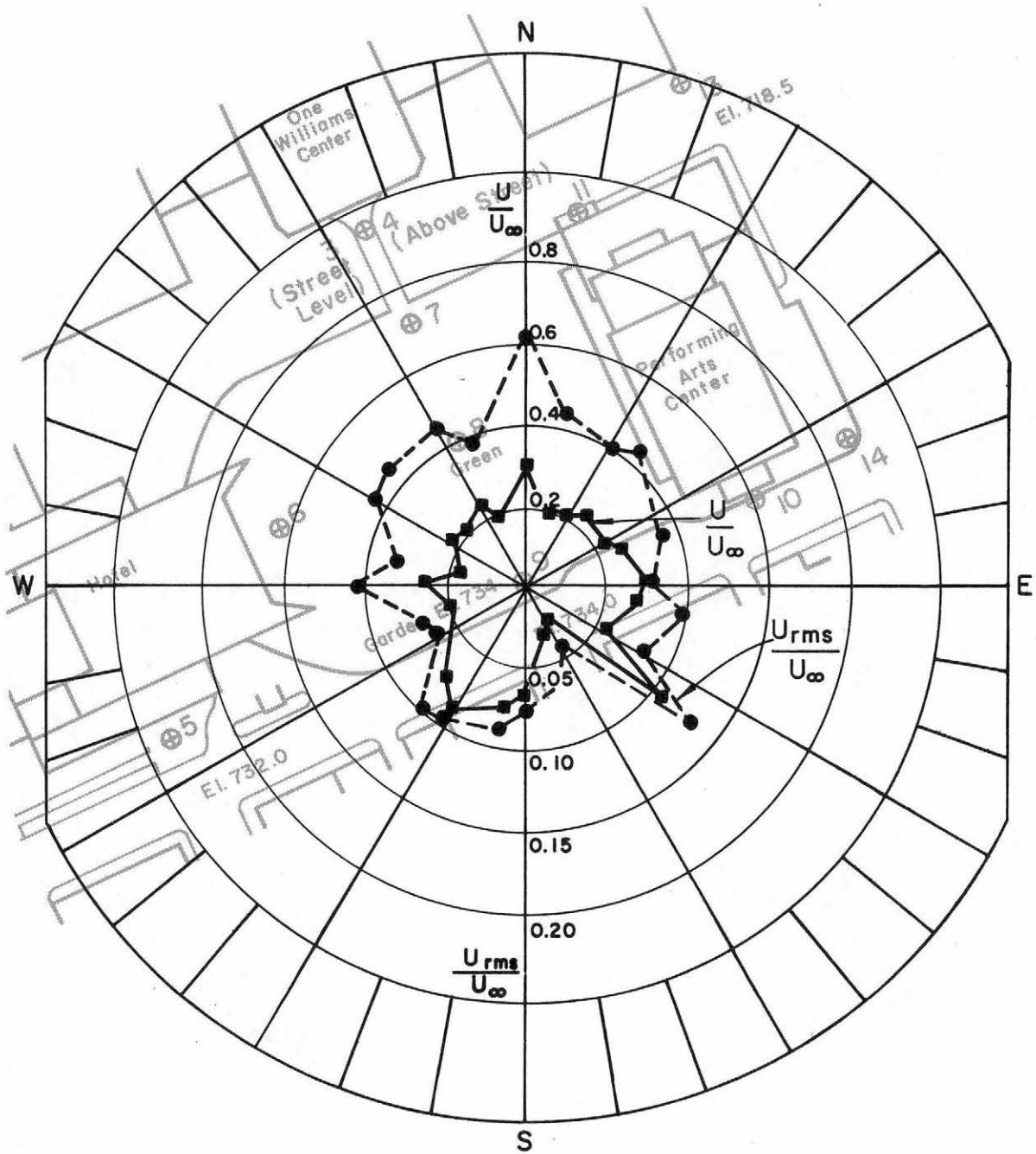


Figure 17. Mean Velocity and Turbulence Intensity at Site 9



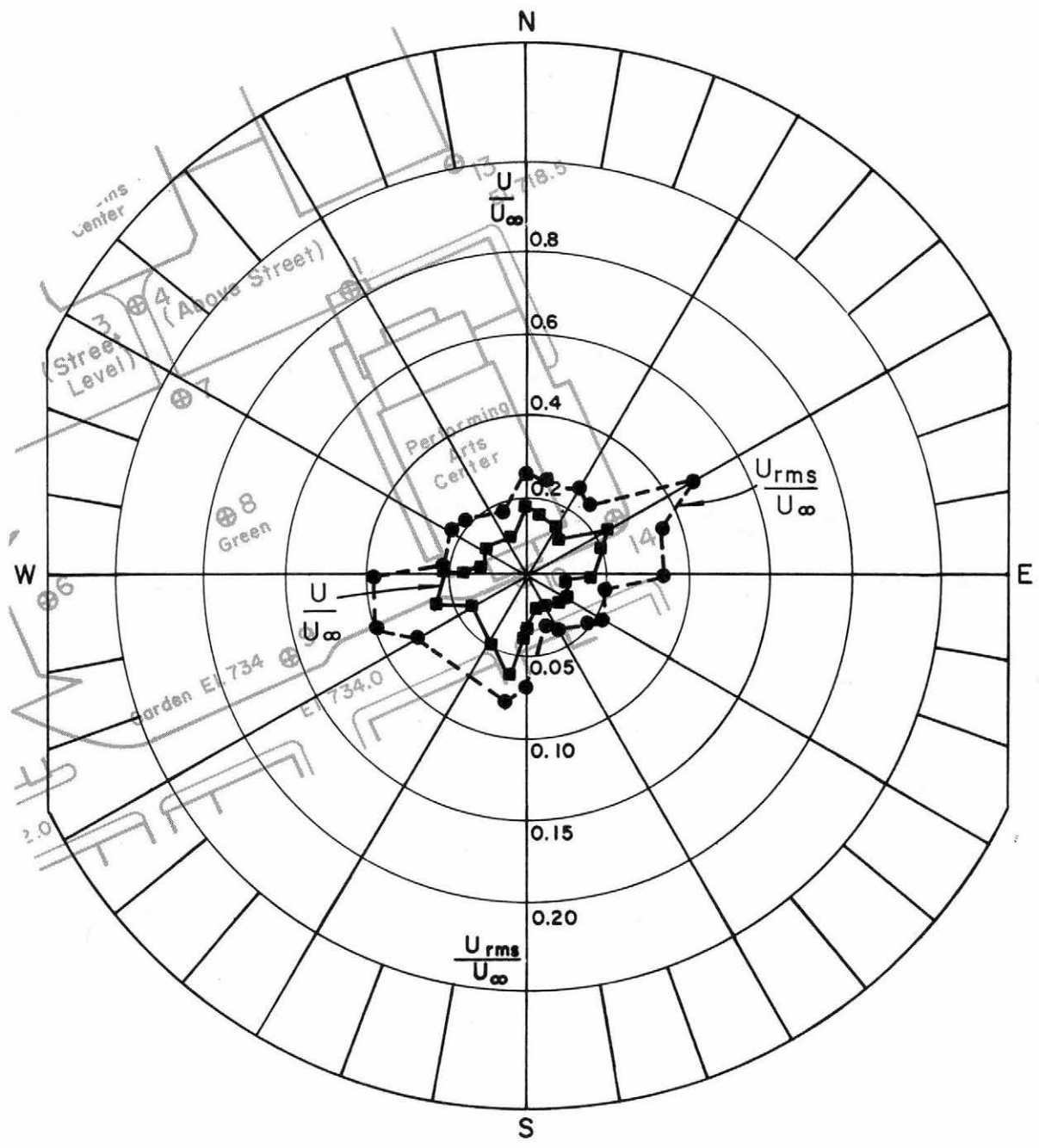


Figure 18. Mean Velocity and Turbulence Intensity at Site 10

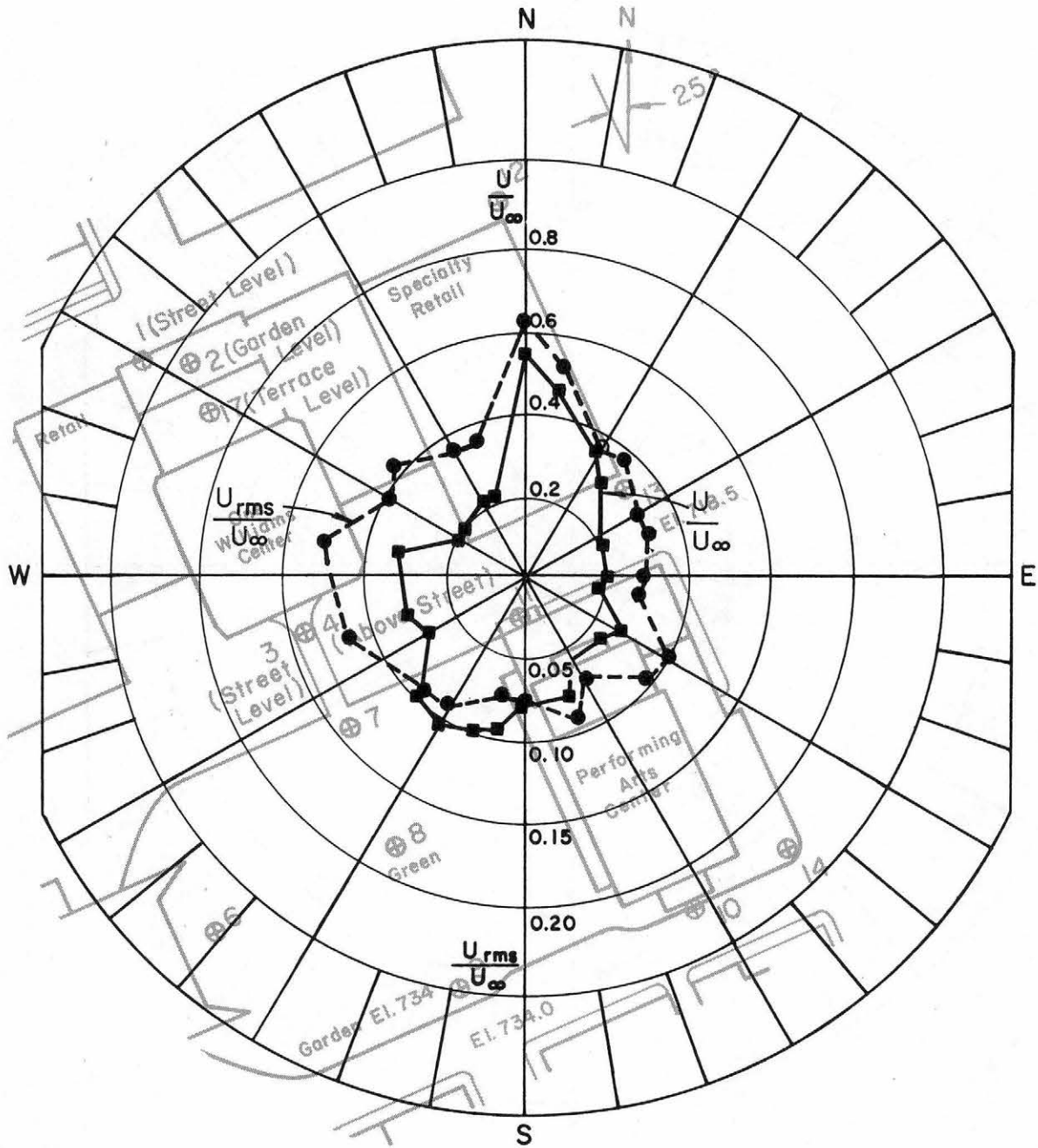


Figure 19. Mean Velocity and Turbulence Intensity at Site 11

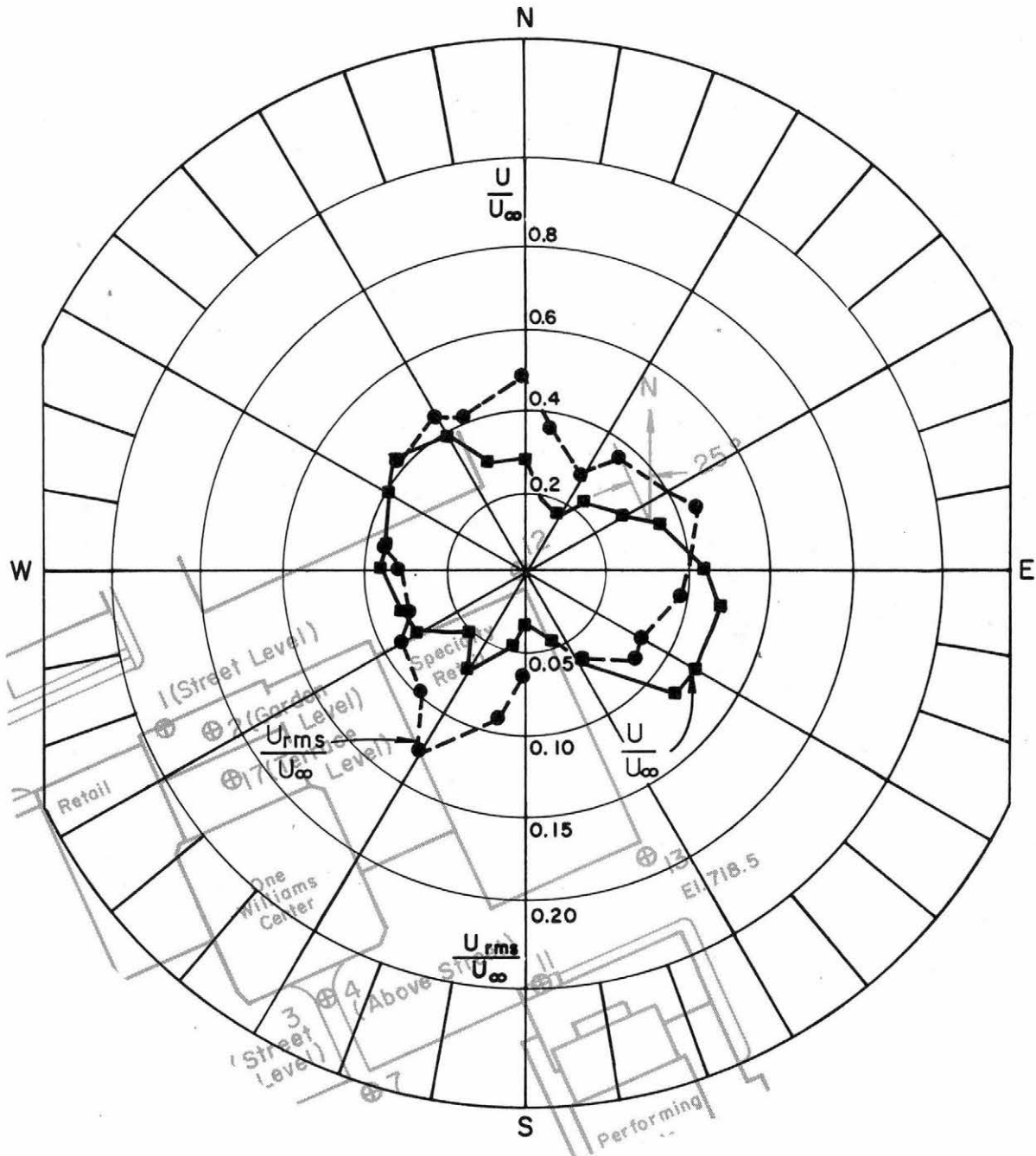


Figure 20. Mean Velocity and Turbulence Intensity at Site 12

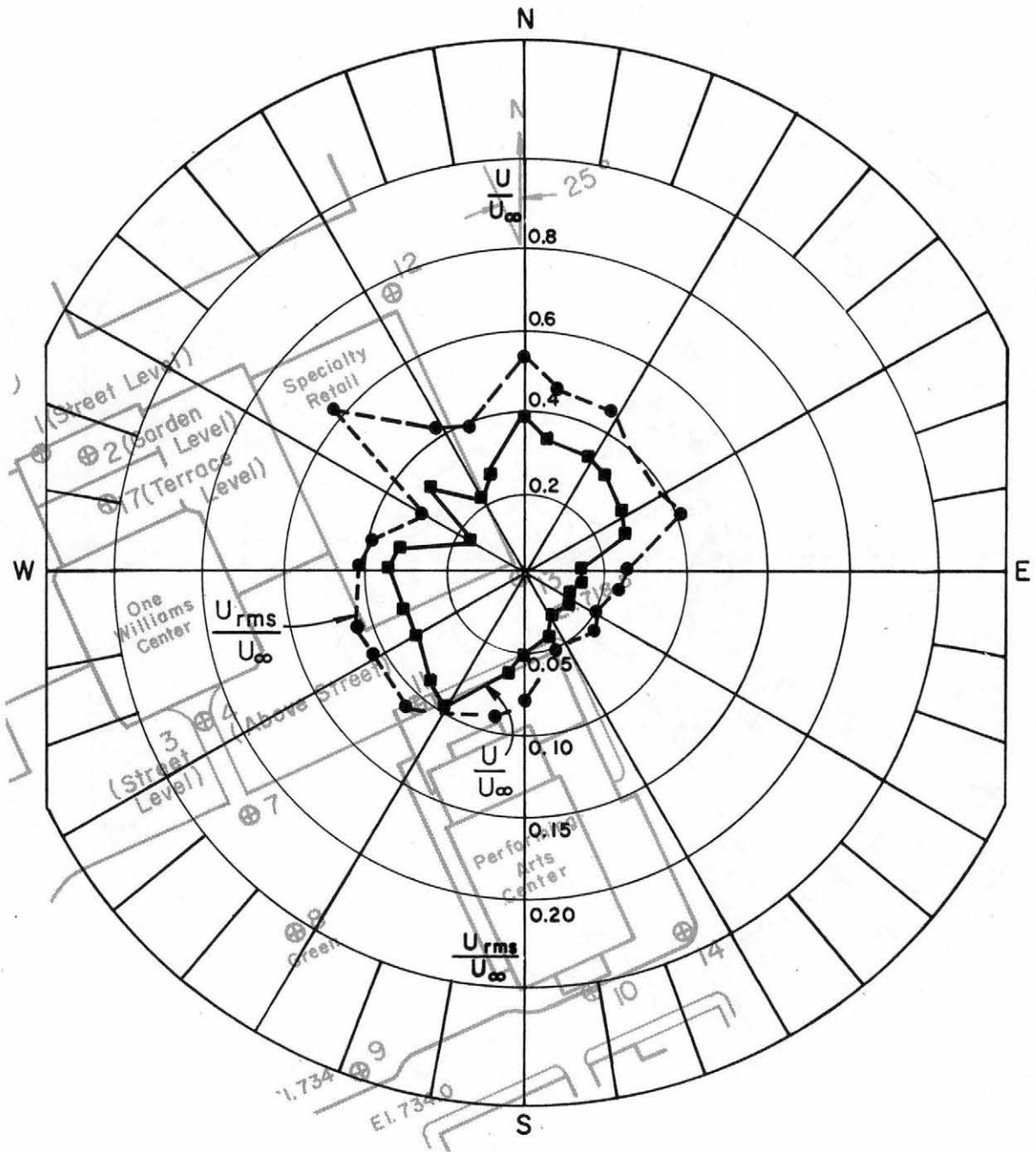


Figure 21. Mean Velocity and Turbulence Intensity at Site 13

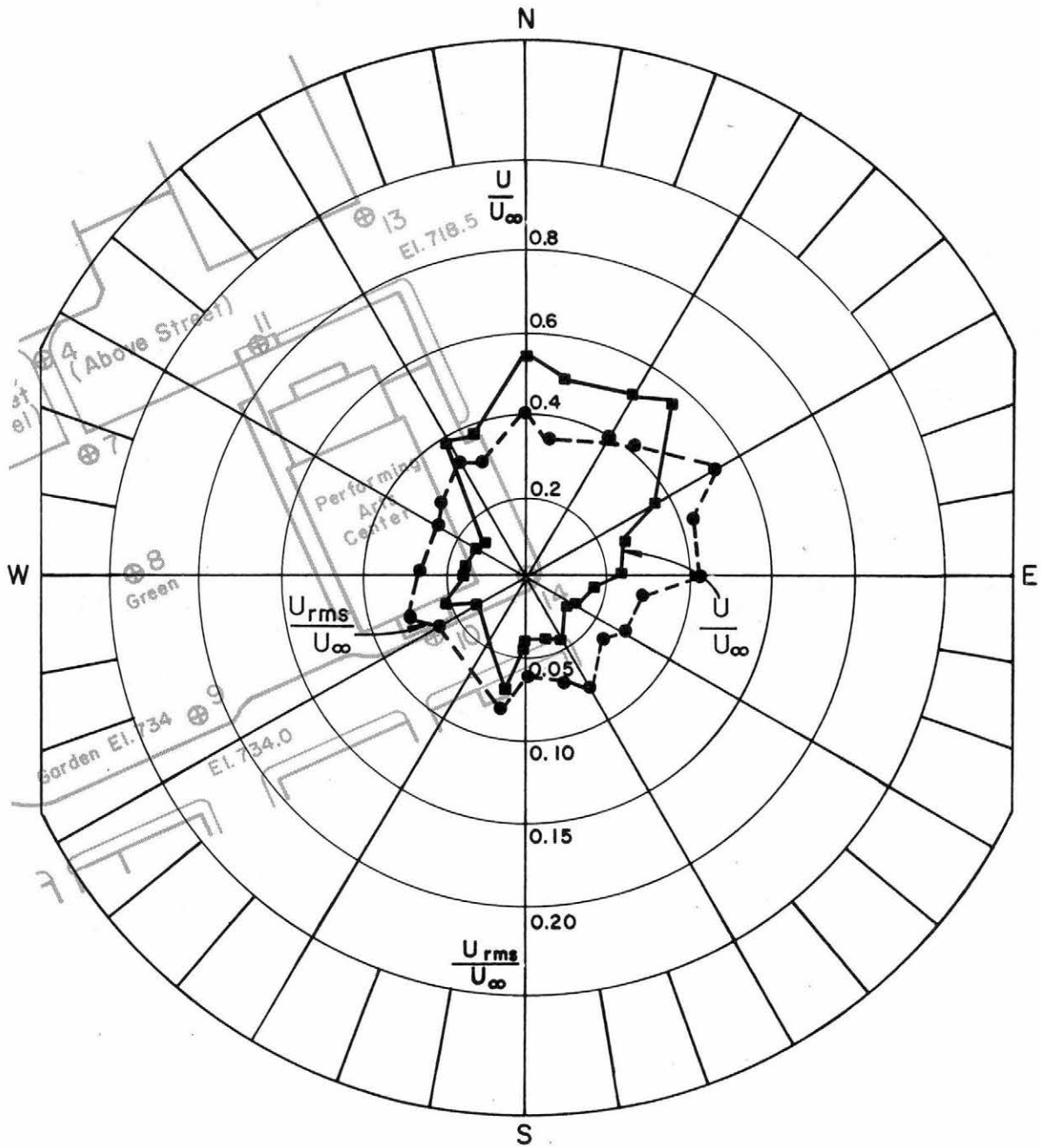


Figure 22. Mean Velocity and Turbulence Intensity at Site 14

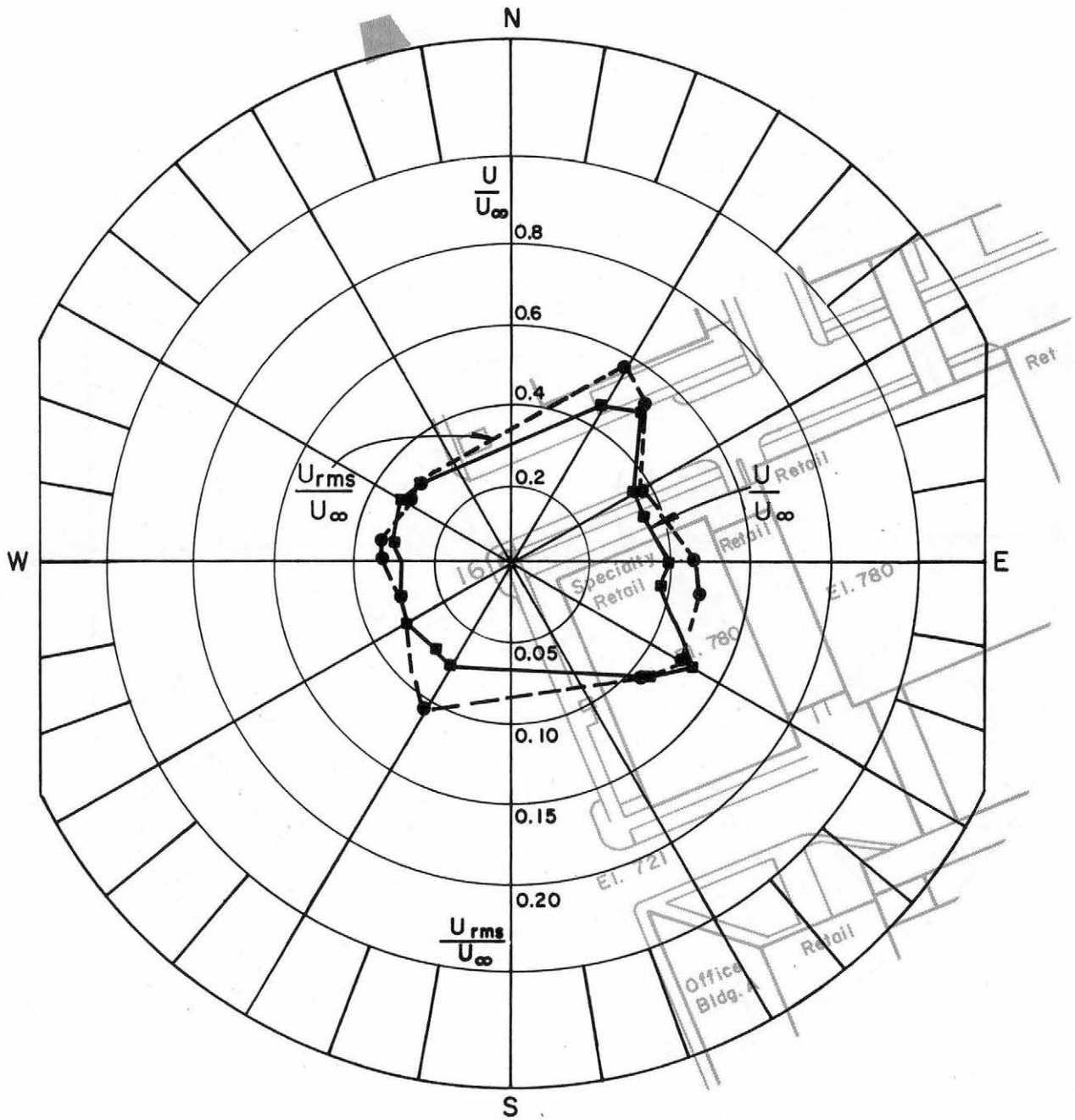


Figure 23. Mean Velocity and Turbulence Intensity at Site 16

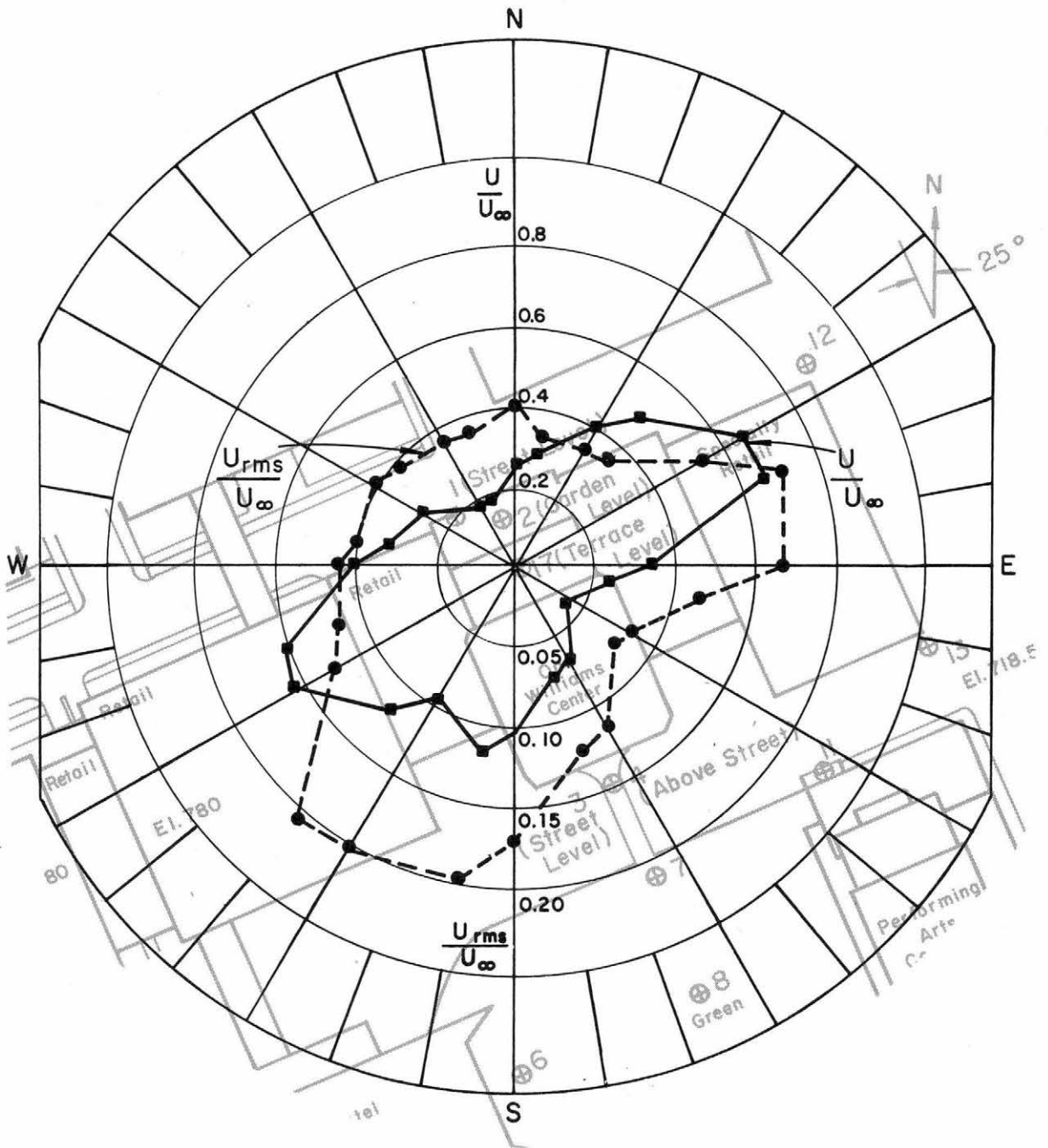


Figure 24. Mean Velocity and Turbulence Intensity at Site 17

APPENDIX A  
PRESSURE DATA

Notes -

Pressure coefficients are defined in section 4.3

Pressure tap designation is explained in Figure 2



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 0

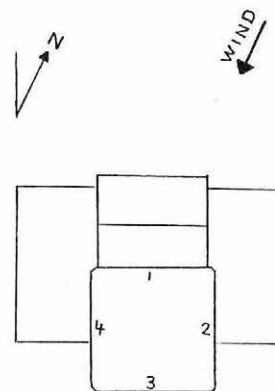
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.249	.256	.401	-1.435	201	-.442	.043	-.297	-.593
102	.522	.136	.926	.070	202	-.368	.032	-.220	-.471
103	.575	.131	.999	.171	203	-.232	.033	-.118	-.336
104	.553	.126	.996	.175	204	-.167	.037	-.016	-.318
105	.495	.119	.852	.096	205	-.152	.041	.017	-.294
106	.459	.113	.816	.083	206	-.120	.046	.048	-.315
107	.381	.107	.718	.011	207	-.121	.056	.058	-.392
108	.297	.098	.611	-.057	208	-.135	.108	.114	-.826
109	.008	.084	.283	-.300	209	-.664	.178	.200	-1.392
111	-.359	.300	.458	-1.448	211	-.447	.040	-.309	-.565
112	.489	.142	.902	.036	212	-.359	.031	-.247	-.460
113	.600	.132	.953	.133	213	-.250	.032	-.101	-.368
114	.600	.128	.947	.167	214	-.176	.038	-.010	-.315
115	.544	.121	.873	.126	215	-.146	.045	.041	-.291
116	.502	.115	.839	.111	216	-.104	.054	.099	-.342
117	.393	.106	.776	.053	217	-.118	.066	.050	-.569
118	.286	.095	.609	-.021	218	-.148	.122	.098	-.845
119	-.003	.070	.244	-.265	219	-.604	.177	.062	-1.266
121	-.402	.304	.452	-1.658	221	-.452	.041	-.290	-.625
122	.403	.144	.879	-.067	222	-.354	.032	-.227	-.481
123	.506	.137	.905	.027	223	-.257	.035	-.122	-.463
124	.515	.135	.897	.080	224	-.186	.042	-.004	-.397
125	.458	.123	.843	.128	225	-.161	.042	.011	-.335
126	.422	.117	.835	.121	226	-.122	.052	.078	-.395
127	.336	.108	.728	.063	227	-.126	.072	.109	-.595
128	.235	.097	.651	-.019	228	-.153	.126	.193	-.957
129	-.052	.076	.312	-.304	229	-.530	.192	.095	-1.442
131	-.376	.280	.716	-1.420	231	-.462	.048	-.329	-.759
132	.312	.147	.820	-.274	232	-.353	.035	-.244	-.490
133	.436	.138	.848	.084	233	-.267	.034	-.118	-.507
134	.445	.131	.850	.120	234	-.201	.038	-.028	-.532
135	.397	.123	.789	.076	235	-.176	.045	.018	-.554
136	.364	.115	.765	.034	236	-.138	.057	.088	-.728
137	.255	.107	.676	.003	237	-.146	.085	.051	-1.076
138	.165	.095	.625	-.088	238	-.171	.136	.099	-1.286
139	-.105	.075	.281	-.335	239	-.467	.203	.082	-1.417
141	-.361	.277	.442	-1.422	241	-.450	.066	-.192	-1.035
142	.230	.134	.716	-.131	242	-.337	.040	-.204	-.529
143	.303	.122	.718	.010	243	-.252	.037	-.109	-.410
144	.314	.117	.726	.034	244	-.193	.040	-.023	-.432
145	.277	.105	.648	.011	245	-.180	.048	-.020	-.440
146	.256	.100	.628	-.009	246	-.150	.061	.034	-.529
147	.186	.095	.551	-.066	247	-.159	.087	.085	-.688
148	.104	.089	.494	-.131	248	-.179	.141	.146	-.883
149	-.171	.075	.148	-.421	249	-.418	.219	.153	-1.343
151	-.321	.237	.344	-1.293	251	-.398	.112	-.075	-1.739
152	.123	.114	.662	-.171	252	-.322	.062	-.131	-.713
153	.243	.096	.616	.041	253	-.275	.051	-.133	-.602
154	.285	.099	.676	.070	254	-.226	.045	-.091	-.515
155	.263	.100	.636	.044	255	-.202	.044	-.057	-.449
156	.244	.099	.595	.039	256	-.158	.051	.001	-.397
157	.164	.095	.505	-.107	257	-.165	.069	.007	-.528
158	.066	.080	.322	-.180	258	-.176	.110	.074	-.678
159	-.209	.065	-.011	-.524	259	-.329	.157	.112	-1.099

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 0

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.545	.103	-.300	-1.154	401	-.500	.053	-.290	-.794
302	-.471	.061	-.274	-.731	402	-.484	.051	-.272	-.674
303	-.444	.050	-.268	-.612	403	-.497	.051	-.322	-.703
304	-.421	.046	-.274	-.581	404	-.488	.052	-.299	-.691
305	-.436	.044	-.280	-.593	405	-.515	.053	-.328	-.735
306	-.422	.042	-.247	-.582	406	-.509	.055	-.290	-.982
307	-.433	.042	-.287	-.599	407	-.527	.056	-.313	-.710
308	-.417	.042	-.251	-.596	408	-.529	.066	-.286	-.797
309	-.435	.042	-.282	-.615	409	-.578	.085	-.355	-.973
311	-.574	.089	-.301	-1.049	411	-.489	.046	-.342	-.687
312	-.472	.053	-.204	-.689	412	-.473	.045	-.322	-.662
313	-.463	.045	-.280	-.624	413	-.493	.047	-.345	-.662
314	-.446	.040	-.314	-.579	414	-.486	.048	-.328	-.662
315	-.452	.038	-.330	-.598	415	-.503	.048	-.342	-.704
316	-.436	.037	-.282	-.565	416	-.498	.050	-.351	-.708
317	-.449	.034	-.337	-.588	417	-.528	.052	-.358	-.747
318	-.436	.034	-.321	-.550	418	-.531	.058	-.353	-.911
319	-.444	.034	-.327	-.555	419	-.565	.074	-.356	-.943
321	-.597	.099	-.330	-1.114	421	-.516	.053	-.341	-.773
322	-.444	.061	-.269	-.755	422	-.500	.051	-.329	-.777
323	-.475	.049	-.300	-.692	423	-.514	.051	-.345	-.784
324	-.451	.043	-.264	-.616	424	-.507	.054	-.308	-.914
325	-.465	.040	-.297	-.634	425	-.529	.055	-.322	-.801
326	-.450	.038	-.295	-.581	426	-.527	.056	-.341	-.763
327	-.458	.038	-.315	-.589	427	-.547	.059	-.351	-.808
328	-.442	.038	-.325	-.565	428	-.550	.065	-.338	-.874
329	-.447	.039	-.314	-.608	429	-.591	.092	-.383	-1.070
331	-.630	.115	-.337	-1.317	431	-.564	.065	-.386	-.887
332	-.529	.069	-.327	-.775	432	-.545	.063	-.376	-.781
333	-.513	.056	-.267	-.721	433	-.565	.058	-.399	-.813
334	-.445	.051	-.318	-.708	434	-.559	.059	-.403	-.909
335	-.483	.047	-.328	-.701	435	-.574	.062	-.402	-.957
336	-.461	.045	-.267	-.661	436	-.568	.067	-.386	-1.002
337	-.469	.045	-.330	-.645	437	-.598	.072	-.375	-.963
338	-.454	.044	-.317	-.601	438	-.601	.078	-.391	-.992
339	-.459	.045	-.307	-.755	439	-.630	.098	-.362	-1.238
341	-.641	.094	-.414	-1.197	441	-.640	.079	-.425	-1.106
342	-.593	.072	-.400	-.893	442	-.616	.074	-.411	-.878
343	-.574	.072	-.348	-.863	443	-.627	.074	-.429	-.954
344	-.530	.068	-.344	-.770	444	-.617	.076	-.416	-.943
345	-.511	.062	-.294	-.794	445	-.638	.080	-.422	-1.173
346	-.473	.053	-.268	-.714	446	-.627	.081	-.405	-1.063
347	-.469	.052	-.302	-.784	447	-.637	.079	-.378	-1.056
348	-.446	.056	-.304	-.807	448	-.621	.079	-.376	-1.069
349	-.447	.062	-.244	-.767	449	-.632	.082	-.402	-1.052
351	-.633	.127	-.083	-1.274	451	-.636	.122	-.351	-1.700
352	-.597	.113	-.100	-1.022	452	-.606	.113	-.331	-1.236
353	-.585	.100	-.204	-1.188	453	-.627	.104	-.378	-1.185
354	-.511	.084	-.265	-.986	454	-.620	.097	-.396	-1.056
355	-.475	.075	-.186	-.781	455	-.624	.087	-.386	-1.012
356	-.440	.075	-.166	-.899	456	-.595	.079	-.369	-.980
357	-.452	.093	-.231	-1.174	457	-.602	.075	-.359	-.878
358	-.424	.104	-.196	-1.383	458	-.608	.087	-.332	-.924
359	-.405	.116	-.145	-1.747	459	-.628	.099	-.273	-1.043

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 0

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.498	.080	-.153	-.843
502	-.634	.130	-.208	-1.113
503	-.708	.113	-.310	-1.310
504	-.473	.106	-.043	-.893
505	-.361	.112	.115	-.744
506	-.617	.135	-.167	-1.225
507	-.712	.096	-.388	-1.269
508	-.698	.110	-.183	-1.244
509	-.628	.106	-.239	-1.013
510	-.724	.206	.250	-1.431
511	-.721	.082	-.418	-1.130
512	-.717	.106	-.278	-1.240
513	-.583	.110	0.000	-1.138
514	-.554	.101	-.162	-.901
515	-.634	.125	-.018	-1.112
516	-.625	.153	.173	-1.196
517	-.543	.155	.145	-1.057
518	-.450	.109	-.029	-.829
519	-.453	.100	-.119	-.984
520	-.403	.118	-.072	-1.396
521	-.424	.136	-.128	-1.239
522	-.444	.162	-.125	-1.451
523	-.314	.078	-.076	-.666
524	-.267	.059	-.079	-.499
525	-.472	.100	-.024	-.866
526	-.414	.136	.136	-.863
527	-.440	.192	.435	-1.034
528	-.434	.137	.084	-.861
529	-.400	.105	-.011	-.829
530	-.349	.097	.063	-.819
531	-.339	.091	-.046	-.950
532	-.386	.134	-.101	-1.344
533	-.437	.166	-.064	-1.375
534	-.288	.083	-.006	-.678
535	-.284	.064	-.096	-.522
536	-.269	.065	-.067	-.480
537	-.268	.075	-.050	-.536
538	.027	.055	.255	-.212
539	.041	.069	.309	-.321
540	.147	.084	.597	-.144
541	.005	.069	.344	-.257
542	-.167	.176	.325	-.956
543	-.039	.068	.276	-.295
544	.086	.074	.377	-.137
545	.118	.087	.577	-.162
546	.137	.086	.535	-.141
547	.114	.078	.599	-.087
548	.132	.085	.576	-.076
549	.155	.092	.550	-.107
550	.040	.054	.362	-.115



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 10

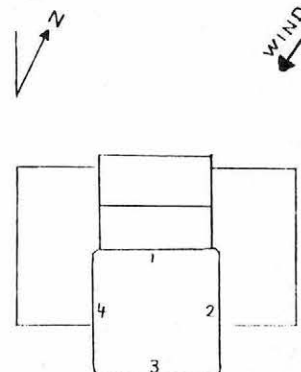
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	.307	.189	.796	-.460	201	-.434	.042	-.258	-.596
102	.607	.132	.985	.152	202	-.303	.035	-.167	-.414
103	.525	.120	.884	.103	203	-.125	.048	.057	-.281
104	.474	.114	.844	.076	204	-.036	.056	.164	-.220
105	.377	.107	.704	.086	205	-.006	.059	.202	-.186
106	.337	.101	.726	.042	206	.051	.066	.275	-.149
107	.250	.094	.597	-.034	207	.072	.073	.300	-.145
108	.166	.085	.490	-.073	208	.134	.085	.387	-.144
109	-.086	.064	.140	-.345	209	-.066	.204	.461	-.789
111	.270	.189	.812	-.847	211	-.451	.037	-.322	-.571
112	.604	.133	.950	.141	212	-.299	.031	-.167	-.395
113	.544	.118	.951	.163	213	-.142	.043	.028	-.264
114	.509	.109	.889	.198	214	-.035	.053	.154	-.190
115	.428	.101	.785	.136	215	.015	.061	.205	-.176
116	.377	.094	.707	.102	216	.088	.070	.309	-.152
117	.268	.094	.615	-.012	217	.113	.072	.409	-.092
118	.164	.082	.479	-.080	218	.176	.089	.518	-.187
119	-.108	.057	.117	-.261	219	-.011	.205	.619	-.659
121	.199	.210	.807	-.637	221	-.461	.036	-.351	-.643
122	.522	.140	.975	.101	222	-.303	.031	-.176	-.438
123	.491	.128	.835	.133	223	-.157	.043	.015	-.287
124	.462	.120	.797	.150	224	-.053	.053	.164	-.199
125	.377	.104	.745	.111	225	-.015	.060	.201	-.305
126	.332	.096	.651	.070	226	.054	.070	.280	-.288
127	.234	.086	.510	-.012	227	.086	.081	.341	-.356
128	.133	.075	.366	-.090	228	.140	.102	.448	-.551
129	-.144	.059	.092	-.328	229	-.023	.205	.552	-.720
131	.160	.208	.755	-.909	231	-.470	.047	-.322	-.627
132	.449	.140	.880	.034	232	-.306	.039	-.163	-.447
133	.392	.124	.883	.076	233	-.176	.045	-.010	-.315
134	.372	.114	.826	.070	234	-.080	.053	.119	-.237
135	.305	.104	.742	.036	235	-.034	.062	.204	-.221
136	.265	.095	.688	.006	236	.031	.071	.287	-.185
137	.165	.080	.463	-.055	237	.048	.080	.296	-.158
138	.068	.069	.332	-.124	238	.096	.099	.372	-.230
139	-.195	.054	.052	-.383	239	-.028	.209	.461	-.669
141	.019	.214	.621	-1.014	241	-.474	.053	-.269	-.754
142	.293	.116	.710	-.083	242	-.312	.040	-.152	-.453
143	.282	.110	.694	.028	243	-.190	.044	.004	-.306
144	.273	.105	.648	.026	244	-.106	.050	.104	-.237
145	.224	.097	.612	-.009	245	-.088	.054	.129	-.261
146	.193	.088	.562	-.044	246	-.030	.062	.224	-.190
147	.109	.079	.456	-.133	247	-.012	.071	.294	-.231
148	.024	.068	.328	-.227	248	.029	.090	.410	-.328
149	-.233	.062	.023	-.414	249	-.108	.199	.494	-.719
151	-.085	.176	.447	-.973	251	-.495	.097	-.187	-1.166
152	.199	.100	.542	-.079	252	-.352	.056	-.176	-.681
153	.260	.103	.670	.023	253	-.261	.042	-.124	-.397
154	.274	.100	.659	.032	254	-.183	.042	-.037	-.306
155	.227	.095	.577	-.016	255	-.140	.044	.009	-.258
156	.198	.087	.525	-.028	256	-.071	.050	.097	-.220
157	.093	.074	.345	-.122	257	-.061	.061	.214	-.233
158	-.006	.062	.226	-.219	258	-.025	.079	.321	-.312
159	-.265	.056	-.066	-.586	259	-.134	.143	.413	-.631

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 10

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.554	.044	-.308	-1.003	401	-.484	.045	-.312	-.680
302	-.450	.054	-.229	-.635	402	-.465	.044	-.321	-.624
303	-.439	.045	-.287	-.597	403	-.484	.043	-.342	-.637
304	-.417	.043	-.196	-.582	404	-.469	.043	-.326	-.663
305	-.448	.042	-.302	-.587	405	-.498	.042	-.355	-.705
306	-.431	.041	-.286	-.585	406	-.486	.043	-.352	-.644
307	-.443	.040	-.302	-.616	407	-.506	.045	-.358	-.695
308	-.423	.039	-.306	-.579	408	-.501	.054	-.305	-.688
309	-.444	.040	-.306	-.573	409	-.552	.074	-.342	-.904
311	-.556	.074	-.334	-1.043	411	-.480	.046	-.325	-.734
312	-.468	.051	-.242	-.719	412	-.460	.045	-.316	-.615
313	-.467	.041	-.312	-.614	413	-.490	.040	-.331	-.656
314	-.443	.039	-.274	-.567	414	-.476	.041	-.318	-.640
315	-.454	.038	-.246	-.581	415	-.495	.040	-.334	-.628
316	-.434	.036	-.308	-.550	416	-.485	.041	-.289	-.627
317	-.459	.034	-.324	-.576	417	-.518	.044	-.386	-.670
318	-.440	.034	-.328	-.554	418	-.512	.049	-.352	-.695
319	-.450	.035	-.333	-.556	419	-.549	.061	-.380	-.782
321	-.607	.083	-.377	-1.041	421	-.510	.041	-.383	-.669
322	-.504	.051	-.308	-.691	422	-.488	.040	-.373	-.635
323	-.488	.043	-.309	-.641	423	-.505	.040	-.380	-.657
324	-.461	.041	-.274	-.609	424	-.492	.041	-.364	-.640
325	-.479	.035	-.346	-.607	425	-.529	.045	-.389	-.693
326	-.459	.035	-.343	-.597	426	-.520	.047	-.374	-.672
327	-.470	.034	-.350	-.610	427	-.543	.051	-.395	-.744
328	-.449	.034	-.328	-.597	428	-.538	.056	-.379	-.905
329	-.466	.036	-.348	-.595	429	-.582	.067	-.395	-.966
331	-.631	.091	-.408	-1.202	431	-.563	.053	-.403	-.792
332	-.533	.061	-.323	-.852	432	-.542	.052	-.374	-.764
333	-.530	.048	-.350	-.732	433	-.560	.050	-.386	-.734
334	-.496	.044	-.318	-.675	434	-.548	.051	-.384	-.712
335	-.498	.041	-.352	-.633	435	-.566	.053	-.408	-.750
336	-.471	.040	-.336	-.625	436	-.555	.055	-.396	-.783
337	-.486	.039	-.362	-.638	437	-.600	.061	-.448	-.857
338	-.466	.038	-.304	-.616	438	-.595	.067	-.422	-.954
339	-.475	.039	-.326	-.611	439	-.622	.079	-.409	-.985
341	-.642	.082	-.345	-1.166	441	-.622	.070	-.426	-1.055
342	-.585	.064	-.393	-.859	442	-.599	.069	-.429	-.921
343	-.566	.065	-.353	-.837	443	-.613	.069	-.442	-.973
344	-.520	.063	-.283	-.845	444	-.599	.073	-.409	-.982
345	-.517	.055	-.317	-.727	445	-.621	.071	-.396	-.930
346	-.484	.049	-.292	-.680	446	-.605	.071	-.389	-1.101
347	-.489	.048	-.318	-.707	447	-.616	.070	-.396	-.995
348	-.459	.048	-.304	-.710	448	-.600	.069	-.387	-.940
349	-.477	.049	-.264	-.694	449	-.626	.065	-.387	-.927
351	-.659	.119	-.201	-1.151	451	-.610	.089	-.354	-1.095
352	-.578	.100	-.254	-.999	452	-.585	.089	-.342	-1.101
353	-.562	.088	-.276	-.974	453	-.623	.096	-.371	-1.255
354	-.530	.079	-.267	-1.153	454	-.619	.096	-.381	-1.250
355	-.539	.080	-.315	-1.163	455	-.620	.086	-.379	-.982
356	-.522	.085	-.311	-1.148	456	-.576	.079	-.358	-.880
357	-.541	.080	-.286	-.900	457	-.599	.073	-.374	-.960
358	-.509	.083	-.223	-.847	458	-.613	.081	-.373	-.986
359	-.489	.081	-.183	-.787	459	-.659	.098	-.319	-1.149

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 10

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.510	.067	-.248	-.747
502	-.724	.112	-.307	-1.118
503	-.587	.156	-.117	-1.097
504	-.321	.114	.104	-.700
505	-.149	.091	.129	-.513
506	-.505	.082	-.246	-1.031
507	-.682	.088	-.383	-1.161
508	-.645	.092	-.240	-1.048
509	-.532	.095	-.207	-.916
510	-.900	.194	-.023	-1.590
511	-.788	.145	-.448	-1.568
512	-.650	.138	-.132	-1.227
513	-.539	.105	.139	-1.023
514	-.525	.089	-.227	-.933
515	-.571	.118	-.080	-1.001
516	-.551	.154	.022	-1.219
517	-.488	.116	-.049	-.964
518	-.446	.073	-.175	-.725
519	-.494	.093	-.217	-1.119
520	-.488	.102	-.171	-.949
521	-.502	.095	-.239	-1.054
522	-.528	.122	-.221	-1.418
523	-.314	.056	-.150	-.517
524	-.248	.052	-.065	-.503
525	-.473	.099	.055	-.797
526	-.415	.125	.196	-.814
527	-.393	.168	.332	-1.082
528	-.416	.103	.007	-.830
529	-.403	.089	-.071	-.805
530	-.375	.083	.018	-.772
531	-.401	.095	-.106	-.789
532	-.484	.106	-.124	-.980
533	-.564	.156	-.106	-1.540
534	-.286	.080	-.022	-.631
535	-.260	.057	-.037	-.472
536	-.238	.059	-.057	-.481
537	-.229	.069	.022	-.525
538	-.004	.044	.209	-.308
539	-.005	.060	.268	-.445
540	.143	.080	.526	-.091
541	-.001	.069	.376	-.159
542	-.197	.169	.304	-1.083
543	-.106	.054	.133	-.286
544	.097	.075	.402	-.109
545	.113	.075	.419	-.114
546	.137	.077	.506	-.074
547	.105	.068	.407	-.062
548	.127	.073	.419	-.074
549	.146	.078	.447	-.078
550	.047	.056	.417	-.078



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 20

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	.546	.145	.935	-.166	201	-.438	.042	-.295	-.601
102	.485	.132	.963	-.146	202	-.223	.040	-.050	-.361
103	.367	.110	.756	-.115	203	-.003	.059	.186	-.221
104	.324	.100	.695	-.112	204	.112	.068	.324	-.131
105	.243	.088	.525	-.041	205	.145	.074	.423	-.111
106	.213	.083	.501	-.035	206	.222	.080	.527	-.059
107	.132	.076	.416	-.106	207	.254	.086	.580	-.056
108	.061	.067	.335	-.134	208	.342	.097	.706	-.006
109	-.170	.051	.007	-.346	209	.381	.136	.752	-.444
111	.569	.143	1.022	.094	211	-.439	.039	-.324	-.586
112	.533	.123	.917	.153	212	-.217	.043	-.064	-.372
113	.420	.104	.738	.068	213	-.033	.055	.171	-.193
114	.376	.093	.685	.072	214	.101	.067	.316	-.110
115	.291	.083	.569	.025	215	.161	.076	.398	-.082
116	.246	.075	.510	.006	216	.253	.085	.519	-.028
117	.113	.134	.368	-.498	217	.287	.098	.601	-.013
118	.050	.063	.250	-.162	218	.379	.112	.711	.047
119	-.180	.062	.151	-.316	219	.420	.153	.794	-.282
121	.478	.141	.892	.051	221	-.459	.041	-.267	-.605
122	.459	.122	.810	.019	222	-.233	.041	-.058	-.374
123	.371	.104	.695	.051	223	-.055	.055	.172	-.248
124	.334	.093	.644	.066	224	.070	.066	.331	-.145
125	.257	.090	.534	-.007	225	.125	.080	.411	-.091
126	.213	.081	.468	-.021	226	.216	.090	.525	-.015
127	.113	.071	.356	-.096	227	.259	.101	.600	0.000
128	.026	.060	.273	-.156	228	.343	.116	.703	.049
129	-.217	.046	-.051	-.360	229	.363	.153	.785	-.298
131	.364	.140	.860	-.071	231	-.499	.053	-.329	-.689
132	.374	.128	.860	-.087	232	-.260	.046	-.033	-.414
133	.289	.111	.690	.007	233	-.104	.054	.134	-.246
134	.261	.099	.625	.015	234	.014	.065	.286	-.169
135	.188	.088	.504	-.040	235	.064	.074	.362	-.138
136	.150	.078	.429	-.050	236	.145	.084	.453	-.077
137	.045	.070	.329	-.141	237	.164	.095	.549	-.056
138	-.035	.060	.207	-.194	238	.238	.109	.687	-.028
139	-.258	.051	-.057	-.418	239	.247	.158	.809	-.527
141	.245	.139	.697	-.312	241	-.535	.060	-.318	-.735
142	.252	.122	.747	-.228	242	-.287	.046	-.122	-.429
143	.196	.102	.610	-.015	243	-.133	.054	.096	-.292
144	.179	.092	.560	-.031	244	-.030	.061	.264	-.203
145	.119	.083	.432	-.075	245	.012	.081	.338	-.191
146	.091	.075	.375	-.090	246	.076	.081	.352	-.129
147	.007	.066	.279	-.154	247	.103	.091	.417	-.125
148	-.069	.058	.184	-.241	248	.166	.106	.549	-.145
149	-.312	.054	-.056	-.507	249	.144	.157	.576	-.396
151	.131	.108	.544	-.340	251	-.587	.077	-.377	-.966
152	.195	.091	.582	-.103	252	-.339	.054	-.123	-.548
153	.163	.086	.575	-.018	253	-.226	.047	-.016	-.386
154	.173	.086	.559	-.010	254	-.129	.048	.099	-.276
155	.126	.084	.493	-.046	255	-.079	.054	.166	-.232
156	.100	.076	.412	-.079	256	.005	.062	.248	-.156
157	.010	.072	.323	-.178	257	.015	.073	.328	-.172
158	-.072	.060	.163	-.234	258	.066	.084	.414	-.209
159	-.301	.049	-.118	-.522	259	.019	.132	.414	-.487

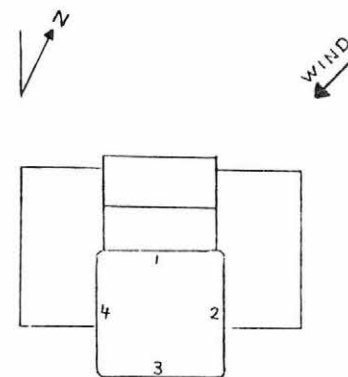
WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 20

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.462	.060	-.263	-.727	401	-.449	.042	-.268	-.572
302	-.422	.050	-.239	-.713	402	-.426	.041	-.262	-.545
303	-.436	.045	-.231	-.685	403	-.446	.040	-.311	-.576
304	-.418	.043	-.263	-.622	404	-.428	.039	-.308	-.557
305	-.446	.041	-.316	-.619	405	-.459	.039	-.314	-.613
306	-.425	.039	-.298	-.565	406	-.440	.040	-.293	-.576
307	-.437	.038	-.312	-.559	407	-.458	.041	-.319	-.613
308	-.412	.039	-.276	-.545	408	-.439	.045	-.292	-.602
309	-.440	.041	-.285	-.591	409	-.477	.057	-.320	-.794
311	-.479	.052	-.280	-.777	411	-.447	.037	-.317	-.568
312	-.438	.043	-.242	-.639	412	-.426	.036	-.311	-.548
313	-.463	.038	-.348	-.630	413	-.462	.035	-.348	-.576
314	-.441	.037	-.307	-.567	414	-.446	.035	-.336	-.550
315	-.455	.037	-.312	-.607	415	-.463	.034	-.354	-.568
316	-.432	.036	-.304	-.551	416	-.444	.034	-.332	-.568
317	-.458	.036	-.328	-.604	417	-.477	.035	-.345	-.599
318	-.432	.037	-.294	-.580	418	-.460	.038	-.338	-.725
319	-.444	.037	-.300	-.594	419	-.480	.045	-.326	-.704
321	-.511	.069	-.239	-.809	421	-.478	.050	-.311	-.689
322	-.460	.049	-.184	-.671	422	-.459	.049	-.302	-.668
323	-.471	.043	-.276	-.649	423	-.476	.048	-.287	-.689
324	-.450	.041	-.257	-.609	424	-.463	.046	-.325	-.695
325	-.485	.040	-.336	-.642	425	-.497	.043	-.363	-.717
326	-.461	.039	-.313	-.601	426	-.481	.044	-.350	-.648
327	-.473	.039	-.327	-.619	427	-.501	.045	-.370	-.683
328	-.447	.040	-.304	-.589	428	-.485	.049	-.319	-.729
329	-.468	.037	-.337	-.603	429	-.520	.057	-.311	-1.015
331	-.577	.097	-.164	-1.182	431	-.527	.055	-.317	-.852
332	-.505	.071	-.218	-.794	432	-.507	.053	-.279	-.713
333	-.519	.061	-.255	-.791	433	-.539	.059	-.350	-.716
334	-.497	.056	-.325	-.730	434	-.526	.059	-.350	-.809
335	-.508	.052	-.357	-.730	435	-.551	.059	-.369	-.891
336	-.484	.051	-.336	-.701	436	-.538	.061	-.365	-.839
337	-.518	.047	-.327	-.665	437	-.577	.060	-.421	-.851
338	-.492	.046	-.352	-.668	438	-.560	.063	-.405	-.790
339	-.500	.047	-.346	-.656	439	-.588	.078	-.378	-1.350
341	-.627	.080	-.252	-1.035	441	-.616	.058	-.415	-.846
342	-.563	.067	-.249	-.904	442	-.592	.058	-.390	-.808
343	-.553	.064	-.312	-.871	443	-.614	.060	-.400	-.846
344	-.525	.061	-.342	-.824	444	-.601	.066	-.384	-1.123
345	-.551	.061	-.369	-.741	445	-.629	.072	-.439	-.953
346	-.527	.061	-.348	-.750	446	-.615	.075	-.419	-.963
347	-.535	.060	-.363	-.800	447	-.632	.074	-.445	-1.031
348	-.509	.061	-.313	-.804	448	-.607	.068	-.445	-1.045
349	-.547	.058	-.380	-.740	449	-.627	.072	-.446	-.972
351	-.632	.097	-.340	-1.170	451	-.567	.072	-.366	-.888
352	-.573	.079	-.315	-.925	452	-.539	.072	-.335	-.862
353	-.599	.083	-.286	-.988	453	-.582	.069	-.403	-.896
354	-.585	.083	-.379	-1.071	454	-.578	.071	-.372	-.886
355	-.605	.082	-.383	-1.132	455	-.599	.069	-.433	-.892
356	-.593	.087	-.361	-1.068	456	-.569	.065	-.397	-.830
357	-.620	.088	-.388	-1.110	457	-.591	.061	-.381	-.892
358	-.580	.082	-.371	-1.025	458	-.589	.070	-.327	-.907
359	-.576	.074	-.373	-.940	459	-.633	.095	-.301	-1.051



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 20

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.544	.085	-.260	-.997
502	-.906	.149	-.376	-1.360
503	-.379	.060	-.110	-.790
504	-.170	.110	.199	-.548
505	-.113	.098	.162	-.577
506	-.575	.156	-.151	-1.094
507	-.529	.199	.258	-1.052
508	-.505	.122	-.084	-.944
509	-.437	.057	-.094	-.771
510	-.768	.347	.081	-1.726
511	-1.219	.213	-.477	-1.900
512	-.463	.122	-.081	-.899
513	-.541	.082	-.192	-1.009
514	-.517	.071	-.284	-.847
515	-.551	.090	-.218	-1.016
516	-.541	.115	-.047	-1.120
517	-.504	.099	-.170	-1.133
518	-.516	.085	-.268	-.913
519	-.562	.084	-.320	-.975
520	-.553	.081	-.342	-.924
521	-.542	.079	-.326	-1.012
522	-.563	.100	-.316	-1.354
523	-.289	.055	-.073	-.501
524	-.209	.044	-.070	-.379
525	-.494	.078	-.141	-.796
526	-.459	.097	-.010	-.804
527	-.429	.124	.138	-1.077
528	-.449	.099	-.124	-1.022
529	-.465	.090	-.130	-.900
530	-.485	.090	-.208	-.860
531	-.517	.073	-.294	-.964
532	-.544	.086	-.250	-1.083
533	-.599	.118	-.285	-1.195
534	-.279	.070	.042	-.556
535	-.230	.047	-.086	-.427
536	-.206	.044	-.026	-.392
537	-.190	.050	-.004	-.421
538	-.040	.040	.143	-.226
539	-.043	.051	.147	-.345
540	.104	.075	.565	-.116
541	-.027	.068	.358	-.297
542	-.264	.158	.140	-1.013
543	-.160	.048	.036	-.348
544	.032	.060	.368	-.160
545	.036	.065	.335	-.181
546	.041	.065	.336	-.151
547	.042	.058	.355	-.099
548	.052	.062	.579	-.316
549	.052	.063	.355	-.144
550	.001	.046	.252	-.102



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 30

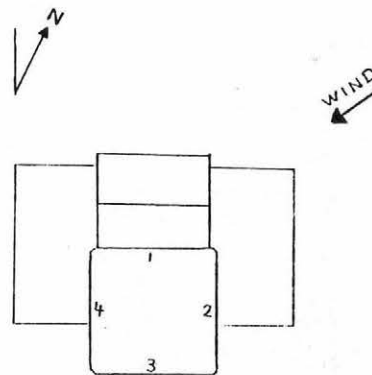
PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	.410	.145	.852	-.130	201	-.461	.049	-.303	-.661
102	.150	.181	.637	-.501	202	-.114	.056	.159	-.290
103	.142	.078	.437	-.070	203	.141	.081	.438	-.165
104	.158	.069	.390	-.045	204	.270	.094	.553	-.077
105	.083	.066	.289	-.111	205	.311	.096	.613	-.007
106	.067	.061	.259	-.124	206	.400	.104	.718	.048
107	-.003	.056	.174	-.171	207	.438	.111	.743	.064
108	-.055	.049	.124	-.202	208	.535	.121	.851	.109
109	-.256	.039	-.096	-.417	209	.580	.127	.983	.149
111	.377	.198	.858	-.719	211	-.469	.045	-.304	-.650
112	.168	.198	.634	-.580	212	-.105	.055	.124	-.285
113	.217	.091	.493	-.066	213	.135	.076	.389	-.083
114	.192	.078	.425	-.020	214	.290	.089	.581	.039
115	.120	.069	.333	-.066	215	.357	.098	.667	.079
116	.088	.061	.298	-.092	216	.455	.107	.766	.153
117	-.024	.054	.197	-.168	217	.461	.111	.801	.083
118	-.089	.046	.079	-.219	218	.551	.120	.912	.133
119	-.275	.037	-.137	-.389	219	.573	.130	.961	.166
121	.241	.214	.830	-.917	221	-.484	.045	-.335	-.655
122	.102	.186	.589	-.598	222	-.141	.053	.112	-.309
123	.169	.088	.460	-.111	223	.078	.076	.374	-.143
124	.150	.073	.403	-.050	224	.221	.090	.527	-.035
125	.076	.066	.367	-.129	225	.286	.099	.594	-.087
126	.047	.059	.300	-.108	226	.380	.108	.705	-.016
127	-.037	.051	.202	-.174	227	.417	.116	.776	.029
128	-.104	.043	.101	-.243	228	.496	.125	.878	.138
129	-.302	.036	-.155	-.452	229	.501	.139	.935	.086
131	.203	.194	.779	-1.098	231	-.526	.055	-.325	-.706
132	.110	.175	.607	-.446	232	-.159	.064	.121	-.334
133	.115	.089	.463	-.191	233	.042	.076	.339	-.175
134	.104	.075	.422	-.076	234	.183	.090	.523	-.063
135	.041	.065	.329	-.133	235	.240	.100	.596	-.028
136	.014	.057	.262	-.171	236	.328	.110	.706	.036
137	-.072	.055	.165	-.250	237	.336	.115	.778	.033
138	-.139	.047	.063	-.308	238	.410	.123	.858	.084
139	-.331	.044	-.121	-.488	239	.410	.130	.819	.089
141	.099	.186	.750	-.862	241	-.587	.057	-.405	-.849
142	.030	.165	.595	-.548	242	-.220	.054	-.010	-.392
143	.070	.075	.466	-.158	243	-.025	.072	.290	-.198
144	.064	.063	.395	-.155	244	.097	.083	.418	-.106
145	-.006	.060	.224	-.175	245	.146	.086	.537	-.057
146	-.026	.054	.170	-.174	246	.229	.093	.636	.026
147	-.103	.049	.077	-.241	247	.250	.100	.629	.042
148	-.166	.045	.019	-.301	248	.315	.108	.749	.095
149	-.379	.046	-.187	-.563	249	.306	.120	.717	-.001
151	.116	.113	.517	-.384	251	-.603	.070	-.382	-.925
152	.108	.098	.431	-.323	252	-.271	.054	-.063	-.466
153	.084	.079	.402	-.143	253	-.129	.054	.122	-.283
154	.081	.071	.405	-.086	254	-.011	.062	.278	-.165
155	.022	.064	.329	-.127	255	.053	.074	.389	-.109
156	-.003	.057	.270	-.153	256	.151	.086	.562	-.031
157	-.100	.053	.148	-.241	257	.155	.092	.543	-.045
158	-.167	.046	.053	-.292	258	.211	.099	.631	.013
159	-.366	.047	-.181	-.611	259	.195	.101	.635	-.047

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 30

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.507	.078	-.226	-.875	401	-.432	.042	-.280	-.593
302	-.486	.066	-.308	-.840	402	-.405	.041	-.271	-.565
303	-.483	.049	-.318	-.722	403	-.426	.040	-.303	-.583
304	-.454	.044	-.289	-.653	404	-.404	.041	-.285	-.558
305	-.485	.044	-.268	-.659	405	-.439	.042	-.261	-.616
306	-.457	.044	-.265	-.595	406	-.413	.042	-.269	-.613
307	-.470	.044	-.286	-.613	407	-.429	.044	-.251	-.620
308	-.442	.046	-.274	-.586	408	-.404	.047	-.233	-.642
309	-.466	.046	-.312	-.636	409	-.454	.055	-.261	-.651
311	-.503	.067	-.249	-.808	411	-.441	.040	-.291	-.578
312	-.483	.055	-.324	-.690	412	-.415	.039	-.265	-.552
313	-.498	.043	-.382	-.668	413	-.447	.038	-.312	-.596
314	-.467	.040	-.350	-.617	414	-.423	.038	-.309	-.575
315	-.479	.039	-.360	-.623	415	-.444	.038	-.312	-.607
316	-.452	.039	-.327	-.599	416	-.420	.039	-.290	-.588
317	-.487	.040	-.353	-.614	417	-.460	.039	-.304	-.626
318	-.457	.040	-.321	-.578	418	-.435	.042	-.268	-.586
319	-.470	.041	-.322	-.594	419	-.461	.047	-.251	-.612
321	-.526	.070	-.284	-.895	421	-.468	.044	-.294	-.618
322	-.501	.057	-.333	-.764	422	-.442	.043	-.294	-.584
323	-.507	.047	-.351	-.693	423	-.464	.041	-.335	-.610
324	-.479	.045	-.343	-.646	424	-.443	.041	-.300	-.596
325	-.514	.043	-.356	-.687	425	-.487	.042	-.350	-.615
326	-.485	.043	-.351	-.640	426	-.464	.043	-.316	-.628
327	-.497	.043	-.357	-.633	427	-.483	.045	-.287	-.724
328	-.471	.044	-.316	-.605	428	-.461	.048	-.232	-.718
329	-.498	.047	-.354	-.671	429	-.491	.048	-.329	-.673
331	-.559	.079	-.267	-.935	431	-.501	.058	-.287	-.695
332	-.537	.069	-.316	-.890	432	-.477	.056	-.269	-.658
333	-.549	.055	-.354	-.807	433	-.520	.051	-.278	-.738
334	-.524	.053	-.366	-.761	434	-.502	.051	-.261	-.727
335	-.537	.051	-.373	-.764	435	-.525	.052	-.304	-.756
336	-.510	.051	-.350	-.706	436	-.503	.054	-.316	-.740
337	-.544	.049	-.389	-.741	437	-.538	.056	-.334	-.900
338	-.516	.049	-.366	-.722	438	-.511	.057	-.300	-.824
339	-.528	.050	-.372	-.728	439	-.529	.065	-.235	-.867
341	-.629	.078	-.309	-1.285	441	-.602	.068	-.345	-.884
342	-.595	.071	-.427	-1.059	442	-.576	.067	-.342	-.875
343	-.600	.063	-.411	-.907	443	-.604	.070	-.383	-.928
344	-.573	.060	-.404	-.895	444	-.592	.076	-.373	-.969
345	-.614	.060	-.432	-.852	445	-.617	.077	-.436	-1.312
346	-.587	.059	-.429	-.831	446	-.596	.077	-.363	-1.417
347	-.598	.058	-.438	-.831	447	-.610	.071	-.406	-1.095
348	-.571	.057	-.414	-.782	448	-.579	.068	-.347	-.843
349	-.586	.060	-.384	-.799	449	-.611	.076	-.302	-.903
351	-.642	.104	-.427	-1.768	451	-.559	.074	-.373	-.840
352	-.604	.088	-.312	-1.402	452	-.530	.075	-.338	-.856
353	-.645	.086	-.442	-1.046	453	-.577	.080	-.386	-1.030
354	-.626	.096	-.403	-1.362	454	-.567	.084	-.361	-1.004
355	-.635	.096	-.424	-1.456	455	-.590	.079	-.370	-.963
356	-.603	.089	-.397	-1.332	456	-.561	.074	-.334	-.926
357	-.622	.070	-.456	-1.142	457	-.591	.067	-.366	-.830
358	-.490	.067	-.433	-.909	458	-.564	.069	-.249	-.805
359	-.601	.064	-.438	-.841	459	-.592	.073	-.281	-.900

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 30

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.626	.095	-.270	-1.007
502	-.669	.093	-.342	-1.083
503	-.469	.164	-.056	-1.026
504	-.346	.114	.192	-.709
505	-.505	.116	.012	-.897
506	-.609	.144	-.029	-1.126
507	-.544	.075	-.277	-.834
508	-.299	.143	.035	-.830
509	-.484	.085	-.187	-.782
510	-.821	.165	-.111	-1.541
511	-.812	.135	-.271	-1.443
512	-.494	.089	-.124	-1.075
513	-.468	.068	-.164	-.858
514	-.480	.061	-.183	-.736
515	-.510	.065	-.282	-.865
516	-.525	.082	-.247	-1.237
517	-.527	.068	-.317	-1.086
518	-.557	.068	-.402	-.853
519	-.553	.068	-.387	-.874
520	-.531	.067	-.352	-.834
521	-.537	.067	-.330	-.855
522	-.545	.072	-.349	-.909
523	-.240	.050	-.050	-.440
524	-.167	.040	.003	-.329
525	-.464	.071	-.064	-.729
526	-.488	.067	-.184	-.764
527	-.495	.078	-.218	-1.052
528	-.494	.070	-.253	-1.107
529	-.537	.066	-.345	-.825
530	-.567	.075	-.387	-.910
531	-.513	.071	-.336	-.811
532	-.541	.083	-.314	-.865
533	-.593	.105	-.270	-1.347
534	-.247	.074	.148	-.487
535	-.194	.042	-.053	-.424
536	-.171	.036	-.057	-.327
537	-.158	.042	-.034	-.310
538	-.072	.040	.091	-.400
539	-.081	.044	.112	-.292
540	.091	.068	.389	-.099
541	-.049	.065	.361	-.216
542	-.307	.145	.072	-1.012
543	-.212	.045	-.032	-.377
544	.002	.057	.304	-.197
545	.001	.055	.285	-.168
546	-.005	.061	.267	-.250
547	.012	.049	.316	-.134
548	.018	.051	.275	-.127
549	-.001	.058	.291	-.235
550	-.024	.039	.180	-.153



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 40

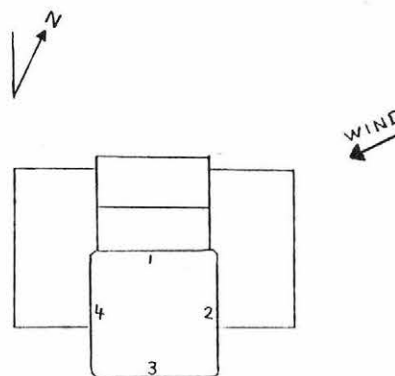
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.129	.239	.516	-1.594	201	-.479	.059	-.285	-.969
102	-.454	.207	.266	-1.135	202	-.010	.068	.233	-.292
103	-.055	.077	.174	-.574	203	.262	.097	.595	-.055
104	-.034	.052	.166	-.231	204	.392	.109	.766	.045
105	-.084	.051	.089	-.254	205	.408	.108	.709	.039
106	-.078	.046	.064	-.228	206	.496	.113	.828	.121
107	-.130	.041	.004	-.255	207	.522	.118	.868	.154
108	-.158	.037	-.031	-.273	208	.599	.124	.946	.152
109	-.310	.035	-.174	-.425	209	.562	.137	.994	-.045
111	-.398	.394	.439	-1.849	211	-.456	.049	-.276	-.670
112	-.429	.202	.245	-1.024	212	.002	.070	.239	-.256
113	-.060	.097	.208	-.449	213	.252	.091	.531	-.085
114	-.020	.062	.190	-.222	214	.410	.103	.689	.003
115	-.061	.051	.112	-.221	215	.467	.111	.753	.022
116	-.067	.044	.084	-.204	216	.557	.118	.858	.102
117	-.150	.040	.007	-.262	217	.571	.128	.972	.137
118	-.186	.034	-.062	-.288	218	.633	.134	1.037	.183
119	-.325	.032	-.220	-.435	219	.541	.132	.976	.115
121	-.541	.442	.547	-2.425	221	-.491	.053	-.292	-.762
122	-.396	.202	.322	-1.167	222	-.038	.069	.213	-.254
123	-.082	.104	.256	-.696	223	.200	.095	.542	-.069
124	-.038	.062	.225	-.375	224	.344	.107	.720	.068
125	-.085	.055	.127	-.384	225	.386	.108	.689	.069
126	-.088	.046	.102	-.286	226	.473	.114	.795	.160
127	-.153	.040	.003	-.285	227	.487	.119	.858	.167
128	-.192	.035	-.051	-.314	228	.535	.123	.943	.183
129	-.348	.034	-.214	-.463	229	.433	.133	.887	.055
131	-.469	.425	.441	-2.040	231	-.532	.062	-.332	-.834
132	-.335	.207	.272	-1.078	232	-.085	.077	.272	-.403
133	-.099	.102	.265	-.586	233	.130	.097	.519	-.167
134	-.057	.065	.234	-.299	234	.270	.109	.637	-.004
135	-.096	.051	.150	-.263	235	.315	.117	.717	.006
136	-.101	.044	.112	-.227	236	.394	.123	.815	.065
137	-.182	.041	-.004	-.330	237	.393	.128	.791	.043
138	-.216	.038	-.072	-.344	238	.441	.132	.851	.109
139	-.359	.042	-.229	-.518	239	.346	.131	.768	-.058
141	-.385	.333	.407	-1.744	241	-.621	.079	-.410	-.956
142	-.300	.189	.254	-.958	242	-.152	.069	.148	-.407
143	-.116	.096	.180	-.718	243	.053	.086	.456	-.183
144	-.073	.057	.164	-.458	244	.173	.094	.607	-.053
145	-.121	.050	.069	-.365	245	.204	.109	.670	-.055
146	-.123	.043	.042	-.305	246	.278	.115	.726	.014
147	-.187	.040	-.037	-.307	247	.284	.120	.738	-.003
148	-.228	.040	-.074	-.346	248	.328	.124	.745	.036
149	-.408	.048	-.239	-.599	249	.225	.118	.706	-.111
151	-.130	.206	.538	-.970	251	-.665	.123	-.414	-1.291
152	-.078	.143	.360	-.669	252	-.218	.066	.068	-.433
153	-.055	.076	.241	-.326	253	-.061	.064	.233	-.237
154	-.034	.057	.204	-.211	254	.058	.068	.351	-.101
155	-.083	.048	.125	-.235	255	.116	.079	.434	-.068
156	-.097	.042	.089	-.225	256	.205	.089	.555	.013
157	-.185	.041	-.023	-.330	257	.188	.083	.490	0.000
158	-.238	.041	-.091	-.394	258	.223	.084	.538	.037
159	-.416	.057	-.225	-.657	259	.153	.090	.531	-.069

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 40

PRFSSURE TAP NUMBER	MFAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.548	.098	-.254	-1.106	401	-.421	.044	-.285	-.596
302	-.512	.079	-.289	-1.002	402	-.389	.043	-.268	-.564
303	-.501	.059	-.325	-.752	403	-.413	.042	-.281	-.582
304	-.463	.054	-.257	-.750	404	-.390	.043	-.272	-.560
305	-.474	.047	-.322	-.637	405	-.416	.044	-.278	-.567
306	-.444	.047	-.301	-.628	406	-.386	.045	-.209	-.544
307	-.455	.047	-.322	-.610	407	-.407	.048	-.232	-.609
308	-.426	.048	-.289	-.589	408	-.386	.054	-.219	-.616
309	-.457	.051	-.276	-.657	409	-.445	.063	-.209	-.709
311	-.520	.085	-.249	-.983	411	-.425	.045	-.259	-.809
312	-.492	.064	-.311	-.798	412	-.394	.039	-.245	-.543
313	-.500	.051	-.333	-.744	413	-.437	.038	-.301	-.564
314	-.460	.047	-.319	-.670	414	-.411	.038	-.288	-.547
315	-.470	.046	-.305	-.694	415	-.434	.038	-.307	-.560
316	-.437	.046	-.258	-.674	416	-.407	.039	-.172	-.573
317	-.460	.045	-.249	-.640	417	-.441	.045	-.265	-.586
318	-.426	.046	-.209	-.611	418	-.415	.048	-.226	-.577
319	-.441	.045	-.215	-.620	419	-.448	.055	-.173	-.725
321	-.554	.090	-.275	-1.214	421	-.458	.043	-.312	-.590
322	-.521	.069	-.331	-.898	422	-.426	.042	-.288	-.553
323	-.517	.053	-.345	-.770	423	-.450	.041	-.308	-.596
324	-.480	.049	-.335	-.751	424	-.427	.041	-.288	-.577
325	-.506	.048	-.345	-.752	425	-.466	.049	-.295	-.629
326	-.473	.048	-.301	-.718	426	-.438	.051	-.249	-.617
327	-.488	.048	-.331	-.680	427	-.461	.053	-.285	-.649
328	-.458	.047	-.312	-.641	428	-.438	.056	-.255	-.648
329	-.487	.048	-.312	-.677	429	-.484	.059	-.202	-.782
331	-.566	.087	-.312	-.963	431	-.483	.060	-.285	-.731
332	-.534	.074	-.323	-.941	432	-.455	.059	-.259	-.739
333	-.559	.067	-.380	-.886	433	-.491	.048	-.334	-.728
334	-.525	.063	-.369	-.787	434	-.467	.049	-.319	-.771
335	-.539	.060	-.386	-.799	435	-.493	.049	-.345	-.774
336	-.510	.059	-.358	-.794	436	-.468	.051	-.271	-.749
337	-.538	.052	-.368	-.775	437	-.507	.056	-.315	-.746
338	-.509	.051	-.335	-.715	438	-.483	.058	-.274	-.723
339	-.527	.051	-.349	-.728	439	-.519	.065	-.246	-.865
341	-.631	.109	-.345	-1.411	441	-.563	.068	-.289	-.799
342	-.593	.092	-.342	-1.170	442	-.534	.066	-.301	-.766
343	-.601	.083	-.385	-1.080	443	-.569	.064	-.355	-.888
344	-.572	.084	-.372	-1.179	444	-.556	.067	-.338	-.840
345	-.606	.081	-.418	-1.062	445	-.584	.084	-.322	-1.125
346	-.577	.078	-.385	-1.074	446	-.543	.082	-.294	-1.027
347	-.590	.071	-.392	-.948	447	-.548	.078	-.256	-.875
348	-.559	.068	-.362	-.889	448	-.512	.075	-.132	-.809
349	-.590	.073	-.375	-1.066	449	-.568	.081	-.248	-.888
351	-.592	.112	-.242	-1.270	451	-.597	.110	-.347	-1.203
352	-.559	.093	-.208	-1.094	452	-.572	.118	-.325	-1.308
353	-.614	.092	-.291	-1.023	453	-.637	.140	-.370	-1.642
354	-.607	.096	-.227	-1.066	454	-.610	.120	-.368	-1.178
355	-.633	.100	-.296	-1.103	455	-.613	.106	-.391	-1.228
356	-.606	.100	-.372	-1.096	456	-.554	.086	-.115	-.901
357	-.628	.090	-.413	-1.117	457	-.549	.090	-.100	-.870
358	-.591	.085	-.386	-1.019	458	-.493	.090	-.120	-.807
359	-.607	.082	-.405	-1.005	459	-.525	.088	-.213	-.964

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 40

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.676	.089	-.365	-1.237
502	-.660	.077	-.401	-.972
503	-.659	.122	-.139	-1.354
504	-.461	.111	.069	-.860
505	-.575	.109	.039	-1.019
506	-.664	.113	-.017	-1.165
507	-.491	.098	.257	-.779
508	-.236	.097	.063	-.671
509	-.575	.107	-.061	-.923
510	-.709	.116	-.341	-1.302
511	-.664	.141	-.116	-1.226
512	-.571	.123	-.176	-1.083
513	-.452	.097	-.137	-.960
514	-.354	.093	-.047	-.804
515	-.404	.087	-.102	-.868
516	-.401	.106	-.090	-.973
517	-.415	.101	-.118	-.858
518	-.462	.105	-.127	-.833
519	-.539	.106	-.194	-1.066
520	-.569	.122	-.295	-1.329
521	-.584	.131	-.277	-1.475
522	-.616	.176	-.292	-1.766
523	-.155	.059	.153	-.372
524	-.082	.046	.098	-.279
525	-.366	.087	-.055	-.713
526	-.408	.085	-.178	-.896
527	-.396	.095	-.150	-1.079
528	-.395	.091	-.156	-1.021
529	-.450	.096	-.169	-.933
530	-.502	.103	-.066	-.945
531	-.512	.106	-.193	-1.081
532	-.557	.136	-.229	-1.740
533	-.625	.153	-.296	-1.545
534	-.123	.114	.327	-.551
535	-.119	.067	.318	-.417
536	-.086	.043	.123	-.238
537	-.087	.039	.125	-.214
538	-.115	.033	-.018	-.484
539	-.137	.039	.015	-.356
540	.034	.062	.357	-.168
541	-.087	.062	.241	-.290
542	-.432	.155	-.074	-1.437
543	-.281	.042	-.121	-.461
544	-.080	.050	.123	-.255
545	-.095	.059	.165	-.368
546	-.109	.058	.101	-.331
547	-.053	.044	.150	-.182
548	-.069	.048	.155	-.235
549	-.099	.047	.104	-.295
550	-.070	.026	.061	-.155



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 50

PRESSURE TAP NUMER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-1.161	.397	.016	-2.519	201	-.484	.084	-.284	-1.154
102	-.976	.153	-.392	-1.604	202	.113	.087	.392	-.351
103	-.476	.173	-.115	-1.169	203	.368	.113	.703	-.066
104	-.265	.087	-.044	-.802	204	.482	.123	.820	.039
105	-.257	.059	.032	-.772	205	.495	.122	.869	.053
106	-.214	.042	-.079	-.540	206	.563	.126	.926	.113
107	-.244	.036	-.097	-.480	207	.558	.129	.922	.095
108	-.243	.034	-.116	-.437	208	.587	.131	.952	.107
109	-.348	.038	-.199	-.497	209	.406	.132	1.045	-.093
111	-1.569	.442	-.156	-2.717	211	-.454	.075	-.235	-1.419
112	-.930	.180	-.285	-1.835	212	.124	.091	.493	-.183
113	-.600	.266	-.056	-1.671	213	.373	.105	.677	.027
114	-.347	.181	-.052	-1.270	214	.520	.117	.873	.153
115	-.268	.098	.049	-.977	215	.557	.123	.944	.153
116	-.215	.064	.037	-.911	216	.625	.128	1.015	.196
117	-.265	.054	.077	-.755	217	.576	.131	.971	.183
118	-.265	.041	.003	-.614	218	.583	.131	.978	.175
119	-.355	.039	-.150	-.577	219	.328	.125	.750	-.066
121	-1.372	.481	-.023	-2.933	221	-.493	.083	-.252	-1.216
122	-.847	.215	-.129	-1.706	222	.077	.085	.412	-.178
123	-.582	.279	-.044	-1.637	223	.316	.110	.780	.007
124	-.368	.220	-.003	-1.356	224	.449	.121	.942	.102
125	-.317	.149	-.042	-1.414	225	.470	.133	.866	.090
126	-.252	.100	.011	-1.020	226	.537	.137	.942	.158
127	-.266	.069	-.023	-.948	227	.519	.136	.928	.142
128	-.266	.055	.052	-.811	228	.516	.133	.987	.107
129	-.372	.051	-.176	-.742	229	.237	.125	.660	-.198
131	-1.228	.470	-.070	-2.933	231	-.547	.098	-.309	-1.492
132	-.797	.241	-.180	-1.869	232	.027	.098	.375	-.269
133	-.570	.273	-.080	-1.550	233	.238	.108	.584	-.050
134	-.384	.226	-.052	-1.434	234	.368	.117	.746	.072
135	-.317	.162	-.036	-1.291	235	.393	.121	.805	.087
136	-.251	.112	.017	-1.044	236	.450	.123	.889	.150
137	-.284	.070	-.039	-.738	237	.429	.128	.872	.077
138	-.277	.052	-.004	-.713	238	.434	.128	.835	.084
139	-.368	.049	-.176	-.599	239	.200	.125	.604	-.272
141	-.922	.391	.115	-2.476	241	-.683	.146	-.385	-1.562
142	-.625	.205	-.073	-1.482	242	-.051	.080	.266	-.316
143	-.420	.221	-.016	-1.494	243	.159	.098	.543	-.130
144	-.283	.163	-.004	-1.199	244	.267	.107	.686	-.010
145	-.282	.107	-.073	-.838	245	.264	.110	.719	-.003
146	-.234	.072	-.059	-.685	246	.322	.112	.756	.046
147	-.265	.057	-.034	-.630	247	.306	.112	.737	.020
148	-.268	.052	-.063	-.566	248	.314	.112	.790	.029
149	-.371	.058	-.119	-.672	249	.123	.120	.613	-.199
151	-.574	.319	.258	-2.037	251	-.730	.176	-.372	-1.631
152	-.384	.211	.159	-1.369	252	-.155	.070	.130	-.388
153	-.270	.125	.014	-.793	253	.011	.072	.315	-.188
154	-.190	.084	.007	-.594	254	.127	.077	.465	-.054
155	-.203	.061	-.039	-.497	255	.174	.086	.590	-.026
156	-.189	.049	-.062	-.413	256	.249	.094	.699	.029
157	-.271	.045	-.138	-.481	257	.215	.092	.571	.010
158	-.296	.045	-.156	-.518	258	.214	.086	.557	.007
159	-.441	.065	-.236	-.738	259	.042	.092	.493	-.200

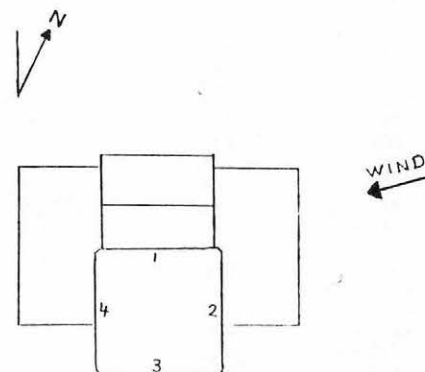


WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION, 50

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.566	.135	-.166	-1.291	401	-.400	.052	-.200	-.619
302	-.524	.110	-.167	-1.094	402	-.363	.051	-.175	-.537
303	-.507	.078	-.222	-.910	403	-.388	.050	-.181	-.565
304	-.463	.074	-.225	-.828	404	-.359	.051	-.197	-.547
305	-.487	.069	-.268	-.792	405	-.402	.053	-.237	-.602
306	-.451	.067	-.270	-.792	406	-.372	.055	-.200	-.579
307	-.463	.064	-.283	-.798	407	-.397	.058	-.185	-.609
308	-.427	.061	-.251	-.806	408	-.378	.064	-.164	-.608
309	-.459	.060	-.289	-.708	409	-.436	.072	-.181	-.753
311	-.561	.135	-.254	-1.371	411	-.405	.046	-.256	-.569
312	-.517	.107	-.254	-1.306	412	-.371	.044	-.240	-.532
313	-.526	.073	-.307	-.939	413	-.412	.044	-.257	-.569
314	-.474	.066	-.290	-.782	414	-.383	.044	-.244	-.542
315	-.480	.062	-.287	-.897	415	-.405	.043	-.267	-.567
316	-.442	.059	-.254	-.783	416	-.376	.044	-.224	-.549
317	-.470	.056	-.265	-.769	417	-.414	.049	-.240	-.642
318	-.432	.054	-.201	-.710	418	-.386	.054	-.157	-.611
319	-.447	.052	-.280	-.708	419	-.432	.066	-.194	-.756
321	-.589	.146	-.244	-2.014	421	-.424	.051	-.256	-.669
322	-.541	.114	-.222	-1.528	422	-.387	.046	-.228	-.569
323	-.529	.083	-.261	-1.008	423	-.411	.045	-.256	-.579
324	-.486	.080	-.237	-1.070	424	-.384	.046	-.228	-.565
325	-.509	.069	-.309	-.893	425	-.435	.049	-.279	-.608
326	-.471	.066	-.267	-.877	426	-.406	.050	-.244	-.601
327	-.484	.063	-.286	-.830	427	-.430	.053	-.257	-.632
328	-.450	.060	-.254	-.782	428	-.409	.058	-.193	-.613
329	-.482	.063	-.287	-.883	429	-.472	.071	-.193	-.787
331	-.586	.129	-.267	-1.450	431	-.434	.062	-.207	-.723
332	-.542	.105	-.214	-1.316	432	-.400	.058	-.205	-.708
333	-.568	.087	-.314	-1.107	433	-.442	.053	-.289	-.661
334	-.531	.081	-.290	-.974	434	-.416	.053	-.217	-.644
335	-.549	.079	-.300	-1.043	435	-.440	.052	-.240	-.674
336	-.518	.077	-.309	-.994	436	-.417	.053	-.214	-.638
337	-.543	.068	-.343	-1.011	437	-.467	.057	-.276	-.694
338	-.508	.064	-.316	-.909	438	-.450	.061	-.218	-.658
339	-.527	.062	-.333	-.886	439	-.500	.072	-.279	-.760
341	-.633	.135	-.306	-1.332	441	-.441	.078	-.080	-.783
342	-.587	.113	-.235	-1.098	442	-.416	.071	-.167	-.731
343	-.605	.107	-.214	-1.044	443	-.469	.070	-.250	-.902
344	-.583	.105	-.293	-1.138	444	-.449	.077	-.204	-.784
345	-.624	.106	-.228	-1.336	445	-.466	.077	-.214	-.849
346	-.592	.100	-.205	-1.215	446	-.430	.075	-.161	-.812
347	-.609	.096	-.270	-1.173	447	-.473	.088	-.180	-.948
348	-.578	.093	-.252	-1.231	448	-.483	.101	-.177	-.991
349	-.610	.087	-.377	-1.212	449	-.554	.099	-.270	-.924
351	-.421	.127	-.098	-1.055	451	-.586	.121	-.295	-1.394
352	-.396	.118	-.066	-.867	452	-.568	.127	-.276	-1.287
353	-.498	.124	-.058	-.916	453	-.611	.131	-.295	-1.185
354	-.531	.122	-.113	-.965	454	-.543	.107	-.274	-1.151
355	-.607	.125	-.160	-1.070	455	-.529	.101	-.105	-.965
356	-.616	.129	-.126	-1.163	456	-.424	.116	.121	-.817
357	-.657	.127	-.215	-1.171	457	-.414	.105	-.062	-.733
358	-.630	.119	-.218	-1.233	458	-.422	.103	-.128	-.865
359	-.654	.121	-.344	-1.627	459	-.417	.100	-.177	-.835

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 50

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.678	.101	-.387	-1.103
502	-.668	.085	-.411	-.944
503	-.683	.104	-.315	-1.182
504	-.506	.126	.097	-1.201
505	-.616	.133	.053	-1.250
506	-.708	.121	-.102	-1.216
507	-.435	.108	-.055	-.837
508	-.368	.105	-.063	-.733
509	-.648	.119	-.147	-1.082
510	-.718	.108	-.355	-1.329
511	-.653	.112	-.270	-1.372
512	-.631	.131	-.197	-1.411
513	-.428	.104	.111	-.804
514	-.287	.079	-.013	-.738
515	-.323	.068	-.139	-.614
516	-.285	.075	-.062	-.722
517	-.257	.074	-.069	-.612
518	-.270	.106	.010	-.779
519	-.385	.141	-.033	-1.132
520	-.567	.149	-.113	-1.514
521	-.664	.155	-.259	-1.556
522	-.751	.212	-.268	-1.834
523	-.097	.060	.133	-.303
524	-.024	.053	.210	-.207
525	-.315	.083	-.045	-.679
526	-.327	.068	-.145	-.692
527	-.295	.067	-.054	-.662
528	-.263	.061	-.058	-.680
529	-.288	.087	-.109	-.707
530	-.339	.113	-.030	-.796
531	-.444	.130	.110	-1.255
532	-.590	.169	-.193	-1.448
533	-.686	.212	-.239	-1.969
534	-.013	.103	.365	-.511
535	-.037	.113	.410	-.408
536	-.020	.053	.235	-.158
537	-.046	.046	.181	-.197
538	-.130	.033	.029	-.349
539	-.166	.046	0.000	-.504
540	-.009	.060	.301	-.194
541	-.086	.082	.359	-.400
542	-.531	.162	-.158	-1.179
543	-.309	.048	-.130	-.456
544	-.149	.050	.091	-.330
545	-.184	.055	.068	-.404
546	-.211	.057	-.026	-.411
547	-.108	.036	.068	-.271
548	-.133	.039	.078	-.278
549	-.178	.047	-.017	-.378
550	-.105	.022	-.009	-.195



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 60

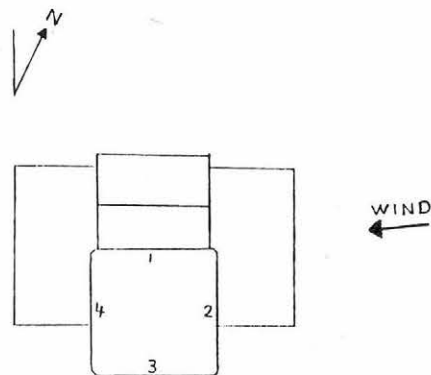
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-1.669	.459	-.546	-3.053	201	-.628	.225	-.252	-2.329
102	-1.227	.245	-.436	-2.273	202	.172	.105	.456	-.231
103	-1.041	.251	-.216	-2.035	203	.453	.121	.803	-.043
104	-.772	.226	-.151	-1.557	204	.522	.126	.908	.024
105	-.579	.190	-.090	-1.331	205	.565	.126	.918	.170
106	-.461	.148	-.072	-1.259	206	.578	.128	.957	.164
107	-.381	.114	-.057	-1.009	207	.568	.126	.952	.144
108	-.346	.091	-.003	-.867	208	.521	.123	.914	.102
109	-.342	.078	-.082	-.746	209	.202	.116	.736	-.148
111	-1.239	.472	-.368	-3.014	211	-.565	.193	-.206	-1.857
112	-1.018	.228	-.305	-2.014	212	.173	.109	.499	-.235
113	-.980	.231	-.192	-2.199	213	.457	.116	.908	.086
114	-.893	.258	-.021	-2.000	214	.550	.123	1.002	.127
115	-.765	.276	.013	-1.817	215	.586	.126	.988	.117
116	-.634	.266	.015	-1.503	216	.600	.129	1.001	.102
117	-.506	.242	.126	-1.359	217	.582	.136	.988	.190
118	-.426	.191	.133	-1.352	218	.509	.133	.915	.084
119	-.382	.141	.130	-1.145	219	.177	.114	.626	-.253
121	-1.087	.435	-.338	-3.051	221	-.622	.241	-.204	-2.251
122	-.934	.258	-.343	-3.027	222	.124	.112	.458	-.283
123	-.900	.246	-.205	-2.568	223	.390	.120	.794	.018
124	-.834	.258	0.000	-1.834	224	.477	.125	.835	.099
125	-.711	.279	-.003	-2.076	225	.497	.123	.914	.081
126	-.614	.259	.088	-1.564	226	.510	.123	.914	.121
127	-.513	.232	.067	-1.338	227	.488	.121	.881	.117
128	-.438	.201	.118	-1.267	228	.419	.117	.808	.013
129	-.414	.169	.235	-1.255	229	.110	.116	.520	-.332
131	-1.130	.437	-.377	-3.066	231	-.691	.241	-.283	-2.183
132	-.943	.270	-.335	-2.476	232	.061	.108	.400	-.330
133	-.861	.259	-.240	-2.108	233	.301	.119	.706	.003
134	-.754	.250	-.136	-1.674	234	.381	.124	.777	.084
135	-.637	.247	-.051	-1.433	235	.414	.124	.797	.098
136	-.541	.235	.126	-1.566	236	.426	.125	.811	.101
137	-.470	.209	.019	-1.557	237	.394	.126	.917	.067
138	-.418	.169	.028	-1.207	238	.326	.121	.780	-.004
139	-.396	.138	-.030	-1.343	239	.034	.110	.498	-.304
141	-1.073	.388	-.356	-2.756	241	-.875	.289	-.326	-2.288
142	-.855	.244	-.344	-2.076	242	-.021	.099	.357	-.364
143	-.753	.247	-.214	-1.897	243	.220	.109	.601	-.059
144	-.639	.254	-.027	-1.801	244	.286	.112	.659	.018
145	-.492	.215	-.076	-1.442	245	.289	.107	.712	.046
146	-.419	.183	.010	-1.425	246	.298	.109	.702	.044
147	-.361	.146	-.027	-1.070	247	.282	.109	.715	.022
148	-.329	.117	-.036	-.969	248	.231	.110	.640	-.052
149	-.344	.111	.045	-.999	249	-.014	.112	.385	-.372
151	-.973	.373	-.180	-2.650	251	-.858	.271	-.218	-2.314
152	-.743	.271	-.150	-1.882	252	-.104	.094	.321	-.401
153	-.531	.197	-.129	-1.479	253	.082	.076	.357	-.124
154	-.425	.157	-.120	-1.115	254	.155	.080	.469	-.043
155	-.350	.124	-.051	-.958	255	.216	.089	.569	.009
156	-.314	.101	-.058	-.879	256	.247	.095	.632	.025
157	-.310	.083	-.051	-.853	257	.238	.101	.751	.024
158	-.317	.067	-.064	-.626	258	.172	.090	.637	-.013
159	-.360	.059	-.132	-.687	259	-.066	.086	.382	-.355

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 60

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.554	.207	-.064	-1.697	401	-.382	.101	.005	-1.066
302	-.547	.175	.066	-1.396	402	-.367	.089	-.057	-1.003
303	-.530	.148	.222	-1.308	403	-.363	.084	-.086	-.795
304	-.560	.155	.004	-1.252	404	-.368	.085	-.113	-.815
305	-.559	.137	-.072	-1.408	405	-.382	.078	-.170	-.973
306	-.559	.129	-.174	-1.302	406	-.391	.079	-.176	-.946
307	-.539	.114	-.228	-1.448	407	-.393	.081	-.167	-.952
308	-.523	.099	-.264	-1.252	408	-.406	.089	-.141	-.919
309	-.534	.121	-.110	-1.623	409	-.432	.106	-.033	-.980
311	-.609	.241	-.088	-2.160	411	-.403	.123	-.017	-1.332
312	-.582	.188	-.004	-1.620	412	-.372	.095	-.080	-.834
313	-.544	.151	.039	-1.387	413	-.369	.089	-.110	-1.061
314	-.539	.145	-.046	-1.383	414	-.372	.080	-.183	-.902
315	-.538	.143	-.074	-1.417	415	-.360	.071	-.191	-.770
316	-.533	.137	-.173	-1.463	416	-.355	.065	-.167	-.702
317	-.509	.120	-.028	-1.536	417	-.362	.065	-.140	-.756
318	-.500	.117	-.158	-2.114	418	-.377	.071	-.165	-.797
319	-.487	.112	-.243	-1.673	419	-.419	.101	-.141	-.926
321	-.576	.235	-.124	-1.837	421	-.454	.199	.056	-1.622
322	-.553	.179	.018	-1.375	422	-.397	.113	-.110	-.943
323	-.530	.150	-.040	-1.244	423	-.381	.090	-.143	-.800
324	-.544	.159	.003	-1.399	424	-.373	.080	-.123	-.872
325	-.558	.164	-.049	-1.432	425	-.346	.062	-.165	-.612
326	-.562	.161	-.055	-1.520	426	-.347	.058	-.153	-.556
327	-.548	.155	-.216	-1.573	427	-.347	.062	-.143	-.649
328	-.538	.155	-.077	-1.579	428	-.361	.077	-.132	-.762
329	-.542	.154	-.153	-1.976	429	-.406	.105	-.117	-.944
331	-.529	.202	-.104	-1.539	431	-.410	.130	-.072	-1.198
332	-.513	.172	-.031	-1.281	432	-.379	.096	-.128	-.861
333	-.546	.149	-.101	-1.152	433	-.378	.080	-.174	-.755
334	-.581	.144	-.137	-1.344	434	-.376	.070	-.209	-.704
335	-.605	.145	-.179	-1.405	435	-.367	.064	-.183	-.668
336	-.616	.147	-.246	-1.405	436	-.368	.065	-.186	-.680
337	-.599	.149	-.089	-1.636	437	-.370	.066	-.132	-.654
338	-.594	.144	-.285	-1.830	438	-.385	.075	-.188	-.705
339	-.584	.142	-.274	-1.874	439	-.410	.098	-.113	-.845
341	-.436	.129	-.136	-1.100	441	-.353	.098	-.053	-.893
342	-.423	.137	-.113	-1.036	442	-.348	.084	-.131	-.693
343	-.450	.160	-.033	-1.134	443	-.361	.080	-.162	-.687
344	-.496	.169	.031	-1.161	444	-.356	.075	-.144	-.674
345	-.564	.168	-.036	-1.344	445	-.363	.072	-.162	-.643
346	-.616	.164	-.082	-1.359	446	-.384	.078	-.168	-.779
347	-.651	.163	-.086	-1.453	447	-.408	.092	-.185	-.849
348	-.677	.171	-.238	-1.660	448	-.408	.095	-.189	-.849
349	-.666	.186	-.286	-2.047	449	-.386	.099	-.144	-.861
351	-.292	.075	-.074	-.700	451	-.422	.089	-.137	-.845
352	-.259	.072	-.022	-.586	452	-.425	.088	-.164	-1.087
353	-.255	.102	.106	-.921	453	-.437	.089	-.197	-.965
354	-.288	.129	.258	-1.103	454	-.434	.091	-.161	-.910
355	-.342	.160	.042	-1.187	455	-.378	.099	.113	-.761
356	-.416	.186	0.000	-1.089	456	-.301	.095	.014	-.642
357	-.500	.210	-.003	-1.296	457	-.349	.101	-.036	-.843
358	-.595	.192	-.188	-1.545	458	-.447	.121	-.159	-1.051
359	-.707	.200	-.279	-1.760	459	-.320	.070	-.135	-.630

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 60

PRESSURE TAP NUMBR	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.698	.121	-.379	-1.585
502	-.733	.108	-.340	-1.174
503	-.741	.139	-.144	-1.482
504	-.456	.168	.247	-1.111
505	-.647	.162	.044	-1.501
506	-.743	.146	-.213	-1.396
507	-.346	.137	.168	-.860
508	-.443	.127	.009	-.851
509	-.654	.164	-.042	-1.387
510	-.756	.122	-.391	-1.341
511	-.783	.140	-.329	-1.386
512	-.695	.161	.036	-1.370
513	-.240	.099	.201	-.678
514	-.312	.091	-.073	-.693
515	-.289	.066	-.108	-.562
516	-.252	.067	-.067	-.574
517	-.182	.048	.019	-.390
518	-.129	.052	.075	-.374
519	-.172	.098	.168	-.577
520	-.425	.172	-.031	-1.156
521	-.525	.174	-.144	-1.293
522	-.570	.215	-.169	-1.637
523	-.020	.058	.206	-.195
524	.040	.065	.337	-.189
525	-.282	.093	.053	-.837
526	-.304	.079	-.105	-.782
527	-.263	.077	-.020	-.742
528	-.183	.043	-.037	-.403
529	-.148	.045	.024	-.437
530	-.156	.070	.125	-.558
531	-.263	.159	.100	-1.168
532	-.524	.212	-.038	-1.549
533	-.579	.243	-.037	-2.211
534	.057	.076	.356	-.342
535	.101	.123	.662	-.353
536	.027	.053	.263	-.202
537	-.012	.051	.175	-.191
538	-.156	.043	-.004	-.356
539	-.222	.066	-.053	-.555
540	-.058	.062	.195	-.285
541	-.142	.096	.343	-.578
542	-.437	.113	-.167	-.917
543	-.299	.062	-.095	-.624
544	-.195	.048	-.019	-.393
545	-.248	.058	-.080	-.496
546	-.308	.069	-.087	-.612
547	-.136	.036	.014	-.282
548	-.171	.040	-.021	-.362
549	-.245	.052	-.057	-.545
550	-.123	.022	-.006	-.209



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 70

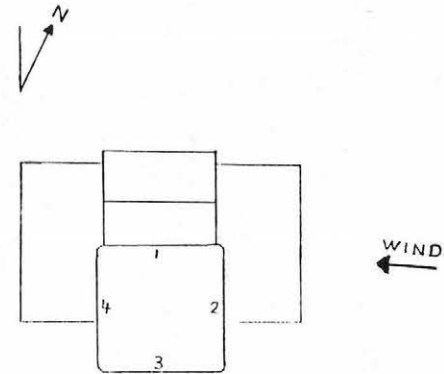
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.644	.196	-.256	-2.190	201	-1.591	.424	-.475	-2.739
102	-.609	.150	-.258	-1.665	202	.133	.118	.528	-.285
103	-.611	.151	-.234	-1.530	203	.496	.124	.870	.064
104	-.623	.156	-.136	-1.494	204	.556	.128	.881	.113
105	-.642	.165	-.060	-1.409	205	.575	.126	.971	.111
106	-.630	.166	.020	-1.435	206	.573	.124	.994	.099
107	-.591	.166	.059	-1.500	207	.545	.122	.966	.086
108	-.546	.166	.091	-1.292	208	.485	.120	.876	.035
109	-.536	.179	.268	-1.427	209	.223	.113	.580	-.374
111	-.567	.186	-.200	-2.164	211	-1.264	.425	-.294	-2.661
112	-.550	.157	-.211	-1.665	212	.150	.107	.566	-.219
113	-.580	.169	-.095	-1.699	213	.497	.120	.865	.124
114	-.590	.170	-.012	-1.699	214	.587	.124	.968	.225
115	-.588	.167	.022	-1.368	215	.609	.123	.971	.263
116	-.580	.172	.026	-1.526	216	.607	.122	.959	.260
117	-.577	.166	-.015	-1.438	217	.560	.131	.927	.089
118	-.570	.161	-.051	-1.252	218	.478	.125	.871	.047
119	-.601	.201	-.003	-1.530	219	.195	.107	.569	-.241
121	-.587	.204	-.173	-2.997	221	-1.154	.386	-.319	-2.669
122	-.563	.171	-.193	-1.820	222	.118	.115	.513	-.260
123	-.568	.173	-.145	-1.915	223	.443	.127	.854	.083
124	-.580	.183	-.092	-1.722	224	.527	.132	.975	.139
125	-.595	.178	-.044	-1.513	225	.524	.133	.924	.167
126	-.594	.182	-.076	-1.529	226	.521	.133	.900	.149
127	-.576	.181	.048	-1.533	227	.483	.130	.898	.101
128	-.568	.184	.177	-1.612	228	.402	.127	.830	.041
129	-.592	.227	.028	-2.035	229	.138	.115	.504	-.306
131	-.618	.196	-.269	-2.901	231	-1.127	.360	-.332	-2.661
132	-.591	.168	-.247	-2.275	232	.069	.116	.510	-.298
133	-.609	.180	-.173	-1.983	233	.369	.123	.737	.012
134	-.611	.175	-.164	-1.822	234	.442	.126	.854	.063
135	-.601	.170	-.057	-1.920	235	.458	.126	.883	.095
136	-.584	.168	.072	-1.529	236	.453	.127	.871	.085
137	-.574	.170	.004	-1.614	237	.386	.127	.773	.054
138	-.540	.156	-.050	-1.456	238	.306	.120	.662	-.006
139	-.535	.181	.048	-1.549	239	.046	.106	.387	-.338
141	-.716	.233	-.304	-2.277	241	-1.068	.343	-.180	-2.497
142	-.654	.177	-.290	-1.725	242	.020	.113	.460	-.291
143	-.648	.177	-.230	-1.488	243	.260	.113	.690	-.026
144	-.639	.176	-.139	-1.476	244	.313	.116	.789	.020
145	-.611	.161	-.104	-1.346	245	.339	.118	.769	.016
146	-.543	.156	-.015	-1.296	246	.334	.118	.756	.023
147	-.541	.152	-.041	-1.118	247	.300	.116	.710	-.039
148	-.499	.149	-.035	-1.021	248	.229	.112	.615	-.118
149	-.506	.159	-.050	-1.255	249	-.020	.107	.425	-.344
151	-.781	.301	-.215	-2.559	251	-.844	.331	-.099	-2.604
152	-.660	.220	-.179	-1.803	252	-.042	.094	.282	-.374
153	-.611	.174	-.173	-1.539	253	.122	.082	.501	-.088
154	-.560	.154	-.146	-1.503	254	.184	.085	.541	0.000
155	-.498	.141	-.126	-1.233	255	.232	.093	.583	.025
156	-.444	.126	-.088	-1.270	256	.255	.098	.618	.022
157	-.393	.108	-.018	-1.108	257	.201	.245	.645	-1.564
158	-.371	.043	-.098	-1.026	258	.172	.096	.551	-.060
159	-.369	.077	-.089	-.698	259	-.065	.102	.297	-.409

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 70

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.426	.112	-.051	-1.024	401	-.538	.197	-.066	-1.597
302	-.402	.107	.088	-.957	402	-.445	.114	-.060	-1.037
303	-.408	.137	.092	-1.027	403	-.413	.092	-.064	-.903
304	-.472	.166	.048	-1.277	404	-.399	.086	-.115	-.753
305	-.599	.214	.114	-1.369	405	-.405	.084	-.179	-.788
306	-.729	.223	-.057	-1.400	406	-.399	.084	-.167	-.798
307	-.863	.230	.001	-2.106	407	-.392	.085	-.139	-.849
308	-.997	.251	-.269	-2.000	408	-.385	.087	-.090	-.771
309	-1.052	.266	-.220	-2.258	409	-.396	.103	-.013	-1.052
311	-.484	.201	.038	-1.772	411	-.624	.253	-.049	-1.881
312	-.464	.189	.230	-1.350	412	-.444	.114	-.096	-.931
313	-.498	.205	.147	-1.439	413	-.382	.075	-.143	-.716
314	-.593	.227	.135	-1.574	414	-.367	.064	-.112	-.644
315	-.688	.235	-.007	-1.646	415	-.361	.063	-.143	-.638
316	-.776	.236	-.028	-1.748	416	-.361	.069	-.185	-.644
317	-.859	.239	-.051	-1.770	417	-.384	.079	-.161	-1.161
318	-.889	.227	-.072	-2.062	418	-.386	.090	-.094	-1.104
319	-.884	.229	-.169	-2.078	419	-.389	.108	-.028	-.971
321	-.455	.202	.157	-1.607	421	-.589	.268	-.039	-1.820
322	-.437	.185	.167	-1.281	422	-.416	.118	-.105	-1.110
323	-.476	.211	.059	-1.513	423	-.363	.077	-.129	-.910
324	-.556	.250	.147	-1.636	424	-.343	.061	-.164	-.767
325	-.663	.258	.239	-1.765	425	-.351	.061	-.179	-.894
326	-.757	.252	.021	-1.723	426	-.352	.064	-.173	-.771
327	-.826	.248	-.043	-1.997	427	-.356	.072	-.152	-.749
328	-.881	.253	-.122	-2.180	428	-.358	.086	-.139	-.897
329	-.903	.279	-.202	-2.524	429	-.352	.096	.078	-1.615
331	-.402	.126	-.018	-1.425	431	-.502	.210	-.111	-1.808
332	-.369	.131	.050	-1.109	432	-.395	.106	-.114	-1.224
333	-.410	.175	.144	-1.249	433	-.399	.084	-.106	-.704
334	-.465	.204	-.016	-1.291	434	-.383	.070	-.175	-.643
335	-.538	.233	-.004	-1.517	435	-.377	.069	-.170	-.713
336	-.637	.255	.031	-1.717	436	-.373	.071	-.194	-.795
337	-.748	.276	-.122	-1.877	437	-.373	.070	-.157	-.885
338	-.860	.274	-.201	-2.051	438	-.372	.076	-.136	-.777
339	-.932	.290	-.255	-2.144	439	-.373	.089	-.100	-.955
341	-.397	.090	-.169	-.819	441	-.472	.169	-.099	-1.415
342	-.330	.077	-.057	-.745	442	-.404	.106	-.151	-.843
343	-.294	.102	.007	-.833	443	-.382	.085	-.121	-.698
344	-.304	.132	.012	-1.040	444	-.371	.077	-.187	-.669
345	-.354	.192	.069	-1.209	445	-.379	.076	-.185	-.702
346	-.428	.230	-.025	-1.538	446	-.388	.083	-.203	-.771
347	-.534	.258	-.088	-1.720	447	-.393	.087	-.127	-.855
348	-.687	.275	-.085	-2.040	448	-.380	.081	-.197	-.819
349	-.909	.297	-.242	-2.339	449	-.367	.075	-.179	-.708
351	-.321	.084	-.087	-.751	451	-.401	.094	-.133	-1.034
352	-.254	.060	-.081	-.538	452	-.394	.089	-.169	-.903
353	-.214	.060	.092	-.624	453	-.409	.091	-.193	-.840
354	-.200	.064	.132	-.534	454	-.397	.094	-.109	-.831
355	-.211	.088	.066	-.731	455	-.352	.087	.070	-.746
356	-.251	.125	.035	-.889	456	-.316	.092	.067	-.720
357	-.348	.178	-.007	-1.348	457	-.382	.100	-.087	-.810
358	-.482	.213	-.079	-1.670	458	-.459	.118	-.229	-1.013
359	-.685	.252	-.119	-1.981	459	-.335	.076	-.123	-.728

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 70

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.789	.124	-.427	-1.509
502	-.778	.107	-.430	-1.191
503	-.787	.144	-.319	-1.583
504	-.376	.161	.190	-.946
505	-.652	.162	-.075	-1.209
506	-.786	.141	-.187	-1.341
507	-.481	.176	.136	-1.326
508	-.490	.142	.029	-.970
509	-.708	.170	-.050	-1.453
510	-.722	.113	-.383	-1.270
511	-.765	.147	-.297	-1.472
512	-.713	.175	-.018	-1.436
513	-.197	.097	.154	-.596
514	-.345	.098	-.062	-.727
515	-.308	.077	-.115	-.671
516	-.266	.078	-.045	-.621
517	-.180	.051	-.019	-.481
518	-.116	.046	.063	-.379
519	-.105	.074	.148	-.519
520	-.269	.169	.075	-1.270
521	-.378	.146	-.007	-1.251
522	-.404	.157	.088	-1.525
523	.020	.051	.221	-.224
524	.074	.067	.396	-.118
525	-.281	.097	.019	-.678
526	-.325	.087	-.092	-.710
527	-.281	.087	-.013	-.659
528	-.181	.045	-.033	-.373
529	-.128	.037	.026	-.273
530	-.131	.055	.076	-.402
531	-.197	.139	.116	-1.010
532	-.391	.184	.042	-1.558
533	-.416	.203	.029	-1.550
534	.100	.069	.404	-.185
535	.166	.120	.606	-.333
536	.057	.059	.398	-.154
537	.007	.054	.305	-.169
538	-.232	.072	.011	-.993
539	-.325	.098	-.004	-1.102
540	-.079	.072	.221	-.352
541	-.253	.099	.111	-.659
542	-.412	.102	-.184	-.883
543	-.340	.079	-.069	-.684
544	-.240	.056	-.076	-.513
545	-.312	.070	-.098	-.636
546	-.381	.075	-.151	-.655
547	-.156	.042	-.014	-.373
548	-.200	.041	-.036	-.388
549	-.318	.071	-.121	-.615
550	-.138	.028	-.034	-.250





WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 80

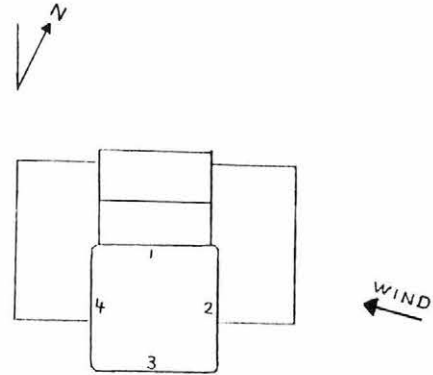
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.467	.067	-.274	-.958	201	-1.060	.355	-.003	-2.380
102	-.460	.063	-.274	-.870	202	.345	.134	.772	-.158
103	-.460	.065	-.264	-.991	203	.566	.132	.992	.091
104	-.463	.070	-.220	-.861	204	.581	.130	.965	.153
105	-.489	.073	-.264	-.870	205	.535	.125	.867	.043
106	-.491	.074	-.234	-.887	206	.515	.122	.852	.060
107	-.493	.076	-.205	-.936	207	.471	.118	.821	.050
108	-.502	.086	-.151	-1.049	208	.400	.112	.762	.022
109	-.535	.109	-.145	-1.054	209	.133	.103	.523	-.181
111	-.438	.059	-.243	-.810	211	-1.073	.366	.062	-2.309
112	-.432	.057	-.242	-.728	212	.304	.133	.794	-.128
113	-.452	.061	-.267	-.766	213	.557	.128	.886	.134
114	-.459	.062	-.268	-.864	214	.606	.129	.942	.175
115	-.464	.064	-.269	-.860	215	.592	.127	.940	.159
116	-.472	.068	-.271	-.904	216	.568	.124	.976	.155
117	-.488	.072	-.280	-1.060	217	.472	.117	.892	.099
118	-.511	.080	-.309	-1.106	218	.382	.110	.819	.038
119	-.543	.107	-.300	-1.185	219	.118	.089	.508	-.165
121	-.461	.066	-.275	-1.125	221	-.952	.321	-.044	-2.152
122	-.454	.061	-.252	-.886	222	.250	.131	.699	-.147
123	-.456	.062	-.247	-.988	223	.483	.131	.900	.128
124	-.459	.067	-.253	-1.211	224	.526	.132	.953	.152
125	-.478	.074	-.267	-.924	225	.519	.126	.962	.081
126	-.490	.079	-.262	-.939	226	.499	.124	.924	.068
127	-.505	.083	-.256	-1.013	227	.438	.118	.871	.050
128	-.526	.097	-.221	-.988	228	.345	.110	.707	-.021
129	-.556	.121	-.025	-1.259	229	.060	.094	.380	-.239
131	-.507	.079	-.294	-1.126	231	-.786	.309	.265	-2.007
132	-.494	.072	-.290	-1.013	232	.190	.137	.743	-.276
133	-.506	.068	-.305	-.855	233	.381	.125	.812	-.022
134	-.511	.072	-.315	-.889	234	.419	.125	.917	.059
135	-.515	.077	-.309	-1.009	235	.406	.123	.928	.059
136	-.517	.082	-.293	-1.081	236	.386	.121	.893	.031
137	-.532	.091	-.271	-1.240	237	.343	.115	.762	.049
138	-.542	.092	-.288	-1.009	238	.259	.106	.620	-.050
139	-.568	.119	-.274	-1.286	239	.009	.085	.290	-.277
141	-.579	.107	-.331	-1.097	241	-.710	.326	.083	-1.964
142	-.560	.098	-.331	-1.092	242	.143	.115	.581	-.215
143	-.560	.101	-.322	-1.273	243	.301	.126	.738	.003
144	-.562	.106	-.310	-1.321	244	.329	.130	.777	.034
145	-.587	.106	-.332	-1.492	245	.275	.116	.741	-.007
146	-.591	.111	-.204	-1.319	246	.261	.112	.700	.010
147	-.587	.119	-.192	-1.524	247	.216	.107	.595	-.021
148	-.571	.115	-.161	-1.218	248	.143	.101	.463	-.091
149	-.583	.123	-.227	-1.179	249	-.089	.090	.251	-.494
151	-.611	.195	-.265	-1.907	251	-.497	.218	.019	-1.894
152	-.549	.149	-.244	-1.398	252	.020	.088	.423	-.228
153	-.565	.137	-.264	-1.344	253	.131	.083	.464	-.062
154	-.566	.123	-.274	-1.324	254	.184	.087	.514	.003
155	-.552	.110	-.136	-1.029	255	.222	.092	.548	.007
156	-.530	.104	-.154	-1.330	256	.237	.094	.556	.009
157	-.511	.091	-.211	-1.040	257	.188	.089	.585	-.032
158	-.481	.084	-.230	-1.013	258	.115	.081	.454	-.090
159	-.453	.082	-.212	-.871	259	-.113	.078	.192	-.432

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 80

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.371	.057	-.164	-.588	401	-.544	.134	-.242	-1.227
302	-.353	.046	-.187	-.515	402	-.449	.069	-.212	-.694
303	-.268	.037	-.129	-.500	403	-.405	.057	-.220	-.632
304	-.246	.039	-.110	-.508	404	-.389	.055	-.214	-.603
305	-.244	.053	.167	-.915	405	-.379	.050	-.174	-.615
306	-.263	.074	.007	-1.072	406	-.375	.048	-.164	-.594
307	-.330	.126	-.059	-1.216	407	-.367	.047	-.197	-.594
308	-.543	.204	-.065	-1.565	408	-.366	.047	-.195	-.600
309	-.985	.177	-.301	-1.852	409	-.374	.057	-.209	-.583
311	-.375	.054	-.188	-.651	411	-.554	.138	-.254	-1.460
312	-.336	.045	-.148	-.549	412	-.433	.069	-.230	-.689
313	-.271	.052	.009	-.622	413	-.393	.050	-.174	-.629
314	-.249	.064	.036	-.715	414	-.386	.045	-.211	-.607
315	-.251	.091	.040	-.958	415	-.380	.043	-.185	-.568
316	-.295	.145	.061	-1.070	416	-.379	.042	-.208	-.557
317	-.415	.233	.018	-1.494	417	-.380	.048	-.224	-.597
318	-.633	.274	-.007	-1.682	418	-.380	.048	-.192	-.598
319	-.943	.196	-.170	-1.866	419	-.373	.048	-.192	-.565
321	-.376	.056	-.178	-.697	421	-.556	.134	-.230	-1.430
322	-.328	.046	-.144	-.558	422	-.434	.065	-.223	-.744
323	-.271	.055	-.031	-.677	423	-.402	.055	-.174	-.612
324	-.249	.072	.024	-.891	424	-.398	.053	-.136	-.594
325	-.267	.119	.040	-1.174	425	-.391	.048	-.121	-.588
326	-.314	.171	.040	-1.389	426	-.391	.047	-.195	-.562
327	-.405	.227	0.000	-1.418	427	-.388	.045	-.248	-.551
328	-.582	.268	.098	-1.757	428	-.387	.046	-.229	-.551
329	-.853	.228	-.170	-1.908	429	-.385	.050	-.233	-.574
331	-.420	.067	-.191	-.828	431	-.564	.130	-.274	-1.531
332	-.346	.052	-.147	-.564	432	-.475	.072	-.220	-.807
333	-.274	.051	-.046	-.641	433	-.455	.064	-.242	-.719
334	-.246	.062	.022	-.734	434	-.450	.061	-.267	-.704
335	-.243	.089	-.033	-.911	435	-.443	.061	-.274	-.718
336	-.270	.137	-.050	-1.226	436	-.441	.060	-.261	-.692
337	-.323	.188	-.025	-1.330	437	-.427	.058	-.257	-.691
338	-.458	.244	-.031	-1.518	438	-.426	.058	-.245	-.745
339	-.732	.230	-.139	-1.951	439	-.418	.057	-.247	-.656
341	-.444	.071	-.261	-.731	441	-.597	.143	-.100	-1.377
342	-.339	.050	-.135	-.571	442	-.508	.078	-.162	-.760
343	-.245	.046	-.078	-.526	443	-.475	.069	-.230	-.751
344	-.208	.051	.018	-.631	444	-.473	.070	-.267	-.785
345	-.193	.070	.034	-.737	445	-.466	.072	-.250	-.803
346	-.203	.098	.007	-1.007	446	-.467	.073	-.291	-.788
347	-.245	.143	-.025	-1.183	447	-.456	.069	-.285	-.783
348	-.348	.206	-.010	-1.457	448	-.448	.064	-.283	-.719
349	-.652	.234	-.061	-1.834	449	-.441	.064	-.214	-.706
351	-.383	.078	-.142	-.811	451	-.473	.089	-.176	-.880
352	-.281	.047	-.099	-.511	452	-.464	.083	-.126	-.804
353	-.190	.040	.012	-.348	453	-.467	.082	-.183	-.838
354	-.154	.041	-.006	-.406	454	-.462	.081	-.058	-.882
355	-.134	.048	.068	-.455	455	-.441	.085	.008	-.860
356	-.137	.062	.013	-.677	456	-.426	.088	-.136	-.913
357	-.153	.075	.001	-.644	457	-.489	.105	-.250	-1.144
358	-.217	.107	.001	-.851	458	-.565	.117	-.285	-1.365
359	-.395	.156	-.015	-1.276	459	-.433	.080	-.257	-1.016

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 80

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.697	.103	-.411	-1.160
502	-.694	.083	-.426	-1.012
503	-.692	.115	-.258	-1.198
504	-.392	.115	-.055	-.799
505	-.546	.125	-.128	-1.101
506	-.690	.108	-.284	-1.188
507	-.478	.123	.084	-1.013
508	-.444	.111	-.033	-.780
509	-.624	.134	-.221	-1.389
510	-.663	.109	-.368	-1.253
511	-.681	.128	-.200	-1.413
512	-.625	.121	-.114	-1.098
513	-.129	.110	.360	-.605
514	-.431	.103	-.122	-.883
515	-.383	.086	-.167	-.749
516	-.330	.090	-.054	-.707
517	-.199	.047	-.023	-.393
518	-.102	.035	.032	-.272
519	-.045	.056	.164	-.306
520	-.111	.090	.092	-.556
521	-.228	.113	.038	-.769
522	-.263	.119	.068	-.866
523	.071	.050	.291	-.078
524	.145	.077	.486	-.077
525	-.281	.107	.140	-.725
526	-.370	.100	-.120	-.824
527	-.305	.101	-.012	-.701
528	-.172	.044	-.017	-.329
529	-.106	.033	.032	-.222
530	-.107	.041	.065	-.375
531	-.043	.080	.149	-.539
532	-.171	.125	.111	-.775
533	-.248	.153	.063	-1.021
534	.133	.073	.455	-.069
535	.223	.112	.692	-.134
536	.105	.078	.485	-.114
537	.037	.058	.299	-.141
538	-.361	.100	-.039	-.850
539	-.437	.116	-.066	-1.013
540	-.157	.083	.201	-.489
541	-.393	.084	-.062	-.800
542	-.442	.095	-.162	-.788
543	-.430	.080	-.095	-.712
544	-.327	.074	-.143	-.724
545	-.449	.087	-.213	-.814
546	-.526	.087	-.297	-1.030
547	-.228	.060	-.005	-.482
548	-.267	.053	-.071	-.491
549	-.404	.077	-.222	-.818
550	-.182	.035	-.036	-.314



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 90

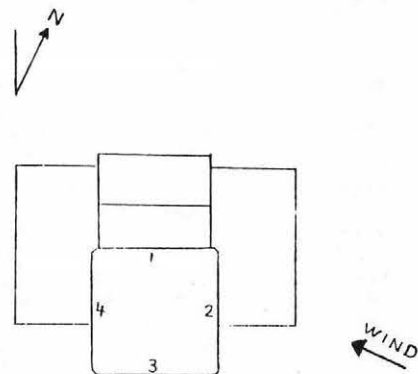
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.456	.052	-.257	-.669	201	-.112	.211	.473	-1.143
102	-.450	.050	-.239	-.665	202	.564	.137	.925	.018
103	-.454	.049	-.279	-.691	203	.591	.134	.961	.088
104	-.457	.048	-.291	-.679	204	.551	.129	.896	.083
105	-.471	.054	-.293	-.740	205	.476	.118	.838	.005
106	-.474	.053	-.317	-.717	206	.436	.113	.780	.020
107	-.484	.055	-.315	-.731	207	.369	.107	.688	-.026
108	-.497	.063	-.287	-.758	208	.276	.099	.571	-.115
109	-.529	.085	-.233	-1.103	209	.017	.080	.298	-.319
111	-.439	.051	-.279	-.620	211	-.158	.264	.508	-1.432
112	-.435	.050	-.287	-.626	212	.529	.130	.971	.091
113	-.441	.048	-.266	-.641	213	.601	.130	1.042	.222
114	-.446	.048	-.290	-.641	214	.585	.126	.952	.219
115	-.454	.047	-.299	-.657	215	.531	.120	.847	.189
116	-.461	.049	-.318	-.714	216	.476	.113	.792	.162
117	-.483	.056	-.327	-.772	217	.386	.115	.771	.032
118	-.498	.062	-.314	-.812	218	.276	.103	.665	-.042
119	-.536	.084	-.334	-1.003	219	.006	.074	.284	-.218
121	-.455	.054	-.288	-.883	221	-.183	.252	.673	-1.096
122	-.449	.052	-.284	-.755	222	.462	.142	.906	-.039
123	-.456	.050	-.293	-.639	223	.529	.137	.934	.157
124	-.460	.050	-.314	-.627	224	.513	.132	.974	.165
125	-.477	.052	-.300	-.721	225	.449	.122	.825	.107
126	-.483	.053	-.321	-.691	226	.407	.116	.759	.106
127	-.494	.054	-.326	-.696	227	.326	.108	.655	.047
128	-.507	.059	-.336	-.821	228	.220	.098	.541	-.036
129	-.544	.083	-.329	-.996	229	-.043	.074	.259	-.265
131	-.508	.059	-.306	-.718	231	-.149	.262	.594	-1.191
132	-.503	.057	-.306	-.709	232	.394	.135	.937	-.017
133	-.511	.053	-.343	-.737	233	.437	.136	.862	.089
134	-.514	.053	-.327	-.728	234	.428	.127	.815	.116
135	-.522	.053	-.330	-.742	235	.381	.118	.735	.104
136	-.527	.055	-.309	-.739	236	.335	.109	.691	.057
137	-.541	.056	-.366	-.818	237	.242	.107	.626	-.030
138	-.548	.060	-.381	-.853	238	.144	.096	.497	-.135
139	-.569	.075	-.376	-.905	239	-.108	.070	.150	-.401
141	-.570	.066	-.381	-.889	241	-.148	.205	.429	-.859
142	-.563	.064	-.375	-.835	242	.281	.123	.789	-.042
143	-.566	.067	-.381	-.859	243	.316	.118	.748	-.027
144	-.571	.072	-.378	-.993	244	.303	.113	.701	-.015
145	-.587	.083	-.388	-1.255	245	.259	.108	.729	-.018
146	-.589	.084	-.409	-1.238	246	.227	.102	.626	-.039
147	-.586	.079	-.406	-1.195	247	.160	.093	.484	-.109
148	-.578	.073	-.392	-.998	248	.066	.083	.375	-.190
149	-.583	.085	-.358	-1.063	249	-.183	.070	.101	-.435
151	-.538	.095	-.330	-1.165	251	-.139	.155	.317	-.768
152	-.518	.083	-.311	-1.070	252	.094	.081	.488	-.129
153	-.548	.083	-.339	-.969	253	.130	.082	.457	-.095
154	-.564	.085	-.333	-1.060	254	.172	.084	.523	-.023
155	-.572	.084	-.364	-1.133	255	.195	.088	.558	-.018
156	-.570	.085	-.379	-1.139	256	.196	.088	.517	-.041
157	-.551	.084	-.318	-1.127	257	.148	.084	.523	-.033
158	-.521	.077	-.279	-1.081	258	.063	.072	.363	-.098
159	-.491	.078	-.169	-.917	259	-.173	.058	.035	-.351

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 90

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.394	.051	-.228	-.599	401	-.533	.097	-.139	-1.060
302	-.325	.040	-.207	-.478	402	-.443	.063	-.213	-.656
303	-.186	.040	-.023	-.311	403	-.412	.056	-.215	-.616
304	-.128	.045	.057	-.258	404	-.396	.052	-.144	-.591
305	-.097	.045	.089	-.243	405	-.397	.052	-.202	-.665
306	-.064	.050	.118	-.240	406	-.388	.050	-.216	-.563
307	-.052	.057	.138	-.260	407	-.388	.048	-.221	-.559
308	-.044	.090	.186	-.416	408	-.380	.048	-.208	-.538
309	-.494	.183	.177	-1.097	409	-.390	.048	-.240	-.542
311	-.390	.048	-.228	-.571	411	-.525	.086	-.230	-1.071
312	-.308	.036	-.183	-.441	412	-.433	.057	-.211	-.625
313	-.192	.034	-.053	-.301	413	-.416	.048	-.204	-.597
314	-.120	.040	.033	-.246	414	-.406	.043	-.199	-.570
315	-.081	.047	.080	-.227	415	-.407	.041	-.240	-.565
316	-.042	.055	.156	-.249	416	-.399	.040	-.258	-.545
317	-.037	.061	.148	-.248	417	-.405	.043	-.264	-.536
318	-.039	.100	.207	-.463	418	-.394	.043	-.246	-.535
319	-.445	.187	.313	-1.141	419	-.392	.045	-.211	-.536
321	-.415	.053	-.230	-.571	421	-.540	.096	-.219	-1.261
322	-.313	.040	-.160	-.437	422	-.439	.059	-.208	-.722
323	-.200	.038	-.045	-.305	423	-.425	.050	-.201	-.683
324	-.130	.044	.045	-.278	424	-.418	.045	-.260	-.547
325	-.097	.045	.071	-.343	425	-.428	.044	-.225	-.621
326	-.058	.054	.142	-.475	426	-.421	.043	-.260	-.583
327	-.044	.069	.197	-.627	427	-.421	.043	-.266	-.588
328	-.048	.108	.260	-.853	428	-.412	.044	-.264	-.557
329	-.357	.190	.308	-1.028	429	-.417	.047	-.258	-.570
331	-.468	.061	-.260	-.676	431	-.570	.090	-.275	-1.085
332	-.335	.045	-.157	-.482	432	-.509	.070	-.234	-.792
333	-.211	.042	-.021	-.355	433	-.499	.068	-.243	-.767
334	-.137	.046	.048	-.263	434	-.488	.068	-.245	-.926
335	-.097	.051	.101	-.248	435	-.487	.066	-.267	-.937
336	-.057	.060	.166	-.274	436	-.480	.064	-.251	-.813
337	-.058	.059	.144	-.456	437	-.486	.052	-.331	-.650
338	-.060	.092	.195	-.815	438	-.475	.052	-.304	-.641
339	-.311	.194	.249	-1.069	439	-.471	.053	-.269	-.641
341	-.494	.059	-.284	-.729	441	-.602	.093	-.405	-1.320
342	-.324	.044	-.162	-.512	442	-.555	.061	-.335	-.814
343	-.190	.041	.006	-.320	443	-.541	.060	-.282	-.814
344	-.122	.043	.054	-.249	444	-.529	.061	-.367	-.778
345	-.093	.043	.091	-.252	445	-.524	.060	-.384	-.828
346	-.059	.049	.150	-.243	446	-.509	.059	-.355	-.888
347	-.051	.059	.207	-.413	447	-.504	.057	-.355	-.807
348	-.048	.086	.265	-.632	448	-.491	.055	-.341	-.748
349	-.244	.183	.296	-.955	449	-.488	.056	-.341	-.737
351	-.433	.066	-.234	-.804	451	-.514	.086	-.195	-1.083
352	-.263	.039	-.051	-.422	452	-.499	.072	-.221	-.849
353	-.152	.035	-.011	-.271	453	-.514	.061	-.276	-.739
354	-.092	.035	.044	-.200	454	-.500	.062	-.289	-.742
355	-.065	.037	.083	-.178	455	-.487	.068	-.269	-.790
356	-.041	.039	.103	-.153	456	-.484	.077	-.168	-.787
357	-.058	.044	.147	-.352	457	-.551	.076	-.270	-.872
358	-.076	.066	.148	-.463	458	-.575	.086	-.230	-1.002
359	-.213	.140	.142	-.857	459	-.465	.064	-.258	-.798

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 90

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.676	.125	-.337	-1.225
502	-.657	.087	-.395	-1.060
503	-.642	.105	-.248	-1.164
504	-.466	.083	-.118	-.745
505	-.617	.125	-.174	-1.025
506	-.654	.116	-.221	-1.196
507	-.435	.102	-.036	-.927
508	-.320	.109	.095	-.710
509	-.543	.121	-.063	-1.023
510	-.648	.094	-.299	-1.082
511	-.635	.105	-.112	-1.033
512	-.560	.104	-.213	-.968
513	-.066	.125	.482	-.471
514	-.423	.104	-.018	-.858
515	-.380	.087	-.139	-.804
516	-.316	.095	-.013	-.709
517	-.157	.044	.010	-.319
518	-.046	.036	.097	-.162
519	.053	.062	.332	-.171
520	.017	.064	.214	-.338
521	-.068	.090	.154	-.470
522	-.100	.106	.238	-.534
523	.100	.047	.352	-.033
524	.183	.072	.503	0.000
525	-.237	.110	.202	-.691
526	-.372	.088	-.099	-.880
527	-.292	.091	.022	-.801
528	-.134	.042	.024	-.304
529	-.059	.034	.076	-.175
530	-.066	.040	.082	-.242
531	.049	.052	.259	-.371
532	-.020	.086	.195	-.465
533	-.030	.099	.275	-.684
534	.163	.078	.500	-.272
535	.258	.105	.733	-.015
536	.171	.081	.609	-.052
537	.083	.064	.388	-.184
538	-.407	.101	-.156	-.896
539	-.439	.107	-.105	-.950
540	-.240	.088	.055	-.612
541	-.419	.062	-.165	-.741
542	-.415	.064	-.147	-.822
543	-.449	.070	-.207	-.832
544	-.372	.072	-.184	-.714
545	-.490	.092	-.238	-.952
546	-.599	.093	-.376	-1.034
547	-.283	.066	-.090	-.585
548	-.302	.061	-.130	-.706
549	-.479	.079	-.222	-.831
550	-.238	.039	-.082	-.398



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 100

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.428	.052	-.259	-.643	201	.496	.157	.945	-.419
102	-.419	.051	-.260	-.625	202	.601	.133	.994	.161
103	-.427	.050	-.281	-.622	203	.492	.120	.907	.087
104	-.427	.049	-.285	-.629	204	.428	.112	.833	.046
105	-.452	.046	-.310	-.641	205	.351	.096	.634	.033
106	-.448	.048	-.309	-.653	206	.307	.091	.575	.006
107	-.456	.050	-.307	-.650	207	.227	.084	.485	-.058
108	-.454	.055	-.297	-.694	208	.135	.075	.453	-.121
109	-.476	.067	-.263	-.839	209	-.108	.058	.182	-.312
111	-.432	.046	-.270	-.576	211	.516	.148	.989	-.093
112	-.428	.045	-.278	-.572	212	.610	.123	.933	.251
113	-.444	.045	-.223	-.606	213	.520	.116	.908	.186
114	-.440	.045	-.251	-.604	214	.470	.106	.818	.163
115	-.451	.044	-.241	-.606	215	.390	.096	.698	.101
116	-.451	.045	-.242	-.613	216	.327	.088	.603	.058
117	-.467	.045	-.301	-.624	217	.229	.083	.506	-.031
118	-.461	.047	-.287	-.650	218	.126	.071	.377	-.115
119	-.473	.058	-.198	-.755	219	-.118	.050	.055	-.290
121	-.461	.049	-.287	-.607	221	.433	.153	.911	-.135
122	-.452	.048	-.276	-.600	222	.522	.125	.975	.167
123	-.463	.046	-.285	-.610	223	.452	.114	.855	.154
124	-.464	.045	-.307	-.616	224	.400	.104	.791	.133
125	-.477	.046	-.344	-.638	225	.318	.092	.691	.027
126	-.472	.045	-.329	-.649	226	.266	.084	.614	.003
127	-.479	.045	-.332	-.660	227	.174	.075	.497	-.050
128	-.475	.046	-.324	-.646	228	.068	.065	.356	-.130
129	-.490	.053	-.309	-.793	229	-.169	.053	.053	-.342
131	-.517	.047	-.359	-.730	231	.345	.157	.822	-.271
132	-.513	.046	-.355	-.742	232	.413	.129	.936	.033
133	-.529	.049	-.371	-.711	233	.378	.114	.754	.062
134	-.526	.051	-.375	-.826	234	.338	.104	.674	.043
135	-.537	.051	-.400	-.777	235	.268	.094	.577	.009
136	-.536	.053	-.408	-.805	236	.211	.086	.519	-.028
137	-.544	.050	-.380	-.734	237	.120	.079	.410	-.099
138	-.535	.054	-.377	-.737	238	.021	.066	.277	-.163
139	-.540	.064	-.347	-.811	239	-.218	.047	-.038	-.370
141	-.579	.053	-.427	-.804	241	.216	.151	.685	-.660
142	-.569	.052	-.415	-.783	242	.306	.119	.731	-.050
143	-.577	.055	-.420	-.864	243	.259	.106	.606	-.028
144	-.578	.058	-.418	-.891	244	.227	.097	.558	-.016
145	-.603	.061	-.433	-.915	245	.157	.086	.491	-.087
146	-.595	.062	-.440	-.918	246	.119	.079	.407	-.111
147	-.594	.058	-.443	-.864	247	.044	.071	.312	-.169
148	-.585	.055	-.457	-.904	248	-.048	.063	.229	-.217
149	-.594	.062	-.353	-.869	249	-.281	.053	-.077	-.445
151	-.544	.067	-.362	-.892	251	.047	.082	.330	-.358
152	-.535	.065	-.337	-.885	252	.117	.079	.473	-.109
153	-.567	.072	-.383	-.962	253	.096	.067	.368	-.087
154	-.580	.078	-.381	-1.055	254	.123	.069	.377	-.055
155	-.595	.072	-.427	-.987	255	.122	.074	.401	-.043
156	-.591	.072	-.430	-1.376	256	.112	.074	.384	-.072
157	-.592	.065	-.381	-1.056	257	.049	.069	.333	-.135
158	-.568	.061	-.222	-.770	258	-.029	.059	.229	-.213
159	-.558	.066	-.313	-.839	259	-.250	.048	-.055	-.408

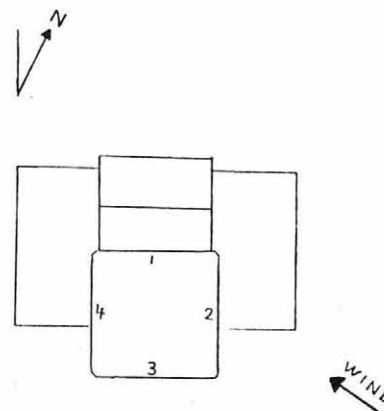
WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 100

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.410	.048	-.259	-.571	401	-.460	.075	-.210	-.935
302	-.249	.043	-.065	-.407	402	-.420	.059	-.216	-.679
303	-.047	.056	.200	-.235	403	-.418	.050	-.266	-.628
304	.044	.065	.290	-.174	404	-.410	.050	-.230	-.621
305	.089	.067	.290	-.165	405	-.426	.044	-.284	-.587
306	.151	.074	.375	-.134	406	-.411	.042	-.273	-.568
307	.187	.081	.421	-.122	407	-.413	.041	-.284	-.560
308	.252	.093	.528	-.088	408	-.401	.041	-.273	-.553
309	.254	.168	.637	-.381	409	-.417	.044	-.252	-.545
311	-.410	.043	-.247	-.541	411	-.456	.063	-.225	-.690
312	-.237	.038	-.082	-.366	412	-.431	.051	-.270	-.593
313	-.067	.044	.093	-.206	413	-.438	.039	-.171	-.569
314	.045	.053	.225	-.132	414	-.425	.037	-.173	-.553
315	.108	.060	.298	-.113	415	-.429	.036	-.239	-.550
316	.179	.068	.394	-.063	416	-.418	.036	-.266	-.556
317	.202	.072	.456	-.015	417	-.432	.038	-.294	-.553
318	.274	.084	.568	-.037	418	-.413	.038	-.282	-.539
319	.231	.178	.673	-.428	419	-.415	.039	-.281	-.538
321	-.437	.046	-.281	-.585	421	-.482	.061	-.230	-.786
322	-.252	.038	-.110	-.382	422	-.454	.054	-.212	-.691
323	-.085	.046	.113	-.247	423	-.460	.048	-.260	-.602
324	.017	.055	.234	-.171	424	-.451	.046	-.251	-.589
325	.080	.065	.328	-.099	425	-.473	.043	-.319	-.627
326	.157	.075	.438	-.051	426	-.455	.043	-.316	-.604
327	.202	.085	.525	-.035	427	-.457	.043	-.293	-.599
328	.265	.100	.665	-.040	428	-.443	.043	-.278	-.584
329	.206	.175	.657	-.416	429	-.440	.045	-.288	-.586
331	-.494	.056	-.269	-.659	431	-.545	.071	-.254	-.960
332	-.282	.046	-.041	-.416	432	-.530	.064	-.341	-.865
333	-.115	.049	.104	-.266	433	-.544	.065	-.355	-.892
334	-.011	.057	.184	-.185	434	-.524	.061	-.340	-.820
335	.043	.065	.253	-.159	435	-.526	.059	-.343	-.804
336	.106	.073	.351	-.118	436	-.511	.058	-.338	-.757
337	.144	.077	.431	-.065	437	-.516	.050	-.367	-.678
338	.204	.090	.534	-.044	438	-.495	.051	-.352	-.667
339	.197	.158	.654	-.397	439	-.496	.051	-.326	-.661
341	-.515	.058	-.369	-.845	441	-.612	.066	-.437	-.927
342	-.274	.046	-.076	-.438	442	-.586	.066	-.389	-.870
343	-.114	.047	.149	-.241	443	-.581	.068	-.391	-.932
344	-.030	.051	.244	-.163	444	-.558	.067	-.380	-.867
345	.003	.056	.281	-.121	445	-.569	.077	-.376	-1.136
346	.057	.061	.322	-.084	446	-.539	.072	-.358	-1.185
347	.077	.067	.338	-.084	447	-.533	.063	-.359	-.944
348	.116	.078	.429	-.126	448	-.513	.058	-.340	-.810
349	.077	.137	.490	-.440	449	-.519	.053	-.373	-.750
351	-.449	.092	-.174	-1.359	451	-.543	.071	-.300	-.874
352	-.225	.043	.010	-.372	452	-.532	.061	-.322	-.796
353	-.106	.039	.076	-.254	453	-.549	.060	-.343	-.789
354	-.032	.039	.160	-.178	454	-.520	.064	-.307	-.792
355	-.007	.040	.210	-.151	455	-.509	.071	-.231	-.807
356	.024	.040	.249	-.115	456	-.505	.078	-.230	-.855
357	.016	.041	.199	-.081	457	-.588	.078	-.386	-.993
358	.033	.043	.244	-.103	458	-.613	.084	-.371	-.936
359	-.010	.074	.275	-.393	459	-.495	.085	-.282	-1.071



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 100

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.986	.330	.038	-1.764
502	-1.072	.223	-.439	-1.729
503	-.431	.136	-.021	-1.039
504	-.519	.072	-.275	-.800
505	-.803	.142	-.349	-1.322
506	-.400	.147	.012	-1.080
507	-.221	.111	.132	-.579
508	-.103	.097	.193	-.606
509	-.495	.130	-.166	-1.075
510	-.611	.104	-.261	-1.265
511	-.572	.105	-.017	-.951
512	-.443	.077	-.179	-.706
513	.027	.130	.560	-.438
514	-.427	.088	-.103	-.802
515	-.378	.071	-.105	-.719
516	-.312	.084	-.009	-.833
517	-.135	.046	.071	-.273
518	-.013	.040	.190	-.121
519	.105	.066	.419	-.060
520	.072	.050	.298	-.108
521	.031	.063	.277	-.305
522	.008	.078	.304	-.407
523	.105	.048	.343	-.021
524	.183	.068	.485	-.007
525	-.215	.120	.312	-.668
526	-.367	.074	-.084	-.649
527	-.281	.080	.019	-.551
528	-.104	.044	.108	-.217
529	-.012	.045	.211	-.125
530	-.038	.044	.212	-.240
531	.109	.063	.426	-.038
532	.080	.067	.501	-.212
533	.057	.072	.324	-.320
534	.154	.069	.453	-.181
535	.228	.089	.622	.028
536	.159	.065	.500	-.052
537	.082	.051	.343	-.158
538	-.388	.088	-.096	-.893
539	-.412	.080	-.190	-.851
540	-.276	.077	-.032	-.570
541	-.455	.056	-.282	-.721
542	-.436	.058	-.270	-1.101
543	-.492	.080	-.228	-.896
544	-.409	.078	-.174	-.786
545	-.526	.098	-.221	-1.125
546	-.644	.099	-.420	-1.237
547	-.325	.071	-.134	-.848
548	-.341	.071	-.152	-.800
549	-.517	.075	-.258	-.881
550	-.279	.048	-.099	-.476



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 110

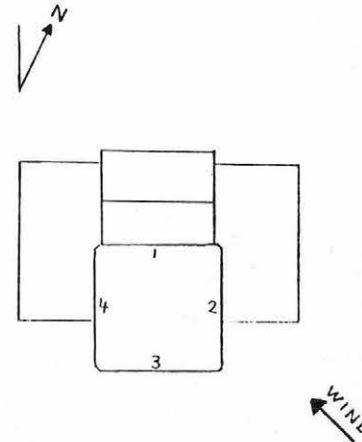
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.412	.045	-.239	-.566	201	.592	.126	.954	.019
102	-.392	.044	-.217	-.537	202	.472	.120	.787	-.060
103	-.411	.043	-.248	-.557	203	.358	.096	.659	-.016
104	-.398	.044	-.239	-.562	204	.314	.087	.625	0.000
105	-.421	.041	-.284	-.569	205	.230	.077	.473	-.054
106	-.402	.043	-.259	-.543	206	.207	.072	.441	-.049
107	-.414	.044	-.269	-.576	207	.126	.066	.356	-.124
108	-.395	.046	-.242	-.592	208	.055	.059	.262	-.141
109	-.414	.053	-.228	-.603	209	-.172	.049	.017	-.345
111	-.406	.042	-.261	-.552	211	.560	.138	1.005	-.016
112	-.390	.041	-.243	-.539	212	.465	.128	.810	-.102
113	-.426	.038	-.289	-.567	213	.370	.101	.711	.042
114	-.410	.038	-.282	-.547	214	.333	.091	.650	.039
115	-.427	.037	-.311	-.580	215	.250	.081	.539	-.016
116	-.411	.038	-.268	-.562	216	.207	.073	.492	-.035
117	-.441	.041	-.314	-.588	217	.100	.068	.340	-.127
118	-.420	.043	-.272	-.567	218	.021	.058	.222	-.185
119	-.434	.047	-.261	-.634	219	-.194	.040	-.045	-.366
121	-.459	.043	-.301	-.603	221	.488	.139	.932	-.124
122	-.439	.042	-.300	-.583	222	.405	.134	.788	-.111
123	-.457	.041	-.321	-.603	223	.326	.100	.659	.015
124	-.444	.042	-.310	-.583	224	.286	.088	.592	-.006
125	-.469	.043	-.351	-.638	225	.203	.081	.507	-.031
126	-.450	.044	-.307	-.608	226	.165	.074	.457	-.033
127	-.464	.045	-.304	-.638	227	.070	.065	.343	-.115
128	-.444	.049	-.269	-.685	228	-.013	.055	.231	-.179
129	-.464	.053	-.236	-.690	229	-.242	.042	-.070	-.365
131	-.498	.053	-.328	-.670	231	.347	.174	.880	-.608
132	-.480	.053	-.336	-.651	232	.286	.161	.759	-.433
133	-.524	.051	-.333	-.681	233	.208	.110	.566	-.109
134	-.509	.052	-.330	-.730	234	.188	.097	.538	-.083
135	-.527	.053	-.333	-.714	235	.119	.086	.445	-.119
136	-.512	.055	-.324	-.729	236	.086	.077	.385	-.125
137	-.547	.061	-.376	-.798	237	-.001	.069	.244	-.183
138	-.532	.063	-.356	-.770	238	-.073	.057	.141	-.233
139	-.555	.067	-.348	-.848	239	-.287	.044	-.086	-.413
141	-.573	.060	-.387	-1.004	241	.103	.164	.649	-.688
142	-.552	.060	-.370	-.983	242	.102	.151	.563	-.525
143	-.570	.062	-.379	-1.091	243	.082	.109	.513	-.301
144	-.557	.065	-.363	-1.211	244	.075	.099	.471	-.176
145	-.581	.060	-.429	-.809	245	.007	.081	.371	-.176
146	-.560	.061	-.403	-.821	246	-.005	.074	.308	-.174
147	-.567	.060	-.402	-.844	247	-.073	.066	.236	-.238
148	-.549	.061	-.367	-.952	248	-.135	.058	.134	-.294
149	-.591	.063	-.384	-.891	249	-.341	.049	-.132	-.566
151	-.553	.069	-.360	-.887	251	-.046	.103	.275	-.574
152	-.533	.069	-.340	-.926	252	-.008	.086	.339	-.410
153	-.575	.080	-.373	-1.174	253	-.009	.067	.273	-.273
154	-.573	.082	-.357	-1.125	254	.021	.066	.317	-.153
155	-.596	.084	-.392	-1.254	255	0.000	.072	.308	-.161
156	-.578	.080	-.376	-1.231	256	-.003	.075	.278	-.173
157	-.585	.073	-.304	-1.024	257	-.077	.065	.186	-.238
158	-.552	.076	-.230	-.907	258	-.128	.058	.112	-.294
159	-.552	.078	-.163	-.956	259	-.320	.053	-.116	-.525

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 110

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.414	.043	-.255	-.547	401	-.453	.065	-.219	-.849
302	-.179	.046	-.016	-.331	402	-.434	.059	-.176	-.903
303	.041	.069	.267	-.163	403	-.440	.048	-.229	-.636
304	.153	.081	.415	-.092	404	-.419	.045	-.245	-.575
305	.204	.077	.438	-.069	405	-.437	.041	-.305	-.602
306	.286	.084	.528	-.016	406	-.409	.040	-.279	-.560
307	.321	.091	.575	-.007	407	-.418	.040	-.288	-.572
308	.409	.102	.699	.051	408	-.395	.041	-.256	-.574
309	.439	.140	.838	-.251	409	-.417	.041	-.296	-.543
311	-.410	.044	-.223	-.576	411	-.450	.061	-.244	-.736
312	-.171	.047	-.009	-.322	412	-.437	.050	-.262	-.687
313	.022	.060	.240	-.155	413	-.456	.045	-.313	-.618
314	.161	.072	.396	-.075	414	-.428	.042	-.315	-.575
315	.224	.081	.498	-.035	415	-.438	.041	-.322	-.593
316	.314	.091	.604	.029	416	-.414	.041	-.294	-.575
317	.332	.095	.633	.101	417	-.444	.040	-.316	-.582
318	.426	.108	.751	.163	418	-.416	.041	-.284	-.568
319	.483	.130	.862	-.051	419	-.425	.041	-.287	-.569
321	-.462	.047	-.306	-.668	421	-.516	.079	-.195	-1.098
322	-.193	.045	-.032	-.325	422	-.494	.065	-.248	-.877
323	.003	.061	.226	-.161	423	-.495	.050	-.299	-.711
324	.132	.072	.391	-.069	424	-.469	.047	-.271	-.676
325	.170	.076	.427	-.064	425	-.487	.046	-.343	-.633
326	.263	.085	.558	.009	426	-.457	.047	-.299	-.619
327	.305	.094	.641	.032	427	-.467	.047	-.309	-.659
328	.386	.106	.768	.066	428	-.443	.048	-.271	-.630
329	.414	.138	.831	-.100	429	-.475	.045	-.274	-.624
331	-.518	.054	-.314	-.667	431	-.593	.099	-.288	-1.239
332	-.225	.054	-.025	-.397	432	-.568	.085	-.339	-1.076
333	-.041	.062	.226	-.220	433	-.575	.070	-.368	-.974
334	.086	.072	.377	-.114	434	-.544	.066	-.346	-.897
335	.140	.082	.475	-.082	435	-.550	.063	-.368	-.862
336	.217	.092	.589	-.025	436	-.522	.060	-.362	-.742
337	.223	.110	.642	-.073	437	-.536	.055	-.368	-.797
338	.296	.123	.724	-.059	438	-.507	.055	-.339	-.727
339	.322	.147	.784	-.201	439	-.516	.054	-.336	-.736
341	-.544	.060	-.400	-.988	441	-.610	.076	-.414	-1.168
342	-.229	.057	.034	-.471	442	-.574	.067	-.396	-1.025
343	-.062	.071	.279	-.230	443	-.579	.067	-.404	-.967
344	.032	.079	.391	-.135	444	-.550	.065	-.352	-.934
345	.050	.080	.460	-.145	445	-.573	.068	-.390	-.865
346	.107	.084	.517	-.098	446	-.539	.065	-.364	-.868
347	.112	.089	.488	-.151	447	-.543	.061	-.365	-.829
348	.152	.098	.542	-.215	448	-.516	.059	-.340	-.775
349	.138	.121	.531	-.457	449	-.531	.051	-.377	-.787
351	-.572	.170	-.215	-1.393	451	-.555	.085	-.303	-1.616
352	-.179	.065	.126	-.450	452	-.524	.065	-.160	-.821
353	-.050	.065	.252	-.232	453	-.544	.067	-.229	-.877
354	.031	.067	.340	-.154	454	-.515	.070	-.253	-.884
355	.041	.067	.359	-.147	455	-.524	.080	-.241	-.914
356	.071	.065	.386	-.094	456	-.520	.087	-.223	-.897
357	.031	.055	.305	-.126	457	-.611	.089	-.318	-1.017
358	.052	.052	.305	-.089	458	-.605	.095	-.253	-.986
359	.014	.053	.264	-.246	459	-.577	.153	-.235	-1.538

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 110

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.764	.352	.310	-1.799
502	-1.082	.193	-.464	-1.688
503	-.540	.141	-.131	-1.021
504	-.528	.088	-.263	-.947
505	-.870	.142	-.398	-1.307
506	-.372	.054	-.089	-.541
507	-.147	.100	.223	-.488
508	-.122	.097	.292	-.644
509	-.494	.145	-.126	-.972
510	-.538	.079	-.226	-.889
511	-.316	.138	.052	-.829
512	-.398	.049	-.200	-.622
513	.129	.119	.591	-.282
514	-.391	.096	.159	-.709
515	-.355	.081	-.068	-.884
516	-.320	.091	-.007	-1.026
517	-.085	.057	.146	-.284
518	.040	.060	.329	-.109
519	.144	.089	.655	-.093
520	.095	.061	.501	-.070
521	.059	.053	.306	-.189
522	.030	.055	.282	-.274
523	.051	.051	.336	-.205
524	.093	.062	.376	-.141
525	-.201	.123	.268	-.655
526	-.333	.085	-.045	-.745
527	-.284	.082	-.009	-.697
528	-.056	.061	.182	-.226
529	.041	.066	.310	-.166
530	-.008	.055	.214	-.218
531	.131	.077	.511	-.048
532	.106	.061	.349	-.100
533	.068	.062	.459	-.148
534	.097	.023	.160	.049
535	.130	.067	.357	-.016
536	.103	.026	.167	.042
537	.051	.051	.246	-.080
538	-.333	.094	-.055	-.940
539	-.371	.089	-.092	-.919
540	-.262	.075	-.003	-.651
541	-.436	.060	-.191	-.661
542	-.416	.064	-.178	-.828
543	-.510	.105	-.141	-1.486
544	-.389	.085	-.143	-.689
545	-.519	.100	-.243	-1.012
546	-.622	.098	-.378	-1.264
547	-.313	.077	-.086	-.636
548	-.350	.080	-.125	-.693
549	-.503	.085	-.300	-.949
550	-.272	.048	-.135	-.476



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 120

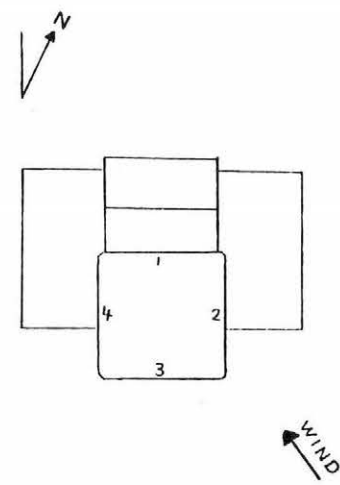
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.390	.039	-.263	-.541	201	.342	.172	.771	-.274
102	-.363	.038	-.225	-.511	202	.068	.213	.522	-.629
103	-.380	.035	-.272	-.517	203	.152	.084	.384	-.082
104	-.364	.038	-.222	-.538	204	.135	.074	.345	-.079
105	-.393	.041	-.265	-.549	205	.065	.072	.294	-.178
106	-.370	.041	-.239	-.525	206	.058	.066	.271	-.161
107	-.383	.043	-.242	-.532	207	-.008	.059	.189	-.192
108	-.367	.047	-.163	-.534	208	-.055	.051	.126	-.216
109	-.407	.055	-.127	-.619	209	-.219	.091	.555	-.443
111	-.386	.040	-.246	-.546	211	.290	.242	.830	-.616
112	-.365	.039	-.222	-.510	212	.099	.221	.795	-.720
113	-.403	.036	-.298	-.522	213	.183	.095	.479	-.102
114	-.383	.037	-.263	-.497	214	.169	.081	.408	-.059
115	-.399	.036	-.268	-.513	215	.100	.070	.327	-.116
116	-.379	.037	-.260	-.489	216	.071	.061	.279	-.107
117	-.403	.037	-.270	-.535	217	-.025	.057	.179	-.186
118	-.384	.040	-.228	-.517	218	-.078	.048	.107	-.215
119	-.411	.048	-.225	-.594	219	-.246	.035	-.116	-.357
121	-.431	.046	-.275	-.556	221	.189	.252	.775	-1.729
122	-.407	.045	-.268	-.535	222	.048	.207	.555	-.932
123	-.426	.044	-.278	-.566	223	.149	.090	.404	-.414
124	-.409	.044	-.257	-.564	224	.133	.073	.357	-.096
125	-.431	.044	-.260	-.578	225	.044	.076	.333	-.226
126	-.409	.046	-.228	-.563	226	.028	.061	.274	-.140
127	-.424	.048	-.246	-.574	227	-.049	.053	.168	-.201
128	-.406	.053	-.201	-.563	228	-.109	.044	.083	-.257
129	-.454	.058	-.228	-.694	229	-.290	.035	-.143	-.406
131	-.488	.050	-.291	-.705	231	.097	.237	.778	-1.380
132	-.468	.049	-.295	-.696	232	.017	.191	.616	-.682
133	-.484	.051	-.334	-.679	233	.081	.094	.397	-.274
134	-.465	.052	-.288	-.664	234	.077	.077	.322	-.161
135	-.483	.053	-.320	-.760	235	.016	.067	.231	-.171
136	-.468	.055	-.285	-.697	236	-.008	.059	.204	-.166
137	-.514	.054	-.249	-.764	237	-.097	.057	.135	-.255
138	-.499	.057	-.229	-.735	238	-.150	.048	.047	-.271
139	-.528	.061	-.268	-.775	239	-.327	.042	-.171	-.457
141	-.539	.061	-.348	-.761	241	-.009	.203	.520	-1.043
142	-.514	.060	-.346	-.725	242	-.041	.161	.397	-.652
143	-.532	.059	-.388	-.740	243	.005	.073	.271	-.192
144	-.516	.060	-.369	-.746	244	.009	.061	.252	-.136
145	-.551	.055	-.404	-.750	245	-.050	.060	.175	-.185
146	-.527	.056	-.394	-.742	246	-.057	.053	.181	-.188
147	-.542	.056	-.409	-.773	247	-.126	.048	.128	-.245
148	-.527	.056	-.373	-.732	248	-.178	.044	.053	-.292
149	-.559	.057	-.413	-.806	249	-.364	.043	-.198	-.500
151	-.515	.060	-.344	-.785	251	-.094	.109	.221	-.785
152	-.493	.059	-.317	-.742	252	-.053	.076	.178	-.502
153	-.533	.073	-.365	-1.221	253	-.044	.050	.153	-.281
154	-.522	.070	-.352	-1.016	254	-.012	.049	.163	-.238
155	-.541	.072	-.356	-1.091	255	-.041	.050	.153	-.218
156	-.518	.071	-.353	-1.080	256	-.043	.052	.161	-.257
157	-.538	.063	-.268	-.849	257	-.120	.052	.079	-.345
158	-.523	.070	-.314	-.921	258	-.160	.045	.024	-.365
159	-.530	.066	-.374	-.874	259	-.334	.043	-.202	-.543

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 120

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.427	.050	-.268	-.843	401	-.490	.087	-.241	-.891
302	-.057	.059	.153	-.318	402	-.457	.072	-.241	-.743
303	.195	.087	.456	-.102	403	-.449	.053	-.257	-.659
304	.325	.098	.600	-.014	404	-.415	.047	-.221	-.618
305	.373	.092	.638	.031	405	-.448	.045	-.296	-.604
306	.469	.098	.741	.115	406	-.414	.044	-.273	-.562
307	.507	.104	.801	.108	407	-.427	.044	-.284	-.579
308	.605	.112	.932	.189	408	-.398	.044	-.188	-.563
309	.623	.122	.995	.215	409	-.424	.045	-.265	-.601
311	-.423	.045	-.246	-.568	411	-.482	.077	-.269	-.832
312	-.046	.056	.159	-.227	412	-.454	.060	-.270	-.736
313	.175	.083	.490	-.100	413	-.474	.045	-.340	-.672
314	.330	.097	.650	.021	414	-.434	.042	-.310	-.590
315	.393	.106	.701	.069	415	-.441	.041	-.315	-.581
316	.490	.114	.793	.147	416	-.409	.041	-.269	-.577
317	.505	.116	.833	.170	417	-.433	.040	-.287	-.613
318	.593	.124	.918	.246	418	-.400	.041	-.235	-.583
319	.587	.130	.997	.231	419	-.411	.042	-.249	-.573
321	-.461	.049	-.311	-.620	421	-.547	.101	-.214	-1.094
322	-.083	.055	.139	-.254	422	-.512	.076	-.301	-.905
323	.146	.078	.445	-.070	423	-.496	.055	-.308	-.853
324	.292	.090	.592	.045	424	-.457	.048	-.301	-.645
325	.340	.098	.676	.056	425	-.494	.045	-.330	-.648
326	.441	.107	.786	.135	426	-.458	.045	-.304	-.620
327	.475	.114	.829	.153	427	-.466	.045	-.315	-.628
328	.549	.123	.937	.192	428	-.435	.045	-.299	-.584
329	.510	.127	.906	.108	429	-.463	.047	-.276	-.620
331	-.518	.058	-.344	-.749	431	-.599	.101	-.344	-1.142
332	-.124	.062	.130	-.324	432	-.563	.085	-.366	-1.064
333	.090	.081	.383	-.153	433	-.576	.068	-.376	-.997
334	.235	.092	.542	-.029	434	-.535	.060	-.357	-.846
335	.287	.101	.609	.010	435	-.539	.056	-.337	-.842
336	.371	.109	.718	.079	436	-.506	.054	-.308	-.780
337	.357	.118	.753	.059	437	-.540	.048	-.357	-.727
338	.428	.125	.836	.084	438	-.507	.047	-.354	-.699
339	.405	.128	.811	.014	439	-.518	.047	-.354	-.700
341	-.532	.061	-.362	-.860	441	-.569	.061	-.427	-.894
342	-.138	.060	.079	-.332	442	-.533	.059	-.386	-.782
343	.051	.083	.356	-.203	443	-.541	.058	-.399	-.781
344	.162	.095	.506	-.119	444	-.509	.059	-.364	-.740
345	.154	.090	.544	-.053	445	-.540	.055	-.375	-.857
346	.220	.096	.648	-.004	446	-.504	.054	-.337	-.811
347	.224	.102	.647	-.014	447	-.512	.052	-.338	-.784
348	.269	.110	.665	-.015	448	-.481	.052	-.304	-.747
349	.241	.127	.762	-.076	449	-.514	.055	-.338	-.700
351	-.577	.147	-.126	-1.406	451	-.551	.070	-.263	-.874
352	-.126	.068	.136	-.340	452	-.505	.064	-.327	-.774
353	.017	.063	.253	-.170	453	-.528	.065	-.340	-.828
354	.113	.069	.373	-.091	454	-.491	.069	-.283	-.850
355	.127	.075	.390	-.090	455	-.499	.078	-.283	-.863
356	.164	.077	.421	-.036	456	-.487	.087	-.245	-.850
357	.211	.074	.438	-.073	457	-.606	.089	-.340	-1.126
358	.124	.072	.429	-.060	458	-.631	.094	-.299	-1.099
359	.055	.065	.366	-.119	459	-.563	.165	-.174	-1.396

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 120

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.754	.154	-.247	-1.407
502	-.725	.140	-.156	-1.222
503	-.448	.085	-.182	-.954
504	-.571	.144	.277	-1.115
505	-.609	.092	-.224	-1.129
506	-.451	.163	-.023	-1.036
507	-.357	.114	.112	-.755
508	-.499	.103	-.025	-.857
509	-.601	.121	-.135	-1.063
510	-.497	.075	-.228	-.767
511	-.216	.116	.123	-.680
512	-.477	.097	-.167	-.864
513	.226	.125	.804	-.151
514	-.361	.100	.053	-.709
515	-.329	.080	-.083	-.669
516	-.301	.094	.092	-.900
517	-.026	.058	.247	-.211
518	.121	.068	.460	-.096
519	.239	.101	.920	-.004
520	.166	.071	.592	-.073
521	.103	.065	.337	-.095
522	.032	.062	.288	-.260
523	.046	.058	.289	-.188
524	.088	.065	.391	-.203
525	-.123	.138	.393	-.611
526	-.294	.093	.010	-.913
527	-.249	.093	.066	-.922
528	.007	.061	.256	-.165
529	.123	.073	.433	-.065
530	.017	.068	.347	-.191
531	.226	.101	.604	-.020
532	.167	.078	.462	-.027
533	.071	.073	.403	-.242
534	.081	.070	.446	-.240
535	.100	.067	.440	-.098
536	.110	.063	.391	-.047
537	.068	.062	.443	-.095
538	-.300	.080	-.059	-.963
539	-.343	.083	-.105	-1.310
540	-.301	.076	-.033	-.804
541	-.426	.052	-.211	-.618
542	-.398	.054	-.194	-.787
543	-.530	.101	-.265	-1.204
544	-.403	.074	-.164	-.718
545	-.538	.094	-.269	-.971
546	-.627	.091	-.358	-1.123
547	-.342	.076	-.108	-.607
548	-.390	.086	-.150	-.764
549	-.515	.086	-.242	-.961
550	-.283	.046	-.119	-.479



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 130

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.375	.044	-.237	-.567	201	-.257	.264	.433	-1.378
102	-.341	.043	-.219	-.539	202	-.558	.191	.188	-1.120
103	-.360	.042	-.240	-.566	203	-.082	.078	.132	-.460
104	-.338	.042	-.219	-.527	204	-.044	.048	.122	-.223
105	-.366	.041	-.231	-.532	205	-.088	.049	.091	-.274
106	-.336	.042	-.190	-.503	206	-.074	.045	.094	-.253
107	-.355	.044	-.183	-.511	207	-.121	.040	.025	-.300
108	-.335	.047	-.167	-.492	208	-.140	.035	-.006	-.305
109	-.404	.059	-.202	-.589	209	-.275	.032	-.173	-.393
111	-.372	.041	-.213	-.510	211	-.492	.404	.551	-2.473
112	-.343	.040	-.162	-.477	212	-.478	.191	.226	-1.130
113	-.376	.037	-.273	-.514	213	-.106	.110	.174	-.823
114	-.350	.037	-.238	-.491	214	-.041	.063	.161	-.403
115	-.369	.037	-.242	-.507	215	-.074	.048	.087	-.270
116	-.346	.038	-.177	-.496	216	-.073	.042	.071	-.246
117	-.387	.038	-.252	-.543	217	-.142	.037	.007	-.263
118	-.362	.041	-.198	-.513	218	-.166	.032	-.044	-.270
119	-.400	.050	-.184	-.584	219	-.284	.030	-.166	-.397
121	-.401	.041	-.236	-.567	221	-.648	.451	.415	-2.066
122	-.370	.040	-.220	-.532	222	-.454	.195	.242	-1.188
123	-.392	.040	-.231	-.534	223	-.121	.115	.168	-.712
124	-.369	.041	-.210	-.521	224	-.060	.063	.212	-.406
125	-.414	.039	-.282	-.563	225	-.103	.052	.084	-.287
126	-.386	.041	-.237	-.504	226	-.098	.044	.078	-.249
127	-.406	.045	-.185	-.550	227	-.155	.038	.006	-.338
128	-.386	.050	-.144	-.525	228	-.183	.033	-.039	-.316
129	-.443	.064	-.190	-.865	229	-.320	.034	-.190	-.425
131	-.441	.050	-.213	-.596	231	-.490	.394	.392	-1.796
132	-.413	.049	-.190	-.573	232	-.369	.201	.237	-1.032
133	-.460	.050	-.272	-.694	233	-.136	.104	.249	-.828
134	-.436	.051	-.263	-.690	234	-.082	.064	.206	-.487
135	-.458	.052	-.275	-.705	235	-.116	.049	.119	-.375
136	-.439	.055	-.170	-.673	236	-.116	.041	.086	-.262
137	-.486	.059	-.300	-.684	237	-.191	.038	-.004	-.294
138	-.466	.060	-.273	-.658	238	-.217	.035	-.053	-.341
139	-.507	.064	-.266	-.753	239	-.347	.037	-.194	-.489
141	-.513	.055	-.334	-.681	241	-.362	.290	.413	-1.490
142	-.481	.054	-.322	-.648	242	-.305	.179	.287	-.914
143	-.503	.054	-.343	-.690	243	-.124	.082	.147	-.631
144	-.482	.055	-.340	-.687	244	-.080	.049	.109	-.377
145	-.502	.057	-.329	-.729	245	-.135	.043	.057	-.288
146	-.477	.058	-.311	-.776	246	-.130	.038	.024	-.258
147	-.508	.065	-.343	-.858	247	-.188	.036	-.050	-.314
148	-.499	.067	-.318	-.849	248	-.219	.036	-.082	-.356
149	-.544	.059	-.372	-.818	249	-.374	.043	-.223	-.544
151	-.505	.064	-.277	-.790	251	-.228	.135	.195	-.947
152	-.480	.064	-.293	-.815	252	-.110	.088	.170	-.494
153	-.525	.066	-.358	-1.040	253	-.085	.072	.176	-.540
154	-.504	.016	-.470	-.563	254	-.058	.078	.165	-.583
155	-.521	.025	-.456	-.596	255	-.122	.080	.114	-.514
156	-.347	.022	-.302	-.392	256	-.132	.070	.087	-.511
157	-.535	.067	-.151	-.927	257	-.191	.055	-.035	-.432
158	-.533	.079	-.316	-1.072	258	-.212	.047	-.082	-.451
159	-.540	.069	-.357	-.955	259	-.355	.046	-.186	-.577

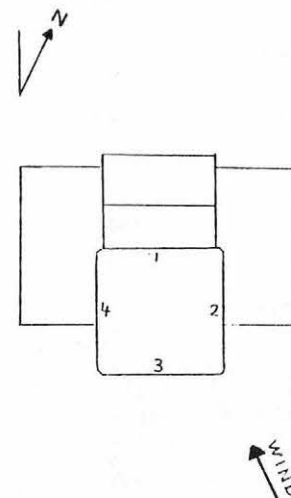


WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 130

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.431	.059	-.239	-.818	401	-.504	.098	-.146	-.963
302	.049	.068	.328	-.224	402	-.460	.079	-.165	-.776
303	.313	.096	.682	.008	403	-.450	.057	-.179	-.675
304	.442	.106	.797	.103	404	-.405	.050	-.177	-.631
305	.452	.112	.754	.082	405	-.433	.048	-.282	-.762
306	.540	.119	.845	.157	406	-.395	.047	-.232	-.647
307	.559	.125	.881	.153	407	-.412	.047	-.244	-.663
308	.630	.132	.961	.140	408	-.379	.047	-.220	-.603
309	.551	.128	.974	.061	409	-.413	.051	-.194	-.661
311	-.399	.048	-.243	-.643	411	-.509	.095	-.229	-1.097
312	.052	.069	.360	-.185	412	-.465	.070	-.279	-.831
313	.277	.091	.586	.014	413	-.470	.055	-.265	-.794
314	.436	.104	.759	.131	414	-.421	.049	-.268	-.632
315	.489	.112	.811	.163	415	-.429	.046	-.276	-.631
316	.577	.119	.924	.220	416	-.390	.045	-.232	-.559
317	.600	.117	.941	.247	417	-.421	.045	-.279	-.587
318	.659	.122	1.045	.286	418	-.381	.045	-.237	-.544
319	.538	.125	.989	.121	419	-.397	.044	-.262	-.573
321	-.441	.049	-.251	-.892	421	-.555	.099	-.273	-1.165
322	-0.000	.064	.268	-.226	422	-.505	.073	-.292	-.910
323	.229	.087	.574	-.053	423	-.496	.058	-.319	-.818
324	.372	.099	.781	.089	424	-.450	.053	-.296	-.661
325	.422	.113	.828	.106	425	-.461	.051	-.254	-.667
326	.514	.120	.910	.178	426	-.419	.050	-.225	-.614
327	.524	.126	.918	.204	427	-.434	.049	-.272	-.604
328	.568	.131	.953	.226	428	-.398	.049	-.223	-.569
329	.442	.128	.849	.068	429	-.433	.047	-.248	-.653
331	-.497	.060	-.314	-.888	431	-.567	.092	-.264	-1.016
332	-.061	.071	.213	-.275	432	-.526	.075	-.303	-.912
333	.142	.088	.470	-.089	433	-.555	.062	-.345	-.873
334	.287	.099	.686	.025	434	-.510	.058	-.303	-.741
335	.331	.107	.767	.043	435	-.520	.055	-.356	-.780
336	.414	.115	.859	.126	436	-.483	.053	-.321	-.748
337	.426	.114	.966	.099	437	-.508	.048	-.325	-.679
338	.479	.117	.996	.143	438	-.470	.047	-.294	-.635
339	.367	.119	.777	.036	439	-.487	.047	-.317	-.661
341	-.516	.067	-.329	-.997	441	-.545	.063	-.374	-.979
342	-.129	.055	.107	-.328	442	-.506	.060	-.331	-.931
343	.049	.072	.326	-.157	443	-.522	.057	-.342	-.759
344	.165	.082	.468	-.032	444	-.486	.055	-.289	-.691
345	.190	.091	.563	-.046	445	-.522	.059	-.377	-.861
346	.268	.098	.657	.029	446	-.483	.058	-.350	-.808
347	.266	.105	.645	.015	447	-.499	.056	-.361	-.818
348	.309	.113	.686	.035	448	-.464	.055	-.325	-.787
349	.219	.113	.600	-.126	449	-.496	.051	-.342	-.734
351	-.520	.183	-.097	-1.396	451	-.551	.071	-.364	-.914
352	-.121	.060	.096	-.360	452	-.480	.063	-.294	-.739
353	.008	.058	.221	-.183	453	-.494	.067	-.331	-.806
354	.113	.065	.364	-.074	454	-.454	.072	-.272	-.772
355	.127	.072	.432	-.061	455	-.470	.082	-.247	-.868
356	.175	.078	.542	-.013	456	-.456	.091	-.215	-.864
357	.133	.082	.493	-.056	457	-.579	.100	-.286	-1.016
358	.151	.083	.533	-.053	458	-.615	.100	-.261	-1.131
359	.056	.073	.396	-.163	459	-.532	.164	-.114	-1.773

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 130

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.669	.113	-.343	-1.197
502	-.595	.131	-.164	-1.063
503	-.537	.127	-.146	-1.098
504	-.637	.091	-.360	-1.115
505	-.616	.077	-.332	-.879
506	-.611	.118	-.122	-1.212
507	-.441	.103	.011	-.899
508	-.533	.102	-.128	-.982
509	-.618	.106	-.175	-1.127
510	-.433	.078	-.119	-.825
511	-.177	.081	.085	-.596
512	-.530	.100	-.138	-.935
513	.232	.107	.683	-.074
514	-.310	.103	.086	-.702
515	-.296	.085	.042	-.733
516	-.278	.094	.085	-1.021
517	.015	.056	.252	-.212
518	.162	.066	.416	0.000
519	.295	.106	.708	.040
520	.209	.076	.532	.040
521	.122	.061	.444	-.070
522	-.033	.080	.245	-.594
523	-.015	.074	.257	-.466
524	.017	.076	.388	-.310
525	-.071	.149	.529	-.575
526	-.266	.096	.009	-1.063
527	-.218	.099	.138	-1.051
528	.037	.064	.374	-.331
529	.171	.075	.480	.003
530	.037	.079	.367	-.290
531	.287	.105	.769	.031
532	.192	.081	.582	-.046
533	-.005	.097	.330	-.478
534	.013	.096	.385	-.435
535	.086	.085	.569	-.239
536	.159	.100	.684	-.088
537	.133	.090	.526	-.079
538	-.241	.054	-.058	-.480
539	-.257	.071	.043	-.705
540	-.291	.066	-.073	-.683
541	-.380	.060	-.116	-.615
542	-.353	.065	-.120	-.592
543	-.534	.115	-.278	-1.244
544	-.326	.079	-.037	-.687
545	-.484	.097	-.159	-.891
546	-.581	.094	-.331	-1.090
547	-.288	.071	-.007	-.622
548	-.372	.086	-.027	-.681
549	-.486	.090	-.241	-.906
550	-.235	.049	-.082	-.392



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
 TULSA, OKLAHOMA  
 WIND DIRECTION 140

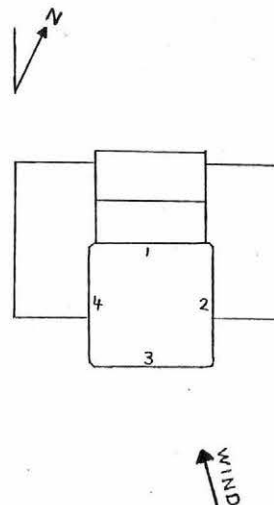
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.357	.050	-.204	-.552	201	-1.276	.422	-.141	-2.743
102	-.317	.049	-.150	-.518	202	-.978	.152	-.473	-1.609
103	-.343	.049	-.180	-.536	203	-.530	.195	-.102	-1.466
104	-.316	.049	-.155	-.525	204	-.280	.108	-.068	-1.122
105	-.349	.048	-.182	-.645	205	-.245	.062	-.032	-.951
106	-.315	.048	-.154	-.643	206	-.191	.043	.019	-.668
107	-.342	.051	-.175	-.623	207	-.218	.036	-.028	-.513
108	-.323	.058	-.121	-.558	208	-.208	.033	-.033	-.472
109	-.396	.069	-.167	-.750	209	-.304	.037	-.166	-.449
111	-.365	.045	-.215	-.597	211	-1.500	.430	.033	-2.827
112	-.330	.043	-.182	-.502	212	-.886	.163	-.275	-1.623
113	-.361	.042	-.218	-.498	213	-.597	.242	-.011	-1.663
114	-.328	.042	-.179	-.448	214	-.340	.175	.069	-1.263
115	-.352	.042	-.197	-.483	215	-.260	.100	.029	-.984
116	-.324	.044	-.168	-.491	216	-.200	.064	.041	-.712
117	-.370	.047	-.150	-.539	217	-.247	.055	.021	-.745
118	-.342	.052	-.137	-.533	218	-.232	.041	-.004	-.584
119	-.396	.064	-.164	-.712	219	-.310	.038	-.148	-.479
121	-.383	.051	-.162	-.577	221	-1.438	.455	-.109	-2.711
122	-.342	.047	-.142	-.519	222	-.831	.190	-.259	-1.698
123	-.369	.046	-.229	-.547	223	-.563	.238	-.069	-1.520
124	-.341	.047	-.153	-.543	224	-.335	.178	-.014	-1.329
125	-.383	.042	-.226	-.569	225	-.281	.114	-.019	-1.046
126	-.352	.042	-.165	-.525	226	-.216	.071	-.021	-.765
127	-.381	.046	-.169	-.558	227	-.243	.055	-.012	-.675
128	-.361	.053	-.169	-.558	228	-.237	.046	-.051	-.653
129	-.432	.075	-.139	-.744	229	-.328	.039	-.171	-.500
131	-.380	.060	-.171	-.634	231	-.937	.418	.059	-2.446
132	-.348	.058	-.147	-.598	232	-.623	.200	-.047	-1.493
133	-.392	.054	-.215	-.662	233	-.350	.167	-.010	-1.241
134	-.361	.056	-.201	-.707	234	-.213	.089	-.008	-.737
135	-.391	.059	-.208	-.779	235	-.212	.054	-.040	-.540
136	-.371	.059	-.086	-.768	236	-.183	.042	-.012	-.685
137	-.418	.059	-.203	-.683	237	-.240	.040	-.018	-.516
138	-.402	.065	-.210	-.670	238	-.233	.036	-.073	-.424
139	-.460	.078	-.217	-.770	239	-.322	.042	-.156	-.490
141	-.380	.073	-.135	-.686	241	-.488	.258	.233	-1.855
142	-.349	.070	-.137	-.651	242	-.379	.152	.077	-1.162
143	-.391	.074	-.189	-.923	243	-.233	.100	.007	-.885
144	-.368	.070	-.149	-.940	244	-.160	.058	-.007	-.686
145	-.415	.071	-.235	-.863	245	-.201	.048	-.061	-.567
146	-.403	.077	-.153	-.740	246	-.173	.038	-.006	-.373
147	-.466	.095	-.142	-.865	247	-.217	.037	-.044	-.371
148	-.460	.096	-.161	-.833	248	-.218	.039	-.026	-.363
149	-.492	.081	-.265	-.786	249	-.321	.051	-.159	-.531
151	-.389	.082	-.043	-.677	251	-.268	.113	.117	-.863
152	-.368	.079	-.086	-.665	252	-.171	.075	.057	-.598
153	-.436	.088	-.219	-1.019	253	-.130	.063	.121	-.428
154	-.406	.100	-.149	-1.002	254	-.096	.062	.134	-.450
155	-.380	.088	-.129	-.820	255	-.159	.057	.048	-.454
156	-.337	.083	-.044	-.758	256	-.161	.050	.012	-.373
157	-.481	.120	-.149	-1.073	257	-.222	.040	-.080	-.377
158	-.529	.134	-.235	-1.256	258	-.215	.038	-.079	-.362
159	-.483	.093	-.237	-.909	259	-.312	.053	-.097	-.580

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 140

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.472	.117	-.214	-1.911	401	-.534	.160	-.109	-1.322
302	.184	.092	.495	-.193	402	-.483	.131	.006	-1.057
303	.436	.118	.856	-.080	403	-.471	.092	-.110	-.855
304	.549	.126	.942	.007	404	-.428	.086	-.114	-.893
305	.546	.119	.860	.127	405	-.453	.076	-.216	-1.063
306	.617	.123	.950	.221	406	-.411	.070	-.173	-.797
307	.602	.124	.935	.166	407	-.427	.065	-.234	-.797
308	.622	.125	1.026	.165	408	-.389	.061	-.187	-.670
309	.387	.126	.823	-.067	409	-.429	.060	-.240	-.730
311	-.424	.083	-.222	-1.227	411	-.538	.153	-.141	-1.516
312	.183	.090	.498	-.124	412	-.483	.116	-.170	-1.198
313	.411	.108	.775	-.025	413	-.486	.079	-.128	-.958
314	.557	.116	.957	.121	414	-.428	.072	-.117	-.783
315	.584	.119	1.012	.180	415	-.439	.070	-.128	-.824
316	.649	.122	1.049	.224	416	-.397	.071	-.097	-.990
317	.610	.129	1.116	.176	417	-.425	.062	-.238	-1.025
318	.617	.127	1.056	.127	418	-.380	.058	-.189	-.994
319	.333	.116	.700	-.174	419	-.399	.054	-.206	-.795
321	-.470	.095	-.238	-1.358	421	-.583	.168	-.209	-1.688
322	.092	.087	.370	-.204	422	-.522	.127	-.050	-1.374
323	.316	.110	.668	.008	423	-.513	.092	-.093	-1.049
324	.448	.120	.842	.112	424	-.460	.087	-.082	-.990
325	.449	.128	1.069	.086	425	-.483	.085	-.224	-1.185
326	.524	.132	1.053	.141	426	-.439	.082	-.182	-1.171
327	.505	.133	.990	.091	427	-.454	.075	-.201	-1.124
328	.509	.133	.966	.087	428	-.417	.071	-.160	-1.163
329	.249	.128	.770	-.233	429	-.449	.062	-.265	-1.156
331	-.541	.125	-.267	-1.465	431	-.562	.136	-.217	-1.287
332	-.051	.081	.262	-.391	432	-.516	.111	-.167	-1.014
333	.131	.098	.503	-.129	433	-.527	.087	-.233	-.933
334	.257	.105	.616	0.000	434	-.488	.085	-.220	-.944
335	.278	.111	.627	-.003	435	-.507	.084	-.274	-.965
336	.346	.116	.711	.039	436	-.473	.081	-.235	-.859
337	.333	.132	.876	-.008	437	-.508	.074	-.270	-.937
338	.373	.134	.869	.020	438	-.468	.069	-.241	-.937
339	.203	.137	.758	-.208	439	-.488	.069	-.233	-1.245
341	-.632	.171	-.315	-1.697	441	-.505	.092	-.223	-.986
342	-.160	.058	.035	-.391	442	-.467	.086	-.130	-.815
343	-.013	.060	.233	-.252	443	-.507	.093	-.213	-.926
344	.082	.063	.375	-.110	444	-.488	.094	-.209	-.926
345	.078	.070	.361	-.170	445	-.528	.100	-.170	-1.018
346	.143	.076	.441	-.094	446	-.495	.102	-.251	-1.106
347	.128	.085	.465	-.131	447	-.515	.104	-.198	-1.068
348	.162	.097	.589	-.136	448	-.482	.102	-.219	-1.216
349	.042	.118	.468	-.301	449	-.527	.114	-.284	-1.309
351	-.670	.233	-.104	-1.659	451	-.467	.110	-.046	-1.042
352	-.169	.057	.052	-.377	452	-.357	.071	-.038	-.621
353	-.068	.042	.179	-.212	453	-.381	.068	-.181	-.659
354	.023	.041	.217	-.108	454	-.350	.073	-.117	-.700
355	.023	.043	.224	-.117	455	-.401	.084	-.120	-.926
356	.071	.045	.257	-.072	456	-.427	.099	-.039	-1.026
357	.042	.056	.352	-.107	457	-.533	.122	-.127	-1.121
358	.078	.062	.382	-.080	458	-.494	.133	-.107	-1.179
359	-.003	.073	.366	-.180	459	-.569	.209	-.091	-1.710

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 140

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.710	.111	-.404	-1.195
502	-.607	.116	-.153	-1.123
503	-.586	.135	-.139	-1.321
504	-.647	.101	-.344	-1.358
505	-.632	.084	-.287	-1.009
506	-.639	.107	-.160	-1.326
507	-.453	.136	.153	-1.032
508	-.566	.141	.186	-1.137
509	-.677	.123	-.142	-1.197
510	-.328	.104	.006	-.712
511	-.293	.097	-.003	-.673
512	-.569	.115	-.102	-.997
513	.136	.099	.734	-.153
514	-.247	.105	.150	-.677
515	-.263	.087	.037	-.898
516	-.256	.094	.015	-.853
517	-.020	.050	.165	-.181
518	.089	.051	.283	-.042
519	.199	.083	.508	.004
520	.125	.055	.501	-.028
521	.062	.059	.322	-.195
522	-.080	.078	.213	-.403
523	-.070	.066	.129	-.426
524	-.031	.066	.246	-.369
525	-.043	.115	.439	-.517
526	-.226	.102	.046	-.943
527	-.193	.102	.157	-.959
528	-.001	.053	.222	-.295
529	.100	.065	.495	-.202
530	-.019	.069	.277	-.288
531	.189	.083	.670	-.018
532	.113	.070	.764	-.123
533	-.050	.076	.225	-.448
534	-.032	.079	.255	-.430
535	.046	.067	.442	-.231
536	.103	.070	.508	-.081
537	.085	.069	.484	-.087
538	-.185	.043	-.055	-.381
539	-.209	.056	.031	-.427
540	-.251	.080	.046	-.603
541	-.268	.058	-.055	-.492
542	-.249	.062	-.036	-.600
543	-.519	.153	-.189	-1.479
544	-.210	.063	.015	-.535
545	-.267	.087	.066	-.691
546	-.431	.111	-.079	-1.028
547	-.202	.059	.034	-.468
548	-.234	.076	.007	-.646
549	-.348	.097	-.015	-.802
550	-.161	.037	.007	-.349



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 150

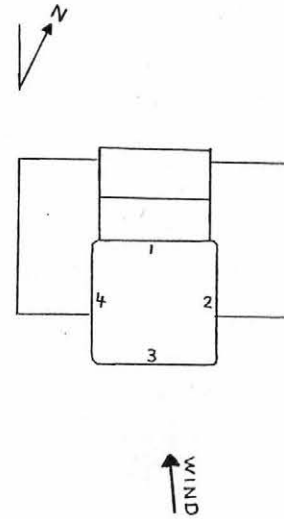
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.326	.087	-.011	-.842	201	-1.562	.431	-.333	-2.784
102	-.271	.078	.058	-.650	202	-1.137	.233	-.326	-2.131
103	-.297	.071	-.038	-.641	203	-1.025	.253	-.270	-1.964
104	-.267	.069	-.050	-.645	204	-.754	.246	-.037	-1.587
105	-.324	.075	-.065	-.730	205	-.527	.215	.126	-1.798
106	-.291	.075	-.047	-.668	206	-.365	.169	.063	-1.575
107	-.325	.079	-.078	-.723	207	-.321	.126	.049	-1.155
108	-.305	.090	-.020	-.726	208	-.250	.095	.156	-.882
109	-.367	.112	-.018	-.892	209	-.299	.079	.016	-.708
111	-.343	.117	.041	-1.145	211	-1.159	.446	-.394	-2.784
112	-.279	.090	.019	-.728	212	-.909	.223	-.319	-1.986
113	-.309	.076	-.062	-.658	213	-.923	.231	-.150	-1.937
114	-.267	.065	-.082	-.568	214	-.796	.253	.018	-1.919
115	-.289	.056	-.100	-.631	215	-.691	.261	.061	-1.604
116	-.257	.052	-.076	-.482	216	-.528	.253	.167	-1.452
117	-.310	.060	-.084	-.643	217	-.453	.242	.177	-1.665
118	-.287	.072	-.004	-.777	218	-.336	.189	.211	-1.265
119	-.359	.107	-.080	-.893	219	-.329	.139	.109	-1.197
121	-.325	.110	.035	-1.336	221	-1.207	.463	-.298	-2.784
122	-.260	.077	-.027	-.973	222	-.910	.265	-.171	-2.089
123	-.282	.065	-.103	-.672	223	-.827	.278	-.056	-2.079
124	-.246	.058	-.091	-.585	224	-.654	.292	.077	-1.819
125	-.287	.052	-.134	-.547	225	-.550	.276	.140	-1.713
126	-.250	.052	-.089	-.493	226	-.413	.228	.073	-1.431
127	-.284	.058	-.118	-.522	227	-.360	.187	.087	-1.299
128	-.268	.074	-.054	-.647	228	-.284	.151	.211	-1.177
129	-.341	.112	-.016	-.855	229	-.310	.115	.019	-.974
131	-.274	.068	-.089	-.678	231	-1.056	.371	-.054	-2.540
132	-.235	.063	-.073	-.559	232	-.756	.245	-.102	-1.965
133	-.286	.060	-.123	-.522	233	-.548	.243	-.061	-1.713
134	-.248	.057	-.109	-.497	234	-.355	.182	-.024	-1.422
135	-.274	.053	-.131	-.541	235	-.297	.135	.132	-1.344
136	-.247	.054	-.096	-.553	236	-.222	.100	.084	-1.045
137	-.294	.058	-.119	-.536	237	-.250	.080	.015	-.771
138	-.267	.069	-.076	-.550	238	-.208	.062	.052	-.779
139	-.309	.093	-.041	-.786	239	-.259	.059	-.075	-.574
141	-.250	.059	-.005	-.669	241	-.560	.226	.050	-1.654
142	-.213	.059	-.005	-.726	242	-.406	.139	-.048	-1.086
143	-.251	.064	-.100	-.766	243	-.275	.109	-.052	-.957
144	-.220	.058	.041	-.604	244	-.181	.069	-.019	-.629
145	-.279	.054	-.078	-.620	245	-.201	.047	-.046	-.485
146	-.258	.060	-.054	-.589	246	-.155	.038	-.033	-.323
147	-.309	.076	-.073	-.793	247	-.188	.036	-.076	-.389
148	-.285	.078	-.111	-.719	248	-.166	.039	-.037	-.405
149	-.294	.075	-.122	-.900	249	-.242	.049	-.106	-.442
151	-.241	.068	-.066	-.623	251	-.274	.113	.037	-.814
152	-.217	.069	-.064	-.728	252	-.168	.077	.121	-.652
153	-.279	.080	-.095	-.815	253	-.133	.052	.031	-.386
154	-.229	.074	-.016	-.670	254	-.094	.047	.054	-.344
155	-.228	.052	-.081	-.553	255	-.149	.045	-.019	-.406
156	-.198	.054	0.000	-.531	256	-.136	.040	-.029	-.374
157	-.293	.086	-.077	-.953	257	-.189	.040	-.079	-.477
158	-.292	.093	-.095	-.807	258	-.163	.039	-.033	-.402
159	-.283	.071	-.124	-.635	259	-.221	.051	-.052	-.469

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 150

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.823	.368	-.237	-2.513	401	-.484	.219	.034	-1.685
302	.229	.111	.571	-.167	402	-.436	.195	.212	-1.275
303	.508	.118	.820	.048	403	-.488	.181	.201	-1.297
304	.607	.123	.945	.133	404	-.524	.189	.283	-1.290
305	.565	.128	.984	.086	405	-.612	.180	.154	-1.731
306	.617	.127	1.065	.149	406	-.604	.178	.088	-1.418
307	.574	.124	.995	.116	407	-.625	.178	.003	-1.533
308	.557	.118	.983	.109	408	-.581	.184	-.101	-1.705
309	.210	.115	.588	-.170	409	-.632	.196	-.204	-1.778
311	-.684	.306	-.052	-2.669	411	-.550	.276	.069	-1.897
312	.200	.124	.579	-.223	412	-.489	.221	.209	-1.413
313	.444	.132	.852	.023	413	-.530	.188	.206	-1.359
314	.572	.138	.999	.112	414	-.529	.194	.210	-1.253
315	.574	.140	1.028	.110	415	-.591	.200	.175	-1.522
316	.613	.141	1.020	.114	416	-.572	.202	.146	-1.792
317	.561	.166	1.114	-1.152	417	-.609	.200	.188	-1.832
318	.538	.131	.988	.067	418	-.557	.192	-.032	-1.885
319	.196	.115	.744	-.201	419	-.563	.184	-.144	-1.624
321	-.823	.347	-.202	-2.315	421	-.485	.248	.121	-1.956
322	.083	.129	.565	-.446	422	-.424	.205	.084	-1.453
323	.317	.144	.882	-.071	423	-.470	.196	.170	-1.217
324	.425	.147	1.001	.085	424	-.496	.211	.186	-1.473
325	.411	.134	.904	.031	425	-.608	.215	.165	-1.624
326	.464	.133	.895	.118	426	-.610	.219	.177	-1.928
327	.419	.130	.875	.065	427	-.657	.224	.007	-2.002
328	.392	.129	.878	.026	428	-.636	.228	-.004	-1.855
329	.065	.135	.545	-.362	429	-.664	.241	-.212	-2.360
331	-.811	.307	-.246	-2.355	431	-.376	.155	.090	-1.205
332	-.099	.094	.287	-.498	432	-.332	.151	.221	-.996
333	.066	.091	.455	-.183	433	-.392	.154	.073	-1.167
334	.173	.088	.556	-.063	434	-.394	.161	.147	-1.183
335	.177	.087	.569	-.043	435	-.474	.172	.031	-1.252
336	.229	.089	.660	.007	436	-.499	.187	.018	-1.280
337	.192	.104	.633	-.065	437	-.607	.201	-.097	-1.728
338	.204	.105	.637	-.078	438	-.610	.205	-.089	-1.499
339	-.008	.120	.607	-.335	439	-.663	.230	-.227	-1.823
341	-.654	.209	-.203	-1.699	441	-.310	.073	-.151	-.637
342	-.161	.054	.061	-.350	442	-.249	.071	-.063	-.542
343	-.042	.053	.245	-.214	443	-.285	.086	-.047	-.649
344	.039	.056	.295	-.117	444	-.277	.097	-.019	-.723
345	.016	.058	.335	-.149	445	-.365	.120	.001	-.889
346	.075	.061	.380	-.093	446	-.367	.129	-.028	-.868
347	.055	.066	.386	-.124	447	-.445	.140	-.076	-1.185
348	.081	.072	.501	-.153	448	-.465	.149	-.053	-1.198
349	-.045	.085	.320	-.315	449	-.548	.164	-.189	-1.391
351	-.424	.155	-.015	-1.093	451	-.284	.072	-.081	-.656
352	-.115	.040	.039	-.275	452	-.206	.046	-.073	-.441
353	-.067	.035	.071	-.174	453	-.226	.044	-.089	-.463
354	.011	.036	.186	-.097	454	-.189	.049	.005	-.449
355	.002	.039	.242	-.106	455	-.235	.059	-.022	-.602
356	.043	.041	.319	-.069	456	-.240	.079	0.000	-.765
357	-.002	.043	.248	-.122	457	-.332	.103	-.054	-.760
358	.030	.045	.256	-.101	458	-.289	.102	.036	-.745
359	-.043	.050	.217	-.186	459	-.395	.165	-.057	-1.375

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 150

PRFSSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.828	.139	-.431	-1.451
502	-.752	.156	-.268	-1.396
503	-.633	.191	.209	-1.342
504	-.732	.120	-.385	-1.469
505	-.723	.109	-.396	-1.176
506	-.740	.147	-.090	-1.401
507	-.362	.177	.213	-.970
508	-.565	.179	.136	-1.218
509	-.754	.167	-.063	-1.555
510	-.257	.147	.201	-.998
511	-.339	.137	.120	-.824
512	-.616	.180	.035	-1.395
513	.096	.073	.498	-.106
514	-.157	.077	.182	-.473
515	-.174	.071	.031	-.593
516	-.180	.076	.055	-.648
517	-.008	.041	.165	-.211
518	.069	.041	.230	-.055
519	.152	.066	.497	-.033
520	.084	.038	.246	-.029
521	.043	.039	.211	-.070
522	-.085	.059	.163	-.422
523	-.067	.055	.181	-.357
524	-.042	.049	.211	-.223
525	-.027	.078	.317	-.361
526	-.139	.080	.105	-.651
527	-.121	.078	.135	-.590
528	.014	.049	.239	-.114
529	.077	.055	.322	-.106
530	-.027	.054	.178	-.283
531	.138	.065	.389	-.032
532	.071	.049	.293	-.118
533	-.059	.062	.172	-.382
534	-.045	.065	.194	-.354
535	.021	.054	.249	-.189
536	.072	.056	.329	-.138
537	.055	.049	.272	-.134
538	-.104	.028	.004	-.232
539	-.119	.035	-.004	-.259
540	-.157	.059	.012	-.559
541	-.151	.032	-.004	-.277
542	-.144	.036	-.022	-.319
543	-.342	.124	-.045	-1.033
544	-.140	.047	.047	-.373
545	-.142	.044	.041	-.440
546	-.180	.061	.019	-.486
547	-.126	.038	.047	-.284
548	-.138	.041	.045	-.408
549	-.158	.051	.003	-.460
550	-.095	.027	.012	-.216





WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 160

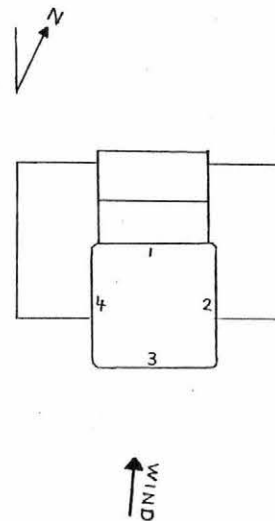
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.484	.211	.004	-1.533	201	-.524	.173	-.194	-1.940
102	-.350	.102	-.028	-.818	202	-.496	.135	-.193	-1.299
103	-.312	.074	-.053	-.639	203	-.515	.143	-.134	-1.358
104	-.291	.067	-.045	-.563	204	-.527	.156	.045	-1.385
105	-.285	.060	-.092	-.516	205	-.546	.162	-.030	-1.572
106	-.280	.057	-.116	-.494	206	-.538	.163	.019	-1.564
107	-.281	.057	-.114	-.499	207	-.516	.161	.079	-1.400
108	-.274	.059	-.102	-.508	208	-.475	.160	.126	-1.198
109	-.273	.065	-.072	-.563	209	-.503	.189	.248	-1.521
111	-.544	.219	-.056	-1.423	211	-.470	.156	-.160	-2.361
112	-.349	.087	-.082	-.787	212	-.450	.131	-.122	-1.652
113	-.302	.056	-.108	-.503	213	-.475	.147	-.107	-1.593
114	-.288	.049	-.094	-.471	214	-.491	.153	.016	-1.551
115	-.287	.047	-.123	-.494	215	-.510	.158	-.040	-1.449
116	-.280	.048	-.126	-.451	216	-.501	.163	.022	-1.477
117	-.286	.055	-.135	-.538	217	-.497	.149	.085	-1.388
118	-.287	.059	-.092	-.578	218	-.501	.144	.110	-1.152
119	-.289	.064	-.070	-.870	219	-.549	.190	.007	-1.285
121	-.523	.224	-.010	-1.379	221	-.598	.237	-.153	-2.577
122	-.370	.098	-.083	-.696	222	-.557	.186	-.119	-1.935
123	-.323	.065	-.117	-.625	223	-.570	.190	-.028	-1.702
124	-.297	.053	-.108	-.489	224	-.563	.192	.027	-1.699
125	-.287	.052	-.135	-.490	225	-.555	.193	.050	-1.679
126	-.285	.051	-.129	-.474	226	-.539	.186	.031	-1.443
127	-.288	.054	-.148	-.500	227	-.521	.178	.031	-1.584
128	-.281	.057	-.086	-.509	228	-.491	.174	.105	-1.235
129	-.290	.061	-.092	-.597	229	-.496	.199	.080	-1.314
131	-.393	.149	-.039	-1.289	231	-.694	.247	-.243	-1.947
132	-.350	.105	-.098	-1.011	232	-.612	.192	-.199	-1.699
133	-.325	.088	-.048	-.804	233	-.611	.197	-.113	-2.026
134	-.310	.074	-.123	-.594	234	-.574	.191	-.080	-1.612
135	-.299	.063	-.135	-.570	235	-.539	.191	.012	-1.305
136	-.284	.060	-.080	-.560	236	-.477	.185	.034	-1.247
137	-.285	.059	-.143	-.540	237	-.449	.174	.076	-1.094
138	-.282	.061	-.080	-.617	238	-.406	.157	.058	-1.069
139	-.279	.061	-.094	-.690	239	-.385	.142	-.024	-1.141
141	-.307	.092	-.082	-.774	241	-.616	.213	-.206	-1.524
142	-.304	.088	-.076	-.810	242	-.510	.162	-.194	-1.281
143	-.332	.100	-.078	-.841	243	-.446	.159	-.042	-1.266
144	-.311	.090	-.034	-.709	244	-.367	.149	.031	-1.106
145	-.289	.067	-.051	-.717	245	-.346	.142	-.010	-1.064
146	-.290	.071	-.057	-.739	246	-.301	.117	.022	-.790
147	-.308	.089	-.105	-.961	247	-.279	.102	-.009	-.760
148	-.296	.088	-.069	-.935	248	-.256	.089	.079	-.683
149	-.263	.074	-.029	-1.297	249	-.266	.078	-.046	-.628
151	-.245	.080	-.016	-.690	251	-.355	.137	-.043	-.994
152	-.249	.077	-.078	-.604	252	-.267	.116	.062	-1.011
153	-.309	.125	-.022	-1.002	253	-.239	.113	.025	-.902
154	-.260	.097	-.029	-.749	254	-.232	.103	.015	-.842
155	-.220	.062	-.003	-.780	255	-.221	.069	-.003	-.655
156	-.235	.080	.010	-.743	256	-.197	.051	.003	-.462
157	-.288	.098	-.085	-.790	257	-.202	.041	.021	-.407
158	-.299	.112	-.091	-1.090	258	-.201	.040	-.062	-.405
159	-.267	.085	-.082	-.794	259	-.231	.053	-.068	-.531

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 160

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-1.549	.388	.001	-2.579	401	-.301	.074	-.078	-.643
302	.240	.129	.934	-.194	402	-.288	.066	-.009	-.602
303	.562	.127	.938	.141	403	-.262	.081	-.006	-.718
304	.617	.128	.999	.172	404	-.278	.108	.050	-.869
305	.596	.134	.995	.021	405	-.310	.134	.195	-1.098
306	.593	.132	.971	.016	406	-.402	.180	.222	-1.259
307	.551	.129	.889	.013	407	-.579	.237	-.007	-1.416
308	.495	.125	.814	.015	408	-.836	.277	.016	-1.924
309	.221	.116	.634	-.249	409	-1.108	.245	-.286	-2.184
311	-1.257	.388	.019	-2.785	411	-.314	.091	.044	-.784
312	.214	.133	.757	-.269	412	-.279	.097	.122	-.807
313	.516	.141	.999	.022	413	-.287	.137	.156	-.970
314	.582	.144	1.018	.120	414	-.331	.180	.233	-1.041
315	.574	.142	1.013	.125	415	-.425	.228	.192	-1.349
316	.568	.141	1.048	.092	416	-.549	.276	.200	-1.548
317	.546	.123	.912	.019	417	-.683	.311	.138	-1.807
318	.470	.119	.900	-.021	418	-.843	.281	.217	-2.128
319	.197	.105	.564	-.193	419	-.965	.244	-.241	-2.178
321	-1.072	.391	.134	-2.401	421	-.298	.068	-.116	-.759
322	.141	.156	.757	-.480	422	-.264	.063	-.026	-.763
323	.371	.160	.946	-.098	423	-.249	.088	.107	-1.071
324	.422	.161	.949	-.061	424	-.254	.123	.113	-1.193
325	.410	.148	.958	.012	425	-.324	.185	.091	-1.532
326	.400	.144	.889	0.000	426	-.397	.229	.076	-1.677
327	.350	.140	.837	-.056	427	-.522	.284	.009	-1.719
328	.285	.137	.768	-.091	428	-.707	.319	-.026	-2.118
329	.035	.128	.466	-.450	429	-.940	.278	-.172	-2.140
331	-.738	.322	.196	-2.148	431	-.292	.081	-.076	-1.261
332	.026	.162	.727	-.379	432	-.246	.057	-.079	-.577
333	.144	.119	.716	-.180	433	-.226	.054	.010	-.615
334	.172	.101	.647	-.111	434	-.215	.060	.015	-.677
335	.158	.092	.570	-.113	435	-.230	.078	.018	-.936
336	.158	.090	.592	-.080	436	-.252	.113	.034	-1.014
337	.108	.099	.604	-.189	437	-.308	.157	-.016	-1.405
338	.059	.094	.466	-.223	438	-.422	.208	-.063	-1.509
339	-.136	.098	.310	-.600	439	-.679	.240	-.063	-1.815
341	-.464	.175	.190	-1.372	441	-.265	.075	-.025	-.660
342	-.056	.103	.450	-.356	442	-.218	.048	-.047	-.433
343	.010	.086	.488	-.220	443	-.188	.041	-.044	-.420
344	.030	.074	.488	-.165	444	-.168	.042	.019	-.393
345	.014	.059	.313	-.189	445	-.178	.049	.004	-.643
346	.013	.053	.220	-.168	446	-.185	.061	-.021	-1.008
347	-.013	.053	.218	-.192	447	-.219	.083	.032	-1.002
348	-.034	.056	.257	-.279	448	-.276	.118	-.009	-1.177
349	-.174	.065	.168	-.439	449	-.418	.138	-.062	-1.343
351	-.217	.093	.025	-.790	451	-.281	.105	-.079	-1.036
352	-.072	.053	.174	-.236	452	-.205	.053	-.063	-.414
353	-.045	.045	.215	-.187	453	-.170	.039	-.025	-.314
354	-.021	.039	.184	-.140	454	-.150	.038	.007	-.291
355	-.020	.036	.135	-.144	455	-.148	.043	.012	-.323
356	-.008	.033	.123	-.117	456	-.129	.048	.016	-.360
357	-.033	.038	.248	-.138	457	-.131	.061	.097	-.468
358	-.046	.037	.162	-.160	458	-.133	.065	.106	-.462
359	-.124	.045	.033	-.328	459	-.183	.075	.043	-.898

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 160

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.650	.116	-.326	-1.314
502	-.675	.150	-.162	-1.390
503	-.576	.159	.010	-1.194
504	-.752	.144	-.272	-1.460
505	-.715	.112	-.254	-1.132
506	-.713	.153	-.095	-1.440
507	-.253	.138	.276	-.919
508	-.500	.156	.076	-1.067
509	-.717	.148	-.076	-1.363
510	-.375	.175	.385	-1.132
511	-.371	.130	.194	-.864
512	-.600	.164	.026	-1.236
513	.025	.055	.370	-.157
514	-.056	.044	.141	-.233
515	-.090	.063	.096	-.735
516	-.099	.064	.425	-.581
517	.007	.043	.246	-.135
518	.054	.045	.271	-.106
519	.116	.067	.434	-.061
520	.055	.044	.255	-.080
521	.013	.048	.309	-.122
522	-.141	.072	.089	-.558
523	-.129	.069	.084	-.648
524	-.095	.057	.320	-.386
525	-.008	.054	.301	-.197
526	-.074	.070	.188	-.697
527	-.088	.075	.181	-.831
528	.032	.047	.288	-.108
529	.094	.062	.389	-.098
530	-.002	.055	.236	-.211
531	.099	.063	.351	-.090
532	.029	.048	.262	-.169
533	-.107	.080	.148	-.683
534	-.102	.076	.118	-.569
535	-.022	.063	.306	-.349
536	.069	.066	.416	-.266
537	.059	.065	.434	-.119
538	-.099	.027	.048	-.237
539	-.119	.035	.048	-.313
540	-.174	.073	.038	-.852
541	-.113	.030	.013	-.229
542	-.109	.033	.061	-.242
543	-.280	.107	-.049	-.874
544	-.145	.053	.016	-.507
545	-.130	.038	.022	-.364
546	-.131	.044	.066	-.397
547	-.129	.040	.004	-.348
548	-.124	.033	-.016	-.357
549	-.125	.038	.003	-.355
550	-.089	.028	.025	-.179



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 170

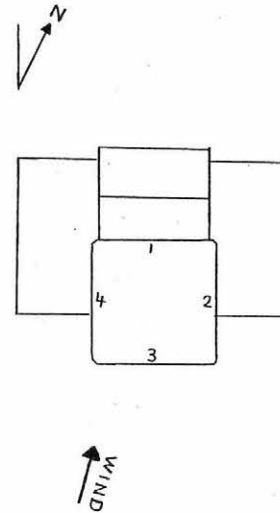
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.427	.140	-.074	-1.387	201	-.391	.102	-.104	-1.085
102	-.315	.070	-.068	-.672	202	-.362	.077	-.099	-.893
103	-.296	.053	-.133	-.625	203	-.375	.080	-.149	-.920
104	-.276	.048	-.141	-.553	204	-.369	.085	-.132	-.980
105	-.289	.049	-.136	-.554	205	-.392	.087	-.165	-.991
106	-.281	.047	-.156	-.528	206	-.387	.089	-.128	-.893
107	-.291	.047	-.162	-.534	207	-.398	.091	-.138	-1.096
108	-.277	.047	-.120	-.518	208	-.388	.097	-.087	-1.316
109	-.288	.047	-.114	-.493	209	-.427	.120	-.071	-1.251
111	-.441	.119	-.115	-.978	211	-.361	.085	-.120	-1.423
112	-.326	.057	-.113	-.553	212	-.332	.072	-.132	-.909
113	-.314	.042	-.177	-.459	213	-.355	.077	-.139	-.977
114	-.302	.039	-.166	-.462	214	-.353	.078	-.139	-1.039
115	-.311	.037	-.162	-.475	215	-.371	.077	-.164	-.862
116	-.295	.037	-.176	-.459	216	-.362	.077	-.141	-1.117
117	-.309	.037	-.188	-.475	217	-.398	.073	-.191	-.949
118	-.298	.038	-.172	-.465	218	-.406	.076	-.194	-.828
119	-.305	.039	-.172	-.453	219	-.452	.108	-.177	-1.022
121	-.470	.116	-.208	-1.170	221	-.388	.065	-.178	-.880
122	-.359	.057	-.164	-.605	222	-.366	.057	-.157	-.725
123	-.343	.044	-.166	-.540	223	-.382	.061	-.165	-.822
124	-.320	.040	-.157	-.469	224	-.373	.066	-.133	-.738
125	-.327	.039	-.177	-.573	225	-.402	.078	-.148	-1.049
126	-.316	.038	-.183	-.521	226	-.400	.078	-.112	-1.065
127	-.325	.037	-.201	-.502	227	-.421	.076	-.100	-.939
128	-.308	.036	-.190	-.443	228	-.422	.083	-.054	-.867
129	-.318	.038	-.179	-.453	229	-.473	.110	-.206	-1.143
131	-.492	.118	-.169	-1.225	231	-.460	.086	-.201	-1.338
132	-.394	.072	-.131	-.716	232	-.431	.080	-.184	-1.142
133	-.373	.059	-.177	-.667	233	-.452	.078	-.242	-.971
134	-.349	.053	-.164	-.597	234	-.449	.084	-.136	-1.119
135	-.349	.052	-.169	-.726	235	-.466	.088	-.194	-1.135
136	-.330	.052	-.157	-.726	236	-.451	.088	-.130	-1.052
137	-.343	.044	-.201	-.674	237	-.466	.082	-.130	-.909
138	-.328	.043	-.209	-.675	238	-.459	.081	-.155	-.857
139	-.332	.044	-.188	-.607	239	-.486	.096	-.141	-.951
141	-.449	.083	-.179	-.925	241	-.502	.102	-.255	-1.326
142	-.426	.075	-.163	-.757	242	-.466	.090	-.246	-1.184
143	-.429	.086	-.134	-.834	243	-.481	.093	-.217	-1.014
144	-.383	.075	-.118	-.869	244	-.468	.092	-.151	-.967
145	-.373	.063	-.201	-.708	245	-.481	.100	-.172	-1.036
146	-.367	.074	-.160	-.870	246	-.467	.098	-.152	-1.143
147	-.381	.079	-.205	-.874	247	-.469	.095	-.148	-.925
148	-.349	.070	-.195	-.796	248	-.439	.095	-.080	-.884
149	-.342	.070	-.131	-.743	249	-.438	.083	-.119	-.848
151	-.380	.096	-.043	-.786	251	-.534	.184	-.099	-1.491
152	-.381	.091	-.075	-.775	252	-.477	.174	-.077	-1.535
153	-.447	.121	-.117	-.941	253	-.474	.128	-.010	-1.058
154	-.341	.108	.003	-.883	254	-.464	.114	-.126	-.975
155	-.295	.079	.030	-.664	255	-.388	.091	-.049	-.916
156	-.333	.092	-.013	-.781	256	-.320	.074	-.062	-.675
157	-.424	.119	-.137	-1.042	257	-.313	.071	-.094	-.599
158	-.395	.099	-.156	-.952	258	-.297	.067	-.055	-.583
159	-.364	.083	-.140	-.694	259	-.331	.067	-.084	-.593

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 170

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.733	.407	.577	-2.283	401	-.308	.051	-.119	-.506
302	.334	.156	.860	-.168	402	-.269	.042	-.120	-.422
303	.487	.165	1.130	-.042	403	-.203	.043	-.022	-.395
304	.514	.167	1.035	-.050	404	-.159	.048	.016	-.444
305	.476	.146	.907	.001	405	-.172	.051	.045	-.585
306	.471	.144	.973	-.025	406	-.164	.062	.058	-.595
307	.420	.139	.951	-.063	407	-.224	.106	.080	-1.044
308	.370	.132	.800	-.127	408	-.364	.219	.165	-1.782
309	.145	.118	.490	-.341	409	-.793	.261	.098	-1.935
311	-.825	.382	.287	-2.122	411	-.321	.050	-.141	-.552
312	.260	.128	.774	-.136	412	-.267	.040	-.132	-.425
313	.466	.129	.948	.138	413	-.225	.041	.028	-.483
314	.517	.136	1.002	.168	414	-.186	.049	.059	-.530
315	.497	.139	.907	.136	415	-.194	.061	.015	-.634
316	.493	.139	.948	.099	416	-.191	.095	.110	-.958
317	.407	.138	.901	-.010	417	-.275	.159	.101	-1.522
318	.337	.130	.784	-.123	418	-.430	.252	.153	-1.581
319	.096	.100	.410	-.301	419	-.774	.252	.070	-1.893
321	-.738	.307	.382	-1.967	421	-.334	.045	-.165	-.601
322	.221	.125	.710	-.306	422	-.276	.036	-.147	-.447
323	.385	.134	.834	-.154	423	-.237	.038	-.083	-.572
324	.430	.139	.923	-.342	424	-.193	.045	-.056	-.723
325	.413	.133	.958	.023	425	-.208	.059	.077	-.777
326	.397	.129	.934	.037	426	-.206	.081	.055	-1.097
327	.328	.124	.789	-.035	427	-.281	.138	.039	-1.128
328	.260	.116	.661	-.127	428	-.410	.223	.067	-1.586
329	.021	.095	.353	-.322	429	-.744	.227	-.156	-2.168
331	-.568	.252	.132	-1.706	431	-.344	.056	-.174	-.664
332	.144	.125	.724	-.256	432	-.267	.042	-.131	-.457
333	.261	.134	.893	-.070	433	-.222	.036	-.076	-.423
334	.280	.130	.764	-.045	434	-.182	.037	.004	-.402
335	.243	.124	.720	-.073	435	-.187	.042	.007	-.474
336	.228	.117	.737	-.088	436	-.167	.054	0.000	-.702
337	.180	.115	.639	-.140	437	-.216	.076	-.030	-.918
338	.113	.102	.544	-.173	438	-.288	.132	-.040	-1.075
339	-.100	.077	.284	-.429	439	-.572	.202	-.059	-1.740
341	-.395	.185	.120	-1.380	441	-.347	.082	-.125	-.733
342	.015	.084	.394	-.277	442	-.255	.052	-.104	-.469
343	.070	.094	.527	-.224	443	-.201	.039	-.055	-.392
344	.088	.091	.544	-.158	444	-.152	.036	-.012	-.420
345	.056	.084	.509	-.173	445	-.159	.035	-.037	-.356
346	.048	.075	.426	-.151	446	-.137	.038	.003	-.520
347	-0.000	.067	.360	-.199	447	-.164	.051	-.016	-.607
348	-.037	.060	.268	-.230	448	-.189	.085	.007	-.894
349	-.201	.056	.044	-.395	449	-.371	.139	-.015	-1.115
351	-.178	.092	.094	-.821	451	-.364	.102	-.074	-.922
352	-.019	.059	.296	-.225	452	-.232	.051	-.048	-.398
353	-.019	.051	.335	-.168	453	-.177	.039	-.052	-.346
354	.001	.050	.369	-.133	454	-.129	.038	-.006	-.272
355	-.016	.050	.296	-.149	455	-.125	.042	.013	-.298
356	-.009	.047	.310	-.155	456	-.084	.045	.058	-.303
357	-.047	.043	.155	-.176	457	-.085	.045	.108	-.337
358	-.074	.039	.099	-.192	458	-.077	.050	.095	-.327
359	-.207	.049	-.035	-.405	459	-.152	.069	.055	-.506

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 170

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.602	.137	-.157	-1.339
502	-.552	.148	.075	-1.104
503	-.460	.120	-.058	-.938
504	-.722	.177	-.187	-1.510
505	-.617	.110	-.210	-1.100
506	-.579	.139	-.117	-1.097
507	-.218	.114	.146	-.699
508	-.288	.127	.051	-.816
509	-.566	.157	-.035	-1.411
510	-.344	.122	.122	-.805
511	-.271	.108	.141	-.667
512	-.485	.157	-.083	-1.182
513	.043	.060	.400	-.113
514	-.001	.047	.284	-.210
515	-.033	.054	.225	-.370
516	-.046	.057	.234	-.406
517	.025	.043	.256	-.117
518	.059	.048	.320	-.064
519	.114	.075	.631	-.053
520	.038	.048	.243	-.134
521	-.031	.049	.238	-.174
522	-.238	.100	.025	-.764
523	-.229	.088	.044	-.756
524	-.169	.090	.247	-.658
525	.034	.052	.256	-.190
526	-.009	.061	.263	-.405
527	-.022	.064	.241	-.460
528	.070	.056	.333	-.162
529	.117	.070	.468	-.050
530	-.036	.059	.281	-.291
531	.069	.063	.387	-.222
532	-.005	.053	.237	-.175
533	-.160	.101	.108	-.927
534	-.182	.105	.070	-1.125
535	-.031	.093	.319	-.434
536	.110	.085	.475	-.153
537	.119	.086	.550	-.129
538	-.130	.029	-.026	-.238
539	-.169	.036	-.034	-.408
540	-.275	.097	.038	-.906
541	-.123	.031	.063	-.234
542	-.121	.033	.050	-.231
543	-.380	.127	-.082	-1.073
544	-.255	.095	-.023	-.933
545	-.170	.062	.061	-.443
546	-.129	.052	.076	-.503
547	-.201	.075	.073	-.724
548	-.159	.057	.167	-.509
549	-.130	.046	.004	-.393
550	-.116	.028	-.028	-.257



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 180

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.398	.124	-.101	-1.096	201	-.365	.087	-.127	-.892
102	-.307	.065	-.099	-.621	202	-.332	.075	-.115	-.743
103	-.300	.048	-.161	-.519	203	-.354	.077	-.117	-.722
104	-.274	.043	-.150	-.500	204	-.338	.082	-.098	-.789
105	-.294	.039	-.155	-.443	205	-.359	.073	-.159	-.773
106	-.277	.038	-.158	-.453	206	-.344	.073	-.138	-.837
107	-.293	.038	-.168	-.472	207	-.362	.074	-.138	-.813
108	-.270	.038	-.140	-.421	208	-.343	.080	-.101	-.797
109	-.297	.040	-.159	-.465	209	-.396	.103	-.160	-.913
111	-.399	.094	-.149	-1.270	211	-.348	.068	-.149	-.889
112	-.314	.049	-.143	-.624	212	-.317	.063	-.122	-.716
113	-.320	.040	-.172	-.571	213	-.347	.065	-.149	-.879
114	-.301	.038	-.168	-.557	214	-.334	.064	-.146	-.713
115	-.317	.036	-.202	-.564	215	-.357	.063	-.175	-.694
116	-.294	.035	-.183	-.457	216	-.339	.062	-.163	-.649
117	-.312	.033	-.213	-.475	217	-.372	.059	-.208	-.652
118	-.293	.034	-.199	-.489	218	-.364	.061	-.203	-.729
119	-.306	.034	-.212	-.501	219	-.405	.080	-.195	-.802
121	-.421	.092	-.162	-1.023	221	-.375	.062	-.181	-.825
122	-.338	.051	-.089	-.603	222	-.348	.058	-.133	-.644
123	-.336	.040	-.143	-.501	223	-.370	.059	-.156	-.691
124	-.308	.036	-.161	-.443	224	-.351	.062	-.147	-.704
125	-.329	.031	-.210	-.466	225	-.375	.059	-.195	-.637
126	-.310	.031	-.199	-.422	226	-.363	.059	-.178	-.615
127	-.324	.031	-.207	-.434	227	-.385	.059	-.208	-.662
128	-.298	.032	-.181	-.429	228	-.369	.062	-.163	-.687
129	-.322	.036	-.210	-.456	229	-.420	.078	-.181	-.832
131	-.460	.106	-.156	-.967	231	-.436	.067	-.217	-.831
132	-.368	.063	-.161	-.611	232	-.406	.065	-.211	-.706
133	-.376	.052	-.209	-.640	233	-.430	.068	-.235	-.787
134	-.355	.051	-.206	-.593	234	-.420	.071	-.222	-.764
135	-.368	.052	-.215	-.622	235	-.443	.075	-.257	-.993
136	-.341	.050	-.194	-.615	236	-.423	.077	-.246	-.937
137	-.359	.045	-.229	-.605	237	-.450	.071	-.264	-.777
138	-.337	.046	-.174	-.669	238	-.433	.072	-.241	-1.089
139	-.344	.045	-.129	-.691	239	-.456	.079	-.171	-.894
141	-.429	.081	-.209	-.898	241	-.499	.092	-.249	-1.181
142	-.380	.069	-.194	-.682	242	-.464	.085	-.236	-.904
143	-.392	.072	-.155	-.821	243	-.483	.089	-.243	-1.003
144	-.383	.075	-.156	-.720	244	-.464	.093	-.229	-.972
145	-.436	.093	-.231	-.872	245	-.496	.102	-.242	-1.083
146	-.438	.100	-.235	-1.031	246	-.469	.096	-.203	-1.044
147	-.449	.093	-.244	-.839	247	-.467	.092	-.160	-1.016
148	-.402	.083	-.194	-.726	248	-.418	.088	-.125	-.815
149	-.408	.094	-.177	-1.489	249	-.431	.073	-.162	-.738
151	-.281	.114	-.026	-1.163	251	-.551	.171	-.112	-1.201
152	-.271	.113	-.023	-1.011	252	-.471	.163	-.048	-1.140
153	-.294	.120	-.009	-.904	253	-.434	.121	-.071	-1.255
154	-.277	.094	-.013	-.652	254	-.437	.121	-.020	-1.044
155	-.361	.107	-.012	-.904	255	-.390	.089	-.074	-.854
156	-.420	.114	-.070	-1.064	256	-.312	.073	-.007	-.590
157	-.464	.113	-.131	-1.122	257	-.297	.074	-.074	-.653
158	-.454	.124	-.190	-1.270	258	-.251	.073	-.057	-.506
159	-.458	.128	-.156	-1.116	259	-.253	.083	-.034	-.507

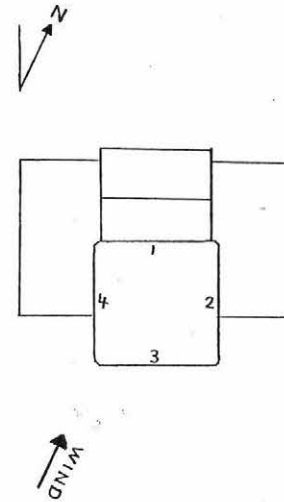
WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 180

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.056	.329	.765	-1.897	401	-.295	.042	-.162	-.542
302	.374	.169	.917	-.185	402	-.214	.037	-.065	-.422
303	.358	.138	1.013	.010	403	-.119	.060	.114	-.355
304	.356	.133	.995	.036	404	-.050	.072	.306	-.293
305	.299	.129	.844	-.023	405	-.056	.071	.199	-.261
306	.290	.128	.838	-.015	406	-.014	.079	.248	-.283
307	.226	.128	.806	-.102	407	-.025	.090	.262	-.424
308	.185	.127	.742	-.208	408	.001	.121	.341	-.576
309	-.019	.123	.414	-.459	409	-.177	.244	.427	-1.120
311	-.111	.314	.810	-1.345	411	-.306	.041	-.161	-.475
312	.332	.151	.918	-.050	412	-.217	.035	-.090	-.376
313	.336	.117	.876	.052	413	-.154	.047	.017	-.306
314	.342	.104	.889	.102	414	-.085	.058	.139	-.248
315	.288	.095	.775	.080	415	-.074	.067	.166	-.245
316	.278	.092	.701	.060	416	-.023	.078	.265	-.251
317	.200	.095	.612	-.098	417	-.034	.082	.249	-.568
318	.147	.092	.571	-.143	418	-.015	.116	.331	-.653
319	-.054	.079	.313	-.401	419	-.179	.220	.384	-1.087
321	-.195	.263	.665	-1.224	421	-.320	.037	-.193	-.452
322	.238	.120	.804	-.165	422	-.231	.032	-.121	-.355
323	.263	.103	.689	-.028	423	-.172	.043	.003	-.330
324	.279	.102	.745	-.016	424	-.104	.052	.120	-.301
325	.227	.085	.549	.015	425	-.103	.056	.142	-.251
326	.219	.083	.580	.012	426	-.060	.064	.231	-.227
327	.151	.084	.678	-.055	427	-.069	.076	.255	-.306
328	.105	.084	.593	-.114	428	-.049	.105	.342	-.493
329	-.093	.082	.338	-.313	429	-.217	.196	.449	-.973
331	-.165	.219	.689	-1.303	431	-.341	.052	-.142	-.552
332	.152	.113	.774	-.175	432	-.235	.040	-.075	-.410
333	.149	.087	.624	-.103	433	-.182	.039	.018	-.310
334	.162	.082	.602	-.044	434	-.122	.041	.115	-.235
335	.119	.079	.555	-.080	435	-.118	.046	.145	-.238
336	.121	.079	.555	-.106	436	-.074	.051	.222	-.232
337	.051	.082	.458	-.154	437	-.100	.057	.168	-.408
338	.014	.078	.439	-.187	438	-.086	.080	.220	-.556
339	-.166	.068	.133	-.411	439	-.201	.158	.304	-.855
341	-.195	.136	.296	-.952	441	-.423	.089	-.177	-.838
342	-.029	.062	.274	-.226	442	-.252	.052	-.014	-.422
343	-.027	.060	.278	-.170	443	-.175	.043	.042	-.314
344	.004	.061	.409	-.140	444	-.113	.041	.118	-.258
345	-.032	.057	.265	-.203	445	-.126	.042	.080	-.242
346	-.014	.057	.268	-.189	446	-.095	.042	.130	-.230
347	-.052	.058	.258	-.220	447	-.116	.045	.153	-.266
348	-.064	.058	.216	-.226	448	-.099	.057	.173	-.506
349	-.222	.060	.061	-.449	449	-.180	.098	.200	-.698
351	-.129	.058	.064	-.475	451	-.509	.174	-.149	-1.477
352	-.062	.037	.125	-.214	452	-.218	.056	-.030	-.476
353	-.073	.033	.111	-.172	453	-.134	.038	0.000	-.307
354	-.036	.034	.172	-.144	454	-.070	.036	.076	-.242
355	-.051	.034	.143	-.165	455	-.071	.036	.073	-.253
356	-.029	.035	.162	-.136	456	-.040	.034	.092	-.217
357	-.076	.035	.152	-.179	457	-.077	.037	.066	-.311
358	-.067	.036	.080	-.203	458	-.069	.040	.100	-.310
359	-.217	.050	.003	-.440	459	-.114	.046	.058	-.370



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 180

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.544	.163	.029	-1.616
502	-.424	.125	.054	-.875
503	-.335	.085	.006	-.852
504	-.784	.218	.120	-1.672
505	-.659	.153	-.141	-1.469
506	-.424	.147	.060	-1.051
507	-.304	.098	.039	-.681
508	-.407	.197	.047	-1.198
509	-.333	.152	.022	-1.142
510	-.220	.098	.155	-.583
511	-.075	.100	.338	-.511
512	-.376	.108	-.075	-.851
513	-.009	.050	.178	-.249
514	-.015	.039	.139	-.188
515	-.027	.039	.141	-.316
516	-.037	.050	.394	-.792
517	.018	.039	.186	-.119
518	.047	.039	.196	-.085
519	.084	.055	.357	-.056
520	.026	.037	.187	-.085
521	-.058	.042	.141	-.220
522	-.256	.087	-.020	-.807
523	-.238	.078	.001	-.669
524	-.195	.082	.175	-.621
525	0.000	.042	.280	-.155
526	-.011	.047	.164	-.305
527	-.015	.051	.181	-.394
528	.030	.044	.200	-.119
529	.080	.052	.342	-.076
530	-.023	.041	.150	-.186
531	.050	.049	.296	-.095
532	-.032	.044	.177	-.243
533	-.185	.077	.033	-.620
534	-.210	.081	.040	-.728
535	-.037	.081	.348	-.332
536	.079	.074	.469	-.119
537	.068	.078	.493	-.164
538	-.145	.035	-.043	-.293
539	-.181	.036	-.049	-.311
540	-.267	.071	.029	-.631
541	-.157	.062	.059	-.384
542	-.120	.055	.075	-.360
543	-.328	.133	.056	-1.018
544	-.296	.079	-.122	-.743
545	-.193	.066	.012	-.613
546	-.136	.043	0.000	-.341
547	-.239	.052	-.060	-.567
548	-.141	.046	.082	-.393
549	-.115	.069	.332	-.316
550	-.136	.028	-.023	-.233



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 190

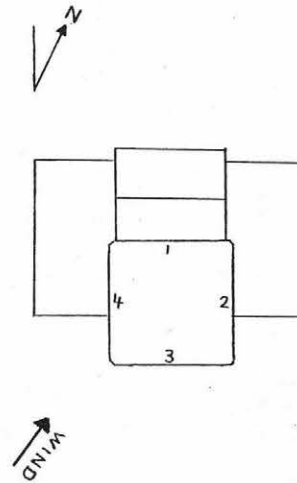
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.416	.090	-.126	-1.025	201	-.377	.053	-.193	-.684
102	-.339	.056	-.137	-.752	202	-.352	.049	-.217	-.576
103	-.349	.048	-.199	-.785	203	-.378	.025	-.315	-.482
104	-.321	.045	-.177	-.596	204	-.355	.041	-.262	-.586
105	-.350	.044	-.197	-.505	205	-.387	.047	-.213	-.534
106	-.327	.044	-.164	-.495	206	-.370	.049	-.197	-.573
107	-.347	.044	-.203	-.519	207	-.398	.053	-.197	-.614
108	-.315	.044	-.177	-.480	208	-.377	.060	-.160	-.608
109	-.341	.046	-.154	-.512	209	-.441	.090	-.205	-.939
111	-.422	.077	-.202	-.998	211	-.379	.045	-.202	-.624
112	-.347	.051	-.124	-.545	212	-.349	.045	-.203	-.590
113	-.369	.043	-.197	-.546	213	-.383	.045	-.233	-.608
114	-.345	.040	-.192	-.498	214	-.365	.045	-.228	-.596
115	-.365	.039	-.249	-.531	215	-.393	.044	-.262	-.634
116	-.336	.039	-.210	-.480	216	-.370	.045	-.238	-.603
117	-.363	.039	-.243	-.489	217	-.404	.046	-.229	-.602
118	-.335	.040	-.206	-.473	218	-.388	.049	-.215	-.664
119	-.352	.040	-.213	-.493	219	-.428	.066	-.216	-.835
121	-.440	.074	-.157	-.778	221	-.398	.049	-.243	-.589
122	-.388	.054	-.187	-.635	222	-.374	.047	-.212	-.557
123	-.405	.046	-.223	-.618	223	-.401	.047	-.259	-.578
124	-.375	.043	-.163	-.558	224	-.377	.047	-.229	-.554
125	-.398	.044	-.257	-.615	225	-.422	.049	-.245	-.638
126	-.373	.043	-.222	-.551	226	-.406	.049	-.228	-.622
127	-.391	.044	-.240	-.556	227	-.433	.049	-.266	-.641
128	-.357	.044	-.202	-.505	228	-.408	.051	-.229	-.650
129	-.389	.046	-.209	-.541	229	-.460	.062	-.268	-.808
131	-.512	.092	-.230	-.945	231	-.472	.063	-.308	-.809
132	-.441	.068	-.199	-.772	232	-.441	.062	-.285	-.771
133	-.447	.060	-.222	-.802	233	-.481	.062	-.301	-.752
134	-.421	.057	-.277	-.822	234	-.466	.064	-.285	-.747
135	-.439	.055	-.306	-.722	235	-.496	.068	-.328	-.899
136	-.408	.055	-.273	-.681	236	-.474	.072	-.307	-.946
137	-.448	.059	-.287	-.728	237	-.512	.079	-.297	-1.108
138	-.422	.057	-.253	-.651	238	-.492	.077	-.281	-.824
139	-.437	.056	-.227	-.643	239	-.523	.085	-.282	-.925
141	-.543	.091	-.307	-1.024	241	-.511	.084	-.314	-.926
142	-.486	.073	-.309	-.934	242	-.480	.081	-.281	-.866
143	-.511	.082	-.302	-.867	243	-.508	.082	-.310	-.902
144	-.502	.095	-.289	-.977	244	-.488	.086	-.284	-.850
145	-.551	.101	-.322	-1.215	245	-.529	.086	-.330	-1.149
146	-.533	.103	-.313	-1.147	246	-.519	.095	-.311	-1.303
147	-.541	.097	-.336	-1.256	247	-.548	.099	-.343	-1.303
148	-.498	.091	-.275	-1.057	248	-.515	.092	-.301	-1.136
149	-.510	.086	-.275	-.929	249	-.536	.087	-.302	-1.004
151	-.371	.091	-.046	-.775	251	-.617	.213	-.125	-1.661
152	-.341	.091	-.054	-.905	252	-.584	.207	-.068	-1.479
153	-.417	.098	-.084	-.962	253	-.580	.128	-.179	-1.193
154	-.453	.103	-.011	-1.042	254	-.545	.127	-.156	-1.193
155	-.517	.104	-.053	-1.171	255	-.486	.110	-.235	-1.015
156	-.503	.106	-.222	-1.128	256	-.420	.088	-.173	-.776
157	-.536	.102	-.276	-1.031	257	-.436	.076	-.209	-.814
158	-.508	.107	-.233	-1.031	258	-.396	.071	-.176	-.756
159	-.505	.101	-.227	-1.021	259	-.389	.076	-.101	-.670

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 190

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	.494	.159	1.041	-.254	401	-.339	.050	-.184	-.532
302	.567	.141	.977	-.157	402	-.181	.043	-.016	-.372
303	.437	.125	.929	-.035	403	-.016	.060	.254	-.252
304	.398	.117	.879	-.012	404	.092	.070	.395	-.173
305	.311	.112	.674	-.109	405	.113	.070	.323	-.200
306	.281	.104	.616	-.090	406	.182	.077	.424	-.174
307	.189	.096	.547	-.140	407	.194	.085	.453	-.173
308	.129	.085	.472	-.183	408	.274	.097	.543	-.124
309	-.105	.067	.233	-.350	409	.271	.158	.703	-.625
311	.470	.177	.958	-.272	411	-.361	.049	-.178	-.579
312	.576	.146	1.041	-.049	412	-.183	.042	-.039	-.338
313	.449	.129	.866	.074	413	-.039	.053	.142	-.219
314	.410	.116	.839	.092	414	.076	.064	.292	-.141
315	.316	.104	.705	.028	415	.113	.073	.344	-.141
316	.284	.095	.644	.006	416	.198	.082	.451	-.093
317	.163	.086	.509	-.078	417	.220	.090	.536	-.106
318	.090	.075	.423	-.121	418	.301	.106	.653	-.106
319	-.134	.056	.180	-.295	419	.290	.171	.722	-.554
321	.297	.176	.836	-.488	421	-.387	.047	-.201	-.611
322	.395	.152	.945	-.121	422	-.199	.044	-.016	-.365
323	.317	.134	.786	-.019	423	-.066	.061	.178	-.257
324	.302	.122	.734	.010	424	.048	.073	.319	-.190
325	.226	.099	.576	-.068	425	.061	.078	.348	-.154
326	.199	.091	.528	-.061	426	.134	.087	.450	-.104
327	.106	.082	.438	-.131	427	.147	.097	.483	-.116
328	.048	.073	.361	-.180	428	.218	.111	.588	-.181
329	-.170	.061	.147	-.382	429	.185	.169	.679	-.577
331	.157	.145	.658	-.400	431	-.431	.060	-.253	-.703
332	.216	.122	.702	-.446	432	-.227	.052	-.014	-.420
333	.150	.105	.589	-.140	433	-.122	.060	.115	-.289
334	.140	.095	.529	-.078	434	-.019	.067	.249	-.216
335	.077	.089	.417	-.122	435	-.001	.074	.292	-.221
336	.071	.084	.392	-.116	436	.071	.081	.365	-.173
337	-.015	.078	.366	-.196	437	.063	.086	.431	-.155
338	-.059	.069	.272	-.231	438	.118	.097	.506	-.125
339	-.247	.057	-.026	-.439	439	.099	.136	.640	-.648
341	.007	.089	.398	-.429	441	-.536	.095	-.275	-1.281
342	.010	.065	.382	-.224	442	-.256	.057	-.053	-.500
343	-.034	.055	.369	-.208	443	-.121	.056	.135	-.309
344	-.015	.052	.382	-.177	444	-.024	.057	.249	-.185
345	-.054	.051	.214	-.211	445	-.026	.061	.236	-.187
346	-.044	.050	.224	-.182	446	.021	.060	.275	-.132
347	-.097	.052	.190	-.257	447	.001	.063	.252	-.165
348	-.114	.054	.142	-.294	448	.038	.070	.323	-.161
349	-.281	.055	-.061	-.472	449	.002	.094	.384	-.371
351	-.113	.057	.063	-.529	451	-.593	.164	-.193	-1.351
352	-.068	.048	.076	-.449	452	-.161	.074	.132	-.460
353	-.084	.041	.070	-.224	453	-.024	.063	.249	-.276
354	-.043	.037	.116	-.163	454	.069	.068	.377	-.101
355	-.061	.037	.113	-.192	455	.063	.069	.384	-.125
356	-.032	.036	.163	-.156	456	.086	.063	.346	-.086
357	-.083	.036	.057	-.198	457	.018	.055	.227	-.200
358	-.098	.036	.036	-.234	458	.004	.051	.240	-.201
359	-.257	.057	-.058	-.499	459	-.070	.049	.127	-.254

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 190

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.495	.103	-.160	-1.308
502	-.446	.114	-.050	-.854
503	-.366	.064	-.122	-.704
504	-.650	.372	.068	-2.036
505	-1.023	.221	-.354	-1.852
506	-.360	.115	.023	-.971
507	-.439	.073	-.199	-.733
508	-.789	.140	-.263	-1.327
509	-.311	.074	-.007	-.603
510	-.136	.110	.226	-.591
511	-.032	.092	.358	-.414
512	-.577	.149	-.127	-1.057
513	.045	.078	.298	-.348
514	.081	.062	.358	-.164
515	.053	.047	.234	-.134
516	.014	.048	.191	-.308
517	.026	.048	.210	-.232
518	.056	.047	.266	-.142
519	.095	.063	.437	-.077
520	.027	.047	.212	-.093
521	-.074	.050	.177	-.261
522	-.343	.124	-.061	-1.205
523	-.331	.103	-.055	-.797
524	-.260	.109	.131	-.729
525	.092	.071	.470	-.279
526	.069	.055	.402	-.127
527	.046	.051	.320	-.213
528	.053	.056	.348	-.180
529	.078	.059	.381	-.098
530	-.018	.044	.159	-.229
531	.044	.053	.313	-.127
532	-.050	.050	.226	-.292
533	-.257	.104	.069	-.932
534	-.298	.115	.028	-1.133
535	-.041	.120	.456	-.470
536	.141	.105	.716	-.174
537	.164	.103	.638	-.121
538	-.165	.056	.053	-.402
539	-.214	.045	-.028	-.393
540	-.384	.104	-.013	-.809
541	-.093	.079	.218	-.424
542	-.045	.072	.253	-.302
543	-.388	.189	.183	-1.301
544	-.415	.082	-.181	-.812
545	-.305	.088	.006	-.664
546	-.207	.063	.013	-.457
547	-.333	.073	-.020	-.716
548	-.202	.063	-.004	-.501
549	-.171	.058	.019	-.437
550	-.151	.035	0.000	-.266



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 200

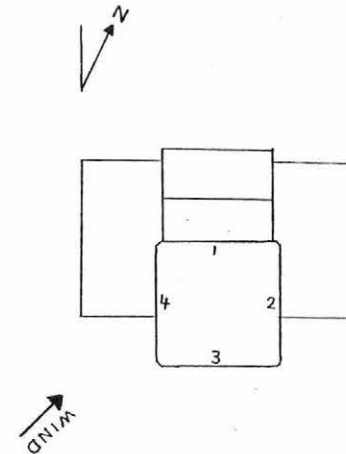
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.431	.069	-.171	-.792	201	-.379	.043	-.223	-.571
102	-.399	.061	-.179	-.657	202	-.349	.042	-.195	-.549
103	-.420	.050	-.174	-.658	203	-.381	.041	-.232	-.577
104	-.383	.047	-.231	-.573	204	-.351	.041	-.213	-.559
105	-.412	.046	-.271	-.621	205	-.395	.042	-.259	-.567
106	-.377	.045	-.241	-.584	206	-.368	.043	-.228	-.545
107	-.398	.044	-.256	-.563	207	-.399	.045	-.239	-.652
108	-.358	.044	-.209	-.532	208	-.366	.048	-.225	-.654
109	-.386	.046	-.215	-.537	209	-.403	.057	-.235	-.742
111	-.421	.071	-.143	-.952	211	-.381	.040	-.203	-.528
112	-.395	.055	-.164	-.725	212	-.346	.040	-.185	-.503
113	-.430	.046	-.285	-.631	213	-.396	.040	-.280	-.565
114	-.395	.043	-.228	-.579	214	-.371	.040	-.258	-.530
115	-.420	.041	-.246	-.597	215	-.406	.040	-.284	-.564
116	-.378	.041	-.239	-.552	216	-.376	.041	-.241	-.556
117	-.410	.042	-.282	-.615	217	-.418	.045	-.258	-.608
118	-.373	.043	-.231	-.569	218	-.390	.050	-.222	-.603
119	-.395	.044	-.249	-.604	219	-.421	.059	-.176	-.724
121	-.474	.082	-.133	-.942	221	-.417	.047	-.241	-.578
122	-.451	.068	-.209	-.914	222	-.387	.047	-.234	-.561
123	-.474	.053	-.254	-.669	223	-.423	.046	-.285	-.611
124	-.436	.050	-.268	-.624	224	-.394	.045	-.248	-.587
125	-.471	.046	-.294	-.768	225	-.442	.044	-.297	-.578
126	-.435	.045	-.285	-.589	226	-.416	.044	-.254	-.608
127	-.456	.045	-.303	-.615	227	-.448	.045	-.290	-.654
128	-.413	.045	-.261	-.579	228	-.415	.048	-.257	-.637
129	-.444	.051	-.231	-.612	229	-.456	.061	-.222	-.722
131	-.560	.087	-.280	-1.128	231	-.492	.054	-.242	-.662
132	-.517	.073	-.313	-.895	232	-.458	.053	-.228	-.626
133	-.550	.063	-.303	-.765	233	-.495	.049	-.326	-.653
134	-.517	.060	-.308	-.751	234	-.471	.050	-.317	-.649
135	-.540	.058	-.349	-.777	235	-.506	.051	-.343	-.711
136	-.498	.057	-.323	-.707	236	-.478	.052	-.324	-.703
137	-.520	.052	-.323	-.699	237	-.519	.058	-.268	-.761
138	-.484	.052	-.300	-.679	238	-.497	.060	-.229	-.763
139	-.507	.051	-.314	-.671	239	-.535	.066	-.281	-.973
141	-.599	.086	-.323	-1.111	241	-.494	.058	-.339	-.819
142	-.549	.071	-.365	-1.027	242	-.462	.057	-.306	-.783
143	-.582	.074	-.396	-1.001	243	-.497	.059	-.352	-.835
144	-.559	.084	-.362	-1.120	244	-.470	.063	-.326	-.885
145	-.595	.087	-.399	-1.111	245	-.511	.059	-.339	-.793
146	-.564	.089	-.375	-1.291	246	-.493	.067	-.304	-1.074
147	-.581	.083	-.408	-1.395	247	-.537	.075	-.324	-.990
148	-.533	.071	-.378	-.934	248	-.518	.086	-.316	-1.207
149	-.567	.078	-.389	-1.272	249	-.565	.092	-.242	-1.074
151	-.494	.100	-.173	-1.122	251	-.493	.149	.020	-1.678
152	-.454	.097	-.050	-.984	252	-.498	.139	-.137	-1.642
153	-.523	.081	-.101	-.935	253	-.644	.103	-.261	-1.146
154	-.526	.097	-.337	-1.389	254	-.514	.100	-.195	-1.025
155	-.557	.082	-.367	-1.179	255	-.460	.096	-.143	-.998
156	-.522	.084	-.329	-1.027	256	-.427	.086	-.187	-.856
157	-.555	.090	-.304	-1.147	257	-.484	.077	-.258	-.843
158	-.506	.089	-.267	-1.066	258	-.466	.069	-.255	-.752
159	-.514	.088	-.236	-1.108	259	-.492	.072	-.199	-.826

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 200

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	.544	.128	.965	-.060	401	-.385	.046	-.225	-.587
302	.393	.131	.738	-.314	402	-.126	.049	.072	-.299
303	.293	.091	.569	0.000	403	.081	.073	.357	-.133
304	.276	.082	.543	.023	404	.212	.084	.543	-.046
305	.183	.077	.445	-.053	405	.239	.082	.499	-.032
306	.171	.071	.396	-.046	406	.328	.088	.586	.036
307	.083	.065	.297	-.116	407	.347	.095	.609	.030
308	.039	.057	.240	-.136	408	.452	.105	.746	.104
309	-.175	.044	.045	-.339	409	.491	.130	.896	.009
311	.536	.145	.910	-.017	411	-.391	.049	-.234	-.595
312	.400	.158	.823	-.221	412	-.121	.051	.058	-.271
313	.320	.094	.603	.062	413	.076	.064	.296	-.144
314	.295	.083	.607	.082	414	.224	.076	.465	-.016
315	.202	.075	.564	.010	415	.274	.084	.541	.001
316	.180	.067	.534	.004	416	.384	.092	.665	.089
317	.066	.062	.304	-.108	417	.386	.108	.714	.075
318	.006	.053	.223	-.148	418	.487	.120	.869	.127
319	-.199	.040	-.070	-.333	419	.527	.136	.969	-.022
321	.439	.144	.863	-.161	421	-.428	.053	-.218	-.606
322	.335	.151	.803	-.233	422	-.144	.050	.053	-.313
323	.272	.093	.666	.043	423	.037	.065	.271	-.156
324	.253	.081	.623	.045	424	.184	.075	.450	-.058
325	.152	.072	.418	-.067	425	.217	.079	.491	-.010
326	.128	.064	.350	-.066	426	.317	.087	.587	.076
327	.027	.057	.253	-.168	427	.343	.095	.642	.091
328	-.027	.050	.214	-.221	428	.445	.106	.781	.152
329	-.236	.045	-.039	-.365	429	.472	.119	.996	.091
331	.337	.142	.764	-.253	431	-.504	.056	-.292	-.690
332	.259	.129	.656	-.240	432	-.190	.057	.035	-.374
333	.178	.088	.504	-.075	433	-.030	.061	.258	-.201
334	.161	.075	.414	-.050	434	.102	.068	.394	-.076
335	.080	.066	.320	-.118	435	.135	.074	.421	-.053
336	.066	.059	.296	-.108	436	.229	.081	.531	.014
337	-.029	.057	.204	-.192	437	.244	.085	.528	.019
338	-.084	.048	.112	-.233	438	.332	.096	.629	.072
339	-.286	.041	-.148	-.415	439	.363	.116	.694	-.049
341	.071	.104	.527	-.401	441	-.573	.071	-.381	-.919
342	.035	.090	.409	-.352	442	-.232	.048	.036	-.397
343	-.006	.065	.330	-.200	443	-.063	.051	.231	-.224
344	.019	.058	.317	-.136	444	.058	.055	.305	-.113
345	-.035	.055	.208	-.192	445	.061	.055	.300	-.105
346	-.027	.051	.185	-.169	446	.122	.057	.336	-.049
347	-.093	.050	.085	-.234	447	.102	.059	.333	-.072
348	-.115	.048	.086	-.247	448	.148	.064	.406	-.033
349	-.286	.069	.069	-.474	449	.119	.082	.426	-.107
351	-.149	.103	.075	-.607	451	-.555	.114	-.270	-1.230
352	-.072	.057	.082	-.399	452	-.095	.054	.108	-.318
353	-.074	.044	.122	-.264	453	.091	.058	.281	-.162
354	-.027	.041	.154	-.201	454	.218	.065	.446	.014
355	-.048	.040	.138	-.243	455	.219	.067	.471	.032
356	-.010	.040	.194	-.180	456	.238	.063	.482	.045
357	-.072	.039	.113	-.263	457	.127	.061	.397	-.048
358	-.086	.038	.076	-.290	458	.083	.058	.328	-.115
359	-.269	.054	-.116	-.533	459	-.035	.055	.189	-.297

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 200

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.508	.077	-.249	-.843
502	-.226	.123	.061	-.723
503	-.382	.048	-.193	-.588
504	-.665	.350	.120	-1.584
505	-1.027	.195	-.350	-1.769
506	-.550	.141	-.108	-.928
507	-.497	.091	-.247	-.988
508	-.732	.158	-.299	-1.248
509	-.341	.074	0.000	-.844
510	-.136	.092	.182	-.482
511	-.136	.106	.163	-.641
512	-.441	.129	-.046	-.937
513	.111	.121	.552	-.504
514	.224	.075	.492	-.036
515	.164	.060	.371	-.036
516	.061	.067	.288	-.250
517	.085	.067	.351	-.189
518	.131	.063	.383	-.106
519	.179	.081	.552	-.090
520	.089	.061	.361	-.087
521	-.051	.058	.211	-.232
522	-.354	.151	.017	-1.325
523	-.352	.105	-.041	-1.271
524	-.324	.102	.099	-.697
525	.241	.093	.635	-.073
526	.177	.072	.514	-.035
527	.106	.076	.363	-.520
528	.112	.075	.365	-.419
529	.158	.082	.502	-.114
530	-.003	.058	.227	-.258
531	.111	.063	.396	-.096
532	-.011	.062	.236	-.319
533	-.267	.122	.096	-1.257
534	-.322	.125	.090	-1.635
535	-.088	.180	.754	-.651
536	.272	.133	.754	-.153
537	.327	.133	.826	-.090
538	-.150	.058	.121	-.400
539	-.245	.046	-.033	-.400
540	-.502	.104	.082	-.879
541	-.038	.063	.243	-.296
542	0.000	.070	.358	-.175
543	-.416	.172	.169	-1.026
544	-.591	.093	-.313	-1.032
545	-.472	.097	-.214	-1.270
546	-.348	.076	-.132	-.923
547	-.462	.083	-.125	-.913
548	-.293	.074	-.079	-.630
549	-.276	.068	-.082	-.578
550	-.159	.046	.058	-.313



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 210

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.492	.092	-.239	-1.193	201	-.371	.047	-.182	-.511
102	-.454	.074	-.247	-.878	202	-.335	.046	-.148	-.466
103	-.457	.054	-.298	-.749	203	-.370	.045	-.202	-.517
104	-.407	.048	-.254	-.670	204	-.332	.046	-.154	-.477
105	-.437	.047	-.280	-.621	205	-.387	.044	-.238	-.556
106	-.397	.046	-.229	-.570	206	-.356	.046	-.221	-.517
107	-.424	.046	-.277	-.582	207	-.391	.048	-.242	-.567
108	-.379	.047	-.226	-.537	208	-.357	.052	-.196	-.592
109	-.425	.049	-.250	-.609	209	-.417	.061	-.193	-.634
111	-.509	.099	-.212	-1.127	211	-.383	.042	-.220	-.564
112	-.464	.072	-.268	-.867	212	-.341	.041	-.199	-.519
113	-.471	.050	-.313	-.721	213	-.385	.038	-.262	-.520
114	-.423	.045	-.277	-.607	214	-.355	.039	-.214	-.493
115	-.445	.043	-.311	-.606	215	-.389	.039	-.247	-.555
116	-.396	.043	-.259	-.567	216	-.350	.041	-.232	-.514
117	-.428	.044	-.251	-.674	217	-.393	.041	-.229	-.549
118	-.386	.045	-.194	-.649	218	-.365	.045	-.111	-.540
119	-.413	.045	-.256	-.639	219	-.414	.054	-.152	-.632
121	-.534	.111	-.187	-1.413	221	-.396	.047	-.175	-.519
122	-.496	.082	-.266	-.988	222	-.362	.045	-.157	-.486
123	-.500	.059	-.298	-.766	223	-.400	.043	-.217	-.517
124	-.448	.054	-.239	-.652	224	-.364	.043	-.178	-.504
125	-.483	.054	-.262	-.698	225	-.416	.043	-.244	-.598
126	-.441	.053	-.226	-.676	226	-.385	.044	-.100	-.561
127	-.465	.053	-.232	-.692	227	-.419	.046	-.196	-.584
128	-.418	.053	-.194	-.682	228	-.382	.049	-.163	-.568
129	-.448	.050	-.259	-.641	229	-.439	.060	-.169	-.643
131	-.559	.102	-.241	-1.284	231	-.459	.061	-.280	-.869
132	-.514	.086	-.305	-1.045	232	-.417	.056	-.239	-.637
133	-.540	.074	-.320	-.948	233	-.468	.055	-.287	-.677
134	-.502	.072	-.280	-.985	234	-.442	.055	-.260	-.653
135	-.530	.071	-.266	-1.078	235	-.480	.055	-.296	-.715
136	-.485	.071	-.185	-.963	236	-.444	.056	-.242	-.673
137	-.530	.067	-.280	-.866	237	-.490	.060	-.308	-.758
138	-.491	.064	-.274	-.751	238	-.466	.063	-.263	-.746
139	-.517	.064	-.319	-1.048	239	-.513	.068	-.291	-.774
141	-.601	.101	-.332	-1.096	241	-.489	.059	-.302	-.729
142	-.553	.087	-.321	-.933	242	-.453	.059	-.275	-.707
143	-.600	.096	-.360	-1.081	243	-.493	.060	-.324	-.729
144	-.583	.112	-.307	-1.204	244	-.458	.063	-.303	-.701
145	-.636	.125	-.368	-1.395	245	-.505	.076	-.332	-.990
146	-.599	.119	-.324	-1.323	246	-.481	.080	-.287	-1.006
147	-.619	.110	-.357	-1.258	247	-.524	.080	-.326	-1.039
148	-.565	.103	-.310	-1.344	248	-.495	.083	-.289	-.907
149	-.583	.086	-.353	-1.142	249	-.550	.084	-.357	-.993
151	-.491	.119	-.118	-1.074	251	-.465	.123	-.115	-1.438
152	-.442	.118	-.052	-.864	252	-.467	.109	-.148	-1.526
153	-.525	.107	.030	-1.129	253	-.626	.110	-.265	-1.220
154	-.540	.119	-.051	-1.600	254	-.481	.105	-.199	-.966
155	-.597	.120	-.179	-1.439	255	-.411	.095	-.146	-.797
156	-.566	.121	-.302	-1.844	256	-.395	.086	-.148	-.803
157	-.603	.136	-.319	-1.476	257	-.447	.079	-.079	-.767
158	-.549	.132	-.280	-1.365	258	-.416	.079	-.048	-.768
159	-.558	.136	-.293	-1.602	259	-.444	.091	-.114	-.848

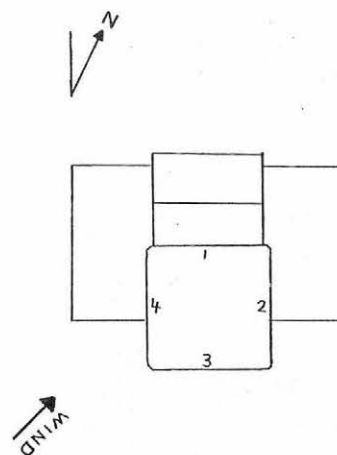


WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 210

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	.250	.178	.739	-.672	401	-.421	.053	-.238	-.640
302	-.072	.209	.494	-1.004	402	-.048	.058	.145	-.265
303	.107	.073	.362	-.180	403	.186	.084	.445	-.141
304	.115	.062	.338	-.081	404	.330	.095	.626	-.033
305	.042	.066	.265	-.145	405	.367	.095	.724	-.009
306	.049	.061	.244	-.135	406	.466	.101	.807	.072
307	-.028	.055	.165	-.208	407	.484	.106	.818	.069
308	-.051	.048	.106	-.206	408	.592	.114	.974	.154
309	-.232	.036	-.102	-.368	409	.614	.134	1.008	.157
311	.146	.265	.832	-1.050	411	-.427	.049	-.265	-.625
312	-.063	.221	.642	-.782	412	-.030	.061	.195	-.232
313	.128	.090	.444	-.226	413	.189	.085	.478	-.072
314	.133	.073	.402	-.154	414	.348	.099	.662	.049
315	.057	.063	.295	-.180	415	.392	.108	.703	.082
316	.053	.055	.262	-.114	416	.502	.116	.825	.159
317	-.043	.051	.151	-.194	417	.520	.118	.867	.172
318	-.081	.044	.100	-.205	418	.610	.124	.936	.253
319	-.254	.036	-.111	-.362	419	.580	.128	.938	.154
321	.124	.256	.784	-1.164	421	-.460	.060	-.208	-.872
322	-.002	.204	.585	-.664	422	-.065	.068	.207	-.277
323	.110	.086	.426	-.233	423	.137	.089	.482	-.160
324	.119	.068	.385	-.094	424	.293	.102	.668	-.064
325	.034	.063	.227	-.162	425	.307	.103	.698	.013
326	.028	.055	.205	-.127	426	.408	.111	.848	.082
327	-.063	.048	.093	-.202	427	.422	.119	.873	.072
328	-.097	.041	.058	-.224	428	.516	.129	.968	.133
329	-.277	.038	-.135	-.404	429	.498	.127	.909	.103
331	.170	.193	.691	-.902	431	-.518	.071	-.265	-1.065
332	.107	.162	.560	-.563	432	-.181	.070	.127	-.424
333	.092	.082	.443	-.260	433	-.027	.075	.328	-.268
334	.094	.065	.380	-.120	434	.104	.078	.461	-.112
335	.018	.056	.247	-.154	435	.133	.084	.488	-.127
336	.015	.049	.214	-.151	436	.233	.093	.586	-.040
337	-.087	.048	.130	-.256	437	.233	.107	.608	-.121
338	-.124	.042	.055	-.257	438	.327	.119	.746	-.037
339	-.309	.043	-.171	-.464	439	.342	.138	.786	-.103
341	.046	.136	.446	-.616	441	-.599	.090	-.358	-1.191
342	-.003	.099	.320	-.404	442	-.278	.049	-.109	-.514
343	-.032	.061	.238	-.244	443	-.120	.050	.084	-.280
344	-.001	.053	.254	-.153	444	.011	.056	.238	-.156
345	-.056	.052	.197	-.202	445	.018	.063	.310	-.172
346	-.040	.048	.178	-.174	446	.100	.071	.418	-.094
347	-.111	.046	.106	-.253	447	.098	.080	.433	-.099
348	-.129	.045	.087	-.259	448	.173	.091	.551	-.064
349	-.308	.048	-.132	-.485	449	.161	.106	.575	-.159
351	-.151	.087	.109	-.603	451	-.591	.182	-.243	-2.132
352	-.089	.062	.097	-.361	452	-.174	.060	.006	-.488
353	-.072	.042	.100	-.247	453	.001	.058	.195	-.219
354	-.018	.041	.133	-.153	454	.136	.069	.407	-.084
355	-.051	.041	.091	-.209	455	.148	.075	.464	-.091
356	-.018	.041	.132	-.162	456	.198	.073	.514	.004
357	-.085	.039	.075	-.218	457	.111	.069	.349	-.108
358	-.097	.040	.061	-.238	458	.107	.067	.348	-.145
359	-.263	.056	-.093	-.591	459	.009	.065	.294	-.237

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 210

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.467	.075	-.196	-.734
502	-.147	.097	.094	-.553
503	-.466	.092	-.111	-.876
504	-.749	.165	-.277	-1.483
505	-.655	.159	.136	-1.148
506	-.470	.095	-.205	-1.048
507	-.586	.089	-.283	-1.139
508	-.579	.087	-.269	-.995
509	-.488	.165	-.075	-1.094
510	-.345	.110	.090	-.744
511	-.467	.102	-.009	-.813
512	-.571	.134	-.141	-1.108
513	.099	.095	.482	-.371
514	.206	.086	.551	-.017
515	.139	.070	.416	-.053
516	.019	.066	.276	-.218
517	.036	.066	.360	-.231
518	.098	.061	.335	-.113
519	.134	.075	.428	-.081
520	.042	.057	.324	-.296
521	-.075	.062	.191	-.314
522	-.320	.118	.068	-1.002
523	-.350	.098	.018	-.961
524	-.378	.104	-.008	-.730
525	.244	.101	.719	-.002
526	.176	.081	.529	-.042
527	.058	.080	.320	-.357
528	.073	.075	.370	-.333
529	.127	.076	.488	-.104
530	-.020	.061	.240	-.290
531	.073	.064	.367	-.174
532	-.035	.065	.412	-.374
533	-.273	.102	.131	-.852
534	-.339	.105	.009	-.966
535	-.164	.145	.431	-.632
536	.188	.128	.798	-.176
537	.290	.137	.868	-.108
538	-.162	.049	.056	-.353
539	-.231	.042	-.060	-.377
540	-.460	.110	-.107	-.829
541	-.084	.057	.240	-.329
542	-.033	.069	.348	-.249
543	-.367	.164	.170	-.994
544	-.532	.114	-.209	-1.032
545	-.424	.114	-.114	-.922
546	-.316	.085	-.095	-.653
547	-.408	.099	-.081	-.832
548	-.260	.075	-.056	-.704
549	-.250	.073	-.008	-.542
550	-.137	.048	.102	-.273



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 220

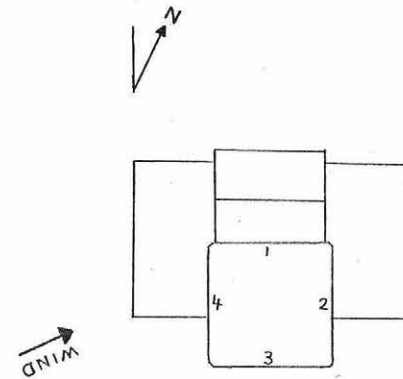
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.490	.119	-.202	-1.240	201	-.337	.039	-.211	-.484
102	-.479	.097	-.222	-1.062	202	-.339	.038	-.223	-.481
103	-.438	.066	-.218	-.724	203	-.341	.038	-.224	-.472
104	-.426	.059	-.217	-.771	204	-.344	.038	-.217	-.472
105	-.412	.051	-.194	-.651	205	-.337	.043	-.183	-.500
106	-.405	.048	-.221	-.584	206	-.340	.043	-.185	-.485
107	-.396	.047	-.221	-.590	207	-.339	.044	-.173	-.502
108	-.392	.047	-.230	-.611	208	-.348	.049	-.165	-.531
109	-.384	.052	-.214	-.658	209	-.370	.061	-.130	-.644
111	-.487	.110	-.236	-1.296	211	-.358	.042	-.215	-.519
112	-.475	.083	-.260	-1.019	212	-.358	.041	-.221	-.514
113	-.443	.061	-.252	-.755	213	-.361	.039	-.237	-.522
114	-.429	.055	-.267	-.670	214	-.366	.040	-.237	-.550
115	-.413	.051	-.240	-.644	215	-.365	.040	-.247	-.547
116	-.407	.050	-.239	-.658	216	-.369	.040	-.241	-.541
117	-.397	.047	-.248	-.638	217	-.362	.043	-.203	-.503
118	-.392	.047	-.230	-.614	218	-.368	.047	-.182	-.526
119	-.385	.047	-.200	-.626	219	-.386	.053	-.161	-.609
121	-.523	.128	-.187	-1.197	221	-.374	.045	-.226	-.547
122	-.509	.103	-.267	-1.172	222	-.374	.043	-.240	-.547
123	-.483	.085	-.236	-.891	223	-.375	.043	-.247	-.546
124	-.474	.079	-.246	-1.109	224	-.382	.042	-.235	-.561
125	-.461	.079	-.230	-.970	225	-.378	.040	-.223	-.543
126	-.458	.077	-.234	-1.158	226	-.385	.041	-.209	-.566
127	-.450	.074	-.222	-1.121	227	-.388	.042	-.237	-.596
128	-.448	.072	-.196	-1.004	228	-.402	.048	-.170	-.629
129	-.432	.062	-.231	-.695	229	-.420	.063	-.203	-.705
131	-.562	.143	-.211	-1.336	231	-.394	.057	-.203	-.716
132	-.554	.125	-.178	-1.207	232	-.397	.056	-.202	-.752
133	-.551	.127	-.065	-1.244	233	-.403	.051	-.218	-.679
134	-.560	.128	-.074	-1.062	234	-.412	.052	-.215	-.697
135	-.562	.131	-.126	-1.232	235	-.413	.053	-.199	-.797
136	-.568	.135	-.199	-1.398	236	-.421	.053	-.237	-.696
137	-.555	.137	-.222	-1.556	237	-.423	.053	-.252	-.667
138	-.555	.126	-.254	-1.591	238	-.440	.059	-.244	-.667
139	-.554	.122	-.286	-1.413	239	-.476	.083	-.227	-1.022
141	-.468	.132	-.126	-1.142	241	-.445	.089	-.106	-.884
142	-.449	.121	-.009	-1.065	242	-.450	.086	-.161	-.819
143	-.466	.127	0.000	-1.044	243	-.471	.091	-.217	-.866
144	-.495	.134	-.040	-1.179	244	-.499	.102	-.237	-.922
145	-.515	.142	-.107	-1.093	245	-.501	.097	-.267	-.958
146	-.543	.143	-.098	-1.220	246	-.495	.088	-.255	-.919
147	-.567	.150	-.163	-1.456	247	-.471	.082	-.183	-.826
148	-.591	.151	-.079	-1.443	248	-.460	.084	-.206	-.840
149	-.605	.142	-.262	-1.501	249	-.447	.102	-.138	-1.042
151	-.346	.119	.016	-.989	251	-.502	.203	-.005	-1.636
152	-.310	.078	-.034	-.678	252	-.530	.192	-.070	-1.727
153	-.309	.082	-.034	-.830	253	-.655	.165	-.285	-1.616
154	-.336	.096	.007	-1.152	254	-.534	.141	-.199	-1.284
155	-.366	.108	-.046	-1.037	255	-.368	.108	.164	-.946
156	-.407	.121	-.064	-1.124	256	-.350	.100	.079	-.834
157	-.455	.135	-.110	-1.409	257	-.339	.096	.027	-.779
158	-.491	.144	-.120	-1.354	258	-.342	.093	.036	-.920
159	-.530	.182	-.083	-1.333	259	-.337	.100	.008	-.894

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 220

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.244	.288	.380	-1.884	401	-.405	.064	-.193	-.824
302	-.578	.192	.068	-1.221	402	.033	.070	.311	-.211
303	-.087	.091	.124	-.598	403	.315	.099	.633	.016
304	-.071	.053	.082	-.317	404	.411	.109	.728	.065
305	-.074	.051	.147	-.246	405	.478	.111	.829	.130
306	-.091	.046	.121	-.237	406	.523	.114	.909	.179
307	-.113	.041	.066	-.252	407	.565	.120	.970	.215
308	-.158	.036	-.019	-.284	408	.602	.127	1.030	.209
309	-.254	.033	-.128	-.384	409	.580	.135	.955	.142
311	-.561	.410	.434	-1.972	411	-.396	.054	-.208	-.609
312	-.556	.182	.108	-1.128	412	.036	.074	.286	-.305
313	-.112	.129	.190	-.999	413	.297	.094	.636	.001
314	-.071	.075	.149	-.700	414	.411	.106	.768	.079
315	-.076	.055	.118	-.414	415	.480	.114	.852	.116
316	-.100	.045	.081	-.259	416	.532	.123	.953	.154
317	-.130	.041	.009	-.256	417	.590	.129	1.038	.199
318	-.184	.034	-.054	-.292	418	.613	.134	1.039	.228
319	-.278	.031	-.177	-.393	419	.517	.135	.962	.061
321	-.529	.488	.526	-2.317	421	-.452	.081	-.243	-1.099
322	-.421	.241	.409	-1.327	422	-.026	.099	.381	-.380
323	-.114	.134	.289	-.881	423	.195	.123	.595	-.227
324	-.080	.077	.222	-.474	424	.281	.132	.731	-.202
325	-.089	.067	.171	-.616	425	.366	.130	.814	-.065
326	-.110	.054	.113	-.449	426	.406	.136	.897	-.042
327	-.142	.045	.046	-.303	427	.432	.143	.953	-.055
328	-.197	.039	-.029	-.337	428	.445	.152	.971	-.022
329	-.287	.036	-.158	-.433	429	.351	.175	.830	-.245
331	-.234	.345	.557	-2.103	431	-.629	.175	-.082	-1.741
332	-.192	.227	.432	-1.280	432	-.163	.125	.302	-.615
333	-.088	.135	.318	-.913	433	.013	.120	.577	-.335
334	-.072	.090	.246	-.580	434	.070	.114	.525	-.243
335	-.078	.069	.171	-.489	435	.100	.111	.569	-.190
336	-.100	.059	.106	-.495	436	.120	.111	.600	-.159
337	-.127	.055	.087	-.283	437	.132	.114	.655	-.169
338	-.180	.047	.010	-.315	438	.144	.122	.661	-.182
339	-.284	.043	-.112	-.458	439	.120	.156	.731	-.301
341	-.106	.194	.442	-1.063	441	-.697	.184	-.289	-1.570
342	-.118	.130	.277	-.741	442	-.271	.105	.262	-.592
343	-.092	.089	.209	-.820	443	-.115	.096	.440	-.411
344	-.090	.068	.190	-.436	444	-.067	.081	.415	-.334
345	-.095	.064	.202	-.442	445	-.022	.072	.408	-.286
346	-.110	.057	.166	-.371	446	-.024	.064	.375	-.314
347	-.136	.054	.125	-.317	447	-.010	.065	.345	-.488
348	-.182	.053	.071	-.362	448	-.003	.072	.307	-.468
349	-.295	.058	-.069	-.515	449	-.011	.098	.405	-.427
351	-.140	.093	.247	-.642	451	-.608	.223	-.160	-1.803
352	-.126	.067	.125	-.535	452	-.194	.071	.138	-.455
353	-.094	.054	.082	-.405	453	-.009	.068	.351	-.356
354	-.081	.046	.088	-.290	454	.059	.069	.329	-.184
355	-.078	.044	.080	-.228	455	.086	.068	.383	-.151
356	-.089	.042	.069	-.264	456	.072	.059	.271	-.135
357	-.108	.042	.075	-.228	457	.026	.055	.262	-.262
358	-.156	.041	.013	-.320	458	-.010	.058	.245	-.273
359	-.278	.064	-.046	-.560	459	-.052	.065	.233	-.277

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 220

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.381	.082	-.055	-.679
502	-.197	.078	.030	-.506
503	-.512	.098	-.190	-.841
504	-.680	.134	-.306	-1.411
505	-.545	.149	-.115	-1.099
506	-.509	.128	-.126	-1.284
507	-.617	.103	-.280	-1.270
508	-.627	.088	-.308	-1.077
509	-.594	.128	-.102	-1.192
510	-.404	.111	.052	-.824
511	-.538	.116	.096	-1.002
512	-.609	.115	-.153	-1.004
513	-.002	.105	.367	-.381
514	.079	.083	.464	-.190
515	.051	.064	.418	-.161
516	-.033	.074	.241	-.447
517	-.032	.068	.274	-.524
518	.006	.058	.311	-.243
519	.022	.066	.387	-.157
520	-.045	.047	.180	-.180
521	-.143	.049	.059	-.313
522	-.344	.110	-.053	-.995
523	-.364	.099	-.090	-.956
524	-.316	.095	.023	-.798
525	.091	.083	.418	-.335
526	.072	.065	.352	-.197
527	-.024	.096	.284	-.755
528	-.001	.084	.305	-.501
529	.027	.067	.323	-.233
530	-.057	.050	.136	-.277
531	-.024	.054	.215	-.206
532	-.109	.052	.136	-.333
533	-.309	.106	.080	-.892
534	-.350	.120	-.010	-1.129
535	-.144	.129	.360	-.681
536	.034	.114	.569	-.325
537	.103	.122	.625	-.267
538	-.211	.064	.020	-.451
539	-.219	.049	-.013	-.422
540	-.324	.079	-.050	-.671
541	-.139	.091	.303	-.507
542	-.062	.095	.361	-.434
543	-.217	.167	.398	-1.190
544	-.327	.064	-.118	-.631
545	-.262	.066	-.016	-.591
546	-.212	.063	.016	-.769
547	-.271	.056	-.086	-.562
548	-.202	.050	-.006	-.462
549	-.190	.054	.030	-.480
550	-.149	.039	.024	-.274



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 230

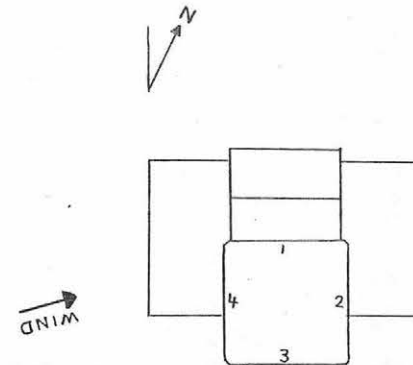
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.517	.163	-.104	-1.409	201	-.320	.051	-.144	-.550
102	-.506	.133	-.045	-1.167	202	-.316	.049	-.151	-.528
103	-.460	.096	-.069	-.969	203	-.318	.049	-.164	-.521
104	-.451	.095	-.124	-1.071	204	-.317	.050	-.138	-.518
105	-.441	.085	-.203	-.918	205	-.323	.049	-.154	-.550
106	-.437	.082	-.216	-.928	206	-.325	.050	-.154	-.579
107	-.423	.074	-.214	-.858	207	-.328	.052	-.153	-.586
108	-.415	.067	-.216	-.796	208	-.336	.059	-.140	-.646
109	-.405	.070	-.223	-.853	209	-.367	.078	-.134	-.890
111	-.529	.167	-.214	-1.409	211	-.338	.054	-.148	-.672
112	-.509	.128	-.217	-1.301	212	-.331	.050	-.138	-.502
113	-.472	.094	-.246	-.910	213	-.331	.045	-.172	-.498
114	-.452	.085	-.235	-.917	214	-.333	.045	-.186	-.492
115	-.435	.081	-.223	-.839	215	-.332	.044	-.176	-.483
116	-.426	.076	-.219	-.856	216	-.333	.045	-.175	-.530
117	-.415	.074	-.173	-.954	217	-.338	.048	-.163	-.585
118	-.406	.069	-.209	-.889	218	-.346	.051	-.169	-.579
119	-.396	.064	-.213	-.823	219	-.375	.063	-.144	-.703
121	-.579	.194	-.147	-1.648	221	-.356	.067	-.163	-.884
122	-.551	.147	-.134	-1.317	222	-.345	.055	-.157	-.733
123	-.518	.125	-.125	-1.448	223	-.345	.051	-.188	-.668
124	-.512	.127	-.069	-1.455	224	-.347	.049	-.192	-.644
125	-.502	.114	-.194	-1.173	225	-.346	.049	-.198	-.551
126	-.498	.112	-.176	-1.230	226	-.350	.047	-.209	-.540
127	-.483	.104	-.160	-1.272	227	-.352	.048	-.191	-.548
128	-.475	.096	-.170	-1.125	228	-.367	.056	-.180	-.698
129	-.459	.094	-.199	-1.202	229	-.422	.075	-.153	-.668
131	-.535	.165	-.119	-1.347	231	-.374	.085	-.121	-1.031
132	-.525	.145	-.106	-1.110	232	-.367	.078	-.147	-1.018
133	-.539	.146	-.092	-1.556	233	-.382	.070	-.211	-.951
134	-.563	.144	-.115	-1.363	234	-.393	.065	-.225	-.720
135	-.575	.144	-.147	-1.213	235	-.393	.065	-.228	-.714
136	-.587	.149	-.186	-1.351	236	-.395	.061	-.201	-.710
137	-.598	.155	-.183	-1.541	237	-.386	.062	-.205	-.748
138	-.608	.152	-.184	-1.718	238	-.406	.076	-.185	-.889
139	-.617	.155	-.196	-1.815	239	-.449	.109	-.163	-1.280
141	-.374	.123	-.063	-1.058	241	-.429	.130	-.137	-1.942
142	-.362	.107	-.039	-.941	242	-.422	.124	-.188	-2.288
143	-.390	.119	-.058	-.912	243	-.432	.097	-.244	-1.507
144	-.432	.128	-.040	-.914	244	-.457	.101	-.255	-1.165
145	-.471	.140	-.053	-1.010	245	-.421	.080	-.207	-.852
146	-.521	.143	-.134	-1.104	246	-.388	.069	-.169	-.652
147	-.563	.148	-.161	-1.127	247	-.353	.062	-.163	-.580
148	-.615	.155	-.183	-1.495	248	-.340	.071	-.074	-.732
149	-.680	.176	-.269	-1.633	249	-.341	.105	-.090	-1.133
151	-.279	.069	-.052	-.640	251	-.389	.132	-.109	-1.302
152	-.269	.052	-.056	-.491	252	-.387	.117	-.150	-1.311
153	-.270	.055	-.091	-.704	253	-.492	.118	-.228	-1.132
154	-.280	.056	-.124	-.604	254	-.414	.100	-.079	-.838
155	-.301	.070	-.086	-.813	255	-.290	.078	-.010	-.754
156	-.336	.085	-.118	-.835	256	-.273	.071	.015	-.707
157	-.400	.108	-.109	-.882	257	-.284	.069	-.019	-.623
158	-.477	.133	-.112	-1.045	258	-.291	.067	.199	-.528
159	-.593	.192	-.140	-1.577	259	-.276	.065	-.039	-.585

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 230

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-1.329	.441	-.065	-2.593	401	-.443	.107	-.211	-1.318
302	-1.074	.175	-.333	-2.068	402	.135	.091	.489	-.181
303	-.555	.192	-.055	-1.672	403	.409	.118	.740	.044
304	-.317	.096	-.019	-.893	404	.493	.126	.838	.099
305	-.251	.056	-.073	-.658	405	.545	.123	1.008	.139
306	-.230	.039	-.090	-.437	406	.580	.127	1.024	.145
307	-.227	.034	-.093	-.374	407	.596	.129	.967	.142
308	-.241	.032	-.127	-.381	408	.588	.132	1.052	.116
309	-.292	.038	-.111	-.477	409	.382	.138	.824	-.086
311	-1.695	.427	.001	-2.980	411	-.416	.087	-.177	-1.245
312	-1.039	.189	-.390	-2.302	412	.134	.095	.475	-.240
313	-.712	.282	-.121	-1.950	413	.376	.112	.746	.015
314	-.444	.213	-.106	-1.483	414	.478	.122	.815	.119
315	-.305	.131	-.026	-1.126	415	.527	.126	.914	.139
316	-.257	.083	.135	-1.196	416	.557	.128	.932	.162
317	-.251	.065	.083	-.751	417	.592	.140	.960	.173
318	-.264	.049	.143	-.617	418	.552	.142	.936	.161
319	-.308	.043	.057	-.547	419	.277	.136	.695	-.260
321	-1.321	.491	.303	-2.887	421	-.498	.121	-.221	-1.934
322	-.902	.233	.031	-1.932	422	.097	.098	.480	-.275
323	-.686	.283	.070	-1.867	423	.347	.121	.768	-.044
324	-.495	.267	.090	-1.826	424	.435	.131	.857	.012
325	-.407	.233	.135	-1.379	425	.454	.132	.954	.026
326	-.327	.170	.054	-1.372	426	.470	.137	1.068	.023
327	-.285	.124	.134	-1.103	427	.454	.142	1.150	.013
328	-.281	.095	.023	-.997	428	.401	.147	1.049	-.029
329	-.312	.060	-.032	-.707	429	.129	.150	.748	-.364
331	-.864	.376	.356	-2.827	431	-.709	.209	-.279	-2.518
332	-.695	.260	.164	-1.972	432	-.012	.126	.370	-.519
333	-.563	.263	.146	-1.759	433	.201	.139	.674	-.246
334	-.428	.228	.054	-1.471	434	.252	.143	.775	-.199
335	-.331	.187	.157	-1.282	435	.255	.144	.822	-.158
336	-.276	.149	.256	-1.075	436	.239	.144	.835	-.143
337	-.258	.123	.153	-1.141	437	.204	.146	.730	-.255
338	-.261	.088	.017	-.915	438	.133	.133	.622	-.266
339	-.306	.069	0.000	-.680	439	-.090	.124	.432	-.521
341	-.568	.252	.077	-2.156	441	-.850	.238	-.281	-2.007
342	-.488	.197	.063	-1.935	442	-.103	.137	.323	-.597
343	-.437	.205	.049	-1.752	443	.080	.150	.613	-.364
344	-.366	.189	.092	-1.382	444	.115	.147	.691	-.293
345	-.322	.165	.112	-1.123	445	.096	.129	.572	-.293
346	-.277	.132	.071	-.915	446	.084	.119	.597	-.222
347	-.254	.105	.060	-.786	447	.048	.108	.528	-.275
348	-.260	.087	-.010	-.915	448	-.007	.094	.435	-.367
349	-.306	.075	-.028	-.714	449	-.163	.086	.230	-.516
351	-.428	.218	.017	-1.801	451	-.714	.235	-.054	-2.041
352	-.362	.170	0.000	-1.371	452	-.092	.103	.417	-.429
353	-.308	.144	.077	-1.080	453	.058	.105	.540	-.260
354	-.264	.128	.061	-.944	454	.102	.101	.530	-.187
355	-.223	.104	.063	-.832	455	.099	.096	.572	-.215
356	-.199	.080	.049	-.736	456	.067	.086	.559	-.217
357	-.198	.067	.041	-.559	457	.001	.073	.366	-.178
358	-.206	.052	.041	-.442	458	-.051	.067	.301	-.247
359	-.266	.054	-.064	-.560	459	-.151	.068	.168	-.452

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 230

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.278	.109	.019	-.681
502	-.339	.108	.001	-.754
503	-.571	.128	-.073	-1.012
504	-.700	.122	-.301	-1.491
505	-.623	.119	-.180	-1.130
506	-.564	.125	-.172	-1.186
507	-.638	.108	-.316	-1.285
508	-.658	.088	-.378	-1.001
509	-.639	.115	-.186	-1.286
510	-.438	.140	.253	-.988
511	-.590	.145	.113	-1.203
512	-.673	.131	-.199	-1.201
513	-.146	.083	.122	-.495
514	-.054	.071	.237	-.367
515	-.053	.059	.209	-.326
516	-.348	.217	.092	-1.490
517	-.321	.187	.142	-1.328
518	-.220	.138	.113	-1.098
519	-.133	.082	.124	-.665
520	-.131	.047	.038	-.404
521	-.180	.043	.001	-.408
522	-.280	.066	-.067	-.732
523	-.296	.064	-.079	-.577
524	-.292	.071	-.050	-.578
525	-.030	.112	.411	-.419
526	-.002	.075	.331	-.372
527	-.360	.232	.108	-1.626
528	-.286	.189	.120	-1.350
529	-.143	.100	.164	-.883
530	-.127	.058	.048	-.564
531	-.123	.046	.078	-.347
532	-.171	.044	.031	-.313
533	-.274	.065	-.063	-.571
534	-.301	.070	-.053	-.687
535	-.219	.089	.182	-.504
536	-.135	.080	.259	-.584
537	-.065	.081	.341	-.302
538	-.167	.059	.016	-.419
539	-.204	.043	-.063	-.407
540	-.299	.072	-.056	-.569
541	-.122	.081	.215	-.444
542	-.071	.080	.281	-.341
543	-.302	.134	.291	-1.014
544	-.290	.045	-.129	-.471
545	-.235	.044	-.083	-.419
546	-.184	.036	-.051	-.411
547	-.246	.044	-.079	-.405
548	-.174	.038	-.022	-.328
549	-.161	.032	-.040	-.334
550	-.140	.023	-.045	-.228





WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 240

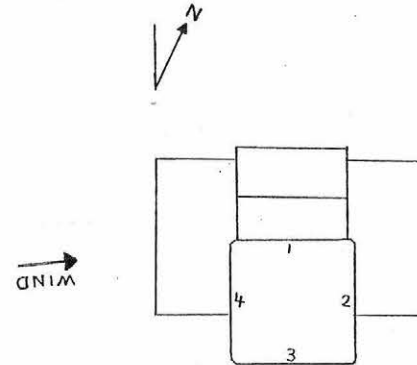
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.544	.202	-.072	-1.417	201	-.366	.101	-.047	-1.083
102	-.531	.170	.033	-1.257	202	-.347	.091	-.034	-.898
103	-.519	.146	-.013	-1.349	203	-.349	.085	-.051	-.831
104	-.542	.154	.055	-1.486	204	-.350	.083	-.088	-.847
105	-.575	.167	-.009	-1.503	205	-.363	.082	-.121	-.735
106	-.589	.165	-.096	-1.368	206	-.367	.080	-.105	-.741
107	-.579	.160	-.144	-1.463	207	-.376	.083	-.057	-.738
108	-.565	.157	-.216	-1.430	208	-.386	.093	-.020	-.860
109	-.528	.124	-.214	-1.193	209	-.409	.111	-.034	-.949
111	-.606	.239	-.034	-1.627	211	-.398	.143	-.020	-1.268
112	-.573	.186	.019	-1.381	212	-.354	.102	-.028	-.927
113	-.534	.152	.007	-1.194	213	-.355	.092	-.135	-1.010
114	-.531	.155	.042	-1.366	214	-.353	.084	-.161	-.816
115	-.537	.158	.029	-1.356	215	-.351	.076	-.140	-.771
116	-.531	.159	-.095	-1.461	216	-.346	.069	-.175	-.712
117	-.539	.165	.032	-1.503	217	-.347	.069	-.146	-.740
118	-.528	.159	-.144	-1.594	218	-.356	.074	-.114	-.778
119	-.514	.153	-.177	-1.895	219	-.404	.098	-.113	-.893
121	-.590	.270	-.052	-2.124	221	-.433	.188	.041	-1.486
122	-.558	.210	0.000	-1.480	222	-.365	.108	-.066	-.826
123	-.534	.173	.073	-1.249	223	-.350	.085	-.132	-.866
124	-.549	.179	.019	-1.379	224	-.339	.073	-.158	-.839
125	-.568	.183	-.037	-1.526	225	-.344	.071	-.114	-.730
126	-.571	.179	-.059	-1.663	226	-.338	.063	-.080	-.635
127	-.559	.168	-.068	-1.296	227	-.344	.065	-.114	-.718
128	-.548	.167	-.118	-1.635	228	-.359	.080	-.110	-.873
129	-.532	.152	-.184	-1.887	229	-.409	.112	-.075	-1.057
131	-.526	.211	-.037	-1.569	231	-.447	.173	-.038	-1.540
132	-.503	.179	.001	-1.346	232	-.385	.107	-.038	-.863
133	-.537	.164	0.000	-1.354	233	-.374	.092	-.152	-.882
134	-.573	.163	.072	-1.369	234	-.365	.081	-.139	-.813
135	-.602	.165	-.068	-1.499	235	-.360	.072	-.148	-.668
136	-.613	.167	.027	-1.440	236	-.352	.067	-.162	-.607
137	-.618	.167	-.047	-1.496	237	-.365	.086	-.142	-1.155
138	-.621	.165	-.168	-1.609	238	-.368	.073	-.174	-.680
139	-.616	.167	-.213	-1.545	239	-.405	.102	-.133	-.879
141	-.427	.144	-.027	-1.200	241	-.425	.116	-.118	-1.114
142	-.415	.133	-.043	-.983	242	-.398	.098	-.143	-.996
143	-.445	.142	-.004	-1.026	243	-.402	.097	-.152	-.980
144	-.493	.151	-.050	-1.331	244	-.408	.099	-.156	-.893
145	-.531	.165	-.042	-1.322	245	-.389	.089	-.192	-.841
146	-.587	.168	-.049	-1.369	246	-.362	.077	-.174	-.797
147	-.633	.175	-.180	-1.428	247	-.346	.072	-.154	-.728
148	-.674	.189	-.251	-1.640	248	-.340	.077	-.126	-.719
149	-.710	.211	-.264	-1.918	249	-.357	.092	-.123	-.778
151	-.346	.087	-.073	-.786	251	-.330	.085	-.104	-.841
152	-.322	.072	-.111	-.741	252	-.355	.084	-.127	-.771
153	-.311	.071	-.124	-.818	253	-.461	.129	-.180	-1.234
154	-.322	.084	-.121	-1.088	254	-.393	.118	-.080	-.961
155	-.352	.103	-.089	-1.332	255	-.311	.101	.080	-.845
156	-.402	.125	-.101	-1.325	256	-.315	.092	.099	-.766
157	-.489	.153	-.185	-1.144	257	-.361	.088	-.025	-.772
158	-.567	.175	-.218	-1.438	258	-.371	.081	-.155	-.724
159	-.692	.239	-.230	-1.937	259	-.349	.074	-.145	-.699

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 240

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-1.579	.491	-.481	-2.997	401	-.703	.282	-.215	-2.659
302	-1.192	.279	-.462	-2.382	402	-.188	.106	-.585	-.354
303	-1.021	.260	-.297	-2.158	403	.477	.118	.901	-.022
304	-.760	.214	-.221	-1.557	404	.553	.124	.928	.032
305	-.581	.188	-.064	-1.428	405	.559	.124	.931	.148
306	-.465	.155	-.012	-1.335	406	.579	.126	.947	.158
307	-.393	.127	-.003	-1.152	407	.564	.126	.926	.117
308	-.349	.108	.113	-.999	408	.519	.126	.928	.080
309	-.348	.098	0.000	-.906	409	.192	.127	.622	-.418
311	-1.119	.409	-.269	-2.997	411	-.608	.230	-.190	-2.018
312	-.965	.248	-.164	-1.923	412	.165	.117	.512	-.241
313	-.913	.253	-.193	-1.956	413	.454	.117	.836	.063
314	-.840	.256	-.078	-1.831	414	.552	.123	.950	.126
315	-.743	.259	.045	-1.640	415	.580	.124	.983	.119
316	-.632	.252	.037	-1.501	416	.594	.125	1.001	.136
317	-.531	.229	.356	-1.537	417	.559	.132	.963	.117
318	-.440	.185	.241	-1.210	418	.490	.129	.885	.041
319	-.391	.150	.142	-1.313	419	.161	.114	.525	-.278
321	-1.015	.437	-.263	-2.987	421	-.636	.256	-.189	-2.188
322	-.873	.288	-.158	-2.747	422	.133	.108	.502	-.252
323	-.845	.270	-.076	-2.249	423	.400	.117	.729	.050
324	-.786	.260	-.060	-1.869	424	.493	.123	.838	.129
325	-.726	.236	-.056	-1.671	425	.499	.129	.903	.130
326	-.651	.222	-.045	-1.654	426	.513	.131	.917	.140
327	-.568	.214	.019	-1.572	427	.479	.130	.903	.121
328	-.491	.204	.244	-1.365	428	.403	.128	.841	.032
329	-.452	.210	.061	-1.515	429	.095	.123	.546	-.329
331	-.847	.330	-.262	-2.480	431	-.753	.262	-.157	-2.044
332	-.762	.257	-.243	-2.116	432	.053	.103	.476	-.316
333	-.729	.234	-.139	-2.072	433	.292	.110	.635	-.078
334	-.701	.215	-.010	-1.924	434	.375	.113	.721	.040
335	-.653	.203	-.016	-1.624	435	.394	.114	.790	.061
336	-.589	.199	.080	-1.478	436	.398	.115	.828	.098
337	-.537	.185	-.015	-1.326	437	.379	.127	.815	.019
338	-.481	.166	-.020	-1.436	438	.304	.119	.705	-.041
339	-.454	.170	-.053	-1.330	439	.009	.110	.385	-.397
341	-.780	.253	-.255	-1.992	441	-.936	.279	-.347	-2.215
342	-.690	.194	-.237	-1.711	442	-.029	.100	.360	-.319
343	-.687	.196	-.154	-1.948	443	.207	.102	.641	-.100
344	-.655	.193	-.054	-1.779	444	.273	.105	.697	-.012
345	-.612	.182	-.124	-1.378	445	.278	.114	.658	.007
346	-.555	.168	-.086	-1.269	446	.281	.114	.686	.020
347	-.500	.160	-.032	-1.515	447	.245	.112	.653	0.000
348	-.441	.145	.004	-1.143	448	.176	.105	.568	-.085
349	-.420	.126	.073	-1.152	449	-.075	.090	.338	-.423
351	-.824	.288	-.275	-2.513	451	-.882	.290	-.233	-2.527
352	-.687	.204	-.258	-2.041	452	-.052	.092	.398	-.316
353	-.675	.197	-.162	-1.651	453	.160	.092	.553	-.082
354	-.599	.188	-.114	-1.321	454	.227	.099	.632	-.054
355	-.506	.176	.013	-1.194	455	.227	.101	.615	-.051
356	-.404	.151	.070	-1.055	456	.193	.096	.562	-.064
357	-.338	.129	.040	-.877	457	.111	.085	.480	-.086
358	-.290	.101	.010	-.767	458	.033	.082	.468	-.167
359	-.290	.079	.001	-.670	459	-.175	.079	.193	-.454

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 240

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.344	.151	.190	-.986
502	-.444	.133	.045	-.922
503	-.658	.168	-.102	-1.480
504	-.782	.140	-.421	-1.401
505	-.780	.149	-.237	-1.389
506	-.675	.167	-.009	-1.329
507	-.687	.149	-.168	-1.493
508	-.709	.139	-.139	-1.338
509	-.746	.213	-.136	-2.997
510	-.445	.175	.199	-1.064
511	-.647	.169	.080	-1.468
512	-.770	.160	-.119	-1.452
513	-.140	.063	.223	-.489
514	-.034	.067	.359	-.289
515	-.078	.062	.193	-.337
516	-.741	.274	-.196	-2.920
517	-.646	.196	-.189	-1.385
518	-.462	.179	-.019	-1.223
519	-.214	.128	.204	-1.127
520	-.150	.067	.084	-.504
521	-.188	.055	.078	-.500
522	-.265	.072	-.021	-.649
523	-.298	.074	-.092	-.605
524	-.312	.095	.003	-.796
525	-.006	.138	.675	-.443
526	.007	.089	.443	-.423
527	-.766	.290	-.086	-2.646
528	-.619	.224	-.032	-1.827
529	-.262	.152	.098	-1.064
530	-.191	.076	.076	-.819
531	-.164	.050	.021	-.615
532	-.191	.043	.022	-.500
533	-.248	.075	-.031	-.611
534	-.288	.078	-.078	-.696
535	-.244	.086	.054	-.725
536	-.262	.080	.122	-.636
537	-.121	.092	.437	-.538
538	-.147	.061	.044	-.350
539	-.184	.046	-.023	-.415
540	-.311	.078	-.035	-.780
541	-.023	.063	.255	-.283
542	.008	.072	.391	-.233
543	-.364	.146	.038	-1.253
544	-.316	.062	-.135	-.588
545	-.253	.055	-.064	-.476
546	-.200	.044	-.045	-.384
547	-.245	.051	-.108	-.472
548	-.171	.042	-.029	-.333
549	-.151	.036	-.006	-.281
550	-.121	.027	-.032	-.220



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 250

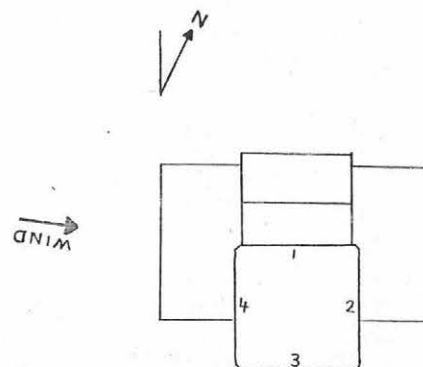
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.414	.111	-.062	-1.200	201	-.521	.189	-.078	-1.507
102	-.387	.096	.018	-1.048	202	-.427	.109	-.104	-1.036
103	-.389	.119	.095	-1.000	203	-.404	.089	-.124	-.877
104	-.437	.151	.164	-1.220	204	-.388	.085	-.120	-.806
105	-.575	.201	-.004	-1.358	205	-.391	.076	-.163	-.697
106	-.688	.204	-.063	-1.405	206	-.377	.078	-.146	-.743
107	-.840	.207	-.091	-1.584	207	-.376	.080	-.151	-.821
108	-.995	.249	-.107	-1.965	208	-.365	.083	-.133	-.926
109	-1.169	.261	-.357	-2.336	209	-.386	.097	-.061	-.928
111	-.439	.162	0.000	-1.464	211	-.586	.224	-.072	-1.670
112	-.422	.163	.073	-1.289	212	-.417	.105	-.152	-1.065
113	-.482	.190	.238	-1.474	213	-.383	.069	-.152	-.786
114	-.574	.224	.066	-1.352	214	-.365	.062	-.139	-.592
115	-.691	.242	-.035	-1.490	215	-.372	.064	-.189	-.623
116	-.795	.245	-.009	-1.818	216	-.370	.072	-.145	-.664
117	-.880	.235	-.122	-1.903	217	-.374	.074	-.195	-.719
118	-.913	.226	-.222	-1.938	218	-.368	.085	-.141	-.815
119	-.920	.234	-.313	-2.198	219	-.374	.100	-.080	-.836
121	-.474	.200	.003	-1.640	221	-.588	.230	-.096	-1.623
122	-.449	.178	.053	-1.150	222	-.402	.098	-.080	-.932
123	-.498	.200	.019	-1.335	223	-.361	.068	-.108	-.889
124	-.575	.227	.094	-1.383	224	-.349	.059	-.188	-.725
125	-.661	.257	.034	-1.556	225	-.348	.061	-.136	-.652
126	-.751	.253	.104	-1.721	226	-.348	.066	-.142	-.717
127	-.832	.246	-.004	-2.073	227	-.360	.078	-.167	-1.055
128	-.883	.244	-.131	-2.133	228	-.362	.091	-.121	-1.055
129	-.917	.263	-.347	-2.308	229	-.389	.111	-.052	-.933
131	-.435	.146	-.148	-1.470	231	-.549	.214	-.044	-1.926
132	-.406	.146	-.078	-1.142	232	-.415	.101	-.080	-.932
133	-.468	.185	.060	-1.260	233	-.393	.075	-.170	-.706
134	-.526	.206	.037	-1.408	234	-.372	.066	-.141	-.646
135	-.610	.221	-.041	-1.528	235	-.371	.062	-.186	-.642
136	-.689	.227	-.088	-1.584	236	-.366	.065	-.175	-.675
137	-.786	.231	-.050	-1.844	237	-.377	.068	-.182	-.704
138	-.842	.226	-.248	-2.007	238	-.375	.076	-.138	-.695
139	-.884	.253	-.366	-2.249	239	-.388	.094	-.115	-.893
141	-.369	.098	-.092	-.885	241	-.468	.131	-.149	-1.195
142	-.335	.088	-.031	-.882	242	-.415	.093	-.169	-.830
143	-.348	.111	.053	-1.051	243	-.409	.087	-.175	-.817
144	-.379	.140	-.037	-1.220	244	-.397	.088	-.166	-.812
145	-.464	.179	.048	-1.161	245	-.403	.085	-.170	-.868
146	-.544	.201	.022	-1.351	246	-.371	.074	-.175	-.793
147	-.654	.220	-.112	-1.625	247	-.364	.073	-.158	-.747
148	-.763	.230	-.167	-1.912	248	-.354	.078	-.157	-.797
149	-.879	.260	-.341	-2.544	249	-.358	.085	-.072	-.802
151	-.390	.088	-.132	-.803	251	-.353	.094	-.112	-.865
152	-.342	.066	-.145	-.639	252	-.368	.088	-.146	-.781
153	-.322	.065	-.125	-1.197	253	-.463	.128	-.127	-1.200
154	-.306	.072	-.026	-1.075	254	-.378	.108	-.099	-.920
155	-.322	.086	-.050	-.857	255	-.325	.090	-.015	-.765
156	-.354	.111	-.123	-.957	256	-.345	.092	.034	-.746
157	-.446	.159	-.131	-1.398	257	-.402	.086	-.111	-.763
158	-.555	.196	-.138	-1.430	258	-.399	.080	-.182	-.765
159	-.772	.270	-.242	-2.053	259	-.378	.079	-.175	-.714

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 250

PRESSURE TAP NUMMER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.582	.163	-.260	-2.227	401	-1.738	.406	-.535	-2.838
302	-.547	.126	-.253	-1.367	402	.132	.120	.694	-.326
303	-.559	.133	-.241	-1.396	403	.513	.127	.932	-.006
304	-.566	.144	-.207	-1.449	404	.584	.132	1.003	.056
305	-.569	.155	-.056	-1.486	405	.570	.128	1.008	.055
306	-.553	.152	.113	-1.432	406	.579	.128	1.002	.065
307	-.535	.148	.053	-1.376	407	.546	.126	.918	.028
308	-.501	.148	.081	-1.260	408	.495	.123	.858	.034
309	-.532	.169	-.021	-1.395	409	.221	.114	.580	-.200
311	-.517	.159	-.219	-1.865	411	-1.239	.408	-.293	-2.779
312	-.496	.136	-.196	-1.590	412	.133	.110	.548	-.288
313	-.506	.131	-.215	-1.460	413	.477	.124	.864	.040
314	-.508	.136	-.144	-1.348	414	.578	.130	1.003	.110
315	-.522	.144	-.066	-1.298	415	.591	.131	1.043	.130
316	-.519	.150	.068	-1.288	416	.596	.131	1.049	.135
317	-.534	.134	-.137	-1.202	417	.546	.128	.966	.153
318	-.536	.137	-.029	-1.370	418	.475	.125	.885	.105
319	-.582	.186	-.029	-1.413	419	.194	.110	.529	-.240
321	-.521	.157	-.168	-2.012	421	-1.174	.361	-.296	-2.582
322	-.491	.133	-.176	-1.508	422	.095	.115	.583	-.325
323	-.501	.135	-.160	-1.370	423	.412	.124	.839	-.050
324	-.508	.150	-.026	-1.580	424	.502	.127	.983	.021
325	-.519	.147	-.135	-1.314	425	.517	.129	.947	.144
326	-.516	.152	-.073	-1.361	426	.527	.127	.971	.165
327	-.517	.150	.013	-1.324	427	.482	.122	.918	.135
328	-.520	.154	.001	-1.241	428	.410	.115	.817	.079
329	-.581	.205	-.009	-1.883	429	.115	.116	.501	-.246
331	-.550	.161	-.191	-1.909	431	-1.074	.353	-.197	-2.831
332	-.519	.130	-.209	-1.394	432	-.022	.272	.436	-2.151
333	-.527	.134	-.204	-1.635	433	.332	.122	.778	-.018
334	-.527	.134	-.151	-1.542	434	.420	.126	.889	.122
335	-.537	.139	-.126	-1.257	435	.427	.127	.861	.120
336	-.525	.143	.018	-1.294	436	.429	.128	.837	.113
337	-.531	.141	-.071	-1.257	437	.354	.126	.778	.009
338	-.512	.136	-.097	-1.166	438	.289	.120	.703	-.065
339	-.535	.171	-.079	-1.852	439	.032	.105	.424	-.419
341	-.634	.190	-.263	-1.995	441	-1.099	.308	-.445	-2.557
342	-.575	.144	-.253	-1.588	442	-.035	.100	.365	-.372
343	-.578	.147	-.209	-1.765	443	.206	.102	.596	-.055
344	-.567	.145	-.144	-1.787	444	.274	.104	.667	.018
345	-.556	.129	-.134	-1.236	445	.300	.112	.809	.040
346	-.530	.121	-.132	-1.075	446	.306	.111	.805	.033
347	-.509	.120	-.116	-1.077	447	.264	.109	.775	-.034
348	-.475	.124	-.049	-1.033	448	.202	.106	.680	-.113
349	-.475	.128	-.119	-1.032	449	-.056	.099	.381	-.400
351	-.730	.227	-.334	-1.914	451	-.906	.287	-.212	-2.373
352	-.624	.155	-.290	-1.636	452	-.049	.083	.323	-.271
353	-.606	.143	-.241	-1.373	453	.159	.086	.587	-.047
354	-.565	.143	-.091	-1.252	454	.233	.091	.631	0.000
355	-.521	.143	-.079	-1.133	455	.229	.090	.580	-.006
356	-.451	.136	-.012	-1.151	456	.200	.083	.531	-.028
357	-.412	.130	-.054	-.967	457	.113	.080	.510	-.086
358	-.354	.114	-.037	-.813	458	.045	.076	.374	-.144
359	-.338	.090	-.056	-.701	459	-.159	.078	.231	-.409

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 250

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.485	.173	.129	-1.123
502	-.480	.139	.076	-.991
503	-.692	.161	.023	-1.364
504	-.711	.119	-.349	-1.444
505	-.728	.143	-.220	-1.362
506	-.662	.162	-.027	-1.348
507	-.762	.126	-.388	-1.380
508	-.738	.108	-.388	-1.141
509	-.750	.147	-.188	-1.326
510	-.338	.150	.159	-.947
511	-.594	.157	.067	-1.242
512	-.765	.146	-.209	-1.589
513	-.124	.054	.046	-.353
514	-.030	.057	.191	-.277
515	-.075	.058	.166	-.292
516	-.719	.235	-.224	-1.848
517	-.627	.167	-.225	-1.374
518	-.513	.151	-.022	-1.214
519	-.317	.136	.163	-.898
520	-.224	.094	.055	-.609
521	-.239	.074	-.037	-.636
522	-.286	.073	-.083	-.799
523	-.316	.069	-.132	-.664
524	-.304	.085	-.043	-.640
525	-.033	.120	.600	-.467
526	.006	.090	.369	-.360
527	-.673	.232	-.163	-2.194
528	-.558	.185	-.079	-1.444
529	-.354	.146	.125	-1.124
530	-.278	.113	.031	-.759
531	-.233	.082	-.044	-.587
532	-.232	.060	-.028	-.692
533	-.277	.078	-.043	-.817
534	-.313	.077	-.098	-.652
535	-.274	.089	.034	-.714
536	-.328	.094	.018	-.984
537	-.192	.104	.252	-.583
538	-.147	.064	.031	-.374
539	-.192	.047	-.021	-.360
540	-.317	.072	-.086	-.669
541	-.028	.059	.274	-.242
542	.006	.069	.354	-.215
543	-.352	.153	.009	-1.229
544	-.301	.061	-.117	-.541
545	-.241	.051	-.062	-.520
546	-.199	.040	-.064	-.405
547	-.236	.050	-.050	-.422
548	-.172	.039	-.028	-.397
549	-.133	.098	.282	-.277
550	-.120	.024	-.042	-.231



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 260

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.372	.057	-.209	-.622	201	-.521	.141	-.155	-1.182
102	-.343	.046	-.175	-.515	202	-.407	.080	-.139	-1.061
103	-.268	.036	-.119	-.452	203	-.378	.064	-.177	-.736
104	-.239	.038	-.100	-.521	204	-.356	.059	-.156	-.601
105	-.248	.043	-.047	-.497	205	-.369	.054	-.120	-.599
106	-.250	.055	-.090	-.622	206	-.351	.050	-.193	-.524
107	-.320	.100	-.104	-.934	207	-.358	.049	-.181	-.528
108	-.539	.199	-.091	-1.755	208	-.345	.049	-.174	-.524
109	-1.048	.190	-.544	-2.136	209	-.365	.055	-.140	-.559
111	-.383	.053	-.188	-.677	211	-.517	.124	-.201	-1.138
112	-.339	.045	-.135	-.562	212	-.395	.065	-.181	-.634
113	-.289	.047	-.004	-.694	213	-.379	.051	-.128	-.572
114	-.251	.057	-.041	-.895	214	-.361	.047	-.204	-.539
115	-.258	.078	-.015	-.964	215	-.370	.045	-.195	-.547
116	-.291	.135	.034	-1.237	216	-.361	.045	-.179	-.552
117	-.431	.235	.021	-1.545	217	-.378	.044	-.230	-.584
118	-.666	.297	-.060	-1.805	218	-.362	.044	-.236	-.575
119	-1.030	.209	-.359	-1.970	219	-.368	.043	-.226	-.575
121	-.400	.056	-.221	-.719	221	-.538	.139	-.224	-1.641
122	-.336	.052	.047	-.659	222	-.411	.070	-.125	-.677
123	-.296	.072	.034	-.831	223	-.394	.058	-.167	-.587
124	-.283	.104	.060	-.936	224	-.379	.053	-.187	-.555
125	-.317	.131	.094	-1.078	225	-.388	.047	-.226	-.564
126	-.372	.187	.066	-1.387	226	-.373	.046	-.233	-.536
127	-.507	.244	.043	-1.493	227	-.382	.045	-.223	-.565
128	-.701	.268	-.059	-1.743	228	-.369	.045	-.224	-.568
129	-.964	.222	-.300	-2.120	229	-.390	.052	-.207	-.724
131	-.413	.067	-.238	-.856	231	-.546	.143	-.211	-1.309
132	-.345	.053	-.157	-.630	232	-.444	.075	-.211	-.781
133	-.323	.081	-.051	-.850	233	-.430	.056	-.205	-.674
134	-.314	.108	-.053	-1.002	234	-.405	.050	-.261	-.581
135	-.356	.146	-.019	-1.115	235	-.408	.048	-.254	-.603
136	-.418	.190	-.050	-1.270	236	-.395	.049	-.246	-.636
137	-.556	.222	-.082	-1.484	237	-.412	.051	-.260	-.730
138	-.709	.221	-.104	-1.495	238	-.397	.054	-.238	-.834
139	-.886	.225	-.340	-1.851	239	-.405	.062	-.246	-1.003
141	-.413	.083	-.091	-.739	241	-.558	.125	-.220	-1.356
142	-.342	.060	-.099	-.616	242	-.486	.084	-.210	-.798
143	-.312	.065	-.100	-.756	243	-.475	.085	-.227	-.881
144	-.298	.079	-.094	-.749	244	-.435	.080	-.210	-.848
145	-.340	.117	-.060	-1.081	245	-.425	.068	-.199	-.775
146	-.381	.144	-.019	-1.164	246	-.404	.064	-.221	-.713
147	-.483	.178	-.074	-1.290	247	-.421	.065	-.224	-.679
148	-.607	.192	-.153	-1.392	248	-.405	.065	-.189	-.693
149	-.752	.201	-.312	-1.843	249	-.402	.066	-.151	-.658
151	-.519	.094	-.297	-.965	251	-.414	.104	-.145	-1.173
152	-.394	.051	-.213	-.614	252	-.417	.087	-.210	-.807
153	-.328	.042	-.202	-.518	253	-.457	.104	-.179	-.962
154	-.273	.043	-.141	-.488	254	-.362	.090	-.091	-.708
155	-.264	.054	-.088	-.653	255	-.384	.105	-.012	-.726
156	-.258	.069	-.034	-.705	256	-.452	.091	-.068	-.813
157	-.318	.102	-.110	-.881	257	-.500	.078	-.292	-.863
158	-.384	.139	-.068	-.945	258	-.510	.091	-.280	-1.080
159	-.561	.192	-.100	-1.545	259	-.509	.092	-.289	-.935

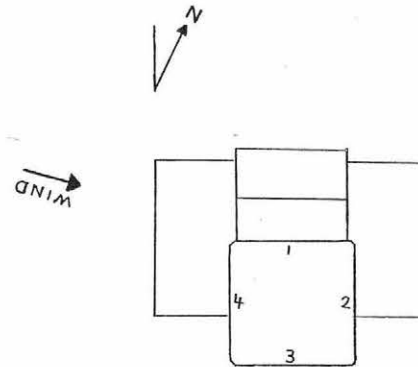
WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 260

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.451	.066	-.232	-.830	401	-1.131	.408	-.049	-2.441
302	-.431	.062	-.224	-.694	402	.362	.128	.740	-.103
303	-.444	.061	-.228	-.708	403	.579	.132	.947	.178
304	-.440	.067	-.206	-.786	404	.602	.135	.977	.194
305	-.458	.074	-.215	-.887	405	.573	.124	.992	.072
306	-.448	.077	-.221	-.870	406	.563	.121	.941	.105
307	-.462	.080	-.206	-.890	407	.499	.116	.841	.049
308	-.463	.087	-.125	-.898	408	.428	.110	.734	.013
309	-.516	.122	-.103	-1.121	409	.147	.098	.437	-.191
311	-.423	.065	-.203	-.931	411	-1.218	.379	-.181	-2.577
312	-.409	.062	-.125	-.818	412	.288	.134	.857	-.245
313	-.416	.061	-.237	-.905	413	.571	.129	1.001	.199
314	-.408	.063	-.228	-.803	414	.634	.130	1.105	.215
315	-.426	.066	-.224	-.877	415	.610	.127	1.059	.205
316	-.425	.069	-.221	-.877	416	.591	.124	1.013	.212
317	-.469	.072	-.268	-.939	417	.498	.120	.827	.147
318	-.475	.080	-.259	-.998	418	.413	.111	.752	.069
319	-.521	.110	-.269	-1.184	419	.130	.085	.434	-.166
321	-.447	.065	-.256	-.892	421	-1.063	.304	-.190	-2.203
322	-.425	.059	-.244	-.708	422	.210	.130	.661	-.181
323	-.438	.060	-.237	-.711	423	.451	.136	.842	.094
324	-.434	.064	-.193	-.849	424	.509	.137	.921	.168
325	-.459	.077	-.221	-1.070	425	.505	.126	.912	.117
326	-.452	.077	-.205	-1.133	426	.497	.122	.906	.082
327	-.474	.078	-.187	-.970	427	.426	.115	.803	.016
328	-.480	.085	-.146	-.921	428	.341	.105	.707	-.010
329	-.534	.121	-.221	-1.351	429	.064	.087	.381	-.253
331	-.495	.070	-.306	-1.092	431	-0.994	.249	-.224	-1.959
332	-.473	.064	-.281	-.777	432	.122	.118	.615	-.217
333	-.480	.065	-.282	-.837	433	.341	.137	.782	-.018
334	-.471	.067	-.278	-.995	434	.410	.136	.844	.069
335	-.484	.070	-.269	-.953	435	.398	.130	.799	.085
336	-.478	.075	-.255	-1.008	436	.391	.124	.790	.075
337	-.501	.078	-.218	-1.090	437	.332	.116	.743	.027
338	-.493	.078	-.224	-.828	438	.261	.106	.654	-.033
339	-.524	.101	-.235	-1.096	439	.001	.084	.311	-.347
341	-.566	.098	-.315	-1.257	441	-0.930	.260	-.283	-2.004
342	-.527	.085	-.300	-1.051	442	.056	.110	.503	-.313
343	-.536	.088	-.319	-1.039	443	.252	.117	.760	-.055
344	-.527	.092	-.225	-1.118	444	.303	.117	.856	-.016
345	-.550	.090	-.285	-1.232	445	.286	.107	.706	.033
346	-.535	.091	-.232	-.936	446	.286	.103	.701	.028
347	-.540	.094	-.221	-.980	447	.229	.098	.646	-.025
348	-.522	.096	-.109	-.918	448	.164	.092	.574	-.091
349	-.544	.103	-.177	-1.143	449	-.083	.082	.274	-.343
351	-.648	.156	-.306	-1.692	451	-.761	.252	-.129	-1.765
352	-.584	.113	-.294	-1.252	452	0.000	.089	.402	-.217
353	-.601	.116	-.315	-1.151	453	.175	.088	.552	-.018
354	-.582	.116	-.212	-1.036	454	.245	.089	.624	.042
355	-.577	.117	-.169	-1.045	455	.230	.087	.609	.015
356	-.539	.111	-.196	-.927	456	.200	.080	.529	-.009
357	-.527	.106	-.159	-1.033	457	.098	.075	.443	-.082
358	-.471	.101	-.137	-.953	458	.038	.069	.389	-.147
359	-.435	.097	-.159	-.865	459	-.171	.064	.117	-.392



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 260

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.453	.121	.037	-.874
502	-.401	.109	.088	-.767
503	-.593	.134	-.200	-1.320
504	-.661	.109	-.339	-1.151
505	-.654	.125	-.099	-1.216
506	-.605	.120	-.205	-1.054
507	-.679	.108	-.384	-1.286
508	-.657	.084	-.384	-.993
509	-.664	.117	-.157	-1.174
510	-.334	.114	.024	-.734
511	-.473	.125	-.067	-1.034
512	-.677	.107	-.208	-1.247
513	-.146	.058	.031	-.398
514	-.055	.055	.180	-.343
515	-.086	.060	.143	-.343
516	-.699	.205	-.296	-1.847
517	-.613	.154	-.236	-1.324
518	-.537	.122	-.168	-1.192
519	-.420	.114	-.088	-.974
520	-.320	.094	-.038	-.735
521	-.290	.071	-.081	-.577
522	-.296	.067	-.109	-.753
523	-.326	.062	-.134	-.597
524	-.281	.066	-.071	-.592
525	-.056	.120	.485	-.421
526	-.009	.097	.359	-.396
527	-.667	.207	-.239	-1.725
528	-.550	.162	-.225	-1.280
529	-.416	.108	-.071	-.919
530	-.365	.094	-.074	-.807
531	-.305	.071	-.130	-.676
532	-.274	.055	-.100	-.592
533	-.281	.063	-.071	-.713
534	-.314	.060	-.149	-.635
535	-.284	.070	-.059	-.745
536	-.422	.084	-.133	-.812
537	-.321	.087	.077	-.698
538	-.122	.057	.140	-.370
539	-.149	.048	.087	-.377
540	-.255	.071	.209	-.708
541	-.032	.062	.242	-.293
542	.008	.067	.324	-.184
543	-.234	.111	.066	-1.015
544	-.235	.054	-.031	-.483
545	-.210	.047	-.041	-.381
546	-.182	.038	-.022	-.331
547	-.192	.042	-.053	-.377
548	-.157	.033	-.024	-.280
549	-.150	.032	-.006	-.277
550	-.104	.022	-.016	-.169



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 270

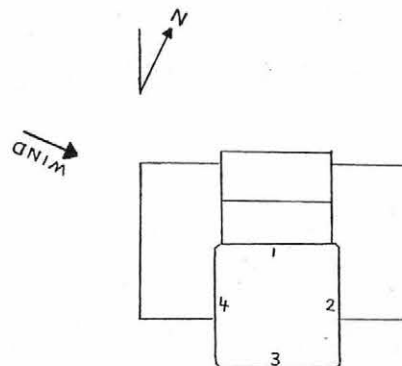
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.397	.044	-.249	-.559	201	-.491	.100	-.233	-1.058
102	-.305	.034	-.200	-.419	202	-.393	.062	-.167	-.634
103	-.168	.038	-.034	-.298	203	-.391	.052	-.205	-.566
104	-.098	.044	.071	-.240	204	-.371	.049	-.190	-.540
105	-.089	.046	.124	-.224	205	-.396	.046	-.218	-.578
106	-.041	.051	.197	-.199	206	-.375	.045	-.238	-.543
107	-.043	.058	.216	-.237	207	-.389	.044	-.266	-.550
108	-.024	.091	.273	-.528	208	-.370	.043	-.242	-.541
109	-.475	.180	.154	-1.157	209	-.395	.043	-.253	-.543
111	-.414	.042	-.230	-.553	211	-.480	.082	-.239	-1.108
112	-.309	.033	-.185	-.459	212	-.404	.052	-.202	-.617
113	-.201	.037	-.039	-.316	213	-.423	.048	-.238	-.605
114	-.112	.045	.083	-.239	214	-.400	.043	-.218	-.547
115	-.084	.051	.104	-.240	215	-.416	.041	-.245	-.563
116	-.036	.060	.194	-.216	216	-.399	.039	-.233	-.550
117	-.038	.064	.197	-.240	217	-.419	.038	-.287	-.562
118	-.025	.101	.285	-.387	218	-.392	.038	-.260	-.538
119	-.462	.203	.378	-1.021	219	-.404	.038	-.272	-.550
121	-.429	.043	-.250	-.591	221	-.505	.082	-.263	-1.100
122	-.303	.039	-.142	-.440	222	-.434	.054	-.190	-.686
123	-.201	.048	.043	-.345	223	-.436	.047	-.265	-.619
124	-.128	.056	.144	-.295	224	-.417	.044	-.254	-.614
125	-.114	.060	.151	-.305	225	-.436	.044	-.296	-.664
126	-.069	.068	.209	-.367	226	-.410	.044	-.268	-.635
127	-.081	.085	.247	-.677	227	-.422	.043	-.287	-.620
128	-.095	.132	.274	-1.147	228	-.404	.043	-.257	-.586
129	-.487	.221	.406	-1.535	229	-.423	.042	-.288	-.602
131	-.438	.066	-.246	-.840	231	-.550	.116	-.312	-1.495
132	-.322	.058	-.046	-.587	232	-.470	.071	-.279	-.855
133	-.252	.058	.064	-.458	233	-.484	.054	-.308	-.744
134	-.188	.060	.101	-.424	234	-.451	.049	-.305	-.680
135	-.182	.065	.126	-.499	235	-.463	.051	-.291	-.865
136	-.157	.076	.196	-.594	236	-.442	.053	-.275	-.694
137	-.195	.103	.173	-1.114	237	-.451	.056	-.284	-.753
138	-.257	.178	.212	-1.354	238	-.419	.056	-.242	-.659
139	-.544	.261	.240	-1.543	239	-.425	.057	-.217	-.631
141	-.519	.097	-.176	-1.202	241	-.617	.127	-.242	-1.245
142	-.371	.057	-.179	-.591	242	-.515	.085	-.269	-1.022
143	-.289	.048	-.030	-.459	243	-.496	.081	-.217	-.862
144	-.225	.048	.070	-.450	244	-.482	.085	-.205	-.835
145	-.226	.051	-.021	-.621	245	-.530	.091	-.263	-.859
146	-.196	.062	.016	-.757	246	-.533	.093	-.290	-.865
147	-.239	.090	.016	-.815	247	-.553	.098	-.291	-1.131
148	-.299	.131	.043	-.879	248	-.516	.093	-.263	-1.045
149	-.436	.145	-.062	-1.212	249	-.513	.093	-.241	-.913
151	-.650	.144	-.332	-1.354	251	-.368	.103	-.004	-.835
152	-.397	.063	-.216	-.621	252	-.348	.093	-.012	-.753
153	-.270	.050	-.055	-.450	253	-.351	.085	-.073	-.741
154	-.178	.055	.037	-.344	254	-.364	.100	.030	-.737
155	-.156	.061	.096	-.351	255	-.499	.116	.010	-.995
156	-.121	.065	.167	-.366	256	-.553	.110	-.227	-1.252
157	-.128	.071	.182	-.412	257	-.624	.113	-.344	-1.285
158	-.120	.082	.156	-.470	258	-.639	.138	-.359	-1.529
159	-.200	.116	.127	-.768	259	-.654	.137	-.360	-1.465

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 270

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.431	.053	-.258	-.741	401	-.134	.247	.558	-1.395
302	-.405	.051	-.245	-.603	402	.569	.136	.994	.094
303	-.426	.051	-.263	-.625	403	.588	.133	.959	.126
304	-.415	.053	-.220	-.658	404	.567	.128	1.065	.095
305	-.443	.053	-.282	-.652	405	.492	.111	.800	.051
306	-.426	.055	-.254	-.667	406	.472	.107	.805	.037
307	-.449	.059	-.229	-.697	407	.388	.100	.701	-.016
308	-.444	.067	-.189	-.756	408	.310	.092	.574	-.030
309	-.502	.094	-.250	-1.117	409	.038	.078	.347	-.228
311	-.416	.051	-.269	-.970	411	-.176	.275	.507	-1.279
312	-.399	.050	-.260	-.844	412	.541	.140	.936	.086
313	-.426	.044	-.273	-.587	413	.588	.127	1.008	.158
314	-.407	.045	-.258	-.566	414	.596	.124	.953	.174
315	-.431	.046	-.279	-.602	415	.530	.119	.940	.150
316	-.421	.046	-.254	-.597	416	.494	.113	.892	.144
317	-.459	.049	-.316	-.701	417	.392	.102	.756	.030
318	-.448	.054	-.285	-.723	418	.304	.091	.672	-.016
319	-.489	.072	-.296	-.885	419	.019	.066	.278	-.202
321	-.460	.051	-.316	-.709	421	-.323	.294	.482	-1.331
322	-.433	.050	-.296	-.646	422	.440	.142	.891	-.046
323	-.452	.051	-.303	-.670	423	.520	.132	1.000	.107
324	-.439	.052	-.300	-.654	424	.534	.129	1.019	.129
325	-.472	.052	-.325	-.663	425	.449	.115	.806	.079
326	-.454	.053	-.306	-.683	426	.436	.110	.785	.082
327	-.477	.054	-.321	-.743	427	.351	.103	.683	.010
328	-.468	.058	-.309	-.764	428	.263	.093	.568	-.062
329	-.505	.069	-.299	-.891	429	-.028	.076	.281	-.320
331	-.523	.074	-.318	-1.034	431	-.533	.310	.546	-1.788
332	-.496	.068	-.290	-.899	432	.127	.126	.583	-.406
333	-.521	.070	-.302	-.841	433	.251	.114	.800	-.051
334	-.500	.070	-.294	-.836	434	.309	.113	.867	-.006
335	-.520	.075	-.310	-.853	435	.292	.113	.857	-.021
336	-.506	.080	-.293	-.922	436	.297	.112	.839	-.007
337	-.540	.081	-.294	-.952	437	.224	.113	.614	-.058
338	-.519	.084	-.285	-.931	438	.175	.103	.507	-.104
339	-.548	.099	-.296	-1.328	439	-.069	.082	.268	-.330
341	-.672	.129	-.385	-2.117	441	-.550	.207	.043	-1.617
342	-.593	.102	-.330	-1.858	442	-.009	.084	.421	-.305
343	-.604	.104	-.223	-1.444	443	.100	.101	.585	-.161
344	-.588	.107	-.201	-1.558	444	.152	.107	.632	-.135
345	-.616	.113	-.355	-1.203	445	.126	.109	.654	-.161
346	-.593	.113	-.279	-1.157	446	.146	.109	.625	-.135
347	-.608	.112	-.334	-1.073	447	.098	.111	.596	-.210
348	-.587	.111	-.230	-1.050	448	.053	.111	.582	-.370
349	-.602	.111	-.253	-1.055	449	-.178	.102	.341	-.494
351	-.759	.175	-.379	-1.619	451	-.283	.157	.129	-1.180
352	-.643	.121	-.334	-1.246	452	.036	.070	.364	-.232
353	-.629	.118	-.303	-1.332	453	.103	.075	.439	-.103
354	-.482	.099	-.208	-.969	454	.154	.075	.472	-.051
355	-.587	.122	-.149	-1.282	455	.121	.075	.489	-.065
356	-.519	.113	-.150	-1.110	456	.091	.070	.440	-.115
357	-.496	.110	-.111	-.917	457	-.019	.069	.303	-.214
358	-.404	.099	-.088	-.856	458	-.075	.074	.268	-.284
359	-.356	.090	-.028	-.700	459	-.274	.081	.051	-.524

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 270

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.402	.113	.046	-.782
502	-.263	.108	.117	-.720
503	-.527	.121	-.181	-1.005
504	-.644	.101	-.332	-1.516
505	-.601	.115	-.066	-1.109
506	-.527	.102	-.143	-.945
507	-.710	.143	-.342	-1.465
508	-.639	.087	-.348	-1.240
509	-.627	.107	-.116	-1.068
510	-.435	.077	-.112	-.712
511	-.533	.146	-.088	-.995
512	-.623	.122	-.080	-1.297
513	-.192	.062	0.000	-.490
514	-.117	.063	.207	-.423
515	-.152	.064	.078	-.468
516	-.752	.213	-.181	-1.759
517	-.637	.160	-.193	-1.495
518	-.530	.128	-.188	-1.240
519	-.359	.117	-.004	-.972
520	-.252	.083	.035	-.640
521	-.217	.064	.028	-.538
522	-.221	.075	.060	-.619
523	-.239	.069	.007	-.585
524	-.210	.071	.110	-.475
525	-.128	.105	.378	-.553
526	-.106	.107	.241	-.588
527	-.744	.234	-.224	-1.962
528	-.604	.188	-.168	-1.528
529	-.368	.116	-.093	-1.143
530	-.288	.079	-.003	-.632
531	-.235	.058	-.038	-.501
532	-.209	.058	-.015	-.503
533	-.216	.075	.026	-.651
534	-.231	.075	.029	-.816
535	-.206	.071	.090	-.612
536	-.304	.103	-.019	-.728
537	-.278	.100	.096	-.710
538	-.076	.048	.126	-.257
539	-.091	.043	.137	-.268
540	-.160	.058	.143	-.387
541	-.014	.074	.331	-.313
542	.028	.070	.509	-.266
543	-.061	.095	.381	-.551
544	-.173	.059	.013	-.447
545	-.172	.051	.032	-.440
546	-.150	.045	.032	-.381
547	-.156	.048	.078	-.425
548	-.136	.040	.038	-.319
549	-.127	.044	.068	-.385
550	-.072	.027	.053	-.203



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 280

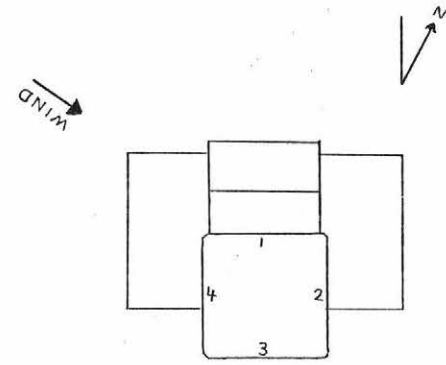
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.396	.041	-.286	-.536	201	-.440	.078	-.191	-.986
102	-.242	.034	-.105	-.362	202	-.370	.051	-.176	-.645
103	-.067	.049	.127	-.207	203	-.386	.043	-.233	-.553
104	.030	.059	.262	-.136	204	-.368	.041	-.193	-.550
105	.055	.064	.280	-.142	205	-.403	.037	-.289	-.566
106	.127	.071	.374	-.084	206	-.377	.036	-.256	-.534
107	.142	.078	.423	-.092	207	-.396	.036	-.280	-.558
108	.209	.089	.541	-.060	208	-.371	.036	-.255	-.523
109	.085	.214	.552	-.630	209	-.395	.039	-.273	-.526
111	-.404	.038	-.283	-.529	211	-.440	.058	-.205	-.731
112	-.239	.035	-.105	-.356	212	-.393	.043	-.227	-.560
113	-.089	.048	.101	-.277	213	-.425	.039	-.255	-.626
114	.033	.060	.240	-.189	214	-.394	.038	-.256	-.557
115	.076	.070	.308	-.168	215	-.414	.037	-.292	-.563
116	.152	.080	.399	-.127	216	-.392	.036	-.281	-.534
117	.163	.084	.485	-.094	217	-.418	.034	-.315	-.536
118	.241	.099	.601	-.105	218	-.385	.034	-.252	-.507
119	.130	.213	.689	-.552	219	-.402	.034	-.252	-.520
121	-.420	.044	-.299	-.712	221	-.485	.069	-.268	-.866
122	-.222	.046	-.059	-.462	222	-.421	.046	-.265	-.621
123	-.085	.067	.126	-.435	223	-.431	.040	-.290	-.610
124	.015	.081	.284	-.306	224	-.406	.039	-.271	-.577
125	.037	.091	.356	-.300	225	-.438	.038	-.306	-.586
126	.110	.103	.451	-.214	226	-.405	.039	-.295	-.534
127	.121	.115	.514	-.264	227	-.421	.039	-.292	-.583
128	.169	.135	.585	-.431	228	-.396	.040	-.264	-.576
129	.067	.243	.752	-.985	229	-.419	.044	-.262	-.676
131	-.439	.074	-.199	-.898	231	-.544	.110	-.198	-1.321
132	-.249	.076	.066	-.508	232	-.472	.075	-.243	-.860
133	-.157	.087	.199	-.426	233	-.487	.064	-.221	-.860
134	-.071	.098	.312	-.349	234	-.453	.061	-.249	-.750
135	-.059	.107	.374	-.344	235	-.470	.061	-.300	-.759
136	-.016	.114	.500	-.338	236	-.443	.063	-.281	-.737
137	-.031	.113	.566	-.382	237	-.470	.062	-.292	-.743
138	-.006	.127	.582	-.617	238	-.428	.062	-.248	-.806
139	-.094	.194	.566	-.848	239	-.436	.066	-.251	-.979
141	-.550	.122	-.251	-1.408	241	-.587	.124	-.110	-1.304
142	-.330	.072	-.098	-.649	242	-.483	.089	-.135	-.916
143	-.230	.076	.163	-.526	243	-.501	.090	-.158	-.852
144	-.156	.078	.227	-.498	244	-.516	.101	-.151	-.860
145	-.160	.076	.286	-.419	245	-.591	.105	-.292	-1.041
146	-.107	.077	.258	-.338	246	-.586	.108	-.342	-1.029
147	-.118	.081	.302	-.505	247	-.598	.109	-.305	-1.089
148	-.104	.094	.416	-.747	248	-.546	.108	-.303	-1.175
149	-.156	.118	.378	-.734	249	-.547	.112	-.286	-1.049
151	-.734	.189	-.341	-1.931	251	-.307	.107	.053	-1.067
152	-.393	.073	-.208	-.749	252	-.261	.084	.029	-.539
153	-.231	.052	-.040	-.486	253	-.309	.076	-.012	-.624
154	-.108	.056	.123	-.287	254	-.339	.090	.056	-.721
155	-.076	.063	.201	-.444	255	-.493	.114	-.113	-1.041
156	-.024	.066	.267	-.201	256	-.569	.125	-.202	-1.351
157	-.051	.066	.231	-.274	257	-.650	.123	-.254	-1.272
158	-.019	.068	.296	-.258	258	-.669	.142	-.346	-1.485
159	-.063	.077	.305	-.513	259	-.700	.154	-.397	-1.659

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 280

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.408	.042	-.272	-.578	401	.408	.166	.835	-.326
302	-.377	.041	-.232	-.522	402	.619	.136	.967	.190
303	-.402	.040	-.274	-.568	403	.517	.125	.835	.146
304	-.384	.040	-.263	-.537	404	.476	.116	.807	.131
305	-.423	.042	-.279	-.582	405	.388	.107	.764	.035
306	-.396	.043	-.259	-.556	406	.367	.100	.708	.010
307	-.422	.047	-.237	-.600	407	.276	.092	.595	-.057
308	-.405	.052	-.188	-.647	408	.201	.082	.516	-.103
309	-.446	.064	-.256	-.855	409	-.066	.061	.185	-.317
311	-.406	.039	-.282	-.557	411	.386	.183	.841	-.448
312	-.384	.038	-.271	-.530	412	.586	.135	.970	.190
313	-.429	.038	-.294	-.594	413	.525	.125	.848	.090
314	-.402	.038	-.262	-.557	414	.506	.117	.817	.090
315	-.426	.038	-.296	-.556	415	.422	.108	.695	.018
316	-.408	.038	-.287	-.597	416	.383	.100	.651	-.010
317	-.440	.038	-.297	-.578	417	.253	.093	.561	-.054
318	-.415	.041	-.262	-.597	418	.183	.081	.489	-.094
319	-.449	.053	-.269	-.744	419	-.080	.055	.129	-.263
321	-.462	.048	-.294	-.746	421	.204	.221	.960	-.832
322	-.430	.047	-.275	-.613	422	.420	.153	.805	-.135
323	-.453	.047	-.307	-.650	423	.383	.140	.758	-.104
324	-.434	.048	-.284	-.637	424	.380	.128	.741	.031
325	-.462	.048	-.312	-.656	425	.320	.113	.681	-.021
326	-.435	.049	-.277	-.635	426	.312	.103	.645	-.012
327	-.460	.050	-.293	-.690	427	.223	.092	.511	-.072
328	-.442	.054	-.284	-.760	428	.149	.081	.416	-.123
329	-.487	.065	-.309	-1.012	429	-.108	.068	.165	-.381
331	-.525	.082	-.234	-1.146	431	-.115	.232	.606	-1.167
332	-.495	.078	-.199	-.902	432	.110	.113	.506	-.279
333	-.534	.086	-.297	-.899	433	.101	.115	.598	-.420
334	-.509	.089	-.256	-1.071	434	.148	.113	.628	-.266
335	-.535	.094	-.156	-1.058	435	.122	.111	.554	-.228
336	-.516	.100	-.106	-1.127	436	.133	.110	.550	-.232
337	-.557	.097	-.235	-1.190	437	.080	.104	.531	-.193
338	-.526	.097	-.300	-1.099	438	.045	.097	.509	-.254
339	-.555	.102	-.307	-1.068	439	-.173	.084	.194	-.525
341	-.686	.143	-.316	-1.896	441	-.238	.165	.170	-.982
342	-.606	.122	-.288	-1.286	442	-.014	.070	.301	-.362
343	-.627	.134	-.247	-1.419	443	.017	.078	.387	-.253
344	-.607	.138	-.188	-1.387	444	.058	.082	.464	-.247
345	-.637	.138	-.281	-1.212	445	.018	.079	.351	-.317
346	-.601	.130	-.257	-1.130	446	.042	.081	.387	-.300
347	-.606	.120	-.235	-1.071	447	-.009	.086	.428	-.268
348	-.559	.113	-.153	-.993	448	-.043	.092	.541	-.385
349	-.575	.117	-.184	-1.093	449	-.260	.094	.141	-.585
351	-.743	.192	-.343	-2.049	451	-.087	.092	.204	-.551
352	-.622	.140	-.262	-1.528	452	.047	.061	.297	-.187
353	-.638	.133	-.269	-1.252	453	.069	.068	.340	-.200
354	-.576	.131	-.168	-1.083	454	.115	.070	.356	-.176
355	-.543	.130	-.168	-1.071	455	.081	.070	.353	-.160
356	-.459	.116	-.118	-1.000	456	.060	.064	.432	-.209
357	-.426	.099	-.051	-.880	457	-.056	.062	.179	-.244
358	-.331	.089	.004	-.706	458	-.101	.069	.282	-.310
359	-.300	.084	.012	-.643	459	-.287	.085	.121	-.598

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 280

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.227	.109	.160	-.626
502	-.066	.082	.208	-.387
503	-.497	.134	-.152	-1.015
504	-.588	.095	-.302	-1.032
505	-.532	.098	-.114	-.972
506	-.418	.070	-.082	-.739
507	-.922	.324	.074	-1.783
508	-.978	.227	-.350	-1.633
509	-.420	.140	-.065	-1.046
510	-.483	.067	-.259	-.719
511	-.736	.128	-.248	-1.254
512	-.390	.152	-.056	-.960
513	-.179	.064	.085	-.466
514	-.128	.063	.169	-.360
515	-.185	.069	.034	-.585
516	-.682	.204	-.259	-1.873
517	-.616	.171	-.179	-1.657
518	-.494	.128	-.147	-1.536
519	-.332	.108	.116	-.848
520	-.227	.069	.018	-.555
521	-.202	.059	.051	-.436
522	-.208	.072	.091	-.690
523	-.219	.064	.037	-.670
524	-.205	.056	.029	-.439
525	-.134	.092	.304	-.551
526	-.145	.094	.192	-.471
527	-.716	.225	-.220	-1.854
528	-.593	.187	-.169	-1.479
529	-.356	.112	.093	-.968
530	-.262	.075	.016	-.538
531	-.215	.056	.004	-.496
532	-.193	.054	.151	-.444
533	-.211	.063	.081	-.648
534	-.214	.060	.076	-.733
535	-.198	.056	.066	-.607
536	-.243	.077	-.015	-.715
537	-.228	.084	.073	-.723
538	-.051	.059	.200	-.301
539	-.069	.052	.134	-.345
540	-.117	.061	.281	-.568
541	-.012	.057	.348	-.303
542	.023	.066	.485	-.216
543	-.009	.077	.469	-.319
544	-.133	.075	.134	-.504
545	-.143	.077	.097	-.508
546	-.129	.068	.154	-.398
547	-.133	.072	.123	-.615
548	-.113	.061	.125	-.383
549	-.112	.064	.184	-.376
550	-.065	.037	.135	-.222



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 290

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.409	.041	-.278	-.570	201	-.414	.051	-.210	-.683
102	-.159	.046	.013	-.325	202	-.371	.043	-.234	-.569
103	.054	.073	.282	-.222	203	-.396	.041	-.260	-.560
104	.172	.085	.446	-.143	204	-.376	.040	-.242	-.523
105	.218	.081	.540	-.055	205	-.417	.040	-.265	-.589
106	.309	.088	.629	.017	206	-.384	.039	-.257	-.548
107	.336	.095	.678	.035	207	-.406	.038	-.273	-.563
108	.429	.106	.804	.088	208	-.379	.038	-.250	-.530
109	.481	.128	.834	.001	209	-.404	.040	-.275	-.555
111	-.415	.041	-.295	-.683	211	-.430	.048	-.210	-.648
112	-.155	.044	.125	-.298	212	-.398	.040	-.222	-.582
113	.028	.062	.268	-.174	213	-.430	.034	-.319	-.576
114	.176	.075	.406	-.062	214	-.396	.033	-.302	-.532
115	.231	.085	.469	-.039	215	-.419	.033	-.315	-.529
116	.325	.096	.590	.019	216	-.393	.033	-.285	-.502
117	.352	.102	.677	.048	217	-.425	.035	-.319	-.558
118	.456	.115	.796	.102	218	-.391	.035	-.280	-.529
119	.506	.133	.897	.039	219	-.410	.035	-.287	-.549
121	-.442	.044	-.304	-.701	221	-.486	.063	-.267	-.931
122	-.160	.042	.082	-.383	222	-.435	.046	-.240	-.709
123	.026	.063	.282	-.196	223	-.449	.040	-.316	-.639
124	.159	.077	.445	-.111	224	-.420	.039	-.250	-.585
125	.196	.088	.510	-.158	225	-.447	.041	-.316	-.602
126	.296	.101	.639	-.095	226	-.411	.040	-.286	-.579
127	.325	.115	.727	-.089	227	-.430	.039	-.282	-.603
128	.400	.132	.848	-.053	228	-.401	.039	-.265	-.570
129	.416	.160	.893	-.115	229	-.433	.039	-.300	-.622
131	-.473	.069	-.251	-.795	231	-.540	.093	-.253	-1.021
132	-.183	.062	.020	-.454	232	-.493	.078	-.132	-.955
133	-.023	.078	.292	-.386	233	-.513	.068	-.329	-.869
134	.106	.092	.459	-.262	234	-.475	.065	-.322	-.788
135	.144	.105	.490	-.193	235	-.493	.063	-.309	-.789
136	.216	.119	.612	-.177	236	-.460	.063	-.257	-.763
137	.201	.134	.644	-.225	237	-.490	.063	-.332	-.862
138	.251	.146	.759	-.220	238	-.445	.061	-.277	-.794
139	.193	.153	.756	-.400	239	-.459	.061	-.263	-.782
141	-.618	.119	-.269	-1.394	241	-.588	.103	-.296	-1.325
142	-.276	.066	-.042	-.570	242	-.526	.091	-.183	-1.012
143	-.108	.074	.171	-.421	243	-.581	.099	-.270	-1.045
144	.006	.084	.308	-.266	244	-.595	.107	-.283	-1.121
145	.043	.092	.363	-.268	245	-.659	.116	-.366	-1.145
146	.122	.101	.514	-.205	246	-.626	.118	-.360	-1.109
147	.125	.112	.601	-.251	247	-.626	.112	-.363	-1.181
148	.164	.124	.765	-.200	248	-.574	.109	-.306	-1.104
149	.094	.136	.727	-.321	249	-.581	.101	-.244	-1.004
151	-.762	.173	-.382	-1.662	251	-.387	.105	-.060	-.904
152	-.360	.076	-.151	-.740	252	-.331	.097	-.019	-.711
153	-.162	.063	.115	-.346	253	-.380	.096	-.024	-.749
154	-.027	.071	.285	-.225	254	-.422	.090	-.034	-.904
155	.010	.077	.341	-.205	255	-.582	.110	-.242	-1.102
156	.076	.080	.416	-.144	256	-.628	.132	-.339	-1.397
157	.075	.091	.387	-.189	257	-.712	.127	-.402	-1.437
158	.124	.098	.500	-.153	258	-.720	.152	-.366	-1.567
159	.083	.114	.598	-.183	259	-.731	.152	-.386	-1.438

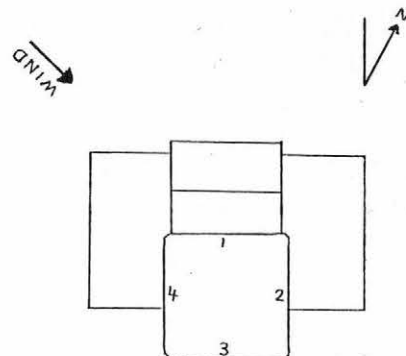


WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 290

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.403	.038	-.286	-.543	401	.559	.140	.931	.069
302	-.369	.037	-.254	-.508	402	.480	.132	.846	-.055
303	-.398	.037	-.290	-.566	403	.360	.108	.674	.023
304	-.376	.036	-.272	-.534	404	.329	.098	.634	.006
305	-.424	.040	-.269	-.721	405	.242	.098	.529	-.079
306	-.392	.041	-.260	-.726	406	.241	.086	.503	-.033
307	-.420	.043	-.282	-.729	407	.156	.080	.397	-.085
308	-.395	.046	-.270	-.690	408	.093	.069	.295	-.148
309	-.431	.052	-.266	-.744	409	-.151	.048	.019	-.320
311	-.411	.038	-.283	-.552	411	.558	.142	.983	.057
312	-.386	.037	-.269	-.517	412	.476	.141	.864	-.194
313	-.429	.036	-.292	-.546	413	.363	.107	.685	-.039
314	-.398	.036	-.256	-.544	414	.343	.096	.639	-.016
315	-.427	.035	-.318	-.595	415	.256	.087	.536	-.056
316	-.405	.036	-.289	-.599	416	.224	.080	.470	-.059
317	-.444	.036	-.300	-.598	417	.111	.072	.351	-.144
318	-.411	.038	-.251	-.605	418	.049	.062	.250	-.191
319	-.444	.044	-.270	-.687	419	-.178	.044	.003	-.382
321	-.455	.044	-.302	-.735	421	.284	.176	.780	-.733
322	-.418	.043	-.290	-.641	422	.202	.160	.727	-.565
323	-.448	.043	-.297	-.634	423	.173	.099	.555	-.175
324	-.426	.044	-.290	-.588	424	.171	.090	.507	-.142
325	-.466	.048	-.332	-.686	425	.104	.092	.447	-.177
326	-.433	.050	-.299	-.676	426	.108	.087	.433	-.119
327	-.462	.051	-.296	-.729	427	.029	.082	.351	-.220
328	-.440	.053	-.241	-.731	428	-.021	.075	.346	-.266
329	-.475	.052	-.306	-.731	429	-.240	.058	.026	-.448
331	-.504	.075	-.208	-.908	431	-.124	.218	.513	-1.311
332	-.474	.074	-.214	-.930	432	-.107	.165	.371	-.716
333	-.519	.076	-.292	-1.060	433	-.037	.076	.323	-.467
334	-.488	.079	-.270	-.841	434	.003	.062	.325	-.257
335	-.521	.086	-.315	-1.200	435	-.038	.060	.279	-.372
336	-.498	.088	-.257	-1.073	436	-.030	.061	.257	-.371
337	-.554	.090	-.315	-1.061	437	-.096	.068	.210	-.329
338	-.517	.083	-.269	-.877	438	-.116	.067	.177	-.332
339	-.550	.088	-.299	-.947	439	-.290	.070	.059	-.559
341	-.601	.108	-.345	-1.255	441	-.120	.148	.365	-.925
342	-.555	.100	-.292	-1.196	442	-.096	.119	.254	-.690
343	-.585	.104	-.339	-1.353	443	-.070	.059	.141	-.453
344	-.567	.114	-.296	-1.438	444	-.043	.051	.178	-.286
345	-.616	.121	-.365	-1.427	445	-.087	.054	.149	-.326
346	-.583	.118	-.318	-1.438	446	-.066	.052	.181	-.239
347	-.595	.110	-.259	-1.191	447	-.125	.053	.200	-.339
348	-.550	.100	-.165	-1.056	448	-.156	.057	.208	-.358
349	-.565	.096	-.253	-.917	449	-.344	.071	.034	-.624
351	-.675	.143	-.370	-1.454	451	-.064	.121	.351	-.579
352	-.616	.121	-.338	-1.160	452	-.062	.091	.233	-.477
353	-.657	.131	-.323	-1.282	453	-.082	.055	.108	-.371
354	-.607	.127	-.231	-1.191	454	-.047	.049	.131	-.246
355	-.588	.114	-.202	-1.079	455	-.089	.048	.098	-.283
356	-.508	.105	-.137	-1.028	456	-.082	.048	.134	-.272
357	-.485	.092	-.191	-.913	457	-.146	.049	.039	-.359
358	-.389	.087	-.023	-.711	458	-.157	.055	.089	-.382
359	-.370	.091	-.032	-.731	459	-.330	.075	-.060	-.599

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 290

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.138	.090	.171	-.494
502	-.113	.094	.160	-.698
503	-.504	.132	-.105	-.988
504	-.508	.095	.257	-.856
505	-.296	.130	.014	-.822
506	-.377	.041	-.139	-.662
507	-.444	.336	.090	-1.597
508	-1.102	.194	-.205	-1.714
509	-.569	.128	-.160	-.882
510	-.491	.075	-.253	-.898
511	-.862	.137	-.376	-1.263
512	-.381	.048	-.112	-.523
513	-.202	.061	.009	-.518
514	-.166	.057	.139	-.421
515	-.270	.083	.055	-.737
516	-.690	.194	-.149	-1.979
517	-.654	.159	-.297	-1.558
518	-.554	.119	-.224	-1.195
519	-.483	.111	-.140	-1.058
520	-.359	.093	-.093	-1.064
521	-.308	.071	-.091	-.768
522	-.303	.079	-.064	-.828
523	-.306	.069	-.109	-.610
524	-.283	.068	-.073	-.601
525	-.178	.066	.066	-.464
526	-.201	.088	.157	-.782
527	-.735	.198	-.176	-1.740
528	-.680	.173	-.191	-1.428
529	-.479	.103	-.198	-.895
530	-.400	.092	-.063	-.801
531	-.333	.072	-.136	-.610
532	-.295	.073	.025	-.737
533	-.306	.081	-.048	-.706
534	-.304	.069	-.104	-.616
535	-.261	.065	-.055	-.503
536	-.287	.070	.018	-.922
537	-.257	.067	-.048	-.582
538	-.016	.067	.272	-.439
539	-.014	.058	.257	-.282
540	-.051	.047	.160	-.474
541	-.008	.071	.276	-.436
542	.052	.079	.366	-.337
543	.044	.092	.437	-.342
544	-.018	.062	.242	-.246
545	-.021	.056	.192	-.300
546	-.026	.057	.209	-.212
547	-.007	.057	.269	-.245
548	-.002	.053	.252	-.267
549	-.017	.064	.366	-.221
550	-.041	.037	.154	-.152



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 300

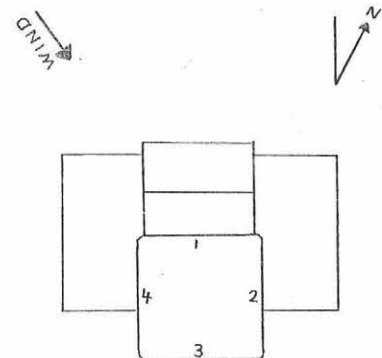
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.422	.048	-.246	-.637	201	-.430	.064	-.216	-.704
102	-.080	.055	.156	-.270	202	-.400	.059	-.213	-.653
103	.152	.084	.399	-.151	203	-.423	.050	-.245	-.624
104	.281	.095	.562	-.033	204	-.398	.047	-.232	-.575
105	.311	.091	.581	.013	205	-.435	.045	-.281	-.639
106	.414	.099	.698	.070	206	-.395	.044	-.229	-.580
107	.442	.106	.743	.055	207	-.418	.044	-.275	-.601
108	.544	.117	.873	.083	208	-.387	.044	-.254	-.562
109	.562	.133	.978	.084	209	-.427	.047	-.287	-.623
111	-.423	.043	-.289	-.623	211	-.450	.056	-.163	-.759
112	-.085	.055	.123	-.253	212	-.427	.047	-.270	-.617
113	.114	.077	.351	-.148	213	-.454	.038	-.332	-.599
114	.275	.091	.538	-.012	214	-.414	.037	-.265	-.557
115	.327	.100	.621	.001	215	-.438	.038	-.270	-.583
116	.426	.109	.750	.071	216	-.407	.038	-.245	-.557
117	.470	.111	.797	.093	217	-.438	.040	-.294	-.584
118	.574	.120	.935	.169	218	-.394	.040	-.248	-.555
119	.577	.131	.952	.111	219	-.418	.040	-.260	-.577
121	-.463	.048	-.296	-.660	221	-.504	.066	-.277	-.834
122	-.113	.053	.114	-.279	222	-.461	.056	-.260	-.676
123	.088	.075	.375	-.107	223	-.478	.049	-.296	-.676
124	.231	.089	.520	-.013	224	-.447	.047	-.278	-.666
125	.278	.093	.618	.013	225	-.481	.043	-.333	-.666
126	.387	.102	.744	.101	226	-.438	.042	-.284	-.594
127	.412	.111	.777	.096	227	-.462	.042	-.304	-.626
128	.492	.124	.857	.141	228	-.431	.042	-.278	-.581
129	.464	.131	.901	.096	229	-.463	.047	-.307	-.655
131	-.511	.069	-.292	-.781	231	-.571	.101	-.329	-1.285
132	-.163	.063	.073	-.440	232	-.537	.086	-.290	-1.037
133	.012	.070	.325	-.187	233	-.554	.074	-.361	-.981
134	.159	.081	.508	-.061	234	-.512	.072	-.326	-.839
135	.203	.092	.559	-.040	235	-.534	.071	-.345	-.842
136	.293	.105	.655	.006	236	-.501	.069	-.313	-.828
137	.311	.109	.680	.042	237	-.529	.066	-.317	-.932
138	.394	.120	.820	.090	238	-.491	.061	-.323	-.747
139	.351	.136	.833	-.027	239	-.507	.060	-.329	-.731
141	-.645	.103	-.353	-1.076	241	-.615	.092	-.322	-1.063
142	-.240	.063	.010	-.452	242	-.580	.086	-.317	-.963
143	-.056	.070	.230	-.233	243	-.632	.094	-.365	-1.014
144	.064	.075	.409	-.135	244	-.626	.102	-.356	-1.037
145	.090	.082	.439	-.150	245	-.665	.103	-.346	-1.250
146	.181	.088	.548	-.067	246	-.624	.105	-.339	-1.139
147	.188	.097	.551	-.070	247	-.637	.102	-.384	-1.269
148	.250	.111	.717	-.015	248	-.599	.096	-.349	-1.025
149	.213	.132	.843	-.127	249	-.637	.097	-.374	-1.180
151	-.691	.149	-.390	-1.392	251	-.513	.134	-.081	-1.129
152	-.280	.077	-.015	-.578	252	-.432	.112	.017	-.831
153	-.079	.073	.245	-.283	253	-.487	.094	-.111	-.805
154	.072	.082	.393	-.136	254	-.507	.087	-.154	-.891
155	.105	.088	.461	-.119	255	-.601	.106	-.333	-1.207
156	.171	.090	.569	-.039	256	-.602	.107	-.375	-1.324
157	.159	.085	.494	-.062	257	-.686	.129	-.394	-1.291
158	.201	.086	.540	-.024	258	-.653	.144	-.348	-1.308
159	.126	.111	.657	-.123	259	-.662	.136	-.378	-1.261

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 300

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.404	.040	-.264	-.552	401	.338	.174	.774	-.502
302	-.363	.040	-.230	-.507	402	.076	.202	.551	-.569
303	-.394	.038	-.282	-.540	403	.142	.085	.413	-.189
304	-.371	.038	-.260	-.520	404	.132	.074	.363	-.097
305	-.413	.039	-.260	-.562	405	.059	.069	.341	-.171
306	-.374	.040	-.207	-.539	406	.066	.063	.323	-.141
307	-.402	.042	-.228	-.591	407	-.011	.057	.216	-.196
308	-.375	.047	-.197	-.605	408	-.051	.049	.129	-.202
309	-.422	.057	-.214	-.738	409	-.247	.037	-.100	-.357
311	-.410	.041	-.289	-.556	411	.248	.222	.906	-1.046
312	-.381	.039	-.256	-.517	412	.014	.207	.599	-.648
313	-.422	.036	-.295	-.552	413	.123	.093	.389	-.174
314	-.383	.036	-.257	-.514	414	.127	.079	.363	-.090
315	-.415	.036	-.283	-.546	415	.056	.069	.271	-.132
316	-.389	.037	-.249	-.556	416	.041	.061	.238	-.133
317	-.435	.037	-.296	-.579	417	-.048	.058	.231	-.252
318	-.397	.039	-.247	-.530	418	-.087	.048	.171	-.248
319	-.428	.044	-.186	-.592	419	-.267	.035	-.099	-.383
321	-.455	.042	-.316	-.630	421	.032	.256	.812	-1.041
322	-.414	.041	-.282	-.584	422	-.098	.192	.512	-.776
323	-.445	.041	-.314	-.613	423	.043	.083	.361	-.289
324	-.421	.041	-.286	-.579	424	.046	.066	.294	-.200
325	-.462	.043	-.322	-.621	425	-.035	.058	.335	-.248
326	-.425	.043	-.277	-.594	426	-.031	.053	.328	-.212
327	-.455	.043	-.328	-.636	427	-.108	.048	.222	-.276
328	-.430	.045	-.295	-.631	428	-.146	.045	.177	-.277
329	-.476	.050	-.262	-.692	429	-.323	.040	-.162	-.457
331	-.476	.056	-.249	-.747	431	-.185	.243	.596	-1.201
332	-.447	.056	-.263	-.709	432	-.221	.167	.365	-.863
333	-.492	.057	-.315	-.770	433	-.072	.072	.219	-.509
334	-.458	.058	-.298	-.894	434	-.036	.051	.184	-.200
335	-.488	.057	-.316	-.757	435	-.087	.044	.100	-.247
336	-.464	.057	-.292	-.714	436	-.083	.042	.088	-.222
337	-.516	.062	-.289	-.775	437	-.166	.044	.136	-.297
338	-.482	.065	-.253	-.737	438	-.185	.042	.077	-.321
339	-.523	.074	-.306	-.964	439	-.343	.045	-.146	-.503
341	-.562	.085	-.318	-1.061	441	-.112	.182	.550	-.972
342	-.519	.083	-.266	-1.020	442	-.136	.133	.225	-.661
343	-.555	.084	-.309	-1.079	443	-.077	.056	.154	-.355
344	-.536	.088	-.296	-1.069	444	-.055	.046	.152	-.263
345	-.580	.093	-.342	-1.272	445	-.112	.048	.132	-.270
346	-.551	.095	-.337	-1.140	446	-.096	.045	.107	-.244
347	-.584	.094	-.295	-1.113	447	-.160	.046	.052	-.332
348	-.558	.094	-.279	-1.127	448	-.189	.049	.115	-.357
349	-.599	.092	-.338	-1.068	449	-.368	.060	-.087	-.582
351	-.649	.131	-.389	-1.461	451	-.074	.165	.470	-1.020
352	-.616	.127	-.329	-1.328	452	-.067	.094	.239	-.602
353	-.686	.133	-.374	-1.340	453	-.081	.062	.249	-.294
354	-.663	.136	-.355	-1.438	454	-.055	.052	.215	-.216
355	-.682	.126	-.386	-1.511	455	-.112	.048	.107	-.270
356	-.624	.112	-.266	-1.101	456	-.116	.046	.048	-.299
357	-.619	.095	-.280	-.987	457	-.199	.050	.016	-.389
358	-.530	.091	-.068	-.929	458	-.210	.056	.007	-.435
359	-.526	.105	-.121	-1.087	459	-.390	.076	-.131	-.786

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 300

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.313	.118	.117	-.783
502	-.444	.119	.034	-.867
503	-.550	.148	-.033	-1.076
504	-.504	.071	-.267	-.740
505	-.198	.120	.079	-.926
506	-.446	.086	-.137	-.760
507	-.814	.178	-.210	-1.458
508	-.742	.170	-.020	-1.338
509	-.476	.108	-.207	-1.011
510	-.586	.090	-.326	-1.221
511	-.599	.091	-.273	-1.063
512	-.434	.153	-.039	-.972
513	-.272	.060	-.095	-.587
514	-.226	.049	-.006	-.426
515	-.313	.071	-.079	-.735
516	-.593	.147	-.275	-1.606
517	-.567	.122	-.287	-1.213
518	-.568	.116	-.271	-1.096
519	-.566	.113	-.186	-1.193
520	-.482	.095	-.133	-.941
521	-.431	.100	-.120	-1.080
522	-.425	.118	-.064	-1.212
523	-.388	.083	-.121	-.818
524	-.344	.081	-.069	-.681
525	-.247	.057	-.019	-.533
526	-.269	.084	.040	-.657
527	-.654	.160	-.266	-1.636
528	-.576	.130	-.181	-1.143
529	-.520	.094	-.243	-.847
530	-.488	.094	-.183	-.887
531	-.418	.083	-.104	-.752
532	-.392	.099	-.079	-.921
533	-.392	.111	-.080	-1.102
534	-.349	.077	-.079	-.659
535	-.307	.082	-.054	-.653
536	-.307	.084	-.051	-.656
537	-.295	.089	-.056	-.757
538	-.011	.060	.214	-.329
539	-.007	.054	.244	-.266
540	-.009	.057	.268	-.218
541	.036	.073	.332	-.357
542	.071	.101	.435	-.307
543	.110	.081	.445	-.280
544	-.018	.062	.383	-.256
545	-.017	.075	.385	-.252
546	-.001	.080	.432	-.282
547	-.001	.066	.401	-.319
548	.006	.077	.379	-.180
549	.004	.074	.392	-.274
550	-.038	.039	.261	-.203



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 310

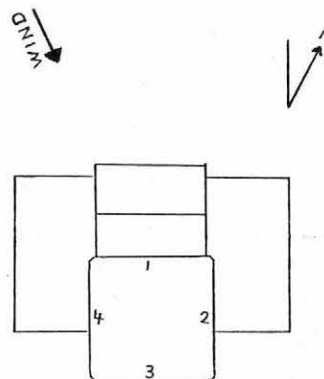
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.457	.057	-.242	-.739	201	-.521	.099	-.266	-1.199
102	.020	.072	.329	-.274	202	-.476	.079	-.249	-.873
103	.270	.098	.636	-.117	203	-.473	.056	-.281	-.724
104	.398	.108	.816	-.030	204	-.432	.050	-.257	-.831
105	.414	.120	.753	.041	205	-.464	.054	-.304	-.942
106	.512	.126	.862	.137	206	-.416	.053	-.242	-.724
107	.527	.131	.953	.157	207	-.441	.052	-.260	-.759
108	.600	.136	1.040	.202	208	-.406	.052	-.232	-.742
109	.510	.139	.903	-.023	209	-.439	.053	-.257	-.711
111	-.429	.053	-.229	-.776	211	-.511	.093	-.223	-1.033
112	.025	.074	.297	-.262	212	-.478	.071	-.319	-1.084
113	.242	.093	.601	-.071	213	-.489	.051	-.313	-.803
114	.406	.104	.797	.052	214	-.433	.047	-.259	-.748
115	.448	.110	.831	.082	215	-.453	.045	-.294	-.745
116	.536	.116	.858	.158	216	-.416	.045	-.256	-.661
117	.553	.123	.987	.158	217	-.450	.044	-.304	-.613
118	.618	.128	1.036	.196	218	-.402	.044	-.260	-.586
119	.485	.134	.902	.061	219	-.427	.043	-.298	-.597
121	-.482	.057	-.334	-.724	221	-.571	.098	-.256	-1.155
122	-.014	.073	.252	-.232	222	-.517	.073	-.294	-.866
123	.210	.099	.553	-.089	223	-.517	.056	-.336	-.826
124	.355	.112	.758	.044	224	-.473	.052	-.091	-.831
125	.402	.109	.770	.105	225	-.503	.051	-.346	-.749
126	.500	.116	.868	.171	226	-.456	.050	-.309	-.703
127	.499	.122	.875	.144	227	-.478	.050	-.339	-.780
128	.538	.128	.900	.165	228	-.443	.049	-.292	-.701
129	.379	.150	.828	-.049	229	-.484	.051	-.271	-.696
131	-.546	.067	-.352	-.985	231	-.587	.099	-.339	-1.117
132	-.083	.077	.213	-.325	232	-.547	.084	-.325	-.932
133	.117	.099	.493	-.153	233	-.574	.072	-.385	-.887
134	.267	.111	.629	-.004	234	-.526	.065	-.330	-.791
135	.299	.118	.683	.007	235	-.548	.062	-.374	-.807
136	.378	.123	.803	.074	236	-.513	.061	-.330	-.814
137	.362	.126	.838	.038	237	-.548	.062	-.382	-.925
138	.418	.132	.889	.081	238	-.507	.062	-.347	-.833
139	.292	.141	.830	-.144	239	-.530	.059	-.357	-.870
141	-.643	.095	-.396	-1.293	241	-.614	.088	-.405	-1.078
142	-.147	.071	.177	-.352	242	-.575	.081	-.350	-.930
143	.053	.087	.451	-.160	243	-.614	.088	-.378	-.991
144	.176	.096	.605	-.054	244	-.593	.095	-.319	-.987
145	.200	.104	.633	-.100	245	-.645	.106	-.401	-1.382
146	.276	.107	.714	-.033	246	-.603	.102	-.360	-1.307
147	.255	.108	.660	-.079	247	-.622	.097	-.389	-1.532
148	.282	.110	.697	-.031	248	-.586	.089	-.351	-1.310
149	.150	.126	.643	-.178	249	-.620	.088	-.415	-1.115
151	-.646	.142	-.355	-1.595	251	-.568	.131	-.188	-1.460
152	-.162	.072	.092	-.469	252	-.498	.099	-.122	-.959
153	.045	.086	.372	-.171	253	-.537	.080	-.229	-.968
154	.203	.103	.618	-.025	254	-.514	.077	-.318	-.905
155	.226	.112	.714	-.004	255	-.567	.089	-.344	-1.162
156	.284	.116	.797	.040	256	-.560	.095	-.333	-1.119
157	.259	.112	.676	-.007	257	-.621	.120	-.372	-1.259
158	.250	.101	.662	.007	258	-.577	.129	-.330	-1.309
159	.032	.091	.444	-.188	259	-.598	.124	-.350	-1.299

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 310

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.397	.041	-.239	-.574	401	-.295	.281	.374	-1.646
302	-.352	.040	-.207	-.511	402	-.582	.201	.113	-1.328
303	-.386	.039	-.254	-.534	403	-.129	.095	.094	-.739
304	-.357	.039	-.231	-.500	404	-.082	.053	.091	-.422
305	-.403	.043	-.271	-.585	405	-.132	.051	.043	-.310
306	-.361	.044	-.227	-.548	406	-.104	.046	.066	-.260
307	-.392	.047	-.234	-.584	407	-.160	.041	-.015	-.285
308	-.368	.053	-.161	-.616	408	-.171	.036	-.042	-.309
309	-.433	.060	-.212	-.696	409	-.308	.030	-.212	-.412
311	-.405	.038	-.275	-.552	411	-.643	.440	.521	-2.206
312	-.372	.037	-.246	-.520	412	-.561	.194	.260	-1.167
313	-.411	.035	-.296	-.520	413	-.173	.123	.151	-.808
314	-.372	.036	-.258	-.516	414	-.084	.068	.144	-.397
315	-.402	.036	-.285	-.568	415	-.125	.052	.066	-.335
316	-.373	.037	-.242	-.531	416	-.115	.044	.070	-.261
317	-.424	.041	-.282	-.589	417	-.193	.036	-.038	-.303
318	-.384	.044	-.198	-.548	418	-.197	.031	-.059	-.328
319	-.429	.053	-.170	-.643	419	-.321	.030	-.216	-.448
321	-.453	.045	-.242	-.605	421	-.903	.457	.397	-2.291
322	-.408	.044	-.208	-.561	422	-.575	.181	.159	-1.240
323	-.440	.043	-.245	-.591	423	-.221	.121	.148	-.996
324	-.412	.043	-.214	-.575	424	-.131	.064	.138	-.873
325	-.456	.042	-.320	-.589	425	-.150	.051	.035	-.371
326	-.416	.043	-.278	-.584	426	-.129	.042	.047	-.265
327	-.448	.046	-.235	-.636	427	-.194	.037	-.004	-.306
328	-.422	.050	-.231	-.622	428	-.215	.033	-.039	-.324
329	-.476	.061	-.227	-.749	429	-.369	.035	-.142	-.496
331	-.472	.059	-.295	-.673	431	-.759	.438	.362	-2.325
332	-.439	.058	-.268	-.636	432	-.520	.183	.276	-1.098
333	-.493	.049	-.353	-.705	433	-.235	.129	.067	-1.236
334	-.455	.049	-.312	-.686	434	-.141	.070	.091	-.804
335	-.490	.051	-.354	-.745	435	-.174	.049	.022	-.359
336	-.465	.053	-.303	-.710	436	-.161	.041	.029	-.297
337	-.503	.056	-.303	-.793	437	-.226	.038	-.045	-.334
338	-.471	.059	-.258	-.717	438	-.234	.036	-.071	-.342
339	-.525	.068	-.232	-.864	439	-.370	.040	-.212	-.531
341	-.514	.060	-.282	-.792	441	-.594	.392	.288	-2.191
342	-.470	.058	-.269	-.748	442	-.437	.200	.148	-1.218
343	-.506	.056	-.316	-.803	443	-.220	.113	.116	-.855
344	-.484	.056	-.278	-.727	444	-.145	.062	.099	-.662
345	-.543	.061	-.351	-.819	445	-.182	.051	.066	-.489
346	-.506	.063	-.347	-.817	446	-.153	.042	.054	-.348
347	-.541	.066	-.374	-.823	447	-.213	.039	-.021	-.406
348	-.521	.074	-.299	-.946	448	-.231	.039	-.066	-.406
349	-.573	.076	-.331	-.955	449	-.388	.049	-.216	-.553
351	-.575	.093	-.360	-1.132	451	-.423	.216	.304	-1.282
352	-.546	.093	-.329	-1.081	452	-.274	.152	.193	-1.134
353	-.602	.102	-.407	-1.327	453	-.224	.119	.099	-.797
354	-.580	.113	-.340	-1.747	454	-.151	.083	.078	-.568
355	-.610	.105	-.333	-1.189	455	-.187	.060	.020	-.531
356	-.569	.093	-.339	-.922	456	-.181	.045	.008	-.427
357	-.602	.087	-.314	-1.135	457	-.258	.039	-.112	-.440
358	-.542	.086	-.144	-1.026	458	-.261	.042	-.103	-.448
359	-.558	.100	-.186	-1.094	459	-.409	.054	-.228	-.711

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 310

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.470	.107	-.052	-.845
502	-.554	.107	-.071	-.934
503	-.644	.107	-.209	-1.062
504	-.466	.077	-.169	-.770
505	-.225	.088	.046	-.559
506	-.561	.104	-.177	-1.054
507	-.694	.120	-.373	-1.363
508	-.617	.139	-.170	-1.177
509	-.558	.125	-.156	-1.247
510	-.658	.098	-.337	-1.342
511	-.622	.082	-.288	-.984
512	-.634	.113	-.233	-1.165
513	-.320	.059	-.120	-.605
514	-.274	.052	-.065	-.516
515	-.349	.060	-.053	-.601
516	-.528	.103	-.223	-1.274
517	-.518	.100	-.282	-1.046
518	-.532	.104	-.252	-1.022
519	-.540	.103	-.322	-1.381
520	-.467	.084	-.162	-.852
521	-.443	.104	-.028	-1.003
522	-.453	.128	-.095	-1.255
523	-.416	.105	-.088	-1.030
524	-.376	.097	-.061	-.829
525	-.307	.059	.022	-.543
526	-.326	.080	-.056	-.659
527	-.570	.133	-.240	-1.292
528	-.503	.097	-.252	-.970
529	-.481	.077	-.251	-.899
530	-.458	.079	-.185	-.831
531	-.435	.085	-.132	-1.010
532	-.408	.105	.042	-1.033
533	-.407	.131	.056	-1.314
534	-.381	.097	-.079	-.843
535	-.371	.091	-.065	-.684
536	-.376	.105	-.007	-.767
537	-.409	.104	-.046	-.843
538	-.001	.049	.257	-.162
539	.023	.059	.303	-.234
540	.065	.075	.454	-.182
541	.016	.053	.260	-.208
542	-.026	.110	.525	-.451
543	.092	.082	.470	-.240
544	.048	.087	.438	-.243
545	.040	.088	.536	-.289
546	.048	.086	.423	-.234
547	.054	.079	.464	-.194
548	.062	.086	.547	-.197
549	.059	.081	.488	-.217
550	-.011	.043	.230	-.187





WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 320

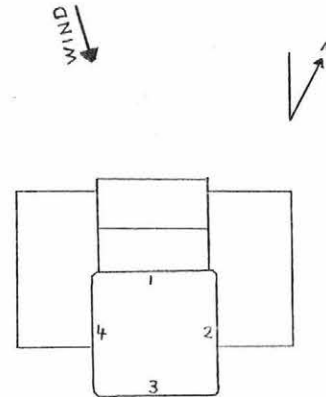
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.510	.094	-.243	-1.261	201	-.565	.133	-.249	-1.314
102	.134	.093	.445	-.239	202	-.509	.110	-.201	-1.127
103	.382	.120	.699	-.055	203	-.509	.081	-.219	-1.111
104	.498	.129	.857	.052	204	-.466	.079	-.170	-.999
105	.510	.121	.845	.105	205	-.512	.072	-.285	-.869
106	.590	.123	.908	.163	206	-.462	.069	-.242	-.964
107	.573	.123	.913	.104	207	-.486	.065	-.284	-.928
108	.598	.124	.936	.084	208	-.448	.062	-.229	-.786
109	.341	.135	.751	-.150	209	-.486	.063	-.281	-.781
111	-.466	.085	-.258	-1.125	211	-.585	.149	-.276	-1.810
112	.122	.101	.425	-.213	212	-.535	.115	-.261	-1.269
113	.355	.115	.721	-.029	213	-.529	.082	-.259	-1.046
114	.508	.124	.887	.098	214	-.464	.076	-.236	-.894
115	.530	.128	.887	.118	215	-.481	.072	-.266	-.916
116	.596	.131	.998	.182	216	-.440	.070	-.215	-.844
117	.561	.133	1.006	.188	217	-.471	.058	-.264	-.786
118	.574	.133	.989	.192	218	-.419	.055	-.226	-.747
119	.286	.126	.704	-.107	219	-.445	.055	-.264	-.750
121	-.504	.091	-.271	-1.202	221	-.598	.151	-.292	-1.544
122	.076	.090	.398	-.262	222	-.534	.117	-.247	-1.180
123	.298	.115	.716	-.072	223	-.529	.084	-.300	-1.016
124	.431	.126	.897	.042	224	-.477	.078	-.268	-.952
125	.426	.125	.882	.084	225	-.514	.072	-.304	-.937
126	.503	.129	.929	.160	226	-.461	.068	-.263	-.892
127	.470	.130	.905	.125	227	-.484	.062	-.308	-.853
128	.464	.131	.908	.090	228	-.446	.059	-.278	-.729
129	.196	.130	.647	-.268	229	-.489	.062	-.291	-.811
131	-.566	.102	-.300	-1.389	231	-.609	.137	-.329	-1.421
132	.012	.093	.380	-.274	232	-.559	.111	-.273	-1.139
133	.216	.111	.627	-.083	233	-.570	.087	-.256	-1.002
134	.358	.118	.805	.048	234	-.518	.081	-.304	-.958
135	.372	.122	.833	.046	235	-.546	.080	-.346	-.999
136	.432	.125	.919	.107	236	-.510	.078	-.315	-1.040
137	.378	.127	.758	.001	237	-.551	.073	-.360	-.858
138	.390	.125	.774	.042	238	-.503	.068	-.315	-.746
139	.137	.125	.574	-.369	239	-.533	.067	-.311	-.788
141	-.697	.148	-.417	-1.592	241	-.625	.122	-.290	-1.280
142	-.074	.088	.275	-.338	242	-.571	.108	-.219	-1.087
143	.124	.106	.553	-.163	243	-.608	.110	-.318	-1.168
144	.238	.112	.678	-.067	244	-.587	.114	-.268	-1.200
145	.221	.112	.626	-.060	245	-.631	.107	-.304	-1.096
146	.287	.112	.707	.011	246	-.594	.106	-.259	-1.280
147	.252	.109	.718	-.028	247	-.618	.100	-.349	-1.115
148	.253	.106	.696	-.014	248	-.584	.097	-.318	-1.122
149	.042	.113	.539	-.307	249	-.627	.095	-.370	-1.489
151	-.755	.233	-.359	-2.350	251	-.536	.157	-.141	-1.762
152	-.139	.089	.145	-.588	252	-.464	.105	-.051	-.942
153	.084	.093	.441	-.135	253	-.508	.096	-.151	-.882
154	.242	.106	.599	.007	254	-.495	.095	-.148	-.986
155	.256	.111	.650	.003	255	-.570	.102	-.259	-1.019
156	.305	.110	.682	.060	256	-.576	.110	-.250	-1.022
157	.248	.106	.622	.020	257	-.651	.121	-.359	-1.332
158	.224	.091	.568	.014	258	-.623	.143	-.319	-1.392
159	-.066	.078	.330	-.352	259	-.659	.155	-.362	-1.794

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 320

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.405	.054	-.191	-.630	401	-1.336	.449	.077	-2.853
302	-.354	.052	-.149	-.582	402	-1.059	.178	-.305	-1.860
303	-.391	.052	-.201	-.632	403	-.594	.207	-.146	-1.492
304	-.360	.053	-.170	-.599	404	-.362	.113	.007	-1.049
305	-.399	.051	-.230	-.595	405	-.281	.060	-.050	-.710
306	-.356	.053	-.165	-.558	406	-.261	.041	-.115	-.530
307	-.394	.055	-.217	-.625	407	-.265	.036	-.121	-.542
308	-.372	.059	-.194	-.627	408	-.283	.034	-.155	-.446
309	-.453	.071	-.187	-.794	409	-.334	.043	-.162	-.482
311	-.406	.051	-.229	-.607	411	-1.638	.473	.060	-3.017
312	-.366	.048	-.191	-.550	412	-1.015	.191	-.315	-1.821
313	-.414	.043	-.252	-.625	413	-.705	.267	-.165	-1.695
314	-.371	.043	-.212	-.583	414	-.459	.208	-.112	-1.447
315	-.404	.043	-.254	-.595	415	-.332	.128	.035	-1.143
316	-.371	.044	-.237	-.534	416	-.287	.083	-.013	-.953
317	-.413	.050	-.196	-.627	417	-.284	.074	.113	-1.153
318	-.372	.052	-.185	-.551	418	-.301	.054	.186	-.723
319	-.430	.062	-.248	-.675	419	-.355	.045	-.078	-.645
321	-.432	.048	-.237	-.788	421	-1.483	.479	-.193	-2.999
322	-.378	.043	-.191	-.588	422	-.955	.205	-.373	-1.779
323	-.414	.042	-.268	-.588	423	-.705	.274	-.127	-1.725
324	-.383	.043	-.238	-.560	424	-.490	.238	-.043	-1.654
325	-.436	.046	-.272	-.599	425	-.355	.169	.060	-1.366
326	-.392	.047	-.217	-.553	426	-.304	.108	.007	-1.137
327	-.428	.048	-.227	-.600	427	-.295	.074	-.018	-.822
328	-.401	.054	-.194	-.614	428	-.311	.060	.019	-.772
329	-.466	.072	-.212	-.820	429	-.368	.053	-.112	-.729
331	-.438	.056	-.217	-.794	431	-1.302	.470	-.186	-3.017
332	-.400	.052	-.231	-.634	432	-.902	.230	-.243	-1.981
333	-.444	.050	-.282	-.670	433	-.655	.273	-.102	-1.753
334	-.402	.049	-.244	-.613	434	-.480	.232	-.102	-1.348
335	-.440	.049	-.272	-.665	435	-.377	.176	-.090	-1.280
336	-.413	.050	-.243	-.620	436	-.325	.131	.031	-1.224
337	-.462	.056	-.224	-.705	437	-.296	.084	-.062	-1.030
338	-.432	.061	-.238	-.705	438	-.309	.058	-.082	-.834
339	-.500	.076	-.276	-.791	439	-.367	.049	-.175	-.781
341	-.449	.071	-.216	-.757	441	-1.037	.402	.231	-2.682
342	-.400	.067	-.182	-.733	442	-.765	.233	-.034	-2.279
343	-.446	.065	-.273	-.729	443	-.558	.237	-.043	-1.703
344	-.425	.067	-.238	-.719	444	-.421	.198	-.057	-1.492
345	-.475	.058	-.287	-.749	445	-.298	.115	-.028	-.930
346	-.435	.060	-.254	-.757	446	-.275	.082	-.062	-.762
347	-.481	.068	-.307	-.773	447	-.276	.065	-.080	-.725
348	-.473	.081	-.219	-.862	448	-.295	.055	-.115	-.704
349	-.564	.091	-.299	-.977	449	-.349	.051	-.134	-.582
351	-.502	.088	-.217	-.898	451	-.738	.269	-.046	-2.195
352	-.470	.085	-.201	-.947	452	-.549	.208	-.075	-1.579
353	-.519	.095	-.297	-1.341	453	-.418	.161	-.035	-1.177
354	-.475	.088	-.278	-1.048	454	-.336	.118	-.057	-.947
355	-.502	.086	-.252	-1.067	455	-.305	.088	-.072	-.800
356	-.455	.080	-.244	-.872	456	-.298	.067	-.102	-.642
357	-.477	.082	-.081	-.816	457	-.310	.052	-.136	-.654
358	-.414	.089	-.104	-.975	458	-.335	.049	-.172	-.523
359	-.476	.124	-.128	-1.272	459	-.406	.060	-.217	-.661

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 320

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS. PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.520	.128	-.015	-.944
502	-.613	.132	-.098	-1.115
503	-.720	.128	-.163	-1.348
504	-.416	.114	-.032	-.821
505	-.366	.104	-.017	-.750
506	-.640	.120	-.141	-1.207
507	-.736	.109	-.477	-1.290
508	-.663	.115	-.316	-1.182
509	-.646	.132	-.279	-1.306
510	-.661	.103	-.345	-1.139
511	-.685	.086	-.386	-1.012
512	-.684	.103	-.262	-1.259
513	-.376	.069	-.179	-.715
514	-.318	.073	-.121	-.909
515	-.379	.077	-.163	-.755
516	-.484	.110	-.182	-1.116
517	-.470	.097	-.221	-1.080
518	-.448	.100	-.160	-1.015
519	-.443	.090	-.120	-.907
520	-.367	.084	-.056	-.841
521	-.341	.096	-.056	-.872
522	-.383	.138	-.036	-1.384
523	-.369	.115	-.025	-1.035
524	-.358	.102	-.065	-.770
525	-.328	.064	-.081	-.629
526	-.317	.084	-.075	-.770
527	-.476	.138	-.136	-1.439
528	-.440	.102	-.078	-.950
529	-.370	.077	-.141	-.724
530	-.358	.084	-.105	-.916
531	-.334	.108	.077	-.918
532	-.285	.104	.090	-.704
533	-.355	.137	.138	-1.020
534	-.360	.111	-.040	-.807
535	-.366	.102	-.087	-.784
536	-.372	.098	-.096	-.750
537	-.374	.099	-.093	-.887
538	.034	.055	.334	-.130
539	.070	.068	.358	-.173
540	.120	.076	.468	-.087
541	0.000	.044	.191	-.197
542	-.030	.134	.411	-.588
543	.071	.085	.472	-.382
544	.113	.091	.580	-.173
545	.098	.087	.454	-.216
546	.102	.085	.469	-.164
547	.121	.081	.465	-.132
548	.119	.084	.480	-.157
549	.102	.082	.474	-.163
550	.027	.057	.488	-.135



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 330

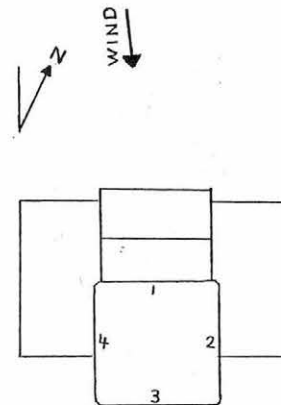
PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-.770	.295	-.276	-2.241	201	-.582	.219	-.055	-1.678
102	.164	.115	.538	-.304	202	-.565	.186	.060	-1.356
103	.454	.130	.891	-.004	203	-.559	.158	.070	-1.359
104	.521	.136	.937	.070	204	-.594	.162	-.019	-1.390
105	.537	.125	.974	.127	205	-.628	.158	.254	-1.417
106	.557	.126	.975	.117	206	-.635	.157	.045	-1.473
107	.545	.125	.974	.133	207	-.621	.151	-.039	-1.422
108	.502	.124	.915	.090	208	-.611	.151	-.221	-1.505
109	.177	.120	.612	-.212	209	-.595	.141	-.250	-1.760
111	-.653	.244	-.213	-2.029	211	-.659	.279	.031	-2.104
112	.156	.122	.511	-.237	212	-.630	.216	-.004	-1.753
113	.456	.120	.838	.003	213	-.582	.171	.093	-1.423
114	.552	.127	.915	.090	214	-.587	.172	-.020	-1.378
115	.585	.129	.916	.144	215	-.593	.173	-.105	-1.353
116	.598	.130	.934	.147	216	-.594	.172	-.113	-1.494
117	.572	.135	.965	.142	217	-.577	.153	-.204	-1.519
118	.500	.130	.889	.067	218	-.561	.148	-.218	-1.678
119	.163	.110	.587	-.255	219	-.545	.142	-.243	-1.510
121	-.630	.233	-.230	-2.120	221	-.645	.268	-.093	-1.945
122	.111	.116	.522	-.449	222	-.610	.209	.076	-1.612
123	.381	.132	.858	-.049	223	-.574	.175	.071	-1.651
124	.471	.139	.931	-.004	224	-.587	.180	.061	-1.451
125	.528	.132	.946	.099	225	-.605	.185	-.026	-1.644
126	.541	.132	.926	.073	226	-.607	.179	.001	-1.471
127	.512	.128	.897	.055	227	-.596	.177	-.045	-1.819
128	.434	.122	.802	-.024	228	-.589	.177	-.222	-1.787
129	.084	.115	.501	-.464	229	-.588	.177	-.134	-1.939
131	-.728	.268	-.252	-2.560	231	-.592	.232	.079	-1.771
132	.031	.110	.405	-.363	232	-.572	.194	.049	-1.394
133	.293	.125	.722	-.030	233	-.580	.178	.070	-1.335
134	.376	.129	.798	.065	234	-.622	.179	.017	-1.355
135	.403	.130	.826	.080	235	-.654	.183	-.065	-1.502
136	.410	.130	.845	.079	236	-.672	.185	-.124	-1.542
137	.395	.176	.808	-1.447	237	-.663	.169	-.217	-1.839
138	.338	.127	.750	-.040	238	-.655	.165	-.282	-1.814
139	.037	.126	.631	-.348	239	-.642	.162	-.279	-1.710
141	-.864	.279	-.185	-2.699	241	-.488	.133	-.148	-1.237
142	-.070	.104	.341	-.403	242	-.468	.129	-.108	-1.060
143	.166	.114	.643	-.176	243	-.489	.146	-.081	-1.119
144	.236	.115	.715	-.059	244	-.530	.159	-.090	-1.259
145	.270	.113	.737	0.000	245	-.606	.177	-.116	-1.477
146	.279	.111	.726	.018	246	-.654	.181	-.118	-1.715
147	.252	.109	.676	-.003	247	-.691	.191	-.113	-1.739
148	.196	.108	.685	-.090	248	-.726	.207	-.195	-1.878
149	-.023	.113	.430	-.348	249	-.748	.222	-.336	-2.242
151	-.993	.328	-.298	-2.637	251	-.405	.171	-.020	-1.615
152	-.173	.100	.253	-.497	252	-.353	.086	-.064	-.775
153	.150	.099	.660	-.127	253	-.353	.085	-.102	-.747
154	.262	.110	.695	-.012	254	-.376	.093	-.118	-.909
155	.297	.113	.689	.024	255	-.417	.111	-.140	-1.025
156	.304	.110	.692	.043	256	-.480	.133	-.161	-1.134
157	.258	.103	.646	.021	257	-.584	.160	-.198	-1.202
158	.168	.087	.577	-.031	258	-.685	.187	-.224	-1.553
159	-.132	.095	.334	-.519	259	-.815	.254	-.278	-2.977

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 330

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.415	.092	-.118	-1.146	401	-1.695	.446	-.387	-2.978
302	-.399	.081	-.124	-.930	402	-1.241	.235	-.411	-2.092
303	-.403	.078	-.160	-.862	403	-1.045	.249	-.342	-2.098
304	-.407	.077	-.168	-.811	404	-.770	.233	-.163	-1.612
305	-.403	.077	-.160	-.758	405	-.580	.186	-.072	-1.415
306	-.410	.078	-.150	-.736	406	-.466	.147	.039	-1.254
307	-.420	.080	-.147	-.751	407	-.404	.118	.069	-1.132
308	-.431	.087	-.137	-.799	408	-.370	.093	-.032	-.939
309	-.458	.107	-.112	-1.042	409	-.380	.090	.083	-1.141
311	-.439	.129	.030	-1.160	411	-1.268	.485	-.424	-3.082
312	-.404	.098	-.103	-.974	412	-1.038	.237	-.394	-2.310
313	-.403	.085	-.157	-.834	413	-1.009	.243	-.182	-2.500
314	-.402	.075	-.208	-.790	414	-.898	.255	-.086	-2.051
315	-.398	.067	-.196	-.707	415	-.765	.267	-.075	-1.627
316	-.394	.061	-.225	-.719	416	-.633	.260	.003	-1.670
317	-.393	.067	-.186	-.659	417	-.560	.240	.092	-1.437
318	-.405	.072	-.122	-.814	418	-.471	.187	.102	-1.306
319	-.453	.098	-.172	-1.007	419	-.429	.139	-.029	-1.124
321	-.432	.144	-.062	-1.575	421	-1.184	.471	-.325	-3.055
322	-.392	.088	-.153	-.850	422	-.979	.268	-.322	-2.137
323	-.387	.072	-.198	-.802	423	-.924	.266	-.238	-2.120
324	-.382	.065	-.198	-.838	424	-.823	.280	-.014	-1.911
325	-.369	.058	-.192	-.621	425	-.754	.270	-.017	-2.026
326	-.366	.055	-.207	-.639	426	-.647	.250	.018	-1.720
327	-.368	.058	-.172	-.734	427	-.549	.225	0.000	-1.404
328	-.377	.072	-.153	-1.095	428	-.469	.197	.164	-1.348
329	-.431	.104	-.125	-.968	429	-.437	.168	.008	-1.443
331	-.417	.111	-.109	-1.491	431	-1.201	.472	-.396	-3.082
332	-.393	.087	-.139	-.955	432	-.996	.288	-.339	-2.253
333	-.396	.075	-.142	-.801	433	-.882	.270	-.131	-2.206
334	-.394	.066	-.184	-.748	434	-.773	.265	-.134	-1.637
335	-.395	.061	-.202	-.651	435	-.669	.260	-.063	-1.628
336	-.397	.060	-.224	-.630	436	-.574	.243	.155	-1.470
337	-.396	.064	-.193	-.628	437	-.472	.190	.027	-1.335
338	-.412	.073	-.196	-.704	438	-.421	.151	-.054	-1.219
339	-.454	.102	-.139	-.831	439	-.411	.118	.002	-1.147
341	-.391	.076	-.186	-.843	441	-1.184	.408	-.194	-2.874
342	-.382	.070	-.202	-.680	442	-.896	.246	-.358	-2.134
343	-.394	.068	-.230	-.742	443	-.738	.256	-.173	-1.934
344	-.397	.067	-.234	-.743	444	-.590	.240	-.175	-1.544
345	-.392	.066	-.207	-.696	445	-.480	.210	-.102	-1.690
346	-.397	.069	-.224	-.804	446	-.409	.165	-.104	-1.138
347	-.412	.079	-.205	-.900	447	-.368	.135	-.089	-1.184
348	-.437	.100	-.128	-1.060	448	-.345	.112	-.014	-1.118
349	-.460	.117	-.192	-1.503	449	-.362	.087	-.020	-1.056
351	-.419	.100	-.168	-1.112	451	-1.021	.339	-.266	-2.560
352	-.416	.093	-.190	-.927	452	-.817	.280	-.248	-2.432
353	-.432	.091	-.169	-1.159	453	-.558	.183	-.173	-1.251
354	-.429	.087	-.207	-.944	454	-.448	.147	-.157	-1.065
355	-.417	.081	-.208	-.862	455	-.393	.112	-.176	-.965
356	-.396	.073	-.159	-.773	456	-.358	.084	-.117	-.752
357	-.365	.065	-.145	-.677	457	-.331	.068	-.155	-.715
358	-.372	.081	-.160	-.779	458	-.338	.061	-.155	-.653
359	-.404	.117	-.089	-1.350	459	-.379	.064	-.215	-.677

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 330

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.496	.171	.206	-1.144
502	-.696	.165	.047	-1.444
503	-.803	.150	-.187	-1.404
504	-.403	.155	.185	-1.073
505	-.486	.140	.189	-1.041
506	-.711	.181	.026	-1.602
507	-.795	.137	-.418	-1.512
508	-.797	.139	-.313	-1.340
509	-.709	.032	-.597	-.795
510	-.718	.119	-.339	-1.294
511	-.752	.109	-.400	-1.139
512	-.765	.133	-.172	-1.452
513	-.346	.079	-.129	-.742
514	-.294	.082	-.052	-.830
515	-.376	.096	-.091	-1.003
516	-.433	.115	-.143	-1.266
517	-.410	.108	-.147	-1.102
518	-.359	.081	-.074	-.851
519	-.349	.074	-.141	-.686
520	-.292	.073	-.039	-.811
521	-.319	.108	-.067	-1.019
522	-.336	.125	-.006	-1.223
523	-.316	.100	.013	-1.050
524	-.305	.089	-.049	-.707
525	-.308	.075	-.031	-.617
526	-.285	.099	.107	-.698
527	-.386	.126	.256	-1.023
528	-.376	.096	-.042	-.797
529	-.312	.076	-.097	-1.041
530	-.282	.084	.027	-.931
531	-.262	.080	.030	-.794
532	-.256	.085	.043	-.762
533	-.295	.117	.159	-1.079
534	-.286	.098	.036	-.927
535	-.297	.087	-.085	-.678
536	-.298	.087	-.058	-.695
537	-.342	.108	-.101	-.719
538	.072	.067	.394	-.126
539	.095	.077	.403	-.187
540	.148	.083	.525	-.086
541	-.011	.048	.211	-.220
542	-.087	.159	.369	-.748
543	.040	.084	.418	-.244
544	.096	.089	.503	-.253
545	.108	.090	.534	-.195
546	.113	.089	.506	-.116
547	.129	.084	.620	-.118
548	.125	.088	.544	-.113
549	.108	.089	.525	-.113
550	.037	.063	.387	-.135



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 340

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-1.763	.370	-.485	-2.810	201	-.429	.117	-.065	-1.071
102	.122	.122	.580	-.270	202	-.409	.114	-.009	-1.153
103	.505	.126	.885	.019	203	-.428	.149	-.010	-1.140
104	.567	.130	.986	.067	204	-.494	.180	.070	-1.224
105	.555	.122	.934	.137	205	-.585	.200	-.059	-1.283
106	.556	.123	.980	.139	206	-.712	.210	-.154	-1.516
107	.521	.121	.941	.088	207	-.873	.221	-.123	-1.654
108	.461	.118	.894	.007	208	-1.039	.260	-.171	-2.335
109	.192	.118	.598	-.309	209	-1.130	.274	-.380	-2.298
111	-1.313	.410	-.219	-2.645	211	-.492	.193	.050	-1.490
112	.112	.113	.600	-.286	212	-.476	.185	.157	-1.243
113	.487	.126	.849	.049	213	-.497	.208	.332	-1.413
114	.583	.132	.947	.097	214	-.595	.233	.113	-1.421
115	.598	.133	.949	.110	215	-.706	.246	.129	-1.543
116	.597	.132	.949	.128	216	-.810	.250	.050	-1.795
117	.548	.126	.937	.137	217	-.884	.249	-.034	-1.850
118	.466	.120	.858	.067	218	-.908	.232	-.077	-2.102
119	.174	.105	.533	-.239	219	-.908	.233	-.168	-1.973
121	-1.234	.397	-.237	-2.885	221	-.511	.222	.089	-1.837
122	.093	.124	.504	-.406	222	-.487	.192	.162	-1.439
123	.422	.135	.820	-.079	223	-.531	.214	.202	-1.404
124	.510	.140	.968	.018	224	-.612	.243	.116	-1.626
125	.515	.133	.897	.127	225	-.725	.254	-.015	-1.672
126	.515	.134	.905	.142	226	-.806	.249	-.009	-1.837
127	.469	.131	.853	.076	227	-.863	.247	-.089	-2.169
128	.387	.126	.747	-.016	228	-.898	.256	-.199	-2.319
129	.101	.121	.491	-.316	229	-.894	.276	-.289	-2.358
131	-1.153	.338	-.151	-2.584	231	-.455	.158	-.093	-1.352
132	.025	.129	.445	-.436	232	-.435	.159	-.031	-1.135
133	.326	.133	.816	-.057	233	-.455	.170	.089	-1.254
134	.409	.135	.883	.051	234	-.513	.191	.116	-1.374
135	.422	.133	.870	.012	235	-.593	.214	-.055	-1.715
136	.421	.132	.861	.019	236	-.687	.241	-.093	-1.723
137	.369	.130	.801	.018	237	-.804	.259	-.110	-1.801
138	.295	.123	.723	-.069	238	-.882	.263	-.224	-2.117
139	.018	.113	.389	-.442	239	-.941	.304	-.315	-2.628
141	-1.138	.372	-.237	-2.731	241	-.448	.123	-.163	-1.079
142	-.053	.110	.430	-.424	242	-.394	.099	-.135	-.973
143	.200	.118	.695	-.100	243	-.388	.124	-.113	-1.091
144	.267	.121	.807	.016	244	-.416	.152	-.098	-1.154
145	.285	.122	.782	-.040	245	-.473	.184	-.018	-1.156
146	.283	.118	.800	-.039	246	-.551	.207	-.111	-1.401
147	.245	.113	.755	-.081	247	-.652	.230	-.126	-1.734
148	.180	.106	.644	-.151	248	-.768	.242	-.254	-1.964
149	-.066	.102	.271	-.409	249	-.913	.266	-.343	-2.076
151	-1.068	.381	-.243	-3.055	251	-.365	.146	-.083	-1.721
152	-.133	.101	.412	-.504	252	-.325	.086	-.111	-.751
153	.169	.100	.706	-.081	253	-.316	.071	-.049	-.620
154	.262	.113	.804	.034	254	-.322	.077	-.076	-.638
155	.281	.117	.894	.036	255	-.350	.092	-.101	-.829
156	.276	.114	.858	.036	256	-.389	.119	-.064	-.951
157	.222	.105	.637	-.054	257	-.461	.136	-.184	-1.095
158	.125	.086	.473	-.101	258	-.591	.189	-.200	-1.420
159	-.180	.082	.180	-.503	259	-.849	.289	-.292	-2.325

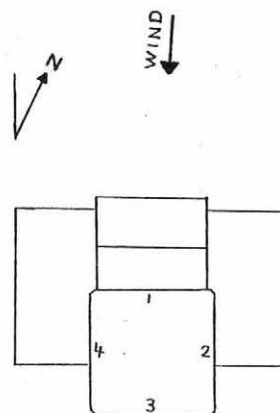
WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 340

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.554	.201	.031	-1.441	401	-.697	.250	-.300	-2.672
302	-.450	.110	-.052	-.894	402	-.649	.173	-.272	-1.471
303	-.422	.089	-.116	-.818	403	-.658	.171	-.120	-1.617
304	-.409	.084	-.156	-.790	404	-.662	.171	-.171	-1.581
305	-.411	.081	-.169	-1.334	405	-.680	.185	-.106	-1.800
306	-.404	.082	-.176	-1.267	406	-.655	.178	-.064	-1.547
307	-.403	.084	-.123	-1.214	407	-.615	.177	-.043	-1.473
308	-.397	.087	-.120	-1.164	408	-.560	.177	.083	-1.260
309	-.391	.098	-.022	-1.020	409	-.535	.186	.043	-1.497
311	-.617	.244	-.050	-1.725	411	-.619	.191	-.241	-1.975
312	-.446	.107	-.132	-.845	412	-.594	.165	-.235	-1.789
313	-.395	.073	-.175	-.824	413	-.605	.162	-.265	-2.351
314	-.378	.064	-.077	-.682	414	-.618	.171	-.108	-1.621
315	-.379	.063	-.163	-.631	415	-.631	.176	-.058	-1.657
316	-.378	.069	-.166	-.704	416	-.618	.180	.091	-1.514
317	-.392	.076	-.089	-.753	417	-.605	.182	.103	-1.696
318	-.393	.086	-.098	-.837	418	-.586	.177	.073	-1.467
319	-.399	.100	-.056	-.835	419	-.615	.219	.012	-1.440
321	-.605	.248	-.024	-1.794	421	-.650	.259	-.159	-3.032
322	-.447	.123	-.107	-1.238	422	-.610	.200	-.152	-1.917
323	-.395	.075	-.095	-.703	423	-.621	.202	-.166	-2.051
324	-.377	.061	-.111	-.633	424	-.623	.196	-.207	-1.657
325	-.379	.061	-.190	-.709	425	-.625	.186	-.119	-1.523
326	-.381	.068	-.159	-.952	426	-.621	.190	-.177	-1.713
327	-.390	.078	-.166	-1.078	427	-.604	.188	-.049	-1.468
328	-.395	.091	-.093	-1.171	428	-.585	.183	.031	-1.453
329	-.397	.109	-.074	-.872	429	-.609	.225	.088	-1.803
331	-.538	.203	-.119	-1.791	431	-.701	.241	-.331	-2.298
332	-.436	.108	-.127	-.959	432	-.661	.198	-.312	-1.969
333	-.393	.076	-.126	-.692	433	-.685	.211	-.218	-2.182
334	-.379	.064	-.196	-.609	434	-.676	.198	-.073	-1.991
335	-.378	.061	-.205	-.673	435	-.663	.191	-.018	-1.586
336	-.377	.066	-.213	-.716	436	-.633	.186	.022	-1.685
337	-.387	.071	-.181	-.777	437	-.591	.175	-.015	-1.338
338	-.388	.078	-.178	-.814	438	-.548	.162	-.062	-1.329
339	-.397	.092	-.123	-.955	439	-.540	.182	-.089	-1.560
341	-.446	.134	-.130	-1.275	441	-.863	.320	-.337	-2.534
342	-.404	.091	-.165	-.775	442	-.756	.226	-.348	-2.336
343	-.400	.076	-.234	-.759	443	-.727	.203	-.186	-1.728
344	-.390	.068	-.188	-.691	444	-.674	.189	-.108	-1.510
345	-.402	.069	-.199	-.646	445	-.610	.173	-.131	-1.354
346	-.397	.071	-.222	-.734	446	-.550	.161	-.111	-1.278
347	-.409	.083	-.234	-.919	447	-.502	.154	-.016	-1.173
348	-.423	.104	-.203	-1.132	448	-.453	.143	.010	-.988
349	-.410	.109	-.185	-1.041	449	-.447	.140	-.143	-1.063
351	-.441	.127	-.159	-1.330	451	-.939	.312	-.284	-2.742
352	-.428	.114	-.163	-1.159	452	-.825	.264	-.300	-2.298
353	-.455	.098	-.230	-.937	453	-.637	.194	-.236	-1.807
354	-.433	.085	-.157	-.947	454	-.533	.167	-.207	-1.412
355	-.407	.074	-.148	-.805	455	-.464	.140	-.174	-1.106
356	-.372	.065	-.141	-.663	456	-.405	.117	-.158	-.880
357	-.339	.063	-.123	-.621	457	-.374	.092	-.094	-.746
358	-.336	.079	-.093	-.852	458	-.357	.081	-.088	-.730
359	-.356	.123	.007	-1.579	459	-.389	.080	-.190	-.837



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 340

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.374	.159	.236	-1.025
502	-.659	.167	.058	-1.208
503	-.823	.147	-.230	-1.375
504	-.493	.175	.134	-1.361
505	-.499	.141	.085	-.964
506	-.734	.175	.145	-1.545
507	-.731	.120	-.365	-1.288
508	-.767	.153	-.230	-1.542
509	-.714	.174	-.076	-1.499
510	-.803	.134	-.424	-1.491
511	-.785	.114	-.443	-1.176
512	-.803	.150	-.195	-1.488
513	-.389	.108	-.130	-.953
514	-.334	.105	.009	-.801
515	-.458	.132	-.022	-1.017
516	-.498	.148	.009	-1.249
517	-.485	.145	-.031	-1.751
518	-.395	.110	-.010	-1.011
519	-.359	.089	-.067	-.807
520	-.294	.085	.079	-1.065
521	-.279	.090	.039	-.734
522	-.287	.103	.061	-.822
523	-.266	.083	-.036	-.637
524	-.250	.074	-.078	-.674
525	-.327	.093	-.018	-.744
526	-.294	.120	.180	-.756
527	-.385	.153	.253	-1.236
528	-.381	.112	-.004	-.987
529	-.309	.089	.049	-.815
530	-.280	.085	.085	-.658
531	-.262	.079	.051	-.767
532	-.259	.084	-.015	-.791
533	-.284	.106	.121	-1.234
534	-.265	.082	.003	-.732
535	-.275	.069	-.030	-.601
536	-.275	.077	-.028	-.616
537	-.287	.083	-.055	-.729
538	.048	.053	.327	-.114
539	.058	.064	.343	-.217
540	.120	.076	.437	-.135
541	-.005	.059	.279	-.213
542	-.118	.170	.364	-.813
543	.026	.086	.439	-.276
544	.090	.084	.493	-.181
545	.098	.094	.562	-.163
546	.122	.095	.580	-.169
547	.105	.082	.515	-.099
548	.116	.091	.590	-.106
549	.129	.097	.583	-.139
550	.040	.054	.310	-.139



WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 350

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
101	-1.282	.400	.126	-2.578	201	-.421	.058	-.228	-.660
102	.313	.126	.752	-.104	202	-.392	.048	-.215	-.575
103	.562	.133	1.011	-.053	203	-.318	.040	-.158	-.572
104	.587	.135	1.008	.073	204	-.293	.045	-.125	-.670
105	.547	.126	.940	.135	205	-.304	.059	-.054	-.718
106	.532	.124	.938	.120	206	-.329	.085	-.036	-1.084
107	.476	.119	.851	.071	207	-.440	.151	-.113	-1.339
108	.404	.114	.753	-.004	208	-.707	.242	-.173	-1.792
109	.143	.098	.447	-.299	209	-1.172	.223	-.445	-2.262
111	-1.305	.361	-.210	-2.431	211	-.429	.062	-.240	-.768
112	.248	.132	.716	-.167	212	-.378	.056	-.096	-.687
113	.544	.131	.987	.126	213	-.340	.080	.069	-.978
114	.610	.131	1.088	.212	214	-.328	.109	.046	-.986
115	.597	.126	1.061	.206	215	-.378	.163	.006	-1.223
116	.579	.122	1.033	.200	216	-.469	.237	-.025	-1.448
117	.501	.121	.919	.059	217	-.662	.306	-.128	-1.777
118	.414	.113	.806	-.013	218	-.876	.292	-.173	-2.016
119	.128	.090	.438	-.235	219	-1.077	.218	-.424	-2.194
121	-1.172	.321	-.244	-2.267	221	-.448	.068	-.252	-.857
122	.191	.123	.595	-.201	222	-.389	.063	-.188	-.732
123	.462	.129	.951	.105	223	-.355	.095	.040	-.926
124	.524	.132	.971	.146	224	-.353	.137	.003	-1.077
125	.507	.130	.882	.141	225	-.422	.201	.113	-1.602
126	.498	.129	.891	.117	226	-.500	.249	-.093	-1.734
127	.434	.124	.793	.050	227	-.639	.285	-.076	-1.705
128	.346	.117	.682	-.018	228	-.816	.280	-.115	-2.071
129	.058	.097	.354	-.278	229	-1.027	.244	-.388	-2.370
131	-1.014	.318	-.121	-2.544	231	-.472	.083	-.243	-1.369
132	.126	.132	.651	-.269	232	-.398	.067	-.194	-.777
133	.344	.125	.798	.053	233	-.362	.093	.004	-1.163
134	.402	.127	.842	.092	234	-.353	.120	.018	-1.278
135	.392	.128	.811	.077	235	-.392	.164	-.058	-1.437
136	.381	.129	.811	.065	236	-.459	.221	-.036	-1.531
137	.359	.119	.768	.043	237	-.578	.277	-.100	-1.707
138	.277	.110	.647	.003	238	-.720	.278	-.155	-1.913
139	.003	.090	.305	-.255	239	-.924	.254	-.261	-2.316
141	-.926	.308	-.062	-2.492	241	-.482	.123	-.212	-1.244
142	.053	.117	.490	-.289	242	-.386	.070	-.155	-.723
143	.251	.118	.716	-.012	243	-.335	.071	-.118	-.730
144	.299	.118	.786	.043	244	-.317	.093	-.081	-1.114
145	.295	.119	.814	.030	245	-.358	.135	-.102	-1.110
146	.288	.116	.790	.034	246	-.396	.179	-.076	-1.184
147	.235	.111	.701	-.024	247	-.486	.222	-.151	-1.486
148	.160	.104	.570	-.117	248	-.611	.254	-.151	-1.699
149	-.096	.095	.275	-.419	249	-.845	.244	-.358	-2.091
151	-.897	.364	.166	-2.464	251	-.382	.147	-.045	-1.314
152	-.025	.104	.445	-.296	252	-.328	.079	-.125	-.762
153	.209	.095	.644	-.024	253	-.316	.065	-.127	-.593
154	.293	.107	.799	.027	254	-.300	.065	-.103	-.597
155	.298	.111	.781	.022	255	-.315	.077	-.127	-.706
156	.290	.110	.750	.013	256	-.330	.100	-.102	-.859
157	.213	.104	.614	-.040	257	-.370	.123	-.116	-.900
158	.115	.091	.450	-.129	258	-.465	.179	-.122	-1.096
159	-.188	.061	.089	-.515	259	-.688	.239	-.224	-1.950

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 350

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT	PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
301	-.590	.150	-.217	-1.398	401	-.522	.078	-.293	-1.487
302	-.464	.077	-.216	-.789	402	-.504	.064	-.291	-.874
303	-.433	.063	-.232	-.705	403	-.516	.066	-.221	-1.069
304	-.413	.059	-.207	-.669	404	-.514	.072	-.188	-.931
305	-.422	.058	-.235	-.611	405	-.531	.085	-.323	-1.122
306	-.411	.055	-.225	-.604	406	-.526	.086	-.288	-1.004
307	-.416	.055	-.249	-.623	407	-.535	.087	-.261	-1.045
308	-.406	.055	-.226	-.619	408	-.535	.093	-.217	-.995
309	-.415	.055	-.226	-.656	409	-.584	.126	-.227	-1.251
311	-.596	.151	-.278	-1.486	411	-.489	.065	-.299	-.951
312	-.452	.070	-.213	-.830	412	-.474	.062	-.286	-.758
313	-.430	.055	-.245	-.629	413	-.492	.070	-.268	-1.036
314	-.414	.051	-.258	-.636	414	-.490	.074	-.267	-1.046
315	-.422	.049	-.240	-.650	415	-.508	.080	-.251	-1.101
316	-.415	.049	-.240	-.656	416	-.507	.086	-.122	-1.040
317	-.430	.050	-.278	-.623	417	-.533	.085	-.274	-.960
318	-.419	.051	-.274	-.601	418	-.548	.093	-.236	-.983
319	-.423	.052	-.267	-.681	419	-.600	.134	-.283	-1.205
321	-.603	.161	-.226	-1.485	421	-.514	.081	-.303	-1.359
322	-.473	.074	-.214	-.831	422	-.494	.073	-.296	-1.291
323	-.446	.055	-.226	-.634	423	-.507	.077	-.288	-1.365
324	-.429	.050	-.217	-.620	424	-.504	.086	-.208	-1.457
325	-.437	.046	-.274	-.616	425	-.523	.082	-.297	-1.212
326	-.425	.045	-.258	-.597	426	-.523	.085	-.286	-1.040
327	-.431	.045	-.278	-.595	427	-.543	.089	-.284	-.970
328	-.422	.047	-.255	-.632	428	-.550	.098	-.271	-.999
329	-.432	.051	-.255	-.721	429	-.600	.129	-.249	-1.221
331	-.637	.176	-.219	-1.624	431	-.587	.089	-.357	-1.190
332	-.508	.084	-.227	-.843	432	-.564	.081	-.338	-1.181
333	-.476	.063	-.269	-.755	433	-.583	.093	-.299	-1.458
334	-.453	.057	-.246	-.710	434	-.583	.099	-.261	-1.496
335	-.455	.057	-.272	-.724	435	-.598	.107	-.216	-1.294
336	-.447	.062	-.281	-.800	436	-.591	.114	-.133	-1.415
337	-.461	.062	-.282	-.766	437	-.601	.104	-.288	-1.072
338	-.450	.062	-.262	-.779	438	-.602	.107	-.272	-1.069
339	-.449	.065	-.245	-.808	439	-.636	.141	-.233	-1.313
341	-.602	.148	-.236	-1.280	441	-.680	.119	-.437	-1.393
342	-.532	.094	-.236	-.839	442	-.641	.099	-.393	-1.186
343	-.509	.080	-.262	-.829	443	-.650	.103	-.382	-1.356
344	-.479	.072	-.268	-.949	444	-.642	.107	-.304	-1.213
345	-.479	.070	-.223	-.866	445	-.656	.108	-.325	-1.168
346	-.457	.067	-.217	-.963	446	-.641	.106	-.318	-1.110
347	-.472	.088	-.172	-1.166	447	-.633	.107	-.259	-1.129
348	-.479	.117	-.206	-1.201	448	-.600	.109	-.144	-1.043
349	-.479	.116	-.222	-1.479	449	-.593	.120	-.144	-1.200
351	-.574	.129	-.169	-1.241	451	-.763	.232	-.358	-2.223
352	-.559	.119	-.183	-1.086	452	-.706	.195	-.342	-1.754
353	-.565	.115	-.169	-.994	453	-.698	.151	-.357	-1.394
354	-.513	.100	-.130	-.865	454	-.655	.125	-.335	-1.215
355	-.467	.084	-.177	-.772	455	-.621	.113	-.288	-1.135
356	-.408	.072	-.149	-.784	456	-.564	.106	-.172	-.957
357	-.391	.093	-.158	-.988	457	-.547	.106	-.201	-.900
358	-.381	.118	-.138	-1.008	458	-.533	.114	-.141	-.992
359	-.384	.137	-.096	-1.359	459	-.550	.112	-.093	-1.072

WIND ENGINEERING STUDY OF ONE WILLIAMS CENTER  
TULSA, OKLAHOMA  
WIND DIRECTION 350

PRESSURE TAP NUMBER	MEAN PRESSURE COEFFICIENT	RMS PRESSURE COEFFICIENT	MAXIMUM PRESSURE COEFFICIENT	MINIMUM PRESSURE COEFFICIENT
501	-.401	.117	-.015	-1.005
502	-.574	.127	-.151	-1.138
503	-.743	.110	-.129	-1.212
504	-.521	.136	.060	-1.062
505	-.478	.123	-.007	-.875
506	-.678	.138	-.148	-1.481
507	-.710	.109	-.387	-1.324
508	-.724	.126	-.232	-1.295
509	-.673	.126	-.175	-1.141
510	-.766	.116	-.444	-1.401
511	-.749	.091	-.488	-1.078
512	-.761	.123	-.318	-1.282
513	-.518	.118	-.146	-1.031
514	-.475	.112	-.025	-.995
515	-.588	.133	.064	-1.068
516	-.600	.147	.110	-1.405
517	-.539	.156	-.003	-1.271
518	-.420	.116	-.075	-.889
519	-.391	.091	.021	-.758
520	-.326	.102	-.048	-1.210
521	-.336	.146	.103	-1.589
522	-.341	.169	-.028	-1.656
523	-.288	.102	-.039	-1.160
524	-.259	.070	-.082	-.616
525	-.424	.104	-.085	-.856
526	-.375	.131	.119	-.935
527	-.443	.163	.264	-1.080
528	-.425	.130	-.003	-.901
529	-.355	.102	.084	-.782
530	-.298	.102	.339	-.728
531	-.299	.091	.036	-.955
532	-.297	.114	.010	-1.065
533	-.305	.158	.198	-1.818
534	-.254	.087	.016	-.847
535	-.267	.073	-.079	-.629
536	-.261	.077	-.055	-.683
537	-.287	.086	-.079	-.709
538	.047	.060	.419	-.231
539	.063	.070	.421	-.264
540	.156	.087	.622	-.084
541	.013	.066	.394	-.225
542	-.107	.176	.459	-.938
543	.012	.078	.306	-.249
544	.131	.085	.527	-.146
545	.132	.091	.618	-.219
546	.155	.093	.521	-.119
547	.131	.079	.562	-.088
548	.153	.090	.607	-.066
549	.160	.090	.682	-.098
550	.045	.052	.279	-.107

