



RESEARCH TRIANGLE INSTITUTE

SUBCONTRACT No. 11213(4949A-72)
RTI PROJECT OU-295
OCD WORK UNIT 1154C

DECEMBER 1968

AD 685869

FINAL REPORT
R-OU-295

STATISTICAL ANALYSIS OF
NFSS PROTECTION CATEGORIES

by

R.O. Lyday, G.M. Botkin, E.L. Hill, and F.G. Giesbrecht

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Statistical Analysis of NFSS Protection Categories

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R. O. Lyday, Jr., G. M. Botkin, E. L. Hill, and F. G. Giesbrecht

December 1968

for

OFFICE OF CIVIL DEFENSE
OFFICE OF THE SECRETARY OF THE ARMY
Washington, D.C. 20310

through

Stanford Research Institute

under

Subcontract No. 11213(4949A-72)
OCD Work Unit 1154C

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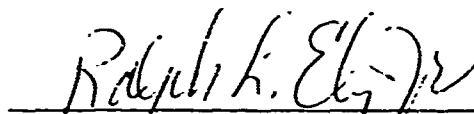
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ACKNOWLEDGEMENTS

The authors wish to express appreciation for the assistance given by Mr. Ahmed A. Qadeer and Mr. Herbert H. Hill in the planning, data collection, and data preparation phases of this project.

In addition, the authors wish to acknowledge the participation of Messrs. M. D. Wright, R. L. Hedgecock, and C. T. Sawyer in the extensive field work necessary to obtain data for both this project and OCD Work Unit 1159C.

ABSTRACT

The objective of this research was to determine the relationship between the center protection factors (PF's) of a large sample of facilities as evaluated in accordance with the Engineering Manual (PF-COMP) and the center PF's of the same facilities as evaluated in the NFSS prior to February 1967. The 334 buildings in the statistical sample were selected from San Jose, Albuquerque, New Orleans, Detroit, and Providence. In addition to PF's reported in NFSS Phases 1 and 2 and PF's calculated by PF-COMP using RTI collected data, the following separate estimates of the center PF were determined: NFSS Phase 1 and 2 methods using RTI input data, PF-COMP using NFSS input data, and PF-COMP using NFSS input data supplemented by additional building data collected by RTI. As a result of this statistical analysis, conclusions regarding the relationship of the seven PF estimates are:

- 1) Revised NFSS PF's for individual buildings should not be estimated nor is any advantage seen in revised estimates of Phase 2 shelter PF's available in a geographic area such as a county. This conclusion is drawn because NFSS Phase 2 (P2-NFSS) PF's are nonconservative (high) when compared to Engineering Manual-RTI (EM-RTI) results and because of the difficulty in obtaining Phase 2 PF values other than by PF category.
- 2) PF's calculated using NFSS Phase 1 and 2 procedures and RTI collected input data (P1-RTI and P2-RTI) are both conservative (low) when compared to EM-RTI results. The nonconservative results determined in the NFSS are therefore attributed to data collection discrepancies.
- 3) Many buildings surveyed in the NFSS prior to February 1967 have PF's less than 40 and are consequently not contained in Phase 2 data files. The regression equation developed for the total sample to determine the relationship between P1-NFSS and EM-RTI could be used to estimate PF's of buildings in this category. These results would be useful in damage assessment when analysis of areas as large as a county are made.
- 4) Procedures have been established whereby NFSS Phase 1 and 2 input data collected prior to February 1967 can be processed by PF-COMP. However, because of input discrepancies noted in NFSS data when compared to RTI collected data, this method of estimating revised values for shelter stories is not recommended.
- 5) A comparison of NFSS Phase 2 data with EM-RTI data indicated that (a) each procedure identified shelter on the same story for 327 stories; (b) there are 41 stories identified as shelter stories by the NFSS that were not found to have shelter by PF-COMP; and (c) PF-COMP identified 133 shelter stories that are not contained in NFSS files. The conclusion is that the current use of PF-COMP will substantially increase the number of shelter stories in the NFSS.

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Statistical Analysis of NFSS Protection Categories

I. INTRODUCTION

The National Fallout Shelter Survey (NFSS) was designed to identify fallout shelter space in all buildings other than single family dwellings. Before February 1967, Phase 1 of the NFSS used a computer program at the National Bureau of Standards (NBS) to obtain a "first estimate" of the protection factors in the buildings, and Phase 2 was a follow-up to more completely identify and locate the probable shelter areas in the buildings. In Phase 1, the basic dimensions and structural information were recorded on Film Optical Scanning Device for Input to Computers (FOSDIC) forms and processed through the NFSS/NBS computer program [Ref. 1]. The output from this program was a listing of the protection factors (PF) within each building. Manual corrections to the computer results were made in Phase 2 to account for aperture sill heights, areaways, and partitions not reported in Phase 1.

In 1964, the Research Triangle Institute (RTI) began writing a computer program (PF-COMP) [Refs. 2 and 3] to calculate the protection factors in a building by procedures more nearly like those of the detailed Engineering Manual method.^{1/} This program was designed to consider the effects of sill heights, areaways, and partitions, thereby eliminating the "manual corrections" carried out in Phase 2. The program output provides the shelter analyst with a detailed analysis of the protection factor at the center of each story of a structure and displays the PF's for eight other predetermined locations on each story. It also provides estimates of the shelter boundaries and number of shelter spaces available on each story. This program (PF-COMP) replaced the Phase 1 and Phase 2 NFSS procedures for shelter evaluation in February 1967.

To date, approximately 182 million shelter spaces with a PF of at least 40 have been identified in the total NFSS [Ref. 7]. This is far short of the number needed to shelter the total U. S. population. However, many buildings have areas within them with PF's just below the "cutoff" point (PF 40) and thus their indication as shelter is highly dependent on the accuracy of the shelter evaluation programs. In addition, the results of OCD Work Unit 1115A [Ref. 8] showed that the NFSS Phase 1 PF's were generally substantially lower than hand calculated PF's determined

^{1/} The term "Engineering Manual" refers to the PF computational method described in References 4 and 5 and contained in Reference 6 as the "Detailed Procedure." The PF-COMP Program initially was based on data presented in Reference 6, supplemented by Radiation Shielding Analysis charts dated June 1964. Subsequent revisions to the "Engineering Manual" method have been incorporated in PF-COMP to keep it current with the shielding state-of-the-art.

using the Engineering Manual procedure for the same facility, although NFSS Phase 2 results for eight of the 32 sample buildings were nonconservative. Because of the small sample of only 32 buildings in that study, it was not possible to determine reliably a useful relationship between the EM PF and the NFSS PF. The PF-COMP Program now enables Engineering Manual type results to be obtained for buildings without performing tedious hand calculations.

The objective of the present research was to determine the relationship between the center PF's of a large sample of facilities as evaluated in accordance with the Engineering Manual and the center PF's of the same facilities as evaluated in the NFSS prior to February 1967. Mathematical relationships for estimating revised PF values for NFSS structures with selected characteristics are given. The sources that contribute to the total variance between the Engineering Manual PF and the NFSS PF are also identified and PF estimates are given for buildings which could be recalculated using PF-COMP procedures and NFSS Phase 1 and 2 input data.

The scope of work for this contract is given in Appendix A.

II. SAMPLE DATA

A. Sample of Buildings

Under OCD Work Unit 1159C, Structural Characteristics of NFSS Buildings [Ref. 9], the frequencies of occurrence of selected structural attributes in a statistical sample of National Fallout Shelter Survey (NFSS) buildings in the cities of Providence, New Orleans, Detroit, Albuquerque, and San Jose were determined. The structural characteristics analyzed included: dimensions, number of stories, apertures, foundation, substructure, exterior walls, frame, roof, floors, and interior partitions. Additional data necessary for protection factor analyses by the NFSS/NBS and PF-COMP Computer Programs were also obtained for use in this project.

A sufficient number of buildings were surveyed in each city to give a relative standard error of approximately twenty percent for an estimate of a structural attribute which occurs in twenty-five percent of the buildings in each city. To achieve this degree of statistical accuracy, it was estimated that a sample of 309 buildings would be sufficient, divided among the cities as follows:

Providence	67
New Orleans	60
Detroit	74
Albuquerque	53
San Jose	55

A sample of this size obviously enables a more accurate determination of the relationship between Engineering Manual PF's and NFSS PF's to be made than was possible using the 32 buildings surveyed under OCD Work Unit 1115A.

The geographic areas surveyed were the entire Standard Metropolitan Statistical Areas of the above cities, except for the portion of the Providence SMSA that lies in Massachusetts. Special facilities (tunnels, caves, etc.) and buildings where licenses have been refused were excluded from consideration. A random sample of buildings to be surveyed was selected from the remainder of the NFSS buildings (NFSS facility numbers) in the SMSA. In addition to the basic sample in each SMSA, alternate buildings were selected in order to have substitute buildings for those where entry was denied and in order to enlarge the sample when time permitted the survey of additional buildings; 334 buildings were actually surveyed.

B. Protection Factor Computations

Engineers and analysts from RTI visited the local building inspectors, city engineers, city planning personnel, and others to collect data for each building from building plans, Sanborn Maps, geological maps, building codes, etc. A visit

was then made to each building site to verify these data and to obtain any additional data necessary to determine the following separate estimates of the center PF for each shelter story:

- 1) PF reported under NFSS Phase 1 (P1-NFSS).
- 2) PF reported under NFSS Phase 2 (P2-NFSS).
- 3) PF by NFSS Phase 1 methods using RTI input data (P1-RTI).
- 4) PF by NFSS Phase 2 methods using RTI input data (P2-RTI).
- 5) PF from PF-COMP using NFSS Phase 1 and 2 building input data (EM-NFSS).
- 6) PF from PF-COMP using NFSS Phase 1 and 2 input data plus additional building data collected by RTI survey teams (EM-NFSS and RTI).
- 7) PF from PF-COMP using building input data collected by RTI survey teams (EM-RTI).

NFSS Phase 1 (P1-NFSS) PF's were previously calculated by the National Bureau of Standards using Architect-Engineer (AE) supplied input data, and NFSS Phase 2 (P2-NFSS) PF's were determined by the AE's by modifying Phase 1 PF's as required. Data for calculating the remaining PF's were collected in the field survey phase of Work Unit 1159C as described above and actual PF calculations were performed under the present project. Procedures used and problems encountered in obtaining the NFSS PF's and in calculating the remaining five PF's are contained in the following sections:

1. Phase 1-NFSS

NFSS Phase 1 input data for the sample buildings were obtained on computer tape from the master NFSS files at the National Bureau of Standards (NBS). However, output data from the PF computations were not contained on computer tape at NBS or at the National Civil Defense Computer Facility (NCD CF) where official NFSS records are now maintained. Therefore, it was necessary to review computer printouts to obtain NFSS Phase 1 output data. Information for facilities survey through 1963 were available in Office of Civil Defense (OCD) Pentagon Files; printouts for facilities surveyed in later years had to be obtained from that part of the OCD data bank at the Institute for Defense Analyses (IDA). In addition to the PF of each story of all building parts, the contributions (reduction factors) from the ceiling and from each wall were obtained from these printouts.

2. Phase 2-NFSS

In Phase 2 of the NFSS, the AE's collected data regarding aperture sill heights, areaways, and interior partitions; these data were recorded on the front of the Phase 2 Data Collection Form (DCF). The effect of these building parameters on the PF were determined and the PF category, as shown in Table I, was reported on the front side of the DCF for each shelter story. Details of

these calculations were sometimes, but not always, reported on the back side of the Phase 2 Data Collection Form (DCF) for each shelter story. Only data located on the front side of the Phase 2 DCF were recorded on NFSS computer tapes at NDCDF. Of the 292 shelter stories with a Phase 2 NFSS PF reported, 132 were reported to be in a PF category different (higher or lower) than reported in NFSS Phase 1. In many cases, the back of the DCF could not be obtained and in many other cases the computations were not reported on the DCF. Therefore, only the PF category for some shelter stories was available for analysis of Phase 2 PF's. The values used in analyses involving Phase 2 results for such stories are also shown on Table I.

Many buildings and building parts analyzed in Phase 1 were not reported in Phase 2 because the adjusted PF did not meet the prescribed minimum of 40. In buildings that were divided into "building parts" for PF analysis in Phase 1, it was quite common for only one part to be contained in Phase 2 records. These buildings presented considerable problems of identification in this analysis because such results in Phase 2 were labeled as "Part 00" with no relationship to Phase 1 parts given. Shelter marking sketches were evaluated, when available, from the Corps of Engineers or Naval Facilities Engineering Command, and engineering judgments were made to correlate Phase 1 part numbers with Phase 2 results for such facilities.

Table 1
PROTECTION FACTOR CATEGORIES

<u>Protection Factor (PF)</u>		<u>Reduction Factor (RF)</u>	
Category	Range	Range	RF Used In Phase 2 Analysis*
8	over 1,000	less than .0010	.001
7	500 - 1,000	.0020 to .0010	.002
6	250 - 499	.0040 to .0020+	.003
5	150 - 249	.0067 to .0040+	.006
4	100 - 149	.0100 to .0067+	.009
3	70 - 99	.0143 to .0100+	.012
2	40 - 69	.0250 to .0143+	.020
1	20 - 39	.0500 to .0250+	.038
0	10 - 19	.1000 to .0500+	.075

*NFSS Phase 1 Reduction Factor (RF) data computed by NBS and furnished to the AE were reported to only three decimal places; therefore, the values used by RTI in analysis of Phase 2 PF's when only the PF category was known are the means of the RF range rounded to the third decimal place.

3. Phase 1-RTI

Data obtained in the RTI field survey of the sample buildings were used to prepare FOSDIC forms for all buildings using NFSS Phase 1 instructions [Ref. 10]. The division of complex buildings into building parts again presented identification difficulties. Marking sketches, NFSS FOSDIC forms, or NFSS Phase 2 DCF's were quite often difficult or impossible to obtain and some such data were required to assign RTI building part numbers that would correspond to NFSS assigned numbers. Because of the sensitivity of the NFSS/NBS Program to erasures and other indications that might cause errors in interpretation of input data, many FOSDIC forms had to be processed several times to get acceptable results.

4. Phase 2-RTI

Using NFSS Phase 2 procedures [Ref. 11], adjustments were made to the Phase 1-RTI PF's to account for aperture sill heights, areaways, and interior partitions. The actual values calculated using these procedures were used in analyses involving Phase 2-RTI data. The data for the building characteristics required to make the PF and RF adjustments were also obtained in the field survey phase of OCD Work Unit 1159C.

5. Engineering Manual-NFSS

All NFSS building data required in Phase 1 and 2 calculations were reported on Phase 1 FOSDIC forms and on the front of Phase 2 DCF's.^{2/} Records of these are maintained on computer tape at the National Bureau of Standards and NCDCE, respectively. Manual transcription of data from these records to a form suitable for processing by the PF-COMP Program would have been a tedious and time-consuming task and would have led to transcription errors. Therefore, a computer program was written to extract NFSS data and reorganize it for use by the PF-COMP Program. NFSS data (especially for contaminated planes and interior partitions) collected prior to February 1967 are not nearly as extensive as those normally collected for the PF-COMP Program, but could be modified for processing. These results indicate the PF's that could be obtained if the earlier NFSS data were recalculated using a program based on the Engineering Manual.

6. Engineering Manual-NFSS and RTI

As indicated above, NFSS data collected in Phases 1 and 2 do not describe a building as completely as data collected for processing by the PF-COMP Program. Therefore, NFSS data were supplemented by more complete data collected

^{2/} It is noted that only the detailed NFSS Phase 2 calculations using these building data were reported on the back of the DCF and consequently not always available.

for PF-COMP analyses and PF's in the sample buildings were then calculated by the PF-COMP Program. Interior partition data and the single azimuthal sector per side used to describe contaminated planes in the NFSS were replaced by PF-COMP data. This was accomplished by replacing the punch cards containing interior partition data and contaminated plane data, which were used to calculate the Engineering Manual-NFSS PF described in paragraph 5 above, with comparable cards containing PF-COMP data.

7. Engineering Manual-RTI

Sufficient building data were collected in the field survey phase of OCD Work Unit 1159C to make Engineering Manual type calculations using the PF-COMP Program. These data were submitted on Shielding Analysis Forms, described in Reference 2, to the National Civil Defense Computer Facility for processing by the PF-COMP Program in effect in February 1967. Due to the lack of urgency and the availability of more building plans than were indicated to be available to NFSS survey personnel (based on review of FOSDIC Item 21, Survey Method Code), it is assumed that the RTI collected data are more nearly correct and complete than those collected in the NFSS. Therefore, PF's calculated by the PF-COMP computer program using these data were used as the base against which the other PF's were compared in this project.

C. Preparation of Data for Analysis

Data for each story of the Work Unit 1159C buildings determined to be adequate for this analysis were prepared on punched cards for machine analysis. Listings of the data for the 901 stories analyzed and a discussion of how these data were obtained are given by city in Appendix B. Included in the data for each story are the PF's and reduction factors determined by each of the seven methods described in Section II.B., Structural Classification (PV Code), Use Class Code, number of shelter spaces determined in the P2-NFSS and EM-RTI calculations, and the following selected NFSS reported building characteristics estimated to be of most significance in PF computations:

- 1) Average aperture sill height.
- 2) Minimum aperture sill height.
- 3) Average percent apertures for the detector story.
- 4) Maximum percent apertures for the detector story.
- 5) Height of detector above or below first story floor level.
- 6) Total overhead weight.
- 7) Weight of ceiling.
- 8) Weight of floor.
- 9) Average exterior wall mass.

- 10) Average wall exposure (for basements only).
- 11) Average interior partition weight.
- 12) Average percent apertures of story above.
- 13) Average exterior wall weight of story above.
- 14) Average percent apertures of story below.
- 15) Average wall weight of story below.

For several reasons, all of the buildings surveyed under Work Unit 1'59C were not analyzed in this project and are therefore not listed in Appendix B. A list of those buildings not analyzed in this project is given in Appendix C; they were not included in this analysis for one of the following reasons:

- 1) Correspondence of NFSS building part numbers and RTI assigned part numbers could not be determined. Shelter marking sketches, NFSS Phase 1 FOSDIC forms, or Phase 2 DCF's were required to identify part numbers assigned to complex buildings in the NFSS and these were not always available, especially during the field survey phase. Therefore, if such data were not available, it was impossible to determine which portion of a complex building should be compared with RTI results. In many cases the RTI analyst considered it necessary to break a building into multiple parts, whereas the NFSS submission was done as a single building part. Conversely, many buildings subdivided into parts in the NFSS were done as one part by RTI.
- 2) The number of stories assigned to a building in the NFSS did not match the number of stories assigned by the RTI field survey teams.
- 3) The EM-NFSS PF or the EM-RTI PF was not obtained. The EM-NFSS data extraction program yielded the NFSS building characteristics which are listed in Appendix B and which were used in determining the relationship of PF to selected building parameters. The EM-RTI PF was the base against which other PF's and RF's were analyzed.

III. STATISTICAL ANALYSIS

A. Objective

The objective of this analysis was to describe the relationships among the various PF estimates, taking into account various building characteristics. For example, the model used to describe the relationship between the NFSS Phase 1 (P1-NFSS) PF and the PF-COMP (EM-RTI) PF is:

$$Y = KZ + C, \quad (1)$$

where Y = EM-RTI PF, Z = P1-NFSS PF, C = a bias in the estimated PF's, and K , which is a function of building characteristics ($X_1, X_2, \dots, X_k$), is determined in the analysis.

B. Statistical Technique

The principal statistical technique used to analyze data of these types is called general linear model analysis, or simply "regression" analysis. As stated in Reference 12, "Regression analysis may be defined as the estimation or prediction of the value of one variable from the values of other given variables." Using this procedure in the preceding example, an expression could be determined for K as a function of the variables $X_1, X_2, \dots, X_k$.

An illustration of this technique is given by the following simple example from pages 146-161 of Reference 13. The first two columns of Table II give ten pairs of values which are also graphically represented in Figure 1 as a scatter diagram. The problem is to determine the linear equation that will yield for each X -value a certain Y -value (Y_e) which will be an estimate of the actual Y -value. The linear equation for the line of best fit can be written in the form:

$$Y_e = a + bX. \quad (2)$$

The *method of least squares* is the method of fitting a line to a set of n points in such a way that $\sum(Y - Y_e)^2$ has its smallest value, where the ~~sum~~ is calculated for the given n pairs of values of X and Y . The problem now has been reduced to finding, for the given pairs of values of X and Y , the constants a and b of equation (2) in such a way that $\sum(Y - Y_e)^2$ is minimized. By the methods of the differential calculus, values for a and b are determined by the following two linear equations:

$$an + b\sum X = \sum Y \quad (3)$$

$$a\sum X + b\sum X^2 = \sum XY. \quad (4)$$

Table II
CALCULATION OF REGRESSION LINE AND RELATED QUANTITIES FOR THE
REGRESSION EXAMPLE DATA^{3/}

X	Y	XY	X ²	Y ²	Y _e	Y - Y _e	(Y - Y _e) ²
45	6.53	293.85	2025	42.6409	7.28	-0.75	0.5625
42	6.20	260.40	1764	39.0400	6.75	-0.45	0.2025
56	9.52	533.12	3136	90.6304	9.22	0.30	0.0900
48	7.50	360.00	2304	56.2500	7.81	-0.31	0.0961
42	6.99	293.58	1764	48.8601	6.75	0.24	0.0576
35	5.97	206.50	1225	34.8100	5.52	0.38	0.1444
58	9.49	550.42	3364	90.0601	9.57	-0.08	0.0064
40	6.20	248.00	1600	38.4400	6.47	-0.20	0.0400
39	6.55	255.45	1521	42.9025	6.22	0.33	0.1089
50	8.72	436.00	2500	76.0384	8.16	0.56	0.3136
455	72.70	3441.52	21203	560.3224			1.6220

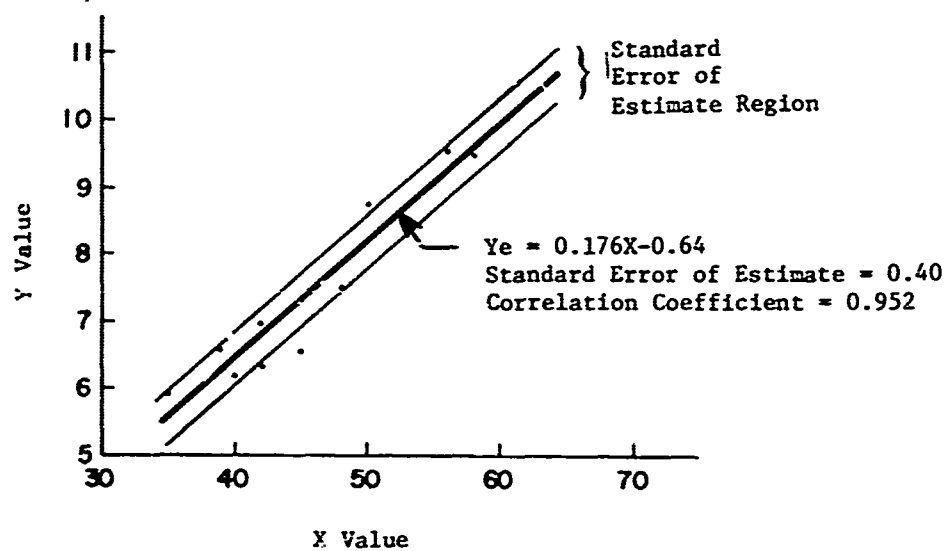


Fig. 1. Relation Between Regression Line, Points of Scatter Diagram, and Standard Error of Estimate^{3/}

^{3/} Source: Reference 13.

The quantities required in the solution of these equations are also given in Table II. The equation of the line of regression of Y and X takes the form:

$$Y_e = -0.64 + 0.176X. \quad (5)$$

The standard error associated with this equation is called the "standard error of the estimate" and is given by:

$$Se = \sqrt{\frac{\sum (Y - Y_e)^2}{N}}. \quad (6)$$

The standard error for this example is 0.40, which indicates that about two-thirds of the observed values of Y fall within a region bounded by two lines drawn parallel to the line of regression at a vertical distance of 0.40 from it as shown on Figure 1. A measure of the correspondence between the X and Y values can be obtained by the "correlation coefficient" which is given by:

$$r = \sqrt{\frac{\sum (Y_e - \bar{Y})^2}{\sum (Y - Y_e)^2 + \sum (Y - \bar{Y})^2}}. \quad (7)$$

In this example, the correlation coefficient is 0.952. The larger the correlation coefficient is in absolute value, the closer the points lie to a straight line and the stronger is the evidence of a linear relationship.

Because of numerous calculations required in this statistical analysis, a computer program was used. This program is a part of the "TSAR System" [Ref. 14], which is a set of programs written by Duke University Computation Center, Durham, North Carolina, for the IBM 360, Model 75 Computer. The output from this program, which is discussed in detail in Appendix D, contains estimates of K and C (Equation 1) and an indication of the most important variables (X) by giving the correlation coefficient for each regression. The standard error given in the output is the root mean square of the deviations of data points from the regression line.

C. Regression Analyses Considered

As an example of the types of analyses performed, those pertaining to the relationship of the NFSS Phase 1 (P1-NFSS) computation and the RTI Engineering Manual (EM-RTI) computations are explained in some detail.

1. Protection Factors

The first attempt was to find constants K and C such as to allow one to predict

$$\text{EM-RTI PF} = K (\text{P1-NFSS PF}) + C. \quad (8)$$

The regression or least squares estimates for K and C are 0.650 and 94. The analysis of variance associated with this regression analysis is as follows:

<u>Source</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>
Regression due to C	15,370,123	1	
Regression due to K given C	12,272,790	1	21,272,790
Residual (error)	19,077,371	338	56,442
Total	46,720,284	340	

Figure 2 shows a plot of the 340 data points and the fitted function. The figure also shows parallel lines, 238 units above and below the fitted line. This value (238 units) is the standard error of the estimate and is computed as the square root of the average squared deviation of the predicted EM-RTI values from the observed values. These lines represent approximations to the 66% confidence limits for predicted individual EM-RTI PF values for a given P1-NFSS PF value. In other words, this band should cover the true EM-RTI PF value approximately two-thirds of the time.

2. Logarithms of Protection Factors

A second attempt was to fit a function of the type:

$$\ln (\text{EM-RTI PF}) = K \ln (\text{P1-NFSS PF}) + C. \quad (9)$$

The values for K and C which minimize the deviations of the predicted $\ln (\text{EM-RTI PF})$ values from the observed are 0.731 and 1.378. The analysis of variance associated with this equation is as follows:

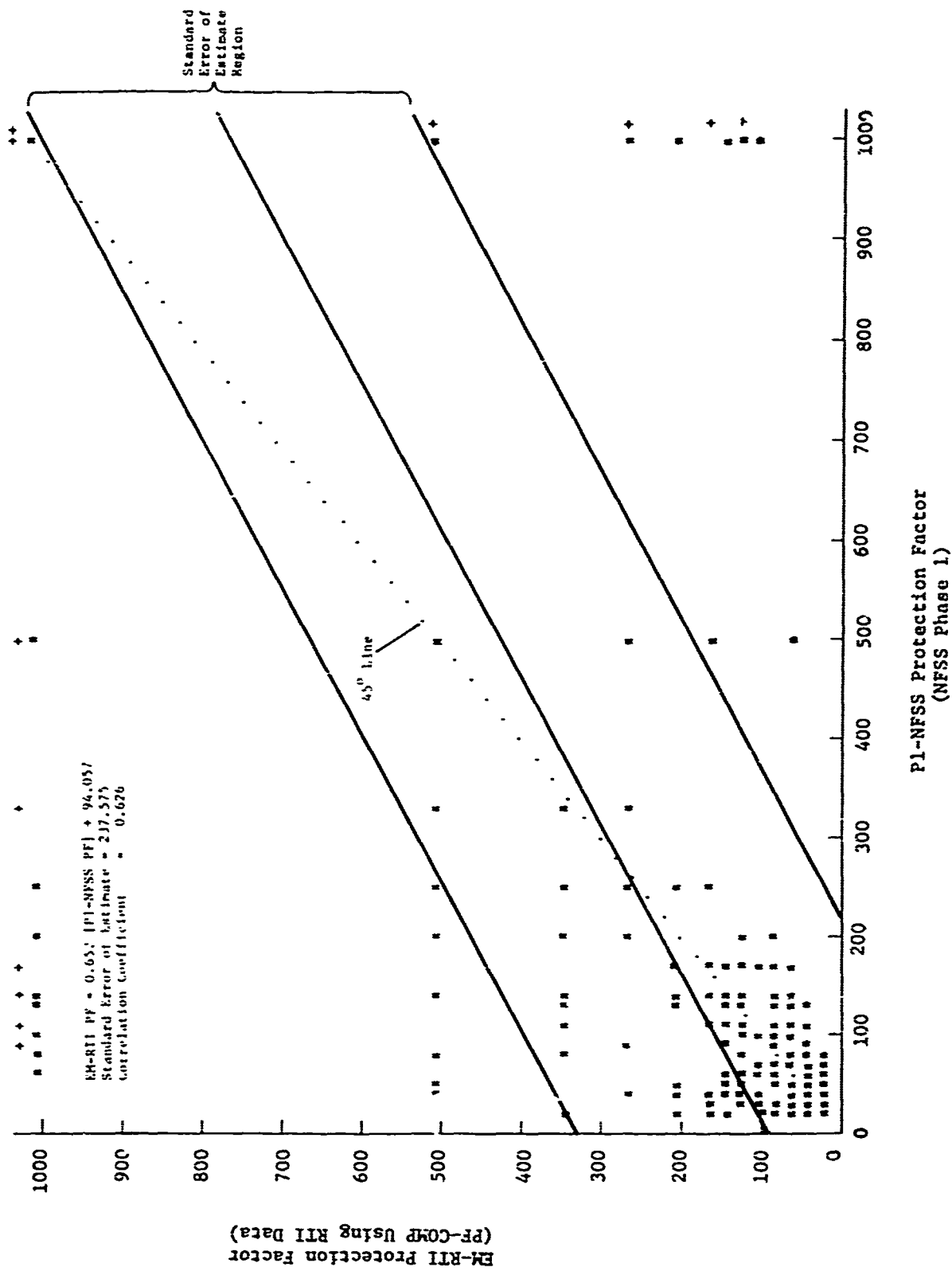


Fig. 2. Relationship Between P1-NFSS and EM-RTI Protection Factors.
(Total Sample - 340 Shelter Stories)

<u>Source</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>
Regression due to C	7,159.72	1	
Regression due to K given C	238.67	1	238.67
Residual (error)	231.43	338	0.685
Total	7,629.82	340	

Figure 3 shows the plot of the data, the fitted line and the 66% confidence band. Over the whole scale this appears to be a better fit than the PF analysis shown in Figure 2. However, if attention is focused on the region of PF's less than 100, the results lose much of their appeal.

3. Reduction Factors

A final analysis was attempted, using the reciprocals of protection factors, i.e., reduction factors. The values of K and C in the equation

$$EM-RTI\ RF = K (Pl-NFSS\ RF) + C \quad (10)$$

are 0.595 and 0.005. The analysis of variance table appropriate to this equation is as follows:

<u>Source</u>	<u>Sum of Squares</u>	<u>Degrees of Freedom</u>	<u>Mean Square</u>
Regression due to C	0.097581	1	
Regression due to K given C	0.025662	1	0.025662
Residual (error)	0.052969	338	0.000157
Total	0.176212	340	

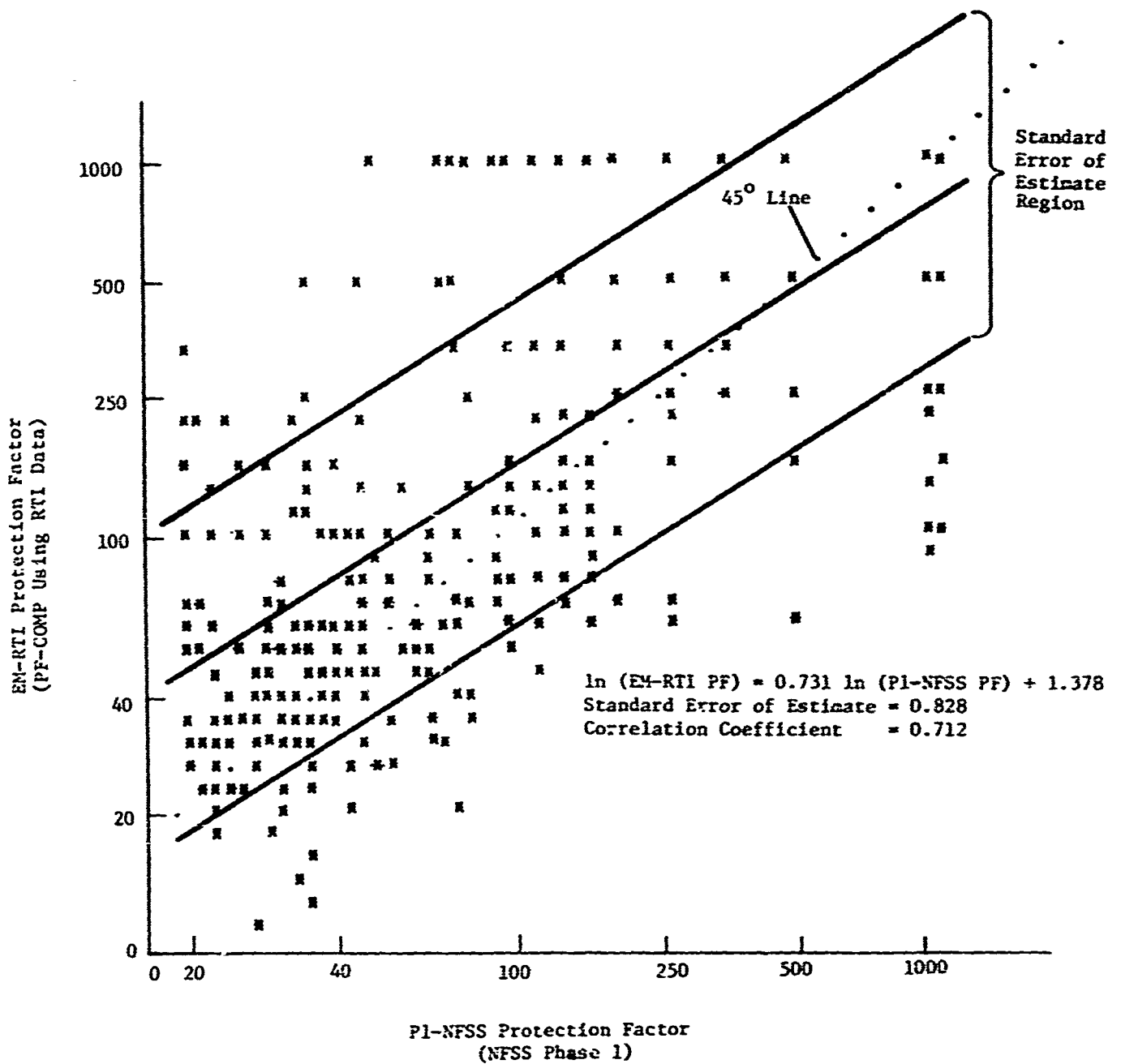


Fig. 3. Relationship Between $\ln(\text{P1-NFSS})$ and $\ln(\text{EM-RTI})$ Protection Factors
(Total Sample - 340 Shelter Stories)

A second regression line, forced to go through the origin, was also attempted. The value of K in the equation

$$EM-RTI\ RF = K (P1-NFSS\ RF) \quad (11)$$

is 0.773. The analysis of variance table for this regression becomes:

Source	Sum of Squares	Degrees of Freedom	Mean Square
Regression due to K	0.119654	1	0.119654
Residual (error)	0.056558	339	0.000167
Total	0.176212	340	

Both of these regression lines are shown in Figure 4. An examination of these two analyses suggests that there is an improvement in the fit of the regression line when it is not forced through the origin; i.e., the mean square of the residual error is less.

D. Discussion

An examination of the data displays and the regression lines shown in Figures 2 through 4 indicates relatively poor fits for all regression lines. Consequently, it was difficult to determine an "optimum" curve-fitting method for the data. The above analysis indicates that the use of logarithms gives slightly better results, followed by reduction factors and protection factors in that order. Nevertheless, reduction factors were used due to their immediate availability from NFSS records and their ease of interpretation.

Separate values of K were calculated for each of the five cities to determine whether fundamental differences in NFSS survey procedures, differences in building construction practice, etc., caused significant differences from city to city. Similarly, when it appeared that the relationship describing a certain PF estimate was fundamentally different for buildings with certain characteristics, separate estimates of K were computed.

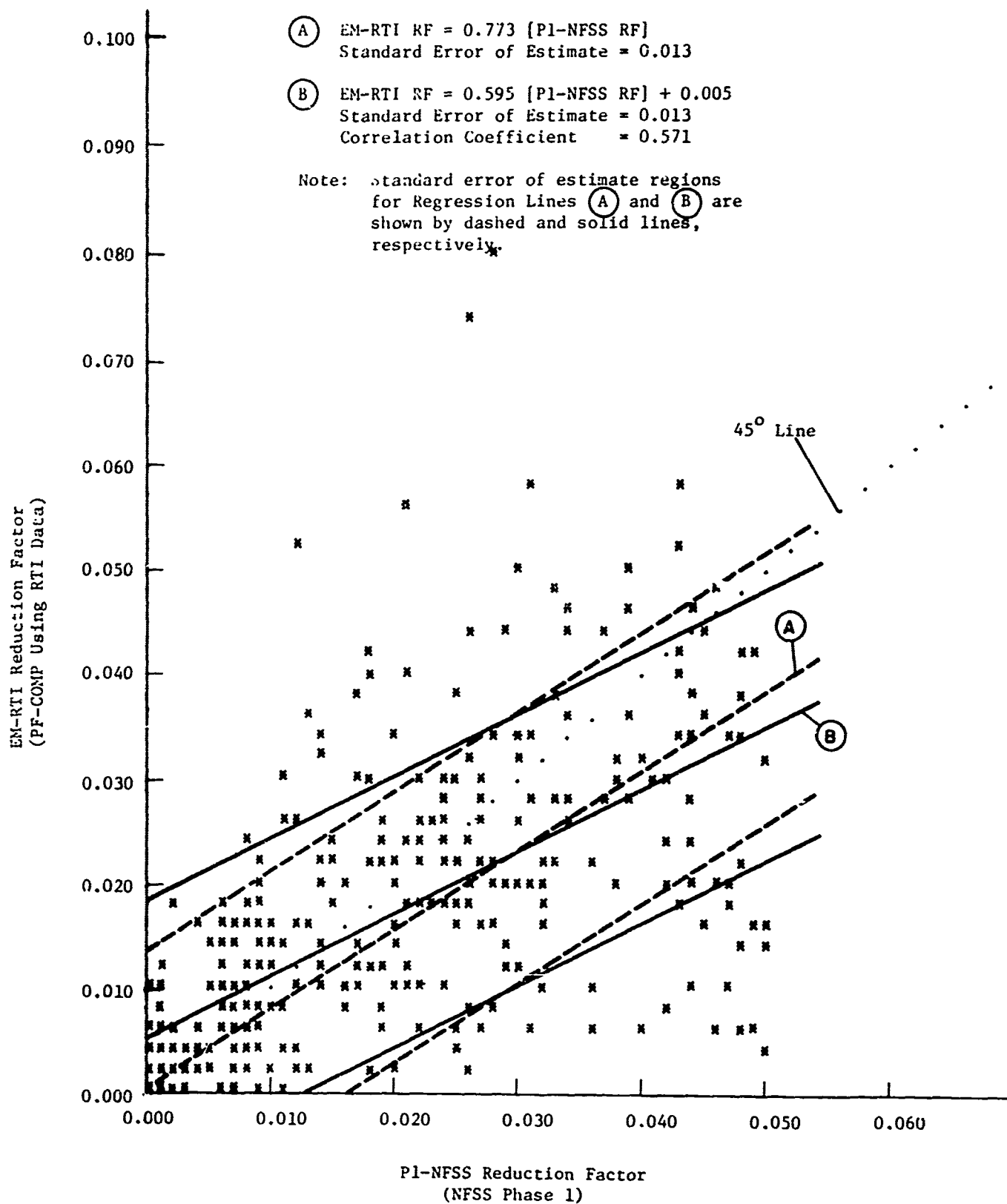


Fig. 4. Relationship Between Pl-NFSS and EM-RTI Reduction Factors.
(Total Sample - 340 Shelter Stories)

IV. RESULTS

A. Relationship Between NFSS Phase 1 and PF-COMP Results

1. Total Sample and Individual City Results

A comparison of NFSS Phase 1 (P1-NFSS) results with PF-COMP (EM-RTI) results, which are based on Engineering Manual procedures, indicates the overall difference in computer results due to both procedural differences in the methods and variations in collection and reporting of field data.

a. Linear Regression Using Reduction Factors

The linear regression equations determined by comparing P1-NFSS and EM-RTI results (with all building characteristics included) are shown in Table III for all eligible stories in the sample and for the eligible stories in each city. To be eligible for inclusion in this analysis, it was required that each story have P1-NFSS, P1-RTI, and EM-RTI PF's available so that comparisons of these three results would be based on the same sample size. The relationship of the RF's obtained using P1-NFSS and EM-RTI procedures for the 340 total sample stories is shown in Figure 4 (repeated in Appendix E as Figure E-1) along with the resultant regression line.^{4/}

It is difficult to discern the trends in the mathematical relationship between the P1-NFSS and EM-RTI results, which are based on reduction factors, by inspection of the multiplicative factor (K) and the constant (C). Therefore, the equations were solved for P1-NFSS reduction factors corresponding to PF's of 20, 40, and 100 and the resultant EM-RTI PF's are also given in Table III. The results for the total sample and for each of the cities indicate that NFSS Phase 1 PF's are conservative (low) for PF values of 20 and 40 when compared to Engineering Manual results (PF-COMP), but all sample results are nonconservative (high) for NFSS Phase 1 PF's of 100. Solving the equation to determine the PF at which results become nonconservative (high) for the total sample gives a PF of 74. There are significant differences noted in results from one city to another, with San Jose NFSS Phase 1 results appearing to be the most conservative (low). However, the correlation coefficient for San Jose is the smallest (0.387).

^{4/} Similar illustrations for the remaining 42 regression analyses are shown in Appendix E.

A comparison of results for all stories in all of the cities that have a protection factor less than 100 gave a K of 0.347, with a C of 0.014, and a correlation coefficient of 0.255. This indicated that breakdown of the total sample by PF range was not a significant parameter.

Table III
COMPARISON OF P1-NFSS RESULTS WITH EM-RTI RESULTS*
(Standard Regression)

Sample	Sample Size	EM-RTI RF = K [P1-NFSS RF] + C				Estimated EM-RTI PF When P1-NFSS PF Is:		
		K	C	Standard Error	Correlation Coefficient	20	40	100
All Cities	340	0.595	0.005	0.013	0.571	29	50	91
Providence	58	0.735	0.005	0.009	0.712	24	43	81
Detroit	47	0.875	0.003	0.014	0.685	21	40	85
New Orleans	117	0.655	0.005	0.013	0.590	26	47	87
Albuquerque	28	0.730	0.004	0.008	0.843	25	45	88
San Jose	90	0.353	0.007	0.013	0.387	41	63	95

*See Figures E-1 through E-6 of Appendix E for displays of the data analyzed in each sample.

b. Linear Regression (Through the Origin) Using Reduction Factors

Forcing the regression line through the origin eliminates the constant (C) in the equation, with the relationship between PF methods then expressed as a function of a single multiplicative factor (K). However, as discussed in Section III, these results are not as statistically significant as the results determined when the regression line is not forced through the origin.

Therefore, only the results of comparing P1-NFSS and EM-RTI data (Table I) are discussed in this report although similar regression equations for all other comparisons are given on the data displays contained in Appendix E.

Analysis of Table IV indicates that all estimated EM-RTI protection factors are higher than P1-NFSS results, i.e., the P1-NFSS PF's are indicated always to be conservative. This is in contrast with results shown in Table III, where P1-NFSS PF's in all samples become nonconservative somewhere between 40 and 100.

Table IV
COMPARISON OF P1-NFSS RESULTS WITH EM-RTI RESULTS*
(Regression Line Forced Through Origin)

Sample	Sample Size	EM-RTI RF = K [P1-NFSS RF]		Estimated EM-RTI PF When P1-NFSS PF Is:		
		K	Standard Error	20	40	100
All Cities	340	0.773	0.013	26	52	129
Providence	58	0.943	0.009	21	42	106
Detroit	47	0.962	0.014	21	42	104
New Orleans	117	0.810	0.013	25	49	123
Albuquerque	28	0.861	0.008	23	46	116
San Jose	90	0.571	0.014	35	70	175

*See Figures E-1 through E-6 of Appendix E for displays of the data analyzed in each sample.

2. Significance of Building Characteristics

The correlation coefficient is a measure of the importance of each variable in the regression analysis. A review of the regression analysis results (the TSAR regression analysis printout for P1-NFSS vs. EM-RTI is shown in Appendix D) indicated that no single parameter or group of parameters added significantly to the correlation coefficient. However, based on results of these analyses and engineering judgment, separate estimates of K were made for basements, upper stories, and each of these further subdivided into stories with roof contribution of ≥ 50 percent or < 50 percent of the total contribution. These results, shown in Table V, indicate that no significant increase in the correlation coefficient is obtained by these subdivisions of the total sample. However, knowledge that the shelter story is a basement gives an equation with a correlation coefficient approximately the same as that for the total sample and a smaller standard error. It is noted that only basements with < 50 percent roof contribution are predicted to have EM-PF's greater than 100 (conservative) when the NFSS Phase 1 PF is 100.

Also shown in Table V are results obtained by subdividing the total sample by NFSS Use Class and Structural Classification. Each of these groupings, other than Government and Public Service Use Class, enables slightly better estimates of EM-PF's to be made than those made for the total sample or for the subdivision by basement and above-grade stories. NFSS Phase 1 PF's for Educational, Industrial, and Steel-Framed buildings are conservative when compared to each of the three estimated EM-RTI results. All three estimates of EM-RTI PF's for commercial buildings indicate that NFSS Phase 1 PF's are nonconservative (high) for each estimate; this is based on a relatively large sample of 141 stories.

Table V

COMPARISON OF P1-NFSS RESULTS WITH EM-RTI
RESULTS FOR SPECIFIC BUILDING CHARACTERISTICS*

Sample	Sample Size	EM-RTI RF = K [P1-NFSS RF] + C				Estimated EM-RTI PF When P1-NFSS PF Is:		
		K	C	Standard Error	Correlation Coefficient	20	40	100
Total Sample	340	0.595	0.005	0.013	0.571	29	50	91
Basements	116	0.800	0.003	0.009	0.573	23	43	91
Roof Contribution ≥50% of Total RF	98	0.880	0.003	0.009	0.603	21	40	85
Roof Contribution <50% of Total RF	18	0.577	0.002	0.007	0.498	32	61	129
Above-Grade Stories	224	0.543	0.007	0.014	0.487	29	49	80
Roof Contribution ≥50% of Total RF	25	0.660	0.007	0.016	0.539	25	43	74
Roof Contribution <50% of Total RF	197	0.535	0.007	0.014	0.484	30	49	81
<u>Use Class</u>								
Residential	55	0.744	0.005	0.008	0.609	24	42	80
Educational	43	0.776	0.002	0.008	0.679	25	47	102
Religious	6**	-	-	-	-	-	-	-
Gov't & Public Service	41	0.520	0.005	0.013	0.459	32	56	98
Commercial	141	0.931	0.005	0.009	0.673	19	35	70
Industrial	14	0.410	0.004	0.007	0.601	41	70	123
Amusement	4	-	-	-	-	-	-	-
Transportation	3	-	-	-	-	-	-	-
<u>Structural Class</u>								
Wood Frame	8	-	-	-	-	-	-	-
Wall-Bearing	82	0.882	0.002	0.010	0.605	22	42	92
Steel-Framed	96	0.614	0.002	0.007	0.602	31	58	123
Reinforced-Concrete Framed	119	0.628	0.004	0.010	0.554	28	51	97
Composite-Framed	2	-	-	-	-	-	-	-

*See Figure E-1 and E-7 through E-20 of Appendix F for displays of the data analyzed in each sample.

**Results for sample sizes of 10 or less are not reported.

3. Analysis of Variation

The preceding Sections IV.A.1. and 2. have described a large variation in NFSS Phase 1 (Pl-NFSS) results and PF-COMP (EM-RTI) results. Sources of variation that are present in PF estimates include simple measurement errors (such as incorrect estimates of dimensions or mass thicknesses), and procedural differences (differences arising from the use of shorter approximate methods to calculate the PF, instead of more detailed procedures). PF's for the sample buildings calculated by NFSS Phase 1 procedures and using RTI collected input data (Pl-RTI) can be used to estimate these variations. NFSS Phase 1 results were noted in Table IV, and repeated in Table VI. to be conservative for PF values of approximately 74 or less and nonconservative for larger values when compared to EM-RTI results. An estimate of variation due to simple measurement errors and other input discrepancies can be obtained by comparing estimates of Pl-NFSS with estimates of Pl-RTI. Solution of the equations with results shown in Table VI indicates that differences in input data collected by AE's and by RTI analysts cause AE estimates (Pl-NFSS) to be nonconservative (high) above a PF of approximately 32 when compared to RTI estimates (Pl-RTI). This indicates that the AE-estimated building characteristics are nonconservative when compared to RTI data; e.g., mass thicknesses were probably over-estimated as found in Reference 8. It was also noted in reviewing sample building data that many buildings contained partial basements and the AE's almost always chose to break the building into parts to account for this characteristic. This was done because the NFSS/NBS Program assumed the basement area to be the same as the first story area. Division of buildings into parts considerably reduced the amount of roof and ground contribution.

By comparing Pl-RTI results with EM-RTI results, similar estimates of variation due to procedural differences in the NFSS/NBS Computer Program and the PF-COMP Computer Program can be determined. PF values shown in Table VI for this regression indicate that all three Pl-RTI estimates are conservative when compared to EM-RTI estimates. The correlation coefficient for this regression is relatively large.

The above comparisons indicate that Phase 1 NFSS results are often nonconservative (high) when compared to EM-RTI results because of input data differences.

Table VI

REGRESSION ANALYSIS RESULTS USED IN ESTIMATING VARIATION OF NFSS PHASE 1 RESULTS*

Regression (Ind. vs. Dep.)	Sample Size	Dependent RF = K[Independent RF]+C				Estimated Dependent PF When Independent PF Is:		
		K	C	Standard Error	Correlation Coefficient	20	40	100
P1-NFSS vs. EM-RTI	340	0.595	0.005	0.013	0.571	29	50	91
P1-NFSS vs. P1-RTI	340	0.679	0.010	0.017	0.507	23	37	60
P1-RTI vs. EM-RTI	340	0.573	0.003	0.010	0.736	32	58	115

*See Figures E-1, E-21, and E-22 of Appendix E for displays of the data analyzed in each sample.

4. Analysis of Work Unit 1115A Data

NFSS PF results for 32 buildings were analyzed under OCD Work Unit 1115A [Ref. 8]; however, the statistical technique of regression analysis was not used to compare these findings. Although the sample size was quite small, results of regressions for P1-NFSS vs. EM (hand calculations), P1-RTI vs. EM (hand calculations), and P1-NFSS vs. P1-RTI are shown in Table VII.

Both P1-NFSS and P1-RTI results for the 32 buildings are quite conservative when compared to Engineering Manual hand calculations. This is the same result noted in Table VI for P1-RTI vs. EM-RTI, but the P1-NFSS vs. EM-RTI regression indicates nonconservative results for PF's above 74.

Comparison of protection factors for P1-NFSS vs. P1-RTI data for the 32 buildings in Table VII with comparable results in Table VI (the current sample) indicates amazing similarity of results.

Table VII
REGRESSION ANALYSIS RESULTS FOR WORK UNIT 1115A PHASE 1 DATA*

Regression (Ind. vs. Dep.)	Sample Size	Dependent RF = K[Independent RF]+C				Estimated Dependent PF When Independent PF Is:		
		K	C	Standard Error	Correlation Coefficient	20	40	100
P1-NFSS vs. EM	32	0.292	+0.004	0.008	0.194	54	88	145
P1-NFSS vs. P1-RTI	32	0.561	+0.012	0.012	0.258	25	38	57
P1-RTI vs. EM	32	0.496	-0.001	0.006	0.714	42	88	253

*See Figures E-23 through E-25 of Appendix E for displays of the data analyzed in each sample.

B. Relationship Between NFSS Phase 2 and PF-COMP Results

1. Total Sample and Individual City Results

NFSS Phase 2 results would normally be of most significance in this analysis, because the results of this phase determined those buildings to be marked as fallout shelters. However, due to problems discussed in Section II.B.2., only the protection factor category was known for 133 shelter stories. Consequently, analyses based on NFSS Phase 2 data should be interpreted accordingly.

Results of the regression analyses of P2-NFSS and EM-RTI results are shown in Table VIII for all eligible stories in the sample and for the eligible stories in each city. To be included in this analysis, it was required that each story have P2-NFSS, P2-RTI, and EM-RTI PF's available so that comparisons of these three results would be based on the same sample size. Estimated EM-RTI PF's for P2-NFSS PF's of 20 are not given in Table VIII and later tables based on NFSS Phase 2 data because only stories with a PF of at least 40 are included in the NFSS Phase 2.

Phase 1 results served as an initial estimate of PF's which were adjusted upward in almost all cases in Phase 2. Having previously analyzed the Phase 1 results in Section IV.A., the results displayed in Table VIII are as expected other than the PF 40 estimate in Detroit and for the PF 100 estimate in Albuquerque. The NFSS Phase 2 (P2-NFSS) estimated PF's for Detroit are lower than NFSS Phase 1 (P1-NFSS) estimated PF's as indicated by the decreased K factor and the increased EM-RTI PF estimate for an NFSS PF 40. This result is very likely due to the large number of partial basements in Detroit which yielded results in Phase 1 that were subsequently lowered in Phase 2. In Albuquerque, changes in PF Category were made in 30 of the 41 sample shelter stories. The Phase 2 results are as expected at the PF 40 point (even though P2-NFSS is nonconservative at that point) but indicate considerable reduction in PF in higher PF shelter stories. This indicates that the AE recognized additional sources of contribution in many of the shelter stories; e.g., areaways or over-estimated wall weights.

There are very significant increases in the correlation coefficients in Detroit and San Jose from the NFSS Phase 1 analysis to the NFSS Phase 2 analysis. There is a significant decrease noted in the correlation coefficient for Albuquerque. For the total sample, P2-NFSS results are equal to EM-RTI estimates at PF 40 and then become nonconservative.

Table VIII

COMPARISON OF P2-NFSS RESULTS WITH EM-RTI RESULTS*

Sample	Sample Size	EM-RTI RF = K[P2-NFSS RF]+C				Estimated EM-RTI PF When P2-NFSS PF Is:	
		K	C	Standard Error	Correlation Coefficient	40	100
All Cities	292	0.890	0.003	0.011	0.657	40	84
Providence	45	0.745	0.005	0.008	0.720	42	80
Detroit	52	0.399	0.010	0.014	0.953	50	72
New Orleans	90	1.016	0.002	0.009	0.537	36	82
Albuquerque	41	1.193	-0.002	0.011	0.389	36	112
San Jose	64	0.820	0.003	0.011	0.698	43	88

*See Figures E-26 through E-31 of Appendix E for displays of the data analyzed in each sample.

Although the PF-COMP (EM-RTI) determination of shelter spaces was not verified by return visits to the buildings, Table IX shows an interesting correlation of these data to those noted in the NFSS Phase 2 (P2-NFSS). Total sample shelter spaces with a PF of at least 100 identified by PF-COMP are identical to those identified in the NFSS Phase 2, although there is considerable variation from city to city. PF-COMP indicates that there are approximately 50 percent more spaces with a PF of at least 40 than were identified in the NFSS Phase 2 for the total sample.

Table IX also shows the results for numbers of stories found to have shelter space of at least PF 40. Each procedure identified shelter on the same story for 327 stories; there are 41 stories identified as shelter stories by the NFSS that were not found to have shelter by PF-COMP; and PF-COMP identified 133 shelter stories that are not contained in NFSS files. This latter result is primarily due to the NFSS/NBS Phase 1 Computer Program being conservative for the lower PF values.

Table IX

SHELTER SPACES AND SHELTER STORIES IN SAMPLE BUILDINGS

CITY	SPACES				SHELTER STORIES (PF > 40)		
	P2-NFSS		EM-RTI		Common to Both P2-NFSS and EM-RTI	P2-NFSS Only	EM-RTI Only
	PF > 40	PF > 100	PF > 40	PF > 100			
Providence	24,951	18,688	71,248	52,022	71	6	15
Detroit	18,114	15,342	13,936	4,774	56	5	13
New Orleans	126,698	77,592	169,448	63,484	107	22	60
Albuquerque	25,320	15,396	23,513	5,542	32	3	4
San Jose	18,169	10,429	42,392	11,300	61	5	41
	213,252	137,449	320,537	137,122	327	41	133

2. Significance of Building Characteristics

Table X contains results of regression analyses obtained by subdividing the total sample by basement and above-grade stories, by Use Class, and by Structural Classification. For the Use Class and Structural Classification subdivisions, all stories with P2-NFSS and EM-RTI results are included, whereas the analysis for the total sample, basement, and above-grade stories also required that the shelter story have a P2-RTI estimate.

Table X

COMPARISON OF P2-NFSS RESULTS WITH EM-RTI RESULTS FOR SPECIFIC BUILDING CHARACTERISTICS*

Sample	Sample Size	EM-RTI RF = $K[P2-NFSS\ RF] + C$				Estimated EM-RTI PF When P2-NFSS PF Is:	
		K	C	Standard Error	Correlation Coefficient	40	100
Total Sample	292	0.890	0.003	0.011	0.657	40	84
Basements	131	0.884	0.003	0.010	0.551	40	84
Above-Grade Stories	161	0.920	0.004	0.012	0.579	37	76
<u>Use Class</u>							
Residential	88	0.544	0.009	0.013	0.283	44	69
Educational	47	0.913	0.002	0.010	0.533	40	90
Religious	7	-	-	-	-	-	-
Gov't & Public Service	68	1.410	-0.002	0.015	0.729	30	83
Commercial	151	1.210	-0.002	0.012	0.647	35	99
Industrial	16	0.397	0.006	0.008	0.558	63	100
Amusement	4	-	-	-	-	-	-
Transportation	3	-	-	-	-	-	-
<u>Structural Class</u>							
Wood Frame	8	-	-	-	-	-	-
Wall-Bearing	98	0.829	0.004	0.011	0.493	40	81
Steel-Framed	119	0.958	0.002	0.014	0.484	39	86
Reinforced Concrete-Framed	157	1.233	-0.001	0.013	0.681	34	88
Composite-Framed	2	-	-	-	-	-	-

*See Figure E-26 and E-32 through E-41 of Appendix E for displays of the data analyzed in each sample.

3. Analysis of Variation

The comparison of P2-NFSS results with EM-RTI estimates indicates that NFSS Phase 2 results are nonconservative. The RTI calculations using NFSS Phase 2 procedures and RTI input data can be used to estimate the influence of procedural differences and variations due to differences in RTI and NFSS input data.

Table XI indicates that the differences in input data noted for NFSS Phase 1 results are compounded by the application of NFSS Phase 2 adjustments. P2-NFSS estimates are quite nonconservative when compared to results from the RTI analysis using NFSS Phase 2 methods (P2-RTI).

The analysis of procedural differences between NFSS Phase 2 methods and the PF-COMP Program are shown by the comparison of P2-RTI vs. EM-RTI results. This indicates that NFSS Phase 2 procedures as applied by RTI give conservative results when compared to EM-RTI results.

Table IX

REGRESSION ANALYSIS RESULTS USED IN ESTIMATING VARIATION OF NFSS PHASE 2 RESULTS*

Regression (Ind. vs. Dep.)	Sample Size	Dependent RF = $K[\text{Independent RF}] + C$				Estimated Dependent PF When Independent PF Is:	
		K	C	Standard Error	Correlation Coefficient	0	100
P2-NFSS vs. EM-RTI	292	0.890	0.003	0.011	0.657	0	84
P2-NFSS vs. P2-RTI	292	0.945	0.008	0.016	0.781	32	57
P2-RTI vs. EM-RTI	292	0.528	0.004	0.010	0.507	58	108

*See Figures E-26, E-42, and E-43 of Appendix E for displays of the data analyzed in each sample.

C. PF-COMP Calculations Using NFSS Data

NFSS data collected prior to February 1967 are not nearly as extensive as those normally collected for the PF-COMP Program, but were modified for PF-COMP processing as described in Section II.B.5. Processing these data by PF-COMP indicates the PF's that could be obtained if the earlier NFSS data were recalculated using a program based on the Engineering Manual. The regression equation to compare these results (EM-NFSS) with PF-COMP (EM-RTI) results is:

$$\text{EM-RTI RF} = 0.121[\text{EM-NFSS RF}] + 0.013, \quad (12)$$

with a small correlation coefficient of 0.354 and a very large standard error of 0.016. Results from this equation indicate that the EM-NFSS results are quite variable when compared to EM-RTI results. For example, when the EM-NFSS PF's are 40 and 100, the corresponding EM-RTI PF's are 62 and 70. Calculated values of EM-NFSS PF's would be conservative below a PF of 69. Because of input differences noted previously in Sections IV.A. and B., this method of estimating revised values for NFSS shelter stories is less reliable than using the equations for NFSS Phase 2

The use of RTI collected data for contaminated planes and interior partitions to supplement NFSS data is described in Section II.B.6. (EM-NFSS & RTI). The relationship of these results to EM-RTI data is given by:

$$\text{EM-RTI RF} = 0.187[\text{EM-NFSS \& RTI RF}] + 0.013, \quad (13)$$

which also has a small correlation coefficient of 0.419 and a large standard error of 0.014. This equation is not significantly different from the equation above for EM-NFSS data.

V. CONCLUSIONS

Mathematical relationships for estimating revised Protection Factor values for NFSS structures using existing NFSS Phase 1 and 2 data were developed. Unfortunately, none of these relationships proved to be "optimum" due to the poor data fits for all regression lines developed. As a result of this statistical analysis, several conclusions regarding the relationship of the seven PF estimates are presented:

- 1) Revised NFSS PF's for individual buildings should definitely not be estimated nor is any advantage seen in revised estimates of Phase 2 shelter PF's available in a geographic area such as a county. This conclusion is drawn because NFSS Phase 2 (P2-NFSS) PF's are nonconservative (high) when compared to Engineering Manual-RTI (EM-RTI) results and because of the difficulty in obtaining Phase 2 PF values other than PF Category (see Section II.A.2.). The results in Phase 2 are not sufficiently nonconservative to cause alarm, since the regression indicates the estimated EM PF to be 40 when the NFSS PF is 40, i.e., it doesn't appear that shelters now indicated to be acceptable would drop below PF 40.
- 2) PF's calculated using NFSS Phase 1 and 2 procedures and RTI collected input data (P1-RTI and P2-RTI) are both conservative (low) when compared to Engineering Manual-RTI (EM-RTI) results. However, as stated above, original NFSS results are nonconservative when compared to EM-RTI results. The non-conservative results determined in the NFSS are therefore attributed to data collection discrepancies. This, of course, assumes the RTI collected data to be more nearly correct than NFSS data and it is pointed out that this assumption was not verified by replication of a sample of buildings to estimate the RTI field data variation. One substantiation is that earlier analysis of the relationship between P1-NFSS and EM-RTI PF's under OCD Work Unit 1115A gave results almost identical to those of this study.
- 3) Many buildings surveyed in the NFSS prior to February 1967 have PF's less than 40 and are consequently not contained in Phase 2 data files. The regression equation developed for the total sample to determine the relationship between P1-NFSS and EM-RTI could be used to estimate PF's of buildings in this category. These results would be useful in damage assessment when analysis of areas as large as a county are made. No advantage is gained by using regression equations for subdivisions of the total sample by specific building characteristics. Obtaining data for this type of analysis would be difficult due to lack of NFSS Phase 1 output data in NFSS computer files.

4) Procedures have been established whereby NFSS Phase 1 and 2 input data collected prior to February 1967 can be processed by the PF-COMP Computer Program now used in the NFSS. However, because of input discrepancies noted in NFSS data when compared to RTI collected data, this method of estimating revised values for shelter stories is not recommended. This procedure would give PF's for each story of a building, but would not be reliable.

5) A comparison of NFSS Phase 2 data with EM-RTI data indicated that (a) each procedure identified shelter on the same story for 327 stories; (b) there are 41 stories identified as shelter stories by the NFSS that were not found to have shelter by PF-COMP; and (c) PF-COMP identified 133 shelter stories that are not contained in NFSS files. The conclusion is that the current use of PF-COMP will substantially increase the number of shelter stories in the NFSS.

REFERENCES

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Appendix A

Contractual Scope of Work

Subcontract Number: 11213(4949A-72)

The Subcontractor shall furnish all facilities, personnel, and services required to perform the following Statement of Work:

- (1) Make a preliminary examination of data on approximately 309 buildings, collected under OCD Subtask 1159C "Structural Characteristics of NFSS Buildings," for adequacy related to the present task.
- (2) Make a statistical analysis of the data, providing comparisons of the following separate estimates of the protection factor (PF) of each building:
 - (a) PF reported under NFSS Phase 1;
 - (b) PF reported under NFSS Phase 2;
 - (c) PF's calculated by NFSS Phase 1 and 2 procedures, using Subcontractor's building data;
 - (d) PF calculated by Subcontractor's computer program, (PF-COMP, CDC-3600) using building data obtained in NFSS Phase 1 and 2;
 - (e) PF calculated by Subcontractor's computer program, using building data obtained in NFSS Phase 1 and 2, supplemented by Subcontractor's data on inputs not required under NFSS procedures; and,
 - (f) PF calculated by Subcontractor's computer program, using Subcontractor's building data.
- (3) Provide mathematical relationships useful in grossly estimating revised PF values for NFSS structures, by various building categories.
- (4) Provide a final report covering all work, including a tabulation of the PF values prescribed in paragraph (2), by building, building type, city, etc.
- (5) Develop graphic displays to depict the mathematical relationships provided under Task (3).
- (6) Investigate alternative means of examining NFSS Phase 2 results due to the availability of only PF Categories on NFSS computer tapes.
- (7) Illustrate the variation in the statistical analysis of reduction factors instead of protection factors.

Appendix B

Sample Building Data

I. INTRODUCTION

This appendix contains data for each story of the buildings surveyed under OCD Work Unit 1159C that were determined to be adequate for analysis in this project. Included are the seven estimates of PF, reduction factors, structural classification, Use Class Code, number of shelter spaces determined in the Phase 2-NFSS and Engineering Manual-RTI calculations, and selected building characteristics.

The data for each building story were prepared on three punch cards and are presented herein in a printout format. A description of the column headings is contained in Section II and data for Providence, Detroit, New Orleans, Albuquerque, and San Jose are contained in Sections III through VII. When an element of data is not applicable or not obtainable, the column is left blank. For example, structural classification and Use Class Codes are given only for stories that were reported in Phase 2 of the NFSS, i.e., those of at least PF 40.

II. KEY TO DATA ON CARDS

<u>Card Number</u>	<u>Column Heading</u>	<u>Description</u>
1	OBS NO	The "Observation Number" is a number assigned in ascending sequence to identify each individual story analyzed and is the first column of data on each punch card.
	STANDARD LOCATION	The National Location Code (NLC) assigned in the NFSS Phase 1 to define the geographic area in which the building is located.
	FACILITY NUMBER	A five-digit number assigned in the NFSS Phase 1 to identify each building.
	PART NO.	Building part number assigned in the NFSS Phase 1.
	STORY NO.	Story number of the shelter story for which data are reported.
	PV CODE	Structural Classification (PV Code) for the building assigned in NFSS Phase 1 and reported herein for only those stories of buildings contained in NFSS Phase 2 files.
	USE CODE	Use Class Code for the building assigned in the NFSS Phase 1 and reported herein for only those stories of buildings contained in NFSS Phase 2 files.
	RUN 1	Data from NFSS Phase 1 calculations (P1-NFSS).
	ROOF CONT	Roof contribution to the detector in the center of the story analyzed.
	TOTAL RF	Total reduction factor (roof and ground contributions) for the detector.
	RUN 2	Data from NFSS Phase 2 calculations (P2-NFSS).
	TOTAL RF	Total reduction factor (roof and ground contributions) for the detector location. Since only PF categories were reported in the NFSS Phase 2, the RF's were obtained as described in Table I.
	RUN 3	Data from calculations using NFSS Phase 1 methods and RTI input data (P1-RTI).
	ROOF CONT	Roof contribution to the detector in the center of the story analyzed.
	TOTAL RF	Total reduction factor (roof and ground contributions) for the detector.

<u>Card Number</u>	<u>Column Heading</u>	<u>Description</u>
1 (cont'd.)	RUN 4	Data from calculations using NFSS Phase 2 methods and RTI input data (P2-RTI).
	TOTAL RF	Total reduction factor (roof and ground contributions) for the detector location. Calculated RF's are reported.
	RUN 5	Data from PF-COMP calculations using NFSS Phase 1 and Phase 2 building input data (EM-NFSS).
	TOTAL RF	Total reduction factor (roof and ground contributions) for the detector.
	RUN 6	Data from PF-COMP calculations using NFSS input data plus additional building data collected by RTI survey teams (EM-NFSS & RTI).
	TOTAL RF	Total reduction factor (roof and ground contributions) for the detector.
	RUN 7	Data from PF-COMP calculations using building input data collected by RTI survey teams (EM-RTI).
	ROOF CONT	Roof contribution to the detector in the center of the story analyzed.
	TOTAL RF	Total reduction factor (roof and ground contributions) for the detector.
2	OBS NO	The "Observation Number" is a number assigned in ascending sequence to identify each individual story analyzed and is the first column of data on each punch card
	SPACES RUN 2	Shelter spaces determined by Architect-Engineers in the NFSS Phase 2 (P2-NFSS).
	PF-40	Number of spaces with a PF of at least 40 on the detector story.
	PF-100	Number of spaces with a PF of at least 100 on the detector story.
	SPACES RUN 7	Shelter spaces determined by the PF-COMP Computer Program using RTI input data (EM-RTI). It is noted that these are only machine estimates and were not verified by a return visit to the building or a review of building plans.
	PF-40	Number of spaces with a PF of at least 40 on the detector story.
	PF-100	Number of spaces with a PF of at least 100 on the detector story.

<u>Card Number</u>	<u>Column Heading</u>	<u>Description</u>
2 (cont'd.)	AVG APER SILL HT.	Average of the aperture sill heights reported in NFSS Phase 2 for the detector story.
	MIN APER SILL HT.	Minimum value of the aperture sill height reported in NFSS Phase 2 for the detector story.
	AVG % APER	Average of the percent apertures reported in NFSS Phase 2 for the detector story.
	MAX. % APER	Maximum percent apertures reported in NFSS Phase 2 for detector story.
	HT OF DET	Height of the detector above or below the first story floor level as determined from NFSS Phase 1 data.
	TOTAL OVER- HEAD WT.	Total overhead weight in pounds per square foot (psf) as determined from NFSS Phase 1 data.
	FLOOR WT.	Mass thickness (psf) of the detector story floor as determined from NFSS Phase 1 data.
	CEILING WT.	Mass thickness (psf) of the floor above the detector as determined from NFSS Phase 1 data.
	AVG EXT WALL MASS	Average exterior wall mass thickness (psf) for the detector story as determined from NFSS Phase 1 data.
	OBS NO	The "Observation Number" is a number assigned in ascending sequence to identify each individual story analyzed and is the first column of data on each punch card.
	AVG % BSMT EXPO	Average percent wall exposure for the detector story (for basements only) as determined from NFSS Phase 1 data.
3	AVG INT PARTITION WEIGHT	Average interior partition mass thickness (psf) for the detector story as determined from NFSS Phase 1 data.
	STORY ABOVE	
	AVG % APER	Average of the percent apertures for the story above the detector story as determined from NFSS Phase 1 data.

<u>Card Number</u>	<u>Column Heading</u>	<u>Description</u>
3 (cont'd.)	AVG EXT WALL MASS	Average exterior wall mass thickness (psf) for the story above the detector story as determined from NFSS Phase 1 data.
	STORY BELOW	
	AVG % APER	Average of the percent apertures for the story below the detector story as determined from NFSS Phase 1 data.
	AVG EXT WALL MASS	Average exterior wall mass thickness (psf) for story below the detector story as determined from NFSS Phase 1 data.
RUN 1 PF ^{1/}		PF reported under NFSS Phase 1 (P1-NFSS).
RUN 2 PF		PF reported under NFSS Phase 2 (P2-NFSS).
RUN 3 PF		PF by NFSS Phase 1 methods using RTI input data (P1-RTI).
RUN 4 PF		PF by NFSS Phase 2 methods using RTI input data (P2-RTI).
RUN 5 PF		PF from PF-COMP using NFSS building input data (EM-NFSS).
RUN 6 PF		PF from PF-COMP using NFSS input data plus additional building data collected by RTI survey teams (EM-NFSS & RTI).
RUN 7 PF		PF from PF-COMP using building input data collected by RTI survey teams (EM-RTI).

^{1/} Reduction factors (RF) for each of the seven PF estimates were reported to three decimal places; therefore, those RF's reported as 0.000 were arbitrarily assigned a PF of 1009 (the reciprocal of the RF).

III. Providence, Rhode Island Data

CARD 1 PROVIDENCE

OS NO	STANDARD LOCATION	FACILITY NUMBER	PART NO.	STORY NO.	SV CODE	USE CODE	RUN 1 ROOF CONT	RUN 1 TOTAL HF	RUN 2 TOTAL HF	RUN 3 ROOF CONT	RUN 3 TOTAL RF	RUN 4 TOTAL RF	RUN 5 TOTAL HF	RUN 6 TOTAL HF	RUN 7 ROOF CONT	RUN 7 TOTAL HF
1	17210007	707	1	0	31	55	.019	.019	.012	.014	.019	.019	.018	.018	.010	.012
2	17210007	707	1	1			.	.	.	.	.	.	.455	.181	.057	.123
3	17220003	60	1	0			.	.	.	.	.	.	.003	.003	.035	.045
4	17220003	60	1	1			.	.	.	.	.	.	.094	.216	.112	.169
5	17240007	298	1	0	35	51	.001	.019	.019	.011	.048	.048	.002	.004	.017	.025
6	17240007	298	1	1			.	.	.	.	.	.	.063	.137	.044	.175
7	17240007	298	1	2			.	.	.	.	.	.	.088	.163	.057	.126
8	17240008	364	1	0	32	61	.004	.004	.004	.012	.012	.012	.003	.003	.016	.016
9	17240008	364	1	1			.	.	.	.	.	.	.245	.274	.136	.149
10	17240016	708	1	0	36	49	.009	.010	.010	.020	.020	.020	.009	.009	.010	.013
11	17240016	753	1	0	36	79	.019	.020	.020	.002	.003	.003	.021	.021	.001	.002
12	17240016	753	1	1			.	.	.	.008	.016	.016	.102	.124	.005	.010
13	17240016	753	1	2			.	.	.	.018	.021	.020	.219	.115	.012	.017
14	17240016	753	1	3			.	.	.	.046	.048	.047	.304	.172	.039	.041
15	17240018	929	1	0	36	11	.003	.006	.009	.	.	.	.625	.025	.000	.009
16	17240018	929	1	1			.	.	.	.	.	.	.326	.142	.002	.074
17	17240018	929	1	2			.	.	.	.	.	.	.165	.075	.010	.061
18	17240018	929	1	3			.	.	.	.	.	.	.213	.171	.052	.094
19	17240018	931	1	0	36	11	.003	.012	.012	.002	.008	.008	.026	.026	.000	.004
20	17240018	931	1	1			.	.	.	.004	.066	.066	.359	.372	.002	.008
21	17240018	931	1	2			.	.	.	.013	.078	.078	.214	.213	.010	.064
22	17240018	931	1	3			.	.	.	.	.	.	.204	.201	.052	.092
23	17240039	2014	1	0	32	54	.008	.008	.008	.	.	.	.007	.007	.007	.008
24	17240039	2014	1	1			.	.	.	.	.	.	.250	.352	.039	.118
25	17240039	2073	1	0	32	61	.008	.008	.008	.030	.030	.030	.007	.007	.016	.016
26	17240039	2073	1	1			.	.	.	.	.	.	.215	.218	.162	.247
27	17240043	2435	1	2			.	.	.	.009	.069	.069	.244	.171	.005	.034
28	17240043	2435	1	3			.	.	.	.046	.093	.093	.206	.172	.017	.060
29	17240043	2434	1	2			.	.	.	.009	.044	.044	.235	.143	.008	.038
30	17240043	2443	1	1			.	.	.	.002	.060	.060	.295	.165	.001	.027
31	17240043	2443	1	2			.	.	.	.009	.044	.044	.225	.085	.006	.024
32	17240043	2443	1	3			.	.	.	.047	.091	.091	.210	.121	.038	.068
33	17240043	2446	1	1			.	.	.	.002	.061	.061	.355	.210	.001	.034
34	17240043	2446	1	2			.	.	.	.009	.049	.049	.207	.100	.006	.026
35	17240043	2446	1	3			.	.	.	.047	.075	.075	.102	.125	.038	.056
36	17240046	2914	1	0	32	55	.014	.014	.020	.016	.017	.017	.014	.014	.011	.011
37	17240046	2914	1	1			.	.	.	.070	.081	.079	.091	.104	.052	.085
38	17240046	2943	1	0	36	11	.022	.022	.022	.030	.030	.030	.018	.017	.017	.021
39	17240046	2943	1	1			.	.	.	.034	.072	.061	.247	.086	.025	.057
40	17240046	2943	1	2			.	.	.	.069	.085	.080	.266	.056	.039	.060
41	17240046	2943	1	3			.	.	.	.	.	.	.094	.106	.073	.092
42	17240046	2943	1	4			.	.	.	.	.	.	.210	.303	.158	.177
43	17240046	2994	1	0	43	51	.008	.008	.008	.008	.010	.010	.007	.007	.005	.005
44	17240046	2994	1	1			.	.	.	.039	.078	.075	.124	.189	.026	.040
45	17240046	2994	1	2			.	.	.	.064	.094	.094	.053	.086	.038	.066
46	17240046	2994	1	3			.	.	.	.	.	.	.072	.096	.061	.096
47	17240046	2994	1	4			.	.	.	.	.	.	.096	.111	.103	.129
48	17240046	2994	1	5			.	.	.	.	.	.	.152	.156	.199	.216
49	17240046	3025	1	0	43	51	.000	.000	.001	.001	.001	.001	.000	.000	.000	.001
50	17240046	3045	1	1			.	.	.	.	.	.	.293	.154	.000	.044
51	17240046	3045	1	2			.000	.027	.	.000	.031	.030	.020	.139	.000	.030
52	17240046	3025	1	3			.	.	.	.000	.025	.025	.054	.063	.060	.026
53	17240046	3045	1	4			.	.	.	.001	.034	.032	.058	.066	.000	.031
54	17240046	3025	1	5			.	.	.	.005	.069	.068	.062	.052	.003	.030
55	17240046	3025	1	6			.	.	.	.018	.064	.063	.065	.060	.012	.037
56	17240046	3025	1	7			.	.	.	.	.	.	.093	.082	.052	.076
57	17240046	3035	1	0	36	51	.025	.025	.025	.026	.026	.026	.025	.016	.009	.016
58	17240046	3035	1	1			.	.	.	.	.	.	.203	.201	.015	.069
59	17240046	3035	1	2			.	.	.	.346	.069	.069	.078	.046	.074	.044
60	17240046	3035	1	3			.	.	.	.078	.095	.095	.116	.080	.036	.063
61	17240046	3035	1	4			.	.	.	.	.	.	.161	.101	.044	.088
62	17240046	3035	1	5			.	.	.	.	.	.	.295	.173	.128	.143
63	1724 046	3041	1	-1	43	51	.	.	.001	.	.	.	.000	.	.000	.000
64	1724 046	3041	1	0	43	51	.000	.000	.038	.	.	.	.000	.	.000	.000
65	1724 046	3041	1	1	43	51	.000	.010	.010	.	.	.	.024	.	.000	.033
66	1724 046	3041	1	2	43	51	.000	.009	.009	.	.	.	.002	.	.000	.004
67	1724 046	3041	1	3	43	51	.000	.010	.010	.	.	.	.003	.	.000	.002
68	1724 046	3041	1	4	43	51	.000	.009	.009	.	.	.	.001	.	.000	.002
69	1724 046	3041	1	5	43	51	.000	.008	.008	.	.	.	.001	.	.000	.002
70	1724 046	3041	1	6	43	51	.000	.011	.011	.	.	.	.003	.	.000	.002
71	1724 046	3041	1	7	43	51	.000	.010	.010	.	.	.	.001	.	.000	.003
72	1724 046	3041	1	8	43	51	.006	.008	.008	.	.	.	.003	.	.000	.005
73	1724 046	3041	1	9	43	51	.000	.012	.012	.	.	.	.002	.	.000	.002
74	1724 046	3041	1	10	43	51	.008	.009	.009	.	.	.	.002	.	.000	.002
75	1724 046	3041	1	11	43	51	.008	.008	.008	.	.	.	.002	.	.000	.002
76	1724 046	3041	1	12	43	51	.006	.007	.007	.	.	.	.002	.	.000	.002
77	1724 046	3041	1	13	43	51	.006	.007	.007	.	.	.	.002	.	.000	.002
78	1724 046	3041	1	14	43	51	.003	.006	.006	.	.	.	.002	.	.001	.003
79	1724 046	3041	1	15	43	51	.000	.006	.006	.	.	.	.002	.	.006	.009
80	1724 046	3041	1	16	43	51	.000	.006	.006	.	.	.	.005	.	.000	.002
81	1724 046	3041	1	17	43	51	.000	.015	.009	.	.	.	.005	.	.000	.002

CARD 1 PROVIDENCE (CONTINUED)

U.S. NO.	STANDARD LOCATION	FACILITY NUMBER	PAK NO.	STORY NO.	PV CODE	USE CODE	RUN 1 ROOF COUNT	RUN 1 TOTAL HF	RUN 2 TOTAL HF	RUN 3 ROOF COUNT	RUN 3 TOTAL HF	RUN 4 TOTAL HF	RUN 5 TOTAL HF	RUN 6 TOTAL HF	RUN 7 ROOF COUNT	RUN 7 TOTAL HF
82	1724 046	3041	1	10	43	51	.000	.008	.008	.	.	.	.005	.	.000	.002
83	1724 046	3041	1	14	43	51	.000	.006	.006	.	.	.	.004	.	.000	.002
84	1724 046	3041	1	20	43	51	.000	.006	.006	.	.	.	.004	.	.000	.002
85	1724 046	3041	1	21			.000	.005	.	.	.	.	.004	.	.000	.002
86	1724 046	3041	1	22	43	51	.000	.005	.020	.	.	.	.004	.	.000	.002
87	1724 046	3041	1	23	43	51	.000	.005	.012	.	.	.	.004	.	.000	.004
88	1724 046	3041	1	24	43	51	.	.	.012	.	.	.	.004	.	.000	.005
89	1724 046	3041	1	25	43	51	.002	.022	.012	.	.	.	.005	.	.003	.007
90	1724 046	3041	1	26			.019	.032	.	.	.	.	.024	.	.030	.033
91	17240047	3141	1	0	32	55	.008	.008	.008	.012	.012	.012	.006	.007	.009	.009
92	17240047	3141	1	1			.	.	.	.	.	.	.195	.252	.098	.192
93	17240047	3271	1	1	57	86	.002	.014	.009	.	.	.	.042	.033	.085	.020
94	17240047	3271	1	2			.021	.027	.	.	.	.	.023	.055	.037	.054
95	17240047	3285	1	0	35	53	.014	.014	.020	.023	.023	.023	.014	.012	.013	.013
96	17240047	3285	1	1			.	.	.	.	.	.	.007	.200	.098	.130
97	17240047	3285	1	2			.	.	.	.	.	.	.019	.276	.201	.220
98	17240056	3586	1	0	21	11	.012	.014	.014	.035	.046	.046	.013	.013	.020	.022
99	17240056	3586	1	1			.	.	.	.	.	.	.005	.585	.050	.425
100	17240056	3586	1	2			.	.	.	.	.	.	.031	.445	.129	.389
101	17240056	3586	1	0	21	11	.012	.020	.020	.042	.000	.000	.020	.016	.020	.033
102	17240056	3586	1	1			.	.	.	.	.	.	.009	.322	.050	.312
103	17240056	3586	1	2			.	.	.	.	.	.	.008	.283	.129	.323
104	17240056	3586	1	0	21	11	.012	.012	.012	.033	.038	.038	.013	.013	.020	.026
105	17240056	3586	1	1			.	.	.	.	.	.	.078	.526	.050	.353
106	17240056	3586	1	2			.	.	.	.	.	.	.098	.265	.129	.316
107	17240056	3586	1	0	57	11	.000	.001	.001	.000	.002	.002	.000	.000	.000	.000
108	17240056	3586	1	1			.	.	.	.	.	.	.081	.363	.000	.111
109	17240056	3586	1	2			.001	.034	.	.003	.043	.024	.005	.181	.001	.026
110	17240056	3586	1	3			.007	.334	.	.011	.056	.056	.137	.104	.007	.046
111	17240056	3586	1	4			.	.	.046	.080	.080	.145	.105	.036	.071	
112	17240056	3586	1	0	57	11	.000	.003	.003	.000	.001	.001	.001	.000	.000	.000
113	17240056	3586	1	1			.	.	.001	.086	.086	.402	.170	.000	.093	
114	17240056	3586	1	2			.001	.044	.	.003	.029	.015	.240	.084	.001	.023
115	17240056	3586	1	3			.007	.039	.	.011	.035	.035	.173	.074	.007	.049
116	17240056	3586	1	4			.	.	.	.	.	.	.178	.100	.036	.077
117	17240056	3603	1	0	21	11	.010	.013	.013	.046	.094	.094	.014	.014	.024	.036
118	17240056	3603	1	1			.	.	.	.	.	.	.013	.314	.058	.315
119	17240056	3603	1	2			.	.	.	.	.	.	.012	.277	.145	.333
120	17240056	3604	1	0	21	11	.010	.014	.020	.046	.062	.062	.017	.017	.024	.034
121	17240056	3604	1	1			.	.	.	.	.	.	.025	.322	.058	.292
122	17240056	3604	1	2			.	.	.	.	.	.	.015	.307	.145	.340
123	17240056	3604	1	0	21	11	.010	.011	.011	.036	.039	.039	.013	.013	.024	.030
124	17240056	3604	1	1			.	.	.	.	.	.	.027	.414	.058	.336
125	17240056	3604	1	2			.	.	.	.	.	.	.041	.306	.145	.322
126	17240056	3612	1	0	21	11	.010	.012	.012	.046	.048	.048	.011	.010	.022	.026
127	17240056	3612	1	1			.	.	.	.	.	.	.075	.516	.074	.375
128	17240056	3612	1	2			.	.	.	.	.	.	.015	.436	.189	.402
129	17240060	3621	1	0	35	51	.008	.009	.009	.019	.019	.019	.008	.008	.012	.012
130	17240060	3621	1	1			.	.	.	.	.	.	.028	.390	.056	.133
131	17240060	3621	1	2			.	.	.	.	.	.	.034	.305	.158	.222
132	17240060	3625	1	0	34	11	.004	.007	.007	.006	.032	.032	.024	.023	.002	.007
133	17240060	3625	1	1			.	.	.018	.098	.098	.310	.343	.089	.074	
134	17240060	3625	1	2			.	.	.	.	.	.079	.361	.050	.091	
135	17240060	3626	1	0	34	11	.004	.006	.00	.	.036	.036	.009	.010	.002	.011
136	17240060	3626	1	1			.	.	.	.	.	.	.049	.327	.086	.077
137	17240060	3626	1	2			.	.	.	.	.	.	.038	.339	.049	.090
138	17240062	4093	1	0	35	23	.006	.018	.018	.008	.009	.009	.007	.	.000	.001
139	17240062	4093	1	1			.	.	.021	.045	.033	.138	.	.	.003	.012
140	17240062	4093	1	2			.	.	.045	.071	.060	.260	.	.	.011	.021
141	17240063	4124	1	1	43	45	.000	.000	.001	.000	.010	.003	.006	.	.000	.009
142	17240063	4124	1	2	43	45	.000	.000	.001	.001	.004	.002	.002	.	.000	.006
143	17240063	4124	1	3	43	45	.001	.001	.002	.004	.022	.010	.007	.	.000	.007
144	17240063	4124	1	4			.028	.028	.	.028	.039	.035	.032	.	.006	.016
145	17240063	4280	1	0	34	11	.005	.006	.006	.007	.011	.011	.007	.009	.004	.007
146	17240063	4280	1	1			.	.	.	.041	.096	.096	.264	.194	.018	.112
147	17240063	4280	1	2			.	.	.	.	.	.	.092	.172	.101	.125
148	17240063	4301	1	0	34	11	.005	.006	.006	.007	.013	.013	.005	.006	.004	.008
149	17240063	4301	1	1			.	.	.	.	.	.	.082	.297	.021	.183
150	17240063	4312	1	2			.	.	.	.	.	.	.040	.319	.141	.187
151	17240063	4312	1	0	34	11	.005	.006	.006	.007	.041	.041	.005	.013	.004	.013
152	17240063	4312	1	1			.	.	.041	.096	.096	.265	.167	.018	.105	
153	17240063	4312	1	2			.	.	.	.	.	.011	.154	.101	.126	
154	17240063	4320	1	0	34	11	.006	.007	.007	.007	.015	.015	.007	.006	.005	.009
155	17240063	4320	1	1			.	.	.	.	.	.	.091	.325	.018	.145
156	17240063	4320	1	2			.	.	.	.	.	.	.085	.290	.101	.144
157	1 240070	4621	1	0	35	21	.005	.014	.020	.005	.017	.017	.006	.006	.004	.010
158	17240070	4621	1	1			.	.	.016	.034	.024	.032	.036	.	.013	.029
159	17240070	4621	1	2			.	.	.086	.077	.075	.258	.171	.054	.082	
160	17240072	4725	1	0	43	72	.011	.014	.012	.016	.022	.022	.012	.013	.016	.019
161	17240072	4725	1	1			.	.	.	.	.	.	.079	.171	.058	.096
162	17240072	4725	1	2			.	.	.	.	.	.	.015	.164	.113	.143

CARD 1 PROVIDENCE (CONTINUED)

U.S. STANDARD FACILITY	U.S. LOCATION	NUM	NO.	STORY	NO.	USE	CODE	NUM 1	TOTAL	NUM 2	TOTAL	NUM 3	TOTAL	NUM 4	TOTAL	NUM 5	TOTAL	NUM 6	TOTAL	NUM 7	TOTAL
NO.	NO.	NO.	NO.	NO.	NO.	CODE	CODE	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
163	17240072	4745	1	3																	
164	17240074	4634	1	0	36	51		.004	.005	.005	.003	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004
165	17240074	4634	1	1							.013	.005	.004	.004	.004	.004	.004	.004	.004	.004	.004
166	17240074	4634	1	2							.023	.005	.004	.004	.004	.004	.004	.004	.004	.004	.004
167	17240074	4634	1	3							.023	.005	.004	.004	.004	.004	.004	.004	.004	.004	.004
168	17240074	4634	1	4							.036	.006	.004	.004	.004	.004	.004	.004	.004	.004	.004
169	17240074	4634	1	5																	
170	17240074	4634	1	6	35	23		.013	.013	.013	.001	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007
171	17240074	4634	1	7							.002	.033	.033	.033	.033	.033	.033	.033	.033	.033	.033
172	17240074	4634	1	8							.007	.026	.026	.026	.026	.026	.026	.026	.026	.026	.026
173	17240074	4634	1	9	57	23		.006	.006	.006	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001
174	17240074	4634	1	10				.021	.027		.016	.040	.040	.040	.040	.040	.040	.040	.040	.040	.040
175	17240074	4634	1	11	36	23															
176	17240074	4634	1	12				.001	.001	.006	.002	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005
177	17240074	4634	1	13				.002	.040		.004	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050
178	17240074	4634	1	14				.009	.028		.015	.043	.043	.043	.043	.043	.043	.043	.043	.043	.043
179	17240074	4634	1	15							.062	.081	.081	.081	.081	.081	.081	.081	.081	.081	.081
180	17240074	4634	1	16				.003	.030		.003	.049	.049	.049	.049	.049	.049	.049	.049	.049	.049
181	17240074	4634	1	17	36	23		.012	.023	.023	.011	.040	.040	.040	.040	.040	.040	.040	.040	.040	.040
182	17240074	4634	1	18							.046	.099	.099	.099	.099	.099	.099	.099	.099	.099	.099
183	17240074	4634	1	19				.008	.011		.001	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002
184	17240074	4634	1	20							.004	.009	.009	.009	.009	.009	.009	.009	.009	.009	.009
185	17240074	4634	1	21							.026	.029	.029	.029	.029	.029	.029	.029	.029	.029	.029
186	17240117	4634	1	0	58	61		.001	.007	.001											
187	17240117	4634	1	1				.024	.023												
188	17240117	4634	1	2	58	61		.046	.045	.020											
189	17240117	4634	1	3																	
190	17240117	4634	1	4																	
191	17240117	4634	1	5																	
192	17240117	4634	1	6																	
193	17240117	4634	1	7																	
194	17240117	4634	1	8	43	12		.005	.015	.020											
195	17240117	4634	1	9																	
196	17240117	4634	1	10																	
197	17240117	4634	1	11	32	86		.019	.020	.020											
198	17240117	4634	1	12																	
199	17240117	4634	1	13																	
200	17240117	4634	1	14																	
201	17240117	4634	1	15																	
202	17240117	4634	1	16																	
203	17240117	4634	1	17																	
204	17240117	4634	1	18																	
205	17240117	4634	1	19																	
206	17240117	4634	1	20																	

CARD 2 PROVIDENCE

U.S. STANDARD FACILITY	U.S. LOCATION	NUM	NO.	STORY	NO.	USE	CODE	NUM 1	TOTAL	NUM 2	TOTAL	NUM 3	TOTAL	NUM 4	TOTAL	NUM 5	TOTAL	NUM 6	TOTAL	NUM 7	TOTAL
NO.	NO.	NO.	NO.	NO.	NO.	CODE	CODE	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
1	28	1	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	49	504	767	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	13	13	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	167	0	181	181	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	24	24	21	21	1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	22	0	21	21	1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	18	18	23	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	174	174	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CARD 2 PROVIDENCE (CONTINUED)

LINE	S P A C = S				AVH APRM SILL MT.	MIN. APER SILL MT.	AVH SILL MT.	MAX. SILL MT.	WT OF NET	TOTAL OVER- HEAD WT.	FLOOR WT.	CEILING HEIGHT	MALL MASS	AVG EXT MALL MASS
	PF-40	PF-100	PF-40	PF-100										
29					0	0	0.00	0	10.10	10	11	100		
30					0	0	0.00	0	10.10	10	3	150	50	120
31					0	0	0.00	0	10.10	10	11	100	50	120
32					0	0	0.00	0	10.10	10	19	50	50	120
33					0	0	0.00	0	10.10	10	3	150	50	120
34					0	0	0.00	0	10.10	10	11	100	50	120
35					0	0	0.00	0	10.10	10	19	50	50	120
36					0	0	0.00	0	10.10	10	3	150	50	120
37	101				0	0	0.00	0	10.10	10	19	50	50	120
38					0	0	0.00	0	10.10	10	3	150	50	120
39	34				0	0	0.00	0	20.10	40	3	20	80	450
40					0	0	0.00	0	0.10	0	-7	50	0	300
41					0	0	0.00	0	15.10	20	3	40	10	300
42					0	0	0.00	0	12.70	20	15	30	10	160
43					0	0	0.00	0	15.10	20	27	20	10	160
44	120	120	140	140	0	0	0.00	0	15.10	20	39	10	10	120
45					0	0	0.00	0	0.10	0	-7	120	0	140
46					0	0	0.00	0	17.70	30	3	70	50	60
47					0	0	0.00	0	30.10	40	19	60	10	60
48					0	0	0.00	0	30.10	40	30	50	10	60
49					0	0	0.00	0	30.10	40	41	40	10	60
50	40				0	0	0.00	0	30.10	40	52	30	10	60
51					0	0	0.00	0	0.10	0	-7	750	0	300
52					0	0	0.00	0	64.70	70	3	680	100	240
53					0	0	0.00	0	50.10	50	23	580	100	240
54					0	0	0.00	0	50.10	50	35	480	100	240
55					0	0	0.00	0	50.10	50	47	380	100	160
56					0	0	0.00	0	50.10	50	59	280	100	160
57					0	0	0.00	0	50.10	50	71	180	100	160
58	90				0	0	0.00	0	50.10	50	83	80	100	160
59					0	0	0.00	0	0.10	0	-6	60	0	160
60					0	0	0.00	0	22.70	50	3	70	10	240
61					0	0	0.00	0	12.70	20	15	40	10	200
62					0	0	0.00	0	12.70	20	25	30	10	160
63					0	0	0.00	0	12.70	20	35	20	10	160
64	071	071	740	840	0	0	0.00	0	12.70	20	45	10	10	120
65	0	0	040	840	0	0	0.00	0	5.10	10	-27	999	0	450
66	300	300	0	0	0	0	0.00	0	5.10	10	-12	999	0	450
67	320	320	2000	2800	0	0	0.00	0	50.10	50	3	999	100	300
68	080	080	2000	2800	0	0	0.00	0	50.10	50	43	999	100	160
69	060	060	2000	2400	0	0	0.00	0	50.10	50	54	999	100	160
70	060	060	2012	2116	0	0	0.00	0	50.10	50	65	999	100	160
71	060	060	2000	2800	0	0	0.00	0	50.10	50	76	999	100	160
72	060	060	2000	2345	0	0	0.00	0	50.10	50	87	999	100	160
73	060	060	2000	1658	0	0	0.00	0	50.10	50	98	999	100	160
74	060	060	2000	2466	0	0	0.00	0	50.10	50	109	999	100	160
75	060	060	2000	2800	0	0	0.00	0	50.10	50	120	999	100	160
76	060	060	2000	2800	0	0	0.00	0	50.10	50	131	999	100	160
77	060	060	2000	2800	0	0	0.00	0	50.10	50	142	999	100	120
78	060	060	2000	2546	0	0	0.00	0	50.10	50	153	999	100	120
79	1000	1000	2200	2100	0	0	0.00	0	50.10	50	164	999	100	120
80	450	450	700	700	0	0	0.00	0	50.10	50	175	999	100	120
81	450	450	1749	1749	0	0	0.00	0	50.10	50	186	999	100	120
82	450	450	1749	1749	0	0	0.00	0	50.10	50	197	999	100	120
83	450	450	1749	1749	0	0	0.00	0	50.10	50	208	999	100	120
84	450	450	1749	1749	0	0	0.00	0	50.10	50	219	999	100	120
85	450	450	1749	1749	0	0	0.00	0	50.10	50	230	999	100	120
86			1749	1749	0	0	0.00	0	50.10	50	241	700	100	120
87	180	180	003	224	0	0	0.00	0	50.10	50	252	600	100	120
88	180	180	301	172	0	0	0.00	0	50.10	50	263	500	100	120
89	180	180	049	609	0	0	0.00	0	50.10	50	274	400	100	120
90			049	512	0	0	0.00	0	50.10	50	285	300	100	120
91			0	0	0	0	0.00	0	50.10	50	296	200	100	120
92	20	24	21	21	0	0	0.00	0	50.10	50	307	100	100	120
93			0	0	0	0	0.00	0	0.10	0	-7	133	0	250
94	702	702	019	0	0	0	0.00	0	22.70	50	3	50	70	150
95			0	0	0	0	0.00	0	17.70	40	3	200	0	110
96	200	0	230	24	0	0	0.00	0	20.10	40	18	100	100	110
97			0	0	0	0	0.00	0	2.70	10	-10	110	0	300
98			0	0	0	0	0.00	0	29.75	69	3	20	90	80
99	11	0	12	0	0	0	0.00	0	29.75	79	16	10	10	30
100			0	0	0	0	0.00	0	5.10	10	-6	110	0	150
101			0	0	0	0	0.00	0	7.70	20	3	30	80	30
102	11	0	0	0	0	0	0.00	0	7.70	20	11	20	10	30
103			0	0	0	0	0.00	0	5.00	10	-6	110	0	150
104			0	0	0	0	0.00	0	7.70	20	3	30	80	30
105	11	0	12	0	0	0	0.00	0	7.70	20	11	20	10	30
106			0	0	0	0	0.00	0	5.00	10	-6	110	0	150
107			0	0	0	0	0.00	0	7.70	20	3	30	80	30
108	12	12	14	14	0	0	0.00	0	5.10	10	-6	380	0	150
109			0	0	0	0	0.00	0	7.70	20	3	300	80	110
110			0	0	0	0	0.00	0	7.70	20	11	220	80	110

CARD 2 PROVIDENCE (CONTINUED)

UJS NJ	S P A C E S				AVG		MIN. APER SILL MT.	APER %	MAX. %	HT OF DET	TOTAL OVER- HEAD MT.	FLOOR MT.	CEILING WEIGHT	AVG EXT WALL MASS
	MT. 2	PF 101	PF-40	PF-100	MT.	MT.								
110			0	0	0.00	0	7.50	20	19	140	80	80	110	
111			0	0	0.00	0	7.50	20	27	60	80	80	110	
112	12	12	14	14	1.50	0	5.00	10	-6	390	0	80	150	
113			0	0	0.00	0	5.00	10	3	300	80	80	110	
114			93	0	0.00	0	5.00	10	11	220	80	80	110	
115			0	0	0.00	0	5.00	10	19	140	80	80	110	
116			0	0	0.00	0	5.00	10	27	50	80	80	110	
117	10	0	0	0	1.50	0	5.00	10	-6	120	0	90	150	
118			0	0	0.00	0	10.00	20	3	30	90	10	35	
119			0	0	0.00	0	10.00	20	11	20	10	10	35	
120	10	0	0	0	.75	0	5.00	10	-6	120	0	90	150	
121			0	0	0.00	0	10.00	20	3	30	90	10	35	
122			0	0	0.00	0	10.00	20	11	20	10	10	35	
123	10	0	2	0	.75	0	5.00	10	-6	120	0	90	150	
124			0	0	0.00	0	10.00	20	3	30	90	10	35	
125			0	0	0.00	0	10.00	20	11	20	10	10	35	
126	10	0	10	0	1.50	0	2.50	10	-6	120	0	90	150	
127			0	0	0.00	0	10.00	20	3	30	90	10	35	
128			0	0	0.00	0	10.00	20	11	20	10	10	35	
129	10	10	19	4	0	0	0.00	0	-5	110	0	100	180	
130			0	0	0.00	0	22.00	40	3	10	100	0	120	
131			0	0	0.00	0	25.00	40	13	10	0	0	120	
132	21	21	26	26	0	0	-0.00	0	-5	150	0	70	160	
133			0	0	0.00	0	20.00	20	3	80	70	70	120	
134			0	0	0.00	0	20.00	20	11	10	70	70	120	
135	21	21	10	16	3	0	0.00	0	-5	150	0	70	160	
136			0	0	0.00	0	20.00	20	3	90	70	70	120	
137			0	0	0.00	0	20.00	20	11	10	70	70	120	
138	42	0	400	400	1.50	0	15.00	20	-8	40	0	60	200	
139			316	0	0.00	0	15.00	20	3	80	60	60	120	
140			57	0	0.00	0	15.00	20	14	20	60	60	120	
141	378	378	2126	716	0.00	0	12.50	20	3	510	0	140	145	
142	378	378	2059	250	3.00	3	12.50	20	16	370	140	140	170	
143	2160	2160	2013	48	3.00	3	12.50	20	30	230	140	140	170	
144			43	0	3.00	3	12.50	20	44	90	140	140	170	
145	15	15	15	15	0	0	0.00	0	-5	150	0	70	180	
146			0	0	0.00	0	15.00	20	3	90	70	70	130	
147			0	0	0.00	0	15.00	20	11	10	70	70	100	
148	14	14	18	18	0	0	0.00	0	-5	150	0	70	180	
149			0	0	0.00	0	15.00	20	3	80	70	70	130	
150			0	0	0.00	0	15.00	20	11	10	70	70	100	
151	14	14	13	0	0	0	0.00	0	-5	150	0	70	180	
152			0	0	0.00	0	15.00	20	3	90	70	70	130	
153			0	0	0.00	0	15.00	20	11	10	70	70	100	
154	70	70	75	75	0	0	0.00	0	-5	150	0	70	180	
155			0	0	0.00	0	15.00	20	3	90	70	70	130	
156			0	0	0.00	0	15.00	20	11	10	70	70	100	
157	140	0	214	164	2.25	0	27.50	40	-6	150	0	70	150	
158			0	0	0.00	0	30.00	40	3	90	70	70	150	
159			0	0	0.00	0	22.00	30	14	10	70	70	150	
160	52	0	40	0	1.50	0	5.00	10	-7	100	0	60	130	
161			0	0	0.00	0	15.00	20	3	40	60	10	130	
162			0	0	0.00	0	20.00	20	14	30	10	10	130	
163			0	0	0.00	0	20.00	20	25	20	10	10	130	
164	10	10	26	26	0.00	0	2.50	10	-3	100	0	50	150	
165			0	0	0.00	0	22.00	30	3	50	50	10	120	
166			0	0	0.00	0	15.00	30	13	40	10	10	120	
167			0	0	0.00	0	15.00	30	23	30	10	10	120	
168			0	0	0.00	0	15.00	30	33	20	10	10	120	
169	20	0	87	97	0	0	0.00	0	-5	90	0	40	300	
170			0	0	0.00	0	20.00	20	3	50	40	40	200	
171			106	0	0.00	0	20.00	20	17	10	40	40	200	
172	554	554	455	455	0	0	0.00	0	-9	150	0	50	250	
173			0	0	0.00	0	30.00	30	3	100	50	50	160	
174			0	0	0.00	0	30.00	30	15	50	50	50	160	
175	90	90	167	167	.75	0	2.50	10	-6	270	0	70	200	
176			0	0	0.00	0	25.00	30	3	200	70	70	150	
177			0	0	0.00	0	25.00	30	14	130	70	70	150	
178			0	0	0.00	0	25.00	30	25	60	70	70	150	
179			125	0	3.00	3	30.00	30	-7	240	0	60	200	
180			0	0	0.00	0	30.00	30	3	190	60	60	150	
181	300	0	0	0	0.00	0	30.00	30	15	120	60	60	150	
182			0	0	0.00	0	30.00	30	20	60	60	60	150	
183			146	146	2.25	0	5.00	10	-7	120	0	30	200	
184			573	221	0.00	0	17.50	20	2	90	30	30	160	
185			309	0	0.00	0	17.50	20	15	60	30	30	160	
186			0	0	0.00	0	17.50	20	23	30	30	30	160	
187	2760	2760	1098	1808	.75	0	7.50	10	-12	250	0	80	300	
188			0	0	0.00	0	30.00	30	3	170	80	80	160	

CARD 2 PROVIDENCE (CONTINUED)

DSS N	SPACE S				AVG APER SILL MT.		MIN. APER SILL MT.	AVG % APER	MAX. % APER	MT OF DET	TOTAL OVER- HEAD WT.	FLOOR WT.	CEILING WEIGHT	AVG EXT WALL MASS
	HUN 1 PF-40	PF-100	HUN 2 PF-40	PF-100	MT.	MT.								
184	640		2540		0	0.00	0	30.0	30	18	90	80	80	160
190			0		0	0.00	0	30.0	30	35	10	80	80	160
191			0		0	0.00	0	30.0	30	3	120	60	60	120
192			0		0	1.50	0	5.00	10	-6	180	0	60	150
193			0		0	0.00	0	30.0	30	13	60	60	60	120
194	200		72		0	1.50	0	30.0	30	-6	180	0	60	150
195			0		0	0.00	0	30.0	30	3	120	60	60	120
196			0		0	0.00	0	30.0	30	13	60	60	60	120
197	20		72		0	0.00	0	0.0	0	-7	90	0	80	250
198			0		0	0.00	0	22.25	50	3	10	80	0	170
199			0		0	0.00	0	10.0	10	11	100	50	50	120
200	40		314		0	.75	0	5.0	10	-6	400	0	70	200
201	551		345		0	0.00	0	12.70	20	3	330	70	70	200
202			0		0	0.00	0	15.0	20	15	230	70	70	70
203			0		0	0.00	0	15.0	20	25	190	70	70	70
204	115	115	400	400	2.25	0	7.70	20	-8	200	0	60	60	150
205	050	050	316	316	0	0.00	0	7.70	20	3	140	60	60	100
206			57		0	0.00	0	20.0	20	14	90	60	60	120

CARD 3 PROVIDENCE

DSS N	AVG 2 % EXT	AVG 1.1 % HEIGHT	STORY ABOVE		STORY APER 2 % APER	FLOOR EXT WALL MASS	RUN 1 PF	RUN 2 PF	RUN 3 PF	RUN 4 PF	RUN 5 PF	RUN 6 PF	RUN 7 PF
			AVG 2 % APER	AVG 1.1 % HEIGHT									
1	90	0.03	20.00	140			53	83	53	53	56	56	83
2		0.03			0.00	200					2	6	8
3	55	15.00	30.00	225							333	333	22
4		0.03			7.00	240					11	5	6
5	60	24.75	25.00	130			53	53	21	21	500	250	40
6		0.03	15.00	130	20.00	200					16	7	6
7		0.03			25.00	130					11	6	8
8	90	0.03	12.50	160			250	250	83	83	333	333	63
9		0.03			2.50	350					4	4	7
10	82	0.03					100	100	50	50	111	111	87
11	90	22.50	42.00	170			50	50	333	333	48	48	500
12		0.03	42.50	120	5.00	200			63	63	5	8	100
13		0.03	42.50	120	52.00	170			48	50	5	9	50
14		0.03			42.50	120			21	21	3	6	24
15	77	0.03	15.00	70			167	111			40	40	111
16		0.03	15.00	80	10.00	170					3	7	14
17		0.03	15.00	80	15.00	70					6	13	16
18		0.03			15.00	90					5	6	10
19	70	0.03	15.00	70			83	83	125	125	38	38	111
20		0.03	15.00	80	5.00	170			15	15	3	3	11
21		0.03	15.00	80	15.00	70			13	13	5	5	16
22		0.03			15.00	90					5	5	11
23	80	0.03	15.00	90			125	125			143	143	125
24		0.03			0.0	200					4	3	8
25	90	0.03	42.50	160			125	125	33	33	143	143	63
26		0.03			2.50	200					5	5	4
27		0.03	10.00	120	10.00	120			14	14	4	6	20
28		0.03			10.00	120			11	11	5	6	17
29		0.03	10.00	120	10.00	120			23	23	4	7	26
30		0.03	10.00	120	10.00	120			17	17	3	6	37
31		0.03	10.00	120	10.00	120			23	23	4	12	42
32		0.03			10.00	120			11	11	5	8	15
33		0.03	10.00	120	10.00	120			16	16	3	5	20
34		0.03	10.00	120	10.00	120			20	20	5	10	38
35		0.03			10.00	120			13	13	5	6	18
36	87	24.75	20.00	300			71	50	50	50	71	71	91
37		45.00			0.00	400			12	13	11	10	12
38	90	45.00	15.00	160			45	45	33	33	56	56	48
39		0.03	12.50	160	0.00	300			14	16	4	12	18
40		0.03	15.00	120	15.00	160			12	13	15	18	17
41		0.03	15.00	120	12.50	160					11	9	11
42		0.03			15.00	120					5	3	6
43	90	45.00	17.50	60			125	125	100	100	143	143	200
44		0.03	30.00	60	0.00	110			13	13	8	5	11
45		0.03	30.00	60	17.50	60			11	11	19	12	15
46		0.03	30.00	60	30.00	60					14	10	10
47		0.03	30.00	60	30.00	60					10	9	8
48		0.03			30.00	60					7	6	5
49	90	24.75	44.50	240			1000	1000	1000	1000	1000	1000	1000
50		22.50	40.00	240	0.00	300					3	6	10
51		0.03	50.00	240	44.50	240	37		32	35	50	7	33
52		0.03	50.00	160	50.00	240			40	40	19	16	36
53		0.03	50.00	160	50.00	240			29	31	17	15	32
54		0.03	50.00	160	50.00	160			14	15	16	10	33
55		0.03	50.00	160	50.00	160			16	16	15	17	27
56		0.03			50.00	160					11	12	13

CARD 3 PROVIDENCE (CONTINUED)

NO	AVG % SMT -XPO	AVG INT PARTITION HEIGHT	STONY ABOVE AVG % APEN	AVG EXT WALL MASS	STONY B/LUM AVG % APEN	AVG EXT WALL MASS	RUN 1 PF	RUN 2 PF	RUN 3 PF	RUN 4 PF	RUN 5 PF	RUN 6 PF	RUN 7 PF
57	85	0.00	22.25	200			40	50	38	38	40	63	63
58		0.00	12.50	160	5.00	240					5	5	14
59		0.00	12.50	160	22.25	200			14	14	13	12	20
60		0.00	12.50	120	12.50	160			11	11	9	13	16
61		0.00	12.50	120	12.50	160					6	10	11
62		0.00			12.50	120					3	6	7
63		0.00	5.00	450									
64	40	0.00	50.00	300	5.00	450	1009	1000			1009		1009
65		45.00	50.00	160	5.00	450	100	25			1009		167
66		74.75	50.00	160	50.00	300	111	100			42		30
67		74.75	50.00	160	50.00	150	100	100			500		250
68		74.75	50.00	160	50.00	160	111	111			333		500
69		74.75	50.00	160	50.00	160	125	125			1000		500
70		74.75	50.00	160	50.00	160	91	91			333		500
71		74.75	50.00	160	50.00	160	100	100			1000		333
72		40.00	50.00	160	50.00	160	125	125			333		200
73		40.00	50.00	120	50.00	150	83	83			500		500
74		40.00	50.00	120	50.00	150	111	111			500		500
75		40.00	50.00	120	50.00	150	125	125			500		500
76		40.00	50.00	120	50.00	140	143	143			500		500
77		40.00	50.00	120	50.00	140	167	167			500		500
78		40.00	50.00	120	50.00	140	167	167			500		333
79		40.00	50.00	120	50.00	140	167	167			500		111
80		0.00	50.00	120	50.00	140	167	83			200		500
81		0.00	50.00	120	50.00	140	67	111			200		500
82		0.00	50.00	120	50.00	140	125	125			200		500
83		0.00	50.00	120	50.00	140	167	167			250		500
84		0.00	50.00	120	50.00	140	167	167			250		500
85		0.00	50.00	120	50.00	140	200	50			250		500
86		0.00	50.00	120	50.00	140	200	93			250		500
87		0.00	50.00	120	50.00	140	45	93			250		200
88		0.00	50.00	120	50.00	140	51	93			200		143
89	90	0.00	22.25	150	0.00	275	125	125	83	83	167	143	111
90		0.00	20.00	110	17.50	110	71	111			24	30	50
91		0.00	29.75	80	2.50	300	71	50	43	43	71	83	77
92		0.00	29.75	80	29.75	00					5	5	4
93	80	0.00	7.50	30	5.00	150	71	71	22	22	77	77	45
94		0.00	7.50	30	7.50	30					2	2	2
95	70	0.00	7.50	30	5.00	150	50	50	1009	1009	50	63	30
96		0.00	7.50	30	7.50	30					3	3	3
97	90	0.00	7.50	30	5.00	150	83	83	26	26	77	77	30
98		0.00	7.50	30	7.50	30					2	3	3
99	80	0.00	7.50	110	5.00	150	1000	800	500	500	1009	1009	1009
100		0.00	7.50	110	7.50	110	29		23	42	5	6	30
101		0.00	7.50	110	7.50	110	29		18	18	7	10	22
102	70	0.00	5.00	110	5.00	150	333	333	1000	1000	1000	1009	1000
103		0.00	5.00	110	5.00	110	23		34	67	4	12	43
104		0.00	5.00	110	5.00	110	26		29	29	6	14	29
105		0.00	5.00	110	5.00	110	77	77	11	11	71	71	29
106	70	0.00	10.00	35	5.00	150					3	3	3
107		0.00	10.00	35	10.00	35	71	50	16	16	59	59	29
108		0.00	10.00	35	5.00	150					2	3	3
109	80	0.00	10.00	35	5.00	150	91	91	26	26	77	77	33
110		0.00	10.00	35	10.00	35					4	2	3
111	67	0.00	10.00	35	10.00	35	83	83	21	21	91	100	30
112		0.00	10.00	35	2.50	150					3	2	3
113		0.00	10.00	35	10.00	35					3	2	2
114	82	0.00	22.50	120	5.00	150	111	111	53	53	125	125	83
115		0.00	25.00	120	5.00	150					2	3	4
116	67	0.00	20.00	120	5.00	150	143	143	31	31	42	43	143
117		0.00	20.00	120	5.00	150			10	10	3	3	14
118	70	0.00	20.00	120	5.00	150	167	167	28	28	111	100	91
119		0.00	20.00	120	5.00	150					4	3	13
120		0.00	20.00	120	29.00	120					3	3	11

CARD 3 PROVIDENCE (CONTINUED)

IN	AVG 1	AVG 2	STORY	ARRIVE	STORY	DEPART	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	RUN 6	RUN 7
1	2	3	4	5	6	7	8	9	10	11	12	13	14
13	40	10.00	15.00	120			56	56	111	111	143		1000
14		22.50	15.00	120	15.00	200			22	30	7		83
141		22.50	15.00	120	15.00	120			14	17	4		4A
142		0.00	12.50	170			1009	1009	100	333	167		111
143		24.75	12.50	170	12.50	145	1009	1000	250	500	500		167
144		24.75	12.50	170	12.50	170	1000	500	45	100	143		143
145	72	0.00	15.00	130			36	26	29	31			63
146		0.00	15.00	100	0.00	170	167	91	91	143	111	143	
147		0.00	15.00	100	15.00	130		10	10	4	5	9	
148	70	0.00	15.00	130			167	167	77	77	200	167	125
149		0.00	15.00	100	0.00	170				3	6	8	
150		0.00	15.00	100	15.00	130				4	3	5	
151	70	0.00	15.00	130			167	167	24	24	200	77	77
152		0.00	15.00	100	0.00	170		10	10	4	6	10	
153		0.00	15.00	100	15.00	130				3	6	8	
154	67	0.00	15.00	130			143	143	67	57	143	167	111
155		0.00	15.00	10	0.00	170				3	3	7	
156		0.00	15.00	10	15.00	130				3	3	7	
157	20	24.75	15.00	170			71	50	59	59	167	167	100
158		22.50	22.50	170	27.50	170		29	42	31	28	34	
159		0.00			36.00	150		13	13	4	6	12	
160	40	15.00	15.00	130	0.00	130	71	33	45	45	63	77	53
161		0.00	20.00	130	15.00	130				13	6	10	
162		0.00	20.00	130	20.00	130				5	6	7	
163	67	15.00	22.25	120			200	200	250	250	250	250	333
164		0.00	15.00	120	2.50	170			12	12	10	3	11
165		0.00	15.00	120	22.25	140			19	19	16	13	21
166		0.00	15.00	120	15.00	170			12	12	13	12	14
167		0.00	15.00	120	15.00	140				6	10	5	
168	37	0.00	20.00	200	0.00	300	77	77	143	143	63	200	1000
169		0.00	20.00	200	20.00	200			30	30	15	8	1A
170	00	0.00	10.00	160	0.00	200			36	36	9	12	63
171		20.00	10.00	160	3.00	270	167	167	1000	1000	167		1009
172		20.00	10.00	160	30.00	170	37	25	29	29	25		40
173	40	20.00	25.00	150			1000	167	200	200	333	67	250
174		0.00	25.00	150	2.50	270	25	25	22	20	4	11	31
175		0.00	25.00	150	25.00	170	36	23	23	31	26	20	
176		0.00	25.00	150	25.00	170			12	12	16	16	15
177	50	20.00	30.00	150	0.00	200			20	20	167	50	100
178		0.00	30.00	150	30.00	170	33		17	20	18	5	32
179		0.00	30.00	150	30.00	170	43	43	25	25	63	19	40
180	70	22.50	17.50	160			91		10	10	11	14	18
181		0.00	17.50	160	5.00	200			500	500	143		1009
182		0.00	17.50	160	17.50	160			111	111	9		250
183		0.00	17.50	160	17.50	160			34	34	15		91
184	70	40.00	40.00	160			143	1000			7		12
185		0.00	40.00	160	7.50	300	43				1009		1009
186		0.00	40.00	160	30.00	160	22	50			23		23
187		0.00	40.00	160	30.00	160					24		63
188	67	0.00								3			5
189		0.00									3		4
190		0.00											4
191	70	0.00	40.00	120			77	50			250		43
192		0.00	30.00	120	30.00	170					7		4
193		0.00	30.00	120	30.00	170					13		3
194	90	0.00	22.25	170			50	50			59	59	500
195		0.00			0.00	270					2	2	7
196		0.00					21		23	23	4		24
197	70	0.00	12.50	70	5.00	200	111	111	59	59	533		77
198		0.00	15.00	70	12.50	200	48	48	48	56	29		43
199		0.00	15.00	70	15.00	70			13	14	16		21
200		0.00							11	13			10
201	77	22.50	7.50	190			500	500	111	111	500		1000
202		22.50	7.50	120	7.50	170	125	125	23	30	16		83
203		40.00			7.50	160	28		14	17	14		49

IV. Detroit, Michigan Data

CARD 1 DETROIT

045	STANDARD FACILITY	PART	STORY	PV	USE	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	RUN 6	RUN 7
NJ	LOCATION NUMBER	NO.	NO.	CODE	CODE	COUNT	TOTAL	COUNT	TOTAL	COUNT	TOTAL	COUNT
207	43310J01	151	1	0	32	.003	.019	.004	.003	.010	.010	.007
208	43310U01	151	1	1		.	.	.040	.054	.044	.150	.121
209	43320U10	1210	1	0	35	.004	.009	.009	.001	.001	.008	.
210	43320U10	1210	1	1		.	.	.003	.050	.015	.123	.
211	43320U10	1210	1	2		.	.	.012	.023	.018	.082	.
212	43320U20	190	1	0	36	.004	.007	.006	.010	.011	.005	.005
213	43320U20	190	1	1		.	.	.	.	.	.343	.300
214	43320U20	190	1	2		.	.	.	.	.	.269	.299
215	43320U20	190	2	0	36	.005	.006	.006	.012	.013	.006	.007
216	43320U20	190	2	1		.	.	.	.	.	.314	.153
217	43320U20	190	2	2		.	.	.	.	.	.284	.254
218	43320U35	1024	1	0	57	.001	.001	.001	.002	.005	.005	.000
219	43320U35	1024	1	1		.000	.044	.	.001	.029	.018	.134
220	43320U35	1024	1	2		.001	.027	.	.004	.045	.030	.023
221	43320U35	1024	1	3		.	.	.	.008	.091	.057	.052
222	43320U35	1024	1	4		.006	.045	.	.020	.080	.065	.047
223	43320U35	1024	1	5		.	.	.051	.099	.087	.053	.045
224	43320U35	1024	1	6		.	.	.	.	.	.122	.092
225	43320U35	1024	2	0	57	.022	.022	.022	.	.	.018	.018
226	43320U35	1024	2	1		.	.	.	.	.	.300	.274
227	43320U35	1024	2	2		.	.	.	.	.	.284	.142
228	43320U35	1024	1	0	32	.022	.022	.022	.038	.038	.038	.019
229	43320U35	1024	1	1		.	.	.	.	.	.367	.387
230	43320U57	404	1	0	35	.001	.002	.006	.	.	.006	.
231	43320U57	404	1	1		.007	.028	.	.	.	.076	.
232	43320U57	404	1	2		.	.	.	.	.	.099	.
233	43320U57	404	1	0	35	.007	.007	.007	.002	.002	.008	.009
234	43320U57	404	1	1		.	.	.	.	.	.155	.183
235	43320U57	404	1	2		.	.	.	.	.	.239	.275
236	43320U44	206	0	0	32	.009	.011	.009	.010	.011	.015	.
237	43320U44	206	0	1		.	.	.	.	.	.297	.
238	43320U26	0042	1	0	36	.000	.000	.001	.	.	.000	.000
239	43320U26	0042	1	1	36	.000	.019	.019	.	.	.049	.041
240	43320U26	0042	1	2		.001	.039	.	.	.	.034	.038
241	43320U26	0042	1	3		.	.	.	.	.	.083	.047
242	43320U36	0224	1	0	36	.001	.001	.001	.000	.000	.004	.004
243	43320U36	0224	1	1	36	.007	.020	.038	.000	.022	.111	.238
244	43320U36	0224	1	2		.	.	.011	.043	.029	.150	.197
245	43320U36	0224	1	3		.	.	.	.	.	.320	.194
246	43320U40	3447	1	0	36	.006	.006	.006	.026	.028	.006	.
247	43320U40	3447	1	1		.	.	.	.	.	.218	.
248	43320U40	3447	1	2		.019	.036	.	.	.	.070	.
249	43320U40	3447	1	3		.	.	.	.	.	.083	.
250	43320U40	3447	1	4		.	.	.	.	.	.183	.
251	43320U40	3454	1	0	43	.001	.001	.001	.002	.002	.000	.000
252	43320U40	3454	1	1		.001	.043	.	.002	.070	.092	.098
253	43320U40	3454	1	2		.002	.046	.	.007	.041	.036	.024
254	43320U40	3454	1	3		.007	.039	.	.025	.053	.033	.044
255	43320U40	3454	1	4		.	.	.	.	.	.051	.045
256	43320U51	00	1	0	43	.000	.000	.039	.000	.000	.000	.000
257	43320U51	00	1	1		.000	.031	.	.000	.037	.032	.034
258	43320U51	00	1	2	43	.008	.016	.009	.000	.009	.006	.003
259	43320U51	00	1	3	43	.008	.009	.005	.000	.005	.003	.003
260	43320U51	00	1	4	43	.000	.007	.006	.000	.007	.002	.006
261	43320U51	00	1	5	43	.000	.006	.005	.000	.006	.004	.005
262	43320U51	00	1	6	43	.001	.009	.009	.000	.004	.002	.004
263	43320U51	00	1	7	43	.006	.010	.010	.003	.005	.005	.009
264	43320U51	00	1	8		.	.	.027	.033	.033	.080	.082
265	43320U62	0234	2	0	36	.003	.011	.006	.	.	.011	.
266	43320U62	0234	2	1		.005	.040	.	.	.	.071	.
267	43320U62	0234	2	2		.	.	.	.	.	.111	.
268	43320U62	0234	2	3		.	.	.	.	.	.108	.
269	43320U62	0234	2	4		.	.	.	.	.	.144	.
270	43320U62	0234	2	5		.	.	.	.	.	.240	.
271	43320100	4000	1	0		.	.	.017	.017	.017	.014	.014
272	43320100	4000	1	1		.	.	.	.	.	.494	.338
273	43320100	4000	1	2		.	.	.	.	.	.295	.295
274	43320112	7136	1	0	32	.006	.006	.006	.021	.021	.005	.018
275	43320112	7136	1	1		.	.	.	.	.	.159	.183
276	43320147	7096	1	0	36	.019	.019	.019	.054	.054	.020	.017
277	43320147	7096	1	1		.	.	.077	.091	.091	.225	.184
278	43320147	7096	1	2		.	.	.	.	.	.077	.076
279	43320147	7096	1	3		.	.	.	.	.	.242	.172
280	43320155	4020	0	0		.	.	.001	.001	.001	.008	.005

B-15

LINE	STANDARD	FACILITY	UNIT	STORY	NO.	USE	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7
NO.	LOCATION	NUMBER	NO.	NO.	CODE	CODE	CONF	TOTAL	TOTAL	CONF	TOTAL	TOTAL	TOTAL
							CONF	HF	CONF	HF	CONF	HF	CONF
001	43300150	0000	0	1			.	.	.002	.058	.058	.162	.080
002	43300150	0000	0	2			.000	.038	.004	.042	.042	.054	.041
003	43300150	0000	0	3			.001	.026	.008	.042	.042	.052	.037
004	43300150	0000	0	4			.	.	.015	.057	.057	.132	.057
005	43300150	0000	0	5			.	.	.	.	.	.158	.118
006	43300150	0000	0	6			.	.	.	.	.	.138	.103
007	43300150	0000	0	7			.	.	.	.	.	.022	.155
008	43300150	0000	1	8	51	20	.006	.006	.005	.010	.010	.008	.008
009	43300150	0000	1	1			.	.	.035	.055	.048	.175	.095
010	43300150	0000	2	0	51	20	.	.	.005	.009	.010	.019	.008
011	43300150	0000	2	1			.	.	.033	.062	.040	.157	.059
012	43300150	0000	1	0	57	31	.019	.026	.003	.	.	.019	.020
013	43300150	0000	1	1			.	.	.	.	.	.158	.078
014	43300150	0000	1	0	37	53	.009	.009	.009	.006	.006	.009	.003
015	43300150	0000	1	1			.	.	.026	.037	.032	.132	.
016	43300150	0000	1	0	36	61	.000	.000	.001	.000	.000	.000	.000
017	43300150	0000	1	1			.000	.040	.003	.033	.023	.161	.099
018	43300150	0000	1	0			.	.	.009	.030	.011	.105	.081
019	43300150	0000	1	3			.	.	.001	.036	.014	.040	.049
020	43300150	0000	1	4			.	.	.010	.034	.024	.116	.121
021	43300150	0000	2	0	57	72	.000	.010	.001	.003	.004	.006	.005
022	43300150	0000	2	1			.000	.020	.003	.006	.006	.145	.103
023	43300150	0000	2	0			.001	.042	.009	.049	.049	.152	.044
024	43300150	0000	2	3			.	.	.029	.087	.075	.102	.063
025	43300150	0000	2	4			.	.	.	.	.	.125	.087
026	43300150	0000	1	0	36	11	.002	.021	.009	.	.	.010	.009
027	43300150	0000	1	1			.	.	.	.	.	.041	.170
028	43300150	0000	1	0			.	.	.	.	.	.104	.074
029	43300150	0000	1	3			.	.	.	.	.	.171	.128
030	43300150	0000	2	0	36	11	.001	.016	.005	.001	.009	.005	.008
031	43300150	0000	2	1			.	.	.002	.031	.031	.194	.058
032	43300150	0000	2	0			.	.	.009	.023	.023	.061	.020
033	43300150	0000	2	3			.	.	.047	.055	.055	.118	.072
034	43300150	0000	3	0	36	11	.002	.021	.009	.002	.044	.044	.004
035	43300150	0000	3	1			.	.	.	.	.	.008	.195
036	43300150	0000	3	2			.	.	.	.	.	.079	.130
037	43300150	0000	3	3			.	.	.	.	.	.140	.163
038	43300150	0000	1	0	61	31	.006	.007	.005	.021	.021	.006	.015
039	43300150	0000	1	1			.	.	.009	.078	.078	.144	.049
040	43300150	0000	1	0	35	40	.005	.020	.005	.	.	.023	.008
041	43300150	0000	1	1			.	.	.	.	.	.005	.442
042	43300150	0000	1	0			.	.	.	.	.	.033	.264
043	43300150	0000	1	0	57	53	.006	.006	.006	.	.	.006	.006
044	43300150	0000	1	1			.	.	.	.	.	.173	.132
045	43300150	0000	1	0			.	.	.	.	.	.009	.076
046	43300150	0000	1	3			.	.	.	.	.	.185	.170
047	43300150	0000	1	0	36	51	.001	.002	.005	.003	.007	.007	.004
048	43300150	0000	1	1			.002	.020	.007	.045	.025	.049	.
049	43300150	0000	1	0			.012	.020	.020	.043	.043	.015	.
050	43300150	0000	1	3			.	.	.	.	.	.000	.110
051	43300150	0000	1	0	35	53	.012	.012	.020	.020	.025	.020	.011
052	43300150	0000	1	1			.	.	.	.	.	.156	.164
053	43300150	0000	1	0	31	53	.008	.030	.008	.032	.033	.007	.007
054	43300150	0000	1	1			.	.	.	.	.	.133	.167
055	43300150	0000	1	0	57	44	.009	.032	.024	.019	.019	.035	.020
056	43300150	0000	1	1			.	.	.019	.019	.019	.021	.005
057	43300150	0000	1	0	35	20	.004	.020	.020	.	.	.010	.013
058	43300150	0000	1	1			.	.	.	.	.	.039	.275
059	43300150	0000	1	0	32	06	.022	.022	.022	.033	.033	.017	.017
060	43300150	0000	1	1			.	.	.	.	.	.027	.032
061	43300150	0000	1	0	61	52	.008	.008	.012	.	.	.008	.005
062	43300150	0000	1	1			.	.	.	.	.	.005	.005
063	43300150	0000	1	0			.	.	.	.	.	.005	.005
064	43300150	0000	4	0	43	11	.	.	.001	.001	.001	.001	.001
065	43300150	0000	4	1	43	11	.	.	.005	.001	.004	.004	.001
066	43300150	0000	4	0	43	11	.	.	.005	.003	.015	.015	.008
067	43300150	0000	4	3	43	11	.	.	.005	.008	.018	.018	.004
068	43300150	0000	4	4	43	11	.	.	.005	.008	.046	.046	.008
069	43300150	0000	4	5	43	11	.	.	.003	.008	.024	.024	.008
070	43300150	0000	4	6	43	11	.	.	.003	.008	.020	.020	.008
071	43300150	0000	4	7	43	11	.	.	.009	.009	.016	.016	.008
072	43300150	0000	4	8	43	11	.	.	.009	.009	.011	.011	.008
073	43300150	0000	4	9	43	11	.	.	.009	.009	.010	.010	.008
074	43300150	0000	4	10	43	11	.	.	.009	.009	.010	.010	.008
075	43300150	0000	4	11	43	11	.	.	.005	.008	.009	.009	.005
076	43300150	0000	4	12	43	11	.	.	.005	.008	.009	.009	.005
077	43300150	0000	4	13	43	11	.	.	.005	.008	.009	.009	.005
078	43300150	0000	4	14	43	11	.	.	.005	.008	.009	.009	.005
079	43300150	0000	4	15	43	11	.	.	.005	.008	.010	.010	.005
080	43300150	0000	4	16	43	11	.	.	.005	.008	.014	.014	.005
081	43300150	0000	4	17	43	11	.	.	.005	.014	.025	.025	.005
082	43300150	0000	4	18	43	11	.	.	.020	.004	.004	.004	.005

CARD 2 DETROIT

U35 NJ	S P A C E S				AVG APER SILL HT.	MIN. APER SILL HT.	AVG % APER	MAX. % APER	W/ OF NFT	TOTAL OVER- WEIGHT	FLOOR HT.	CEILING HEIGHT	AVG EAT MALL MASS
	PF-40	PF 100	PF-40	PF-100									
207	914	914	231	231	1.50	0	15.00	20	-9	170	0	110	80
208			0	0	0.00	0	30.00	40	3	60	110	0	60
209	24	24	30	30	0.00	0	0.00	0	-7	80	0	60	773
210			0	0	0.00	0	14.75	59	3	20	60	10	113
211			198		0.00	0	5.00	20	15	10	10	10	113
212	26	26	277	277	0	0	0.00	0	-9	150	0	70	150
213			0	0	0.00	0	25.00	30	3	90	70	70	100
214			0	0	0.00	0	25.00	30	18	10	70	70	100
215	120	120	131	131	0	0	0.00	0	-9	150	0	70	150
216			0	0	0.00	0	10.00	20	3	90	70	70	140
217			0	0	0.00	0	10.00	20	18	10	70	70	103
218	86	86	116	116	0.00	0	2.00	10	-9	340	0	50	393
219			27	0	0.00	0	32.00	69	3	290	50	50	150
220			393	3	0.00	0	20.00	40	23	240	50	50	110
221			0	0	0.00	0	40.00	40	36	190	50	50	110
222			0	0	0.00	0	40.00	40	49	140	50	50	110
223			0	0	0.00	0	40.00	40	62	90	50	50	110
224			0	0	0.00	0	35.00	40	75	40	50	50	110
225	42	0	0	0	0.00	0	0.00	0	-10	70	0	50	173
226			0	0	0.00	0	27.00	59	3	20	50	10	120
227			0	0	0.00	0	15.00	30	16	10	10	10	120
228	96	0	35	0	0.00	0	0.00	0	-7	90	0	80	60
229			0	0	0.00	0	32.00	69	3	10	80	0	80
230	65	65	97	97	1.50	0	10.00	10	-7	220	0	80	170
231			0	0	0.00	0	22.00	40	3	140	80	80	95
232			0	0	0.00	0	17.00	40	15	50	80	80	93
233	10	10	44	44	0	0	0.00	0	-6	140	0	60	40
234			0	0	0.00	0	10.00	40	3	80	60	60	60
235			0	0	0.00	0	7.00	30	15	20	60	60	43
236	11	11	14	14	0	0	0.00	0	-10	110	0	60	150
237			0	0	0.00	0	47.00	59	3	50	60	0	100
238	21	21	29	29	0	0	0.00	0	-7	490	0	120	990
239	162	0	403	309	0.00	0	5.00	20	3	370	120	120	110
240			0	0	0.00	0	20.00	20	17	250	120	120	110
241			0	0	0.00	0	20.00	20	29	130	120	120	110
242	72	72	55	55	0	0	0.00	0	-7	290	0	100	110
243	0	0	94	0	0.00	0	27.00	50	3	190	120	70	110
244			0	0	0.00	0	27.00	40	16	120	70	70	110
245			0	0	0.00	0	27.00	40	29	50	70	70	110
246	13	13	26	0	0.00	0	0.00	0	-6	60	0	10	140
247			0	0	0.00	0	7.00	20	3	90	10	10	140
248			0	0	0.00	0	7.00	20	15	40	10	10	130
249			0	0	0.00	0	7.00	20	26	30	10	10	130
250			0	0	0.00	0	7.00	20	37	20	10	10	130
251	102	102	64	64	0	0	0.00	0	-6	300	0	60	150
252			0	0	0.00	0	17.00	30	3	240	60	50	110
253			327	0	0.00	0	22.00	30	16	190	50	50	80
254			0	0	0.00	0	22.00	30	26	140	50	50	80
255			0	0	0.00	0	22.00	30	36	90	50	50	80
256	0	0	148	168	.75	0	2.00	10	-13	890	0	100	790
257			0	0	0.00	0	24.75	69	3	750	100	100	113
258	360	360	600	14	0.00	0	24.75	69	13	650	100	100	105
259	432	432	600	170	0.00	0	24.75	69	26	550	100	100	105
260	432	432	600	196	0.00	0	24.75	69	39	450	100	100	105
261	432	432	600	315	0.00	0	24.75	69	52	350	100	100	105
262	408	408	600	350	0.00	0	24.75	69	65	250	100	100	105
263	378	378	600	277	0.00	0	24.75	69	78	150	100	100	105
264			0	0	0.00	0	24.75	69	91	50	100	100	105
265	42	42	35	12	2.25	0	15.00	30	-11	60	0	10	300
266			0	0	0.00	0	20.00	40	3	50	10	10	235
267			0	0	0.00	0	25.00	40	19	40	10	10	150
268			0	0	0.00	0	25.00	40	33	30	10	10	140
269			0	0	0.00	0	25.00	40	47	20	10	10	140
270			0	0	0.00	0	25.00	40	51	10	10	10	140
271			32	0	0.00	0	0.00	0	-5	120	0	100	990
272			0	0	0.00	0	20.00	30	3	20	100	10	70
273			0	0	0.00	0	20.00	30	23	10	10	10	70
274	91	91	66	0	0.00	0	0.00	0	-7	120	0	100	200
275			0	0	0.00	0	17.00	40	3	20	100	0	150
276	47	0	28	0	0.00	0	0.00	0	-5	80	0	20	140
277			0	0	0.00	0	37.25	89	3	60	20	20	110
278			0	0	0.00	0	30.00	30	15	40	20	20	110
279			0	0	0.00	0	30.00	30	25	20	20	20	110
280			24	24	0	0	0.00	0	-7	380	0	50	790
281			0	0	0.00	0	45.00	50	3	330	50	50	110
282			0	0	0.00	0	45.00	50	13	280	50	50	110
283			0	0	0.00	0	45.00	50	23	230	50	50	110
284			0	0	0.00	0	45.00	50	33	180	50	50	110
285			0	0	0.00	0	45.00	50	43	130	50	50	110
286			0	0	0.00	0	45.00	50	53	80	50	50	110
287			0	0	0.00	0	45.00	50	63	30	50	50	110

CARD 2 DETROIT (CONTINUED)

UJY	S F A C T S				AVG	MIN.	AVG	MAX.	HT	TOTAL	AVG		
4J	KUN 2				APER	APER	%	%	OF	OVER-	FLOOR	CEILING	EXT
	PF-40	PF	10-1	PF-40	PF-100	SILL	SILL	APFM	APFM	NET	WT.	WT.	MASS
230	13	11		56	56	0	0	0.00	0	-4	150	0	70
234				0	0	0.00	0	29.75	64	3	80	70	0
250	10	10		18	18	0	0	0.00	0	-4	150	0	70
291				0	0	0.00	0	34.70	64	3	80	70	0
292	75	75		121	121	1.50	0	10.00	20	-6	90	0	60
293				16	0	0.00	0	15.00	30	3	20	60	0
294	24	24		17	17	0	0	0.00	0	-7	130	0	70
295				0	0	0.00	0	22.75	64	3	80	70	0
296	210	210		347	347	0	0	0.00	0	-7	850	0	400
297				0	0	0.00	0	32.75	59	3	650	200	400
298				105	0	0.00	0	34.70	59	18	450	200	400
299				56	0	0.00	0	34.70	59	29	250	200	400
300				0	0	0.00	0	34.70	59	40	50	200	400
301	63	63		96	96	.75	0	10.00	20	-6	390	0	70
302				0	0	0.00	0	17.70	40	3	320	70	80
303				114	0	0.00	0	17.70	40	15	240	80	80
304				0	0	0.00	0	15.00	30	24	160	80	80
305				0	0	0.00	0	15.00	30	35	90	80	80
306	54	54		60	60	1.50	0	20.00	20	-6	220	0	60
307				0	0	0.00	0	30.00	30	3	160	60	60
308				0	0	0.00	0	30.00	30	12	100	60	60
309				0	0	0.00	0	30.00	30	21	40	60	60
310	35	35		42	42	1.50	0	10.00	20	-6	220	0	60
311				0	0	0.00	0	15.00	30	3	160	60	60
312				0	0	0.00	0	15.00	30	12	100	60	60
313				0	0	0.00	0	15.00	30	21	40	60	60
314	24	24		31	0	3.00	3	20.00	20	-6	220	0	60
315				0	0	0.00	0	30.00	30	3	160	30	60
316				0	0	0.00	0	30.00	30	12	100	60	60
317				0	0	0.00	0	30.00	30	21	40	60	60
318	1015	1015		198	0	0.00	0	0.00	0	-9	140	0	60
319				0	0	0.00	0	27.70	40	3	50	60	0
320	34	34		47	47	1.50	0	17.70	40	-5	140	0	120
321				0	0	0.00	0	42.75	19	3	20	120	10
322				0	0	0.00	0	30.00	30	18	10	10	10
323	481	481		622	622	0	0	0.00	0	-9	150	0	60
324				0	0	0.00	0	44.75	79	3	90	60	30
325				0	0	0.00	0	22.70	50	27	80	30	30
326				0	0	0.00	0	12.70	20	39	30	30	30
327	170	170		105	105	3.00	3	5.00	10	-6	260	0	70
328				301	0	0.00	0	20.00	20	3	190	70	70
329				0	0	0.00	0	20.00	20	13	120	70	70
330				0	0	0.00	0	20.00	20	23	50	70	70
331	124	0		149	0	0.00	0	0.00	0	-7	110	0	40
332				0	0	0.00	0	37.70	79	3	90	40	40
333				0	0	0.00	0	15.00	30	18	40	40	40
334	19	19		31	0	0.00	0	0.00	0	-5	100	0	50
335				0	0	0.00	0	29.75	69	3	50	50	0
336	344	0		304	0	.75	0	7.70	10	-7	80	0	70
337				0	0	0.00	0	20.00	20	3	10	70	0
338	52	0		0	0	0.00	0	5.70	20	-7	160	0	150
339				0	0	0.00	0	15.00	40	3	10	150	0
340	16	0		11	0	0.00	0	0.00	0	-4	50	0	70
341				0	0	0.00	0	39.70	79	3	11	70	0
342	40	0		71	71	0	0	0.00	0	-7	140	0	120
343				0	0	0.00	0	17.70	40	3	20	120	0
344	3092	3092		240	240	0	0	0.00	0	-10	999	0	70
345	306	306		0	0	0.00	0	12.70	30	3	999	70	60
346	371	367		246	0	0.00	0	12.70	30	33	950	60	60
347	488	423		0	0	0.00	0	12.70	30	44	890	60	60
348	618	618		177	0	0.00	0	12.70	30	55	830	60	60
349	325	271		202	0	0.00	0	22.70	30	66	770	60	60
350	433	404		241	0	0.00	0	22.70	30	77	710	60	60
351	433	404		304	0	0.00	0	22.70	30	88	650	60	60
352	433	321		326	0	0.00	0	22.70	30	99	590	60	60
353	433	321		269	0	0.00	0	22.70	30	110	530	60	60
354	433	346		303	0	0.00	0	22.70	30	121	470	60	60
355	468	361		339	0	0.00	0	22.70	30	132	410	60	60
356	468	381		370	0	0.00	0	22.70	30	143	350	60	60
357	468	468		401	0	0.00	0	22.70	30	154	290	60	60
358	468	335		413	0	0.00	0	22.70	30	165	230	60	60
359	335	335		413	0	0.00	0	22.70	30	176	170	60	60
360	335	405		202	0	0.00	0	22.70	30	187	110	60	60
361	307	0		0	0	0.00	0	22.70	30	198	50	60	60

CARD 3 DETROIT

DIS	AVG %	AVG INT	STORY ABOVE		STORY BELOW		RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	RUN 6	RUN 7
NO	WMT	PARTITION	AVG %	AVG EXT	AVG %	AVG EXT	PF	PF	PF	PF	PF	PF	PF
NO	WMT	WEIGHT	APER	WALL MASS	APER	WALL MASS							
207	67	0.00	30.00	68			53	111	100	100	83	143	200
208		0.00			15.00	80			19	20	7	8	20
209	90	0.00	14.75	113			111	111	1000	1000	125		1009
210		0.00	5.00	113	0.00	773			20	67	8		14
211		0.00			14.75	113			43	56	12		53
212	90	22.50	25.00	100			143	167	91	91	200	200	125
213		0.00	25.00	100	0.00	150					3	3	9
214		0.00			25.00	100					4	3	3
215	90	5.00	10.00	140			167	167	77	77	167	143	111
216		0.00	10.00	103	0.00	150					3	7	10
217		0.00			10.00	140					4	4	4
218	90	10.00	32.00	150			1000	1000	200	200	1009	1009	1009
219		0.00	20.00	110	2.50	385	23		34	56	7	7	26
220		10.00	40.00	110	32.00	150	37		22	33	43	45	67
221		10.00	40.00	110	20.00	110			11	18	19	10	27
222		10.00	40.00	110	40.00	110	22		13	15	21	20	23
223		10.00	35.00	110	40.00	110			10	11	19	22	19
224		10.00			40.00	110					8	11	10
225	90	5.00	27.25	120			45	45			56	56	18
226		0.00	15.00	126	0.00	173					3	4	5
227		0.00			27.25	140					4	7	9
228	90	0.00	32.00	80			45	45	26	26	53	53	34
229		0.00			0.00	60					3	3	4
230	77	42.50	22.50	95			500	167			250		250
231		22.50	17.50	93	10.00	170	36				13		16
232		20.00			22.50	95					10		5
233	90	0.00	10.00	60			143	143	500	500	125	111	1000
234		0.00	7.50	43	0.00	40					6	5	7
235		0.00			10.00	60					4	4	4
236	82	10.00	47.25	100			91	111	91	91	67		143
237		0.00			0.00	150					2		8
238	90	22.50	5.00	110			1009	1009			1009	1009	1009
239		0.00	20.00	110	0.00	990	53	53			20	24	125
240		0.00	20.00	110	5.00	110	26				29	26	17
241		0.00			20.00	110					12	21	4
242	90	22.50	27.50	110			1000	1000	1009	1009	250	250	1009
243		22.50	27.50	110	0.00	110	50	25	45	46	9	4	50
244		0.00	27.50	110	27.50	110			23	34	7	5	26
245		0.00			27.50	110					3	5	14
246	90	17.50	7.50	140			167	167	36	36	167		50
247		0.00	7.50	138	0.00	140					5		20
248		0.00	7.50	135	7.50	140	26				14		16
249		0.00	7.50	135	7.50	138					12		10
250		0.00			7.50	135					5		5
251	90	22.50	17.50	110			1000	1000	500	500	1009	1009	1009
252		0.00	22.50	80	0.00	150	23		14	14	11	10	17
253		0.00	22.50	80	17.50	110	21		24	24	28	42	48
254		0.00	22.50	80	22.50	80	26		19	19	30	23	28
255		0.00			22.50	80					20	22	10
256	90	0.00	24.75	113			1009	26	1009	1009	1009	1009	1009
257		0.00	24.75	105	2.50	790	32		27	31	29	18	17
258		20.00	24.75	105	24.75	113	65	111	111	167	333	125	111
259		20.00	24.75	105	24.75	105	111	167	167	333	333	167	125
260		20.00	24.75	105	24.75	105	143	167	143	200	500	167	125
261		20.00	24.75	105	24.75	105	167	167	167	230	500	200	143
262		20.00	24.75	105	24.75	105	111	111	250	500	250	200	167
263		20.00	24.75	105	24.75	105	100	100	200	200	125	111	125
264		20.00			24.75	105			30	30	13	12	29
265	80	0.00	20.00	235			91	167			91		91
266		0.00	25.00	150	15.00	338	25				14		21
267		0.00	25.00	148	20.00	235					9		16
268		0.00	25.00	148	25.00	150					9		14
269		0.00	25.00	148	25.00	148					7		9
270		0.00			25.00	148					4		5
271	50	22.50	20.00	70					59	59	71	71	63
272		0.00	20.00	70	0.00	990					2	3	7
273		0.00			20.00	70					3	3	4
274	65	30.00	17.50	150			167	167	48	48	200	56	56
275		0.00			3.00	200					6	10	10
276	90	22.50	37.25	110			53	53	19	19	50	59	42
277		0.00	30.00	110	0.00	140			11	11	5	5	20
278		0.00	30.00	110	37.25	110					13	13	29
279		0.00			30.00	110					4	6	14
280	90	0.00	45.00	110					1000	1000	125	200	1009
281		0.00	45.00	110	0.00	798			17	17	6	13	24
282		0.00	45.00	110	45.00	110	26		24	24	19	24	31
283		0.00	45.00	110	45.00	110	28		24	24	19	27	31
284		0.00	45.00	110	45.00	110			18	18	8	18	24
285		0.00	45.00	110	45.00	110					6	8	15
286		0.00	45.00	110	45.00	110					7	10	13
287		0.00			45.00	110					5	4	7

CARD 3 DETROIT (CONTINUED)

UTS (J)	AVG 2 INFE -LPU	AVG 1-1 PARTITION MELU-1	STONY ABOVE AVG 2 APEN	AVG FRY WALL MASS	STONY AVG 2 APEN	H-LUM AVG EXI WALL MASS	RUN 1 PF	RUN 2 PF	RUN 3 PF	RUN 4 PF	RUN 5 PF	RUN 6 PF	RUN 7 PF
284	90	45.00	24.75	75	0.00	120	167	167	100	100	167	167	111
285		0.00							18	25	6	11	23
290	90	22.50	14.50	70	0.00	120		167	100	100	167	200	125
291		0.00							16	25	6	17	23
292	75	22.50	15.00	138	10.00	193	38	333			56	50	100
293		22.50									6	13	31
294	90	0.00	22.25	145	0.00	990	111	111	167	167	111		333
295		0.00							27	31	8		38
296	90	24.75	12.25	110	0.00	990	1000	1000	1009	1009	1009	1009	1009
297		0.00	54.50	110	0.00	990	21		30	43	6	10	29
298		0.00	54.50	110	32.25	110			33	91	10	16	42
299		0.00	54.50	110	54.50	110			28	71	20	21	42
300		0.00			54.50	110			29	42	8	8	34
301	71	30.00	17.50	93	10.00	228	100	1000	167	167	200	67	1000
302		0.00	17.50	90	17.50	93	38		15	15	7	10	23
303		0.00	15.00	90	17.50	90	24		20	20	7	12	42
304		0.00	15.00	90	17.50	90			11	13	10	16	29
305		0.00			15.00	90					8	11	9
306	60	0.00	30.00	80	0.00	140	48	111			100	111	143
307		0.00	10.00	80	20.00	140					4	6	16
308		0.00	10.00	80	30.00	80					10	14	24
309		0.00			30.00	10					8	8	15
310	75	0.00	15.00	70	10.00	125	63	167	11	111	200	125	143
311		0.00	15.00	70	15.00	70			32	32	5	17	29
312		0.00	15.00	60	15.00	70			43	43	16	50	40
313		0.00			15.00	70			18	18	8	14	22
314	60	0.00	30.00	80	20.00	140	48	111	23	23	250	91	83
315		0.00	30.00	80	30.00	80					5	5	11
316		0.00	30.00	80	30.00	80					13	8	17
317		0.00			33.00	80					7	6	13
318	67	24.75	27.50	180	0.00	203	143	167	48	48	167	67	67
319		0.00							13	13	7		14
320	80	40.00	42.25	140	17.50	160	50	167			43	30	125
321		0.00	30.00	140	42.25	140					3	2	6
322		0.00									4	4	4
323	90	0.00	44.75	70	125	125	125	125			167	167	167
324		0.00	22.50	70		70					8	8	18
325		0.00	12.50	70	44.75	70					11	12	19
326		0.00			22.50	70					5	6	7
327	67	20.00	20.00	110	500	167	500	167	143	143	250		167
328		0.00	20.00	110	50	140	38		22	38	20		50
329		0.00	20.00	110	20.00	110	38		23	23	67		11
330		0.00			20.00	110					11		9
331	90	0.00	39.50	130	83	50	83	50	40	40	91	91	63
332		0.00	15.00	105	0.00	120					6	5	6
333		0.00			39.50	130					7	7	4
334	90	0.00	29.75	70	125	125	125	125	30	30	143	143	56
335		0.00			0.00	990					8	5	9
336	80	22.50	20.00	70	31	50	31	50	53	53	29	34	56
337		0.00			7.50	120			53	53	3	2	3
338	77	20.00	15.00	78	40	40	40	40			100	77	22
339		0.00			5.00	105					4	4	6
340	90	0.00	39.50	40	45	45	45	45	30	30	59	59	45
341		0.00			0.00	990					2	2	3
342	90	20.00	17.50	115	167	83	167	83			125		200
343		0.00			0.00	805					3		9
344	90	20.00	12.50	93	1000	1000	1000	1000	1000	1000	125		1000
345		0.00	12.50	93	0.00	798			19	19	8		13
346		20.00	12.50	90	167	67	167	67	67	67	17		48
347		20.00	12.50	90	167	56	167	56	56	56	143		19
348		20.00	12.50	90	167	22	167	22	22	22	167		50
349		20.00	12.50	90	333	42	333	42	42	42	125		63
350		20.00	12.50	90	333	50	333	50	50	50	125		71
351		20.00	12.50	90	111	63	111	63	63	63	125		77
352		20.00	12.50	90	111	91	111	91	91	91	125		83
353		20.00	12.50	90	111	100	111	100	100	100	167		87
354		20.00	12.50	90	111	100	111	100	100	100	200		83
355		20.00	12.50	90	167	111	167	111	111	111	200		91
356		20.00	12.50	90	167	111	167	111	111	111	125		91
357		20.00	12.50	90	167	111	167	111	111	111	100		100
358		20.00	12.50	90	167	83	167	83	83	83			100
359		20.00	12.50	90	167	71	167	71	71	71	100		83
360		20.00	12.50	90	167	40	167	40	40	40	48		50
361		20.00			22.50	90	50	11	11	11	12		16

V. New Orleans, Louisiana Data

CARD 1 NEW ORLEANS

US	STANDARD	FACILITY	PAID	STORY	PV	USE	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	RUN 6	RUN 7
NJ	LOCATION	NUMBER	NO.	NO.	CODE	CODE	COUNT	TOTAL	COUNT	TOTAL	COUNT	TOTAL	COUNT
362	5242000V	43	1	1			.000	.002	.002	.322	.358	.000	.010
363	5242000V	35	1	1			.000	.002	.002	.226	.365	.000	.010
364	5242000V	35	1	1			.000	.002	.002	.212	.420	.000	.010
365	52420010	49	1	3	36	45	.001	.018	.006	.007	.006	.006	.013
366	52420010	220	1	1	57	45	.000	.033	.020	.000	.362	.000	.010
367	52420010	220	1	2	57	45	.000	.031	.020	.000	.022	.014	.000
368	52420010	220	1	3	57	45	.000	.030	.020	.000	.016	.013	.000
369	52420010	220	1	4	57	45	.000	.014	.020	.000	.013	.011	.000
370	52420010	220	1	5	57	45	.001	.012	.020	.000	.013	.011	.000
371	52420010	220	1	6						.048	.045	.012	.019
372	52420030	220	1	1	36	43	.002	.040	.020	.000	.099	.110	.002
373	52420030	220	1	2			.009	.037	.020	.000	.091	.084	.006
374	52420030	220	1	3						.086	.100	.026	.034
375	52420030	220	2	1	36	43	.008	.029	.020	.022	.054	.048	.007
376	52420030	220	2	2						.231	.121	.032	.052
377	52420030	220	2	3					.034	.077	.077	.135	.024
378	52420070	222	1	1			.000	.034	.000	.026	.028	.034	.000
379	52420070	222	1	2	57	59	.000	.007	.007	.000	.005	.005	.000
380	52420070	222	1	3	57	59	.000	.012	.012	.000	.003	.003	.000
381	52420070	222	1	4	57	59	.000	.011	.011	.000	.007	.007	.000
382	52420070	222	1	5	57	59	.000	.009	.009	.000	.027	.009	.013
383	52420070	222	1	6	57	59	.001	.024	.024	.001	.022	.022	.010
384	52420070	222	1	7	57	59	.001	.020	.020	.003	.021	.021	.013
385	52420070	222	1	8			.026	.043	.012	.047	.047	.036	.038
386	52420070	222	1	9	57	61	.000	.002	.038	.000	.000	.000	.010
387	52420070	222	1	1			.000	.033	.000	.024	.024	.043	.046
388	52420070	222	1	2	57	61	.002	.017	.017	.006	.022	.022	.010
389	52420070	222	1	3					.036	.043	.048	.042	.063
390	52420075	280	1	3	57	54	.007	.014	.014	.003	.008	.009	.012
391	52420075	295	1	1			.004	.030	.000	.031	.058	.055	.036
392	52420075	295	1	2	36	54	.011	.017	.017	.052	.063	.063	.014
393	52420075	295	1	3			.055	.039	.000	.000	.000	.030	.030
394	52420075	295	1	4					.000	.000	.000	.112	.111
395	52420075	521	1	1			.001	.044	.006	.026	.011	.082	.040
396	52420075	521	1	2	57	54	.004	.022	.022	.016	.025	.019	.014
397	52420075	521	1	3			.016	.039	.000	.046	.067	.053	.010
398	52420075	521	1	4					.000	.000	.000	.010	.029
399	52420075	522	1	1			.001	.034	.001	.027	.027	.141	.030
400	52420075	522	1	2	57	59	.003	.008	.008	.003	.011	.011	.009
401	52420075	522	1	3	57	59	.009	.024	.024	.015	.033	.031	.017
402	52420075	522	1	4					.000	.000	.000	.052	.046
403	52420075	526	1	1			.008	.046	.006	.054	.054	.115	.108
404	52420075	526	1	2	37	59	.013	.024	.024	.015	.025	.025	.027
405	52420075	526	1	3			.042	.030	.000	.025	.034	.034	.031
406	52420075	526	1	4			.035	.344	.000	.038	.048	.046	.043
407	52420075	526	1	5					.000	.071	.071	.052	.065
408	52420075	526	1	6					.000	.108	.111	.112	.121
409	52420075	526	1	7					.000	.214	.197	.248	.258
410	52420077	175	1	2					.000	.059	.000	.000	.043
411	52420077	179	1	3					.000	.066	.000	.000	.046
412	52420077	176	1	4					.000	.103	.000	.000	.031
413	52420077	174	1	5					.000	.083	.000	.002	.029
414	52420077	174	1	6					.000	.147	.000	.024	.040
415	52420080	361	1	0	43	51	.000	.000	.001	.000	.000	.000	.000
416	52420080	361	1	1	43	51	.000	.044	.009	.000	.019	.004	.080
417	52420080	361	1	2	43	51	.000	.012	.009	.000	.003	.003	.007
418	52420080	361	1	3	43	51	.000	.005	.003	.000	.001	.001	.005
419	52420080	361	1	4	43	51	.000	.003	.003	.000	.003	.003	.004
420	52420080	361	1	5	43	51	.000	.001	.002	.000	.003	.003	.005
421	52420080	361	1	6	43	51	.000	.022	.022	.000	.014	.014	.029
422	52420080	361	1	7			.000	.027	.000	.007	.007	.021	.015
423	52420080	361	1	8			.001	.040	.001	.006	.006	.013	.015
424	52420080	361	1	9			.003	.031	.000	.003	.007	.007	.013
425	52420080	361	1	10			.015	.032	.000	.015	.024	.024	.025
426	52420080	361	1	11					.000	.086	.092	.092	.088
427	52420080	365	1	0	57	53	.000	.000	.001	.000	.000	.000	.000
428	52420080	365	1	1					.000	.070	.046	.000	.011
429	52420080	365	1	2	57	53	.000	.009	.006	.000	.006	.010	.000
430	52420080	365	1	3	57	53	.001	.017	.009	.000	.014	.015	.000
431	52420080	365	1	4	57	53	.007	.021	.021	.000	.015	.014	.010
432	52420080	365	1	5					.000	.066	.050	.009	.042
433	52420080	377	1	0	43	51	.000	.000	.001	.000	.000	.000	.000
434	52420080	377	1	1	43	51	.000	.008	.003	.000	.028	.028	.011
435	52420080	377	1	2	43	51	.000	.001	.001	.000	.003	.002	.001
436	52420080	377	1	3	43	51	.000	.001	.001	.000	.009	.003	.001
437	52420080	377	1	4	43	51	.000	.002	.003	.000	.007	.004	.001
438	52420080	377	1	5	43	51	.000	.005	.003	.000	.006	.003	.003
439	52420080	377	1	6	43	51	.000	.005	.003	.000	.005	.003	.002
440	52420080	377	1	7	43	51	.000	.004	.004	.000	.012	.012	.001
441	52420080	377	1	8	43	51	.005	.385	.003	.000	.009	.069	.002

CARD 1 NEW ORLEANS (CONTINUED)

UNIT LOCATION	FACILITY NUMBER	EQUIPMENT NO.	START NO.	PV CODE	USE CODE	RUN 1 TOTAL TIME	RUN 2 TOTAL TIME	RUN 3 TOTAL TIME	RUN 4 TOTAL TIME	RUN 5 TOTAL TIME	RUN 6 TOTAL TIME	RUN 7 TOTAL TIME
442 52420080	377	1	9	43	51	.000	.005	.003	.000	.007	.001	.005
443 52420080	377	1	10	43	51	.000	.004	.004	.000	.005	.001	.005
444 52420080	377	1	11	43	51	.000	.003	.003	.000	.005	.001	.004
445 52420080	377	1	12	43	51	.000	.005	.002	.000	.004	.001	.005
446 52420080	377	1	13	43	51	.000	.004	.004	.000	.004	.001	.005
447 52420080	377	1	14	43	51	.000	.004	.004	.000	.004	.002	.005
448 52420080	377	1	15	43	51	.000	.004	.004	.000	.003	.003	.036
449 52420080	377	1	16	43	51	.001	.007	.006	.000	.003	.003	.007
450 52420080	377	1	17	43	51	.004	.008	.006	.001	.005	.005	.010
451 52420080	377	1	18			.028	.032	.016	.020	.020	.033	.031
452 52420080	385	1	1			.000	.027	.000	.026	.026	.022	.021
453 52420080	385	1	2	57	53	.000	.012	.012	.000	.003	.002	.002
454 52420080	385	1	3	57	53	.000	.012	.012	.000	.004	.004	.001
455 52420080	385	1	4	57	53	.001	.012	.009	.001	.010	.010	.002
456 52420080	385	1	5			.007	.025	.005	.023	.023	.019	.021
457 52420080	385	1	6			.	.	.034	.061	.061	.117	.130
458 52420080	386	1	1			.	.	.	.	.	.067	.062
459 52420080	386	1	2	57	53	.013	.029	.020	.	.	.021	.015
460 52420080	386	1	3			.	.	.	.	.	.047	.031
461 52420080	386	1	4			.	.	.	.	.	.166	.187
462 52420080	393	1	0	43	51	.000	.000	.001	.000	.001	.000	.000
463 52420080	393	1	1			.030	.034	.000	.024	.024	.063	.064
464 52420080	393	1	2	43	51	.000	.005	.005	.000	.006	.002	.003
465 52420080	393	1	3	43	51	.000	.020	.020	.000	.028	.028	.022
466 52420080	393	1	4			.000	.043	.001	.023	.023	.049	.048
467 52420080	393	1	5	43	51	.000	.024	.024	.002	.020	.022	.020
468 52420080	393	1	6	43	51	.001	.020	.020	.006	.020	.016	.015
469 52420080	393	1	7	43	51	.004	.018	.018	.020	.032	.032	.015
470 52420080	393	1	8			.016	.028	.005	.096	.096	.037	.026
471 52420080	393	1	0	43	54	.004	.006	.006	.001	.006	.004	.005
472 52420080	393	1	1			.017	.039	.008	.036	.022	.036	.035
473 52420080	393	1	2			.	.	.015	.028	.024	.080	.081
474 52420080	394	1	1			.	.	.004	.087	.084	.129	.148
475 52420080	394	1	2	43	51	.003	.024	.024	.008	.029	.029	.014
476 52420080	396	1	3	43	51	.006	.018	.018	.013	.025	.025	.018
477 52420080	398	1	4			.012	.043	.021	.034	.034	.027	.026
478 52420080	398	1	5			.	.	.035	.048	.048	.033	.033
479 52420080	398	1	6			.	.	.062	.083	.083	.134	.079
480 52420080	398	1	7			.	.	.	.	.	.175	.175
481 52420080	398	1	8			.	.	.	.	.	.313	.309
482 52420080	407	1	1			.003	.036	.	.	.	.076	.076
483 52420080	407	1	2	36	52	.011	.023	.023	.	.	.034	.032
484 52420080	407	1	3			.	.	.	.	.	.124	.098
485 52420080	417	1	1	57	53	.001	.021	.021	.	.	.076	.055
486 52420080	417	1	2	57	53	.002	.006	.006	.	.	.010	.007
487 52420080	417	1	3	57	53	.005	.009	.009	.	.	.011	.013
488 52420080	417	1	4	57	53	.013	.017	.017	.	.	.020	.020
489 52420080	417	1	5			.	.	.	.	.	.054	.058
490 52420080	417	1	6			.	.	.	.	.	.159	.164
491 52420080	464	1	0	57	41	.001	.001	.006	.	.	.003	.005
492 52420080	464	1	1			.	.	.	.	.	.195	.050
493 52420080	464	1	2			.003	.049	.	.	.	.049	.026
494 52420080	464	1	3			.012	.044	.	.	.	.044	.052
495 52420080	464	1	4			.	.	.	.	.	.110	.080
496 52420080	464	2	0	57	41	.004	.028	.006	.	.	.007	.008
497 52420080	464	2	1			.	.	.	.	.	.158	.080
498 52420080	464	2	2			.	.	.	.	.	.096	.081
499 52420080	466	1	0	34	51	.000	.000	.003	.003	.007	.000	.000
500 52420080	466	1	1			.004	.029	.	.011	.019	.019	.021
501 52420080	466	1	2			.017	.037	.	.048	.052	.019	.020
502 52420080	466	1	3			.	.	.	.	.	.117	.082
503 52420087	309	1	0	51	41	.001	.002	.002	.003	.002	.001	.001
504 52420087	316	1	1			.	.	.000	.042	.041	.108	.088
505 52420087	316	1	2	57	53	.000	.026	.020	.000	.013	.019	.015
506 52420087	316	1	3	57	53	.000	.018	.018	.000	.027	.025	.016
507 52420087	316	1	4	57	53	.000	.028	.028	.001	.032	.030	.017
508 52420087	316	1	5	57	53	.001	.021	.021	.002	.027	.024	.016
509 52420087	316	1	6	57	53	.003	.017	.017	.008	.028	.026	.017
510 52420087	316	1	7	57	53	.009	.021	.021	.031	.047	.022	.025
511 52420087	316	1	8			.	.	.	.	.	.055	.050
512 52420088	163	1	0	57	41	.000	.016	.003	.	.	.001	.005
513 52420088	163	1	1			.	.	.	.	.	.201	.064
514 52420088	163	1	2			.008	.045	.	.	.	.078	.053
515 52420088	163	1	3	57	41	.004	.034	.028	.	.	.039	.030
516 52420088	163	1	4			.	.	.	.	.	.188	.096
517 52420088	607	1	1	57	12	.	.	.020	.	.	.117	.081
518 52420088	607	1	2			.	.	.	.	.	.078	.037
519 52420088	607	1	3			.	.	.	.	.	.077	.037
520 52420088	607	1	4			.	.	.	.	.	.067	.028
521 52420088	607	1	5			.	.	.	.	.	.047	.021
522 52420088	607	1	6	57	12	.	.	.020	.	.	.041	.018

CARD 1 NEW ORLEANS (CONTINUED)

HS	STANDARD FACILITY	PAID	STORY	PV	USE	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	RUN 6	RUN 7
NO	LOCATION	NO.	NO.	CODE	CODE	UNIT	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
							HF	RF	RF	HF	HF	HF
523	52420000	00/	1	7	57	12						
524	52420000	00/	1	8				.020			.038	.017
525	52420000	00/	1	9							.039	.017
526	52420000	00/	1	10							.046	.020
527	52420000	00/	1	11							.072	.033
528	52420000	00/	1	12							.173	.087
529	52420000	00/	1	13	57	11	.000	.026	.010	.064	.061	.093
530	52420000	00/	1	14	57	11	.000	.015	.000	.030	.023	.006
531	52420000	00/	1	15			.000	.030	.020	.000	.036	.028
532	52420000	00/	1	16	57	11	.000	.047	.000	.045	.040	.024
533	52420000	00/	1	17			.000	.050	.001	.059	.053	.030
534	52420000	00/	1	18	57	11	.000	.033	.020	.002	.044	.039
535	52420000	00/	1	19	57	11	.001	.024	.024	.005	.043	.043
536	52420000	00/	1	20	57	11	.004	.025	.025	.013	.048	.048
537	52420000	00/	1	21			.016	.033	.035	.067	.067	.036
538	52420000	00/	1	22							.096	.086
539	52420000	00/	1	23							.224	.083
540	52420000	00/	1	24							.035	.024
541	52420000	00/	1	25							.030	.021
542	52420000	00/	1	26							.025	.017
543	52420000	00/	1	27							.024	.020
544	52420000	00/	1	28							.022	.015
545	52420000	00/	1	29	57	11		.020			.020	.013
546	52420000	00/	1	30	57	11		.020			.019	.012
547	52420000	00/	1	31	57	11		.020			.018	.011
548	52420000	00/	1	32	57	11		.020			.017	.011
549	52420000	00/	1	33				.020			.019	.012
550	52420000	00/	1	34							.036	.026
551	52420000	00/	2	1							.215	.142
552	52420000	00/	2	2							.030	.024
553	52420000	00/	2	3							.026	.022
554	52420000	00/	2	4							.030	.019
555	52420000	00/	2	5							.028	.017
556	52420000	00/	2	6							.021	.015
557	52420000	00/	2	7							.020	.014
558	52420000	00/	2	8	57	11		.020			.018	.01
559	52420000	00/	2	9	57	11		.020			.017	.012
560	52420000	00/	2	10	57	11		.020			.016	.011
561	52420000	00/	2	11	57	11		.020			.018	.013
562	52420000	00/	2	12							.035	.030
563	52420000	00/	3	1							.299	.158
564	52420000	00/	3	2					.000	.037	.025	.028
565	52420000	00/	3	3					.000	.028	.019	.024
566	52420000	00/	3	4					.000	.031	.025	.023
567	52420000	00/	3	5					.000	.027	.022	.025
568	52420000	00/	3	6					.000	.024	.018	.023
569	52420000	00/	3	7					.000	.021	.021	.021
570	52420000	00/	3	8	57	11		.020	.000	.019	.019	.014
571	52420000	00/	3	9	57	11		.020	.000	.018	.018	.017
572	52420000	00/	3	10	57	11		.020	.001	.018	.018	.016
573	52420000	00/	3	11	57	11		.020	.004	.020	.020	.018
574	52420000	00/	3	12					.028	.044	.044	.035
575	52420000	00/	1	1	43	51		.038			.199	
576	52420000	00/	1	2	43	51	.003	.038	.038		.011	
577	52420000	00/	1	3	43	51	.009	.040	.028		.012	
578	52420000	00/	1	4	43	51		.020			.022	
579	52420000	00/	1	5	43	51		.039			.051	
580	52420000	00/	1	6							.161	
581	52420000	00/	1	1	57	49	.003	.026	.009	.001	.133	.031
582	52420000	00/	1	2					.004	.024	.019	.088
583	52420000	00/	1	3					.012	.028	.019	.126
584	52420000	00/	2	1	57	49		.020	.002	.048	.047	.191
585	52420000	00/	2	2					.007	.010	.009	.188
586	52420000	00/	2	3					.041	.044	.042	.104
587	52420000	00/	3	1	57	49	.001	.039	.020		.005	.156
588	52420000	00/	3	2			.005	.037			.092	.076
589	52420000	00/	3	3							.060	.099
590	52420122	110	1	1			.000	.042	.001	.014	.008	.165
591	52420122	110	1	2			.000	.032	.000	.027	.017	.021
592	52420122	110	1	3	57	41	.001	.025	.009	.001	.025	.016
593	52420122	110	1	4			.004	.050	.003	.034	.028	.083
594	52420122	110	1	5			.015	.044	.009	.037	.032	.063
595	52420122	110	1	6					.024	.085	.074	.089
596	52420122	110	1	1	57	41	.002	.020	.028			.193
597	52420122	110	1	2			.004	.030				.235
598	52420122	110	1	3			.015	.033				.143
599	52420122	110	1	4								.154
600	52420122	110	1	5								.126
601	52420127	003	1	0	58	69			.004	.008	.015	.015
602	52420127	003	1	1					.007	.007	.007	.010
603	52420127	003	1	0	58	69			.006			.006

CARD 1 NEW ORLEANS (CONTINUED)

					RUN 1		RUN 2		RUN 3		RUN 4		RUN 5		RUN 6		RUN 7	
STANDARD FACILITY NAME	UNIT NO.	STORY NO.	PV CODE	USE CODE	NOUF UNIT	TOTAL HF	TOTAL HF	NOUF C34F	TOTAL HF	TOTAL HF	TOTAL HF	TOTAL HF	TOTAL HF	TOTAL HF	NOUF C34F	TOTAL HF	TOTAL HF	
003 32420122	000	1	1											.024	.002	.000	.000	
004 32420130	00	1	1	36	21	.002	.025	.009	.002	.068	.050	.218	.	.	.001	.031		
005 32420130	00	1	2	30	21	.015	.031	.020	.009	.031	.017	.038	.	.	.005	.019		
006 32420130	00	1	3			.	.	.	.047	.077	.060	.150	.	.	.033	.047		
007 32420142	104	1	0	36	23	.002	.006	.006	.	.	.	.003	.001	.000	.001	.004		
008 32420142	104	1	1	30	23	.011	.015	.015	.	.	.	.000	.004	.002	.011	.015		
009 32420142	104	1	2			.	.	.	.	.	.	.040	.021	.011	.073	.075		
010 32420142	104	1	3			.	.	.	.	.	.	.221	.090	.	.000	.000		
011 32420000	000	2	0	43	11	.000	.000	.001	.000	.001	.001	.000	.	.	.001	.003		
012 32420000	000	2	1	43	11	.000	.007	.007	.001	.073	.073	.009	.	.	.017	.018		
013 32420000	000	2	2	43	11	.000	.002	.003	.120	.075	.074	.003	.	.	.000	.004		
014 32420000	000	2	3	43	11	.000	.001	.002	.000	.068	.047	.002	.	.	.000	.000		
015 32420000	000	2	4	43	11	.000	.006	.003	.000	.057	.047	.002	.	.	.000	.007		
016 32420000	000	2	5	43	11	.000	.004	.006	.000	.049	.041	.003	.	.	.000	.006		
017 32420000	000	2	6	43	11	.000	.004	.005	.000	.051	.043	.005	.	.	.000	.006		
018 32420000	000	2	7	43	11	.000	.007	.009	.000	.047	.047	.004	.	.	.000	.006		
019 32420000	000	2	8	43	11	.000	.006	.006	.000	.043	.043	.003	.	.	.000	.005		
020 32420000	000	2	9	43	11	.000	.004	.004	.000	.036	.036	.002	.	.	.000	.005		
021 32420000	000	2	10	43	11	.000	.004	.004	.000	.043	.043	.002	.	.	.000	.005		
022 32420000	000	2	11	43	11	.000	.004	.004	.000	.035	.035	.002	.	.	.000	.004		
023 32420000	000	2	12	43	11	.000	.003	.003	.000	.032	.032	.002	.	.	.001	.005		
024 32420000	000	2	13	43	11	.001	.004	.004	.002	.031	.031	.002	.	.	.013	.017		
025 32420000	000	2	14	43	11	.006	.009	.009	.019	.045	.045	.007	.	.	.006	.014		
026 32420000	001	3	1	36	22	.005	.031	.020	.007	.025	.022	.000	.	.	.007	.036		
027 32420000						.018	.047	.	.019	.041	.032	.070	.	.	.007	.036		
028 32420007	001	3	2			.	.	.	.	.	.	.110	.	.	.035	.046		

CARD 2 NEW ORLEANS

C-45 AJ	S P A C E S				AVG		MIN.		AV.		MAX.		TOTAL		FLOOD		CFLING		WALL	
	HUN 2 PF-40 PF	HUN 7 PF-40 PF	HUN 7 PF-100	HUN 7 PF-100	APRM SILL WT.	APER SILL WT.	AV. %	MIN. %	AV. AP-M	MAX. APER	WT OF DET	OVER- HEAD WT.	WT.	WT.	WT.	WT.	WT.	WT.	WT.	
302			193	47	0.00	0	5.00	10	3	200	8	80	200							
303			193	47	0.00	0	20.00	20	3	30	0	10	120							
304			193	47	0.00	0	32.00	40	3	30	0	10	120							
305	90	90	18	0	0	0	0.00	0	0.00	0	-5	100	0	70	160					
306	5000	0	0	0	0.00	0	19.00	79	3	730	0	130	100							
307	3360	0	8090	0	3.00	3	58.00	58	17	600	130	130	100							
308	6720	2520	8400	595	3.00	3	58.00	58	29	470	130	130	100							
309	6720	2520	8400	2702	3.00	3	58.00	58	41	340	130	130	100							
310	6720	2520	8400	2840	3.00	3	58.00	58	53	210	130	130	100							
311			6457	0	3.00	3	58.00	58	65	80	130	130	100							
312	1200	0	0	0	0.00	0	22.00	30	3	210	0	70	120							
313		1200	0	0	0.00	0	20.00	30	17	140	70	70	120							
314		0	0	0	0.00	0	20.00	30	31	70	70	70	120							
315	682	0	0	0	0.00	0	12.00	20	3	210	0	70	120							
316		0	0	0	0.00	0	15.00	20	17	140	70	70	120							
317		0	0	0	0.00	0	15.00	20	31	70	70	70	120							
318		214	0	0	0.00	0	22.25	69	3	650	0	80	40							
319	264	264	1042	776	0.00	0	12.00	20	12	570	80	80	83							
320	264	0	1147	349	0.75	0	5.00	20	21	490	80	80	83							
321	264	0	292	0	0.75	0	5.00	20	30	410	80	80	83							
322	264	264	469	0	0.75	0	5.00	20	39	330	80	80	83							
323	250	0	274	0	0.75	0	5.00	20	48	250	80	80	83							
324	250	0	360	0	0.75	0	5.00	20	57	170	80	80	83							
325		0	0	0	0.75	0	5.00	20	66	90	80	80	83							
326	0	0	202	0	0.00	0	2.00	10	-5	380	0	90	170							
327		0	0	0	0.00	0	34.75	59	3	290	90	90	140							
328	160	0	1148	0	0.00	0	32.00	50	15	200	90	90	120							
329		0	0	0	0.00	0	32.00	50	30	110	90	90	120							
330	247	0	449	0	1.00	0	24.75	64	3	120	80	80	120							
331	180	0	0	0	0.00	0	20.00	50	20	90	30	30	130							
332		0	0	0	0.00	0	20.00	50	37	60	30	30	130							
333		0	0	0	0.00	0	20.00	50	54	30	30	30	130							
334		0	0	0	0.00	0	34.75	79	3	210	0	50	90							
335		1826	0	0	0.00	0	52.00	69	22	160	50	50	90							
336	1805	0	2501	0	0.00	0	44.00	69	34	110	50	50	90							
337		0	0	0	0.00	0	44.00	69	46	80	50	50	90							
338		0	0	0	0.00	0	22.25	69	3	230	0	50	90							
339		0	0	0	0.00	0	5.00	20	22	180	50	50	90							
400	291	291	689	24	0.75	0	5.00	20	34	130	50	50	90							
401	482	0	60	0	0.75	0	5.00	20	46	80	50	50	90							
402		0	0	0	0.00	0	20.00	40	3	80	0	10	240							
403		0	0	0	0.00	0	10.00	20	15	70	10	10	240							
404	287	0	387	0	0.00	0	10.00	20	27	60	10	10	180							
405		0	0	0	0.00	0	10.00	20	39	50	10	10	180							
406		0	0	0	0.00	0	10.00	20	51	40	10	10	180							
407.		0	0	0	0.00	0	10.00	20	51	40	10	10	180							

CARD 2 NEW ORLEANS (CONTINUED)

U45 NO	S P A C E S				AVG APER SILL MT.	MIN. APER SILL MT	AVG Z APER	MAX. Z APER	MT OF NET	TOTAL OVER- HEAD WT.	FLOOR WT.	CEILING WEIGHT	AVG EXIT MALL MASS
	RUN 2		RUN 1										
	PF-40	PF 100	PF-40	PF-100									
408			0	0	0.00	0	10.00	20	63	30	10	10	180
409			0	0	0.00	0	10.00	20	75	20	10	10	180
410			0	0	0.00	0	69.00	69	14	240	50	50	50
411			0	0	0.00	0	69.00	69	28	190	50	50	50
412			0	0	0.00	0	69.00	69	42	140	50	50	50
413			0	0	0.00	0	69.00	69	56	90	50	50	50
414			0	0	0.00	0	69.00	69	70	40	50	50	50
415	40	40	0	0	0.00	0	0.00	0	-8	710	0	60	180
416	080	351	1009	322	0.00	0	54.75	79	3	650	60	60	130
417	085	351	1440	1022	0.00	0	59.00	59	20	590	60	60	130
418	1104	1104	1440	941	0.00	0	59.00	59	33	530	60	60	130
419	1104	1104	1440	945	0.00	0	59.00	59	46	470	60	60	130
420	1104	1104	1440	1103	0.00	0	59.00	59	59	410	60	60	130
421	441	0	1440	703	0.00	0	59.00	59	72	350	60	60	130
422			1440	801	0.00	0	59.00	59	85	290	60	60	130
423			1440	797	0.00	0	59.00	59	98	230	60	60	130
424			1440	708	0.00	0	59.00	59	111	170	60	60	130
425			1200	0	0.00	0	59.00	59	124	110	60	60	130
426			0	0	0.00	0	59.00	59	137	50	60	60	130
427	1370	1370	502	502	0.00	0	0.00	0	-9	420	0	70	180
428			1503	0	0.00	0	44.00	89	3	350	70	70	60
429	1929	1929	2427	18	0.00	0	25.00	50	22	280	70	70	90
430	081	081	2427	790	0.00	0	25.00	50	36	210	70	70	90
431	1148	0	1009	0	0.00	0	25.00	50	50	140	70	70	90
432			0	0	0.00	0	25.00	50	64	70	70	70	90
433	205	205	410	410	0.00	0	0.00	0	-9	999	0	80	200
434	182	182	501	0	0.00	0	34.00	69	3	999	80	80	210
435	175	175	1407	1009	2.00	2	27.00	40	21	999	80	80	150
436	1710	1710	1646	771	2.00	2	27.00	40	33	999	80	80	150
437	1710	1710	1710	936	1.50	0	30.00	40	45	999	80	80	150
438	1710	1710	1710	1032	1.50	0	30.00	40	57	999	80	80	150
439	1710	1710	1710	1101	1.50	0	30.00	40	70	999	80	80	150
440	1710	1710	1710	1170	1.50	0	30.00	40	81	970	80	80	150
441	1710	1710	1710	1242	.50	0	39.75	59	93	890	80	80	140
442	1710	1710	1710	1309	.50	0	39.75	59	105	810	80	80	140
443	1710	1710	1710	1376	.50	0	39.75	59	117	730	80	80	140
444	1710	1710	1710	1417	.50	0	39.75	59	129	650	80	80	140
445	1710	1710	1710	1398	.50	0	39.75	59	141	570	80	80	140
446	1710	1710	1710	1473	.50	0	39.75	59	153	490	80	80	140
447	1710	1710	1710	1544	.50	0	39.75	59	165	410	80	80	140
448	1710	1710	1710	1609	.50	0	39.75	59	177	330	80	80	140
449	707	707	1710	1683	.50	0	39.75	59	189	250	80	80	140
450	707	707	1710	1563	.50	0	39.75	59	201	170	80	80	140
451			1678	0	.50	0	39.75	59	213	90	80	80	140
452			174	0	0.00	0	22.75	89	3	460	0	80	140
453	175	0	332	332	.50	0	27.00	50	19	390	80	80	140
454	175	0	332	332	.50	0	27.00	50	30	300	80	80	140
455	210	210	332	332	.50	0	27.00	50	41	220	80	80	140
456			276	0	.50	0	27.00	50	52	140	80	80	140
457			0	0	.50	0	27.00	50	63	60	80	80	140
458			0	0	0.00	0	34.75	89	3	110	0	30	140
459	120	0	0	0	0.00	0	25.00	50	20	80	30	30	140
460			0	0	0.00	0	25.00	50	35	50	30	30	140
461			0	0	0.00	0	25.00	50	50	20	30	30	140
462	196	196	500	530	0.00	0	0.00	0	-8	590	0	60	150
463			374	0	0.00	0	44.75	89	3	530	60	60	160
464	1303	1303	2040	239	9.00	0	37.00	40	25	470	60	60	130
465	092	0	1232	0	0.00	0	37.00	40	35	410	60	60	130
466			1220	0	0.00	0	37.00	40	45	350	60	60	130
467	092	0	1520	0	0.00	0	37.00	40	55	290	60	60	130
468	092	0	1171	0	0.00	0	37.00	40	65	230	60	60	130
469	092	0	0	0	0.00	0	37.00	40	75	170	60	60	130
470			0	0	0.00	0	37.00	40	85	110	60	60	130
471	140	140	100	108	0.00	0	0.00	0	-9	140	0	50	100
472			0	0	0.00	0	17.25	59	3	90	50	50	120
473			21	0	0.00	0	7.50	30	15	40	50	50	120
474			0	0	0.00	0	32.25	89	3	150	0	20	130
475	300	0	57	0	1.00	1	42.00	50	15	130	20	20	180
476	300	0	0	0	1.00	1	42.00	50	26	110	20	20	180
477			0	0	1.00	1	42.00	50	37	90	20	20	180
478			0	0	1.00	1	42.00	50	48	70	20	20	180
479			0	0	1.00	1	42.00	50	59	50	20	20	180
480			0	0	1.00	1	42.00	50	70	30	20	20	180
481			0	0	1.00	1	42.00	50	81	10	20	20	180
482			0	0	0.00	0	19.75	59	3	30	0	10	120
483	05	0	0	0	0.00	0	10.00	20	17	20	10	10	120
484			0	0	0.00	0	10.00	20	31	10	10	10	120
485	510	0	009	0	0.00	0	2.50	10	3	230	0	40	70
486	070	070	1036	378	.75	0	2.50	10	25	190	40	40	80
487	777	777	1036	955	.75	0	2.50	10	39	150	40	40	80

CARD 2 NEW ORLEANS (CONTINUED)

LWS NJ	S P A C E S				AVG APER SILL		MIN. APER SILL MT	AVG Z APER	MAX. Z APER	TOTAL OF MT		FLOOD MT.	CEILING HEIGHT	AVG EAT WALL MASS
	RF-40	RF	100	RF-40	RF-100	MT				MT	MT			
488	214					.75	0	2.70	19	43	110	40	40	60
489						.75	0	2.70	10	67	70	40	40	65
490						.75	0	3.00	10	41	30	40	40	70
491	125	43	125	125	2.25	0	42.70	59	-8	260		50	50	150
492						0.00	0	32.70	50	3	213	50	50	140
493						0.00	0	40.00	48	19	156	50	50	140
494						0.00	0	40.00	49	71	110	50	40	140
495						0.00	0	40.00	40	45	80	50	50	140
496	84	73	110	0	1.50	0	42.70	30	-8	130		50	50	130
497						0.00	0	20.00	30	3	100	50	50	130
498						0.00	0	42.70	39	19	70	50	50	130
499	384	304	100	100	.75	0	7.00	10	-4	280		130	50	220
500						0.00	0	22.70	69	3	150	130	50	150
501						0.00	0	19.70	54	21	130	50	50	150
502						0.00	0	19.70	54	37	30	50	50	150
503	14	14	41	41		0	0.00	0	-14	200		0	0	360
504						0.00	0	61.70	60	3	430		50	90
505	504		774	0	1.50	0	35.00	50	24	330		50	50	90
506	725		325	0	1.50	0	35.00	50	16	330		50	50	90
507	504		427	0	1.50	0	35.00	50	40	250		50	50	90
508	725		4	0	1.50	0	35.00	50	60	230		50	50	90
509	725		0	0	1.50	0	35.00	50	72	150		50	50	90
510	725		0	0	1.50	0	35.00	50	84	130		50	50	90
511			0	0	1.50	0	35.00	50	95	80		50	50	90
512	200	200	200	200	2.00	2	32.70	50	-5	540		130	200	200
513						0.00	0	40.00	40	3	410	130	120	200
514						0.00	0	40.00	40	16	230	120	120	160
515	403		0	0	0.00	0	40.00	40	33	170	120	120	160	
516			0	0	0.00	0	40.00	40	48	50	120	120	160	
517	535		0	0	0.00	0	30.00	30	3	430		40	40	150
518			0	0	0.00	1	44.00	64	12	390		40	40	50
519			0	0	0.00	0	15.00	20	22	350		40	40	40
520			0	0	0.00	5	15.00	20	32	310		40	40	40
521			0	0	0.00	0	15.00	20	42	270		40	40	40
522	535		414	0	0.00	0	15.00	20	52	230		40	40	40
523	535		331	0	0.00	0	15.00	20	42	190		40	40	40
524			452	0	0.00	0	15.00	20	72	150		40	40	40
525			550	0	0.00	0	15.00	20	42	110		40	40	40
526			601	0	0.00	0	15.00	20	62	70		40	40	40
527			400	0	0.00	0	15.00	20	102	30		40	40	40
528			0	0	0.00	0	40.00	40	3	500		50	50	140
529	100	100	43	0	3.00	3	40.00	40	15	450		50	50	140
530	100		141	0	3.00	3	40.00	40	27	400		50	50	140
531			79	0	3.00	3	40.00	40	39	350		50	50	140
532			0	0	3.00	3	40.00	40	51	300		50	50	140
533	100		0	0	3.00	3	40.00	40	63	250		50	50	140
534	100		0	0	3.00	3	40.00	40	75	200		50	50	140
535	100		0	0	3.00	3	40.00	40	87	150		50	50	140
536			0	0	3.00	3	40.00	40	99	100		50	50	140
537			0	0	3.00	3	40.00	40	111	50		50	50	140
538			0	0	0.00	0	12.00	20	3	900		80	80	100
539			1674	745	1.50	0	36.00	62	16	900		80	80	100
540			1674	837	1.50	0	36.00	62	26	820		80	80	100
541			1674	991	1.50	0	36.00	62	34	740		80	80	100
542			1674	1110	1.50	0	36.00	62	42	650		80	80	100
543			1674	1219	1.50	0	36.00	62	50	550		80	80	100
544			1674	1336	1.50	0	36.00	62	58	500		80	80	100
545	124		1674	1447	1.50	0	36.00	62	66	420		80	80	100
546	124		1674	1560	1.50	0	36.00	62	74	340		80	80	100
547	124		1674	1598	1.50	0	36.00	62	82	250		80	80	100
548	124		1674	1122	1.50	0	36.00	62	90	180		80	80	100
549			241	0	1.50	0	36.00	62	98	100		80	80	100
550			0	0	0.00	0	12.00	20	3	900		80	80	100
551			265	0	1.50	0	36.00	62	16	920		80	80	100
552			326	0	1.50	0	36.00	62	26	820		80	80	100
553			392	0	1.50	0	36.00	62	34	740		80	80	100
554			430	2	1.50	0	36.00	62	42	650		80	80	100
555			467	30	1.50	0	36.00	62	50	550		80	80	100
556			500	52	1.50	0	36.00	62	58	500		80	80	100
557	62		540	75	1.50	0	36.00	62	66	420		80	80	100
558	62		578	102	1.50	0	36.00	62	74	340		80	80	100
559	62		604	114	1.50	0	36.00	62	82	250		80	80	100
560	62		674	125	1.50	0	36.00	62	90	180		80	80	100
561			0	0	1.50	0	36.00	62	98	100		80	80	100
562			0	0	0.00	0	24.75	69	3	930		80	80	100
563			164	0	1.50	0	36.00	62	16	930		80	80	100
564			215	0	1.50	0	36.00	62	26	820		80	80	100
565			267	0	1.50	0	36.00	62	34	740		80	80	100
566			317	0	1.50	0	36.00	62	42	650		80	80	100
567			362	0	1.50	0	36.00	62	50	550		80	80	100

CARD 2 NEW ORLEANS (CONTINUED)

OJIS NO	S P A C E S						AVG APER SILL MT.	MIN. APER SILL MT.	AVG % APER	MAX. % APER	WT OF NET	TOTAL OVER- HEAD WT.	FLOOR MT.	CEILING HEIGHT	AVG EXT WALL MASS
	RUN 2		RUN 7		RUN 7										
	PF-40	PF 100	PF-40	PF-100											
568					568	0	1.50	0	31 0	62	58	500	80	80	100
569	62	0			567	0	1.50	0	31 0	62	65	420	80	80	100
570	62	0			414	9	1.50	0	31 0	62	74	340	80	80	100
571	62	0			434	18	1.50	0	36.00	62	82	260	80	80	100
572	62	0			413	0	1.50	0	36.00	62	90	180	80	80	100
573					0	0	1.50	0	36.00	62	98	100	80	80	100
574	0	0			0	0	0.00	0	22.00	69	3	180	0	30	80
575	0	0			0	0	0.00	0	25.00	30	17	150	30	30	80
576	40	0			0	0	0.00	0	25.00	30	29	120	30	30	80
577	40	0			0	0	0.00	0	25.00	30	41	90	30	30	80
578	0	0			0	0	0.00	0	25.00	30	53	60	30	30	80
579					0	0	0.00	0	25.00	30	65	30	30	30	80
580	805	805	2072	1476	0.00	0	0.00	0	40.00	20	3	190	0	60	175
581					0	0	0.00	0	47.25	59	14	120	60	60	175
582					0	0	0.00	0	47.25	59	39	60	60	60	175
583	107	0			0	0	0.00	0	7.00	20	3	180	0	60	105
584			734	147	0.00	0	0.00	0	27.00	50	14	120	60	60	115
585			0	0	0.00	0	0.00	0	27.00	50	39	60	60	60	115
586	107	0			354	0	0.00	0	10.00	30	3	180	0	60	80
587			734	214	0.00	0	0.00	0	20.00	40	14	120	60	60	100
588			0	0	0.00	0	0.00	0	20.00	40	39	60	60	60	100
589			772	118	0.00	0	0.00	0	35.00	40	3	310	0	50	95
590			640	256	0.00	0	0.00	0	35.00	40	15	260	50	50	95
591	281	281	761	541	0.00	0	0.00	0	35.00	40	27	210	50	50	95
592			742	0	0.00	0	0.00	0	35.00	40	39	100	50	50	95
593			0	0	0.00	0	0.00	0	35.00	40	51	110	50	50	95
594			0	0	0.00	0	0.00	0	35.00	40	63	50	50	50	95
595	000	0			0	0	0.00	0	30.00	50	3	260	0	50	80
596			0	0	0.00	0	0.00	0	30.00	50	16	210	50	50	80
597			0	0	0.00	0	0.00	0	30.00	50	30	160	50	50	80
598			0	0	0.00	0	0.00	0	30.00	50	42	110	50	50	80
599			0	0	0.00	0	0.00	0	30.00	50	54	50	50	50	80
600	1298	1000	320	0	1.50	0	0.00	0	7.00	10	-19	230	0	60	80
601			3624	2944	0	0	0.00	0	0.00	0	3	170	60	0	90
602	1075	765	577	577	2.25	0	0.00	0	35.00	50	-15	270	0	80	400
603			1474	638	0	0	0.00	0	0.00	0	3	190	80	0	80
604	1030	405	0	0	0.00	0	0.00	0	27.00	30	3	190	0	80	160
605	540	0	769	0	0.00	0	0.00	0	30.00	30	17	110	80	80	160
606			0	0	0.00	0	0.00	0	30.00	30	30	30	80	80	160
607	366	366	190	390	3.00	3	0.00	0	17.00	30	-7	190	0	70	160
608	671	0	441	180	0.00	0	0.00	0	27.00	40	3	120	70	50	160
609			223	0	0.00	0	0.00	0	35.00	40	16	70	50	50	120
610			0	0	0.00	0	0.00	0	35.00	40	28	20	50	50	120
611	380	380	147	147	0	0	0.00	0	0.00	0	-11	990	0	170	170
612	480	480	535	447	0.00	0	0.00	0	19.00	59	3	990	170	100	215
613	148	148	568	0	3.00	3	0.00	0	29.00	59	19	990	100	100	120
614	2720	2720	204	14	3.00	3	0.00	0	29.00	59	32	990	100	100	120
615	2720	2720	224	56	3.00	3	0.00	0	29.00	59	45	990	100	100	120
616	2254	2254	224	95	3.00	3	0.00	0	29.00	59	48	990	100	100	120
617	1985	1985	224	109	3.00	3	0.00	0	29.00	59	71	990	100	100	120
618	1020	1020	224	125	3.00	3	0.00	0	29.00	59	84	850	100	100	120
619	2284	2284	224	143	3.00	3	0.00	0	29.00	59	97	750	100	100	120
620	2720	2720	224	161	3.00	3	0.00	0	29.00	59	110	650	100	100	120
621	2720	2720	224	173	3.00	3	0.00	0	29.00	59	123	550	100	100	120
622	2720	2720	224	190	3.00	3	0.00	0	29.00	59	136	450	100	100	120
623	2720	2720	224	197	3.00	3	0.00	0	29.00	59	149	350	100	100	120
624	2720	2720	224	179	3.00	3	0.00	0	29.00	59	162	250	100	100	120
625	1020	1020	219	0	3.00	3	0.00	0	29.00	59	175	150	100	100	120
626	238	0	0	0	0.00	0	0.00	0	20.00	30	3	150	60	50	140
627			216	0	0.00	0	0.00	0	25.00	30	17	100	50	50	140
628			0	0	0.00	0	0.00	0	25.00	30	30	50	50	50	140

CARD 3 NEW ORLEANS

OJIS NO	AVG % EXT	AVG INT HEIGHT	STORY ABOVE		STORY BELOW		RUN 1 PF	RUN 2 PF	RUN 3 PF	RUN 4 PF	RUN 5 PF	RUN 6 PF	RUN 7 PF
			AVG % APER	AVG EXT WALL MASS	AVG % APER	AVG EXT WALL MASS							
352		0.00							500	500	3	3	100
363		0.00							500	500	4	3	100
364		0.00							500	500	5	2	100
365	70	24.75	40.00	160			56	167			143	167	77
366		0.00	58.00	100			30	50			1089	16	21
367		22.50	58.00	100	79.00	100	32	90			45	71	100
368		22.50	58.00	100	58.00	100	56	111			63	77	111
369		22.50	58.00	100	58.00	100	71	111			77	91	125
370		22.50	58.00	100	58.00	100	83	111			77	91	125
371		22.50			58.00	100					21	22	53
372		0.00	20.00	120			25	50			10	9	26

CARD 3 NEW ORLEANS (CONTINUED)

445 KJ	AVG % SMT XPMO	AVG LVL PARTITION HEIGHT	STORY AVG % APEN	MOVEMENT AVG EXT WALL MASS	STORY AVG % APEK	WFLUM AVG EXT WALL MASS	RUN 1 PF	RUN 2 PF	RUN 3 PF	RUN 4 PF	RUN 5 PF	RUN 6 PF	RUN 7 PF
373	U.UJ												
374	U.UJ												
375	U.UJ						27						
376	U.UJ		20.00	120	22.50	120					11	12	53
377	U.UJ		15.00	120	20.00	120					15	10	26
378	U.UJ		15.00	120	12.50	120	34	50	19	21	10	13	23
379	U.UJ		15.00	120	15.00	120					4	8	19
379	U.UJ		12.50	H3					13	13	7	6	11
380	U.UJ		5.00	H3	22.25	80	29		38		36	29	37
381	U.UJ		5.00	H3	12.50	H3	143	143	200		111	200	200
382	U.UJ		5.00	H3	5.00	H3	83	83	333	333	125	167	111
383	U.UJ		5.00	H3	5.00	H3	91	91	143	143	143	63	40
384	U.UJ		5.00	H3	5.00	H3	111	111	37	37	111	77	48
385	U.UJ		5.00	H3	5.00	H3	42	42	45	45	100	71	40
386	U.UJ		5.00	H3	5.00	H3	50	50	48	48	77	67	48
387	U.UJ		14.75	140			23		21	21	28	26	25
388	U.UJ		12.50	120	2.50	170	500	25			1009	1009	77
389	U.UJ		12.50	120	34.75	140	30		42	42	23	22	21
390	U.UJ				32.50	120	59	59	45	45	100	34	71
391	U.UJ						71		21	21	24	16	23
392	U.UJ		20.00	130			33	71	125	125	111	83	100
393	U.UJ		20.00	130	24.75	130	59		17	17	26	26	20
394	U.UJ		20.00	130	20.00	130	26	59	16	16	71	67	26
395	U.UJ				20.00	130					33	33	16
396	U.UJ		52.00	90							9	9	7
397	U.UJ		44.50	90			33		38	91	12	25	53
398	U.UJ		44.50	90	34.75	90	45	45	48	53	71	38	54
399	U.UJ				52.00	90	26		15	19	25	34	22
400	U.UJ		5.00	90	44.50	90							
401	U.UJ		5.00	90			29		37	37	12	11	7
402	U.UJ		5.00	90	22.25	90	125	125	91	91	24	33	23
403	U.UJ		5.00	90	5.00	90	42	42	30	32	111	100	83
404	U.UJ		10.00	240							59	50	38
405	U.UJ		10.00	180			22		19	19	9	9	13
406	U.UJ		10.00	180	20.00	240	42		19	19	9	9	21
407	U.UJ		10.00	180	10.00	180	33	42	40	40	37	26	45
408	U.UJ		10.00	180	10.00	180	23		29	29	32	26	30
409	U.UJ		10.00	180	10.00	180			22	22	23	20	22
410	U.UJ		10.00	180	10.00	180			14	14	16	15	14
411	U.UJ		49.00	50	10.00	180					9	9	8
412	U.UJ		49.00	50	0.00	183					5	5	4
413	U.UJ		49.00	50	69.00	70					17		23
414	U.UJ		49.00	50	69.00	70					15		22
415	U.UJ		49.00	50	69.00	70					10		32
416	U.UJ		49.00	50	69.00	70					12		34
417	U.UJ		54.25	130							7		21
418	U.UJ		59.00	130	0.00	180	1009	1000	1009	1009	1009	1009	1009
419	U.UJ		59.00	130	54.25	130	23	111	53	250	13	19	100
420	U.UJ		59.00	130	59.00	130	83	111	333	333	77	143	333
421	U.UJ		59.00	130	59.00	130	200	333	1000	1000	200	125	333
422	U.UJ		59.00	130	59.00	130	333	333	333	333	250	111	333
423	U.UJ		59.00	130	59.00	130	1000	500	333	333	200	143	500
424	U.UJ		59.00	130	59.00	130	45	45	71	71	71	34	167
425	U.UJ		59.00	130	59.00	130	37		143	143	48	67	200
426	U.UJ		59.00	130	59.00	130	25		167	167	77	67	200
427	U.UJ		59.00	130	59.00	130	32		143	143	77	48	167
428	U.UJ		59.00	130	59.00	130	31		42	42	40	40	67
429	U.UJ		44.50	65					11	11	11	11	14
430	U.UJ		25.00	90	0.00	180	1009	1000			1009	1009	1009
431	U.UJ		25.00	90	44.50	65					14	22	91
432	U.UJ		25.00	90	25.00	90	111	167			167	100	111
433	U.UJ		25.00	90	25.00	90	59	111			71	67	125
434	U.UJ		37.50	213			48	48			67	71	45
435	U.UJ		37.50	213							15	20	24
436	U.UJ		27.50	155	0.00	200	1009	1000	1009	1009	1009	1009	1009
437	U.UJ		27.50	155	34.50	213	125	333	36	36	91	15	43
438	U.UJ		27.50	155	27.50	155	1000	1000	333	500	1000	250	250
439	U.UJ		30.00	150	27.50	155	500	333	111	333	1000	200	200
440	U.UJ		30.00	150	30.00	150	200	333	143	250	1000	111	250
441	U.UJ		39.75	148	30.00	150	200	333	167	333	333	91	250
442	U.UJ		39.75	148	30.00	150	250	250	200	333	900	200	333
443	U.UJ		39.75	148	39.75	148	200	333	111	111	1009	250	333
444	U.UJ		39.75	148	39.75	148	200	333	143	143	500	200	333
445	U.UJ		39.75	148	39.75	148	250	250	200	200	1000	200	333
446	U.UJ		39.75	148	39.75	148	333	333	200	200	1000	200	333
447	U.UJ		39.75	148	39.75	148	200	333	200	200	1000	250	500
448	U.UJ		39.75	148	39.75	148	250	250	250	250	1000	200	500
449	U.UJ		39.75	148	39.75	148	250	250	250	250	1000	200	500
450	U.UJ		39.75	148	39.75	148	250	250	333	333	500	200	500
451	U.UJ		39.75	148	39.75	148	143	167	333	333	26	26	500
452	U.UJ		39.75	148	39.75	148	125	167	200	200	143	167	500
453	U.UJ		27.50	140			31		200	200	100	125	333
454	U.UJ		27.50	140	22.25	140	37		50	50	30	32	53
455	U.UJ						83	83	333	333	509	48	48

CARD 3 NEW ORLEANS (CONTINUED)

H-45 AJ	AVG % HMT EXPO	AVG I-1 PARTITION WEIGHT	STORY ABOVE		STORY BELOW		RUN 1 PF	RUN 2 PF	RUN 3 PF	RUN 4 PF	RUN 5 PF	RUN 6 PF	RUN 7 PF
			AVG % APEN	AVG EXT WALL MASS	AVG % APEN	AVG EXT WALL MASS							
454		U.00	27.50	140	27.50	140	83	83	250	250	1000	1000	1000
455		U.00	27.50	140	27.50	140	83	111	100	100	500	500	500
456		U.00	27.50	140	27.50	140	40		43	43	53	48	56
457		U.00			27.50	140			16	16	9	8	19
458		U.00	25.00	140							15	16	11
459		U.00	25.00	140	34.75	140	34	50			48	67	29
460		U.00	25.00	140	25.00	140					21	32	17
461		U.00			25.00	140					6	9	8
462	90	U.00	44.75	160			1009	1000	1000	1000	1009	1009	1009
463		U.00	47.50	130	0.00	130	29		42	42	16	16	39
464		U.00	47.50	130	44.75	160	200	200	167	167	500	333	111
465		U.00	37.50	130	37.50	130	50	50	36	36	45	31	63
466		U.00	37.50	130	37.50	130	23		43	43	20	21	59
467		U.00	37.50	130	37.50	130	42	42	50	50	45	50	59
468		U.00	37.50	130	37.50	130	50	50	50	50	63	67	53
469		U.00	37.50	130	37.50	130	56	56	31	31	67	67	33
470		U.00			37.50	130	36		10	10	27	38	13
471	80	U.00	17.25	120			167	167	167	167	250	200	167
472		U.00	7.50	120	0.00	100	26		28	45	28	29	37
473		U.00			17.25	120			36	42	13	12	37
474		U.00	42.50	180					11	12	8	7	9
475		U.00	42.50	180	32.25	138	42	42	34	34	71	40	38
476		U.00	42.50	180	42.50	180	56	56	40	40	56	38	24
477		U.00	42.50	180	42.50	180	23		29	29	37	38	24
478		U.00	42.50	180	42.50	180			21	21	30	30	18
479		U.00	42.50	180	42.50	180			12	12	7	13	11
480		U.00	42.50	180	42.50	180					6	5	7
481		U.00			42.50	180					3	3	4
482		U.00	10.00	120			28			13	13	13	24
483		U.00	10.00	120	19.75	120	43	43		29	31	31	17
484		U.00			10.00	120				8	10	7	
485		U.00	2.50	83			48	48		13	18	56	
486		U.00	2.50	68	2.50	76	167	167		100	143	143	
487		U.00	2.50	68	2.50	63	111	111		91	77	167	
488		U.00	2.50	68	2.50	68	59	59		50	50	26	
489		U.00	5.00	70	2.50	68				19	17	37	
490		U.00			2.50	68				6	6	27	
491	67	U.00	32.50	140			22	167		333	200	1009	
492		U.00	40.00	140	42.25	130				5	20	77	
493		U.00	40.00	140	32.50	140	20			20	38	100	
494		U.00	40.00	140	40.00	140	23			23	19	53	
495		U.00			40.00	140				9	13	23	
496	67	U.00	20.00	130			36	167		143	167	48	
497		U.00	22.50	130	22.50	130				6	13	22	
498		U.00			20.00	130				10	12	18	
499	75	U.00	22.25	130			1009	333	143	143	1009	1009	500
500		U.00	19.75	150	7.50	220	34		53	71	53	48	71
501		U.00	19.75	150	22.25	130	27		19	20	53	50	23
502		U.00			19.75	130				9	12	5	
503	62	24.75					500	500	500	500	1000	1000	1000
504		U.00	35.00	90					24	24	9	11	13
505		U.00	35.00	90	61.75	90	38	50	77	77	53	67	56
506		U.00	35.00	90	35.00	90	56	56	37	40	63	63	45
507		U.00	35.00	90	35.00	90	36	50	31	33	59	56	48
508		U.00	35.00	90	35.00	90	48	48	37	42	63	36	42
509		U.00	35.00	90	35.00	90	59	59	36	38	59	48	34
510		U.00	35.00	90	35.00	90	48	48	21	21	45	40	16
511		U.00			35.00	90					18	20	4
512	25	U.00	40.00	200			56	333		1000	200	167	
513		U.00	40.00	160	32.50	200				5	16	71	
514		U.00	40.00	160	40.00	200	22			14	19	56	
515		U.00	40.00	160	40.00	160	29	50		26	33	29	
516		U.00			40.00	160				10	10	9	
517		U.00	44.50	50				50		9	12	21	
518		U.00	15.00	40	30.00	130				14	27	22	
519		U.00	15.00	40	44.50	50				13	27	26	
520		U.00	15.00	40	15.00	40				15	38	31	
521		U.00	15.00	40	15.00	40				21	48	48	
522		U.00	15.00	40	15.00	40		59		24	56	56	
523		U.00	15.00	40	15.00	40		50		26	59	67	
524		U.00	15.00	40	15.00	40				26	59	71	
525		U.00	15.00	40	15.00	40				22	50	77	
526		U.00	15.00	40	15.00	40				14	30	77	
527		U.00			15.00	40				6	11	63	
528		U.00	40.00	140			38		16	15	11	26	14
529		U.00	40.00	140	40.00	140	67	167	33	43	167	125	42
530		U.00	40.00	140	40.00	140	33	50	28	36	71	125	53
531		U.00	40.00	140	40.00	140	21		22	25	42	111	50
532		U.00	40.00	140	40.00	140	28		17	19	33	53	32
533		U.00	40.00	140	40.00	140	30	50	23	26	37	59	36
534		U.00	40.00	140	40.00	140	42	42	23	23	42	63	37

CARD 3 NEW ORLEANS (CONTINUED)

U45 NJ	AVG % SMT -X-FU	AVG IVI PARTITION WEIGHT	STONY AVG % APEN	ANOVE AVG EXT MALL MASS	STURT AVG % APEN	FLUM AVG EXT MALL MASS	RUN 1 PF	RUN 2 PF	RUN 3 PF	RUN 4 PF	RUN 5 PF	RUN 6 PF	RUN 7 PF
235		10.00	40.00	140	40.00	140	40	40	21	21	40	59	34
236		10.00	40.00	140	40.00	140	30		15	15	28	34	26
237		10.00			40.00	140					10	12	13
238		0.00	36.00	100							4	12	6
239		7.50	36.00	100	12.50	100					29	42	200
240		7.50	36.00	100	36.00	100					33	48	200
241		7.50	36.00	100	36.00	100					40	59	250
242		7.50	36.00	100	36.00	100					42	50	250
243		7.50	36.00	100	36.00	100					45	67	250
244		7.50	36.00	100	36.00	100					50	77	333
245		7.50	36.00	100	36.00	100		50			53	83	333
246		7.50	36.00	100	36.00	100		50			56	91	333
247		7.50	36.00	100	36.00	100		50			59	91	333
248		7.50	36.00	100	36.00	100		50			53	83	200
249		0.00	36.00	100	36.00	100					28	38	45
250		7.50	36.00	100	12.50	100					5	7	6
251		7.50	36.00	100	36.00	100					33	42	77
252		7.50	36.00	100	36.00	100					38	45	91
253		7.50	36.00	100	36.00	100					33	53	100
254		7.50	36.00	100	36.00	100					36	59	111
255		7.50	36.00	100	36.00	100					48	67	111
256		7.50	36.00	100	36.00	100					50	71	125
257		7.50	36.00	100	36.00	100		50			56	77	125
258		7.50	36.00	100	36.00	100		50			59	83	143
259		7.50	36.00	100	36.00	100		50			63	91	143
260		7.50	36.00	100	36.00	100		50			56	77	125
261		7.50	36.00	100	36.00	100		50			29	33	40
262		0.00	36.00	100							3	6	6
263		7.50	36.00	100	24.75	100					36	42	67
264		7.50	36.00	100	36.00	100			27	40	42	45	71
265		7.50	36.00	100	36.00	100			36	53	42	45	71
266		7.50	36.00	100	36.00	100			37	40	43	38	77
267		7.50	36.00	100	36.00	100			37	45	40	43	83
268		7.50	36.00	100	36.00	100			42	56	43	56	91
269		7.50	36.00	100	36.00	100			48	48	48	63	100
270		7.50	36.00	100	36.00	100		50	53	53	53	71	100
271		7.50	36.00	100	36.00	100		50	56	56	59	77	111
272		7.50	36.00	100	36.00	100		50	56	56	63	77	111
273		7.50	36.00	100	36.00	100		50	50	50	56	67	100
274		0.00	25.00	80	36.00	100			23	23	29	32	57
275		95.00	25.00	80	22.25	40		26			5		8
276		95.00	25.00	80	25.00	40	26	25			91		31
277		95.00	25.00	80	25.00	40	25	50			83		38
278		95.00	25.00	80	25.00	40		50			45		38
279		0.00	25.00	80	25.00	40		25			20		28
280		0.00	47.25	173	25.00	80					6		12
281		0.00	47.25	173	20.00	173	38	111	500	1000	7	32	500
282		0.00			47.25	173			42	53	11	12	38
283		0.00	27.50	115					36	53	8	10	27
284		0.00	27.50	115				50	21	21	5	6	37
285		0.00			7.50	103			100	111	5	11	143
286		0.00	20.00	100	27.50	115			23	24	10	10	29
287		0.00	20.00	100	10.00	88	26	50			11	6	50
288		0.00			20.00	100	27				11	13	167
289		0.00	35.00	95							17	10	20
290		10.00	35.00	95	35.00	95	24		71	125	6	77	143
291		10.00	35.00	95	35.00	95	31		37	59	48	125	111
292		10.00	35.00	95	35.00	95	40	111	40	63	18	250	167
293		10.00	35.00	95	35.00	95	20		29	36	12	43	67
294		10.00	35.00	95	35.00	95	23		27	31	16	22	36
295		0.00	30.00	80	35.00	95			12	14	11	15	23
296		0.00	30.00	80			50	50			7	6	24
297		0.00	30.00	80	30.00	80	33				4	13	31
298		0.00	30.00	80	30.00	80	30				7	11	30
299		0.00	30.00	80	30.00	80					6	11	14
300	90	45.50	0.00	90							8	11	13
301		22.50			7.50	80		167	67	67	1080	48	42
302	90	0.00	0.00	80				167	143	143	100	250	1000
303		0.00									100	500	500
304		0.00	30.00	160	35.00	200					34	500	1009
305		45.50	30.00	160	27.50	160	40	111	15	17	5		27
306		45.50			30.00	160	32	50	32	59	26		53
307	50	24.75	27.50	150					13	17	7		21
308		22.50	35.00	120	17.50	160	167	167			333	1000	1000
309		22.50	35.00	120	27.50	160	67	67			10	111	250
310		22.50			35.00	120					13	48	67
311	90	0.00	19.75	213							5	11	13
312		25.00	29.75	120	0.00	178	1009	1000	1000	1000	1009		1000
313		25.00	29.75	120	19.75	213	143	143	14	14	111		333
314		20.00	29.75	120	29.75	120	900	333	13	14	333		96
315		20.00	29.75	120	29.75	120	1000	900	15	21	500		111
							167	333	18	21	500		125

CARD 3 NEW ORLEANS (CONTINUED)

OIS NO	AVG % TSRT EXPO	AVG INT PARTITION WEIGHT	STORY ABOVE		STORY BELOW		RUN 1 PF	RUN 2 PF	RUN 3 PF	RUN 4 PF	RUN 5 PF	RUN 6 PF	RUN 7 PF
			AVG % APER	AVG EXT WALL MASS	AVG % APER	AVG EXT WALL MASS							
010		20.00	29.75	120	29.75	120	111	167	20	24	333		143
017		20.00	29.75	120	29.75	120	111	167	20	23	200		167
018		20.00	29.75	120	29.75	120	143	111	21	21	250		167
019		20.00	29.75	120	29.75	120	167	167	23	23	333		200
020		20.00	29.75	120	29.75	120	250	250	28	28	500		200
021		20.00	29.75	120	29.75	120	250	250	23	23	500		200
022		20.00	29.75	120	29.75	120	250	250	29	29	500		250
023		20.00	29.75	120	29.75	120	333	333	31	31	500		250
024		20.00	29.75	120	29.75	120	250	250	32	32	500		200
025		20.00	29.75	120	29.75	120	111	111	22	22	143		59
026		0.00	25.00	140			32	50	40	45	4		29
027		7.50	25.00	140	20.00	140	21		24	31	14		56
028		7.50			25.00	140					9		22

CARD 1 ALBUQUERQUEB-31

CARD 2 ALBUQUERQUE

G33 NO	S P A C E S				AVG APER SILL HT.	MIN. APER SILL HT.	AVG. % APER	MAX. % APER	HT OF DET	TOTAL OVER- HEAD WT.	FLOOR WT.	CEILING HEIGHT	AVG EXT MALL MASS
	NUN 2 PF-40 PF	100	RUN 7 PF-40 PF	100									
029	127	127	42	02	0.00	0	2.7	10	-6	220	0	60	150
030			0	0	0	0	0.00	0	3	160	60	50	50
031			0	0	0	0	0.00	0	14	110	50	50	43
032			0	0	0	0	0.00	0	25	60	50	50	43
033			0	0	0.00	0	22.70	40	14	90	60	60	80
034	75	0	23	7	.75	0	2.70	10	-9	90	0	30	150
035			0	0	0.00	0	15.00	30	3	60	30	30	50
036			0	0	0.00	0	15.00	30	14	30	30	30	50
037	10	13	19	3	0	0	0.00	0	-6	160	0	50	210
038			47	0	0.00	0	20.00	30	3	110	50	50	120
039			0	0	0.00	0	20.00	30	13	60	50	50	120
040	100	103	41	0	1.50	0	15.00	40	-7	140	0	50	150
041			0	0	0.00	0	27.00	30	3	90	50	50	70
042			0	0	0.00	0	30.00	30	14	40	50	50	70
043	30	0	0	0	1.50	0	5.00	10	-9	70	0	40	120
044			0	0	0.00	0	7.00	20	3	30	40	0	190
045	272	272	330	330	1.50	0	5.00	10	-7	550	0	150	150
046			0	0	0.00	0	35.00	40	3	400	150	150	120
047	750	0	0	0	0.00	0	22.00	40	15	250	150	150	80
048			0	0	0.00	0	22.00	40	25	100	150	150	80
049	750	750	270	270	0	0	0.00	0	-12	980	0	90	150
050			0	0	0.00	0	49.00	60	3	900	90	60	90
051			0	0	0.00	0	14.75	50	21	840	60	60	70
052			0	0	0.00	0	14.75	50	33	780	60	60	70
053			0	0	0.00	0	14.75	50	45	720	60	60	70
054			0	0	0.00	0	14.75	50	57	660	60	60	70
055			0	0	0.00	0	14.75	50	49	600	60	60	70
056			0	0	0.00	0	14.75	50	81	540	60	60	70
057			0	0	0.00	0	14.75	50	93	480	60	60	70
058			0	0	0.00	0	14.75	50	105	420	60	60	70
059			0	0	0.00	0	14.75	50	117	360	60	60	70
060			0	0	0.00	0	14.75	50	129	300	60	60	70
061			0	0	0.00	0	14.75	50	141	240	60	60	70
062			0	0	0.00	0	14.75	50	153	180	60	60	70
063			0	0	0.00	0	14.75	50	165	120	60	60	70
064			0	0	0.00	0	14.75	50	177	60	60	60	70
065	245	245	203	203	0	0	0.00	0	-9	150	0	60	150
066	740	740	234	234	0	0	0.00	0	-6	200	0	40	150
067			0	0	0.00	0	24.75	60	3	150	40	40	120
068	532	0	778	0	0.00	0	7.00	20	19	120	40	40	120
069			0	0	0.00	0	7.00	20	31	90	40	40	120
070			0	0	0.00	0	7.00	20	43	60	40	40	120
071	380	0	44	0	3.00	3	10.00	30	-7	180	0	70	150
072	450	0	0	0	0.00	0	25.00	50	3	910	70	70	110
073	934	0	743	0	3.00	3	40.00	40	21	840	70	70	200
074	1034	0	948	0	3.00	3	40.00	40	34	770	70	70	200
075	1034	0	1924	0	3.00	3	40.00	40	47	700	70	70	200
076	1060	1060	2070	137	3.00	3	40.00	40	60	630	70	70	200
077	1060	1060	2109	543	3.00	3	40.00	40	73	560	70	70	200
078	2101	2101	2535	811	3.00	3	40.00	40	86	490	70	70	200
079	2101	2101	2547	997	3.00	3	40.00	40	99	420	70	70	200
080	1634	0	1709	0	3.00	3	40.00	40	112	350	70	70	200
081	1060	1060	1954	454	3.00	3	40.00	40	125	290	70	70	200
082	1060	1060	2001	554	3.00	3	40.00	40	138	210	70	70	200
083	1034	0	1675	0	3.00	3	40.00	40	151	140	70	70	200
084	0	0	0	0	3.00	3	40.00	40	164	70	70	70	200
085	900	900	343	303	0	0	0.00	0	-12	490	0	80	150
086	0	0	0	0	0.00	0	10.00	10	3	410	60	50	60
087	0	0	0	0	0.00	0	79.00	79	28	360	50	50	20
088	0	0	0	0	0.00	0	79.00	79	40	310	50	50	20
089	0	0	0	0	0.00	0	79.00	79	52	250	50	50	20
090	0	0	0	0	0.00	0	79.00	79	64	210	50	50	20
091	0	0	0	0	0.00	0	79.00	79	76	160	50	50	20
092	0	0	0	0	0.00	0	79.00	79	88	110	50	50	20
093	0	0	0	0	0.00	0	0.00	0	100	60	50	50	20
094	62	52	14	14	0	0	0.00	0	-6	190	0	60	150
095	0	0	0	0	0.00	0	7.00	20	3	130	60	60	70
096	0	0	0	0	0.00	0	0.00	0	20	70	60	60	60
097	21	0	44	0	0.00	0	12.00	30	-7	150	0	70	200
098	0	0	0	0	0.00	0	12.00	30	3	80	70	40	140
099	0	0	0	0	0.00	0	22.00	30	19	40	40	40	120
700	10	0	10	0	0.00	0	2.00	10	-5	80	0	60	160
701	0	0	0	0	0.00	0	5.00	20	3	20	60	0	130
702	52	54	65	95	1.50	0	5.00	10	-4	230	0	50	150
703	0	0	0	0	0.00	0	20.00	30	3	150	50	50	70
704	0	0	0	0	0.00	0	20.00	30	12	130	50	50	70
705	0	0	0	0	0.00	0	20.00	30	21	50	50	50	70
706	50	54	70	70	1.50	0	5.00	10	-6	200	0	50	150
707	0	0	0	0	0.00	0	20.00	30	3	150	50	50	70
708	0	0	0	0	0.00	0	20.00	30	12	100	50	50	70
709	0	0	0	0	0.00	0	20.00	30	21	50	50	50	70
710	0	0	0	0	0.00	0	20.00	40	14	110	50	50	70
711	0	0	0	0	0.00	0	20.00	40	25	60	50	50	40
712	69	0	74	74	1.50	0	10.00	10	-7	210	0	50	120
713	0	0	13	0	0.00	0	17.00	30	3	160	50	50	50
714	0	0	0	0	0.00	0	29.00	40	14	110	50	50	40
715	0	0	0	0	0.00	0	29.00	40	25	60	50	50	40
716	63	63	30	0	0.00	0	2.00	10	-9	120	0	50	150
717	0	0	0	0	0.00	0	15.00	20	3	70	50	30	80
718	0	0	0	0	0.00	0	15.00	20	14	40	30	30	30
719	50	0	0	0	2.25	0	7.00	10	-7	120	0	50	150
720	0	0	0	0	0.00	0	20.00	30	3	70	60	30	90
721	337	337	378	328	.75	0	2.00	10	-7	190	0	50	150
722	73	0	113	0	0.00	0	19.00	50	3	100	50	50	150
723	0	0	0	0	0.00	0	12.00	30	17	50	50	50	150
724	0	0	57	0	0.00	0	15.00	50	3	240	80	80	40
725	0	0	94	0	0.00	0	35.00	50	3	240	80	80	40

CARD 3 ALBUQUERQUE

U-3 NJ	AVG % JSM1 EXPD	AVG 1st PARTITION HEIGHT	STORY AVG % APER	ABOVE AVG EX1 WALL MASS	STORY AVG % APER	U-LW AVG EX1 WALL MASS	RUN 1 PF	RUN 2 PF	RUN 3 PF	RUN 4 PF	RUN 5 PF	RUN 6 PF	RUN 7 PF
029	90	0.00	0.00	50			250	250	1000	1000	333	250	500
030		0.00	0.00	43	2.50	150					6	3	4
031		0.00	0.00	43	0.00	50					8	5	12
032		0.00	0.00		0.00	43					7	5	12
033		0.00			5.00	40					9	4	7
034	70	22.50	15.00	50			50	50	50	50	42	45	71
035		17.50	15.00	50	2.50	150					2	3	8
036		0.00			15.00	50					2	3	8
037	75	0.00	20.00	120			167	167	143	143	125	167	63
038		22.50	20.00	120	0.00	210	33		40	40	3	31	83
039		20.00			20.00	140			11	11	6	19	51
040	93	22.50	27.50	70			100	100	200	200	91		91
041		45.00	10.00	70	15.00	150			17	23	5		24
042		0.00			27.50	70					5		8
043	80	45.00	7.50	190			56	56	21	21	67		25
044		45.00			5.00	140					6		10
045	72	5.00	15.00	120			750	250	200	200	1000	1000	1000
046		0.00	22.50	80	5.00	150			15	15	12	9	14
047		0.00	22.50	80	35.00	120	37	50	29	29	19	16	36
048		0.00			22.50	80	21		24	24	26	15	24
049	90	10.00	40.50	90			1000	1000	200	200	1000	1000	300
050		22.50	14.75	70	0.00	150					13	5	8
051		0.00	14.75	70	40.50	90					13	20	8
052		0.00	14.75	70	14.75	70					10	11	11
053		0.00	14.75	70	14.75	70			11	11	10	10	17
054		0.00	14.75	70	14.75	70			14	14	21	22	10
055		0.00	14.75	70	14.75	70			17	17	25	25	23
056		0.00	14.75	70	14.75	70			21	21	28	29	26
057		0.00	14.75	70	14.75	70			26	26	30	31	29
058		0.00	14.75	70	14.75	70	22		26	26	30	31	29
059		0.00	14.75	70	14.75	70	23		28	28	33	34	38
060		0.00	14.75	70	14.75	70	24		29	29	36	37	33
061		0.00	14.75	70	14.75	70			31	31	38	38	36
062		0.00	14.75	70	14.75	70			32	32	40	40	36
063		0.00	14.75	70	14.75	70	20		24	24	38	38	34
064		0.00	14.75	70	14.75	70	23		23	23	30	30	29
065		0.00	14.75	70	14.75	70			16	16	13	11	18
066	90	12.50	7.50	80			200	1000	1000	1000	250	250	1000
067	93	0.00	24.75	120			500	500	250	250	500	510	500
068		0.00	7.50	120	0.00	150	20		32	32	25	24	29
069		0.00	7.50	120	24.75	120	67	67	36	36	77	67	48
070		0.00	7.50	120	7.50	120	23		14	14	17	26	20
071	75	0.00	10.00	100	7.50	120					7	8	8
072		15.00	40.00	200	2.50	150	250	50	36	36	200		67
073		0.00	40.00	200	25.00	125		50	42	42	32	40	40
074		0.00	40.00	200	40.00	200		50	56	56	71	71	50
075		0.00	40.00	200	40.00	200		50	56	56	77	77	63
076		0.00	40.00	200	40.00	200		50	77	77	83	83	100
077		0.00	40.00	200	40.00	200		111	111	111	91	91	111
078		0.00	40.00	200	40.00	200		111	143	143	100	100	125
079		0.00	40.00	200	40.00	200		167	200	200	111	111	143
080		0.00	40.00	200	40.00	200		167	100	100	125	125	167
081		0.00	40.00	200	40.00	200		50	143	143	125	125	167
082		0.00	40.00	200	40.00	200		111	143	143	125	125	167
083		0.00	40.00	200	40.00	200		111	143	143	125	125	167
084		0.00	40.00	200	40.00	200		50	100	100	71	71	100
085	80	5.00	10.00	60			26	33	33	33	20	20	37
086		5.00	79.00	20	0.00	150	500	1000	1000	1000	1000	1000	1000
087		10.00	79.00	20	10.00	60	25	17					10
088		10.00	79.00	20	79.00	20	26		14	14	16	14	14
089		10.00	79.00	20	79.00	20	26	14	14	14	20	22	25
090		10.00	79.00	20	79.00	20	26	14	14	14	25	20	24
091		10.00	79.00	20	79.00	20	26	19	19	19	29	21	24
092		10.00	79.00	20	79.00	20	26	23	23	23	29	23	20
093		5.00	79.00	20	79.00	20	26	23	23	23	17	20	28
094		5.00	79.00	20	79.00	20	26				12	12	9
095	87	0.00	7.50	75			333	333	333	333	500	500	500
096		0.00	0.00	65	0.00	150			19	19	0	14	14
097		0.00	7.50	75	7.50	75			14	14	17	14	15
098	52	40.50	12.50	140			38	50	40	40	250		47
099		0.00	22.50	120	12.50	200			11	11	6		14
100		0.00			12.50	140					6		4
101	85	40.50	5.00	130			53	53	71	71	77	71	38
102		0.00			2.50	100			10	10	4	4	10
103	60	0.00	20.00	70			167		63	63	250	167	143
104		35.00	20.00	70	5.00	150			20	27	6	10	24
105		17.50	20.00	70	20.00	70			23	29	8	21	37
106		17.50			20.00	70			11	12	6	14	10
107	57	0.00	20.00	70			167		43	43	200	143	200
108		35.00	20.00	70	5.00	150			20	27	6	11	24
109		17.50	20.00	70	20.00	70			20	20	9	22	31
110		17.50			20.00	70			11	12	7	16	10
111		10.00	20.00	40	20.00	40			40	53	17		32
112		0.00	17.50	50					20	22	12		24
113	67	0.00	20.00	40	10.00	120		83	125	125	143	333	
114		10.00	20.00	40	17.50	50			26	40	7		43
115		10.00	20.00	40	20.00	40			40	56	16		32
116		40.50	15.00	80					20	22	12		24
117	90	0.00	15.00	80	2.50	150	100	100	50	50	167	167	67
118		0.00			15.00	80					3	3	9
119		0.00									3	3	9
120	72	0.00	20.00	80			21	50			83	63	33
121		0.00											7
122	77	0.00	10.75	150	2.50	150	200	333	200	200	500		500
123		0.00	12.50	150	19.75	150	36	50	42	48			53
124		20.00							11	11	22		14
125		20.00							22	22	4		42
									20	20	4		43

VII. San Jose, California Data

CARD 1 SAN JOSE

NO.	STANDARD LOCATION	FACILITY NUMBER	PART NO.	STORY NO.	PV CODE	USE CODE	RUN 1 NOOF CONT	RUN 1 TOTAL RF	RUN 2 TOTAL RF	RUN 3 NOOF CONT	RUN 3 TOTAL RF	RUN 4 TOTAL RF	RUN 5 TOTAL RF	RUN 6 TOTAL RF	RUN 7 NOOF CONT	RUN 7 TOTAL RF
726	72P10000	74	1	0	51	55	.019	.019	.020	.009	.009	.009	.019	.016	.007	.007
727	72P10000	74	1	1								.329	.207	.213		.264
728	72P10000	85	1	0	36	49	.000	.000	.001	.001	.001	.000	.000	.000	.000	.000
729	72P10000	85	1	1	36	49	.001	.013	.013	.008	.009	.009	.030	.003	.002	.002
730	72P10000	85	1	2	36	49	.008	.022	.022	.033	.033	.033	.035	.004	.010	.010
731	72P10000	85	1	3									.178	.063	.060	.060
732	72P10000	86	1	0	57	45	.003	.006	.003				.006	.005	.001	.002
733	72P10000	86	1	1									.238	.157	.006	.037
734	72P10000	86	1	2									.209	.135	.029	.051
735	72P10000	86	1	0	43	11	.000	.000	.001	.000	.000	.000	.000	.000	.000	.000
736	72P10000	86	1	1			.000	.047		.001	.017	.017	.022	.030	.000	.010
737	72P10000	86	1	2	43	11	.002	.006	.006	.002	.002	.002	.002	.000	.000	.001
738	72P10000	86	1	3			.012	.036		.010	.010	.010	.020	.006	.007	.010
739	72P10000	86	1	4						.047	.048	.048	.192	.031	.045	.047
740	72P10000	204	1	0	57	55			.001				.000	.000	.001	.002
741	72P10000	204	1	1									.169	.203	.003	.184
742	72P10000	204	1	2									.034	.051	.008	.054
743	72P10000	204	1	3									.041	.047	.015	.071
744	72P10000	204	1	4									.033	.039	.030	.074
745	72P10000	204	1	5									.037	.041	.059	.098
746	72P10000	204	1	6									.141	.125	.110	.216
747	72P10000	108	1	0	57	53			.001	.001	.001	.001	.000	.000	.000	.000
748	72P10000	108	1	1						.008	.074	.074	.067	.085	.000	.037
749	72P10000	108	1	2						.048	.058	.055	.042	.022	.035	.046
750	72P10000	108	1	3						.005	.050	.031	.049	.054	.000	.030
751	72P10000	108	1	4						.033	.066	.053	.300	.298	.029	.055
752	72P10000	116	1	2									.042	.061	.000	.010
753	72P10000	116	1	3									.122	.115	.000	.009
754	72P10000	209	1	0	32	53			.020	.095	.095	.095	.020	.020	.056	.057
755	72P10000	209	1	1									.158	.156	.009	.094
756	72P10010	121	1	0	57	51	.001	.001	.001	.005	.005	.005	.014	.014	.000	.000
757	72P10010	121	1	1			.003	.028		.045	.072	.072	.065	.084	.000	.034
758	72P10010	121	1	2			.023	.046		.000	.010	.008	.078	.077	.000	.005
759	72P10010	121	1	3			.000	.048		.000	.015	.009	.028	.036	.000	.006
760	72P10010	121	1	4			.009	.036		.000	.014	.011	.056	.040	.000	.006
761	72P10010	121	1	5			.000	.026		.000	.013	.010	.056	.020	.000	.008
762	72P10010	121	1	6	57	51	.000	.028	.020	.000	.010	.008	.036	.016	.000	.009
763	72P10010	121	1	7			.008	.048		.000	.041	.041	.075	.021	.000	.014
764	72P10010	121	1	8			.001	.029		.001	.032	.032	.031	.019	.000	.013
765	72P10010	121	1	9			.008	.029		.002	.027	.027	.033	.022	.000	.012
766	72P10010	121	1	10						.034	.031	.031	.076	.058	.005	.015
767	72P10010	134	1	0	57	51	.001	.001	.002	.000	.001	.001	.000	.001	.000	.000
768	72P10010	134	1	1						.080	.086	.086	.109	.203	.000	.171
769	72P10010	134	1	2						.000	.071	.071	.137	.118	.000	.042
770	72P10010	134	1	3			.000	.046		.000	.059	.059	.112	.123	.000	.042
771	72P10010	134	1	4						.000	.044	.044	.123	.104	.000	.037
772	72P10010	134	1	5			.000	.042		.000	.033	.033	.077	.076	.000	.030
773	72P10010	134	1	6			.000	.033		.000	.026	.026	.081	.059	.000	.027
774	72P10010	134	1	7			.000	.026		.000	.021	.021	.050	.049	.000	.024
775	72P10010	134	1	8	57	51	.001	.024	.024	.001	.020	.020	.043	.043	.000	.023
776	72P10010	134	1	9	57	51	.003	.025	.025	.002	.020	.020	.041	.040	.000	.022
777	72P10010	134	1	10			.012	.032		.005	.023	.023	.085	.084	.002	.022
778	72P10010	134	1	11						.009	.064	.064	.078	.086	.006	.031
779	72P10010	140	1	1	57	54	.000	.021	.020	.000	.040	.040	.054	.093	.000	.040
780	72P10010	140	1	2						.000	.016	.016	.088	.025	.000	.015
781	72P10010	140	1	3			.004	.046		.005	.033	.033	.079	.050	.000	.019
782	72P10010	140	1	4									.105	.102	.024	.046
783	72P10010	213	1	0	57	22			.003	.020	.021	.021	.034	.034	.013	.014
784	72P10010	213	1	1									.046	.046	.058	.063
785	72P10010	213	1	2									.370	.370	.199	.210
786	72P10010	158	1	0	57	53	.008	.008	.008	.005	.005	.005	.067	.067	.006	.007
787	72P10010	158	1	1						.036	.074	.074	.203		.320	.377
788	72P10010	158	1	2									.038		.270	.315
789	72P10046	217	1	0	53	43			.009	.003	.004	.004	.008	.009	.001	.002
790	72P10046	217	1	1						.045	.085	.085	.326	.284	.037	.094
791	72P10046	178	1	0	57	51	.001	.001	.002	.001	.001	.001	.001	.004	.000	.001
792	72P10046	178	1	1			.014	.042		.009	.052	.052	.203	.156	.007	.019
793	72P10046	178	1	2									.274	.280	.244	.255
794	72P10046	44583	1	0	59	49	.008	.009	.009	.016	.016	.016	.009	.009	.012	.016
795	72P10046	44583	1	1									.139	.115	.049	.081
796	72P10046	44583	1	0	59	49	.003	.007	.006	.003	.003	.003	.006	.006	.002	.013
797	72P10046	44583	1	1						.015	.044	.021	.232	.116	.008	.024
798	72P10046	44583	1	2									.154	.090	.064	.073
799	72P10046	44583	1	0	59	49	.008	.008	.001	.008	.008	.000	.005	.005	.000	.008
800	72P10046	44583	1	1						.032	.089	.015	.220	.264	.001	.034
801	72P10046	44583	1	2						.035	.056	.041	.070	.075	.026	.052
802	72P10182	1101	1	0	32	46	.012	.012	.006	.017	.017	.017	.010	.010	.044	.051
803	72P10182	1101	1	1						.042	.089	.089	.361	.245	.072	.107
804	72P10182	1103	1	0	51	61	.022	.022	.020	.028	.029	.029	.020	.024	.024	.025
805	72P10182	1103	1	1									.167	.338	.251	.274

CARD 1 SAN JOSE (CONTINUED)

USS	STANDARD	FACILITY	PART	STORY	PV	USE	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	RUN 6	RUN 7
NJ	LOCATION	NUMBER	NO.	NO.	CODE	CODE	ROOF	TOTAL	ROOF	TOTAL	TOTAL	TOTAL	ROOF
							CONT	RF	CONT	RF	RF	RF	CONT
806	72810106	4703	1	0	59	12	.000	.005	.005	.000	.003	.039	.032
807	72810106	4703	1	1			.	.	.000	.041	.015	.207	.130
808	72810106	4703	1	2			.	.	.000	.031	.113	.117	.060
809	72810106	4703	1	3			.001	.045	.001	.021	.010	.098	.047
810	72810106	4703	1	4			.004	.043	.006	.021	.016	.077	.041
811	72810106	4703	1	5			.	.	.036	.048	.043	.089	.057
812	72810106	4704	1	0	59	12	.001	.009	.009	.000	.010	.007	.005
813	72810106	4704	1	1			.003	.033	.001	.035	.023	.080	.059
814	72810106	4704	1	2			.012	.038	.004	.035	.024	.065	.037
815	72810106	4704	1	3			.	.	.028	.057	.048	.102	.090
816	72810109	1001	1	1			.000	.047	.000	.026	.026	.056	.083
817	72810109	1001	1	2	35	54	.000	.023	.023	.000	.022	.014	.019
818	72810109	1001	1	3	36	54	.002	.021	.021	.003	.020	.018	.017
819	72810109	1001	1	4			.027	.043	.	.	.051	.041	.040
820	72810114	222	1	0	52	55	.	.	.020	.019	.028	.019	.022
821	72810114	222	1	1			.	.	.	.	.	.083	.013
822	72810160	501	1	0	22	26	.014	.014	.020	.045	.045	.014	.
823	72810160	501	1	1			.	.	.	.	.	.422	.
824	72810162	1714	1	0	59	11	.003	.004	.004	.007	.007	.003	.005
825	72810162	1714	1	1			.	.	.022	.057	.076	.146	.203
826	72810162	1714	1	2			.	.	.035	.052	.041	.087	.070
827	72810162	1714	1	3			.	.	.052	.054	.067	.113	.129
828	72810162	1714	1	4			.	.	.	.	.	.181	.141
829	72810162	1714	1	5			.	.	.	.	.	.184	.151
830	72810162	1714	1	6			.	.	.	.	.	.215	.187
831	72810165	118	1	0	59	41	.000	.000	.001	.000	.002	.000	.000
832	72810165	118	1	1			.000	.035	.000	.089	.089	.086	.030
833	72810165	118	1	2	59	41	.000	.022	.022	.000	.035	.025	.008
834	72810165	118	1	3	59	41	.001	.019	.019	.000	.026	.017	.073
835	72810165	118	1	4			.004	.030	.003	.034	.025	.128	.138
836	72810165	118	1	5			.	.	.044	.071	.070	.184	.168
837	72810165	235	1	0	57	23	.	.	.009	.000	.001	.041	.021
838	72810165	235	1	1			.	.	.001	.015	.015	.183	.064
839	72810165	235	1	2			.	.	.004	.015	.015	.020	.025
840	72810165	235	1	3			.	.	.015	.026	.026	.187	.138
841	72810165	236	1	0	52	31	.	.	.009	.009	.009	.008	.009
842	72810165	236	1	1			.	.	.049	.063	.063	.297	.274
843	72810165	243	1	0	52	23	.	.	.020	.034	.038	.021	.021
844	72810165	243	1	1			.	.	.	.	.	.381	.225
845	72810165	303	1	0	59	49	.025	.025	.025	.006	.006	.023	.028
846	72810165	303	1	1			.	.	.732	.847	.847	.218	.155
847	72810165	407	1	0	35	53	.006	.006	.006	.030	.000	.005	.005
848	72810165	407	1	1			.	.	.003	.034	.034	.199	.156
849	72810165	407	1	2			.	.	.	.	.	.304	.263
850	72810165	411	1	0	59	11	.020	.020	.006	.012	.012	.079	.079
851	72810165	411	1	1			.	.	.	.	.	.223	.112
852	72810165	411	1	2			.	.	.	.	.	.571	.518
853	72810165	3901	1	1	32	69	.000	.000	.001	.000	.000	.000	.000
854	72810165	3904	1	0	59	41	.000	.000	.001	.001	.001	.000	.000
855	72810165	3904	1	1			.	.	.001	.053	.038	.002	.006
856	72810165	3904	1	2			.002	.031	.004	.023	.019	.006	.003
857	72810165	3904	1	3			.021	.046	.036	.046	.043	.085	.046
858	72810165	4001	1	0	59	12	.001	.001	.002	.001	.004	.004	.018
859	72810165	4001	1	1			.	.	.004	.056	.043	.336	.222
860	72810165	4001	1	2			.	.	.021	.061	.054	.118	.088
861	72810165	4005	1	0	59	12	.006	.000	.001	.000	.000	.020	.030
862	72810165	4005	1	1			.	.	.000	.014	.007	.287	.235
863	72810165	4005	1	2			.004	.049	.003	.016	.008	.091	.079
864	72810165	4005	1	3			.021	.049	.021	.035	.029	.071	.078
865	72810165	4008	1	0	59	12	.000	.000	.001	.000	.000	.036	.066
866	72810165	4008	1	1			.	.	.000	.015	.007	.289	.213
867	72810165	4008	1	2			.004	.050	.002	.011	.019	.091	.023
868	72810165	4008	1	3			.021	.050	.016	.027	.021	.071	.059
869	72810165	4012	1	0	32	23	.000	.000	.009	.004	.003	.054	.
870	72810165	4012	1	1			.	.	.	.	.	.378	.
871	72810165	4106	1	1			.001	.029	.001	.029	.025	.364	.098
872	72810165	4106	1	2	59	12	.007	.024	.024	.004	.021	.018	.045
873	72810165	4106	1	3			.	.	.028	.048	.038	.106	.055
874	72810165	4112	1	0	59	23	.007	.011	.009	.001	.003	.043	.013
875	72810165	4112	1	1			.	.	.003	.031	.011	.103	.100
876	72810165	4115	1	0	59	23	.003	.017	.006	.001	.001	.039	.040
877	72810165	4115	1	1			.	.	.003	.071	.037	.278	.198
878	72810165	4115	1	2			.	.	.026	.085	.068	.152	.149
879	72810165	4209	1	0	59	26	.000	.000	.001	.000	.009	.029	.008
880	72810165	4209	1	1			.000	.024	.001	.018	.004	.004	.
881	72810165	4209	1	2	59	26	.003	.020	.020	.003	.004	.003	.009
882	72810165	4209	1	3			.012	.020	.016	.016	.016	.017	.
883	72810165	4209	1	4			.	.	.	.	.	.064	.
884	72810165	4211	1	0	59	29	.000	.007	.007	.000	.002	.003	.004
885	72810165	4211	1	1			.	.	.000	.006	.003	.189	.111
886	72810165	4211	1	2	59	29	.000	.024	.024	.000	.052	.052	.028

CARD 1 SAN JOSE (CONTINUED)

JOSS	STANDARD	FACILITY	PART	STORY	PV	USE	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	RUN 6	RUN 7
NO	LOCATION	NUM	NO.	NO.	CODE	CODE	ROOF	TOTAL	ROOF	TOTAL	ROOF	TOTAL	ROOF
							COUNT	RF	COUNT	RF	COUNT	RF	COUNT
887	72810165	4211	1	5	56	29	.000	.019	.019	.000	.024	.024	.000
888	72810165	4211	1	4	59	29	.000	.018	.018	.000	.021	.021	.000
889	72810165	4211	1	5	59	29	.000	.015	.015	.000	.018	.018	.000
890	72810165	4211	1	6	59	29	.000	.013	.020	.000	.017	.017	.000
891	72810165	4211	1	7	59	29	.000	.012	.020	.000	.015	.015	.000
892	72810165	4211	1	8	59	29	.000	.011	.020	.000	.014	.013	.000
893	72810165	4211	1	9	59	29	.000	.010	.020	.000	.014	.012	.000
894	72810165	4211	1	10	59	29	.000	.009	.009	.000	.013	.011	.000
895	72810165	4211	1	11	59	29	.000	.016	.009	.000	.012	.023	.000
896	72810165	4211	1	12	59	29	.000	.017	.006	.000	.011	.023	.000
897	72810165	4211	1	13	59	29	.000	.016	.003	.000	.011	.022	.000
898	72810165	4211	1	14			.001	.016		.000	.010	.021	.000
899	72810165	4211	1	15	59	29	.007	.021	.009	.000	.009	.026	.000
900	72810165	4211	1	16			.	.	.000	.013	.013	.069	.000
901	72810009	110	1	1			.024	.026	.	.	.	.093	.154

CARD 2 SAN JOSE

JOSS	SPACE	AVG	MIN.	TOTAL	AVG	FLOOR	CEILING	EXT
NO	PF-40 PF 100 PF-40 PF-100	APER SILL	APER SILL	OF HFRD	EX	HT	HEIGHT	MALL
		HT.	HT	NET	MT.			MASS
120	332	0	349	0.00	0	2.70	10	-8
121		0	0	0.00	0	22.75	79	3
122	50	117	127	0	0	0.10	0	-4
123	060	0	1142	0.00	0	12.70	20	3
124	060	0	1142	0.00	0	12.70	20	130
125		0	0	0.00	0	12.70	20	41
126	10	15	15	0	0	0.70	0	-6
127		0	0	0.00	0	17.70	30	3
128		0	0	0.00	0	15.00	30	15
129	286	241	241	0	0	0.00	0	-6
130		713	248	0.00	0	19.75	69	3
131	595	1468	1064	0.00	0	12.70	20	20
132		1452	504	0.00	0	17.70	30	12
133		0	0	0.00	0	20.70	30	44
134	555	187	187	0	0	0.70	0	-9
135		0	0	0.00	0	42.70	69	3
136		0	0	0.00	0	37.70	79	24
137		0	0	0.00	0	37.70	79	36
138		0	0	0.00	0	37.70	79	48
139		0	0	0.00	0	37.70	79	60
140	1471	1971	565	0.00	0	37.70	79	72
141		0	0	0.00	0	0.70	0	-14
142		0	0	0.00	0	20.70	40	3
143		0	0	0.00	0	20.70	30	20
144		0	0	0.00	0	20.70	30	35
145		0	0	0.00	0	5.70	10	53
146		1046	0	0.00	0	15.70	30	17
147		1941	79	0.00	0	15.70	30	30
148	285	0	0	0.00	0	0.70	0	-3
149		0	0	0.00	0	17.70	40	3
150	130	141	171	.75	0	5.70	20	-7
151		0	0	0.00	0	17.70	40	3
152		090	349	0.00	0	15.70	30	24
153		090	383	0.00	0	15.70	30	36
154		090	361	0.00	0	15.70	30	48
155		090	198	0.00	0	15.70	30	60
156	170	090	141	0.00	0	15.70	30	72
157		440	0	0.00	0	30.70	30	84
158		491	0	0.00	0	30.70	30	96
159		740	0	0.00	0	30.70	30	108
160		725	0	0.00	0	30.70	30	120
161	81	114	114	0	0	0.70	0	-7
162		0	0	0.00	0	46.75	69	3
163		0	0	0.00	0	39.70	59	21
164		0	0	0.00	0	51.70	59	32
165		0	0	0.00	0	59.70	59	43
166		0	0	0.00	0	59.70	59	54
167		0	0	0.00	0	59.70	59	65
168		0	0	0.00	0	59.70	59	76
169	237	76	0	0.00	0	59.70	59	87
170	237	110	0	0.00	0	59.70	59	98
171		22	0	0.00	0	59.70	59	109
172		0	0	0.00	0	59.70	59	120
173	543	0	0	0.00	0	5.70	10	3
174		512	0	0.00	0	5.70	10	18
175		344	0	0.00	0	5.70	10	28
176		0	0	0.00	0	5.70	10	30
177	227	147	0	.75	0	2.70	10	-9

CARD 2 SAN JOSE (CONTINUED)

D35 NO	S P A C E S				AVG APER SILL MT.	MIN. APER SILL MT.	AVG % APER	MAX. % APER	TOTAL OVER- HEAD WT.	FLOOR WT.	CEILING WEIGHT	AVG EXT WALL MASS	
	RUN 2 PF-40	PF 100	RUN 7 PF-40	PF-100									
784			0	0	0.00	0	15.00	40	3	70	120	60	85
785			0	0	0.00	0	17.50	50	16	10	60	60	55
786	104	104	A9	89	0	0	0.00	0	-14	130	0	60	150
787			0	0	0.00	0	22.00	60	3	70	60	60	76
788			0	0	0.00	0	2.50	10	19	10	60	60	60
789	102	102	154	154	0	0	0.00	0	-12	130	0	100	220
790			0	0	0.00	0	27.00	40	3	30	100	0	170
791	113	113	100	100	0	0	0.00	0	-6	210	0	100	150
792			221	0	0.00	0	34.00	60	3	110	160	100	100
793			0	0	0	0	0.00	0	13	10	100	100	100
794	40	40	73	0	0	0	0.00	0	-9	140	0	70	100
795			0	0	0.00	0	37.00	60	3	70	70	0	100
796	117	117	55	0	1.50	0	2.50	10	-9	170	0	60	235
797			725	0	0.00	0	12.00	20	3	110	60	60	250
798			0	0	0.00	0	12.00	20	17	50	60	60	180
799	40	40	44	44	0	0	0.00	0	-8	270	0	90	240
800			0	0	0.00	0	30.00	50	3	150	90	100	210
801	24	24	0	0	0.00	0	50.00	50	19	50	100	100	170
802			0	0	0	0	0.00	0	-7	140	0	40	120
803	14	14	A0	0	0.00	0	47.00	60	3	100	40	0	60
804			0	0	0	0	0.00	0	-6	90	0	80	150
805	150	150	107	63	.75	0	0.00	0	3	10	80	0	40
806			149	0	1.00	0	30.00	50	3	400	0	80	140
807			502	0	0.00	0	27.00	50	13	320	80	80	120
808			658	0	0.00	0	27.00	50	23	240	80	80	120
809			632	0	0.00	0	27.00	50	33	150	60	80	120
810			0	0	0.00	0	27.00	50	43	50	80	80	120
811	404	404	176	0	.75	0	2.00	10	-7	240	0	80	120
812			111	0	0.00	0	15.00	20	3	150	60	60	110
813			348	0	0.00	0	15.00	20	13	120	60	60	100
814			0	0	0.00	0	15.00	20	23	60	60	60	100
815			0	0	0.00	0	20.00	50	3	420	0	110	100
816	405	405	503	0	1.50	0	5.00	10	16	310	110	110	160
817	406	406	607	0	1.50	0	5.00	10	10	200	110	110	100
818			0	0	1.50	0	5.00	10	42	90	110	110	100
819			13	0	0	0	0.00	0	-4	90	0	80	150
820	70	70	10	0	0.00	0	0.00	0	3	10	80	0	100
821			0	0	0.00	0	59.00	60	3	10	100	0	10
822	97	97	145	105	0.00	0	5.00	20	-6	150	0	70	120
823			0	0	0.00	0	37.00	60	3	90	70	10	120
824			0	0	0.00	0	44.00	50	20	70	10	10	60
825			0	0	0.00	0	44.00	50	30	60	10	10	60
826			0	0	0.00	0	44.00	50	40	50	10	10	60
827			0	0	0.00	0	44.00	50	50	40	10	10	60
828			0	0	0.00	0	44.00	50	60	30	10	10	60
829	63	63	96	96	0	0	0.00	0	-3	540	0	100	160
830			0	0	0.00	0	7.00	30	3	440	100	90	160
831	400	400	123	0	0.00	0	15.00	30	16	350	90	90	160
832	400	400	0	0	0.00	0	15.00	30	29	250	90	90	160
833			0	0	0.00	0	15.00	30	42	170	90	90	160
834	275	275	0	0	0.00	0	20.00	30	55	90	90	90	110
835			444	170	6.00	0	12.00	20	-7	270	0	80	320
836			247	0	0.00	0	15.00	20	13	110	80	80	120
837			2	0	0.00	0	15.00	20	75	30	80	80	120
838	52	44	161	151	.75	0	5.00	20	-10	150	0	120	400
839			0	0	1.00	0	12.00	30	3	30	120	0	100
840	80	80	0	0	0.00	0	0.00	0	-4	100	0	80	150
841			0	0	0.00	0	10.00	10	3	20	80	0	150
842	130	130	151	151	0	0	0.00	0	-5	90	0	50	150
843			0	0	0.00	0	12.00	20	3	40	50	0	120
844	700	700	157	157	0	0	0.00	0	-11	150	0	70	120
845			0	0	0.00	0	17.00	30	3	90	70	70	120
846			0	0	0.00	0	7.00	20	21	10	70	70	120
847	30	30	40	40	0	0	0.00	0	-8	100	0	90	100
848			0	0	0.00	0	60.00	60	3	10	70	0	10
849	130	130	272	272	0	0	0.00	0	3	300	0	0	10
850	837	837	226	226	0	0	0.00	0	-10	450	0	100	350
851			0	0	0.00	0	12.00	50	3	350	100	100	210
852			0	0	0.00	0	10.00	40	16	250	100	100	190
853	70	70	74	74	1.50	0	7.00	10	-6	240	0	70	130
854			0	0	0.00	0	27.00	30	3	170	70	70	100
855	70	70	61	61	0	0	0.00	0	-6	310	0	70	130
856			329	34	0.00	0	44.00	50	3	240	70	70	130
857			304	46	0.00	0	44.00	50	12	170	70	70	130

CARD 2 SAN JOSE (CONTINUED)

OAS NO	S P A C E S				AVG APER SILL HT.	MIN. APER SILL HT.	AVG X APER	MAX. X APER	HT OF DET	TOTAL OVER- HEAD MT.	FLOOR MT.	CEILING WEIGHT	AVG EXT WALL MASS
	RUN 2 PF-40	PF 100	RUN 7 PF-40	PF-100									
664			127	0	0.00	0	44.50	59	21	100	70	70	130
665	79	79	91	69	0	0	0.00	0	-6	310	0	70	130
666			569	161	0.00	0	44.50	59	3	240	70	70	130
667			569	164	0.00	0	44.50	59	12	170	70	70	130
668			209	0	0.00	0	44.50	59	21	100	70	70	130
669	189	189	122	122	2.25	0	37.50	50	-7	180	0	150	180
670			0	0	0.00	0	56.75	69	3	10	150	0	35
671			47	0	0.00	0	25.00	40	3	210	0	70	100
672	60	0	242	0	0.00	0	20.00	20	12	140	70	70	100
673			25	0	0.00	0	20.00	20	21	70	70	70	100
674	1750	1750	556	556	.75	0	12.50	20	-5	140	0	70	150
675			2116	0	0.00	0	40.00	40	3	70	70	0	150
676	200	200	195	0	1.50	0	10.00	20	-10	170	0	80	140
677			0	0	0.00	0	22.50	40	3	90	80	10	130
678			0	0	0.00	0	22.50	40	16	80	10	10	130
679	201	201	331	331	0	0	0.00	0	-8	340	0	100	150
680			1549	310	0.00	0	7.50	10	3	240	100	60	100
681	105	0	1804	725	0.00	0	5.00	10	74	180	60	60	80
682			1400	109	0.00	0	5.00	10	32	120	60	60	80
683			0	0	0.00	0	5.00	10	40	60	60	60	80
684	58	58	327	327	0	0	0.00	0	-8	999	0	70	150
685			80	7	0.00	0	10.00	20	3	999	70	70	150
686	292	0	0	0	0	0	0.00	0	21	999	70	70	100
687	282	0	15	0	0	0	0.00	0	36	970	70	70	100
688	292	0	148	0	0	0	0.00	0	51	900	70	70	100
689	292	0	270	0	0	0	0.00	0	66	830	70	70	100
690	292	0	270	0	0	0	0.00	0	41	760	70	70	100
691	292	0	270	0	0	0	0.00	0	96	690	70	70	100
692	292	0	270	0	0	0	0.00	0	111	620	70	70	100
693	145	0	270	0	0	0	0.00	0	126	550	70	70	100
694	232	0	270	0	0	0	0.00	0	141	480	70	70	100
695	232	0	270	0	0.00	0	40.00	40	156	410	70	70	100
696	262	204	270	0	0.00	0	40.00	40	171	340	70	70	100
697	116	116	270	0	0.00	0	40.00	40	186	270	70	70	100
698			270	9	0.00	0	40.00	40	201	200	70	70	100
699	264	264	270	76	0.00	0	40.00	40	216	130	70	70	100
700			270	0	0.00	0	40.00	40	231	60	70	70	100
901			1471	0	0.00	0	15.00	20	3	20	50	0	100

CARD 3 SAN JOSE

OAS NO	AVG % WMT EXFO	AVG % PARTITION WEIGHT	STORY ABOVE		STORY BELOW		RUN 1 PF	RUN 2 PF	RUN 3 PF	RUN 4 PF	RUN 5 PF	RUN 6 PF	RUN 7 PF
			AVG % APER	AVG EXT WALL MASS	AVG % APER	AVG EXT WALL MASS							
726	90	0.00	22.25	133									
727		0.00					53	50	111	111	53	63	143
728	50	0.00	12.50	240	2.50	123							
729		45.01	12.50	120	0.00	440	1009	1000	1000	1000	1009	1009	1000
730		0.00	12.50	120	12.50	240	77	77	111	111	33	333	500
731		0.00			12.50	120	45	45	30	30	29	250	100
732	70	0.00	17.50	78			167	333			6	16	17
733		0.00	15.00	70	0.00	120					167	290	500
734		0.00			17.50	78					4	6	27
735	90	0.00	19.75	235			1009	1000	1009	1009	1009	1009	1009
736		0.00	12.50	185	0.00	185	21	21	59	59	45	33	100
737		0.00	17.50	168	19.75	235	125	125	500	500	500	1009	1000
738		0.00	22.00	150	12.50	185	28		100	100	50	167	100
739		0.00			17.50	188			21	21	5	32	21
740	90	22.50	42.00	100			1000				1009	1009	500
741		0.00	37.00	100	0.00	100					6	5	5
742		0.00	37.00	100	37.00	100					29	20	19
743		0.00	37.00	100	37.00	100					24	21	14
744		0.00	37.00	100	37.00	100					30	26	14
745		0.00	37.00	100	37.00	100					27	24	10
746		0.00			37.00	100					7	8	5
747	90	0.00	20.00	110			1000	1000	1000	1009	1009	1009	1009
748		0.00	20.00	110	0.00	150			14	14	15	12	27
749		0.00	20.00	110	20.00	110			17	18	24	45	22
750		0.00	5.00	100	20.00	110			28	32	20	19	33
751		0.00			20.00	110			15	19	3	3	18
752		10.00	15.00	130	17.50	130					24	16	100
753		10.00			15.00	130					8	9	111
754	90	0.00	17.50	100			50	11	11	50	50	18	18
755		0.00			0.00	145					6	6	15
756	90	0.00	17.50	165	5.00	128	1000	200	200	71	71	1000	1000
757		0.00	15.00	165	17.50	165	36	14	14	15	12	20	20
758		0.00	15.00	165	15.00	165	22	100	125	13	13	208	208
759		0.00	15.00	165	15.00	165	21	67	111	36	28	167	167
760		0.00	15.00	165	15.00	165	28	71	91	18	25	167	167
761		0.00	15.00	165	15.00	165	38	77	100	18	50	125	125

CARD 3 SAN JOSE (CONTINUED)

045 NJ	AVG % TSMT EXPO	AVG INT PARTITION HEIGHT	STORY ABOVE AVG % APER	AVG EXT WALL MASS	STORY BELOW AVG % APER	AVG EXT WALL MASS	RUN 1 PF	RUN 2 PF	RUN 3 PF	RUN 4 PF	RUN 5 PF	RUN 6 PF	RUN 7 PF
762		0.00	30.00	130	15.00	105	50	50	100	125	20	43	111
763		0.00	30.00	130	15.00	105	21		24	24	13	48	71
764		0.00	30.00	130	30.00	130	34		31	31	32	53	77
765		0.00	30.00	130	30.00	130	34		37	37	38	45	83
766		0.00			30.00	130			32	32	13	17	67
767	90	0.00	46.75	130			1000	500	1000	1000	1009	1000	1009
768		20.00	59.00	130	0.00	150			12	12	9	5	6
769		0.00	59.00	130	46.75	130			14	14	7	8	24
770		0.00	59.00	130	59.00	130	20		17	17	9	8	24
771		0.00	59.00	130	59.00	130			23	23	8	10	27
772		0.00	59.00	130	59.00	130	24		30	30	13	13	33
773		0.00	59.00	130	59.00	130	30		38	38	14	17	37
774		0.00	59.00	130	59.00	130	38		48	48	20	20	42
775		0.00	59.00	130	59.00	130	42	42	50	50	23	23	43
776		0.00	59.00	130	59.00	130	48	48	50	50	24	25	45
777		0.00	59.00	130	59.00	130	31		43	43	12	12	45
778		0.00			59.00	130			16	16	13	13	32
779		0.00	5.00	70			48	48	25	25	19	11	25
780		0.00	5.00	70	5.00	70			63	63	11	40	67
781		0.00	5.00	70	5.00	70	22		30	30	13	20	53
782		0.00			5.00	70					10	10	27
783	80	0.00	15.00	85				333	48	48	29	29	71
784		0.00	17.50	55	2.50	150					22	22	16
785		0.00			15.00	85					3	3	5
786	90	2.50	22.25	78	0.00	150	125	125	200	200	143		143
787		0.00	2.50	80	22.25	78			14	14	5		3
788		0.00									3		3
789	77	0.00	27.50	170	0.00	220		111	250	250	125	125	500
790		0.00			0.00	220			12	12	3	4	11
791	90	0.00	14.50	100	0.00	130	1000	500	1000	1000	1000	250	1000
792		0.00	0.00	100	34.50	100	24		19	19	5	6	53
793		0.00									4	4	4
794	85	0.00	37.25	100	0.00	100	111	111	56	56	111	111	43
795		0.00			0.00	100					7	9	12
796	70	2.50	12.50	230	2.50	235	143	167	333	333	167	167	77
797		0.00	12.50	180	12.50	230			23	48	4	9	50
798		0.00									6	11	14
799	90	0.00	50.00	210	0.00	245	1009	1000	1009	1009	200	200	1009
800		22.50	40.00	170	50.00	210			14	67	5	4	29
801		0.00							18	24	14	13	19
802	90	0.00	47.25	60	0.00	120	63	167	59	59	100	100	20
803		0.00			0.00	120			11	11	3	4	9
804	82	0.00	0.00	40	0.00	150	45	50	34	34	50	42	40
805		22.50									6	3	4
806	60	0.00	50.00	120	5.00	143	200	200	333	333	26	31	71
807		0.00	27.50	120	30.00	140			24	67	5	7	48
808		0.00	27.50	120	27.50	120			32	77	9	17	67
809		0.00	27.50	120	27.50	120	22		48	100	10	21	67
810		0.00	27.50	120	27.50	120	23		48	63	13	24	59
811		0.00			27.50	120			21	23	11	18	24
812	50	0.00	15.00	110	2.50	120	111	111	100	100	143	200	50
813		0.00	15.00	100	15.00	110	30		29	43	13	17	45
814		0.00	15.00	100	15.00	100	26		29	42	15	27	50
815		0.00							18	21	10	11	24
816		0.00	5.00	100	20.00	105	21		38	38	18	12	30
817		0.00	5.00	100	5.00	100	43	43	45	45	71	53	56
818		0.00	5.00	100	5.00	100	48	48	50	50	56	59	59
819		0.00			5.00	100	23				20	24	21
820	75	0.00	32.25	100	0.00	150		50	36	36	53	45	42
821		0.00									2	2	3
822	90	0.00	49.00	10	0.00	120	71	50	22	22	71		32
823		0.00									2		2
824	60	0.00	37.25	120	5.00	120	250	250	143	143	333	333	167
825		0.00	44.50	80	37.25	120			11	13	7	5	7
826		0.00	44.50	80	44.50	80			19	24	11	14	25
827		0.00	44.50	80	44.50	80			10	15	5	8	16
828		0.00	44.50	80	44.50	80					6	7	11
829		0.00	44.50	80	44.50	80					5	7	8
830		0.00			44.50	80					5	5	5
831	90	0.00	7.50	165	0.00	165	1009	1000	500	500	1009	1009	1009
832		0.00	15.00	165	7.50	165	29		11	11	12	33	10
833		0.00	15.00	165	15.00	165	45	45	29	40	125	50	42
834		0.00	15.00	165	15.00	165	53	53	38	59	14	14	48
835		0.00	20.00	110	15.00	165	33		29	40	8	8	40
836		0.00			15.00	165			14	14	5	6	14
837	65	0.00	12.50	120	12.50	300		111	1000	1000	24	48	167
838		0.00	15.00	120	15.00	120			67	67	10	16	143
839		0.00	15.00	120	15.00	120			67	67	50	40	100
840		0.00							38	38	5	8	42
841	87	0.00	12.50	150	5.00	200		111	111	111	125	111	125
842		0.00							16	16	10	4	21

CARD 3 SAN JOSE (CONTINUED)

DIS NO	AVG % HMT =XMO	AVG INT PARTITION WEIGHT	STORY AVG % APEN	STORY AVG EXT =ALL MASS	STORY AVG % APEN	STORY AVG EXT WALL MASS	RUN 1 PF	RUN 2 PF	RUN 3 PF	RUN 4 PF	RUN 5 PF	RUN 6 PF	RUN 7 PF
043	47	0.00	10.00	150									
044		0.00						50	26	26	48	48	20
045	90	22.50	12.50	128	0.00	150					4	5	4
046		22.50					40	40	167	167	43	50	250
047	90	0.00	17.50	120	0.00	150			21	21	5	6	27
048		0.00	7.50	98			167	167	1009	1009	200	200	1000
049		0.00			0.00	150			29	29	5	6	18
050	90	0.00	69.00	10	17.50	150					3	4	18
051		0.00	69.00	10			50	167	83	83	13	13	111
052		0.00			0.00	100					2	2	7
053		0.00			69.00	10					2	2	7
054	90	0.00	12.50	215			1009	1000	1009	1009	1009	1009	1009
055		22.50	10.00	195	0.00	550	1009	1000	1000	1000	1009	1009	1009
056		22.50	10.00	195	12.50	215			19	26	500	167	19
057		0.00			10.00	195	52		43	53	167	333	37
058	90	7.00	27.50	100			22		22	23	15	22	21
059		0.00	17.50	100	7.50	130	1000	500	250	250	56	56	51
060		0.00			27.50	100			18	23	3	5	29
061	90	22.50	44.50	130					16	19	9	11	27
062		22.50	44.50	130	0.00	150	1009	1009	1009	1009	50	26	1000
063		0.00	44.50	130	44.50	150			71	143	3	4	200
064		0.00			44.50	150	20		63	125	11	13	200
065	90	22.50	44.50	130	44.50	150	20		29	34	14	13	61
066		0.00	44.50	130	0.00	150	1009	1000	1009	1009	20	15	250
067		0.00	44.50	130	44.50	150			67	143	3	5	333
068		0.00			44.50	150	20		91	53	11	43	333
069	75	27.50	56.75	33			20		37	48	14	17	71
070		47.50			57.50	108	1009	111	200	200	19	17	250
071		0.00	20.00	100							3		4
072		40.00	20.00	100	25.00	100	34		34	40	3	11	51
073		40.00			20.00	100	42	42	48	56	9	22	100
074	30	47.50	40.00	150			91	111	333	333	77	77	250
075		57.50			12.50	150			32	91	10	10	100
076	80	7.00	22.50	130	10.00	140	59	167	1000	1000	17	25	81
077		0.00	22.50	130	22.50	150			14	27	4	5	27
078		0.00							12	17	7	7	28
079	90	0.00	7.50	100	0.00	150	1009	1000	111	111	1009		250
080		0.00	7.50	80	7.50	100	38		56	250	12		143
081		0.00	7.50	80	7.50	100	50	50	250	333	111		500
082		0.00			7.50	100	36		63	63	59		125
083	50	0.00	19.00	150	0.00	150					16		14
084		0.00	0.00	100	0.00	150	143	143	500	500	200	250	1000
085		0.00	0.00	100	10.00	150			167	333	5	9	333
086		0.00	0.00	100	0.00	100	42	42	19	19	36	34	34
087		0.00	0.00	100	0.00	100	53	53	42	42	42	42	42
088		0.00	0.00	100	0.00	100	63	63	48	48	48	48	50
089		0.00	0.00	100	0.00	100	67	67	56	56	56	56	56
090		0.00	0.00	100	0.00	100	77	77	59	59	63	63	63
091		0.00	0.00	100	0.00	100	83	83	67	67	67	67	67
092		0.00	0.00	100	0.00	100	91	91	71	71	77	77	77
093		0.00	0.00	100	0.00	100	100	90	71	71	83	83	83
094		0.00	40.00	100	0.00	100	111	111	77	77	91	91	91
095		0.00	40.00	100	0.00	100	56	111	83	83	43	43	100
096		0.00	40.00	100	40.00	100	59	167	91	91	43	43	100
097		0.00	40.00	100	40.00	100	63	333	91	91	45	45	100
098		0.00	40.00	100	40.00	100	63		100	100	48	48	111
099		0.00	40.00	100	40.00	100	48	111	111	111	38	38	111
100		0.00			40.00	100					14	14	83
101		0.00					38		77	77	11	6	83

Appendix C

Buildings Not Used in Regression Analysis

This appendix contains a list of those buildings not analyzed in the regression analysis; they were not included in this analysis for one of the following reasons:

- 1) Correspondence of NFSS building part numbers and RTI assigned part numbers could not be determined. Shelter-marking sketches, NFSS Phase 1 FOSDIC forms or Phase 2 DCF's were required to identify part numbers assigned to complex buildings in the NFSS and these were not always available. Therefore, if such data were not available it was impossible to determine which portion of a complex building should be compared with RTI results. In many cases the RTI analyst considered it necessary to break a building into multiple parts, whereas the NFSS submission was done as a single building part. Conversely, many buildings subdivided into parts in the NFSS were done as one part by RTI.
- 2) The number of stories assigned to a building in the NFSS did not match the number of stories determined by the RTI field survey teams.
- 3) The EM-NFSS PF or the EM-RTI PF was not obtained. The EM-NFSS data extraction program yielded the NFSS building characteristics (listed in Appendix B) used in determining the relationship of PF to selected building parameters. The EM-RTI PF was the base against which other PF's and RF's were analyzed.

Providence, Rhode Island	
<u>Standard Location</u>	<u>Facility Number</u>
17220003	00061
17240009	00447
17240046	03002
17240046	03040
17240050	03339
17240056	03584
17240062	04086
17240062	04092
17240063	02014
17240063	04135
17240065	04318
17240074	04827
17240074	04881
17240074	04894
17240084	06068
17240090	06870
17240091	06925

Detroit, Michigan	
<u>Standard Location</u>	<u>Facility Number</u>
43330005	03504
43316015	00250
43320015	00399
43330041	04079
43330042	02780
43330077	05320
43330079	06035
43330080	04476
43330097	04957
43330107	05530
43330109	06086
43330115	05273
43330115	05286
43330123	05416

Detroit, Michigan (Cont'd.)	
<u>Standard Location</u>	<u>Facility Number</u>
43330134	05450
43330136	05778
43330153	04853
43330158	04511
43330161	05230
43330174	02912
43330187	02738
43330195	02259
43330240	01095
43330282	03249
43330290	01659
43330294	00017
43330331	01292
43330382	00029
43330409	04372
43330413	06278
43330448	03247
43330461	03541
43330464	03571
43330464	03578
43330492	04004
43330510	03098

New Orleans, Louisiana	
<u>Standard Location</u>	<u>Facility Number</u>
52420060	00371
52420022	00070
52420071	00225
52420074	00410
52420075	00286
52420086	00350
52420086	00486
52420088	00161
52420091	00027

New Orleans, Louisiana (Cont'd.)

<u>Standard Location</u>	<u>Facility Number</u>
524200	00533
52420101	00038
52420111	00041
52420142	00198
52420130	00136
52420137	00035
52420155	00425
52420160	00142

Albuquerque, New Mexico

<u>Standard Location</u>	<u>Facility Number</u>
53110002	00008
53110006	00006
53110007	00001
53110007	00002
53110007	00004
53110008	00105
53110010	00038
53110015	00211
53110018	00029
53110019	00099
53110021	00127
53110024	00063
53110024	00065
53110024	00073
53110024	00203
53110027	00139
53110027	00148
53110027	00156
53110046	80805
53110046	86530
53110046	89930
53110046	89940
53110046	90381

Albuquerque, New Mexico (Cont'd.)

<u>Standard Location</u>	<u>Facility Number</u>
53110047	00077
53110047	00078
53110056	00118
53110060	00111
53110066	00108

San Jose, California

<u>Standard Location</u>	<u>Facility Number</u>
72810002	00003
72810002	00201
72810005	00022
72810006	00041
42810008	00072
72810012	00146
72810046	00271
72810097	34102
72810163	00601
72810165	03903
72810165	03908
72810165	04207

Appendix D

Example of Regression Analysis Printout

Figure D-1 is an example of the printout from the TSAR program used to compute the regression equations for this project. Included in the printout are a correlation, mean and standard deviation matrix and a regression equation that is recomputed as each variable is included. The variables used are identified in Table D-I. The two sections of the example printout are: A. Correlation, Mean, and Standard Deviation Matrix, and B. Example of Stepwise Multiple Regression.

Section

A This figure gives the Correlation, Mean, and Standard Deviation Matrix.

B As found in the TSAR Manual,^{1/} the headings are defined as follows:

N = The number of observations. Observations for which any of the variables are blank (no score) will be ignored.

FINCLUDE and FDELETE specify the threshold F values which determine what variables are included in and deleted from the partial regression. To be included, a variable must have an F value greater than FINCLUDE; to be deleted, a variable must have an F value less than FDELETE.

MULT R = Multiple Correlation Coefficient = the square root of the ratio of the regression sums of squares to the total sums of squares. (MULT R)² is sometimes called the coefficient of determination, and is the proportion of the total sums of squares accounted for by the regression.

SE EST = Standard error of estimate = the error associated with the regressions equation at a given point.

$$SE\ EST = S_D \sqrt{(1 - MULT\ R^2)/DF}$$

where S_D is the standard deviation of the dependert variable.

Fvalue — this F is distributed as $F(N_V, DF)$ where DF is N minus the number of estimated parameters in the regression equation (number of variables plus one for the constant term, if any) and $N_V = N - DF - 1 =$ the number of included variables. This F value gives the significance of the regression equation. It is the ratio of the regression sum of squares $\times (1/N_V)$ to the residual sum of squares $\times (1/DF)$. Another method of calculating F is $\frac{(MULT\ R)^2 \times DF}{(1 - MULT\ R^2) \times NV}$.

^{1/} Tele-Storage and Retrieval System, User's Manual. Durham, N. C.: Duke Computation Center, November 1967.

Section

B
(cont'd.)

BETA = Partial regression coefficient. $BETA_i$ measures the average increase in the dependent variable per unit increase in the i th independent variable when the other independent variables are held constant.

The values for BETA are obtained by solving a system of equations of the form

$$b_0 + b_1 x_1 + b_2 x_2 + \dots + b_k x_k = y$$

$$b_0 x_1 + b_1 x_1^2 + b_2 x_1 x_2 + \dots + b_k x_1 x_k = x_1 y$$

.....

$$b_0 x_k + b_1 x_k x_1 + b_2 x_k x_2 + \dots + b_k x_k^2 = x_k y$$

SE BETA = the Standard Error of Beta = the error associated with beta.

$$SE \text{ BETA} = (E_{DD})(E_{II})/DF$$

NOR B = Normalized Beta = $BETA (MEAN_I)$

B = The regression coefficient = $BETA \frac{S_D}{S_I}$ where S_D is the standard

deviation of the dependent variable, and S_I is the standard deviation of the independent variable.

SE B = Standard Error of B = the error associated with each B (regression coefficient).

$$SE B = (SE \text{ BETA}) \times \frac{S_D}{S_I}$$

F = The F value which indicates the significance of adding the variables, $F = \left(\frac{BETA}{SE \text{ BETA}} \right)^2$ and is distributed by $F(1, DF)$.

MULTIPLE REGRESSION ANALYSIS - STEPWISE - N = 340.												CORRELATIONS, MEANS, STANDARD DEVIATIONS					
CL1	FI	SILL	APER	CLWT	OHWT	HT	EXPO	INPAR	FLWT	WWT	MINSL	MAXAP	APERA	WTA	APERB	WWTB	
RF1	3093	-5160	-3133	3613	2883	-3086	9073	-4963	-2957	-2469	-2282	-1327	3875	-0391	-1549	2249	3464
CL1		-0021	-1231	-1286	-1702	-5281	-1356	1109	-0622	-2205	0870	-1172	-2144	-2248	-2442	-1453	-0907
FI			0931	-5624	-7375	-0838	-4910	7633	-0070	0100	3161	-1229	-5917	0320	1396	-5242	-5401
SILL				0214	0162	1486	0720	0734	1548	2104	0159	7992	0094	0344	0000	0591	-0839
APER					4607	1100	5109	-6504	2345	-1026	-2407	1659	8193	5705	0765	8505	4580
CLWT						2800	5014	-6292	1543	3150	-2786	2177	5585	-0085	-0547	4653	7120
OHWT							1415	-0947	2862	3427	0005	1959	1790	1303	2173	1011	2157
HT								-6463	1851	0156	-2313	1917	4721	1912	-0707	5862	2903
EXPO									-0864	0769	3294	-0892	-5529	-1345	0370	-6361	-5071
INPAR										0640	0162	1090	1684	2265	1783	2386	1010
FLWT											0719	1706	0008	-0401	-0265	-1097	1414
WWT											-0388	-2846	0131	1484	-2059	-1751	
MINSL												1630	0736	0469	1982	1036	
MAXAP													3172	0082	6156	4843	
APERA														2679	5087	1274	
WTA															0745	1004	
APERB																	3804

340. CORRELATIONS, MEANS, STANDARD DEVIATIONS

RF7			MEANS, STANDARD DEVIATION		
RF1	5712	0.01938529	14.61588081		
CL1	2746	0.00506176	7.05346270		
F1	-3191	0.27941176	0.57081394		
SILL	-1621	0.59644117	0.93802251		
APER	1362	18.74411764	17.12608227		
CLWT	1146	44.35294117	40.87384891		
OHWT	-2447	305.3970	247.5544		
HT	-0139	29.92647058	48.77620804		
EXPO	-2664	4.10588235	3.45063725		
INPAR	-3052	10.81176470	17.91468868		
FLWT	-1942	71.23529411	27.07365548		
WWT	-1758	157.5352	117.3643		
MINSL	-0578	0.27647058	0.85187834		
MAXAP	1969	30.09117647	24.05476627		
APERA	-1309	24.87941176	16.33131399		
WTA	-1766	116.2705	46.54705824		
APERB	0375	14.86102941	18.28623578		
WWTB	2275	85.92647060	97.89876719		
RF1		0.01694118	15.22988286		

Fig. D-1a. Correlation, Means, and Standard Deviation Matrix

MULTIPLE REGRESSION ANALYSIS - STEPWISE - N = 340. DEPENDENT VARIABLE RF7 . FINCLUDE = 1.0000. FDELETE = 1.0000

MULT 7	SE EST	DF	F	VAR	BETA	SE BETA	NOR B	B	SE B	F
0.0000	0.0152299	339	0.000000000	'CON'			16.94117647	0.01694118		
				RF1 INCLUDED						
0.5712	0.0125186	338	163.7463	RF1	0.57127304	0.04464346	11.53951873	0.59527179	0.04651890	163.7463
				'CON'			16.94117647	0.00540166		
				INPAR INCLUDED						
0.5888	0.0123463	337	89.42243552	RF1	0.52710430	0.04609133	10.64732531	0.54924755	0.04802759	130.7839
				INPAR	-0.14933454	0.04609133	-1.37260056	-0.00012695	0.03918380	10.49740649
				'CON'			16.94117647	0.00766645		
				CLI INCLUDED						
0.5985	0.0122546	336	62.53163965	RF1	0.49101048	0.04803992	9.91824275	0.51163746	0.05005804	104.4664
				CLI	0.11321712	0.04597961	1.23739472	0.24445915	0.09927948	6.06308445
				INPAR	-0.15296757	0.04577273	-1.40599332	-0.00013004	0.03891295	11.16824708
				'CON'			16.94117647	0.00719153		
				WMTB INCLUDED						
0.6058	0.0121887	335	48.56878460	RF1	0.43987361	0.05334708	8.88539651	0.45835758	0.05558815	67.98988469
				CLI	0.13709919	0.04705552	1.49841135	0.29602548	0.10160258	8.48884624
				INPAR	-0.17727149	0.04690224	-1.62938155	-0.00015070	0.03987318	14.28534115
				WMTB	0.10551547	0.04895745	1.41046551	0.00001641	0.00761619	4.64509598
				'CON'			16.94117647	0.00677628		
				WMT INCLUDED						
0.6097	0.0121615	334	39.52806837	RF1	0.42043692	0.05463169	8.49268108	0.43809916	0.05692672	59.22600180
				CLI	0.14874113	0.04752527	1.62565281	0.32116325	0.10261687	9.79521867
				INPAR	-0.18068424	0.04684760	-1.66074963	-0.00015361	0.03982673	14.87530312
				WMT	-0.07168798	0.04536637	-1.46549558	-0.00000930	0.00588700	2.49703452
				WMTB	0.10109519	0.04892845	1.35137798	0.00001573	0.00761168	4.26911680
				'CON'			16.94117647	0.00859771		

Fig. D-1b. Example of Stepwise Multiple Regression

Table D-1

Variables Used in Example of Regression Analysis

<u>Variable</u>	<u>Description</u>
RF1	Total reduction factor (roof and ground contributions) to the detector in the center of the story analyzed from NFSS Phase 1 calculations (P1-NFSS).
CL1	Roof contribution to the detector in the center of the story analyzed from NFSS Phase 1 calculations (PL1-NFSS).
F1	Basement indicator -- it is assigned a value of 1 for basements and 0 or -1 for above ground stories.
SILL	Average of the aperture sill heights reported in NFSS Phase 2 for the detector story.
APER	Average of the percent apertures reported in NFSS Phase 1 for the detector story.
CLWT	Mass thickness (psf) of the floor above the detector as determined from NFSS Phase 1 data.
OHWT	Total overhead weight in pounds per square foot (psf) as determined from NFSS Phase 1 data.
HT	Height of the detector above the first story floor level as determined from NFSS Phase 1 data.
EXPO	Average percent wall exposure for the detector story (for basements only) as determined from NFSS Phase 1 data.
INPAR	Average interior partition mass thickness (psf) for the detector story as determined from NFSS Phase 1 data.
FLWT	Mass thickness (psf) of the detector story floor as determined from NFSS Phase 1 data.
WWT	Average exterior wall mass thickness (psf) for the detector story as determined from NFSS Phase 1 data.
MINSL	Minimum value of the aperture sill height reported in NFSS Phase 2 for the detector story.
MAXAP	Maximum percent apertures reported in NFSS Phase 2 for detector story.
APERA	Average of the percent apertures for the story above the detector story as determined from NFSS Phase 1 data.
WWTa	Average exterior wall mass thickness (psf) for the story above the detector story as determined from NFSS Phase 1 data.

(continued)

Table D-1 (Continued)

<u>Variable</u>	<u>Description</u>
APERB	Average of the percent apertures for the story below the detector story as determined from NFSS Phase 1 data.
WWTB	Average exterior wall mass thickness (psf) for story below the detector story as determined from NFSS Phase 1 data.
RF7	Total reduction factor (roof and ground contributions) to the detector in the center of the story analyzed from PF-COMP calculations using building input data collected by RTI survey teams (EM-RTI).

Appendix E

Data Displays

This appendix contains displays of data for each of the 43 samples selected for this study. These samples were analyzed to determine the relationships between selected pairs of seven methods of calculating reduction factors. Each display contains the linear regression line obtained by this analysis along with its associated standard error of estimate and correlation coefficient. In addition, the regression line forced through the origin with its associated standard error of estimate is included.

Observations indicated on the displays by asterisks (*) may represent more than one shelter story if the values are very similar for more than one shelter story. If the results of one method were to equal the results of another method, the regression line would be a 45° Line. The 45° Line is indicated by dots (.) for orientation.

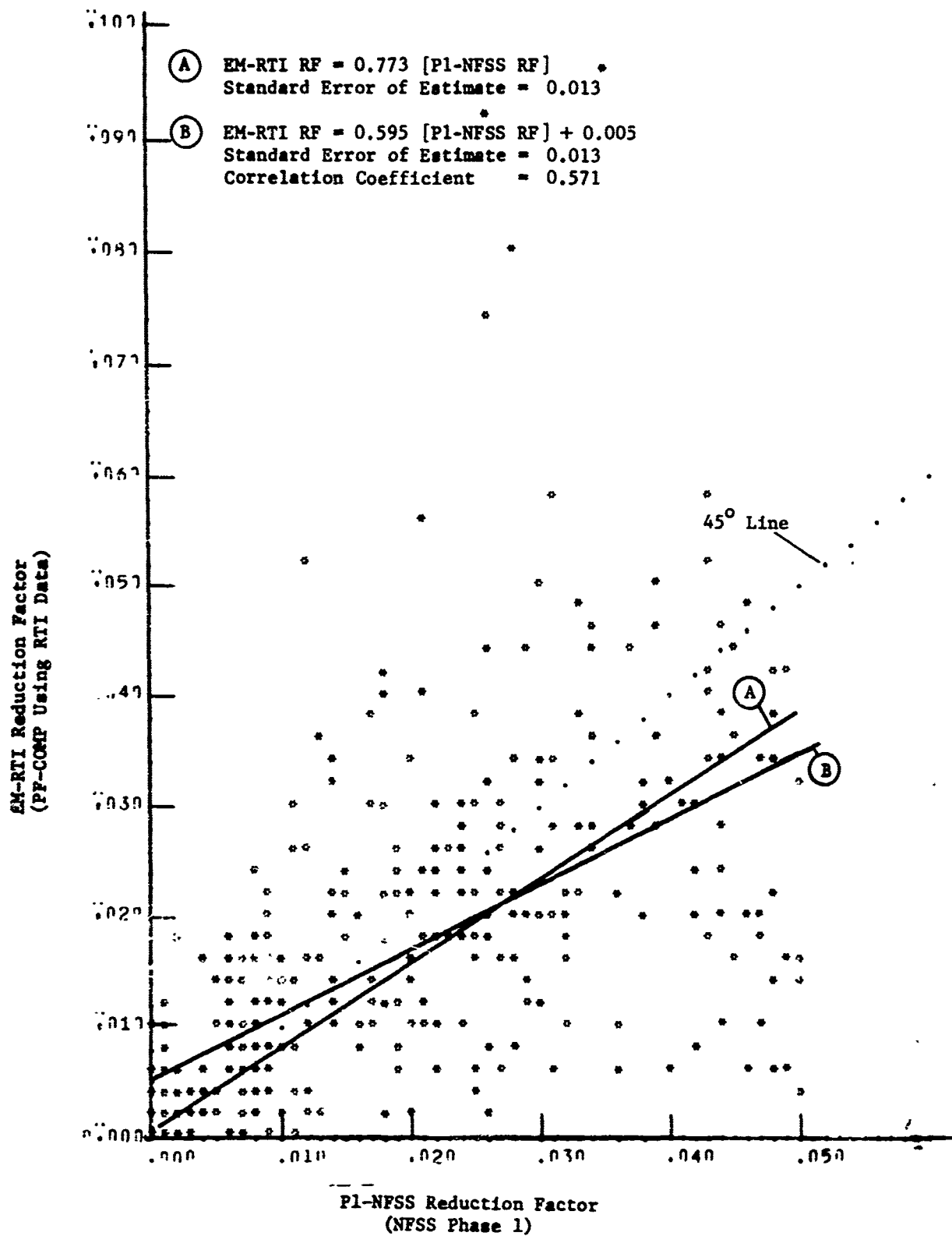


Fig. E.1. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Total Sample - 340 Shelter Stories)

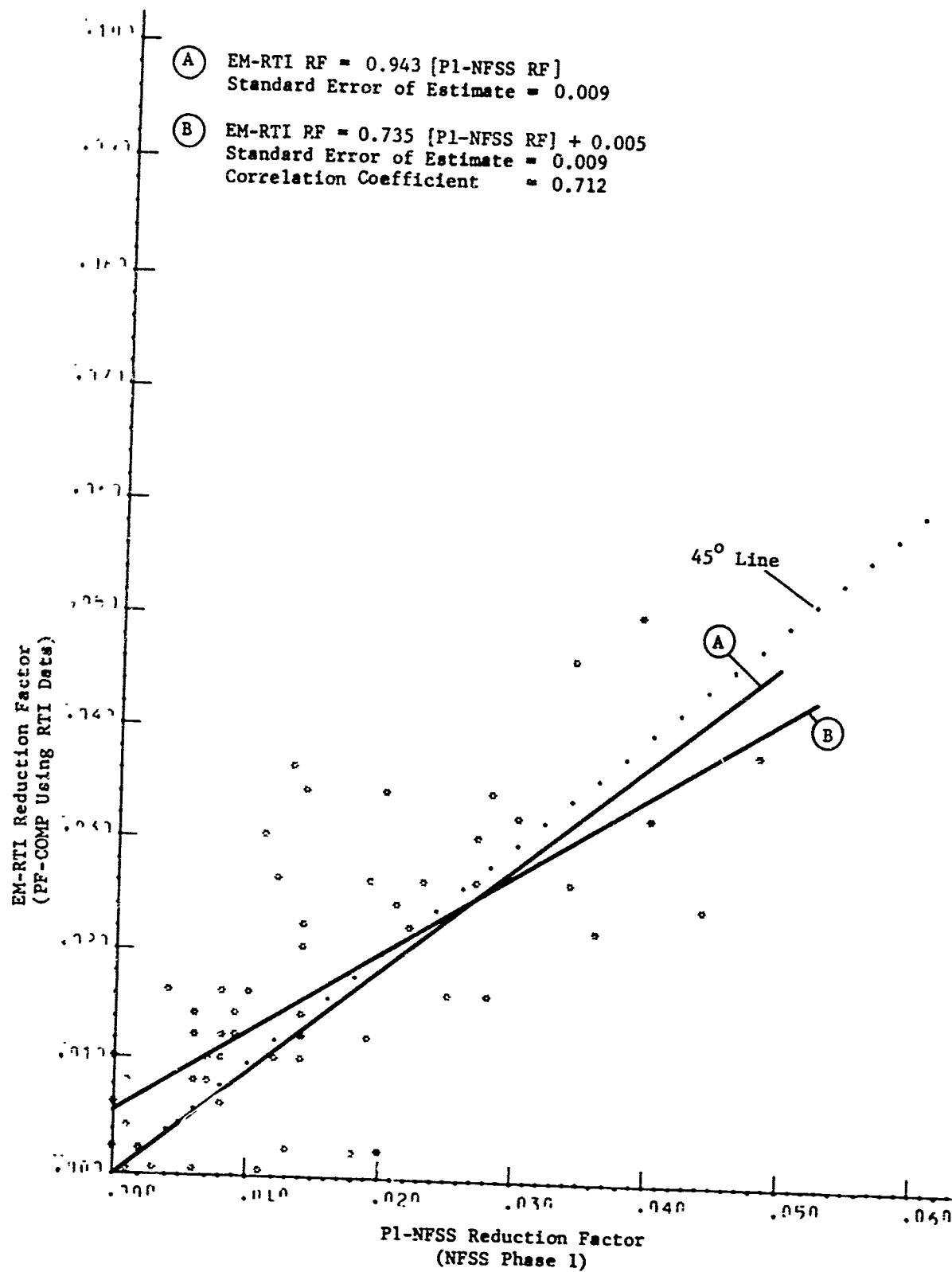


Fig. E.2. Relationship Between P1-NFSS and EM-RTI Reduction Factors
(Providence - 58 Shelter Stories)

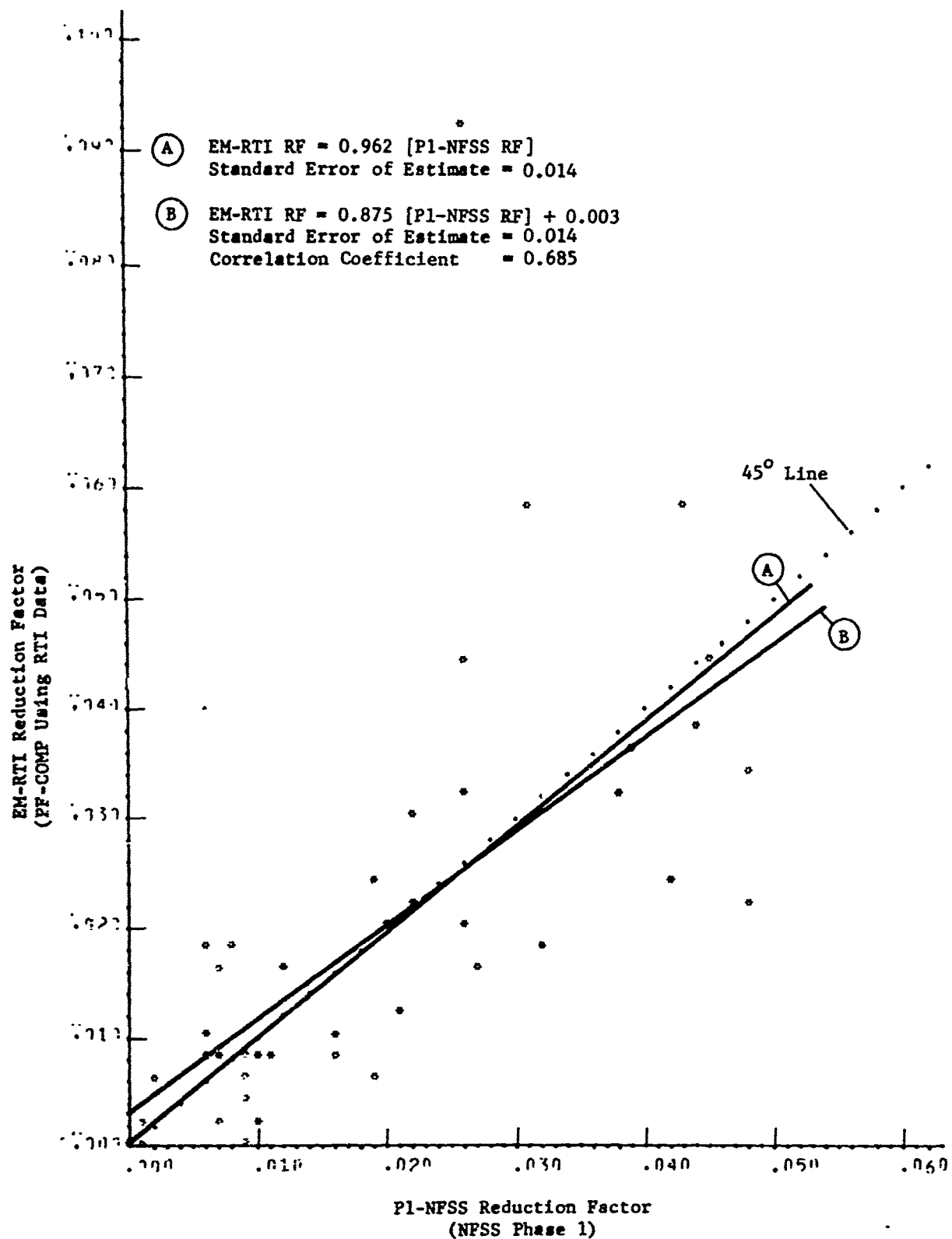


Fig. E.3. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Detroit - 47 Shelter Stories)

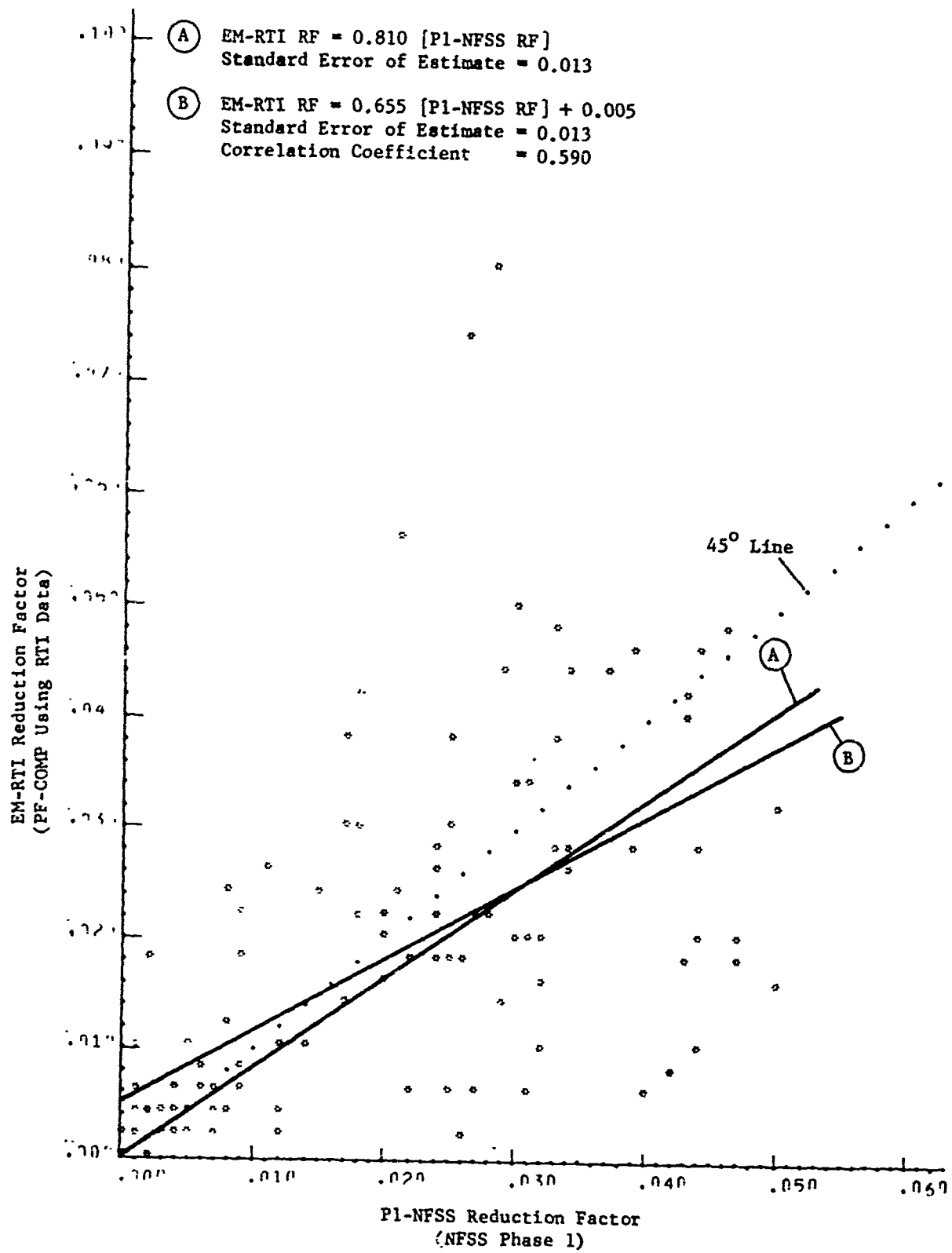


Fig. E.4. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(New Orleans - 117 Shelter Stories)

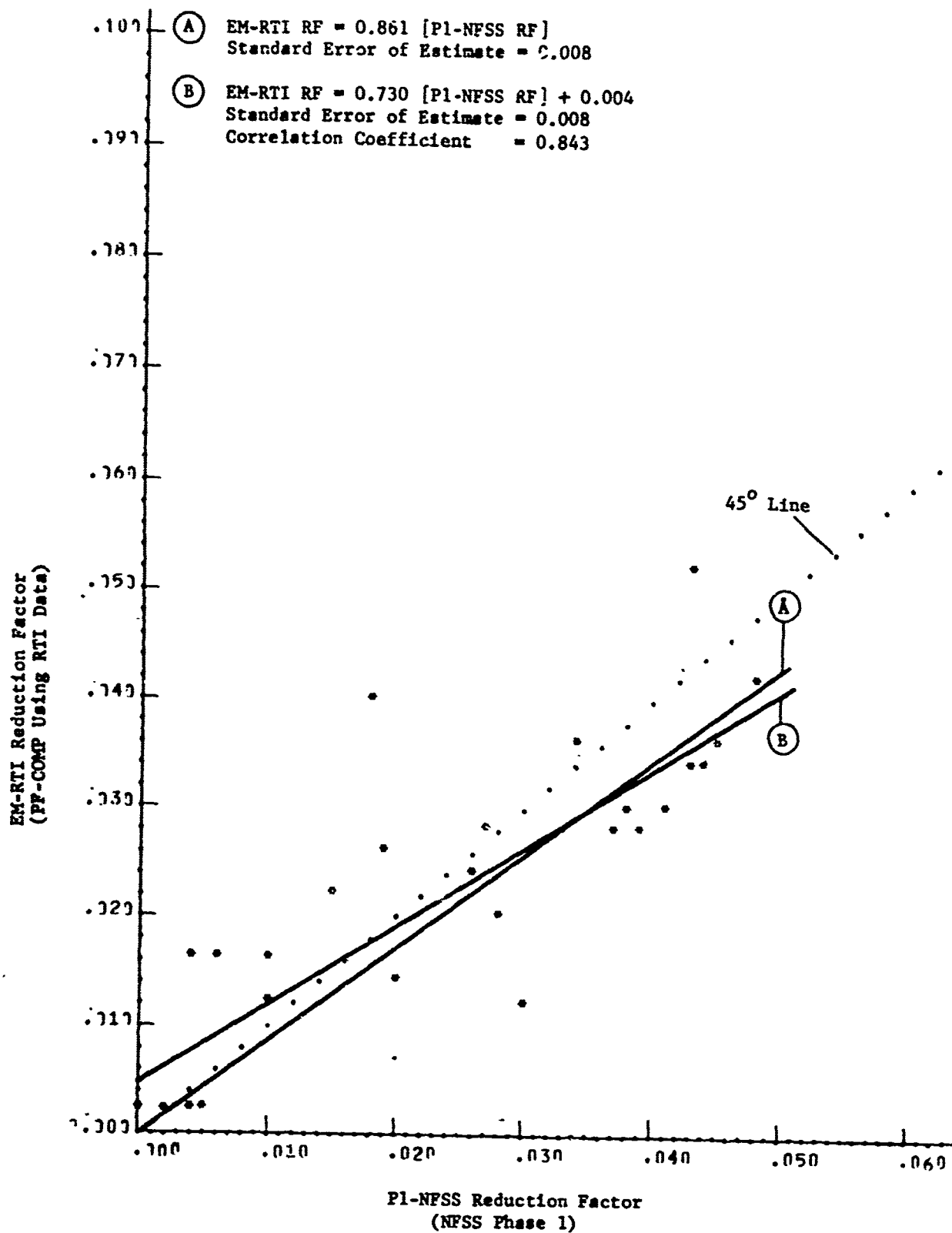


Fig. E.5. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Albuquerque - 28 Shelter Stories)

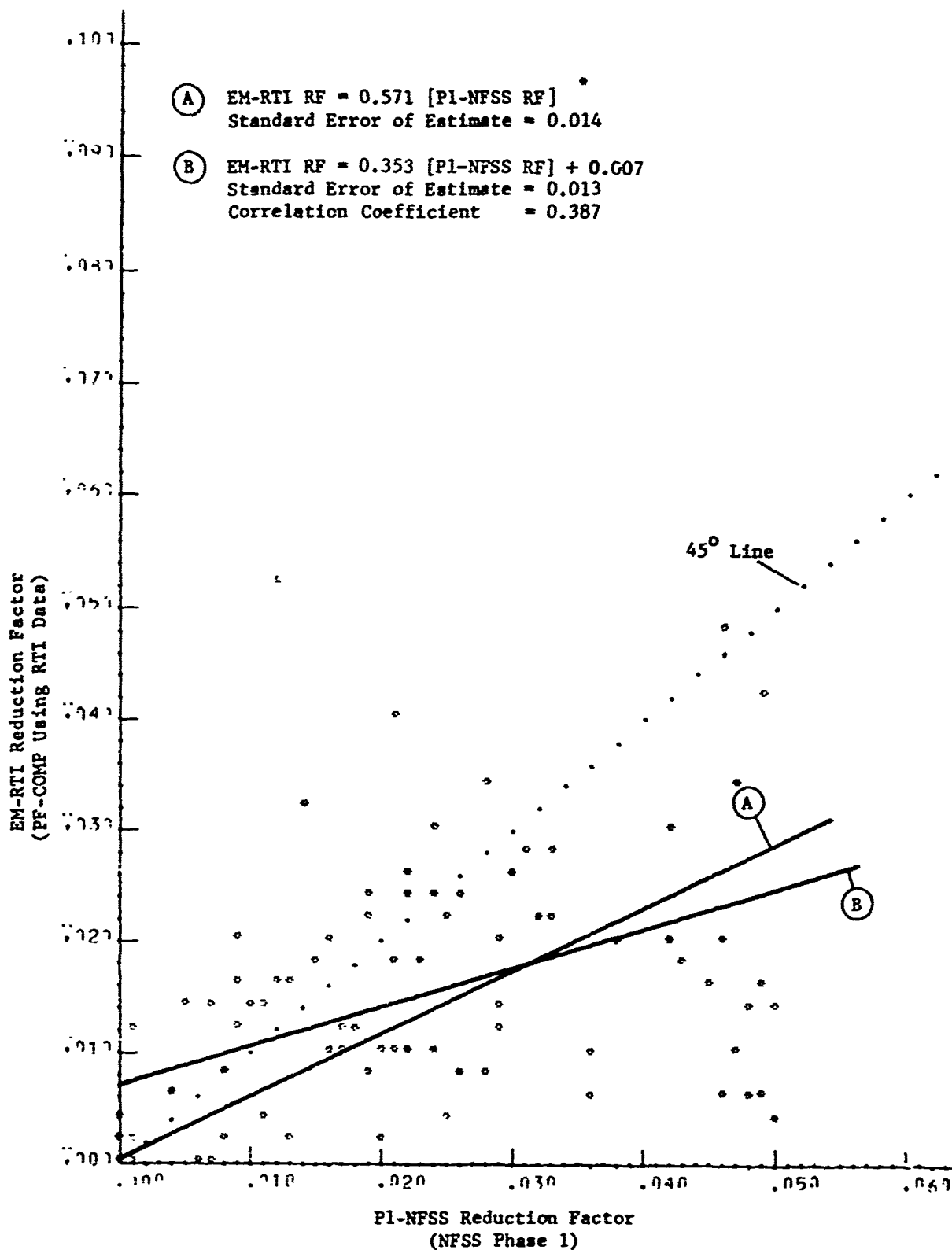


Fig. E.6. Relationship Between PI-NFSS and EM-RTI Reduction Factors.
(San Jose - 90 Shelter Stories)

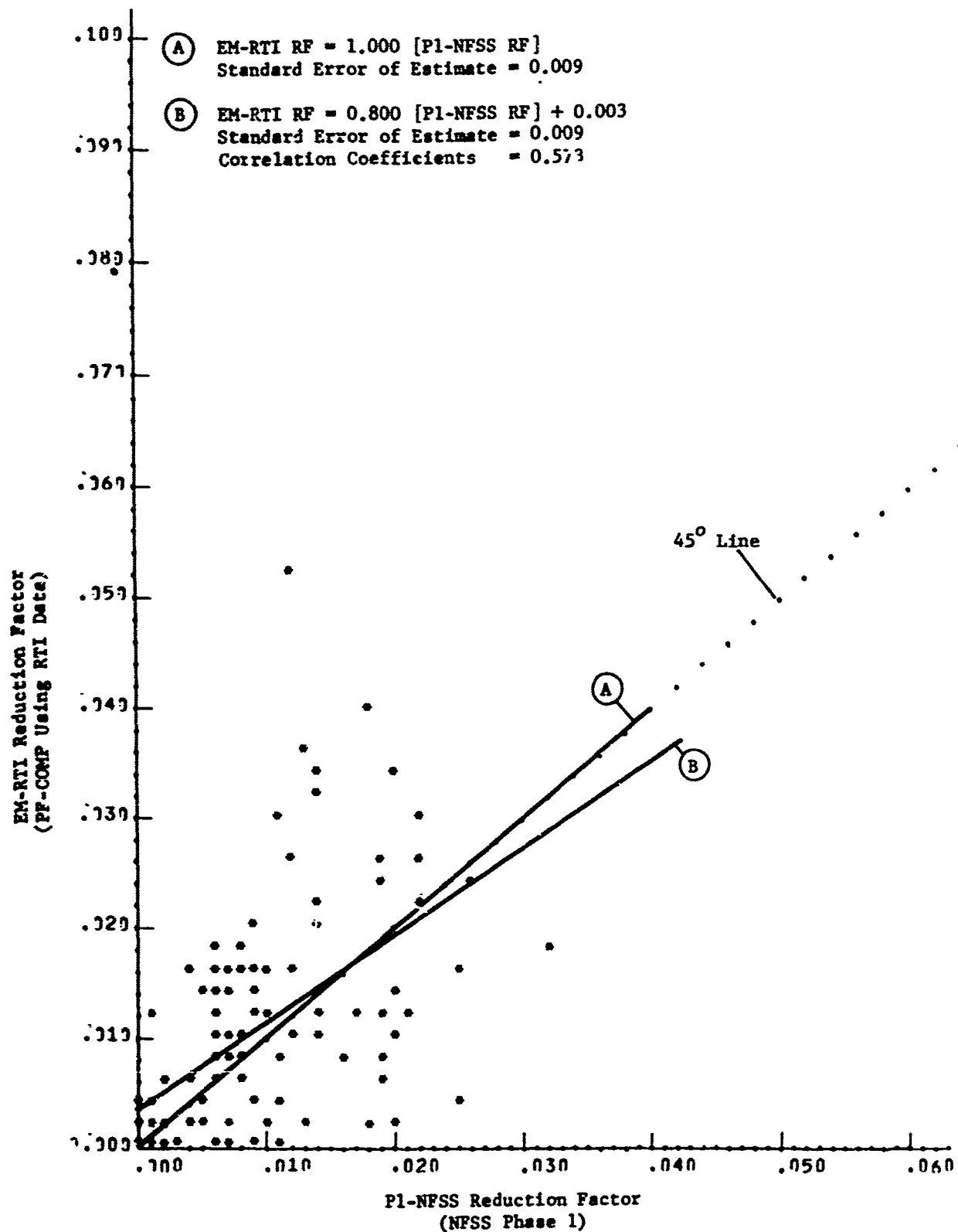


Fig. E.7. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Basements - 116 Shelter Stories)

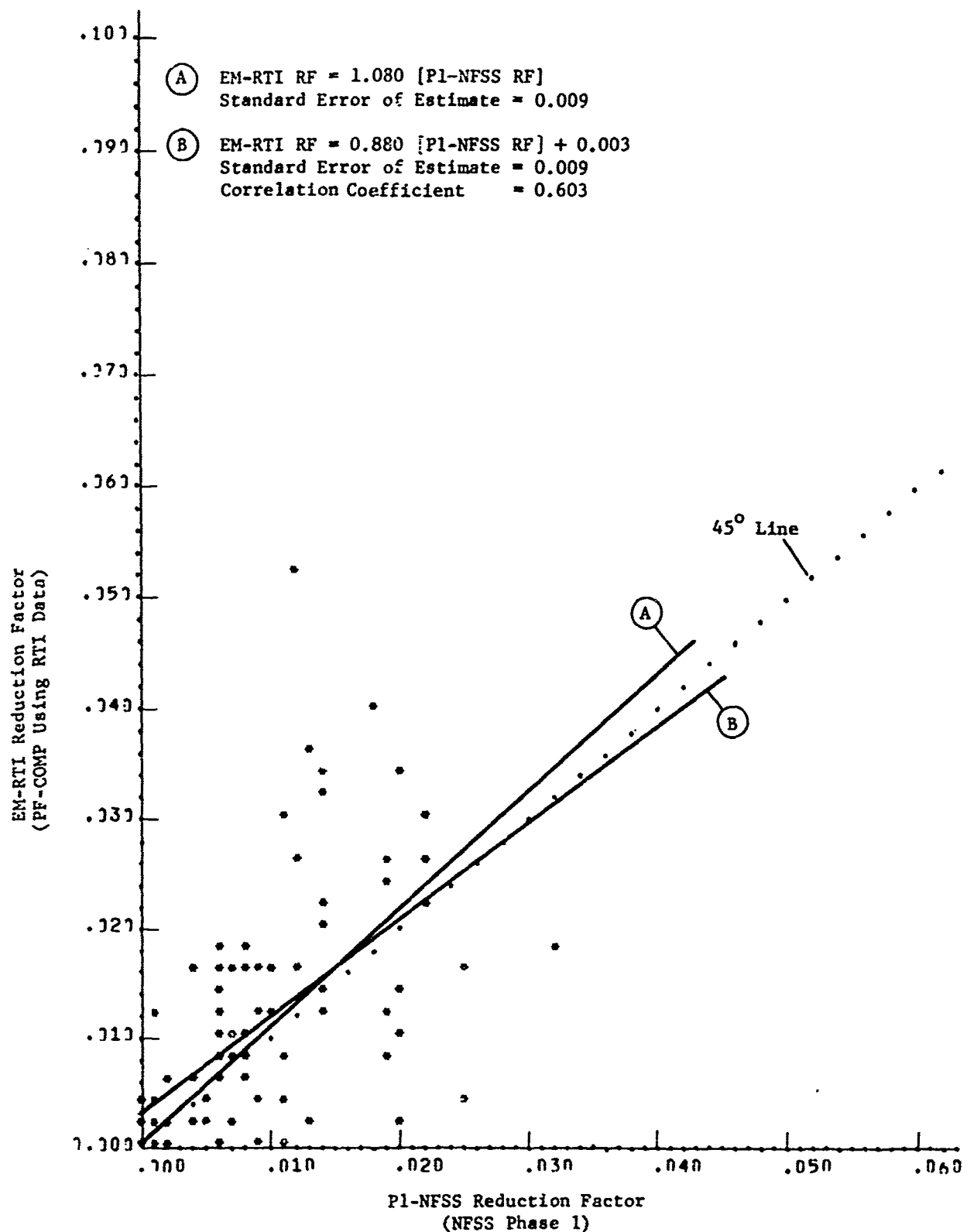


Fig E.8. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Basement with Roof Contribution >50% of Total RF - 98 Shelter Stories)

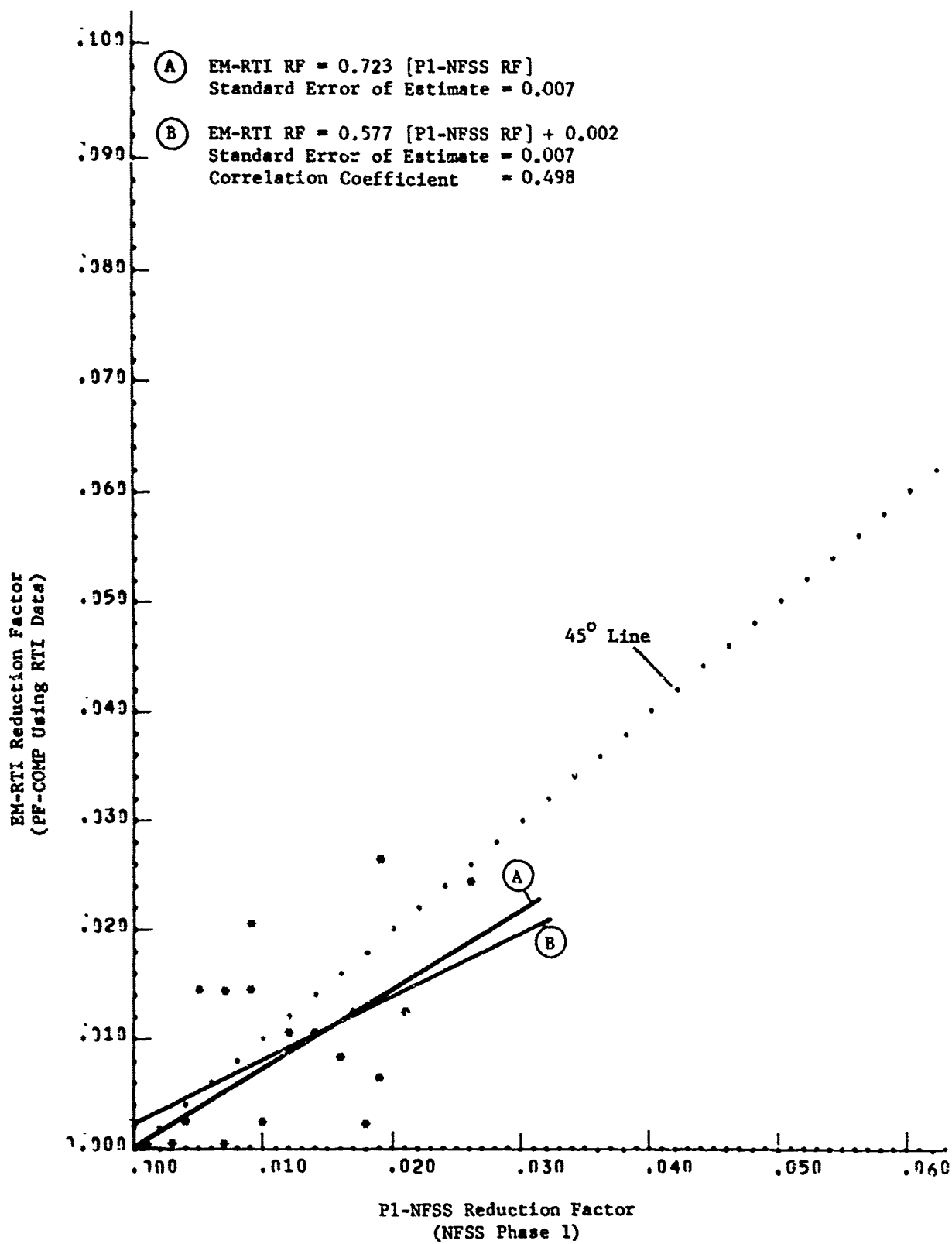


Fig. E.9. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Basement with Roof Contribution <50% of Total RF - 18 Shelter Stories)

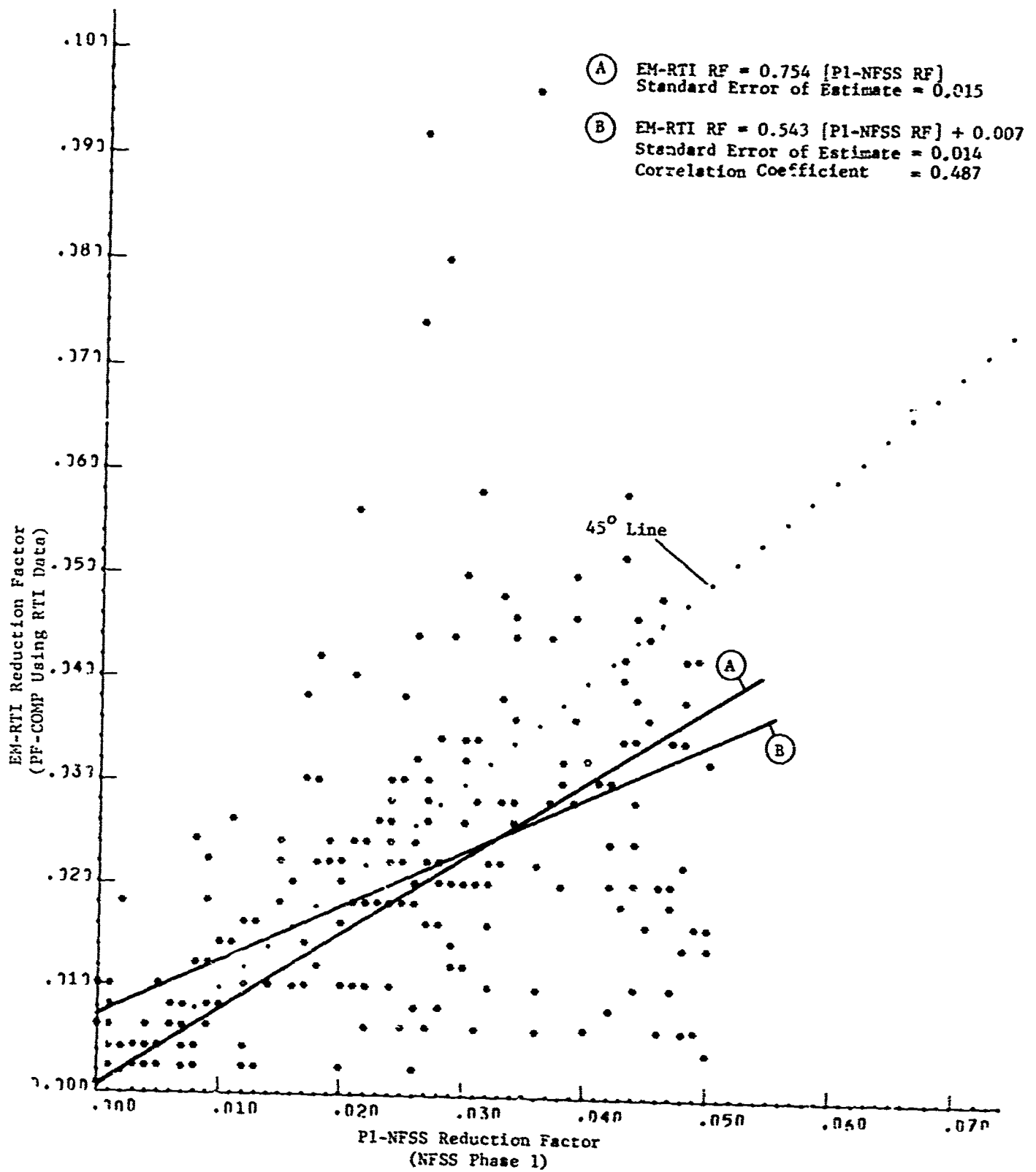


Fig. E.10. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Above Grade Stories - 224 Shelter Stories)

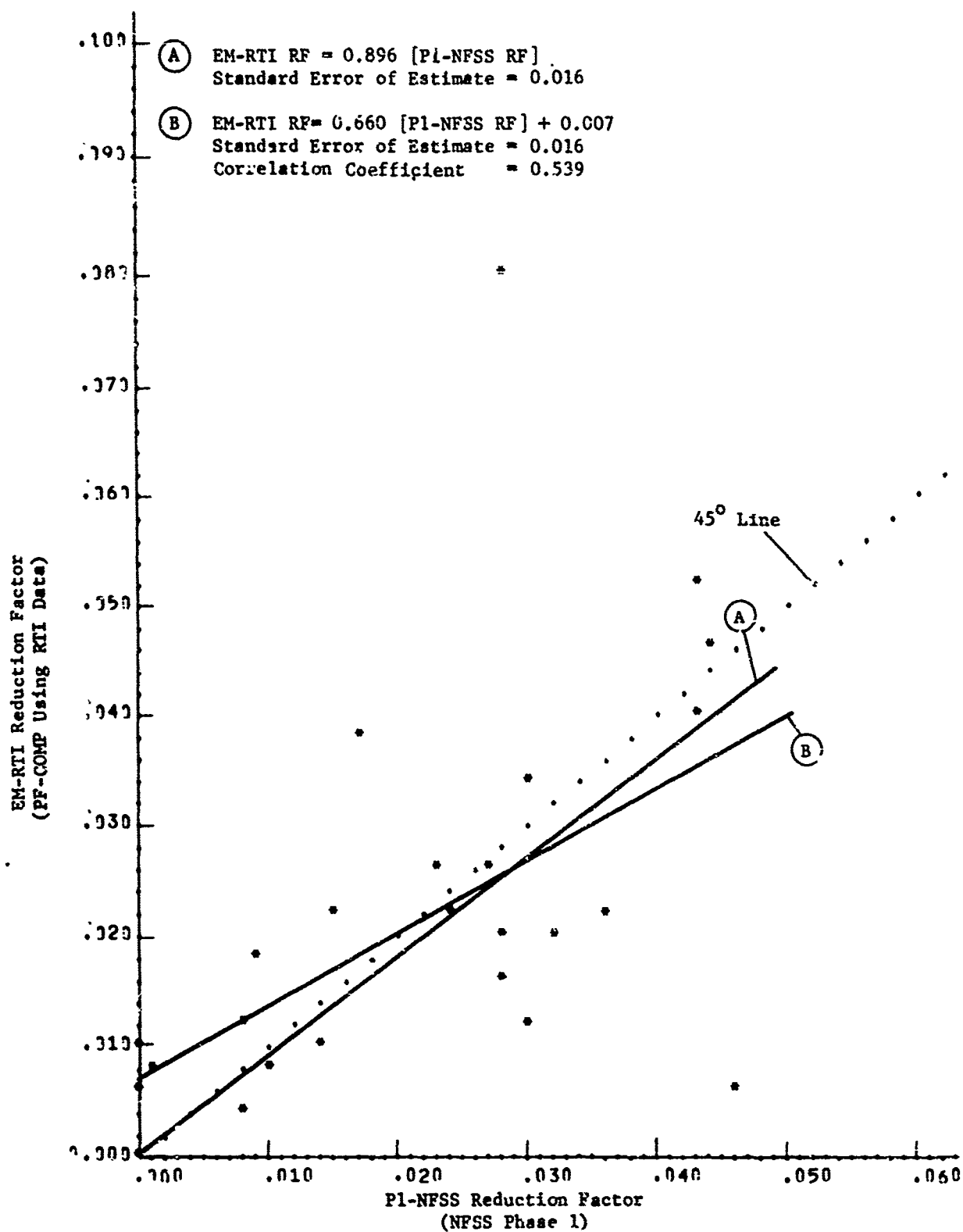


Fig. E.11. Relationship Between Pl-NFSS and EM-RTI Reduction Factors.
(Above Grade Stories with Roof Contribution $\geq$ 50% of Total RF - 25 Shelter Stories)

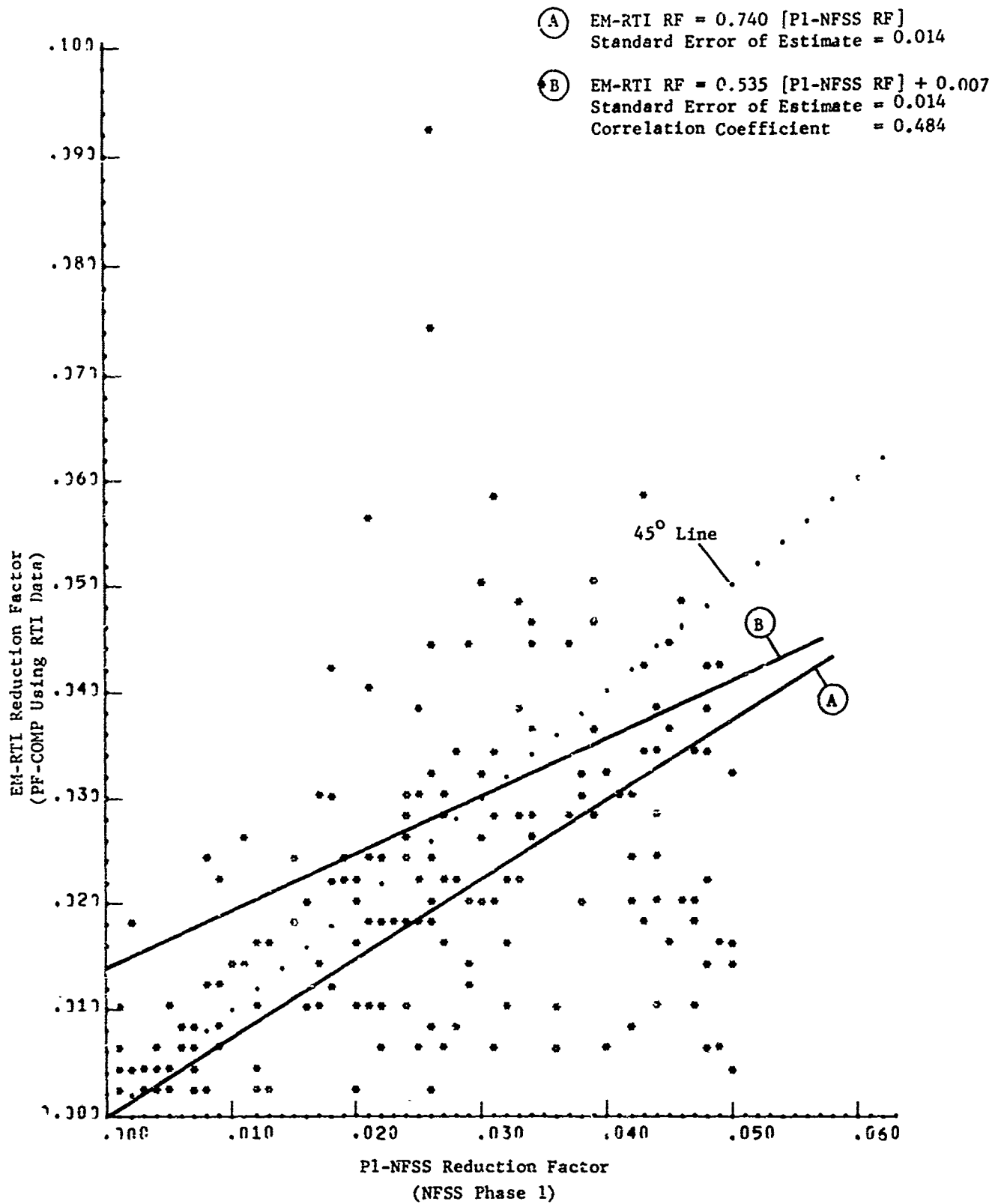


Fig. E.12. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Above Grade Stories with Roof Contribution < 50% of Total RF - 199 Shelter Stories)

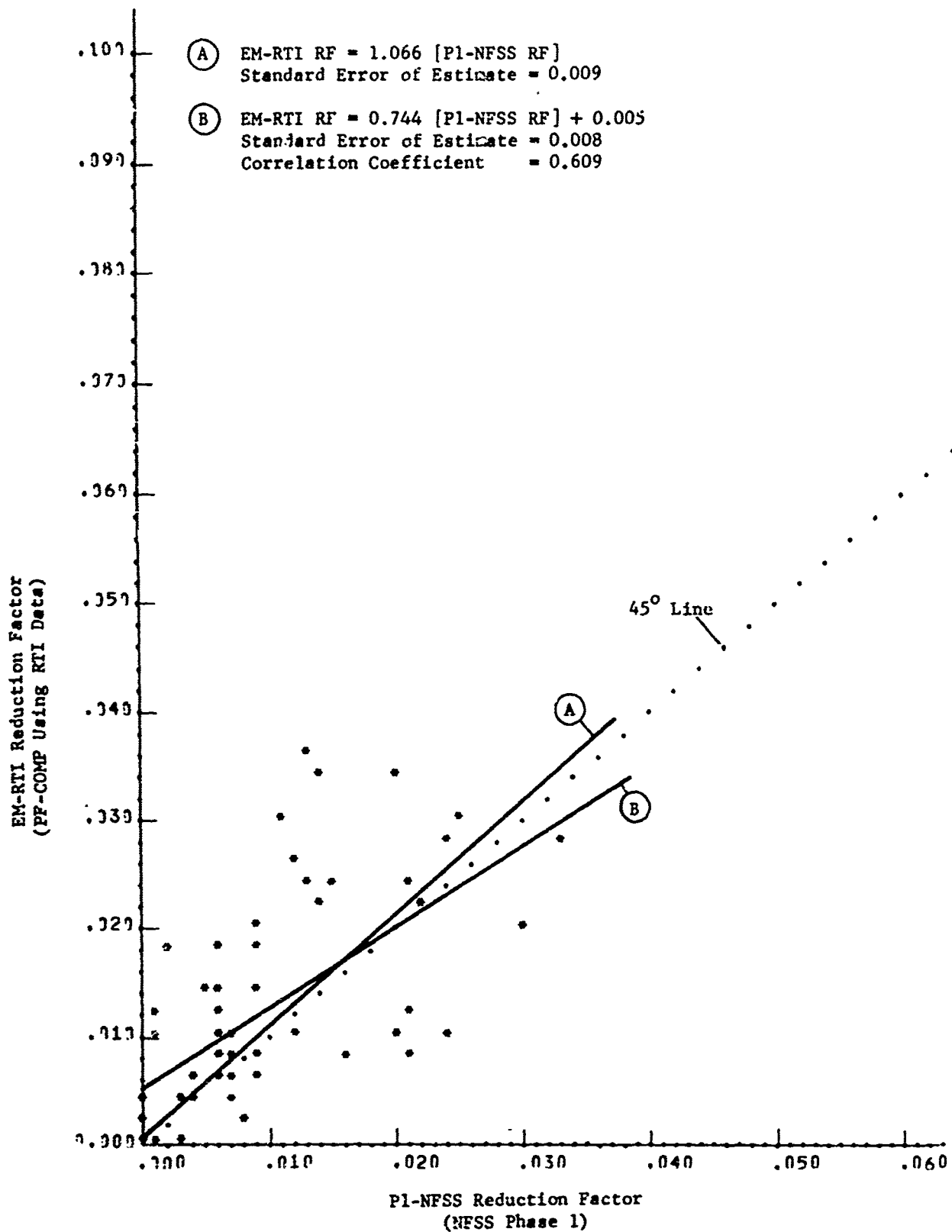


Fig. E.13. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
Use Class Residential - 55 Shelter Stories)

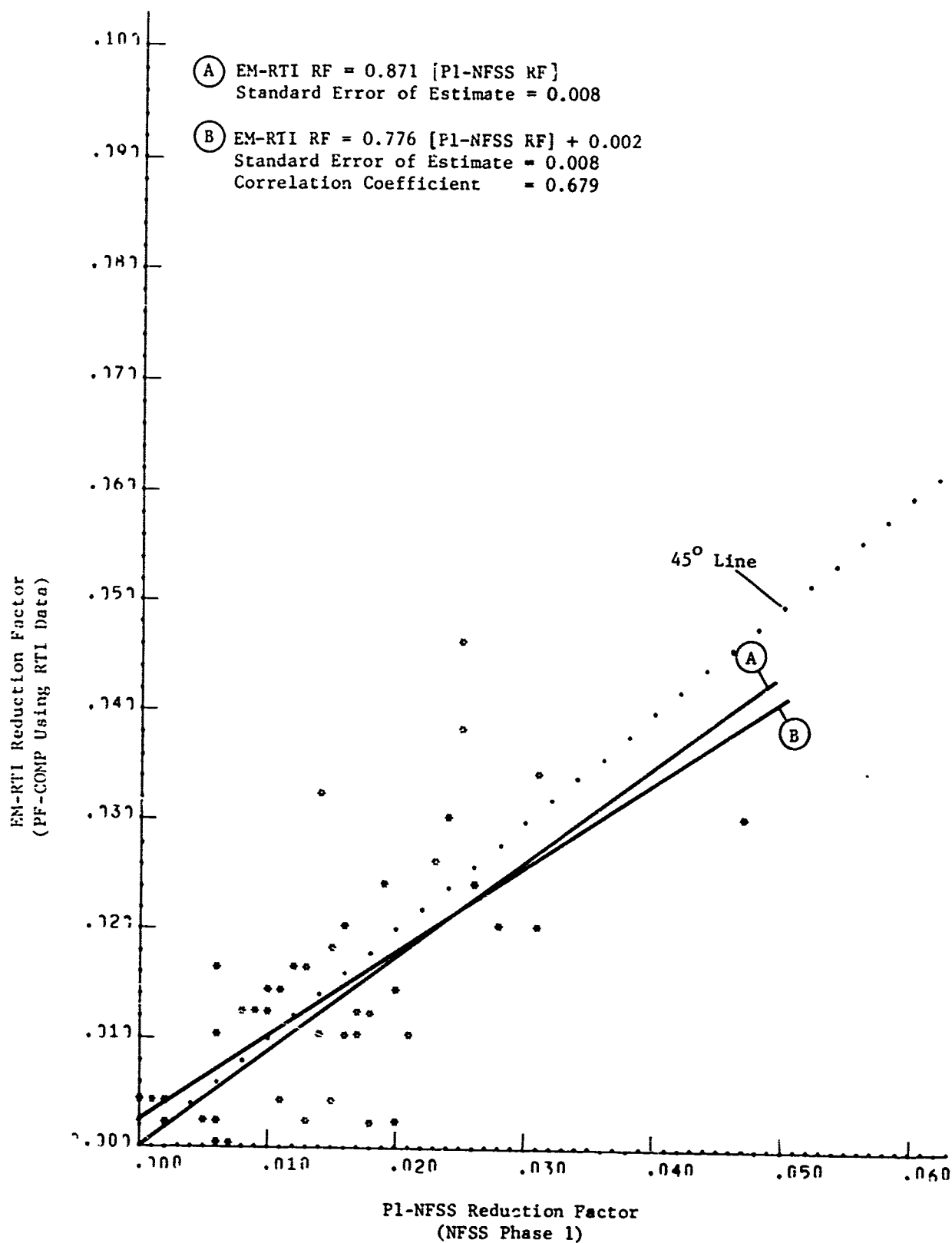


Fig. E-14. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Use Class Educational - 43 Shelter Stories)

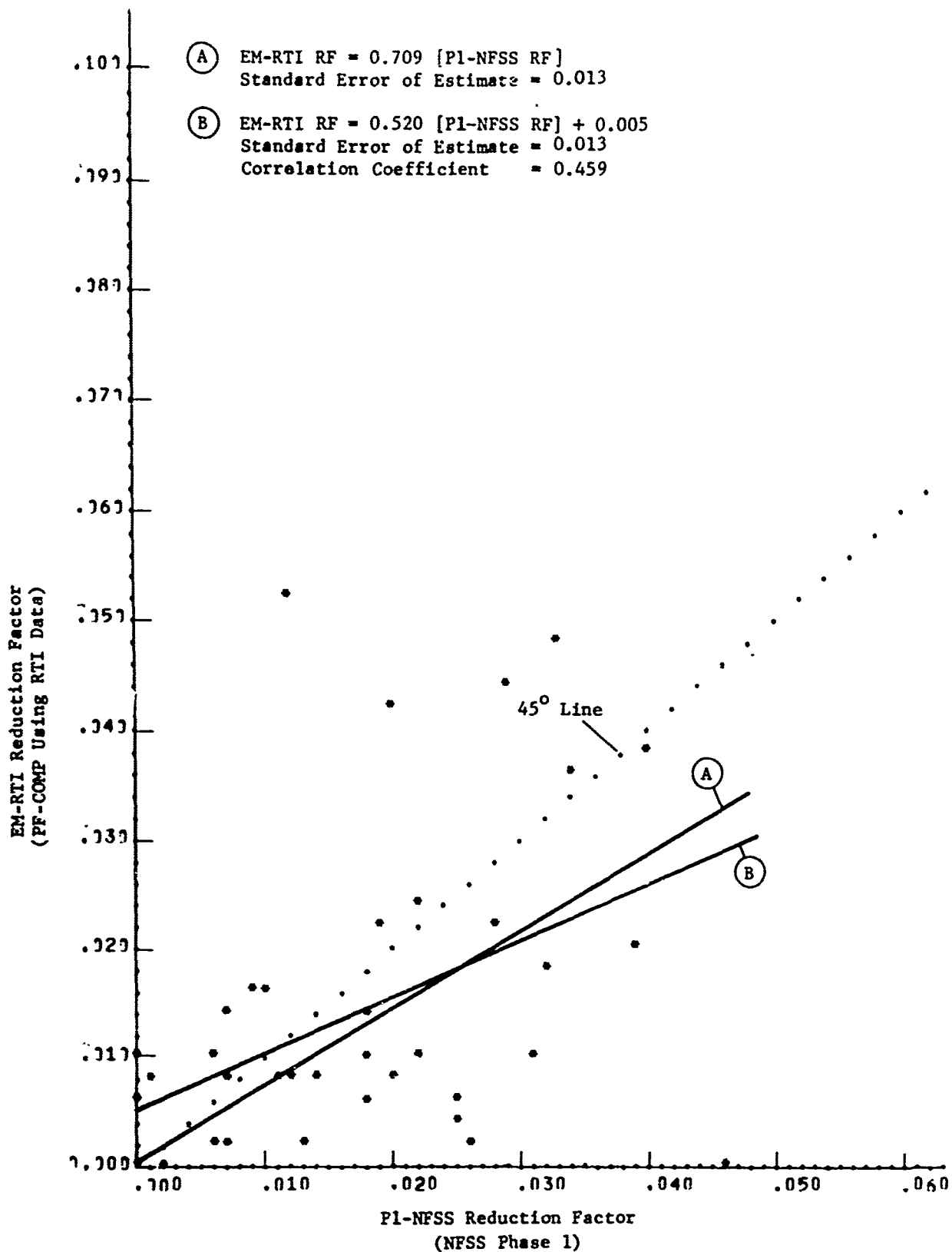


Fig. E.15. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Use Class Government and Public Service - 41 Shelter Stories)

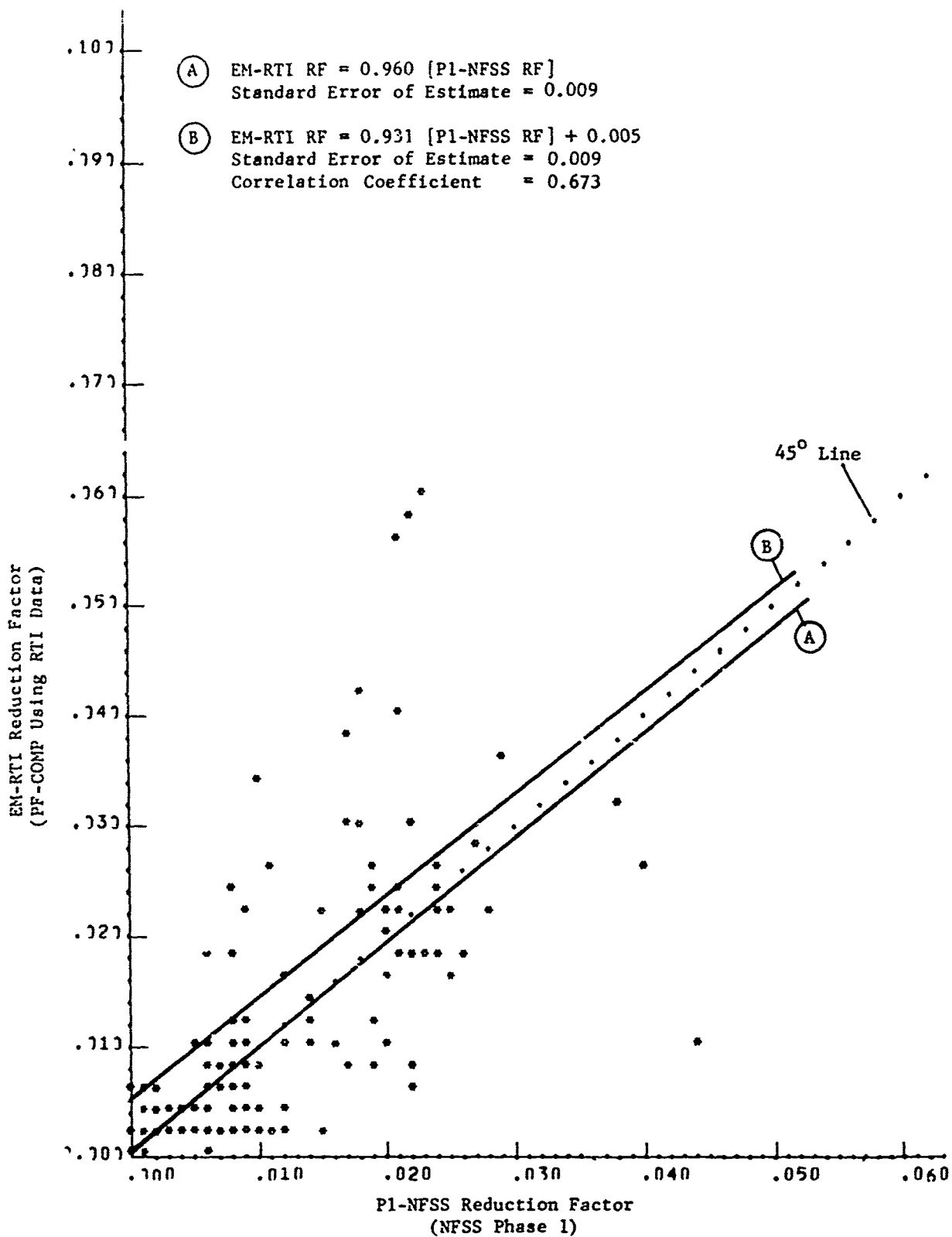


Fig. E.16. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Use Class Commercial - 141 Shelter Stories)

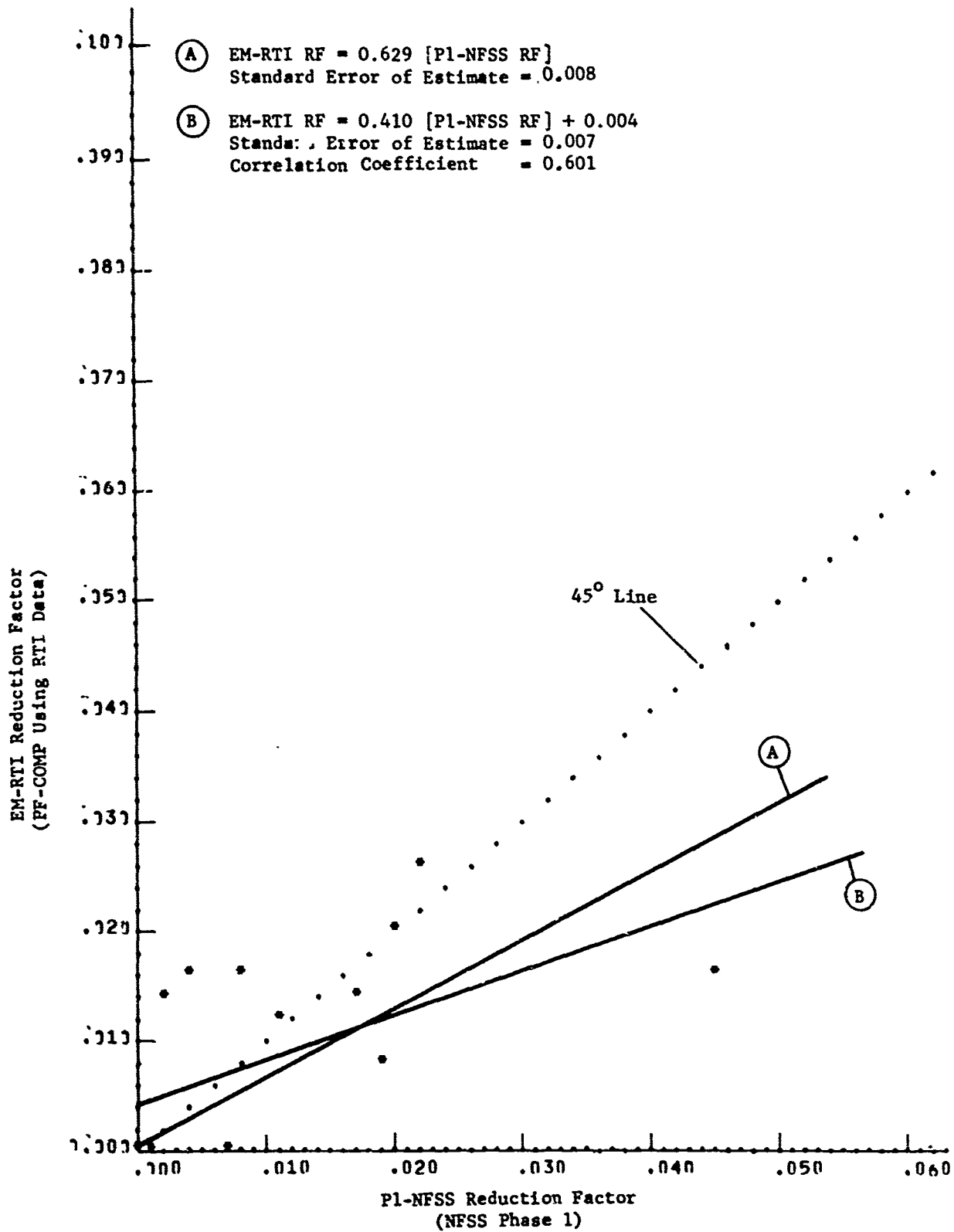


Fig. E.17. Relationship Between Pl-NFSS and EM-RTI Reduction Factors.
(Use Class Industrial - 14 Shelter Stories)

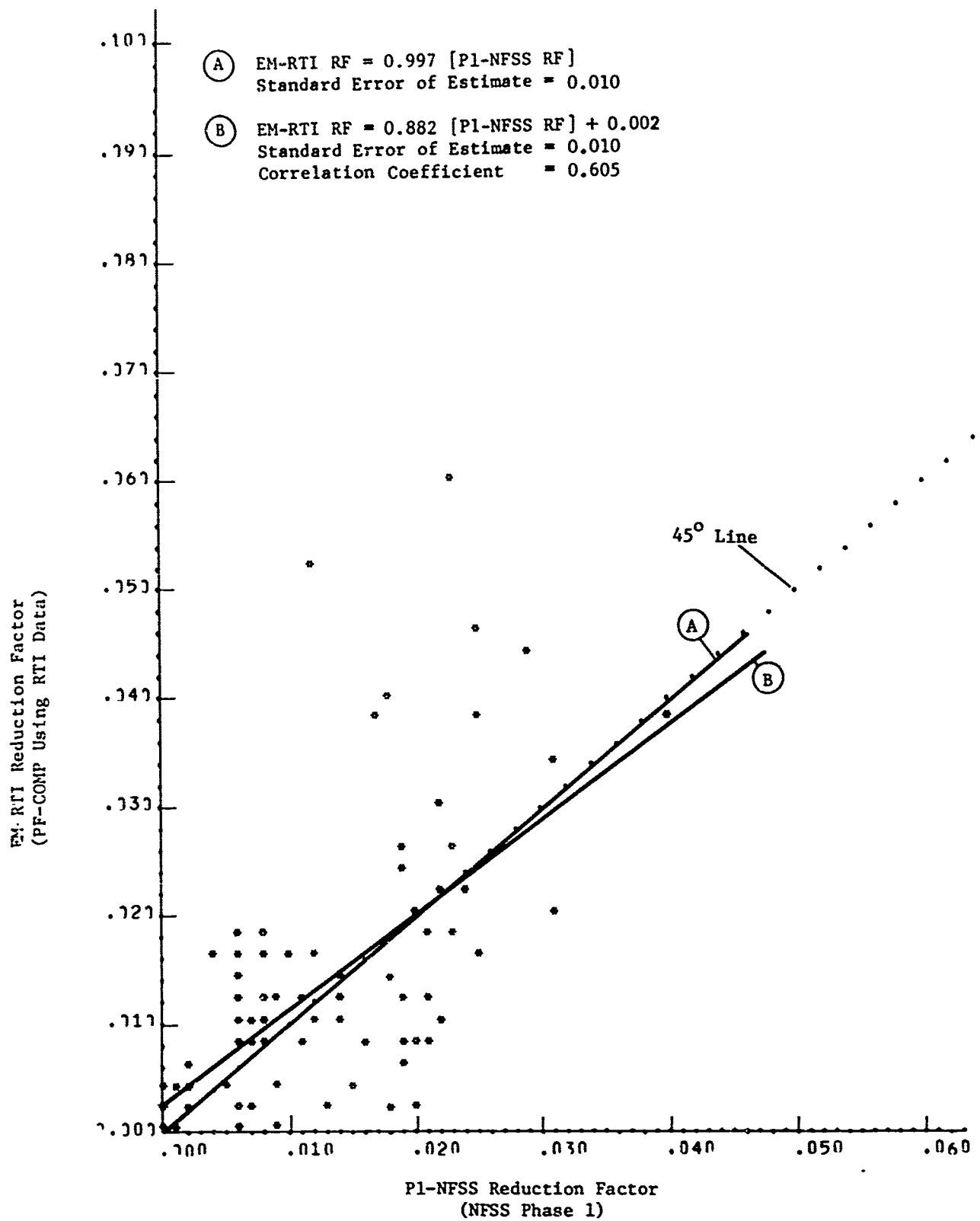


Fig. E.18. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Structural Classification Wall-Bearing - 82 Shelter Stories)

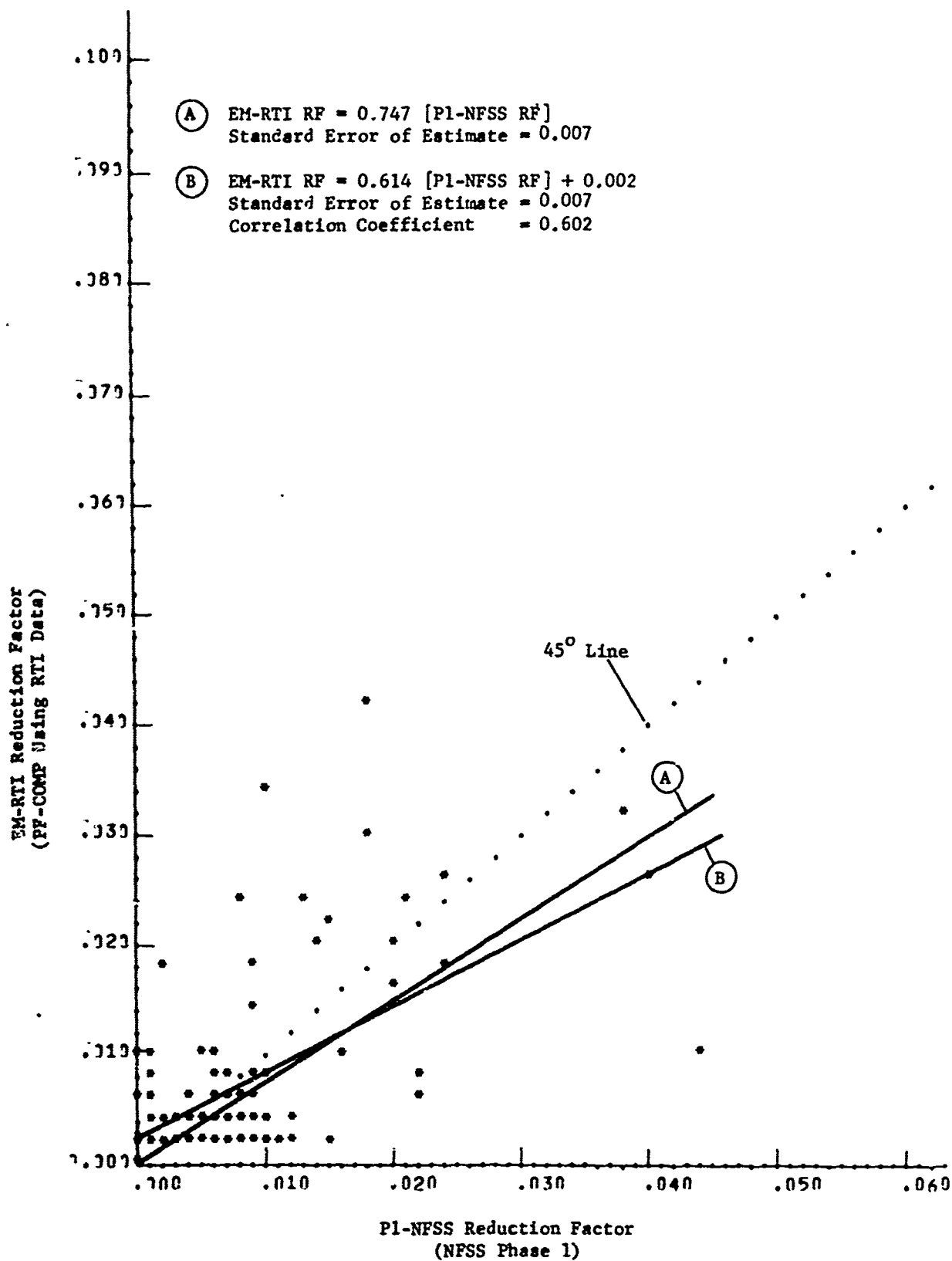


Fig. E.19. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Structural Classification Steel-Framed - 96 Shelter Stories)

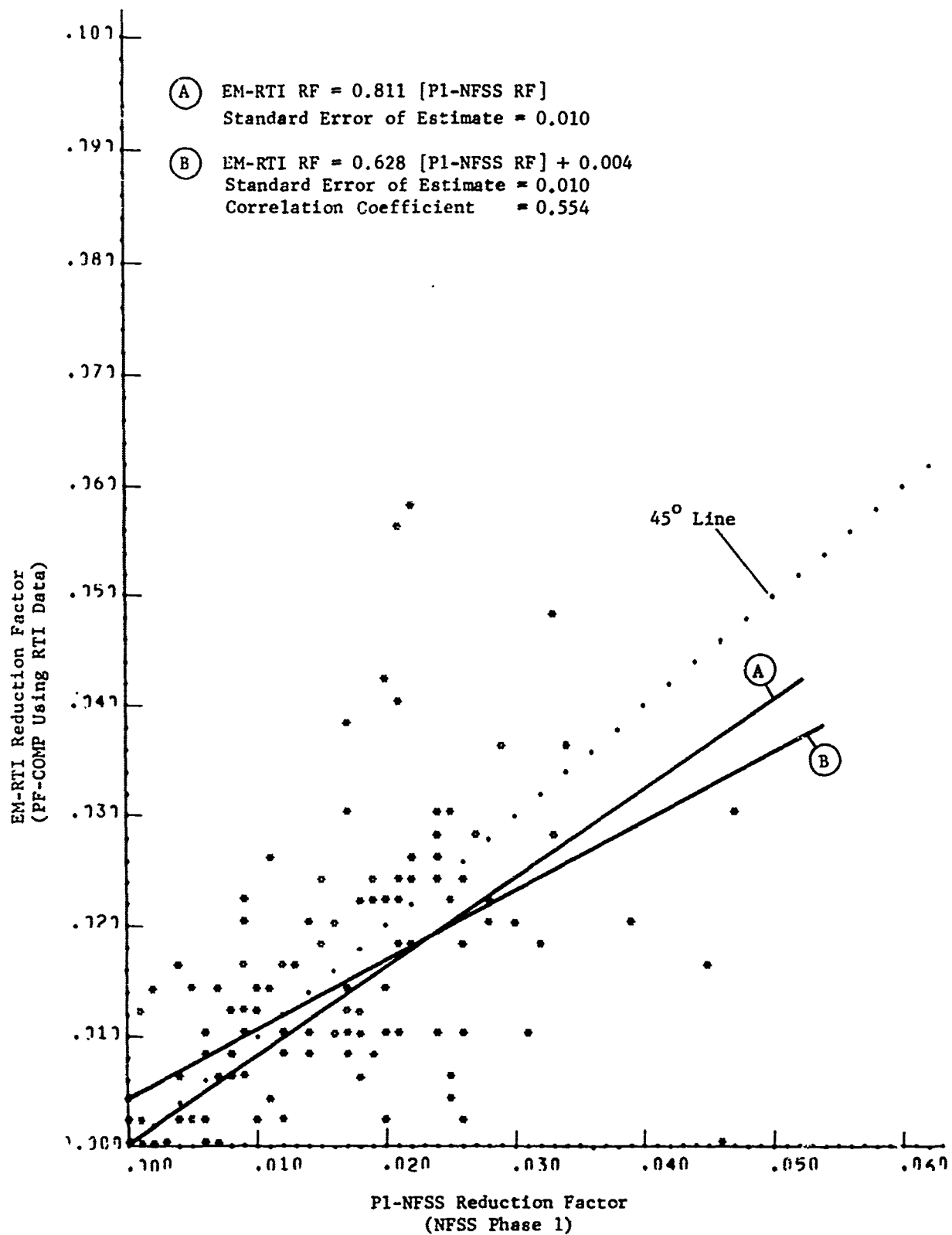


Fig. E.20. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Structural Classification Reinforced-Concrete Framed
119 Shelter Stories)

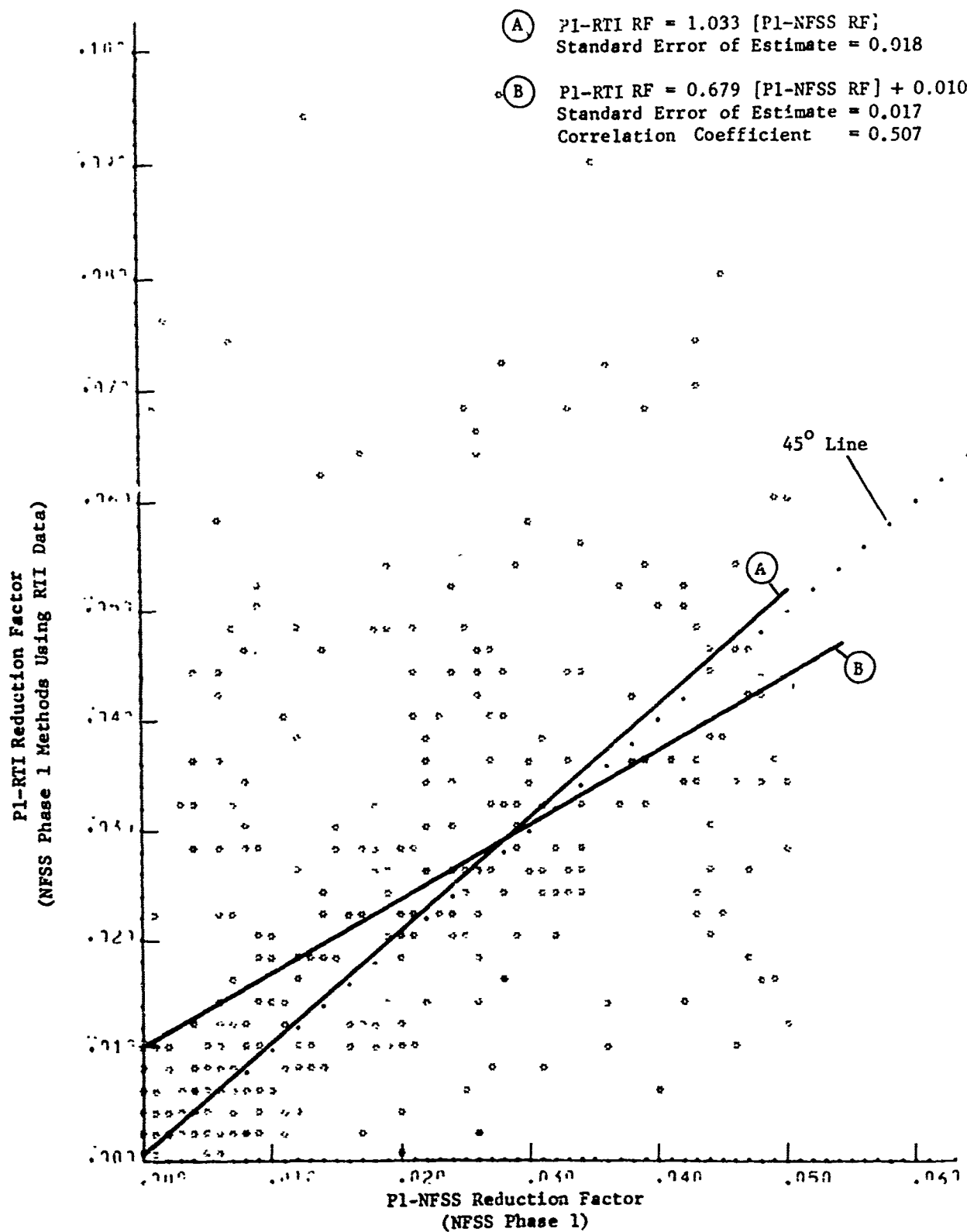


Fig. E.21. Relationship Between P1-NFSS and P1-RTI Reduction Factors.
(Total Sample -340 Shelter Stories)

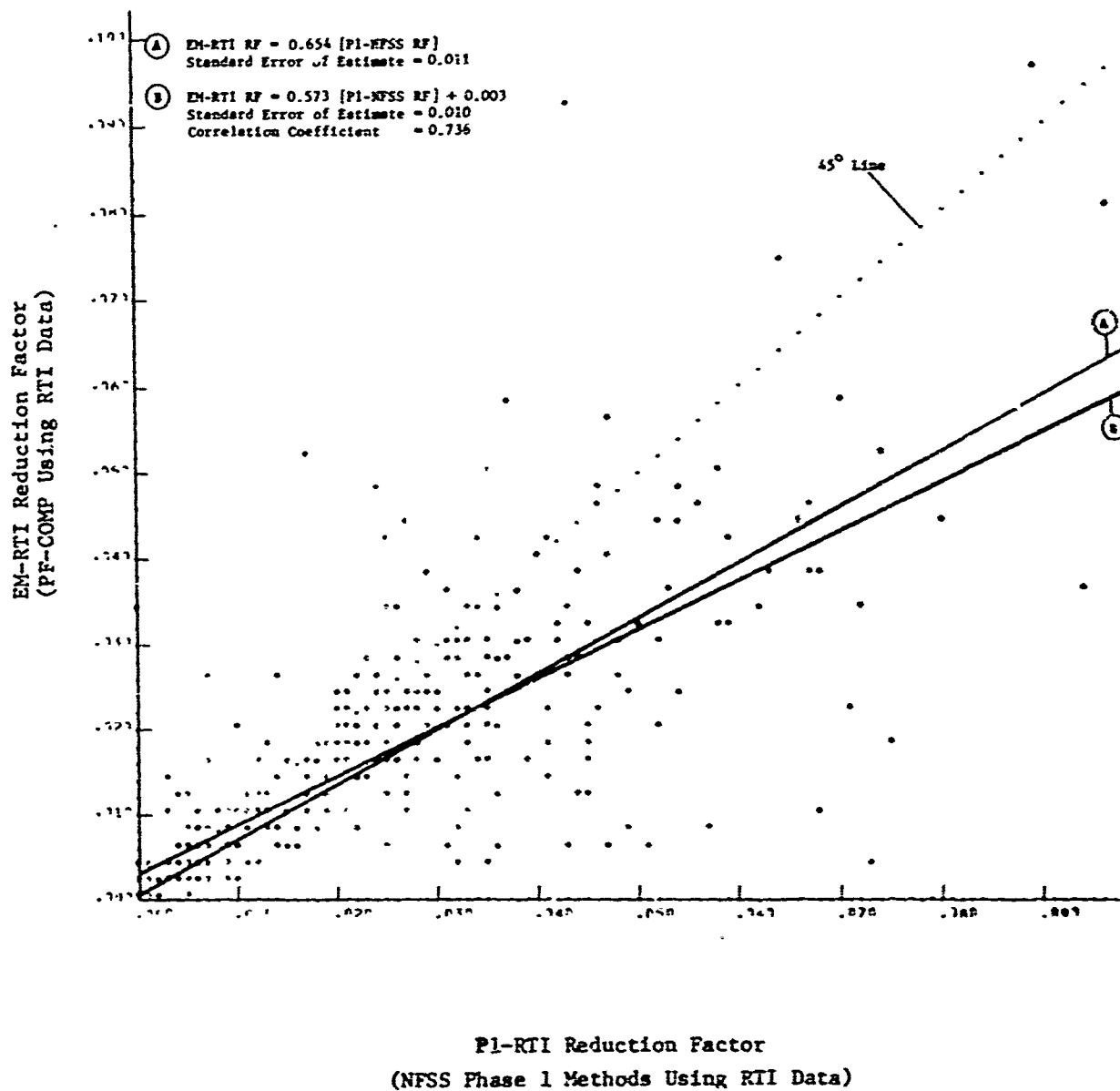


Fig. E.22. Relationship Between PI-RTI and EM-RTI Reduction Factors
(Total Sample - 340 Shelter Stories)

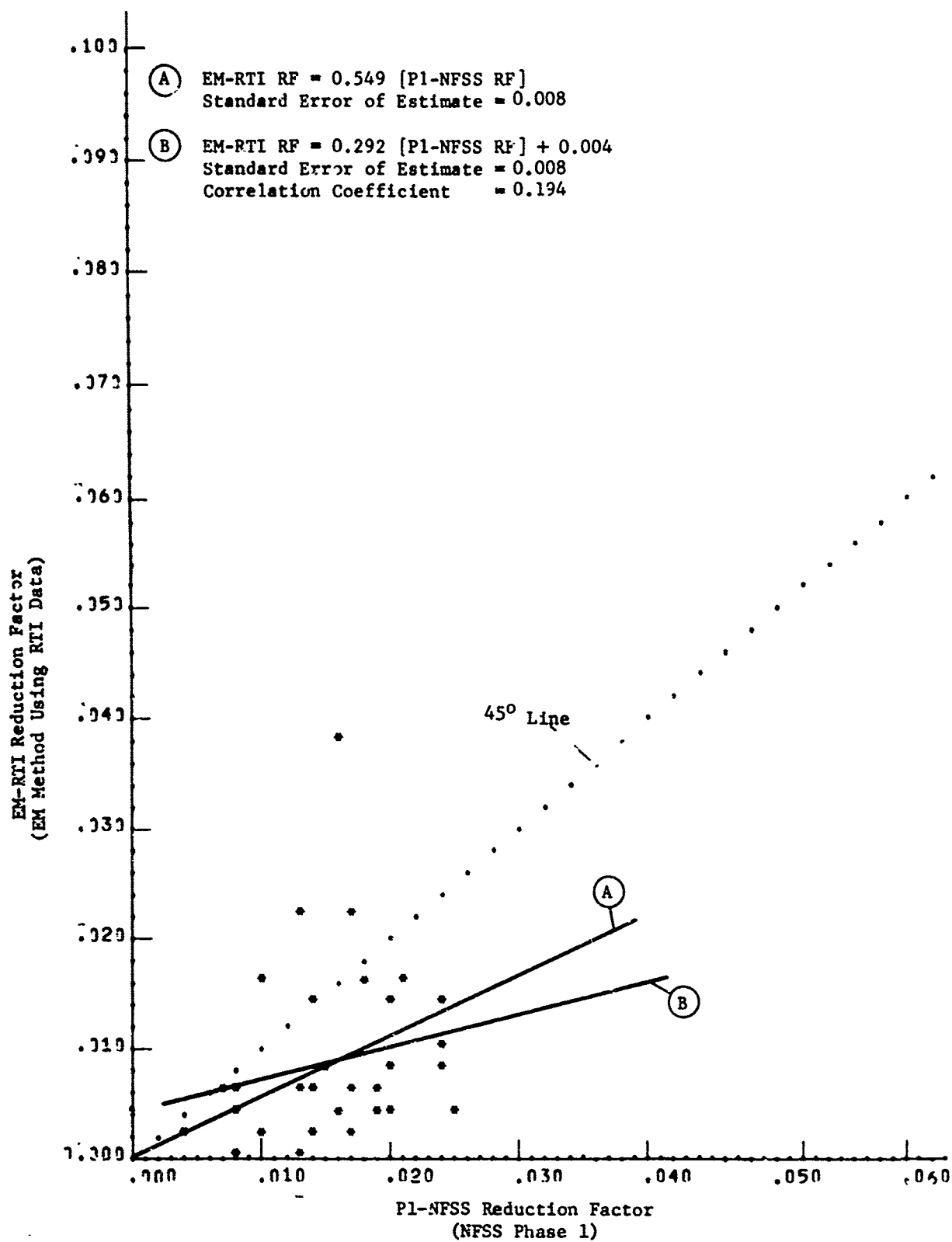


Fig. E.23. Relationship Between P1-NFSS and EM-RTI Reduction Factors.
(Work Unit 1115A Phase 1 Data - 32 Shelter Stories)

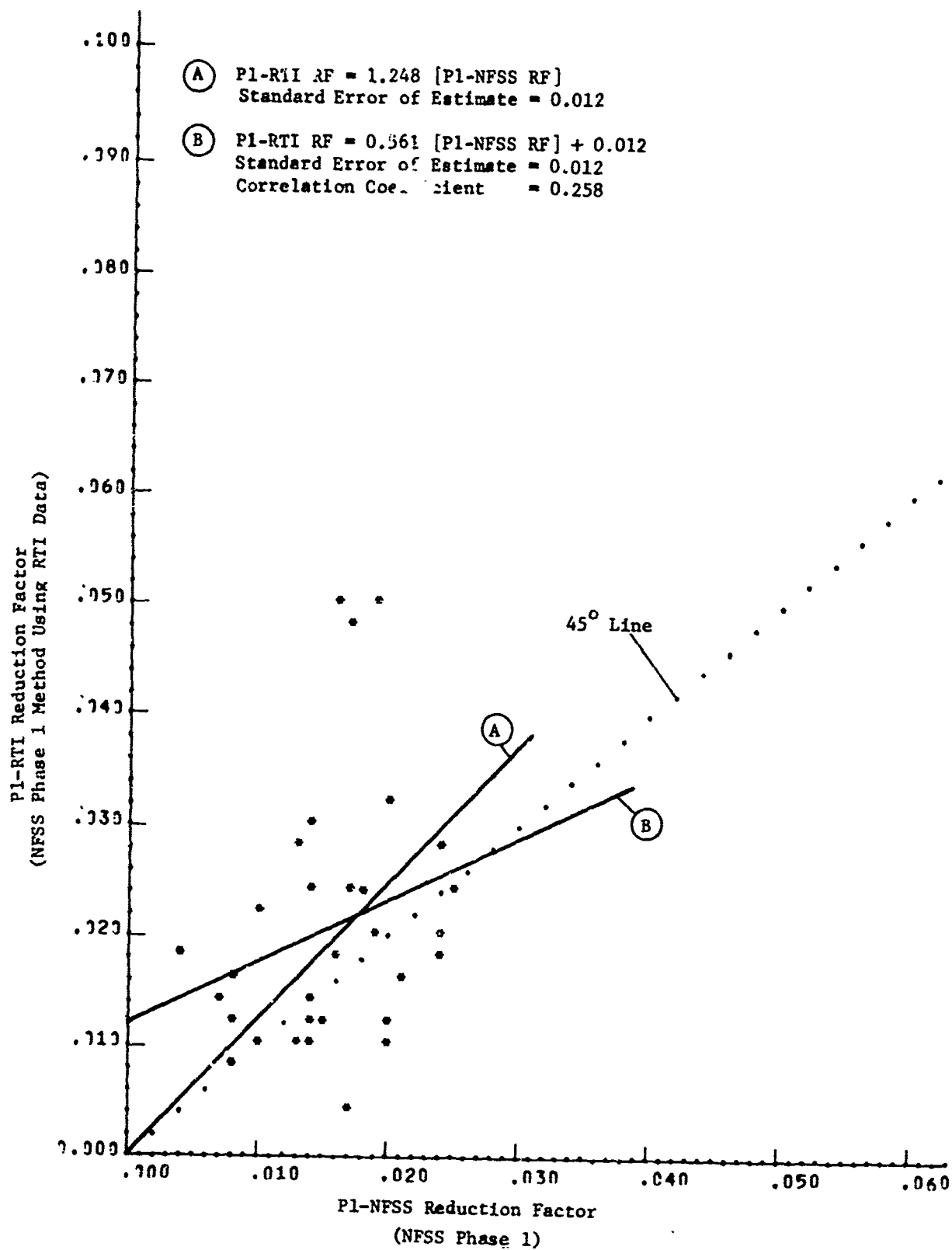


Fig. E.24. Relationship Between P1-NFSS and P1-RTI Reduction Factors.
 (Subtask 1115A Phase 1 Data - 32 Shelter Stories)

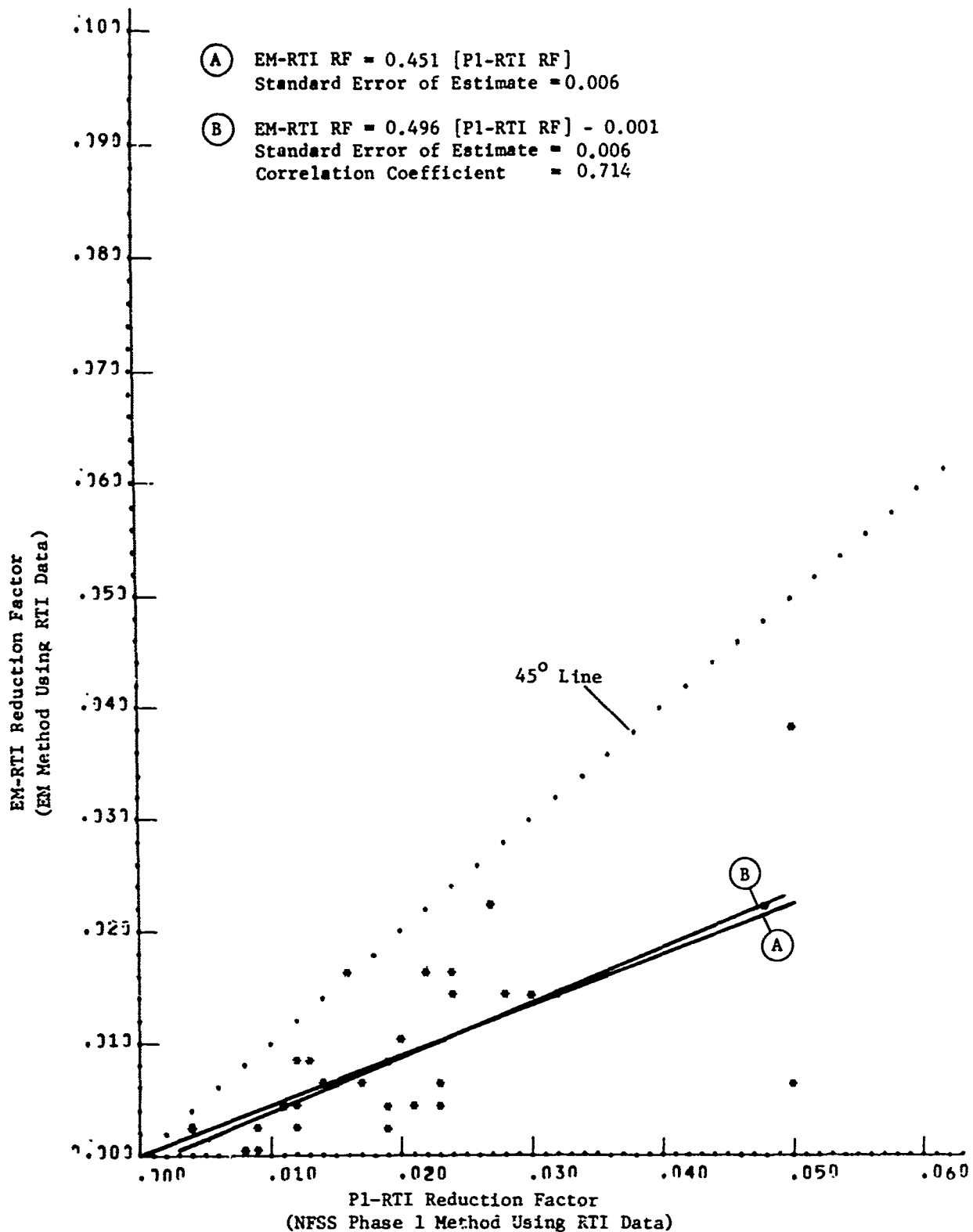


Fig. E.25. Relationship Between Pl-RTI and EM-RTI Reduction Factors.
(Subtask 1115A Phase 1 Data - 32 Shelter Stories)

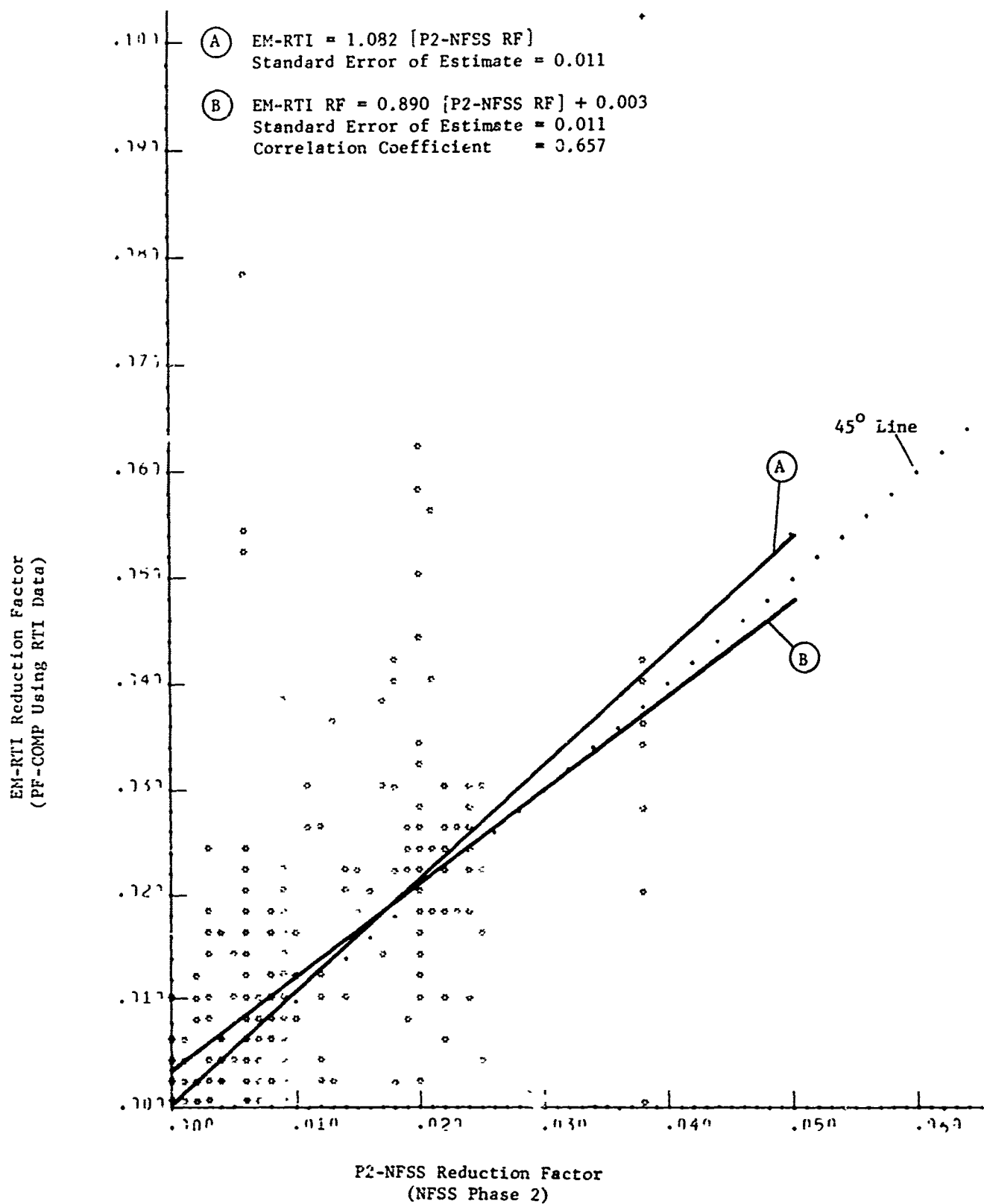


Fig. E.26. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(Total Sample - 292 Shelter Stories)

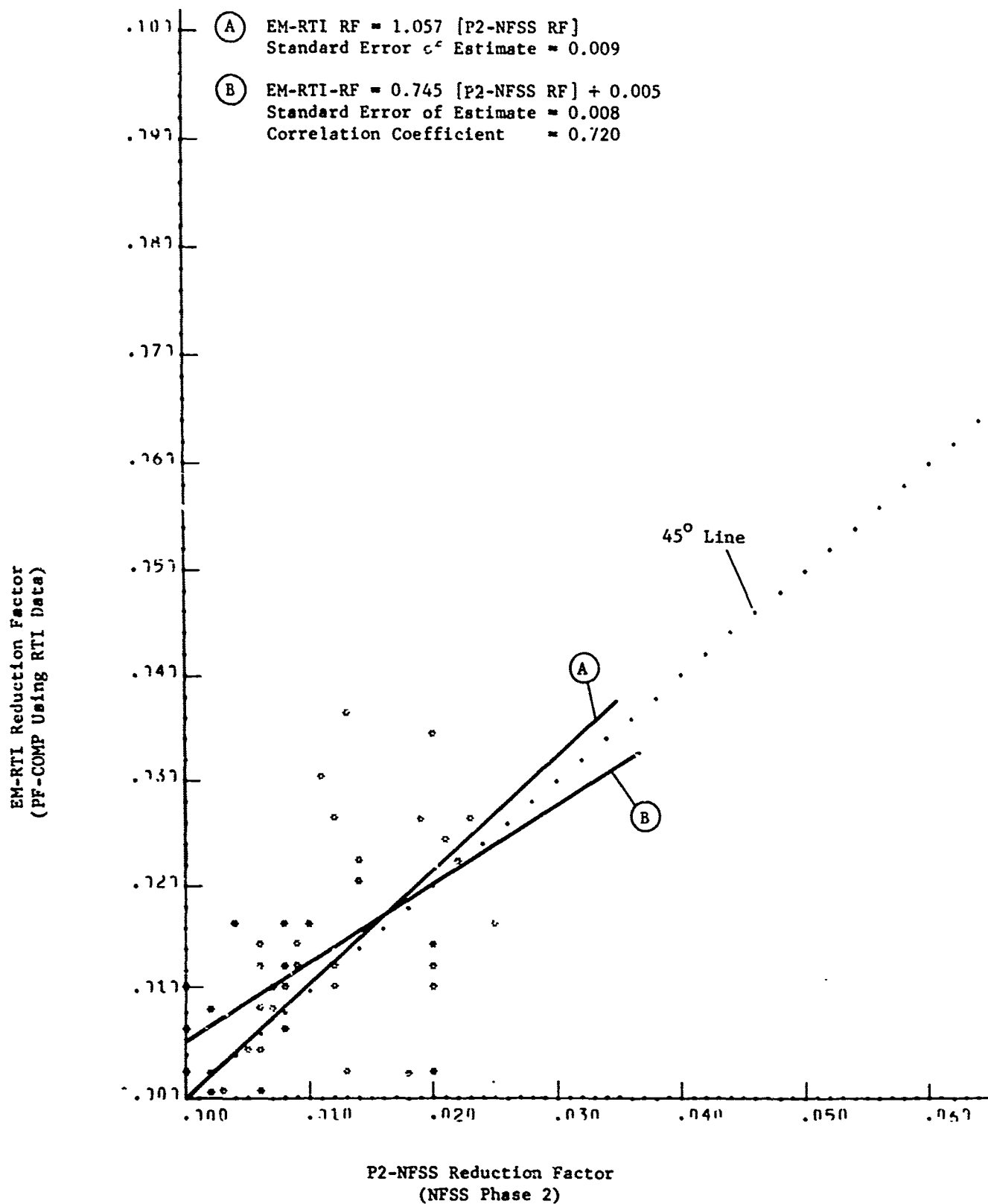


Fig. E.27. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(Providence - 45 Shelter Stories)

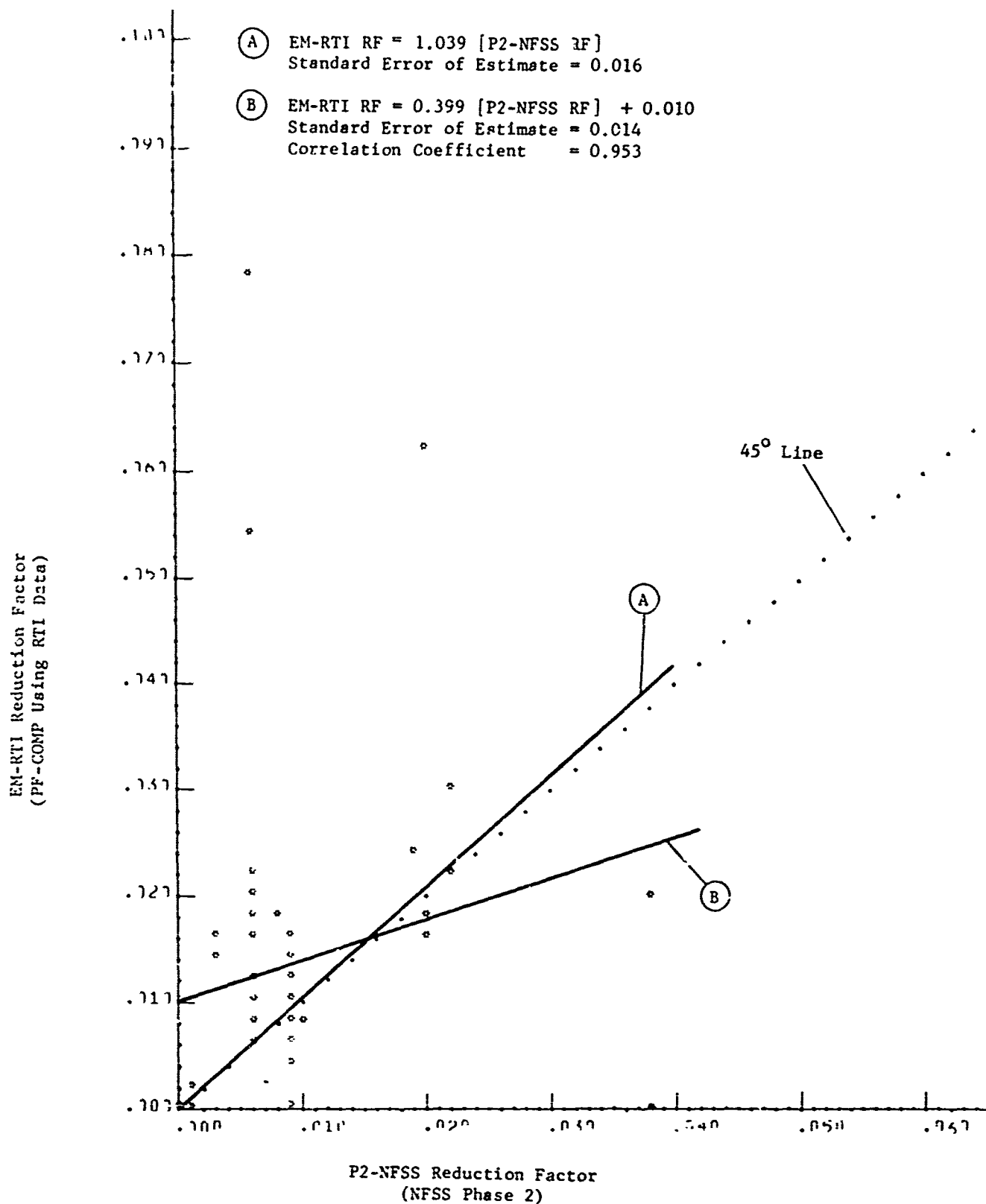


Fig. E.28. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(Detroit - 52 Shelter Stories)

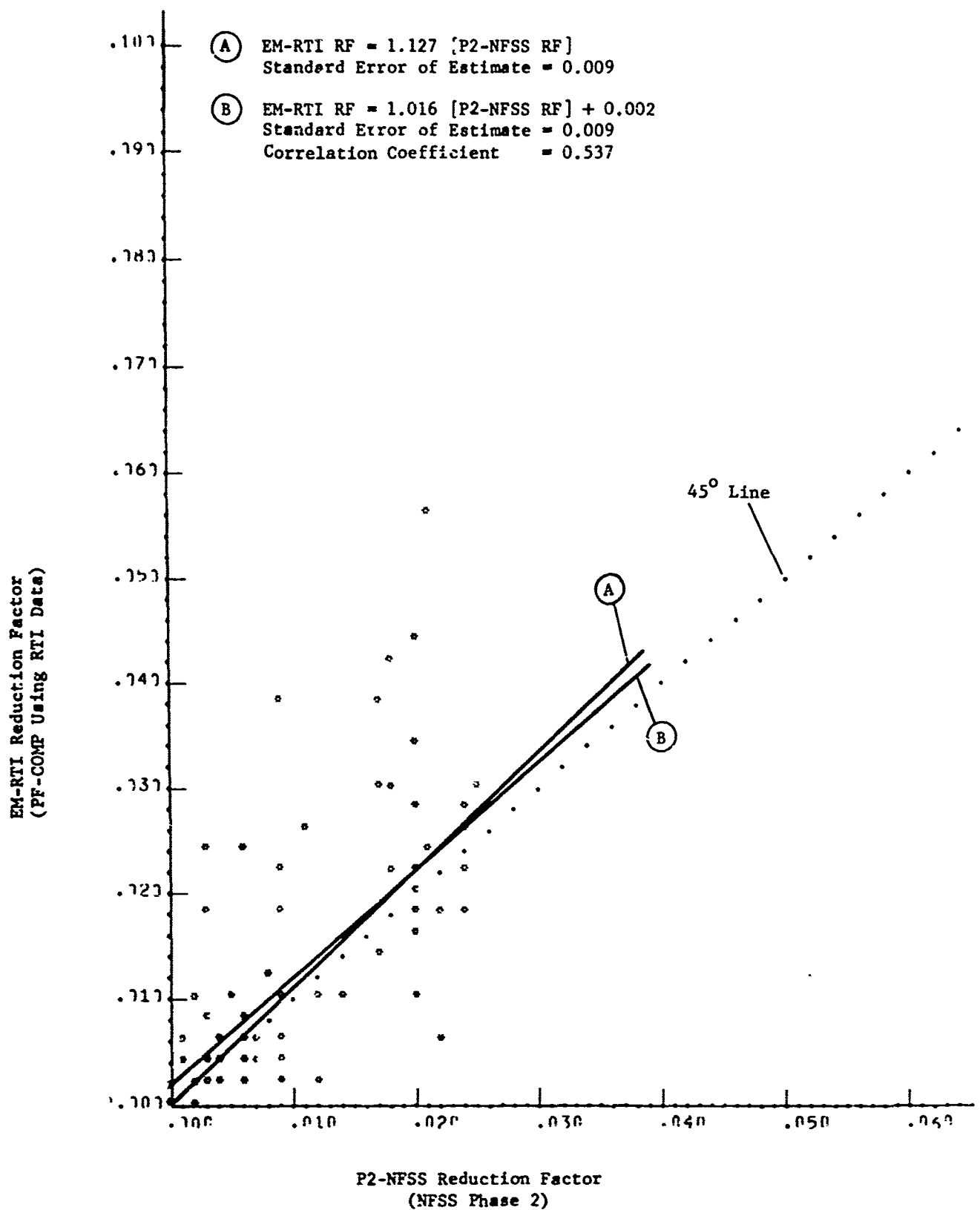


Fig. E.29. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(New Orleans - 90 Shelter Stories).

EM-RTI Reduction Factor
(PF-COMP Using RTI Data)

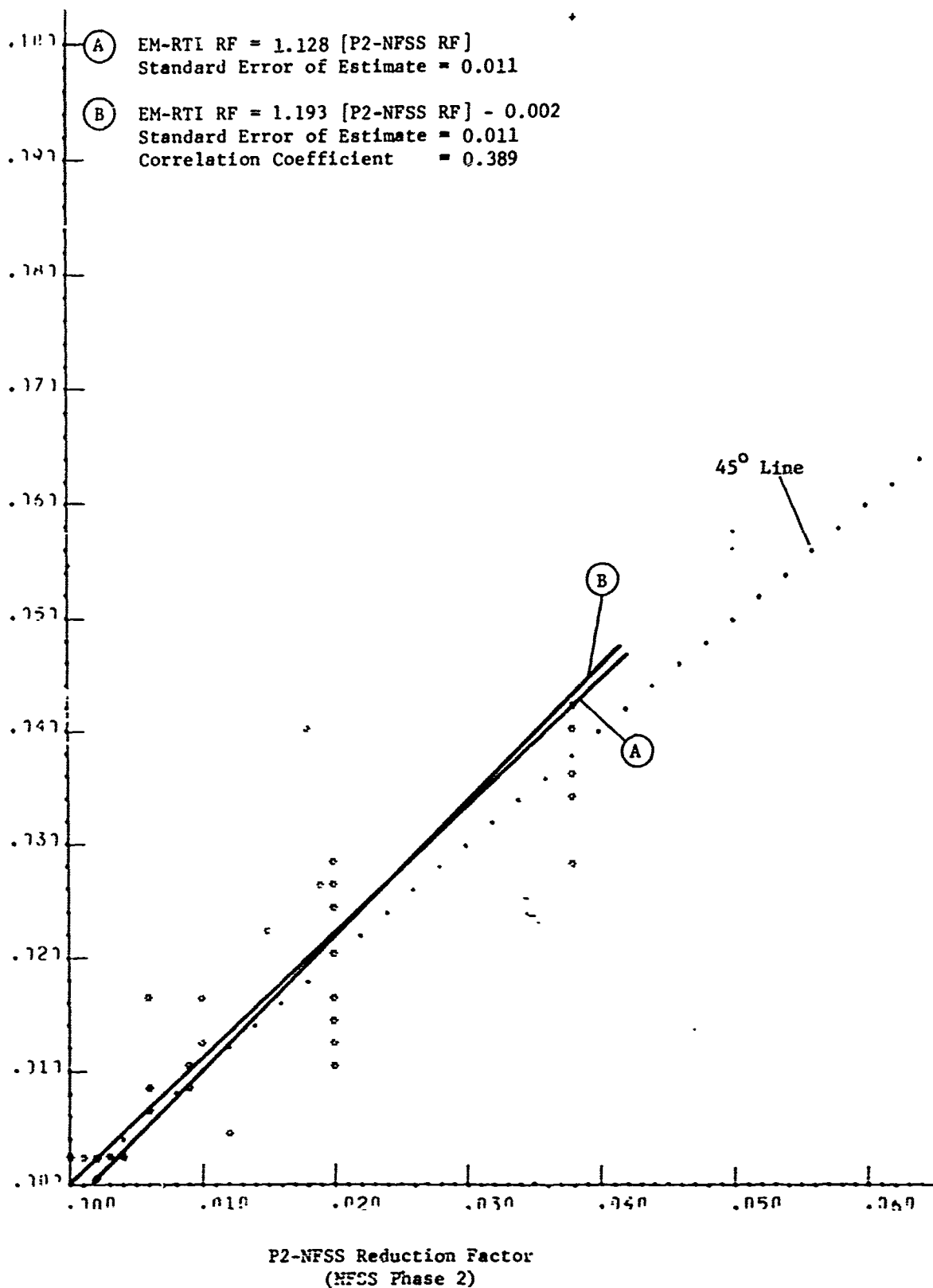


Fig. E.30. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(Albuquerque - 41 Shelter Stories)

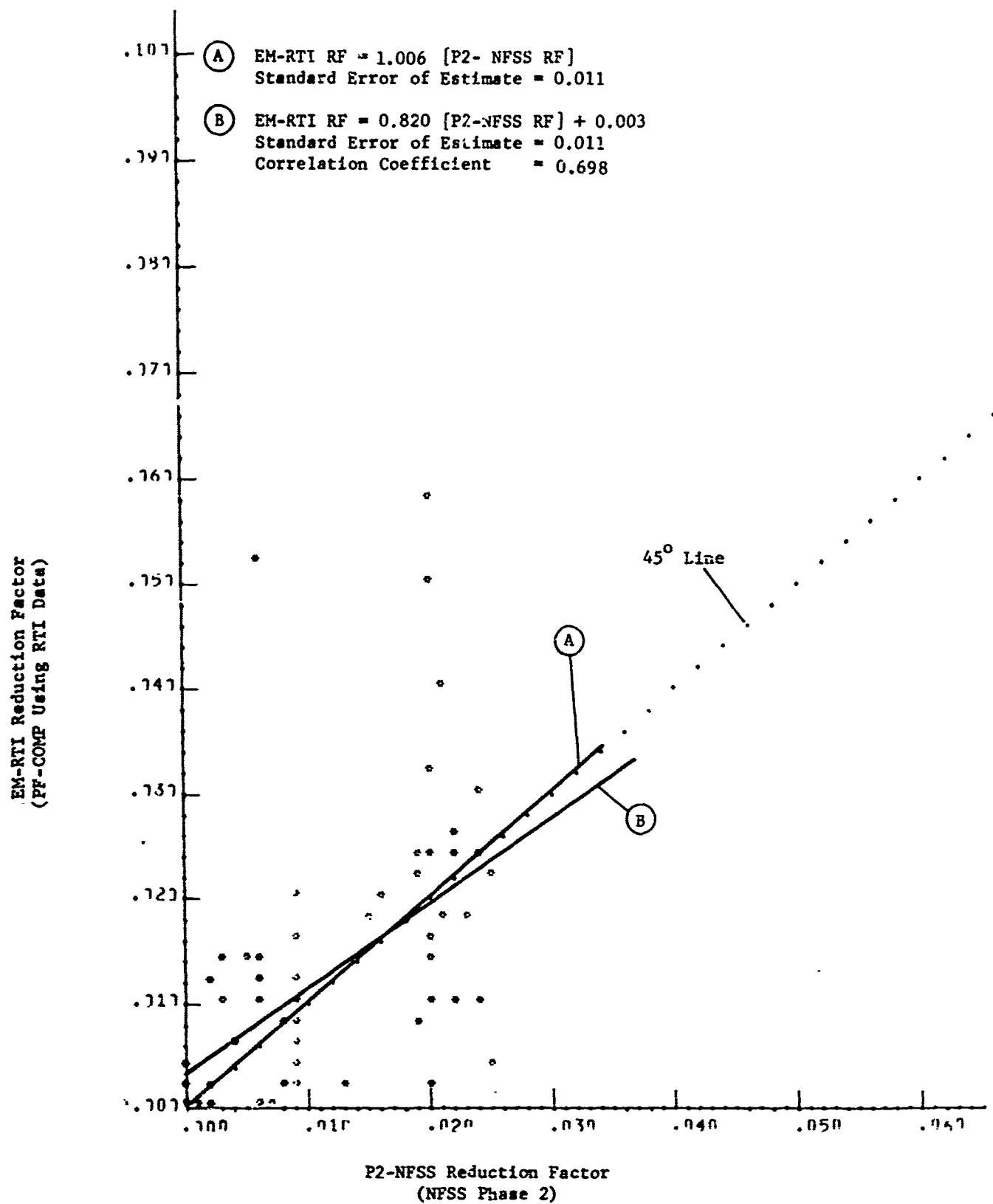


Fig. E.31. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(San Jose - 64 Shelter Stories)

EM-RTI Reduction Factor
(PF-COMP Using RTI Data)

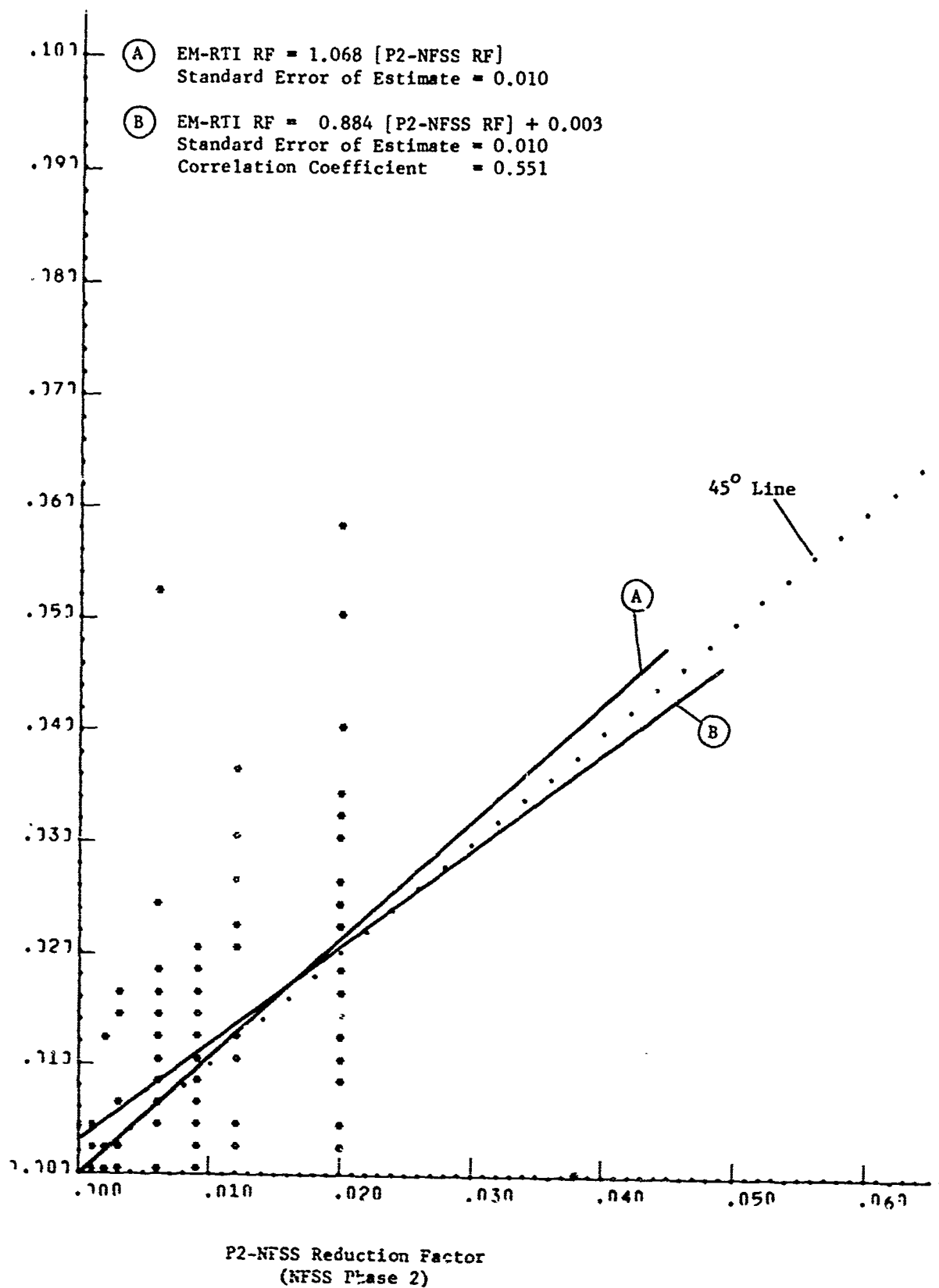


Fig. E.32. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(Basements - 131 Shelter Stories)

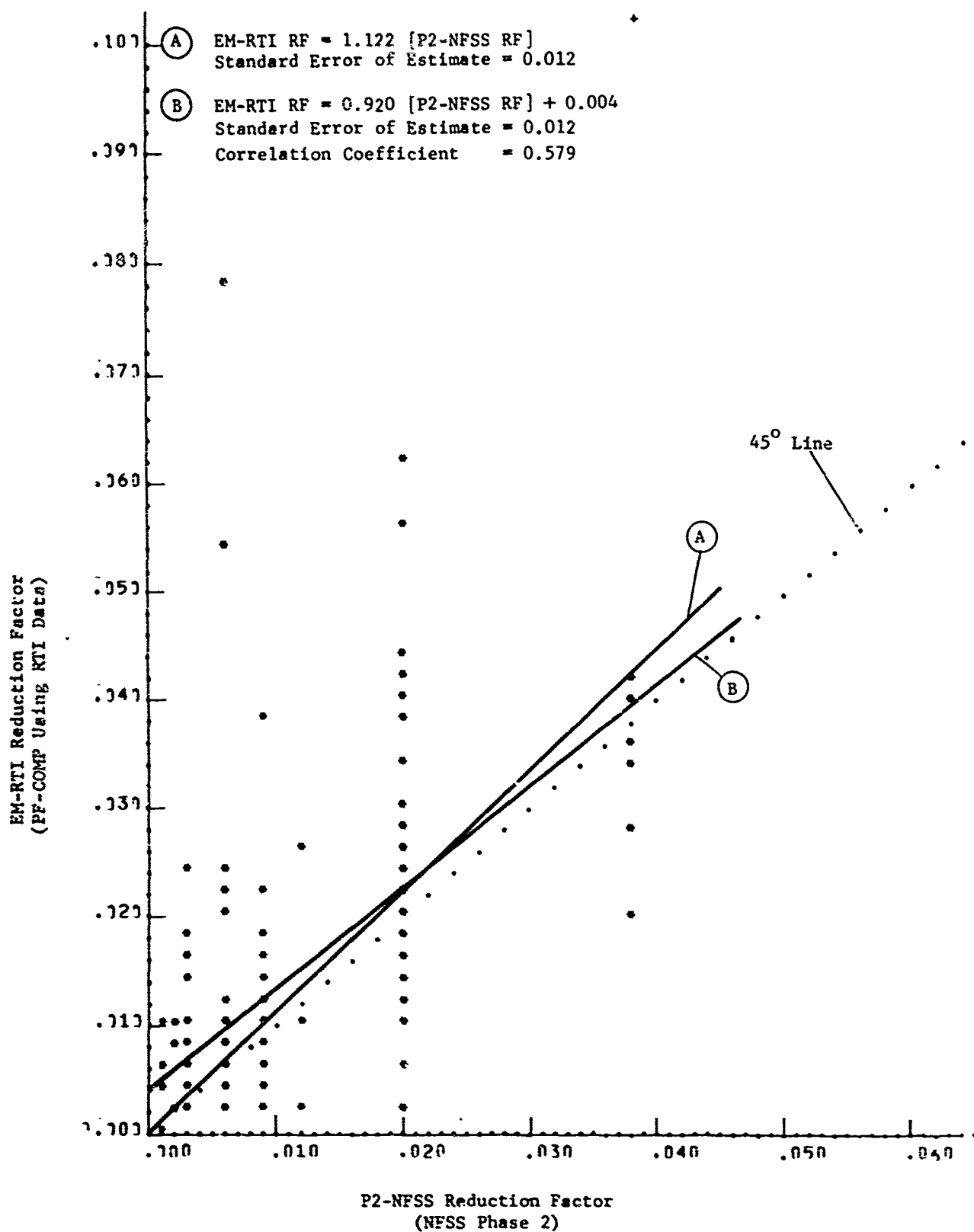


Fig. E.33. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(Above-Grade Stories - 161 Shelter Stories)

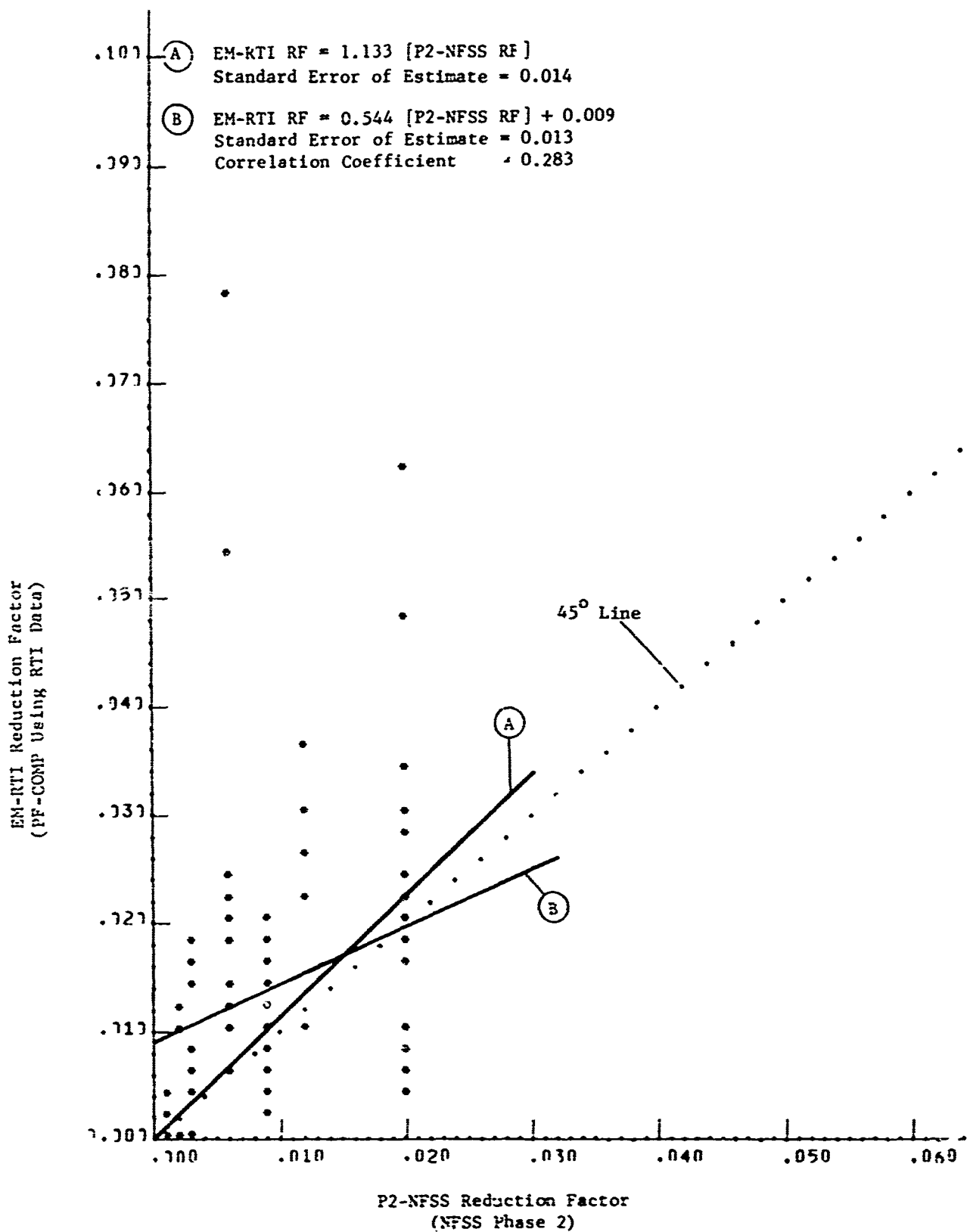


Fig. E.34. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
 (Use Class Residential - 88 Shelter Stories)

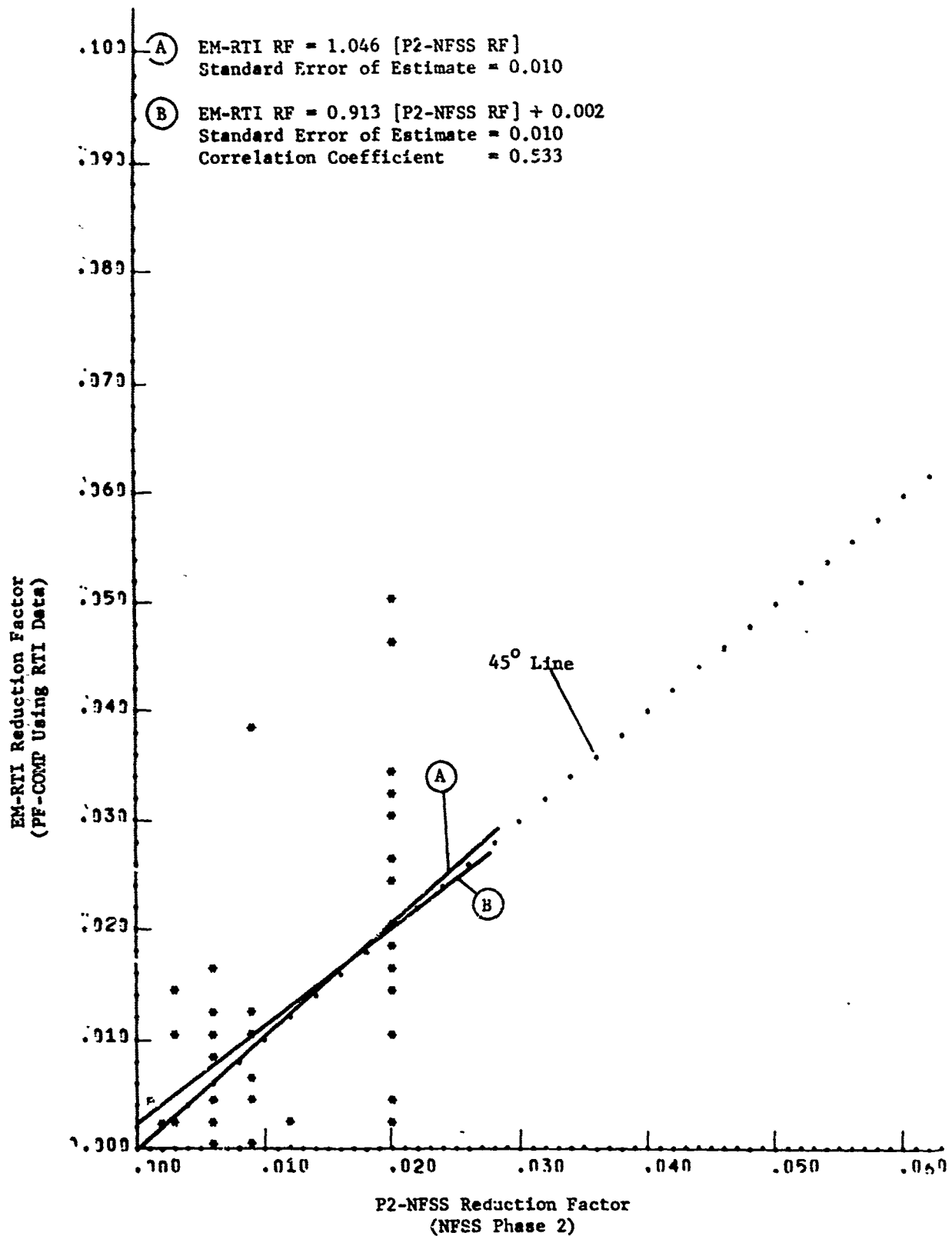


Fig. E.35. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(Use Class Educational - 47 Shelter Stories)

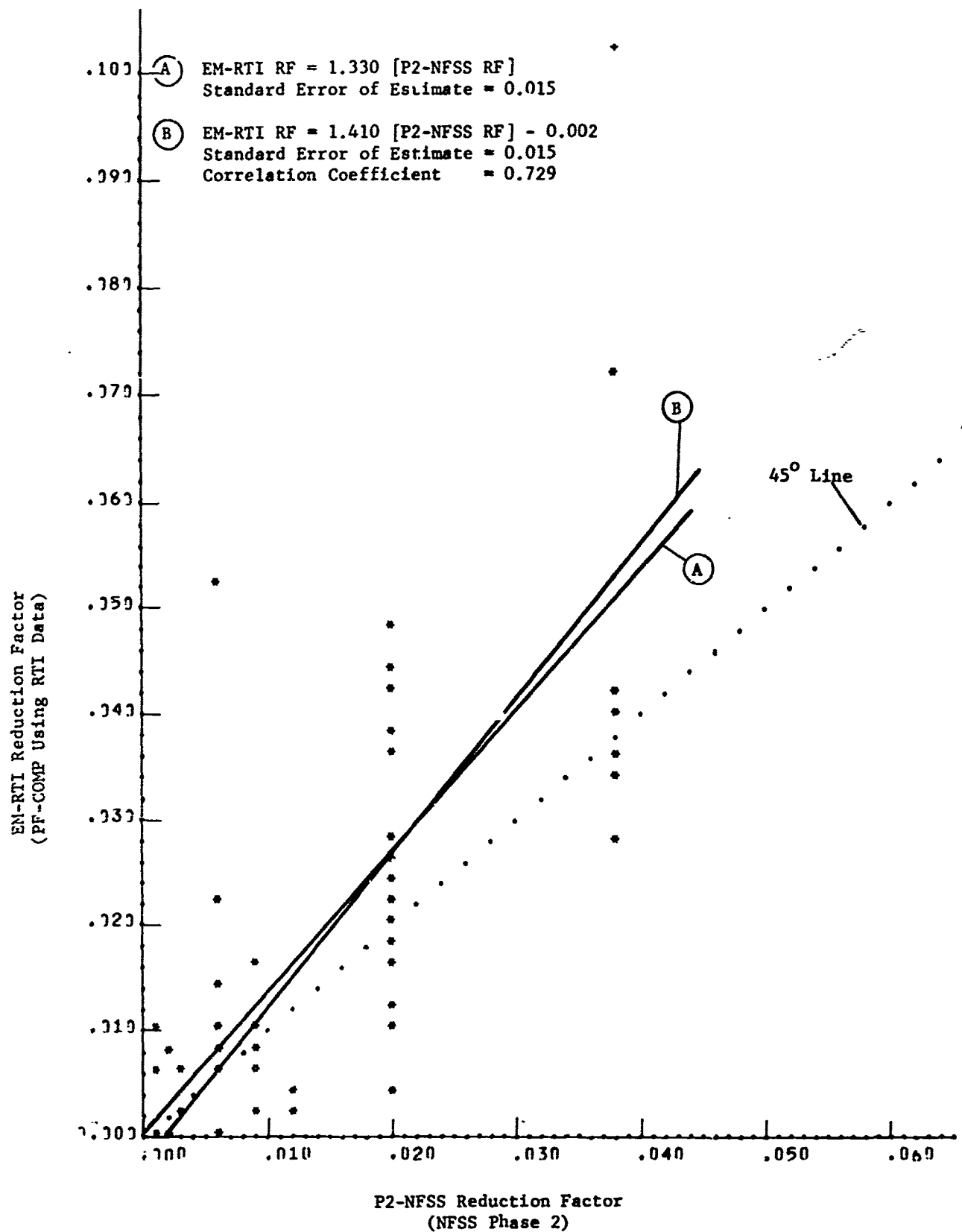


Fig. E.36. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(Use Class Government and Public Service - 68 Shelter Stories)

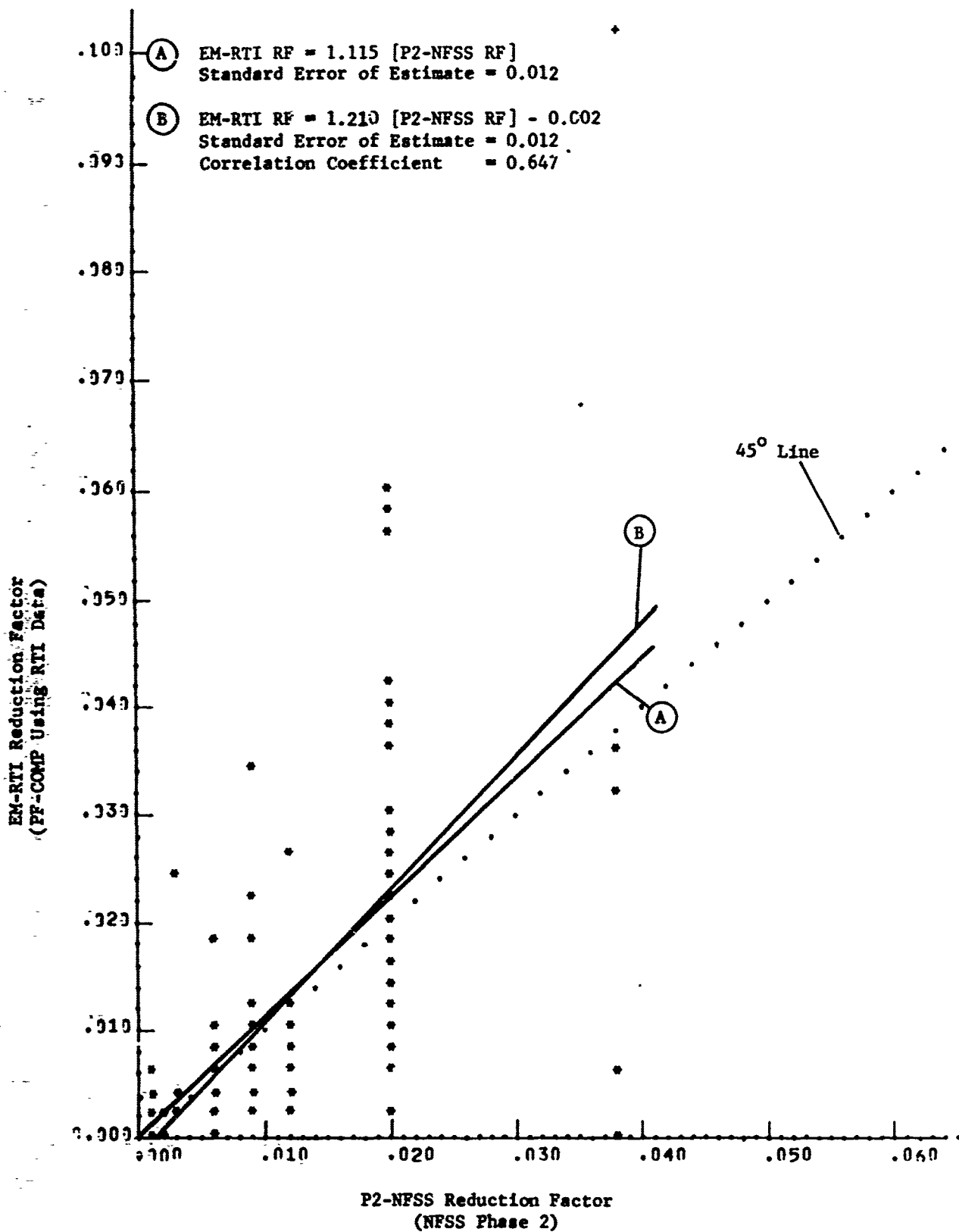


Fig. E.37. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(Use Class Commercial - 151 Shelter Stories)

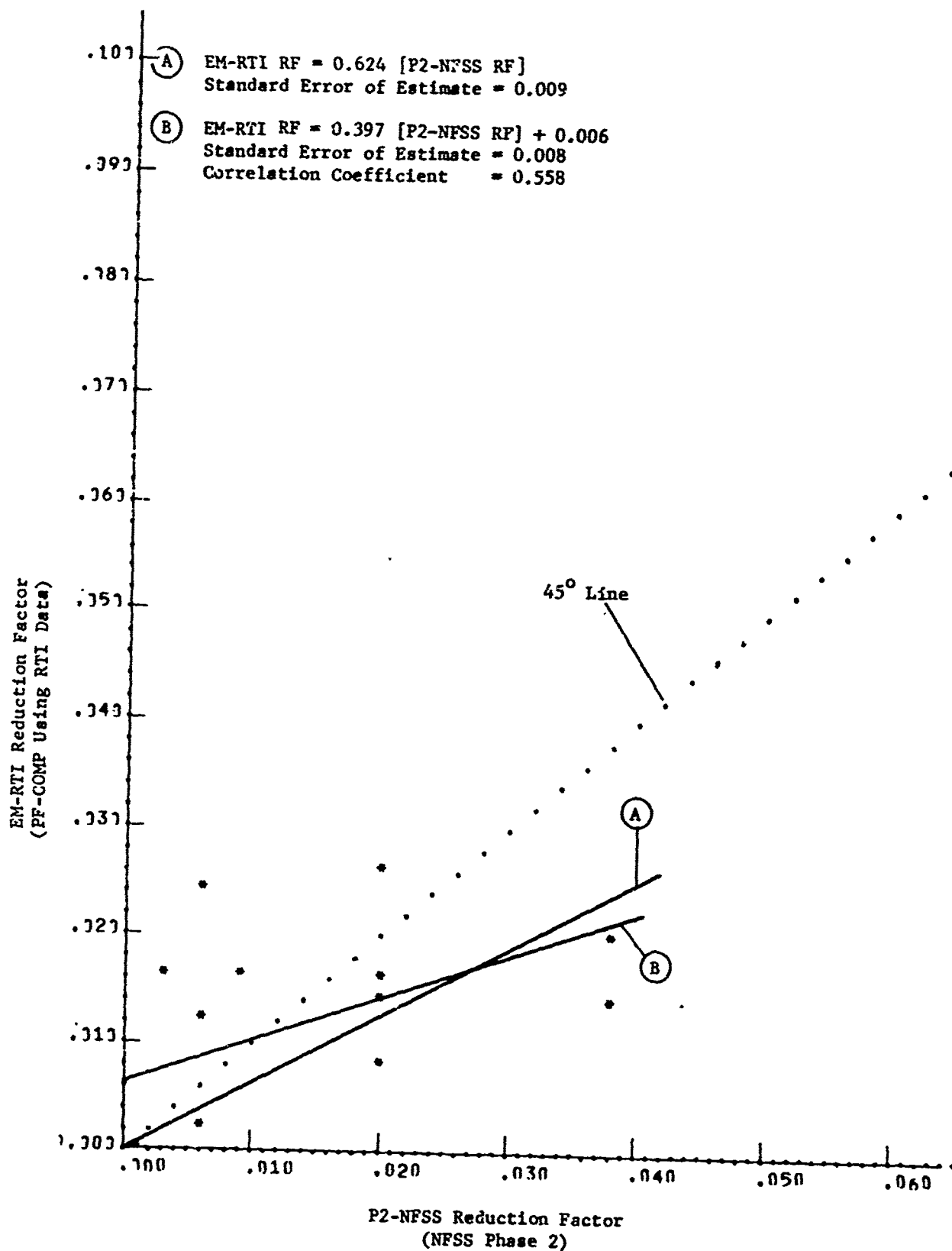


Fig. E.38. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(Use Class Industrial - 16 Shelter Stories)

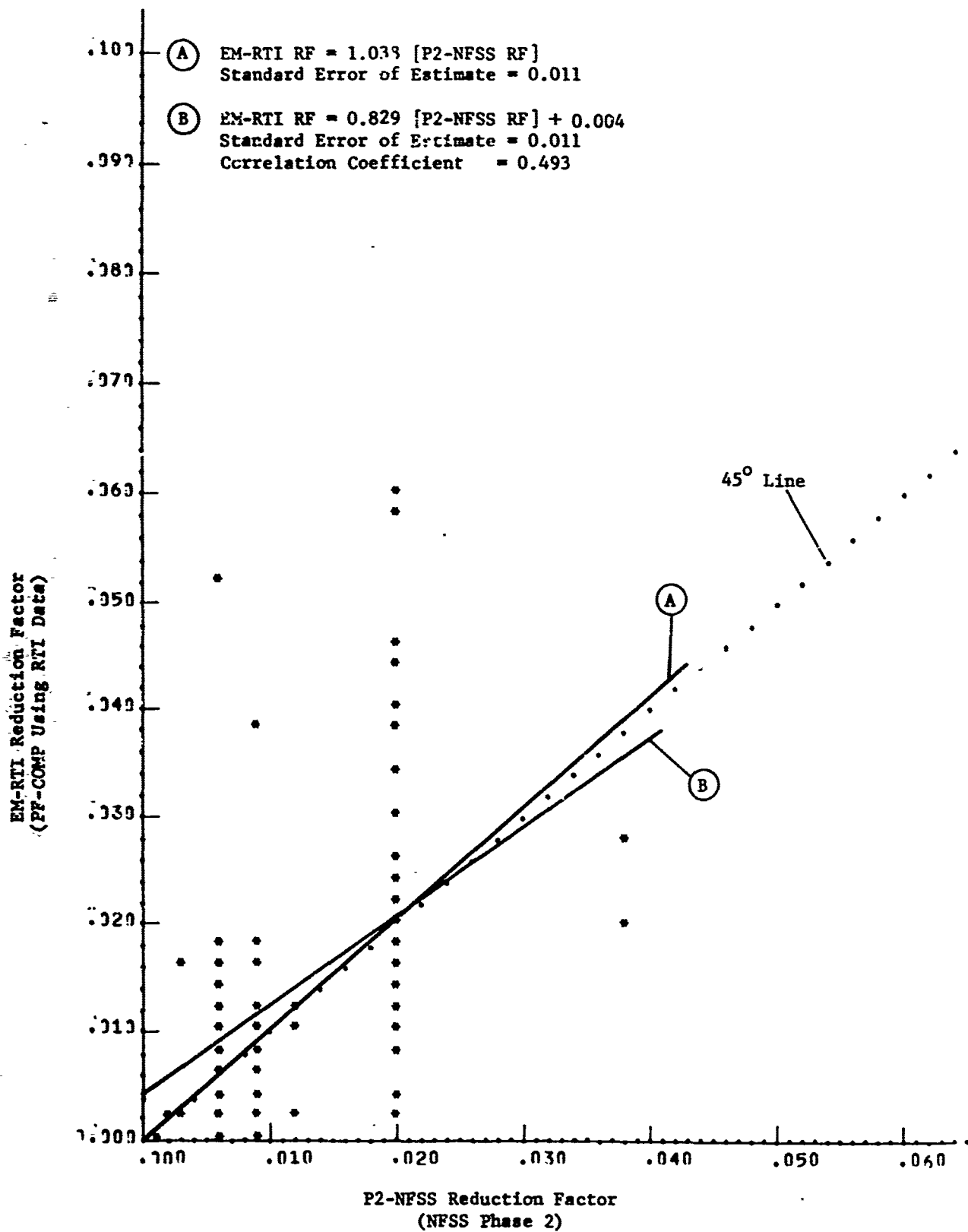


Fig. E.39. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(Structural Classification Wall-Bearing - 98 Shelter Stories)

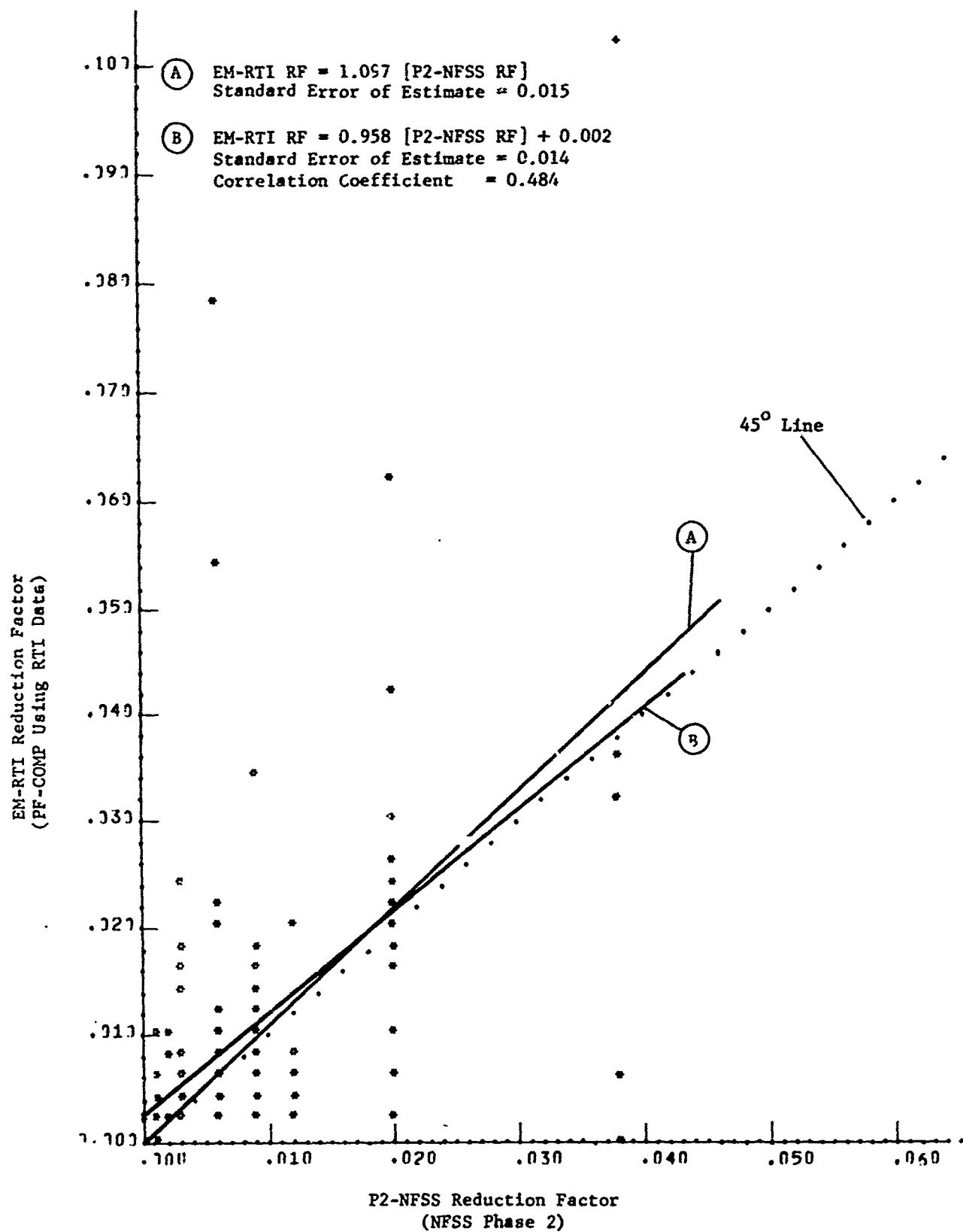


Fig. E.40. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(Structural Classification Steel-Framed - 119 Shelter Stories)

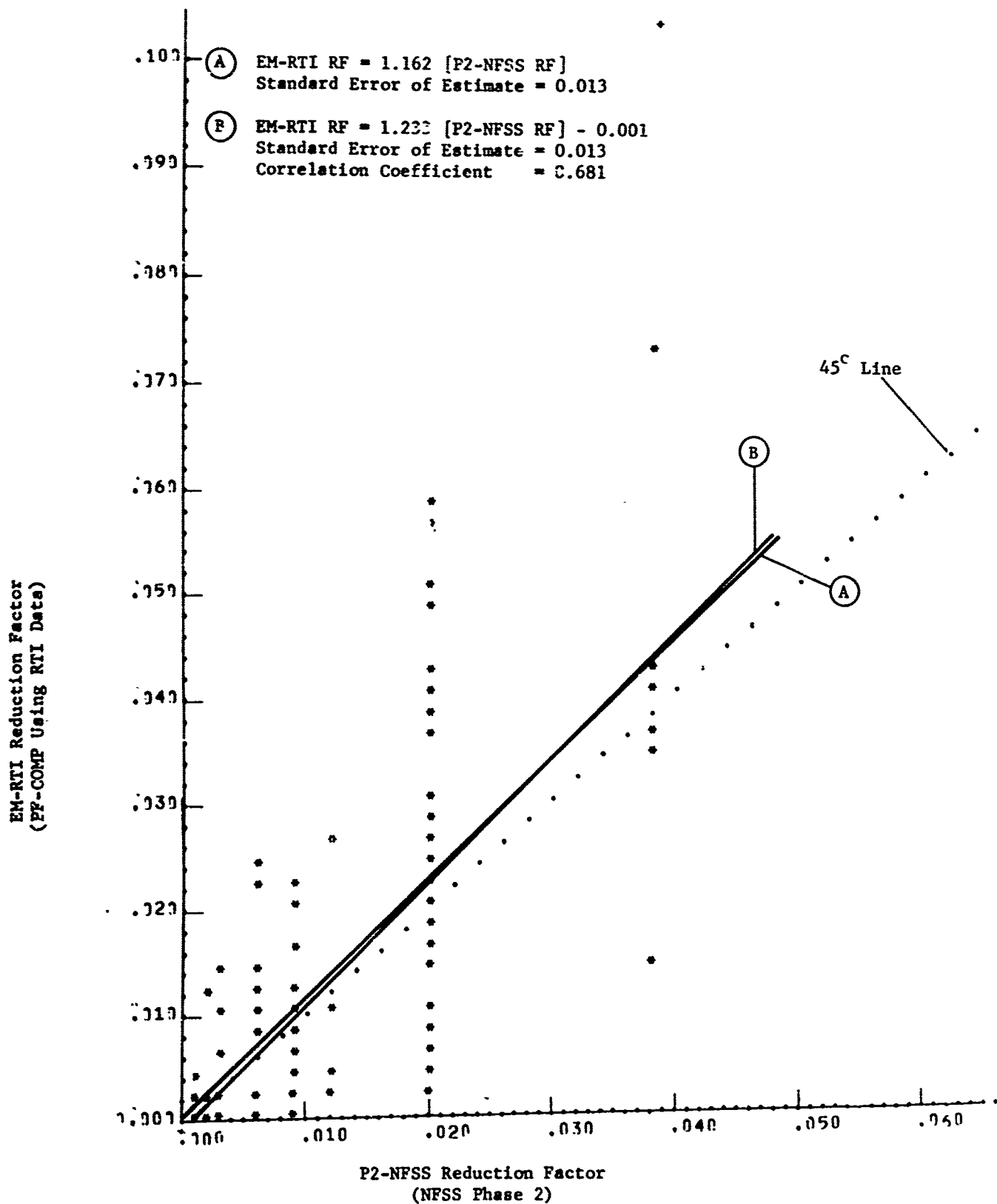


Fig. E.41. Relationship Between P2-NFSS and EM-RTI Reduction Factors.
(Structural Classification Concrete-Framed - 157 Shelter Stories)

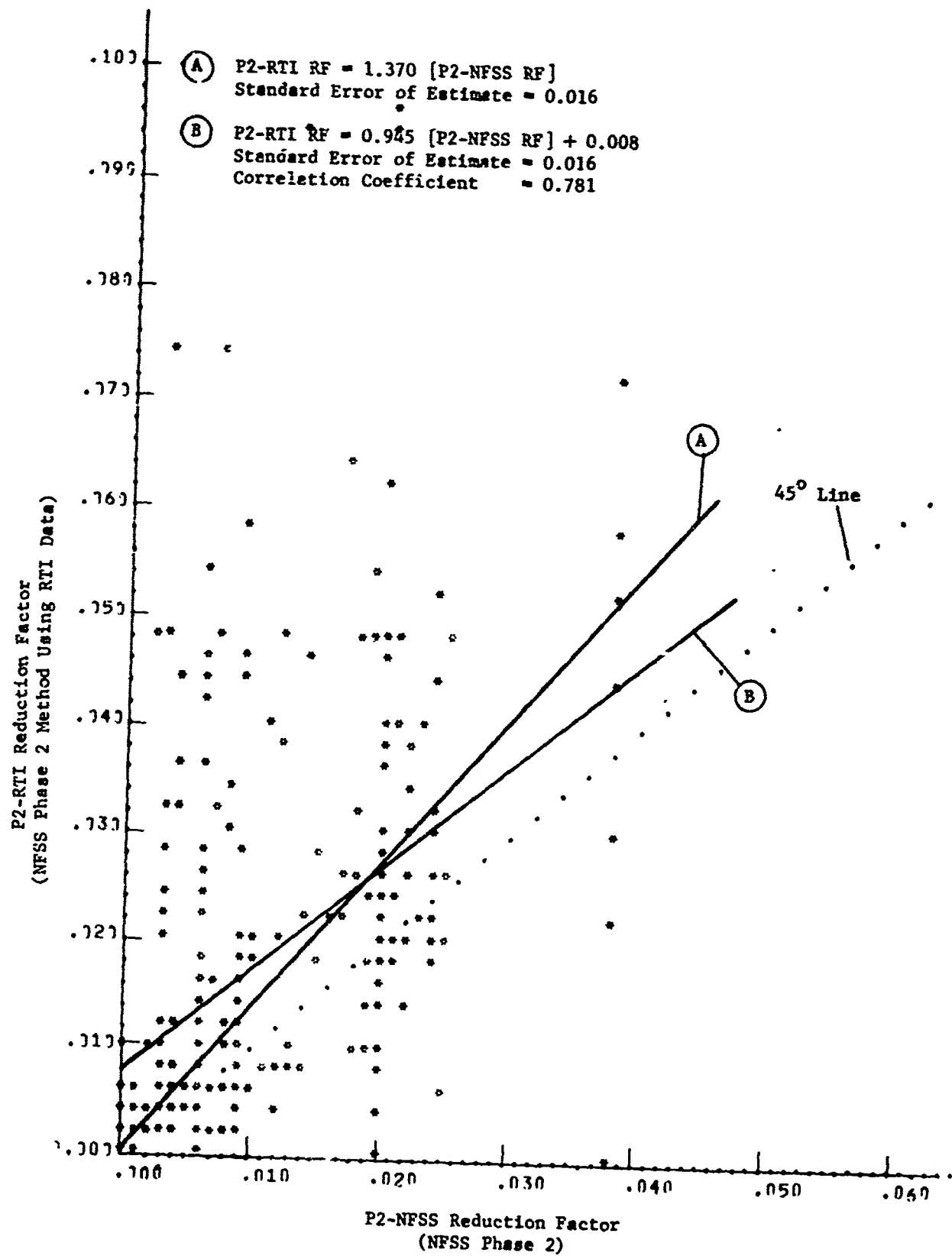


Fig. E. 42 Relationship Between P2-NFSS and P2-RTI Reduction Factors.
 (Total Sample - 292 Shelter Stories)

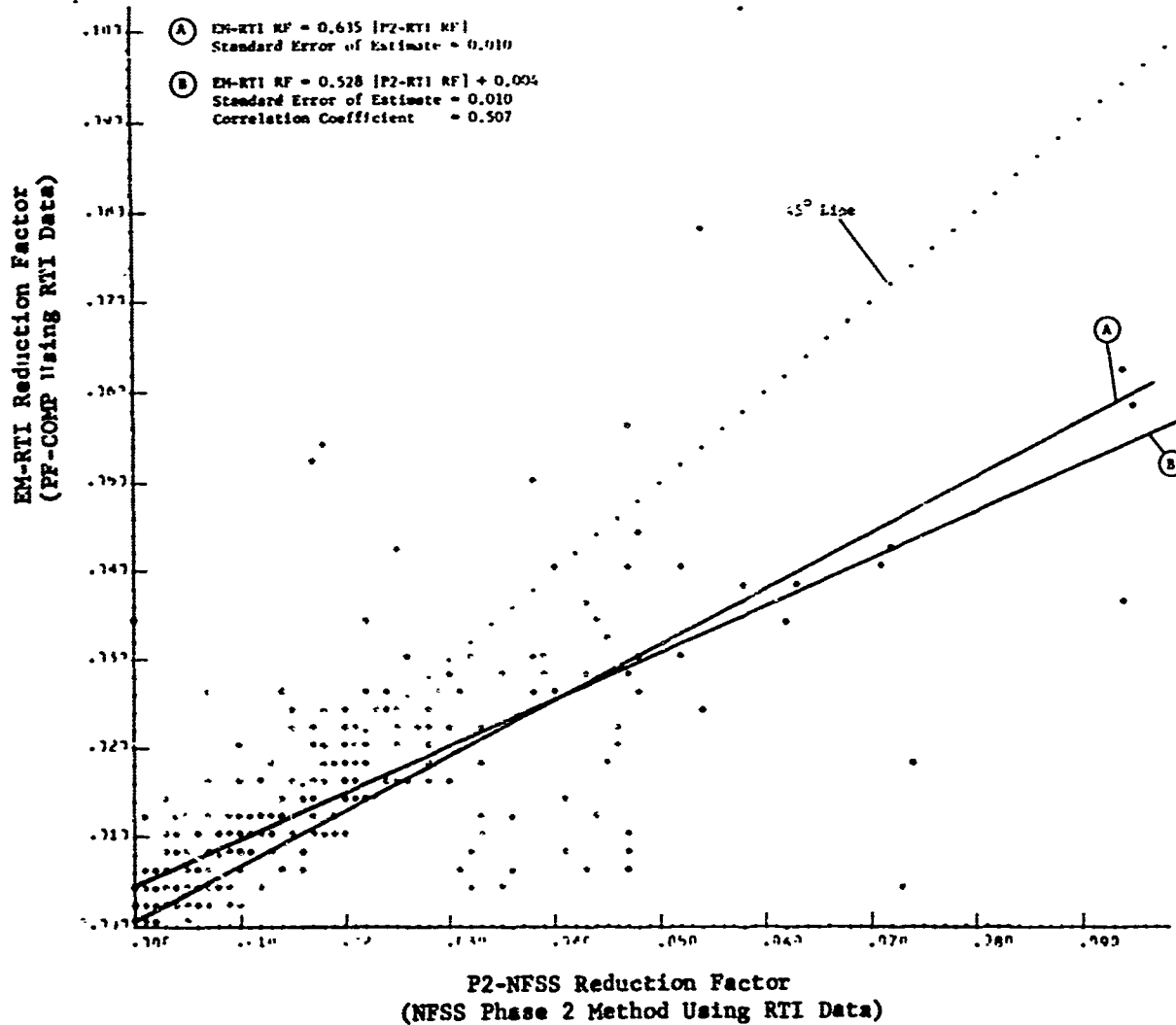


Fig. E.43. Relationship Between P2-RTI and EM-RTI Reduction Factors.
(Total Sample - 292 Shelter Stories)

Unclassified

Security Classification

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author) Research Triangle Institute P.O. Box 12194 Research Triangle Park, North Carolina 27709		2a. REPORT SECURITY CLASSIFICATION Unclassified	
		2b. GROUP	
3. REPORT TITLE STATISTICAL ANALYSIS OF NFSS PROTECTION CATEGORIES			
4. DESCRIPTIVE NOTES (Type of report and inclusive dates) Final Report: August 1966 - December 1968			
5. AUTHOR(S) (First name, middle initial, last name) R. O. Lyday, G. M. Botkin, E. L. Hill, and F. G. Giesbrecht			
6. REPORT DATE December 1968		7a. TOTAL NO. OF PAGES 133	7b. NO. OF REFS 14
8a. CONTRACT OR GRANT NO. Standard Research Institute Subcontract No. 11213(4949A-72) Research Triangle Institute Project CU-295 OCD Work Unit 1154C		8b. ORIGINATOR'S REPORT NUMBER R-OU-295	
8c. OTHER REPORT NUM (Any other numbers that may be assigned this report)			
9. DISTRIBUTION STATEMENT This document has been approved for public release and sale; its distribution is unlimited.			
11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY Office of Civil Defense Office of the Secretary of the Army Washington, D. C. 20310	
13. ABSTRACT The objective of this research was to determine the relationship between the center PF's of a sample of 334 facilities as evaluated in accordance with the Engineering Manual (PF-COMP) and the center PF's of the same facilities as evaluated in the NFSS prior to February 1967. In addition to PF's reported in NFSS Phases 1 and 2 and PF's calculated by PF-COMP using RTI collected data, the following separate estimates of the center PF were determined: NFSS Phase 1 and 2 methods using RTI input data, PF-COMP using NFSS input data, and PF-COMP using NFSS input data supplemented by additional building data collected by RTI. Conclusions regarding the relationship of the seven PF estimates are: 1) Revised NFSS PF's for individual buildings should not be estimated nor is any advantage seen in revised estimates of Phase 2 shelter PF's available in a geographic area such as a county. This conclusion is drawn because NFSS Phase 2 (P2-NFSS) PF's are nonconservative (high) when compared to Engineering Manual-RTI (EM-RTI) results and because of the difficulty in obtaining Phase 2 PF values other than by PF category. 2) PF's calculated using NFSS Phase 1 and 2 procedures and RTI collected input data (P1-RTI and P2-RTI) are both conservative (low) when compared to EM-RTI results. The nonconservative results determined in the NFSS are therefore attributed to data collection discrepancies. 3) Many buildings surveyed in the NFSS prior to February 1967 have PF's less than 40 and are consequently not contained in Phase 2 data files. The regression equation developed for the total sample to determine the relationship between P1-NFSS and EM-RTI could be used to estimate PF's of buildings in this category. 4) Procedures have been established whereby NFSS Phase 1 and 2 input data collected prior to February 1967 can be processed by PF-COMP. However, because of input discrepancies noted in the NFSS data when compared to RTI collected data, this method of estimating revised values for shelter stories is not recommended.			

DD FORM 1473

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Unclassified
Security Classification

Unclassified

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14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Buildings Surveys National Fallout Shelter Sur v Construction Fallout Shelters Shelters Structures Shielding Civil Defense Systems Protection Factor						

Unclassified

Security Classification