



December 5, 2000

Mr. Robert Weiland
Merritt & Harris, Inc.
110 East 42nd Street
Suite 1200
New York, NY 10017-5685

Re: **WORLD TRADE CENTER**
NEW YORK, NY
Building One
Theoretical Traffic Analysis

Dear Mr. Brady:

The following are the criteria and a summary of the results of our calculated elevator traffic analysis for One World Trade Center:

CRITERIA

The following are the criteria used to analyze elevator traffic capabilities:

- **Maximum Five-minute Handling Capacity (# of People):** This is the approximate maximum number of passengers the elevator system can be expected to serve during a five-minute peak period. For a bank of elevators serving commercial office space, this should be no less than 10% to 12% of the total population this bank is expected to serve.
- **Maximum Five-minute Handling Capacity (% of Population):** This is the percentage of the total expected population served by the elevator bank represented by the maximum five-minute handling capacity. For a bank of elevators serving commercial office space, this should be no less than 10% to 12
- **Average Interval:** This is the average time interval between elevators passing a given floor in a particular direction during a peak period, assuming the elevators are evenly spaced throughout the building. Note that Average Interval is a design criteria, and is NOT the same as the "average waiting time", which cannot be directly calculated by theoretical means. For a bank of elevators serving commercial office space, the average interval should be no more than 35 to 45 seconds.

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SUMMARY OF RESULTS

SHUTTLES

- The Zone 2 shuttle can achieve a maximum handling capacity of 18% of the population they serve, with an average interval of 25 seconds.
- The Zone 3 shuttle can achieve a maximum handling capacity of 22% of the population they serve, with an average interval of 22 seconds.

LOCAL BANKS

- The results for the local banks (A, B, C, D of any zone) can achieve maximum handling capacities ranging between 13-18% and average intervals of approximately 30 seconds.

The results described above show that the elevators in One World Trade Center should provide acceptable service during peak traffic periods with a full population in the buildings.

Should you have any questions or should you need any clarifications on our report, please feel free to contact us. Thank you.

Sincerely,

BOCA GROUP INTERNATIONAL, INC.



Daniel DeBlasio
Director of Engineering
World Trade Center - 1 Traffic Analysis.doc

ATTACHMENT 7

Crandlemere and Associates Asbestos-Containing Materials
Document Review & Evaluation

R. W. CRANDLEMERE & ASSOCIATES, INC.
PROTECTING BUSINESS AND THE ENVIRONMENT

ASBESTOS-CONTAINING MATERIALS
DOCUMENT REVIEW AND EVALUATION
ONE WORLD TRADE CENTER, NORTH TOWER
NEW YORK CITY, NY 10081

Project #000095

Merritt & Harris, Inc. #20-251E

User:

Merritt & Harris, Inc.
Attn: Mr. Robert G. Weiland, V. P.
110 East 42nd Street, 12th Floor
New York City, NY 10017-5685

Date Issued: November 7, 2000

The Asbestos-Containing Materials Document Review and Evaluation described herein was conducted by the undersigned, of R. W. Crandlemere & Associates, Inc. (CRANDLEMERE & ASSOCIATES). CRANDLEMERE & ASSOCIATES assessment consisted solely of the activities described in the Introduction of this report. The assessment was conducted in accordance with the Scope of Work in our Proposal No. 00-090. It is subject to the Limitations and Service Constraints as provided in Appendix A of our ASTM Phase I Environmental Site Assessment report prepared as part of this Project. See Appendix F of that report for ASTM definition of terms in italics in this report.

Report Prepared by:



R. Wayne Crandlemere
President

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1.0 INTRODUCTION

R. W. Crandlemere & Associates, Inc. (CRANDLEMERE & ASSOCIATES) was retained by Merritt & Harris, Inc. (the *user*) to conduct an ASTM E1527-97 Phase I *Environmental Site Assessment* (ESA) of One, Two, Four and Five World Trade Center, located in the Borough of Manhattan, New York City, New York, 10081.

It is our understanding that Merritt & Harris, Inc. is providing this information in conjunction with, and as part of, a larger assessment of the *property* and has named The Port Authority of New York and New Jersey as an *additional user* as defined by the ASTM Standard E1527-97 Section 3.3.39. As an *additional user*, The Port Authority of New York and New Jersey may rely on the information presented in this report.

This report presents CRANDLEMERE & ASSOCIATES' professional opinion, and no warranty, expressed or implied, is made. The Port Authority of New York and New Jersey has the right to reproduce in full and provide copies of this report to interested parties. All reports, both verbal and written, are for the benefit of The Port Authority of New York and New Jersey and its' agents, employees, participates, and assigns.

On September 26, 27, 28 and 29 and October 10 and 11, 2000 Mr. R. Wayne Crandlemere of CRANDLEMERE & ASSOCIATES conducted a *Site visit* to identify *recognized environmental conditions* at the Site. In addition, CRANDLEMERE & ASSOCIATES' assessment included reconnaissance of adjacent properties, background research, and review of available local, state and federal regulatory records regarding the presence of petroleum products or hazardous materials at or in the vicinity of the Site.

The results of our work regarding the ASTM Standard for a Phase I Environmental Site Assessment of the Site is provided in a separate Phase I ESA report.

This report addresses the asbestos-containing materials (ACM) related to the One World Trade Center, North Tower (including elevator, façade, and asbestos issues for this building). See the separate reports specifically related to the Two World Trade Center, Four World Trade Center, Five World Trade Center, Retail Mall and Plaza, Central Services and Subgrade for ACM information specific to those buildings and facility areas.

1.1 Background

The World Trade Center was constructed between 1966 and 1970 when asbestos was used in buildings as a fire retardant. According to the World Trade Center Property Book (see Section 3.4), "sprayed on asbestos is present within the 6th floor catwalks, mezzanine substructure, elevator shafts and machine rooms, interior core pipe chases, and electric and phone closets of the Twin Tower buildings. Additionally, asbestos-containing thermal system pipe insulation is present in pipe chases, the Concourse ceiling plenum and in MERs [mechanical equipment rooms], while vinyl asbestos floor tiles are present throughout the complex. The Port Authority has removed a large portion of the asbestos material typically located on the structural columns and on pipe insulation from tenant

floors in One World Trade Center, and has removed much of the pipe wrap insulation found in the Subgrade. The practice of containment has not been implemented at the World Trade Center."

"In addition to full-scale abatement projects, the World Trade Center has instituted an ongoing operations and maintenance program whereby specific individuals on the staff are trained as certified ACM handlers and can respond with appropriate equipment and procedures to manage incidental ACM incidents. Tenants whose space may contain ACM have been formally notified."

1.2 Scope of Work

Beyond the Scope of Work for the ASTM Standard for a Phase I Environmental Site Assessment, but as required by the *user*, summaries of readily available information (provided by and apparently prepared by the Port Authority of New York and New Jersey) pertaining to the presence of asbestos-containing building materials (ACBM) and documentation of the work done to abate ACBM was evaluated. No sampling or analysis was included and this is not to be interpreted as a complete asbestos survey.

Please note: There is reported litigation in progress for cost-recovery of money related to ACM abatement and/or management. This litigation was not evaluated as part of this assessment and the *user* should consider a detailed review of the on-going litigation and make their own determination as to the impact, if any, on their use of this report and/or future impact of the litigation on their decision making process related to the World Trade Center. Further, the information presented in this report is based at least in part on a somewhat arbitrary separation of areas of the complex that may or may not have any basis in the current operation of the Complex as it is currently managed as one facility. The *user* should consider this report as a good faith effort to present ACM related information to the subject area, however, the *user* is encouraged to review the ACM related Section of the Phase I Environmental Site Assessment (ESA) report which provides a summary of all ACM related information provided by the *owner*. Included in Appendix H-7 of the ESA report are copies of the asbestos program highlights as presented in the World Trade Center Environmental Programs 1999 Year End report. This includes a summary of 1999 Asbestos Projects, World Trade Center Asbestos Disclosure, World Trade Center Elevator Shaft Asbestos Assessment, and World Trade Center Asbestos Contract Administration procedures. Portions of those documents are included in this report. Additionally, the *user* should consider an independent review of the information provided.

It should also be noted that certain materials such as fire doors were not included in the materials suspected to be asbestos-containing and have not been tested or otherwise investigated. It was reported that testing of spline ceilings, hung ceilings, wallboard and wallboard joint compound determined that they were not ACM throughout the facility. A review of test results was not performed and we cannot verify the adequacy of such testing. The *user* may wish to further investigate such materials.

There have been significant on-going asbestos abatement projects and cost estimates provided by the *owner* indicate the following estimated removal costs:

<u>Material</u>	<u>Removal Cost</u>
Vinyl asbestos tile (VAT)	\$ 5-6/square foot
Sprayed-on Fireproofing	\$20-25/square foot
Thermal System Insulation (TSI)	\$15/linear foot

The actual costs for VAT removal for 1999 projects are provided in Appendix H-7 of the Phase I ESA report.

Documentation regarding the presence of ACM in elevator shafts is presented by shaft designation. It is unclear where the shafts are located within the facility and the *user* should consider cross-referencing the shaft locations to the area under consideration. Mr. Taylor reported that there are forty (40) shafts that contain ACM within the Center.

2.0 SUMMARY OF REVIEW OF DOCUMENTS

Materials known to be present in One World Trade Center (excluding mechanical equipment rooms, truck dock and Subgrade locations) appear to include:

Material	Amount
Spray-on fireproofing	124,888 square feet
Cementitious insulation behind convector units	60 square feet
Thermal system insulation (TSI)	1,430 linear feet
Exhaust duct insulation	1,000 linear feet
Elevator pits and shafts	As noted in documents
Vinyl asbestos tile (VAT)	710,677 Square feet

Additionally, the following ACM was reported:

Mechanical Equipment Rooms	100,000 square feet spray-on fireproofing and unknown quantities of TSI
Level B-1; Cove and Northeast quadrant	5,000 square feet spray-on fireproofing/No TSI
Level B-6	40,000 square feet spray-on fireproofing/No TSI
Roof	Could contain asbestos

THE PORT AUTHORITY OF NY & NJ

Memorandum

TO: Joanne Ciccollo
FROM: Joe Amatuccio
DATE: September 27, 2000

SUBJECT: ASBESTOS DISCLOSURE:
One World Trade Center: 33rd and 34th Floors.

COPY: A. Burton, T. Lynch, E. Monteverde, P. Taylor, F. Varriano, L. Zucchi

Regarding your inquiry as to the presence of asbestos-containing building materials present on the 33rd and 34th floors in One World Trade Center, our site survey and bulk sampling data base indicates the following:

On the 33rd floor, there is no asbestos-containing sprayed-on fireproofing or thermal system insulation material present, as defined by the U.S. Environmental Protection Agency standard 40 CFR Part 61: National Emissions Standard For Hazardous Air Pollutants; Asbestos – Final Rule and the U.S. Occupational Safety and Health Administration standard 29 CFR 1910.1001: Asbestos, within the leasehold area. Asbestos-containing sprayed-on fireproofing is however present behind the core walls, but not the within the core's plenum. Vinyl asbestos floor tiles have been identified on the northwest quadrant of the floor.

On the 34th floor, there is no asbestos-containing sprayed-on fireproofing or thermal system insulation material present, as defined by the U.S. Environmental Protection Agency standard 40 CFR Part 61: National Emissions Standard For Hazardous Air Pollutants; Asbestos – Final Rule and the U.S. Occupational Safety and Health Administration standard 29 CFR 1910.1001: Asbestos, within the leasehold area. Asbestos-containing sprayed-on fireproofing is however present behind the core walls, but not the within the core's plenum. There is are no vinyl asbestos floor tile present.

Should you have any questions, please contact me at x 2704.

Joe Amatuccio
Manager,
Operations & Maintenance Management

THE PORT AUTHORITY OF NY & NJ

MEMORANDUM

TO: Joseph Amatuuccio, Carla Bonacci, Jerrold Dinkels,
Frank DiMartini, Eric Hauser, Louis Menno,
Edwin Monteverde, Francis Riccardelli, Nancy Seliga

FROM: John Castaldo

DATE: September 19, 2000

SUBJECT: ASBESTOS POSITIVE LOCATIONS AT THE
WORLD TRADE CENTER: UPDATE.

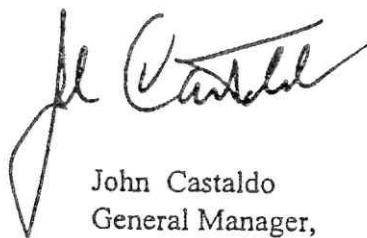
REFERENCE: J. Castaldo to Addressees; Memorandums Dated 5/4/98
and 12/21/99; Same Subject.

COPY: L. Ardizzone, S. Benjamin, I. Chachkes, J. Connors,
W. Devlin, M. Finegold, M. Hurley, M. Jakubek,
M. Kirshner, T. Lynch, U. Mehta, G. Meyer, R. Muessig,
C. Nanninga, A. Reiss, E. Strauss, G. Tabek, P. Taylor,
F. Varriano, L. Zucchi, Operations Control Desk, S-4's

Attached please find an update to my initial May, 1998 memorandum wherein the known asbestos locations at the World Trade Center were disclosed. The information provided in this disclosure is a compulation of available bulk sampling and analytical results from both the World Trade and Engineering Departments' data bases.

In compliance with the disclosure requirements of the U.S. Occupational Safety and Health Administration's asbestos standard, I am requesting that this information be distributed to all World Trade Department, Engineering Department, PA Office Space, and Leasing Division property managers, project managers, construction managers, construction inspectors, operations supervisors, security supervisors, facility maintenance supervisors, and leasing agents associated with the allocation of space, and the design and implementation of World Trade Center projects. Additionally, please forward this information to those contractors under your administration. If there are questions as to the presence of asbestos-containing materials at a particular location, or if the scope of demolition and/or renovation work may impact asbestos-containing materials, please contact Art Burton, Assistant Environmental Coordinator, at 435-8364.

Those on the copyline are requested to contact this office for the appropriate response action if asbestos-containing materials may be impacted by work under your jurisdiction. The Port Authority complies with Industrial Code Rule #56 relative to worker certifications, contractor licensing, and work procedures if asbestos is going to be disturbed or impacted. Please contact me at 435-8518 should you have any questions.

A handwritten signature in black ink, appearing to read "John Castaldo". The signature is stylized with a large, looped initial "J" and a cursive "Castaldo".

John Castaldo
General Manager,
Base Building Services

**Asbestos-Containing Surfacing And/Or Thermal System Insulation Materials Located In
One World Trade Center - Exclusive Of Elevator Shafts**

<u>Full Floor Locations</u>	<u>Random Locations On Floor</u>	<u>Subgrades</u>	<u>Convactor Units</u>
- Lobby Mezzanine	- 43 rd / 44 th Floor PA	- B1 Level:	- 77 th Floor
- 1 st - 6 th Floors: Core	Exhaust Duct	- Core, N/E Quadrant	- 79 th Floor
- 6 th Floor Catwalk	- 82 nd Floor	- B6 Level	- 88 th Floor
- 7 th / 8 th Floor MER	- 104 th Floor		- 101 st Floor
- 41 st / 42 nd Floor MER	- Core Electric Closets		- 103 rd Floor
- 75 th / 76 th Floor MER	On The 1 st - 40 th floors		- 105 th floor
- 108 th / 109 th Floor MER	- Perimeter Electric Closets On The 30 th Floor		-

**Asbestos-Containing Surfacing And/Or Thermal System Insulation Materials Located In
Two World Trade Center - Exclusive Of Elevator Shafts**

<u>Full Floor Locations</u>	<u>Random Locations On Floor</u>	<u>Quadrant Location</u>	<u>Convactor Units</u>
- 6 th Floor Catwalk	- Lobby Mezzanine	- S/W, 43rd Floor	- 22 nd Floor
- 10 th - 13 th Floors (Bell Atlantic)	- 7 th / 8 th Floor MER	Kitchen Exhaust Duct	- 24 th Floor
- 41 st / 42 nd Floor MER	- 9 th Floor		- 59 th Floor
	- 19 th Floor		- 72 nd Floor
	- 20 th Floor		- 79 th Floor
	- 26 th Floor		- 81 st Floor
	- 33 rd Floor		- 84 th Floor
	- 71 st Floor		- 86 th Floor
	- 75 th / 76 th Floor MER		- 87 th Floor

World Trade Center Elevator Shafts With Asbestos-Containing Surfacing Insulation Material

One World Trade Center

Pits and Shafts

1 / 2	39 / 40 / 41
3 / 4	42 / 43 / 44
5 / 48	45 / 46 / 47
8 / 9	51 / 52 / 53
16 / 17	54 / 55 / 56
49	57 / 58 / 59
18 / 19	60 / 61 / 62
20 / 21	63 / 64 / 65
22 / 23	66 / 67 / 68
50	69 / 70 / 71
24 / 25 / 26	72 / 73 / 74
27 / 28 / 29	
30 / 31 / 32	
33 / 34 / 35	
36 / 37 / 38	

Two World Trade Center

Pits and Shafts

5 / 48	36 / 37 / 38
10 / 11	39 / 40 / 41
14 / 15	42 / 43 / 44
24 / 25 / 26	45 / 46 / 47
27 / 28 / 29	54 / 55 / 56
30 / 31 / 32	57 / 58 / 59
33 / 34 / 35	63 / 64 / 65

There is no asbestos-containing surfacing insulation material in the J and K elevator cars in 1 and 2 WTC.

There is no asbestos-containing surfacing insulation material with the elevator shafts in 4 and 5 WTC.

**Asbestos-Containing Surfacing And/Or Thermal System Insulation Materials Located In
Four And Five World Trade Center**

There is no asbestos-containing sprayed-on fireproofing in Four and Five World Trade Center.
A cementitious patch has been identified on a beam in the south wing of the southwest portion on the 5th floor in 5 WTC.
Thermal system insulation is present in the form of pipe saddles.

**Asbestos-Containing Surfacing And/Or Thermal System Insulation Materials Located On
The Concourse**

There is no asbestos-containing sprayed-on fireproofing in the plenum of the Concourse.
Thermal system insulation material is present.

ACM

**Asbestos-Containing Surfacing And/Or Thermal System Insulation Materials Located On
The B1 Level And The Truckdock**

Asbestos-containing sprayed-on fireproofing and thermal system insulation material is present.

Miscellaneous Asbestos-Containing Materials At The World Trade Center

Base building flooring throughout the facility is vinyl asbestos floor tile (VAT).

**Asbestos-Containing Surfacing And Thermal System Insulation Materials Located In
One World Trade Center - Exclusive Of Elevator Shafts**

<u>Full Floor Locations</u>	<u>Quadrant Location</u>	<u>Random Locations On Floor</u>	<u>Subgrades</u>
Lobby Mezzanine		43 / 44 Floor Exhaust Duct	B1 Level:
1st.- 6th Floors: Core		72nd Floor	Core, North/
6th Floor Catwalk		82nd Floor	West/East
			Quadrant,
7 / 8 Floor MER			
41 / 42 Floor MER			
75 / 76 Floor MER		Core Electric Closets On The	B2 Level: Old
108 / 109 Floor MER		1st - 40th Floors	Locksmith And
		Perimeter Electric Closet On The	B6 Level
		30th Floors	

**Asbestos-Containing Surfacing And Thermal System Insulation Materials Located In
Two World Trade Center - Exclusive Of Elevator Shafts**

<u>Full Floor Locations</u>	<u>Random Locations On Floor</u>	<u>Quadrant Location</u>
6th Floor Catwalk	Lobby Mezzanine	S/W, 43rd Floor
10th - 13th Floors	7 / 8 Floor MER	
41 / 42 Floor MER	9th Floor	
	19th Floor	
	20th Floor	
	26th Floor	
	33rd Floor	
	71st Floor	
	75 / 76 Floor MER	

Asbestos-Containing Surfacing And Thermal System Insulation Materials Located In
Four And Five World Trade Center

There is no asbestos-containing sprayed-on fireproofing in Four and Five World Trade Center.
Thermal system insulation is present in the form of pipe saddles.

Asbestos-Containing Surfacing And Thermal System Insulation Materials Located On
The Concourse

There is no asbestos-containing sprayed-on fireproofing in the plenum of the Concourse.
There is thermal system insulation material present.

ACM

Asbestos-Containing Surfacing And Thermal System Insulation Materials Located On
The B1 Level And The Truckdock

Asbestos-containing sprayed-on fireproofing and thermal system insulation material is present.

Miscellaneous Asbestos-Containing Materials At The World Trade Center

Base building flooring throughout the facility is vinyl asbestos floor tile (VAT).

ACBM is located behind the convector units at the following locations:

1 WTC; 77, 79, 88, 101, 103 and 105.

2 WTC; 22, 24, 59, 72, 79, 81, 84, 86 and 87.

World Trade Center Elevator Shafts With Asbestos-Containing Insulation Material

One World Trade Center

Shafts 1 - 5:	Elevator Pit to EMR
8 - 9:	Elevator Pit to EMR
16 - 21:	Elevator Pit to 32nd Floor
22 - 23:	Elevator Pit to EMR
48:	Elevator Pit to EMR
49:	Elevator Pit to 32nd Floor
50:	Elevator Pit to 31st Floor
24 - 29:	Elevator Pit to EMR
30 - 35:	Elevator Pit to EMR
36 - 41:	Elevator Pit to EMR
42 - 47:	Elevator Pit to EMR
51 - 56:	Elevator Pit to EMR
57 - 62:	Elevator Pit to EMR
63 - 68:	Elevator Pit to EMR
69 - 74:	Elevator Pit to EMR

Two World Trade Center

Shafts 5 & 48:	Elevator Pit to EMR
10 & 11:	Elevator Pit to EMR
14 & 15:	Elevator Pit to EMR
24 - 29:	Elevator Pit to EMR
30 - 35:	Elevator Pit to EMR
36 - 41:	Elevator Pit to EMR
42 - 47:	Elevator Pit to EMR
51 - 56:	Elevator Pit to EMR
57 - 62:	Elevator Pit to EMR
63 - 68:	Elevator Pit to EMR
69 - 74:	Elevator Pit to EMR

There is no asbestos-containing insulation material in the J and K elevator cars in 1 and 2 WTC.

There is no asbestos-containing insulation material with the elevator shafts in 4 and 5 WTC.

THE PORT AUTHORITY OF NEW YORK & NEW JERSEY

MEMORANDUM

TO: Phil Taylor-Supervising Engineer.
FROM: Pete Negrón
DATE: July 21, 1999
SUBJECT: Elevator Shaft Asbestos Assessment.
REFERENCE: Attached E-Mail
COPY TO: J. Amatuccio, D. Bobbitt, A. Burton, J. Castaldo, F. Riccardelli, L. Zucchi.

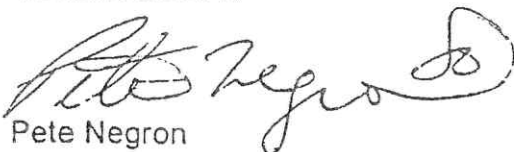
During the week of July 21, 1999, I inspected the elevator shafts to assess the condition of the fireproofing on the steel members.

The attached report includes the shaft number, floor and condition of fireproofing: intact or delaminated, and recommended action.

Floors not listed were inspected and found to be acceptable in that the fireproofing was intact.

In summary, of the 22 shafts inspected, shafts, which require full-scale abatement, are shafts 22/23A, 10B and 48B.

If you require further information regarding this report please contact me at 1.212.435.8364.



Pete Negrón
Associate Environmental Analyst
Operations & Maintenance Management
World Trade Center

Attachment

WORLD TRADE CENTER
ELEVATOR SHAFTS ASBESTOS ASSESSMENT

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
25	1A	NO	YES	24 S.F.	SEAL EDGES
26	1A	NO	YES	12 S.F.	SEAL EDGES
27	1A	NO	YES	30 S.F.	SEAL EDGES
28	1A	NO	YES	12 S.F.	SEAL EDGES
29	1A	NO	YES	48 S.F.	SEAL EDGES
SPRAY-ON MATERIAL					

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
9	2A	NO	YES	24 S.F.	SEAL EDGES
27	2A	NO	YES	4 S.F.	SEAL EDGES
28	2A	NO	YES	4 S.F.	SEAL EDGES
29	2A	NO	YES	4 S.F.	SEAL EDGES
30	2A	NO	YES	24 S.F.	SEAL EDGES
31	2A	NO	YES	24 S.F.	SEAL EDGES
34	2A	NO	YES	36 S.F.	SEAL EDGES
38	2A	NO	YES	6 S.F.	SEAL EDGES
SPRAY-ON MATERIAL					

2A

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
310	3A	NO	YES	72 S.F.	SEAL EDGES
5	3A	NO	YES	34 S.F.	SEAL EDGES
8	3A	NO	YES	48 S.F.	SEAL EDGES
9	3A	NO	YES	48 S.F.	SEAL EDGES
16	3A	NO	YES	30 S.F.	SEAL EDGES
17	3A	NO	YES	48 S.F.	SEAL EDGES
18	3A	NO	YES	48 S.F.	SEAL EDGES
19	3A	NO	YES	72 S.F.	SEAL EDGES
28	3A	NO	YES	48 S.F.	SEAL EDGES
34	3A	NO	YES	72 S.F.	SEAL EDGES
40	3A	NO	YES	6 S.F.	SEAL EDGES
SPRAYED-ON MATERIAL					

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
ALL	4A	YES	NO	NONR	NONE
CEMENTITIOUS MATERIAL					

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
ALL	5A	YES	NO	NONE	NONE
ALL	48A	YES	NO	NONE	NONE
CEMENTITIOUS MATERIAL					

Note: Delamination is fireproofing whether sprayed or troweled no longer present on the steel members.

WORLD TRADE CENTER
ELEVATOR SHAFTS ASBESTOS ASSESSMENT

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
22	8A	NO	YES	72 S.F.	SEAL EDGES
33	8A	NO	YES	48 S.F.	SEAL EDGES
36	8A	NO	YES	4 S.F.	SEAL EDGES
38	8A	NO	YES	48 S.F.	SEAL EDGES
39	8A	NO	YES	48 S.F.	SEAL EDGES
SPRAY-ON MATERIAL					

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
7	9A	NO	YES	2 S.F.	SEAL EDGES
13	9A	NO	YES	2 S.F.	SEAL EDGES
24	9A	NO	YES	3 S.F.	SEAL EDGES
31	9A	NO	YES	4 S.F.	SEAL EDGES
34	9A	NO	YES	6 S.F.	SEAL EDGES
36	9A	NO	YES	6 S.F.	SEAL EDGES
39	9A	NO	YES	48 S.F.	SEAL EDGES
41	9A	NO	YES	48 S.F.	SEAL EDGES
43	9A	NO	YES	48 S.F.	SEAL EDGES
SPRAYED-ON MATERIAL					

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
9	16A	NO	YES	24 S.F.	SEAL EDGES
25	16A	NO	YES	18 S.F.	SEAL EDGES
26	16A	NO	YES	28 S.F.	SEAL EDGES
27	16A	NO	YES	48 S.F.	SEAL EDGES
28	16A	NO	YES	24 S.F.	SEAL EDGES
CEMENTITIOUS MATERIAL					

FLOORS	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
ALL	17A	YES	NO	NO	NONE

FLOORS	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
ALL	18A	X	NO	NONE	NONE

Note: Delamination is fireproofing whether sprayed or troweled no longer present on the steel members.

WORLD TRADE CENTER
ELEVATOR SHAFTS ASBESTOS ASSESSMENT

FLOOR	SHAFT 1 WTC	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
8	19A	NO	YES	16 S.F.	SEAL EDGES
10	19A	NO	YES	24 S.F.	SEAL EDGES
11	19A	NO	YES	24 S.F.	SEAL EDGES
19	19A	NO	YES	48 S.F.	SEAL EDGES
25	19A	NO	YES	48 S.F.	SEAL EDGES
26	19A	NO	YES	48 S.F.	SEAL EDGES
28	19A	NO	YES	24 S.F.	SEAL EDGES
30	19A	NO	YES	24 S.F.	SEAL EDGES
32	19A	NO	YES	2 S.F.	SEAL EDGES
CEMENTITIOUS MATERIAL					

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
8	20A	NO	YES	12 S.F.	SEAL EDGES
10	20A	NO	YES	3 S.F.	SEAL EDGES
22	20A	NO	YES	3 S.F.	SEAL EDGES
23	20A	NO	YES	3 S.F.	SEAL EDGES
25	20A	NO	YES	36 S.F.	SEAL EDGES
26	20A	NO	YES	34 S.F.	SEAL EDGES
27	20A	NO	YES	26 S.F.	SEAL EDGES
28	20A	NO	YES	30 S.F.	SEAL EDGES
29	20A	NO	YES	28 S.F.	SEAL EDGES
SPRAYED-ON MATERIAL					

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
310	21A	NO	YES	24 S.F.	SEAL EDGES
2	21A	NO	YES	24 S.F.	SEAL EDGES
3	21A	NO	YES	24 S.F.	SEAL EDGES
9	21A	NO	YES	24 S.F.	SEAL EDGES
23	21A	NO	YES	24 S.F.	SEAL EDGES
29	21A	NO	YES	48 S.F.	SEAL EDGES
32	21A	NO	YES	6 S.F.	SEAL EDGES
SPRAYED-ON MATERIAL					

Note: Delamination is fireproofing whether sprayed or troweled no longer present on the steel members.

WORLD TRADE CENTER
ELEVATOR SHAFTS ASBESTOS ASSESSMENT

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
3	22A	NO	YES	4 S.F.	SEAL EDGES
4	22A	NO	YES	4 S.F.	SEAL EDGES
5	22A	NO	YES	4 S.F.	SEAL EDGES
6	22A	NO	YES	4 S.F.	SEAL EDGES
7	22A	NO	YES	4 S.F.	SEAL EDGES
8	22A	NO	YES	4 S.F.	SEAL EDGES
9	22A	NO	YES	4 S.F.	SEAL EDGES
10	22A	NO	YES	4 S.F.	SEAL EDGES
11	22A	NO	YES	4 S.F.	SEAL EDGES
12	22A	NO	YES	4 S.F.	SEAL EDGES
13	22A	NO	YES	4 S.F.	SEAL EDGES
14	22A	NO	YES	6 S.F.	SEAL EDGES
15	22A	NO	YES	4 S.F.	SEAL EDGES
16	22A	NO	YES	12 S.F.	SEAL EDGES
18	22A	NO	YES	6 S.F.	SEAL EDGES
19	22A	NO	YES	6 S.F.	SEAL EDGES
20	22A	NO	YES	6 S.F.	SEAL EDGES
21	22A	NO	YES	6 S.F.	SEAL EDGES
22	22A	NO	YES	6 S.F.	SEAL EDGES
23	22A	NO	YES	6 S.F.	SEAL EDGES
24	22A	NO	YES	6 S.F.	SEAL EDGES
25	22A	NO	YES	6 S.F.	SEAL EDGES
26	22A	NO	YES	8 S.F.	SEAL EDGES
27	22A	NO	YES	6 S.F.	SEAL EDGES
28	22A	NO	YES	48 S.F.	SEAL EDGES
29	22A	NO	YES	6 S.F.	SEAL EDGES
30	22A	NO	YES	6 S.F.	SEAL EDGES
31	22A	NO	YES	6 S.F.	SEAL EDGES
32	22A	NO	YES	6 S.F.	SEAL EDGES
33	22A	NO	YES	6 S.F.	SEAL EDGES
34	22A	NO	YES	6 S.F.	SEAL EDGES
35	22A	NO	YES	4 S.F.	SEAL EDGES
36	22A	NO	YES	8 S.F.	SEAL EDGES
37	22A	NO	YES	6 S.F.	SEAL EDGES
38	22A	NO	YES	6 S.F.	SEAL EDGES
39	22A	NO	YES	24 S.F.	SEAL EDGES
40	22A	NO	YES	8 S.F.	SEAL EDGES
41	22A	NO	YES	8 S.F.	SEAL EDGES
42	22A	NO	YES	8 S.F.	SEAL EDGES
43	22A	NO	YES	8 S.F.	SEAL EDGES
44	22A	NO	YES	8 S.F.	SEAL EDGES
45	22A	NO	YES	8 S.F.	SEAL EDGES
46	22A	NO	YES	8 S.F.	SEAL EDGES
47	22A	NO	YES	8 S.F.	SEAL EDGES
48	22A	NO	YES	2 S.F.	SEAL EDGES
49	22A	NO	YES	6 S.F.	SEAL EDGES
50	22A	NO	YES	2 S.F.	SEAL EDGES
51	22A	NO	YES	4 S.F.	SEAL EDGES
52	22A	NO	YES	4 S.F.	SEAL EDGES
54	22A	NO	YES	4 S.F.	SEAL EDGES
55	22A	NO	YES	2 S.F.	SEAL EDGES
56	22A	NO	YES	48 S.F.	SEAL EDGES
58	22A	NO	YES	3 S.F.	SEAL EDGES
62	22A	NO	YES	2 S.F.	SEAL EDGES
64	22A	NO	YES	2 S.F.	SEAL EDGES
67	22A	NO	YES	2 S.F.	SEAL EDGES

Note: Delamination is fireproofing whether sprayed or troweled no longer present on the steel members.

WORLD TRADE CENTER
ELEVATOR SHAFTS ASBESTOS ASSESSMENT

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
70	22A	NO	YES	3 S.F.	SEAL EDGES
73	22A	NO	YES	2 S.F.	SEAL EDGES
78	22A	NO	YES	2 S.F.	SEAL EDGES
SPRAYED-ON MATERIAL			ABATEMENT OF SHAFT IS RECOMMENDED		

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
16	23A	NO	YES	2 S.F.	SEAL EDGES
17	23A	NO	YES	2 S.F.	SEAL EDGES
18	23A	NO	YES	2 S.F.	SEAL EDGES
19	23A	NO	YES	2 S.F.	SEAL EDGES
20	23A	NO	YES	2 S.F.	SEAL EDGES
21	23A	NO	YES	2 S.F.	SEAL EDGES
22	23A	NO	YES	2 S.F.	SEAL EDGES
23	23A	NO	YES	2 S.F.	SEAL EDGES
24	23A	NO	YES	2 S.F.	SEAL EDGES
25	23A	NO	YES	2 S.F.	SEAL EDGES
26	23A	NO	YES	2 S.F.	SEAL EDGES
27	23A	NO	YES	2 S.F.	SEAL EDGES
28	23A	NO	YES	2 S.F.	SEAL EDGES
29	23A	NO	YES	2 S.F.	SEAL EDGES
30	23A	NO	YES	2 S.F.	SEAL EDGES
31	23A	NO	YES	2 S.F.	SEAL EDGES
32	23A	NO	YES	2 S.F.	SEAL EDGES
33	23A	NO	YES	2 S.F.	SEAL EDGES
34	23A	NO	YES	2 S.F.	SEAL EDGES
35	23A	NO	YES	2 S.F.	SEAL EDGES
36	23A	NO	YES	2 S.F.	SEAL EDGES
37	23A	NO	YES	2 S.F.	SEAL EDGES
73	23A	NO	YES	1 S.F.	SEAL EDGES
SPRAYED-ON MATERIAL			ABATEMENT OF SHAFT IS RECOMMENDED		

Note: Delamination is fireproofing whether sprayed or troweled no longer present on the steel members.

WORLD TRADE CENTER
ELEVATOR SHAFTS ASBESTOS ASSESSMENT

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
3	10B	NO	YES	6 S.F.	SEAL EDGES
4	10B	NO	YES	6 S.F.	SEAL EDGES
7	10B	NO	YES	8 S.F.	SEAL EDGES
12	10B	NO	YES	1 S.F.	SEAL EDGES
15	10B	NO	YES	2 S.F.	SEAL EDGES
19	10B	NO	YES	20 S.F.	SEAL EDGES
20	10B	NO	YES	15 S.F.	SEAL EDGES
21	10B	NO	YES	26 S.F.	SEAL EDGES
22	10B	NO	YES	28 S.F.	SEAL EDGES
23	10B	NO	YES	15 S.F.	SEAL EDGES
25	10B	NO	YES	48 S.F.	SEAL EDGES
28	10B	NO	YES	4 S.F.	SEAL EDGES
29	10B	NO	YES	2 S.F.	SEAL EDGES
31	10B	NO	YES	2 S.F.	SEAL EDGES
34	10B	NO	YES	48 S.F.	SEAL EDGES
35	10B	NO	YES	48 S.F.	SEAL EDGES
36	10B	NO	YES	34 S.F.	SEAL EDGES
37	10B	NO	YES	24 S.F.	SEAL EDGES
39	10B	NO	YES	48 S.F.	SEAL EDGES
40	10B	NO	YES	48 S.F.	SEAL EDGES
SPRAYED-ON MATERIAL		ABATEMENT OF SHAFT IS RECOMMENDED			

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
5	11B	NO	YES	1 S.F.	SEAL EDGES
12	11B	NO	YES	1 S.F.	SEAL EDGES
19	11B	NO	YES	2 S.F.	SEAL EDGES
26	11B	NO	YES	2 S.F.	SEAL EDGES
31	11B	NO	YES	48 S.F.	SEAL EDGES
33	11B	NO	YES	2 S.F.	SEAL EDGES
40	11B	NO	YES	2 S.F.	SEAL EDGES
SPRAYED-ON MATERIAL					

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
ALL	5B	YES	NO	NONE	NONE
ALL	48B*	NO	YES	***	ABATEMENT
48B SHAFT-SPRAYED-ON FIREPROOFING					
*** 1' - FOOT STRIP ALONG LENGTH OF COLUMN MISSING.					

Note: Delamination is fireproofing whether sprayed or troweled no longer present on the steel members.

WORLD TRADE CENTER
ELEVATOR SHAFTS ASBESTOS ASSESSMENT

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
3	14B	NO	YES	2 S.F.	SEAL EDGES
4	14B	NO	YES	2 S.F.	SEAL EDGES
8	14B	NO	YES	1 S.F.	SEAL EDGES
9	14B	NO	YES	1 S.F.	SEAL EDGES
10	14B	NO	YES	1 S.F.	SEAL EDGES
11	14B	NO	YES	1 S.F.	SEAL EDGES
12	14B	NO	YES	1 S.F.	SEAL EDGES
13	14B	NO	YES	1 S.F.	SEAL EDGES
14	14B	NO	YES	1 S.F.	SEAL EDGES
15	14B	NO	YES	1 S.F.	SEAL EDGES
16	14B	NO	YES	1 S.F.	SEAL EDGES
17	14B	NO	YES	1 S.F.	SEAL EDGES
18	14B	NO	YES	1 S.F.	SEAL EDGES
23	14B	NO	YES	1 S.F.	SEAL EDGES
24	14B	NO	YES	1 S.F.	SEAL EDGES
25	14B	NO	YES	1 S.F.	SEAL EDGES
26	14B	NO	YES	1 S.F.	SEAL EDGES
27	14B	NO	YES	1 S.F.	SEAL EDGES
28	14B	NO	YES	1 S.F.	SEAL EDGES
SPRAYED-ON MATERIAL					

FLOOR	SHAFT	FIREPROOFING INTACT	DELAMINATION	QUANTITY DELAMINATED	RECOMMENDATION
310	15B	NO	YES	4 S.F.	SEAL EDGES
3	15B	NO	YES	2 S.F.	SEAL EDGES
4	15B	NO	YES	4 S.F.	SEAL EDGES
22	15B	NO	YES	1 S.F.	SEAL EDGES
25	15B	NO	YES	8 S.F.	SEAL EDGES
SPRAYED-ON MATERIAL					

Note: Delamination is fireproofing whether sprayed or troweled no longer present on the steel members.

THE PORT AUTHORITY OF NY & NJTWO WORLD TRADE CENTER, 37TH FLOOR
NEW YORK, NY 10048(212) 435-7000
(800) 961-6600

October 18, 2000

R. W. Crandlemere & Associates
549 Columbian Street
Suite 305
Weymouth, MA 02190

RE: ASBESTOS DUE DILIGENCE: INFORMATION REQUEST.

Dear Mr. Crandlemere:

Please find attached the responses to your October 12, 2000 fax wherein you requested that the available asbestos information be broken down into seven areas. In addition, responses to your general information requests are also provided.

Request: Total remaining and total removed ACM, broken down by material types and locations, within the designated areas as much as practical (e.g. by floor number or other description; such as within pipe chase or the elevator shafts).

The attached breakdowns for 1 WTC, 2 WTC, 4 WTC, 5 WTC, MERs, Subgrade, and Concourse disclose the estimated amounts of asbestos-containing sprayed-on fireproofing and thermal system insulation material present. Drawings identifying these asbestos locations by sample number are on file in my office. Attachments disclosing the amounts of vinyl asbestos floor tiles present as of April, 2000 are also included. These estimates were provided by the Port Authority's Engineering Department, Asbestos Litigation Task Force, and the World Trade Department.

Asbestos-containing roofing material was removed from the MER set-backs in 1 and 2 World Trade Center, and the roofs of 4 and 5 World Trade Center. The roofs of 1 and 2 World Trade Center were not sampled.

Request: The abatement costs for work performed and anticipated future abatement costs for each type of remaining known ACM.

From 1986 to 1999, a total thirty one (31) contracts were bid, and a total of \$58.2 million dollars was spent in abatement projects. The Engineering Department estimates the cost for vinyl asbestos floor tile removal to be between \$5 - \$6 per square foot, sprayed-on removal to be between \$20 - \$25 per square foot, and thermal system insulation to be \$15 per linear foot (outer diameter dependant).

As of September, 2000, a total of 2,184,038 million square feet of sprayed-on fireproofing, and 3,500,000 million square feet of vinyl asbestos floor tile was removed. According to PA records, a total of seven million square feet of vinyl asbestos floor tiles were installed in the World Trade Center.

Request: Materials determined not to be ACM (e.g. spline ceilings, hung ceilings, wallboard, wallboard joint compound, etc., as well as areas of sprayed-on fireproofing determined not to be ACM).

Sampling of the building materials noted above did not disclose the presence of asbestos.

Request: Any materials that are assumed to be ACM (such as fire doors) with an estimate, if possible, of the amounts of each material.

Our presumption as to the types of asbestos-containing building materials within the World Trade Center did not include fire doors. Based upon sample data, asbestos containing building materials appear to be limited to sprayed-on fireproofing, thermal system insulation, and floor tiles and mastic.

Request: Asbestos litigation status.

Your information request has been forwarded to the Port Authority's Law Department. We will notify you accordingly.

The following information is in response to your fax dated Wednesday, October 18th.

Request: PCB-containing Hydraulic Fluid.

The hydraulic fluid (hydraulic oil # 32 AW) leaking from elevator FE-5, located on the B4 Level of 1 World Trade Center does not contain PCB. I have a copy of the Material Safety Data Sheet from the distributor; Consumers Oil, 515 South First Avenue, Mt. Vernon, N.Y.. Hydraulic elevator FE - 6 in 2 World Trade Center also uses hydraulic oil # 32 AW.

Relating to the trash compactors, please note that the hydraulic fluid is ordered through the Port Authority Stockroom from an approved list of chemical products established by the Inspection & Safety Division. The hydraulic fluid used for the trash compactors is either mineral or vegetable based. Both are non-PCB products.

Request: Additional Information Regarding Radio-Frequency Testing.

I do not have a copy of, nor do I have knowledge of the March, 1999 report prepared by Denny & Associates recommending additional RF exposure monitoring. All radio-frequency documents are available for your review in the Document Room.

Please contact me at (212) 435-8507 should you have any questions or require additional information.



Phil Taylor
World Trade Operations &
Maintenance Management

Cc: J. Connors, A. Reiss, L. Zucchi

1 A.

Excluding MERs, Truckdock, and Subgrade Locations

<u>Location</u>	<u>Floors</u>	<u>Amount</u>
Forty three floors with less than 160 sqft of sprayed-on fireproofing*:	1 st - 40 th floor Electric Closets, 36 th Floor Perimeter Electric Closet, 82 nd Floor 104 th Floor	6,888 sqft
* Classified as "Random Locations On Floor" in WTC Disclosure Memorandum		
Six floors with less than 10 sqft of cementitious insulation behind convector units*:	77 th , 79 th , 88 th , 101 st , 103 rd , and 105 th Floors	60 sqft
* Classified as "Convector Units" in the WTC Disclosure Memorandum		
Full Floor Locations*:		
Five core floors with 12,000sqft of sprayed-on fireproofing:	1 st , 2 nd , 3 rd , 4 th , and 5 th Floors	60,000 sqft
6 th Floor Plus Catwalk		43,000 sqft
Lobby Mezzanine		15,000 sqft
* Classified as "Full Floor Locations" in the WTC Disclosure Memorandum		
PA Café Kitchen Exhaust Duct	43 rd 44 th Floor	1,000 Inft
Thermal System Insulation On Vertical Steam Line:	B6 - 108 th Floor	1,430 Inft

1, 2, 4, and 5 WTC

Mechanical Equipment Rooms

1 WTC:

7 th / 8 th Floor MER	25,000 sqft of sprayed-on / TSI present but quantity unknown
41 st / 42 nd Floor MER	25,000 sqft of sprayed-on / " " " " "
75 th / 76 th Floor MER	25,000 sqft of sprayed-on / " " " " "
108 th / 109 th Floor MER	25,000 sqft of sprayed-on / " " " " "

TOTAL: 100,000 sqft of sprayed-on / TSI quantity unknown*

* Non-fiberglass wrapped piping components, such as elbows, fittings, and flanges contain asbestos.

2 WTC:

41 st / 42 nd Floor MER	25,000 sqft of sprayed-on / TSI present but quantity unknown
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TOTAL: 25,000 sqft of sprayed-on / TSI quantity unknown*

* Non-fiberglass wrapped piping components, such as elbows, fittings, and flanges contain asbestos.

4 WTC:

Non-ACM

5 WTC:

Non-ACM

1, 2, 4, and 5 WTC

SUBGRADES and TRUCKDOCK

Subgrades -

1 WTC:

B1 Level - Core, and N/E Quadrant	5,000 sqft / No TSI
B6 Level - Entire Level	40,000 sqft / No TSI
<u>TOTAL:</u>	<u>45,000 sqft / No TSI</u>

2, 4, and 5 WTC:

No ACM

Truckdock -

Main Truckdock

50,000 sqft

1, 2, 4, and 5 WORLD TRADE CENTER

VINYL ASBESTOS FLOOR TILES

Amount Remaining in 1 WTC:	710,677 sqft
Amount Remaining in 2 WTC:	1,734,032 sqft
Amount Remaining in 4 WTC:	241,000 sqft
Amount Remaining in 5 WTC:	167,515 sqft

WTC 1
VAT ABATEMENT STATUS DIAGRAM

WTC FLOORS	TOTAL UTILISATION AREA	ABATED SQ FT VAT IN CLAIM	JOBS/NUMBERS IN CLAIM	ABATED SQ FT VAT NOT IN CLAIM	JOBS/NUMBERS NOT IN CLAIM	REMAINING SQ FT VAT ON FLOOR	WTC FLOOR
100 MER 100 MER		400.00	118.078				100 MER
101	35800	35.800.00	118.078				101
102	35800	35.800.00	118.078				102
103	35800	35.800.00	118.078				103
104	35800	35.800.00	118.078				104
105	35800	35.800.00	118.078				105
106	35800	35.800.00	118.078				106
107	35800	35.800.00	118.078				107
108	35800	35.800.00	118.078				108
109	35800	35.800.00	118.078				109
110	35800	35.800.00	118.078				110
111	35800	35.800.00	118.078				111
112	35800	35.800.00	118.078				112
113	35800	35.800.00	118.078				113
114	35800	35.800.00	118.078				114
115	35800	35.800.00	118.078				115
116	35800	35.800.00	118.078				116
117	35800	35.800.00	118.078				117
118	35800	35.800.00	118.078				118
119	35800	35.800.00	118.078				119
120	35800	35.800.00	118.078				120
121	35800	35.800.00	118.078				121
122	35800	35.800.00	118.078				122
123	35800	35.800.00	118.078				123
124	35800	35.800.00	118.078				124
125	35800	35.800.00	118.078				125
126	35800	35.800.00	118.078				126
127	35800	35.800.00	118.078				127
128	35800	35.800.00	118.078				128
129	35800	35.800.00	118.078				129
130	35800	35.800.00	118.078				130
131	35800	35.800.00	118.078				131
132	35800	35.800.00	118.078				132
133	35800	35.800.00	118.078				133
134	35800	35.800.00	118.078				134
135	35800	35.800.00	118.078				135
136	35800	35.800.00	118.078				136
137	35800	35.800.00	118.078				137
138	35800	35.800.00	118.078				138
139	35800	35.800.00	118.078				139
140	35800	35.800.00	118.078				140
141	35800	35.800.00	118.078				141
142	35800	35.800.00	118.078				142
143	35800	35.800.00	118.078				143
144	35800	35.800.00	118.078				144
145	35800	35.800.00	118.078				145
146	35800	35.800.00	118.078				146
147	35800	35.800.00	118.078				147
148	35800	35.800.00	118.078				148
149	35800	35.800.00	118.078				149
150	35800	35.800.00	118.078				150
151	35800	35.800.00	118.078				151
152	35800	35.800.00	118.078				152
153	35800	35.800.00	118.078				153
154	35800	35.800.00	118.078				154
155	35800	35.800.00	118.078				155
156	35800	35.800.00	118.078				156
157	35800	35.800.00	118.078				157
158	35800	35.800.00	118.078				158
159	35800	35.800.00	118.078				159
160	35800	35.800.00	118.078				160
161	35800	35.800.00	118.078				161
162	35800	35.800.00	118.078				162
163	35800	35.800.00	118.078				163
164	35800	35.800.00	118.078				164
165	35800	35.800.00	118.078				165
166	35800	35.800.00	118.078				166
167	35800	35.800.00	118.078				167
168	35800	35.800.00	118.078				168
169	35800	35.800.00	118.078				169
170	35800	35.800.00	118.078				170
171	35800	35.800.00	118.078				171
172	35800	35.800.00	118.078				172
173	35800	35.800.00	118.078				173
174	35800	35.800.00	118.078				174
175	35800	35.800.00	118.078				175
176	35800	35.800.00	118.078				176
177	35800	35.800.00	118.078				177
178	35800	35.800.00	118.078				178
179	35800	35.800.00	118.078				179
180	35800	35.800.00	118.078				180
181	35800	35.800.00	118.078				181
182	35800	35.800.00	118.078				182
183	35800	35.800.00	118.078				183
184	35800	35.800.00	118.078				184
185	35800	35.800.00	118.078				185
186	35800	35.800.00	118.078				186
187	35800	35.800.00	118.078				187
188	35800	35.800.00	118.078				188
189	35800	35.800.00	118.078				189
190	35800	35.800.00	118.078				190
191	35800	35.800.00	118.078				191
192	35800	35.800.00	118.078				192
193	35800	35.800.00	118.078				193
194	35800	35.800.00	118.078				194
195	35800	35.800.00	118.078				195
196	35800	35.800.00	118.078				196
197	35800	35.800.00	118.078				197
198	35800	35.800.00	118.078				198
199	35800	35.800.00	118.078				199
200	35800	35.800.00	118.078				200
201	35800	35.800.00	118.078				201
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271	35800	35.800.00	118.078				271
272	35800	35.800.00	11				