

*ORIGINAL
Do Not Remove*

ASBESTOS SURVEY
AT
NAVAL STATION PUGET SOUND
SEATTLE, WASHINGTON

N44255-93-C-4056

BUILDING 47
RECREATION FACILITY

FOR

NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY NORTHWEST
SILVERDALE, WASHINGTON



PREPARED BY:



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SEPTEMBER 1993

September 17, 1993

Commander
Naval Facilities Engineering Command
Engineering Field Activity, Northwest
3505 NW Anderson Hill Road
Silverdale, WA 98383-9130

**Subject: Transmittal of Asbestos Survey Report, Building 47, Recreation Facility,
Naval Station Puget Sound, Seattle, Washington
(N44255-93-C-4056)**

Transmitted with this letter are two copies of the subject report. This work was accomplished in accordance with the Architect/Engineer Contract dated January 20, 1993, and Change Order P00002 dated July 1, 1993, directives and reviews by EFA Northwest.



Don Hemovich, P. E., Technical Director



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copies to:
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**ASBESTOS SURVEY AT NAVAL STATION PUGET SOUND
SEATTLE, WASHINGTON**

BUILDING 15, CERAMICS SHOP

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BUILDING 47

RECREATION BUILDING

EXECUTIVE SUMMARY

A sampling survey for asbestos-containing materials (ACM) was performed in Building 47, Recreation Facility from May 12 to May 19, 1993. This structure is used primarily as a recreational facility. A total of 96 bulk samples were collected of suspect material. Of the samples collected 51 were found to contain asbestos. A follow-up on-site inspection was conducted on 9/06/93 by Alpha's Technical Director and on 9/07/93 by Alpha's certified industrial hygienist.

High Priority Areas

There are no high priority areas for which asbestos removal is recommended.

Special Attention Areas

Specific areas in the facility that require special attention include the following:

- Room 203 - Damaged pipe insulation and debris. Access should be restricted until the debris is removed.
- Above theatre ceiling (Room 101) - Repair damaged pipe and fitting insulation and remove debris.
- Crawspaces F and L (access through Room 302E - Fan Room below Room 302) - access should be restricted due to damaged, friable pipe insulation, debris and padding until the debris is removed.
- Seal open ends on pipe insulation in Rooms 3, 23 and 27. Debris in carpet in Room 27 should be removed.
- Hatch door should be installed in ceiling just outside the north end of the library. The attic in this area should have restricted access until the debris is removed.
- Walk-in crawlspace in the Basement, Room I and J - Access should be restricted until the damaged, friable pipe insulation is repaired and the debris is removed.
- Room 8A - Seal open ends on pipe insulation.
- Room 10 - Seal open end and remove debris.
- Room 16 - Seal open end on pipe insulation.
- Room 100 - Move equipment away from asbestos-containing pipe insulation to avoid damage.
- Room 104 - Place protective metal sleeve around pipe insulation at bottom of stairs and seal open ends.

Estimated Removal Cost

There is no estimated removal cost by a commercial contractor because there are no high priority asbestos-containing materials.

Risk Assessment

The approach is derived from MILSTD-882B (System Safety Program Requirements) and OPNAVINST 5100.23C, Chapter 12 (Deficiency Abatement Program). Probability of hazard and severity of hazard are combined to produce a relative numerical Risk Assessment Code (RAC). The RAC is used Navy-wide as a management tool to prioritize corrective action at multiple sites.

Risk Assessment Code (RAC)							
	1	2	3	4	5	Total Deficiencies	Cost Estimate*
# of Deficiencies	-	-	14	34	-	48	NONE

* Cost estimate is for high priority items (RAC 1 and 2) only.

Special Note

All correspondence, files and records in existence or which may be created in the future that relate to insulation/asbestos are exempt from destruction and must be preserved until further notice. This encompasses all insulation/asbestos-related documents, both long-term and short-term. This requirement applies to all originals and nonidentical copies. Therefore, the recording of subject documents on microfilm or microfiche or electronic media does not relieve an activity from the requirements to retain all original documents. See also "Mandatory Records" in the last section of this report.

INTRODUCTION

INTRODUCTION

The Hazardous Materials Department of Alpha Engineering Group, Inc. was retained by the Engineering Field Activity, Northwest, Naval Facilities Engineering Command, Silverdale, WA, to conduct an on-site asbestos survey of the U.S. Naval Station Puget Sound (NSPS), Seattle, WA. The following describes the primary elements and requirements included in the agreement and scope of work for this project or as otherwise directed by EFA Northwest.

General Description

Survey, locate, verify asbestos content, record and prioritize hazardous conditions of all friable and nonfriable asbestos in each building and associated utilities services at NSPS, Seattle, WA. The survey shall include sampling of building materials for asbestos, examination of the condition of asbestos-containing materials, analysis of risks to friable asbestos exposure, drawings depicting location of asbestos-containing materials, and cost estimates for asbestos abatement or encapsulation of materials deemed to be a significant health hazard.

Asbestos Survey

Conduct a survey in all areas of buildings at NSPS to determine if any form of asbestos is present within the buildings. The survey shall be comprehensive in its identification, sampling and classification of the potentially hazardous asbestos-containing materials (ACMs). The survey shall include, but not be limited to, all accessible friable and nonfriable materials such as fireproofing, soundproofing, insulation, or other building materials suspected of containing asbestos. The survey shall also include identification of suspected ACM that might not be readily visible, such as that found in elevator and other shafts, along pipe chases, above ductwork or mixing boxes, inside air shafts, enclosed by sheetrock or paneling, behind perimeter induction air units and above false ceilings.

Asbestos Sampling

Collect samples, test for asbestos and determine the percent asbestos, type asbestos and record material friability and condition as observed in place.

Suspect ACM samples will be analyzed by an independent third party laboratory using polarized light microscopy (PLM) with dispersion staining and/or X-ray diffraction techniques.

Industrial Hygienist and Technical Director

The Certified Industrial Hygienist (CIH) shall be employed during the asbestos survey to review the "Work Plan" and advise the Project Manager and Technical Director concerning personal and areal safety procedures. The CIH shall also work with the Technical Director to review each building survey report during the final inspection of each of the buildings.

The Technical Director shall be a senior engineer skilled in construction practices and shall also advise the Project Manager concerning contract procedures.

Report

The Consultant shall prepare a report summarizing findings based on laboratory results, along with a cost estimate for removal of high priority asbestos-containing materials and recommendations for management of the low priority asbestos-containing materials found in the facility.

Report Use

This report has been prepared for use by NSPS, Seattle, WA, and the Naval Facilities Engineering Command, Silverdale, WA. Implementation of the abatement work described in the report is outlined in the "Asbestos Abatement Projects" section of this report. Operations and Maintenance (O&M) work regarding asbestos-containing materials is presented in a section titled, "Operations and Maintenance." Since this is a technical report for use in the planning of a hazardous environment correction program, it is not intended for use or interpretation by the general public who could misinterpret the contents. This report shall not be released by Alpha unless directed or instructed to by the Naval Facilities Engineering Command, EFA Northwest, Silverdale, WA.

Questions by the reader concerning implementation of the recommendations or the findings leading to these recommendations, should be directed to Commander, EFA Northwest, Naval Facilities Engineering Command, 3505 NW Anderson Hill Road, Silverdale, WA 98383-9130, ATTN: Code 09ETIMS, phone No. (206) 396-5981.

Consultant Data

The Alpha Engineering Group, Inc., located at 22232 - 17th Avenue SE, Suite 301, Bothell, WA 98021, is an engineering organization providing complete professional engineering services, as well as environmental, industrial hygiene and hazardous materials consulting services. Project teams for asbestos work include industrial hygienists, professional engineers, EPA/AHERA inspectors and certified asbestos workers.

**ASBESTOS
INFORMATION**

ASBESTOS INFORMATION

Physical Characteristics of Asbestos

Asbestos is a name given to a number of naturally-occurring fibrous silicates. There are two main types of asbestos: the Serpentine form, represented by chrysotile, which is identified by flexible, soft, long and finely-polished strands; the other type of asbestos form is the Amphiboles form, which occur as straight, needle-like fibers, of which crocidolite, amosite, and anthophyllite, tremolite, and actinolite are primary examples.

Chrysotile is also known as "white" asbestos and is noted for its tensile strength. It was widely used due to the fact that it is the only kind of asbestos that can be woven into cloth, although chrysotile appears in many other products as well. It was used in 90 to 92 percent of all commercial asbestos products.

Amosite, also known as "brown" asbestos, has somewhat coarser brownish fibers, which are straight and brittle, and does not readily absorb water well. Amosite was found in 7 to 8 percent of commercial asbestos applications and was generally used in insulating materials in marine facilities and shipbuilding. It has also been broadly used in pipe and boiler lagging in buildings.

Crocidolite, also known as "blue" asbestos, was also frequently used in marine insulation. Crocidolite was used in less than 1 percent of commercial applications. It is the most needle-like of all fibers enabling it to penetrate further and deeper into body tissues than any other asbestos type.

The three other types of asbestos in the amphibole group are: anthophyllite, actinolite and tremolite. These are extremely rare in commercial products.

In 1973, the U.S. Environmental Protection Agency (EPA) banned spray application of "insulating or fireproofing material containing more than 1 percent asbestos by weight." It was still applied in the form of "decorative materials" until 1977, when a law was passed to restrict the spray applications of "all materials containing asbestos."

Health Effects of Asbestos

All types of asbestos can cause lung disease and cancer, and to date there is no scientific evidence showing how many fibers one must be exposed to before its effects are noted. Scientific evidence shows that any exposure to asbestos may cause cancer.

Possible ways for materials to get into the body are by absorption, ingestion (eating) or respiration (breathing). Generally, skin is a barrier to asbestos exposure, but there is a potential for it being worked into the skin. A few cases of asbestos warts on the skin from asbestos have been reported, but these occurrences are uncommon and usually not considered serious.

Ingestion of asbestos fibers can produce tumors in various parts of the body. Cancers of the colon, spleen and other areas are associated with ingestion of asbestos. Since most asbestos ingested passes through the digestive tract unabsorbed, a large exposure is believed to be necessary to have significant impact to health.

The most dangerous exposure to asbestos is from fibers that are inhaled which are small enough to float in the air (respirable fibers). The size of a respirable fiber is from 25 microns to less than 0.01 micron. A micron is about 1/20,000 of an inch, too small to be seen by the naked eye. Once these fibers become imbedded in the lung, they cannot be removed. Dust and other material inhaled are generally worked up from the lung and coughed out, but small asbestos fibers do not escape by these mechanisms. When scar tissue builds up around the asbestos fibers, a disease called asbestosis can develop. It is progressive, which means once it starts, it does not stop. It is incurable. It can shorten life and increase the risk of death from pneumonia or even a common cold.

Another effect of asbestos is its ability to cause lung cancer. Asbestos fibers, by themselves, have been shown to cause tumors in numerous tissues. Besides causing cancer by itself, it is co-carcinogenic. For instance, both smokers or asbestos workers develop cancer 10 to 20 times more often than other people, but asbestos workers who smoke increase their probability of developing lung cancer by up to 92 times.

If asbestos comes into contact with the thin layers of tissue which line the chest, a cancer can develop. This cancer is called mesothelioma. It is relatively rare, but it is almost always fatal in a few months. The only known cause of this cancer is exposure to asbestos.

Asbestos is a known human carcinogen. There are only about thirty proven human carcinogens and asbestos is one of them. Asbestos, like other carcinogens, requires an incubation period. Cancer from asbestos usually does not occur until 25-35 years after exposure. This means that an exposure today could cause a cancer 25-35 years from now.

The potential deleterious effects to human health from asbestos containing materials must not be minimized. Nevertheless, asbestos is not aggressive and when undisturbed, asbestos poses little danger. Asbestos is seldom found in a pure state in commercial products; it is almost always combined with other materials and binders such as tars, plastic, Portland cement, plaster, adhesives and sealants, to name a few. Many of the binders are so effective that the asbestos fibers cannot escape into the air unless the material is sanded, ground, broken-up or drilled. When asbestos is tightly bonded, the material is termed nonfriable and is therefore a low risk material (friable means that the material can be readily crushed by hand pressure and released into the air). Friable products are inherently high risk materials and must be abated or left undisturbed.

In this report, asbestos containing materials are identified as being either friable or nonfriable. The Operations and Maintenance section of this report provides recommended procedures relating to safeguarding against the release of asbestos fibers from asbestos-containing materials.

BUILDING SURVEY

BUILDING SURVEY

Building Description

This building consists of 50,052 square feet on three floor levels (including basement). The roof is composed of rolled roofing with asphalt and gravel, and neoprene membrane. The principle construction of the building is wood and concrete framing.

Sampling

The survey of this building was conducted by Ryan Rayburn and Tyrone Woolfolk from May 14, to May 18, 1993. A total of 86 samples were collected and tested. Two samples were collected for most homogeneous material areas. The transtie pipe in the basement Room K is a live electrical conduit. The fire door in Room 19 and the safe insulation in Room 128 are sealed and no samples were taken that might compromise the doors' integrity. These materials should be sampled prior to disturbance or removal to determine asbestos content (if any). All areas were assigned an identification number (HMG#) from the list in Appendix 3. The assignment of the HMG# was made during the survey and before laboratory test results were received. Therefore, some material areas may have been assigned HMG numbers and found to be non-asbestos. Homogeneous material areas are listed on the Material Area Spreadsheets (Appendix 4). Sample data from the survey is recorded on the Bulk Sample Data Summary (Appendix 5).

Of the 96 samples of suspected asbestos containing materials (ACM) collected 51 were found to contain asbestos in quantities equal to or greater than 1 percent.

Sample #068 included both tar patch and asphalt/gravel over rolled roofing. Previous and subsequent bulk sampling shows that the tar patch contains asbestos and the asphalt/gravel over rolled roofing in Alpha's opinion is non-ACM.

Sample #067 (rolled roofing, HMG# 38.1) tested positive for asbestos. Sample #058, for the same material, tested negative. It's Alpha's opinion that all rolled roofing be considered ACM. For future disturbance (renovation, removal, etc.) further bulk sampling of the rolled roofing will help delineate the extent of ACM.

Methodology

All samples were collected using standard industry methods and in accordance with Navy regulations. Each sample was labeled with a unique identification number and a photograph was taken of the sample site. Inaccessible areas, such as inside walls, above solid ceilings and inside pipe chases, where ACM was suspected of being present, were examined using a borescope.

All bulk samples were analyzed by the standard technique using polarized light microscopy (PLM) using Interim Method for Determination of Asbestos in Bulk Insulation Samples EPA 600/M4-82-020, December, 1982. Bulk analyses were conducted by Analytica Solution, Golden, Colorado. Analytica Solutions participates in the EPA, NVLAP quality assurance program. The error factor for quantity determination is usually less than plus or minus 10 percent. The real intent of the analysis is to determine qualitatively whether or not asbestos is present. If there

is any doubt in the microscopist's mind concerning the sample, it could be sent for transmission electron microscope (TEM) analysis. TEM was found not to be necessary for this survey.

Recommendations

Basis for Recommendations

Report recommendations are based on the survey findings and the following:

1. Asbestos is considered to be a serious potential health hazard when the fibers become airborne. The Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) now state that there is no known safe level of exposure to asbestos. Because the damage-causing fibers are invisible to the naked eye, over-exposure can occur without the individual's knowledge.
2. Current federal, state and Navy regulations are very strict regarding asbestos work, permissible exposure levels for employees, and friable asbestos materials.
3. Current EPA regulations require asbestos to be removed from buildings before being renovated or demolished.

Prioritization

Prioritization for abatement of asbestos containing materials is based on the "best professional judgement" of the Consultant, Alpha Engineering Group, Inc. Only high priority and low priority ratings are used. Criteria for a high priority rating included factors such as:

1. Friability (toxicity potential) of the asbestos-containing materials;
2. Damage or potential damage to coverings over friable asbestos-containing materials or, natural deterioration of the covering over friable asbestos containing materials; or raw, exposed friable asbestos-containing materials;
3. Spaces or areas where people are commonly present, and the exposure potential to asbestos-containing materials is high (hazard potential); and,
4. Concealed areas, such as attics and crawl spaces, where repairmen or technicians need to enter to perform maintenance or repairs on a more or less regular basis and friable asbestos-containing materials are present.

Those areas where two or more of these criteria presented a significant risk are rated as high priority in this report. For example, areas regularly used for training or occupied office spaces with exposed friable asbestos containing materials receive a high priority rating. A similar area where the asbestos-containing materials are not exposed and/or where fewer persons are likely to enter, receive a low rating. Attic spaces and tunnels are generally given a low rating, except where friable ACM debris or damage and exposed ACM is found, and repairmen or technicians need to enter to perform maintenance or repairs. A high priority rating is equivalent to a risk assessment code (RAC) of 1 or 2.

Asbestos-containing materials such as window putty, floor tile and cement asbestos board (CAB) receive a low rating because these materials are usually nonfriable, unless severely damaged or deteriorated. A low priority rating is equivalent to a risk assessment code (RAC) of 4 or 5.

Specific Recommendations

The following material/area(s) are recommended for abatement (defined as "control of asbestos beyond an operations and maintenance program, that includes removal, enclosure and encapsulation techniques"). The HVAC system in the theatre should not be operated in the areas of damage until abatement is complete.

Special Attention

- Room 203 - Damaged pipe insulation and debris. Access should be restricted until the debris is removed.
- Above theatre ceiling (Room 101) - Repair damaged pipe and fitting insulation and remove debris.
- Crawlspace F and L (access through Room 302E - Fan Room below Room 302) - access should be restricted due to damaged, friable pipe insulation, debris and padding until the debris is removed.
- Seal open ends on pipe insulation in Rooms 3, 23 and 27. Debris in carpet in Room 27 should be removed.
- Hatch door should be installed in ceiling just outside the north end of the library. The attic in this area should have restricted access until the debris is removed.
- Walk-in crawlspace in the Basement, Room I and J - Access should be restricted until the damaged, friable pipe insulation is repaired and the debris is removed.
- Room 8A - Seal open ends on pipe insulation.
- Room 10 - Seal open end and remove debris.
- Room 16 - Seal open end on pipe insulation.
- Room 100 - Move equipment away from asbestos-containing pipe insulation to avoid damage.
- Room 104 - Place protective metal sleeve around pipe insulation at bottom of stairs and seal open ends.

Low Priority

All asbestos-containing material/areas identified during this survey not requiring special attention or receiving a high priority rating are:

- Flooring material and associated mastic (HMG#'s 20.1, 20.2, 20.3, 20.4, 20.5, 20.6, 20.7, 21.1, 21.3, 21.5, 21.6 and 22.1).

- Pipe and fitting insulation (HMG#s 9.1, 9.2, 10.1, 10.2, 11.1, and 12.1).
- Tank insulation (HMG# 8.1).
- Debris (HMG# 46.1).
- 2' x 4' lay-in ceiling tile (HMG# 25.1 and 25.3).
- Spray on surfacing material (HMG# 1.1).
- Cement asbestos board (CAB) (HMG# 29.1).
- Cement asbestos pipe "Transite" (HMG# 30.1).
- Weatherproofing sealant (HMG# 41.1).
- Fire doors (HMG# 44.1).
- Window putty (HMG# 47.1).
- Safe insulation (HMG# 55.3).
- Carpet padding (HMG# 55.4).
- Gasket (HMG# 55.5).
- Rolled roofing and asphalt gravel roofing (HMG# 38.1 and 39.1).
- Tar patch (HMG# 42.2).

See Appendix 2 Drawings; Appendix 4, Material Area Spreadsheets; Appendix 5, Bulk Sample Data Summary; Appendix 6, Photographs; and, Appendix 7, Lab Test Results, for more detailed information.

The following Operations and Maintenance section of this report describes general procedures, and techniques regarding care and maintenance of these asbestos containing materials.

OPERATIONS & MAINTENANCE

OPERATIONS AND MAINTENANCE (O&M)

Operation and Maintenance Program

The principal objective of an O&M program is to minimize exposure of building occupants to asbestos fibers. This is accomplished by (1) maintaining ACM in good condition, (2) ensuring proper cleanup of materials when damaged, (3) preventing further damage and fiber release, and (4) periodic monitoring of the ACM.

An Operations & Maintenance Program is designed to observe and periodically verify the condition of asbestos-containing materials within the facility. This is done through labeling of ACM, documenting conditions on a periodic basis, and assuring that any work conducted in the facility is approved beforehand to determine if ACM will be disturbed. If ACM is, or is likely to be disturbed during any work in the facility, it should be removed or isolated prior to work being conducted. Any removal or large scale repair work should be performed only by trained, qualified and properly protected individuals in accordance with applicable federal, state and local regulations.

The Commanding Officer at the facility or his agent should make available to any contractor inspecting the facility, performing work, or submitting a bid to undertake any construction, renovation, remodeling, maintenance, repair, or demolition project:

1. This report, documenting the asbestos inspection, or
2. A written statement either of reasonable certainty of nondisturbance or of assumption of the presence of asbestos.

In either case, ACM will be clearly identified beforehand, to minimize inadvertent fiber release.

Asbestos Management Program Ashore

The Navy Asbestos Management Program Ashore consists of the following key elements: Inventory, assessment, abatements, operations and maintenance (O&M) program, and training. These elements are not a step by step process, but rather the key components of an activity's plan o protect personnel from asbestos exposure. The cornerstone of the program is the O&M program. An active and aggressive O&M program protects personnel by ensuring that any known or suspect asbestos containing material (ACM) is tested before a maintenance or repair operations disturbs it, and that proper work practices are employed whenever ACM is disturbed. An O&M program also protects the activity by maintaining adequate records, and by training all personnel who have access to ACM. An excellent first step in the process is to designate an asbestos program coordinator per paragraph 1712d(4), OPNAVINST 5100.23C. The coordinator's first step should be to establish an O&M program. The following further describe the key elements.

1. Operation and Maintenance Program

- A. Objective: Ensure that personnel are protected from asbestos exposure caused by inadvertent disturbance of asbestos containing materials.
- B. Scope: An O&M program should include the following elements. An activity will already have a system of inputting, tracking, and executing work requests, a

medical surveillance program, and other features mentioned below. The elements of the O&M program should be incorporated into these existing systems to the degree possible.

1. Notification. A program to tell building occupants and maintenance personnel where ACM is located, and how and why to avoid disturbing it. All persons affected should be informed.
2. Surveillance. Regular inspection of ACM to note, assess, and document any changes in its condition.
3. Controls. A system to review all work requests for the likelihood of disturbing ACM, and to issue permits to ensure proper work practices are employed whenever ACM will be encountered.
4. Work Practices. O&M work practices to avoid, or minimize fiber release during activities affecting ACM.
5. Recordkeeping. To document all O&M activities.
6. Training. Asbestos program coordinator and maintenance staff training.
7. Worker Protection. Medical and respiratory protection programs for workers who will require respiratory protection as part of their asbestos activities.

Excerpted from: Appendix 17-B, OPNAVINST 5100.23C, 2 November 1992.

General Recommendations

1. Staff maintenance personnel and any maintenance contractors should be informed of the presence and location of ACM and cautioned against disturbing or damaging the ACM.
2. All asbestos work should be conducted in accordance with Chapter 17 of OPNAVINST 5100.23C, "Navy Occupational Safety and Health Program," and the Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA) and state or local regulations.
3. The U.S. Environmental Protection Agency (EPA) through the National Emission Standard for Hazardous Air Pollutants (NESHAP) requires that friable ACM be removed from a building prior to demolition or renovation. The NESHAP standard requires that notification be made to the local air pollution control or state agency prior to removal of any asbestos material.
4. The following procedures should be implemented as part of an Operations and Maintenance program for the asbestos containing materials in the building/structure.

Routine O&M Procedures

1. **Debris:** When asbestos-containing friable materials in the form of dust, powder, fragments, chips, etc., exist or are discovered, the following steps should be implemented:
 - a. Isolate the area to prevent spreading of contamination.
 - b. Inform the NSPS Asbestos Program Manager.
 - c. If material is a minimal amount, wet down (beware of electrical safety dangers) with an amended water solution (water with detergent added), wipe area up thoroughly with rags and amended water, place debris (insulation debris, rags, etc.) into an approved disposal bag, and dispose of in compliance with applicable regulations.
 - d. Do not use a broom to sweep up materials or debris.
 - e. Do not use vacuum cleaners to remove debris, as this will spread contamination further.
 - f. Clean up should only be done by asbestos trained workers.
 - g. In the event that a large section of insulation is damaged and there is extensive contamination, isolate the area, and obtain services of an asbestos abatement contractor.
2. **Vinyl Floor Tiles/Mastic:** Vinyl floor tile (or linoleum) is considered a nonfriable material. During cleaning or waxing, do not abrade with a high speed buffer or coarse compound. Use low speed buffers only. When tiles are broken, gently remove them and replace with non-asbestos tile, fill in small areas with leveling compound, or reattach tile to floor with contact cement. Where tile is exposed, periodically inspect for damaged or loose, missing tiles. Do not sand, grind or otherwise abrade tiles.

The mastic is considered a nonfriable material as long as it is not disturbed or exposed to foot traffic. If the mastic must be disturbed, limit work areas to less than 6 square feet, ventilate the area and use a petroleum based solvent (or other acceptable solvent) to remove mastic with putty knife and rags. Place rags and mastic debris in disposal bags and dispose of in accordance with applicable regulations. Do not sand, grind or otherwise abrade mastic.

If tiles are to be removed as part of a renovation, modification or demolition, it should be performed by a qualified asbestos abatement contractor.
3. **Roofing, Tar Patch Material and Sealants:** The asbestos-containing tar patch (located on the first level, northwest section), roofing and sealants pose little danger when left undisturbed. Current asbestos regulations exempt roofing

materials provided the materials are in a nonfriable condition and remain so. Any roof repairs or penetrations should be done using manual (nonpower) tools and methods under conditions of extreme care so as not to cause the roofing materials to release fibers. A fine water mist should be applied as cuts or penetration are made.

4. **Pipe, Fittings and Tank Insulation:** Conduct periodic inspections to document condition. Minor areas of damage should be treated with a spray adhesive and covered with duct tape or other impermeable covering to limit fiber release. If pipe insulation is severely damaged or if over a few linear feet is damaged, obtain the services of an asbestos abatement contractor.

5. **Cement Asbestos Board and Transite Pipe:** This material (CAB) is considered nonfriable and does not present an exposure hazard as long as it is not disturbed or damaged. Do not sand, grind, saw, drill, cut or otherwise abrade this material. Paint exposed edges of pipe or board. Periodically inspect board or pipe for damage and treat exposed areas with paint. If material is to be cut, drilled or removed, obtain services of an asbestos abatement contractor.

6. **Window Putty/Sealants:** These materials are nonfriable and in good condition at the time of survey. There is no potential health hazard as long as these material remain in good condition and are not disturbed. Do not saw, sand, drill, chip or grind these materials. When a window pane or the entire frame needs to be replaced, it is not practical to try to remove the asbestos window putty/sealant and replace it with nonasbestos materials. The usual practice is to remove the entire window frame containing the asbestos/sealant and dispose of the entire frame as asbestos-containing material in a proper manner. This work should be done by a qualified asbestos worker or contractor.

7. **Carpet Padding and Gasket:** These materials are friable. Do not sand, grind, or otherwise abrade gasket or carpet padding. Removal of these materials should be performed only by an asbestos abatement contractor.

8. **Spray on Textured Ceiling Material:** The spray on surfacing material is basically hard, well encapsulated but still considered to be friable. Do not sand, grind, saw, drill, cut or otherwise abrade this material. Paint exposed edges of material where openings in the ceiling exist. If material is to be cut, drilled or removed, obtain services of an asbestos abatement contractor.

9. **2' x 4' Lay-in Ceiling Tile:** The lay-in ceiling tile is considered a friable material in good condition. Do not cut, drill, break or otherwise abrade these materials. The ceiling tiles should be moved or removed by a certified asbestos abatement worker or contractor prior to work performed above the ceiling.

10. **Fire Doors and Safe Insulation:** Asbestos-containing fire doors pose little risk when left undisturbed. In the event that damage or repairs are needed, it may require services of an outside contractor to limit fiber release. If locks or hinges must be replaced, consideration should be given to employing an abatement

contractor. If doors are damaged, they should be replaced with nonasbestos doors. Do not drill doors. Removal of doors intact does not require the services of an asbestos abatement contractor.

Asbestos Abatement Projects

Where high priority asbestos-containing materials are recommended for removal, the work should be accomplished by qualified contractors. The following milestones apply for this type of work:

<u>Event</u>	<u>Responsible Party</u>
- Need to Perform Asbestos Work (a function of this report)	- Consultant
- Asbestos Abatement Project Prioritization	- EFA Northwest
- Engineering Service Request (ESR) and Step II to EFA Northwest	- NSPS
- Funding Sponsor	- Base Realignment and Closure Account
- Preparation of Asbestos Abatement Design	- EFA Northwest
- Administration of Asbestos Abatement Contract	- EFA Northwest
- Asbestos Abatement	- Contractor
- Updating Asbestos Work Documents	- NSPS

Mandatory Records

The requirements for asbestos related recordkeeping at this facility are the responsibility of the Naval Station Puget Sound, Seattle, WA. The records include such items as removal of asbestos-containing materials; personnel training; fit testing and medical records; operations and maintenance activities; fiber release episodes, etc. References for these requirements include Part III Environmental Protection Agency; 40 CFR Part 763; OPNAVINST 5100.23C, 1704e(3), 1708d.(2), 1709g; and SECNAVINST 5212.10A, "Mandatory Retention of Insulation/Asbestos Related Records".

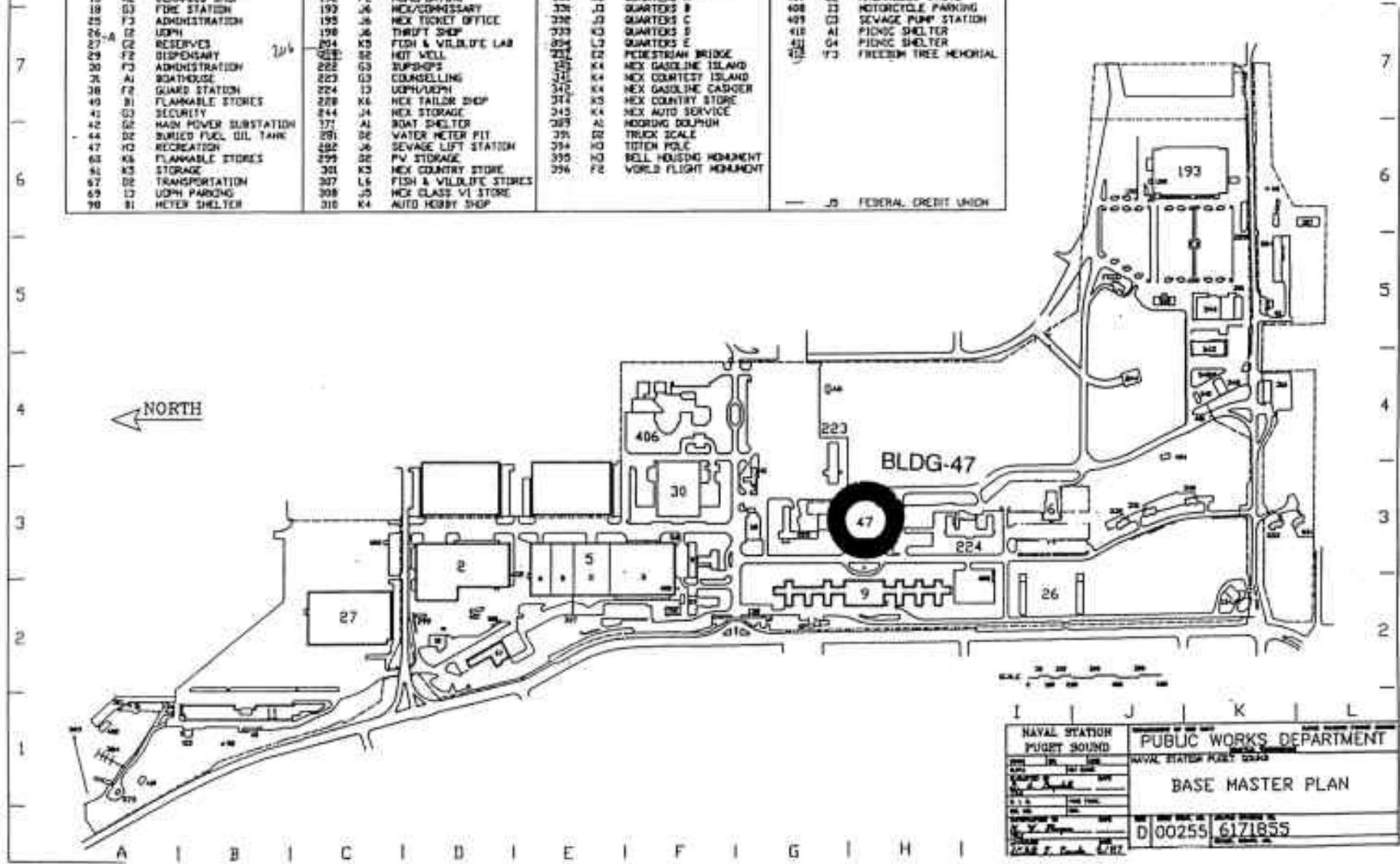
APPENDIX 1
COST ESTIMATE

**NAVAL STATION PUGET SOUND
BUILDING 47, RECREATION FACILITY
NO CONSULTANT ESTIMATE
FOR
ASBESTOS ABATEMENT REQUIRED**

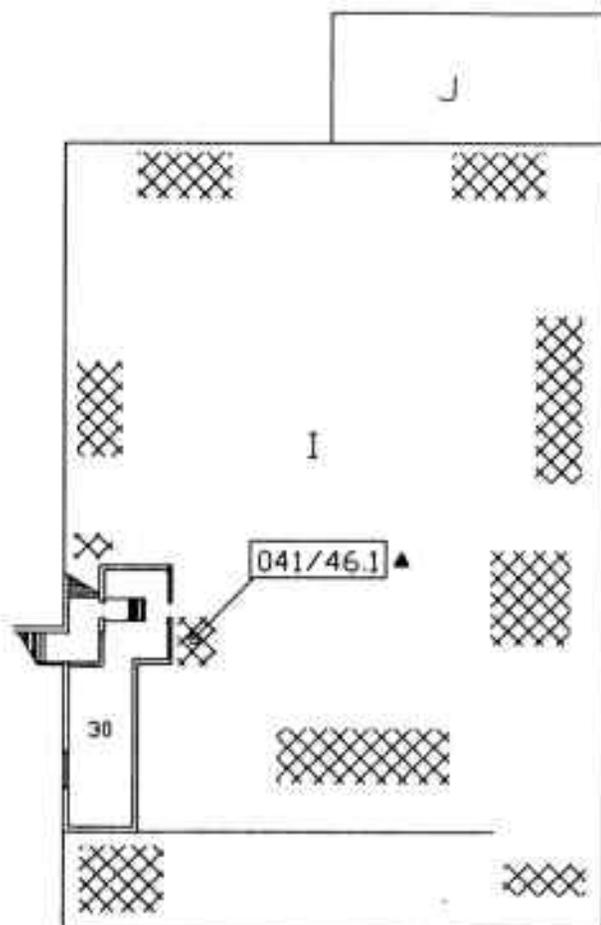
**APPENDIX 2
DRAWINGS**

BLDG	LOC	DESCRIPTION						
2	02	RESERVES	189	K2	WATER METER PIT	300	F3	FLAGPOLE
3	03	SUPPLY	112	R1	PV STORAGE	321	A1	PIER 1
6	13	ROLLING LAUNCH	138	A1	SEWAGE PUMP STATION	324	A1	PIER 7
9	02	UCPH/ADPH	188	F3	SEWAGE LIFT STATION	328	02	UCPH PARKING
11	01	PUBLIC WORKS	129	03	RESERVE STORAGE	327	03	RECREATION COURTS
12	02	WELDER PLANT	138	02	GATEHOUSE	329	03	RECREATION COURTS
13	K2	COORPACS SHOP	192	F2	NONREPORTING	325	K3	QUARTERS A
18	03	FIRE STATION	192	J6	HEX/CONCESSARY	326	J1	QUARTERS B
25	F3	ADMINISTRATION	192	J6	HEX TICKET OFFICE	328	J1	QUARTERS C
26	02	UCPH	198	J6	THRIFT SHOP	329	K3	QUARTERS D
27	02	RESERVES	204	K3	FISH & WILDLIFE LAB	329	L3	QUARTERS E
29	F2	DISPENSARY	222	02	HOT WELL	323	E2	PEDESTRIAN BRIDGE
30	F3	ADMINISTRATION	222	03	SNACKS	325	K4	HEX GASOLINE ISLAND
36	A1	BATHHOUSE	223	03	COACHING	341	K4	HEX ORIENTED ISLAND
38	F2	GUARD STATION	224	13	UCPH/UCPH	342	K4	HEX GASOLINE CASIOER
40	B1	FLAMMABLE STORES	228	K4	HEX TAILOR SHOP	344	K5	HEX COUNTRY STORE
41	03	SECURITY	244	J4	HEX STORAGE	345	K4	HEX AUTO SERVICE
42	02	HIGH POWER SUBSTATION	171	A1	BOAT SHELTER	389	A2	HOODING DOLPHIN
44	02	BURIED FUEL OIL TANK	291	02	WATER METER PIT	391	02	TRUCK SCALE
47	10	RECREATION	282	J6	SEWAGE LIFT STATION	394	H3	TOTEM POLE
62	K4	FLAMMABLE STORES	295	02	PV STORAGE	395	H3	BELL HOUSING MONUMENT
61	K3	STORAGE	301	K3	HEX COUNTRY STORE	396	F2	WORLD FLIGHT MONUMENT
67	02	TRANSPORTATION	307	L6	FISH & WILDLIFE STORES			
69	13	UCPH PARKING	308	J5	HEX CLASS V1 STORE			
70	B1	METER SHELTER	310	K4	AUTO HOBBY SHOP			

— J5 FEDERAL CREDIT UNION



NAVAL STATION PUGET SOUND		PUBLIC WORKS DEPARTMENT	
NAVAL STATION PUGET SOUND		NAVAL STATION PUGET SOUND	
BASE MASTER PLAN		BASE MASTER PLAN	
D 00255		6171855	



EXPLANATION

SAMPLE No.  HMG No.

HMG CODES

46.1 Debris

△ Negative

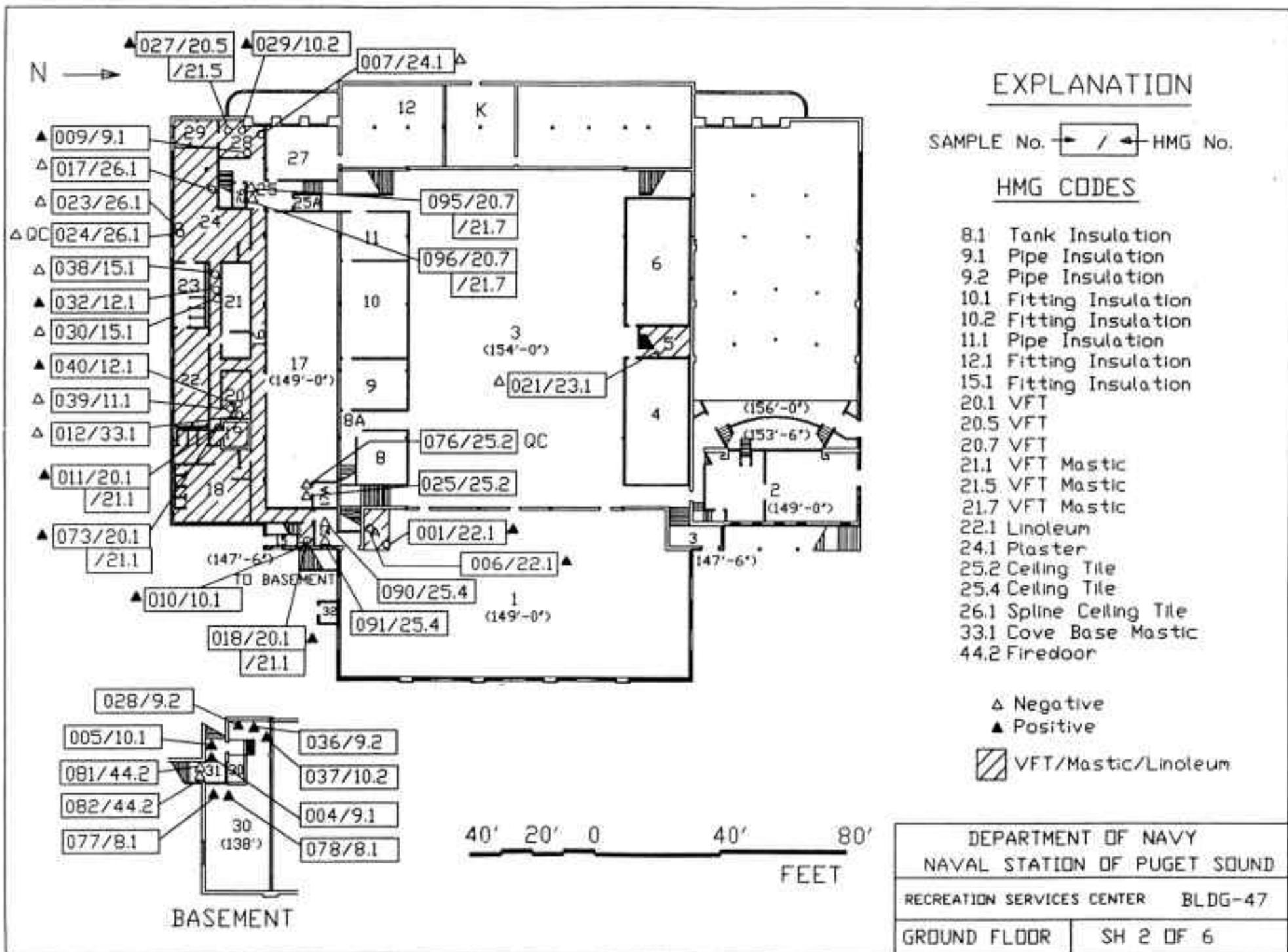
▲ Positive

 Debris

NOTE: THERE IS A LARGE AMOUNT OF DEBRIS IN THE CRAWLSPACE. THE ENTIRE CRAWLSPACE SHOULD BE CONSIDERED CONTAMINATED.

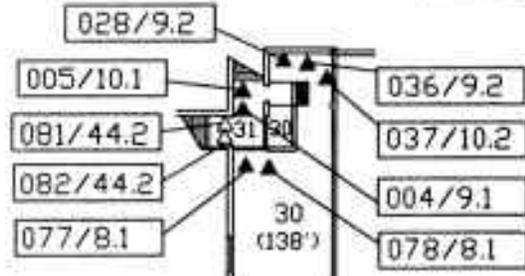
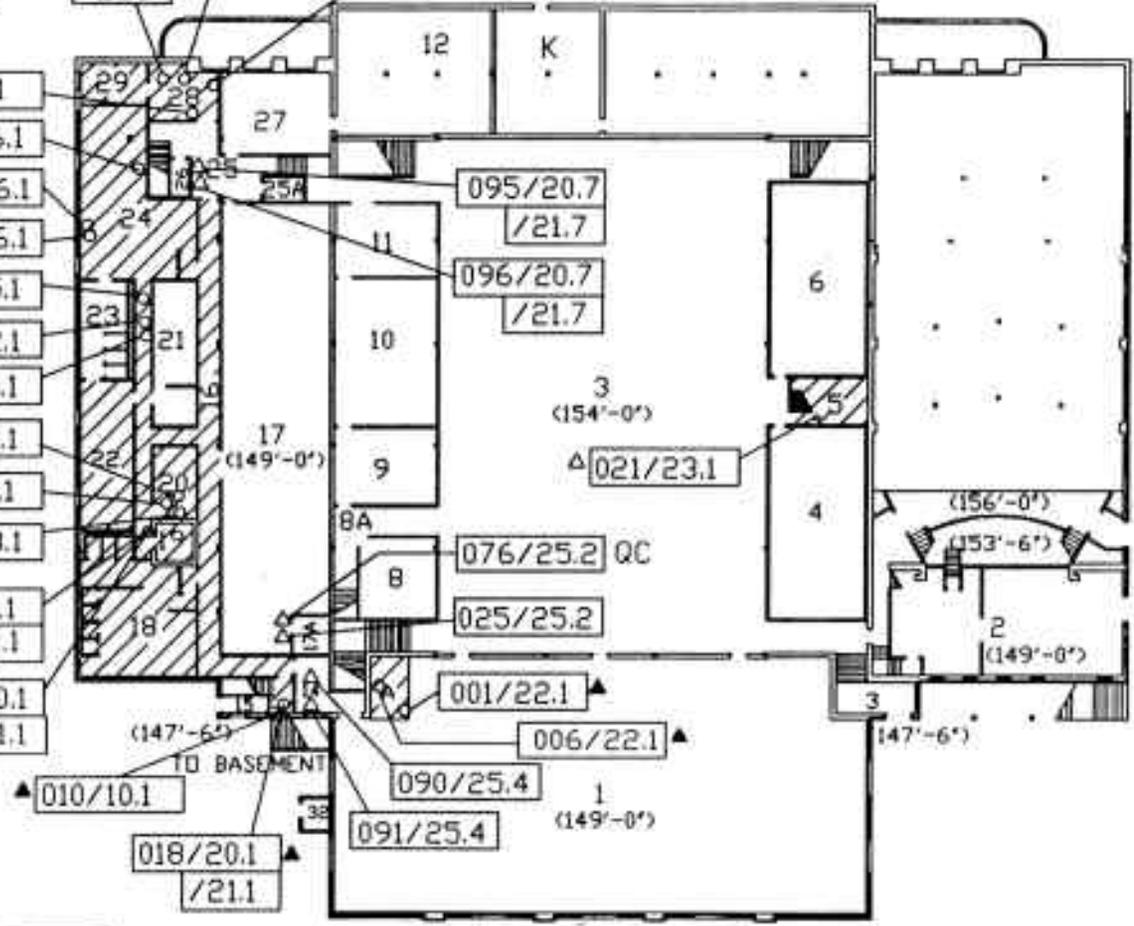
40' 20' 0 40' 80'
FEET

DEPARTMENT OF NAVY	
NAVAL STATION OF PUGET SOUND	
RECREATION SERVICES CENTER	BLDG-47
BASEMENT CRAWLSPACE	SH 1 OF 6



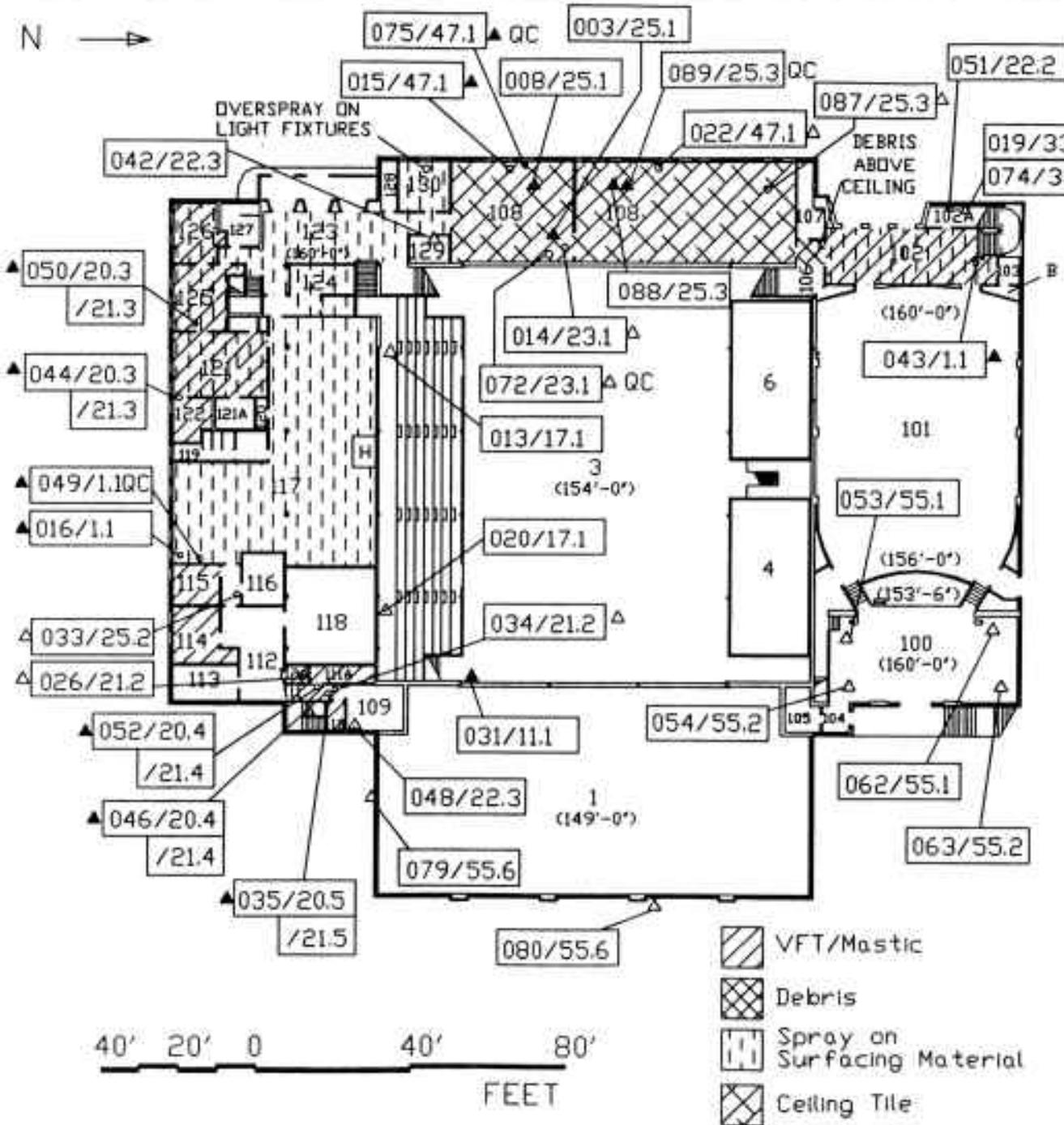
027/20.5
/21.5
029/10.2
007/24.1

▲ 009/9.1
▲ 017/26.1
▲ 023/26.1
▲ QC 024/26.1
▲ 038/15.1
▲ 032/12.1
▲ 030/15.1
▲ 040/12.1
▲ 039/11.1
▲ 012/33.1
▲ 011/20.1
/21.1
▲ 073/20.1
/21.1



BASEMENT

N →



EXPLANATION

SAMPLE No. / HMG No.

HMG CODES

- 1.1 Spray on Surfacing Material
- 11.1 Pipe Insulation
- 17.1 Pipe Insulation
- 20.3 VFT
- 20.4 VFT
- 20.5 VFT
- 21.2 VFT Mastic
- 21.3 VFT Mastic
- 21.4 VFT Mastic
- 21.5 VFT Mastic
- 22.2 Linoleum
- 22.3 Linoleum
- 23.1 Drywall
- 24.1 Plaster
- 25.1 Ceiling Tile
- 25.2 Ceiling Tile
- 25.3 Ceiling Tile
- 33.1 Cove Base Mastic
- 47.1 Window Putty
- 55.1 Stage Curtain
- 55.2 Stage Curtain
- 55.6 STUCCO

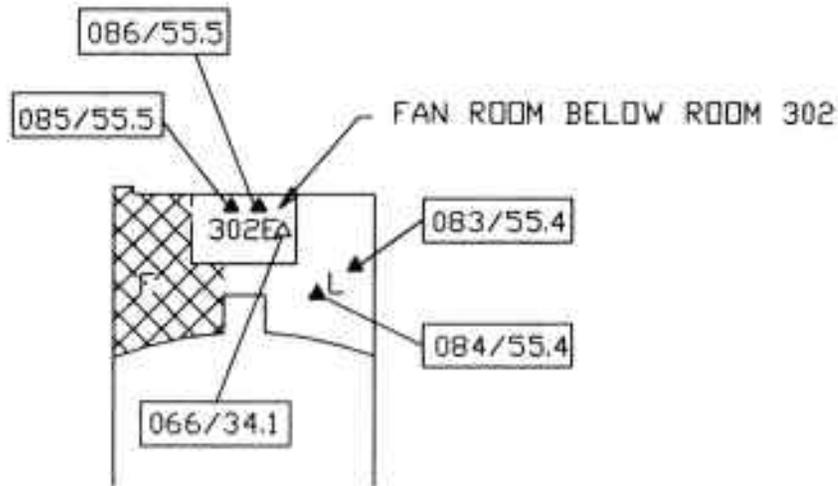
△ Negative
▲ Positive

- VFT/Mastic
- Debris
- Spray on Surfacing Material
- Ceiling Tile

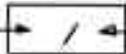
40' 20' 0 40' 80'
FEET

DEPARTMENT OF NAVY	
NAVAL STATION OF PUGET SOUND	
RECREATION SERVICES CENTER	BLDG-47
MAIN FLOOR	SH 3 OF 6

N →



EXPLANATION

SAMPLE No.  HMG No.

HMG CODES

- 34.1 VJC
- 55.4 Carpet Pad
- 55.5 Gasket on Box

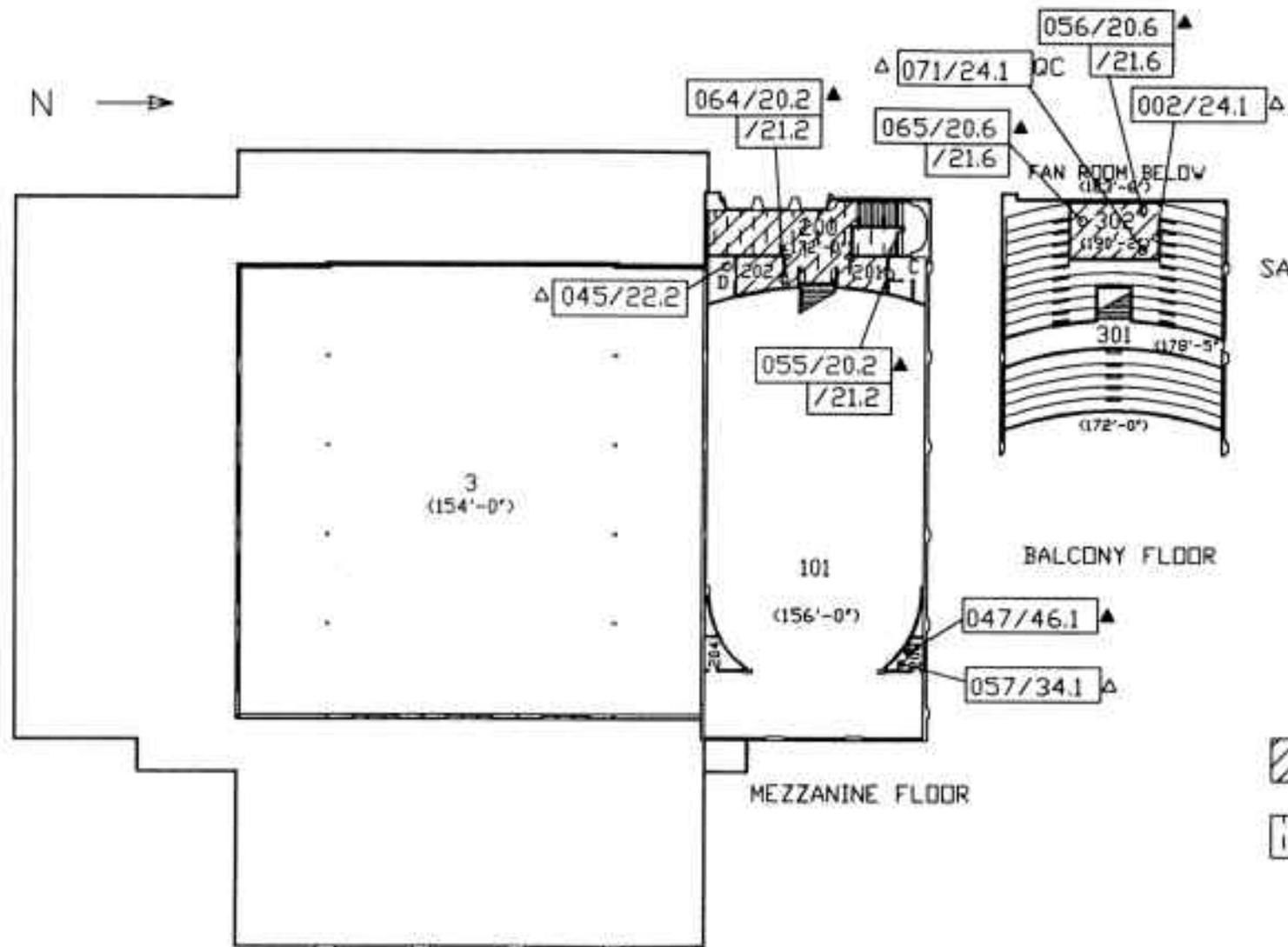
- Δ Negative
- ▲ Positive

 Debris

40' 20' 0 40' 80'
FEET

DEPARTMENT OF NAVY	
NAVAL STATION OF PUGET SOUND	
RECREATION SERVICES CENTER BLDG-47	
BALCONY FLOOR	SH 4 OF 6

N →



EXPLANATION

SAMPLE No. / HG No.

HMG CODES

- 20.2 VFT
- 20.6 VFT
- 21.2 VFT Mastic
- 21.6 VFT Mastic
- 22.2 Linoleum
- 24.1 Plaster
- 34.1 VJC
- 46.1 Debris

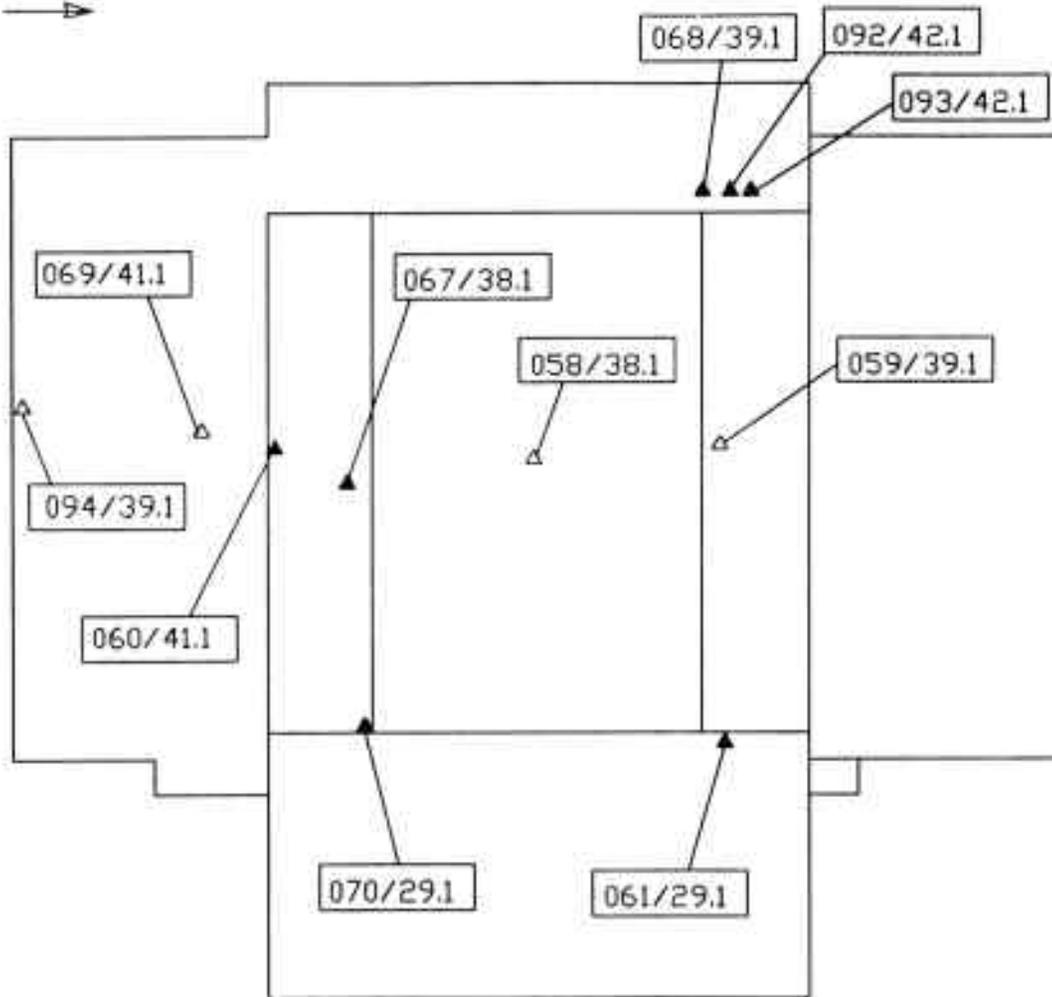
△ Negative
▲ Positive

- VFT/Mastic
- Spray on Surfacing Material

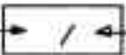
40' 20' 0 40' 80'
FEET

DEPARTMENT OF NAVY	
NAVAL STATION OF PUGET SOUND	
RECREATION SERVICES CENTER	BLDG-47
UPPER FLOORS	SH 5 OF 6

N →



EXPLANATION

SAMPLE No.  HMG No.

HMG CODES

- 29.1 CAB
- 38.1 Roofing
- 39.1 Roofing
- 41.1 Sealant
- 42.1 Tar Patch

- △ Negative
- ▲ Positive

40' 20' 0 40' 80'
FEET

DEPARTMENT OF NAVY NAVAL STATION OF PUGET SOUND	
RECREATION SERVICES CENTER BLDG-47	
ROOF	SH 6 DF 6

APPENDIX 3
HOMOGENEOUS
MATERIALS LIST

APPENDIX 3

HOMOGENEOUS MATERIAL AREA I.D. NUMBER (HMG#) REFERENCE LIST

<u>UNIT I.D. # DESCRIPTION</u>	<u>UNIT I.D. # DESCRIPTION</u>
Surfacing	Miscellaneous
SF 1.X Sprayed - on finish	SF 20.X Vinyl floor tile - VFT
SF 2.X Troweled - on finish	SF 21.X Floor tile mastic
SF 4.X Other surfacing	SF 22.X Linoleum or sheet vinyl (includes mastic and backing)
<u>UNIT I.D. # DESCRIPTION</u>	SF 23.X Drywall, mud, tape (walls and ceiling) - GWB
Thermal	SF 24.X Plaster (walls and ceiling)
SF 5.X Cloth wrap at seams/joints	SF 25.X Lay-in ceiling tile - Lay-in CT
SF 6.X Breaching	SF 26.X Spline ceiling tile - Spline CT
SF 7.X Duct insulation	SF 27.X Glue-on ceiling tile - Glue-on CT
SF 8.X Tank insulation	SF 28.X Ceiling tile glue - CT glue
LF 9.X Block pipe insulation - Block PI	SF 29.X Cement asbestos board CAB
EA 10.X Hard mudded fitting (HMF) and joints associated with block PI	SF 30.X Cement asbestos pipe
LF 11.X Corrugated pipe insulation - Corr. PI	SF 31.X Cement asbestos shingles - CAB
EA 12.X Hard mudded fitting (HMF) and joints associated with corrugated PI	SF 32.X Cove base
LF 13.X Compressed pipe insulation - Comp. PI	SF 33.X Cove base mastic
EA 14.X Hard mudded fitting (HMF) associated with compressed PI	EA 34.X Vibration joint cloth - VJC
EA 15.X Hard mudded fitting (HMF) associated with fiberglass or other misc. insulation	LF 35.X Caulking
EA 16.X Joint with white sealant on ends	SF 36.X Mortar
LF 17.X Tarpaper pipe insulation	SF 37.X Asphalt roof shingles
LF 18.X Troweled-on pipe insulation	SF 38.X Rolled roofing
SF 19.X Finish mud	SF 39.X Asphalt and gravel roofing
EA 19.X Finish mud	SF 40.X Cant strip
56.X Other thermal	LF 41.X Weatherproofing sealant
<u>PIPE AND FITTING PARAMETERS</u>	SF 42.X Tar patch
Pipe and Fitting OD \leq 6"	LF 43.X Tar patch
Pipe and Fitting OD $>$ 6" but \leq 10"	EA 44.X Firedoors
Pipe and Fitting OD $>$ 10"	LF 45.X Duct sealant
	SF 46.X Debris
	LF 47.X Window putty
	SF 48.X Tarpaper
	LF 49.X Tape
	LF 50.X Wire insulation
	EA 51.X Contact shields
	EA 52.X Elevator brake shoes
	SF 53.X Dust
	SF 54.X Blown-in insulation
	55.X Other miscellaneous

APPENDIX 4
MATERIAL
AREA SPREADSHEET

MATERIAL AREA SPREADSHEET

(Type 1)

Alpha Engineering Group, Inc.



Date: 5/14/93

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17-3830-11

Surveyor(s): R RAYBURN

Building Name/Number: 47

Facility Usage: RECREATION

TWOOLFOLK

Floor	HMG #	Material Description	Location	Qty	CR	DM	%	FR	EP	PE
B	15.1	HMF A/W FBGL PI	Room IZ	8EA	3	0	N	N	3	CO
B	9.1	≤6" BLOCK PI	Room I - CRAWLSPACE UNDER GYM	1200LF	2	100LF	Y	Y	2	CO
B	10.1	HMF A/W BLOCK PI	Room I - " " "	45 EA	2	5EA	Y	Y	2	CO
B	46.1	DEBRIS - PI	Room I " " "	1500 SF	1	1500 SF	Y	Y	1	CO
B	30.1	TRANSITE PIPE - ELECTRIC	Room J - CRAWLSPACE UNDER LIBRARY	220LF	3	0	Y	N	3	CO
B	9.1	≤6" BLOCK PI	Room J - " "	180 LF	3	0	Y	N	3	CO
B	10.1	HMF A/W BLOCK PI	Room J - " "	23 EA	3	0	Y	N	3	CO
B	46.1	DEBRIS	Room J - " "	100 SF	1	100 SF	Y	Y	2	CO
B	30.1	TRANSITE PIPE - ELECTRIC	Room K " "	28 LF	3	0	Y	N	3	CO

↳ No sample - live electrical.
Pipe stenciled "Transite"

LEGEND:

Qty. • Quantity

CR • Condition Rating

DM • Damage Quantity

% • Percentage & Type Asbestos

FR • Friable

EP • Exposure Potential

PE • Personnel Exposed

SF Sq. Ft.
LF Lineal Ft.
EA Each

1 Poor
2 Moderate
3 Good

SF Square Ft.
LF Lineal Ft.
EA Each

C Chrysotile
A Amosite
T Tremolite
AC Actinolite
CR Crocidolite

Y Yes
N No

1 High
2 Moderate
3 Low

GP General Public
OW Office Worker
JA Janitor
CO Contractor
AI All

MATERIAL AREA SPREADSHEET

(Type 1)

Alpha Engineering Group, Inc.

Date: 5/14/93
NSPS, Seattle

Project Name: Comprehensive Asbestos Survey

Project No: 17-3830-11

Surveyor(s): T. WOOLFOLK

Building Name/Number: 47

Facility Usage: Recreation

R. RAYBURN

Floor	HMG #	Material Description	Location	Qty	CR	DM	%	FR	EP	RE
1	55.3	Safe Insulation	Room # 128 - NO SAMPLES ^{w/out} DESTROY	1 EA	3	∅SF	N	N	3	OT
1	22.3	Red Linoleum	Room # 128, #129, #130, #123	9.55 SF	3	∅SF	N	N	3	OT
1	1.1	Spray-on Surf. Mat.	Room # 128, #130, #123, #126 Add 100 SF to Rm. #123 - En. #125, #121, #122, #124	2,030 SF	2	∅SF	Y	Y	2	OT
1	25.1	2'x4' Lay-in CT	Room # 126, #125, #121, #124	900 SF	3	∅SF	Y	N	3	OT
1	20.3	9" Red FT & Mastic	Room # 126, #125, #121, #122	860 SF	3	∅SF	Y	N	3	OT
1	25.2	2'x4' Lay-in CT (smooth)	Room # 124 (1/2)	60 SF	3	∅SF	N	N	3	OT
1	1.1	Spray-on Surf. Mats	Room # 117 (Ceiling/Walls)	3200 SF	3	∅SF	Y	Y	3	OT
1	9.1	≤ 6" Black P.I.	Room # 117 H (Closet), 119 ^{over} window	55 LF	3	∅LF	Y	N	3	OT
1	10.1	HMF 1/4" ≤ 6" Black P.I.	" " " 119 ^{9th} window	15 EA	3	∅EA	Y	N	3	OT
1	22.2	Gray-Red Linoleum	120	20 SF	3	∅SF	N	N	3	OT
1	20.3	9" Red FT & Mastic	Rm. # 114, #115, #112A	350 SF	3	∅SF	Y	N	3	OT
1	20.4	9" Green FT & Mastic	Rm. # 111, 110 (3 layers w/linoleum)	92 SF	2	2SF	Y	Y	2	OT
1	20.5	12" Brn. FT & Mastic	Rm. 111, 111A → (2 layers)	130 SF	3	∅SF	Y	N	3	OT

LEGEND:

Qty • Quantity	CR • Condition Rating	DM • Damage Quantity	W • Percentage & Type Asbestos	FR • Friable	EP • Exposure Potential	PE • Personnel Exposed
3F Sq. Ft.	1 Poor	SF Square Ft	O Chrysotile	Y Yes	1 High	GP General Public
LF Lineal Ft	2 Moderate	LF Lineal Ft	A Amosite	N No	2 Moderate	OW Office Worker
EA Each	3 Good	EA Each	T Tremolite		3 Low	JA Janitor
			AC Actinolite			CO Contractor
			CR Crocidolite			AL All

MATERIAL AREA SPREADSHEET

(Type 1)

Alpha Engineering Group, Inc.



Date: 5/12/93

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17-3830-11

Surveyor(s): T. WOOLFOLK

Building Name/Number: 47

Facility Usage: Recreation

R. RAYBURN

Floor	HMG #	Material Description	Location	Qty	CR	DM	%	FR	EP	PE
B	22.1	wht & Tan Linoleum	Room # A - IN Rm 1	70 SF	3	0SF	Y	N	3	OT
B	24.1	Plaster	THROUGHOUT (EXCEPT GYM)	24,000SF	2	20SF	N	Y	3	OT
B	25H	2' x 4' Lay-in CT	Room #14	130SF	2	24SF	N	Y	2	OT
B	9.1	≤6" Block P.I.	" " "	25 LF	2	1LF	Y	Y	2	OT
B	10.1	HMF A/W ≤6" Block P.I.	" "	3 EA	3	0EA	Y	N	3	OT
B	20.1	12" Beige VFT & Mastic	Rm 5, "152"	170 SF	3	0SF	Y	N	3	OT
B	33.1	Cove Base Mastic	THROUGHOUT	650 LF	2	0	N	N	3	OT
B	9.1	≤6" Block P.I.	Rm. #8A "2 OPEN ENDS"	22 LF	2	1LF	Y	Y	2	OT
B	10.1	HMF A/W ≤6" Blak P.I.	" "	3 EA	3	0EA	Y	N	3	OT
B	9.1	≤6" Block P.I.	Rm. #10 "1 ^{1SF debris} OPEN END"	40 LF	2	6LF	Y	Y	2	OT
B	10.1	HMF A/W ≤6" Block P.I.	Rm. #10	12 EA	3	0EA	Y	N	3	OT
B	17.1	Tarpaper P.I.	Rm. #11, #3	36 LF	3	0LF	N	N	3	OT
B	9.1	≤6" Block P.I.	Rm #3 "1 OPEN END"	310 LF	3	0LF	Y	N	3	OT
B	10.1	HMF A/W ≤6" Block P.I.	Rm. #3	46 EA	3	0LF	Y	N	3	OT
B	47.1	WINDOW PUTTY	Rm. #3	1,000 LF	3	0	Y	N	3	OT

LEGEND:

Qty. • Quantity	CR • Condition Rating	DM • Damage Quantity	% • Percentage & Type Asbestos	FR • Friable	EP • Exposure Potential	PE • Personnel Exposed
SF Sq. Ft	1 Poor	SF Square Ft	C Chrysotile	Y Yes	1 High	GP General Public
LF Lineal Ft	2 Moderate	LF Lineal Ft	A Amosite	N No	2 Moderate	OW Office Worker
EA Each	3 Good	EA Each	T Tremolite		3 Low	JA Janitor
			AC Actinolite			CO Contractor
			CR Crocidolite			AL All

MATERIAL AREA SPREADSHEET

(Type 1)

Alpha Engineering Group, Inc. 

Date: 5/12/93

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17-3830-11

Surveyor(s): T. WOOLFOLK

Building Name/Number: 47

Facility Usage: RECREATION

R. RAYBURN

Floor	HMG #	Material Description	Location	Qty	CR	DM	%	FR	EP	PE
B	11.1	5/6" CORR PI	Room 3 (2 open ends)	300LF	2	2LF	Y	Y	2	OT
B	12.1	HMF A/W CORR PI	Room 3	38EA	2	1EA	Y	Y	2	OT
B	23.1	DRYWALL	Room 4, 6, STAIRWAY	4700SF	3	0	N	N	3	OT
B	44.1	FIREDOOR	Room 19 (3'x6')	1EA	3	0	Y	N	3	OT
B	20.1	12" BEIGE FT/MASK	Room # 20, 22, 24, 29	1160SF	3	0	Y	N	3	OT
B	26.1	12" SPLINE CT	Room 22	350SF	3	0	N	N	3	OT
B	9.1	5/6" BLOCK PI	Room 22	22LF	3	0	Y	N	3	OT
B	10.1	HMF A/W BLOCK PI	Room 22	4EA	3	0	Y	N	3	OT
			<p>THE FIREDOOR IN RM 19 IS SEALED. NO SAMPLES WERE TAKEN SO THAT THE DOOR RETAINS ITS INTEGRITY</p>							

LEGEND:

Qty. • Quantity	CR • Condition Rating	DM • Damage Quantity	% • Percentage & Type Asbestos	FR • Friable	EP • Exposure Potential	PE • Personnel Exposed
F Sq. Ft.	1 Poor	SF Square Ft	C Chrysotile	Y Yes	1 High	GP General Public
F Lineal Ft	2 Moderate	LF Lineal Ft	A Amosite	N No	2 Moderate	OW Office Worker
A Each	3 Good	EA Each	T Tremolite		3 Low	JA Janitor
			AC Actinolite			CO Contractor
			CR Crocidolite			AL All

MATERIAL AREA SPREADSHEET

(Type 1)

Alpha Engineering Group, Inc.



Date: 5/17/93

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17-3830-11

Surveyor(s): R. RAYBURN

Building Name/Number: 47

Facility Usage: RECREATION

TWOULFOK

Floor	HMG #	Material Description	Location	Qty	CR	DM	%	FR	EP	PE
B	20.1	12" BEIGE VFT/MASTIC	Rm 18, 19	580 SF	3	0	Y	N	3	OT
B	26.1	12" SPLINE CT	Rm 18	480 SF	3	0	N	Y	2	OT
B	15.1	HMF A/W FBGL PI	Rm 18	1 EA	3	0	N	N	3	OT
D	9.1	≤6" BLOCK PI	Rm 18 + INSIDE WALLS	53 LF	3	0	Y	N	3	OT
B	10.1	HMF A/W BLOCK PI	Rm 18 + INSIDE WALLS	10 EA	3	0	Y	N	3	OT
B	9.1	≤6" BLOCK PI	Rm 18 - ABOVE CEILING	40 LF	2	1 LF	Y	Y	2	CO
B	10.1	HMF A/W BLOCK PI	Rm 18 - ABOVE CEILING	13 EA	2	2 EA	Y	Y	2	CO
B	15.1	HMF A/W FBGL PI	Rm 18 - ABOVE CEILING	12 EA	3	0	N	N	3	CO
B	9.2	>6" ≤10" BLOCK PI	Rm 18 - ABOVE CEILING	30 LF	2	1 LF	Y	Y	2	CO
B	10.2	>6" ≤10" HMF A/W BLOCK PI	Rm 18 - ABOVE CEILING	3 EA	3	0	Y	N	3	CO

CEILING SPACE

LEGEND:

Qty. • Quantity	CR • Condition Rating	DM • Damage Quantity	% • Percentage & Type Asbestos	FR • Friable	EP • Exposure Potential	PE • Personnel Exposed
SF Sq. Ft.	1 Poor	SF Square Ft	C Chrysotile	Y Yes	1 High	GP General Public
LF Lineal Ft	2 Moderate	LF Lineal Ft	A Amosite	N No	2 Moderate	OW Office Worker
EA Each	3 Good	EA Each	T Tremolite		3 Low	JA Janitor
			AC Actinolite			CO Contractor
			CR Crocidolite			AL All

MATERIAL AREA SPREADSHEET

(Type 1)

Alpha Engineering Group, Inc.



Date: 5/13/93
NSPS, Seattle

Project Name: Comprehensive Asbestos Survey

Project No: 17-3830-11

Surveyor(s): T. WOOLFOLK

Building Name/Number: 47

Facility Usage: RECREATION

R. RAYBURN

Floor	HMG #	Material Description	Location	Qty	CR	DM	%	FR	EP	PE
B	9.1	≤6" Black P.I.	Room # 23	8 LF	2	1 LF	Y	Y	2	OT
B	10.1	HMF A/W ≤6" Black P.I.	" "	1 EA	3	DEA	Y	N	3	OT
B	26.1	12" Spine CT	Room # 24	604 SF	3	0	N	Y	2	OT
B	9.1	≤6" Black P.I.	" " + INSIDE WALLS	80 LF	3	0 LF	Y	N	3	OT
B	10.1	HMF A/W ≤6" Black P.I.	" " + INSIDE WALLS	15 EA	3	DEA	Y	N	3	OT
B	9.1	≤6" Black P.I.	Room # 16 ~1 OPEN END	7 LF	2	1 LF	Y	Y	3	OT
B	10.1	HMF A/W ≤6" Black P.I.	" "	3 EA	3	DEA	Y	N	3	OT
B	25.2	2'x4' Lay-in CT (smooth)	Room # 17	600 SF	3	0	N	N	3	OT
B	20.7	Black Floor tile/mastic	Room # 25	212 SF	3	0 SF	Y	N	3	OT
B	9.1	≤6" Black P.I.	" "	19 LF	3	0 LF	Y	N	3	OT
B	10.1	HMF A/W ≤6" Black P.I.	" "	6 EA	3	DEA	Y	N	3	OT
B	9.1	≤6" Black P.I.	Room # 27 w/ "Debris on Carpet"	17 LF	2	1 LF	Y	Y	2	OT
B	20.5	12" Brn. FT + Mastic	Room # 28	154 SF	3	0	Y	N	3	OT

LEGEND:

Qty. • Quantity	CR • Condition Rating	DM • Damage Quantity	% • Percentage & Type Asbestos	FR • Friable	EP • Exposure Potential	PE • Personnel Exposed
SF Sq. Ft	1 Poor	SF Square Ft	C Chrysotile	Y Yes	1 High	GP General Public
LF Lineal Ft	2 Moderate	LF Lineal Ft	A Amosite	N No	2 Moderate	OW Office Worker
EA Each	3 Good	EA Each	T Tremolite		3 Low	JA Janitor
			AC Actinolite			CO Contractor
			CR Crocidolite			AL All

MATERIAL AREA SPREADSHEET (Type 1)

Alpha Engineering Group, Inc. 

Date: 5/14/93

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17-3830-11

Surveyor(s): R RAYBURN

Building Name/Number: 47

Facility Usage: RECREATION

TWOOLFOLK

Floor	HMG #	Material Description	Location	Qty	CR	DM	%	FR	EP	PE
B	9.1	≤6" BLOCK PI	Rm 30	80LF	2	3LF	Y	Y	2	CO
B	10.1	HMF A/W BLOCK PI	Rm 30	18EA	3	0	Y	N	3	CO
B	8.1	TANK INSULATION	Rm 30	14SF	3	0	Y	N	3	CO
B	9.2	>6" ≤10" BLOCK PI	Rm 30	5LF	3	0	Y	N	3	CO
B	10.2	HMF A/W BLOCK PI	Rm 30	1EA	3	0	Y	N	3	CO
B	44.2	FIREDOOR	Rm 31	2EA	3	0	N	N	3	CO
B	9.1	≤6" BLOCK PI	Rm 31	9LF	3	0	Y	N	2	OT
B	10.1	HMF A/W BLOCK PI	Rm 31	2EA	3	0	Y	N	2	OT

LEGEND:

Qty. • Quantity

CR • Condition Rating

DM • Damage Quantity

% • Percentage & Type Asbestos

FR • Friable

EP • Exposure Potential

PE • Personnel Exposed

SF Sq. Ft.
LF Lineal Ft.
EA Each

1 Poor
2 Moderate
3 Good

SF Square Ft.
LF Lineal Ft.
EA Each

C Chrysotile
A Amosite
T Tremolite
AC Actinolite
CR Crocidolite

Y Yes
N No

1 High
2 Moderate
3 Low

GP General Public
OW Office Worker
JA Janitor
CO Contractor
AL All

MATERIAL AREA SPREADSHEET

(Type 1)

Alpha Engineering Group, Inc.



Date: 5/13/93

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17-3830-11

Surveyor(s): T. Woodcock

Building Name/Number: 47

Facility Usage: RECREATION

R. RANBORN

Floor	HMG #	Material Description	Location	Qty	CR	DM	%	FR	EP	PE
B	11.1	±6" Corr. P.I.	Crawlspace above Rm. #24, incl.	40LF	3	0LF	Y	N	3	OT
B	12.1	HMF A/W ±6" Corr. P.I.	inside walls.	12EA	2	1EA	Y	Y	2	OT
B	9.1	±6" Block P.I.	Crawlspace above Rm. #22, incl.	60LF	3	0LF	Y	N	3	OT
B	10.1	HMF A/W ±6" Block P.I.	inside walls.	22EA	2	1EA	Y	Y	2	OT
B	15.1	HMF A/W ±6" Fgl. P.I.	Crawlspace above Rm. #24, incl.	24EA	3	0EA	N	N	3	OT
B	11.1	±6" Corr. P.I.	inside walls.	30LF	3	0LF	Y	N	3	OT
B	12.1	HMF A/W ±6" Block P.I.	" " "	9EA	1	4EA	Y	Y	2	OT
B	9.1	±6" Block P.I.	" " "	35LF	2	1LF	Y	Y	2	OT
B	10.1	HMF A/W ±6" Block P.I.	" " "	11EA	2	3EA	Y	Y	2	OT
B	7.1	±6" Corr. P.I.	Crawlspace above Rm. #16	360LF	3	0LF	Y	N	3	OT

LEGEND:

Qty. • Quantity	CR • Condition Rating	DM • Damage Quantity	% • Percentage & Type Asbestos	FR • Friable	EP • Exposure Potential	PE • Personnel Exposed
SF Sq. Ft.	1 Poor	SF Square Ft.	C Chrysotile	Y Yes	1 High	GP General Public
LF Lineal Ft.	2 Moderate	LF Lineal Ft.	A Amosite	N No	2 Moderate	OW Office Worker
EA Each	3 Good	EA Each	T Tremolite		3 Low	JA Janitor
			AC Actinolite			CO Contractor
			CR Crocidolite			AL All

MATERIAL AREA SPREADSHEET

(Type 1)

Alpha Engineering Group, Inc.



Date: 5/13/93

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17-3830-11

Surveyor(s): T. WOLFOCK

Building Name/Number: 47

Facility Usage: RECREATION CTR.

R. RAY BURN

Floor	HMG #	Material Description	Location	Qty	CR	DM	%	FR	EP	PE
B	9.1	±6" Block P.I.	Room # 28 & 29	95 LF	2	6 LF	Y	Y	2	OT
B	10.1	HMF A/W ±6" Block P.I.	" "	39 EA	3	0 EA	Y	N	3	OT
B	9.2	6"-10" Block P.I.	" "	29 LF	2	1 LF	Y	Y	2	OT
B	10.2	HMF A/W 6"-10" Block P.I.	" "	2 EA	3	0 EA	Y	N	3	OT
B	15.1	HMF A/W ±6 Fdy. P.I.	Room # 29	10 EA	3	0 EA	N	N	3	OT
B	9.1	±6" Block P.I.	Room # 28 inside wall	1 LF	3	0 LF	Y	N	3	OT
B	10.1	HMF A/W ±6" Block P.I.	" " "	2 EA	3	0 EA	Y	N	3	OT
B	9.1	±6" Block P.I.	Crawlspace above room # 17 (20' x 10')	60 LF	2	2 LF	Y	Y	2	OT
B	10.1	HMF A/W ±6" Block P.I.	" "	17 EA	3	0 EA	Y	N	3	OT
B	11.1	±6" Corr. P.I.	Crawlspace above room # 20	70 LF	2	6 LF	Y	Y	2	OT
B	12.1	HMF A/W ±6" Corr. P.I.	" "	20 EA	2	4 EA	Y	Y	2	OT
B	15.1	HMF A/W Fdy. P.I.	Crawlspace above rm. # 24, incl. inside walls.	30 EA	3	0 EA	N	N	3	OT

LEGEND:

Qty. • Quantity	CR • Condition Rating	DM • Damage Quantity	% • Percentage & Type Asbestos	FR • Friable	EP • Exposure Potential	PE • Personnel Exposed
SF Sq. Ft.	1 Poor	SF Square Ft.	C Chrysotile	Y Yes	1 High	GP General Public
LF Lineal Ft.	2 Moderate	LF Lineal Ft.	A Amosite	N No	2 Moderate	OW Office Worker
EA Each	3 Good	EA Each	T Tremolite		3 Low	JA Janitor
			AC Actinolite			CO Contractor
			CR Crocidolite			AL All

MATERIAL AREA SPREADSHEET

(Type 1)

Alpha Engineering Group, Inc.



Date: 5/13/93

NSPS, Seattle

Project Name: Comprehensive Asbestos Survey

Project No: 17-3830-11

Surveyor(s): T. WOODFORD

Building Name/Number: 47

Facility Usage: Movie Theatre / REC.

R. RAYBURN

Floor	HMG #	Material Description	Location	Qty	CR	DM	%	FR	EP	PE
Balcony	20.6	9" Gray FT and Mastic	Room # 302	250 SF	3	20 SF	Y	N	3	OT
Balcony	24.1	Plaster	Room # 302, 302E	1000 SF	3	0 SF	N	N	3	OT
Balcony	9.1	≤6" Block P.I.	Room # 302 E (Fan Room)	22 LF	2	2 LF	Y	Y	2	OT
Balcony	10.1	HMF A/w ≤6" Block P.I.	" " "	9 EA	2	1 EA	Y	Y	2	OT
Balcony	34.1	Vibration Joint Cloth	" " " (2 EA)	18 LF	2	1 SF	N	Y	2	OT
Balcony	9.1	≤6" Block P.I.	Crawlspace F; Access through Rm. 203E	22 LF	2	2 LF	Y	Y	2	OT
Balcony	10.1	HMF A/w ≤6" Block P.I.	" " "	9 EA	2	1 EA	Y	Y	2	OT
Balcony	46.1	Debris	" " "	300 SF	1	300 SF	Y	Y	1	OT
Balcony	55.5	Gasket on wood box	Room 302E	12 LF	2	1 LF	Y	Y	2	OT
Balcony	29.1	CAB	Room 302E	20 SF	3	0	Y	N	2	OT
Balcony	55.4	old carpet padding	Crawlspace L (north of 302E)	35 SF	1	35 SF	Y	Y	2	OT

LEGEND:

Qty. • Quantity	CR • Condition Rating	DM • Damage Quantity	% • Percentage & Type Asbestos	FR • Friable	EP • Exposure Potential	PE • Personnel Exposed
SF • Sq. Ft.	1 • Poor	SF • Square Ft.	C • Chrysotile	Y • Yes	1 • High	GP • General Public
LF • Linear Ft.	2 • Moderate	LF • Linear Ft.	A • Amosite	N • No	2 • Moderate	OW • Office Worker
EA • Each	3 • Good	EA • Each	T • Tremolite		3 • Low	JA • Janitor
			AC • Actinolite			CO • Contractor
			CR • Crocidolite			AI • All

APPENDIX 5
BULK SAMPLE DATA SHEETS

BULK SAMPLE DATA SUMMARY AND CHAIN OF CUSTODY RECORD

Alpha Engineering Group, Inc.



Date: 5/17/93

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17383011

305 792

Surveyor(s): R. Rayburn

Building Name/Number: 47

Facility Usage: Recreation

G. Stensland

Sample No.	HMG #	Material Description	Sample Location	Asbestos Detected	
				Yes	No
001 ✓	22.1	Wht. & Tan Linoleum	Rm 1	30% C	
002 ✓	24.1	Plaster	Rm 302	0	✓
003 ✓	25.1	2' x 4' Lay-in CT	Rm 108	7% C	
004 ✓	9.1	≤ 6" Block P.I.	Rm 31	30% A 5% C	
005 ✓	10.1	HMF A/W ≤ 6" Block PI	Rm 31	25% A 10% C	
006 ✓	22.1	Wht. & Tan Linoleum	Rm 1	30% C	
007 ✓	24.1	Plaster	Rm 28	0	✓
008 ✓	25.1	2' x 4' Lay-in CT	Rm 108	7% C	
009 ✓	9.1	≤ 6" Block PI	Rm 28	18% A 5% C	
010 ✓	10.1	HMF A/W ≤ 6" Block PI	Rm 16	25% C	
011 ✓	20.1	12" Beige VFT	Rm 19	2% C	
	21.1	Mastic	Rm 19	25% C	

LEGEND

- Yes C = Chrysotile
 A = Amosite
 T = Tremolite
 AC = Actinolite
 CR = Crocidolite
 AN = Anthophyllite
- No X = None Detected

CHAIN OF CUSTODY RECORD

Turnaround Rush 3 day
 24 hr ✓ 5 day

PLM Analysis
 Fax Results
 Dispose of Samples After 6 Months

Relinquished by: R. Rayburn 5/20/93 8:00 Received by: R. Rayburn 5/20/93 8:00

Relinquished by: R. Rayburn 5/27/93 12:00 Received by: R. Rayburn 5/27/93 9:30

Relinquished by: _____ Received by: _____

BULK SAMPLE DATA SUMMARY AND CHAIN OF CUSTODY RECORD

Alpha Engineering Group, Inc.

Date: 5/17/93

305792

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17383011

Surveyor(s): R. Rayburn
G. Stensland

Building Name/Number: 47

Facility Usage: Recreation

Sample No.	HMG #	Material Description	Sample Location	Asbestos Detected	
				Yes	No
012 ✓	33.1	Cove Base Mastic	Rm 20	0	✓
013 ✓	17.1	Tarpaper PI	Rm 3	0	✓
014 ✓	23.1	Dry wall	Rm 108	0	✓
015 ✓	47.1	Window Putty	Rm 108	1% C 5% C	
016 ✓	47.1	Spray on matl	Rm 117		
017 ✓	26.1	12" Spline GT	Rm 24	0	✓
018 ✓	20.1	12" Beige VFT	Rm 16	3% C	
	21.1	Mastic	Rm 16	25% C	
019 ✓	33.1	Cove Base Mastic	Rm 102A	0	✓
020 ✓	17.1	Tarpaper PI	Rm 3	0	✓
021 ✓	23.1	Dry wall	Rm 3 - Raquet Hall stairwell	0	✓
022 ✓	47.1	Window Putty	Rm 108	0	✓

Reanalyzed 8/17/93 see lab test report
Reanalyzed 7/13/93 see lab test report

LEGEND

- Yes C = Chrysotile
 A = Amosite
 T = Tremolite
 AC = Actinolite
 CR = Crocidolite
 AN = Anthophyllite
- No X = None Detected

CHAIN OF CUSTODY RECORD

Turnaround Rush 3 day
 24 hr ✓ 5 day

PLM Analysis
 Fax Results
 Dispose of Samples After 6 Months

Relinquished by: <u>R. Rayburn</u> <u>5/20/93</u> <u>0800</u> <small>Name Date Time</small>	Received by: <u>G. Stensland</u> <u>5/20/93</u> <u>0800</u> <small>Name Date Time</small>
Relinquished by: <u>G. Stensland</u> <u>5/27/93</u> <u>1200</u> <small>Name Date Time</small>	Received by: <u>See City of Seattle</u> <u>5/28/93</u> <u>0830</u> <small>Name Date Time</small>
Relinquished by: _____ <small>Name Date Time</small>	Received by: _____ <small>Name Date Time</small>

BULK SAMPLE DATA SUMMARY AND CHAIN OF CUSTODY RECORD

Alpha Engineering Group, Inc. 

Date: 5/17/93

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17383011

305792

Surveyor(s): R. Rayburn
G. Stensland

Building Name/Number: 47

Facility Usage: Recreation

Sample No.	HMG #	Material Description	Sample Location	Asbestos Detected	
				Yes	No
023 ✓	26.1	12" spline CT	Rm 24	0	✓
024 ✓	26.1	12" Spline CT	Rm 24	0	✓
025 ✓	25.2	2'x4' Lay-in CT (smooth)	Rm 17	0	✓
026 ✓	21.2	Black Mastic/Tar	Rm 111	0	✓
027 ✓	20.5	12" BRN VFT	Rm 28	10%OC	
	21.5	Mastic	Rm 28	0	✓
028 ✓	9.2	6"-10" Block PI	Rm 30	20%OC 10%OC	
029 ✓	10.2	HMF A/W 6"-10" Block PI	Rm 28	27%A 18%OC	
030 ✓	15.1	HMF A/W ≤ 6" Fhgl. PI	Rm 16 - Inside wall	0	✓
031 ✓	11.1	≤ 6" Corr. PI	Rm 3	40%OC	
032 ✓	12.1	HMF A/W ≤ 6" Corr. PI	Rm 16 - Above ceiling (crawl space)	1%A 20%OC	
033 ✓	25.2	2'x4' Lay-in CT (smooth)	Rm 112	0	✓

LEGEND

- Yes C = Chrysotile
 A = Amosite
 T = Tremolite
 AC = Actinolite
 CR = Crocidolite
 AN = Anthophyllite
- No X = None Detected

CHAIN OF CUSTODY RECORD

Turnaround Rush 3 day 5 day
 24 hr

PLM Analysis
 Fax Results
 Dispose of Samples After 6 Months

Relinquished by: R. Rayburn 5/20/93 0800 Received by: R. Stensland 5/20/93 0800

Relinquished by: R. Stensland 5/20/93 1200 Received by: R. C. Rayburn 5/20/93 9:30

Relinquished by: _____ Received by: _____

**BULK SAMPLE DATA SUMMARY
AND CHAIN OF CUSTODY RECORD**

Alpha Engineering Group, Inc. 

Date: 5/17/93

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17383011

305792

Surveyor(s): R. Rayburn
G. Stensland

Building Name/Number: 47

Facility Usage: Recreation

Sample No.	HMG #	Material Description	Sample Location	Asbestos Detected	
				Yes	No
034 ✓	21.2	Black Mastic/Tar	Rm 111A	0	✓
035 ✓	20.5	12" Brn. VFT	Rm 111	25% C	
	21.5	Mastic	Rm 111	15% C	
036 ✓	9.2	6"-10" Block PI	Rm 30	15% C 5% CR	
037 ✓	10.2	HMF A/W 6"-10" Block PI	Rm 30	20% C	
038 ✓	15.1	HMF A/W ≤ 6" Fbgl. PI	Rm 16 - Above ceiling (crawl space)	0	✓
039 ✓	11.1	≤ 6" Corr. PI	CRAWL SPACE ABOVE RM 20	0	✓
040 ✓	12.1	HMF A/W ≤ 6" Corr. PI	" " " "	15% C	
041 ✓	46.1	Debris	CRAWL SPACE: I (BASEMENT)	35% A 20% C	
042 ✓	22.3	Red Linoleum	Rm 129	0	✓
043 ✓	1.1	Spray-on Surf. Mat.	Rm 102	10% C	
044 ✓	20.3	9" Red FT	Rm 122	12% C	

LEGEND

- Yes C = Chrysotile
 A = Amosite
 T = Tremolite
 AC = Actinolite
 CR = Crocidolite
 AN = Anthophyllite
- No X = None Detected

CHAIN OF CUSTODY RECORD

Turnaround Rush 3 day
 24 hr ✓ 5 day

PLM Analysis
 Fax Results
 Dispose of Samples After 6 Months

Relinquished by: R. Rayburn 5/20/93 0800 Received by: R. Rayburn 5/20/93 0800
 Relinquished by: G. Stensland 5/27/93 1200 Received by: R. Rayburn 5/28/93 9:30
 Relinquished by: _____ Received by: _____

BULK SAMPLE DATA SUMMARY AND CHAIN OF CUSTODY RECORD

Alpha Engineering Group, Inc. 

Date: 5/17/93

300793

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17383011

Surveyor(s): P. Rayburn
G. Stensland

Building Name/Number: 47

Facility Usage: Recreation

Sample No.	HMG #	Material Description	Sample Location	Asbestos Detected	
				Yes	No
	21.3	Mastic	Rm 122	25% C	
045 ✓	22.2	Gray-Red Linoleum	Rm D	0	✓
046 ✓	20.4	9" Green FT	Rm 111	5% C	
	21.4	Mastic	Rm 111	0	✓
047 ✓	46.1	Debris	Rm 203	20% A	
048 ✓	22.3	Red Linoleum	Rm 109	0	✓
049 ✓	1.1	Spray-on Surf. Mat.	Rm 117	3% C	
050 ✓	20.3	9" Red FT	Rm 125	5% C	
	21.3	Mastic	Rm 125	3% C	
051 ✓	22.2	Gray-Red Linoleum	Rm 102A	0	✓
052 ✓	20.4	9" Green FT	Rm 111	5% C	
	21.4	Mastic	Rm 111	0	✓

LEGEND

- Yes C = Chrysotile
 A = Amosite
 T = Tremolite
 AC = Actinolite
 CR = Crocidolite
 AN = Anthophyllite
- No X = None Detected

CHAIN OF CUSTODY RECORD

Turnaround Rush 3 day
 24 hr 5 day

PLM Analysis
 Fax Results
 Dispose of Samples After 6 Months

Relinquished by: P. Rayburn 5/20/93 0800
 Name Date Time

Relinquished by: G. Stensland 5/27/93 1200
 Name Date Time

Relinquished by: _____
 Name Date Time

Received by: G. Stensland 5/20/93 0800
 Name Date Time

Received by: Paul Rayburn 5/27/93 9:30
 Name Date Time

Received by: _____
 Name Date Time

BULK SAMPLE DATA SUMMARY AND CHAIN OF CUSTODY RECORD

Alpha Engineering Group, Inc. 
305 793

Date: 5/17/93

Project Name: **NSPS, Seattle
Comprehensive Asbestos Survey**

Project No: 17383011

Surveyor(s): R. Rayburn

Building Name/Number: 47

Facility Usage: Recreation

G. Stensland

Sample No.	HMG #	Material Description	Sample Location	Asbestos Detected	
				Yes	No
053 ✓	55.1	Red Stage Curtain	Rm 100	0	✓
054 ✓	55.2	Blue Stage Curtain	Rm 100	0	✓
055 ✓	20.2	12" Dk. Beige FT	Rm 201	2% C	
	21.2	Mastic	Rm 201	0	✓
056 ✓	20.6	9" Gray FT	Rm 302	2% C	
	21.6	Mastic	Rm 302	5% C	
057 ✓	34.1	Vibration Joint Cloth	Room 203	0	✓
058 ✓	38.1	Rolled Roofing	ROOF	0	✓
059 ✓	39.1	Asphalt/Gravel Over Rolled Roofing	ROOF	0	✓
060 ✓	41.1	Weatherproofing Sealant	ROOF	20% C	
061 ✓	29.1	GAB	ROOF	20% C	
062 ✓	55.1	Red Stage Curtain	Rm 100	0	✓

LEGEND

- Yes
- C = Chrysotile
 - A = Amosite
 - T = Tremolite
 - AC = Actinolite
 - CR = Crocidolite
 - AN = Anthophyllite
- No
- X = None Detected

CHAIN OF CUSTODY RECORD

Turnaround Rush 3 day
 24 hr 5 day PLM Analysis
 Fax Results
 Dispose of Samples After 6 Months

Relinquished by: R. Rayburn 5/20/93 0800 Received by: R. Stensland 5/20/93 0800
Name Date Time Name Date Time

Relinquished by: R. Stensland 5/20/93 1200 Received by: R. Stensland 5/20 9:30
Name Date Time Name Date Time

Relinquished by: _____ Received by: _____
Name Date Time Name Date Time

BULK SAMPLE DATA SUMMARY AND CHAIN OF CUSTODY RECORD

Alpha Engineering Group, Inc.

Date: 5/17/93

305793

Project Name: **NSPS, Seattle**
Comprehensive Asbestos Survey

Project No: 17383011

Surveyor(s): R. Rayburn
G. Stensland

Building Name/Number: 47

Facility Usage: Recreation

Sample No.	HMG #	Material Description	Sample Location	Asbestos Detected	
				Yes	No
063 ✓	55.2	Blue Stage Curtain	Rm 100	0	✓
064 ✓	20.2	12" DK. Beige FT	Rm 202	2% C	
	21.2	Mastic	Rm 202	0	✓
065 ✓	20.6	9" Gray FT	Rm 302	12% C	
	21.6	Mastic	Rm 302	10% C	
066 ✓	34.1	Vibration Joint Cloth	Rm 302E	0	✓
067 ✓	39.1	Rolled Roofing	ROOF	2% C	
068 ✓	39.1	Asphalt/Gravel Over Rolled Roofing	ROOF	5% C	
069 ✓	41.1	Weatherproofing Sealant	ROOF	0	✓
070 ✓	29.1	CAB	ROOF	20% C	
071 ✓	24.1	Plaster	Rm 302	0	✓
072 ✓	23.1	Dry wall	Rm 102	0	✓

LEGEND

- Yes C = Chrysotile
 A = Amosite
 T = Tremolite
 AC = Actinolite
 CR = Crocidolite
 AN = Anthophyllite
- No X = None Detected

CHAIN OF CUSTODY RECORD

Turnaround Rush 3 day
 24 hr 5 day

PLM Analysis
 Fax Results
 Dispose of Samples After 6 Months

<p>Relinquished by: <u>R. Rayburn</u> <u>5/29/93</u> <u>0800</u></p> <p>Relinquished by: <u>G. Stensland</u> <u>5/27/93</u> <u>1200</u></p> <p>Relinquished by: _____</p>	<p>Received by: <u>G. Stensland</u> <u>5/29/93</u> <u>0800</u></p> <p>Received by: <u>R. Rayburn</u> <u>5/28/93</u> <u>9:32</u></p> <p>Received by: _____</p>
<p>Name _____ Date _____ Time _____</p>	<p>Name _____ Date _____ Time _____</p>

BULK SAMPLE DATA SUMMARY AND CHAIN OF CUSTODY RECORD

Alpha Engineering Group, Inc. 
305783

Date: 5/17/93

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17383011

Surveyor(s): R. Rayburn
G. Stensland

Building Name/Number: 47

Facility Usage: Recreation

Sample No.	HMG #	Material Description	Sample Location	Asbestos Detected	
				Yes	No
073 ✓	20.1	12" Beige VFT	Rm 19	2% C	
	21.1	Mastic	Rm 19	10% C	
074 ✓	33.1	Cove Base Mastic	Rm 102A	0	✓
075 ✓	47.1	Window Putty	Rm 108	2% C	
076 ✓	25.2	2'x4' Lay-in CT (smooth)	Rm 17	0	✓
077 ✓	8.1	TANK INSULATION	Rm 30	50% A	
078 ✓	8.1	TANK INSULATION	Rm 30	40% C	
079 ✓	55.6	STUCCO	EXTERIOR - EAST	0	✓
080 ✓	55.6	STUCCO	EXTERIOR - EAST	0	✓
081 ✓	44.2	FIRE DOOR	Rm 31	0	✓
082 ✓	44.2	FIRE DOOR	Rm 31	0	✓

LEGEND

CHAIN OF CUSTODY RECORD

- Yes
- C = Chrysotile
 - A = Amosite
 - T = Tremolite
 - AC = Actinolite
 - CR = Crocidolite
 - AN = Anthophyllite
- No
- X = None Detected

Turnaround 24 hr 5 day 3 day Rush

PLM Analysis
 Fax Results
 Dispose of Samples After 6 Months

Relinquished by: R. Rayburn 5/29/93 0800 Received by: G. Stensland 5/29/93 0800

Relinquished by: G. Stensland 5/27/93 1200 Received by: Tom C. Rayburn 5/28/93 9:50

Relinquished by: _____ Date _____ Time _____ Received by: _____ Date _____ Time _____

**BULK SAMPLE DATA SUMMARY
AND CHAIN OF CUSTODY RECORD**

Alpha Engineering Group, Inc.



Date: 5/18/93

305793

Project Name: **NSPS, Seattle
Comprehensive Asbestos Survey**

Project No: 17383011

Surveyor(s): R. Rayburn

Building Name/Number: 47

Facility Usage: Recreation

G. Stensland

Sample No.	HMG #	Material Description	Sample Location	Asbestos Detected	
				Yes	No
083 ✓	55.4	Carpet pad	Crawl space L	15% C	
084 ✓	55.4	Carpet pad	Crawl space L	15% C	
085 ✓	55.5	Gasket, on box	Room 302E	85% C	
086 ✓	55.5	Gasket, on box	Room 302E	85% C	
087	25.3	2'x4' LAY IN CT	Room 108 - Library		✓
088	25.3	2'x4' LAY IN CT	Room 108 - Library	4% C	
089	25.3	2'x4' LAY IN CT	Room 108 - Library	5% C	
090	25.4	5'x4' LAY IN CT	Room 14		✓
091	25.4	2'x4' LAY IN CT	Room 14		✓
092	42.1	TAR PATCH ONLY	Roof	10% C	
093	42.1	TAR PATCH ONLY	Roof	15% C	
094	37.1	ASPHALT & GRAVEL OVER ROCKS	Roof		✓

LEGEND

CHAIN OF CUSTODY RECORD

Page 9 of 11

Yes C = Chrysotile
A = Amosite
T = Tremolite
AC = Actinolite
CR = Crocidolite
AN = Anthophyllite

Turnaround Rush 3 day
 24 hr ✓ 5 day

PLM Analysis
Fax Results
Dispose of Samples After 6 Months

Relinquished by: R. Rayburn 5/20/93 0800 Received by: R. Wood 5/20/93 0800
Name Date Time Name Date Time
Relinquished by: G. Stensland 5/27/93 1200 Received by: Chris Chapman 5/28/93 9:20
Name Date Time Name Date Time
Relinquished by: _____ Received by: _____
Name Date Time Name Date Time

No X = None Detected

BULK SAMPLE DATA SUMMARY AND CHAIN OF CUSTODY RECORD

Alpha Engineering Group, Inc.



Date: 8/10/93

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

306807

Project No: 17383011

Surveyor(s): R. Rayburn
G. Stensland

Building Name/Number: 47

Facility Usage: Recreation

Sample No.	PLM (%)	Material Description	Sample Location	Asbestos Found
087	25.3	2' x 4' Lay-in CT	Library side of Rm. 108	
088	25.3	2' x 4' Lay-in CT	Library side of Rm. 108	
089	25.3	2' x 4' Lay-in CT	Library side of Rm. 108	
090	25.4	2' x 4' Lay-in CT	Rm. 14	
091	25.4	2' x 4' Lay-in CT	Rm. 14	
092	42.1	Tar Patch only	Roof	
093	42.1	Tar Patch only	Roof	
094	39.1	Asphalt + Gravel over rolled roof	Roof	

LEGEND

- C = Chrysotile
- A = Amosite
- T = Tremolite
- AC = Actinolite
- CR = Crocidolite
- AN = Anthophyllite
- X = None Detected

CHAIN OF CUSTODY RECORD

Turnaround: 24 hr 3 day 5 day

PLM Analysis
Fax Results
Dispose of Samples After 6 Months

Relinquished by: [Signature] 8/10/93 1200
 Name Date Time
 Relinquished by: _____
 Name Date Time
 Relinquished by: _____
 Name Date Time

Received by: [Signature] 8/12/93 9:00
 Name Date Time
 Received by: _____
 Name Date Time
 Received by: _____
 Name Date Time

BULK SAMPLE DATA SUMMARY AND CHAIN OF CUSTODY RECORD

Alpha Engineering Group, Inc. 

Date: 8/16/93

Project Name: NSPS, Seattle
Comprehensive Asbestos Survey

Project No: 17383011

Surveyor(s): R. RAYBURN

Building Name/Number: 47

Facility Usage: RECREATOR

6 STEAKS LAND

Sample No.	HMG #	Material Description	Sample Location	Asbestos Detected	
				Yes	No
095	20.7	12" BLACK VET	Rm 25	10% G	
	21.7	MASTIC	Rm 25		✓
096	20.7	12" BLACK VET	Rm 25	12% G	
	21.7	MASTIC	Rm 25		✓

LEGEND

- Yes C = Chrysotile
 A = Amosite
 T = Tremolite
 AC = Actinolite
 CR = Crocidolite
 AN = Anthophyllite
- No X = None Detected

CHAIN OF CUSTODY RECORD

Turnaround _____ Rush K 3 day
 _____ 24 hr _____ 5 day

PLM Analysis
 Fax Results
 Dispose of Samples After 6 Months

Relinquished by:
 Relinquished by:
 Relinquished by:

Name	Date	Time
Name	Date	Time
Name	Date	Time

Received by:
 Received by:
 Received by:

Name	Date	Time
Name	Date	Time
Name	Date	Time