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ASBESTOS MANAGEMENT PLAN

PREPARED FOR

BOURNE HIGH SCHOOL
75 WATERHOUSE ROAD
BOURNE, MA 02532

BOURNE PUBLIC SCHOOL SYSTEM

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Date: October 29, 1988

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Certification: Commonwealth of Massachusetts Certification as Inspector (I-00055) and Management Planner (MP-00098).

This management plan meets the requirements of the EPA "Asbestos Containing Materials in Schools" Rule, 40 CFR 763, as specified in the Asbestos Hazard Emergency Response Act (AHERA).

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BOURNE HIGH SCHOOL
Bourne, MA 02532

SECTION 1 INSPECTION REPORT

This section provides a general description and overview of the school, its size, date of construction and/or modification, location, and student inspection/management plan detailing those locations where asbestos-containing building materials (ACBM) or suspect ACBM were identified by the inspector, as well as the friability, physical condition, potential for damage or disturbance of the ACBM.

1(A) GENERAL BUILDING DESCRIPTION

Bourne High School is a two story structure, with a partial basement level. The building has three classroom wings off the main corridor, identified as A, B, and C. The school has a conventional foundation, and has external brick face over an air space and concrete block. The interior classroom walls are concrete block. Ceilings in the classrooms are typically twelve-inch perforated cellulose or mineral wool tile under cement. Hallways and common areas have similar materials of construction.

The original building was constructed in 1959 with the A & B wings. The C wing was added in 1960. There is currently a project underway to expand the High School from its current capacity of 623 students to 800 students. The High School contains a total of 36 classroom areas, library, gymnasium, and cafeteria on the first and second floors. The basement level contains the boiler room, maintenance, wood shop and the band room.

There are two boiler rooms in the High School. Heat is provided to the original building by two H.B. Smith # 60 Model 1950 watertube boilers. The C Wing is served by an H.B. Smith # 450 Mills Watertube boiler. All three operate on #6 heating fuel oil, and provide hot water in a continuous closed loop system. Individual fin and tube radiators are located in each classroom. The heating plant also provides domestic hot water. In the main boiler room, one boiler serves as the primary heating plant, while the second unit provides supplemental heat for peak loads and serves as an auxiliary unit. The addition to the school includes a phased-in replacement of the three existing boilers with the removal of the asbestos containing building material present. Supply lines for the heating system travel through an underground pipe tunnel which connects both boiler rooms.

There are approximately 83,300 square feet of useable floor space in the High School, with an additional 2600 square feet in the boiler room, and 6800 square feet in the pipe tunnel. A layout of the school building is shown as Figure D-1. The principal locations of asbestos in the High School is shown as Figure D-2, and the locations of the samples collected during the inspection is shown as Figure D-3.

Following the formal start of the inspection program for the Bourne Schools, an opening meeting was held with Mr. Robert Watmouth, Business Administrator for the Bourne Public Schools. Before the inspection at the High School, I met with Mrs. Bond, the secretary, who provided information on the size and history of the school. Since the inspection was performed during the summer, the principal Mr. Grondin, was not available for an interview. I met with several members of the Custodial staff. A tour of the building was conducted by Richard Wentzel, the Head Custodian. During the course of the inspection, several members of the Custodial staff were interviewed. Information on the known locations of ACBM, and any previous or planned abatement projects was obtained.

1(B) SUMMARY OF INSPECTION REPORT

A comprehensive inspection of Bourne High School was performed on August 10 and 11, 1988 by Scott D. Herzog, CIH. Mr. Herzog is certified as an Asbestos Inspector by the Commonwealth of Massachusetts Department of Labor and Industries, and has met all the requirements for Inspector under the Asbestos-Containing Materials in Schools Rule (40 CFR 763), promulgated by the Environmental Protection Agency to comply with the requirements of The Asbestos Hazard Emergency Response Act (AHERA). Mr. Herzog attended and successfully completed a course for Inspector and Management Planner at Tufts University in January, 1988. Tufts University is recognized as one of five regional facilities which are included in the Asbestos Information Center. Mr. Herzog's Massachusettes Inspector certification is I-00055, and his Management Planner certification is MP-00098. A copy of the license and certificate from Tufts University, as well as a statement of qualifications is appended to this inspection/management plan.

The inspection report was reviewed, with special attention to physical damage, friability, potential for disturbance, and location of asbestos-containing building materials. The findings of the inspection are detailed by homogeneous area and functional space (room, hallway, etc.) in Section 5. Section 1 summarizes the principal findings of the inspection, for purposes of the management plan. Thermal system insulation ACBM as boiler surfacing and pipe insulation, and Miscellaneous Material ACBM as vinyl floor tile, vibration isolators, and Transite vent pipes were noted. There was no surfacing material ACBM observed in Bourne High School.

A. Thermal System Insulation

A(1) Boiler Room- Heat is provided in Bourne High School by continuous closed-loop hot water system to individual fin and tube radiators in classrooms, and to unit ventilators serving the larger areas. There are two boiler rooms for the High School. The main boiler serves the original building while a smaller boiler room serves the C Wing addition. Boilers are equipped with Ray oil burners, and use # 4 heating fuel oil. The main boiler room

was designed to operate on coal. One furnace in the main boiler room serves as the primary heating plant, while the second unit provides supplemental heat for peak loads and serves as an auxiliary unit. Oil is provided by an underground storage tank.

Main Boiler Room: The two boilers are H.B. Smith # 60 Watertube Model 1950 low-pressure steam boilers. The insulated portion of the firebox is 9 feet length by 4.5 feet height by 8 feet width, with a 2 inch board and underlying block type covering. Boiler # 1 was significantly damaged on the left and right rear sides where the covering is delaminated and patched, and significantly damaged on the rear of the boiler where open friable ACBM is exposed. The cloth covering is severely damaged. Debris was noted on the right side floor. The # 2 boiler was significantly damaged on the right side middle and rear due to condensation dmage from steam leaks. There was significant damage to the rear around the clean out door. There was 380 square feet of ACBM on the boiler. A sample from the rear side of # 1 boiler was 60% chrysotile and 30% amosite asbestos. A sample of the cement at the top rear of the boiler was 90% chrysotile asbestos.

The transitions were 16 inches diameter and were cloth-covered and in generally good condition, with no damage. Each boiler had a Wing # 17908 induced draft fan. The fans were not insulated.

The breeching from each boiler was 28 inches square, and expanded to 36 by 42 inches, and was 13 feet in length to the wall. The breeching is significantly damaged. The surface is cloth covered. The board under the cloth is broken, and crumbled in many areas. It is delaminating from the housing by # 2 fan. There is 170 square feet of ACBM on the breeching. A sample of the insulation on the breeching where the cloth is torn was 50% chrysotile asbestos and 20% amosite asbestos.

The hot water tank is 6.7 feet diameter by 12 feet length. The surface is cloth-covered and in generally good condition with one small damaged area on the right end, with numerous scuffs and marks all over the surface. There are 250 square feet of ACBM on the tank.

Small Boiler Room: The smaller boiler room has one H.B. Smith # 450 Mills watertube boiler with a Ray oil/gas combination burner. The insulated firebox portion of the boiler was 6 feet length by 4.3 feet height by 5.5 feet width. The boiler was cloth-covered and encapsulated, in excellent condition. The only area to be addressed was where the cloth was open at the bottom left underside of the boiler. There is 107 square feet of ACBM on the boiler. The transition and breeching were similarly cloth-covered and encapsulated. Both were in excellent condition with no damage and no noted debris. There is 76 square feet of ACBM on these two areas.

A(2) Boiler Room- Piping- The two boilers in the main boiler room feed to a main header. There are two zone valves with hot water circulating pumps marked A & B Wings, and three smaller pumps marked gymnasium, cafeteria, and Superintendents Office. Each boiler has one main feed to the hot water header. There are individual taps off the header to the hot water storage tank, and from the tank to the individual zones. All hot water circulating and return lines in both boiler rooms are fiberglass insulated with mud cementitious ACBM fittings. There are approximately 80-100 fittings on 1 to 3 inch lines in the main boiler room and 60-80 fittings in the smaller boiler room. All fittings were in very good condition, with no damage.

A(3) Pipe Tunnel- All supply and return lines travel through a pipe tunnel which passes under the school. There are risers from the tunnel to individual radiators in the classrooms. A drawing of the pipe tunnel is shown as Figure D-4. The tunnel covers the major portion of the school through the A, B, C Wings and connects the old and new boiler rooms and fan room. All pipe insulation in the tunnel is fiberglass insulated with mud cementitious ACBM fittings. There are approximately 200-300 fittings, of which just 3-4 were damaged and friable. The balance were cloth-covered and in very good condition. Two representative samples were taken from the damaged fittings at the elbow by valve 62 left side, and the elbow by valve 86 left side. Both contained 20% chrysotile and 20-30% amosite asbestos. The tunnel is approximately 625 feet in length. Portions are extensively used for storage of custodial and cleaning supplies. Custodial staff spend time bringing supplies in and out of the area.

A(4) Gymnasium- A portion of the heating is by forced air louvers around the periphery of the gym. Radiators run along the top of the wall below the windows. Lines are fiberglass insulated with 17 ACBM fittings. Those fittings by the top of the bleachers were damaged and had a high disturbance.

A(5) Locker Rooms- The locker rooms contained wall-mounted radiators which were fiberglass insulated with ACBM fittings. Water lines were also fiberglass insulated with ACBM fittings. Valves were behind a rigid wall. Several fittings (approximately 10% of total) in the girls locker room above a drop ceiling were damaged and friable. The fiberglass insulation in the boys locker room was also physically damaged, with a high potential for disturbance to the fittings. It is estimated that there are 50-60 fittings in these two areas.

A(6) Basement Level Storage (opposite Custodian room)- The room has one AAF Dust Collector which is fiberglass insulated with 12 ACBM fittings in excellent condition, with no damage or debris noted.

A(7) Mens Room (by office)- Pipe insulation was fiberglass. There

were approximately 20 ACBM fittings, of which six were damaged, and two were slightly damaged. All piping was at ceiling height (7 feet) and had a high potential for disturbance.

A(8) A Wing Classrooms (including Library)- All heating supply lines were insulated with fiberglass, and several had ACBM fittings. Risers for first floor classrooms come directly from the tunnel. The lines are fiberglass insulated with no fittings. The second floor rooms have risers behind concrete block walls. These could not be examined, but are assumed to be fiberglass with ACBM fittings. One line in Mr. Benoits' office had two fittings, one of which was damaged. One line to a radiator in the Health office had an ACBM fitting. Several of the Science rooms had sinks. Water supply lines were not insulated.

A(9) B Wing Classrooms (including Art Room and Home Economics)- All heating supply lines were insulated with fiberglass, and several had ACBM fittings. Room 13B had two damaged fittings above the tile near the radiator. Risers on the first floor come directly from the tunnel. Again, the second floor risers are behind concrete block walls and could not be examined. The janitor closet on the second floor had two water supply lines on the floor. The lines are fiberglass with five ACBM fittings. The door hits against one of the fittings, causing damage and debris on the floor.

A(10) C Wing Classrooms (including Mechanical Drawing)- All heating supply lines on the first floor come directly from the tunnel. Rooms on the second floor have risers behind concrete block walls and could not be examined. There was no visible ACBM in this wing, however lines behind the walls are likely to have ACBM fittings as noted elsewhere.

A(11) Basement (except Boiler Room) Water and heat supply lines for the ground floor level janitors room, the slop sink, and the janitors closet are all fiberglass insulated with a total of 19 ACBM fittings, all of which were in excellent condition. The wood shop had a number of small diameter hot water lines to the radiators. All were fiberglass insulated, with a total of 27 ACBM fittings. Two lines from the wood shop continue through to the finish room. 4 ACBM fittings are on the two fiberglass insulated lines. The music room has several lines which run below or slightly above a drop ceiling. The lines are lagged with fiberglass and have 20 ACBM fittings. One fitting by the piano is starting to show signs of degradation. All others are in good condition.

B. Miscellaneous Materials ACBM

B(1) Vinyl asbestos floor tile- The majority of the classroom areas and many of the offices had nine inch striated floor tile as floor covering. The condition of the tile varied from excellent to slightly damaged. All of the floor tile was

considered to be homogeneous (uniform) in appearance. The table below describes the condition of the tile in each room, and the locations of the most significantly damaged tile. Samples of floor tile were collected from three areas determined to be representative of the tile in the school. All three samples contained 20-25% chrysotile asbestos.

Location	Condition
Phys. Educ. Office	Bath area tile in good condition. No damage
Main Office	Slight/Moderate Wear/ No Damage
Mr. Grondin	Slight Wear/Slight Water Damage by AC.
Audio	Good Condition/ No Damage
Library	Moderate Wear/ Damage by bookshelves
C/R 13A	No Damage/ Low Wear
C/R 15A	Good Condition/ 1 Tile Missing
C/R 14A	Low to Moderate Wear/ No Damage
C/R 12A	Same as above
C/R 10A	Same as above
Health	Slight Wear/ Water Damage by Window
Men,Faculty	No Wear/ No Damage
Women, Faculty	No Wear/ No Damage
Homemaking	Low Wear/ No Damage
C/R 13B	No Wear/ No Damage
C/R 11B	Low Wear/ 1 Broken Tile
C/R 10B	No Wear/ No Damage
C/R 12B	Low Wear/ No Damage
C/R 14B	Moderate Wear/ Slight Damage
Art Room	Moderate Wear/ 10 Broken Tiles/ 8-10 Damaged 40SF Front of Room/ 20 Damaged Hallway Side of Room.
C/R 15C	Moderate Wear/ No Damage
C/R 13C	Low Wear/ No Damage
C/R 11C	Same as Above
C/R 10C	Good Condition/ No Damage
C/R 12C	Moderate Wear/ Damage by Window and Storeroom between 12C and Mech. Dwg.
Mech. Drawing	Same as above/ Damage by front of room.
Publications	Low Wear/ No Damage
Chemistry	Good Condition/ No Damage
COM (Work Area)	Same as above
Physics	Moderate Wear/ No Damage
Biology	Slight Wear/ No Damage
Gen. Science	Low Wear/ No Damage
Storage	Good Condition/ No Damage
C/R 21A	Low Wear/ No Damage
C/R 23A	Low Wear/ 4-5 Damaged Tiles by Radiator
C/R 25A	Low Wear/ No Damage
Women Faculty	Low Wear/ No Damage
Men Faculty	Low Wear/ 1 Broken Tile
C/R 23B	Low Wear/ No Damage
C/R 21B	Moderate Wear/ Slight Damage by red bookcase

C/R 20B	Low Wear/ No Damage
C/R 22B	Same as above
C/R 24B	Moderate Wear/ No Damage
C/R 26B	Moderate Wear/ No Damage
C/R 25C	Low Wear/ No Damage
C/R 23C	Same as above
C/R 21C	Under carpeting- Same as above
C/R 20C	Slight Wear/ No Damage
C/R 22C	Broken where Transite pipe comes through floor.
C/R 24C	Same as above
Research	Slight Wear/ No Damage
Gnd Level Janitor	Low Wear/ No Damage
McHugh Room	One damaged area
Keating Room	Significant Damage- One row of tiles pulling up and crumbling. Visible water damage
Office Alcove	1 Damaged Area/ 3-4 Broken Tiles

B(2) Transite Exhaust Ducts- Laboratory- Classrooms 22C and 24C have a total of 13 Transite exhaust ducts on laboratory benches. The ducts were 10 inch diameter and approximately 4 feet in length. The ducts were in good condition with no damage or friability, however it is right in the center of the bench area, where students are working. There is a total of 156 square feet of ACBM.

B(3) Vibration Isolators- Several of the HVAC units in the fan room, and unit ventilators have ACBM vibration isolators between sections of ductwork. The isolators are generally in good condition from the exterior. Air in the ductwork comes in contact with the inside surfaces which cannot be examined. Any cuts or tears in the cloth may release asbestos fibers directly to the airstream.

1. Weightlifting (Old Stage)- Two vibration isolators.
2. Music Room- One vibration isolator
3. Fan Room- Seven Trane fan units, each with 2 vibration isolators. A total of 56 square feet of ACBM.
4. Unit Ventilators (Main AMU for old furnace room)- Five vibration isolators, with a total of 54 square feet of ACBM.

B(4) Roof Drains- Several of the roof drains were fiberglass insulated with ACBM mud fittings. Roof drains were noted in the girls locker room, the physical education office, from the biology lab across to the greenhouse (3-4 fittings), the storage room by the second floor B Wing, a janitors closet by the teachers lounge (note: there was also a 3 linear foot section of ACBM lagging in good condition, and the music room. All roof drains were in good condition, with no visible damage.

B(5) Transite siding (laboratory hood). Transite side and rear panels in lab hoods are not included in the scope of AHERA, since they are not part of the structure of the building. Hence, they

are included for informational purposes only. The Research area between 22C and 24C has one laboratory hood with approximately 40 square feet of ACBM. The siding was in good condition, with no observed damage.

Except as noted above, no other ACBM or suspect ACBM was noted in the inspection phase of this survey.

The summary of damaged or significantly damaged ACBM in the High School, using the categories defined by the EPA is as follows:

Location	-----Significantly Damaged or Damaged------		
	Thermal System ACBM	Surfacing Material Friable ACBM	Miscellaneous Materials Friable ACBM
A(1)	550 SQ.FT.	-----	----
A(2)	----	-----	----
A(3)	----	-----	----
A(4)	6 FTNGS.	-----	----
A(5)	10 FTNGS.	-----	----
A(6)	----	-----	----
A(7)	12 FTNGS.	-----	----
A(8)	----	-----	----
A(9)	----	-----	----
A(10)	----	-----	----
A(11)	----	-----	----
B(1)	----	-----	800 SQ.FT.
B(2)	----	-----	----
B(3)	----	-----	----
B(4)	----	-----	----
B(5)	----	-----	----
TOTAL	550 SQ.FT. 28 FTNGS.	-----	800 SQ.FT.

A summary of all ACBM and suspect ACBM in the High School is as follows:

Location	Thermal System ACBM	Surfacing Material ACBM	Miscellaneous Material ACBM
A(1)	1007 SQ.FT.	----	----
A(2)	140-180 FTNGS.	----	----
A(3)	200-300 FTNGS.	----	----
A(4)	17 FTNGS.	----	----
A(5)	50-60 FTNGS.	----	----
A(6)	12 FTNGS.	----	----
A(7)	20 FTNGS.	----	----
A(8)	UNKNOWN FTNGS.	----	----
A(9)	UNKNOWN FTNGS.	----	----
A(10)	UNKNOWN FTNGS.	----	----
A(11)	70 FTNGS.	----	----
B(1)	----	----	43,000 SQ.FT.
B(2)	----	----	156 SQ.FT.
B(3)	----	----	110 SQ.FT.
B(4)	----	----	3 LF & 6 FTNGS
B(5)	----	----	40 SQ.FT.
TOTAL	1007 SQ.FT. & 660 FTNGS.	---- NONE	43,306 SQ.FT. 3 LF. 6 FTNGS.

1(C) SUMMARY OF PREVIOUS INSPECTIONS AND RESPONSE ACTIONS

1. An inspection of the High School by the Massachusetts Department of Labor and Industries was performed on May 18, 1983 by Bonnie Weeks, a Chemist with the Department. She found that no spray-on ACBM was present in the High School. She noted that asbestos pipe insulation had tears but specific locations were not identified. Several generic recommendations were offered, but no specific locations again were identified.

2. An inspection of all Bourne schools was performed by Dr. Charles Spooner in late 1982, by Bolt-Beranek & Newman (Dr. Spooner formed Hygeia, Inc. during the inspection process. Reports are filed under Hygeia name. The report for the High School was reviewed, and the following recommendations were noted: 1) the tunnel had ACM at the joints and fittings only, 2) the storeroom off the biology lab contains asbestos lagged roof drain pipes; 3) pipe lagging in the crawl space off the new boiler room area; 4) lagging in the old and new boilers were inspected and no damage was evident. A notice to school employees, dated December 22, 1983, stated that all pipe and boiler lagging was inspected and found to be in good condition, with no sign of deterioration.

3. On December 29, 1983, an audit of the asbestos program at the High School was performed by Dirk Van Gemeren, a contract representative for the EPA Office of Pesticides & Toxic Substances, Air Management

Repair: Returning damaged ACBM to an undamaged condition or intact state. This action is normally limited to localized damage.

Encapsulation: The treatment of ACBM with a material that surrounds or embeds the fibers in a matrix to prevent release. There are two types of encapsulants- penetrating, and bridging. Penetrating encapsulants bind the fibers together to form a hard mass less susceptible to damage or friability. Bridging encapsulants are applied to the outer surface, forming a hard shell on the surface, which reduces the potential for further damage. Both types may be applied by brush or through the use of an airless sprayer.

Enclosure: Construction of an essentially airtight, impermeable, permanent barrier around ACBM to control the release of fibers to the air. For example, a solid metal or plywood wall would classify as an enclosure, however carpeting over vinyl-asbestos floor tile, or lay-in acoustical tile over spray-on insulation would not classify as enclosures.

Operations & Maintenance: A program of training, work practices, and periodic surveillance designed to maintain the condition of friable ACBM and to prevent further release by minimizing and controlling friable ACBM disturbance or damage. The O & M program is described in detail in Section 6.

2(A) PROPOSED RESPONSE PLANS

A. Thermal System Insulation

A(1) Boiler Rooms- Surfacing Material- Significantly Damaged, Friable, High Disturbance- The boiler surfacing and breeching in the main boiler room are significantly damaged with friable ACBM exposed. Several of the surfaces are delaminating. There is a planned project to phase in replacement of the three boilers including removal of the ACBM. Response Action 1. Restrict access to the area. Clean debris on floor of boiler and breeching. Make emergency repairs to control release of friable asbestos. Covering on the # 2 boiler is beyond repair. Schedule removal of ACBM at the conclusion of the heating season or as soon as possible.

A(2) Boiler Rooms, Piping- No Damage, Moderate Disturbance. All pipe insulation is fiberglass, with mud cementitious ACBM fittings. The fittings are generally in very good condition with no damage or debris. Maintenance activities have the potential to cause disturbance. Response Action 6. Maintain under O&M. Repair damaged areas as they are observed. Take preventative measures to reduce future disturbance.

A(3) Pipe Tunnel- Slight Damage, Low Disturbance. All pipe insulation in the tunnel was fiberglass. Just 3-4 fittings were damaged. This area is not accessible to students. A portion of the tunnel is used for storage of cleaning and custodial supplies. Response Action 4. Repair the damaged fittings. Maintain under O&M. Reduce storage of supplies in areas where

disturbance of ACBM is likely.

A(4) Gymnasium- Damaged, Moderate Disturbance, Potential Significant Damage. Radiators run along top of wall below window. Fittings at the top of the bleachers were damaged, and susceptible to damage by students. Response Action 3. Remove the damaged fittings at the top of the bleachers. Repair all other damaged areas, and enclose them in rigid metal or wood enclosures. Maintain under O&M, and take preventative measures to reduce future disturbance.

A(5) Locker Rooms- Damaged, Moderate Disturbance. Heat and water lines above the drop ceiling had damaged fittings. Approximately 10% of fittings were damaged or significantly damaged. Response Action 4. Remove all damaged fittings and replace with non-ACBM. Repair other slightly damaged fittings. Maintain under O&M.

A(6) Basement Storage- No Damage, Low Disturbance. All lines are fiberglass with mud cement fittings. Fittings are in excellent condition with no damage. This area is not accessible to students. Response Action 8. Maintain under O&M under removal of ACBM is required under NESHAPS for renovation or demolition.

A(7) Mens Room- Damaged, High Disturbance, Potential Significant Damage. Pipe insulation is fiberglass with mud cement fittings. Six fiitngs are damaged, and two are exposed and friable. All fittings are at ceiling height, and are subject to disturbance from cleaning supplies. Response Action 3. Remove all fittings in bathroom when cost-effective. Continued exposure will further damage the fittings.

A(8) A Wing Clases- No Damage. Low Disturbance. Most classrooms had no visible fittings on piping. A few fittings were noted above drop spaces and behind false walls in the library and C/R 13A. Fittings were generally in good condition with no damage. Response Action 7. Maintain under O&M. Take preventative measures to reduce future disturbance.

A(9) B Wing Classes- No Damage, Low Disturbance. Most classrooms had no visible fittings on piping. Supply from second floor behind chase. Response Action 7. Maintain under O&M. Take preventative measures to reduce future disturbance.

A(10) C Wing Classes- No Damage, Low Disturbance. Sames comments as above. Response Action 7. Maintain under O&M. Take preventative measures to reuce future disturbance.

A(11) Basement Level- Slight Damage, Moderate Disturbance. The wood shop and music room are active student use areas. Piping is below ceiling level in the wood shop, and above drop ceiling in music. Pipes are insulated with fiberglass and mud cement fittings. Response Action 5. Repair damaged fittings by piano in usic room. Maintain areas under O&M. Schedule removal and

replacement of ACBM fittings when cost-effective.

B(1) Vinyl asbestos tile- Damaged, Moderate Disturbance, Potential Significant Damage. All nine-inch striated tile is assumed to be ACBM. Five areas were identified where the floor tile was either severely worn, or was damaged or significantly damaged. These areas were the library, art room, C/R 23A, C/R 22C, and Keating office. Response Action 4. Remove and replace damaged tiles. Implement O&M program to reduce further disturbance. Eliminate the use of abrasives for cleaning and buffing floors. Prevent drilling and cutting of floor tiles in the rooms. Place rubber feet or gliders on chairs and desks to reduce wear on the floor.

B(2) Transite Lab Exhaust Ducts- No Damage, Moderate Disturbance. The ducts are not damaged, however they are accessible to students in active work areas. Response Action 6. Maintain under O&M. Consideration should be given to removal and replacement of the ducts on a second priority, and when cost-effective.

B(3) Vibration Isolators- No Damage, High Disturbance. Vibration isolators are used in the air handling systems for the schools. The isolators visusily are not damaged. Air in the ductwork comes directly in contact with the isolators. Any cuts or tears in the surface could release asbestos fibers to the airstream. Response Action 5. Maintain under O&M. Monitor condition of isolators. Schedule removal and replacement of the isolators when they show significant degradation, or during shutdown when maintenance work is required on the HVAC unit.

B(4) Roof Drains- No Damage, Low Disturbance. Mud fittings, and one section of lagging are in good condition, and not subject to student disturbance. Response Action 8. Maintain under O&M, until removal is required under NESHAPS for major renovation or demolition.

B(5) Transite Laboratory Siding- No Damage, Low Disturbance. This hood is in a research lab not normally accessible to students. The siding should remain in good condition, unless subject to attack by strong acids. Since lab hoods are not part of the building structure, they are not included in the AHERA scope. Response Action 8. Maintain under O&M. If there is evidence of excessive wear or degradation, schedule removal and replacement with non ACBM.

SECTION 3 RESPONSE ACTIONS

The ranking utilizes the response actions developed by the management planner, and assigned to the ACBM described above, and prioritizes the order of corrective measures to be undertaken by the LEA. Where funding is not available to implement the entire program of recommended measures at one time, a prioritization of those actions is required. This ranking is a forced ordering, and should only be used as a guideline, not as an absolute ranking. Where response actions are the same for two or more items, they are ranked in relative importance, based on the potential for exposure, and the effort needed to implement controls.

The recommended response actions developed by the management planner, based on the assessment described above. The LEA has the final decision on the response actions and priorities to be undertaken. Table T-1 describes the relative advantages and disadvantages of each response action. Consideration should be given to the applicability of a particular response action for a particular building. In other words, no one response is correct for all buildings. Factors to be included in the decision are the current and future use of the affected school area, whether further damage could occur, and the availability of funding to implement one of the corrective actions.

3(A) PROPOSED RESPONSE ACTIONS

Ranking	Response	Location/Description of Action
1	1	Boiler Room (main)- Restrict area to authorized personnel, and control access by locking door to the boiler room. Clean up debris on floor by boiler and breeching. Repair friable areas of boiler and breeching surfacing to prevent further damage. Schedule removal of ACBM at the conclusion of the heating season or when scheduled for boiler replacement whichever comes first.

Note: Continued O&M in the boiler room and cleanup of debris on the floor will be required to prevent from tracking debris into actively used portions of the school.

2	2	Mens Room (Main Floor) Remove all fittings from lines and replace with non-ACBM on a priority basis.
3	3	Gymnasium- Remove and replace damaged fittings at the top of the bleachers. Repair any other damaged areas, and enclose ACBM fittings in wood or metal enclosures.

Ranking	Response	Location/Description of Action
4	4	Locker Rooms- Remove and replace damaged fittings above the drop ceiling in both locker rooms, and repair any damaged areas. Enclose risers up to six feet in wood or metal enclosures to prevent further disturbance.
5	4	Vinyl asbestos tile- Remove and replace sections of floor tile with excessive wear, with broken or damaged tiles, or with water damage. Implement O&M program to reduce future wear including a prohibition on the use of abrasive materials, and drilling and cutting.
6	4	Pipe tunnel- Repair three or four damaged fittings. Reduce storage of cleaning and custodial supplies in areas where there is ACBM. Maintain under O&M and periodically inspect the tunnel to determine the condition of pipe insulation.
7	5	Vibration Isolators- Remove and replace isolators when the HVAC systems may be shut down for other maintenance tasks, and when cost-effective to do so.
8	5	Basement (Ground Floor) Repair damaged fitting in music room. Maintain under O&M. Evaluate removal of all ACBM in shop and music areas on a second priority when cost-effective to do so.
9	6	Transite Lab Ducts- Remove ducts to floor level and replace with non-ACBM, or enclose with a metal outer cover. Monitor condition of ducts.
10	6	Boiler Room- Piping Maintain under O&M. Take preventative action to reduce future disturbance.
11	7	A,B,C Wings- Maintain under O&M program. Repair damaged fittings as soon as noted on the inspection reports.

No immediate corrective action is required for the remaining items. All should be maintained under O&M program, and action taken to prevent disturbance.

3(B) STAGING OF ABATEMENT ACTIONS

Several considerations must be evaluated when scheduling abatement activities. These factors include:

1) The potential for exposure to occupants of the building.
2) The desirability of completing the work during the summer months when school is not in session.
3) The desirability of completing the project prior to the start of the heating season, even if school is in session at the time.
4) The availability of fiunding to perform the work.
5) The availability of contractors to do this work.

The only major abatement project in the High School is removal of the ACBM from the boilers and breeching in the main boiler room. That project must be performed during the non-heating season. The size of the project requires that it be performed during the summer months.. Since removal is already planned as a part of the expansion project, emergency repair of the surface to reduce friability must be performed as soon as possible, with complete removal at the end of the heating season. All other work may be performed during all months of the year. Based on thse factors and the considerations above, the following schedule is recommended for these projects:

1. Boiler Room- Clean up debris, repair friable areas. Restrict access. 4Q, 1988
   - Remove ACBM from boilers and breeching 3Q, 1989
2. Mens Room- Remoave fittings and replace 2Q, 1989
3. Gymnasium- Remove damaged fittings. Repair/enclose balance. 3Q, 1989
4. Locker Rooms- Repair damaged fittings above drop ceilings. 2Q, 1989
5. VAT- Remove damaged tile and replace with non-ACBM. Implement O&M program. 3Q, 1989
6. Basement- Repair damaged fittings in shop and music room. Evaluate removal of all fittings in these areas. 4Q, 1989
7. Vibration Isolators- Remove and replace when other mechaniocal work is performed, and when cost-effective to do so. .....WHEN SCHEDULED
8. Transite lab ducts- Remove to floor level or enclose in an aluminum shroud. 2Q, 1990

SECTION 4 COST ESTIMATION AND CONTRACTOR SELECTION

This section describes the estimated costs of implementing the response action plans described above. These estimates are developed for budgeting purposes only, to evaluate the costs of different response actions. It may be considered on the order of an engineering estimate- that is +/- 25 percent. They do not constitute a firm bid

for the abatement work, or a proposal to perform the work for the estimated amount.

One of the most important decisions to be made by the LEA is the choice of an asbestos abatement contractor. An experienced, knowledgeable contractor can make an abatement action proceed smoothly. Conversely, a poor contractor could potentially cause greater release of asbestos fibers in the school through improper work practices. This section reviews some of the considerations which should be included in the selection of an abatement contractor.

The use of an engineering firm to serve as "project monitor" during the abatement is highly recommended. The monitor serves as the "eyes and ears" of the building owner before, during, and after the completion of an abatement response. The monitor provides quality assurance services including the collection of air samples and visual inspections. Ais sampling might include the collection of pre-abatement samples to establish a background concentration, sampling during the abatement to assure that no asbestos is leaving the work area, and clearance samples to assure the project has been completed. The monitor also oversees the contractor to assure that all work is performed in accordance with the schedule and other contract documents, as well as in accordance with local, state and federal regulations pertaining to asbestos abatement projects. This section also describes some of the considerations which should be evaluated in the selection of an engineering firm.

4(A) COST ESTIMATES

Location	Estimated Cost (Current $) Recommendation		Total Removal
1. Boiler Rooms- Surfacing	$ 13,500.00		$ 24,150.00
2. Boiler Rooms- Piping	$ 400.00		$ 7,000.00
3. Pipe Tunnel	$ 500.00		$ 12,500.00
4. Gymnasium	$ 400.00		$ 850.00
5. Locker Rooms-All fittings	$ 2,750.00		$ 2,750.00
6. Basement Storage	------		$ 600.00
7. Mens Room First Floor	$ 800.00		$ 800.00
8. A Wing (Visible)	------		$ 300.00
9. B Wing (Visible)	------		$ 300.00
10. C Wing (Visible)	------		$ 500.00
11. Basement Rooms	$ 350.00		$ 3,500.00
12. Vinyl asbestos tile	$ 4,800.00		$ 258,000.00
13. Transite Vent Pipes	$ 750.00		$ 3,120.00
14. Vibration Isolators	$ 8,000.00		$ 8,000.00
15. Roof Drains	------		$ 400.00
16. Transite Hood Panels	------		$ 1,200.00
TOTAL	$ 32,250.00	to	$ 325,970.00

Notes: (1) The estimated cost of total removal excluding the vinyl asbestos tile is $ 66.970.00.

(2) The expansion of the High School includes a phased-in project to remove the asbestos from the three boilers. These figures, listed is cost item # 1 could be deleted, if already budgeted.

4(B) CONTRACTOR SELECTION SPECIFICATIONS

While bid cost is certainly an important consideration in the selection of an abatement contractor, it must not be the only consideration. Careful planning and preparation are the most important keys to a successful project. Adequate information must be provided to the contractor to permit a bid, and certain information must be obtained from the final bidder or bidders before an award is made.

(1) Previous experience with the contractor on similar projects at the facility which define the contractor's abilities. The contractor should demonstrate reliability through submission of a list of references. Preferably, the contractor should have a minimum of three years of experience, and be able to provide a list of ten references. At least three of these should be on projects of similar scope and size as the one proposed.

(2) The contractor should maintain and provide a copy of the comprehensive general liability and professional liability (errors & omissions) insurance policies, stating the insurer, policy number, type of coverage, aggregate amount, and expiration date. Policies for worker compensation, and driver/vehicle insurance should be provided as well. Review the policies with your legal counsel.

(3) The contractor should provide a complete list of the training courses attended by the person who will serve as site supervisor for the project. The firm should provide evidence that all workers have completed the requirements for worker training, and that both workers and supervisor are certified/certifiable in the Commonwealth, in compliance with 453 CMR 6.0, as well as local, and federal regulations for asbestos abatement.

(4) The contractor should provide a copy of the written standard operating procedure, and work practices, including specific references to OSHA and EPA standards.

(5) The contractor should comply with all current and proposed asbestos abatement regulations in the Commonwealth of Massachusetts.

(6) The contractor should provide a description of all projects which have been terminated prematurely, and the circumstances surrounding the termination.

(7) The contractor should provide a list of any citations levied against the contractor by local, state, or federal agencies for violations related to asbestos abatement. The contractor should also provide a description of any legal proceedings, lawsuits, or claims in reference to asbestos abatement.

(8) The Bourne Public Schools and the selected contractor should take special care to assure that there is understanding and acceptance of the terms and conditions of the contract by both parties prior to the start of any work.

Most importantly, the Asbestos Program Manager should have effective communication and a sense of confidence in the ability of the contractor, and have a good working relationship with the primary contact at the firm.

4(C) ENGINEERING FIRM SELECTION- As with the contractor, there are several considerations in the selection of the engineering representative.

(1) As stated, the firm is the liason between the building owner and the abatement contractor, and will be in daily communication with the building owner on the status of the project. Effective communication, and a sense of confidence in the ability of the engineering firm should be the most important criterion.

(2) Persons involved with the project on-site should have attended approved training courses as a Project Monitor. Individual(s) must be certified by the Commonwealth of Massachusetts, Department of Labor and Industries as Project Monitor(s).

(3) Previous experience with the engineering firm on similar projects at the facility which define the firm's abilities. Firms should demonstrate reliability through submission of a list of references. Preferably, the engineering firm or principal assigned to the project should have a minimum of two years of experience in monitoring similar projects.

(4) The engineering firm should provide a copy of the comprehensive general liability, and professional liability (errors & omissions) insurance, stating the insurer, policy number, type of coverage, aggregate amount, and expiration date. Policies for worker compensations, and driver/vehicle insurance should be examined as well. Review all policies with your legal counsel.

(5) The laboratory used by the engineering firm should be licensed in the Commonwealth of Massachusetts to perform asbestos fiber counting. The laboratory should participate in the NIOSH Proficiency Analytical Testing program, and be accredited by the American Industrial Hygiene Association, or the individual performing the fiber counting be listed in the AIHA Asbestos Registry.

(6) The individual providing on-site support should be an industrial hygienist by training, or should be under the direction of a full-time industrial hygienist. All training shall comply with 40 CFR 763.

SECTION 5 INSPECTION REPORT

This section details the findings of the inspector during the on-site inspection of the facility, as well as the results of the samples taken during the inspection. The details and general description of the building(s) are presented in Section 1, and so, are not repeated here. As a part of the physical inspection, the following segments were incorporated:

(1) A review of all maps, drawings, and figures which were available at the time of the inspection, and which might identify the presence of asbestos-containing building materials in the school building.
(2) A review of all reports, inspections, studies, and other douments by both private consultants, and representatives of state and federal agencies, which may have identified the location of ACBM.

(3) A review of documents pertaining to any previous abatement activities, available at the time of the inspection.
(4) Discussions with key maintenance and administrative personnel to identify locations of ACBM in the school buildings, or to obtain details on previous abatement activities.
(5) Comprehensive walk-through of the affected school building, including examination of all classrooms, hallways, closets, cabinets, bathrooms, basements, utility areas, mechanical areas, pipe tunnels and chases. The physical condition of all ACBM and suspect ACBM is examined by touching all affected surfaces. Samples are collected for analysis in accordance with the requirements of 40 CFR 763, and analyzed by polarized light microscopy, using the EPA-approved protocol ("Interim Procedure for the Analysis of Bulk Samples").

For purposes of clarity, LF refers to linear feet of insulation, usually as pipe lagging, regardless of the diameter of the pipe or duct. SF refers to square feet, usually as boiler covering, or surfacing insulation. Fittings may include elbows, tees and valves. Fittings are not included or calculated in the measurement of equivalent feet, but are generally expressed as the number of fittings. The term "friable" refers to the ability to crumble ACM using moderate hand pressure, and is used to express the likelihood that ACM can become airborne. Additional terms are described in the glossary to this report.

BUILDING INFORMATION SHEET

DATE: 10 19 1988

DOCUMENT NUMBER: B-1

Building Number: BO-1

Building Name: BOURNE HIGH SCHOOL

Building Location:
BOURNE HIGH SCHOOL
75 WATERHOUSE ROAD
BOURNE, MA 02532

Number of Floors in This Building	2	Original Construction Date (Year)	1959
Number of Basement Levels	1	Renovation Date #1 (Year)	1960
Number of Attic or Penthouse Levels	N/A	Renovation Date #2 (Year)	1988
Number of Other Levels	N/A	Estimated Gross Square Feet Occupied Space in Building	83,300 SF

Building Construction Type: STEEL FRAME

Structural Concrete with:
Metal Decks, Flat Slab, Beam/Joist or Waffle Slabs; Structural Tees,
Steel Frame
Wood Frame
Load Bearing Masonry

Other (Specify):

	Building Use	x Floor Space
Use # 1	ACADEMIC	70
Use # 2	GYMNASIUM	15
Use # 3	ADMINISTRATIVE	10

Academic Classes, Administrative Offices, Food Services, Dormitory, Mechanical Spaces, Gymnasium, Laboratory, Sorority Fraternity, Library, Residential
Other (Specify other)

ACM PRESENT? YES

YES = PRESENT
NO = NOT PRESENT
UNK = UNKNOWN

Original Owner & Address: SAME

Current Owner & Address:
BOURNE PUBLIC SCHOOLS
36 SANDWICH ROAD
BOURNE, MA

Architect & Address:

Engineering Consultant & Address:
HYGEIA, INC.

Construction Contractor & Address:

Building Manager Address & Phone:
MR. ROBERT WATMOUTH
BUSINESS ADMINISTRATOR

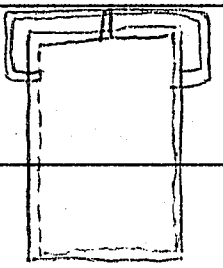
Inspector # 1 Identification:
SCOTT D. HERZOG
ENVIROSCIENCE CONSULTANTS
66 CEDAR ST
NEWINGTON, CT 06111

Inspector # 2 Identification:

ENVIROSCIENCE CONSULTANTS
66 CEDAR STREET
NEWINGTON, CT 06111

SCHOOL BOURNE HIGH
LOCATION BOURNE

DATE 8/10/88

ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
GND LEVEL STORAGE	CEMENT	C.B.	CEMENT	1-AAF DUSTCOLLECTOR ALL FG INSUL. LINES W/ 12 ACBM FITTINGS - EXC COND.
GYM 105'X 80'	WOOD PANEL	C.B.	WOOD	* (1) HEATING (VISIBLE) BY FORCED AIR LOUVERS AROUND GYM PERIPHERY
			(2)	RADIATORS RUN ALONG TOP OF WALL BELOW WINDOW. SUPPLY/RETURN LINES FG/ W/ ACBM FITTINGS
			* (3)	(17). FITTINGS BY TOP OF BLEACHERS SHOULD BE REMOVED. CHK-TRAP DOOR IN FLR - WHERE IT LEADS TO?
~~BOYS~~ GIRLS LOCKER ROOM	CEMENT. 8" TILE- MINERAL WOOL	C.B., TILE	TERRAZZO. (1) (2)	WMR'S - ALL LINES FG INSULATED W/ ACBM FITTINGS 1 ROOF DRAIN - FG W/ ACBM FITTING - EXC. CONDITION
			(3)	HW SUPPLY (SHOWERS) ALL FG. VALVES BEHIND C.B. WALL.
			(4)	SEVL ACBM FITTING ABOVE CEILING TILE DAMAGED SHOULD BE REPLACED.
			* (5)	CHK HVAC ROOM OFF LOCKER ROOM.
BOYS LOCKER ROOM	CEMENT	C.B., TILE	TERRAZZO (1)	12 TRANSITE LIGHT PANEL WMR'S ALL (?) LINES FG INSULATED W/ ACBM FITTING FG PIPES DAMAGED HIGH DISTURBANCE (6' HEIGHT)
			(2)	HI POTENTIAL FOR ACBM DAMAGE. 12 TRANSITE (?) LIGHT PANELS IN CEILING FOR NATL. LIGHT EA. 3'x8'

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ROOM/LOCATION	CEILING	WALLS (SURFACING) *	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
PHYS. ED OFFICE:	12" PERF. TILES 2'x2' LAT UNDER CEMENT	C.B. TILE, WOOD PANELING.	BATH - 9" GRN STRIATED TILE GOOD CONDITION (6'x6') ELSE 12" TILE	WMR's - ALL LINES FG INSUL 1 ROOF DRAIN - FG w/ 1 ACBM FITTING.
			AND CARPETING OVER CEMENT	
HALLWAY OUTSIDE PHYS ED	2x2 LAT UNDER CEMENT.	GLAZED BLOCK	TERRAZZO	STEEL I-BEAM SUPPORT - NO ACBM.
CAFETERIA (*)	WOOD PANELING CHK CRIES - BEAMS	PANELLING, GLASS, GLAZED BLOCK	TERRAZZO (1)	FMR's. ALL LINES COME UP FROM BASEMENT - NO INSUL.
KITCHEN	WHAT USED FOR? 12" PERF METAL UNDER	GLAZED BLOCK	GLAZED TILE	ALL PIPING, UNINSULATED. COMES UP DIRECTLY FROM BASEMENT
MENS ROOM	CEMENT.	C.B. GLAZED BLOCK.	TERRAZZO	PIPING, ALL FG - APPROX 20 ACBM FITTINGS. 6 DAMAGED, PSD, 2/6 EXPOSED ALL FITTINGS REMOVED THIS AI
				PIPING ALL AT CEILING. HEIGHT - 7' NOT DISTURB
WEIGHTLIFTING * (COLD STAGE)	2 PLASTER FALSE CEILING PANELS FOR VENTS	PANELLING.	WOOD	(1) HVAC (BEHIND REAR OF ROOM) - TWO ACBM VIBRATION DAMPERS -

* CHK. STORAGE CLOSET

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SCHOOL BOURNE HIGH
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ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
CHK TICKET BOOTH BATHROOMS -				
MAIN FOYER	1&V 2x2' LAT UNDER CEMENT	BRICK, GLASS	TERRAZZO	(1) HVAC IN FREE-HANGING, DESIGN. DUCTWORK FROM ABOVE. (3) FMR - NO INSULATION
MAIN OFFICE			9" STRIATED TILE - WHITE IN OFFICE, GRAY IN INDN. OFFICES - SL. TO MOD WEAR. NO BREAKS	(1) BENOIT - 2 FITTINGS ON LINE - 1 DAMAGED. (2)
MR. GRONDIN'S OFFICE	12" PERF CEILING TILE UNDER CEMENT	C.B.	9" GRAY STRIATED TILE. SL. WEAR. SOME SL. WATER DAMAGE BY AC UNIT.	(*) CHK PIPING IN ALCOVE
AUDIO 6'x8'	12" PERF CEILING TILE	C.B.	9" BLK STRIATED FLR. TILE - GOOD COND	NO HEATING VENTS
LIBRARY	12" PERF. CEILING TILES	C.B (*) 08-11-88-08	9" GRAY STRIATED FLR. TILE MOD. WEAR SOME DAMAGE BY BOOKSHELVES -	F.G. LINES IN DROP SPACES FOR HALLWAY WAR'S - LINES F.G. W/ ACM FITTINGS - ALSO TO FLR
13A	12" PERF CEILING TILES UNDER CEMENT (CELLULOSE)	C.B. 20% CHRYS	9" GRAY STRIATED GOOD CONDITION NO WEAR NO BREAKS	BOOK CLOSET - 2 F.G. INSUL. LINES TO 2ND FLOOR BEHIND FALSE WALL - ACM FITTINGS -
15A	12" PERF CEILING TILES UNDER CEMENT (CELLULOSE)	C.B.	9" GRAY STRIATED TILE - GOOD CONDITION 1 MISSING	

* CHK CLOSET.

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SCHOOL BOURNE HIGH
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ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
14 A. 27'x 27'	12" PERF CELLULOSE TILE UNDER CEMENT	C.B.	9" TAN STRIATED TILE GOOD CONDITION LO → MOD WEAR NO BREAKS	(*) CHK CLOSETS- 1 FMR - PIPING UNINSUL FROM BASEMENT-
12 A.	12" PERF CELLULOSE TILE UNDER CEMENT	C.B.	SAME	RISER TO 2ND FLOOR PIPES FG W/ NO FITTINGS.
10 A.	SAME	C.B	SAME	RISER TO 2ND FLOOR - ONE DRAIN VALVE PIPES FG INSULATED - NO FITTINGS -
HEALTH	12" PERF. CELLULOSE TILE		9" BLUE STRIATED TILE GOOD COND.- SL. WEAR-SOME WATER DAMAGE BY WINDOW.	1- WMR- SUPPLY/RETURN LINES FROM BASEMENT FG INSULATED. 1 ACB, M FITTING
FOYER #2	12" PERF CELLULOSE TILE CENTER CORR. OVER HVAC.	BRICK	TERRAZZO	FMR's - SUPPLY & RETURN FROM BASEMENT - NO INSULATION ON PIPES..
MEN FACULTY	BLANK CEMENT 12" CELLULOSE TILE PERF	GLAZED BLOCK:	9" GRAY STRIATED. EXC CONDITION.	CMR - PIPES THRU 12" TILE.
WOMENS FACULTY	SAME	SAME	SAME	SAME
GIRLS - CHK - ALSO WALL PANEL				
HOMEMAKING	12" PERF CELLULOSE	C.B PLYWOOD	9" WHITE/GRN STRIATED TILE	

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ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
13 B	12" CELLULOSE OVER CEMENT	C.B. PLYWOOD	9" STRIATED TAN TILE - EXCELLENT CONDITION NO WEAR NO BREAKS	2 DAMAGED ACM FITTINGS ABOVE TILE NEAR FMR. 1 PG LINE CTR OF RO FROM HOME EC TO EXIT OF 11-B
11 B	SAME	~~BRICK~~ C.B. PANELLING	9" GRAY STRIATED TILE LO WEAR 1 BKN TILE	1 - FMR PIPES FROM BASEMENT - NO INSULATION
10 B	12" CELLULOSE OVER CEMENT	C.B.	9" TAN STRIATED TILE EXCELLENT COND	NO VISIBLE ACBM
HALLWAY	SAME	C.B.	TERRAZZO	
12 B (*) PHOTOGRAPH	DARKROOM 12" CELLULOSE PERF TILE CEIL.	C.B.	9" STRIATED TAN TILE - GOOD CONDITION LO WEAR/NO BREAKS	1 SINK - NO INSUL. NO VISIBLE ACBM.
14 B	12" CELLULOSE PERF TILE OVER CEMENT	C.B.	9" STRIATED TAN TILE - FAIR COND - MOD WEAR - SM. DAMAGE	1 SINK - NO INSULATION SINK HOUSING - PARTICLE BOARD PIPING COMES FROM RISER
APT ROOM (30 x 40) (*)	2 1/2 CLOSET REAR 12" CELLULOSE PERF TILE	C.B. (*)	9" STRIATED TAN TILE - 10 BKN TILES MOD. WEAR	IN CLOSET - RISER NOT INSULATED. 2 PG RISERS FRT OF ROOM TO 2ND FL. NO
			8-10 DAM. FRT OF ROOM 20 DAM. HALLWAY SIDE OF ROOM - REPLACE	FITTINGS - BEHIND SOLID ENCLOSURE

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ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
15-C (*)	12" MINERAL WOOL CLIP IN PLACE TILES UNDER CEMENT	C.B.	9" TAN/BROWN STRIATED TILE - MOD. WEAR/NO DAMAGE	1 FMR - FROM BASEMENT NO VISIBLE ACBM.
13-C (33x30) (*)	CHK CLOSET 12" MINERAL WOOL CLIP IN PLACE TILES	C.B.	9" TAN STRIATED GOOD CONDITION NO DAMAGE	1 FMR FROM BASEMENT NO VISIBLE ACBM
11-C (33x30) (*)	UNDER CONCRETE SAME CHK CLOSET	C.B	SAME	
10-C	12" MINERAL WOOL CLIP IN PLACE TILES	C.B.	9" WHITE STRIATED TILES GOOD CONDITION NO DAMAGE	1 FMR FROM BASEMENT NO VISIBLE ACBM.
12-C	SAME	C.B.	9" WHITE STRIATED TILES SOME DAMAGE BY WINDOWS - DAMAGE	1 FMR FROM BASEMENT NO VISIBLE ACBM
MECH DWG (*)	SAME CHK CLOSET	C.B.	INSIDE ROOM BETN 12-C & MECH. DWG. SAME - DAMAGE BY FRT OF ROOM - 6 TILES.	1 FMR FROM BASEMENT NO VISIBLE ACBM
HALLWAY				
(14x14) PUBLICATIONS (PSYCHOLOGIST)	12" perforated tile	C.B.	9" Gray striated tile Good condition NO breaks, to wear	1 WMR - Supply & Return lines from riser behind wall - NO insulation.
				1 sink - Supply lines FG insulated from first floor - NO fittings above home ec room

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ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
Chemistry	12" perforated ceiling tile	C.B.	9" striated tan tile good cond.	8 Sinks No insulation lines come up from 1st floor along base of wall.
			*	2 FMR's - From first floor riser. 1 Lab Hood - Transite panels side & rear.
COM (Workarea)	12" perforated ceiling tile	C.B.	Same	1 WMR - No visible Pipes No Visible ACBM
Physico (*) Chk workshop (lab)	12" perforated tile	C.B	9" striated tan tile - mod. wear No breaks.	2 FMR's - from first floor riser. 7 Sinks Along 2 Walls Chk hallway by 10/12A.
Biology (*) Chk storage	Chk storeroom. 12" perforated tile under cement		9" striated tan tile sl. wear no breaks.	for risers - All noninsulated 6 Sinks along 2 walls Same Locations as above
				1 - FMR - from first floor riser. 1 Roof Drain Cuts across ceiling to greenhouse
Gen Science (*) Chk Supply Cab.	12" perforated tile under cement	C.B.	9" gray striated tile	FG insul. 3/4 ACBM filling 5 Sinks along two side walls from first floor 1 FMR from first floor
stor.	12" perforated tile ~~over~~ under cement	C.B	9" black striated tiles good condition	No Visible ACBM 1 Water Supply line from 1st fl - not insulated
21A (*) Chk supply closet	12" perforated tile under cement	C.B.	9" gray striated tiles good condition	No Visible ACBM

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ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
23A	Same	C.B.	9" gray striated- good condition except for 4-5 tiles by rad.	No Visible ACBM
25A (*) Ht. closet	Same	C.B.	9" gray striated good condition-	No Visible ACBM
Women Faculty	Same.	C.B.	no damage 9" tan striated tile.	1 CMR-line comes up behind CB wall. Line is FG. w/ ACBM fitting
men Faculty	Same	C.B. (*)	Same 1 Broken Tile	1 CMR line from behind CB wall. No Visible Insulation. Likely FG.
23B Computer Lab.	Same	C.B.	Same- Good condition.	1 FMR-Line from first floor No visible ACBM.
21B Typing	Same	C.B	Same Good condition- Sl. damage by red bookcase.	1 FMR-Line from first floor No Visible ACBM.
Storage Room:	N/A	N/A	N/A	1 Roof Drain-FG. No Visible ACBM. Joints-good condition
20B	Same	C.B.	9" tan striated tiles good condition No Damage	in class area 1 FMR-Line from first floor-NO Visible Damage
22B	Same	C.B.	Same	1 FMR-Line from first floor-No Visible Damage

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LOCATION BOURNE

DATE 8/10/88

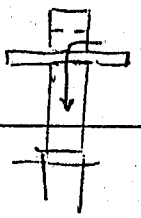
ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
24B (28x30')	Same	CB	9" Tan striated floor tile Mod. wear	1 FMR-Supply from first floor-No visible ACBM.
26B	Same	CB	9" Tan striated floor tile Mod. wear in str.-No breaks.	1 FMR-Supply from first floor-No visible ACBM.
Teachers Lounge	Same	CB	carpeting over cement.	1 WMR-Supply from 26B
Storage.	Cement (Roof Access)	CB	9" Black Striated tiles	1 WMR-Supply and Return lines visible-FG-No fittings
Boys	Cement	CB	Terrazzo	1 WMR-Supply and return from adja. rooms-No insulation
Janitor.			①	2 Water Supply lines on floor-FG w/ 5 fittings-Door hits against one-debris on floor-remove all from line.
			②	1 WMR-Supply and return from adja. rooms. No insulation
			③	1 Roof Drain-3 LF horiz. sect. ACBM Good condition
25C	12" tile clip in grid system. mineral wool	C.B.	9" Tan striated tile. Good condition No breaks.	1 FMR-Supply from first floor-No visible ACBM

Divided into 2 rooms

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66 CEDAR STREET
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SCHOOL BOURNE HIGH
LOCATION BOURNE

DATE 8/10/88

ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
23C	12" mineral wool clip in place tile.	C.B.	Same Good condition No breaks	~~[illegible]~~/No visible AcBM 1 FMR-Supply from first floor.
21C	12" mineral wool clip in place tile	C.B	Carpeting over	1 FMR-Supply from first floor No visible AcBM
20C	12" mineral wool clip in place tile	C.B.	9" tan striated tile sl. wear No damage	1 FMR-Supply from first floor No visible AcBM.
22C	Same	 (*)	9" Tan striated tiles Broken where transite pipe goes thru floor	Transite exhaust ducts on lab benches 6 ducts x 10" Ø x 4'L Labelled: Transite Gas Vent Pipe 3-1A Johns Manville.
24C	Same		9" Tan striated tiles Same comments as above	7 Transite exhaust ducts on lab benches as labelled above.
Research Both 22C & 24C	Same	CB	9" Tan striated tile slight wear No damage (1)	Transite siding on one laboratory hood. (2) 2 CME's. Supply from first floor. No visible AcBM.
(D) Boys & Girls Rooms Check				

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SCHOOL BOURNE HIGH
LOCATION BOURNE

DATE 8/10/88

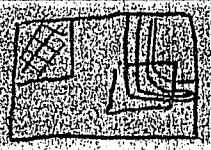
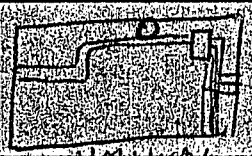
ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
Chl. Door opposite 25-C				

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SCHOOL BOURNE HIGH
LOCATION BOURNE

PG 12 OF 15

DATE 8/11/88

ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
GND. LEVEL JANITOR	CEMENT	C.B	9" BLK STRIATED TILE (9"x9") GOOD CONDITION	2 FG LAGGED LINES TO HEATER 6 ACM FITTINGS
SLOP SINK	CEMENT	GLAZED BLOCK	NO WEAR NO BREAKS TERRAZZO	2 FG LAGGED LINES 4 ACM FITTINGS
SHOP TOILET	CEMENT	GLAZED BLOCK CB	TERRAZZO	1 WMR. PIPES FROM WALL TO SLOP SINK - NO VISIBLE ACBM.
WOOD SHOP				
JANITOR STORAGE	CEMENT	CB	CEMENT (1)	2 SETS OF LINES - SM. DIA. FG. LAGGED. TOTAL OF 9 ACBM FITTINGS
				
WOOD SHOP	CEMENT	CB	12" PERF METAL TILES UNDER CEMENT	(1) ALL LINES SMALL O/A HW TO HEATER. FG LAGGED W/ ACBM FITTINGS - TOTAL 27 ALL IN GOOD CONDITION
		 HALLWAY	(A) 1 VIBRATION DAMPER 12"x40"	(2) 1 CMR HEATER/HVAC UNIT. ALL LINES FG LAGGED. (3) 1 ROOF DRAIN - FG LAGGED - 6 ACBM FITTINGS - ALL GOOD CONDITION, NO DAMAGE

08-11-88-01
40% CHRYS.

* FRIABLE, CRUMBLY DAMAGED. SHOULD BE REPLACED

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SCHOOL BOURNE HIGH
LOCATION BOURNE

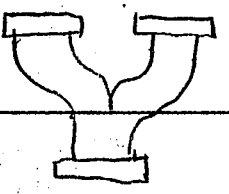
DATE 8/11/88

ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
WOOD SHOP FINISH RM	CEMENT	CB	CEMENT	2 LINES FROM WOOD SHOP CONTINUE THROUGH. FG LAGGED 4 ACBM FITTINGS-AC
				GOOD CONDITION ALL LAGGING BELOW CEILING:
MUSIC ROOM	12" PERF METAL TILES OVER CEMENT	CB	CEMENT (1)	SIMILAR TO WOOD SHOP. ALL LINES RUN BELOW OR SLIGHTLY ABOVE DROP CEILING 2 MAIN LINES TRAVERS
				ROOM: ALL LINES FG LAGGED W/ 20 ACM FITTINGS. ONES BY PIANO STARTING TO SHOW DEGRAD
			(2)	& NEED REPAIRS- ALL OTHERS GOOD CONDITION 1 CMR W/ SUPPLY & RETURN LINES - FG
			(3)	LAGGED CMR HAS 1 ACBM VIBRATION DAMPER - GOOD CONDITION
			(4)	12"X40". 1 ROOF DRAIN - 4 FITTINGS. DAM AT BASE BY FLOOR

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SCHOOL BOURNE HIGH PG 14 OF 15 DATE 8/11/88
LOCATION BOURNE

ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
TUNNEL- (1)	TUNNEL COVERS MAJOR PORTION OF SCHOOL THRU A, B, C WINGS & CONNECTS OLD & NEW BOILER ROOMS AND			FAN ROOM. SERVES
	AS FEED & SUPPLY FOR ALL RADIATORS IN A & B & C WINGS. ALL LINES ARE EG LAGGED WITH ACBM FITTINGS. NEARLY ALL FITTINGS WERE IN GOOD CONDITION			
20% CHRYS, 30% AMOS	3-4 FITTINGS	IN BAD CONDITION, PROBABLY CE-11-88-05 ELBOW BY VALVE 62 (L)		200-300 FITTINGS. 2 SAMPLES REPRESENTATIVE SIDE OF ALL.
20% CHRYS 20% AMOS (2)		CE-11-88-06 ELBOW BY VALVE 86 (L) SIDE		
	FAN ROOM - TOTAL OF 7			TRANE FANS, EACH HAD TWO
	VIBRATION DAMPERS - ALL SUSPECT ACBM	2-14"x20" & 20"ø	6+5 = 11	
		3-12"x16" & 16"ø	4+4 = 8	
		4-8"x12" & 12"ø	3+3 = 6	
		5-14"x20" & 20"ø	6+5 = 11	
		6-12"x16" & 16"ø	4+4 = 8	
		7-16"x20" & 20"ø	6+6 = 12	
				56 PTS
(3)	UNIVENTS - MAIN AMU FOR OLD FURNACE.			
	2 20" x 84" VIBRATION DAMPERS.			
	2 16" x 20" VIBRATION DAMPERS			
	1 16" x 20" VIBRATION DAMPER ON FAN -			
	ALL IN GOOD CONDITION. LOW WEAR NOT FRIABLE.			



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SCHOOL BOURNE HIGH
LOCATION BOURNE

PG 15 OF 15

DATE 8/11/88

ROOM/LOCATION	CEILING	WALLS (SURFACING)	FLOOR	THERMAL SYSTEM/ MISCELLANEOUS
GUIDANCE (MAIN)	12" CELLULOSE OVER CEMENT	C.B.	9" WHITE STRIATED TILE 6-8 DAM TILES BY LEBRUN OFFICE.	NONE VISIBLE
McHUGH	SAME	C.B.	9" TAN/COFFEE STRIATED TILES - 1 DAMAGED AREA.	1 WMR NONE VISIBLE
KEATING	SAME	C.B. (*)	9" TAN STRIATED TILES SIG DAM - ONE ROW OF TILES PULLING UP	NONE VISIBLE
		25% CHRYS.	SCRUMBLING - VISIBLE WATER DAMAGE TO TILE (08-11-88-07)	SAME
LEBRUN	SAME	C.B.		SAME
OFFICE ALCOVE	SAME	C.B.	9" BLK STRIATED TILES - 1 DAM AREA 3-4 BROK. TILES -	SAME
		20% CHRYS.	(08-11-88-09)	
CUSTODIAL CONTACT		RICHARD WENZEL, HEAD CUSTODIAN		

SAMPLE LOG and SAMPLE NOTES

DOCUMENT NUMBER: SL-1

Building Number and Name: B01 BOURNE HIGH SCHOOL

Sample Area/Lot Number and Name:

Drawing/Sketch Number and Name:

THIS IS A CHAIN-OF-CUSTODY DOCUMENT. PLEASE FILL OUT COMPLETELY AND SIGN ACCORDINGLY

Sample Number	Receiver's Initials	Photo. Number	Description of Sampled Material	Sample Site Location
SDH 08-1-88 TS -01			White Fibrous Homogeneous	Wood Shop - Fitting on FG Insulation
TS -02			White Fibrous Homogeneous	Boiler Room - Rear Side of #1 boiler - Block Insulation
TS -03			White Fibrous Homogeneous	Boiler Room - Breeching Surface under Cloth where Torn.
TS -04			White Fibrous Homogeneous	Boiler Room - Cement at top Rear of Boiler at delamination
TS -05			White Fibrous Homogeneous	Pipe Tunnel, Elbow by Valve 62, Left Side.
TS -06			White Fibrous Homogeneous	Pipe Tunnel, Elbow by Valve 86, Left Side.
MI -07			Tan Homogeneous Floor Tile	Keating Office - Floor Tiles by Wall
MI -08			Gray Homogeneous Floor Tile	Library - Floor by Bookshelves

Receiving Analyst's Name	Receiving Analyst's Firm
J. McGILL	EMSL
Receiving Analyst's Signature	Date Samples Received
	8/4/88

Inspector's Name	Inspector's Firm
Scott D. Herzog	EnviroScience Consul
Inspector's Signature	Date Samples Collected
Scott Herzog	8/11/88

SAMPLE LOG and SAMPLE NOTES

DOCUMENT NUMBER: SL-1

Building Number and Name: B01 BOURNE HIGH SCHOOL

Sample Area/Lot Number and Name:

Drawing/Sketch Number and Name:

THIS IS A CHAIN-OF-CUSTODY DOCUMENT. PLEASE FILL OUT COMPLETELY AND SIGN ACCORDINGLY

Sample Number	Receiver's Initials	Photo. Number	Description of Sampled Material	Sample Site Location
SDH-08-11-88-09 MI			Black Homogeneous Floor Tile	Office Alcove (Computer)

Receiving Analyst's Name: J. McGILL

Receiving Analyst's Firm: EMSL

Receiving Analyst's Signature:

Date Samples Received: 8/14/88

Inspector's Name: Scott D. Herzog

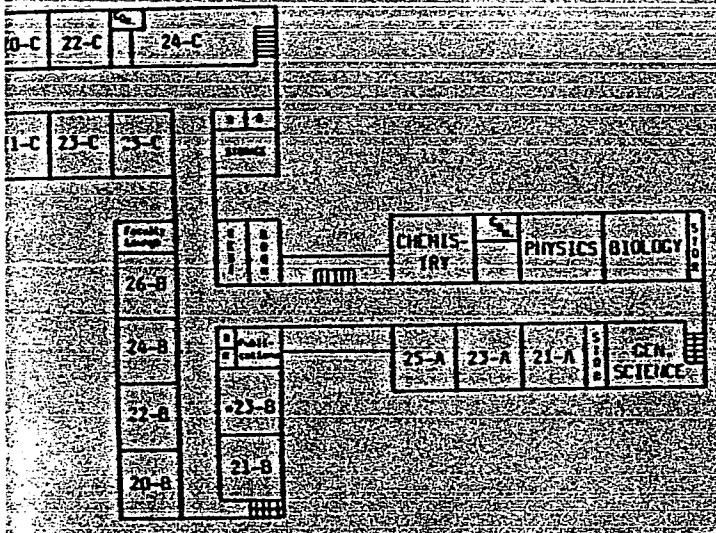
Inspector's Firm: EnviroScience Consu

Inspector's Signature: Scott Herzog

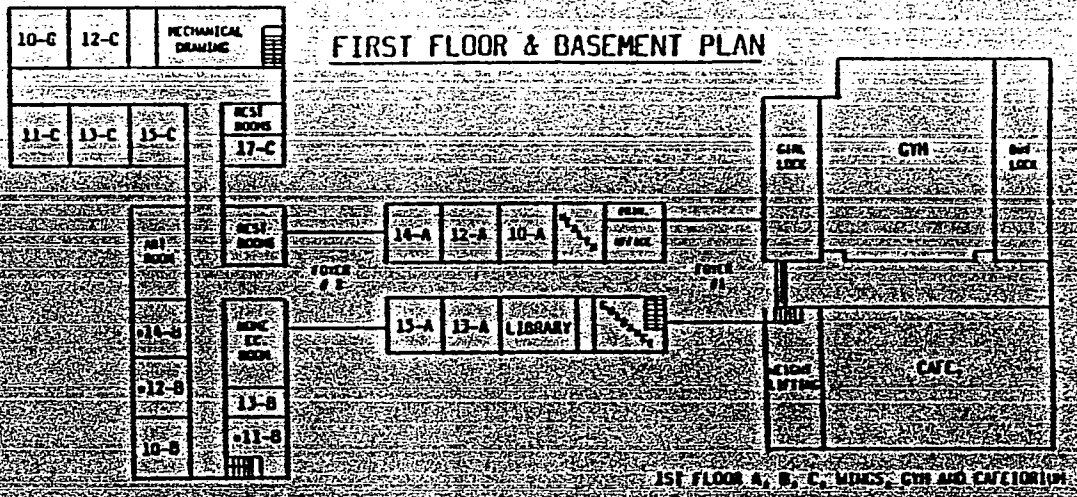
Date Samples Collected: 8/11/88

BOURNE HIGH SCHOOL

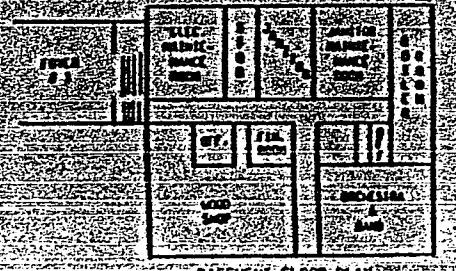
2nd FLOOR PLAN



FIRST FLOOR & BASEMENT PLAN



1ST FLOOR A, B, C, WINGS, GYM AND CAFETORIUM



BASEMENT FLOOR PLAN

BOURNE HIGH SCHOOL

COMPUTER ROOM

FIGURE D-01
LAYOUT OF HIGH SCHOOL

BOURNE HIGH SCHOOL

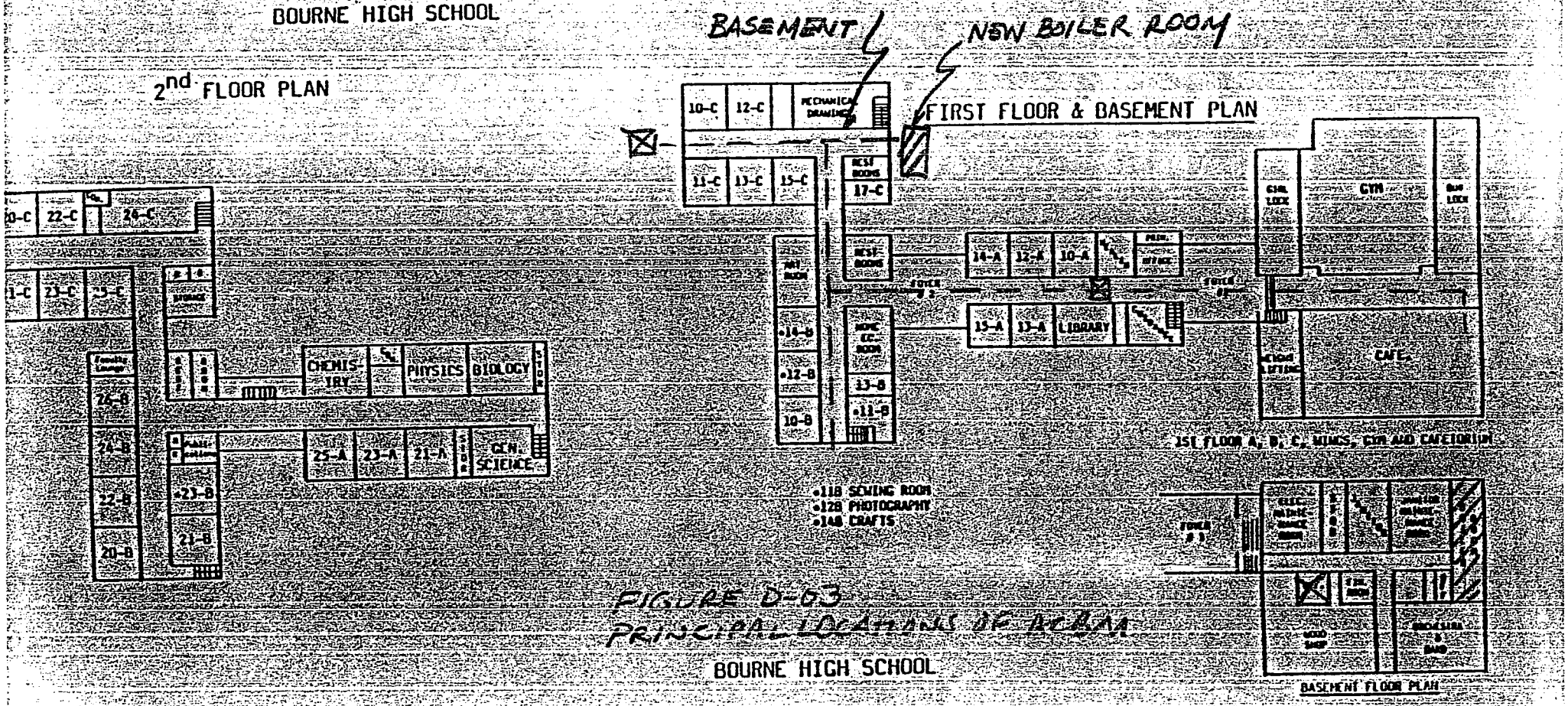


FIGURE D-03
PRINCIPAL LOCATIONS OF ACOUSTICAL TREATMENT
BOURNE HIGH SCHOOL

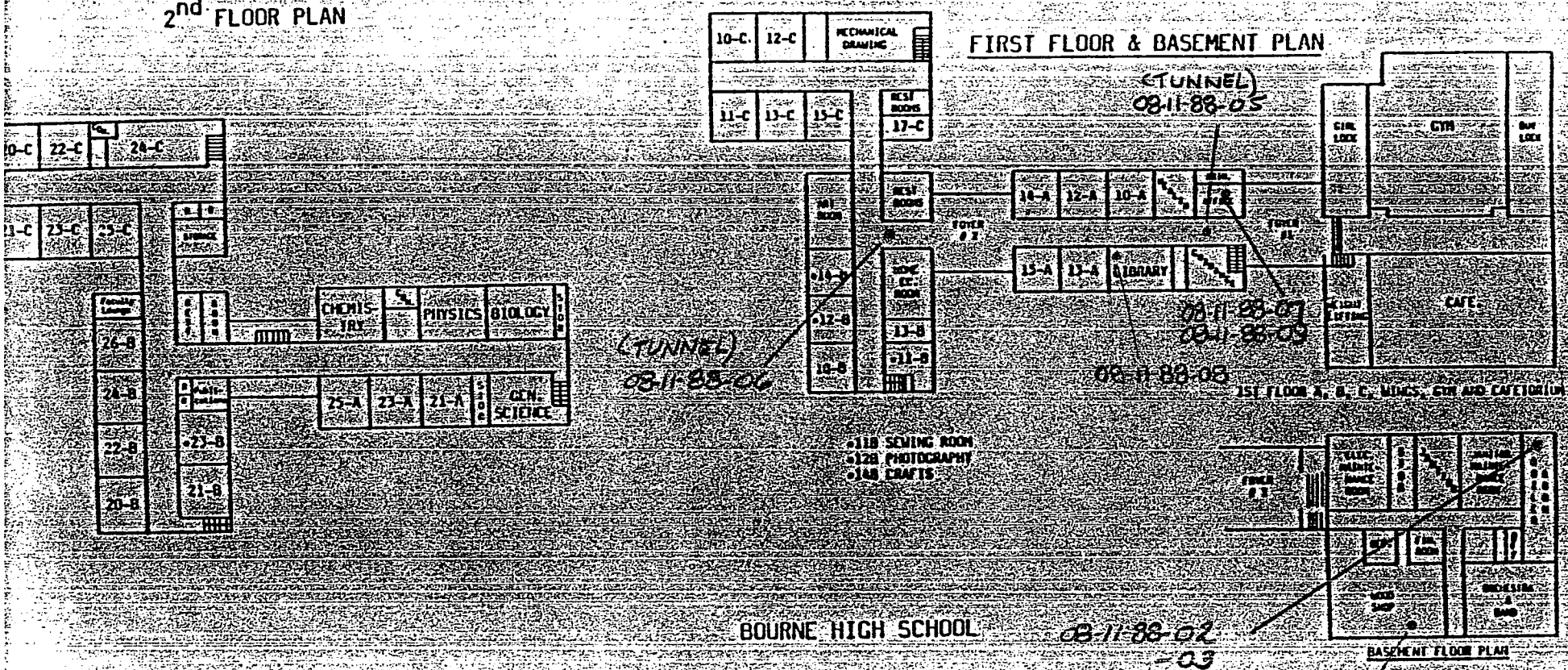
COMPUTER ROOM

— — — PIPE TUNNEL

////, - PIPE SURFACING, LAGGING

☒ - VIBRATION ISOLATORS

BOURNE HIGH SCHOOL



COMPUTER ROOM

FIGURE D-02
LOCATION OF SAMPLES

ELECTRON-MICROSCOPY SERVICE LABORATORIES INC.

108 HADDON AVENUE
WESTMONT, N.J.
08108
609-858-4800

1056 STELTON ROAD
PISCATAWAY, N.J.
08858
201-981-0550

1800 PEACHTREE STREET
ATLANTA, GEORGIA
30309
404-355-4046

Wednesday, September, 21, 1988

EnviroScience Consultants, Inc.
66 Cedar Street
Newington, Ct. 06111

POLARIZED LIGHT MICROSCOPY (PLM) EPA METHOD 600/M4-82-020, December, 1982

PROJECT: Bourne Public School

SAMPLE#	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS TYPE	%	NONASBESTOS FIBROUS	%	NONFIBROUS	%
SDH-08-11-88-01		Tan Fibrous Homogeneous	Teased Apart	Chrysotile	70	Cellulose	20	Other	10
SDH-08-11-88-02		White Fibrous Homogeneous	Teased Apart	Chrysotile Amosite	60 30			Other	10
SDH-08-11-88-03		Grey Fibrous Homogeneous	Teased Apart	Chrysotile Amosite	50 20			Gypsum Other	20 10
SDH-08-11-88-04		Grey Fibrous Homogeneous	Teased Apart	Chrysotile	90			Other	10
SDH-08-11-88-05		Grey Fibrous Homogeneous	Teased Apart	Chrysotile Amosite	20 30			Gypsum	50
SDH-08-11-88-06		Grey Fibrous Homogeneous	Teased Apart	Chrysotile Amosite	20 20			Gypsum	60

Comments:

Marty Mastovich
Analyst

Peter Frasca, PH.D.
President

DISCLAIMER: PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Thus negative PLM results cannot be guaranteed . Tiles and wipes should be testedwith either SEM or TEM .