



Office of the Public Auditor

Commonwealth of the Northern Mariana Islands

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April 29, 2002

Ms. Rita H. Inos, Ed.D.
Commissioner of Education
Public School System
P.O. Box 501370
Saipan, MP 96950

Dear Dr. Inos:

Subject: Kagman Elementary School Project (Report No. M-02-04)

This report presents information gathered relating to the contract for the construction of the Kagman Elementary School project. Please note that this compilation of information was not conducted in accordance with Government Auditing Standards issued by the Comptroller General of the United States and, therefore, should not be considered an audit report.

BACKGROUND

The construction contract for the Kagman Elementary School was approved on December 18, 1998 and construction was to be completed by February 12, 2000. The school was only officially opened on September 1, 2000, almost seven months later than scheduled. During and after construction, various news media articles raised concerns about problems pertaining to the construction project. Questions still remain on what were the causes for the delay of construction and whether the school buildings are safe for occupancy as indicated by various reports that are based on inspections conducted by architects and engineers of the contractor, the Department of Public Works (DPW), the Public School System (PSS), and the United States Army Corps of Engineers (US-ACOE).

When the contractor failed to meet the project deadline of February 12, 2000, PSS refused to make further payments to the contractor because it claimed that the contractor owes \$300,000 in liquidated damages and another \$300,000 for remedial work. Subsequently, when a subcontractor sued the contractor for non-payment, the contractor, in turn, filed a counter claim against PSS in Federal Court for non-payment. As a result of the contractor's suit against PSS, the concerned parties signed a payment settlement agreement on January 3, 2002 that stipulated for payment to be completed by March 4, 2002.

On October 30, 2001, the then Acting PSS Commissioner requested the Office of the Public Auditor (OPA) to investigate matters associated with construction and occupancy delays. She referred OPA to a former PSS-CIP Architect memorandum of the same date which listed the architect's questions about a proposed change order to the construction contract. In her request, the Acting Commissioner also expressed concerns over the unresolved structural problems in the constructed school buildings and whether liquidated damages could be collected from the contractor. On November 20, 2001, a member of the Board of Education (BOE) expressed similar concerns.

On November 26, 2001, after meeting with the PSS Board member and the PSS Legal Counsel, OPA agreed to gather information related to the concerns raised and to prepare a compilation report addressing the Kagman Elementary School project.

OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives of our compilation were to: (1) provide a chronology of events related to the Kagman Elementary School Construction Project (Project), (2) determine total payments made to the contractor, (3) determine the total project cost, and (4) identify the causes of problems contributing to delay in project completion.

OPA reviewed the project contract and other pertinent documents available to present a chronology of information relating to project completion and to the project's structural integrity. We examined progress billings for mathematical accuracy, adequacy, and completeness. We computed total project costs, and compared budgeted with actual amounts to account for any variances. Finally, we identified and analyzed factors that contributed to the delay.

Our compilation covered the period from the contract inception in December 1998 through January 2002. To accomplish our objectives, we interviewed knowledgeable officials and employees of DPW, PSS, and the contractor's Legal Counsel. We also obtained and reviewed relevant contract documents from DPW, PSS, the contractor, and the Department of Finance (DOF).

OPA believes that it is not qualified to comment on the technical construction aspects of the project. Consequently, any discussions pertaining to the integrity of the building structures or any discussions of the structural defects were based solely on documents we obtained during the compilation.

OPA has no assurance that it obtained or reviewed all project documents, correspondences, and other printed project information. OPA did, within the allotted time available, review and summarize selected events that may have contributed to the project's delay, as well as other information that may have raised safety concerns.

THE KAGMAN ELEMENTARY SCHOOL PROJECT

The Kagman Elementary School was constructed to help alleviate overcrowding and multi-tracking in other Saipan elementary schools. It was to be ready for the 1999 Fall school semester. The U.S. Department of Interior’s Office of Insular Affairs (OIA) approved the project on December 1, 1998. CNMI Public Laws 9-1¹ and 11-27² re-appropriated \$4 million and \$2.5 million respectively, or a total of \$6.5 million, for the school project. Of the project’s \$6.5 million in funding, 80 percent came from a Federal grant (U.S. Department of Interior’s Covenant Section 702³ Capital Improvement Projects grant fund) and 20 percent was from CNMI local matching contributions⁴. The following table shows the initial budget allocation for the \$6.5 million project.

| Cost Classification | Breakdown of Share | | Total Cost |
|----------------------------------|--------------------|--------------------|--------------------|
| | Federal (80%) | Local (20%) | |
| School’s Construction cost | \$4,698,320 | \$1,174,580 | \$5,872,900 |
| Architectural/Engineering Fees | 320,989 | 80,247 | 401,236 |
| Contingencies | 115,091 | 28,773 | 143,864 |
| Project Inspection Fees | 63,600 | 16,400 | 80,000 |
| 702 Program Administration Costs | 2,000 | - | 2,000 |
| TOTAL PROJECT COSTS | \$5,200,000 | \$1,300,000 | \$6,500,000 |

Information regarding contract cost and project milestones follow.

Contract Cost:

| | | |
|---|-----------------|--------------------|
| Original contract price (contract 54-OS) | | \$5,872,900 |
| Add (Deduct) changes in scope of work: | change order #1 | 35,810 |
| | change order #2 | <u>(168,101)</u> |
| | | <u>(132,291)</u> |
| Final contract price | | 5,740,609 |
| Less: Total payments made to date | | <u>(5,310,446)</u> |
| Balance still being claimed by contractor | | \$430,163 |
| DOI’s share in the final contract price (80%) | | \$4,592,487 |
| CNMI’s local matching contribution (20%) | | \$1,148,122 |

¹ P.L. 9-1 cited as the “Special Capital Improvement Projects Appropriation Act of 1994” appropriated \$4.0 million for the design and construction of an elementary and secondary school in Kagman.

² P.L. 11-27 cited as the “PSS Special Capital Improvement Re-Appropriation Act of 1998” re-appropriated \$3.8 million from the construction of a sanitary landfill under P.L. 9-1 to the construction of new schools – \$1.3 for Dan Dan and \$2.5 for Kagman.

³ Federal funds of \$27.72 million in Covenant funding authorized under the Grant Pledge Agreement and U.S. Public Law 102-381.

⁴ Local matching funds of \$6.93 million dollars derived from bond interest presently deposit at the bank of New York, for a total of \$34.65 million dollars.

Project Milestones:

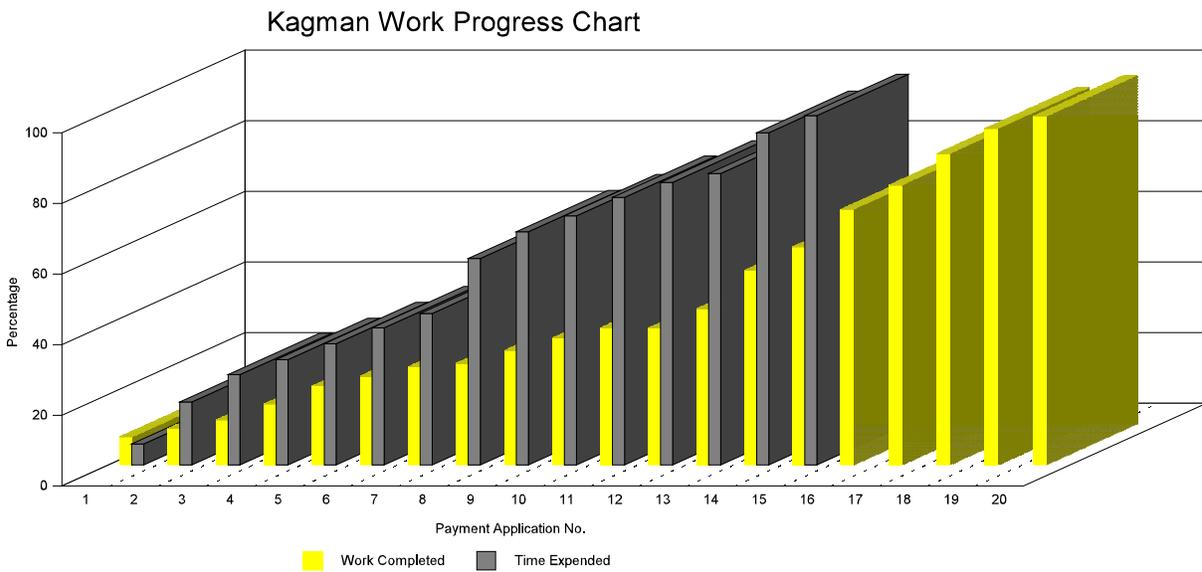
| Date | Particulars |
|-------------------|--|
| December 18, 1998 | Contract approval date. |
| January 11, 1999 | Date of notice to proceed. |
| June 14, 1999 | Approval of change order no. 1 |
| October 7, 1999 | Original project completion date |
| October 19, 1999 | Revised completion date based on change order no. 1. |
| December 21, 1999 | Approval of change order no. 2 |
| February 12, 2000 | Revised completion date based on change order no. 2. |

Chronology of Events During Construction

We compiled two chronologies addressing construction delay and structural safety. **Appendix A** is a chronological list of those events that help explain the delay in the completion of school construction. **Appendix B** is a chronological list of those events that raised questions concerning the structural safety of the school buildings.

Factors Related to the Delay and Structural Safety

Our comparison of contract time expended vs. work completed, as indicated in the following chart, showed that actual work lagged behind schedule through much of the contract period.



Documents and information gathered during our compilation were, in our opinion, alone insufficient, to enable us to conclusively identify the actual cause of the delay or to determine whether the school buildings are structurally unsafe. Consequently, we relied on the professional opinions of personnel involved or knowledgeable about the project.

Contractor Lacked Resources

According to DPW, PSS, and Office of Insular Affairs (OIA) personnel, the contractor firm did not complete the project satisfactorily because it lacked the needed resources. Although the contractor completed smaller projects on Saipan, the project was its largest job to date. It appears that the contractor relied on at least ten other firms to assist in completing this project because it lacked the needed personnel, equipment, and financing. To illustrate, the contractor subcontracted out the fabrication of precast concrete (panels, beams, and columns) under an agreement that the contractor would provide materials and equipment to the subcontractor (1st subcontractor). The contractor also hired another subcontractor (2nd subcontractor) to provide manpower to the 1st subcontractor. This arrangement later proved unsatisfactory and was a source of disagreement between the contractor and the 1st subcontractor.

- When the 1st subcontractor's precast concrete work was delayed, the contractor blamed the 1st subcontractor for the delay, poor finish quality, and other lesser issues.
- The 1st subcontractor in turn claimed that the delay was due largely to the contractor's failure to provide adequate materials and equipment and attributed the poor finish quality to the unskilled work of the 2nd subcontractor.
- The 1st subcontractor also claimed that the contractor substituted materials of lesser value and quality for the concrete precast panels which may have contributed to the cracks found during later inspections.

To sort this out, we met with the contractor's Legal Counsel, who informed us that the contractor was unable to provide sufficient manpower because the government had issued a hiring moratorium which limited its ability to hire nonresident employees. He said that the contractor had to resort to subcontracting manpower because it could not directly hire the additional workers needed.

Poor Quality Control and Quality Assurance May Have Compromised Structural Integrity

A quality control system involves selecting samples for quality control testing, providing inspections, and exercising management control to ensure that work conforms to the contract requirements. As part of quality control, written records, reports of inspections and tests are maintained to (a) provide a reliable record of as-built conditions, (b) provide evidence that construction was performed in accordance with the contract requirements, and (c) document any

noncompliance and corrective actions taken.

According to the US-ACOE, quality control is typically the responsibility of the contractor. The government in turn must conduct quality assurance tests to ensure that a quality control system is in place. According to US-ACOE's report, poor quality control and quality assurance systems contribute to the project's problems and deficiencies. The report indicated that the quality of workmanship going into the structural members for the precast and cast-in-place concrete was poor, and that it may have compromised the structural integrity of some concrete structural members. Further, deficiencies in workmanship repeatedly occurred, and were covered over with new work. The report however, stated that the contractor, did not in its opinion, willfully try to "cut corners" to the detriment of the project.

The report also indicated that the quality control and quality assurance representatives should have established and used a record keeping system inclusive of test reports, daily reports, and other contract documentation. Without complete records and contract documentation, it is not possible to determine the integrity of the actual construction or to track project history.

Unclear Oversight Role of DPW and PSS

Although construction management was budgeted as an expense, DPW and PSS agreed that DPW would instead perform the inspections to reduce project costs. As such, DPW's former Technical Services Division (TSD) Director became primarily responsible for construction management inclusive of conducting formal site inspections and project meetings, reviewing shop drawings, project submittals and payment applications. PSS was to submit any concerns directly to DPW.

However, both DPW and PSS assumed the role of construction manager over the project possibly creating confusion as to whom the contractor should follow in correcting deficiencies. In our opinion, the unclear oversight role of DPW and PSS may have served to delay corrective action.

In the project's initial stages, the PSS Capital Improvement Projects (CIP) office voiced very strong concerns about the quality of the DPW inspections. Subsequently, DPW and PSS agreed that former PSS-CIP Coordinators would conduct their own in-house quality control inspections. As such, the former PSS-CIP Coordinator would directly communicate with the contractor on any structural deficiencies noted and could order the contractor to curtail further work. The former DPW Secretary could likewise issue stop work orders. When both DPW and PSS noted structural deficiencies in Building A, the former PSS-CIP Coordinator wrote the contractor and the former DPW Secretary likewise issued a show cause notice for the contractor to do corrective action. Although the deficiencies noted by DPW and PSS may have been dissimilar, the contractor nevertheless needed to respond to both DPW and PSS. Out of frustration, the contractor, suggested a unified DPW and PSS instruction order. The duplication of instruction orders caused confusion for the contractor, and may have led to delay in correcting structural deficiencies.

Project Vehicles Improperly Charged to Project Cost

During the review, OPA gathered information about the cost of vehicles charged to project cost. We found that DPW had requested the purchase of, and accepted, two project vehicles even though PSS did not authorize such purchase. DPW then submitted a proposed change order to OIA, who subsequently disallowed the purchase on the basis that the vehicles could not be purchased with CIP funds, only to turn around later and allow the lease of the vehicle under the construction contract. To illustrate:

- On January 21, 1999, the contractor presented PSS with a DPW request to submit a change order proposal for the purchase of two project vehicles, preferably jeeps. The former PSS-CIP Coordinator suggested that the PSS Commissioner: review the change order proposal for legal issues, ensure that collateral equipment and contingency items receive first priority, and determine whether the project vehicles purchased will be suitable. PSS suggested the purchase of small pickup rather than the jeeps requested by DPW because they are less costly to purchase and maintain.
- However, by February 9, 1999, the contractor's Project Manager had already delivered two 1999 Toyota RAV4s costing \$45,380 to DPW for use as project vehicles. The contractor subsequently submitted a change order proposal for supply of gasoline with car insurance coverage for a lump sum price of \$5,000 for the two project vehicles.
- The former PSS-CIP Coordinator and Architect confirmed the purchase of the vehicles but informed the PSS Commissioner that the purchase was done without PSS's consent or acknowledgment. The PSS Commissioner subsequently issued a letter to DPW rejecting the change order proposal, claiming that it had requested DPW to withhold approval of the change order proposal until such time that PSS could confirm the legality of the purchase and ensure that all other project needs had been met.
- Then on March 4, 1999, the former DPW-TSD Director prepared a change order proposal of \$50,380 for the purchase of the vehicles inclusive of gasoline and car insurance coverage. DPW submitted the change order proposal to the OIA Fiscal Program Specialist for review and approval, on the basis that OIA's approval was needed because this was an out-of-the-ordinary request for use of CIP funds to be charged under *Construction Management and Inspection*.
- OIA subsequently disapproved the proposed change order on the basis that the items were not part of the original scope of work or budget it had approved on December 1, 1998, and referred to an OPA letter, dated March 11, 1999, which stated that P.L. 4-46⁵ does not

⁵ Section 2 of P.L. 4-46 limits the definition of a capital improvement project to construction or other physical improvements on government owned or leased real property, as well as land acquisition costs. It was the specific intent of the Legislature, as expressed in section 1, "to restrict expenditure on capital improvement funds from use for general operating equipment," the purpose being to increase funds available for more qualified projects.

allow vehicles to be purchased with CIP funds.

- Eventually on March 13, 2000, the contractor's Legal Counsel issued a letter to the former DPW Secretary requesting the return of the vehicles immediately given the problems it had caused the contractor and because the vehicles were not to be a cost borne by the Federal government. He also stated that vehicles needed to be disposed so as to avoid giving an impression of any impropriety. Finally, on March 21, 2000 (after over a year) DPW returned the project vehicles to the contractor.
- However, when DPW executed a settlement agreement with the contractor on May 9, 2001, the terms of the procurement of the vehicles were revised from a purchase to a lease still chargeable to the construction contract for \$52,000.

After questions were raised regarding the propriety of "project vehicles" charged to project cost, OIA and OPA agreed that vehicles were not an allowable project cost. However, the former DPW-TSD Director had already allowed the purchase of the vehicles even before OIA could present its opinion on its propriety and even if the vehicles were disallowed by OIA, the former DPW-TSD Director still included the vehicle as a lease chargeable to the project cost in the May 9, 2001 settlement. It appears that the former DPW-TSD Director exceeded his authority in allowing the purchase of the project vehicles, and failed to exercise good sense or judgement when he represented the government in the settlement agreement with the contractor. As a result, the government paid \$52,000 for the project vehicles it does not even possess.

Settlement of Claims on the Project

On January 3, 2002, DPW, PSS and the contractor executed a revised settlement agreement that superseded an earlier May 9, 2001 settlement. The revised settlement agreement provides that \$405,163 will be paid to the contractor as a full compromise for all issues arising under the contract. Certain contract conditions must be met before payment of the final settlement.

- The subcontractor will be paid a total of \$76,000, inclusive of \$22,688 for air-conditioning balancing services, and \$53,312 which represents payment to the subcontractor in settlement of the lawsuit the subcontractor filed against the contractor for failure to make payments. This latter amount will be deducted from the settlement amount of \$405,163.
- Selected representatives of DPW, PSS, and the contractor will inspect the school to identify any dangerous condition⁶ as a result of a deficiency in the construction of the facilities. If they disagree on the dangerous condition identified, a consulting engineer will be contracted to decide the matter. When a dangerous condition exists, the contractor will

⁶ A dangerous condition shall mean a condition which although the facility presently is used by and occupied by students, teachers and staff in the normal course of educational activities, presents an immediate risk of serious bodily harm for the occupants or will reasonably foreseeable inflict serious injury on the facilities' occupants if said condition is not remedied. The dangerous condition must exist as a result of a deficiency in the construction of facilities and not be partially caused by a failure to maintain or repair the facilities.

conduct remedial work to the satisfaction of the consulting engineers, the cost of which will be paid by the contractor. Any consulting engineer cost will be paid equally by the contractor and PSS.

Total Project Cost

While this project was budgeted at \$6.5 million, actual project costs only amounted to \$6,325,911, leaving unused funds of \$174,089 after \$170,014 was reprogrammed from the Construction account to the Office Furniture account for the purchase of collateral equipment. According to the former PSS-CIP Coordinator, PSS plans to purchase computers with the unused funds.

\$5,060,729, or 80 percent of actual costs, represents the Federal share of costs, while \$1,265,182, or 20 percent, represents the local share. A comparison of budgeted versus actual project cost both before and after the January 3, 2002 settlement follows.

| Account Description | Budget (A) | Actual Costs Before Settlement | 1/3/02 Settlement | Actual Costs After Settlement (B) | (A)-(B) Under (Over) Budget |
|---------------------|--------------------|--------------------------------|-------------------|-----------------------------------|-----------------------------|
| Construction | \$5,872,900 | \$5,310,446 | \$442,091 | \$5,752,537 | \$120,363 |
| Arch/Eng Fees | 401,236 | 401,146 | 0 | 401,146 | 90 |
| Contingencies | 143,864 | 0 | 0 | 0 | 143,864 |
| Inspection Fees | 80,000 | 0 | 0 | 0 | 80,000 |
| Adm Costs | 2,000 | 2,214 | 0 | 2,214 | (214) |
| Office Furniture | 0 | 170,014 | 0 | 170,014 | (170,014) |
| Prof Services | 0 | 14,240 | (14,240) | 0 | 0 |
| Total | 6,500,000 | 5,898,060 | 427,851 | 6,325,911 | 174,089 |
| Federal Share (80%) | 5,200,000 | 4,718,448 | 342,281 | 5,060,729 | 139,271 |
| Local Share (20%) | 1,300,000 | 1,179,612 | 85,570 | 1,265,182 | 34,818 |
| Total | \$6,500,000 | \$5,898,060 | \$427,851 | \$6,325,911 | \$174,089 |

According to DOF records, the final settlement of \$405,163 was adjusted upwards to \$442,091 thereby accounting for two payments the government had previously advanced that needed to be recovered from the contractor.

| | |
|--|-----------|
| Settlement Amount | \$405,163 |
| Add: Reimbursement for architectural and structural assessment fee | 14,240 |
| Reimbursement for air-conditioning balancing | 22,688 |
| <hr/> | |
| Adjusted Settlement Amount | \$442,091 |

The adjusted settlement of \$442,091 has been distributed to the following parties.

| | |
|---|-----------|
| Contractor | \$351,851 |
| Air-con subcontractor for settlement of lawsuit | 53,312 |
| Air-con subcontractor for air-con balancing services | 22,688 |
| Structural Engineer and Architect of Record for professional services | 14,240 |
| <hr/> | |
| Total | \$442,091 |

We determined the propriety of payments made to the contractor, and found that \$5,662,297 paid to the contractor inclusive of the settlement was properly computed.

| | |
|---|-------------|
| Total payments made before the January 3, 2002 settlement | \$5,310,446 |
| Final payment upon settlement | 351,851 |
| <hr/> | |
| Total payments to contractor | \$5,662,297 |

OPA CONCLUSION

According to DPW, PSS and OIA officials interviewed, the construction of the Kagman Elementary school was delayed because the contractor lacked the needed resources to complete the project. The US-ACOE report cited the contractor's ineffective system of quality control and the government's lack of quality assurance as factors which also may have contributed to the delay. We believe that unclear project oversight, as exercised by DPW and PSS, likewise may have contributed to the delay.

We suggest that DPW and PSS:

- require contractors to develop and implement a more effective system of quality control;
- take a more proactive and timely role in conducting quality assurance to ensure that controls are in place;

- hire a Construction Manager instead of conducting construction management in-house, specially if there are not enough qualified technical people (inspectors, architects, engineers) on board; and
- clearly agree on their respective duties and responsibilities under every construction contract.

Finally, we suggest that the CNMI Legislature re-evaluate whether both DPW and PSS should continue to have expenditure authority on PSS-CIP projects when funding rests only with PSS.

Thank you for the opportunity to provide information concerning the Kagman Elementary School Project. Please call should you have questions or require additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read 'MS Sablan', with a stylized flourish at the end.

Michael S. Sablan, CPA
Public Auditor

cc: The Honorable Paul A. Manglona, Senate President
The Honorable Heinz S. Hofschneider, Speaker of the House
Mr. Herman T. Guerrero, BOE Chairman
Mr. Juan S. Reyes, Acting DPW Secretary
Mr. Keith Aughenbaugh, OIA Federal CIP Coordinator

EVENTS THAT MAY HELP EXPLAIN CONSTRUCTION DELAYS

The following is a chronological list of those events that may help explain the delay in the completion of school construction.

Failure to Obtain Permits. On January 22, 1999, the Division of Environmental Quality (DEQ) issued a stop work order notice to the contractor for its failure to obtain an earthmoving and erosion control permit from DPW and for not-complying with permit conditions. The contractor subsequently complied with needed requirements on January 25, 1999, but work had already been delayed for three days, and DPW provided no time extension.

Noncompliance with Earthmoving and Erosion Control Permit Condition. On February 12, 1999, DEQ issued another stop work order for noncompliance with an earthmoving and erosion control permit condition which resulted in a delay of four days. Again, DPW did not approve a time extension.

Foundation Discrepancy. On February 18, 1999, DPW suspended all foundation work due to a discrepancy in the structural foundation plan. After the Structural Engineer and Architect of Record revised the plan at no additional cost to the government, DPW issued a notice, effective February 25, 1999, to resume work. Although the contractor requested a time extension of twenty-seven days, DPW only granted fifteen days.

Alleged Mishandling of Payment by Contractor's Project Manager. On March 4, 1999, the contractor's Legal Counsel issued a letter to the project manager demanding the return of \$503,000 from the first progress payment. The project manager had previously received the payment on March 3, 1999 and allegedly used the money to pay some outstanding obligations he claimed were owed by the contractor. The President of the contractor corporation was unaware of the obligations and filed a lawsuit against both the project manager and individuals he had previously paid using the first progress payment receipts. This incident led to OIA imposing a hold on payment of Federal funds for the project.

Hold on Federal Funds. On March 26 and April 2, 1999, the OIA Fiscal Program Specialist advised the former DPW Secretary and the DPW 702 CIP Coordinator of OIA's concerns about the project delay. OIA pointed out that the delay was apparent because about 25 percent of the project period had lapsed yet completion was only at the 10 percent stage. OIA wanted the percentage of work completed to equate to the progress payments. OIA also stated that the contractor had internal financial problems within its organization as it had received information that one of the contractor's personnel had allegedly mishandled funds paid using the first payment receipts. This incident could have restricted the contractor in settling its financial obligations. DPW issued a stop work order on March 31, 1999 after OIA notified DPW that its funding would stop until the issue on the percentage of completion and other problems were resolved.

On April 12, 1999, the DPW 702 CIP Program Manager wrote to OIA stating that issues raised in OIA's April 2, 1999 letter had already been addressed. The DPW 702 CIP Program Manager stated that: (a) PSS reported that the percentage of completion was 12 percent as of the April 6, 1999 site inspection which closely matched the amount of payment⁷, (b) the internal problem involved a change in the contractor's project manager and disagreement over company's financial obligations but the contractor's Legal Counsel provided assurance that all obligations have been paid up, and (c) the project was on schedule since the completion date of the project had been revised to October 22, 1999 which reflects the amount of work currently in place and how the contractor intends to schedule the remaining scope of work items. On April 13, 1999, OIA removed the hold on Federal funds and DPW subsequently issued a notice to resume work effective April 19, 1999 resulting in a work delay of 19 days from the March 31, 1999 stop work order. Available documents, do not however, indicate that this initial delay was attributable to any particular party, but the time extension appeared to have been mutually agreed upon.

Suspension of Work by Subcontractor. On April 30, 1999, one of the subcontractors notified the contractor that it would stop civil work on the project unless it was paid its billings. On May 1, 1999, the contractor replied that the government had paid only one progress billing since the project started in January. The contractor also warned the subcontractor that it did not have the capability to finish the project because of insufficient funds, equipment, and manpower, and the subcontract could be terminated. We could not determine the extent of any delay due to the subcontractor's suspension of work.

Three and One Half Weeks of Delay. On May 25, 1999, the former PSS-CIP Coordinator questioned the contractor about: (a) extending the project by about three and one half weeks,⁸ and (b) scheduling the erection of precast panels. While only six wall panels had been erected over a three-day period, the construction schedule provides that 450 wall panels were to be erected within a span of 56 days. This would require erecting at least 8 wall panels per day. The former PSS-CIP Coordinator also reminded the contractor of the liquidated damages of \$1,500 for each day of delay.

Delay in Precast Works. On June 7, 1999, the subcontractor responsible for precast walls and roof advised the contractor on the factors it believed contributed to the delay in the precast work schedule including: (1) the contractor had not provided adequate equipment, (2) the labor subcontractor had provided inadequate and inexperienced manpower, (3) the labor subcontractor had provided inferior quality of work, (4) contractors' lack of financial support, and (5) contractors' delay in approving shop drawings. The contractor, in turn, blamed the precast

⁷ Payment application no. 2 was revised which was substantiated by the amount of work in place during a site inspection by DPW and PSS on March 26, 1999.

⁸ This information is based on the revised completion date of November 10, 1999 in the amended April 1, 1999 construction schedule submitted by the contractor.

subcontractor for the delay. On June 16, 1999, the precast subcontractor further justified his explanation for the delay by citing specific materials and equipment that the contractor had not provided. The subcontractor also stated that the manpower provided by another subcontractor whose subcontract was negotiated by the contractor was responsible for much of the delay. This apparently resulted to structural defects in Building A.

155 Days Left to Complete Project as of June 8, 1999. The former PSS-CIP Coordinator and the PSS Commissioner informed the former DPW-TSD Director and the former DPW Secretary respectively that the project was less than 30 percent complete as of June 8, 1999, yet 50 percent of the construction time had been expended with only 155 calendar days remaining until the project's revised completion date of November 10, 1999.

Anticipated Project Delay. On June 10, 1999, the contractor informed the former DPW-TSD Director about delay factors which it claimed were beyond its control including: (1) delay in progress payment, (2) delay in electrical power hook up, (3) pending approval of submittal, (4) DPW's and DEQ's issuance of a suspension work order, and (5) the earthwork completed on the site was not in accordance with civil work drawing plans.

Contract Change Order #1. On June 14, 1999, contract change order #1 was completed. It provided a 12-day time extension for (a) survey work that would establish project reference points, and (b) geophysical survey/mapping and site monitoring of unexploded ordinances. This time extension was mutually agreed upon.

Stop Work Order for Violation of Contract Documents. On October 27, 1999, DPW issued a stop work order to the contractor to stop installation of wall partitions and to immediately correct duct work deficiencies because of violations of contract documents. DPW gave the contractor ten days to correct and resolve the violation. Apparently no time extension was given because the violation was directly attributable to the contractor.

Contract Change Order #2. On December 21, 1999, contract change order #2 was completed extending the project completion date by 94 days to February 12, 2000. This revision was decided by mutual agreement.

Contractor's Request for Time Extension. On February 25, 2000, the contractor enumerated various factors which it believed contributed to the delay in the project's completion, and requested that the former DPW Secretary provide a time extension. Factors cited included: (1) delay in approving submittals, (2) delay in payment processing, (3) delay in confirmation of telephone lines and boxes installation requirements, (4) no permanent or full time project inspectors assigned, (5) additional earthmoving works needed at parking area, basketball fields, and the leaching field area, (6) discrepancies in the mechanical and electrical contract drawing plans, (7) pending application of permanent water and road cutting permit, and (8) extraordinary weather conditions. In its April

25, 2000 reply to the former DPW Secretary, the former PSS-CIP Architect rejected the time extension and provided detailed answers to the eight factors enumerated.

PSS Occupied Buildings. The contractor failed to complete the project by February 12, 2000, the original completion date. PSS, however, opened the school buildings on September 1, 2000 despite some unfinished work. Beneficial occupancy date was determined by DPW to be August 31, 2000.

Settlement of Claims. On May 9, 2001, the former DPW-TSD Director signed a negotiated settlement agreement with the contractor whereby \$25,000 would be deducted from the unpaid contract balance of \$430,163 resulting in a settlement of \$405,163. This deduction was based on a proposed contract change order as follows:

| May 9, 2001 Settlement Between DPW & Contractor | | |
|--|---|------------|
| 1. | Claims for construction deficiencies (Bearing pads \$10,000; Embed plates, \$13,000; Air-conditioning balancing, \$22,700; Floor finish, \$4,300; Landscaping, \$16,300; Railings, \$2,300; Cabinets and casework, \$5,000; Pipe sleeves, \$3,000; and Uncorrected punch list items, \$13,200). | (\$89,800) |
| 2. | Additions for deficiencies claim by contractor (Extra earth moving works, \$30,000; Underground electrical conduit, \$6,000). | 36,000 |
| 3. | Collectible for liquidated damages due to delay in completion of project (Delay of 30 days x \$1,500 per day). | (45,000) |
| 4. | Project vehicles (converted from purchase to lease chargeable to contract). | 52,000 |
| 5. | Forensic investigation | 36,000 |
| 6. | Architectural and structural assessment fee | (14,200) |
| Net deductible from unpaid balance on the contract | | (\$25,000) |

As part of the settlement, a time extension of 170 days from February 12, 2000 to July 31, 2000 was established. This extension did not, however, cover the 30 day delay from August 1 to August 30 for which liquidated damages were assessed as identified in item 3 above.

On October 30, 2001, the former PSS-CIP Coordinator informed the then Acting PSS Commissioner that items in the proposed change order needed verification, and suggested the following settlement changes.

| PSS Version of May 9, 2001 Settlement Between DPW & Contractor | | |
|--|--|-------------|
| 1. | Claims for construction deficiencies (Bearing pads \$10,000; Embed plates, \$13,000; Air-conditioning balancing, \$22,700; Floor finish, \$4,300; Landscaping, \$16,300; Railings, \$2,300; Cabinets and casework, \$5,000; Pipe sleeves, \$3,000; and Uncorrected punch list items, \$13,200) assuming that landscaping and uncorrected punch list items were verified. | (\$89,800) |
| 2. | Additions for deficiencies claim by contractor (Extra earth moving works, \$30,000; Underground electrical conduit, \$6,000) assuming extra earth moving works was verified. | 36,000 |
| 3. | Collectible for liquidated damages due to delay in completion of project (Delay of 166 days x \$1,500 per day). | (249,000) |
| 4. | Project Vehicles (converted from purchase to lease chargeable to contract). | 0 |
| 5. | Forensic investigation assessment fee. | 0 |
| 6. | Architectural and structural assessment fee if verified. | (14,200) |
| Net Deductible from unpaid balance on the contract | | (\$317,000) |

PSS instead proposed that \$317,000 be deducted from the unpaid contract balance of \$430,163 to arrive at a settlement of \$113,163, and determined that a time extension of 35 days from February 12, 2000 to March 18, 2000 was appropriate. PSS declared that liquidated damages should be assessed for the 166-day delay from March 19, 2000 to August 31, 2000 as identified in item 3 above.

The former PSS-CIP Architect did not include the costs of project vehicles (Item 4) and a forensic investigation assessment fee (Item 5) in his revised version of the May 9, 2001 settlement agreement. According to the former PSS-CIP Architect, the project vehicles were not part of the original contract, and OIA would not approve purchase of vehicles. Nevertheless, DPW still included the vehicle in the settlement transacting it as a lease rather than a purchase. However, PSS feels that the quoted price of \$52,000 is too high for a one-year lease of two vehicles. As concerns the forensic investigation assessment fee, the former PSS-CIP Coordinator believes that the contractor should be responsible for the fee since there were major deficiencies noted in the forensic investigation report. Furthermore, before the investigation was conducted, the contractor agreed to pay the fee and there has been no discussion regarding fee reimbursement.

AGO's Legal Opinion on the May 9, 2001 Settlement. The members of the Board of Education expressed disapproval over the May 9, 2001 settlement agreement between the contractor and DPW. Consequently, on October 12, 2001 the PSS Legal Counsel sought an opinion from the Attorney General's Office (AGO) as to whether the settlement could be delayed based on the contract's dispute provisions. On November 8, 2001, the AGO provided a legal opinion that the

settlement agreement constitutes a valid binding enforceable settlement of all issues. Further, any PSS actions to delay the settlement would not be valid as the Contracting Officer, through the former DPW-TSD Director who had the needed authority, had already settled the dispute. As such, PSS has no legal right to contest the validity of the properly executed settlement.

Summary of DPW's Computation of Time Extensions and Resulting Delay. The following table summarizes the stop work orders and contract change orders we found during our review of available documents with the corresponding time extensions granted from which we were able to ascertain how the liquidated damages for the resulting delay were computed by DPW in the proposed contract change order.

| From | To | Particulars | Revised Completion Date | Time Extension (in days) | |
|--|----------|---|-------------------------------|-----------------------------|-----|
| Total delay from original completion date (10/7/99 to 8/30/00) | | | | | 328 |
| Less: Total Time Extension Granted | | | | | |
| 1/22/99 | 1/25/99 | Stop work order. Failure to obtain control permit. | | None | |
| 2/12/99 | 2/16/99 | Stop work order. Noncompliance with permit condition. | | None | |
| 2/18/99 | 2/25/99 | Stop work order. Foundation discrepancy. | 10/22/99 | 15 | |
| 3/31/99 | 4/19/99 | Stop work order. Hold on Federal draw downs per OIA. | 11/10/99 | 19 | |
| 7/1/99 | 8/23/99 | Stop Work Order. Structural failures at building A. | | None | |
| 10/7/99 | 10/19/99 | Contract change order #1. | | None | |
| | 9 | | | | |
| 10/27/99 | 11/6/99 | Stop Work Order. Violation of contract documents. | | None | |
| | 9 | | | | |
| 11/10/99 | 2/12/00 | Contract change order #2. | 2/12/00 | 94 | 128 |
| | 9 | | | | |
| Delay for which no time extension has been granted yet | | | | | 200 |
| Less: Time extension in proposed contract change order (2/12/00 to 7/31/00) | | | | | 170 |
| Basis for liquidated damages for delay, per proposed contract change order (8/1/00 to 8/30/00) | | | | | 30 |

EVENTS THAT RAISE QUESTIONS CONCERNING STRUCTURAL SAFETY

The following is a chronological list of those events that raised questions concerning structural safety of the school buildings.

Structural Failures in Building A. On June 18, 1999, the former PSS-CIP Coordinator in a letter to the contractor identified structural failures of the precast columns, roof beams, and roof slabs for Building A. The DPW Structural Engineer confirmed these structural deficiencies in his June 24, 1999 inspection report where he documented cracks in the roof beams, roof panels and columns of Building A, and the under-reinforcement of the roof panels in Building B. On July 1, 1999, DPW officially advised the contractor to cease placing beams and roof slabs on precast columns until the government had received the DPW Structural Engineer's recommendation.

Show Cause Notice for Contractor to Continue Project. On July 6, 1999, the former PSS-CIP Coordinator alerted the contractor on the need to respond and provide solutions to five deficiencies noted before continuing the project such as the quality of the precast works; cracks at building "A" structural works; unauthorized change in wall panel thickness and re-bar design; lack of payment to subcontractors; and delay in schedule. The former DPW Secretary, likewise, issued a show cause notice on July 7, 1999 which enumerated these deficiencies and required the contractor to provide assurance they would be corrected. The contractor replied to the former DPW Secretary on July 19, 1999, and guaranteed that these deficiencies would be corrected in accordance with the contract documents and specifications.

Conditions for Continuation of the Project and Findings of Default. On August 2, 1999, both the former DPW Secretary and the contractor executed and signed the Conditions for Continuation of the Project which incorporated the Findings of Default outlining the six deficiencies enumerated in the show cause notice. On August 13, 1999, the contractor provided the former DPW Secretary with proposed actions to satisfy the conditions for continuation of the project. Later, on August 23, 1999, the former DPW Secretary issued a resume work notice. The interruption in construction totaled 53 days (from July 1, 1999 to August 23, 1999). We found no documents to enable us to determine whether a time extension was granted.

Monitoring of Conditions for Continuation of Project. On September 7, 1999, the former DPW Secretary followed up with the contractor and stated that seven of the eleven items in the conditions for continuation remained outstanding. On September 20, 1999, the contractor responded to the former DPW Secretary with a detailed explanation provided for each outstanding item. The following table presents DPW's monitoring of the conditions for continuing the project.

APPENDIX B
Page 2 of 6

| DPW's Conditions for Continuation (8/2/99) | Contractor's Proposed Actions to Satisfy Conditions (8/13/99) | ✓ Outstanding Items per DPW (as of 9/7/99) | Response from Contractor (9/20/99) |
|--|--|--|--|
| 1. Replacement and correction of pre-cast deficiencies. | Contractor to replace and re-cast all rejected roof panels. | | Completed as of 9/7/99. |
| 2. Test for deflection of roof panels and wall panels. | Contractor suggested that deflections test be changed to concrete compressive strength test and cracks checking. | | Completed as of 9/7/99. |
| 3. Provide minimum of 35 workers and 2 adequately sized cranes daily and work seven days a week. | Contractor concurred with condition. | ✓ | Cranes will be available when needed and based on actual site conditions. |
| 4. Comply with OSHA. | Latest site safety inspection conducted on 8/13/99 and contractor is awaiting safety audit report. | ✓ | In compliance with OSHA, submitted consultant's safety audit report (7/19/99) and follow-up safety audit (9/17/99). |
| 5. Test strength of stored re-bar materials. | Contractor to do a tensile strength test and is looking for an independent testing company. | ✓ | Submitted advance copy of tensile strength test result on 9/7/99. |
| 6. Negotiate agreement with two sub-contractors for full payment of services rendered. | Contractor concurred with condition. | ✓ | Payment to all but one sub-contractor because of rejected pre-cast roof panel. |
| 7. Provide list of sub-contractors for approval in advance. | Contractor provided current list of sub-contractors as of 8/4/99. | | |
| 8. Provide letter of acceptance on time extension, acceptable change orders and credits to government as change order deducts. | Contractor proposed time extension of 120 calendar days. | ✓ | Proposed time extension of 150 days, acceptable change orders additive of \$353,783.79, and credits to Gov't. of \$230,547.24. |
| 9. Refinish floor slabs at Building A. | Work on this item is in-progress. | ✓ | Floor slab has been chipped but not yet re-poured and suggested that re-pouring be done during architectural finishing work. |
| 10. Maintain record log for all precast concrete members. | Contractor concurred with condition. | ✓ | Submitted latest log report for all the structures starting 8/23/99. |
| 11. Comply with finishes and erection specifications. | Contractor concurred with condition. | | |

Job meeting notes also document monitoring of the outstanding items in the conditions for continuation presented in the table above. In the October 6, 1999 job meeting notes, item 8 above which addressed change order proposals and time extensions was the only significant item at this time in the conditions for continuation.

US-ACOE Report on the Structural Integrity of the Project. During December 6 to 9, 1999, two representatives from the US Army Corps of Engineers (US-ACOE) conducted a four-day site inspection of the structural integrity of the Kagman Elementary School project at the request of

OIA. They subsequently issued a report summarizing general and specific deficiencies. The report stated that the quality of workmanship was poor and that quality control and quality assurance on the project was not effective. It enumerated thirteen structural deficiencies, thirteen architectural deficiencies, three mechanical deficiencies and two electrical deficiencies. For example, a structural deficiency was found in the roof panels of the first three of the six buildings. Because these deficiencies were not corrected, they were repeated during the construction of the remaining three buildings. The report further stated that although the deficiencies noted may not have adversely affected the buildings' structural integrity, they will result in higher maintenance costs and shorter building life expectancy. The US-ACOE recommended that the Structural Engineer and Architect of Record review the deficiencies cited and conduct a project site visit in order to make recommendations for repairs and corrections.

Structural Review Report by the Structural Engineer and Architect of Record. On March 20 and 21, 2000, the Structural Engineer and Architect of Record conducted a preliminary site visit to the Kagman Elementary School. Subsequently, a structural review report, dated April 19, 2000,⁹ was issued which stated that the concrete workmanship was poor. The report enumerated twenty-four potential problems with corresponding recommendations on how to remedy them. The report further stated that the Structural Engineer and Architect of Record cannot, however, "certify" the structure without being present during the construction. The report suggested that a forensic investigation of the building could be performed. This would entail using nondestructive testing equipment to verify (a) the placement of reinforcing, (b) the strength of the concrete, and (c) the quality of topping slabs and patches. The investigation's goal would be to determine whether the above ground portions of the structure had been built in accordance with construction documents, and determine whether the structure was safe for its intended use.

Structural Investigation Report by the Structural Engineer and Architect of Record. From June 20 to 29, 2000, the Structural Engineer and Architect of Record conducted a forensic investigation of the Kagman Elementary School to investigate the construction deficiencies noted by the US-ACOE and to make a forensic evaluation of the structural integrity of the school buildings. On October 17, 2000,¹⁰ it issued a structural investigation report addressing the deficiencies noted by the US-ACOE and provided recommendations for any required repair work. According to the report, the quality of school construction was below that specified in the contract documents, but there was no evidence that the structural integrity of the buildings was inadequate or that the buildings were unsafe. The report concurred with the US-ACOE's observations. It identified few specific locations requiring repair work. The report noted major deficiencies in four of the six buildings, such as the failure to install beam bearing pads and deviations in the wall panel connections. It

⁹ The professional fees for the structural review report was agreed upon to be paid for by contractor and thus was claimed as a deductible of \$14,200 in the May 9, 2001 settlement agreement.

¹⁰ The Structural Investigation report was paid for by the Government for a total of \$36,000 based on the May 9, 2001 settlement.

recommended that the Government address the likely increase in maintenance and repair costs due to the reduced quality of the construction.

We compared the reports issued by the US-ACOE with the Structural Engineer and Architect of Record (SEAR), and noted eleven construction deficiencies common to both reports as follows.

| Item | Location | Description of Deficiency |
|--|-------------------------------|--|
| 1. Bearing Pad | General, all buildings | None were installed per US-ACOE. SEAR could not confirm if these items were installed. |
| 2. Expansion Board | General, all buildings | No evidence of the expansion boards at some locations. |
| 3. Walkway Slab | Walkway canopy, all buildings | Numerous cracks in the walkway slab pours. |
| 4. Floor Construction and Control Joints | General, all buildings | Improper installation of the floor joints. The contractor cut the joints into the slab at least a month after the slab was placed. |
| 5. Embed Plates | General, all buildings | Contractor changed detail during construction. SEAR cannot confirm as-built condition. |
| 6. Wall Panel Joints | General, all buildings | Wall panel joints were changed during construction. Unacceptable finish for majority of wall panel joints, interior and exterior. |
| 7. Seismic Joints | General, all buildings | Joints not constructed per contract documents. Top and sides of seismic joints plastered over. |
| 8. Column 2/H1.3 | Building A | Beam noted to be spalled and cracked by the US-ACOE. Some repairs were completed but SEAR could not determine quality of repair. |
| 9. Column 2/C | Building A | Beam noted to be spalled and cracked by the US-ACOE. Some repairs were completed but SEAR could not determine quality of repair. |
| 10. Wall Panel | Building C | Exposed reinforcing noted by the US-ACOE. SEAR unable to verify this condition. |
| 11. Column/Beam Joints | Building E | Beam has cold joint midway in the beam per US-ACOE. SEAR noted a few beam/column joints that have been patched. |

Concrete Structure Evaluation Report. On August 1, 2000, a Concrete Structure Evaluation report was issued by an independent structural consultant hired by the contractor to determine the cause of the concrete roof cracks at the school and identify remedial repairs. The report stated that the occurrence of cracks is normally a problem in concrete construction. The report recommended that additional work be performed. The report also recommended that random analysis of concrete cores removed from the structure be conducted.

Deficiencies in Air-conditioning Units. On November 8, 2000, the air-con subcontractor informed

the contractor about the deficiencies it had noted while completing its work on the air-conditioning system. The deficiencies included: (a) clogged air filters obstructing air flow and (b) air-conditioning units which needed servicing. The air-con subcontractor clarified its position that although the units were under a one-year warranty, such warranty covered neither unit maintenance nor maintenance-related failures. Four months later, fiberglass particles were emitted from the air-conditioning units and air filters were replaced. However, recurring problems subsequently occurred, which led to the school's closure from April 30 to May 4, 2001 so that problems associated with the air-conditioning system could be further investigated.

Contractors' Deficiencies Claim. On November 12, 2000, the contractor submitted a detailed claim for deficiencies to the former DPW Secretary. The contractor declared that the deficiencies were beyond their control and had resulted in a contract extension of 362 days amounting to \$2.2 million in additional cost as follows.

| Description of Claim | Time Extension (days) | Amount |
|--|-----------------------|-------------|
| 1. Claim for topographic survey error of 2.31 feet affecting the design of the contract civil drawing plans | 197 | \$1,831,601 |
| 2. Extra earth moving works | 63 | 112,390 |
| 3. Placement delay of asphalt pavement | 8 | 17,982 |
| 4. Design discrepancy in the "Connecting covered walkway roof slab and the concrete topping system over the pre-cast rook planks and beams" | 22 | 109,041 |
| 5. Claim for the W & K's structural forensic investigation report and consultant's concrete structure evaluation report | 7 | 71,693 |
| 6. Claim for previous approved elastomeric roof coating waterproofing materials | 30 | 95,923 |
| 7. Variation order for the proposed storm drain line @ covered walkway of building A, B, & C and court yard of building D, E and F | 10 | 15,979 |
| 8. Variations of electrical main feeder lines from the contract drawing plans to the actual site conditions, additional electrical hand holes, conduits for the communications systems | 20 | 29,718 |
| 9. Extra-weather conditions | 5 | - |
| Total | 362 | \$2,284,327 |

Uncorrected Punch List Items. Punch list items noted in reports of DPW inspections on January 5, 2001, March 22, 2001 and March 27, 2001 covered other construction deficiencies. The areas inspected were Buildings A, B, C, D, E, and F, the pump room, the water tank area, and the miscellaneous site exterior work. Inspection reports and discussions with the DPW Engineer indicate that several punch list items have not yet been corrected even though PSS had already occupied the buildings for over a year since the last inspection. The uncorrected punch list items are presented in **Appendix C**.

Actions Taken on the Air-conditioning Problems. Although the air filters for the air-con units have been replaced, fiberglass and dust particles continue to be discharged into the classroom. On April 26, 2001, the DPW Engineer requested the contractor to remove certain sections of the duct work in the classroom in order to determine the workmanship conducted and types of materials used. Laboratory analyses on air samples taken from the school were also conducted. The report stated that the fibers found in the air samples were not considered a health risks. The report's recommendations addressing preventive maintenance included among others that classrooms are cleaned regularly and that air-con filters are changed regularly.

**KAGMAN ELEMENTARY SCHOOL PROJECT
UNCORRECTED PUNCH LIST ITEMS**

| Inspection Report Date | | Building/ Location | Details of Punch List Items Noted |
|------------------------|-----------|---|--|
| Final | Pre-Final | | |
| 1/5/01 | 8/14/00 | Item No. 9-a Room B109 - Girls | Door B109 - Fusible link louver not operable |
| | | Item No. 10-b Room B111 - Boys | Door B111 - Fusible link louver not operable |
| | 8/18/00 | Item No. 4-b Stage Ramp | Damaged acoustical ceiling tiles. |
| | 8/28/00 | Item No. I-5 Building C - Cafetorium | Pass - through refrigerator door not aligned. Repair damaged stainless steel skirt on top of the unit. |
| | | Item No. I-11 Building C - Cafetorium | Storage C101 - Paint touch up rusty water heater piping |
| | 8/30/00 | Item No. 3-f F109 - Girls and F110 - Boys | Fusible link louver for toilet doors not operable. |
| | 11/22/00 | Item No. V General | Fusible louver for toilet doors not operable. |
| 3/22/01 & 3/27/01 | 12/21/00 | Item No. I-7 Civil Portion | Hose bibb attached to building wall not installed. Typical to Buildings C, D, E and F. Refer to detail 5/C-8. <i>Note: To be deducted from contract.</i> |
| | | Item No. I Civil Portion | As noted: Need clearing and removal of vegetation at the leaching field area to inspect the distribution boxes, diverter valve assemblies and observation pipes. |
| | 1/4/01 | Item No. B-3 Fencing | Gap between one side of vehicular exit gate and asphalt driveway near the pump house is too wide. |
| | | Item No. B-8 Fencing | Installation of galvanized diagonal braces for perimeter fence and baseball field not as per plan. Refer to detail 10/C-9. |
| | 1/16/01 | Item No. C-11 Pump and Main- tenance Building | Roof and wall penetration installation not as per plan and specifications. Refer to pipe sleeves and pipe through wall and roof details. |