General Insurance Requirements

1. **GENERAL REQUIREMENTS.** The Contractor shall procure and maintain, during the entire period of performance under this contract, the types of insurance specified below. The Contractor shall have its insurance broker or insurance company submit a Certificate of Insurance to the Contracting Officer giving evidence of the required coverage prior to commencing performance under this contract. In no event shall any work be performed until the required Certificates of Insurance signed by an authorized representative of the insurer(s) have been provided to, and accepted by, the Contracting Officer. All insurance shall be written with financially responsible companies authorized to do business in the District of Columbia or in the jurisdiction where the work is to be performed and have an A.M. Best Company rating of A-VIII or higher. The Contractor shall require all of its subcontractors to carry the same insurance required herein. The Contractor shall ensure that all policies provide that the Contracting Officer shall be given thirty (30) days prior written notice in the event the stated limit in the declarations page of the policy is reduced via endorsement or the policy is canceled prior to the expiration date shown on the certificate. The Contractor/Insurance Company shall provide the Contracting Officer with ten (10) days prior written notice in the event of non-payment of premium.

   a.) Commercial General Liability Insurance. The Contractor shall provide evidence satisfactory to the Contracting Officer with respect to the services performed that it carries $1,000,000 per occurrence limits; $2,000,000 aggregate; Bodily Injury and Property Damage including, but not limited to: premises-operations; broad form property damage; Products and Completed Operations; Personal and Advertising Injury; contractual liability and independent contractors. The policy coverage shall include the University of the District of Columbia as an additional insured, shall be primary and non-contributory with any other insurance maintained by the University of the District of Columbia, and shall contain a waiver of subrogation. The Contractor shall maintain Completed Operations coverage for five (5) years following final acceptance of the work performed under this contract.

   b.) Automobile Liability Insurance. The Contractor shall provide automobile liability insurance to cover all owned, hired or non-owned motor vehicles used in conjunction with the performance of this contract. The policy shall provide a $1,000,000 per occurrence combined single limit for bodily injury and property damage.

   c.) Workers' Compensation Insurance. The Contractor shall provide Workers' Compensation insurance in accordance with the statutory mandates of the University of the District of Columbia or the jurisdiction in which the contract is performed.
   Employer's Liability Insurance. The Contractor shall provide employer's liability insurance as follows: $500,000 per accident for

injury; $500,000 per employee for disease; and $500,000 for policy disease limit.

If projects hereunder include water operations, the U.S. Longshoremen and Harbor Workers' Compensation Act and Maritime endorsements must be purchased and attached to the policies required above.

d.) Builder's Risk Insurance. The Contractor shall provide a Builder's Risk policy equal to the replacement cost value of the completed building or other structure including the building supplies and materials to cover damage to existing facilities at the site. The policy shall cover property while located at the project site, at temporary locations, or in transit; deductibles will be the sole responsibility of the contractor; and shall name the District of Columbia as loss payee/mortgagee, as their interests may appear. The policy shall not exclude equipment breakdown, windstorm, flood, water damage other than flood, or damage due to drain/sewage backup. A waiver of subrogation in favor of the University of the District of Columbia will be included (This policy is not required for contracts involving demolition only.)

a.) Installation-Floater Insurance. For projects not involving structures, the contractor shall provide an installation floater policy with a limit equal to the full contract value. The policy shall cover property while located at the project site, at temporary locations, or in transit; deductibles will be the sole responsibility of the contractor; and name The University of the District of Columbia as the loss payee on the policy, as their interests may appear. A waiver of subrogation in favor of the University of the District of Columbia will be included.

e.) Umbrella or Excess Liability Insurance. The Contractor shall provide umbrella or excess liability (which is excess over employer's liability, general liability, and automobile liability) insurance as follows: $10,000,000 per occurrence, including the University of the District of Columbia as additional insured.

f.) Professional Liability Insurance (Errors & Omissions). The Contractor shall provide Professional Liability Insurance (Errors and Omissions) to cover liability resulting from any error or omission in the performance of professional services under this Contract. The policy shall provide limits of $1,000,000 per occurrence for each wrongful act and $3,000,000 annual aggregate.

The Contractor shall maintain this insurance for five (5) years following the University's final acceptance of the work performed under this contract.

g.) Environmental Liability Insurance. The Contractor shall provide a policy to cover costs associated with bodily injury, property damage and remediation expenses associated with pollution incidents

including, but not limited to, mold, asbestos or lead removal. The policy shall provide a minimum of $1,000,000 in coverage per incident and $2,000,000 aggregate.

h.) Railroad Protective Liability Insurance. [If applicable - building within 50 feet of a railroad (Metro, Amtrak, MARC, and CSX)] If any services provided under or pursuant to this contract involve Contractor doing work near any railroad right-of-way, Contractor shall provide Railroad Protective Liability insurance which shall name the applicable railroad(s) as first Insured and The University as an Additional Insured with limits of not less than $2,000,000 per occurrence and $6,000,000 annual aggregate or such other limits as may be required by the railroad(s), whichever are higher, and written on a combined bodily injury/property damage basis including coverage for physical damage to the railroad's property.

1. **DURATION.** The Contractor shall carry all required insurance until all contract work is accepted by the University, and shall carry the required General Liability; and any required Professional Liability for five (5) years following final acceptance of the work performed under this contract.

2. **LIABILITY.** These are the required minimum insurance requirements established by the University of the District of Columbia. HOWEVER, THE REQUIRED MINIMUM INSURANCE REQUIREMENTS PROVIDED ABOVE, WILL NOT IN ANY WAY LIMIT THE CONTRACTOR'S LIABILITY UNDER THIS CONTRACT.

3. **CONTRACTOR'S PROPERTY**. Contractor and subcontractors are solely responsible for any loss or damage to their personal property, including but not limited to tools and equipment, scaffolding and temporary structures, rented machinery, or owned and leased equipment. A waiver of subrogation shall apply in favor of the University of the District of Columbia.

4. **MEASURE OF PAYMENT.** The University shall not make any separate measure or payment for the cost of insurance and bonds. The Contractor shall include all of the costs of insurance and bonds in the contract price.

5. **NOTIFICATION.** The Contractor shall immediately provide the Contracting Officer with written notice in the event that its insurance coverage has or will be substantially changed, canceled or not renewed, and provide an updated certificate of insurance to the Contracting Officer.

6. **CERTIFICATES OF INSURANCE.** The Contractor shall submit certificates of insurance giving evidence of the required coverage as specified in the Insurance Section prior to commencing work. Evidence of insurance shall be submitted to:

The Contracting Officer
Capital Procurements
University of the District of Columbia
4200 Connecticut Avenue, NW
Washington DC 20008

Facility Condition Assessment of Bertie Backus School for Potential re-use by the Community College of the District of Columbia

September 30, 2009

Prepared by:

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Table of Contents

Introduction ……3

Executive Summary ……4

Facility Condition Assessment ……6

A. Substructure ……6

B. Shell ……6

C. Interiors ……9

D. Services ……14

E. Equipment and Furnishings ……33

F. Special Construction and Demolition ……34

G. Site ……34

H. Accessibility ……36

I . Hazardous Materials ……37

J. Environmental ……37

Appendix

First Floor Diagram of Existing Areas……A1
Second Floor Diagram of Existing Areas ……A2
Third Floor Diagram of Existing Areas ……A3
Elevation 1 showing Window Replacement ……A4
Elevation 2 showing Window Replacement ……A5
Elevation 3 showing Window Replacement ……A6
First Floor Mechanical showing Proposed System ……M1
Second Floor Mechanical showing Proposed System ……M2
Third Floor Mechanical showing Proposed System ……M3
Roof Mechanical showing Proposed System ……M4
Piping Diagram showing Proposed System ……M5

INTRODUCTION

The University of the District of Columbia, under the new leadership of President Allen Sessoms Ph.D., has identified a strategic objective of establishing a 4-year "Flagship University" at the Van Ness Campus that will offer highly qualified students academic challenge equal to the best universities in the nation. In addition, the Community College of the District of Columbia has been established to provide academic opportunities to all District of Columbia high school graduates. These two programs will be physically separated in the future by establishing and migrating the current CCDC programs at UDC to multiple Community College satellite facilities in all of the Wards in the District.

This is the first step in a three-part study to evaluate the possible renovation of the former Bertie Backus Junior High School facility into a CCDC facility. RTKL conducted a one-day building evaluation of the Bertie Backus Middle School on September 10, 2009 to identify recommended repairs. Secondly, an educational programming consultant - Paulien & Associates has been engaged to conduct interviews, and develop a program for the Community College. Finally RTKL will work with Paulien & Associates to conduct a test-fit of the Community College program into the Bertie Backus facility.

The RTKL team included architectural, structural, mechanical, electrical and plumbing disciplines and was augmented by Steven MacKenzie of the University of DC. Cost estimators from M+A Associates participated as well. In addition to observations the team relied upon the recently compiled Facility Condition Assessment prepared by Faithful+Gould for Property Management of the Government of the District of Columbia. The report is dated July 16, 2008 and was completed in general accordance with the ASTM E2018-01 Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process.

In review of this document UDC may consider a phased renovation that focuses on the Building Enclosure and Systems for the entire facility with four separate interior projects; Academic Building, Auditorium, Cafeteria, and Gymnasium. (See Appendix Diagrams A1, A2, & A3 for extent of each of these areas.)

This report, combined with the program and associated test fit, will become the basis for a cost estimate to address repairs and alterations to the facility to meet CCDC needs. Our approach to re-use of this building is to do a thorough update for long term occupancy, which may cause the costs of renovation to be higher that those projected in the Faithful+Gould report which assumed re-use of many aged components.

Hazardous materials assessment is excluded from this study and we recommend that UDC engage a specialty firm to address the extent of these materials as well as abatement strategies. Faithful+Gould did not perform an environmental assessment in 2008 but listed numerous materials that were identified in reports that preceded their assessment. The costs for abatement can be significant and UDC should be armed with the associated costs.

EXECUTIVE SUMMARY

While the substructure and shell of the Bertie Backus facility are serviceable, most of the building systems and finishes have exceeded their standard life expectancies and are in fair to poor condition. Necessary repairs to the building envelope include replacement of the windows and installation of through-wall flashing. In order to meet ADA criteria and current codes under the change-of-use to a Community College, new life-safety and accessibility features need to be installed. New plumbing, mechanical and electrical systems need to be installed. Although the current configuration of interior partitions may prove to be functional a majority of the finishes on walls, ceilings and floors need to be replaced. The presence of hazardous materials noted in the 2008 Facility Condition Assessment may significantly affect demolition costs.

SUBSTRUCTURE

The building showed no significant signs of foundation overloads or failures. The visible conditions do not suggest a need for significant repair or reinforcement of the existing foundation system. The observed basement level walls appeared to be in good condition, with only minimal, and normal, cracking and little evidence of water intrusion. The visible conditions do not suggest a need for significant repair or reinforcement of the existing basement structural systems.

SHELL

Observations yielded no evidence of damage or deterioration of the building structural systems. The spandrel girders and beams were not accessible and could not be observed. The building was originally designed for school occupancy. If the building (or portions of it) were converted to office occupancy; the required design live load would increase by 25%, probably representing an increase in the total design load of about 10%. This could indicate a need for significant reinforcement of components of the existing system. The shelf angles, which secure the brick façade back to the concrete floor structure, are corroded due to lack of through-wall flashing. Damage to the surrounding brick and mortar occurs at all floors on all elevations. It does not appear that the level of corrosion on the lintels/relieving angles is sufficient to significantly compromise the structural capacity of those elements. This should be confirmed during the flashing repair process.

The windows are in fair to poor condition and should be replaced with double-paned assemblies for greater energy efficiency and compliance with the city's Energy Code and LEED criteria. Windows in the auditorium should be infilled with glazed brick to provide greater sound resistance to traffic and other outside noise. (See Appendix Diagrams A4, A5 & A6) Currently, the main entrance is recessed into the S. Dakota Avenue elevation. Although the doors are useable, it is recommended that they be replaced with storefront assemblies. A new feature should be designed to accentuate the entrance and create a more welcoming elevation. According to the 2008 Facility Condition Assessment the roof systems were installed in 2001 and are in generally good condition. On-going maintenance and repair are required.

INTERIORS

Interior partitions are constructed of glazed concrete masonry block, and are generally in good condition. Minimal alterations to existing walls are necessary to correct existing conditions. It is recommended that the lockers be removed and walls infilled with gypsum board or display cases. Each of the toilet rooms should be enlarged and reconfigured to meet current criteria. It is recommended that all interior doors be replaced and door frames be repainted. Stairs are generally in good condition. Generally new resilient tile should be installed throughout with areas of carpet and ceramic tile installed as appropriate. Quarry tile flooring in the kitchen may be cleaned and reused. Wood gym floors should be refinished. Ceramic tile locker room floors may be retained.

Ceilings will be removed in the course of installing a new fire suppression system. Ceilings and lighting should be replaced. Walls should be repainted.

SERVICES

Elevators do not exist and are required by current code. Plumbing systems have exceeded standard life expectancies and are in fair to poor condition. Replacement of plumbing systems will be required to meet minimum code requirements precipitated by a change-of-use classification. HVAC systems have exceeded standard life expectancies and are in poor condition. Systems do not comply with current Indoor Air Quality (IAQ) requirements for a controlled environment. The entire system should be replaced with new. (See Appendix Diagrams M1, M2, M3, M4, M5 for proposed system.) Fire protection recommendations include the addition of sprinklers and standpipes. Due to the condition of the existing fire alarm system and to the projected change-of-use by UDC, the entire fire alarm system should be demolished and replaced. Electrical equipment has outlived its standard service life and the entire electrical system should be replaced. New security systems need to be installed.

EQUIPMENT, FURNISHINGS AND FINISHES

Cooking ranges have been removed from the classroom. Laboratory equipment and fixtures are missing or in poor condition, however remaining lab benches are in good condition. Auditorium seating has been removed. Cafeteria cooking equipment has been removed. The basketball hoops and bleachers have been removed from the gym. Gym lockers have been removed. Depending upon the new Community College program; lab benches may be reused, new auditorium seating may be installed, cooking equipment may be replaced and/or gymnasium equipment replaced. Interior finishes including flooring and ceilings need to be demolished.

SITE IMPROVEMENTS

Exterior stairs should be patched and sidewalks need to be replaced. Parking lots will need to be repaved and repainted. Fencing should be replaced with a system appropriate to the building's use. Exterior lighting coverage needs to be improved.

ACCESSIBILITY

Entrances do not have compliant ramps. None of the toilet rooms meet ADA guidelines, therefore all will need to be reconstructed. The main entrance on South Dakota Avenue will need an ADA compliant ramp. It is recommended that at least two elevators be installed.

HAZARDOUS MATERIALS

A hazardous materials survey was not available to the RTKL team. (Hazardous materials assessment is excluded from this study.) The Faithful+Gould report references earlier studies and noted that their understanding was that "the building contains numerous hazardous materials." We recommend that a thorough assessment be completed by a firm that specializes in hazmat.

ENVIRONMENTAL ANALYSIS

It is our understanding that this project may pursue LEED 2009 under the LEED for New Construction program. A project of this scope, where mechanical and electrical systems are being replaced and building enclosure is being updated, is a good candidate for LEED.

FACILITY CONDITION ASSESSMENT

A. SUBSTRUCTURE

Structural drawings were not available to the assessment team.

A10 FOUNDATIONS

Observations and Review of Documents

The building showed no significant signs of foundation overloads or failures. There was evidence of cracking (most previously repaired) at certain exterior masonry at corners and other vulnerable areas, but these areas did not display horizontal joint discontinuities that would suggest foundation settlement issues.

Recommendations

The visible conditions do not suggest a need for significant repair or reinforcement of the existing foundation system.

A20 BASEMENT CONSTRUCTION

Observations and Review of Documents

The observed basement level walls appeared to be in good condition, with only minimal, and normal, cracking and little evidence of water intrusion.

Recommendations

The visible conditions do not suggest a need for significant repair or reinforcement of the existing basement structural systems.

B. SHELL

Observations and Review of Documents

Our observations are very similar to those included in the 2008 Facility Condition Report. Please refer to that document for a comprehensive discussion of observations.

Recommendations

Our recommendations are very similar to those included in the 2008 Facility Condition Report. Please refer to that document for a comprehensive discussion of recommendations.

B10 SUPERSTRUCTURE

Observations and Review of Documents

The principal structural system utilized in the building is a one-way cast in place reinforced concrete joist system. This was visible in several locations, including Mechanical and service rooms as well as classroom and corridor locations where ceiling tiles had been removed. Observations at these

locations yielded no evidence of damage or deterioration of the building structural systems. Some rust staining was observed, but it is likely that this was residual staining from rust on steel joist forms that were in common use at the time of the building's construction.

It should be noted that the spandrel girders and beams were not accessible and could not be observed. While there was, consequently, no observed evidence of issues at these spandrels, it is possible, especially given the flashing failures discussed below, that water has penetrated the exterior skin and caused damage to some of them.

As noted in the 2008 Facility Condition Assessment, the building was originally designed for school occupancy. Retention of the school occupancy would not pose an issue. If, however, the building (or portions of it) were converted to office occupancy; the required design live load would increase by 25%, probably representing an increase in the total design load of about 10%.

This design load increase is significant enough, as also suggested in the 2008 Assessment, to require somewhat detailed review of the existing structure by a Structural Engineer. It must be understood that this review could indicate a need for significant reinforcement of component of the existing structural system, independent of the apparently very good condition of that system.

Recommendations

It is recommended that, after ceilings and interior wall finishes are removed during renovations, spandrel beams be observed for signs of corrosion damage resulting from water intrusion through the exterior wall. This would be especially appropriate at locations corresponding to the most significant observed flashing failures and lintel/relieving angle corrosion.

Barring later observations of damage in these areas (or others), conditions do not suggest a need for significant repair or reinforcement of the existing base building superstructure systems.

B20 EXTERIOR CLOSURE

Observations and Review of Documents

Steel Lintels, Brick and Mortar: The 2008 Facility Condition Assessment noted that the shelf angles, which secure the brick façade back to the concrete floor structure, are corroded due to lack of through wall flashing. This was confirmed during our recent site visit. The angles are visible from the exterior, and the corrosion seems to be most severe above the window openings. This corrosion has caused spalling and damage to the surrounding brick and mortar, and this occurs at all floors on all elevations. It does not appear that the level of corrosion on the lintels/relieving angles is sufficient to significantly compromise the structural capacity of those elements, themselves. As noted, below, however, this perception should be confirmed during the flashing installation or repair process.

Windows: As noted in the 2008 Facility Condition Assessment, the windows are single paned steel casement assemblies, in fair to poor condition. Many panes are broken and inoperable, and the assemblies are not energy efficient.

Wall Vents: Outside air intake vents to classrooms will become obsolete when the mechanical system is replaced.

Doors: Flush metal exterior doors were replaced in 1996, and are observed to be in good condition.

Main Entrance: Currently, the main entrance is recessed into the S. Dakota Street elevation. The recess provides a landing for the lobby and fire stair doors, and provides some measure of shelter from the elements. The major visual entrance features occur on the elevation above that entrance, with glazed brick and lettering.

The 2008 Facilities Condition Assessment notes that the soffit needs repair.

Recommendations

Steel Lintels, Brick and Mortar: Per the 2008 Facility Condition Assessment, through-wall flashing should be installed. Several courses of brick will be removed during this process, and while the lintels are exposed, it is recommended that they be further examined for corrosion that compromises their structural integrity. If the lintels are found to be structurally sound, it is recommended that they be cleaned to remove the existing corrosion.

> The 2008 Facility Condition Assessment notes approx 5,000 linear feet of flashing to be installed.

Bricks and mortar should be replaced in these areas, and repaired in other areas where damage is noted. Bricks to be replaced should match existing, and mortar should be tested before replacement, if composition is not known, to ensure compatibility with existing. Color to match existing.

> The 2008 Facility Condition Assessment notes 3,420 square feet of brick replacement and mortar tuckpointing.

Windows: As noted in the 2008 Facilities Condition Assessment, windows should be replaced with double-paned assemblies for greater energy efficiency and compliance with the city's Energy Code and LEED criteria. (See Appendix Diagrams A4, A5 & A6.)

Although the building is not listed as historic at this time, it is generally accepted that windows provide an important sense of the building's character. It is recommended that windows be replaced with steel assemblies, with an emphasis on maintaining the proportions and profiles of the original windows.

It is recommended that windows in the auditorium be infilled with glazed brick to provide greater sound resistance to traffic and other outside noise. Glazed brick should match existing.

> There are approximately 13,240 square feet of windows to be replaced, and 660 sf of openings to be infilled with glazed brick.

Wall Vents: Outside air intake vents should be removed and replaced with glazed brick to match existing.

> There are approximately forty-four 12"x24" vent openings to be infilled.

Doors: Although the doors are useable, it is recommended that the doors at the main entrance be replaced with storefront assemblies, or a system that is visually compatible with the replacement

windows. Glazed doors will provide a more welcoming appearance, consistent with a university facility. Depending on the program of the multi-use space, upgraded doors at that entrance, and at the proposed ADA side entrance, may be appropriate. Gym entry doors and at the secondary S Dakota St entrance should be replaced with glazed storefront also. Side/utility doors may be retained.

> There are 8 doors at the main entrance, 12 at the multi-use space entrance, 2 at the side entrance, 4 at the gym entrance and 4 at the secondary S Dakota St entrance.

Main Entrance: A new feature, such as an awning, should be designed to accentuate the entrance and create a more welcoming elevation. Some elements of this feature may be mirrored on the interior, for continuity in the redesigned lobby.

B30 ROOFING

Observations and Review of Documents

According to the 2008 Facility Condition Assessment the roof systems were installed in 2001 and are in generally good condition. On-going maintenance and repair are required.

Recommendations

Repairs should be made and on-going maintenance conducted.

C. INTERIORS

C10 INTERIOR CONSTRUCTION

Observations and Review of Documents

Interior Partitions: Interior partitions are constructed of two withes of concrete masonry block, and are generally in good condition. Metal lockers are inset into the first with, with plaster infill. Lockers are in fair condition. There are several classrooms divided by folding partitions, and one by a freestanding gypsum board and stud assembly.

> The 2008 report noted that several penetrations through fire-rated walls are not properly sealed. These areas, and any new penetrations through fire separations, should be firestopped to maintain the required fire rating.

Toilet Rooms: Existing toilet rooms are in fair condition, but too small to accommodate the required number of, and clearance for, fixtures.

Doors: The existing doors are painted metal, those at stairs have wired glass, and most are in good, useable condition. Many doors are missing. The report noted that doors into classrooms are ¾ hour fire rated, and doors into stairwells, the gymnasium and auditorium are 1 ½ hour rated.

Corridors: Metal expansion joint covers occur throughout the building. The joint covers on the floor are raised ¼" to 1/2" from the tile.

Recommendations

Interior partitions: Minimal alterations to existing walls are necessary. It is recommended that the lockers be removed on the first level, and either removed or welded shut on the upper levels. The walls may be infilled with CMU, glazed tile to match existing adjacent, gypsum board or display cases. For the purposes of this study, it is assumed that the openings will be infilled with gypsum board. Some of these areas may be used as chases for building systems. Folding partitions should be removed and replaced with gypsum board and steel stud assemblies.

There are three folding partitions at 24' long by approx. 9'-6" high.

There is approximately 1327 sf of infill on each floor (265'-5" linear feet of lockers on each floor; lockers are 5'-0" high).

Toilet Rooms: Each of the eight toilet rooms in the school area, the two in the gym and the two in the cafeteria should be enlarged.

Twelve new full height (plumbed) walls will be finished with glazed tile to match existing.

Doors: It is recommended that all interior doors be replaced with flush wood veneer panels. Door frames may be repainted. Door fire ratings are to be maintained.

There are 206 interior doors to be replaced.

Corridors: Transitions should be installed at floor expansion joint covers to mitigate the tripping hazard.

There are 101'-4" of expansion joint covers; transitions should be installed on both sides of covers.

C20 STAIRS

Observations and Review of Documents

Stairs: The 2008 report noted that stairwells are 2-hour enclosures. Stairs are concrete-filled metal pan construction, with painted metal handrails and guardrails. In many cases, double flights of stairs are separated by metal rails at landings. Stairs are generally in good condition.

Recommendations

Stairs: It is recommended that the intermediate rails at landings be removed.

C30 INTERIOR FINISHES

Observations and Review of Documents

In review of this document UDC may consider a phased renovation that focuses on the Building Enclosure and Systems for the entire facility with four separate interior projects; Academic Building, Auditorium, Cafeteria, and Gymnasium. (See Appendix Diagrams A1, A2, & A3 for extent of each of these areas.)

Academic Building

Floors: The corridor and classroom floors are 9”x9” tile and 12”x12” tile (assumed to be installed over 9”x9”). Tile is generally in good condition, although dated. The 2008 Facility Condition Assessment noted that the 9”x9” tiles might contain asbestos and/or be adhered with asbestos-containing mastic. A small number of classrooms have broadloom carpet, in worn condition. Toilet rooms have 1”x1”, 1”x2” and 2”x2” ceramic tile, generally in good condition, although aesthetically dated.

Walls: Corridor walls are painted CMU block and glazed tile. Around three doorways on the third floor, smaller glazed tiles murals are installed.

Ceiling: Classroom ceilings are 24”x24” acoustical ceiling tile, with 24”x24” and 24”x48” drop-in fluorescent lights. Corridors are 12”x12” and 24”x24” acoutstical ceiling tile. The 2008 Facility Condition Assessment noted that some ceiling tiles might contain asbestos. There are gypsum board soffits installed above the windows, as the current ceiling height is lower than the window heads. Some of these soffits show evidence of water damage. Toilet room ceilings are noted in the original as-built drawings as Keene cement plaster.

Auditorium

Floors: Auditorium floors are 9”x9” tile in poor condition.

Walls: Walls are painted CMU.

Ceilings: Ceilings are 24”x48” acoustical ceiling tile, with 24”x48” fluorescent lights. Tiles, grid and lights are in fair to poor condition.

Cafeteria

Floors: Kitchen floors are quarry tile, in good condition. Cafeteria and multi-use space floors are 12”x12” vinyl tiles in fair condition, but dated aesthetically.

Walls: Kitchen, cafeteria and multi-use spaces walls are glazed tile and painted CMU.

Ceilings: Kitchen ceilings are noted in the original as-built drawings as painted Keene cement plaster. They are in good condition. Ceilings in the cafeteria and multi-use space are 12”x12” ACT, with surface mounted fixtures. These ceiling systems are in fair to poor condition.

Gymnasium

Floors: Gymnasium floors are wood, in good condition. Locker room floors are 1”x1”, 1”x2” and 2”x2” tiles in good, if dated, condition. Lobby and stair floors are 9”x9” or 12”x12” tile.

Walls: Gym walls are painted CMU block. Locker room walls are glazed tile and painted CMU. All walls are in good condition.

Ceilings: Gym ceilings are noted in the original as-built finish schedules as asbestos plaster. Locker room ceilings are painted structure, offices are 12"x12" ACT with surface mounted fluorescent lights, and showers are painted Keene cement plaster.

Recommendations

Academic Building

Floors: New resilient tile should be installed throughout, with carpet (tile or broadloom) installed as appropriate to the space.

There are 64,500 sf of floor in the classrooms, corridors, stairs and main lobby to be replaced.

Walls: Please see "Interior Partitions" above. Tile murals around door openings should be removed and replaced with glazed tile, or painted CMU.

There are approximately 190 sf of wall tile to be removed. There are approximately 72,000 sf of wall to be painted.

Ceilings: Ceiling tiles and grids will be replaced in the course of installing a new fire suppression system. ACT tile should be appropriate for most areas, to allow access to the ceiling plenum. The gypsum board soffits will need to be replaced at the current height. Lights in corridors and classrooms should be replaced. Toilet room ceilings may be replaced with moisture-resistant gypsum board ceilings.

Notable areas like the lobby or multi-use space may have gypsum board ceiling feature to accentuate the different use of these areas. Feature lighting or recessed lights may be utilized in these areas.

There are approximately 64,500 sf of ceiling areas to be replaced, with 10% of that area replaced with gypsum board ceilings.

Auditorium

Floors: New resilient tile should be installed throughout, with carpet (tile or broadloom) installed as appropriate.

There is approximately 7,000 sf of flooring to be replaced.

Walls: CMU should be repainted, and acoustical treatments may be considered depending on the anticipated use of the space. The larger windows on the northeast side of the room may not be desirable, depending on the new program. Openings may be infilled with painted CMU to match existing adjacent.

There are approximately 4,750 sf of walls to be painted.

Ceilings: Ceiling tiles and grids will be replaced in the course of installing the fire suppression system. ACT tile may be appropriate for most areas, although acoustical or visual

considerations may call for varied heights or materials. Lights should be replaced: 24x48 florescent lights may be appropriate for most of the space, although varied zones, dimming capability and specialty or spot lighting should be considered for this notable space.

There are approximately 7,000 sf of ceiling to be replaced.

Cafeteria

Floors: Kitchen floors may be cleaned and reused. Cafeteria and multi-use space floors should be replaced with resilient flooring.

There is approximately 15,500 sf of floor tile to be replaced.

Walls: Kitchen, cafeteria and multi-use space walls may be repainted.

There are approximately 2000 sf of wall to be repainted.

Ceilings: Kitchen ceilings may be repainted and reused. Cafeteria and multi-use space ceiling tiles, grids and lights should be replaced. ACT ceiling tiles with drop-in lights should be appropriate for most spaces, and gypsum board, clouds or other decorative ceiling features may be considered for the multi-use space depending on the program.

There is approximately 22,250 sf of ceiling to be replaced, with 25% of that area replaced with gypsum board ceilings.

Gymnasium

Floors: Gym floors should be retained and refinished. Locker room floors may be retained.

There are approximately 2400 square feet of resilient tile floor in the lobbies and stairs to be replaced. There are approximately 9000 square feet of wood flooring to be refinished.

Walls: Walls should be repainted.

There are approximately 4500 square feet of wall to be repainted.

Ceilings: Ceiling tiles, grids and lights will be removed in the course of installing the fire suppression system. Gym ceilings should be replaced with gypsum board. Locker room office ceilings may be replaced as ACT with drop in fluorescent lights, and shower ceilings should be replaced with moisture resistant gypsum board and canister lights.

There are approximately 10,750 square feet of ceiling to be replaced with gypsum board. There are approximately 2700 square feet of ceiling to be replaced with ACT.

D. SERVICES

D10 CONVEYING

Observations and Review of Documents

The building is currently not equipped with passenger or freight elevators.

Recommendations

As noted in the 2008 report, it is recommended that two passenger elevators be installed. A freight elevator may also be installed for convenience. It is recommended that the primary passenger elevator be installed opposite stair 2, adjacent to the main lobby, with a secondary elevator near either stair 4 or stair 1.

D20 PLUMBING

Observations and Review of Documents

Our field observations confirm that the conditions of the existing plumbing systems are as indicated in the 2008 Facility Condition Assessment developed by Faithful + Gould; that is to say, the plumbing systems have exceeded standard life expectancies and are in fair to poor condition. The existing plumbing systems are generally not compatible with the plumbing concepts recommendations that strive to meet modern minimum code requirements precipitated by a change of use classification. Consequently, little of the existing plumbing fixtures and local piping would be retained.

Domestic cold water enters the building at the basement boiler room via a metered 4-inch service main from Hamilton Street. There is no fire service main provided.

Domestic water interior distribution piping is copper and generally in fair condition. Existing insulation is either missing or, where found, suspect with regard to hazardous material content.

Domestic hot water is currently generated by shell-in-tube exchange type storage tank heaters with primary heating water being supplied by a dedicated; gas fired domestic hot water boiler necessitating running the boiler equipment during summer months and non-peak demand times. The storage tanks are original equipment and likely past serviceable life expectancy. Hot water (110 deg F) is provided for normal domestic use only. There is currently no recirculation loop in the building.

Higher temperature water (140 deg f) is also provided for kitchen use via a dedicated electric storage type water heater in the kitchen area. Additional temperature boosting for sanitization is provided at local equipment such as dishwashers. The status of the kitchen equipment is undetermined at this time but could remain for the short term. A specific change in food service use is not fully developed at this time.

Natural Gas is currently provided for the boiler equipment and food service cooking equipment by Washington Gas. Service entry consists of meter and pressure regulator outside the building near the boiler room. Service pressure is assumed to be low pressure (<1.0 psi) but further pressure assessments will be needed during design. No change in operating pressure is currently envisioned. Gas distribution piping is welded black steel and aged but currently serviceable.

Storm Water drainage is primarily for main roof areas and utilizes several risers throughout the building. A mixture of pipe types are noted with the base piping material being galvanized pipe. The life expectancy of galvanized pipe is very suspect. The existing roof drains are 3-inch and considered small. There is no emergency overflow drainage system except for two scupper drains and downspouts in the 'B' Wing.

Sanitary Waste and Vent systems are currently provided via multiple stacks and route by gravity to city sewers at several building exits. A mixture of pipe types are noted with the base piping material being galvanized pipe. The life expectancy of galvanized pipe is very suspect. Sewage ejector stations are provided in the boiler room area due to depth of floor surface and are serviceable. Kitchen waste lines and grease interception is currently provided. Interceptors will likely need replacement.

Plumbing Fixture quantities are evident of the former school requirements. All fixtures are sized for the older style full flow capacities and would not be permitted under newer code requirements for water conservation (low flow). The current fixture installations do not meet current AADG requirements for clearances and mounting heights. Most fixtures are aged and have not been well maintained. The aesthetic characteristics of the existing fixtures will likely be sufficient for replacement candidacy.

Recommendations

Water Service

Retain the existing 4-inch water service entry, metering and valving.

Install a new 8-inch underground water service for fire suppression from the existing mains in Hamilton Street to the current boiler room area. Provide fire service metering (exterior vault) in accordance with DC-WASA standard requirements. Refer to Fire Protection section for additional discussion.

Domestic water distribution

Retain the existing distribution main runs and demolish and re-pipe all local branch piping with Type-L copper for proposed renovated floor layouts.

Remove all existing insulation (hazmat handling required) and provide new 1-inch fiberglass insulation with vapor barrier jacket throughout.

Domestic Hot Water

The existing mechanical boilers are being eliminated so the hot water generation source will need replacement. Demolish the existing shell-and-tube tank system in entirety. Provide new, high efficiency, low NOx, gas fired, storage type domestic water heaters in the mechanical space. Utilize direct vent configurations to the exterior of the building. Sufficient storage capacity for the proposed fixture count has not been fully developed. Assume a minimum of two (2) 200 gallon domestic hot water generators will be provided to allow service maintenance and redundancy.

Domestic hot water distribution piping will generally be demolished and replaced as the demand layout will likely not be compatible with the current pipe sizing. A recirculation loop and pump will be provided to assure delivery temperature on a timely basis. All hot water supply and return piping will be Type-L copper and provided with 1-inch fiberglass insulation and vapor barrier jacket.

Natural Gas

Retain the existing service entry, meter and pressure regulating equipment unless otherwise directed by Washington Gas.

Demolish and replace the interior distribution piping due to resizing of mechanical and plumbing equipment based on demand loads.

Storm Water Drainage

Retain the existing underground piping systems as is. Video tape survey and re-line (Fiberglass Sewer Re-lining) piping if survey indicates damage.

Replace all aboveground drainage piping with new, no-hub cast iron risers and laterals. The quantity of risers will remain similar but replacement and possible vertical re-routing cannot be ruled out.

Replace roof drains with larger (4-inch minimum) drains and cast iron materials. Provide a new overflow drainage system consisting of either additional overflow roof drains, combination roof/overflow drains or scuppers for each roof area. All overflow drain piping shall be run independent and discharge at readily observable location on the exterior of the building.

Sanitary Waste and Vent

Retain the existing underground piping systems as is. Video tape survey and re-line (Fiberglass Sewer Re-lining) if survey indicates damage.
Replace all aboveground waste and vent piping with new, no-hub cast iron risers and laterals. Provide lateral piping to new fixture locations as needed. The quantity of risers will remain similar but replacement and possible vertical re-routing cannot be ruled out.

Plumbing Fixtures

Demolish all existing plumbing fixtures and dispose of same.

Provide new, low flow fixtures throughout to satisfy federal water conservation requirements. Dual flush water closets are recommended as well as "pint" urinals.

Utilize sensor operated faucets and flushometers to maximize water conservation. Accessory sinks should be equipped with flow restriction devices to limit faucet flows to 0.5 GPM. All fixtures will be set and roughed-in in accordance with AADG guidelines.

Special Systems

Provisions for specialized systems such as labatory waste, laboratory gases and high purity water are undetermined until building utilization programming is decided. No provisions are included at this time.

Potable water filtration and ancillary treatments are not required at this time.

D30 HVAC

Observations and Review of Documents

Our field observations confirm that the conditions of the existing HVAC systems are as indicated in the 2008 Facility Condition Assessment developed by Faithful + Gould; that is to say, the systems have exceeded standard life expectancies and are in poor condition. Practically speaking, there is no useful air conditioning or effective ventilation that would comply with current Indoor Air Quality (IAQ) requirements for a controlled environment. The existing systems are neither conducive to nor compatible with the HVAC concepts recommendations that strive to optimize energy performance while moderating renovation costs. Consequently, no part of the existing HVAC systems would be retained.

The existing heating plant has duel-fuel firing capability supported by natural gas service (off of Hamilton Avenue, entering at the boiler room) and a 15,000 gallon fuel oil storage tank that is located underground, exterior of the boiler room. As further explained under HVAC recommendations, fuel oil would not be required and the removal or abandonment of the existing storage tank accounted for.

As indicated under B20 Exterior Enclosure, windows should be replaced with double-paned assemblies for greater energy efficiency and compliance with the city's Energy Code and LEED criteria. HVAC recommendations are based an assumption of new double-paned window assemblies.

Recommendations

Overview

The HVAC recommendations strive to achieve a high degree of energy performance efficiency and maintainability and in doing so, employ a combination of concepts that can be implemented at lower costs than many standard approaches such as 4-pipe or Variable Air Volume (VAV) systems. (See Appendix Diagrams M1, M2, M3, M4, M5 for proposed system.) The recommendations avoid the installation of a chiller plant; greatly reduce the size of the heating plant and significant decrease the size of HVAC distribution systems, related space allocations and the level of difficulty to install the systems.

As described in more detail below, air conditioning systems would be Direct Expansion (DX) type, in both self-contained and ductless split-system configurations. The DX split-systems would be Variable Refrigerant Flow (VRF) systems that would be deployed in the main building (exclusive of the auditorium and cafeteria/gymnasium wings) in combination with Decoupled Outdoor Air (DOA) ventilation systems. The VRF systems would be so equipped and configured to also provide heat pump type heating on a zone-by-zone basis that would be simultaneously available with zone-by-zone cooling. VRF heat pump heating does not require supplemental electric heat during low ambient conditions and the VRF equipment and systems' configurations offer exceptional energy performance ratings at both full load and part load operations.

DOA ventilation distributes 100% preconditioned outdoor air to each space and does so by varying airflow in response to CO_2 sensors that monitor and maintain indoor air quality. This Demand Ventilation Control (DVC) approach curtails energy consumption for conditioning and distributing fresh air at constant flow rates and further reduces energy use when the systems are configured to reclaim energy from the buildings relief/exhaust air. The DOA systems would employ self-contained DX rooftop air handlers equipped with gas heat, variable volume supply and exhaust fans (VFD equipped) and energy reclaim features (heat wheals or heat-pipe).

The significance of combining VRF and DOA systems is that the distribution of cooling and heating energy throughout the main building is accomplished via refrigerant lines that are small in comparison to chilled water piping and heating water piping (See Sketch M5); and that ductwork is greatly reduced to sizes required to only distribute the fresh air component and not have to serve the total cooling requirement.

HVAC in the auditorium and cafeteria/gymnasium wings would be accomplished using self-contained DX rooftop air handlers equipped with gas heat, variable volume supply (VFD equipped) and ducted air distribution systems. The rooftop unit that would serve the auditorium would feature single zone VAV operation and DVC using CO_2 sensors to again modulate outdoor airflow on an as needed basis. Similar systems would be provided for each of the men and women's gymnasiums. A similar system that also included a variable volume return fan (VFD equipped) would be provided for the each of the serving/dining and multiuse areas. Rooftop units serving the kitchen and each of the men and women's gym locker areas would be constant volume.

A large portion of the facility's heating requirements would be served the self-contained DX rooftop air handlers equipped with gas heat (ventilation load) and by the DX split-systems VRF heat pump feature (main building occupied zones). There are remaining heating duties that based on energy costs, would be best served by heating water systems; or based on lowest installation costs, could be handled using electric heat. In view of this evaluation's stated goal of enhanced energy performance the remaining heating loads would be served by a new boiler plant, but the electric option could be revisited as a Value Engineering (VE) option. A smaller, more energy efficient boiler plant would use a battery of high efficiency, gas-fired, modulating pulse boilers. These boilers can be vented directly to the outdoors without the need of a chimney. Heating water would be distributed to re-heat coils associated with the various rooftop air handling units (used to reheat during dehumification); to VAV terminals equipped with heating coils (multi-purpose areas); to cabinet heaters at every building entrance; to finned tube heaters at windows in the corridors, stairs, storage rooms and toilet rooms; and to unit heaters in the fire pump room and electric service room.

A Direct Digital Control (DDC) Building Automation System (BAS) would be provided to monitor and control all of the HVAC systems and to interface with packaged manufacturer controllers (boilers, self-contained DX rooftop units, VRF systems).

Demolition

Remove the existing HVAC systems in their entirety:

- All equipment and piping in the existing central plant including boilers, pumps, tanks, air compressors and controls, breaching and flues (cap at the existing chimney connection), unit heaters, fans, domestic water piping, heating water piping, gas piping (back to the existing gas service), etc.
- All heating water distribution piping throughout the building.
- All point of use heating equipment, including unit ventilators (close wall penetrations; See B20 Exterior Enclosure), cabinet heaters, unit heaters, radiators (toilet rooms, auditorium, gym, etc.), air handler coils, etc.
- All window AC units.
- All DX split-systems and associated ductwork.

- All air handling units and associated intake and exhaust louvers (close wall penetrations; See B20 Exterior Enclosure) and ductwork (auditorium, gym, etc.).
- All rooftop fans and gravity ventilators (approx. 35 places; seal roof penetrations; See B30 Roofing) and associated ductwork, including all toilet exhaust, locker rooms exhausts, kitchen exhaust and hood; shop rooms and labs exhausts, etc.
- All pneumatic control lines and air compressors.

The existing 15,000 underground fuel oil storage tank will no longer be required and must be removed or abandoned. The DC Underground Storage Tanks Management Division requires that the tank be emptied (properly disposing of all liquids and sludge) and cleaned and after notifying the Director to remove the tank, all in accordance with their regulations 6101; unless a tank removal variance is granted by the Director pursuant to 6101.7. The variance may be granted when the removal is likely to cause substantial structural damage or there are "other compelling circumstances." Prior to a variance being granted, a "Closure Assessment of the excavation zone to test for the presence of a release in the areas around the underground system is required. If a variance were to be granted, the tank would be emptied, cleaned and filled with inert solid material.

This evaluation should account for the tank (and all associated underground piping) to be emptied, cleaned and removed; and also include an allowance for the removal and proper disposal of any materials contaminated by leakage or spills.

Air Conditioning

Main Building (General): Air conditioning in the main building would come from two sources in combination. The DOA systems' self-contained DX rooftop air handlers will cool 100% outdoor air to maintain the systems' supply air temperatures at a constant 55° F. This air will not only satisfy required ventilation flow rates but will also provide all of the required latent cooling and a portion of the sensible cooling in a given temperature control zone (class room, office, etc.). Each temperature control zone would also be served by one or more DX ductless split-systems that would supplement the DOA systems cooling by providing the greater part of the required sensible cooling for the space. As indicated the split-systems would be part of the VRF systems.

Main Building (DOA Systems): Provide four self-contained DX rooftop air handlers; two 5,000 CFM, 34 Ton units to serve the wing along South Dakota Avenue and two 6,200 CFM, 42 Ton units to serve the wing over to the cafeteria/gymnasium (See Sketch M4). Provide gas lines from the main service in the boiler room up to each rooftop DOA air handling unit. Provide each unit with the following:

1. Energy reclaim section:
    - Combination 100% outdoor air intake/exhaust air segments with intake and exhaust dampers and dual air paths.
    - Filter banks (MERV 6 prefilters and MERV 13 finale filters) in the outdoor air path prior to air entering the energy reclaim device.
    - Energy reclaim wheel (total energy type) with wheel bypass dampers (both outdoor air and exhaust air streams).
    - Filter banks (MERV 6 prefilters) in the exhaust air path prior to air entering the energy reclaim device.
    - Fan segment in the exhaust air stream (fan sized at 90% of the units supply fan airflow and equip with VFD).

- Exhaust air intake segment with damper and connection on bottom.

2. Heating section, gas-fired.
3. Spacer section.
4. DX cooling coil section and associated air-cooled condenser segment.
5. Spacer section.
6. Supply fan section (equip fan with VFD).
7. Supply air discharge section with damper and bottom discharge).
8. Roof curb.
9. Packaged controls (with BAS interface)..

Each DOA system will serve spaces on one side of the corridor (single exposure) on all three floors of a respective wing (See Sketches M1, M2, M3 and M4). One of the two systems in each wing will also serve the corridor segments on each floor of that wing.

DOA supply air would be distributed via insulated medium pressure ductwork, to VAV terminals provided for each temperature control zone (typically a classroom). Each VAV terminal will modulate the flow of 100% outdoor air to its respective space, on a demand basis as monitored and controlled through the BAS by a CO_2 sensor. Insulated low pressure ductwork would carry the supply air from the VAV terminals to ceiling supply diffusers.

Exhaust air would be ducted from each temperature control zone back to respective DOA units on the roof. The exhaust ductwork would be low pressure with no insulation.

Provide a total of 55 VAV terminals with BAS controllers as follows (See Sketches M1, M2, M3 and M4):

1. 5,000 CFM, 34 Ton DOA system that would serve the NE exposure of wing along South Dakota Avenue:
   - 1ST Floor: Three terminals with 8 inch inlets.
   - 2ND Floor: Three terminals with 8 inch inlets.
   - 3RD Floor: Four terminals with 6 inch inlets and one terminal with an 8 inch inlet.
2. 5,000 CFM, 34 Ton DOA system that would serve the SW exposure of wing along South Dakota Avenue:
   - 1ST Floor: One terminal with a 6 inch inlet (to serve the corridor) and an allowance of six terminals with 6 inch inlets to serve administrative offices.
   - 2ND Floor: One terminal with a 6 inch inlet (to serve the corridor) and two terminals with 10 inch inlets.
   - 3RD Floor: One terminal with a 6 inch inlet and three terminals with 8 inch inlets (one of which would serve the corridor).
3. 6,200 CFM, 42 Ton DOA system that would serve the SE exposure of the wing leading to the cafeteria/gymnasium:
   - 1ST Floor: Five terminals with 6 inch inlets and one terminal with a 6 inch inlet.
   - 2ND Floor: Five terminals with 6 inch inlets and one terminal with a 6 inch inlet.
   - 3RD Floor: Five terminals with 6 inch inlets and one terminal with a 6 inch inlet.
4. 6,200 CFM, 42 Ton DOA system that would serve the NW exposure of the wing leading to the cafeteria/gymnasium:
   - 1ST Floor: Two terminals with 6 inch inlets and one terminal with an 8 inch inlet (to serve the corridor).
   - 2ND Floor: One terminal with a 6 inch inlet and four terminals with 8 inch inlets (one of which would serve the corridor).

- 3RD Floor: One terminal with a 6 inch inlet and four terminals with 8 inch inlets (one of which would serve the corridor).

Main Building (VRF Systems): Provide ten VRF systems; five to serve the wing along South Dakota Avenue and five to serve the wing leading to the cafeteria/gymnasium (See Sketches M1, M2, M3 and M4).

VRF systems use air-cooled condensing units that have high efficiency variable speed (inverter) compressors that are operated in conjunction with inverter fan motors in order to automatically modulate compressor capacity to maintain a constant refrigerant suction pressure, while varying refrigerant volume or flow. Simply stated, this technology allows a VRF system to be comprised of multiple split-system indoor units connected to shared distributive refrigerant lines, back to a single outdoor air-cooled condenser or a bank of two condensers. Up to 80 indoor units can be connected into a single VRF system; not to exceed a total system capacity of 20 Tons. VRF air-cooled condensers are available in 6, 8, 10 and 12 Ton models with a maximum paring of two 10 Ton units. In addition, the allowable length and elevation rise of refrigerant line installations are far less restricted than with standard split-systems (2,000 ft runs and 400 ft elevations). With the addition of a third "heating" refrigerant distribution line and branch selector devices, the VRF system can also provide "heat pump" heating, even as other of its indoor units are simultaneously in cooling mode. There are multiple VRF equipment manufacturers.

Initial connected loads would not total 20 Tons for all of the 10 proposed VRF systems; however, VRF part load energy performance ratings and fractional unloading capabilities are exceptional. Consequently, VRF systems with 20 Ton capacities and typically sized refrigerant lines (See Sketch M5) would allow additional connectivity of indoor units and offer future flexibility without paying an operational penalty.

Therefore, provide ten 20 Ton VRF systems as follows:

1. Each of the 10 systems would have two roof mounted 10 Ton, air-cooled, digital scroll compressors (similar to Daikin model RXYQ120PYDN) with packaged control and BAS monitoring interface.
2. Each systems main refrigerant lines would be sized to accommodate 20 tons of connected cooling capacity (See Sketches M4 & M5) and would include a third line for simultaneous heating capability.
3. The three refrigerant lines would connect to a cooling/heating selector device in the ceiling of each temperature control zone (typically a classroom). Provide a total of 47 units (See Sketches M1, M2, M3) as follows:
   - Two units similar to Daikin model BSVQ36PVJU to serve administrative offices.
   - Twenty units seven similar to Daikin model BSVQ36PVJU.
   - Eighteen units similar to Daikin model BSVQ60PVJU.
4. Two refrigerant lines would then run from the selector device to the ductless indoor unit or units that would be installed in the ceiling to serve the temperature control zone. Provide packaged control and BAS monitoring interface. An integral condensate pump would be provided with each ductless indoor unit. Provide a total of 71 units (See Sketches M1, M2, M3) as follows:
   - An allowance for nine 7,500 Btuh units similar to Daikin model FXZQ07M7VJU to serve administrative offices.
   - Twenty four 2 Ton units similar to Daikin model FXFQ24MVJU.
   - Sixteen 2½ Ton units similar to Daikin model FXFQ30MVJU.

- Twenty two 3 Ton units similar to Daikin model FXFQ36MVJU.

5. Provide condensate drainage for each ductless indoor unit. The units' condensate connections on each floor would be collected into a drain line on each side of the corridor in each of the 2 main building wings. The floor-by-floor drain lines would connect to 4 new 2 inch drain risers that would in turn be connected to the SW system.

Auditorium: Provide an 11,000 CFM (60% outdoor air), 47 Ton (total cooling), 31 Ton (sensible), self-contained DX rooftop air handling unit to serve the auditorium (See Sketch M4). Provide a gas line from the main service in the boiler room up to the auditorium air handling unit. Provide the air handling unit with the following:

1. Economizer Section with outdoor air intake, return air (bottom connection) and relief air discharge and associated dampers.
2. Filter section (MERV 6 prefilters and MERV 13 finale filters).
3. Heating section, gas-fired.
4. Spacer section.
5. DX cooling coil section and associated air-cooled condenser.
6. Spacer section.
7. Supply fan section (equip fan with VFD).
8. Sound attenuation section.
9. Spacer section.
10. Reheat coil section including freeze protection circulation pump.
11. Supply air discharge section with damper and bottom discharge).
12. Roof curb.
13. Packaged controls (with BAS interface) for the gas heat and DX cooling and DDC (BAS system) controls for the variable supply fan and DVC operations.

Provide insulated, low pressure supply ductwork to ceiling diffusers and return ductwork from return registers situated low in the space. The return ductwork would be low pressure with no insulation.

Gymnasium/Lockers: For each of the men and women's gyms (including respective lobbies and storage rooms), provide 6,000 CFM (29% outdoor air), 20 Ton (total cooling), 15 Ton (sensible), self-contained DX rooftop air handling units (See Sketch M4). Provide a gas line from the main service in the boiler room up to each air handling unit. Furnish each of the air handling units similarly to the auditorium unit. Provide insulated, low pressure supply ductwork to ceiling diffusers and return ductwork from return registers situated low in the space. The return ductwork would be low pressure with no insulation.

For each of the men and women's locker areas provide 1,000 CFM (100% outdoor air), 6 Ton (total cooling), 3½ Ton (sensible), self-contained DX rooftop air handling units (See Sketch M4). Provide a gas line from the main service in the boiler room up to each air handling unit. Provide insulated, low pressure supply ductwork to ceiling diffusers. Provide each air handling unit with the following:

1. Outdoor air intake Section with damper.
2. Filter section (MERV 6 prefilters and MERV 13 finale filters).
3. Heating section, gas-fired.
4. Spacer section.
5. DX cooling coil section and associated air-cooled condenser.
6. Spacer section.
7. Supply fan section (constant volume).

8. Sound attenuation section.
9. Spacer section.
10. Reheat coil section including freeze protection circulation pump.
11. Supply air discharge section with damper and bottom discharge).
12. Roof curb.
13. Packaged controls (with BAS interface) for the gas heat and DX cooling.

For each of the men and women's locker areas provide 2 rooftop exhaust fans (with associated roof curbs and dampers); a 300 CFM exhaust fan to each locker room's toilet area and a 500 CFM exhaust fan to serve each of the main locker areas. Provide DDC (BAS system) control of the fans and associated dampers. The exhaust ductwork would be low pressure with no insulation.

Multi-purpose Areas: Provide a 12,000 CFM (35% outdoor air), 40 Ton (total cooling), 30 Ton (sensible), self-contained DX rooftop air handling unit to serve the multi-purpose room, lobby and 4 activity areas (See Sketch M4). Provide a gas line from the main service in the boiler room up to the multi-purpose area air handling unit. Provide the air handling unit with the following:

1. Return air section with bottom connection and associated damper.
2. Sound attenuation section.
3. Return fan section (equip fan with VFD).
4. Economizer Section with outdoor air intake and relief air discharge and associated dampers.
5. Filter section (MERV 6 prefilters and MERV 13 finale filters).
6. Heating section, gas-fired.
7. Spacer section.
8. DX cooling coil section and associated air-cooled condenser.
9. Spacer section.
10. Supply fan section (equip fan with VFD).
11. Sound attenuation section.
12. Spacer section.
13. Supply air discharge section with damper and bottom discharge).
14. Roof curb.
15. Packaged controls (with BAS interface) for the gas heat and DX cooling and DDC (BAS system) controls for the variable supply and return fans and DVC operations.

Provide insulated, medium pressure supply ductwork to VAV terminals. Provide insulated, low pressure ductwork from the VAV terminals to ceiling diffusers in each temperature control zone. Provide return ductwork from ceiling registers in each temperature control zone. The return ductwork would be low pressure with no insulation.

Provide a total of 12 VAV terminals with heating coils and BAS controllers (See Sketch M2). Provide eight terminals with 10 inch inlets and four terminals with 12 inch inlets.

Dining Area: Provide a 13,000 CFM (80% outdoor air), 67 Ton (total cooling), 42 Ton (sensible), self-contained DX rooftop air handling unit to serve the cafeteria dinning area (See Sketch M4). Provide a gas line from the main service in the boiler room up to the air handling unit. Furnish the air handling unit similarly to the auditorium unit. Provide insulated, low pressure supply ductwork to ceiling diffusers and return ductwork from ceiling return registers. The return ductwork would be low pressure with no insulation.

Kitchen: Provide 5,800 CFM (100% outdoor air), 35 Ton (total cooling), 21 Ton (sensible), self-contained DX rooftop air handling units (See Sketch M4). Provide a gas line from the main service in the boiler room up to the air handling unit. Provide insulated, low pressure supply ductwork to ceiling diffusers. Furnish the air handling unit similarly to the locker room units.

Ventilation

Outdoor Air: Outdoor air provisions as described under Air Conditioning for each building area are in compliance with indoor air quality standards and code requirements.

In addition, outdoor air would be drawn through the boiler room and main electrical equipment room in order to provide ventilation cooling and boiler combustion air. Provide a new wall-prop type ventilation fan in each space and replace the existing associated wall louvers and dampers. Provide DDC (BAS system) control of the fans and dampers.

Exhaust Air: Provide two 1,500 CFM, rooftop exhaust fans and associated curbs and dampers (See Sketch M4) to serve the men and women toilet rooms that are stacked on each floor of the main building. Provide DDC (BAS system) control of the fans and dampers.

Provide a 1,000 CFM, rooftop exhaust fan and associated curb and damper (See Sketch M4) to serve the toilet room in the men's locker area and the combined men and women toilet rooms in the multi-purpose area. Provide DDC (BAS system) control of the fan and damper.

Provide a 500 CFM, rooftop exhaust fan and associated curb and damper (See Sketch M4) to serve the toilet room in the women's locker area. Provide DDC (BAS system) control of the fan and damper.

Provide two 700 CFM, rooftop exhaust fans and associated curbs and dampers (See Sketch M4) to serve the men and women locker rooms. Provide DDC (BAS system) control of the fans and dampers.

Provide 3 rooftop exhaust fans (with associated roof curbs and dampers); a 6,000 CFM exhaust fan to serve a kitchen hood and two 3,000 CFM exhaust fans to serve the main kitchen areas when the hood is not in operation. Provide DDC (BAS system) control of the fans and dampers associated with the main kitchen exhaust fans. The kitchen hood exhaust ductwork would be welded black steel in compliance with grease duct standards. The main kitchen exhaust ductwork would be low pressure with no insulation.

Provide an allowance for additional exhaust fans that may result from subsequent facility programming; such as for lab classrooms and/or vocational training applications such as welding, etc.

Heating

Provisions for heating ventilation air (rooftop air handling units equipped with gas-fired heat exchangers) would be as described under Air Conditioning for the DOA systems (main building) and for rooftop air handling units that would serve each particular building area.

Provisions for heating occupied spaces in the main building (split-system heat pumps) would be as described under Air Conditioning for the VRF systems.

Additional heating would be provided by a heating water system. Heating water would be distributed to re-heat coils associated with the various rooftop air handling units and to a few VAV terminals equipped with heating coils (as described under Air Conditioning); to cabinet heaters at every building entrance; to finned tube heaters at windows in the corridors, stairs, storage rooms and toilet rooms; and to unit heaters in the fire pump room and electric service room.

The heating plant would use a battery of high efficiency, modulating pulse boilers arrayed in a manifold configuration. These boilers would be vented directly to the outdoors without the need of a chimney. Heating water distribution would be accomplished using primary/secondary pumping. An in-line type primary pump would be furnished for each boiler. Three secondary pumps (each sized for 50% of the total required flow rate) would be base-mounted spit-case type that are each equipped with a VFD for variable flow distribution to 2-way heating water control valves at each heating coil and point of use heating equipment.

Provide the following:

1. 3 modulating pulse boilers, each with Net IBR outputs of 230 MBH, similar to Burnham, Alpine model ALP285.
2. Three 1 HP in-line pumps.
3. Three 75 HP base-mounted spit-case pumps with VFDs.
4. An allowance for associated boiler plant accessories such as expansion tanks, chemical treatment, etc.
5. Insulated distribution piping to the indicated heating equipment.
6. Packaged controls (with BAS interface) for the boilers and DDC (BAS system) controls for the pumps and heating water control valves throughout.

D40 FIRE PROTECTION

Observations and Review of Documents

Sprinklers and Standpipes

At present, the build does not have fire protection sprinklers and there are neither standpipes nor a building fire service. Fire protection recommendations include the addition of sprinklers and standpipes; however, a flow test must be conducted in order to verify available water pressure and flow and to determine whether a fire pump would be required. Pending a flow test, a new fire pump and related power requirements should be accounted for.

Fire Alarm

Based on the field observation, the condition of existing fire alarm system is as stated in the 2008 Facility Condition Assessment report by Faithful + Gould Inc.: “good”. The following conditions were confirmed by observation:

1. The majority of fire alarm devices and infrastructure has outlived its standard service life of 20-30 years The system is estimated to have been installed circa 1970 (as stated in the FCA report).

2. The existing system does not meet current fire code and ADA requirements. The system is lacking visual devices (only bells are present) and smoke detection devices (as stated in the FCA report).
3. Some manual pull stations are more than 5'-0" from exit doors. This does not meet current fire code (as stated in the FCA report).
4. The FACP (located in the Main Electrical Room) monitors the system and provides local alarm (as stated in the FCA report).

Recommendations

Sprinklers and Standpipes

Install standpipes and fire protection sprinklers throughout the building in compliance with the D.C. Construction Codes of 2008, consisting of the 2005 National Electric Code (NEC), the 2006 International Fire Code (IFC), the District of Columbia Fire Prevention Code Supplement (DCMR 12H), and all other codes mandated by the Department of Consumer and Regulatory Affairs.

A new 6 inch fire service would need to be installed from Hamilton Avenue into the existing boiler room. With the removal of the existing boilers, heating water pumps and appurtenances (See D33 HVAC Recommendations), there would be space for the installation of a fire pump. Pending the results of a flow test, allow for a 1250 GPM, 150 HP fire pump.

Standpipes would need to be installed in fire-rated stair enclosures. Sprinkler zone valve assemblies would tap off the standpipes at each floor. The standpipes would also have 1½ inch hose connections at each floor, such that the entire building floor plan would be within 150 ft. travel distance from of a hose connection. This would be accomplished by installing a 4 inch standpipe in each of Stairs 1, 2, 3, 5 and 7. There will also need to be two 1½ inch hose connections at the back and on both sides of the auditorium stage. The stage hose connections can be served directly from the auditorium sprinkler zone and do not require an additional standpipe.

A 6 inch fire protection pipe would be installed from the fire pump out to Stair 3. In the first floor corridor, a 4 inch line would tap off of the 6 inch pipe and extend to the 4 inch standpipe risers in Stairs 1 and 2. The4 inch Stair 3 standpipe riser would tap off of the 6 inch line, after which the 6 inch line would reduce to 4 inch and hence would extend to the 4 inch standpipe risers in Stairs 5 and 7. Fire protection piping would be schedule 40 black steel with Victaulic fillings.

Sprinkler piping would extend from each zone valve assembly to sprinkler heads distributed as required for full building coverage and according to the referenced codes. A 2 inch, test drain riser would be installed next to each standpipe riser to serve fire department test valves included in each zone valve assembly.

Fire Alarm

Due to the age and condition of the existing fire alarm system, and due to the projected change- of- use by The University of the District of Columbia, it is recommended that the entire fire alarm system be demolished and replaced.

All fire alarm work will be in accordance with the 2005 National Electric Code (NEC), the 2006 International Fire Code (IFC), the District of Columbia Fire Prevention Code

Supplement (DCMR 12H), and all other codes mandated by the Department of Consumer and Regulatory Affairs.

Demolition:

1. Remove all fire alarm devices, such as pull stations and bells, and remove associated circuit conductors and raceway.
2. Where fire alarm circuits are located within CMU walls, remove all conductors and abandon conduit in place. Cut and cap all conduit stub-ups from CMU walls. Provide coverplates where flush-mounted devices are removed.
3. Remove the existing fire alarm control panel (FACP) and associated circuit wiring.

System Overview: A complete code approved, addressable fire alarm system, will include but not be limited to:

1. Fire Alarm Control Panel (FACP)
2. Main Zoning Annunciator Panel located at the building main entrance
3. Remote Zoning Annunciator Panels with LCD directory style display (1 remote panel per zone)
4. Visual and Audible notification devices (horns and strobes)
5. Manual Pull Stations
6. Sprinkler Tamper and Flow Switches
7. Elevator Smoke Detectors
8. Space and HVAC duct mounted smoke detectors on HVAC units having a capacity of 2,000 cfm (cubic feet per minute) or greater
9. Connection to HVAC System for control from Fire Alarm Control Panel
10. Connections to elevator control panels, from Fire Alarm Control Panel
11. Connections to fire pump control panels (if required)

D50 ELECTRICAL

Observations and Review of Documents

Based on the field observation, the condition of the existing electrical system is as stated in the "Facility Condition Assessment (FCA)" report performed by Faithful + Gould Inc.: "fair to poor". The following conditions were confirmed by observation:

1. The majority of electrical equipment has outlived its standard service life of 20-30 years (as stated in the FCA report)
2. There was little evidence that routine maintenance was performed on electrical equipment (as stated in the FCA report)
3. There was visual evidence of corrosion on electrical equipment enclosures and some degradation of conductor insulation
4. In electrical panelboards many circuit breakers appeared damaged or missing.
5. Numerous light fixtures were damaged or discolored (as stated in the FCA report)

As stated in the FCA report, the building receives 208Y/120V, 3 phase, 4 wire electrical service from an underground vault transformer supplied by Potomac Electric Power Company (PEPCO). The vault is located approximately 30 feet to the south of the existing main electrical room and can be accessed via grated hatch. No electrical drawings were provided, and the hatch was unable to be accessed at the time of observation, so the capacity of the transformer (KVA) and primary voltage

are unknown. The FCA report speculated a transformer capacity of 1,000 KVA based on the ratings of the service disconnects.

As stated in the FCA report, underground ducts are routed from the transformer to a current transformer (CT) cabinet. A wire trough, on the load-side of the CT cabinet, supplies (3) 208Y/120V service disconnects rated 600A, 800A, and 1200A.

The building has only one dedicated electrical space—the main electrical room located on the first floor. Branch circuit electrical panelboards are located throughout the building. It appears as though classrooms are served from recessed panelboards located in corridors. Mechanical and kitchen equipment are served at 208V single and three phase, while receptacles, lights, and smaller equipment loads are served at 120V. The auditorium has a dimming system for house and stage lighting.

Much of the wall construction in the building is concrete masonry unit (CMU) block, and the majority of electrical devices on CMU walls are flush mounted. In some spaces, such as the auditorium and laboratories, floor mounted electrical devices were observed.

As stated in the FCA report, emergency power is provided by a separate feeder tap to the incoming service and is utilized for emergency lighting only. Light fixtures and exit signs with battery backup are located throughout the building.

Recommendations

Overview

Due to the age and condition of the existing electrical system, it is recommended that the entire electrical system be demolished and replaced. Additionally, the existing service voltage (208Y/120V) and capacity (1000 KVA) are not recommended for a building of this size (approx. 126,000 square feet) and projected usage by The University of the District of Columbia. It is recommended to provide a 480Y/277V service to the building. This will allow for large mechanical loads to be served at 480V, 3 phase, and lighting to be served at 277V, single phase. This presents more efficient power distribution in the building and minimizes feeder and branch circuit conductor sizes.

The following is the recommended approach to provide a new electrical system for the building, including: demolition of existing systems, service, infrastructure, receptacle, lighting, and other devices:

Codes and Standards

All electrical work will be in accordance with the 2005 National Electric Code (NEC), the 2006 International Building Code (IBC), the District of Columbia Electric Code Supplement (DCMR 12C), and all other codes mandated by the Department of Consumer and Regulatory Affairs.

Demolition

1. Remove electrical service transformer and associated service entrance conductors and raceway.
2. Remove all electrical panelboards and associated feeders and raceway.
3. Remove all electrical devices such as receptacles, lights, and switches, and remove associated branch circuit conductors and raceway.

4. Remove all branch circuit conductors, raceway, and associated disconnects for mechanical equipment.
5. Where branch circuits are located within CMU walls, remove all conductors and abandon conduit in place. Cut and cap all conduit stub-ups from CMU walls. Provide coverplates where flush-mounted devices are removed.
6. Where branch circuits are located in concrete slabs, remove all conductors and abandon conduit in place. Cut and cap all conduit stub-ups.

Electrical Service

The service requirements will be coordinated with PEPCO to provide a 2000 KVA, 480Y/277V (secondary voltage) transformer and 3 phase, 4 wire, 60 Hz incoming secondary service feeders. The transformer will be located in the existing underground vault located approximately 30 feet south of the main electrical room (or in a location determined by PEPCO). If the building requires a fire pump, a separate secondary lateral feeder will be provided. Theses feeders will be in underground concrete encased ductbanks from the transformer to the incoming section of the normal power distribution switchboard and to the fire pump bolted pressure switch (if required).

The incoming line section of the switchboard will consist of a C/T compartment for metering equipment and the main circuit breaker. The entire cubicle is to be fabricated in full compliance with PEPCO requirements.

Provide a feeder tap compartment for the "tap ahead of the main". This feeder tap will be made between the metering compartment and the normal power main breaker compartment of the main distribution switchboard. The feeder will extend out and terminate in a separately mounted fused bolted pressure switch, located immediately adjacent to the switchboard. If emergency power is required, a second tap will serve as the "normal power connection" to the emergency power distribution panel via an automatic transfer switch. (See "Emergency Power Distribution" for further information).

If a fire pump is required, the secondary lateral feeder from the transformer to the fire pump will run through a PEPCO approved metering compartment and terminate in a fused, bolted pressure switch, sized equal to or greater than the locked rotor current of the fire pump (and jockey pump if provided). This switch will be located within the fire pump room and will extend to the "normal power connection" side of the automatic transfer switch provided by the fire pump manufacturer. (See "Emergency Power Distribution" for further information.)

Normal Power Distribution

The Main Switchboard will be rated 3000A, 480Y/277V, and will allow for 25% future growth (see "Building Load Calculations"). Switchboard feeder circuit breakers will feed lighting and mechanical panelboards throughout the facility, as well as elevators. All feeder circuit breakers will be molded-case. Lighting panelboards will serve 277V lighting fixtures and small mechanical equipment. Additionally, lighting panels will feed 480V- 208Y/120V transformers, which will in turn feed convenience receptacle panelboards. Dedicated 480Y/277V mechanical panelboards, 480V-208Y/120V transformers and 208Y/120V mechanical receptacle panelboards will serve mechanical equipment located in the first floor mechanical

room and on the roof. It is also recommended to provide a dedicated 480V- 208Y/120V transformer and 208Y/120V panelboard to serve kitchen equipment.

In is anticipated that the renovated University facility will have computer, information technology, and telecommunication equipment loads. For these loads, it is recommended to provide K-13 rated transformers and 208Y/120V panelboards to minimize harmonic disturbances. For electrical load calculation purposes, it is anticipated that approximately one half of the University academic spaces will have dedicated computer power (see "Building Load Calculations").

The existing building does not contain electrical closets or any dedicated electrical spaces besides the Main Electrical Room. It is recommended to provide electrical closets in the renovated facility to house the equipment described above. The following electrical room/closet distribution is recommended:

1. Provide a Main Electrical Room to house all electrical service equipment in approximately the same location as the existing electrical room.
2. Provide one electrical closet on each floor of each academic wing (total of 6). Each closet will contain: one lighting panel, one convenience receptacle transformer, one convenience receptacle panelboard, one K-13 computer transformer, and one 2-section computer receptacle panel, and one emergency lighting panel (if a generator is installed). Third floor electrical closets will also contain 480Y/277V mechanical panelboards, 480V-208Y/120V transformers and 208Y/120V mechanical receptacle panelboards to serve rooftop equipment.
3. Provide one electrical closet on each floor of the kitchen/multi-purpose/gymnasium wing (total of 2). Each closet will contain: one lighting panel, one convenience receptacle transformer, and one convenience receptacle panelboard. In addition, the second floor electrical closet will contain a 480V-208Y/120V transformer to serve a dedicated kitchen equipment panelboard located in the kitchen.
4. Provide one electrical closet for the auditorium wing. The closet will contain: one lighting panel, one convenience receptacle transformer, and one convenience receptacle panelboard, as well as a 480V-208Y/120V transformer and dimming cabinets for auditorium house and stage lights.
5. In the first floor mechanical room, provide a dedicated 480Y/277V mechanical panelboard, 480V-208Y/120V transformer, and 208Y/120V mechanical receptacle panelboard to serve equipment located in the space.
6. In each elevator machine room (total of 2), provide a main disconnect for each elevator, and a 480V-208Y/120V transformer, and 208Y/120V receptacle panelboard to serve elevator circuits.

Emergency Power Distribution

If a fire pump is required, it will be necessary to provide a generator for emergency power to the fire pump. The generator would also provide power to emergency (egress) lighting.

The generator will be diesel driven and located outdoors in a weatherproof enclosure south of the Main Electrical Room. The size of the generator will be sufficient to handle the operation of the fire pump (and jockey pump if provided) and emergency lighting. The estimated rating of the generator is 200 KW, 480Y/277 volt, 3 phase, 4 wire. The generator will be equipped with a fuel tank with capacity to allow the generator to supply power to the

fire pump for a minimum of 8 hours. The estimated required capacity of the fuel tank is 175 gallons.

The generator will be equipped with two output circuit breakers—one to serve the fire pump and one to serve a 4-pole automatic transfer switch (ATS) located in the Main Electrical Room. A 480Y/277V Emergency distribution panelboard will be served from the load side of the ATS and will feed emergency lighting panelboards throughout the building. The normal power connection to the ATS will be from a tap ahead of the main circuit breaker in the Main Switchboard. Feeders from the generator to fire pump and ATS will be in underground ducts.

Lighting

Lighting levels in all areas will comply with the recommendations of the Illuminating Engineering Society (IES). As a guide, the following are typical areas and the approximate levels of illumination that will be provided:

Area	Footcandle Level
• Lobby	20
• Elevator Lobbies	20
• Corridors	20
• Storage Rooms	20
• Mech/Elec. Rooms	25
• Classrooms	30
• Cafeteria/ Multi-purpose	30
• Auditorium	40
• Kitchen	50
• Gymnasium	100

Lighting fixtures will consist of 2' x 2' and 2' x 4' recessed fluorescent, 6" x 4' direct/indirect fluorescent, industrial strip fluorescent (in utility spaces), and compact fluorescent downlights. Some decorative lighting may be used in lobby spaces or other areas of interest. High bay fluorescent lights will be used in the gymnasium.

All light fixtures will be 277V and utilize electronic ballasts. Linear fluorescent lamps will be T8, T5, or T5 HO. All fluorescent lamps will comply with the Washington, D.C. DCRA efficacy requirements.

The facility will be provided with an automated lighting control system in compliance with ASHRAE 90.1 and the 2006 ICC International Energy Conservation Code. The lighting control system will consist of automatic shutoff devices, dual technology occupancy sensors, and other devices as required.

If an emergency generator is not provided, fluorescent wall-pack type light fixtures with battery backup will be provided throughout the building. These fixtures will be circuited to normal power lighting panelboards and will provide emergency lighting (1 fc minimum) when a power outage occurs. Exit signs will be LED-type. All emergency light fixtures will be equipped with 90 minutes of battery run-time.

Electrical Equipment

1. Feeders, sub feeders and branch circuit wiring for light, power and control, including conduit systems, and connection to all distribution boards, panelboards, outlet boxes, lighting, motors and transformers in the project will be provided.
2. Emergency and normal circuits shall not be combined in the same raceways or junction boxes.
3. Each panelboard will have a main overcurrent protective device.
4. Disconnect switches and motor starters will be provided for all motors, building equipment and user equipment in compliance with the NEC.
5. Wire and Cable:
   a. All wires will be copper
   b. Minimum of 14 AWG for control wiring
   c. Generally, minimum 12AWG for lighting and convenience receptacle circuits.
   d. Wire sizes larger than 10AWG will be stranded.
   e. All wires will be THWN/THHN thermoplastic insulations rated at 75 degree C.
6. Raceway system:
   a. EMT will be used for all feeders.
   b. MC cable will be used for branch circuiting concealed by walls or ceilings.
   c. Where branch circuit raceways are exposed, EMT or nonmetallic raceway ("wiremold" or similar) will be used.
   d. PVC conduit will be used underground or where concrete encased.
   e. Flexible steel conduit will be used for interior connections to rotating or vibrating equipment.
   f. In wet or damp locations and in mechanical equipment rooms, flexible steel conduit with weatherproof PVC jacket will be used.
7. Receptacles will be specification grade, NEMA configuration as required.

Grounding

The grounding system will comply with NFPA 70- Article 250 as a minimum. No conduit will be used for the purposes of grounding. A separate equipment ground conductor will be provided for all feeder and branch circuits. A ground bus will be provided in each electrical room.

Building Load Calculations

		Lighting	Conv. Recep	Computer Recep	Mech	Elevators, Fire Pump, Misc	Kitchen	Total KVA	Total Amps
	VA/SF	**3.0**	**1.0**	**5.0**	**6.0**	**1.5**	**35.0**	**-**	**-**
Space Type	**Square Footage**							**-**	**-**
Academic (Computer)	39,000	117.0	39.0	195.0	234.0	58.5	0.0	-	-
Academic (Non-Computer)	39,000	117.0	39.0	0.0	234.0	58.5	0.0	-	-
Auditorium and Support	10,000	30.0	10.0	0.0	60.0	15.0	0.0	-	-
Cafeteria/ Multi-Purpose	16,600	49.8	16.6	0.0	99.6	24.9	0.0	-	-
Gymnasium and Support	18,800	56.4	18.8	0.0	112.8	28.2	0.0	-	-
Kitchen	2,200	6.6	2.2	0.0	13.2	3.3	77.0	-	-
Total	**125,600**	**376.8**	**125.6**	**195.0**	**753.6**	**188.4**	**77.0**	**1,716.4**	**2,068.0**
Total X 1.25	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2145.50**	**2584.94**

D60 SAFETY, SECURITY & ACCESS CONTROL

Observations and Review of Documents

The facility is generally secured.

Recommendations
New security systems will need to be installed consistent with UDC criteria.

E. EQUIPMENT AND FURNISHINGS

Observations and Review of Documents

Academic Building: Cooking ranges have been removed from the classroom. Lab benches are in good condition.

Auditorium: The seating in the auditorium has been removed. Existing drawings note that seating for 718 had been installed.

Cafeteria: Kitchen cooking equipment has been removed, with the exception of the ventilation hood. The working condition of the hood is unknown. Sinks, counters and the walk in cooler remain, although the working condition of the cooler is unknown.

Gymnasium: The basketball hoops have been removed from the gym. Based on the original as-builts, 600 of the existing 650 12"x12"x12" metal lockers have been removed from the locker rooms. Locker room wood plank benches are in poor condition and some have been removed. The bench pedestals appear intact and in good condition.

Recommendations

Academic Building: Depending upon the program lab benches may be reused.

Auditorium: New seating, with accessible spaces, may be installed depending upon the program.

Cafeteria: Cooking and baking equipment may be replaced depending upon the program.

Gymnasium: Locker room benches and Lockers may be replaced depending on program. This study will assume that the block "footings" on the floor, where the lockers were, will be replaced with tile to match existing adjacent.

Approximately 240 square feet of block will be removed and replaced with tile.

F. SPECIAL CONSTRUCTION AND DEMOLITION

Observations and Review of Documents

While the building superstructure and shell are in good condition, the interior finishes including flooring and ceilings will need to be demolished. The services including plumbing, HVAC, and electrical need to be completely demolished.

Recommendations

Depending upon UDC's program requirements significant quantities of interior finishes and building services should be demolished.

G. SITE IMPROVEMENTS

Observations and Review of Documents

Exterior Stairs, Overhead Walk, Sidewalks and Retaining Walls: The main entrance stairs are granite, and other stairs around the building are poured concrete. The exterior stairs are in fair and useable condition, but are chipped or cracked in many areas. The overhead walk is poured concrete, and appeared to be in fair condition, with several chipped areas. Sidewalks are in generally poor condition.

Parking Lots: Asphalt paved parking lots are in poor condition.

Fencing: Chain link fence surrounds the property and overhead walk. The fencing is functional, but unsightly and unwelcoming.

Outside Athletic Courts: The athletic courts are currently in not useable condition, and are overgrown with vegetation.

Exterior Lighting: Exterior lighting was not surveyed in detail during the recent site visit, but appears to be inadequate for a building that will regularly be used in the evenings by instructors and commuting students.

Recommendations

Exterior Stairs, Overhead Walk, Sidewalks and Retaining Walls: As noted in the Facility Condition Assessment, exterior stairs and the overhead walk are in generally good condition, but should be patched to provide smooth surfaces. The sidewalks need to be replaced to provide a smooth walking surface and ADA compliance. The exterior platforms at the entrance to the multi-use space should also be refurbished, as this area as the potential to become a major program element.

> The 2008 Facility Condition Assessment notes approximately 450 square feet of concrete sidewalk panels to be replaced; and includes costs for repairing the overhead walk and refurbishing exterior stairs.

Parking Lots: Parking lots will need to be repaved and repainted. Consideration should be given to ADA accessible spots, as well as assigned parking for professors, admin, maintenance, commuting students, and visitors.

> The Facility Condition Assessment notes approximately 9,500 square yards of full-depth paving repair.

Fencing: The building will be occupied during a greater part of the day as a community college than as a middle school. The longer operating hours are assumed to afford greater security for the building, but programmatically, fencing may still be required. Fencing should be replaced with a system appropriate to the building's use: ornamental metal fence would enhance the site's appearance, while maintaining the security level. Some welded wire fences may also achieve the desired appearance.

> The 2008 Facility Condition Assessment notes 1,700 linear feet of fencing to be replaced.

Outside Athletic Courts: It is not known at this time whether the courts are to be refurbished and used as part of the college program. It is recommended that the vegetation be removed periodically, and minor maintenance performed, such that if the courts are to be used in the future, the refurbishment effort has not increased.

Exterior Lighting: Exterior lighting coverage needs to be increased to account for increased evening use.

> The Facility Condition Assessment notes 15 new site lights to be installed.

H. ACCESSIBILITY

Observations and Review of Documents

Accessible Entrances: Please see the 2008 Facility Condition Assessment for a comprehensive discussion about ADA compliant entrances. At present, the main entrance stairs meet ADA guidelines, but the entrance does not have a required ramp. The ramp into the kitchen does not, according to the report, have an ADA compliant slope. This ramp could not be used as an accessible entrance for students, as it enters "back-of-house" spaces and does not offer ready access to spaces regularly occupied by students. The ramp to the multi-use space is ADA complaint, according to the report. The overhead walk leading to the gym may count as ADA accessibility to that area. The building does not currently have an accessible drop-off/pick-up area.

Elevators: The building is currently not equipped with passenger or freight elevators.

Signage: The building is currently not provided with ADA compliant signage.

Toilet Rooms: Currently, none of the toilet rooms meet ADA guidelines for accessible fixtures or clearances. From observation, there was not adequate clearance in the stalls for wheelchair access, and no grab bars are installed.

Recommendations

Accessible Entrances: The main entrance on South Dakota Avenue will need an ADA compliant ramp. Due to the length of the ramp, it is recommended that it run parallel to S. Dakota Avenue, replacing one of the planters adjacent to the main entrance. The multi-use space has the potential to become a major program element for students, such as a student lounge or study area for commuters. It is recommended that the ramp be refurbished and an entrance feature be installed at the side door to note this entrance. This ramp may be an element of an egress route for students. If an accessible drop-off/pick-up area near the parking lot is desired, an ADA compliant ramp may be considered for an entrance leading from the parking lot.

Elevators: As noted in the report, it is recommended that two passenger elevators be installed. A freight elevator may also be installed for convenience. It is recommended that the primary passenger elevator be installed opposite stair 2, adjacent to the main lobby, with a secondary elevator near either stair 4 or stair 1.

Signage: All regularly used interior spaces should be identified with ADA complaint signage. Wayfinding signs throughout the building should identify accessible routes and emergency egresses. Exterior signage should be installed to identify locations of accessible entrances.

Toilet Rooms: Significant reconfiguration of the toilet rooms will be necessary to meet ADA guidelines. The report recommends replacement of the sanitary line; the possibility of increased number of fixtures might necessitate this. Lavatory height and clear space under the counter will need to be altered. One stall in each of the toilet rooms should meet ADA guidelines for clear floor space, fixture height, and grab bars. It is a possibility that the size and number of existing toilet rooms may not be sufficient to meet increased fixture counts and required clearances.

I. HAZARDOUS MATERIALS

Observations and Review of Documents

As-built drawings note asbestos plaster as a ceiling finish for many rooms. The drawings also note vinyl asbestos tile as a floor finish for many rooms. Ceilings will need to be removed throughout the building to allow for installation of the fire suppression system. Approximately 75% of the floor tile will be disturbed in the course of replacing mechanical systems.

A hazardous materials survey was not available to the RTKL team. The Faithful+Gould report references earlier studies and noted that their understanding was that "the building contains numerous hazardous materials." Among their items were:

- Asbestos containing insulation, mastics and plies at the original roof system (now encapsulated by the present recovery roof system.)
- 9" x 9" asbestos containing floor tiles and associated mastics throughout the entire building.
- 12" x 12" asbestos containing ceiling tiles throughout the entire building
- Asbestos containing pipe insulation at the boiler room
- Lead-based paint at painted areas throughout the interior and exterior of the building
- A 15,000 gallon capacity underground storage tank (UST) provided below the asphalt paved service yard.

Recommendations

We recommend that a thorough assessment be completed by a firm that specializes in hazardous materials abatement. This firm will be able to assist with removal options and associated costs for each material.

J. ENVIRONMENTAL ANALYSIS

Observations and Review of Documents

It is our understanding that this project may pursue LEED 2009 under the LEED for New Construction program. A project of this scope, where mechanical systems are being replaced and building enclosure is being updated, is a good candidate for LEED.

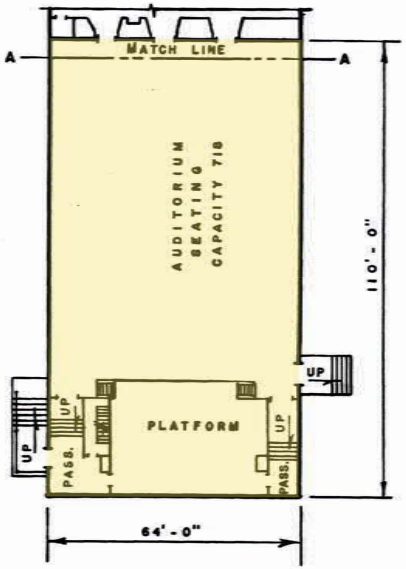
Recommendations

Evaluate the LEED criteria as the project progresses to determine features that meet UDC's programmatic and cost objectives. Among the examples would be Water Use Reductions by replacement of the sanitary line represents an opportunity to consider greywater use for toilet flushing and landscape irrigation. Water-efficient fixtures should be considered. Opportunities for storm-water reuse occur with the large roof and paved areas. Interior Finishes should also be considered. Replacement wood & wood veneer doors provide an opportunity to use FSC certified or recycled core materials. FSC certified wood is often a significant added cost, but recycled-content cores may not be. Many finishes, such as floor tiles, paints, carpet and adhesives, are available in low VOC materials. Gypsum board and ACT tiles often contain recycled content at low, if any, added cost.

FIRST FLOOR

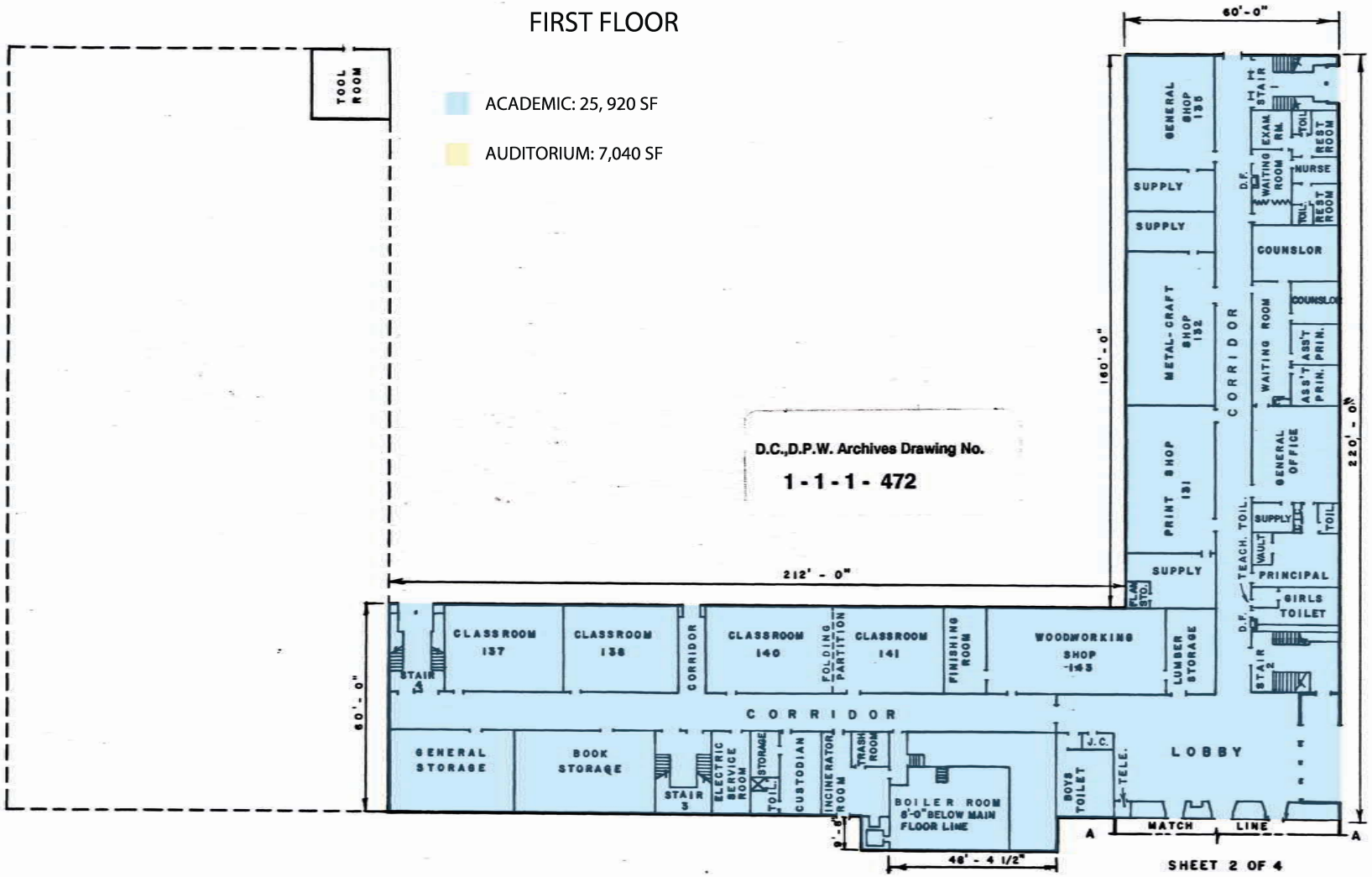
ACADEMIC: 25, 920 SF

AUDITORIUM: 7,040 SF



First Floor Plan
BERTIE BACKUS JR. HIGH SCHOOL
SCALE: 1" = 30'

DEPT. OF BUILDINGS & GROUNDS
DATE: MARCH 1961



SHEET 2 OF 4

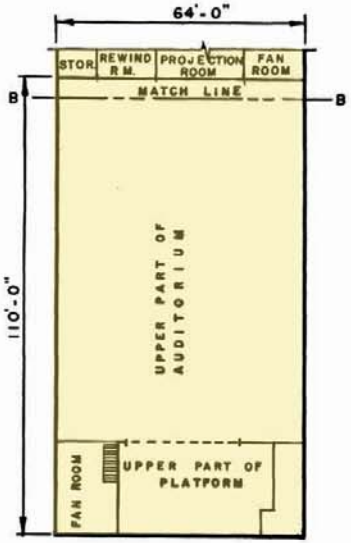
P.P.

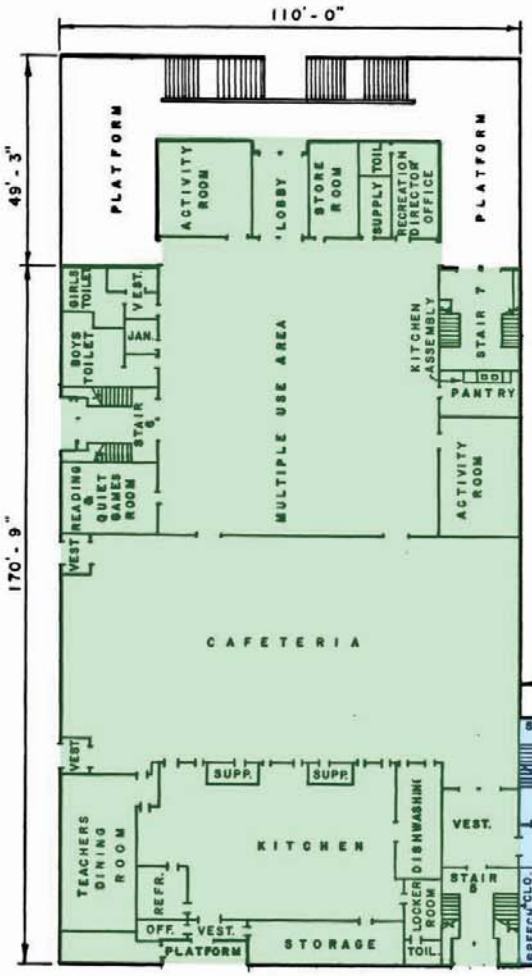
SECOND FLOOR

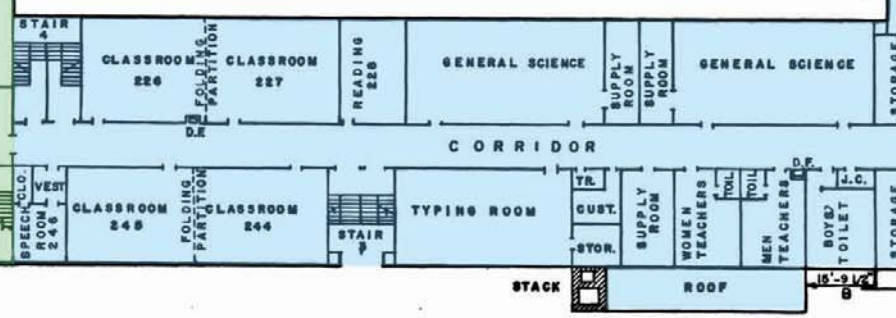
ACADEMIC: 25, 920 SF

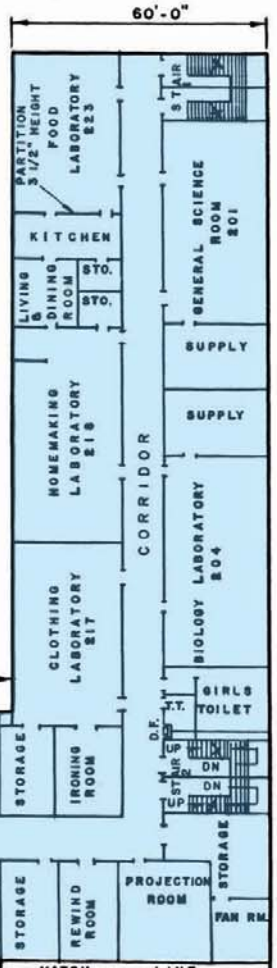
AUDITORIUM: 7,040 SF

CAFETERIA: 20, 600 SF









D.C.,D.P.W. Archives Drawing No.

1-1-1-473

Second Floor Plan
BERTIE BACKUS JR. HIGH SCHOOL
SCALE: 1" = 30'

DEPT. OF BUILDINGS & GROUNDS
DATE: MARCH 1961

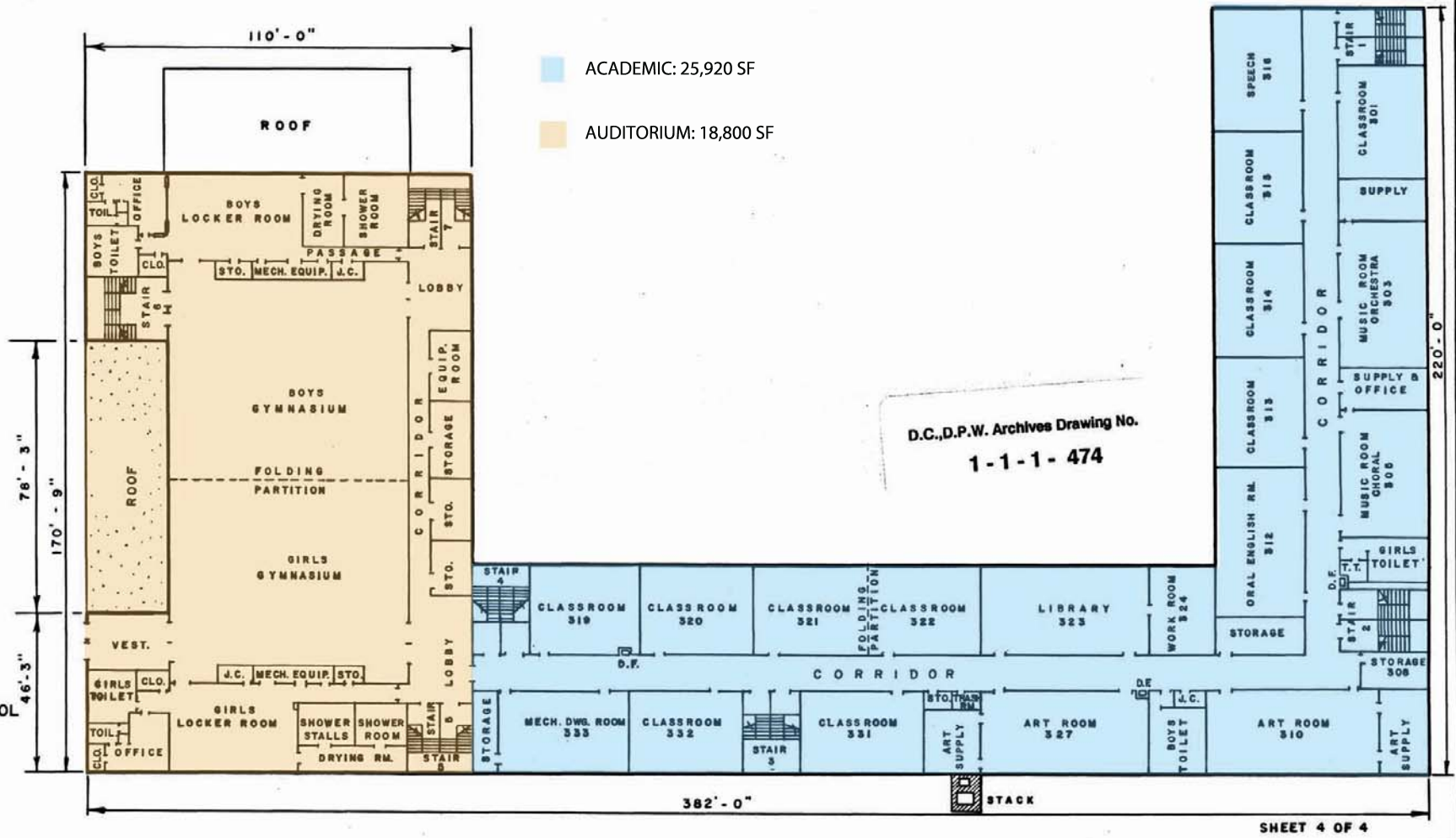
SHEET 3 OF 4

P.P.

THIRD FLOOR

ACADEMIC: 25,920 SF

AUDITORIUM: 18,800 SF



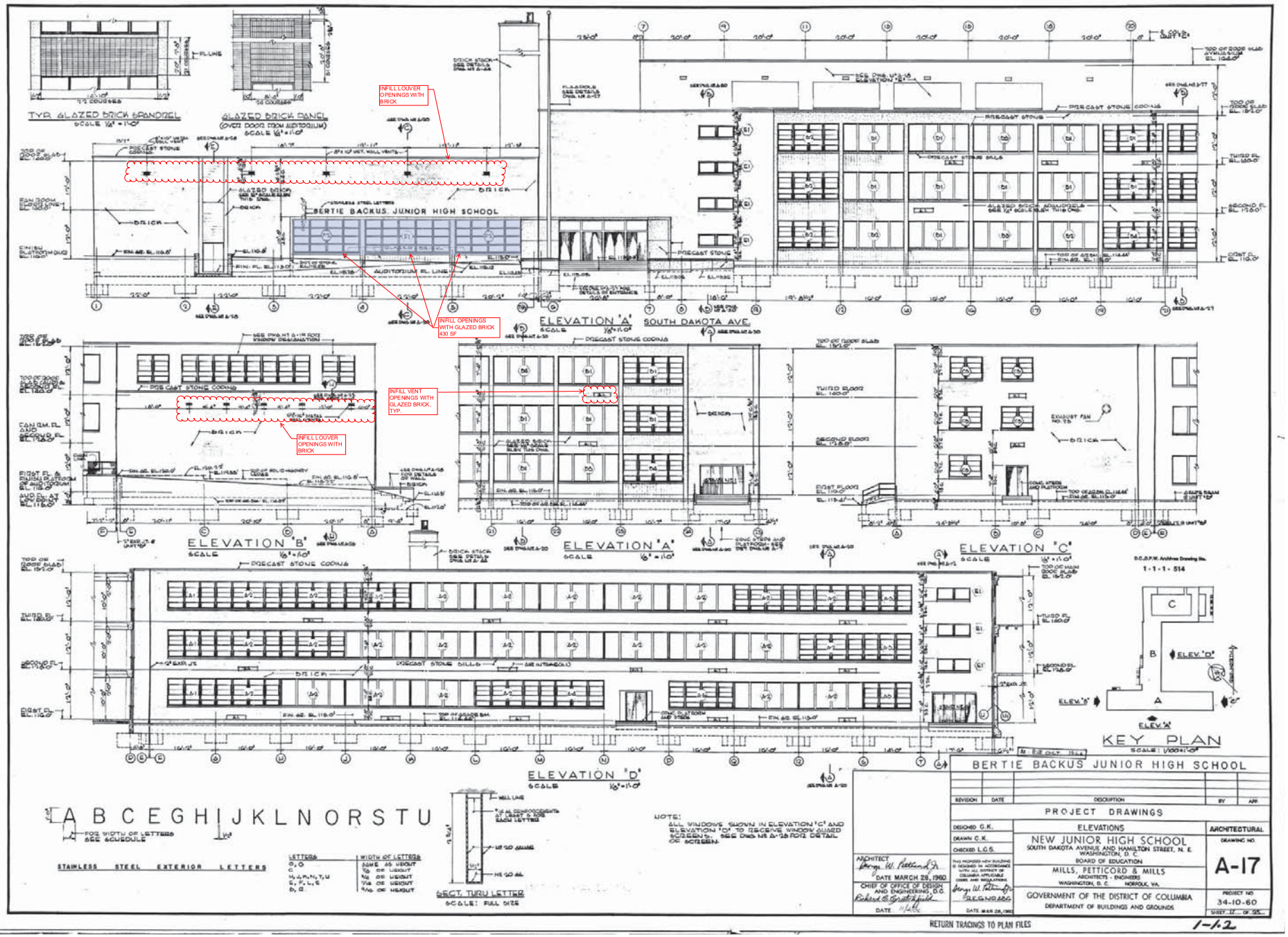
D.C.,D.P.W. Archives Drawing No.
1-1-1-474

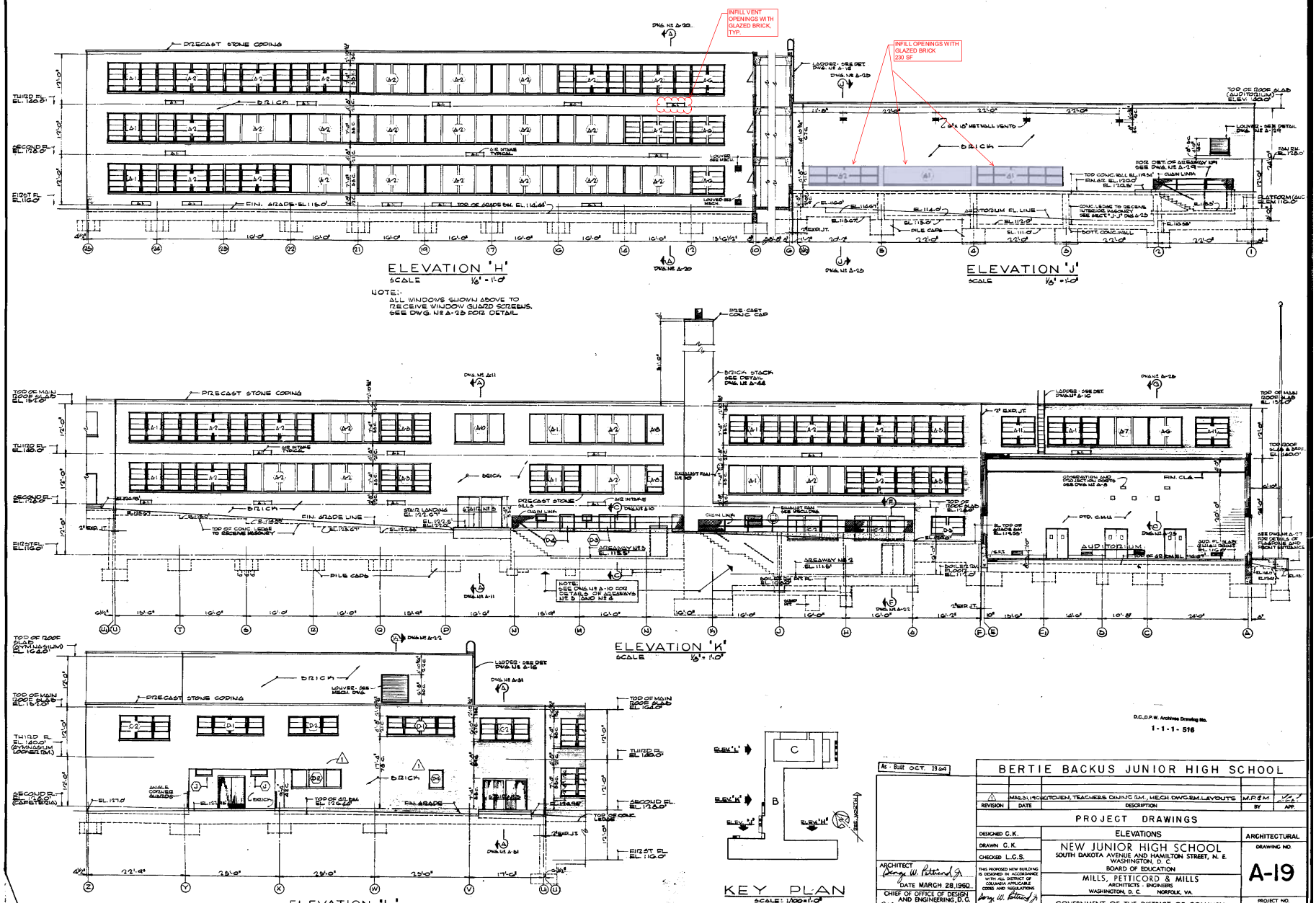
Third Floor Plan
BERTIE BACKUS JR. HIGH SCHOOL
SCALE: 1" = 30'

DEPT. OF BUILDINGS & GROUNDS
DATE: MARCH 1961

SHEET 4 OF 4

P.P.


TYP. GLAZED BRICK SPANDREL
SCALE 1/4" = 1'-0"
GLAZED BRICK PANEL
(OVER DOOR FROM AUDITORIUM)
SCALE 1/4" = 1'-0"
INFILL LOUVER OPENINGS WITH BRICK
INFILL OPENINGS WITH GLAZED BRICK 430 SF
INFILL VENT OPENINGS WITH GLAZED BRICK, TYP.
INFILL LOUVER OPENINGS WITH BRICK
BERTIE BACKUS JUNIOR HIGH SCHOOL
ELEVATION 'A'
SCALE 1/8" = 1'-0"
SOUTH DAKOTA AVE.
ELEVATION 'B'
SCALE 1/8" = 1'-0"
ELEVATION 'A'
SCALE 1/8" = 1'-0"
ELEVATION 'C'
SCALE 1/8" = 1'-0"
ELEVATION 'D'
SCALE 1/8" = 1'-0"
KEY PLAN
SCALE: 1/16" = 1'-0"
A B C E G H I J K L N O R S T U
STAINLESS STEEL EXTERIOR LETTERS
SECT. THRU LETTER
SCALE: FULL SIZE
NOTE:
ALL WINDOWS SHOWN IN ELEVATION 'C' AND ELEVATION 'D' TO RECEIVE WINDOW GUARD SCREEN. SEE DWG NO. A-26 FOR DETAIL OF SCREEN.
BERTIE BACKUS JUNIOR HIGH SCHOOL
PROJECT DRAWINGS
ELEVATIONS
NEW JUNIOR HIGH SCHOOL
SOUTH DAKOTA AVENUE AND HAMILTON STREET, N. E.
WASHINGTON, D. C.
BOARD OF EDUCATION
MILLS, PETTICORD & MILLS
ARCHITECTS - ENGINEERS
WASHINGTON, D. C. NORFOLK, VA.
GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF BUILDINGS AND GROUNDS
ARCHITECTURAL
DRAWING NO.
A-17
PROJECT NO.
34-10-60
DATE MARCH 28, 1960
CHIEF OF OFFICE OF DESIGN AND ENGINEERING, D.C.
RETURN TRACINGS TO PLAN FILES
1-1-2



D.C.D.P.W. Archives Drawing No.
1-1-1-516

As - Built OCT. 1964

BERTIE BACKUS JUNIOR HIGH SCHOOL

REVISION	DATE	DESCRIPTION	BY	APP.
1	MAR. 28, 1960	KITCHEN, TEACHERS DINING RM., MECH. DWG. & M. LAYOUTS	M.P.&M.	

PROJECT DRAWINGS

DESIGNED C.K.
DRAWN C.K.
CHECKED L.C.S.

ELEVATIONS

NEW JUNIOR HIGH SCHOOL
SOUTH DAKOTA AVENUE AND HAMILTON STREET, N. E.
WASHINGTON, D. C.
BOARD OF EDUCATION

MILLS, PETTICORD & MILLS
ARCHITECTS - ENGINEERS
WASHINGTON, D. C. NORFOLK, VA.

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF BUILDINGS AND GROUNDS

ARCHITECT
George W. Pettiford Jr.
DATE MARCH 28, 1960

CHIEF OF OFFICE OF DESIGN AND ENGINEERING, D.C.
Richard E. Gratchfield
DATE 11/4/60

THIS PROPOSED NEW BUILDING IS DESIGNED IN ACCORDANCE WITH ALL DISTRICT OF COLUMBIA APPLICABLE CODES AND REGULATIONS
George W. Pettiford Jr.
REG. NO. 1886
DATE MAR. 28, 1960

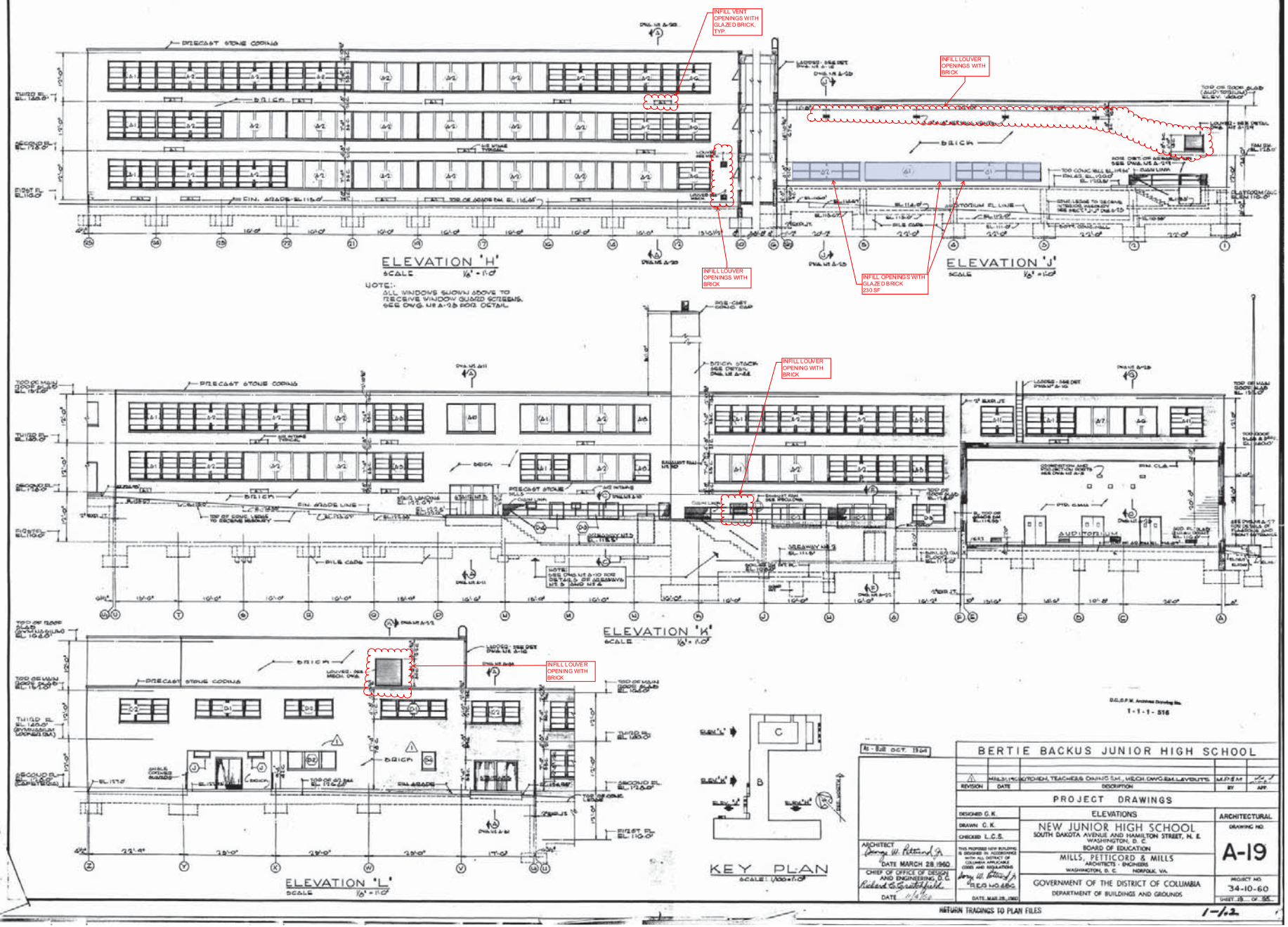
ARCHITECTURAL
DRAWING NO.
A-19

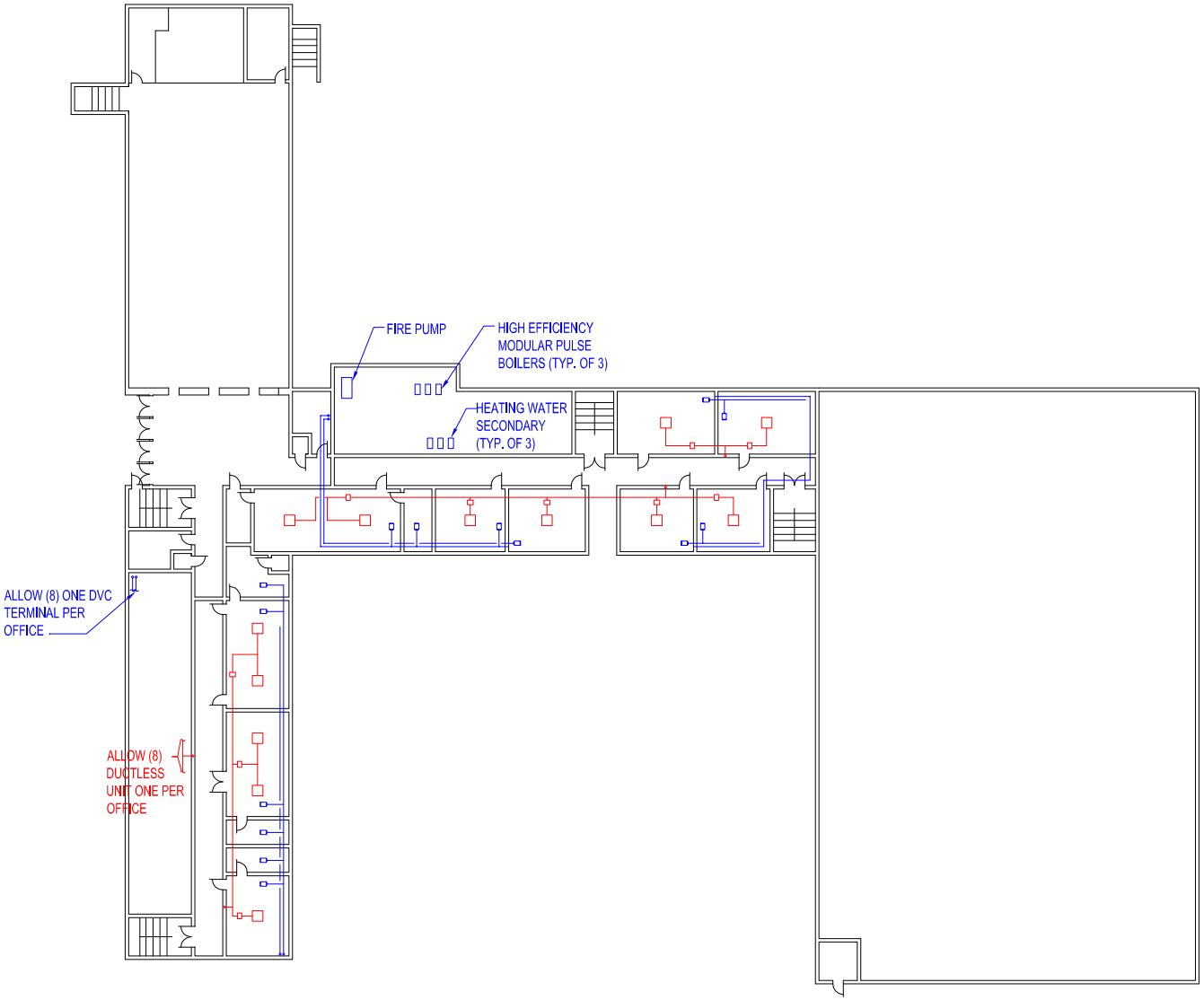
PROJECT NO.
34-10-60

SHEET 19 OF 95

RETURN TRACINGS TO PLAN FILES

1-1.2


INFILL VENT OPENINGS WITH GLAZED BRICK, TYP.
INFILL LOUVER OPENINGS WITH BRICK
INFILL LOUVER OPENINGS WITH BRICK
INFILL OPENINGS WITH GLAZED BRICK 210 SF
ELEVATION 'H'
SCALE 1/8" = 1'-0"
NOTE:
ALL WINDOWS SHOWN ABOVE TO RECEIVE WINDOW GUARD SCREENS. SEE DWG. NO. A-23 FOR DETAIL.
ELEVATION 'J'
SCALE 1/8" = 1'-0"
INFILL LOUVER OPENING WITH BRICK
ELEVATION 'K'
SCALE 1/8" = 1'-0"
INFILL LOUVER OPENING WITH BRICK
ELEVATION 'L'
SCALE 1/8" = 1'-0"
KEY PLAN
SCALE: 1/64" = 1'-0"
BERTIE BACKUS JUNIOR HIGH SCHOOL
PROJECT DRAWINGS
ELEVATIONS
NEW JUNIOR HIGH SCHOOL
SOUTH DAKOTA AVENUE AND HAMILTON STREET, N. E.
WASHINGTON, D. C.
BOARD OF EDUCATION
MILLS, PETTICORD & MILLS
ARCHITECTS - ENGINEERS
WASHINGTON, D. C. NORFOLK, VA.
GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF BUILDINGS AND GROUNDS
ARCHITECTURAL
DRAWING NO.
A-19
PROJECT NO.
34-10-60
DATE MARCH 28, 1960
RETURN TRACINGS TO PLAN FILES
1-/12



1 FIRST FLOOR-MECHANICAL PLAN
SCALE: NONE

NOT FOR CONSTRUCTION

RTKL

RTKL Associates Inc.
901 South Bond Street
Baltimore, MD 21231
Tel: 410.537.6000
Fax: 410.276.2136
www.rtkl.com

PROJECT NUMBER 01-08018.01

SEAL

PROJECT

BERTIE BACKUS JUNIOR HIGH SCHOOL
SOUTH DAKOTA AVENUE AND HAMILTON STREET, N.E.
WASHINGTON, D.C.
BOARD OF EDUCATION

TITLE

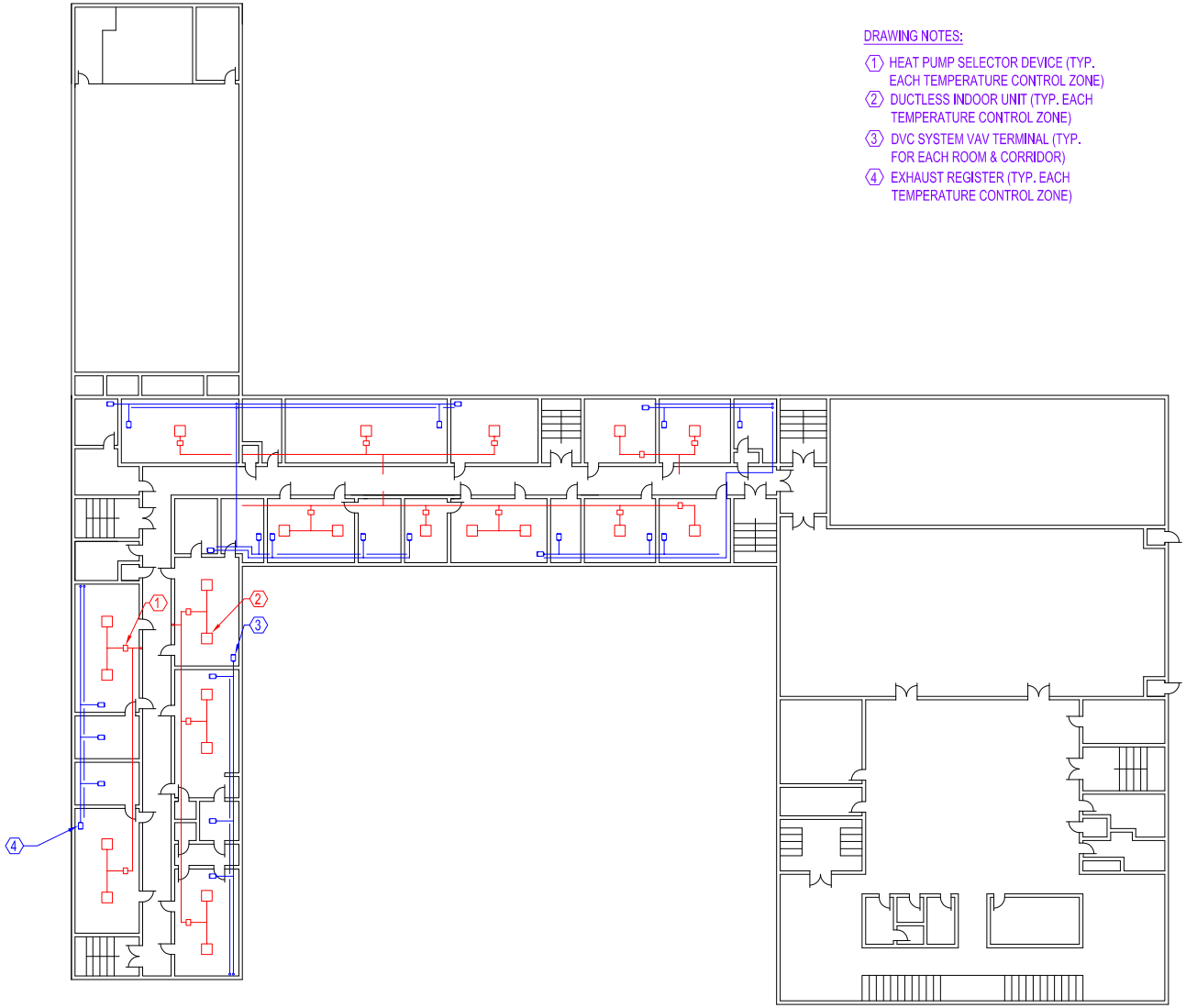
NUMBER

M-1

© 2005 RTKL ASSOCIATES INC.

DRAWING NOTES:

1. HEAT PUMP SELECTOR DEVICE (TYP. EACH TEMPERATURE CONTROL ZONE)
2. DUCTLESS INDOOR UNIT (TYP. EACH TEMPERATURE CONTROL ZONE)
3. DVC SYSTEM VAV TERMINAL (TYP. FOR EACH ROOM & CORRIDOR)
4. EXHAUST REGISTER (TYP. EACH TEMPERATURE CONTROL ZONE)



1 SECOND FLOOR-MECHANICAL PLAN

SCALE: NONE

NOT FOR CONSTRUCTION

RTKL

RTKL Associates Inc.
901 South Bond Street
Baltimore, MD 21231
Tel: 410.537.6000
Fax: 410.276.2136
www.rtkl.com

PROJECT NUMBER 01-08018.01

SEAL

PROJECT

BERTIE BACKUS JUNIOR HIGH SCHOOL

SOUTH DAKOTA AVENUE AND HAMILTON STREET, N.E.
WASHINGTON, D.C.
BOARD OF EDUCATION

TITLE

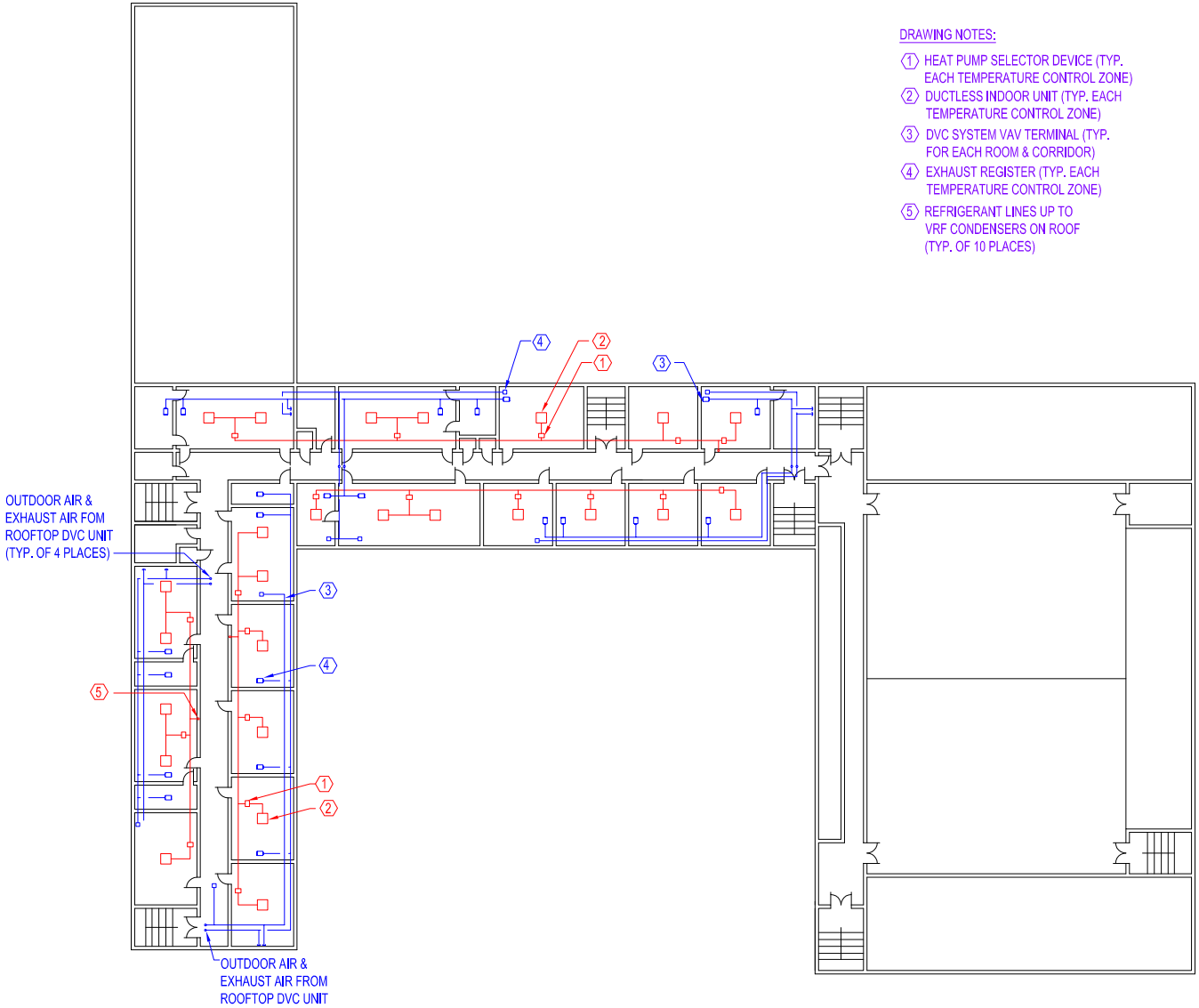
NUMBER

M-2

© 2005 RTKL ASSOCIATES INC.

DRAWING NOTES:

1. HEAT PUMP SELECTOR DEVICE (TYP. EACH TEMPERATURE CONTROL ZONE)
2. DUCTLESS INDOOR UNIT (TYP. EACH TEMPERATURE CONTROL ZONE)
3. DVC SYSTEM VAV TERMINAL (TYP. FOR EACH ROOM & CORRIDOR)
4. EXHAUST REGISTER (TYP. EACH TEMPERATURE CONTROL ZONE)
5. REFRIGERANT LINES UP TO VRF CONDENSERS ON ROOF (TYP. OF 10 PLACES)



1 THIRD FLOOR-MECHANICAL PLAN

SCALE: NONE

NOT FOR CONSTRUCTION

RTKL

RTKL Associates Inc.
901 South Bond Street
Baltimore, MD 21231
Tel: 410.537.6000
Fax: 410.276.2136
www.rtkl.com

PROJECT NUMBER 01-08018.01

SEAL

PROJECT

BERTIE BACKUS JUNIOR HIGH SCHOOL

SOUTH DAKOTA AVENUE AND HAMILTON STREET, N.E.
WASHINGTON, D.C.
BOARD OF EDUCATION

TITLE

NUMBER

M-3

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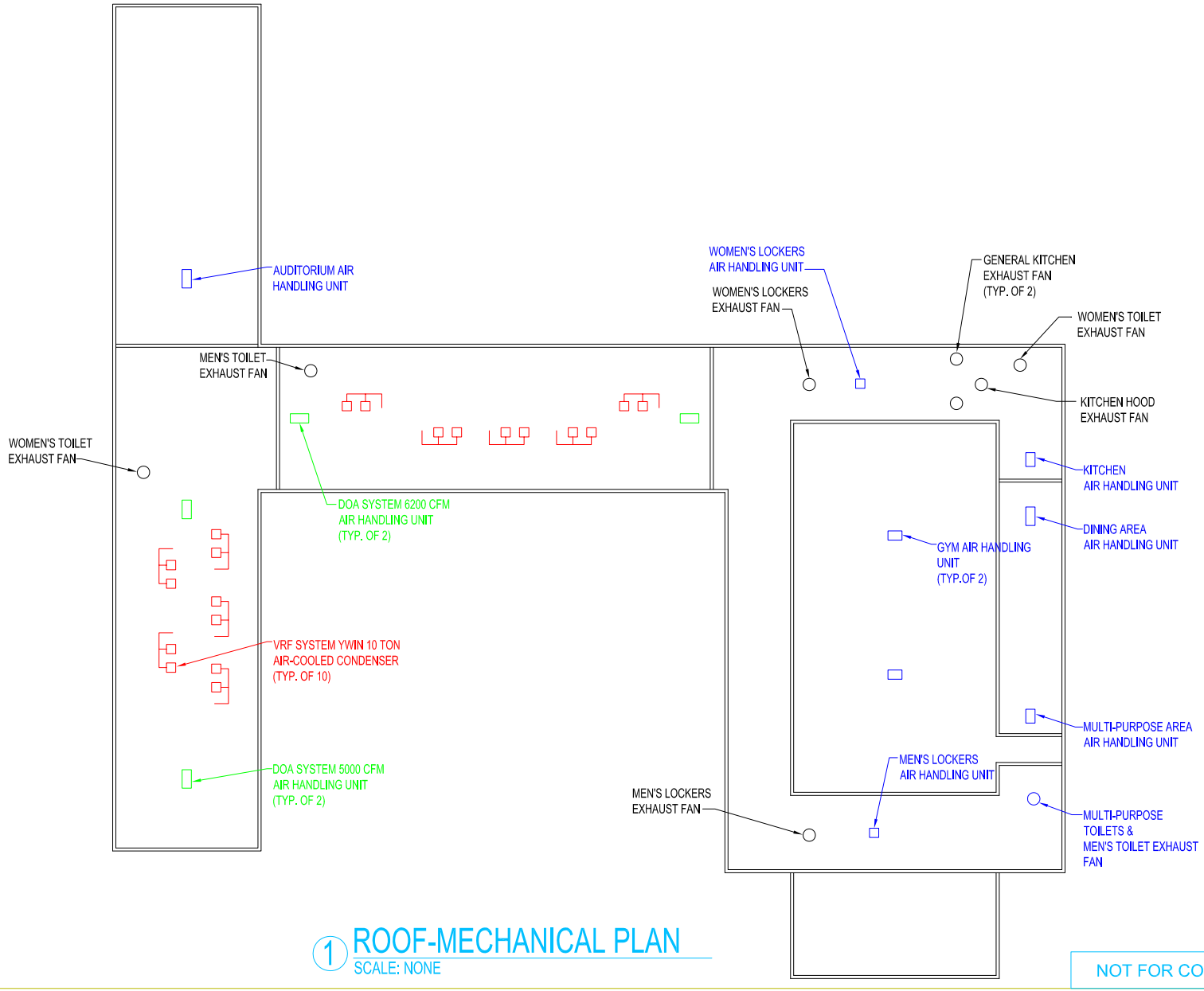

1 ROOF-MECHANICAL PLAN
SCALE: NONE

NOT FOR CONSTRUCTION

RTKL

RTKL Associates Inc.
901 South Bond Street
Baltimore, MD 21231
Tel: 410.537.6000
Fax: 410.276.2136
www.rtkl.com

PROJECT NUMBER 01-08018.01

SEAL

PROJECT

BERTIE BACKUS JUNIOR HIGH SCHOOL
SOUTH DAKOTA AVENUE AND HAMILTON STREET, N.E.
WASHINGTON, D.C.
BOARD OF EDUCATION

TITLE

NUMBER

M-4

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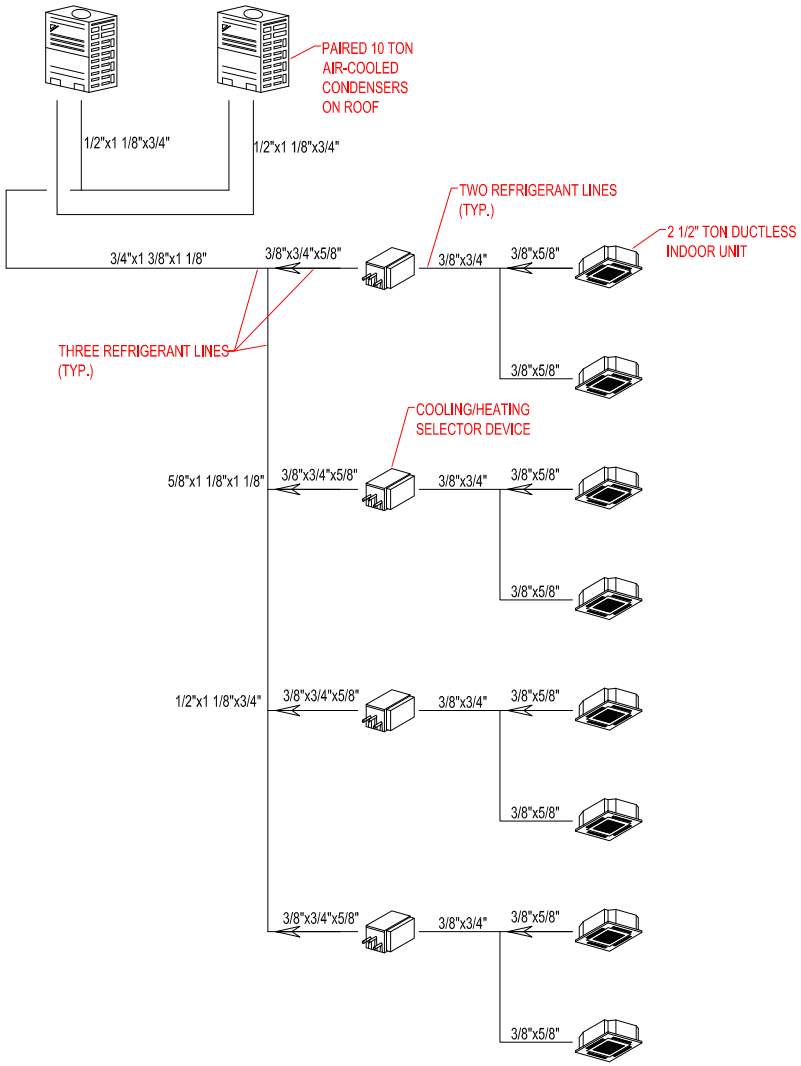

SAMPLE 20 TON VRF SYSTEM PIPING DIAGRAM

1

SCALE: NONE

NOT FOR CONSTRUCTION

RTKL

RTKL Associates Inc.
901 South Bond Street
Baltimore, MD 21231
Tel: 410.537.6000
Fax: 410.276.2136
www.rtkl.com

PROJECT NUMBER 01-08018.01

SEAL

PROJECT

BERTIE BACKUS JUNIOR HIGH SCHOOL

SOUTH DAKOTA AVENUE AND HAMILTON STREET, N.E.
WASHINGTON, D.C.
BOARD OF EDUCATION

TITLE

NUMBER

M-5

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GENERAL PROVISIONS
(ARCHITECT - ENGINEER CONTRACTS)

JANUARY 19, 1989

INDEX

SECTION	TITLE	PAGE NO.
1	Definitions	1
2	General	1
3	Progress Schedules and Reports	2
4	Responsibility of the Architect-Engineer	3
5	Changes	5
6	Payments	6
7	Termination	8
8	Disputes	11
9	Examination of Records	13
10	Covenant Against Contingent Fees	14
11	Officials Not to Benefit	15
12	Employment of District Employees	15
13	Post-Government Employment Conflict of Interest	15
14	Dismissals	17
15	Compliance with Federal and District of Columbia Laws and Regulations	17
16	Equal Opportunity: Non Discrimination in Employment	18
17	Appointment of Attorney	18
18	Indemnification	19
19	Subcontractors and/or Outside Associates and Consultants	20

SECTION	TITLE	PAGE NO.
20	Waiver	20
21	Patents	21
22	Transfer or Assignment of Agreement	21
23	Qualifications	22
24	Consultant's Warranty Against Debarment	22
25	Participation by Foreign Consultants	23

1 Definitions

1.1 The term "Contracting Officer" as used herein means the person vested with authority to execute this agreement on behalf of the District and includes a duly appointed successor delegate.

1.2 The term "District" shall mean the District of Columbia Government.

1.3 The term "Architect-Engineer" or "A-E" or "Consultant" means the individual, individuals, and or firm identified as the "Architect-Engineer" in the preamble of this Agreement.

1.4 The term "Agreement" shall also mean "Contract" and vise versa.

2 General

2.1 The Contracting Officer shall have authority to take any action provided for herein on behalf of the District, including approvals, certifications, vouchers, acceptance and changes within the scope of work.

2.2 The Architect-Engineer's period of performance shall commence on the effective date as agreed and as specified in each task order issued by the Contracting Officer and ends on the date all required services are satisfactorily completed and products delivered.

2.3 All work shall be prosecuted under the full time direction of a principal officer or responsible representative of the Architect-Engineer, approved by the Contracting Officer. The design *of* architectural, structural, mechanical, plumbing, electrical, or other engineering features of the work shall be accomplished and/or reviewed and certified by architects or engineers registered to practice in the District of Columbia in the particular professional field involved.

2.4 The Architect-Engineer shall furnish sufficient technical, supervisory and Administrative personnel to insure the efficient prosecution of the work in accordance with the approved progress schedule.

2.5 The Architect-Engineer agrees that duly authorized representatives of the District shall have access, at all reasonable times, to inspect and make copies of all notes, designs, drawings, specifications or other technical or non-technical data including but not limited to payroll of personnel on this contract pertaining to the work to be performed under this Agreement.

3 Progress Schedules and Reports (See ARTICLE I, SECTION 5)

3.1 The Progress Schedule in a simple Bar Chart form shall be furnished by the Architect-Engineer for each task order for approval within five (5) calendar days of its issuance by the Contracting Officer.

"The Architect-Engineer shall update and update the Progress Schedule on or about the 25th day of each month and shall within five (5) days thereafter deliver two (2) copies thereof to the Contracting Officer Technical Representative (COTR).

4 Responsibility of the Architect-Engineer (See ARTICLE I)

4.1 The Architect-Engineer shall be responsible for the professional quality, technical accuracy and the coordination of all designs, drawings, specifications, and other services furnished. The Architect-engineer shall, without additional compensation, correct or revise any errors or deficiencies in his designs, drawings, specification, and other services.

4.2 Neither the District's review, approval or acceptance of, nor payment for, any of the services required under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this agreement, and the Architect-Engineer shall be and remain liable to the District in accordance with applicable law for all damages to the District caused by the Architect-Engineer's negligent or intentionally wrongful act, omission or default while performing any of the services under this Agreement.

4.3 The Architect-Engineer shall accomplish the design services required under each task order. These services shall include but not limited to the services required to enable the District to award the related construction contract, pursuant to standard District procedures, for the construction of the facilities designed at a price that does not exceed the estimated construction contract price set forth in this contract. When bids or proposals for the construction contract are received which exceed such estimated price, the Architect-Engineer shall perform such redesign and other services as are necessary to permit contract award within such funding limitation.

These additional services shall be performed at no increase in the price of this contract. However, the Architect-Engineer shall not be required to perform such additional services at no cost to the District, if the unfavorable bids or proposals are the result of unforeseeable causes beyond the control and without the fault and negligence of the contractor.

4.5 The Architect-Engineer shall promptly advise the Contracting Officer if he finds that the project being designed will exceed or is likely to exceed the funding limitations and he is unable to design a usable facility within these limitations. Upon receipt of such information, the Contracting Officer will review the Architect-Engineer's revised estimate of construction cost. The Contracting Officer may, if he determines that the estimated construction contract price set forth in the Task order is so low that award of a construction contract not in excess of such estimate is improbable, authorize a change in scope of materials as required to reduce the estimated construction cost to an amount within the estimated construction contract price set forth elsewhere in the contract, or he may adjust such estimated construction contract price. When bids or proposals are not solicited or where they are unreasonably delayed, the District shall prepare an estimate of constructing the design submitted and such estimate will be used in lieu of bids or proposals to determine compliance with the funding limitation.

4.6 The Architect-Engineer shall not be required to perform additional services if the unfavorable bids or proposals are the result of unforeseeable causes beyond the control and without the fault or negligence of the contractor. If bids or proposals are not solicited within 180 days following the District's acceptance of the services to be provided under each task order, the approved District estimate will be used in lieu of bids or proposals to determine compliance with the funding limitation.

4.7 The rights and remedies of the District provided for under this contract are in addition to any other rights and remedies provided by law.

5 Changes

5.1 The Contracting Officer may at any time by written order, make changes to this contract including but not limited to the scope of services to be performed under each task order. If such changes cause an increase or decrease in the Architect-Engineer's cost of, or time required for, performance of any services under this contract, an equitable adjustment shall be made and the contract shall be modified in writing accordingly. Any claim of the Architect-Engineer for adjustment under this clause must be made in writing to the contracting Officer within ten (10) days from the date of receipt by the Architect-Engineer of the notification of change unless the Contracting Officer grants a further period of time before the date of final payment under this contract. Generally, the time of performance of this contract and or each task order may be extended for the administrative convenience of the District or for other purposes whenever the Contracting Officer determines such action will not adversely affect the District's interest. Any time extensions shall not be a cause for additional fee or other related cost.

5.2 If the parties fail to agree upon the adjustment to be made, the dispute shall be processed as provided in Section 8 hereof entitled "Disputes". Nothing provided in this section shall excuse the Architect-Engineer from proceeding with the prosecution of work so changed.

6 Payments (See ARTICLE VII)

6.1 Estimates shall be made periodically (not more often than monthly) of the amount and value of the work and services performed by the Architect-Engineer under this contract, such estimates to be prepared by the Architect-Engineer and accompanied by such supporting data as may be required by the COTR.

6.2 Upon approval of such estimate by the COTR and presentation of properly certified vouchers by the Architect-engineer, payment of up to 90% of the estimated amount as determined above, less all previous payments, shall be made as soon as practicable; provided, however, that if the COTR determines that the work is substantially complete and that the amount of retained percentages is in excess of the amount considered by him to be adequate for the protection of the District, he may in his discretion release to the Architect-Engineer such excess amount.

6.3 Upon the satisfactory completion of the work and formal notification of its final acceptance by the Contracting Officer, the Architect-Engineer shall be paid the unpaid balance of any money due hereunder, including retained percentages. Prior to such final payment under this contract or prior to settlement upon termination of this contract, and as a condition precedent thereto, the Architect-Engineer shall execute and deliver to the Contracting Officer a release of all claims against the District arising under or by virtue of this Agreement, other than such claims, if any, as may be specifically excepted by the Architect-Engineer from the operation of the release in stated amounts to be set forth therein.

6.4 All drawings, designs, specifications, architectural designs of buildings and structures, notes and other architect-engineer work produced I the performance of this contract, or in contemplation thereof, and all as-built drawings produced after completion of the work shall be and remain the sole property of the Government and may be used on any other work without additional cost to the Government. With respect thereto, the Architect-Engineer agrees not to assert any rights or to establish any claim under the design patent or copyright laws and not to publish or reproduce such matter in whole or in part or in any manner or form, or authorize others so to do without the written consent of the District, until such time as the District may have released such matter to the public. Further, with respect to any architectural design which the District desires to protect by applying for an prosecuting a design patent application or otherwise, the Architect-Engineer agrees to furnish he Contracting Officer such duly executed instruments and other papers (prepared by the District) as are deemed necessary to vest in the District the rights granted it under this clause. The Architect-Engineer agrees to furnish and provide access to the originals or copies of all such materials on the request of the Contracting Officer for a period of three (3) years after completion of the project.

7 Termination

7.1 TERMINATION FOR THE CONVENIENCE OF THE GOVERNMENT: The District reserves the right to terminate this contract in whole or from time to time in part, for the convenience of the Government in accordance with the provisions of Chapter 37 of the D.C. Procurement Regulations, Title 27 DCMR (July 1988).

7.2 TERMINATION FOR DEFAULT: Subject to the provisions of paragraph 7.4 below, the District may by written notice of default to the Architect-Engineer, terminate the whole or any part of this contract in any of the following circumstances:

(1) If the Architect-Engineer fails to make satisfactory delivery of the supplies or to perform satisfactorily the services within the time specified in the task order or in any modification or any extension thereof; or

(2) If the Architect-Engineer fails to perform or is in violation of any of the other provisions of this contract, or fails to make progress so as to endanger performance of this contract in accordance with its terms, and in either of these two circumstances does not cure such failure within a period of 10 days (or such longer period as the Contracting Officer may authorize in writing) after receipt of notice from the Contracting Officer specifying such failure.

(3) If the Architect-Engineer fails or refuses to go forward with the work in accordance with the directions of the Contracting Officer;

(4) If the Architect-Engineer expresses through word or conduct an intention not to complete the work in a timely manner; or

(5) If the Architect fails to perform any of the other provisions of the contract.

7.3 In the event the District terminates this contract in whole or in part as provided in paragraph 7.2 of this clause, the District may upon such terms and in such manner as the Contracting Officer may deem appropriate, re-procure supplies or services similar to those so terminated, and the Architect-Engineer shall be liable to the District for any excess costs for re-procuring similar supplies or services, provided, that the Architect-Engineer shall continue the performance of this contract to the extent not terminated under the provisions of this clause.

7.4 The Architect-engineer shall not be liable for any excess re-procurement costs if the failure to perform the contract arises out of causes beyond the control and without the fault or negligence of the Architect-Engineer. Such causes may include, but are not restricted to, acts of God or of the public enemy, acts of the floods, epidemics, quarantine restrictions, strikes, freight, embargoes, and unusually sever weather; but in every case the failure to perform must be beyond the control and without the fault or negligence of the Architect-Engineer.

7.5 If this contract is terminated as provided in paragraph 7.2 of this clause, he District, in addition to any other rights provided in this clause, may require the Architect-Engineer to transfer title and deliver to the District, in the manner and t the extent directed by the Contracting Officer, (1) completed supplies, and (2) such partially completed supplies and materials, parts, tools, dies, jigs, fixtures, plans, drawings information and contract rights (hereinafter called "manufacturing materials") as the Architect-Engineer has specifically produced or specifically acquired for the performance of such part of this contract as has been terminated; and the Architect-Engineer shall upon direction of the Contracting Officer, protect and preserve property in possession of the Architect-engineer in which the District has an interest. Payment for completed supplies delivered to and accepted by the District shall be at the contract price. Payment for manufacturing materials delivered to an accepted by the District and for the protection and preservation of property shall be in an amount agreed upon by the Architect-Engineer and Contracting Officer; failure to agree to such amount shall be a dispute concerning a question of fact within the meaning of the clauses of this contract entitled "Disputes". The District may withhold from amounts otherwise due the Architect-Engineer for such completed supplies or manufacturing materials such sum as the Contracting Officer determines to be necessary to protect the District against lost because of outstanding liens or claims of former lien holders.

7.6 If, after notice of termination of this contract under the provisions of this clause, it is determined for any reason that the Architect-Engineer was not in default under the

provisions of this clause, or that the default was excusable under the provisions of this clause, the rights and obligations of the parties shall, if the contract contains a clause providing for termination for convenience of the Government, be the same as if the notice of termination had been issued pursuant to such clause. If, after notice of termination of this contract under the provisions of this clause, it is determined for any reason that the Architect-Engineer was not in default under the provisions of this clause, and if this contract does not contain a clause providing for termination for convenience of the District, the contract shall be equitably adjusted to compensate for such termination and the contract modified accordingly. Failure to agree to any such adjustment shall constitute a dispute concerning a question of fact within the meaning of the clause of this contract entitled "Disputes".

7.7 The rights and remedies of the District provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

7.8 As used in paragraph 9.3 of this clause, the terms "subcontractor" and "subcontractors" mean subcontractor(s) at any tier.

8 Disputes

8.1 If a dispute arises relating to the contract, the Architect-Engineer may submit a claim to the Contracting Officer who shall issue a written decision on the dispute within sixty (60) calendar days after receipt of the claims.

8.2 "Claim" shall mean a written request submitted to the Contracting Officer for payment of money, adjustment of contract terms, or other relief, which is in dispute or remains unresolved after a reasonable time of its review and disposition by the District Government, and for which a Contracting Officer's decision is demanded.

8.3 The decision of the Contracting Officer shall be final and conclusive and not subject to review by any forum, tribunal, or Government agency unless, within 60 days from the receipt of such decision (the 60-day period shall start on the date the Contracting Officer's written decision is received by the Architect-Engineer), the Architect-Engineer submits a claim in writing to the Contracting Officer, for an informal hearing and decision. The decision of the Contracting Officer, shall be final and not subject to review by any forum, tribunal or Government agency unless, within 90 days from the date of receipt of a decision of the Contracting Officer or, if no decision is issued within the time limits of the Procurement Practice Act (Sec. 805), within 90 days of the expiration of the applicable time limit, a written notice of appeal is filed with the District of Columbia Contract Appeals Board.

8.4 The decision of the Contract Appeals Board for the determination of such appeals shall be final and conclusive unless within one hundred-twenty (120) days after the date of receipt of the Board's decision, the Consultant or District appeals the decision of the District of Columbia Court of Appeals as set forth in D.C. Code Sec. 1-1189.5 (1981 Ed.).

8.5 The Architect-Engineer shall proceed diligently with performance of this contract, pending final resolution of any request for relief, appeal or action related to the contract, and comply with any decision of the Contracting Officer.

9 Examination of Records

The following clause is applicable if the amount of this contract exceeds $2,500.00.

9.1 The Architect-Engineer agrees to preserve all books, records, documents, and other evidence bearing on or reflecting costs and expenses under this Agreement and agrees that the Contracting Officer or any of his duly authorized representatives shall have access and the right to examine any pertinent books, documents, papers and records of the Architect-Engineer involving transactions related to this contract until expiration of three (3) years after final payment under this contract.

9.2 With respect to records which relate to (1) appeals under the "Disputes" clause of this contract, (2) litigation or the settlement of claims arising out of the performance of this contract, or (3) costs and expenses of this contract as to which exception has been taken by the District or any of its duly authorized representatives, the periods of access and examination described shall continue until such appeals, litigation, claims or exceptions have been finally resolved.

9.3 The Architect-Engineer further agrees to include in all his subcontracts hereunder a provision to the effect that the subcontractor agrees to preserve all books, records, documents, and other evidence bearing on or reflecting costs and expenses under this Agreement and agrees that the Contracting Officer or any of his duly authorized representatives shall have access to pertinent books, documents, papers, and records of such subcontractor involving transactions related to the subcontract as set forth in 9.1and 9.2 hereof. The term "subcontractor" as used in this clause excludes subcontracts not exceeding $2,500.

10 Covenant Against Contingent Fees

10.1 The Architect-Engineer warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a bonus, commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Architect-Engineer for the purpose of securing business. Breach of this warranty shall give the Contracting Officer the right to terminate this contract without liability, or in his discretion, the right to terminate this contract without liability, or in his discretion, the right to deduct from the Agreement price or consideration, or otherwise recover, the full amount of such bonus, commission, percentage, brokerage, or contingent fee.

11 Officials Not to Benefit

11.1 No member or delegate of Congress, or official or employee of the District shall receive or have an interest in any share or part of the Contract, as proceeds or any benefit that may arise therefrom. Any such contract entered into by any Contracting Officer in which he or any official or employee of the District is personally interested shall be void, and no payment shall be made thereon by the District or any officer thereof. This provision shall not be applicable to any such contract if made for the general benefit of a corporation in which the officer or employee, or member or delegate of Congress is a minority shareholder.

12 Employment of District Employees

12.1 The Architect-Engineer shall not, without written permission from the Contracting Officer, engage the services of any person or persons in the employment of the District of Columbia for any work required, contemplated or performed under this Agreement.

13 Post-Government Employment Conflict of Interest

13.1 Pursuant to Public Law 95-521, as amended, no former employee of the United States or Government of the District of Columbia:

(1) Shall knowingly represent the Consultant before any Government agency through personal appearance or communication in connection with a matter involving specific parties to this Agreement where the former Government employee participated personally and substantially in this matter while employed with the Government.

(2) Shall, within two (2) years after terminating Government employment, knowingly represent the Consultant before any Government agency through personal appearance or communication in connection with a matter involving specific parties to this Agreement, where the matter was pending under the official responsibility of the former employee within one (1) year prior to termination of Government service.

13.2 Pursuant to Public Law 95-591, as amended, no former senior level officer or former senior level employee of the United States Government or the District of Columbia Government, named in or designated by the Contracting Officer of the Office of Government Ethics under Section 207(d) of Title 18 USC:

(1) Shall, within two (2) years after terminating Government employment, knowingly represent or aid, counsel, advise, consult or assist in representing any other person by personal presence at any formal or informal appearance before any Government agency in connection with a matter involving specific parties, where the former employee participated personally and substantially in that matter while employed with the Government.

(2) Shall, within one (1) year after terminating Government employment, knowingly act as an agent or attorney for or otherwise represent anyone in any formal or informal appearance before or, with the

intent to influence, make any written or oral communication on behalf on anyone to (1) his or her former Department or agency or any of its officers or employees, or (2) in connection with any particular Government matter, whether or not involving a specific party, which is pending before such Department or agency or in which it has a direct and substantial interest.

14 Dismissals

14.1 Should the continued employment of any person or persons in the Architect-Engineer's organization under this Agreement be deemed by the Contracting Officer to be prejudicial to the interests of the District, such person or persons shall be immediately removed from the work hereunder. The Architect-Engineer shall make every effort in the selection of his employees and in the prosecution of the work under this Contract to safeguard all drawings and specifications, and to prevent the theft, conversion or unauthorized use of the same.

15 Compliance with Federal and District of Columbia Laws and Regulations

15.1 The Architect-Engineer shall at all times observe and comply with all laws, codes, regulations, orders and decree set forth by any department, agency or branch of, (i) the United States Government, or (ii) the District of Columbia, and shall indemnify and save harmless the District of Columbia and all of its officers, agents, employees and servants against any and all claims or liability arising from, or based on, the violation of any such law, code, regulation, order or decree, whether

by the Architect-Engineer, an employee or agent of the Architect-Engineer, any person, firm or corporation employed or engaged by the Architect-engineer or contractually associated with him in the performance of, or in connection with, he work required, contemplated or performed under this Agreement.

16 Equal Opportunity: Non-Discrimination in Employment

16.1 During the performance of this contract, the Architect-Engineer shall comply with the provisions of Mayor's Order 85-85 as implemented by Chapter 11 – Equal Employment Opportunity Requirements in Contracts, both of which are designated Attachment 'A' to this Agreement and incorporated by reference thereto.

17 Appointment of Attorney

17.1 The Consultant shall designate and appoint a person, located within the District, whether the Consultant himself, an individual, a partnership or corporation or member thereof, an attorney, attorney-in-fact, agent, or representative, who shall receive service of all notices and process issued by any court or agency of the District and all pleadings or other papers related to any legal action or proceedings arising out of, or pertaining to, this Agreement or the work required by, or performed hereunder.

17.2 The Architect-Engineer expressly agrees that the validity of any service upon the person or entity designated pursuant to Section 17.1 hereof shall not be affected either by the fact that the Architect-Engineer was personally within the District of Columbia and otherwise subject to personal service at the time of such service upon the designated person or entity, or by the fact that the Architect-Engineer failed to receive a copy of such process, notice, pleading or other paper so served upon the designated person or entity.

17.3 The Consultant shall immediately inform the Contracting Officer in writing of any change in the designation required by Section 17.1 hereof, whether such change is in the designee, the address or telephone numbers.

18 Indemnification

18.1 The District shall have an absolute right of indemnity against any and all claims or liability arising from or based on, or as a consequence or result of, any negligent act, error, omission or fault of the Architect-Engineer, its employees, or its subconsultants in the performance of, or in connection with any services required, contemplated or performed under the contract; any and all claims or liability arising from or based on, or as a consequence or result of, any act of approval, inspection, supervision, or acceptance, or any failure to approve, inspect, supervise, or accept, by the District and any of its officers, agents, servants or employees, where such act or failure to act causes or contributes to any negligent act, error, omission, or fault of the Architect-Engineer, its employees, or its

subconsultants in the performance of, or in connection with any services required, contemplated or performed under the contract. Monies due or o become due the Architect-Engineer under the contract, may be retained by the District as necessary to satisfy any outstanding claim which the District may have against the Architect-Engineer.

19 Subcontractors and/or Outside Associates and Consultants

19.1 Any subcontractors and/or outside associates or consultants required by the Architect-Engineer in connection with the services covered by this Contract shall be limited to such individuals or firms as were specifically identified in the Architect-Engineer's written proposal and approved by the District during negotiations. Any proposed changes in such subcontractors, associates, or consultants shall be subject to the prior written approval of the Contracting Officer.

19.2 Any agreement the Architect-Engineer makes with a subcontractor, outside associate or consultant shall incorporate specifically or by reference thereto, each and every provision of this Agreement and the Attachment(s) and Appendices hereto.

20 Waiver

20.1 No action or non-action of the District shall be construed as a waiver of any provision or any breach of this Contract unless the same has been expressly declared and recognized as a waiver by the Contracting Officer in writing. No

waiver so declared and recognized as such in writing by the Contracting Officer shall operate as a waiver of any other provision of subsequent breaches of the same or other provisions of this Agreement.

21 Patents

21.1 The Architect-Engineer hereby expressly agrees and covenants that he shall indemnify the District, its officers, agents, servants, and employees from liability or claims of every nature and kind, including costs and expenses, for or on account of any patented or unpatented invention, article, process or appliance used or incorporated in the facilities and structures by the design, plans, or specifications prepared by the Architect-Engineer hereunder. Where proper construction of the facilities and structures makes necessary the use of nay such invention, article, process or appliance; and the Architect-Engineer has specifically or by implication approved or adopted the use of such invention, article, process or appliance, the Architect-Engineer expressly agrees and convenants that he shall hold harmless and indemnity the District against any and all claims or liability arising therefrom.

22 Transfer or Assignment of Agreement

22.1 Unless otherwise provided by law, neither this Agreement nor any interest herein may be transferred or assigned by the Architect-engineer to any other party without the written consent of the Contracting officer. Any attempted transfer or assignment not authorized by this section shall constitute a breach of this Agreement and the District may for such cause terminate in the manner provided

in Section 7 of this Agreement, the right of the Architect-Engineer to proceed and the Architect-Engineer shall be liable to the District for any excess costs of re-procuring the same or similar services occasioned thereby.

23 Qualifications

23.1 The Architect-Engineer hereby warrants that the signature or signatures herein before affixed are duly authorized; further, the Architect Engineer warrants as a true statement any and all statements of qualification with respect to, but not limited to, professional status, premises, employees, experience and financial standing such as may be set forth in a "U.S. Government Architect-Engineer Questionnaire, Form 254" or other documents furnished to, or required by, the District for the purpose of securing the District's consent to enter into this Agreement. Misrepresentation shall be cause for termination of the Agreement, and such other action as may be appropriate, including without limitation, suspension and debarment and civil or criminal penalties.

24 Consultant's Warranty Against Debarment

24.1 The Architecture-Engineer shall comply with this General Provision by completing the "Certification of Eligibility" attached hereto and submitting it with this Agreement for work or services.

25 Participation by Foreign Consultants

25.1 The Department will not consider for award any proposals submitted by any Consultant, and will not consent to subletting any portions of the contract to any Consultant of a foreign country during any period in which such foreign country is listed by the United States Trade Representative as discriminating against U. S. firms in conducting procurements for public work projects. In addition, no product or any such listed country shall be permanently incorporated into the project. This General Provision applies to the participation of Consultants and products of the following countries which have been listed by the United States Trade Representative:

Japan

For the purpose of this General Provisions:

(1) Any Consultant who is a citizen or national of a foreign country or is controlled directly or indirectly by citizens or nationals of a foreign country, shall be considered to be a Consultant of such foreign country. The term "consultant" is defined in Section 1.3

(2) Any product, or which fifty percent or more of is cost is attributable to production or manufacturing in a foreign country, shall be considered to be a product of such foreign country.