SCOPE OF WORK

VERTICAL TRANSPORTATION UPGRADES

Richard J. Hughes Justice Complex
Trenton, Mercer County, N.J.

PROJECT NO. A1118-00

STATE OF NEW JERSEY

Honorable Chris Christie, Governor
Honorable Kim Guadagno, Lt. Governor

DEPARTMENT OF THE TREASURY

Andrew P. Sidamon-Eristoff, Treasurer

DIVISION OF PROPERTY MANAGEMENT AND CONSTRUCTION

Steven Sutkin, Director

Date: March 25, 2011
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>SECTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. OBJECTIVE</td>
<td>7</td>
</tr>
<tr>
<td>II. CONSULTANT QUALIFICATIONS</td>
<td>7</td>
</tr>
<tr>
<td>A. CONSULTANT &amp; SUB-CONSULTANT PRE-QUALIFICATIONS</td>
<td></td>
</tr>
<tr>
<td>III. PROJECT BUDGET</td>
<td>7</td>
</tr>
<tr>
<td>A. CONSTRUCTION COST ESTIMATE (CCE)</td>
<td></td>
</tr>
<tr>
<td>B. CURRENT WORKING ESTIMATE (CWE)</td>
<td></td>
</tr>
<tr>
<td>C. COST ESTIMATING</td>
<td></td>
</tr>
<tr>
<td>D. CONSULTANT’S FEES</td>
<td></td>
</tr>
<tr>
<td>IV. PROJECT SCHEDULE</td>
<td>9</td>
</tr>
<tr>
<td>A. SCOPE OF WORK DESIGN &amp; CONSTRUCTION SCHEDULE</td>
<td></td>
</tr>
<tr>
<td>B. CONSULTANT’S PROPOSED DESIGN &amp; CONSTRUCTION SCHEDULE</td>
<td></td>
</tr>
<tr>
<td>C. CONSULTANT DESIGN SCHEDULE</td>
<td></td>
</tr>
<tr>
<td>D. BID DOCUMENT CONSTRUCTION SCHEDULE</td>
<td></td>
</tr>
<tr>
<td>E. CONTRACTOR CONSTRUCTION PROGRESS SCHEDULE</td>
<td></td>
</tr>
<tr>
<td>V. PROJECT SITE LOCATION &amp; TEAM MEMBERS</td>
<td>11</td>
</tr>
<tr>
<td>A. PROJECT SITE ADDRESS</td>
<td></td>
</tr>
<tr>
<td>B. PROJECT TEAM MEMBER DIRECTORY</td>
<td></td>
</tr>
<tr>
<td>1. NJBA Representative</td>
<td></td>
</tr>
<tr>
<td>2. Client Agency Representative</td>
<td></td>
</tr>
<tr>
<td>VI. PROJECT DEFINITION</td>
<td>12</td>
</tr>
<tr>
<td>A. BACKGROUND</td>
<td></td>
</tr>
<tr>
<td>B. FUNCTIONAL DESCRIPTION OF THE BUILDING</td>
<td></td>
</tr>
</tbody>
</table>
VII. CONSULTANT DESIGN RESPONSIBILITIES .................................. 13

A. SURVEY
   1. Data Collection
   2. Survey
   3. Cost Estimate
   4. Schedule
   5. Presentation

B. AS-BUILT DOCUMENTATION

C. VERTICAL TRANSPORTATION DESIGN CRITERIA

D. ELEVATORS
   1. Operators & Controls
   2. Cars
   3. Interior Finishes
   4. Communication
   5. Electrical

E. WHEEL CHAIR LIFT
   1. Survey
   2. Schedule

F. ESCALATORS
   1. Inspection
   2. Schedule

G. DUMBWAITER
   1. Survey

H. MACHINE ROOM
   1. Ventilation & Air Conditioning
   2. Miscellaneous Components

I. FIRE PROTECTION
   1. Detectors
   2. Alarm Panel

J. SIGNAGE
   1. Building Signage
   2. Car Signage

K. MAINTENANCE & WARRANTIES
   1. Maintenance
   2. Warranty

L. TESTING & INSPECTIONS
   1. Testing
   2. Inspections

M. CONTRACTORS USE OF THE PREMISES
   1. Hours of Construction
   2. Fire Detector Protection
   3. Elevator Installation Schedule
4. Demolition  
5. Building Interior Finishes  
6. Material Storage  

N. MAINTENANCE & WARRANTIES  
1. Maintenance  
2. Warranty  

O. GENERAL DESIGN OVERVIEW  
1. Design Detail  
2. Specification Format  

P. PROJECT COMMENCEMENT  
1. Project Directory  
2. Site Access  
3. Project Coordination  
4. Existing Documentation  
5. Scope of Work  
6. Project Schedule  

Q. BUILDING & SITE INFORMATION  
1. Building Classification  
2. Building Block & Lot Number  
3. Building Site Plan  
4. Site Location Map  

R. DESIGN MEETINGS & PRESENTATIONS  
1. Design Meetings  
2. Design Presentations  

VIII. CONSULTANT CONSTRUCTION RESPONSIBILITIES............ 25  
A. GENERAL CONSTRUCTION ADMINISTRATION OVERVIEW  
B. PRE-BID MEETING  
C. BID OPENING  
D. POST BID REVIEW MEETING, RECOMMENDATION FOR AWARD  
1. Post Bid Review  
2. Review meeting  
3. Substitutions  
4. Schedule  
5. Performance  
6. Superintendent  
7. Letter of Recommendation  
8. Conformed Drawings  
E. DIRECTOR'S HEARING  
F. CONSTRUCTION JOB MEETINGS, SCHEDULES, LOGS  
1. Meetings  
2. Schedules
3. Submittal Log

G. CONSTRUCTION SITE ADMINISTRATION SERVICES
H. SUB-CONSULTANT PARTICIPATION
I. DRAWINGS
   1. Shop Drawings
   2. As-Built & Record Set Drawings
J. CONSTRUCTION DEFICIENCY LIST
K. INSPECTIONS: SUBSTANTIAL & FINAL COMPLETION
L. CLOSE-OUT DOCUMENTS
M. CLOSE-OUT ACTIVITY TIME
N. TESTING, TRAINING, MANUALS, AND ATTIC STOCK
   1. Testing
   2. Training
   3. Manuals
   4. Attic Stock
O. CHANGE ORDERS
   1. Consultant
   2. Contractor
   3. Recommendation for Award
   4. Code Review
   5. Cost Estimate
   6. Time Extension
   7. Submission
   8. Meetings
   9. Consultant Fee

IX. PERMITS & APPROVALS ................................................................. 37

A. REGULATORY AGENCY PERMITS
   1. NJ Uniform Construction Code Permit
   2. Other Regulatory Agency Approvals & Permits
   3. Prior Approval Certification Letters
B. BARRIER FREE REQUIREMENTS
C. STATE INSURANCE APPROVAL
D. PUBLIC EMPLOYEES OCCUPATIONAL SAFETY & HEALTH PROGRAM
E. MULTI-BUILDING OR MULTI-SITE PERMITS
F. PERMIT MEETINGS
G. MANDATORY NOTIFICATIONS
H. CONSTRUCTION TRAILER PERMITS
I. SPECIAL INSPECTIONS
X. GENERAL REQUIREMENTS .......................................................... 41
   A. SCOPE CHANGES
   B. ERRORS & OMISSIONS
   C. ENERGY INCENTIVE PROGRAM
   D. AIR POLLUTION FROM ARCHITECTURAL COATINGS

XI. ALLOWANCES ............................................................................. 43
   A. PERMIT ALLOWANCE
      1. Permits
      2. Permit Costs
      3. Applications
      4. Consultant Fee

XII. SUBMITTAL REQUIREMENTS .................................................... 44
   A. CONTRACT DELIVERABLES
   B. CATALOG CUTS
   C. PROJECT DOCUMENT BOOKLET
   D. DESIGN DOCUMENT CHANGES
   E. SINGLE-PRIME CONTRACT

XIII. SOW SIGNATURE APPROVAL SHEET ...................................... 46

XIV. CONTRACT DELIVERABLES ...................................................... 47

XV. EXHIBITS ................................................................................. 54
   A. SAMPLE PROJECT SCHEDULE FORMAT
   B. PROJECT SITE PLAN
I. OBJECTIVE

The objective of this project is to upgrade the vertical transportation equipment and system components located in the Richard J. Hughes Justice Complex including fourteen (14) elevators, one (1) wheelchair lift, four (4) escalators, and one (1) dumbwaiter serving the libraries of the building.

II. CONSULTANT QUALIFICATIONS

A. CONSULTANT & SUB-CONSULTANT PRE-QUALIFICATIONS

The Consultant shall be a firm pre-qualified with the Division of Property Management & Construction (DPMC) in the P008 Mechanical Engineering Professional Discipline and have in-house capabilities or Sub-Consultants pre-qualified with DPMC in all other Engineering and Specialty Disciplines necessary to complete the project as described in this Scope of Work (SOW).

III. PROJECT BUDGET

A. CONSTRUCTION COST ESTIMATE (CCE)

The initial Construction Cost Estimate (CCE) for this project is $1,600,000.

The Consultant shall review this Scope of Work and provide a narrative evaluation and analysis of the accuracy of the proposed project CCE in their technical proposal based on their professional opinion.

B. CURRENT WORKING ESTIMATE (CWE)

The Current Working Estimate (CWE) for this project is $2,000,000.

The CWE includes the construction cost estimate and all consulting, permitting and administrative fees.
The CWE is the Client Agency’s financial budget based on this project Scope of Work and shall not be exceeded during the design and construction phases of the project unless DPMC approves the change in Scope of Work through a Contract amendment.

C. COST ESTIMATING

Since the CCE is larger than $750,000, the Consultant or Sub-Consultant providing the estimate must be pre-qualified with DPMC in the P025 Estimating/Cost Analysis Specialty Discipline.

All cost estimates shall be adjusted for regional location, site factors, construction phasing, premium time, building use group, location of work within the building, temporary swing space, security issues, and inflation factors based on the year in which the work is to be performed.

All cost estimates must be submitted on a DPMC-38 Project Cost Analysis form at each design phase of the project with a detailed construction cost analysis in CSI format (2004 Edition) for all appropriate divisions and sub-divisions. The Project Manager will provide cost figures for those items which may be in addition to the CCE such as art inclusion, CM services, etc. and must be included as part of the CWE. This cost analysis must be submitted for all projects regardless of the Construction Cost Estimate amount.

D. CONSULTANT’S FEES

The construction cost estimate for this project shall not be used as a basis for the Consultant’s design and construction administration fees. The Consultant’s fees shall be based on the information contained in this Scope of Work document and the observations made and/or the additional information received during the pre-proposal meeting.
IV. PROJECT SCHEDULE

A. SCOPE OF WORK DESIGN & CONSTRUCTION SCHEDULE

The following schedule identifies the estimated design and construction phases for this project and the estimated durations.

<table>
<thead>
<tr>
<th>PROJECT PHASE</th>
<th>ESTIMATED DURATION (Calendar Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Survey Phase</td>
<td>21</td>
</tr>
<tr>
<td>• Project Team Review &amp; Comment</td>
<td>7</td>
</tr>
<tr>
<td>2. Design Development Phase</td>
<td>50% (Minimum) 56</td>
</tr>
</tbody>
</table>
| • Project Team & DPMC Plan/Code Unit Review & Comment | 14
| 3. Final Design Phase       | 100% 42                            |
| • Project Team & DPMC Plan/Code Unit Review & Approval | 14
| 4. Permit Application Phase | 28 (See note #1 below)             |
| • DCA Elevator Review & Issue Permit |                      |
| 5. Bid Phase                | 42                                 |
| 6. Award Phase              | 28                                 |
| 7. Construction Phase       |                                    |
| • Contractor Mobilization   | 30                                 |
| • Material Fabrication Lead Time | 120                              |
| • Upgrade Elevators @90 days per 2 elevators x 14 elevators | 630 (See note #2 below) |

Notes:

1. The Consultant shall submit the final design documents to the Department of Community Affairs (DCA) Elevator Safety Unit for review and permit approval.

2. Phased upgrades to the vertical transportation equipment must occur since the building will be occupied during construction.
B. CONSULTANT’S PROPOSED DESIGN & CONSTRUCTION SCHEDULE

The Consultant shall submit a project design and construction bar chart schedule with their technical proposal that is similar in format and detail to the schedule depicted in Exhibit ‘A’. The bar chart schedule developed by the Consultant shall reflect their recommended project phases, phase activities, activity durations.

The Consultant shall estimate the duration of the project Close-Out Phase based on the anticipated time required to complete each deliverable identified in Section XIV of this document entitled “Project Close-Out Phase Contract Deliverables” and include this information in the bar chart schedule submitted.

A written narrative shall also be included with the technical proposal explaining the schedule submitted and the reasons why and how it can be completed in the time frame proposed by the Consultant.

This schedule and narrative will be reviewed by the Consultant Selection Committee as part of the evaluation process and will be assigned a score commensurate with clarity and comprehensiveness of the submission.

C. CONSULTANT DESIGN SCHEDULE

The Project Manager will issue the Consultant’s approved project schedule at the first design kickoff meeting. This schedule will be binding for the Consultant’s activities and will include the start and completion dates for each design activity. The Consultant and Project Team members shall use this schedule to ensure that all design milestone dates are being met for the project. The Consultant shall update the schedule to reflect performance periodically (minimally at each design phase) for the Project Team review and approval. Any recommendations for deviations from the approved design schedule must be explained in detail as to the causes for the deviation(s) and impact to the schedule.

D. BID DOCUMENT CONSTRUCTION SCHEDULE

The Consultant shall include a construction schedule in Division 1 of the specification bid document. This schedule shall contain, at minimum, the major activities and their durations for each trade specified for the project. This schedule shall be in “bar chart” format and will be used by the Contractors as an aid in determining their bid price. It shall reflect special sequencing or phased construction requirements including, but not limited to: special hours for building access, weather restrictions, imposed constraints caused by Client Agency program schedules, security needs, lead times for materials and equipment, anticipated delivery dates for critical items, utility interruption and shut-down constraints, and concurrent construction activities of other projects at the site and any other item identified by the Consultant during the design phases of the project.
E. CONTRACTOR CONSTRUCTION PROGRESS SCHEDULE

The Contractor shall be responsible for preparing a coordinated combined progress schedule with the Sub-Contractors after the award of the contract. This schedule shall meet all of the requirements identified in the Consultant’s construction schedule. The construction schedule shall be completed in accordance with the latest edition of the Instructions to Bidders and General Conditions entitled, “Article 9, Construction Progress Schedule” (No CPM).

The Consultant must review and analyze this progress schedule and recommend approval/disapproval to the Project Team until a satisfactory version is approved by the Project Team. The Project Team must approve the baseline schedule prior to the start of construction and prior to the Contractor submitting invoices for payment.

The Consultant shall note in Division 1 of the specification that the State will not accept the progress schedule until it meets the project contract requirements and any delays to the start of the construction work will be against the Contractor until the date of acceptance by the State.

The construction progress schedule shall be reviewed, approved, and updated by the Contractor of schedule, Consultant, and Project Team members at each regularly scheduled construction job meeting and the Consultant shall note the date and trade(s) responsible for project delays (as applicable).

V. PROJECT SITE LOCATION & TEAM MEMBERS

A. PROJECT SITE ADDRESS

The location of the project site is:

Richard J. Hughes Justice Complex
25 W. Market Street
Trenton, New Jersey 08625

See Exhibit ‘B’ for the project site plan.
B. PROJECT TEAM MEMBER DIRECTORY

The following are the names, addresses, and phone numbers of the Project Team members.

1. NJBA Project Manager:

   Name: Vince Campanella, Project Manager  
   Address: New Jersey Building Authority  
   28 West State Street, 6\(^{th}\) Floor  
   Trenton, NJ 08625  
   Phone No: (609) 943-4831  
   E-Mail No: Vincent.campanella@treas.state.nj.us

2. Client Agency Representative:

   Name: Jack Tracey, Manager  
   Address: Division of Property Management & Construction  
   20 West State Street  
   Trenton, New Jersey 08625  
   Phone No: (609) 984-8113  
   E-Mail No: jack.tracey@treas.state.nj.us

VI. PROJECT DEFINITION

A. BACKGROUND

Construction of the Richard J. Hughes Justice Complex was completed in 1982. The building includes fourteen (14) elevator systems, one (1) wheel chair lift, four (4) escalators and one (1) library dumbwaiter. They are all original to the building and were upgraded in 1994 by Amtech Elevator Co. using Swift 5000 controllers. Otis Elevator Company is the current maintenance company.

In March 2007, the Client Agency employed the services of a Consulting firm to evaluate the condition of the vertical transportation equipment of the building and make recommendations for their upgrade including related cost estimates. See Exhibit ‘C’ for a copy of the document entitled “Maintenance Evaluation of the Existing Elevator/Escalator Equipment”, 32 pages.
B. FUNCTIONAL DESCRIPTION OF THE BUILDING

The Justice Complex is an eleven story building totaling approximately 1,080,000 square feet. Floor 1 through 8 is office space that houses the three branches of State government including the Judiciary, Public Advocate, and Law & Public Safety. Floor 9 is the mechanical penthouse, level P-1 is the street level, and P-2 is the parking garage.

VII. CONSULTANT DESIGN RESPONSIBILITIES

A. SURVEY

1. Data Collection:

Obtain and review all available facility documentation that is related to this project such as reports, studies, surveys, equipment manuals, as-built drawings, maintenance records, utility energy data, etc. The State does not attest to the accuracy of the information that will be provided and accepts no responsibility for the consequences of errors by the use of any information and material contained in the documentation. It shall be the responsibility of the Consultant to verify the contents and assume full responsibility for any determination or conclusion drawn from the material used. If the information provided is insufficient, the Consultant shall take the appropriate actions necessary to obtain the additional information required for the project at no additional cost to the State.

2. Survey:

The “Maintenance Evaluation of the Existing Elevator/Escalator Equipment” document prepared in March 2007 may be used as a guide for the upgrades to the vertical transportation equipment; however the Consultant shall verify the accuracy of the contents and history of changes by conducting a survey that includes field observations, photographs, measurements, tests, calculations, etc. See Exhibit ‘C’.

A prioritized list of final equipment upgrades shall be prepared by the Consultant based on ASME Safety Code requirements, handicap accessibility, the age and physical condition of the existing equipment, availability of parts, equipment performance, maintenance records, warranties and guarantees, Client Agency requirements, available project funding, etc.

3. Cost Estimate:

Determine the costs related to the selected vertical transportation equipment upgrades ensuring they do not exceed the available project funding of $2,000,000 Current Working Estimate (CWE).
4. Schedule:

Determine a phased construction schedule for the vertical transportation upgrades considering the material fabrication times, delivery dates, allowable elevator and escalator shut down durations, any required electrical mechanical, structural, and architectural improvements.

5. Presentation:

Prepare six (6) copies of a “draft” Survey Report which includes the recommended vertical transportation upgrades, material and labor costs, and proposed phased construction schedule. Make a presentation to the Project Team for review and approval. Make any corrections to the draft report based on the Project Team comments and submit six (6) copies of the “final” Survey Report to the Project Manager for record. Include all backup information such as the survey data, photographs, correspondence, equipment manufacturer information, catalog cuts, meeting minutes.

B. AS-BUILT DOCUMENTATION

Scaled drawings exist for the Justice Complex and are located in the penthouse mechanical room of the building. The Consultant shall be responsible to locate the required drawings and may use these documents for background floor plan details, but dimensions must be field verified where they are critical to the design of the project.

C. VERTICAL TRANSPORTATION DESIGN CRITERIA

The following sections describing the vertical transportation equipment and related system component upgrades is intended to supplement the “Maintenance Evaluation Existing Elevator/Escalator Equipment” report and provide additional design requirements where required, clarify sections that are vague or ambiguous, and identify the DPMC design policies and procedures that will apply to this project.

The design standards for the vertical transportation equipment and related system components shall comply with those specified in A17.1 of the American Society of Mechanical Engineers (ASME), the NJ Barrier Free Code, and the NJ Rehabilitation Sub-code.
D. ELEVATORS

1.) Operators & Controls:

Any equipment operators and controls that will be replaced shall be solid state microprocessor based equipment. Wiring diagrams shall be provided on the drawings that indicate their locations and method of tie in to all appropriate systems and components.

The existing electrical feeders to each existing elevator operator and controller operator shall be removed and new electrical feeders shall be installed to each elevator control panel and motor operator.

Tie in all appropriate controls and devices to the emergency power system where required.

2.) Cars:

All upgrades to the elevator cars shall be done in a manner that will provide all new warranty and maintenance provisions for the equipment.

A signed and sealed letter shall be submitted to the DPMC Design & Code Review Unit stating that the combined weight of the car, new interior finishes added to the car, and/or any other related upgraded component does not exceed the original elevator system capacity. The Consultant shall provide calculations if required to confirm the same.

3.) Interior Finishes:

Material samples and color pallets shall be submitted to the Project Team for review and approval for all upgrades to the interior car walls, floor, ceilings, etc.

4.) Communication:

Provide a hands free “push-to-call” telephone communication system integral with the car and tie into the local security room.

No electronic “voice synthesizer” to announce car direction, floor, emergency exiting instructions, etc. will be required.

5.) Electrical:

Location, capacity, and space requirements of all elevator electrical items and equipment must be indicated. Identify the size of any transformers and circuit breakers. Provide spare circuits, breakers, and other appropriate electrical components.
Provide an electrical riser diagram that shows the existing and new electrical service equipment, feeders, panels, branch circuits, breakers, transformers, etc. and their locations in the building including the required methods of tie in. Wire sizes, current demand factors, switch and panel schedules shall be included on the drawings.

Any wiring that may be retained shall be identified with new designations as a function of interfacing with the new systems and shall be included in the warranty and maintenance sections of the specification. All wiring and grounding shall comply with NFPA 70 latest edition.

Location, capacity, and space requirements of all elevator electrical items and equipment must be indicated. Identify the size of any transformers and circuit breakers. Provide spare circuits, breakers, and any other appropriate electrical component.

E. **WHEEL CHAIR LIFT**

1.) **Survey:**

The existing survey states that the wheel chair lift is working as designed, the safety switches are operational, and the unit is clean. Re-survey the wheel chair lift to determine the life expectancy of the equipment and related components and if they need to be upgraded in order to obtain the appropriate warranty. Include all upgrades in the design documents.

2.) **Schedule:**

Develop any special equipment upgrade procedures in the design documents that may minimize the lift shut down time.

F. **ESCALATORS**

1.) **Inspection:**

Conduct an internal inspection and take all required measurements of the four escalators including all mechanical/electrical components and based on the findings, prepare design documents to upgrade all required items. Ensure all adjustments, settings, and replacement parts comply with the escalator manufacturer specifications.

2.) **Schedule:**

Provide a phased construction schedule that addresses the upgrade duration for each escalator ensuring that only system is shut down at a time.
G. DUMBWAITER

1.) Survey:

The original survey states that the equipment is in good condition. Re-survey the dumb waiter to determine the life expectancy of the equipment and related components and if they need to be upgraded in order to obtain the appropriate warranty. Include all upgrades in the design documents.

H. MACHINE ROOM

1.) Ventilation & Air Conditioning:

Review the existing elevator mechanical room air conditioning and ventilation systems to ensure they have adequate capacity for the existing and/or new mechanical equipment. Replace and/or upgrade those systems as required for this project.

2.) Miscellaneous Components:

All existing and new non-stainless metal surfaces shall be primed and painted where required.

Specified hoist-ways and pit areas shall be cleaned as required to eliminate potential safety issues.

Proper hoist-way ventilation and lighting shall be provided or upgraded as appropriate.

All elevator mechanical room equipment to be removed, and all new equipment to be installed will be transported by one designated building elevator. Proper care and use of the elevator must be described in detail and included in Division 1 of the specification.

I. FIRE PROTECTION SYSTEMS

1.) Detectors:

Survey the mechanical room, elevator shafts, and the hallway/lobby areas on each floor of the building to determine the type and quantity of detectors that exist and those that shall be provided new. Based on this information, provide detectors in the required locations of each area ensuring that they comply with all applicable codes and are tied into the building fire alarm panel.

2.) Alarm Panel:

All new fire detectors and the elevator recall control devices shall be wired to the existing building fire alarm panel. The fire alarm panel shall trip the shunt-trip breakers in the event of detector activation.
J. SIGNAGE

1.) Building Signage:

Provide all appropriate building signage including, but not limited to: car identification, floor level, special instructions, fire exits, directional, communication, building identification, safety and emergency equipment, fire equipment, and mechanical room signage.

Provide Barrier Free signage as required on all floors of the building. Assure that proper Braille markings are provided per code. Hall push button stations shall be engraved “In Case of Fire Use Stairs” and surface mounted at proper locations.

2.) Car Signage:

Provide car signage including, but not limited to: “Certificate of Compliance on File in Management Office”, “Fire Fighters Instructions”, “No Smoking”, “Capacity”, “Loading”, Code Data Plates, and all other signage required but not identified in this section.

K. MAINTENANCE & WARRANTIES

1. Maintenance:

Specify in the design documents that a full maintenance and service contract for the elevator will be assumed by the Contractor for a period of one (1) year after final acceptance of the elevator and all costs shall be included in their bid price.

Investigate the advantages and disadvantages of assigning the responsibilities of the existing elevator maintenance service contract to the Contractor during the construction phase of this project. Provide a report with recommendations and all backup documentation to the Project Team for review and approval.

The maintenance shall include systematic examinations, adjustments and lubrication of all elevator equipment. Electrical and mechanical parts shall be repaired or replaced whenever it is required, using only parts made by the original manufacturer or the equipment involved, or approved equal.

Service shall include, in addition to the service calls, a semiannual examination and testing of the complete system.

Reports on repairs and/or replacements and semiannual testing shall be forwarded in duplicate to the Client Agency.
Emergency Call Back Service shall be provided twenty-four (24) hours a day, seven days a week without expense to the Client Agency, unless the call is the result of misuse or abuse of the elevator equipment.

2. Warranty:

Ensure all appropriate vertical transportation components are upgraded as part of this project so they will not negate the final warranties to be issued.

Specify that a special warranty, signed by the manufacturer of the control equipment and by the vertical transportation equipment contractor shall be obtained that specifies they will replace or restore defective materials or workmanship on the new equipment for a period of one (1) year from the date of acceptance.

All retained vertical transportation equipment that is not replaced as part of this project shall be thoroughly refurbished where required and shall be included in the Warranty Section.

L. TESTING & INSPECTIONS

1.) Testing:

Completed elevators shall be tested in the presence of the appropriate Code enforcing authority and shall satisfactorily meet all requirements of the acceptance tests.

Design documents shall require that the testing and labeling of the elevators shall be performed by an approved agency.

2.) Inspections:

The Consultant shall ensure all elevator inspections are scheduled and coordinated with the DCA Elevator Inspection Group and allow for proper advanced notification.

The Consultant shall coordinate the review and approval of all elevator construction documents with the elevator design review and permit unit of DCA.

M. CONTRACTORS USE OF THE PREMISES

Develop a list of policies and procedures with the Project Team to be followed by the Contractor during construction and include this information in Division 1 of the specification. Item shall include, but not be limited to:
1.) **Hours of Construction:**

Determine the allowable hours of construction and include that information in Division 1 of the specification for Contractor reference. Note that construction work on nights and weekends may not be performed without prior approval of the Project Team.

2.) **Fire Detector Protection:**

Provide temporary dust and dirt protection for the existing and any new fire detectors in the areas of construction to prevent false alarm signals. Ensure that the detectors are not disabled in the areas where elevators are in use.

3.) **Elevator Installation Schedule:**

The renovation and upgrade work on the elevators shall be prioritized and an approved schedule included in Division 1 of the specification for Contractor reference during bidding.

4.) **Demolition:**

Precautions shall be taken to eliminate dust and dirt in the occupied building construction areas. Construction barriers shall be provided to eliminate all dirt and isolate the building tenants from the construction site.

All demolition materials shall be removed from the building each day and disposed in a manner approved by the Client Agency. Dumpsters shall be provided by the Contractor and located in an area approved by the Client Agency.

5.) **Building Interior Finishes:**

All interior finishes shall be protected from potential damage and shall be restored to their original condition at no cost to the Client Agency.

6.) **Material Storage:**

Design drawings shall identify the acceptable areas and methods of material storage on the site and in the building.
N. MAINTENANCE & WARRANTIES

1.) Maintenance:

Specify in the design documents that full maintenance for the elevators will be assumed by the Contractor for twenty-four months after final acceptance of each elevator, and all costs of such maintenance shall be included in their bid price.

The maintenance shall include systematic examinations, adjustments and lubrication of all elevator equipment. Electrical and mechanical parts shall be repaired or replaced whenever it is required, using only parts made by the original manufacturer or the equipment involved, or approved equal.

Emergency Call Back Service shall be provided twenty-four (24) hours a day, seven days a week without expense to the Client Agency, unless the call is the result of misuse or abuse of the elevator equipment.

2.) Warranty:

Ensure that all of the vertical transportation equipment components replaced will not negate the final elevator warranty.

A special warranty, signed by the manufacturer of the control equipment and by the elevator contractor agreeing to replace or restore defective materials or workmanship on the elevators for a period of twenty-four (24) months from the date of acceptance of the last car completed.

All retained elevator equipment shall be thoroughly refurbished and shall be included in the Warranty Section including car guide shoes and rails.

O. GENERAL DESIGN OVERVIEW

1. Design Detail:

Section VII of this Scope of Work is intended as a guide for the Consultant to understand the overall basic design requirements of the project and is not intended to identify each specific design component related to code and construction items. The Consultant shall provide those details during the design phase of the project ensuring that they are in compliance with all applicable codes, regulating authorities, and the guidelines established in the DPMC Procedures for Architects and Engineers Manual.
The Consultant shall understand that construction documents submitted to DPMC shall go beyond the basic requirements set forth by the current copy of the Uniform Construction Code NJAC 5:23-2.15(f). Drawings and specifications shall provide detail beyond that required to merely show the nature and character of the work to be performed. The construction documents shall provide sufficient information and detail to illustrate, describe and clearly delineate the design intent of the Consultant and enable all Contractors to uniformly bid the project.

The Consultant shall ensure that all of the design items described in this scope of work are addressed and included in the project drawings and specification sections where appropriate.

It shall be the Consultant’s responsibility to provide all of the design elements for this project. Under no circumstance may they delegate the responsibility of the design; or portions thereof, to the Contractor unless specifically allowed in this Scope of Work.

2. Specification Format:

The Consultant shall ensure that the project design specifications are formatted in the revised and expanded version of the Construction Specifications Institute (CSI) format entitled “Master Format 2004 Edition: Numbers and Titles.”

The Consultant shall review all of the CSI Master Format 2004 specification sections listed and remove those that do not apply and edit those that remain so they are consistent and specific to this project scope of work.

P. PROJECT COMMENCEMENT

A pre-design meeting shall be scheduled with the Consultant and the Project Team members at the commencement of the project to obtain and/or coordinate the following information:

1. Project Directory:

Develop a project directory that identifies the name and phone number of key designated representatives who may be contacted during the design and construction phases of this project.

2. Site Access:

Develop procedures to access the project site and provide the names and phone numbers of approved escorts when needed. Obtain copies of special security and policy procedures that must be followed during all work conducted at the facility and include this information in Division 1 of the specification.
3. **Project Coordination:**

Review and become familiar with any current and/or future projects at the site that may impact the design, construction, and scheduling requirements of this project. Incorporate all appropriate information and coordination requirements in Division 1 of the specification.

4. **Existing Documentation:**

Obtain and review all available facility documentation that is related to this project such as reports, studies, surveys, equipment manuals, as-built drawings, maintenance records, utility energy data, etc. The State does not attest to the accuracy of the information that will be provided and accepts no responsibility for the consequences of errors by the use of any information and material contained in the documentation. It shall be the responsibility of the Consultant to verify the contents and assume full responsibility for any determination or conclusion drawn from the material used. If the information provided is insufficient, the Consultant shall take the appropriate actions necessary to obtain the additional information required for the project at no additional cost to the State.

All documentation shall be returned to the provider at the completion of the project.

5. **Scope of Work:**

Review the design and construction administration responsibilities and the submission requirements identified in this Scope of Work with the Project Team members. Items such as: contract deliverables, special sequencing or phased construction requirements, special hours for construction based on Client Agency programs or building occupancy, security needs, delivery dates of critical and long lead items, utility interruptions or shut down constraints for tie-ins, weather restrictions, and coordination with other project construction activities at the site shall be addressed. This information and all general administrative information; including a narrative summary of the work for this project, *shall be included in Division 1* of the specification. The Consultant shall assure that there are no conflicts between the information contained in Division 1 of the specification and the DPMC General Conditions.

6. **Project Schedule:**

Review and update the project design and construction schedule with the Project Team members.
Q.  BUILDING & SITE INFORMATION

The following information shall be included in the project design documents.

1.  Building Classification:

Provide the building Use Group Classification and Construction Type on the appropriate design drawing.

2.  Building Block & Lot Number:

Provide the site Block and Lot Number on the appropriate design drawing.

3.  Building Site Plan:

Only when the project scope involves site work, or when the design triggers code issues that require site information to show code compliance, shall a site plan be provided that is drawn in accordance with an accurate boundary line survey. The site plan shall include but not be limited to the following as may be applicable.

- The size and location of new and existing buildings and additions as well as other structures.
- The distance between buildings and structures and to lot lines.
- Established and new site grades and contours as well as building finished floor elevations.
- New and existing site utilities, site vehicular and pedestrian roads, walkways and parking areas.

4.  Site Location Map:

Provide a site location map on the drawing cover sheet that identifies the vehicular travel routes from major roadways to the project construction site and the approved access roads to the Contractor’s worksite staging area.

R.  DESIGN MEETINGS & PRESENTATIONS

1.  Design Meetings:

Conduct the appropriate number of review meetings with the Project Team members during each design phase of the project so they may determine if the project meets their requirements, question any aspect of the contract deliverables, and make changes where appropriate. The Consultant shall describe the philosophy and process used in the development of the design criteria and the various alternatives considered to meet the project objectives.
Selected studies, sketches, cost estimates, schedules, and other relevant information shall be presented to support the design solutions proposed. Special considerations shall also be addressed such as: Contractor site access limitations, utility shutdowns and switchover coordination, phased construction and schedule requirements, security restrictions, available swing space, material and equipment delivery dates, etc.

It shall also be the responsibility of the Consultant to arrange and require all critical Sub-Consultants to be in attendance at the design review meetings.

Record the minutes of each design meeting and distribute within seven (7) calendar days to all attendees and those persons specified to be on the distribution list by the Project Manager.

2. **Design Presentations:**

The minimum number of design presentations required for each phase of this project is identified below for reference:

- **Survey Phase:** One (1) oral presentation at phase completion.
- **Design Development Phase:** One (1) oral presentation at phase completion.
- **Final Design Phase:** One (1) oral presentation at phase completion.

### VIII. CONSULTANT CONSTRUCTION RESPONSIBILITIES

#### A. GENERAL CONSTRUCTION ADMINISTRATION OVERVIEW

This section of the Scope of Work is intended as a guide for the Consultant to understand their overall basic construction administration responsibilities for the project and does not attempt to identify each specific activity or deliverable required during this phase. The Consultant shall obtain that information from the current publication of the DPMC Procedures for Architects and Engineers Manual and any additional information provided during the Consultant Selection Process.
B. **PRE-BID MEETING**

The Consultant shall attend, chair, record and distribute minutes of the Contractor pre-bid meetings. When bidders ask questions that may affect the bid price of the project, the Consultant shall develop a Bulletin(s) to clarify the bid documents in the format described in the Procedures for Architects and Engineers Manual, Section 9.2 entitled “Bulletins.” These Bulletins must be sent to DPMC at least seven (7) calendar days prior to the bid opening date. DPMC will then distribute the document to all bidders.

C. **BID OPENING**

The Consultant must attend the bid opening held at the designated location.

In the event that the construction bids received exceed the Consultant’s approved final cost estimate by 5% or more, the Consultant shall redesign and/or set up sufficient approved alternate designs, plans and specifications for the project work, to secure a bid that will come within the allocation specified by the State without impacting the programmatic requirements of the project. Such redesign work and changes to plans, including reproduction costs for submission in order to obtain final approval and permits, shall be undertaken by the Consultant at no additional cost to the State.

D. **POST BID REVIEW MEETING, RECOMMENDATION FOR AWARD**

The Consultant; in conjunction with the Project Manager, shall review the bid proposals submitted by the various Contractors to determine the low responsible bid for the project. The Consultant; in conjunction with the Project Manager, shall develop a post bid questionnaire based on the requirements below and schedule a post bid review meeting with the Contractor’s representative to review the construction costs and schedule, staffing, and other pertinent information to ensure they understand the Scope of the Work and that their bid proposal is complete and inclusive of all required to deliver the project in strict accordance with the plans and specifications.

1. **Post Bid Review:**

Review the project bid proposals including the alternates, unit prices, and allowances within seven (7) calendar days from the bid due date. Provide a bid tabulation matrix comparing all bids submitted and make a statement about the high, low, and average bids received. Include a comparison of the submitted bids to the approved current construction cost estimate. When applicable, provide an analysis with supporting data, detailing why the bids did not meet the construction cost estimate.
2. Review Meeting:

Arrange a meeting with the apparent low bid Contractor to discuss their bid proposal and other issues regarding the award of the contract. Remind the Contractor that this is a Lump Sum bid. Request the Contractor to confirm that their bid proposal does not contain errors. Review and confirm Alternate pricing and Unit pricing and document acceptance or rejection as appropriate.

Comment on all omissions, qualifications and unsolicited statements appearing in the proposals. Review any special circumstances of the project. Ensure the Contractor’s signature appears on all post bid review documents.

3. Substitutions:

Inquire about any potential substitutions being contemplated by the Contractor and advise them of the State’s guidelines for the approval of substitutions and the documentation required. Review the deadline and advise the Contractor that partial submissions are not acceptable. Submission after the deadline may be rejected by the State.

Equal substitutions that are proposed by the Contractor that are of lesser value must have a credit change order attached with the submittal (See Article 4 of the General Conditions). The State has the right to reject the submission if there is no agreement on the proposed credit. Contractor will be responsible to submit a specified item.

4. Schedule:

Confirm that the Contractor is aware of the number of calendar days listed in the contract documents for the project duration and that the Contractor’s bid includes compliance with the schedule duration and completion dates. Particular attention shall be given to special working conditions, long lead items and projected delivery dates, etc. Review project milestones (if applicable). This could give an indication of Contractor performance, but not allow a rejection of the bid.

Review the submittal timeframes per the Contract documents. Ask the Contractor to identify what products will take over twenty-eight (28) calendar days to deliver from the point of submittal approval.

5. Performance:

Investigate the past performance of Contractor by contacting Architects and owners (generally three of each) that were listed in their DPMC pre-qualification package and other references that may have been provided. Inquire how the Contractor performed with workmanship, schedule, project management, change orders, cooperation, paper work, etc.
6. Superintendent:

Remind the Contractor that a full-time non-working superintendent is required per the General Conditions, who must be responsible to address Contract issues. (Article 4.3.2.).

7. Letter of Recommendation:

The Consultant shall prepare a Letter of Recommendation for contract award to Contractor submitting the low responsible bid within three (3) calendar days from the post bid review meeting. The document shall contain the project title, DPMC project number, bid due date and expiration date of the proposal. It shall include a detailed narrative describing each post bid meeting agenda item identified above and a recommendation to award the contract to the apparent low bid Contractor based on the information obtained during that meeting. Describe any acceptance or rejection of Alternate pricing and Unit pricing.

Comment on any discussion with the Contractor that provides a sense of their understanding of the project and any special difficulties that they see, and how they might approach those problems.

Attach all minutes of the Post bid meeting and any other relevant correspondence with the Letter of Recommendation and submit them to the Project Manager.

8. Conformed Drawings:

The Consultant shall prepare and distribute two (2) sets of drawings stamped “Conformed Drawings” to the Project Manager that reflect all Bulletins and/or required changes, additions, and deletions to the pertinent drawings within twenty-eight (28) calendar days of the construction contract award date.

Any changes made in Bulletins, meeting minutes, post bid review requirements shall also be reflected in the specification.

E. DIRECTOR’S HEARING

The Consultant must attend any Director’s hearing(s) if a Contractor submits a bid protest. The Consultant shall be present to interpret the intent of the design documents and answer any technical questions that may result from the meeting. In cases where the bid protest is upheld, the Consultant shall submit a new “Letter of Recommendation” for contract award. The hours required to attend the potential hearings and to document the findings shall be estimated by the Consultant and the costs will be included in the base bid of their fee proposal.
F. CONSTRUCTION JOB MEETINGS, SCHEDULES, LOGS

The Consultant shall conduct all of the construction job meetings in accordance with the procedures identified in the A/E manual and those listed below.

1. Meetings:

The Consultant and Sub-Consultant(s) shall attend the pre-construction meeting and all construction job meetings during the construction phase of the project. The Consultant shall chair the meeting, transcribe and distribute the job-meeting minutes for every job meeting to all attendees and to those persons specified to be on the distribution list by the Project Manager. The Agenda for the meeting shall include, but not be limited to the items identified in the Procedures for Architects and Engineers Manual, Section 10.3.1, entitled “Agenda.”

Also, the Consultant is responsible for the preparation and distribution of minutes within seven (7) calendar days of the meeting. The format to be used for the minutes shall comply with those identified in the “Procedures for Architects and Engineers Manual,” Section 10.3.4, entitled, “Format of Minutes.” All meeting minutes are to have an “action” column indicating the party that is responsible for the action indicated and a deadline to accomplish the assigned task. These tasks must be reviewed at each job progress meeting until it is completed and the completion date of each task shall be noted in the minutes of the meeting following the task completion.

2. Schedules:

The Consultant; with the input from the Client Agency Representative and Project Manager, shall review and recommend approval of the project construction schedule prepared by the Contractor. The schedule shall identify all necessary start and completion dates of construction, construction activities, submittal process activities, material deliveries and other milestones required to give a complete review of the project.

The Consultant shall record any schedule delays, the party responsible for the delay, the schedule activity affected, and the original and new date for reference.

The Consultant shall ensure that the Contractor provides a two (2) week “look ahead” construction schedule based upon the current monthly updated schedule as approved at the bi-weekly job meetings and that identifies the daily planned activities for that period. This Contractor requirement must also be included in Division 1 of the specification for reference.
3. **Submittal Log:**

The Consultant shall develop and implement a submittal log that will identify all of the required project submittals as identified in the design specification. The dates of submission shall be determined and approved by all affected parties during the pre-construction meeting.

Examples of the submissions to be reviewed and approved by the Consultant and Sub-Consultant (if required) include: shop drawings, change orders, Request for Information (RFI), equipment and material catalog cuts, spec sheets, product data sheets, MSDS material safety data sheets, specification procedures, color charts, material samples, mock-ups, etc. The submittal review process must be conducted at each job progress meeting and shall include the Consultant, Sub-Consultant, Contractor, Project Manager, and designated representatives of the Client Agency.

The Consultant shall provide an updated submittal log at each job meeting that highlights all of the required submissions that are behind schedule during the construction phase of the project.

G. **CONSTRUCTION SITE ADMINISTRATION SERVICES**

The Consultant and Sub-Consultant(s) shall provide construction site administration services during the duration of the project. The Consultant and Sub-Consultant(s) do not necessarily have to be on site concurrently if there are no critical activities taking place that require the Sub-Consultant’s participation.

The services required shall include, but not be limited to; field observations sufficient to verify the quality and progress of construction work, conformance and compliance with the contract documents, or to attend/chair meetings as may be required by the Project Manager to resolve special issues.

A field observation visit may be conducted in conjunction with regularly scheduled construction job meetings, depending on the progress of work. The Consultant and their Sub-Consultant(s) shall submit a field observation report for each site inspection to the Project Manager. Also, they shall conduct inspections during major construction activities including, but not limited to the following examples: concrete pours, steel and truss installations, code inspections, final testing of systems, achievement of each major milestone required on the construction schedule, and requests from the Project Manager. The assignment of a full time on-site Sub-Consultant does not relieve the Consultant of their site visit obligation.

The Consultant shall refer to Section XIV. Contract Deliverables of this Scope of Work subsection entitled “Construction Phase” to determine the extent of services and deliverables required during this phase of the project.
**H. SUB-CONSULTANT PARTICIPATION**

It is the responsibility of the Consultant to ensure that they have provided adequate hours and/or time allotted in their technical proposal so that their Sub-Consultants may participate in all appropriate phases and activities of this project or whenever requested by the Project Manager. This includes the pre-proposal site visit and the various design meetings and construction job meetings, site visits, and close-out activities described in this Scope of Work. Field observation reports and/or meeting minutes are required to be submitted to the Project Manager within seven (7) calendar days of the site visit or meeting. All costs associated with such services shall be included in the base bid of the Consultant’s fee proposal.

**I. DRAWINGS**

1. **Shop Drawings:**

Each Contractor shall review the specifications and determine the numbers and nature of each shop drawing submittal. Five (5) sets of the documents shall be submitted with reference made to the appropriate section of the specification. The Consultant shall review the Contractor’s shop drawing submissions for conformity with the construction documents within fourteen (14) calendar days of receipt. The Consultant shall return each shop drawing submittal stamped with the appropriate action, i.e. “Approved”, “Approved as Noted”, “Approved as Noted Resubmit for Records”, “Rejected”, etc.

2. **As-Built & Record Set Drawings:**

The Contractor(s) shall keep the contract drawings up to date at all times during construction and upon completion of the project, submit their AS-BUILT drawings to the Consultant with the Contractor(s) certification as to the accuracy of the information prior to final payment. All AS-BUILT drawings submitted shall be entitled AS-BUILT above the title block and dated. The Consultant shall review the Contractor(s) AS-BUILT drawings at each job progress meeting to ensure that they are up to date. Any deficiencies shall be noted in the progress meeting minutes.

The Consultant shall acknowledge acceptance of the AS-BUILT drawings by signing a transmittal indicating they have reviewed them and that they reflect the AS-BUILT conditions as they exist.

Upon receipt of the AS-BUILT drawings from the Contractor(s), The Consultant shall obtain the original mylars from DPMC and transfer the AS-BUILT conditions to the original full sized signed mylars to reflect RECORD conditions within twenty-eight (28) calendar days of receipt of the AS-BUILT information.
The Consultant shall note the following statement on the original RECORD-SET drawings. “The AS-BUILT information added to this drawing(s) has been supplied by the Contractor(s). The (Architect) (Engineer) does not assume the responsibility for its accuracy other than conformity with the design concept and general adequacy of the AS-BUILT information to the best of the (Architect’s) (Engineer’s) knowledge.”

Upon completion, The Consultant shall deliver the RECORD-SET original mylars to DPMC who will acknowledge their receipt in writing. This hard copy set of drawings and three (3) sets of current release AUTO CAD discs shall be submitted to DPMC and the discs shall contain all AS-BUILT drawings in both “.dwg” (native file format for AUTO CAD) and “.tif” (Tagged Image File) file formats.

J. CONSTRUCTION DEFICIENCY LIST

The Consultant shall prepare, maintain and continuously distribute an on-going deficiency list to the Contractor, Project Manager, and Client Agency Representative during the construction phase of the project. This list shall be separate correspondence from the field observation reports and shall not be considered as a punch list.

K. INSPECTIONS: SUBSTANTIAL & FINAL COMPLETION

The Consultant and their Sub-Consultant(s) accompanied by the Project Manager, Code Inspection Group, Client Agency Representative and Contractor shall conduct site inspections to determine the dates of substantial and final completion. The Project Manager will issue the only recognized official notice of substantial completion. The Consultant shall prepare and distribute the coordinated punch list, written warranties and other related DPMC forms and documents, supplied by the Contractor, to the Project Manager for review and certification of final contract acceptance.

If applicable, the punch list shall include a list of attic stock and spare parts.

L. CLOSE-OUT DOCUMENTS

The Consultant shall review all project close-out documents as submitted by the Contractors to ensure that they comply with the requirements listed in the “Procedure for Architects and Engineers’ Manual.” The Consultant shall forward the package to the Project Manager within twenty-eight (28) calendar days from the date the Certificate of Occupancy/Certificate of Approval is issued. The Consultant shall also submit a letter certifying that the project was completed in accordance with the contract documents, etc.
M. CLOSE-OUT ACTIVITY TIME

The Consultant shall provide all activities and deliverables associated with the “Close-Out Phase” of this project as part of their Lump Sum base bid. The Consultant and/or Sub-Consultant(s) may not use this time for additional job meetings or extended administrative services during the Construction Phase of the project.

N. TESTING, TRAINING, MANUALS, AND ATTIC STOCK

The Consultant shall ensure that all equipment testing, training sessions and equipment manuals required for this project comply with the requirements identified below.

1. Testing:

All equipment and product testing conducted during the course of construction is the responsibility of the Contractor. However, the Consultant shall ensure the testing procedures comply with manufacturers recommendations. The Consultant shall review the final test reports and provide a written recommendation of the acceptance/rejection of the material, products or equipment tested within fourteen (14) calendar days of receipt of the report.

2. Training:

The Consultant shall include in the specification that the Contractor shall schedule and coordinate all equipment training with the Project Manager and Client Agency representatives. It shall state that the Contractor shall submit the Operation and Maintenance (O&M) manuals, training plan contents, and training durations to the Consultant, Project Manager and Client Agency Representative for review and approval prior to the training session.

All costs associated with the training sessions shall be borne by the Contractor installing the equipment. A signed letter shall be prepared stating when the training was completed and must be accompanied with the training session sign-in sheet as part of the project close-out package.

3. Operation & Maintenance Manuals:

The Consultant shall coordinate and review the preparation and issuance of the equipment manuals provided by the Contractor(s) ensuring that they contain the operating procedures, maintenance procedures and frequency, cut sheets, parts lists, warranties, guarantees, and detailed drawings for all equipment installed at the facility.

A troubleshooting guide shall be included that lists problems that may arise, possible causes with solutions, and criteria for deciding when equipment shall be repaired and when it must be replaced.
Include a list of the manufacturer’s recommended spare parts for all equipment being supplied for this project.

The Consultant shall ensure that the training session is videotaped by the Contractor. A transmittal copy must be presented to the Project Manager who will forward the document to the Client Agency for future reference.

A list of names, addresses and telephone numbers of the Contractors involved in the installations and firms capable of performing services for each mechanical item shall be included. The content of the manuals shall be reviewed and approved by the Project Manager and Client Agency Representative.

The Consultant shall include in the specification that the Contractor must provide a minimum of ten (10) “throwaway” copies of the manual for use at the training seminar and seven (7) hardbound copies as part of the project close-out package.

4. Attic Stock:

The Consultant shall determine and recommend whether “attic stock” should be included for all aspects of the project. If required, the Consultant shall specify attic stock items to be included in the project.

Prior to project close-out, the Consultant must prepare a comprehensive listing of all items for delivery by the Contractor to the Owner and in accordance with the appropriate specification/plan section. Items shall include, but not be limited to: training sessions, O&M manuals, as-built drawings, itemized attic stock requirements, and manufacturer guarantees/warranties.

O. CHANGE ORDERS

The Consultant shall review and process all change orders in accordance with the contract documents and procedures described below.

1. Consultant:

The Consultant shall prepare a detailed request for Change Order including a detailed description of the change(s) along with appropriate drawings, specifications, and related documentation and submit the information to the Contractor for the change order request submission. This will require the use of the current DPMC 9b form.
2. **Contractor:**

The Contractor shall submit a DPMC 9b Change Order Request form to the Project Manager within twenty (20) calendar days after receiving the Change Order from the Consultant. The document shall identify the changed work in a manner that will allow a clear understanding of the necessity for the change. Copies of the original design drawings, sketches, etc. and specification pages shall be highlighted to clarify and show entitlement to the Change Order.

Copies shall be provided of job minutes or correspondence with all relative information highlighted to show the origin of the Change Order. Supplementary drawings from the Consultant shall be included if applicable that indicate the manner to be used to complete the changed work. A detailed breakdown of all costs associated with the change, i.e. material, labor, equipment, overhead, Sub-Contractor work, profit and bond, and certification of increased bond shall be provided.

If the Change Order will impact the time of the project, the Contractor shall include a request for an extension of time. This request shall include a copy of the original approved project schedule and a proposed revised schedule that reflects the impact on the project completion date. Documentation to account for the added time requested shall be included to support entitlement of the request such as additional work, weather, other Contractors, etc. This documentation shall contain dates, weather data and all other relative information.

3. **Recommendation for Award:**

The Consultant shall evaluate the reason for the change in work and provide a detailed written recommendation for approval or disapproval of the Change Order Request including backup documentation of costs in CSI format and all other considerations to substantiate that decision.

4. **Code Review:**

The Consultant shall determine if the Change Order request will require Code review and shall submit six (6) sets of signed and sealed modified drawings and specifications to the DPMC Plan & Code Review Unit for approval, if required. The Consultant must also determine and produce a permit amendment request if required.

5. **Cost Estimate:**

The Consultant shall provide a detailed cost estimate of the proposed Change Order Request, as submitted by the Contractor, in CSI format (2004 Edition) for all appropriate divisions and subdivisions using a recognized estimating formula. The estimate shall then be compared with that of the Contractor’s estimate. If any line item in the Consultant’s estimate is lower than the corresponding line item in the Contractor’s estimate, the Consultant in conjunction with the Project Manager is to contact the Contractor by telephone and negotiate the cost differences.
The Consultant shall document the negotiated agreement on the Change Order Request form. If the Contractor’s total dollar value changes based on the negotiations, the Consultant shall identify the changes on the Change Order Request form accordingly.

When recommending approval or disapproval of the change order, the Consultant shall be required to prepare and process a Change Order package that contains at a minimum the following documents:

- DPMC 9b Change Order Request
- DPMC 10 Consultant’s Evaluation of Contractor’s Change Order Request
- Consultant’s Independent detailed Cost Estimate
- Notes of Negotiations

6. **Time Extension:**

When a Change Order Request is submitted with both cost and time factors, the Consultant’s independent cost estimate is to take into consideration time factors associated with the changed work. The Consultant is to compare their time element with that of the Contractor’s time request and if there is a significant difference, the Consultant in conjunction with the Project Manager is to contact the Contractor by telephone and negotiate the difference.

When a Change Order Request is submitted for time only, the Consultant is to do an independent evaluation of the time extension request using a recognized scheduling formula.

Requests for extension of contract time must be done in accordance with the General Conditions Section 14.2.2.

7. **Submission:**

The Consultant shall complete all of the DPMC Change Order Request forms provided and submit a completed package to the Project Manager with all appropriate backup documentation within seven (7) calendar days from receipt of the Contractor’s change order request. The Consultant shall resubmit the package at no cost to the State if the change order package contents are deemed insufficient by the Project Manager.

8. **Meetings:**

The Consultant shall attend and actively participate at all administrative hearings or settlement conferences as may be called by Project Manager in connection with such Change Orders and provide minutes of those meetings to the Project Manager for distribution.
9. **Consultant Fee:**

All costs associated with the potential Contractor Change Order Requests shall be anticipated by the Consultant and included in the base bid of their fee proposal.

If the Client Agency Representative requests a scope change; and it is approved by the Project Manager, the Consultant may be entitled to be reimbursed through an amendment and in accordance with the requirements stated in paragraph 10.01 of this Scope of Work.

---

**IX. PERMITS & APPROVALS**

**A. REGULATORY AGENCY PERMITS**

The Consultant shall comply with the following guidelines to ensure that all required permits, certificates, and approvals required by State regulatory agencies are obtained for this project.

1. **NJ Uniform Construction Code Permit:**

The Consultant shall complete the NJUCC permit application and all applicable technical sub-code sections with all technical site data listed. The Agent section of the application and certification section of the building sub-code section shall be signed. These documents shall be forwarded to the Project Manager who will send them to the Department of Community Affairs (DCA) and all permit application costs will be paid by DPMC from encumbered funds for the project.

The Consultant may obtain access and copies of all NJUCC Building, Fire, Plumbing, Electrical and Elevator permit applications at the following website: [www.nj.gov/dca/codes](http://www.nj.gov/dca/codes)

The project construction documents must comply with the latest adopted edition of the NJ Uniform Construction Code that is in effect at the Final Design Phase of this project.

All other required project permits shall be obtained and paid for by the Consultant in accordance with the procedures described in paragraph 2. below.
2. Other Regulatory Agency Permits, Certificates, and Approvals:

The Consultant shall identify and obtain all other State Regulatory Agency permits, certificates, and approvals that will govern and affect the work described in this Scope of Work. An itemized list of these permits, certificates, and approvals shall be included with the Consultant’s Technical Proposal and the total amount of the application fees should be entered in the Fee Proposal line item entitled, “Permit Fee Allowance.” See Section XIV. 6.4.8 for a preliminary list of Regulatory Agency approvals.

The Consultant may refer to the Division of Property Management and Construction “Procedures for Architects and Engineers Manual”, Section 6.4.8, which presents a compendium of State permits, certificates, and approvals that may be required for this project.

The Consultant shall determine the appropriate phase of the project to submit the permit application(s) in order to meet the approved project milestone dates.

Where reference to an established industry standard is made, it shall be understood to mean the most recent edition of the standard unless otherwise noted. If an industry standard is found to be revoked, or should the standard have undergone substantial change or revision from the time that the Scope of Work was developed, the Consultant shall comply with the most recent edition of the standard.

3. Prior Approval Certification Letters:

The issuance of a construction permit for this project may be contingent upon acquiring various prior approvals as defined by NJAC 5:23-1.4. It is the Consultant’s responsibility to determine which prior approvals, if any, are required. The Consultant shall submit a general certification letter to the DPMC Plan & Code Review Unit Manager during the Permit Phase of this project that certifies all required prior approvals have been obtained.

In addition to the general certification letter discussed above, the following specific prior approval certification letters, where applicable, shall be submitted by the Consultant to the DPMC Plan & Code Review Unit Manager: Soil Erosion & Sediment Control, Water & Sewer Treatment Works Approval, Coastal Areas Facilities Review, Compliance of Underground Storage Tank Systems with NJAC 7:14 b, Pinelands Review, Compliance of Abandoned Wells with NJAC 7:9-9, Certification that all utilities have been disconnected from structures to be demolished, Board of Health Approval for Potable Water Wells, Health Department Approval for Septic Systems. It shall be noted that in accordance with NJAC 5:23-2.15(a)5, a permit cannot be issued until the letter(s) of certification is received.
B. BARRIER FREE REQUIREMENTS

The Consultant, in cooperation with the Client Agency Representative, shall assure that this project complies with the NJUCC Barrier Free Sub code where applicable.

C. STATE INSURANCE APPROVAL

The Consultant shall respond in writing to the FM Global Insurance Underwriter plan review comments through the DPMC Plan & Code Review Unit Manager as applicable. The Consultant shall review all the comments and modify the documents while adhering to the project’s SOW requirements, State code requirements, schedule, budget, and Consultant fee.

D. PUBLIC EMPLOYEES OCCUPATIONAL SAFETY & HEALTH PROGRAM

A paragraph shall be included in the design documents, if applicable to this project that states: The Contractor shall comply with all the requirements stipulated in the Public Employees Occupational Safety & Health Program (PEOSHA) document, paragraph 12:100-13.5 entitled “Air quality during renovation and remodeling”. The Contractor shall submit a plan demonstrating the measures to be utilized to confine the dust, debris, and air contaminants in the renovation or construction area of the project site to the Project Team prior to the start of construction.

The link to the document is: http://www.state.nj.us/health/eoh/peoshweb/iaqstd.pdf

E. MULTI-BUILDING OR MULTI-SITE PERMITS

A project that involves many buildings and/or sites requires that a separate permit be issued for each building or site. The Consultant must determine the construction cost estimate for each building and/or site location and submit that amount where indicated on the permit application.

F. PERMIT MEETINGS

The Consultant shall attend and chair all meetings with Permitting Agencies necessary to explain and obtain the required permits.
G. MANDATORY NOTIFICATIONS

The Consultant shall include language in Division 1 of the specification that states the Contractor shall assure compliance with the New Jersey “One Call” Program (1-800-272-1000) if any excavation is to occur at the project site.


H. CONSTRUCTION TRAILER PERMITS

If construction trailers are required for the project then the Consultant shall include language in the Supplemental General Conditions that states the Contractor(s) shall be responsible to obtain and pay for each construction trailer permit directly from the Department of Community Affairs. (General Contractor for Single Bid-Lump Sum All Trades contract, and each Contractor for Separate Bids & Single Bid contract).

DCA will allow a single permit application to cover more than one trailer per Contractor provided the building, plumbing, and electrical technical sub-code sections, as applicable, specify the correct numbers and costs. The trailers will not require a plan review.

DCA will inspect each construction trailer and issue a Certificate of Occupancy (CO) separate from the main building construction.

Storage trailers with no utility connections are exempt from this requirement.

I. SPECIAL INSPECTIONS

In accordance with the requirements of the New Jersey Uniform Construction Code, Bulletin 03-5 and as clarified further by the Department of Community Affairs, the Consultant shall be responsible for the coordination of all special inspections during the construction phase of the project.

1. Definition:

Special inspections are defined as an independent verification by a qualified person (special Inspector) rendered to the code official for Class I buildings only. The special inspector is to be independent from the Contractor and responsible to the building owner or owner’s agent so that there is no possible conflict of interest.
2. Responsibilities:

The Consultant shall submit with the permit application, a list of special inspections and the firm(s) that will be responsible to carry out the inspections required for the project. The list shall be a separate document, on letter head, signed and sealed.

3. Special Inspections:

The following special inspections, as applicable to this project, shall be performed in accordance with Chapter 17 of the International Building Code, New Jersey Edition, as defined below.

- Steel construction, in accordance with Section 1704.3.
- Concrete construction, in accordance with Section 1704.4.
- Masonry construction, in accordance with Section 1704.5.
- Soils, in accordance with Section 1704.7.
- Pile foundations, in accordance with Section 1704.8.
- Seismic resistance for Design Category D buildings, in accordance with Section 1707.
- Structural testing for isolation damping systems in seismic Design Category D buildings, in accordance with Section 1708.
- A quality assurance plan for seismic resistance of seismic Design Category D buildings, in accordance with Sections 1705.1 and 1705.2.

Special inspectors shall be licensed in accordance with the requirements in the New Jersey Uniform Construction Code.

X. GENERAL REQUIREMENTS

A. SCOPE CHANGES

The Consultant must request any changes to this Scope of Work in writing. An approved DPMC 9d Consultant Amendment Request form reflecting authorized scope changes must be received by the Consultant prior to undertaking any additional work. The DPMC 9d form must be approved and signed by the Director of DPMC and written authorization issued from the Project Manager prior to any work being performed by the Consultant. Any work performed without the executed DPMC 9d form is done at the Consultant’s own financial risk.
B. ERRORS AND OMISSIONS

The errors and omissions curve and the corresponding sections of the “Procedures for Architects and Engineers Manual” are eliminated. All claims for errors and omissions will be pursued by the State on an individual basis and resolved during the close-out phase of the project. The State will review each error or omission with the Consultant and determine the actual amount of damages, if any, resulting from each negligent act, error or omission.

C. ENERGY INCENTIVE PROGRAM

The Consultant shall review the Program Overview described on the NJ Smart Start Buildings website at: http://www.njsmartstartbuildings.com/ to determine if any proposed upgrades to the mechanical and/or electrical equipment and systems for this project will qualify for the “New Jersey Smart Start Building Energy Incentive Program”.

The Consultant shall be responsible to complete the Smart Start Registration Form and the Application Forms, provide any applicable worksheets, manufacturer’s specification sheets, calculations, attend meetings, and participate in all activities with designated representatives of the Smart Start Program and Utility Companies to obtain the entitled financial incentives and rebates for this project. All costs associated with this work shall be estimated by the Consultant and the amount included in the base bid of their fee proposal.

D. AIR POLLUTION FROM ARCHITECTURAL COATINGS

The Consultant shall include in the appropriate sections of the specification the requirement that all architectural coatings applied at the project site shall comply with the NJDEP Administrative Code Title 7, Chapter 27, Subchapter 23, entitled “Prevention of Air Pollution from Architectural Coatings”.

Architectural coatings shall mean materials applied for protective, decorative, or functional purposes to stationary structures or their appurtenances, portable buildings, pavements, or curbs. The coating materials include, but are not limited to, paints, varnishes, sealers, and stains.
XI. ALLOWANCES

A. PERMIT FEE ALLOWANCE

The Consultant shall obtain and pay for all of the project permits in accordance with the guidelines identified below.

1. Permits:

The Consultant shall determine the various State permits, certificates, and approvals required to complete this project.

2. Permit Costs:

The Consultant shall determine the application fee costs for all of the required project permits, certificates, and approvals (excluding the NJ Uniform Construction Code permit) and include that amount in their fee proposal line item entitled “Permit Fee Allowance”. A breakdown of each permit and application fee shall be attached to the fee proposal for reference.

NOTE: The NJ Uniform Construction Code permit is excluded since it is obtained and paid for by DPMC.

3. Applications:

The Consultant shall fill out and submit all permit applications to the appropriate permitting authorities and the costs shall be paid from the Consultant’s permit fee allowance provided. A copy of the application(s) and the original permit(s) obtained by the Consultant shall be given to the Project Manager for distribution during construction.

4. Consultant Fee:

The Consultant shall determine what is required to complete and submit the permit applications, obtain supporting documentation, attend meetings, etc., and include the total cost in the base bid of their fee proposal under the “Permit Phase” column.

Any funds remaining in the permit allowance account will be returned to the State at the close of the project.
XII. SUBMITTAL REQUIREMENTS

A. CONTRACT DELIVERABLES

All submissions shall include the Contract Deliverables identified in Section XIV of this Scope of Work and described in the DPMC Procedures for Architects and Engineers Manual.

B. CATALOG CUTS

The Consultant shall provide catalog cuts as required by the DPMC Plan & Code Review Unit during the design document review submissions. Examples of catalog cuts include, but are not limited to: mechanical equipment, hardware devices, plumbing fixtures, fire suppression and alarm components, specialized building materials, electrical devices, etc.

C. PROJECT DOCUMENT BOOKLET

The Consultant shall submit all of the required Contract Deliverables to the Project Manager at the completion of each phase of the project. All reports, meeting minutes, plan review comments, project schedule, cost estimate in CSI format (2004 Edition), correspondence, calculations, and other appropriate items identified on the Submission Checklist form provided in the A/E Manual shall be presented in an 8½” x 11” bound “booklet” format.

D. DESIGN DOCUMENT CHANGES

Any corrections, additions, or omissions made to the submitted drawings and specifications at the Permit Phase of the project must be submitted to DPMC Plan & Code Review Unit as a complete document. Corrected pages or drawings may not be submitted separately unless the Consultant inserts the changed page or drawing in the original documents. No Addendums or Bulletins will be accepted as a substitution to the original specification page or drawing.

E. SINGLE-PRIME CONTRACT

All references to “separate contracts” in the Procedures for Architects and Engineers Manual, Chapter 8, shall be deleted since this project will be advertised as a “Single Bid” (Lump Sum All Trades) contract. The single prime Contractor will be responsible for all work identified in the drawings and specifications.
The drawings shall have the required prefix designations and the specification sections shall have the color codes as specified for each trade in the DPMC Procedure for Architects and Engineers Manual.

The Consultant must still develop the Construction Cost Estimate (CCE) for each trade and the amount shall be included on the DPMC-38 Project Cost Analysis form where indicated. This document shall be submitted at each design phase of the project and updated immediately prior to the advertisement to bid.
XIII. SOW SIGNATURE APPROVAL SHEET

This Scope of Work shall not be considered a valid document unless all signatures appear in each designated area below.

The Client Agency approval signature on this page indicates that they have reviewed the design criteria and construction schedule described in this project Scope of Work and verifies that the work will not conflict with the existing or future construction activities of other projects at the site.

SOW PREPARED BY:  
Fred Stults, Manager  
DPMC Scope Development Unit  
3/25/11

SOW APPROVED BY:  
Jack Tracey, Manager  
Client Agency Representative  
3/25/11

SOW APPROVED BY:  
Vince Campanella, Manager  
NJBA Project Management Group  
3/29/11

SOW APPROVED BY:  
Richard Flodmand, Deputy Director  
Div Property Mgt & Construction  
3/29/11
XIV. CONTRACT DELIVERABLES

The following is a listing of Contract Deliverables that are required at the completion of each phase of this project. The Consultant shall refer to the DPMC publication entitled, “Procedures for Architects and Engineers,” Volumes I and II, 2nd Edition, dated January, 1991 to obtain a more detailed description of the deliverables required for each item listed below.

The numbering system used in this “Contract Deliverables” section of the scope of work corresponds to the numbering system used in the “Procedures for Architects and Engineers” manual and some may have been deleted if they do not apply to this project.

SURVEY

5.1 Project Schedule (Bar Chart Format)

5.2 Meetings & Minutes (Minutes within 5 working days of meeting)

5.3 Correspondence

5.4 Submission Requirements

5.4.7 Survey
   Data Collection
   Survey
   Cost Estimate
   Schedule
   Presentation: 6 sets draft report, 6 sets final report

5.4.8 As-Built Documentation

5.4.9 Utility Availability
   Fire Service
   Electric Service
   Telephone Service
   Emergency Power

5.4.12 Current Working Estimate in CSI Format & Cost Analysis 38 Form

5.4.13 Bar Chart of Design and Construction Schedule

5.4.15 SOW Compliance Statement

5.4.16 This Submission Checklist

5.4.17 Deliverables Submission in Booklet Form: 7 sets

5.5 Approval of Submission

5.5.1 Respond to Submission Comments
DESIGN DEVELOPMENT PHASE: 50% Complete Design Documents (Minimum)

7.1 Project Schedule (Update Bar Chart Schedule)

7.2 Meetings & Minutes (Minutes within 5 working days of meeting)

7.3 Correspondence

7.4 Submission Requirements

7.4.1 A/E Statement of Site Visit, As-Built Drawing Verification (if available)
7.4.2 Space Analysis & Program Requirements (if changed from Schematic Phase)
7.4.3 Special Features Description: communications, security, fire protection, etc.
7.4.4 Vertical Transportation Evaluation
7.4.8 Regulatory Agency Approvals (See Section 6.4.8 for listing)
   7.4.8.2 NJ Department of Community Affairs
      (a) UCC Permit for Building Construction
7.4.9 Confirm Utility Availability
       Fire Service
       Electric Service
       Telephone Service
       Emergency Power
7.4.10 Drawings: 6 sets
       Cover Sheet (See A/E Manual for format)
       Floor Plans
       Elevations
       Sections/Details
       HVAC Drawings, Heating & Cooling Equipment Schedules
       Fire Protection Drawings, Hydraulic Calcs, Water Pressure & Flow Data
       Electrical Drawings, Riser Diagram, Panel Schedules, Service Size, Lighting Design
       Emergency Power Equipment & Source
7.4.11 Specifications: 6 sets (See A/E Manual for format, include Division 1 and edit to describe the administrative and general requirements of the project)
7.4.12 Current Working Estimate in CSI Format & Cost Analysis 38 Form
7.4.13 Bar Chart of Design and Construction Schedule
7.4.14 Oral Presentation of Submission to Project Team
7.4.15 SOW Compliance Statement
7.4.16 This Submission Checklist (See A/E Manual, Figure 6.4.16 for format)
7.4.17 Deliverables Submission in Booklet Form: 7 sets

7.5 Approval

7.5.1 Respond to Submission Comments
7.6 Submission Forms

Figure 7.4.12  Current Working Estimate/Cost Analysis
Figure 7.4.16  Submission Checklist

FINAL DESIGN PHASE  100% Complete Construction Documents

This Final Design Phase may require more than one submission based on the technical quality and code conformance of the design documents.

8.1 Schedule (Update Bar Chart Schedule)

8.2 Meeting & Minutes (Minutes within 5 working days of meeting)

8.3 Correspondence

8.4 Submission Requirements

8.4.1 A/E Statement of Site Visit
8.4.8 Regulatory Agency Approvals (Include itemized list specific to this project)
8.4.10 Drawings: 6 sets
8.4.11 Specifications: 6 sets
8.4.12 Current Working Estimate in CSI Format & Cost Analysis 38 Form
8.4.13 Bar Chart of Design and Construction Schedule
8.4.14 Oral Presentation of this Submission to Project Team
8.4.15 Plan Review/SOW Compliance Statement
8.4.16 This Submission Checklist
8.4.17 Deliverables Submission in Booklet Form: 7 sets

8.5 Approvals

8.5.1 Respond to Submission Comments
PERMIT APPLICATION PHASE

This Permit Application Phase should not include any additional design issues. Design documents shall be 100% complete at the Final Design Phase.

8.6 Permit Application Submission Requirements

8.6.1 - 8.6.7: If all of the deliverables of these sections have been previously submitted to DPMC and approved there are no further deliverables due at this time

8.6.8 Regulatory Agency Approvals
   (a) UCC Permit Application & Technical Sub-codes completed by A/E

8.6.9 Utility Availability Confirmation

8.6.10 Signed and Sealed Drawings: 6 sets

8.6.11 Signed and Sealed Specifications: 6 sets

8.6.12 Current Working Estimate/Cost Analysis

8.6.13 Bar Chart Schedule

8.6.14 Project Presentation (N/A this Project)

8.6.15 Plan Review/SOW Compliance Statement

8.6.16 Submission Checklist

8.7 Approvals

8.8 Submission Forms

Figure 8.4.12 Current Working Estimate/Cost Analysis
Figure 8.4.16 Submission Checklist (Final Review Phase)
Figure 8.6.12-b Bid Proposal Form (Form DPMC -3)
Figure 8.6.12-c Notice of Advertising (Form DPMC -31)
Figure 8.6.16 Submission Checklist (Permit Phase)
Figure 8.7 Bid Clearance Form (Form DPMC -601)

BIDDING AND CONTRACT AWARD

9.0 Bidding Phase Requirements

9.0.1 Original Drawings signed & sealed by A/E, one (1) set AUTOCAD Discs

9.02 One Unbound Specification Color Coded per A/E Manual Section 8.4.11

9.03 Bid Documents Checklist

9.04 Bid Proposal Form

9.05 Notice for Advertising

9.1 Chair Pre-Bid Conference/Mandatory Site Visit
9.2 Prepare Bulletins

9.3 Attend Bid Opening

9.4 Recommendation for Contract Award

9.4.1 Prepare Letter of Recommendation for Award & Cost Analysis

9.5 Attend Pre-Construction Meeting

9.6 Submission Checklist

9.7 Submission Forms

   Figure 9.4.1 Cost Analysis
   Figure 9.6 Submission Checklist

CONSTRUCTION PHASE

10.1 Site Construction Administration

10.2 Pre-Construction Meeting

10.3 Construction Job Meetings

   10.3.1 Agenda: Schedule and Chair Construction Job Meetings
   10.3.2 Minutes: Prepare and Distribute Minutes within 5 working days of meeting
   10.3.3 Schedules: Approve Contractors’ Schedule & Update
   10.3.4 Minutes Format: Prepare Job Meeting Minutes in approved format, figure 10.3.4-a

10.4 Correspondence

10.5 Prepare and Deliver Conformed Drawings

10.7 Approve Contractors Invoicing and Payment Process

10.8 Approve Contractors 12/13 Form for Subs, Samples and Materials

10.10 Approve Test Reports

10.11 Approve Shop Drawings
10.12 Construction Progress Schedule

10.12.1 Construction Progress Schedule

10.13 Review & Recommend or Reject Change Orders

10.13.1 Scope Changes
10.13.2 Construction Change Orders
10.13.3 Field Changes

10.14 Construction Photographs

10.15 Submit Field Observation Reports

10.16 Submission Forms

Figure 10.3.4-a Job Meeting Format of Minutes
Figure 10.3.4-b Field Report
Figure 10.6 DPMC Insurance Form-24
Figure 10.6-a Unit Schedule Breakdown
Figure 10.6-b Monthly Estimate for Payment to Contractor DPMC 11-2
Figure 10.6-c Monthly Estimate for Payment to Contractor DPMC 11-2A
Figure 10.6-d Invoice DPMC 11
Figure 10.6-e Prime Contractor Summary of Stored Materials DPMC 11-3
Figure 10.6-f Agreement & Bill of Sale certificate for Stored Materials DPMC 3A
Figure 10.7-a Approval Form for Subs, Samples & Materials DPMC 12
Figure 10.7-b Request for Change Order DPMC 9b
Figure 10.9 Transmittal Form DPMC 13
Figure 10.10 Submission Checklist

PROJECT CLOSE-OUT PHASE

11.1 Responsibilities: Plan, Schedule and Execute Close-Out Activities

11.2 Commencement: Initiate Close-Out w/DPMC 20A Project Close-Out Form

11.3 Develop Punch List & Inspection Reports

11.4 Verify Correction of Punch List Items

11.5 Determination of Substantial Completion
11.6 Ensure Issuance of “Temporary Certificate of Occupancy or Approval”

11.7 Initiation of Final Contract Acceptance Process

11.8 Submission of Close-Out Documentation

11.8.1 As-Built & Record Set Drawings, 3 sets AUTOCAD Discs Delivered to DPMC
11.8.2 (a) Maintenance and Operating manuals, Warranties, etc.: 7 sets each
(b) Guarantees
(c) Testing Reports
(e) Elevator Inspection Report
(f) Shop Drawings
(g) Letter of Contract Performance
11.8.3 Final Cost Analysis-Insurance Transfer DPMC 25
11.8.4 This Submission Checklist

11.9 Final Payment

11.9.1 Contractors Final Payment
11.9.2 A/E Invoice and Close-Out Forms for Final Payment

11.10 Final Performance Evaluation of the A/E and the Contractors

11.11 Ensure Issuance of a “Certificate of Occupancy or Approval”

11.12 Submission Forms

Figure 11.2 Project Close-Out Documentation List DPMC 20A
Figure 11.3-a Certificate of Substantial Completion DPMC 20D
Figure 11.3-b Final Acceptance of Consultant Contract DPMC 20C
Figure 11.5 Request for Contract Transition Close-Out DPMC 20X
Figure 11.7 Final Contract Acceptance Form DPMC 20
Figure 11.8.3-a Final Cost Analysis
Figure 11.8.3-b Insurance Transfer Form DPMC 25
Figure 11.8.4 Submission Checklist
XV. EXHIBITS

The attached exhibits in this section will include a sample project schedule, and any supporting documentation to assist the Consultant in the design of the project such as maps, drawings, photographs, floor plans, studies, reports, etc.

END OF SCOPE OF WORK
Responsible Group Code Table

The codes below are used in the schedule field "GRP" that identifies the group responsible for the activity. The table consists of groups in the Division of Property Management & Construction (DPMC), as well as groups outside of the DPMC that have responsibility for specific activities on a project that could delay the project if not completed in the time specified. For reporting purposes, the groups within the DPMC have been defined to the supervisory level of management (i.e., third level of management, the level below the Associate Director) to identify the "functional group" responsible for the activity.

<table>
<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>REPORTS TO ASSOCIATE DIRECTOR OF:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM</td>
<td>Contract Management Group</td>
<td>Contract Management</td>
</tr>
<tr>
<td>CA</td>
<td>Client Agency</td>
<td>N/A</td>
</tr>
<tr>
<td>CSP</td>
<td>Consultant Selection and Prequalification Group</td>
<td>Technical Services</td>
</tr>
<tr>
<td>A/E</td>
<td>Architect/Engineer</td>
<td>N/A</td>
</tr>
<tr>
<td>PR</td>
<td>Plan Review Group</td>
<td>Technical Services</td>
</tr>
<tr>
<td>CP</td>
<td>Construction Procurement</td>
<td>Planning &amp; Administration</td>
</tr>
<tr>
<td>CON</td>
<td>Construction Contractor</td>
<td>N/A</td>
</tr>
<tr>
<td>FM</td>
<td>Financial Management Group</td>
<td>Planning &amp; Administration</td>
</tr>
<tr>
<td>OEU</td>
<td>Office of Energy and Utility Management</td>
<td>N/A</td>
</tr>
<tr>
<td>PD</td>
<td>Project Development Group</td>
<td>Planning &amp; Administration</td>
</tr>
</tbody>
</table>

EXHIBIT 'A'
<table>
<thead>
<tr>
<th>Activity ID</th>
<th>Description</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV301</td>
<td>Schedule/Conduct Predesign/Project Kick-Off Mtg.</td>
<td>CM</td>
</tr>
<tr>
<td>CV302</td>
<td>Prepare Program Phase Submittal</td>
<td>AE</td>
</tr>
<tr>
<td>CV303</td>
<td>Distribute Program Submittal for Review</td>
<td>CM</td>
</tr>
<tr>
<td>CV304</td>
<td>Prepare &amp; Submit Project Cost Analysis (DPMC-38)</td>
<td>CM</td>
</tr>
<tr>
<td>CV305</td>
<td>Review &amp; Approve Program Submittal</td>
<td>CA</td>
</tr>
<tr>
<td>CV306</td>
<td>Review &amp; Approve Program Submittal</td>
<td>PR</td>
</tr>
<tr>
<td>CV307</td>
<td>Prepare &amp; Submit Project Cost Analysis (DPMC-38)</td>
<td>CM</td>
</tr>
<tr>
<td>CV308</td>
<td>Review &amp; Approve Schematic Submittal</td>
<td>CA</td>
</tr>
<tr>
<td>CV309</td>
<td>Review &amp; Approve Schematic Submittal</td>
<td>PR</td>
</tr>
<tr>
<td>CV310</td>
<td>Prepare Schematic Phase Submittal</td>
<td>CM</td>
</tr>
<tr>
<td>CV311</td>
<td>Distribute Schematic Submittal for Review</td>
<td>CM</td>
</tr>
<tr>
<td>CV312</td>
<td>Prepare &amp; Submit Project Cost Analysis (DPMC-38)</td>
<td>CM</td>
</tr>
<tr>
<td>CV313</td>
<td>Review &amp; Approve Schematic Submittal</td>
<td>CM</td>
</tr>
<tr>
<td>CV314</td>
<td>Review &amp; Approve Schematic Submittal</td>
<td>CM</td>
</tr>
<tr>
<td>CV315</td>
<td>Consolidate &amp; Return Schematic Submittal Comments</td>
<td>CM</td>
</tr>
<tr>
<td>CV316</td>
<td>Prepare Design Development Phase Submittal</td>
<td>AE</td>
</tr>
<tr>
<td>CV317</td>
<td>Distribute Design Development Submittal</td>
<td>CM</td>
</tr>
<tr>
<td>CV318</td>
<td>Prepare &amp; Submit Project Cost Analysis (DPMC-38)</td>
<td>CM</td>
</tr>
<tr>
<td>CV319</td>
<td>Review &amp; Approve Design Development Submittal</td>
<td>CA</td>
</tr>
<tr>
<td>CV320</td>
<td>Review &amp; Approve Design Development Submittal</td>
<td>PR</td>
</tr>
<tr>
<td>CV321</td>
<td>Review &amp; Approve Design Development Submittal</td>
<td>CM</td>
</tr>
<tr>
<td>CV322</td>
<td>Consolidate &amp; Return D.D. Submittal Comments</td>
<td>CM</td>
</tr>
<tr>
<td>CV323</td>
<td>Prepare Final Design Phase Submittal</td>
<td>AE</td>
</tr>
<tr>
<td>CV324</td>
<td>Distribute Final Design Submittal for Review</td>
<td>CM</td>
</tr>
<tr>
<td>CV325</td>
<td>Review &amp; Approve Final Design Submittal</td>
<td>CA</td>
</tr>
<tr>
<td>CV326</td>
<td>Review &amp; Approve Final Design Submittal</td>
<td>PR</td>
</tr>
<tr>
<td>CV327</td>
<td>Review Final Design Submitt for Constructability</td>
<td>OCS</td>
</tr>
</tbody>
</table>

**NOTE:**
Refer to section "IV Project Schedule" of the Scope of Work for contract phase durations.

*© Primavera Systems, Inc.*
### Activity ID

<table>
<thead>
<tr>
<th>Activity ID</th>
<th>Description</th>
<th>Repn</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV005</td>
<td>Review &amp; Approve Final Design Submittal</td>
<td>CM</td>
</tr>
<tr>
<td>CV006</td>
<td>Consolidate &amp; Return Final Design Comments</td>
<td>CM</td>
</tr>
<tr>
<td>CV007</td>
<td>Prepare &amp; Submit Permit Application Documents</td>
<td>AE</td>
</tr>
<tr>
<td>CV008</td>
<td>Prepare &amp; Submit Bidding Cost Analysis (DPMC-38)</td>
<td>CM</td>
</tr>
</tbody>
</table>

### Plan Review-Permit Acquisition

<table>
<thead>
<tr>
<th>Activity ID</th>
<th>Description</th>
<th>Repn</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV009</td>
<td>Review Constr. Documents &amp; Secure UCC Permit</td>
<td>PR</td>
</tr>
<tr>
<td>CV010</td>
<td>Provide Funding for Construction Contracts</td>
<td>CA</td>
</tr>
<tr>
<td>CV011</td>
<td>Secure Bid Clearance</td>
<td>CM</td>
</tr>
</tbody>
</table>

### Advertise-Bid-Award

<table>
<thead>
<tr>
<th>Activity ID</th>
<th>Description</th>
<th>Repn</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV012</td>
<td>Advertise Project &amp; Bid Construction Contracts</td>
<td>CP</td>
</tr>
<tr>
<td>CV013</td>
<td>Open Construction Bids</td>
<td>CP</td>
</tr>
<tr>
<td>CV014</td>
<td>Evaluate Bids &amp; Prep. Recommendation for Award</td>
<td>CM</td>
</tr>
<tr>
<td>CV015</td>
<td>Evaluate Bids &amp; Prep. Recommendation for Award</td>
<td>AE</td>
</tr>
<tr>
<td>CV016</td>
<td>Complete Recommendation for Award</td>
<td>CP</td>
</tr>
<tr>
<td>CV017</td>
<td>Award Construction Contracts/Award MTP</td>
<td>CP</td>
</tr>
</tbody>
</table>

### Construction

<table>
<thead>
<tr>
<th>Activity ID</th>
<th>Description</th>
<th>Repn</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV018</td>
<td>Project Construction Start/Issue NTP</td>
<td>CM</td>
</tr>
<tr>
<td>CV019</td>
<td>Contract Start/Contract Work (25%) Complete</td>
<td>CON</td>
</tr>
<tr>
<td>CV020</td>
<td>Preconstruction Meeting</td>
<td>CM</td>
</tr>
<tr>
<td>CV021</td>
<td>Begin Preconstruction Submittals</td>
<td>CON</td>
</tr>
<tr>
<td>CV022</td>
<td>Longest Lead Procurement Item Ordered</td>
<td>CON</td>
</tr>
<tr>
<td>CV023</td>
<td>Lead Time for Longest Lead Procurement Item</td>
<td>CON</td>
</tr>
<tr>
<td>CV024</td>
<td>Prepare &amp; Submit Shop Drawings</td>
<td>CON</td>
</tr>
<tr>
<td>CV025</td>
<td>Complete Construction Submittals</td>
<td>CON</td>
</tr>
<tr>
<td>CV026</td>
<td>Roughing Work Start</td>
<td>CON</td>
</tr>
<tr>
<td>CV027</td>
<td>Perform Roughing Work</td>
<td>CON</td>
</tr>
<tr>
<td>CV028</td>
<td>Contract Work (50%+) Complete</td>
<td>CON</td>
</tr>
<tr>
<td>CV029</td>
<td>Longest Lead Procurement Item Delivered</td>
<td>CON</td>
</tr>
<tr>
<td>CV030</td>
<td>Contract Work (75%+) Complete</td>
<td>CON</td>
</tr>
</tbody>
</table>

**NOTE:**
Refer to section "TV Project Schedule" of the Scope of Work for contract phase durations.

© Primavera Systems, Inc.
DIRECTIONS: From the North: Enter Trenton on Route 1. Stay on Route 1 to the last New Jersey exit ("Capitol Complex") Turn right onto Warren Street and go to the light. Turn left at the light (Market Street) and bear right following signs for the Capitol Complex.
Maintenance Evaluation
Existing Elevator/Escalator Equipment

State Owned Buildings
Various Locations
Trenton, New Jersey 08625

R. J. Hughes Justice Complex
25 West Market Street

Prepared for:

State of New Jersey
Department of The Treasury
Division of Property Management and Construction
Trenton, New Jersey 08625

EXHIBIT 'C'
INTENT ................................................................. 3

PART 1 .......................................................................... 4
INTRODUCTION ............................................................ 4
EQUIPMENT PROFILE .................................................. 5
EQUIPMENT EVALUATION ........................................... 10
MAINTENANCE EVALUATION ....................................... 14
CONCLUSIONS ........................................................... 15
RECOMMENDATIONS .................................................. 17

ELEVATOR/ESCALATOR EQUIPMENT CRITERIA .......... 20
ASME A17.1, A17.2 and A17.3 CODE STANDARDS .......... 23
ASME A17.1 CODE REQUIREMENTS ............................ 25

PART 2 .......................................................................... 26
SECTION A ..................................................................... 26
MAINTENANCE DEFICIENCY ITEMS COVERED UNDER CONTRACT .............................................. 26

PART 3 .......................................................................... 33
ELEVATOR GLOSSARY OF TERMINOLOGY .................. 33
The purpose of this vertical transportation consultation is to conduct a comprehensive survey of the elevator systems, to analyze existing systems based on a physical audit of prevailing conditions, to review applicable safety Code standards, and to establish an equipment audit and analysis, based on a comparison of major components to current industry design standards.

Particular attention is given to operating performance levels and observations common to the average rider during normal use. Standards used for comparison are based on the overall local industry standards rather than a single manufacturer to establish benchmarks for improving the various functions recorded. In addition to the aforementioned equipment and performance evaluations, an ADA recommendation is provided with the understanding Federal retroactive compliance in certain areas is mandated in existing properties with public access.

Based on the equipment analysis and recommendations, budget cost estimates of all equipment requiring replacement, and/or rehabilitation in order to meet desired levels of performance, improved elevator safety requirements and operational reliability is provided.
The week of March 19, 2007, Robert Luckenbach (QEI Cert. #I-476) and Howard Nugent (QEI Cert. #S-67) of J. Martin Associates, Inc. performed a site survey at R. J. Hughes Justice Complex, 25 West Market Street, Trenton NJ to examine and evaluate the condition of the existing elevator systems which are presently maintained by Otis Elevator Company. The Officer of Building Management, Mr. Robert Witkowski, was informed of the inspection.

The purpose of this vertical transportation consultation is to provide an analysis of existing systems based on the following:

- Maintenance Evaluation
- Equipment Criteria
- Referenced ASME A17.1, A17.2 and A17.3 Code Standards & Requirements

This report was prepared to determine the condition of fourteen (14) elevator systems, one (1) lift, four (4) escalators and one (1) dumbwaiter as they relate to present continued operation, upgrading requirements (immediate, short term and long term) and compliance to current Codes.

The safety of all elevator equipment is dependent on its proper maintenance and use. Abuse, neglect and lack of proper maintenance can result in the creation of potential safety hazards.

Age and original system design are factors to consider when evaluating the maintenance and systems performance. Conditions such as slow operating speeds, leaking bearings and relay logic controller conditions may be age-related rather than associated with poor maintenance practices or procedures.

Component age and original system design must be considered when evaluating the level of preventative maintenance.

Consideration is given to prevailing conditions referenced under the Maintenance Section of this report for evaluation related to component wear and tear as well as equipment obsolescence and changes in current ASME Safety Code standards.
This survey and report are limited to the existing elevator systems listed below:

<table>
<thead>
<tr>
<th>Building</th>
<th>Address</th>
<th># Elevators</th>
<th># Lifts</th>
<th># Escalators</th>
<th># Dumbwaiter</th>
</tr>
</thead>
<tbody>
<tr>
<td>R. J. Hughes Justice Complex</td>
<td>25 West Market Street</td>
<td>14</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>14</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Type</th>
<th>Gearless</th>
<th>Gearless</th>
<th>Gearless</th>
<th>Gearless</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Capacity (lbs)</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
</tr>
<tr>
<td>3</td>
<td>Speed (fpm)</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>4</td>
<td>Operation</td>
<td>Group</td>
<td>Group</td>
<td>Group</td>
<td>Group</td>
</tr>
<tr>
<td>6</td>
<td>Controller</td>
<td>Swift</td>
<td>Swift</td>
<td>Swift</td>
<td>Swift</td>
</tr>
<tr>
<td>7</td>
<td>Floors Served</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>Car and Hoistway Doors</td>
<td>Center Opening</td>
<td>Center Opening</td>
<td>Center Opening</td>
<td>Center Opening</td>
</tr>
<tr>
<td>9</td>
<td>Car Door Protection Device</td>
<td>Infrared Screen</td>
<td>Infrared Screen</td>
<td>Infrared Screen</td>
<td>Infrared Screen</td>
</tr>
<tr>
<td>10</td>
<td>Clear Opening</td>
<td>48&quot;</td>
<td>48&quot;</td>
<td>48&quot;</td>
<td>48&quot;</td>
</tr>
<tr>
<td>11</td>
<td>Self-Leveling</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>12</td>
<td>Car Operating Panel</td>
<td>1 Main, 1 Aux.</td>
<td>1 Main, 1 Aux.</td>
<td>1 Main, 1 Aux.</td>
<td>1 Main, 1 Aux.</td>
</tr>
<tr>
<td>13</td>
<td>Directional Lanterns</td>
<td>Hall Mounted</td>
<td>Hall Mounted</td>
<td>Hall Mounted</td>
<td>Hall Mounted</td>
</tr>
<tr>
<td>14</td>
<td>Position Indicators</td>
<td>Car &amp; Lobby</td>
<td>Car &amp; Lobby</td>
<td>Car &amp; Lobby</td>
<td>Car &amp; Lobby</td>
</tr>
<tr>
<td>15</td>
<td>Handicapped Equipped</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>16</td>
<td>Fireman's Recall Equipped</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>17</td>
<td>24-Hour Communication</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>18</td>
<td>Maintenance Co.</td>
<td>Otis</td>
<td>Otis</td>
<td>Otis</td>
<td>Otis</td>
</tr>
</tbody>
</table>

State Owned Buildings
Maintenance Evaluation

March 2007
JH51_07_C
<table>
<thead>
<tr>
<th></th>
<th>Type</th>
<th>Gearless</th>
<th>Gearless</th>
<th>Gearless</th>
<th>Gearless</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Capacity (lbs)</td>
<td>3500</td>
<td>3500</td>
<td>4000</td>
<td>4000</td>
</tr>
<tr>
<td>3</td>
<td>Speed (fpm)</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>4</td>
<td>Operation</td>
<td>Simplex</td>
<td>Simplex</td>
<td>Group</td>
<td>Group</td>
</tr>
<tr>
<td>6</td>
<td>Controller</td>
<td>Swift</td>
<td>Swift</td>
<td>Swift</td>
<td>Swift</td>
</tr>
<tr>
<td>7</td>
<td>Floors Served</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>Car and Hoistway Doors</td>
<td>Center Opening</td>
<td>Center Opening</td>
<td>Center Opening</td>
<td>Center Opening</td>
</tr>
<tr>
<td>9</td>
<td>Car Door Protection Device</td>
<td>Infrared Screen</td>
<td>Infrared Screen</td>
<td>Infrared Screen</td>
<td>Infrared Screen</td>
</tr>
<tr>
<td>10</td>
<td>Clear Opening</td>
<td>42&quot;</td>
<td>42&quot;</td>
<td>48&quot;</td>
<td>48&quot;</td>
</tr>
<tr>
<td>11</td>
<td>Self-Leveling</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>12</td>
<td>Car Operating Panel</td>
<td>1 Main, 1 Aux</td>
<td>1 Main, 1 Aux</td>
<td>1 Main, 1 Aux</td>
<td>1 Main, 1 Aux</td>
</tr>
<tr>
<td>13</td>
<td>Directional Lanterns</td>
<td>Hall Mounted</td>
<td>Hall Mounted</td>
<td>Hall Mounted</td>
<td>Hall Mounted</td>
</tr>
<tr>
<td>14</td>
<td>Position Indicators</td>
<td>Car Only</td>
<td>Car Only</td>
<td>Car &amp; Lobby</td>
<td>Car &amp; Lobby</td>
</tr>
<tr>
<td>15</td>
<td>Handicapped Equipped</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>16</td>
<td>Fireman’s Recall Equipped</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>17</td>
<td>24-Hour Communication</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>18</td>
<td>Maintenance Co.</td>
<td>Otis</td>
<td>Otis</td>
<td>Otis</td>
<td>Otis</td>
</tr>
<tr>
<td></td>
<td>Type</td>
<td>Capacity (lbs)</td>
<td>Speed (fpm)</td>
<td>Operation</td>
<td>Year Installed/Upgraded</td>
</tr>
<tr>
<td>---</td>
<td>-----------------</td>
<td>----------------</td>
<td>-------------</td>
<td>-----------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Gearless</td>
<td>4000</td>
<td>500</td>
<td>Group</td>
<td>1979/1994</td>
</tr>
<tr>
<td>3</td>
<td>Gearless</td>
<td>4000</td>
<td>500</td>
<td>Group</td>
<td>1979/1994</td>
</tr>
<tr>
<td>4</td>
<td>Geared</td>
<td>4000</td>
<td>350</td>
<td>Simplex</td>
<td>1979/1994</td>
</tr>
<tr>
<td>5</td>
<td>Geared</td>
<td>4000</td>
<td>350</td>
<td>Simplex</td>
<td>1979/1994</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
- Gearless
- Geared
- Group
- Simplex
- No
- Yes
- 1 Main
- Lobby Only
- Hall Mounted
- Car & Lobby
- Car Only
- Otis

March 2007
<table>
<thead>
<tr>
<th>Item</th>
<th>St. Croix-Blount</th>
<th>St. James</th>
<th>St. Louis</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Type</td>
<td>Hydro</td>
<td>Geared</td>
<td>HO Geared</td>
<td>Gavaventa Express</td>
</tr>
<tr>
<td>2. Capacity (lbs)</td>
<td>Unknown</td>
<td>2500</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>3. Speed (fpm)</td>
<td>Unknown</td>
<td>200</td>
<td>(50)</td>
<td>15 FPM</td>
</tr>
<tr>
<td>4. Operation</td>
<td>Simplex</td>
<td>Simplex</td>
<td>Simplex</td>
<td>Manual</td>
</tr>
<tr>
<td>5. Year Installed/Upgraded</td>
<td>1979</td>
<td>1979/1994</td>
<td>N/A</td>
<td>12/17/04</td>
</tr>
<tr>
<td>6. Controller</td>
<td>Schindler</td>
<td>Swift</td>
<td>Matot</td>
<td>Garaventa</td>
</tr>
<tr>
<td>7. Floors Served</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>5th Floor Court Room</td>
</tr>
<tr>
<td>8. Car and Hoistway Doors</td>
<td>Center Opening</td>
<td>Center Opening Front &amp; Rear</td>
<td>Bi Parting</td>
<td>N/A</td>
</tr>
<tr>
<td>9. Car Door Protection Device</td>
<td>Infrared Screen</td>
<td>Infrared Screen</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>10. Clear Opening</td>
<td>36”</td>
<td>36”</td>
<td>25”x30”</td>
<td>N/A</td>
</tr>
<tr>
<td>11. Self-Leveling</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Manual</td>
</tr>
<tr>
<td>12. Car Operating Panel</td>
<td>1 Main</td>
<td>1 Main Aux</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>13. Directional Lanterns</td>
<td>Hall Mounted</td>
<td>Hall Mounted</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>14. Position Indicators</td>
<td>Car Only</td>
<td>Car Only</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>15. Handicapped Equipped</td>
<td>No</td>
<td>No</td>
<td>N/A</td>
<td>Yes</td>
</tr>
<tr>
<td>16. Fireman’s Recall Equipped</td>
<td>No</td>
<td>No</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>17. 24-Hour Communication</td>
<td>Yes</td>
<td>Yes</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>18. Maintenance Co.</td>
<td>Otis</td>
<td>Otis</td>
<td>Otis</td>
<td>N/A</td>
</tr>
<tr>
<td>Escalator No.</td>
<td>15 Down</td>
<td>16 Up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>---------</td>
<td>-------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>32&quot;</td>
<td>32&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td>90 FPM</td>
<td>90 FPM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floors Served</td>
<td>1 to Lobby</td>
<td>Lobby to 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance Co.</td>
<td>Otis</td>
<td>Otis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Escalator No.</th>
<th>17 Down</th>
<th>18 Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>32&quot;</td>
<td>32&quot;</td>
</tr>
<tr>
<td>Speed</td>
<td>90 FPM</td>
<td>90 FPM</td>
</tr>
<tr>
<td>Floors Served</td>
<td>1 to Lobby</td>
<td>Lobby to 1</td>
</tr>
<tr>
<td>Maintenance Co.</td>
<td>Otis</td>
<td>Otis</td>
</tr>
</tbody>
</table>
The purpose of this analysis is to provide a general equipment audit based on observed conditions, design technology, revised codes and current industry standards.

Particular attention should be given to the major component areas indicated with immediate repairs or renewals. The equipment specified requires renewal upgrading or other extraordinary repair procedures at this time.

The condition of the existing equipment as determined by our field survey is as follows:

MACHINE ROOM EQUIPMENT

Geared and Gearless Machines

The existing geared and gearless machines surveyed were installed and manufactured by Schindler/Haughton in 1979. Amtech Elevator overhauled them in 1994. They could provide more years of service if properly maintained. However, they are nearing the end of their life expectancy.

Hydraulic Machines

Hydraulic Unit, Tank, Pump and Valve – Schindler/Haughton Elevator Company (1979) manufactured the existing units and they are obsolete.

Governors

The governors are in fair-good condition with the exception of Elevator #6 which is noisy.

Controller and Selector

The controllers are microprocessor-based as manufactured by Swift. This equipment is reliable, requires little maintenance and could provide many more years of service if properly maintained. The controller and selector for Elevator #13 is obsolete.

Relay Contactors

The apparatus in place is design obsolete and past the end of its practical useful life. While the equipment is maintainable, parts are not readily available. Relay contactors, relays and coils must be monitored on a regular basis with constant component renewals, furnishing or adjustment. Design obsolete selectors are employed. The unit is currently out of service for several months.

Lighting and Receptacles

Fluorescent fixtures are used to provide lighting in the machine rooms. GFCI receptacles are not provided in the machine rooms as required per NEC Code.
Smoke Detection – Elevator Fire Recall

All elevators have smoke detector systems provided in the machine rooms and Lobbies. Fire Recall features are present.

Elevator Emergency Power Requirements

Hydraulic Elevator Emergency Power Requirements: No battery powered emergency lowering device is provided.

Machine Room Door

The machine room access door is in acceptable condition.

HOISTWAY EQUIPMENT

Hoistway Wiring and Traveling Cables

The existing equipment is in good condition. Life expectancy is approximately 26 years.

Car and Hoistway Door Operating Equipment

The existing GAL Manufacturing Co. manufactured master door operating and car door protective safety equipment is in fair condition and has a proven track record for long-term durability. The door operator, motor, car and hoistway door hangers, rollers, tracks, gibbs and safety edges have an effective life cycle of fifteen (15) to twenty (20) years maximum. They are nearing the end of their life cycle.

Top of Car Operating Station

The existing elevators are provided with top of car inspection stations.

Car Sling and Platform

The existing apparatus is in acceptable condition.

Car Guides

The Schindler/Haughton guides are in good condition.

Car Guide Rails

Existing car guide rails are in good condition.

Top of Car Lighting and Receptacle

Life expectancy is thirty (30) years. The existing equipment is in good condition.
PIT AND PIT EQUIPMENT

Pit Equipment – General

Accessing the pits presently is through the bottom hoistway door, and through pit access doors. The pit areas are generally clean as per ASME A17.1 Section 8.6.

Pit Stop Switch and Pit Ladder

The pits are provided with pit ladder where necessary and stop switch.

Pit Lighting and Receptacle

Pit lighting is provided in accordance to ASME A17.1 Section 2.2.5. The existing receptacles do not comply with NEC Rule 620-85.

Car Buffers

The existing buffers are in fair-good condition.

CAB INTERIOR AND EXTERIOR

Cab Interior – General

The existing cab enclosures are in good condition.

Car Operating Panels

The mechanical pushbuttons have acknowledge lights and Braille plates. The existing car push button assemblies do not comply with current ADAAG federal guidelines.

Car Position Indicators

The digital type car position indicators are in good condition.

Communication

Elevators are not equipped with hands-free communication devices.

Car Door Saddles

The car door saddles are in fair condition.

Emergency Light and Alarm

Elevator cabs are provided with emergency car light fixtures. The alarm bells were tested and found in good condition.

Owned Buildings

Tenance Evaluation

12

March 2007

U151-07-C
Cab Enclosure Lighting

The existing cab enclosure light fixtures are in good condition.

ENTRANCES/LOBBIES

Hoistway Doors and Frames

The hoistway door frames and door panels are in fair/good condition.

Hall Push Buttons and Position Indicators

The hall push button fixtures are in fair condition.

Directional Lanterns

The existing car directional lanterns are in good condition but do not meet current ADAAG requirements.

Elevator Fire Emergency Service – Fire Recall

The elevators are provided with Fire Emergency Service Phases I and II, but do not meet current code requirements. There is no indication that this is being tested monthly as required.
The following observed conditions cover basic areas of maintenance:

**Component Wear:** The components observed included the machine drive sheaves, hoist ropes, hydraulic pump and tank, car and hoistway door apparatus, electrical parts such as control cabinets, motors, traveling cables, etc. These components are generally wearing as expected based on their age and use.

**Housekeeping:** Refers to the general cleanliness of areas under maintenance such as the machine room, interior of the equipment in the machine room, door operating equipment, car tops, and pits. The cleanliness of these areas has improved/deteriorated since the last survey.

**Operating and Performance:** Performance operating characteristics reviewed indicate the elevators are functioning within acceptable standards for this type and vintage system.

**Storage, Prints, Parts:** A well-maintained system should have an adequate supply of spare parts properly stored at the site along with maintenance documents such as replacement parts catalogs and/or wiring diagrams.

**Elevator Firefighters’ Service:** All elevators provided with Firefighters’ Service shall be subjected to monthly Phase I recall and operation of Phase II to ensure the system is maintained in proper operating order. A written record of findings on the operation shall be made and kept on the premises.

**Emergency Power:** All elevators provided with emergency power shall be subjected to monthly recall and operation to ensure the system is maintained in proper operating order. A written record of findings on the operation shall be made and kept on the premises.

The overall maintained condition of the system components continues to be fair in certain areas and commensurate with the age, design and expended usage.

Analysis indicates the current level of preventive servicing is unacceptable fair in the following as per ASME A17.1:

▶ **Annual Testing (Rule 8.11)**
**Buildings R. J. Hughes Justice Complex - Elevators**

All the Elevators were installed in 1979, Schindler/Haughton Elevator Company. All, with the exception of Elevator # 13 (Hydraulic) were upgraded in 1994, by Amtech, using Swift 5000 controllers. Otis Elevator Company is the current maintenance company.

At the time of JMA inspection Elevators # 1 and # 13, were out of service. It is our understanding the elevator # 1 car required a part and Elevator # 13 has been out of service for over three (3) months. Otis Elevator Company has been unable to repair this Elevator.

The overall maintenance condition of the system component appear in *fair* condition.

None of the Elevators have code Data Plates as required by (Rule 8.6.1.5)

None of the elevators comply with current ADA Requirements or current Firefighter's Service Codes.

**Buildings R. J. Hughes Justice Complex - 1 Wheel Chair Lift**

Lift #1 – The Lift is working as designed. The safety switches are operational. The Unit is clean.
Unable to stop Escalators 15 and 18 to inspect interior.

Escalator #15 – Check cause of clacking noise at top of Escalator.

All Escalators – Need gap between step and skirt. Adjusted at various positions of rise.

   - Stop switch alarms need volumes increased to 89 DB’s.
   - Steps to be cleaned.

Escalators 15, 17 and 18 – Need chipped steps replaced or repaired.

Escalator maintenance appears to be minimal from a visual point. There are many chipped steps and a temporary balastrade panel is on the escalators. The steps are dirty. The gaps in the close up step/skirt gaps should be corrected, locate and repair clicking noise on running steps and adjust or replace stop switch cover alarms to code (mandated 80 DB’s). There was no evidence of Annual Escalator Tests.

Matot Dumbwaiter – Facility manager is not sure if it is included in Otis Elevator Company service contract. Unit serves 5, 5M and 6th floor library level. It appears to be used very little. Equipment is in good condition. Paper should be cleaned from the pit area.
Improving the elevator systems to increase safety and performance reliability is subject to numerous alternatives based on the project intent, term and available budgets. Proper planning of those extraordinary expenditures and eventual implementation requires long term planning. Therefore, JMA recommends that the State of New Jersey, Department of The Treasury consider the following:

<table>
<thead>
<tr>
<th>Category Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Immediate</strong>: Work which is necessary to enhance the ongoing preventative maintenance program, to improve operating performance, extend equipment life cycle and to implement an equipment inspection program.</td>
</tr>
<tr>
<td><strong>Short Term</strong>: Upgrading work which should be undertaken within the next one (1) to five (5) years and includes additional work above and beyond the work described under Immediate. It is intended to extend equipment life cycle and upgrade elevator performance and service reliability to acceptable levels for an established term, after which time the equipment condition should be re-assessed.</td>
</tr>
<tr>
<td><strong>Long Term</strong>: Work which, once completed, will extend acceptable performance and service reliability for approximately twenty-five (25) years without additional major expenditures.</td>
</tr>
</tbody>
</table>

**Immediate**

- The Maintenance Deficiency Items should be sent to the maintenance contractor, Otis Elevator, for correction within 30 days. Upon completion, Otis Elevator Company should submit a written report to the Officer of Building Management and JMA.

**Short Term**

An effective Full Service preventative maintenance program should be continued to enhance safety and reliability.

**Long Term**

Full modernization at the present time is warranted and recommended due to the age and observed physical conditions on fourteen (14) Elevators. The need for long-term reliability, serviceability and motion control features mandates the full modernization/upgrading of the elevator in accordance with current safety code standards.

Implementation of the modernization program described below for the elevators will provide proper levels of service for the next 25 years without additional major costs for repairs or replacements.
This budget cost estimate does not include removal and relocation of non-elevator related equipment from the machine room or equipment guarding and/or major upgrades to the facility electrical, mechanical, structural, and architectural improvements.

The time frames below are typical for modernization/upgrading of similar elevator installations. The total time from the start of specification preparation to the project completion varies depending on the scope of work.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description of Work – (13) Elevators (Grd/Grls) (1) Hydraulic</th>
<th>Est. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>New controller, hoist machine with VVVF, cab enclosure, platform, buffers, new entrances, fire control operation, car and hall operating and signal fixtures, hoistway and machine room wiring, complete new door package consisting of door operator, tracks, hangers, interlocks, car/hoistway door gibs, ADA compliance, hands-free communication, infrared detector edges, etc.</td>
<td>$225,000 Per elevator</td>
</tr>
<tr>
<td>2.</td>
<td>New controller, tank, pump, valve, hoistway and machine room wiring, car and hall operating fixtures, Fire Service Operation, ADA requirements, complete new door package consisting of door operator, tracks, hangers, interlocks, car/hoistway door gibs, electronic door re-opening device, roller guides, traveling cables, communication, etc.</td>
<td>$2,925,000</td>
</tr>
<tr>
<td></td>
<td>Option (1)</td>
<td>$150,000</td>
</tr>
<tr>
<td></td>
<td>* Cylinder replacement.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOTAL COST (Elevator Work)</td>
<td>$3,075,000</td>
</tr>
</tbody>
</table>

This table provides the estimated costs for the described work, including a breakdown of the cost by item. The table also includes a list of time frames for various stages of the project, which can help in planning and budgeting.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Preparation/Specifications</td>
<td>4 to 6 weeks</td>
</tr>
<tr>
<td>Bidding Process</td>
<td>2 to 4 weeks</td>
</tr>
<tr>
<td>Bid Analysis/Recommendations</td>
<td>1 to 2 weeks</td>
</tr>
<tr>
<td>Award of Contract</td>
<td>3 to 4 weeks</td>
</tr>
<tr>
<td>Drawing Approvals</td>
<td>8 to 12 weeks</td>
</tr>
<tr>
<td>Material Fabrication Lead Time</td>
<td>16 to 24 weeks</td>
</tr>
<tr>
<td>Modernization/Upgrading - Per Elevator</td>
<td>10 to 12 weeks</td>
</tr>
<tr>
<td>Final Punch List Work and Approvals</td>
<td>1 to 2 weeks</td>
</tr>
</tbody>
</table>

This information is crucial for understanding the scope and timeline of the project, allowing for proper planning and resource allocation.
In general, implementation of a major upgrading and restoration procedure of the elevator systems will impact normal building operations for an extended period of time. Therefore, design development must incorporate a plan with the services during the modernization/upgrading process.

Car interior and fixture selections typically delay the normal modernization process. Early prior planning could greatly reduce the possibility of troublesome delays by having an accepted "concept" or design ready for mock-up or drawings.

In order to obtain the best prices, The State House, Office of Building Management should utilize a competitive bidding process based on defined specifications to obtain proposals from pre-qualified contractors. A competitively-bid full comprehensive maintenance contract in conjunction with the repair and modernization work should be part of the specification terms and conditions.

Consideration should be given to the coordination of the elevator modernization/upgrading work with any other major renovation projects that may be scheduled in the buildings that may impact selections made regarding fixtures and finishes, including lobby renovations if applicable.

Subsequent to your review of our initial findings and recommendations, schedule a meeting with all parties concerned to analyze the modernization recommendations. Typically these projects require extended out-of-service times for performance of work and are quite expensive. Various applications should be evaluated such as partial component replacement, but the Owners must consider the long-term effects of such action, and the possible extra costs associated with stopgap measures.

JMA recommends the installation of a Remote Monitoring and Management System.
The Equipment Criteria section is a general accounting of major component systems used to appraise the overall prevailing conditions.

**Geared Hoist Machine and Geared Drum Hoist Machine**

Utilize a separate AC (DC) motor to engage a worm and gear set to obtain vertical movement and is subject to wear and oil leakage. The cost of motor replacement, new worm and gear sets, bearings and seals exceeds replacement cost at current day pricing. The anticipated life cycle is twenty (20) to twenty-five (25) years before a major overhaul is required.

**Gearless Hoist Machine**

Utilizes the incorporation of a D.C. motor, brake, and drive sheave into one unit to obtain vertical movement and are subject to bearing wear and insulation breakdown. After a twenty-five (25) to thirty (30) year life cycle, some repair work can be anticipated, but with a comprehensive Preventative Maintenance Program, these machines have a realistic life of 50 years or more.

**Hydraulic Cylinder**

Conventional direct plunger oil hydraulic systems, which employ buried cylinders, are an obsolete design based on current industry comparisons. Below grade metals subject to electrolysis and other natural earth contaminants have a tendency to return to their original state as an ore. Installation protection used fifteen (15) years ago was limited to applied rust inhibitive paints, partial external wraps and pure sand backfills.

Our experience has been that this apparatus is definitely subject to failure after fifteen (15) years net-use period under the best conditions. Physical examinations are very limited because the majority of the buried equipment cannot be accessed. Annual pressure testing in accordance with ASME inspection standards is not conclusive.

While it is possible for a cylinder to blow out due to corrosion or fatigue at a welded joint, most systems will deteriorate at a slower pace starting with an unexplained oil loss. The contractor continues to add fluid until such time as it becomes obvious to everyone concerned a major problem exists underground. The soil and below grade environment becomes contaminated necessitating extraordinary clean-up work mandated by the E.P.A. or other governing agency.

**Relay Controller**

The anticipated life cycle of a hardwire elevator control system is estimated at approximately twenty-five (25) to thirty (30) years assuming the enforcement of an effective Preventive Maintenance and Repair Service Program, and maintaining an acceptable operating environment, i.e., proper ambient temperature (55° F minimum to 100° F maximum) and good housekeeping. When any of the aforementioned items are neglected the anticipated life cycle, service reliability and efficiency will deteriorate.
Microprocessor Controller

The anticipated life cycle of a microprocessor based control system is estimated at approximately twenty-five (25) to thirty (30) years, assuming the enforcement of an effective Preventive Maintenance Program and Repair Service Program, and maintaining an acceptable operating environment, i.e., proper ambient temperature (50° F minimum to 95° F maximum) and good housekeeping. When any of these items are neglected, the anticipated life cycle, service reliability and efficiency will deteriorate.

Motor Generator

Motors have an estimated productive life of twenty-five (25) years and generators a life of thirty (30) years. Experience proves that motor generators do not require extensive maintenance during their normal life expectancy. However, beyond that point the equipment begins to deteriorate at an accelerated rate and the frequency of breakdowns reaches a point where maintenance, the rewinding of armatures, field coils, starters, and replacement of bearings are no longer worth considering because such repairs are very expensive and produce a significant amount of down time. Furthermore, new motor drives introduce benefits which fall into two categories. Direct, measurable economic benefits are derived by reduced cost of repairs and equipment down time. Less apparent benefits are improved safety and reliability of service. New solid-state static motor drives provide a 30% energy savings when compared to the obsolete rotating motor generator.

Silicon Controlled Rectifier (SCR) Drive

SCR drives are solid-state units that have an anticipated life cycle of twenty-five (25) to thirty (30) years. They are state-of-the-art and the logical replacements for motor generators. Furthermore, new SCR motor drives introduce benefits which fall into two categories. Direct, measurable economic benefits are derived by reduced cost of repairs and equipment downtime. Less apparent benefits are improved safety and reliability of service. They provide a 30% energy savings when compared to the obsolete rotating motor generator.

Car and Hoistway Door System

The door operators, motors, car and door hangers, rollers, tracks, gibbs and safety edges have an effective life cycle of twenty (20) to twenty-five (25) years. Beyond this point, operation becomes sloppy, noisy and inconsistent. Review of numerous maintenance logs for a multitude of buildings reveals that approximately 60 to 75% of total number of elevator malfunctions resulting in loss of service are attributable to the car and hoistway door systems.

Escalators

Are power-driven, inclined, continuous stairways used for raising and lowering passengers. A conventional escalator is one on which the running gear is driven by a single drive shaft at a terminal. Parts include decking, newel, panels, skirt, steps treads, teeth, comb plates, handrails, drive chains, tracks, truss and switches.

Wiring

The estimated life of insulated cable, which is exposed to continuous flexing (traveling cables) or high ambient operating temperatures (internal equipment wiring) is approximately thirty (30) years. The anticipated life cycle of stationary wiring e.g. feeders, shaft risers, etc., is indefinite as long as it is not disturbed. However, due to drying, the insulation can become brittle. When any major modernization is undertaken, which includes new hoistway interlock branch wiring, hall button
branch wiring, limit switch wiring, etc. and necessitates disturbance of the stationary wiring, it is recommended that the stationary wiring also be replaced.

**Elevator Service Reliability**

As in any piece of electro mechanical equipment, malfunctions are unavoidable. On properly maintained elevator equipment the number of recorded callbacks should not exceed the typical elevator industry standards or contract requirements, whichever is more stringent. The callbacks should be strictly monitored and corrective actions taken to remedy the root causes at an early stage to prevent repeated calls and extended out of service time.

**Environment**

For vintage equipment, the manufacturer required that the machinery areas be maintained at a maximum ambient temperature of 100°F. The ambient temperature required for modern day state-of-the-art computerized solid-state controls is 50°F to 95°F.
The survey and audit of the existing elevator system was conducted based, but not limited to, the following code and standards criteria:


A17.3 (2005): The American Society of Mechanical Engineers (ASME): Safety Code for Existing Elevators and Escalators, including applicable Supplements.


NFPA

NFPA 10: Standard for Portable Fire Extinguishers.


NFPA 252: Fire Tests of Door Assemblies.


OSHA: Occupational Safety & Health Administration

UFAS: Uniform Federal Accessibility Standard.

ANSI/ASTM A446: Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.

ANSI/ASTM B221: Aluminum and Aluminum-Alloy Extruded Bar, Rod, Wire, Shape and Tube.

ANSI/AWS D1.1: Structural Welding Code, Steel.


ANSI/UL 10B: Fire Tests of Door Assemblies.


ASTM A36: Structural Steel.


FS TT-P-641: Primer Coating, Zinc Dust/Zinc Oxide (for Galvanized Surfaces).

FS TT-P-645: Primer, Paint, Zinc Chromate, Alkyd Type.

NEMA L-3: High Pressure Decorative Laminates
The Safety Code for Elevators and Escalators, ASME A17.1 requires the following:

- **Periodic Test (Category 1)** per ASME A17.1 Section 8.11.2.2 shall be performed every year in addition to other inspections. A report should be submitted to the facility Director and metal tags must be installed on the safety releasing carrier and governor for traction elevators. According to Section 8.11.1.1.2, these tests "...shall be witnessed by an inspector..."

- **Firefighters' Emergency Operation** per ASME A17.1, Section 8.6.10.1: All elevators provided with firefighters' emergency operation shall be subjected monthly to Phase I recall by use of the key switch, and a minimum of one-floor operation on Phase II, except in jurisdictions enforcing the NBCC. Deficiencies shall be corrected. A record of findings shall be available to elevator personnel and the authority having jurisdiction. Per Sections 8.11.2.2.6 and 8.11.3.1.6, Category 1 and 5 tests of Firefighters' Emergency Operation are to be performed. According to Section 8.11.1.1.2, these tests "...shall be witnessed by an inspector...".

- **Five Year Test (Category 5)** per ASME A17.1 Sections 8.11.2.3 must be performed every five years on geared/gearless elevators in addition to other inspections. A report should be submitted to the facility Director and metal tags must be installed on the safety releasing carrier, governor and oil buffers, if applicable. According to Section 8.11.1.1.2, these tests "...shall be witnessed by an inspector..."

- **Standby or Emergency Power Operation (Category 1)**: Per ASME A17.1, Section 8.11.2.2.7: Operation of elevators equipped with standby or emergency power shall be tested to determine conformance with the applicable requirements (Item 1.17.2). Tests shall be performed with no load in the car. Section 8.11.2.3.5 (Category 5) states: Passenger elevators and freight elevators permitted to carry passengers (see 2.16.4) shall be tested with 125% of rated load [see 2.16.8(f)]. According to Section 8.11.1.1.2, tests "...shall be witnessed by an inspector..."

- **Shunt Trip Requirement** per ASME A17.1, Section 2.8.23.2: In jurisdictions not enforcing the NBCC, means shall be provided to automatically disconnect the main line power supply to the affected elevator upon or prior to the application of water from sprinklers located in the machine room or in the hoistway more than 600 mm (24 in.) above the pit floor. This means shall be independent of the elevator control and shall not be self-resetting. The activation of sprinklers outside of the hoistway or machine room shall not disconnect the main line power supply.
The Maintenance Deficiencies Items recorded confirm the need for improved preventive maintenance procedures to increase reliability, improve traffic handling and individual elevator performance, and ensure operational safety.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>None at this time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>None at this time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>None at this time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>None at this time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### State Owned Buildings

#### Maintenance Evaluation

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>None at this time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Governor's Mansion Complex Buildings - D-1 basement

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Governor is nosy</td>
<td>8.6.1.6.2</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Clean pit</td>
<td>8.6.4.7.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Governor's Mansion Complex Buildings - D-2 basement

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Remove material stored in pit</td>
<td>8.6.4.7.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Governor's Mansion Complex Buildings - D-3 basement

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Remove plywood from pit</td>
<td>8.6.4.7.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Governor's Mansion Complex Buildings - D-4 basement

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>None at this time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item No.</td>
<td>Item</td>
<td>ASME Code</td>
<td>Date Noted by JMA</td>
<td>Completed by Contractor</td>
<td>Completion Noted by JMA</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------------------</td>
<td>-----------</td>
<td>-------------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Plug hole in car operating panel</td>
<td>NFPA70</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Cab door is scraping saddle</td>
<td>8.6.4.13.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hoist ropes show flat spots (monitor closely)</td>
<td>8.6.1.2</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Determine cause of cab vibration at upper floors</td>
<td>8.6.1.2</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Restore car to service</td>
<td>8.6.1.2</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Annual test is overdue</td>
<td>8.11</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>None at this time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Replace missing car light</td>
<td>8.6.1.2.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Clean pit</td>
<td>8.6.4.7.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item No.</td>
<td>Item</td>
<td>ASME Code</td>
<td>Date Noted by JMA</td>
<td>Completed by Contractor</td>
<td>Completion Noted by JMA</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------</td>
<td>-----------</td>
<td>-------------------</td>
<td>-------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>1</td>
<td>None at this time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Auxiliary Car Operating Panel set at ADA Height. Note that there is No STAR as Required for the "Designated Level", and, the Car Phone is Covered by a Door. This is a Typical Condition.

The Main Car Operating Panel. Firefighter's Service Phase II is in the Upper Panel Out of the Picture.
ASME A17.1 (2004) Section 8.6

The Maintenance Deficiency Items recorded confirm the need for improved preventative maintenance procedures to increase reliability, improve traffic handling and individual escalator performance, and ensure operational safety.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clicking noise at top section - check track alignment</td>
<td>8.6</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Clean step treads</td>
<td>8.6.1.2.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Adjust skirt panels for code clearance</td>
<td>8.6.8.2</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Repair or replace chipped steps</td>
<td>8.6.8.6.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Adjust alarm cover volume for proper level</td>
<td>6.1.6.3.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Replace bottom demarcation light bulb</td>
<td>6.1.6.7</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Adjust low deck panel mesh</td>
<td>6.1.3.3.4</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Adjust skirt deck plates to mate without mismatch</td>
<td>8.6</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hughes Justice Complex Escalators 15 & 16, Deck Sections Not Installed Properly. This is a Potential Dangerous Condition as Material can Catch on Protruding Plate.
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adjust stop button cover alarm volume</td>
<td>6.1.6.3.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Adjust low deck panel mesh</td>
<td>6.1.3.4.3</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Clean dirt from step threads</td>
<td>8.6.1.2.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Adjust step/skirt clearance</td>
<td>8.6.8.2</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Seal gap at top end between landing plate and floor deck</td>
<td>6.1.3.6.3</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Adjust skirt deck plates to mate without mismatch</td>
<td>8.6</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Hughes Justice Complex, Escalator #15. Seal Open Gap Between Top Landing Plate and Building Floor Deck*
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>ASME Code</th>
<th>Date Noted by JMA</th>
<th>Completed by Contractor</th>
<th>Completion Noted by JMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clean dirt from step threads</td>
<td>8.6.1.2.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Adjust step/skirt clearance</td>
<td>8.6.8.2</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Repair or replace chipped steps</td>
<td>8.6.8.6.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Adjust stop switch cover alarm volume</td>
<td>6.1.6.3.1</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Left hand handrail has static charge</td>
<td>8.6</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Bottom landing glass balustrade has temporary replacement</td>
<td>8.6</td>
<td>3/21/07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hughes Justice Complex Escalators 17 and 18. The 'X' marks Temporary Balustrade Material Installed in Plate of Glass. Material is of a Different Thickness than Glass. Should be Replaced with Proper Glass Panel.