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THE CITY OF NEW YORK
DEPARTMENT OF CITYWIDE ADMINISTRATIVE SERVICES
("DCAS")

YUME KITASEI
COMMISSIONER

PROPOSAL FOR BIDS, BID, GENERAL CONDITIONS, GENERAL SPECIFICATIONS, TECHNICAL SPECIFICATIONS, STANDARD DCAS REQUIREMENTS CONTRACT, PROJECT LABOR AGREEMENT

FOR

FURNISHING ALL LABOR, MATERIALS, AND
EQUIPMENT NECESSARY FOR THE PROVISION OF INTERIOR AND EXTERIOR GENERAL CONSTRUCTION WORKS AT VARIOUS DEPARTMENT OF CITYWIDE ADMINISTRATION SERVICES

FACILITIES IN THE BOROUGHS OF MANHATTAN AND BRONX

(the "Project")

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GENERAL CONDITIONS

FOR FURNISHING ALL *LABOR AND MATERIALS* NECESSARY AND REQUIRED TO PERFORM *INTERIOR AND EXTERIOR GENERAL CONSTRUCTION WORK* AT VARIOUS FACILITIES THROUGHOUT MANHATTAN AND THE BRONX IN THE CITY OF NEW YORK.

EPIN: 85625B0011

ARTICLE 1- GENERAL PROVISIONS

(A) The Work consists of furnishing all labor and materials required to perform the requirements detailed in this Contract.

(B) Any references herein to separate contracts and/ or separate contractors, e.g. the "Electrical Contractor" or the "contractor for Electrical Work", shall be deemed to refer, as appropriate, to the contractor performing the work of that trade or any subcontractors hired by the Contractor to perform the work required by the Contract. All subcontractors shall be licensed as mandated by law, rule, or regulation, shall be qualified to perform the specific work for which they are hired by the Contractor, and may only be hired with the prior written consent of the Agency.

(C) If this Contract is subject to a Project Labor Agreement ("PLA"), the terms of the PLA shall take precedence over the General Conditions in the event of any conflict between them.

(D) All definitions used in the Contract shall be deemed to be incorporated into these General Conditions, provided, however, that if the definitions used in the General Conditions are more expansive than those in the Contract, the more expansive definition shall apply.

(E) All references to the "Commissioner" in these General Conditions shall also refer to his/ her representative, as applicable.

(F) "CONSULTANT" shall hereinafter be deemed to be included in the terms: Consultant Engineer, Consultant Architect, Construction Manager, and/ or Consultant Architect/ Engineer. This definition shall apply to either private Consultants or, if there are no private consultants, to employees of the Department of Citywide Administrative Services ("DCAS") acting in these roles.

(G) The Contractor shall furnish surety company payment and performance bonds when required by the Contract, in such penal amounts and form as are indicated.

(H) *CONFLICTS OF INTERESTS*- In relation to Conflicts of Interest, Section 2604 of the Charter of the City of New York provides:

1. No employee or person whose salary is payable in whole or in part from the City treasury (Subdivision c.) shall accept any valuable gift, whether in the form of a service, loan, thing or promise, or any other form from any person, firm, or corporation which to his knowledge is interested directly or indirectly, in any manner whatsoever in business dealings with the City; and
2. Any violation of any of the provisions of this section shall at the option of the Commissioner, render forfeit and void the Contract, work, business, sale, or transaction affected. Other sections of the City Charter, the Administrative Code and the Penal Law are applicable in implementing the basic conflicts of interest Section and under certain circumstances penalties may be invoked against the donor as well as the recipient of any form of valuable gift. Sections of the City Charter, the Administrative Code and the Penal Law referred to herein above shall apply to Contractors performing this Contract regarding circumstances involving Conflicts of Interest and shall also apply to subcontractors authorized to perform work, labor, and services pursuant to this Contract. It shall be the duty and responsibility of the prime Contractor to inform its respective subcontractors of the statutes' applicability to said subcontractors.

ARTICLE 2- PROVISIONS REFERENCED WITH INFORMATION FOR BIDDERS AND AGREEMENT

(A) Pursuant to the "Information for Bidders" and Articles of the "Agreement," the Contractor shall comply with the requirements and provisions set forth in Schedule "A".

(B) *COMMUNICATIONS:*

1. Wherever reference is made in the Contract or General Conditions to documents to be sent to the Commissioner (e.g., notices, filings, or submissions), such documents shall be sent to the address designated by DCAS in the Notice to Proceed or Work Order. In the absence of such specified address, to both:

   General Counsel
   Department of Citywide Administrative Services
   1 Centre Street
   19th Floor- North
   New York, NY 10007

   Director of Engineering Audit
   Department of Citywide Administrative Services
   1 Centre Street
   17th Floor- North
   New York, NY 10007
2. A distribution list will be provided at the kickoff meeting or in a Work Order that lists all the parties who will be required to receive a copy of all communications to DCAS. The distribution list may be modified throughout the Project(s) and Contract.

(C) *PARTIAL PAYMENTS FOR MATERIALS IN ADVANCE OF THEIR INCORPORATION IN THE WORK PURSUANT TO THE "AGREEMENT"*- To better ensure the availability of materials, fixtures and equipment when needed for the work the Commissioner may authorize partial payment for certain materials, fixtures, and equipment, prior to their incorporation in the work. Such payments shall be made only in strict accordance with and subject to all the terms and conditions set forth in the following sub-divisions numbered 1 to 16 inclusive, unless another method of payment is elsewhere provided for specified materials, fixtures, or equipment.

1. The Contractor shall submit to the Commissioner a written request for payment for materials purchased, or to be purchased for which it desires to be paid prior to their actual incorporation in the work. The request shall be accompanied by a schedule of the types and quantities of material and shall state whether such materials are to be stored on or off the site.
2. Where the materials are to be stored off site, they shall be stored at a place other than the Contractor's premises (except with the written consent of the Commissioner) and under the conditions prescribed or approved by the Commissioner. The Contractor shall set apart and separately store at the place or places of storage all materials and shall clearly mark same "PROPERTY OF THE CITY OF NEW YORK", and further, shall not at any time move any of said materials to another off-site place of storage without the prior written consent of the Commissioner. Materials may be removed from their place of storage off the site for incorporation in the work upon approval of the Commissioner.
3. Where the materials are to be stored at the site, they shall be stored at such locations as shall be designated by DCAS and only in such quantities as DCAS shall determine, in its sole judgment, will not interfere with the proper performance of the work by the Contractor, by

other Contractors engaged in performing work on the site or building operations. Such materials shall not be removed from their place of storage on the site except for incorporation in the work, without the approval of DCAS.

4. *INSURANCE*
   a. *STORAGE OFF-SITE*- Where the materials are stored off the site and until they are incorporated in the work, the Contractor shall fully insure such materials against all risks of destruction, damage or loss including but not limited to fire, theft, and any other casualty or happening. The policy of insurance shall be payable to the City of New York and shall be in such terms and amounts as shall be approved by the Commissioner. All insurance policies shall conform to the requirements of the Agreement with respect to other types of insurance required to be carried hereunder. The Contractor shall deliver the original and one copy of such policy or policies marked "Fully Paid" to the Commissioner.
   b. *STORAGE ON THE SITE*- Where the materials are stored at the site, the Contractor shall furnish satisfactory evidence to the Commissioner that they are properly insured against loss, by endorsements or otherwise, under the policy or policies of insurance obtained by the Contractor to cover losses to materials owned or installed by him. The policy of insurance shall cover fire and extended coverage against windstorm, hail, explosion, and riot attending a strike, civil commotion, aircraft, vehicles, and smoke.
5. All costs, charges and expenses arising out of the storage of such materials, shall be paid by the Contractor and the City hereby reserves the right to retain out of any partial or final payment made under the Contract an amount sufficient to cover such costs, charges and expenses with the understanding that the City shall have and may exercise any and all other remedies at law for the recovery of such cost, charges and expenses. There shall be no increase in the contract price for such costs, charges, and expenses and the Contractor shall not make any claim or demand for compensation, therefore.
6. The Contractor shall pay all costs of handling and delivery of materials, to the place of storage and from the place of storage to the site of the work; and the City shall have the right to retain from any partial or final payment an amount sufficient to cover the cost of such handling and delivery.
7. In the event the whole or any part of these materials are lost, damaged, or destroyed in advance of their satisfactory incorporation in the work, the Contractor, at its own cost, shall replace such lost, damaged, or destroyed materials of the same character and quality. The City will reimburse the Contractor for the cost of the replaced materials to the extent, and only to the extent, of the monies received by the City under the policies of insurance herein before referred to. Until such time as the materials is replaced, the City will deduct from the value of the stored materials or from any other money due under the Contract, the amount paid to the Contractor for such lost, damaged, or destroyed materials.
8. Should any of the materials paid for by the City hereunder be subsequently rejected or incorporated in the work in a manner or by a method not in accordance with the Contract Documents, the Contractor shall remove and replace such defective or improperly incorporated material with materials complying with the Contract Documents. Until such materials are replaced, the City will deduct from the value of the stored materials or from any other money due the Contractor, the amount paid by the City for such rejected or improperly incorporated materials.
9. Payments for the cost of materials made hereunder shall not be deemed to be an acceptance of such materials as being in accordance with the contract documents, and the Contractor always retains and must comply with its duty to deliver to the site and properly incorporate in the work only materials which comply with the contract documents.
10. The Contractor shall retain all risks in connection with the damage, destruction or loss of the

materials paid for hereunder to the time of delivery of the same to the site of the work and their proper incorporation in the work in accordance with the contract documents.

11. The Contractor shall comply with all laws and the regulations of any governmental body, or agency pertaining to the priority purchase, allocation, and use of the materials.
12. When requesting payment for such materials, the Contractor shall submit with the partial estimate duly authenticated documents of title, such as bills of sale, invoices, or warehouse receipts. The executed bills of sale shall transfer title to the materials from the Contractor to the City (in the event the invoices state that the material has been purchased by a subcontractor, bills of sale will also be required, transferring title to the materials from subcontractor to the Contractor).
13. Where the Contractor, with the approval of the Commissioner, has purchased unusually large quantities of materials in order to assure their availability for the work, the Commissioner at his/ her option, may waive the requirements of Article 2 Section 12 provided the Contractor furnishes evidence in the form of an affidavit of the Contractor in quadruplicate, and such other proof as the Commissioner may require, that it is the sole owner of such materials and has purchased them free and clear of all liens and other encumbrances. In such event, the Contractor shall pay for such materials and submit proof thereof, in the same manner as provided in Article 2 Section 12 hereof, within seven (7) days after receipt of payment therefor from the Comptroller. Failure on the part of the Contractor to submit satisfactory evidence that it has paid in full for all such materials shall preclude him from payments under the Contract.
14. The Contractor shall include in each succeeding partial estimate requisition, a summary of materials stored which shall set forth the quantity and value of materials in storage, on or off the site, at the end of each preceding estimate period; the amount removed for incorporation in the work; the quantity and value of materials delivered during the current period, and the total value of materials on hand for which payment thereof will be included in the current payment estimate.
15. Upon proof to the satisfaction of the Commissioner of the actual cost of such materials, and upon submission of proper proof of title as required under Articles 12 or 13 hereof, payment will be made therefore to the extent of 85%; provided however, that the cost so verified, established and approved shall not exceed the estimated cost of such materials included in the approved detailed breakdown estimate submitted in accordance with the Agreement; if it does, the City will pay only 85% approved estimated cost.
16. Upon the incorporation in the work of any such materials, which have been paid for in advance of such incorporation in accordance with the foregoing provisions, payment will be made for such materials incorporated in the work pursuant to the Agreement, less any sums paid pursuant to Article 2 Section 15 herein.

(D) Where “LABOR” is used under the Contract, for intermediate skills and for which no rate is hereinbefore certified, and there is in existence at the time the Contract is entered into a labor agreement between the Contractor and a duly recognized labor union, recognizing the existence of such intermediate skills with an agreement to pay a particular rate for such skills, then the Contractor shall pay not less than the rate, so agreed upon between the Contractor and such labor organization for such skills.

ARTICLE 3- SHOP DRAWINGS, PROPOSALS, AS-BUILT DRAWINGS

(A) *SHOP DRAWINGS*

1. *DEFINITION OF SHOP DRAWINGS*- "Shop Drawings" shall be defined as anything sent to the Consultant for preliminary approval including, but not limited to, catalog cuts, drawings, and samples including physical objects. Final approval shall be provided by the Commissioner.
2. *SUBMISSION OF SHOP DRAWINGS*- Instructions regarding Shop Drawings for electrical or mechanical work or equipment of any nature that may be required are set forth in the "General Electrical Requirements" and "General Mechanical Requirements" of these General Conditions.
3. The Contractor shall promptly prepare and submit, within three (3) days of DCAS' written request, layout detail and Shop Drawings of such parts of the Work as are indicated in a Work Order or as required by the Commissioner in his/ her sole discretion. The Shop Drawings shall be accurate and distinct and give all the dimensions required for the fabrication, erection, and installation of the work.
4. *SIZE OF DRAWINGS*- The Shop Drawings shall be submitted in such form and format as directed the Commissioner.
5. *SCOPE OF DRAWINGS*- Shop Drawings shall be numbered consecutively and shall accurately and distinctly represent the following:
   a. All working and erection dimensions.
   b. Arrangements and sectional views.
   c. Necessary details, including performance characteristics, and complete information for making necessary connections with other work.
   d. Kinds of materials including thicknesses and finishes.
   e. All other information required by the Commissioner.
6. *TITLES AND REFERENCE*- Shop drawings shall be dated and contain:
   a. Name of the Project and Contract Number.
   b. The descriptive names of equipment, or materials covered by the Drawings, and the classified item number or numbers, if any, under which it is, or they are required.
   c. The locations or points at which materials, or equipment, are to be installed in the work.
   d. Cross references to the Section Number, detail number and paragraph number of the Contract Specifications or Work Order.
   e. Cross references to the sheet number, detail number, etc., of the Contract Drawings.

NOTE: In addition to the above requirements, the Shop Drawings shall bear a stamp having the following wording:

7. *FIELD MEASUREMENTS*- The Contractor shall certify that it has verified and supplemented the Contract Drawings by taking all required field measurements, that said measurements correctly reflect all field conditions and that this Shop Drawing incorporates said measurements.
8. *THE SUBMISSION OF SHOP DRAWINGS* shall be accompanied by a letter of transmittal containing the name of the Project or Work Order, the name of the Contractor, the number of Drawings, titles and any other requirements and shall be sent to the Consultant with a copy sent to the Commissioner. Re-submission of the same drawings shall bear the original number of the drawings and the original titles.
9. *PRELIMINARY SUBMISSION*- The Contractor shall submit one (1) set of Shop Drawings to the Consultant and the Commissioner for preliminary approval. A satisfactory Shop Drawing will be stamped "Approved", be dated and one copy thereof will be returned to the Contractor either by hand or by letter. Should the Shop Drawing not be given final approval by the Commissioner, it will return the Shop Drawings with the necessary corrections and changes

to be made indicated thereon.

10. *REVISIONS*- The Contractor must make such corrections and changes and again submit drawings, for the approval of the Consultant and the Commissioner. The Contractor shall revise and resubmit the Shop Drawing as required by the Consultant and the Commissioner until approval thereof is obtained. However, Shop Drawings which have been stamped "Approved as Noted" shall be considered "Approved" Shop Drawings and NEED NOT be revised and resubmitted provided, however, that the Contractor shall comply with the noted changes. No work called for by the Shop Drawings shall be done until approval of the said drawings by the Consultant and the Commissioner. In addition to the foregoing Shop Drawing transmissions, a copy of any Shop Drawing prepared by the Contractor which Shop Drawing indicated work related to, adjacent to, impinging upon, or affecting work to be done by other contractors or subcontractor(s) shall be transmitted to the contractors or subcontractor(s) so affected.
11. *FINAL SUBMISSION*- When approval of any Shop Drawing is obtained by the Contractor, it shall insert the date of the approval of the tracing and promptly furnish the Consultant and the Commissioner with additional prints of the approved drawings as the Commissioner may require. No work called for by the Shop Drawings shall be done until the approval of the said drawings is given. After preliminary approval by the Consultant and final approval by the Commissioner, the Contractor shall deliver the Shop Drawing(s) to the DCAS Construction Project Manager in sufficient number so that the approved Shop Drawings can thereafter be distributed to the affected contractors at the job meetings, and this shall be so recorded in the minutes. Every page of the approved Shop Drawings shall be dated, stamped, and signed.
12. *VARIATIONS*- If the Shop Drawings show variations from the Contract requirements because of standard shop practice, or other reasons, the Contractor shall make specific mention of such variations in its letter of submittal and shall highlight area(s) of such variation(s) on the drawings. Approval of the Shop Drawings shall constitute approval of the subject matter thereof only.
13. *CATALOG CUTS*- Except as otherwise prescribed herein, the submission of catalog cuts shall conform to the procedures specified for Shop Drawings.
    a. *PRELIMINARY SUBMISSION*- The Contractor shall submit catalog cuts to the Consultant for its and the Commissioner's approval. A satisfactory catalog cut will be stamped "Approved", be dated and one copy thereof will be returned to the Contractor by letter. Should the catalog cut not be approved by the Commissioner, she/ he will return one set of such catalog cuts with the necessary corrections and changes to be made indicated thereon.
    b. *REVISIONS*- The Contractor shall make such corrections and changes and again submit the catalog cuts for the approval of the Consultant and the Commissioner. The Contractor shall revise and resubmit the catalog cuts as required by the Consultant and/ or Commissioner until approval thereof is obtained. However, catalog cuts which have been stamped "Approved as Noted" shall be considered an "Approved" catalog cut and need not be revised and resubmitted.
    c. *FINAL SUBMISSION*- Once approval of any catalog cut is provided, the Contractor shall deliver copies of the catalog cut to the Consultant and the DCAS Construction Project Manager so that approved catalog cut(s) can thereafter be distributed to the affected contractors at the job meetings and shall be so recorded in the minutes.
14. *RESPONSIBILITY OF CONTRACTOR*
    a. The approval of Shop Drawings will be general and shall not relieve the Contractor of responsibility for the accuracy of such Shop Drawings, or for the proper fitting and construction of the work, or of the furnishing of materials or work required by the Contract and not indicated on the Shop Drawings.

b. Approval of Shop Drawings or any portion(s) thereof shall not be construed or interpreted as approving departures from the Contract Drawings, Supplementary Drawings or Specifications. If the Contractor wishes to deviate from the Contract Drawings, Supplementary Drawings or Specifications, the Contractor must submit a separate written request which fully explains the basis for the request and the cost implications thereof to the Consultant and the Commissioner, and both the Consultant and the Commissioner must approve such request in writing.

15. *SHOP DRAWING SCHEDULE*– A schedule for the submission of Shop Drawings shall be determined by the Commissioner in his/ her sole discretion.
16. *PROCEDURE FOR PREPARING, FORWARDING, CHECKING, AND RETURN* of all Shop Drawings shall be, generally, as follows:

NOTE: The Contractor shall make available to its subcontractors the necessary Contract Documents and have them determine dimensions and conditions in the field, particularly with reference to coordination with other trades or work under other contracts. It shall direct its subcontractors to prepare Shop Drawings for submission to the Consultant in accordance with the requirements of these "General Conditions". It shall also direct its subcontractors to "Circle" corrections made on all re-submissions for approval, to be readily seen.

The Contractor shall:

a. Review and be responsible to the Commissioner, or his/ her authorized representative, for all information shown on all shop and installation drawings and for conformity to contract documents.
b. "Circle" all corrections made on all submissions for approval, to be readily seen.
c. Clearly designate which trade is to perform the work when the use of "work by others", or other similar phrases, are indicated on the drawings before submission to the Consultant.
d. To expedite Shop Drawing procedures, the Contractor shall write a Shop Drawing status letter directly to the Consultant, each week, containing the following subject matter:
    1. A list of all Shop Drawings which have been sent to but not returned by the Architect or Engineer giving name of the subcontractor, drawing number, title, and date of submission.
    2. An indication of the desired priority of the return, if necessary.
    3. The Consultant shall review the shop drawing status log at each job meeting.

NOTE: The status letter shall be prepared and sent at a given time each week, preferably Friday afternoon, to enable the Consultant to receive the letter on Monday morning. This procedure shall be maintained throughout the active Shop Drawing period of construction.

(B) PROPOSALS

1. Before purchasing any item(s) that will be incorporated into a Project as part of a Work Order or if directed by the Commissioner, in her/ his sole discretion, to subcontract certain work, the Contractor shall provide the Commissioner within one (1) week with at least three (3) proposals on official letterhead of the company selling the item(s) or providing the services to the Contractor, each of which shall include a detailed breakdown of its pricing suitable for estimating purposes If additional documentation is deemed necessary by the Commissioner, the Contractor shall provide any and all additional documentation including but not limited to catalog cuts and any other submittals required by the Commissioner within one (1) week of submission of the original proposal or such shorter time as determined by the Commissioner in his/ her sole discretion.
2. These proposal requirements shall apply to all submissions required by the Commissioner on Work Orders, and shall further apply, without limitation, to all submissions required by the Commissioner in her/ his sole discretion including, without limitation, proposals for Extra

Work.

3. The Commissioner reserves the right to direct the Contractor to purchase any item(s) from a vendor of DCAS' choosing if the Commissioner determines that the purchase of such item(s) is in the best interests of the City.
4. *PROPOSAL RESPONSE TIME*
   a. *Contractor Proposal*: If the Commissioner shall advise the Contractor that a proposal hereunder is required, the Contractor shall submit its responsive cost proposal with all supporting documentation to the Commissioner within one (1) week or such shorter period as determined by the Commissioner in her/ his sole discretion. If additional documentation is deemed necessary by the Commissioner, the Contractor shall provide all additional documentation including but not limited to catalog cuts and any other submittals required by the Commissioner in her/ his sole discretion within two weeks of submission of the original proposal or such shorter time as determined by the Commissioner in her/ his sole discretion.
   b. *Other Contractor Proposal(s)*: If the Contractor makes a request for additional work, the Contractor shall provide its proposal with all supporting documentation, as may be required by DCAS in its sole discretion, within one (1) week of the Commissioner's request for such proposal or such shorter period as determined by the Commissioner in her/ his sole discretion. If additional documentation is deemed necessary by the Commissioner, the Contractor shall provide all additional documentation including but not limited to catalog cuts and any other submittals required by the Commissioner in her/ his sole discretion within one (1) week of submission of the original proposal or such shorter time as determined by the Commissioner in his/ her sole discretion.

(C) AS-BUILT DRAWINGS

1. At the start of construction (kickoff meeting) for a Work Order, to the extent documents, plans, or CAD files are available, DCAS will furnish to the Contractor a complete set of reproducible Contract documents and CAD files pertaining to the work to be performed under its Contract. It is the responsibility of the Contractor to modify the drawings to indicate all changes and corrections, if any, occurring in the Work as actually installed.
2. The Contractor shall furnish to DCAS a USB Flash Drive containing As-Built Drawings in the most current AutoCAD format or as otherwise specified.
3. The Contractor's attention is particularly directed to the necessity of keeping accurate records of all subsurface and concealed work, so that the As-Built Drawings may contain this information in exact detail and location. Drawings should also show all connections, valves, gates, switches, cut-outs, and similar operating equipment.
4. As-Built Drawings, when required, shall contain, at a minimum, the following information depending on the trade(s) involved in a Work Order:
   a. The general contractor shall layout in its drawing or drawings the reflected ceiling plan, beam soffit elevations, ceiling heights, roof openings, etc. In addition, the general contractor shall provide to the HVAC subcontractor reflected ceiling starting points or plans, beam soffit elevations, ceiling heights, roof openings etc.
   b. The HVAC subcontractor shall prepare a drawing or drawings showing duct work, heating, and sprinkler piping. This drawing shall include location of grilles, registers, etc. and access door in hung ceilings. Locations shall be fixed by elevations and dimensions from column center lines and/ or walls.
   c. The plumbing subcontractor shall layout in its drawing or drawings the piping, valves, cleanouts, etc., indicating locations and elevations and shall indicate the necessary access doors.
   d. The Electrical Contractor shall indicate in its drawing or drawings fixtures, large conduit,

runs, clearances, pull boxes, junction boxes, sound system speakers, etc.

5. As-Built Drawings shall be submitted to the Commissioner prior to any requisition for a Substantial Completion payment and be in a form and format and shall contain the information required by the Commissioner in his/ her sole discretion.
6. Each As-Built Drawing shall bear the legend "AS-BUILT DRAWING" in heavy block lettering, 1/2-inch high and contain the following data:

   AS-BUILT DRAWING
   Contractor's Name_____
   Contractor's Address_____
   Made by_____.Date_____
   Checked by_____Date_____
   Commissioner's Representative____
7. *AS-BUILT DRAWING TITLE SHEET*- Each Contractor shall prepare a title sheet, same size as As-Built Drawings and contain the following:
   a. Heading:
      The City of New York
      Department of Citywide Administrative Services
      Division of Capital Construction and Technical services
   b. Project No./Work Order No.
   c. Name of the Project and Location and Occupant Agency
   d. Contractor's Name
   e. Record of changes (A caption description of work affected, and the date and No. of Change Order or other authorization).
   f. List of As-Built Drawings.
8. All changes from the Contract Drawings contained in the As-Built Drawings shall be conspicuously encircled and identified by change order number correlating to changes listed on "Title Sheet." The Contractor shall show within the encircled areas the work as actually installed.
9. *BULLETINS, OPERATING AND SERVICE MANUALS*- Where the Contractor has submitted prints in the form of technical bulletins, operating and Service manuals, or other printed matter as a Shop Drawing, having diagrams or drawings thereon of a material or equipment installed in the work, it shall furnish three (3) sets thereof so that the Commissioner may have all the necessary information for the proper operation maintenance and repair of the material and equipment and the ordering of spare parts.
10. All bulletins and operating and service manuals shall be compiled and indexed in the book form for the contract.
11. The Contractor shall review the As-Built Drawings with the Construction Manager on a weekly basis or as otherwise directed by the Commissioner.
12. In her/ his sole discretion, the Commissioner shall have the right not to issue a Substantial Completion and/ or a Final Completion certificate unless and until the Contractor has provided all required As-Built Drawings and other submissions and has closed out all permits that are the Contractor’s responsibility under the Contract or any Work Order.
13. As-Built Drawings shall not be required for Work Orders unless specified, in writing, by the Commissioner in such Work Order in his/ her sole discretion. If the Commissioner does require Record Drawings for a Work Order, the Contractor shall submit a proposal in accordance herewith, the reasonable cost of which shall be determined by the Commissioner and shall be paid as part of the Work Order.

ARTICLE 4- APPROVAL OF MATERIALS

(A) *LOCAL LAWS*- All materials, appliances and types or methods of construction shall be in accordance with the Specifications and shall in no event be less than that necessary to conform to the requirements of Law.

(B) *APPROVAL OF MANUFACTURER*- The names of proposed manufacturers, materialmen, and dealers who are to furnish materials, fixtures, equipment, appliances, or other fittings shall be submitted to the Commissioner for approval, as early as possible, to afford proper investigation and checking.

(C) *ALL MATERIALS*, fixtures, fittings, supplies, and equipment furnished under the Contract shall be new and unused, except as approved by the Commissioner, and of standard first-grade quality and of the best workmanship and design. The City of New York encourages the use of recycled products where practical.

(D) *INFORMATION TO SUPPLIERS*- In asking for prices on materials under any item of the Contract, the Contractor shall provide the manufacturer or dealer with such complete information from the Specifications and Drawings as may in any case be necessary, and in every case, it shall inform the manufacturer or dealer of all the general conditions and requirements herein contained.

(E) *STANDARD REFERENCES*- Whenever reference is made to the furnishing of materials or testing thereof to conform to the standards of any technical society, organization, or body, it shall be construed to mean the latest standard, code, specification, or tentative specification adopted and published at the date of advertisement for bids, even though reference has been made to an earlier standard.

(F) Reference to a technical society, organization or body may be made in the Specifications by abbreviations in accordance with the following list:

A.I.A.	American Institute of Architects
A.C.I.	American Concrete Institute
A.G.A.	American Gas Association
A.G.M.A.	American Gear Manufacturer Association
A.I.E.E.	American Institute of Electrical Engineers
A.I.S.C.	American Institute of Steel Construction
A.M.C.A.	Air Moving & Conditioning Association
A.R.I.	Air-Conditioning and Refrigeration Institute
A.S.A.	American Standards Association
A.S.H.R.A.E.	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
A.S.M.E.	American Society of Mechanical Engineers
A.S.T.M.	American Society for Testing Materials
A.W.S.C.	American Welding Society Code
A.W.W.A.	American Water Works Association
B.S.& A.	New York City Board of Standards & Appeals
C.I.P.R.A.	Cast Iron Pipe Research Association
C.T.I.	Cooling Technology Institute
FED. SPEC.	Federal Specification
I.B.R.	Institute of Boiler and Radiator Manufacturers
I.P.C.E.A.	Insulated Power Cable Engineer's Association
M.E.A.	Material Equipment Acceptance

NAVY SPEC.	Navy Department Specification
N.E.C.	National Electric Code with NYC latest amendments
N.E.M.A.	National Electrical Manufacturers Association
N.F.P.A.	National Fire Protection Association
N.Y.B.C.	New York City Building Code
N.Y.C. D.O.B.	New York City Department of Buildings
P.D.I.	Plumbing & Drainage Institute
P.P.S.	Power Piping Society
S.A.E.	Society of Automotive Engineers Standards
S.H.B.I.	Steel Heating Boiler Institute
S.M.A.C.N.A.	Sheet Metal & Air Conditioning Contractors National Association
U.L.	Underwriters' Laboratories

(G) When no reference is made to a code, standard or specification, the Standard Specifications of the ASTM or the AIEE shall govern.

(H) *SAMPLES OF MATERIALS*- The Contractor shall submit to the Commissioner for approval, samples of all materials specified to be used in the Project.

1. For samples of materials involving electrical work of any nature, see the "General Electrical Requirements."
2. Samples shall be provided in the proper amount as specified in the Contract, of sufficient size to show the quality, type, range of color, finish, and texture of the material. However, in addition thereto, after approval, three (3) additional samples showing the material, color, and texture of all interior finishes, including the finishes of exposed built-in equipment, trim, glazing, fittings, and fixtures, etc., shall also be furnished. The sizes of these additional samples shall be as directed and acceptable to the Commissioner but shall not be less than that specified in the Contract documents.
3. Each of the samples shall be labeled, bearing the name and quality of the material, the Contractor's name, date, Contract and Project, and the related specification or drawing reference to the samples submitted.
4. A letter of transmittal from the Contractor requesting approval must accompany all such samples.
5. Transportation charges to the Commissioner's office must be prepaid on all samples forwarded.
6. Samples for testing purposes shall be in accordance with the requirements of the Specifications.
7. All samples shall be provided at no additional cost to DCAS.

(I) *TIMELY SUBMISSIONS LOG/ SCHEDULE*- Samples shall be submitted in accordance with an approved Shop Drawing log to permit proper consideration without delaying any operation under the Project. Materials should not be ordered until approval is received in writing from the Consultant and the Commissioner. All materials shall be furnished equal in every respect to the approved samples.

(J) *THE APPROVAL OF ANY SAMPLES* will be given as promptly as possible, and shall be only for the characteristic color, texture, strength, or other feature of the material named in such approval, and no other. When this approval is issued by the Commissioner, in his/ her sole discretion, it is done with the distinct understanding that the materials to be furnished will fully and completely comply with the Specifications, and such determination may be made at some later date by a laboratory test or by other procedure. Use of materials will be permitted only so long as the quality

remains equal to the approved samples and complies in every respect with the Specifications, and the colors and textures of the samples previously submitted to the Commissioner for the Project.

(K) *EQUIVALENT QUALITY OF MATERIALS*- All materials and equipment which are designated in the Specifications by a number in the catalog of any manufacturer or by a manufacturer's grade or trade name, are designated for the purpose of describing the article and fixing the standard of the quality and finish. Materials and equipment which are, in the sole discretion of the Commissioner, the equivalent to that specified, will be acceptable.

(L) The submission of any material, or article, as the equal of the materials or articles set forth in the Specifications as a standard shall be accompanied by illustrations, drawings, descriptions, catalogs, records of tests, samples and any and all other information essential for judging the equality to the materials, finish, and durability of that specified as standard, as well as information indicating satisfactory use under similar operating conditions.

(M) Where the Specifications provide that the manufacturer's directions are to be used, such printed directions shall be submitted to the Commissioner.

(N) *COMMISSIONER TO SELECT INSPECTORS*- Except as specifically provided in the Specifications, the Commissioner reserves the right, in his/ her discretion, to select and designate all persons, firms, or corporations to make or witness each inspection, test or analyses, with or without reports.

(O) *REQUEST FOR INSPECTION*- The Contractor shall give notice in writing to the Commissioner sufficiently in advance of its intention to commence the manufacture or preparation of materials specially manufactured or prepared for use in or as part of the permanent construction. Such notice shall contain a request for inspection, the date of commencement and the expected date of completion of the manufacture or preparation of materials. Upon receipt of such notice, the Commissioner will arrange to have a representative present at such times during the manufacture as may be necessary to inspect the materials, or she/ he will notify the Contractor that the inspection will be made at a point other than the point of manufacture, or she/he will notify the Contractor that inspection will be waived.

(P) *NO SHIPPING BEFORE INSPECTION*- The Contractor shall comply with the foregoing before shipping any material.

(Q) *CERTIFICATE OF MANUFACTURE*- When the Commissioner so requires, the Contractor shall furnish to him authoritative evidence in the form of Certificates of Manufacture that the materials to be used in the work have been manufactured and tested in conformity with the Specifications. These certificates shall include copies of the results of physical tests and chemical analyses where necessary, that have been made directly on the product, or on similar products being fabricated by the manufacturer.

(R) When materials or manufactured products shall comprise such quantity that it is not practical to make physical tests or chemical analyses directly on the product furnished, a certificate stating the results of such tests or analyses of similar materials which were concurrently produced may, at the discretion of the Commissioner, be considered as the basis for the acceptance of such material or manufactured product.

(S) *TESTING COMPLIANCE*- The testing personnel shall make the necessary inspections and tests,

and the reports thereof shall be in such form as will facilitate checking to determine compliance with the Specifications, indicating thereon all analyses and/ or test data and interpreted results thereof.

(T) *REPORTS*- Six (6) copies of the reports shall be submitted, and authoritative certification thereof must be furnished to the Commissioner as prerequisite for the acceptance of any material or equipment.

(U) *REJECTIONS*- If, after any test, it is ascertained by the Commissioner that the material or equipment does not comply with the Specifications, the Contractor will be notified thereof, and it will be directed to refrain from delivering said materials or equipment, or to promptly remove it from the site or from the work and replace it with acceptable material at no additional cost to the City.

(V) *PRIOR WRITTEN APPROVAL*- The Contractor shall not supply any material or equipment to the Project as the equivalent of the material or equipment specifically named in the Specifications, without the prior written approval of the Commissioner. Barring the receipt of said written approval, the Contractor shall immediately proceed to furnish the designated material or equipment designated in the Specifications.

(W) *COST OF TESTS BORNE BY CITY*- Where the City conducts tests to determine compliance with the Specifications regarding materials or equipment, and where such compliance is ascertained as a result thereof, the City will bear the cost of such tests. However, if the result of any such test indicates that the Contractor failed to comply with the Specifications, the Contractor will bear the cost of such test as well as any subsequent tests to confirm compliance with the Specifications.

(X) *COST OF TESTS BORNE BY CONTRACTOR*- Where tests are specifically called for in the Specifications to be made by the Contractor, the cost thereof shall be borne by the Contractor and shall be deemed to be included in the bid price. The expenses of the testing personnel assigned by the City shall not be the Contractor's obligation. The Contractor shall reimburse the City for expenditures incurred in the making of tests on materials and equipment submitted by the Contractor as the equivalent of that specifically named in the Specifications and rejected for non-compliance.

ARTICLE 5- DELIVERY OF MATERIALS

(A) The Contractor shall furnish to the Commissioner a copy of each material order, indicating date of order and quantity of material, and shall also notify the Commissioner, when materials have been delivered to the site and in what quantities.

(B) *AMPLE QUANTITIES*- The Contractor shall deliver materials in ample quantities to insure the most speedy and uninterrupted progress of the work to complete the work within the Contract time.

(C) *SEALS/ LABELS*- Manufacturers containers shall be delivered with unbroken seals and shall bear proper labels.

(D) *THE CONTRACTOR SHALL COORDINATE DELIVERIES* to avoid delay in or impeding the progress of the work of any related contractor.

(E) *STACKING*- All materials shall be properly stacked in convenient places adjacent to the site, or where directed, and protected in a satisfactory manner. Stacked materials shall be so arranged as to not interfere with visibility of traffic control devices.

(F) *OVERLOADING*- If authority is given to store materials in any part of the building area, they shall be stored to cause no overloading.

(G) *NO INTERFERENCE*- If it becomes necessary to remove and restack materials to avoid impeding the progress of any part of the work or interfering with the work to be done by any other contractor, the Contractor shall remove and restack such materials at no additional cost to the City.

ARTICLE 6- CONTRACTOR'S SUPERINTENDENT

(A) The Contractor shall employ and retain at each work site, for each Work Order, a Foreman or Superintendent (the "Foreman"), except as otherwise specified by DCAS in a particular Work Order. The Foreman shall be fluent in spoken and written English, shall be fully competent and capable of maintaining proper supervision and care of the work, shall devote his or her time and personal attention to the Work, and shall be present at the Facility from commencement until entire completion of the Work; the Foreman shall be acceptable to the Commissioner, in the Commissioner's sole discretion. In the absence of the Contractor, and irrespective of any Foreman employed by any subcontractor, the Foreman shall ensure that the instructions of the Commissioner are carried out in an expeditious and appropriate fashion. Once approved by the Commissioner, the Foreman on the job shall not be changed or removed without the consent of the Commissioner. The Commissioner may require the Foreman to be present at each Project during all working hours at no additional cost or expense to the City.

(B) Furthermore, it shall be the responsibility of the Contractor to ensure that each Subcontractor and/ or trade provides a Foreman who shall meet the requirements set forth in 6A above.

(C) Once approved by the Commissioner, the Foreman on the job shall not be changed or removed without the consent of the Commissioner.

(D) The Commissioner reserves the right, in her/ his sole discretion, to request replacement of any Contractor's Superintendent(s) or Foremen, or other employee of the Contractor or its sub-contractor(s) performing Work under the Contract. Once notified of the Commissioner's request, the Contractor, shall replace such employee with an employee of equal or greater experience, to the Commissioner's satisfaction, in his/ her sole discretion, within no more than five (5) business days of the Commissioner making such request.

ARTICLE 7- PERMITS

(A) The Contractor shall: acquire, maintain, and submit all permits, licenses, accreditations, and waivers, provide all notices, and pay all fees required in connection with the Work under the Contract; submit such to DCAS prior to commencement of any Work; and obtain any and all regulatory agency approvals necessary and required to complete the Work.

(B) The Contractor shall submit all necessary affidavits of completion, stamped by a Professional Engineer or Registered Architect, certifying compliance with the NYC Building Code. The Contractor shall provide to DCAS copies of all such filings and proofs of compliance upon completion of work assigned under a Work Order and upon acceptance of the Work by the NYC Department of Buildings ("DOB"). All permits shall be closed out in accordance with the requirements of the agency issuing the permit or any other government agency having jurisdiction.

(C) All costs associated with the requirements of this Article including, without limitation, expediting costs, shall be deemed to be included in the bid price.

ARTICLE 8– TRANSPORTATION

(A) It shall be the duty of the Contractor to determine for itself the availability of transportation facilities and dockage for the use of its employees, equipment and material, and the conditions under which such use will be permitted.

(B) If transportation facilities and dockage are available and their use is permitted by the governmental agency having jurisdiction over them, the Contractor shall pay all necessary costs and expenses, and abide by all rules and regulations promulgated in connection therewith.

(C) The Contractor shall comply with all applicable laws, rules, and regulations that relate to the use of vehicles on highways and bridges.

(D) It is understood that the Commissioner makes no warranty as to the continued use by the Contractor of such transportation facilities and dockage.

(E) All costs and expenses associated with the requirements set forth in this Article shall be deemed to be included in the bid price.

ARTICLE 9- CUTTING AND PATCHING

(A) The Contractor shall do all cutting, patching and restoration required by its work, unless otherwise particularly specified in the detailed Specifications of its Contract or in a Work Order.

(B) At its own cost and expense, the Contractor and each Subcontractor shall restore the work of other contractors or subcontractor damaged by its work.

(C) All restoration work shall be done to the satisfaction of the Commissioner, by competent workmen skilled in the trade required by such restoration. If, in the judgment of the Commissioner, workmen engaged in restoration work are incompetent, they shall be replaced immediately by competent workmen.

ARTICLE 10- SCAFFOLDING AND LADDERS

(A) The Contractor shall furnish and securely set scaffolding required for its work and any cost or expense thereof shall be deemed included in the bid price.

(B) *ALL SCAFFOLDING* shall be made of good, sound materials, of adequate dimensions for its intended use and substantially braced and tied to ensure absolute safety for those required to use it.

(C) *LADDERS AND STAIRS*– If required by the Work, the Contractor shall provide and maintain ladders or temporary stairs extending from the street to the first story and to and from every floor and roof level of the building.

(D) *ACCESS*– If required by the Work, the ladders or temporary stairs shall be of acceptable size,

number, and location, so that proper and convenient access may be had by those required to proceed to all parts of the building.

ARTICLE 11- CERTIFICATES OF APPROVAL

(A) At its own cost and expense, the Contractor shall be responsible for and shall obtain all final approvals and/ or certificates of completion for the work installed under the Contract, in the form of such certificates that are required by all City Agencies having jurisdiction over the work of the Contract.

(B) All such certificates shall be forwarded to the Commissioner before Final Acceptance of the work of the Contract.

ARTICLE 12- ACCEPTANCE TESTS

(A) *GOVERNMENTAL AGENCIES*- All equipment and appliances furnished, and installations made under the Contract shall conform to the requirements of the Specifications and shall in no event be less than that necessary to comply with the minimum requirements of all governmental agencies having jurisdiction.

(B) *NOTICE OF TEST*- Whenever the Specifications and/ or any governmental agency having jurisdiction requires the acceptance test, the Contractor shall give written notice to all concerned of the time when these tests will be conducted.

(C) *ENERGY AND ETC. FOR TESTS*- The City will furnish energy, fuel, water, and light.

(D) The Contractor shall furnish labor and all other materials and instruments necessary to conduct the acceptance tests at no additional cost to the City.

(E) *CERTIFICATES*- The granting of Substantial Completion or Final Acceptance by the Commissioner, in his/ her sole discretion, shall be contingent upon the Contractor delivering to the Commissioner all necessary certificates evidencing compliance in every respect with the requirements of the agencies having jurisdiction.

(F) If the results of tests and controlled inspections indicate that the materials or procedures do not meet the requirements as set forth on the drawings or in the Specifications or are otherwise unsatisfactory, the Contractor shall only proceed as directed by the Commissioner. All costs resulting from retesting, replacing of materials and/ or damage to the work of other trades and any delay caused to the schedule shall be borne by the Contractor, as shall all costs of complying with such requirements.

ARTICLE 13 – PROJECT PROGRESS PHOTOGRAPHS

(A) There shall be a minimum of five (5) 8" x 10" photographs taken each month from the commencement of the Work Order to the time of completion. All digital pictures must be at least eight (8) megapixels. These photographs shall show as far as possible, the work completed within and on the exterior, of the structure. The first series of photographs shall be taken prior to the actual commencement of work at the site. In addition, as part of the submission of a requisition for Substantial Completion and/ or Final Acceptance, the Contractor shall submit five (5) photographs taken of unobstructed views of the completed Project, as directed by the Commissioner, after all scaffolding, hoists, shanties, field offices or other temporary work has been removed and final cleaning done. For demolition work included in the Contract there shall be five (5) photographs taken before commencement of demolition operation, five (5) at mid-point of operations and five (5) at the completion of demolition operations.

(B) All required photographs shall be provided in a computer-readable digital format as determined by the Commissioner. The Commissioner at his/ her sole discretion may also request tangible, physical photographs to be provided as well. Said photographs shall be 8" x 10" gloss finish, mounted with a 1" binding flap of muslin on the left side. They shall be marked on the back, with date of exposure, the title of the Project and the specific location. Five (5) copies of each photograph shall be furnished free of charge to DCAS, as shall all digital photographs. Photographs shall be taken as ordered by the Commissioner.

ARTICLE 14- JOB MEETINGS

(A) Meetings shall be held as scheduled by the Construction Project Manager, at which time the Contractor and any subcontractor(s) shall have their representatives present to discuss all details relative to the execution of the work. Attendance by the Contractor and all subcontractors at all these job meetings shall be deemed included in the bid price.

(B) The Construction Project Manager shall preside over these meetings and the Consultant or other person designated by DCAS shall record the minutes thereof. Prior to each meeting the Construction Project Manager will consult with the Contractor(s) and will prepare an agenda of items to be discussed. In general, after informal discussion of any item on the agenda, the Consultant will summarize the discussion in a brief written statement, and copies shall be furnished to DCAS and the Contractor(s).

(C) Job meetings may also be called by the Contractor for the purpose of coordinating, expediting, and scheduling the work of the Contract or Work Order. The Contractor and their subcontractors, materialmen, or vendors whose presence is necessary are required to attend. These meetings may, be held at the same place and immediately following the job meetings held by the Construction Project Manager.

(D) *Construction Project Manager*- Minutes of these meetings shall be recorded, typed, and printed by the Contractor and distributed to all parties concerned.

ARTICLE 15- GUARANTEES

(A) *ADDITIONAL GUARANTEES*- In addition to the guaranty of the work as stipulated in the "Agreement", the Contractor hereby guarantees the portions of the work indicated by the Specifications for the periods listed below, said periods to run concurrently with the guaranty period in the Agreement.

(B) The Contractor shall furnish written guarantees for such work as required by the Specifications, in the form below the Guarantee Period Requirements.

NO FURTHER TEXT ON THIS PAGE

DEPARTMENT OF CITYWIDE ADMINISTRATIVE SERVICES
GUARANTEE PERIOD REQUIREMENTS

NOTE: If there is any conflict between the guarantee periods set forth in these General Conditions and those set forth in the Specifications, the longer period shall control.

Paving and Surfacing	2 years
Landscaping (Plant Material)	2 years
Sprayed On Fireproofing	2 years
Intumescent Fireproofing	2 years
Wood Floor	2 years
Waterproofing	5 years
Membrane Waterproofing	5 years
Cement Coat Waterproofing	5 years
Roofing (Workmanship)	5 years
(Materials)	10 years
Sheet Metal & Flashing	5 years
Insulation	5 years
Caulking & Sealants	2 years
Aluminum Windows & Accessories	2 years
Aluminum Doors & Storefront	5 years
Skylights	2-5 years
Hollow Metal Doors	2 years
Wood Door	5 years
**Guarantee shall be for the life of the installation. Warped more than what is listed in the AWI Standards, shall be considered a defect.	
Finished Hardware	2 years
Epoxy Terrazzo &Terrazzo	2 years
Ceramic Tile	3 years
Vinyl Composition Tile	2 years
Carpeting (Wear)	5 years
(Anti-Static)	5 years
(Edge Ravel)	5 years
Special Coatings	2 years
Plaster	2 years
Mirrors	5 years
Laminated Glass	5 years
Insulated Glass	5 years
Demountable Partitions	2 years

NO FURTHER TEXT ON THIS PAGE

GUARANTEE

PROJECT _____

_____

CONTRACT No. _____

WORK ORDER NO. _____

_____

GUARANTEE TO BE IN EFFECT FROM _____

TO _____

The Contractor hereby guarantees that the work specified under the above section of the aforesaid Contract will be free from defects of material and/or workmanship, for the period(s) indicated above.

The Contractor also guarantees that it will promptly repair, restore, rebuild or replace whichever may be deemed necessary by the City, any or all defective material or workmanship of the aforementioned section, that may appear within the guarantee period and any finished work to which damage may occur because of such defects, to the satisfaction of the City and without any cost or expense to the City.

The Contractor hereby agrees to pay to the City the cost of the repairs or replacements should the City make the same because of the failure of the Contractor to do so.

_____
Contractor

_____
By

Subscribed and sworn to before me this

day of , 20_____

_____
Notary Public

ARTICLE 16- REMOVAL OF RUBBISH AND SURPLUS MATERIALS

(A) Rubbish shall not be thrown from the windows or other parts of the building. All rubbish, dirt and other dust-producing material shall be wetted down from time to time.

(B) The Contractor shall sweep up and deposit, at a location designated on each floor by the Commissioner, all rubbish, debris, and waste materials, as it accumulates daily or when directed by the Commissioner. Material packaging shall be broken up, neatly bundled, tied, and stacked ready for removal.

(C) The Contractor shall be responsible for the removal of all rubbish, etc., from the site of Project. It shall remove from the designated locations all piles of rubbish, debris, waste material and material packaging as they accumulate and when directed by the Commissioner and shall cart them away from the site of the Project. It shall employ and keep engaged for this purpose an adequate force of laborers.

(D) The Commissioner reserves the right to use the agency's own forces to remove the Contractor's rubbish, etc. if the Commissioner determines, in his/ her sole discretion, that the Contractor is failing to promptly remove the rubbish, etc. is delaying the progress of the Project or interfering with building operations or for such other reason as the Commissioner deems appropriate.

1. In the event DCAS uses its own forces to remove the Contractor's rubbish, etc., any cost or expense including, without limitation, personnel costs incurred by DCAS for such removal, shall be deducted from the Contractor's next requisition. If DCAS determines, in its sole discretion, to use its own forces for this purpose, DCAS shall provide the Contractor with 24 hours' notice, to afford the Contractor an opportunity to comply with the requirements of this section.

(E) The Contractor shall remove from the site all surplus materials when there is no further use for same.

(F) At the conclusion of the Work, all materials belonging to the Contractor shall be promptly taken away.

ARTICLE 17- CLEANING

(A) When directed by the Commissioner and before the issuance of Substantial Completion or Final Acceptance or any other payment to the Contractor, the entire work area shall be cleared of all rubbish and thoroughly cleaned by the Contractor. This requirement shall be deemed to mean that all floors shall be scrubbed, washed, or mopped as may be required, and that all ceilings, all wall surfaces, etc., and all other work and finish installed by the Contractor shall be thoroughly cleaned of all dirt, dust, and paint spots.

(B) The Contractor shall thoroughly clean all equipment and materials furnished and installed and shall deliver over such materials and equipment undamaged in a bright, clean, and new appearing condition at time of Substantial Completion or Final Acceptance.

ARTICLE 18- INSPECTIONS BY OTHER CITY AGENCIES

(A) Prior to Substantial Completion of a Project, DCAS and/ or the Contractor, as the Commissioner in his/ her sole discretion shall direct, will file in the Department of Buildings, if necessary, an application for a Certificate of Occupancy for the Facility where Work was performed and/ or an

application for any other approval(s) necessary to complete the Work Order, Project or Contract (collectively referred to as "Applications").

(B) Prior to Final Acceptance, the Contractor will be required to arrange for all final inspections by the inspectional staff of the Department of Buildings or other City Agencies having jurisdiction over such Applications, and secure all reports, certificates etc. by such inspection staff or other City Agencies, in order that the Certificate of Occupancy or other required approvals can be issued without delay.

(C) Unless otherwise specified, all costs and expenses of any kind or nature whatsoever shall be deemed included in the Contractor's bid price.

ARTICLE 19- PROTECTION OF WORK AND PROPERTY

(A) All Contractors shall be under an absolute obligation to safeguard and protect their own work, materials, tools and equipment and the repair or replacement of such items due to damage or theft or any other reason shall be at the Contractor's sole cost and expense.

(B) The provision by DCAS of security guards in the building where a Work Order is being performed shall not diminish in any way the responsibility of the Contractor to protect its own work, materials, tools, equipment, or for any of the other risks and obligations outlined in this Contract.

ARTICLE 20- CONTRACTOR'S DAILY REPORTS/ SIGN-IN SHEETS

(A) As soon as the Contractor has started work on a Project under a Work Order, it shall submit to the DCAS written daily reports of the Work performed the previous day by any of its employees, including the employees of its subcontractors.

(B) The reports shall be prepared by the Contractor's Superintendent and shall bear his signature. Each report shall contain the following information:

1. The type of materials and/ or major equipment being installed by the Contractor and the total number of employees working in each category on that day.
2. The names of the subcontractors working and the type of materials and/ or major equipment being installed by each, together with the total number of employees working for each subcontractor on that day.
3. The major construction equipment being used by the Contractor and/ or subcontractor.

ARTICLE 21- ALTERNATE OR SUBSTITUTE EQUIPMENT

(A) In general, the Drawings and Specifications may show and describe arrangements suitable for the specific items of equipment either named or described. In the event that a Contractor submits for approval, and receives such approval, of a device or piece of equipment which requires connections (vacuum, gas, steam, water, air, electric, etc.) or arrangements of these services, differing from those indicated or described in the Contract Documents or any Work Order, it shall be incumbent upon the Contractor submitting the alternate or substitute equipment to give immediate notice to the subcontractor(s), materialmen, and/ or vendors involved so that they may make suitable alterations in the work to accommodate the substitute or alternate equipment. The Contractor making the substitution shall be responsible for any and all additional costs incurred by virtue of the substitution of equipment for the equipment named or described in the Contract Documents.

ARTICLE 22– SLEEVE AND PENETRATION DRAWINGS

(A) As soon as practicable after the commencement of Work, and when the order in which concrete for the first slabs, walls, etc. is to be poured is apparent, the Contractor shall submit to DCAS or the Consultant, as determined by DCAS in its sole discretion, a sketch indicating the location and size of all penetrations for sleeves, conduit, ducts, etc., which will be required to accommodate the Work, so that they may determine whether such penetrations will materially weaken the building structure. If the sketch is approved, it will be stamped and returned to the Contractor, otherwise comments will be transmitted to the Contractor. The Contractor shall continue to submit sketches as the pouring schedule and concrete Work progresses; the Contractor shall not predicate its layout Work on those sketches until approval thereof.

ARTICLE 23- LOCATION OF PARTITIONS

(A) Prior to the commencement of installation of partitions, the Contractor shall locate all of the partitions on the floor slabs (including the door openings) in a manner approved by the Resident Engineer.

(B) Within three (3) weeks after the concrete slabs have been poured on each floor level, the Contractor shall locate all the partitions on the floor slabs (including the door openings) in a manner approved by the Resident Engineer

ARTICLE 24- FURNITURE AND EQUIPMENT

(A) The Contractor is responsible for moving all loose furniture and/ or equipment in all areas, when such furniture and/ or equipment shall interfere with the proper performance of its work provided, however, it shall be the responsibility of the tenant agency, before commencement of Work in its space, to empty file cabinets, clear desks, remove personal items and to move computers and printers. If the tenant agency fails to do so, the Contractor shall be entitled to payment for its reasonable Labor costs.

(B) All such furniture and/ or equipment must be adequately protected from damage and returned to their original locations when directed to do so by the Commissioner.

ARTICLE 25- OVERTIME WORK (ORDERED BY COMMISSIONER)

(A) *COMMISSIONER RESERVES THE RIGHT TO ORDER AND PAY OVERTIME WORK, UNDER THE FOLLOWING CONDITIONS*:

1. The Commissioner can order overtime work when, in his/ her sole discretion, delay occurs, and such delay is not the fault of the Contractor; or
2. When work is of such an important nature that the Commissioner, in his/ her sole discretion, determines that delays in completing such work to completion would result in serious disadvantage to the public or necessary governmental operations.

(B) *ORDER FOR OVERTIME WORK*- When overtime work is ordered by the Commissioner, such "Order" will be issued in writing and signed by the Commissioner or a designated representative.

(C) CONTRACTOR'S PROCEDURE PRIOR TO COMMENCING WORK:

1. Make immediate application to Commissioner of Department of Labor,

State of New York, for dispensation in accordance with Subdivision 2 of Section 220 of the Labor Law.

2. Upon receipt of such dispensation, proceed expeditiously with ordered overtime work.

ARTICLE 26- COMPLIANCE WITH OSHA AND OTHER SAFETY REGULATIONS

These Contract Documents and the Work hereby contemplated shall be governed, always, by the following Federal Laws and all other applicable State and/ or City laws, rules, and regulations.

(A) Occupational Safety and Health Act of 1970, Public Law 91-596;

(B) 29 CFR Part 1910- OCCUPATIONAL SAFETY AND HEALTH STANDARDS;

(C) 29 CFR Part 1926- SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION.

These Contract documents and the Work hereby contemplated shall also be governed at all times by any and all applicable State and/or City laws, rules and regulations.

ARTICLE 27- TEMPORARY SERVICES

(A) HEATING AND COOLING – Should any other temporary services, including heating and cooling, not specified in this Contract be required as a result of the Contractor's coordination or failure thereof, the Contractor shall be solely responsible for the costs and expenses associated therewith, these services shall be provided by the Contractor at no additional cost to the City.

(B) *ELECTRICITY* for temporary light and the operation of small tools, is available in the area of this Project, and will be furnished to the Contractor without cost.

(C) *TOILET FACILITIES*- The Contractor shall arrange with the Commissioner for the temporary use of certain toilets or washrooms within the building for the use of all employees during the execution of the work.

(D) The Contractor shall maintain all toilet facilities utilized by its employees in a clean and sanitary manner and make all necessary repairs due to misuse.

(E) *NUISANCES*- No Contractor shall cause any sanitary nuisances to be committed by its employees in or about the work. The Contractor shall enforce all sanitary regulations of the City and State Health Authorities.

(F) Should any other temporary services, including heating and cooling, not specified in this Contract be required as a result of the Contractor's coordination or failure thereof, the Contractor shall be solely responsible for the costs and expenses associated therewith, these services shall be provided by the Contractor at no additional cost to the City

(G) When failure to comply with the terms and conditions of this Contract necessitates any temporary services and results in timelines for completion of the work being extended, including extensions beyond the date set for completion of the Contract, the Contractor requiring such additional services shall bear the sole cost and expense for such services.

ARTICLE 28- TEMPORARY USE, OPERATION & MAINTENANCE OF ELEVATORS DURING CONSTRUCTION IN EXISTING BUILDINGS

(A) The Contractor may use, at the Commissioner's sole discretion, one (1) selected elevator in the building for temporary operation by the Contractor for the transportation of employees of all contractors and representatives of DCAS and other Governmental Agencies having jurisdiction over work at the building. It shall maintain for such elevators, all necessary hoisting ropes, governor cables, traveling conductor cables, operating devices, hand reset target annunciators, signal devices, and all other permanent or temporary parts required by the municipal, insurance and other authorities for elevators in temporary use.

(B) During the period of temporary operation, the Contractor shall assume full responsibility for injury to persons or damage or destruction to property, including the elevator equipment and cab interior, shall employ and pay wages both regular and overtime when necessary of all operators and maintenance men, pay the cost for lubricants and parts for maintaining the temporary elevators in clean proper operating condition in pits, shaft-way and machine rooms including the cost of making any replacements required during such temporary operation.

(C) The Contractor shall keep the temporary elevator activated from a period fifteen (15) minutes before the established starting time in the morning to fifteen (15) minutes after the established quitting time in the evening. This applies to every day in the week which is established as a regular working day for these trades.

(D) The Contractor shall replace with new, any of the equipment or parts of the elevator, for temporary operation that were damaged, destroyed, or that indicate excessive wear or corrosion excepting the replacement of hoisting ropes. All shaft-ways, pits, motor rooms and sheave spaces used for temporary operation of elevators shall be thoroughly cleaned down. Where lubricated rails are used, they shall be washed down, if roller guides are used, all rust, dirt, etc., must be removed from the rails. The full cost of parts replacement, cleaning, etc., shall be borne by the Contractor except for the replacement of hoisting ropes.

(E) The elevator for temporary operations shall not be used during its operation for hoisting of materials or removal of rubbish but shall be limited only to the transportation of employees of all contractors and the representatives of the City and other Governmental Agencies having jurisdiction of work at the building. However, the Commissioner may grant special permission at specified times to the Contractor and any subcontractor(s) to hoist materials which in the Commissioner's opinion will not overload or damage the elevator installation. The Contractor shall be responsible for any damage to the elevator during the entire period of such use. The Contractor shall give notification in writing to the Commissioner of any alleged damage to the elevator installation within 24 hours after the elevator has been employed for the hoisting of materials.

(F) The Contractor shall pay all costs for the operation and maintenance of the elevator for temporary operation. All costs in connection with the elevator and equipment shall be deemed to be included in its bid price.

(G) *OVERTIME USE*- Whenever the Contractor and any subcontractor(s) work before or after the regular work hours as indicated in Article 28 (C) above, or on a Saturday, Sunday, or Holiday, the Contractor shall pay for the operation and maintenance of the elevator, at the union daily rates but increased to reflect the difference between regular wage rates and overtime wage rates. The City will not pay any contractor for such overtime use of the elevator.

ARTICLE 29- GENERAL MECHANICAL REQUIREMENTS

THIS ARTICLE SETS FORTH THE GENERAL MECHANICAL INFORMATION AND ROUTINES REQUIRED FOR MECHANICAL WORK UNDER THIS PROJECT. ANY MECHANICAL ITEM SPECIFIED IN ANY CONTRACT OR DESCRIBED OR SHOWN IN ANY DETAIL ON THE DRAWINGS, WHICH IS MORE STRINGENT THAN THESE GENERAL MECHANICAL REQUIREMENTS, OR DEVIATES FROM THE ROUTINES DESCRIBED HEREIN, SHALL GOVERN. WHEN THE WORK OF THIS PROJECT IS A SINGLE CONTRACT, ALL REFERENCES TO ANOTHER CONTRACTOR IN THESE GENERAL MECHANICAL REQUIREMENTS SHALL BE INTERPRETED TO BE THE RESPONSIBILITY OF THE SINGLE CONTRACTOR.

(A) The General Mechanical Requirements contained herein shall be followed by all Contractors furnishing and installing mechanical equipment under this Contract.

(B) "Concealed" piping and ducts shall mean piping and ducts hidden from sight in masonry or other construction, in floor fill, trenches, partitions, hung ceilings, furred spaces, pipe shafts and in service tunnels not used for passage. Where piping and ducts run in areas which have hung ceilings, such piping and ducts shall be installed in the hung ceilings.

(C) *THE CONTRACT DRAWINGS* are in part diagrammatic and show the general arrangement of the equipment, ducts and piping included in the Contract and the approximate size and location of the equipment. The Contractor shall follow these drawings in laying out the work and shall consult the drawings to familiarize himself with all conditions affecting it and to verify the spaces in which it will be installed. The Contractor shall cooperate with the Public Utilities doing certain necessary work for this Project. The attention of the Contractor is called to the Drawings of the Work for the location, arrangement and extent of plumbing and other fixtures and equipment. All work shall be installed in locations as shown on these drawings.

(D) *CERTIFICATES, PERMITS*- No demolition or installation work shall be performed without the Contractor first obtaining a Work Permit from the Department of Buildings. Work shall not be considered substantially complete without the Contractor having first obtained the applicable Equipment Use.

(E) *Permit from the Department of Buildings*- On completion of the work the Contractor shall obtain certificates of approval, acceptance and of compliance with all laws from all Authorities having jurisdiction over the work and shall deliver these certificates to the Commissioner. The work shall not be deemed complete until the certificates and/ or permits have been delivered.

(F) *SUBMITTALS*- Contractors doing mechanical work shall submit, as directed, Shop Drawings, roughing drawings, manufacturer's Shop Drawings, field drawings, cuts, bulletins, etc., of all materials, equipment, installation and startup instructions, operation and maintenance and system manuals, training plan and materials. The equipment submittal shall include, but not be limited to, part-load performance data and curves.

(G) Drawings shall be submitted for approval within 60 days after the issuance of either the Notice to Proceed or a Work Order, if so directed by DCAS in its sole discretion, and in any case at least 20 days prior to the date of the manufacture of the materials for the installation of the work involved.

(H) *ACCESSIBILITY, SERVICABILITY, SAFETY*- All work shall be installed by the Contractor to readily be accessible for inspection, operation, maintenance, and repair. Minor deviations from the arrangement indicated on the Contract Drawings may be made to accomplish this, but they shall not be made without approval by the Consultant and the Commissioner. Gages, sensors, and controls in ductwork and piping shall be properly located to provide accurate response to actual fluid conditions as well as visible and accessible to operations staff. The Contractor shall comply with all fall protection provisions and other safety requirements required by OSHA and all other relevant authorities having jurisdiction over such matters.

(I) *CHANGES IN PIPING, DUCTS, AND EQUIPMENT*- Wherever field conditions are such that for proper execution of the work reasonable changes in location of piping, ducts and equipment are necessary and required, the Contractor shall make such changes as directed and approved, without extra cost to the City.

(J) *CLEANING OF PIPING, DUCTS, AND EQUIPMENT*- Piping, ducts and equipment shall be thoroughly cleaned by the Contractor of all dirt, cuttings and other foreign substances. Should any pipe, duct, or other part of the several systems be stopped by any foreign matter, the Contractor will be required to pay for disconnecting, cleaning and reconnecting wherever necessary for the purpose of locating and removing obstructions. The Contractor shall pay for repairs to other work damaged while removing obstructions.

(K) *SIMILAR EQUIPMENT*- Unless otherwise particularly specified, all equipment of the same kind, type, or classification, and used for identical purposes, shall be the product of one manufacturer.

(L) *MACHINERY PARTS* shall conform exactly to the dimensions shown on the drawings. The equivalent parts of identical machines shall be identical so that they can be interchangeable.

(M) All grease lubricating fittings on equipment shall be of a uniform type and shall be readily accessible, and types proposed to be used shall be submitted for approval.

(N) *GUARDS*- All machinery shall be designed with protecting guards conforming with the requirements of the Industrial Code of the New York State Department of Labor.

(O) *LIMIT SWITCHES*- Unless otherwise specified, limit switches and other mechanically actuated switches shall be enclosed in tight metal boxes and be installed in the proper locations ready for conduit connections. Switches shall be complete with all supports, stops, cams, arms, tripping, and operating members, which shall be adjustable where required for proper functioning.

(P) *EQUIPMENT DESIGN*- Equipment and appurtenances shall be designed in conformity with all relevant applicable standards including, but not limited to ASME, ASHRAE, ARI, AMCA, IBR, CTI, NFPA, PDI, UL, SMACNA, and shall be of rugged construction and of sufficient strength to withstand all stresses which may occur during fabrication, testing, transportation, installation, and all conditions of operations. Adequate stays, braces and anchors shall be provided. All bearings and moving parts shall be adequately protected against wear by bushings, or other approved means, and shall be fully lubricated by readily accessible devices. Details shall be designed for appearance as well as utility. Protruding members, joints, corners, gear covers, and the like shall be finished in appearance. All exposed welds shall be ground smooth, and the corners of structural shapes shall be mitered.

(Q) *SUPPORTING STRUCTURES*- Unless otherwise specified, supporting structures for equipment

to be furnished by the Contractor shall be built by it of sufficient strength to safely withstand all stresses to which they may be subjected, within permissible deflections, and shall meet the following standards:

1. Structural Steel- ASTM Standard Specifications, AISC and NYBC.
2. Concrete for supports for equipment shall conform to the Specifications for concrete herein, but in no case shall be less than the requirements of the NYBC for average concrete.
3. Steel reinforcement for concrete shall be of intermediate grade and shall meet the requirements of the Standard Specifications for Billet Steel-Concrete Reinforcement Bars, ASTM.

(R) *ENGINEER'S ASSUMED DESIGN DATA*- All structural steel, concrete and reinforcement indicated or specified to support the equipment or appurtenances and the area immediately adjacent thereto have been designed from data based on assumed average anticipated clearances and loading. The final structural design in these locations will be based on definite data received from the Contractor after the Consultant and the Commissioner approves the equipment and appurtenances to be installed. The Consultant and the Commissioner will then redesign, if necessary, the supporting structure to properly support and maintain the approved equipment and appurtenances. Necessary major changes in design will be covered by Supplementary Drawings which will be furnished to the Contractor. All changes indicated or necessary to accommodate the equipment and appurtenances, shall be incorporated into the Working Drawings submitted for approval, and the cost of furnishing and installing the work necessitated by these changes shall be borne by the Contractor furnishing the equipment.

(S) *INSTALLATION OF EQUIPMENT*- Equipment shall be erected in a neat and workmanlike manner on the foundations, at the locations and elevations shown on the Contract Drawings or as required. All equipment shall be correctly aligned, leveled and adjusted for satisfactory operation and shall be installed so that proper and necessary connections can be made readily between various units and with piping and equipment that may be installed under other contracts. When required by the Specifications, the Contractor shall obtain the assistance of a competent and experienced Engineer or Superintendent, in the employ of the manufacturer, to install the equipment.

(T) *ELIMINATION OF NOISE*- All work provided under the Contract shall operate without objectionable noise or vibration.

(U) Should operation of any one or more of the several systems produce noise or vibration which is, in the opinion of the Commissioner, objectionable, the Contractor shall at its own expense make changes in piping, equipment, etc. and do all work necessary to eliminate objectionable noise or vibration.

(V) Should noise or vibration found objectionable by the Commissioner be transmitted by any pipe or portions of the structure from equipment installed under the Contract, the Contractor shall at its own expense install such insulators and make such changes in or additions to the installations as may be necessary to prevent transmission of this noise or vibration.

(W) *GROUTING*- The Contractor shall furnish all material and labor for proper bedding on Portland Cement grout, the equipment, or its supporting base. Grout shall consist of one (1) part Portland Cement and one (1) part of approved sand. The top of masonry foundation shall be properly cleaned and wetted before grouting. Grout shall completely fill all spaces between the equipment, or base, and the foundation, and it shall generally average 1" in thickness. Leveling wedges shall not be removed before the grout has reached its final set. Voids left by wedges shall be pointed with grout.

Exposed surface of the grout shall have a finished appearance.

(X) *PRELIMINARY FIELD TEST*- As soon as conditions permit, the Contractor shall furnish all necessary labor and materials for and shall make preliminary field tests of the equipment to ascertain compliance with the requirements of the Contract. If the preliminary field tests disclose equipment which does not comply with the Contract, the Contractor shall, prior to the acceptance test, make all changes, adjustments and replacements required.

(Y) *COMMISSIONING TESTS*- The Contractor shall be responsible for performing commissioning tests, using procedures approved by the Engineer designing the system and commissioning authority, if any, documenting the results and submitting them to the Commissioner and any agency having jurisdiction over the matter, and demonstrating tests for acceptance. The tests shall include, but not be limited to, Static Tests, Component and Subsystem Tests and System Commissioning Tests. Functional testing shall not be performed until installation verification, and start-up TAB (Testing, Adjustment & Balancing) have been completed for a given system. The controls system and all equipment controlled by it shall not be functionally tested until all points have been calibrated and testing is completed. The Contractor shall factor the costs of these tests into its bid for Projects involving installation of a complete system including, but not limited to, installation of a cooling tower system, chiller system, or air conditioning system.

1. For the purposes of this Contract, the term “commissioning tests” shall mean tests that relate to HVAC equipment, beginning with static tests (testing air/ water leakage, insulation integrity, etc.), and followed by start-up, component and apparatus tests, sub-system tests and system tests.

(Z) *INSTRUCTIONS ON OPERATION*- At the time the equipment is placed in permanent operation by the City, the Contractor shall make all adjustments and tests required by the Commissioner to prove that such equipment is in proper and satisfactory operating condition. It shall instruct the City's operating personnel on the proper maintenance and operation of the equipment for the period of time called for in the Specifications.

NO FURTHER TEXT ON THIS PAGE

ARTICLE 30- GENERAL ELECTRICAL REQUIREMENTS

THIS ARTICLE SETS FORTH THE GENERAL ELECTRICAL INFORMATION AND ROUTINES REQUIRED FOR ELECTRICAL WORK UNDER THIS PROJECT. ANY ELECTRICAL ITEM SPECIFIED IN ANY CONTRACT OR DESCRIBED OR SHOWN IN ANY DETAIL ON THE DRAWINGS, WHICH IS MORE STRINGENT THAN THESE GENERAL ELECTRICAL REQUIREMENTS, OR DEVIATES FROM THE ROUTINES DESCRIBED HEREIN, SHALL GOVERN. WHEN THE WORK OF THIS PROJECT IS A SINGLE CONTRACT, ALL REFERENCES TO ANOTHER CONTRACT OR CONTRACTOR IN THESE GENERAL ELECTRICAL REQUIREMENTS SHALL BE INTERPRETED TO BE THE RESPONSIBILITY OF THE SINGLE CONTRACTOR.

I *PROCEDURE-ELECTRICAL APPROVALS*

SCOPE: This section sets forth the general electrical information and the special routines for the approvals of electrical work under all Contracts.

(A) *ELECTRIC SERVICE*- All electric service supply is subject to commercial and operating variation of the utility company. Proper provision shall be made to have all apparatus operate normally under these conditions.

(B) *SUPERVISION AND ACCEPTANCE*- All electrical work and equipment shall be installed under the supervision of the Commissioner. Final Acceptance and approval of the work will be contingent upon the inspection and test of the installation by the City, upon completion of the work.

(C) *TESTS*- The Contractor shall notify the Commissioner when it will examine and begin work and shall also notify the Commissioner when it has completed the work and is ready to have it inspected and tested. Upon completion of the work and prior to final payment, tests shall be made as required by the Commissioner of all electrical materials, electrical and associated mechanical equipment, and of appliances installed hereunder. The Contractor shall furnish all labor and material for such tests. Should the tests show that any of the material, appliances or workmanship are not first class or not in compliance with the Contract, the Contractor on written notice shall remove and promptly replace them with other materials in conformity with the Contract.

(D) *DEPARTMENT OF BUILDINGS (DOB) CERTIFICATE OF ELECTRICAL INSPECTION*- The Contractor shall submit to DCAS a Certificate of Electrical Inspection, certifying that all electrical work performed under the Contract complies with the electrical code technical standards adopted pursuant to New York City Administrative Code section 27-3024. Pursuant to Article 45 of the standard construction contract, final payment shall not be made unless the Contractor provides the Certificate of Electrical Inspection.

(E) *RESPONSIBILITY FOR CARE AND PROTECTION OF EQUIPMENT*

1. The Contractor furnishing any equipment shall be responsible for the equipment until it has been finally inspected, tested, and accepted, in accordance with the requirements of these Specifications.
2. After delivery and before and after installation, the Contractor shall protect all equipment against theft, injury, or damage from all causes. It shall carefully store all equipment received for work which is not immediately installed. If any apparatus has been subject to possible injury by water, it shall be thoroughly dried out and put through a special dielectric test as directed by the Commissioner, at the expense of the Contractor or replaced by the Contractor at no additional cost to the City.

(F) *UNIFORMITY OF EQUIPMENT*- Two or more pieces of apparatus or materials of the same kind, type or classification and being used for identical types of service, shall be made by the same manufacturer.

(G) *CONTROVERSY*- Should there be any controversy or difference of opinion as to the meaning of either the Drawings or Specifications for electrical installations, the same shall be referred to the Commissioner, who shall give his/ her decision. This decision shall be final and accepted as such by the Contractor.

(H) *CONTRACTOR'S ELECTRICAL DRAWINGS AND SAMPLES FOR APPROVAL*

1. The Contractor shall submit to the Commissioner for approval complete dimensional drawings of all equipment, wiring diagrams, motor test data, details of control, and installation layouts, showing all details and locations and including all schedules, descriptions, and supplementary data to comprise complete working drawings and instructions for the prosecution of the work. A description of the operation of the equipment and controls shall be included. A letter in triplicate shall accompany each submittal.
2. The Contractor shall submit duplicate samples of such materials and appliances as may be requested by the Commissioner for approval. These samples shall be properly tagged for identification and submitted for examination and test. After the samples are approved, one sample will be returned to the Contractor and the other sample will be filed in the office of the Commissioner for inspection use. After the contract is completed, the duplicate samples will be returned to the Contractor.

(I) *TIMELINESS*- All material shall be submitted in ample time for the program of construction. Failure to promptly submit acceptable samples and working drawings will not be accepted as grounds for an extension of time. The Commissioner may decline to consider submittals unless all related items are submitted at the same time.

(J) *CONTRACTOR'S STATEMENT WITH SUBMITTALS*- All drawings, blueprints, catalogues, models, samples and other data relative to the equipment, the materials, the work or any part thereof submitted for approval are to be accompanied by a statement that they have been examined by the Contractor and that the drawings, data and other material submitted agree with the requirements of the Contract and Specifications and shall list and describe the points of disagreements, if any exist. In the absence of such statement, approvals will be given with the understanding that articles of equipment or materials or methods of installation are in substantial compliance with the Contract and that if the adoption of these designs, details, articles, equipment, materials, constructions, installations, places and location necessitates changes, alterations or replacements at an increased cost to himself or others, the Contractor making the substitution for the specified equipment or material shall bear all such additional expense involved.

(K) *BULLETINS AND INSTRUCTIONS*- The Contractor shall furnish and deliver to the Commissioner after acceptance of the work, four complete sets of instructions, technical bulletins, and any other printed matter (diagrams, prints, or drawings) required to provide complete information for the proper operation, maintenance and repair of the equipment and the ordering of spare parts.

II *TEMPORARY LIGHTING, SITE SECURITY LIGHTING & POWER*

SCOPE: This Section sets forth the general conditions and procedures relating to temporary lighting, site security lighting and power during the construction period, and is applicable to and binding on all contracts insofar as they are affected.

(A) The Contractor for Electrical Work shall furnish, and connect to a designated circuit breaker panel, a system of temporary lighting to illuminate the entire area where work is being performed and points adjacent to the work (hereinafter referred to as the "Temporary Lighting System"). The Temporary Lighting System shall consist of factory- manufactured temporary lighting strings. The strings shall consist of a heavy-duty cable with integral molded light sockets for 100-watt incandescent lamps. The light sockets shall have a molded flange with a hole, sized to support the lamp socket and cable, and shall be equipped with a locking-type lamp guard. The light string shall originate at a junction box. The Electrical Contractor shall provide a local light switch for control of the Temporary Lighting System.

(B) The lights shall be powered from a ground fault interrupting circuit breaker. Energy for the Temporary Lighting System for minor rehabilitation projects (those projects whose existing distribution system is not being changed or modified under the scope of this Project) may be taken from the existing electrical distribution system if the existing system is of adequate capacity for the additional temporary lighting load. The lights shall be powered from a ground fault interrupting circuit breaker. The Electrical Contractor is to cooperate and coordinate with the facility custodian so as not to interfere with the normal operation of the facility.

(C) Energy for the Temporary Lighting System for new buildings and for those existing buildings that are not covered in the preceding Article 30 Section 1, shall be provided as in the following sections.

(D) Receptacles for temporary power during construction shall be provided in work areas, with a maximum spacing of 25 feet. All temporary receptacles shall be ground fault circuit interrupting type or shall be protected by ground fault interrupting circuit breakers. Receptacles shall be mounted in cast aluminum or cast-iron alloy outlet boxes with threaded hubs and shall be provided with in-use wet location covers. A maximum of three duplex receptacles shall be connected to a 20 ampere, 120-volt circuit.

(E) Wiring for temporary lighting and receptacles, within the existing building, shall be type MC cable as defined in NFPA 70, and shall contain an insulated ground wire. Minimum conductor size shall be No. 12 AWG solid copper with type THHN/THWN insulation.

(F) *CONNECTION TO UTILITY LINES*- Temporary electric service for use during construction shall be provided as follows: The Contractor for Electrical Work shall provide adequate service for the Temporary Lighting System, or a minimum of 100 Amperes, 3 phase, 4 wire service for the Temporary Lighting System, whichever is greater, and make all necessary arrangements with the Public Utility Company and pay all charges by them, for the Temporary Lighting system. The Contractor for Electrical Work shall include in its bid any charges which may be made by the Public Utility Company for extending its electrical facilities, and for making final connections. It shall make payment directly to the Public Utility Company.

(G) *APPLICATIONS FOR METER*- The Contractor for Electrical Work shall make application to the Public Utility Company and sign all documents necessary for, and pay all charges incidental to, the installation of a watt hour meter or meters for Temporary Lighting. The Contractor for Electrical Work shall pay to the Public Utility Company, all bills for Temporary Lighting energy used throughout the work, as they become due.

(H) *SERVICE AND METERING EQUIPMENT*- The Contractor for Electrical Work shall furnish and install, at a suitable location on the site, approved service, and metering equipment for the Temporary Lighting System, ready for the installation of the Public Utility Company's metering devices. The temporary service mains to and from the metering location shall be not less than 100 Amperes, 3 phase, 4 wire and shall be of sufficient capacity to take care of all demands for Temporary Lighting and Site Security Lighting and shall meet all requirements of the NEC.

(I) The Contractor for Electrical Work shall furnish and connect to the metered service point, a system of Temporary Lighting to illuminate the entire area where work is being done and points adjacent to the work, with separately fused circuits for stairways and bridges. Control switches for stairway circuits shall be located near entrance on ground floor. The Contractor for Electrical Work shall coordinate with DCAS in completion of this work.

(J) The Temporary Lighting System shall be progressively installed as required for the advancement of the work under various Contracts.

(K) *RELOCATION*- Any Contractor requiring the relocation or extension of the original Temporary

(L) Lighting System, that is not required due to the normal advancement of the work, as determined by the Commissioner's field representative, shall bear all costs thereof.

(M) *LAMPS*- The Contractor for Electrical work shall furnish and install one complete set of lamps. Broken and burned-out lamps in the general lighting system shall be replaced by the Contractor for Electrical Work while those in the trailers (if applicable) shall be replaced by the Contractor using such equipment. At a minimum, all lamps shall be 23- watt screw-in compact fluorescent lamps.

(N) *CIRCUIT PROTECTION*- The Contractor for Electrical Work shall furnish and install GFI protection for the Temporary Lighting and Site Security Systems.

(O) *ENERGIZING*- The Contractor for Electrical Work shall keep the Temporary Lighting System energized from a period of time, fifteen minutes before the established starting time of that trade, which starts work earliest in the morning to fifteen minutes after the established quitting time of that trade which stops work latest in the evening. This applies to every day in the week which is established as a regular working day for any trade involved in the construction of this facility and holds until completion and Final Acceptance of the work of the Contractor for Electrical Work or until the services are terminated by instructions from the Commissioner.

(P) *MAINTENANCE OF TEMPORARY LIGHTS*

1. The Contractor for Electrical Work shall maintain the Temporary Lighting System in good working order during the scheduled hours established.
2. The Contractor for Electrical Work is to include in its bid all charges for energy for the Temporary Lighting System.
3. The Contractor is advised to show the estimated cost of the installation, maintenance and energy of temporary electrical facilities in its bid breakdown of its lump sum contract so as to facilitate partial payments during construction.

(Q) *OVERTIME USE*- Any Contractor requiring Temporary Lighting Service before or after hours set forth hereinbefore, or on weekends or a Holiday for all trades involved in the work, shall pay for the additional cost of keeping the system operational. If more than one Contractor is involved, the charges shall be prorated, or shared by other acceptable means previously agreed upon by the Contractors involved. When overtime is required by all contractors on the work, the provisions for payment for regular time use of the Temporary Lighting System shall apply.

(R) *SERVICE BEYOND COMPLETION DATE*- When failure to comply with the terms and conditions of any Contract necessitates temporary light beyond the date set for completion of the Contract for Electrical Work, the Contractor requiring such additional service shall pay for keeping it operational. When more than one Contractor requires such service, the expense thereof shall be prorated as determined by the authorized representative of the Commissioner.

(S) *Adjustment in Contract Price for temporary lighting maintenance.* If the temporary lighting maintenance extends beyond the Contract time through no fault of the Electrical Contractor, the additional maintenance cost will be in accordance with the requirements of the sections a. and b. below:

1. Payment for maintaining Temporary facilities when required will be made at the average hourly wage for electricians plus 21% of this rate for a Project specific contract or for requirements contract at such lesser percentage that may have been bid for T&M work, for each hour of work done upon order of the Commissioner. Payments will be included in partial estimates upon submission of detailed vouchers stating date, hour and time expended for each item of work.
2. The addition of 21% of the average hourly wage rate specified above for a Project specific contract or such lesser percentage bid by the Contractor for a requirements contract shall be deemed as the total allowance for all profit and overhead and for all other costs and expenses of any nature whatsoever, including but not limited to allowance for insurance, worker's compensation, unemployment insurance and other supplementary benefits.

(T) *REMOVAL OF TEMPORARY LIGHTING WIRING*- The Temporary Lighting System shall be removed by the Contractor for Electrical Work when authorized by a representative of the Commissioner.

(U) *HAND TOOLS*- The temporary electric lighting system shall not be used for power purposes, excepting that light hand tools not larger than 1/4 HP may be operated therefrom by any contractor.

(V) *SITE SECURITY LIGHTING*

1. If required for a particular Project, the Contractor for Electric Work shall furnish, install, and maintain a system of site security lighting, as herein specified, to illuminate the construction site of the Project, and it shall be connected to and energized from the Temporary Lighting System.
2. It is essential that the site security lighting system be completely installed and operating, at the earliest possible date. All Contractors must cooperate, coordinate, and exert every effort to accomplish an early complete installation of the site security lighting system. After the system is installed and in operation, and a part of the system interferes with the work of any trade, that trade shall be completely responsible for the expense of removing, relocating, and replacing all equipment necessary to reinstate the system to proper operating conditions.
3. The system shall consist of flood lighting, by pole mounted guarded sealed-beam units. Floodlight units shall be mounted 16 feet above grade. Floodlights shall be spaced around the perimeter of the site to produce an illumination level of no less than 1 foot candle around the periphery of the site, as well as any potentially hazardous area or any other area within the site that might be deemed by the Commissioner to require security illumination. The system shall be installed in a manner, acceptable to the Commissioner. The first lighting unit in each circuit shall be provided with a photoelectric cell for automatic control. The photoelectric cell shall be installed as per the manufacturers' recommendations.
4. All necessary poles shall be furnished and installed by the Electrical Contractor.
5. The site security system shall be kept always illuminated during the hours of darkness. The Electrical Contractor, at its expense, shall keep the system in operation furnishing and installing all material necessary to replace all damaged or burned-out parts.
6. The Electrical Contractor shall be on telephone call alert for maintaining the system during the operating period stated above.
7. All materials and equipment furnished under this section shall remain the property of the Electrical Contractor and shall be removed and disposed of by the Electrical Contractor upon completion of that phase of the Project.

(W) *TEMPORARY POWER*

1. Any Contractor requiring temporary power for equipment larger than ¼ H.P. shall arrange with the Public Utility for service and pay for all electrical energy consumed by its lines.
2. It shall provide service, metering equipment and distribution centers as required, and be responsible for keeping the system in working order.
3. When directed by the Commissioner, it shall remove its own temporary power system.

(X) *USE OF COMPLETED PORTIONS OF THE ELECTRICAL WORK*

1. *USE OF MAIN DISTRIBUTION PANEL*- As soon as the permanent electric service feeders and equipment, metering equipment and main distribution panel are installed and ready for operation, the Contractor for Electrical Work shall have the Temporary Lighting System changed over from the temporary service points to the main distribution panel.
2. *COST OF CHANGE OVER*- The Contractor for Electrical Work shall be responsible for all cost due to this change over of service and it shall also make application to the Public Utility Company for a watt hour meter to be set on the permanent meter equipment.
3. After change over the requirements for temporary lighting specified herein shall be adhered to.
4. *NO EXTRA COST*- The operation of the service and switchboard equipment shall be under the supervision of the Contractor for Electrical Work, but this shall in no way be interpreted to mean the acceptance of such part of the installation or relieve it from its responsibility for the complete work or any part thereof. There shall be no additional charge for supervision by the Contractor for Electrical Work.

III ELECTRICAL INSTALLATION PROCEDURE

SCOPE: This Section sets forth the general installation procedure which shall apply to all electrical work and electrical equipment appearing in any of the Contracts.

(A) *INTENT OF CONTRACT DOCUMENTS*- Contract Specifications and Drawings are to be interpreted as a means of conveying the scope and intent of the work without giving every minor electrical detail. It is intended, nevertheless, that each Contractor shall provide whatever labor and materials are found necessary, within the scope of its Contract, for the successful operation of the installation. Specific details of individual installations are to be finally decided upon when the Contractor submits working or Shop Drawings for approval to DCAS. Whenever there are two or more within the contract scope, the Commissioner reserves the right to choose that method which, in his/ her opinion, will afford the most satisfactory performance, lasting qualities, and accessibility for repairs, even though his/ her selection may be the costliest.

(B) *PLANS SCHEMATIC- LOCATIONS APPROXIMATE*- Conduits and wiring are shown on the plans diagrammatically only. Therefore, conduit layouts may not necessarily give the actual physical route of the conduits. The Contractor who installs a conduit system will also be required, as part of the work, to furnish and install all hangers, and pull-boxes, including any special pull-boxes necessary to overcome interferences and to facilitate pulling of electrical cables. Similarly, the locations of equipment, appliances, outlets, and other items shown on Contract Drawings are approximate and are to be established when equipment Shop Drawings are submitted and approved by DCAS during construction.

(C) *SLEEVES* required for conduits passing through walls or floors shall be furnished and set by the Contractor installing the conduits. Sleeves in waterproofed floors shall be provided with flashing extending 12 inches in all directions from sleeve and secured to waterproofing. Flashing shall be turned down into space between pipe and sleeve and caulked watertight. Flashing shall be 20 oz.

cold rolled copper. Sleeves shall be supplied with welded flanges like those supplied by the Plumbing Contractor and shall extend 1" above finished floor.

(D) *COORDINATION*- Each Contractor shall keep in close touch with the construction progress and obtain the necessary information for the accurate placement of its work in ample time before building construction operations block its work. Each Contractor is to consult all other Contract Drawings, as well as approved equipment Shop Drawings on file with DCAS. This will aid in avoiding interferences, omissions, and errors in the electrical installation.

(E) *RESPONSIBILITY FOR ERRORS OF INSTALLATION*- In case of interference with the work of others or erroneous placement of work with respect to equipment or structures, each Contractor shall cooperate with other affected Contractors, for an immediate harmonious solution of the difficulty, each Contractor furnishing its responsible share of the labor and materials necessary to complete the installation in an approved manner.

(F) *RESTORATION*- If drilling or cutting is done on finished surfaces of equipment or the structure, any marring of the surface shall be made good by repair or replacement by the Contractor who caused the damage. Each Contractor shall be held responsible for corrective restoration due to its cutting or drilling and for any damage to the building or its contents caused by it or its workmen. Any Contractor who pierces waterproofing because of the installation of its work shall at its own expense restore the waterproofing to the satisfaction of the Commissioner.

(G) *ELECTRICAL WORK AT SITE*- Any Contractor who is required to furnish equipment consisting of a number of related electrical devices or appliances, mounted in a single enclosure, or on a common base, shall furnish this unit complete with internal wiring, connections, terminal boxes with copper connectors and/ or lugs and ample electrical leads, ready for connection and operation. The cost of any wiring, re-wiring or other work required to be done on this unit in the field, shall be borne by the Contractor who furnished the unit, at no cost to the City.

(H) *COOPERATION AMONG CONTRACTORS*- Whenever an electrically operated unit or system involves the combined work of several Contractors for its installation and successful operation, each Contractor shall exercise the utmost diligence in cooperating with others to produce a complete, harmonious installation.

(I) DEFINITIONS

1. Wiring means both wire and raceway (rigid steel, heavy wall conduit unless specifically indicated otherwise).
2. *POWER WIRING* means wiring from a panelboard or other specified source to a starter (if required) then to a disconnect (if required) then to the final point of usage such as a motor, unit, or device.
3. *CONTROL and/ or INTERLOCK WIRING* means that wiring that signals the device to operate or shut down in response to a signal from a remote-control device such as a temperature, smoke, pressure, float, etc. device (starters and disconnect switches are not included in this definition) regardless of the voltage required for the controlling device.

(J) *WORK BY CONTRACTORS FURNISHING ELECTRICAL EQUIPMENT*– Any Contractor who furnishes an electrically operated or motorized unit of equipment shall install same and, as part of its Contract, perform the following work in connection therewith:

1. *FOUNDATIONS*- Unless otherwise specified or indicated, the Contractor furnishing electrically operated equipment shall also furnish and install approved foundations for same. Special foundation, if required, will be described in the detailed Specification.
   a. *MATERIAL*- All foundations, unless required otherwise, shall rest on structural slab and

shall be of poured concrete, of a mixture specified for reinforced concrete. Foundations shall present a neat, smooth appearance, without voids and without sharp corners or edges.

b. *DIMENSIONS*- Foundation dimensions, height above floor, methods of setting, aligning, and anchoring of equipment shall be as recommended by the manufacturer of equipment and approved by the Commissioner. The minimum height of foundations above finished floor shall be four inches and foundations shall extend at least six inches at all sides beyond the base plates of equipment.

2. At least one inch of grout shall be applied under the equipment base plate after placement and alignment of the equipment.
3. *ITEMS*- Anchor plates, bolts, sleeves, nuts and washers, and other necessary items for proper installation of equipment shall be provided. The Contractor shall also furnish and set required templates to locate accurately the positions of the hold down bolts.
4. *VIBRATION ISOLATION*- If specifically required in the detailed Specifications for a particular unit, vibration isolators shall be provided for rotating equipment.
5. *SUPPORTS*- If any motorized equipment is required to be mounted overhead or off a wall, the Contractor supplying the unit shall furnish and install a suitable platform, bracket, or shelf, whichever is appropriate or specified, and mount the equipment thereon. This support shall be constructed of substantial steel members, plates, etc., and the whole securely fastened to the structure or to anchors previously embedded in the wall or slab. In case of excessive vibration transmitted to structure, isolating pads or other devices shall be installed. The Contractor shall apply one coat of approved primer paint to the support and one additional coat of approved paint in the field.
6. *ASSOCIATED EQUIPMENT*- The Contractor who furnishes a motorized or electrically operated unit of equipment shall also furnish all associated motor starters, disconnect means, relays, control devices, lamps, or other devices, necessary for the successful functioning of the unit.
7. *POINT OF DELIVERY*- Any item specified to be installed by the electrical contractor and delivered to the site that cannot be hand carried (due to bulk, weight, or timeliness) to the location of its installation is to be delivered and set in place, leveled and secured, at the location where it is to be installed by the contractor furnishing the equipment.
8. *CONTROL AND INTERLOCK WIRING*
   a. *General Construction Work and Plumbing Work*
      1. All control wiring associated with doors and door hardware is to be furnished and installed, unless otherwise indicated, by the Contractor furnishing the doors. Power for the door operation and for its controls shall be furnished and installed by the Electrical Contractor.
      2. All other control wiring associated with equipment furnished by either the General Construction Work Contractor or the Plumbing Work Contractor is to be furnished and installed by the Electrical Contractor.
   b. *Heating Ventilating and Air Conditioning Contractor*
      1. The furnishing and installing of all control devices and all control and interlock wiring for equipment furnished under the Heating, Ventilating and Air Conditioning Contract shall be by that Contractor, including any power required for any control device.
      2. The Contractor for Heating, Ventilating and Air Conditioning Work shall deliver to the Contractor for Electrical Work all starters and disconnect switches specified to be furnished under the Heating, Ventilating and Air Conditioning Contract. The Contractor for Electrical Work is to install the starters and disconnect switches and furnish and install all power wiring and make connections between the starter, disconnect switch and motor or equipment being served. The motor or equipment is to be mounted by the Contractor furnishing the motor.
9. *INSTALLATION OF OIL BURNER*- The Contractor who furnishes and installs the gas/oil

burner shall also include as part of its contract, the work of furnishing, installing, and connecting all equipment, controls with necessary conduits and wiring, to a service point provided by the Contractor for Electrical Work. Unless detailed otherwise in the Contract, the Contractor for Electrical Work shall furnish power from the power source to a junction box furnished and installed by him and located near the boiler control panel. The electrical Contractor shall also furnish and install an empty conduit and a junction box to be located at a remote location (outside of the boiler room) for an emergency shut-off switch. The shut-off switch and all other conduit and wire shall be furnished and installed by the Contractor furnishing the boiler.

(K) *WORK BY CONTRACTOR FOR ELECTRICAL WORK*- The Contractor for Electrical Work shall perform the following work:

1. TEXT DELETED
2. *STARTERS AND DISCONNECT SWITCHES*- The associated disconnect switches and starters approved by DCAS which require mounting or wiring apart from a main equipment unit shall be delivered, prewired, to the Contractor for Electrical Work at the site of the Project, who shall install and wire them. The electrical contractor shall acknowledge acceptance in writing to the Contractor supplying them, and thereafter assume responsibility for their safe keeping until Final Acceptance of its work by the City.
3. *CONTROL DEVICES*- The Contractor for Electrical Work shall install conduit, wire, and make all connections for all interlock and control devices furnished under the Plumbing Contract and all control and interlock devices furnished under the General Construction Contract, except for door control wiring. The various control and interlock devices, furnished (prewired) by the Plumbing and General Contractors, shall be installed and final connections made by the Electrical Contractor.
4. *DOOR CONTROL WIRING*- Unless specifically detailed otherwise in the Contract Documents for Electrical Work, all door control and interlock devices are to be furnished and installed and wired by the contractor furnishing the required control and interlock devices.
5. *TESTS*- The Contractor supplying the equipment, together with the Electrical Contractor shall cooperate in making preliminary tests to establish the correctness of the installation. If a faulty operation of the unit is discovered, the Contractor whose work is the cause shall, without delay, remedy the trouble.

(L) *PAINTING*

1. Ingredients and methods of application shall conform to that required for similar work under the contract for General Construction Work.
2. *ALL METAL CABINETS* including switchboards, panelboards, boxes (pull, junction, and outlet), trims, doors and covers shall be painted as follows:
3. All surfaces inside and outside, shall be painted with one approved coat of primer. All accessible surfaces shall be painted with one coat of approved paint inside and outside, in the field after installation.
4. *HANGERS, CONDUITS AND FITTINGS* shall be given a field prime coat of approved paint, followed by a second coat, by the Contractor who installs them.
5. *FINAL COAT*- A final or third coat of paint, as directed, shall be applied by the Contractor installing them when the wall surfaces on which they are supported or the ceiling from which they are hung are not painted by the General Construction Contractor. Pull boxes shall be neatly and legibly stenciled to show service.
6. *PAINTING OF MOTORIZED EQUIPMENT*- The Contractor furnishing electrically driven equipment shall paint motors and driven equipment, starters and controllers and other equipment provided by it. It shall provide any painting or finishing that may be required in the Detailed Specifications of its Contract. For certain equipment having special corrosion

resistant factory finishes, painting may be waived by special permission. Equipment shall be neatly stenciled, with legible characters to indicate service by the Contractor who supplies the equipment.

7. *NAME PLATES* shall be left clean of all paint.

IV ELECTRICAL CONDUIT SYSTEM INCLUDING BOXES (PULL, JUNCTION AND OUTLET)

SCOPE: This Section sets forth the requirements applying to any Contract requiring the installation of electrical conduits, boxes, or fittings. Rigid steel conduit shall be used throughout, unless specifically indicated otherwise.

TYPES: Where the word 'conduit', without a modifier such as, rigid steel, EMT, etc., is specified to be used, it shall be interpreted to mean, rigid steel, heavy wall, threaded conduit.

(A) CONDUIT TYPES

1. *RIGID STEEL CONDUIT* shall be interpreted to mean, rigid steel, heavy wall conduit, hot dipped galvanized inside and outside. The conduit shall meet the requirements of the latest edition, as amended, of the "Standard for Rigid Steel Conduit" of the Underwriters' Laboratories, Inc. Unless otherwise specified in the Specifications or indicated on the drawings, rigid steel conduit shall be used for all exposed work, for all underground conduits in contact with earth, and for fire alarms systems as required by the Building Code and all applicable authorities having jurisdiction.
2. NO TEXT
3. *ELECTRICAL METALLIC TUBING* (EMT) shall be industry standard thin wall conduit of galvanized steel only. All elbows, bends, couplings and similar fittings which constitute a part of the conduit system shall be specifically designed for use with electric metallic tubing. Couplings and terminating fittings shall be of the pressure type as approved by the Commissioner. Set screw fittings will not be acceptable. EMT shall meet the requirements of the latest edition, as amended, of the "Standard for Electrical Metallic Tubing of the Underwriters Laboratories Inc." EMT may only be used where specifically indicated. In no case will EMT be permitted in spaces other than hung ceilings and dry wall partitions.
4. *FLEXIBLE METALLIC*- For final connections to motors and motorized equipment, not more than a 4'-0" length of flexible conduit may be used. For watertight installations, this conduit shall be of a watertight type, attached with watertight glands or fittings.

(B) INSTALLATIONS AND APPLICATIONS

1. Unless otherwise specified or indicated on the drawings, conduit runs shall be installed concealed in finished spaces.
2. *CONDUIT SIZES*- The sizes of conduit shall be as indicated on the Drawings. Wherever conduit sizes are not indicated, the conduit shall meet the requirements of the NEC 2008 as adopted by NYC with Amendments, to accommodate the conductors to be installed therein.
3. Conduits shall be reamed smooth after cutting. No running threads will be permitted. Universal type couplings shall be used where required. Conduit joints shall be screwed up to butt. Empty conduits after installation shall have all open ends temporarily plugged to prevent the entrance of water or other foreign matter.
4. Conduits being installed in concrete or masonry shall be securely held in place by the Contractor installing them, during pouring and construction operations. A group of conduits terminating together shall be held in place by a template.
5. *UNDERGROUND STEEL CONDUITS*- Unless otherwise specified, all underground steel conduits in contact with earth shall be encased by the Contractor who installs them, in a covering of not less than 2" of an approved concrete mixture. Concrete mix shall be one part cement to four and one-half parts of fine and coarse aggregate.
6. *EXCAVATION RESTORATION PERMITS*- The Contractor installing underground conduits, duct banks or manholes shall perform, as part of its contract, the work of cutting pavement,

excavation shoring, keeping trenches or holes pumped dry, backfilling, restoration of surfaces to original condition and removal of excess earth and rubbish from premises. During the work, it shall provide adequate crossovers, protective barriers, lamps, flags, etc., to safeguard traffic and the public. When the work is in a public highway or street, the Contractor shall secure and pay for all necessary permits and inspection fees and pay the cost of repaving.

7. *EXPOSED CONDUIT SUPPORTS*- Exposed conduit shall be supported by zinc coated hangers, with necessary inserts, beam clamps of approved design or attached to walls or ceilings by expansion bolts. Exposed conduits shall be supported or fastened at intervals not more than five feet.
8. Exposed conduit shall be installed parallel, or at right angles to ceiling, walls, and partitions. Where direction changes of exposed conduit cannot be made with neat bends, such as required around beams or columns, conduit type fitting shall be used.
9. The conduit shall be installed with an approved expansion joint:
    a. Wherever the conduit crosses a building expansion joint (each contractor will be held responsible for determining where the building expansion joints are located).
    b. Every 200 feet, when in straight runs of 200 feet or longer.
10. Conduit may only enter and leave a floating slab in the vertical direction, and then only in an approved manner. Horizontal entry into floating slabs is not permitted.
11. Conduit installed in pipe shafts shall be properly supported to carry the total weight of the raceway system complete with cable. In addition, at least one horizontal brace per 10 ft. section shall be provided to assure stability of the raceway system.
12. *BUSHINGS AND LOCKNUTS*- Approved bushings and locknuts shall be used wherever conduits enter outlet boxes, switch boxes, pull boxes, panel board cabinets, etc. For conduits 1" or larger, insulating bushings to O.Z./Gedney, or Approved Equal shall be used.
13. *CONDUIT BENDS* shall be made without kinking conduit or appreciably reducing the internal diameter. All bends in conduit of 2" size or larger shall be made with a hydraulic or power pipe bender. The radius of the inner edge of any bend shall not be less than six times the internal diameter of the conduit where rubber covered conductors are to be installed, and not less than ten times the internal diameter of the conduit where lead covered conductors are to be used. Long gradual sweeps will be insisted upon, rather than sharp bends, when changes of direction are necessary.
14. *EMPTY CONDUITS*
    a. *TESTS*- All conduits and ducts required to be installed and left empty with a #10 galvanized steel drag line, shall be tested for clear bore and correct installation, by the Contractor who installed them, using a ball mandrel, brush, and snake, before the installation will be accepted. The ball shall be of lignum vitae, turned to approximately 85% of the internal diameter of the raceway to be tested. Two short wire brushes shall be included in the mandrel assembly. Snaking of conduits, ducts, etc., shall be done by the Contractor in the presence of the Electrical Inspector. Any conduits or duct which rejects the mandrel shall be cleared at once, the Contractor bearing all costs such as chopping concrete, replacing defective conduit, and restoring surface to original condition.
    b. *TAGS*- Numbers or letters shall be assigned to the various conduit runs, and as they test clear they shall be identified by a fibred tag not less than 1-1/4" in width, attached by means of a nylon cord. All conduit terminations in panel, splice or pull boxes as well as those out of the floor or ceiling shall be tagged.
    c. *TEST RECORDS*- As the conduit runs clear, a record shall be kept under the heading of "Empty Conduit Tested, Left Clear, Tagged and Capped" showing conduit designation, diameter, location, date tested and by whom. When complete, this record shall be signed by the Electrical Inspector and submitted in triplicate for approval. This record shall be entered on the Record drawings which are required under "General Conditions

Governing All Contracts."

d. *CAPPING*- All empty conduit and duct openings, after test shall be capped or plugged by the Contractor as directed.
e. *DRAG LINES*- A drag line shall be left in all empty conduit.

(C) BOXES

1. The Contractor shall furnish and erect all pull boxes indicated on the plans or where required. Sides, top and bottom of pull boxes, shall be zinc coated and shall be built of No. 12 USSG steel reinforced at corners by substantial angle irons welded to plates. Bottom or side of pull boxes shall be removable and held in place by corrosion resistant machine screws. Pull boxes in damp locations shall have threaded hubs and gaskets. All pull boxes shall be suspended from ceiling or walls in the most substantial manner.
2. For large boxes, sufficient suitable porcelain clamp insulators or other approved devices shall be provided in the pull boxes for supporting the cables passing through the box so that the cables will not be unsupported for a distance greater than 3' and to permit a neat and orderly arrangement of the cables.
3. For pull boxes having the largest side more than 9 sq. ft. in area, special rectangular and diagonal angle-iron bracing will be required as approved.
4. Pull boxes of special or odd shapes are required to be installed by the Contractor, even though not shown on plans, where these are necessary to overcome interference or to facilitate the pulling of conductors in conduits.
5. In centering outlets, the Contractor is cautioned to allow for overhead pipes, ducts, and other obstructions, and for variations in arrangement and thickness of fireproofing, soundproofing and plastering. Precautions should be exercised regarding the location of window and door trims, paneling, etc. Mistakes resulting from failure to observe these precautions, must be corrected by the Contractor at no cost to the City. Outlets in hung ceilings shall be supported from the black iron or structure.
6. The exact location of all outlets in finished rooms shall be as directed. When the interior finish has been applied, the Contractor shall make any necessary adjustment of its work to properly center the outlets. All outlet boxes for local switches near doors shall be located at the strike side of doors as finally hung, whether so indicated on the drawings or not.
7. Exposed wall outlet boxes shall be erected neatly and tight against the walls and securely anchored to same.
8. All wall outlets of each type shall be set accurately at the same level on each floor, except where otherwise specified or directed. Where special conditions occur, outlets shall be located as directed.
9. *MOUNTING HEIGHTS*- The following heights are standard heights and are subject to correction due to coordination with Architectural and Engineering drawings. All such changes must be approved by the Commissioner. Heights given are from finished floor to center line of outlet or device on wall or partition, unless otherwise indicated.
    a. General Convenience Outlets 1' 6"(mount vertical)
    b. Clock Outlets 8' 6" or 1'- 6" below ceiling
    c. Wall Lighting Switches 4' 0"
    d. Motor Controllers 5' 0"
    e. Motor Push-button 4' 2"
    f. Telephone Outlets As Directed
    g. Fire Alarm Bells 8' 6"or 1'- 6"below ceiling
    h. Fire Alarm Stations 4' 0"
    i. Intercom Outlet 1' 6"
    j. Cooking & Refrigerator Unit As Directed
10. Outlet boxes shall be of approved design and construction, of form and dimensions suited and adapted to its specific location, the kind of fixture to be used, the number and

arrangements of conduits, etc., connecting therewith. All ferrous outlet boxes shall meet the requirements for zinc coating as specified under Electrical Conduit Systems.

11. There shall be knockouts, opened only for the insertion of conduit, and any outlet boxes with more openings than are necessary for conduit insertion shall be sealed by the Contractor without additional charge.
12. All outlet boxes and junction boxes for exposed work shall be galvanized cast iron or cast aluminum with threaded openings. Outlet boxes for exposed inside work in damp locations shall be galvanized cast iron or cast aluminum with threaded hubs and neoprene gaskets and shall be listed for use in damp locations.
13. Junction boxes shall not be less than 4 11/16" square and shall be equipped with zinc coated plates. Where plates are exposed, they shall be finished to match the room decor.
14. *FIXTURE SUPPORTS*- Outlet boxes supporting lighting fixtures shall be equipped with fixture studs held by approved galvanized stove bolts or integral with the box. Cast iron or malleable boxes shall have four tapped holes for mounting required cover or fixtures.
15. Outlet boxes exposed to the weather or indicated W.P., shall be cast iron or cast aluminum and the covers made watertight with neoprene gaskets. The boxes shall have external lugs for mounting. Drilling of the body of the fitting for mounting will not be permitted. The cover screws shall be ample in size and non-corrodible and not less than four in number for each box opening.

V ELECTRICAL WIRING DEVICES

(A) *WALL SWITCHES* shall be of the best specification grade, quiet type, and shall have a rating of 20 amperes at 120/277 volts, as manufactured by Hubbell, Cooper Wiring Devices, Leviton, or an Approved Equal. The mechanism shall be equipped with arc snuffers. They shall be of the toggle type, single pole. Switches of the 3-way type shall have a similar rating.

(B) RECEPTACLES

1. *CONVENIENCE OUTLETS*- shall be of the best specification grade, duplex, two pole, 3 wires, 20 amperes at 125 volts. It shall have a grounding pole which shall be grounded to an insulated ground conductor and the conduit system. Receptacles shall be capable of both back and side wiring and shall have only one grounding screw. Receptacles shall be Hubbell Cat. #5362 or an Approved Equal.
2. *HEAVY DUTY RECEPTACLE OUTLETS*- shall have the ampere rating and the number of poles specified on the plans, and shall be equal to Hubbell, Russell-Stoll, Cooper Wiring Devices, Leviton, or an Approved Equal. Each outlet shall have a grounding pole, which shall be grounded to the insulated ground conductor and the conduit system.
3. *FLOOR RECEPTACLES* shall be Russell & Stoll #3040, or an Approved Equal, to fit into floor box previously specified.
4. *NAMEPLATES* are required for all receptacles other than 120V.

(C) *CLOCK HANGERS*- Clock outlets for surface type clocks shall be equipped with a supporting hook and recessed faceplate to conceal the cord.

(D) *WATERTIGHT DEVICES*- For installations exposed to weather or in damp locations, the devices shall be in a gasketed, cast-iron enclosure. The device cover shall be designed to be closed with a plug inserted in the receptacle.

(E) PLATES

1. Every convenience outlet and switch outlet shall be covered by means of a stainless-steel No. 302-0.4" antimagnetic plate with an approved finish, unless provided otherwise in the detailed Specifications.
2. Where 2 or 3 switches are grouped together a single faceplate shall be used. Where more

than three (3) switches are located at one point, the faceplates may be made up in multiple units.

VI ELECTRICAL CONDUCTORS AND TERMINATIONS

(A) *CONDUCTORS FOR LIGHT AND POWER*- All wire and cable shall be of annealed copper of 98% conductivity. Aluminum wire or cable will not be permitted. The insulation shall be flame retardant, moisture and heat resistant, thermoplastic, type THHN/THWN or XHHW rated for 600 volts at 75 degrees C. for both wet and dry locations. Wires No. 8 or larger shall be stranded. Wires and cables shall also be subject to the requirements of the NEC 2008 as adopted by NYC with Amendments. Cables for incoming service or wire in conduits contiguous with the earth or in concrete or other damp or wet locations shall be synthetic rubber insulated with neoprene jacket, heat, and moisture resistant and shall to UL Type USE-2/RHW-2, rated for 600 volts at 90 degrees C. for both wet and dry locations.

(B) *FIXTURE WIRE*- Lighting fixtures shall be wired with No. 14 gauge wire designated as AWM, and rated at 105 degrees C.

(C) *OTHER TYPES*- Cables and wires for interior communication systems are described in detailed specifications of applicable contracts.

(D) *MINIMUM SIZE*- Conductors smaller than No. 12 AWG shall not be used for light or power.

(E) *COLOR CODE*- Wires shall have a phase color code, and multiple conductor cables shall be color coded.

(F) *CABLE DATA*- The Contractor shall submit for approval the following information for each size and type of cable to be furnished.

1. Manufacture of Cable- Location of Plant.
2. Minimum insulation resistance at standard test temperature.
3. Days required for delivery to site of work after order to proceed with manufacture.

(G) *ORIGINAL REELS*- Cable and wire shall be delivered to the site of the work on original sealed factory reels.

(H) *TESTS*

1. *NOTIFICATION OF TEST*- No cable shall be released for shipment from the mill unless authorized by the Commissioner. The Contractor shall give the Commissioner at least ten days' notice when the cable will be available for testing at the mill. His representative or inspector shall have access during working hours to all parts of the plant where the cable is being manufactured, and all reasonable inspection and testing facilities shall be afforded to him without increase in price to the City. The Inspector shall witness the complete test of cable and receive a copy of all test data.
2. *TEST DATA*- The Contractor shall forward to the Commissioner six copies of all test data for approval before accepting shipment of the cable.
3. *INSPECTION DURING MANUFACTURE*- The Commissioner reserves the right to dispatch a representative to the factory at any time during the period of manufacture of the cable for the purpose of expediting or checking progress. The living and traveling expenses of the City Engineers making these inspections and witness tests will be borne by the City of New York.
4. *TEST IN CITY LABORATORY*- Sufficient additional length of conductor shall be provided on each reel, so that a six-foot sample may be removed for testing in the City's Laboratories.

This sample shall be cut from the reel in the presence of the DCAS Inspector and cut in two three-foot lengths, each piece to be tagged showing reel number, size and type, manufacturer, date, name of Project and Contract No. Samples shall be handed to the Inspector for transmittal. If it is found as the result of test that the cable does not comply with the approved factory test, the Contractor will be ordered to remove all cable which came off the reel and has been installed, and to replace the defective cable not used, at no cost to the City. It will be held responsible for any delays in the construction program caused by the defective cable.

5. *FINAL FIELD TEST*- After conductors are installed and connected the City will test the work for overall insulation resistance. The Contractor shall furnish all test equipment necessary. To be acceptable, the test shall meet the requirements set forth in the NEC 2008 as adopted by NYC with Amendments.

(I) WIRE INSTALLATION

1. *INSTALL WIRES AFTER PLASTERING*- Feeder and branch circuits wire shall not be installed in conduit before the rough plastering work is completed. No conductors shall be pulled into floor conduits before floor is poured.
2. *CONDUIT SECURED IN PLACE*- No conductor shall be pulled into any conduit run before all joints are made up tightly and the entire run rigidly secured in place.
3. *WIRE ENDS*- All wires shall be left with sufficiently long ends for proper connection and stowing.
4. *PULLING COMPOUNDS*- When required to ease the pulling-in of wires into conduit, only approved compounds as recommended by cable manufacturers shall be used.
5. PRESSURE CONNECTORS for wires shall be of the cast copper or forged copper pressure plate type. Connectors shall be O.Z./Gedney, Burndy, or National Electric Products or Approved Equal. Splices and feeder tap in the gutters of panel boxes shall be made by means of pressure plate type connectors encased in composition covers to O.Z, Burndy or National Electric Products, or an Approved Equal, and in accordance with the NEC 2008 as adopted by NYC with Amendments.
6. Splices in branch wiring for Sound systems and Fire systems, shall be first made mechanically secure, then soldered and taped.
7. In lieu of soldered splices (except for sound and Fire Systems, which must have soldered splices) the following alternates are acceptable for operating temperatures up to 105 degrees C., for fluorescent fixtures, and for the splicing of branch circuit wiring up to No. 8 AWG wire:
   a. Mechanical splices made with mechanical connectors as manufactured by the Minnesota Manufacturing Company "Scotchlock" or an Approved Equal. Mechanical Connectors requiring a special tool (pressure connectors, insulators and locking rings), or an Approved Equal to Buchanan. The tool used for connector application shall be as approved by the connector manufacturer.
   b. For wire and cable No. 6 AWG and larger for branch circuit wiring the seamless tubular connector will only be accepted. Application of this connector shall be with a tool recommended by the connector manufacturer.
8. *TAGS*- All feeders and risers shall be tagged at both ends, and in all pull and junction boxes and gutter spaces through which they pass. Such tags shall be of fibre and have the feeder designation and size stamped thereon.
9. *BRANCH CIRCUIT WIRING*
   a. The Contractor installing branch circuit wiring shall test the work for correct connections and leave all loop splices in the fixture outlet boxes properly spliced and taped. It shall provide wire ends long enough for convenient connection to device.
   b. *NEUTRALS*- No common neutrals shall be used except for lighting branch circuits. Each neutral wire shall be terminated separately on a neutral busbar in the panelboard. No common neutrals will be permitted for convenience receptacle branch circuits.

(J) *TERMINATIONS*

1. *LUGS*- All lugs for all devices, and all cable terminations shall be copper. AL/CU rated lugs will not be permitted. Lugs for No. 6 AWG cable and larger shall be cast copper or forged copper pressure plate type. Lugs for 1/0 and larger conductors shall be fastened with two bolts. The only exception to these requirements is when the particular device is not manufactured with copper lugs or two-bolt lugs by any manufacturer (as part of the UL tested and approved assembly).
2. All lugs shall be of the proper size to accept the cable connected to them. Any contractor furnishing a device containing lugs is to coordinate with the electrical contract documents to ensure that the device terminations are adequate for the wire or cable (whose size may be larger than expected due to voltage drop considerations) connected to the device. This requirement applies to both the electrical contractor whose branch circuit protector must have lugs of the proper size, as well as to the contractor who furnishes the device who may have to increase the size of that device.

VII CIRCUIT PROTECTIVE DEVICES

SCOPE: This Section sets forth the circuit protective devices such as circuit breakers and safety switches used in connection with Motor Control Equipment, Distribution Centers, Panelboards and Service Entrance.

(A) *CIRCUIT BREAKERS*

1. *CIRCUIT BREAKERS* shall be operable in any position and shall be of the quick-make, quick-break type on manual operation. The handle shall be trip free, preventing contacts from being held in closed position against abnormal overloads or short circuits. Positive visual indication of automatic tripped position of breaker shall be provided, in addition to the "On" and "Off" indication. All circuit breakers shall be of the bolted type.
2. *TRIP RATING*- Circuit breakers shall be provided with the required number of trip elements, calibrated at 40 degrees C., ambient temperature, in accordance with wire sizes or motor currents as shown on the Contract Drawings or indicated in the Specifications.
3. *POLE BARRIERS*- Multipole circuit breakers shall be designed to break all poles simultaneously. They shall be provided with barriers between poles and arc suppressing devices.
4. *ELEMENTS*- Multipole circuit breakers shall have frames of not less than 100 ampere rating. Multipole circuit breakers for 480 volts A.C. operation shall have a NEMA interrupting rating of 18,000 amperes unless a higher rating is specified in the Contract Documents or indicated on the Contract Drawings.
5. For circuit breakers with frame size up to and including 225 amperes, the breakers may be provided with non-interchangeable trip elements. For frame ratings above 225 amperes, the breakers shall be provided with interchangeable trip elements which can be replaced readily.
6. The trip rating of all circuit breakers shall not exceed 80% of frame rating.
7. Single pole circuit breakers for branch circuits shall have a frame size of no less than 100 amperes and shall be rated at 125-volt A.C. with a NEMA interrupting rating of 10,000 amperes unless a higher rating is specified in the Specific Requirements or indicated on the Contract Drawings.
8. *INVERSE TIME ACTION*- The circuit breakers shall be dual element type, one element with time limit characteristics, so that tripping will be prevented on momentary overloads, but will occur before dangerous values are reached, the other with instantaneous trip action. Inverse time delay action shall be effective between a minimum tripping point of 125% of rating of breaker and an instantaneous tripping point between 600% and 700% of rated current.
9. *CONSTANCY OF CALIBRATION*- The tripping elements shall insure constant calibration and be capable of withstanding excessive short circuit conditions without injury.

10. *CONTACTS* shall be non-welding under operating conditions and of the silver-to-silver type.
11. *TEMPERATURE RISE*- Current carrying parts, except thermal elements shall not rise in temperature more than 30 degrees C. while carrying rated current at rated frequency.
12. *NUMBERING*- Each circuit breaker shall be distinctly numbered when installed in a group with other breakers. The calibration of trip element shall be indicated on each breaker.

(B) SAFETY SWITCHES

a. *NEMA TYPE HD*- When safety switches are permitted to be used for service entrance, motor disconnecting means or to control other types of electrical equipment, they shall be of the type HD of a rating not less than 30 amperes. Enclosures shall be provided with means for locking. For ratings above 60 amperes terminals shall have double studs.

VIII DISTRIBUTION CENTERS.

SCOPE: This Section sets forth the construction and installation procedure for Switchboards, Panel boards and Cabinets.

(A) *PANELBOARDS- GENERAL TYPE*- The panelboards shall be of the automatic circuit breaker type with individual breakers for each circuit, removable without disturbing the other units. Circuit breakers shall be in accordance with the requirements outlined under "Circuit Protective Devices."

(B) *NUMBER AND RATING OF CIRCUIT BREAKERS*- The Contract Drawings show a layout of each panel, giving the number, frame, size and trip setting of circuit breakers, number of branch circuits and spare breakers. Each branch circuit shall be distinctly numbered.

(C) *BUS-BAR CONSTRUCTION AND SUPPORT*- Panel Boards shall be of the dead front type and shall have bus bars and branch circuits designed to suit the system and voltage. Current carrying parts, exclusive of circuit breakers shall be copper and based on a maximum density of 1,000 amperes per square inch. Bus bars for the main switchboard shall be designed for the frame rating of the Service Breaker. Bus bars shall run up the center of the panel, unless otherwise indicated, and shall have connected thereto the various branch circuits. Unless otherwise specified, bus bars for each panel board shall be equipped with main lugs only, capacity as required on Contract Drawings.

(D) Where main protection is required automatic circuit breakers shall be used. A neutral bus of at least the same capacity as a live bus bar shall be provided for the connection of all neutral conductors. Each terminal shall be identified. All current carrying parts exclusive of circuit breakers shall be of copper with a minimum number of joints. The bus bar structure shall be a self-supporting unit, firmly fastened to a ½" plastic board, extending the full length and width of assembly which shall serve to insulate the bus structure from the back of panel box. Other methods affording equally effective bus structure support and insulation will be given consideration. An insulating barrier shall separate neutral bus from other parts of panel.

(E) *CIRCUIT BREAKER ASSEMBLY*- The entire circuit breaker and bus bar assembly shall be mounted on an adjustable metal base or pan, secured to the back of panel box. The panel shall have edges flanged for rigidity.

(F) *PANEL MOUNTING*- The panel shall be centered in the panel box to line up with door openings, set level and plumb and so that no live parts are exposed with door open.

(G) PANEL CABINET CONSTRUCTION AND SUPPORT

1. Panel boxes shall be fabricated from No. 12 USSG sheet steel of no more than three-piece

construction, reinforced at the corners and with continuous welds. Boxes having a back whose area is larger than 16 square feet, shall be of No. 10 USSG sheet steel and reinforced to provide ample stiffness and to prevent buckling. Boxes shall be of sufficient size to afford a clear gutter space on all sides, of not less than 6".

2. *PANEL CABINET INSTALLATION*- When installed surface, or in panel closets, they shall be mounted on steel channel, supported from floor slab to ceiling slab.
3. Where cabinets cannot be set entirely flush due to shallow walls or partitions or where cabinet is extra deep, the protruding sides of cabinet shall be trimmed with a metal or hardwood return molding of approved design, fastened to cabinet to conceal the intersection between the wall and cabinet.

(H) *CABINET TRIM*- Trim for both lighting and power panel boards shall be door-in-door type installation as depicted in DETAIL "A" TRIM FOR LIGHTING AND POWER PANEL BOARDS. Construction details are to be as described in the following sections.

1. *CABINET TRIM*- The trim and doors for lighting and power panels shall be made of No. 12 USSG full finish sheet steel, in one piece. Cabinet trim larger than 16 square feet shall be made of No. 10 USSG. The inner door shall cover the circuit breaker section only and be provided with substantial hinges. The outer door shall cover the entire gutter space and shall be attached to the border type flange with substantial hinge. Both doors, for power panels, shall be provided with a New York City Lock No. 511S, or an Approved Equal, with key change to No. 47 and two keys. For lighting panels, the inner door shall be provided with a substantial catch. All hinges shall be of the concealed type. Locks shall be flush with trim or with rosette cover.
   a. Locks shall be provided as follows:
      i. Doors less than 30”– one lock;
      ii. Doors 30” to 48”– two locks; and
      iii. Doors greater than 48”– three locks
   b. 42 pole panelboards shall have two (2) locks on the exterior door (one on top and one on bottom). Locks shall be Yale S511, or an Approved Equal, each provided with #47 key.
2. The door shall close against a flange or rabbet to afford a dust tight fit. All space between the panel and the cabinet trim shall be closed by means of a sectional plate secured to the trim.
3. The border flange of the trim shall be fastened to the box with oval head screws finished to prevent corrosion, or with approved trim clamps.
4. To facilitate installation of trim, a suitable angle iron shall be spot welded across the bottom of each trim, to carry the weight of the trim while the holding screws are being put in place.

(I) *MOTOR CONTROL CENTERS*- Motor centers shall be furnished by the Contractor as indicated in the Specifications or drawings but shall be installed by the Electrical Contractor.

(J) *NAMEPLATES*- Nameplates where required, shall be made of engraved Lamicoid sheet, or an Approved Equal. Letters and numbers shall be engraved white on a black background (except for Firehouse projects which shall have white letters on a red background). The Contractor shall submit an engraved sample for approval as to design and style of lettering before proceeding with the manufacture of the nameplate. Nameplates shall be of suitable size and shall also be provided at the top of the switchboard or section thereof and on the trim at the top of all lighting and power panels. Similar nameplates shall also be provided for each distribution circuit breaker giving the breaker number, the number of the feeder, and the name of the equipment fed.

(K) *SHOP DRAWINGS* showing all details of boxes, panels, etc., shall be submitted for approval.

(L) *DIRECTORIES*- A directory consisting of a non-corrosive metal frame, dimensions not less than 5" x 8" with a transparent window equal to plasticile, plexiglass or Lucite not less than 1/16" thick,

over cardboard or heavy paper, shall be fastened with brass screws. The directory shall be typewritten and show the number of each circuit, the name of circuit, lighting or equipment supplied. The size of riser feeder shall be as indicated on directory. The dimensions of directory shall be submitted for approval for each size of panel.

1. *CONSTRUCTION*- Panel boxes, doors, and trim for installation in dry locations, shall be zinc coated after fabrication by the hot-dip galvanizing or electroplate process on inside and outside surfaces. In damp locations, panel boards shall be enclosed with gasket NEMA 3R type. Panel boards located outdoors or exposed to the weather shall be cast iron.
2. *PAINTING*- Panel boxes, doors and trim shall receive a coat of approved priming paint and a second coat of approved paint in the field after installation. Paint shall be applied to the inside and outside of boxes and on both sides of trim. Panel trims and doors shall receive a third or finishing coat on the outside after installation. Approval as to texture and color must be obtained before the final coat is applied. All the painting is to be done by the Contractor who furnishes the boxes and trim. Where panel trims or boxes are installed on walls which are to be painted, the previously mentioned third or finishing coat of paint shall be included in the work of the Contractor who has the contract for general interior painting.

IX MOTORS

SCOPE: This Section sets forth the general design, construction and performance requirements which shall apply to all motors furnished in any of the contracts.

(A) *MOTOR DESIGN*- All motors shall be designed to comply with the Energy Conservation Construction Code of New York State effective July 3, 2002. Motors shall have standard NEMA frames and shall have nameplate ratings adequate to meet the specified conditions of operation. Motor performance under variable conditions of voltage and frequency shall be within the limits set in NEMA standards, unless modified in present Specifications. Motors shall be expressly designed for the hazard duty load, voltage and frequency as specified in the contract. All motor windings shall be copper. All motors intended to operate on a 208-volt system shall be designed and rated for 200 volts.

(B) *MOTORS OF SAME MANUFACTURER*- Unless expressly permitted otherwise by the Commissioner, all motors under the same Contract shall be manufactured by the same company. Exceptions may be granted in the case of motors of 1/4 hp rating and smaller, or for a motor that is an integral part of the equipment, with its housing especially built for this purpose.

(C) *STANDARDS OF COMPARISON*- In general, the best standard products of the leading motor manufacturers shall be considered as a standard for comparison. The requirements of the NEMA standards for motors and generators shall be deemed to contain the minimum requirements of performance and design.

(D) *OBJECTIONABLE NOISES*- Objectionable noises will not be tolerated and especially quiet motors may be required for certain specified locations. Such motors shall bear a nameplate lettered "Quiet Motor." Springs and slip rings shall be of approved non-ferrous material.

(E) BEARINGS

1. Bearings, unless specified otherwise, shall be of the ball or roller type. Motors 1 hp and larger that are equipped with ball roller bearings shall also have lubrication of the pressure-relief greasing type. Each Contractor who furnishes four or more such motors shall also furnish, as part of its contract, a pressure grease gun of rugged design, of approximately ten-ounce capacity, complete with necessary adaptors. It shall also provide ten pounds of approved gun grease.

2. For units where sleeve bearings are deemed desirable, permission for their use may be granted by the Commissioner. Motors 1 hp and larger that are equipped with sleeve type bearings shall in addition to having protected accessible fittings for oiling, be provided with visible means for determining normal oil level. Lubrication shall be positive, automatic, and continuous.

(F) *MOTOR TERMINALS AND BOXES*- Each motor shall be furnished with flexible leads of sufficient length to extend for a distance of no less than three inches beyond the face of the conduit terminal box. This box shall be furnished of ample size to make and house motor connections. These requirements shall be met irrespective of any other standards or practices. Size of cable terminals and conduit terminal box holes shall be subject to approval. For motor 5 hp or larger, each terminal shall come with two cast or forged copper pressure type connectors, with bolts, nuts, and washers. For motors of smaller ratings, connectors of other acceptable types may be furnished. For installations exposed to the weather or moist locations, terminal boxes shall be of cast iron with threaded hubs and gasket covers. Cover screws shall be of non-corrosive material.

(G) *MOTOR TEMPERATURE RISE*- The motor nameplate temperature rises for the various types of motor enclosures shall be as listed below:

1. Open Frame 40 degrees C.
2. Totally enclosed and enclosed fan cooled 55 degrees C.
3. Explosion proof and submersible 55 degrees C.
4. Partially enclosed and drip proof 40 degrees C.

The temperature of the various parts of a motor shall meet the requirements of NEMA standards for the size and type of the motors. Tests for heating shall be made by loading the motor to its rated hp and keeping it so loaded for the rated time interval or until the temperature becomes constant.

(H) *SPECIAL CODE INSTALLATIONS*- Electrical installations covered by special publications of NBFU and by special City rulings and regulations shall comply in design and safety features with such applicable codes, regulations, and rulings, and shall be furnished and installed complete with all accessories and safety devices as therein specified.

(I) *MOTORS ON LIGHTING PANELS*- The largest A.C. motor permitted on branch circuits of lighting panels shall not exceed ¼ hp.

(J) *MOTORS RATED*- ½ hp. and larger shall be polyphase.

(K) *TESTS*

1. *FACTORY INSPECTION*- Electrical equipment and devices (except portable) not covered by standard Specifications or tests herein prescribed shall be inspected and witnessed on test at the factory, the tested equipment being completely assembled and connected under conditions approved by the Commissioner as equivalent to the actual working conditions. Suitability and ruggedness of the design for the specified purpose will be a condition for acceptance.
2. *SHOP TESTS* to determine the load performance of motors shall be made in accordance with Standard C-50 of the ASA. Motors shall meet the requirements of C-50 for insulation resistance, dielectric strength, efficiency, and temperature rise. Efficiency (and power factor for A.C. motors) shall be established for 50, 75, and 100 percent of rated horsepower but for motors of 100 hp or larger, the 125 percent loading shall be included.
3. *TEST REPORTS*- The result of shop tests shall be submitted to the Commissioner for approval and shall be on forms approved by the City. The evaluated test data shall include a signed statement confirming the fact that the equipment meets the requirements of the standards of performance.
4. *MANNER OF TEST*- For motors of 100 hp or smaller, check tests against complete tests of

similar motors will be accepted; for motors larger than 100 hp, complete tests for each motor furnished shall be made, and certified test data sheets shall be submitted for approval, unless shop tests are required by the Specifications.

5. *PREFERRED METHODS*- The efficiency of fractional hp motors shall be determined by the input-output method; for larger motors up to and including 100 hp, the separate loss method as specified in ASA Standards C-50 will be accepted unless otherwise required in the Specifications.

(L) *SPARE PARTS*-The Contractor who furnishes motors, including fractional hp, shall provide the following spare parts and accessories in connection therewith:

1. *BRUSHES*- One additional set of brushes for each motor equipped with them.
2. *BEARINGS*- For each group of three and fraction thereof, of each type and size of motor, the Contractor shall furnish one set of extra bearing linings or ball or roller bearings. Where less than three of any type of motor is involved, one set of extra bearings shall be furnished.
3. *SPRINGS*- One set of brush springs used in slip ring motor or universal type motors.
4. *WRAPPER MARKING*- All parts shall be delivered neatly and securely wrapped and boxed, plainly tagged, and marked for identification and reordering.

X MOTOR CONTROL EQUIPMENT

SCOPE: This Section sets forth the requirements for motor controllers and associated devices which are applicable to all contracts under which motor control equipment is furnished or installed.

(A) *MANUFACTURER*- All control equipment furnished under one contract shall be the product of a single manufacturer. Exceptions to this rule may be granted in the case of controllers for fractional hp motors driving special equipment, the various units of which have been engineered to obtain specific performance.

(B) *CONTROL ITEMS REQUIRED*- The Contractor who furnishes a motor shall also furnish therewith complete disconnecting, starting and control equipment as required by the detailed Specifications, the various code authorities and for the successful operation of the driven equipment. These items include circuit breaker, magnetic starter with overload protection and low voltage release or protection, push button stations, pilot lights and alarms, float, pressure, temperature and limit switches, load transfer switches, devices for manual operation, speed controllers, etc. The Contractor shall furnish as many of these items as are required for the successful operation of the driven unit.

1. Where a motor is to be located out of sight of the controller, the Contractor who furnishes the motor shall furnish an approved disconnecting means to be mounted near motor.

(C) *TYPES OF STARTERS*- A.C. motors of the squirrel cage type, rated from 1 to 30 hp shall have magnetic across the line starters; motors rated above 30 hp shall be furnished with solid-state starters to reduce inrush current. Size of starters shall be based on 200V. operation.

1. A.C. motors of the slip-ring type shall be furnished with primary across the line starters interlocked with secondary starting and regulating equipment. The interlocking feature shall prevent starting of the motor when the secondary controller is off the initial starting point.
2. For fractional hp motors, magnetic type starters are not required unless the method of controlling the driven equipment makes them necessary. Where individual single phase fractional horsepower motors or the sum of fractional horsepower motors controlled by an automatic device are ½ hp or more, magnetic starters and circuit breakers shall be used. Single phase A.C. motors smaller than ½ hp or three phase A.C. motors smaller than 1 hp where manual control is specified may be furnished with starters of toggle switch or push-button type with inbuilt thermal protection. No additional disconnecting means is required to be furnished with this type of starter. This type of starter may also be used in series with

automatic control devices such as thermostats, float and pressure switches, provided the individual motor or the sum of fractional horsepower motors is less than ½ hp. Means for manual operation shall be provided.

(D) *DISCONNECTING BREAKER*- All motor starters, unless otherwise specified shall be provided with a disconnecting means in the form of a circuit breaker of the type specified under "CIRCUIT PROTECTIVE DEVICES" of these General Conditions. This disconnecting means shall be contained in the same housing with the starter and shall be operable from outside. Means shall be provided for locking the handle of the circuit breaker in the "OFF" position if it is desired to take the equipment out of service and prevent unauthorized starting.

(E) *CONTROL CABINET- DRY LOCATIONS*- All starters shall be furnished with GENERAL PURPOSE, NEMA Type 1, sheet metal enclosures with hinged covers and baked enamel finish.

(F) CONTROL CABINET- WATERTIGHT- In wet locations, cast iron watertight enclosures with threaded hubs, galvanized, and gasket hinged cover shall be provided.

(G)
1. *PANELS*- Motor control devices and appliances shall be mounted on approved insulating slabs with all wiring and connections made on the back of the slab.
2. *WIRING AND TERMINALS*- Wiring connections for currents of 100 amperes or less may be made with copper wire or cable with special flameproof insulating coverings. Such wires shall be installed in a neat workmanlike manner, flat against the slab, and held in place by clips. Connections shall be made with pressure connectors for No. 8 AWG and larger wires, and with grommets for small, stranded wires. Except for incoming and outgoing main leads, all connections shall terminate on approved connector blocks which may be installed on the face of the slab. For small across the line starters the above requirements may be modified if satisfactory connections are provided.
3. *COPPER BUS*- For currents exceeding 100 amperes, copper bus shall be used in place of wires. The bus shall be constructed of copper rods, tubing, or flat strap, bent and shaped properly and securely attached to the slab in a neat and workmanlike manner. The cross section of copper shall provide sufficient areas to keep current density at not more than 1,000 amperes per square inch.

(H) *COOPERATION*- The contractors who furnish electrically operated equipment shall give to the contractor for Electrical Work full information relative to sizes and locations of apparatus furnished by them which require electrical connections.

(I) Equipment being installed by the contractor for Electrical Work shall be delivered to it by other contractors in proper time and sequence so that it shall be able to meet its working schedule.

(J)
1. *SPARE PARTS*- Each contractor shall furnish the following spare parts pertaining to equipment furnished by him:
   a. One set of contact fingers and springs and thermal elements for each three (or fraction) of each size of magnetic contactor starter.
   b. One holding coil for each three (or fraction) of each size of magnetic contactor starter.
2. *WRAPPER MARKING*- All parts shall be delivered to the Commissioner neatly wrapped and boxed and plainly tagged and marked for identification and reordering.

XI SCHEDULE OF ELECTRICAL EQUIPMENT

The following schedule of motor and electrical equipment is to be used as an aid in supplementing the requirements of the individual contracts. The Schedule may not be used as a bill of materials.

(A) *Explanation of schedule*

1. *Notes*- The numerals in the "NOTES" column refer to the notes below.
2. *Abbreviations*- the abbreviations in the "Control Type" column are explained above the schedule.

(B) *NOTES:*

NOTE 1 Starter integral with equipment, control wires if any, by Electrical Contractor.
NOTE 2 Starter integral with equipment, control and interlock wiring by HVAC Contractor.
NOTE 3 Starter alternator etc., furnished by HVAC Contractor, to be installed and wired under the Electrical Contract. Control and interlock wiring by HVAC Contractor.
NOTE 4 Starter integral with equipment. Mounting of push-button stations, take up reels, disconnect breakers, etc., and all wiring by Electrical Contractor.
NOTE 5 Remote "off" switch to be furnished, installed and connected by Electrical Contractor.
NOTE 6 Firestat furnished and installed by HVAC to be wired by Electrical Contractor.

(C) All interlock wiring for equipment furnished by the HVAC Contractor and associated conduit work, other than the wiring specified in the preceding schedule, shall be by HVAC Contract.

DB Disconnect Breaker (Switch)	P Pilot Light	BG Break Glass Station
TS Thermal Switch	F Firestat	HOA Hand-Off Auto.
MS Magnetic Starter	T Thermostat	PB Push Button Station
CMS Comb. Mag. Starter	AL Alternator	RO Remote "off"

Equip. Ident.	Location	Contract # of Units	HP or KW	Volt & Phase	Control Type/location	Note

ARTICLE 31- EXCAVATION AND BACKFILLING

(A) All excavation and backfilling required for the work of this Contract shall be done by the Contractor.

(B) Restore floors, pavements, etc. which will be removed for excavation. All excess material excavated by the Contractor becomes the Contractor's property and is to be properly disposed of at the Contractor's sole cost and expense.

ARTICLE 32- PROTECTION

(A) The Contractor shall provide and maintain all necessary temporary closures, guard rails, and barricades to adequately protect all individuals from possible injury. When removal of any of these items is required, the Contractor making this request shall be responsible for its replacement.

ARTICLE 33- INTERRUPTION/ INTERFERENCE WITH BUILDING SERVICES, OPERATIONS AND/ OR FACILITIES

(A) Unless advised otherwise by the Commissioner in a Work Order, the Contractor is deemed on notice that each DCAS Facility operates twenty-four (24) hours a day, seven (7) days a week. Toilet facilities, water, electricity, heat and other building services must be always operational. Therefore, the Contractor shall not interfere with or interrupt building services without prior written authorization by the Commissioner in his/ her sole discretion. Any permitted interference or interruption shall be made as brief as possible and shall be carried out only at the time(s) previously

stated and authorized by the Commissioner. The Contractor shall provide prior written notice of such intended interference or interruption to the building personnel, and to the Commissioner, at least two (2) business days prior thereto.

(B) The building may be occupied by City employees and/ or judicial/court personnel whose work cannot be interrupted or hindered. At all times the Contractor shall avoid making unnecessary noise, to the fullest extent possible, and noise that cannot be avoided shall be kept to a minimum. The Contractor shall therefore schedule its work to avoid noise interference which is likely to affect the regular operations and routines of the building and its occupants. The Commissioner shall have the right to order such work done during other than regular working hours or on weekends in his/ her sole discretion.

(C) As determined by the Commissioner in his/ her sole discretion, if the performance of Contract Work may interfere with the operations of the building or its occupants and/ or will require the temporary shutdown of one or more building services, the Commissioner may direct that the work in question and/ or the temporary shutdown of building services be done during other than regular working hours or on weekends or at such other time(s) that the Commissioner determines will result in the least possible interference with building operations.

(D) The Contractor shall arrange to work continuously, including overtime if required, to ensure that any interference or interruption of building services, operations or routines shall take place only during the authorized time required to complete such Work.

(E) If the Contractor's Work interferes with access or egress to the building including but not limited to doors, ramps, escalators, elevators, or any other type of conveying system necessary to ensure compliance with the requirements of the Americans with Disabilities Act ("ADA"), the New York State Human Rights Law ("NYSHRL"), the New York City Human Rights Law ("NYCHRL"), and/ or any other applicable law, rule or regulation, the Contractor, at its sole cost and expense, shall be responsible for ensuring compliance with such requirements until such Work is completed.

ARTICLE 34- SPECIAL INSPECTIONS AND PROGRESS INSPECTIONS

(A) The Contractor will inform the Commissioner and the Consultant, in writing, a minimum of fourteen (14) days in advance of concealing or covering with any other construction, all or any portion of the Work subject to special or progress inspection(s) in accordance with the rules and regulations of the Department of Buildings or any other regulatory body with jurisdiction over the Work then in effect, and shall not conceal or cover the Work without prior, written approval of the Commissioner and the Consultant.

(B) Where Work subject to special and/ or progress inspections(s) is covered or enclosed by other construction prior to special and/ or progress inspection without the prior written approval of the Commissioner and the Consultant as hereinabove set forth, such construction will be removed as necessary by the Contractor, at no additional cost to the City, to permit all appropriate and mandated inspection(s). Upon the completion of the special and/ or progress inspection(s) and the determination that the inspected work is acceptable, all such work shall then be covered and enclosed by the new construction at no additional cost to the City and any delay in the completion of the Work occasioned thereby shall not be cited by the Contractor for the purposes of claiming delay damages, but may be considered by the City for purposes of assessing liquidated damages in accordance with the Contract.

ARTICLE 35- SHOP DRAWING AND MATERIAL SAMPLES SCHEDULE

(A) To enable construction to be transacted in an orderly and expeditious manner, the Contractor at the kickoff meeting shall review the "SHOP DRAWING LOG/SCHEDULE" and the "SPECIAL DRAWING LOG/ SCHEDULE" and the "SPECIAL SUB-CONTRACTOR REQUIREMENTS", included in this Article, with the Commissioner and the Consultant. It shall be the responsibility of each contractor to complete columns "SUB (SUBMISSION) DATE", "REQ'D (REQUIRED) DEL (DELIVERY) DATE" and "FABRIC (FABRICATION) TIME" on this schedule within seven (7) days after the kickoff meeting.

(B) The Construction Manager for this Project will coordinate and review the data submitted by various contractors, and amend as necessary, and approve. Upon acceptance, the Construction Manager will date and sign the schedule as received, and transmit it to the Consultant, Contractor and DCAS Architects/Engineers.

(C) Thereafter, this schedule will be subject to the relevant provisions of the Agreement and will be strictly adhered to by the Contractor.

ARTICLE 36- REQUIREMENTS CONTRACT PROVISIONS

(A) All references in these General Conditions to the Work to be performed under the Contract shall apply to the Work to be performed under each Work Order, and any reference to Specifications shall apply to the Specifications and the Work specified in a Work Order or a Supplementary Work Order.

(B) In the Commissioner's sole discretion, a determination by the Commissioner to default the Contractor on a particular Work Order may either be deemed a partial default under the Contract or a default of the entire Contract.

(C) The Contractor awarded this Contract is required to ensure the performance of the Work and the associated responsibilities required by all other contracts and subcontracts referenced under these General Conditions.

(D) If a Contractor is defaulted on one or more Work Orders pursuant to the Contract or the Contract is terminated pursuant to the Agreement, the Commissioner, in his/ her sole discretion may assign Work Order(s) to any other Contractor in accordance with the Contract or have the work performed by City employees.

ARTICLE 37- APPROVAL OF REQUISITIONS

(A) No requisitions submitted by the Contractor shall be deemed a proper invoice as defined in the PPB Rules and approved for payment unless the Contractor provides adequate documentation with its requisition that demonstrates that the invoiced work has actually been performed, e.g. supplier invoices, photographs, or any other form of proof that DCAS finds satisfactory in its sole discretion.

(B) Such documentation must be provided with a requisition for the Work submitted no more than sixty (60) days after the work was performed.

(C) If the Contractor fails to provide such documentation within the requisite timeframe, the Contractor shall be solely responsible for all costs incurred by DCAS to confirm that the invoiced work was performed, including but not limited to the cost of uncovering and then closing concealed work. Notwithstanding the foregoing, if such documentation is not timely provided, DCAS further reserves the right, in its sole discretion, to disapprove all or any part of a requisition where the purportedly performed Work cannot be verified to its satisfaction.

END OF GNERAL CONDITIONS