



George Latimer, Westchester County Executive

**General Requirements and Proposals
Information for Bidders
General and Special Clauses
Technical Specifications**

**BOILER REPLACEMENT AND ASSOCIATED WORK
VERNON PLAZA FAMILY CENTER
17 SOUTH SECOND AVENUE
MOUNT VERNON, NEW YORK**

**Contract No. 21-514
Bid Opening: JULY 7, 2021**

By Bidder (Please Print)

Firm/Business Name: _____

Address: _____

For Official Use Only

DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

Division of Engineering

SPECIAL NOTICE

County of Westchester
New York

ADDENDA TO THE BID DOCUMENTS

Addenda to the Bid Documents will be published on the Empire State Purchasing Group website at (<http://www.bidnetdirect.com/new-york>) **It is the responsibility of each potential bidder to check the website on a regular basis for further information relative to the bid documents including information relating to any and all addenda** prior to submitting its bid. All Bidders are deemed to have reviewed and considered all addendums in their Bid.

SUBMISSION OF BIDS

Bidders should not submit the entire bid document with its bid submission. Instead, each bidder is required to submit the full set of designated Proposal Pages. The Proposal Pages are denoted by a border and are titled on the bottom as “Proposal Page ____”. The Proposal Pages must be accompanied by the “Bid Bond and Consent of Surety” (as set forth in the Proposal Pages) attached to the outside of the sealed bid. A Bid Bond is NOT required for contracts of \$100,000 or less. Failure to submit in this manner may cause the bid to be rejected.

The successful bidder will be required to furnish a Performance and Payment Bond.

SPECIAL NOTICE

County of Westchester
New York

MANDATORY PRE-BID SITE INSPECTION

- A. Superseding the first paragraph of Article “3. PRE-BID SITE INSPECTION” of the Information for Bidders, Bidders are required to attend a Mandatory Pre-Bid Site Inspection at 10:00 a.m. Tuesday, June 29, 2021 at a meeting at Vernon Plaza Family Center, 17 South Second Avenue, Mt. Vernon, New York, at which time they will examine the work site under escort by the County’s representative.

**BIDS FROM CONTRACTORS NOT IN ATTENDANCE AT THIS MEETING, OR
THOSE WHO FAIL TO SIGN THE ATTENDANCE SHEET-WILL BE REJECTED**

- B. Bidders shall indicate their interest in the Mandatory Pre-Bid Site Inspection by contacting Mr. Vincent Leone, P.E., Department of Public Works and Transportation, Division of Engineering at (914) 995-5107.
- C. All other portions of Article “3. PRE-BID SITE INSPECTION” of the Information for Bidders shall remain in full force and effect.

SPECIAL NOTICE

County of Westchester
New York

MINORITY PARTICIPATION POLICY

Contractors must comply with the County's Minority Participation Policy, including, but not limited to, the requirement that contractors make a demonstrated good faith effort to utilize Minority Owned Businesses ("MOB") and Women Owned Businesses ("WOB") (see IFB Article 36). To assist contractors in this effort the County has made available a list of MOB and WOB at <http://mwbe.westchestergov.com/> Contractors are also encouraged to utilize other sources to identify potential MOB and WOB as subcontractors and suppliers.

All bidders must submit as part of their bid package the Minority/Women Owned Business Enterprise Questionnaire located in the Proposal Page section of the bid documents.

SPECIAL NOTICE

County of Westchester
New York

CHANGES IN THE WICKS LAW

Effective July 1, 2008, construction contracts of one million five hundred thousand dollars or less will not require the preparation of separate contracts for plumbing and gas fitting; steam heating, hot water heating, ventilation and air conditioning apparatus; and electric wiring and standard illuminating fixtures and general construction.

Each bidder on a public work contract, where the preparation of separate contracts is not required shall, to the full extent applicable, submit with its bid a separate sealed list that names each Subcontractor that the bidder will use to perform work on the contract and the agreed upon price to be paid to each for (a) plumbing and gas fitting, (b) steam heating, hot water heating, ventilating and air conditioning apparatus and (c) electric wiring and standard illuminating fixtures and (d) general construction. The submission (Proposal Page 6) that contains the agreed upon price shall be acknowledged by both Contractor and Subcontractor. For purposes of this paragraph, the acknowledgment from the Subcontractor may contain the facsimile signature of an officer of the Subcontractor.

After the low bid is announced, the sealed list of subcontractors submitted with the bid shall be opened and the names of such subcontractors shall be announced. Thereafter, any changes of subcontractors or agreed-upon amount to be paid to each shall require the approval of the County upon a showing of legitimate construction need for such change.

The Successful low bidder, before award of the contract, must procure and provide to the County, from each of the above denoted Subcontractors, a Contract Disclosure Statement and the Required Disclosure of Relationships to County forms.

The sealed lists of Subcontractors submitted by unsuccessful bidders shall be destroyed after the contract award.

THIS PROJECT IS NOT SUBJECT TO THE REQUIREMENTS OF THE “WICKS LAW”. ACCORDINGLY, EACH BIDDER IS REQUIRED TO SUBMIT SPECIFIC INFORMATION PERTAINING TO ITS PROPOSED SUBCONTRACTORS. PLEASE SEE THE “NOTICE TO CONTRACTORS” THAT FORMS A PART OF THESE BID DOCUMENTS.

SPECIAL NOTICE

County of Westchester
New York

COMPLETION OF GRANT FUNDING FORMS

The bidders are hereby notified that if this project, or any portion thereof, is funded by a grant then the contractor will be responsible to complete all appropriate forms as required by the grant agency in order to complete the application.

PROMPT EXECUTION AND RETURN OF CONTRACT

- A. The successful bidder is required to return the completed contract to the County within ten (10) days of receipt of the execution copy of the contract. The contract must be signed, notarized and returned to the County with all insurance certificates, bonds and supporting documentation, including all required Subcontractor information.
- B. The County reserves all of its rights, including, but not limited to, proceeding against the bid bond, if the successful bidder fails to submit the complete executed package within the above time frame.

NOTICE TO CONTRACTORS

County of Westchester
New York

Sealed proposals for the following construction work:

CONTRACT NO: 21-514

ADVERTISING: June 18, 2021

MANDATORY PRE-BID INSPECTION: June 29, 2021

BOILER REPLACEMENT AND ASSOCIATED WORK VERNON PLAZA FAMILY CENTER 17 SOUTH SECOND AVENUE MOUNT VERNON, NEW YORK

will be received by the Board of Acquisition and Contract in Room 528, Michaelian Office Building, 148 Martine Ave., White Plains, New York until 11:00 a.m., Wednesday, July 7, 2021, and immediately thereafter and in accordance with Executive Order 202-11 issued by Governor Cuomo on March 27, 2020, the bids will be opened and recorded in a proceeding that is accessible to the public via the livestreaming service WebEx. For additional bidding information or questions call (914) 995-2274.

Instructions for livestreaming via WebEx. Attendees may join by computer browser at <https://westchestergov.webex.com/meet/bac-bidopening> or by phone 1-415-655-0001 US Toll or 1-844-621-3956 US Toll Free. The Access Code is 614 981 028.

The Bid Documents (General Requirements, Information for Bidders, Technical Specifications, etc. with Authorized Proposal Pages) **MUST BE OBTAINED** from the Empire State Purchasing Group website at the following web address:

<http://www.bidnetdirect.com/new-york>.

There is no cost to the bidder for this service. Bid documents will be available after 1:00 p.m. on the advertising date.

PLEASE TAKE NOTICE: IN ORDER TO SUBMIT A BID, BIDDERS MUST REGISTER AND DOWNLOAD THE BID DOCUMENTS FROM THE EMPIRE STATE PURCHASING GROUP WEBSITE AND MUST REGISTER USING THE NAME OF THE PERSON OR BUSINESS ENTITY THAT WILL BE SUBMITTING THE BID. IN ORDER TO ENSURE THAT COUNTY BID DOCUMENTS HAVE NOT BEEN ALTERED IN ANY WAY, THE COUNTY WILL NOT ACCEPT BIDS FROM PERSONS OR BUSINESS ENTITIES THAT HAVE NOT FOLLOWED THIS REQUIREMENT.

The Bid Documents include Contract Drawings which **MAY BE OBTAINED** at no cost on the Empire State Purchasing Group website at the following web address: <http://www.bidnetdirect.com/new-york>, after 1:00 p.m. on the advertising date.

If the bidder is unable to utilize the electronic version of the Contract Drawings that are available on the Empire State Purchasing Group Website, the bidder may purchase copies of the Contract Drawings. Contract Drawings may be obtained from the Office of the Board of Acquisition and Contract at the above address after 1:00 p.m. on the advertising date and between the hours of 9:00 a.m. to 4:00 p.m. Monday thru Friday. Copies of the Contract Drawings shall be made available upon payment of a personal check, company check or money order made payable to the County of Westchester, in the amount of **\$100.00** per set. For bidders, the deposit for each set of drawings will be refunded in full if returned in good condition within thirty days after award or rejection of bids. For non-bidders, only fifty percent of the deposit will be refunded. No refunds will be made to the successful bidder.

Each bidder is required to submit the full set of authorized Proposal Pages and all bids over **\$100,000.00** must also be accompanied by the "Bid Bond and Consent of Surety" (as set forth in the Proposal Pages) attached to the outside of the sealed bid. Failure to submit in this manner may cause the bid to be rejected. **The successful bidder, no matter the amount of its bid, will be required to furnish a Performance and Payment Bond with its signed contract.**

To the full extent applicable, each bidder shall submit with its bid a separate sealed list that names each Subcontractor that the bidder will use to perform work on the contract and the agreed upon price to be paid to each for: (a) plumbing and gas fitting, (b) steam heating, hot water heating, ventilating and air conditioning apparatus and (c) electric wiring and standard illuminating fixtures and (d) general construction. The submission (Proposal Page 41) that contains the agreed upon price shall be acknowledged by both Contractor and Subcontractor. For purposes of this paragraph, the acknowledgment from the Subcontractor may contain the facsimile signature of an officer of the Subcontractor.

The Successful low bidder, before award of the contract, must obtain and provide to the County, from each of the above denoted Subcontractors, fully completed and signed Contract Disclosure Statement (Proposal Pages 24-32) and Required Disclosure of Relationships to County (Proposal Pages 33) forms.

The sealed lists of Subcontractors submitted by unsuccessful bidders shall be destroyed, unless you request that it be returned by checking the applicable box on Proposal Page 5.

The County of Westchester reserves the right to waive any informalities in the bids, or to reject any or all bids. No bidder may withdraw its bid within forty-five (45) days after the date of the bid opening.

Pursuant to Chapter 308 of the Laws of the County of Westchester, it is the goal of the County to use its best efforts to encourage, promote, and increase the participation of business enterprises owned and controlled by persons of color or women - Minority Business Enterprise (MBE) and Women Business Enterprise (WBE).

REMINDER: All required licenses should be submitted with the Bid.

COUNTY OF WESTCHESTER, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

BY: Hugh J. Greechan, Jr., P.E., Commissioner

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1. **GENERAL REQUIREMENTS AND PROPOSALS**

DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

Division of Engineering

GENERAL REQUIREMENTS

1. DESCRIPTION OF THE WORK

Work under this Contract includes all necessary labor, materials and equipment required to:

- Replace existing boiler, boiler feed unit, fresh air intake system, new flue thru existing chimney, and associated piping & specialties.
- Relocate existing domestic hot water heater.
- Replace existing domestic hot water storage tank.
- Provide new house keeping pad for all new and relocated equipment.
- Provide all required electrical and control connections to new and relocated equipment
- Provide proper access and lighting to existing mechanical room
- Provide general construction, structural, electrical and controls work as required.
- Temporary heating.
- All associated work specified on contract drawings and specifications.

It is not intended that this description of work mention each particular item required, but that it give information concerning the general scope and areas of work for the convenience of the bidders.

THIS PROJECT IS NOT SUBJECT TO THE REQUIREMENTS OF THE “WICKS LAW”. ACCORDINGLY, EACH BIDDER IS REQUIRED TO SUBMIT SPECIFIC INFORMATION PERTAINING TO ITS PROPOSED SUBCONTRACTORS. PLEASE SEE THE “NOTICE TO CONTRACTORS” THAT FORMS A PART OF THESE BID DOCUMENTS.

GENERAL REQUIREMENTS

2. SUBCONTRACTING & DIRECT EMPLOYMENT OF LABOR

The Contractor shall not subcontract more than ninety (90%) percent of its bid. The Contractor must directly employ at least ten (10%) percent of the personnel working on this contract as measured in man-days worked.

“Directly employ” shall be construed to include only workers employed and paid directly by the Contractor, usually for wages or salary.

The Contractor expressly acknowledges that any violation of this provision constitutes a default under this contract.

3. REQUIRED TIME FOR COMPLETION OF THE WORK

Notification to commence the work will require the mandatory submission of all the executed contracts and the Certificates of Insurance after receipt of authority to award.

The Contractor shall commence the work embraced in this contract within ten (10) days of the service of Notice by the County to do so and shall complete the said work within (120) consecutive calendar days computed from the date of such Notice to commence.

GENERAL REQUIREMENTS

4. SECURITY REGULATIONS

Security Regulations For all County Facilities except County Correctional Facilities:

- A. Contractor's attention is called to the fact that this work is to be performed on property which is the responsibility of the County; therefore, all personnel associated with this contract are subject to special conditions affecting security and control of the facilities operations. Every person required to enter the work site will be issued an ID card and be required to fill out appropriate applications. **There is a \$30.00 processing fee for each lost ID card**; remitted by check made payable to the County of Westchester. All ID processing will be scheduled by the Construction Administrator.
- B. The Contractor/Subcontractor shall issue a copy of the security regulations (Paragraph C) to all personnel engaged on this project.
- C. All Contractor/Subcontractor personnel shall be bound by the following security regulations for the duration of this contract.
 - 1) All personnel must conspicuously display the ID card and identify themselves upon request.
 - 2) If an ID card is misplaced or lost, report this immediately to the Inspector.
 - 3) All Contractor/Subcontractor personnel are responsible for all tools and equipment and you must report any loss immediately to the Construction Administrator.
 - 4) All personnel must observe all orders of the Owner.
 - 5) All personnel are to report any unusual incidents or problems to the Construction Administrator immediately.
 - 6) All personnel shall not possess or consume any alcoholic beverage or illegal drug or medication while on the property, or report to work under the influence of alcohol or drugs.
 - 7) Any vehicle left on the property must be locked and the ignition keys must be removed. Vehicles will not be left overnight without prior approval.
 - 8) All personnel shall not enter any other areas of the premises (except the areas agreed to) without prior approval of the Construction Administrator.

Security Regulations For County Correctional Facilities:

- A. Contractor's attention is called to the fact that this work is to be performed on property adjacent and/or within the County's Correctional Facilities; therefore, all personnel associated with this project are subject to special conditions affecting security and control of the Correctional Facility Operations. Every person required to enter the work site will be fingerprinted, processed for a photo ID card and be required to fill out appropriate applications. **There is a \$100.00 processing fee for each person**, checks made payable to the Commissioner of Finance. All ID processing will be scheduled by the Construction Administrator.

GENERAL REQUIREMENTS

- B. All Contractors and Subcontractors shall issue a copy of the security regulations (Paragraph C) to all personnel to be engaged on this project.
- C. All Contractor's and Subcontractor's personnel shall be bound by the following security regulations for the duration of this project.
 - 1) All personnel entering the Penitentiary, Jail or Women's Unit must stop and identify themselves to the Control or Desk Officer who will issue the appropriate pass after ascertaining that they have been cleared to enter the facility. Only workers with valid ID will be permitted entry. **NO HELPERS.**
 - 2) All personnel must sign in the Visitor's Book, to include the following information: **PERSON'S NAME, COMPANY NAME, REASON FOR ENTRY, WORK LOCATION IN BUILDING.**
 - 3) All personnel must conspicuously display the ID card and identify themselves upon request.
 - 4) If ID card is misplaced or lost, report this loss immediately to the Shift Captain or Associate Warden.
 - 5) All tradesmen will be required to perform a tool inventory inspection of all tools in their possession to demonstrate to the admitting Correction Officer that the typed inventory list matches the tools each time they enter and leave the building. The tradesmen are responsible for keeping all tools and equipment locked when not in immediate use and they must report any loss of tools or equipment immediately to the Shift Captain or Associate Warden.
 - 6) All tradesmen and helpers shall carry all tools in a locked and secured tool box or tool cart. A typed inventory sheet shall be carried with the tool box/cart listing all hand and power tools. A manufacturer's MSD Sheet shall be carried with the tool box/cart for any chemical compound that the tradesman has in his/her possession.
 - 7) All debris (i.e. packaging, demolition, etc) shall be removed from the worksite at the end of each workday.
 - 8) All personnel are subject to search at all times.
 - 9) All personnel must observe all orders of Correctional Staff.
 - 10) All personnel are to report any unusual incidents or problems to a Correction Officer, Shift Captain or the Associate Warden immediately.
 - 11) All personnel shall not possess or consume any alcoholic beverage or illegal drug or medication while on County property, or report to work under the influence of alcohol or drugs.
 - 12) Any vehicle left on County property must be locked and the ignition keys must be removed. Vehicles will not be left over-night on County property without prior approval.
 - 13) All personnel shall not enter any other areas of the prison (except the areas agreed to) without prior approval of the Shift Captain or the Associate Warden.

GENERAL REQUIREMENTS

- 14) All personnel shall not bring anything in for any inmate/detainee or staff member or take out anything for any inmate/detainee or staff member.
- 15) All personnel shall not engage in any unnecessary conversations with any inmate/detainee.
- 16) Weapons, i.e., guns, knives, blackjacks, to include any tool activated by gunpowder or other explosive charge is prohibited in the building (i.e., stud gun). Violators of this rule are subject to arrest.
- 17) All personnel must sign out when leaving and must return the ID card to the Control/Desk Officer before leaving.
- 18) Failure of the contractor to follow these procedures will result in the contractor being denied access to the facility.

5. PAYMENT FOR BONDS AND INSURANCE

The amount bid for contract bonds and insurance shall not exceed 3% of the total contract price excluding the bid price for Miscellaneous Additional Work (Item W800) and Field Testing Equipment (W851), where applicable. Should the bidder exceed the foregoing three percent (3%), the Department will make the necessary adjustment to determine the total amount bid based on the arithmetically correct proposal.

The amount bid shall be payable with the first contract payment.

GENERAL REQUIREMENTS

CONTRACT DRAWINGS:

CONTRACT NUMBER 21-514

The Design Drawings, as listed on the Contract Drawing Index, herewith made a part of these Specifications, shows in general and/or in detail the work to be done under this Contract and/or the various Contracts forming the entire work for the Project, as described herein.

After sending the executed contract to the County and prior to the first job meeting, the Contractor is responsible for obtaining from Public Works, Division of Engineering, Michaelian Office Building, White Plains, a maximum of five gratis copies of the Contract Drawings and Specifications; for the Contractor's permanent possession. Additional sets, requested by the Contractor, beyond the permitted number and time limit, will be furnished by Public Works; but at the Contractor's expense.

<u>DRAWING NO.</u>	<u>TITLE</u>	<u>SHEET NO.</u>
T-1	TITLE SHEET	54-29-T-47
A-1	CELLAR FLOOR PLANS	54-29-A-48
P-1	DETAILS, SYMBOL LEGEND & NOTES	54-29-P-49
P-2	DEMOLITION AND NEW WORK PLAN, CELLAR LEVEL	54-29-P-50
HV-1	DETAILS AND SYMBOL LEGEND	54-29-HV-51
HV-2	NOTES	54-29-HV-52
HV-3	DEMOLITION AND NEW WORK PLAN, CELLAR LEVEL	54-29-HV-53
HV-4	SCHEDULES AND SCHEMATICS	54-29-HV-54
E-1	BOILER ROOM POWER AND LIGHTING PLAN	54-29-E-55

Submit all proposal pages in this section, including all executed and unexecuted pages and fasten with a clip at the upper left hand corner.



George Latimer, Westchester County Executive

PROPOSAL PAGES

**BOILER REPLACEMENT AND ASSOCIATED WORK
VERNON PLAZA FAMILY CENTER
17 SOUTH SECOND AVENUE
MOUNT VERNON, VALHALLA, NEW YORK**

**Contract No. 21-514
Bid Opening: JULY 7, 2021**

By Bidder (Please Print)	For Official Use Only
Firm/Business Name: _____	
Address: _____	
_____	_____

**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
Division of Engineering**

PROPOSAL REQUIREMENTS

BIDDER'S IDENTIFICATION

CONTRACT NO. _____

To the Commissioner of Public Works, Westchester County, New York, acting for the party of the first part.

Proposal made by _____
as party of the second part.

Whose business address is _____

Whose telephone number is _____

Whose E-mail address is _____

Whose Federal ID number is _____

Is bidder an individual,
a partnership or a corporation? _____

If a partnership or corporation,
give the names of all partners
or officers with their titles _____

If operating under a trade name or as partners, has the required Certificate been filed with a County Clerk in accordance with the General Business Law, Section 130?

Yes....[] No....[] N.A....[]

If the answer is NO, Certificate must be filed before the contract can be executed.

NOTE: the bid must be submitted using the Contractor's legal name, not just the "doing business as" (i.e. DBA) name.

COMPLETE THIS FORM USING BLACK INK ONLY

PROPOSAL REQUIREMENTS

1. The undersigned, the bidder, does hereby declare that it has carefully read the contract specifications and has carefully studied the relevant plans, profiles and other drawings (as defined in Article "Contract Drawings" of the General Requirements) relating to the contract work, and has inspected the site(s) of the work..
2. The undersigned does hereby declare that it is the only one interested in its indicated bid; that the bid is in all respects without fraud or reservations; and that no official of the County or of the participating municipalities (if any), or any person in the employ of the County of participating municipalities (if any) is directly interested in the contract bid or in the supplies, equipment or works to which it relates, or in any part of the profits resulting there-from.
3. The undersigned does hereby offer and agree to furnish all materials, to fully and faithfully construct, perform and execute all work under the contract in accordance with the plans, profiles, other drawings and specifications relating thereto, and to furnish all labor, tools, implements, machinery, forms, transportation and materials necessary and proper for said purpose at the following indicated lump sum price for the total work and/or the following indicated unit prices for the various items of the work.
4. The undersigned does hereby declare that the indicated price(s) cover all expenses of every kind incidental to the completion of the contract work, including all claims affecting the work, labor and materials, which may arise through any cause whatsoever, excepting as provided for in Article "Disputed Work-Notice Of Claims For Damages: of the General Clauses.
5. The undersigned hereby agrees that in the event that the quantities of contract work actually performed by the undersigned are less than the approximate quantities indicated in the specifications it will make no claim(s) for loss of anticipated profits.
6. The undersigned does hereby agree that it will execute a contract containing all the terms, conditions, provisions and covenants necessary to complete the work according to the appropriate plans and specifications, within ten working days after receipt by the undersigned of the contract from the County, and that if it fails to execute said contract within said period of time the County may rescind the contract award and may retain as liquidated damages and not as a penalty, any amounts submitted as the bid security accompanying the undersigned's proposal, and/or demand from the Bidder's Surety Company that executed the required Bid Bond and Consent of Surety to pay to the County the difference between the amount bid and the amount for which such contract is thereafter awarded, together with the cost to the County of reletting said contract up to the maximum aggregate amount of 25% of the amount bid.
7. The undersigned does hereby agree to commence the work encompassed under the contract within ten days after notification in writing from the Commissioner of Public Works or his authorized designee, unless a definite earlier or later start has been specified, and will complete the work fully and in every respect on or before the specified completion date; and further agrees that the County has the right to employ such combination of labor, equipment

PROPOSAL REQUIREMENTS

and materials as may be required for the proper completion of the contract work and to deduct all costs from such monies as may be due the undersigned, in the event the contract work is not completed by the specified completion date.

- 8. The undersigned does hereby agree to comply with all relevant provisions of the Labor Laws of the State of New York, and agrees to adhere to the provisions relating to the eight-hour day and five-day week, the payments of minimum rates for labor, and the latest laws relative to payments for wages for labor on public contracts.

- 9. The undersigned does hereby agree to insure all persons connected with the contract work against accident, at its own expense, as prescribed by the Workmen's Compensation Law of the State of New York; and that it will be responsible for payments by itself, its subcontractors and vendors of all taxes applicable to the work, and all other payments as may be required by various laws and rules and regulations of the Federal Government, the State of New York and its political subdivisions and agencies, such payments including but not limited to the following:
 - A. Federal Social Security Taxes on employees' wages.
 - B. Applicable Federal Excise Taxes.
 - C. New York State Unemployment Insurance and Disability Payments, based on employees' wages.

- 10. The undersigned does hereby agree to accept their indicated lump sum price for the total work and/or their indicated unit prices for the various items of the work as the sole basis in the determination of the value of addition to, or deletions from the specified scope of the contract work.

11. ADDENDUM RECEIPT - CONTRACT NO. _____

(The undersigned shall fill in contract number above, and the required information below.)

The undersigned does hereby acknowledge receipt of the below listed addenda to the contract specifications:

Addendum No. _____	Dated _____

COMPLETE THIS FORM USING BLACK ONLY

PROPOSAL REQUIREMENTS

12. Bidders should not submit the entire Bid document with its bid submission. Instead, Bidders must submit ALL of the Proposal Pages. Proposal Pages are denoted by a border and are titled on the bottom as "Proposal Page ___".

Be sure that, where required, the forms have been completed and signed by a notary public.

Proposal Page 12 must be completed by a surety company and submitted with the bid if a Performance and Payment Bond is required in accordance with the "Notice to Contractors".

13. NON-COLLUSIVE BIDDING CERTIFICATION

Made pursuant to Section 103-d of the General Municipal Law of the State of New York as amended by the Laws of 1966.

- A. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:
- 1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
 - 2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and
 - 3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.
- B. A bid shall not be considered for award nor shall any award be made where a. (1), (2) and (3), above, have not been complied with; provided however, that if any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where a. (1), (2) and (3), above, have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not added for the purpose of restricting competition."
14. The undersigned and each person signing in behalf of the undersigned hereby executes the foregoing Affirmative Action Questionnaire, Proposal, Addendum Receipt and Non-Collusive Bidding Certification.
15. The undersigned and each person signing on behalf of the undersigned hereby certifies that

PROPOSAL REQUIREMENTS

the person, firm or corporation submitting this proposal as the bidder has not been found guilty of a willful violation of the New York State Labor Law for failure to pay prevailing wages and supplements, as those terms are defined by the New York State Labor Law, within the twelve (12) months immediately preceding the submission of this bid.

16. The undersigned, by submitting the Proposal Pages, acknowledges that it has read the complete bid package including any and all addenda thereto and its bid includes all of the terms and conditions set forth in the bid documents, including, but not limited to, the Notice to Contractors, General Requirements and Proposals, Contract plans/drawings (if any), Proposal Forms, Information for Bidders, General Clauses, Sample Forms and Attachments, Sample Contract and Bond, Schedule of Hourly Rates and Supplements, Technical Specifications, any Special Notices and all applicable laws, rules and regulations. The undersigned further acknowledges that by submitting this bid the above denoted items are incorporated by reference and constitute an integral part of its bid.
17. The undersigned agrees that, if it is not the Successful bidder, the Sealed List of Subcontractors submitted with its bid can be destroyed by the County. **Please check the following box if you want the Sealed List of Subcontractors returned to you.**

Dated _____, 20__

Legal Name of Person, Firm or Corporation

(Seal of Corporation)

Business Address of Person, Firm or Corporation

By _____
Signature

Title

COMPLETE THIS FORM USING BLACK INK ONLY

ITEMIZED PROPOSAL

ITEM NO.	DESCRIPTION	AMOUNT BID	
		DOLLARS	CENTS
A	For providing all labor, material and equipment necessary to complete all work as shown on the contract drawings and in accordance with the specifications for the Boiler Replacement and Associated Work, Vernon Plaza Family Center, 17 South Second Avenue, Mt. Vernon, New York.	\$	
B	Allowance for providing labor, material, equipment and coordination necessary to complete all work related to existing temporary heating system located at Vernon Plaza Family Center, 17 South Second Avenue, Mt. Vernon, New York.	\$ 75,000	00
C	Contract Bonds and Insurance (Must not exceed 3.00% of items Subtotal A+B)	\$	
W800	Necessary for Miscellaneous Additional Work per Article "Miscellaneous Additional Work (Item W-800)" of Information for Bidders, as directed	\$ 85,000	00
GROSS SUM OF TOTAL BID		\$	

CONTRACTOR: _____

ADDRESS: _____

BY: _____

Signature/Title

CONTRACTOR'S ACKNOWLEDGMENT

(If Corporate)

STATE OF NEW YORK)
COUNTY OF WESTCHESTER) ss.:

On this _____ day of _____, 20____, before me personally came _____
_____ to me known and known to me to be the _____
_____ of _____ the corporation described in and which
executed the within instrument, who being by me duly sworn did depose and say that he the said_
_____ resides at _____
_____ and that he is _____ of said corporation and knows the corporate
seal of the said corporation; that the seal affixed to the within instrument is such corporate seal and
that it was so affixed by order of the Board of Directors of said corporation, and that he signed his
name thereto by like order.

Notary Public

CONTRACTOR'S ACKNOWLEDGMENT

(If Individual)

STATE OF NEW YORK)
COUNTY OF WESTCHESTER) ss.:

On this _____ day of _____, 20____, before me personally came _____
_____ to me known, and known to me to be the same person described in
and who executed the within instrument and he duly acknowledged to me that he executed the same
for the purpose herein mentioned and, if operating under the trade name, that the certificate required
by the New York State General Business Law Section 130 has been filed with the County Clerk of
Westchester County.

Notary Public

CONTRACTOR'S ACKNOWLEDGMENT

(If Co-Partnership)

STATE OF NEW YORK)
COUNTY OF WESTCHESTER) ss.:

On this _____ day of _____, 20____, before me personally came _____
_____ to me known, and known to me to be a member of the firm of
_____ and the person described in, and who executed the
within instrument in behalf of said firm, and he acknowledged to me that he executed the same in
behalf of, and as the act of said firm for the purposes herein mentioned and that the certificate
required by the New York State General Business Law Section 130 has been filed with the County
Clerk of Westchester County.

Notary Public

COMPLETE THIS FORM USING BLACK INK ONLY

CERTIFICATE OF AUTHORITY

I, _____
(Officer other than officer executing proposed documents)

certify that I am _____ of the
(Title)

(Name of Contractor)

(the "Contractor"), a corporation duly organized and in good standing under the

(Law under which organized, e.g., the New York Business Corporation Law)

named in the foregoing agreement; that _____
(Person executing proposal documents)

who signed said agreement on behalf of the Contractor was, at the time of execution the

(Title of such person)

duly signed for and in behalf of said Contractor by authority of its Board of Directors, thereunto
duly organized, and that such authority is in full force and effect at the date hereof.

(Signature)

(SEAL)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this _____ day of, _____, 20____, before me personally came
_____ to me known, and known to me to be
the _____ of _____, the
Corporation described in and which executed the above certificate, who being by me duly sworn did
depose and say that he, the said _____ resides at
_____ and that he is _____
_____ of said Corporation and knows the Corporate Seal of the said
Corporation; that the seal affixed to the above certificate is such Corporate Seal and that it was so
affixed by order of the Board of Directors of said Corporation, and that he signed his name thereto
by like order.

Notary Public

COMPLETE THIS FORM IN BLACK INK ONLY

***Required for all Bids over \$100,000 where a Performance & Payment Bond
is Required in accordance with the "Notice to Contractors"***

CONTRACT NO. _____

BID BOND AND CONSENT OF SURETY

KNOW ALL PERSONS BY THESE PRESENTS, That _____
(Name of Contractor)

(Address)

(hereinafter called the "Principal") and the _____ a
corporation created and existing under the laws of the State of _____, having its principal office
at _____ (hereinafter called the "Surety"),

(PRINT FULL ADDRESS OF SURETY)

are held and firmly bound unto the County of Westchester (hereinafter called the "Obligee"), in the full just
sum of *Twenty-Five (25%) Percent of the Attached Bid*, good and lawful money of the United States of
America, for the payment of which said sum of money, well and truly to be made and done, the said
Principal binds themselves (himself/herself, itself), their (his/her, its) heirs, executors and administrators,
successors and assigns, and the said Surety binds itself, its successors and assigns jointly and severally,
firmly by these presents:

WHEREAS, the said Principal has submitted to the County of Westchester, New York, a
proposal/bid for Contract Number: _____
Project Title: _____ and

WHEREAS, under the terms of the Laws of the State of New York as above indicated, the said
Principal has filed or intends to file this bond to guarantee that the Principal will execute all required contract
documents, furnish all required insurance and furnish such Performance and Payment Bonds or other bonds
as may be required in accordance with the terms of the Principal's said proposal/bid.

NOW, THEREFORE, the Surety agrees:

(i) if the Contract for which the preceding estimate and proposal is made, is awarded to the Bidder by
the County, the Surety shall become bound as Surety and guarantor for the faithful performance of the
Contract and shall execute and deliver a Performance & Payment Bond, in a form acceptable to the County,
in the amount of 100% of the total Contract price, or such other amount as may be specified in the Bid
documents, and shall execute the Contract as party of the third part when required to do so by the Board of
Acquisition and Contract of the County; and

(ii) if the Bidder shall, upon award of the Contract to the Bidder, fail or refuse to execute the Contract
and furnish the necessary bonds and insurance certificates, the Surety shall, on demand by the County, pay to
the County the difference between the amount bid and the amount for which such contract is thereafter
awarded, together with the cost to the County of reletting said Contract, up to the maximum aggregate
amount of this bond.

(iii) the condition of the foregoing obligation is such, that if the said Principal shall promptly execute
and submit, and the County shall accept, all required contract documents including insurance and such
Performance and Payment Bond or other bonds, all as may be required in accordance with the terms of the
Principal's said bid/proposal, then this obligation shall be null and void, otherwise to remain in full force and
virtue.

The Surety, for value received, the receipt of which is hereby acknowledged by the Surety, hereby stipulates and agrees that the obligation of the Surety and of its bond shall remain absolute and shall be in no way impaired, affected or discharged by an extension of time, mutually agreed to by the County and the Bidder, within which the County may award said Contract, and the Surety hereby waives notice of any such extension.

IN TESTIMONY WHEREOF, the said Principal has hereunto set his/her (their, its) hand and the said Surety has caused this instrument to be signed by its duly authorized officer this _____ day of _____ 200__.

Signed and delivered this ____ day of _____ 20____ in the presence of:

(Print Name of Contractor)

_____ Principal
(Signature)

(Title of Authorized Officer)

(Print Name of Surety)

By _____ Surety
(Signature)

(Title of Authorized Officer)

(The Surety Company shall append a single copy of a statement of its financial condition, a copy of the resolution authorizing the execution of Bonds by officers of the Surety Company, Power of Attorney, Surety Acknowledgment.)

AFFIRMATIVE ACTION PROGRAM REQUIREMENT

Affirmative Action Program

An approved Affirmative Action Plan shall be required in all contracts for public work where the awarded contract amount exceeds \$50,000 or more than fourteen (14) persons are employed by the Contractor and/or his subcontractors.

Does the Contractor participate in an approved Affirmative Action Program? Yes [] No []

If Yes, give name of Program: _____

If No, how many employees (total) does the Contractor employ. Please also include in your count the number of employees the Contractor and its Subcontractors expect to use on this project: _____

An approved Affirmative Action Program shall mean a plan approved or adopted by Westchester County including but not limited to, the Home-Town Plan, the Recruitment Training Program or any other program approved or meeting the requirements of the State or Federal government.

The “Monthly Employment Utilization Report” of the Sample Forms, shall be filled out by the Contractor and/or Subcontractor(s) who are required to have an Affirmative Action Program, prior to the start of the work.

Before any subcontractor is approved for use on this contract it will have to complete and submit the “Affirmative Action Program Requirement- Subcontractors” form of the Sample Forms.

COMPLETE THIS FORM USING BLACK INK ONLY

APPRENTICESHIP TRAINING PROGRAM REQUIREMENT

Apprenticeship Training Program

An approved Apprenticeship Training Program shall be required in all contracts for public work where the awarded contract amount exceeds \$50,000. and more than fourteen (14) persons are employed by the Contractor or Subcontractor(s).

Will the Contractor utilize apprentices for this Contract? Yes [] No []

If Contractor Yes, do the apprentices participate in an approved Apprenticeship Training Program? Yes [] No []

If Contractor Yes, give the name of the Program: _____

Will the Subcontractor(s) utilize apprentices for this Contract? Yes [] No []

If Subcontractor(s) Yes, do the apprentices participate in an approved Apprenticeship Training Program? Yes [] No []

If Subcontractor(s) Yes, give the name of the Program: _____

AN APPROVED APPRENTICESHIP TRAINING PROGRAM SHALL MEAN A NEW YORK STATE REGISTERED APPRENTICESHIP TRAINING PROGRAM AS DEFINED UNDER THE NEW YORK STATE LABOR LAW.

COMPLETE THIS FORM USING BLACK INK ONLY

CERTIFICATE OF LICENSE

(TO BE COMPLETED BY AN ELECTRICAL BIDDER ONLY)

_____, being duly sworn
(Name)

deposes and says that the following statements are true:

(1) I am the _____ of the
(Title)

_____, the bidder named on the
(Name of Contractor)

bid proposal, and I have read and am familiar with: a) the electrical license requirements contained in the Information for Bidders of the bid, b) Chapter 277 Article XVII of the Laws of Westchester County entitled Electrical Licensing Board and the Licensing of Master Electricians, and c) the Westchester County Electrical Licensing Board Rules and Regulations.

(2) I am familiar with, and this bid is being submitted in compliance with, the Westchester County Electrical Licensing Board Rules and Regulations, in particular No. 11, which states as follows:

No individual holding a Master Electrician’s License shall lend such License to any person or allow any other person to carry on, engage in, or labor at the business as defined herein of installing, removing, altering, testing, replacing, or repairing electrical systems. A violation of this section by any person holding a License shall be sufficient cause for revocation of such License.

However, nothing herein shall be construed to prohibit the use of a License by the holder thereof for or on behalf of a partnership, corporation or other business association, provided that fifty-one (51) percent or more of the control of the voting capital stock of such partnership, corporation, or other business association is owned by one (1) or more holders of a Westchester County Master Electrical License and that all work performed by such partnership, corporation or other business association is performed by or under the direct supervision of such License holder or holders.

(3) That, as of this date, the bidder submitting the bid possesses the applicable valid Master/”Special” Electrician’s license issued by the Westchester County Electrical Licensing Board; that this License is being used in compliance with the Laws of Westchester County and Westchester County Electrical Licensing Board Rules and Regulations; and **I have provided a copy of such license with the sealed bid proposal.**

COMPLETE THIS FORM USING BLACK INK ONLY

CERTIFICATE OF LICENSE (Continued)

(TO BE COMPLETED BY AN ELECTRICAL BIDDER ONLY)

(4) That all electrical work shall be performed in accordance with the requirements of Chapter 277 Article XVII of the Laws of Westchester County entitled Electrical Licensing Board and the Licensing of Master Electricians and the Westchester County Electrical Licensing Board Rules and Regulations.

(5) That I make this statement in connection with the submission of the bid as proof of the required electrical license, knowing that this statement will be relied upon by the County in the evaluation of that bid.

Signature

Sworn to before me
this _____ day of _____

License No.

Notary Public - State of New York

COMPLETE THIS FORM USING BLACK INK ONLY

CERTIFICATE OF LICENSE

(TO BE COMPLETED BY A PLUMBING BIDDER ONLY)

_____, being duly sworn
(Name)

deposes and says that the following statements are true:

(1) I am the _____ of the
(Title)

_____, the bidder named on the
(Name of Contractor)

bid proposal, and I have read and am familiar with: a) the plumbing license requirements contained in the Information for Bidders of the bid, b) Chapter 277 Article XV of the Laws of Westchester County entitled Westchester County Board of Plumbing Examiners and County-wide Plumbing License, and c) the Westchester County Board of Plumbing Examiners Rules and Regulations.

(2) I am familiar with, and this bid is being submitted in compliance with, Section 277.509A of Article XV of Chapter 277 of the Laws of Westchester County, which states as follows:

A. No holder of a license or certification issued under this article shall authorize, consent to or permit the use of his or her license or certification by or on behalf of any other person. No person who has not qualified or obtained a license or certification under this article shall represent himself or herself to the public as holder of a license or certification issued under this article, either directly, by means of signs, sign cards metal plates or stationery, or indirectly in any other manner whatsoever. However, nothing herein shall be construed to prohibit the use of a license by the holder thereof for or on behalf of a partnership, corporation or other business association, provided that 51 percent or more of the control of the voting capital stock of such partnership, corporation or other business association is owned by one or more holders of a Westchester County master plumbing license and that all work performed by such partnership, corporation or other business association is performed by or under the direct supervision of such license holder or holders.

(3) That, as of this date, the bidder submitting the bid possesses a valid Master Plumber's license issued by the Westchester County Board of Plumbing Examiners; that this License is being used in compliance with the Laws of Westchester County and the Westchester County Board of Plumbing Examiners Rules and Regulations; and **I have provided a copy of such license with the sealed bid proposal.**

COMPLETE THIS FORM USING BLACK INK ONLY

CERTIFICATE OF LICENSE (Continued)

(TO BE COMPLETED BY A PLUMBING BIDDER ONLY)

(4) That all plumbing work shall be performed in accordance with the requirements of Chapter 277, Article XV of the Laws of Westchester County entitled Westchester County Board of Plumbing Examiners and County-wide Plumbing License, and the Westchester County Board of Plumbing Examiners Rules and Regulations.

(5) That I make this statement in connection with the submission of the bid as proof of the required plumbing license, knowing that this statement will be relied upon by the County in the evaluation of that bid.

Signature

Sworn to before me
this _____ day of _____

License No.

Notary Public - State of New York

COMPLETE THIS FORM USING BLACK INK ONLY

CERTIFICATE OF LICENSE

(TO BE COMPLETED BY A HAULING BIDDER OR SUBCONTRACTOR ONLY)

_____, being duly sworn
(Name)

deposes and says that the following statements are true:

(1) I am the _____ of the
(Title)

_____, the bidder/subcontractor (circle one)
(Name of Contractor)

named on the foregoing bid proposal, and I have read and am familiar with the hauling license requirements contained in the Information for Bidders of the foregoing bid.

(2) That, as of this date, the bidder submitting the foregoing bid/subcontractor of the bidder submitting the foregoing bid (circle one) possesses a valid _____ license
(License type, i.e. Class "A")
issued by the Westchester County Solid Waste Commission.

(3) That all hauling work shall be performed in accordance with the requirements of Chapter 826-a of the Laws of Westchester County.

(4) That I make this statement in connection with the submission of the foregoing bid as proof of the required hauling license, knowing that this statement will be relied upon by the County in the evaluation of that bid.

Signature

Sworn to before me
this _____ day of _____

License No.

Notary Public - State of New York

COMPLETE THIS FORM USING BLACK INK ONLY

STORMWATER POLLUTION PREVENTION CERTIFICATION

I certify under penalty of law that I understand and agree to comply with the terms and conditions of the Stormwater Pollution Prevention Plan (“SPPP”) for the construction site identified in such SPPP as a condition of authorization to discharge stormwater. I also understand the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (“SPDES”) general permit for stormwater discharges from construction activities and it is unlawful for any person to contribute to a violation of water quality standards.

Signature

Sworn to before me

This _____ day of _____, 200_.

Notary Public – State of New York, County of _____

My Commission Expires on _____.

This Certification will also have to be signed by your subcontractors. Additional copies of this form can be acquired from the Department of Public Works.

COMPLETE THIS FORM USING BLACK INK ONLY

PREVAILING WAGE RATES AND SUPPLEMENTS

Compliance with the New York State Construction (Article 1, Section 17) and the New York State Labor Law (Section 220)

Is your firm in full compliance with the New York State Labor Law?
(Please check one)

Yes _____ No _____

Are the wage supplements paid into a Federally approved program?
(Please check one)

Yes _____ No _____

If Yes, please indicate which program:

If No, please indicate how the supplements are being paid:

Yes, I have read and understand the terms of this Contract and the laws of this Agreement:

Signature

Date: _____

Notary Public

Date: _____

COMPLETE THIS FORM USING BLACK INK ONLY

MINORITY/WOMEN BUSINESS ENTERPRISE PROGRAM QUESTIONNAIRE
QUESTIONNAIRE REGARDING BUSINESS ENTERPRISES
OWNED AND CONTROLLED BY WOMEN OR PERSONS OF COLOR

As part of the County's program to encourage the meaningful and significant participation of business enterprises owned and controlled by persons of color or women in County contracts, and in furtherance of Section 308.01 of the Laws of Westchester County, completion of this form is required.

A "business enterprise owned and controlled by women or persons of color" means a business enterprise, including a sole proprietorship, limited liability partnership, partnership, limited liability corporation, or corporation, that either:

- 1.) meets the following requirements:
 - a. is at least 51% owned by one or more persons of color or women;
 - b. is an enterprise in which such ownership by persons of color or women is real, substantial and continuing;
 - c. is an enterprise in which such ownership interest by persons of color or women has and exercises the authority to control and operate, independently, the day-to-day business decisions of the enterprise; and
 - d. is an enterprise authorized to do business in this state which is independently owned and operated.

- 2.) is a business enterprise certified as a minority business enterprise ("MBE") or women business enterprise ("WBE") pursuant to Article 15-a of the New York State Executive Law and the implementing regulations, 9 New York Code of Rules and Regulations subtitle N Part 540 et seq., **OR**

- 3.) is a business enterprise certified as a small disadvantaged business concern pursuant to the Small Business Act, 15 U.S.C. 631 et seq., and the relevant provisions of the Code of Federal Regulations as amended.

Please note that the term "persons of color," as used in this form, means a United States citizen or permanent resident alien who is and can demonstrate membership of one of the following groups:

- (a) Black persons having origins in any of the Black African racial groups;
- (b) Hispanic persons of Mexican, Puerto Rican, Dominican, Cuban, Central or South American descent of either Indian or Hispanic origin regardless of race;
- (c) Native American or Alaskan native persons having origins in any of the original peoples of North America; or
- (d) Asian or Pacific Islander persons having origins in any of the Far East countries, South East Asia, the Indian subcontinent or the Pacific Islands.

1. Are you a business enterprise owned and controlled by women or persons of color in accordance with the standards listed above?

_____ No

_____ Yes

Please note: If you answered “yes” based upon certification by New York State and/or the Federal government, official documentation of the certification must be attached.

2. If you answered “Yes” above, please check off below whether your business enterprise is owned and controlled by women, persons of color, or both.

_____ Women

_____ Persons of Color (*please check off below all that apply*)

_____ Black persons having origins in any of the Black African racial groups

_____ Hispanic persons of Mexican, Puerto Rican, Dominican, Cuban, Central or South American descent of either Indian or Hispanic origin regardless of race

_____ Native American or Alaskan native persons having origins in any of the original peoples of North America

_____ Asian or Pacific Islander persons having origins in any of the Far East countries, South East Asia, the Indian sub-continent or the Pacific Islands

Name of Business Enterprise: _____

Address: _____

Name and Title of person completing questionnaire: _____

Signature: _____

Notary Public

Date

CONTRACTOR'S DISCLOSURE STATEMENT

Instructions:

The County of Westchester, in order to insure that it employs responsible contractors for its major construction projects, requires all bidders for construction contracts (which includes reconstruction and repair) with an estimated value of One Hundred Thousand (\$100,000.00) or more Dollars to answer completely and swear to the questions below. If a Contractor Disclosure Statement has been included with this bid specification, then the County has determined that it is applicable to this bid. All subcontractors whose contract has a value of One Hundred Thousand (\$100,000.00) or more Dollars must also submit a Contractor Disclosure Statement.

Please read the questions carefully and answer them completely. Before you answer these questions, please read the definitions of terms used in these questions. While you may contact the Department of Public Works if you have questions about this form, the County cannot provide you with any legal advice for which you must contact your own lawyer. **FAILURE TO COMPLETE THIS CONTRACTOR DISCLOSURE STATEMENT IN GOOD FAITH MAY RESULT IN THE REJECTION OF YOUR BID.**

If you have previously filled out a Contractor Disclosure Statement for another County bid and only some but not all of your responses have changed, attach a copy of the prior Contractor Disclosure Statement and check #2 below indicating changes only and only answer those questions which have changed since you last filled out the Contractor Disclosure Statement.

If you have previously completed a Contractor Disclosure Statement for another County bid and nothing has changed in your responses to the questions, then check #3 and fill out the attached No Change Affidavit. Attach a copy of the prior Contractor Disclosure Statement to the No Change Affidavit.

NOTE IF THE SPACES PROVIDED FOR ANSWERS ARE NOT SUFFICIENT FOR YOU TO COMPLETE YOUR ANSWER TO A PARTICULAR QUESTION, THEN ATTACH ADDITIONAL PAGES TO THIS CONTRACTOR DISCLOSURE STATEMENT WHICH INDICATE THE NUMBER OF THE QUESTION THAT YOU ARE COMPLETING THE ANSWER FOR.

ALSO DO NOT LEAVE ANY ANSWERS BLANK. IF A QUESTION IS NOT APPLICABLE, ANSWER - N/A – AND OFFER A BRIEF EXPLANATION AS TO WHY THE QUESTION DOES NOT APPLY.

Definitions:

Affiliate – is another Business Entity in which the Contractor or one or more of the Principals of the Contractor has an ownership interest of more than fifty (50%) percent. An Affiliate is also another Business Entity in which the Parent of the Contractor owns more than fifty (50%) percent of that other Business Entity.

Agency or Government Agency – is any Federal, State, City or other local agency including, but not limited to, departments, offices, quasi-public agencies, public authorities and

CONTRACTOR'S DISCLOSURE STATEMENT

corporations, boards of education and higher education, public development corporations and local development corporations.

Assignee – is a person or Business Entity to whom an assignment (e.g., a transfer to another of any property, real or personal, including a transfer of any rights in such property) is made.

Business Address – is the location of principal executive offices and is also the primary place of business in Westchester County, if different.

Business Entity – is any profit-seeking business including, but not limited to, corporations, limited and general partnerships, joint ventures and individual (sole) proprietorships.

Contract – is any binding agreement with any Government Agency or other Business Entity for the provision of goods, or services including, but not limited to, construction.

Contractor – is the Business Entity submitting this Contractor Disclosure Statement.

Contractor Disclosure Statement – is this document.

Control – A Business Entity controls another Business Entity when:

- The controlling Business Entity owns more than fifty (50%) percent of the controlled Business Entity, or
- The controlling Business Entity directs or has the right to direct daily operations of the controlled Business Entity, or
- The same person is a Principal in both businesses and directs the daily operations of the controlled Business Entity.

Investigations – is any official inquiry by any Government Agency, with the exception of background investigations for employment.

Officer – is any individual who serves in the function of chief executive officer, chief financial officer or chief operating officer of the Business Entity by whatever titles known.

Parent – is a Business Entity which owns more than fifty (50%) percent of another Business Entity.

Principal – is an individual, partnership, joint venture or corporation which holds ten (10%) percent or more ownership interest in the Business Entity.

Partner – shall mean a person or Business Entity that has a joint ownership in a particular business, but the ownership interest is not as a shareholder of a corporation.

Successor – is a person or Business Entity that takes the place that another has left. With reference to a corporation, a successor shall mean another corporation which, through amalgamation, consolidation, or other legal succession, becomes invested with the rights and assumes the burdens of the first corporation.

CONTRACTOR'S DISCLOSURE STATEMENT

CONTRACT NO.: _____

Check if Subcontractor

Type Of Submission

(Put a X or √ next to the applicable type of submission)

1. **Fully Completed Contractor Disclosure Statement** _____
(Sign Oath on last page of Disclosure Statement)

2. **Changes Only Contractor Disclosure Statement** _____
(Attach copy of previously filed Contractor Disclosure Statement that you are amending. Denote any changes on the following Contractor Disclosure Statement. Sign Oath on last page of this Disclosure Statement)

3. **No Change** _____
(Fill out "No Change Affidavit" [below] and attach copy of previously filed Contractor Disclosure Statement)

NO CHANGE AFFIDAVIT

I swear that the attached Contractor Disclosure Statement was submitted to the County of Westchester on _____ and was true as signed, and that
(Date)
since the above date nothing has occurred which changes in any way the responses made to the questions contained in the attached Contractor Disclosure Statement.

Submitted by: _____
(Signature)

Name (Print): _____

Title (Print): _____

Sworn to before me this ____ day of _____, 200_

NOTARY PUBLIC

COMPLETE THIS FORM USING BLACK INK ONLY

CONTRACTOR'S DISCLOSURE STATEMENT

Questions:

1. The Business Address and taxpayer identification number of Contractor and primary telephone number for such location.

2. List the Business Addresses and primary telephone numbers for such locations, if different from answer to #1 above, where Contractor has been located over the last five (5) years.

3. List all other names and taxpayer identification numbers under which the Contractor, or the Principals and Officers of Contractor, have conducted business within the prior five (5) years.

4. For any response to #3 above, list any and all Westchester County contracts that were awarded to such "other name" Business Entity.

5. List the type of Business Entity that the Contractor is presently organized as (for example - sole proprietorship, partnership, joint venture or corporation).

COMPLETE THIS FORM USING BLACK INK ONLY

CONTRACTOR'S DISCLOSURE STATEMENT

6. If Contractor is a corporation, list the date that the Contractor was incorporated. Also list the name of the Government Agency and location of said Agency in which a certificate of incorporation, certificate of doing business or equivalent, has been filed and the date of any amendments thereto. If, however, the Contractor is a partnership, list the date that the partnership was formed and the name of the Government Agency and location of said Agency in which a business certificate for partnership or equivalent has been filed.

7. List all the names, current Business Addresses and business telephone numbers of the Principals and Officers of the Contractor. If the Contractor is a partnership, list all partners and their business telephone numbers.

8. List the names, current Business Addresses, telephone numbers and taxpayer identification numbers of all Affiliates of the Contractor.

9. List all the names, Business Addresses and telephone numbers of the Principals and Officers of the Affiliates listed in response to #7 above. If the Affiliate is a partnership, list the Business Addresses and business telephone numbers of all partners.

COMPLETE THIS FORM USING BLACK INK ONLY

CONTRACTOR'S DISCLOSURE STATEMENT

14. If you answered yes to #10 above, list the contract sanction history as defined in #12 above for the Controlling Business Entity during the past five (5) years.

15. List any and all prevailing wage or supplement payment violations; state labor law violations deemed willful and any other federal or state citations, notices, violation orders, pending administrative hearings or proceedings or determinations of a violation of any labor law or regulation regarding the Contractor.

16. List all Investigations of the Contractor, its Principals and Officers or, if a partnership, of the Contractor's Partners. Also list all investigations of Affiliates, their Principals and Officers or, if a partnership, of their Partners.

COMPLETE THIS FORM USING BLACK INK ONLY

CONTRACTOR'S DISCLOSURE STATEMENT

17. Have all Federal and State income tax returns, if required, been filed by Contractor during the last five (5) years? ___Yes ___No If you answered no, please explain why such returns were not filed.

18. Are there any criminal proceedings pending against the Contractor or any Principal or Officer of the Contractor or partner, if Contractor is a partnership? ___Yes ___No If you answered yes, please provide details of the pending criminal proceedings.

19. List the record of all criminal convictions of the Contractor, any Principal or Officer or partner, if Contractor is a partnership, and of any former Principal or Officer, of the Contractor or former partner, if Contractor is a partnership, for any crime related to truthfulness or business conduct and for any felony committed within the prior ten (10) years.

20. List all bankruptcy proceedings that the Contractor or its Affiliates have been the subject of within the past seven (7) years, whether pending or completed.

COMPLETE THIS FORM USING BLACK INK ONLY

CONTRACTOR'S DISCLOSURE STATEMENT

21. Is the Contractor a successor, assignee or Affiliate of a Business Entity that has ever been denied a Contract or deemed ineligible to bid on a Government Agency contract?

___ Yes No ___ If you answered yes, explain below.

OATH

I swear that all of the above answers are true based on my knowledge of the facts, or are believed by me to be true, based upon a review of records containing the facts or based upon information I obtained from someone who has knowledge of the facts; and that I have authority to sign this document; and that the answers given above have not been made in a manner intended to deceive or to defeat the purpose of the Contractor Disclosure Statement, which is to assist the County of Westchester in determining if the Contractor is a responsible bidder.

Submitted by: _____
(Signature)

Name (Print): _____

Title (Print): _____

Sworn to before me this ___ day of _____, 20__

NOTARY PUBLIC

COMPLETE THIS FORM USING BLACK INK ONLY

REQUIRED DISCLOSURE OF RELATIONSHIPS TO COUNTY

(Prior to execution of a contract by the County, a potential County contractor must complete, sign and return this form to the County)

Contract Name and/or ID No.:

(To be filled in by County)

Name of Contractor:

(To be filled in by Contractor)

A potential County contractor must complete this form as part of the proposed County contract.

- 1.) Are any of the employees that the Contractor will use to carry out this contract also a County officer or employee, or the spouse, child, or dependent of a County officer or employee?

Yes _____ No _____

If yes, please provide details (attach extra pages, if necessary): _____

- 2.) Are any of the owners of the Contractor or their spouses a County officer or employee?

Yes _____ No _____

If yes, please provide details (attach extra pages, if necessary): _____

- 3.) Do any County officers or employees have an **interest**¹ in the Contractor or in any approved subcontractor that will be used for this contract?

Yes _____ No _____

If yes, please provide details (attach extra pages, if necessary): _____

By signing below, I hereby certify that I am authorized to complete this form for the Contractor.

Name: _____

Title: _____

Date: _____

¹ "Interest" means a direct or indirect pecuniary or material benefit accruing to a County officer or employee, his/her spouse, child or dependent, whether as the result of a contract with the County or otherwise. For the purpose of this form, a County officer or employee shall be deemed to have an "interest" in the contract of:

- 1.) His/her spouse, children and dependents, except a contract of employment with the County;
- 2.) A firm, partnership or association of which such officer or employee is a member or employee;
- 3.) A corporation of which such officer or employee is an officer, director or employee; and
- 4.) A corporation of which more than five (5) percent of the outstanding capital stock is owned by any of the aforesaid parties.

QUESTIONNAIRE REGARDING BUSINESS ENTERPRISES
OWNED AND CONTROLLED BY
SERVICE-DISABLED VETERANS

The County believes it is a laudable goal to provide business opportunities to veterans who were disabled while serving our country, and wants to encourage the participation in County contracts of certified business enterprises owned and controlled by service-disabled veterans. As part of the County's program to encourage the participation of such business enterprises in County contracts, and in furtherance of Article 17-B of the New York State Executive Law, we request that you answer the questions listed below.

The term "Certified Service-Disabled Veteran-Owned Business" shall mean a business that is a certified service-disabled veteran-owned business enterprise under the New York State Service-Disabled Veteran-Owned Business Act (Article 17-B of the Executive Law).

1. Are you a business enterprise that is owned and controlled by a service-disabled veteran in accordance with the standards listed above?

_____ No
_____ Yes

2. Are you certified with the State of New York as a Certified Service-Disabled Veteran-Owned Business?

_____ No
_____ Yes

3. If you are certified with the State of New York as a Certified Service-Disabled Veteran-Owned Business, please attach a copy of the certification.

Name of Firm/Business Enterprise: _____
Address: _____
Name/Title of Person completing Questionnaire: _____
Signature: _____

STATE OF NEW YORK)
) ss.:
COUNTY OF)

Notary Public

Date:

SCHEDULE "F"
CRIMINAL BACKGROUND DISCLOSURE
INSTRUCTIONS

Pursuant to Executive Order 1-2008, the County is required to maintain a record of criminal background disclosure from all persons providing work or services in connection with any County contract, including leases of County-owned real property and licenses:

- a.) If any of the persons providing work or services to the County in relation to a County contract are not subject to constant monitoring by County staff while performing tasks and/or while such persons are present on County property pursuant to the County contract; and
- b.) If any of the persons providing work or services to the County in relation to a County contract may, in the course of providing those services, have access to sensitive data (for example SSNs and other personal/secure data); facilities (secure facilities and/or communication equipment); and/or vulnerable populations (for example, children, seniors, and the infirm).

In those situations, the persons who must provide a criminal background disclosure ("Persons Subject to Disclosure") include the following:

- a.) Consultants, Contractors, Licensees, Lessees of County-owned real property, their principals, agents, employees, volunteers or any other person acting on behalf of said Contractor, Consultant, Licensee, or Lessee who is at least sixteen (16) years old, including but not limited to Subconsultants, subcontractors, Sublessess, or Sublicensees who are providing services to the County, and
- b.) Any family member or other person, who is at least sixteen (16) years old, residing in the household of a County employee who lives in housing provided by the County located on County property.

Under Executive Order 1-2008, it is the duty of every County Consultant, Contractor, Licensee, or Lessee to inquire of each and every Person Subject to Disclosure and disclose whether they have been convicted of a crime or whether they are subject to pending criminal charges, and to submit this form with that information.¹ Accordingly, you are required to complete the attached Criminal Background Disclosure Form and Certification.

Please note that under no circumstances shall the existence of a language barrier serve as a basis for the waiver of or an exception from the disclosure requirements of Executive Order 1-2008. If translation services are required by the Consultant, Contractor, Licensee, or Lessee to fulfill this obligation, it shall be at the sole cost and expense of the Consultant, Contractor, Licensee, or Lessee.

Please also note that the conviction of a crime(s) and/or being subject to a pending criminal charge(s) will not automatically result in a denial of a person's right to work on a County contract, right to be on County property, or license, but may, if the County determines that the prior conviction(s) or pending criminal charge(s) create an unacceptable risk. However, if a person fails to list or falsifies any part of his/her conviction history or any pending criminal charge(s) for any reason, he/she may be prohibited from working or being on County property without any risk assessment. If it is later determined that a Person Subject to Disclosure failed to disclose a criminal conviction or pending criminal charge for any reason, his/her right to work on a County contract, be on County property, or license may be terminated at any time.

Please further note that, pursuant to Executive Order 1-2008, and subject to the applicable provisions of New York Correction Law §§ 752 and 753, the County has the right to bar a Person Subject to Disclosure from providing work or services to the County or from being on County property if any such person has:

- a.) A conviction of a crime(s);
- b.) A pending criminal proceeding for a crime(s); or
- c.) Refused to answer questions concerning his/her criminal background

¹ For these disclosures, a "crime" or "pending criminal charge" includes all felonies and misdemeanors as defined under the New York State Penal Law or the equivalent under Federal law or the laws of any other State.

Please finally note that any failure by a County Consultant, Contractor, Licensee, or Lessee to comply with the disclosure requirements of Executive Order 1-2008 may be considered by the County to be a material breach and shall be grounds for immediate termination by the County of the related County contract.

Exemptions

Executive Order 1-2008 exempts from the aforementioned disclosure requirements Persons Subject to Disclosure:

- a.) for whom the County has already conducted a background check and issued a security clearance that is in full force and effect; and
- b.) for whom another state or federal agency having appropriate jurisdiction has conducted a security and/or background clearance or has implemented other protocols or criteria for this purpose that apply to the subject matter of a County contract that is in full force and effect.

If you are claiming an exemption for one or more Persons Subject to Disclosure, you must notify the Procuring Officer². The Procuring Officer will then determine whether the Person(s) Subject to Disclosure are actually exempt, and provide written notification of his/her determination. If the Procuring Officer determines that a Person Subject to Disclosure is not exempt, the Procuring Officer will notify you of that determination, and you will have to include disclosures for that person on your Criminal Background Disclosure Form and Certification.

² Procuring Officer” shall mean the head of the department or the individual or individuals authorized by the head(s) of the department(s) undertaking the procurement and with respect to those matters delegated to the Bureau of Purchase and Supply pursuant to Section 161.11(a) of the Laws of Westchester County, the Purchasing Agent.

Subconsultants, Subcontractors, Sublessees, or Sublicensees

Under Executive Order 1-2008, it is your duty to ensure that any and all approved subconsultants, subcontractors, sublessees, or sublicensees complete and submit the attached Criminal Background Disclosure Form and Certification for all of their respective Persons Subject to Disclosure. This must be done before such a subconsultant, subcontractor, sublessees, or sublicensees can be approved to perform work on a contract.

New Persons Subject to Disclosure

Under Executive Order 1-2008, you have a **CONTINUING OBLIGATION** to maintain the accuracy of the Criminal Background Disclosure Form and Certification (and any accompanying documentation) for the duration of this contract, including any amendments or extensions thereto. Accordingly, it is your duty to complete and submit an updated Criminal Background Disclosure Form and Certification whenever there is a new Person Subject to Disclosure for this contract. **NO NEW PERSON SUBJECT TO DISCLOSURE SHALL PERFORM WORK OR SERVICES OR ENTER ONTO COUNTY PREMISES UNTIL THE UPDATED CRIMINAL BACKGROUND DISCLOSURE FORM AND CERTIFICATION IS FILED WITH THE PROCURING OFFICER.** You shall also provide the County with any other updates that may be necessary to comply with the disclosures required by Executive Order 1-2008.

*PLEASE CONTINUE TO THE
Criminal Background Disclosure Form and Certification
BEGINNING ON THE NEXT PAGE*

CONTRACT #:

Name of Consultant, Contractor, Lessee, or Licensee: _____

**CRIMINAL BACKGROUND DISCLOSURE
FORM AND CERTIFICATION**

If this form is being completed by a subconsultant, subcontractor, sublessee, or sublicensee, please consider all references in this form to “consultant, contractor, lessee, or licensee” to mean “subconsultant, subcontractor, sublessee, or sublicensee” and check here: _____

I, _____, certify that I am a principal or a
(Name of Person Signing Below)

representative of the Consultant, Contractor, Lessee, or Licensee and I am authorized to complete and execute this Criminal Background Disclosure Form and Certification. I certify that I have asked each Person Subject to Disclosure the following questions:

- **Have you or your company ever been convicted of a crime (all felonies and misdemeanors as defined under the New York State Penal Law or the equivalent under Federal law or the laws of any other State) including, but not limited to, conviction for commission of fraud, embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property?**
- **Are you or your company subject to any pending criminal charges (all felonies and misdemeanors as defined under the New York State Penal Law or the equivalent under Federal law or the laws of any other State)?**

I certify that the names and titles of Persons Subject to Disclosure who refused to answer **either** of the questions above are:

1. _____
2. _____
3. _____
4. _____
5. _____

(If more space is needed, please attach separate pages labeled “REFUSED to Answer - Continued.”)

I certify that the names and titles of Persons Subject to Disclosure who answered “Yes” to **either of the** questions above are:

1. _____
2. _____
3. _____
4. _____
5. _____

(If more space is needed, please attach separate pages labeled “YES Answers - Continued.”)

Each Person Subject to Disclosure listed above who has either **been convicted of a crime(s)** and/or **is subject to a pending criminal charge(s)** must answer additional questions. Those questions are below.

A Person Subject to Disclosure who has **been convicted of a crime(s)** must respond to the following (please attach separate pages with responses for each person, with their name and title):

- 1.) Describe the reason for being on County property if applicable, identify the specific duties and responsibilities on this project which you intend to perform for the County, including but not limited to, access to sensitive data and facilities and access to vulnerable populations.
- 2.) Please list all criminal convictions along with a brief description of the crime(s) (including all felonies and misdemeanors as defined under the New York State Penal Law or the equivalent under Federal law or the laws of any other State).
- 3.) Please provide the date and place of each conviction.
- 4.) Please provide your age at the time of each crime for which you were convicted.
- 5.) Please provide the legal disposition of each case.
- 6.) Please provide any information either produced by yourself or someone on your behalf in regards to your rehabilitation and good conduct.

A Person Subject to Disclosure who **is subject to a pending criminal charge(s)** must respond to the following (please attach separate pages with responses for each person, with their name and title):

- 1.) Describe the reason for being on County property and if applicable, identify the specific duties and responsibilities on this project which you intend to perform for the County, including but not limited to, access to sensitive data and facilities and access to vulnerable populations.
- 2.) Please identify all pending criminal charges (all felonies and misdemeanors as defined under the New York State Penal Law or the equivalent under Federal law or the laws of any other State).
- 3.) Please briefly describe the nature of the pending charges and the date upon which it is alleged that a crime was committed.

I hereby certify that all of the information provided herein (and in any and all attachments) is true and accurate and that all disclosures required by Executive Order 1-2008 and this Criminal Background Disclosure Form and Certification have been completed. By my signature below, I hereby affirm that all of the facts, statements and answers contained herein (and in any and all attachments) are true and correct. I understand that providing false or incomplete information or withholding by omission or intention pertinent information will be cause for refusing further consideration of my being utilized under this contract.

It is understood and agreed that no Person Subject to Disclosure shall perform work or services or enter onto County property until this required Criminal Background Disclosure Form and Certification is filed with the Procuring Officer.

It is understood and agreed that to the extent that new Persons Subject to Disclosure are proposed to perform work or provide services under this contract after filing of this Criminal Background Disclosure Form and Certification with the Procuring Officer, such new Persons Subject to Disclosure shall not perform work or provide services or enter into County property until an updated Criminal Background Disclosure Form and Certification has been filed with the Procuring Officer.

It is further understood and agreed that the consultant, contractor, lessee, or licensee has a continuing obligation to maintain the accuracy of the Criminal Background Disclosure Form and Certification for the duration of this contract, including any amendments or extensions thereto, and shall provide any updates to the information to the County as necessary to comply with the requirements of Executive Order 1-2008.

Name: _____

Title: _____

Date: _____

Notary Public

Date

SUBCONTRACTOR'S SEALED BID SUBMISSION

Westchester County Contract No.: _____

Name of Subcontractor: _____

Address: _____

Phone #: _____ Fax #: _____

E-mail address: _____

Name of Contractor to whom
this bid is submitted: _____

Scope of Work to be performed by Subcontractor (e.g., electrical, plumbing, HVAC):

The price agreed upon by and between Contractor and Subcontractor for the full
performance of the Subcontractor's work:

\$: _____

In words (e.g, one hundred thousand dollars and xx/100):

Subcontractor

Contractor

Signature

Signature

By _____
(print name & title)

By _____
(print name & title)

**THE SUCCESSFUL LOW BIDDER, BEFORE AWARD OF THE CONTRACT, MUST
PROCURE AND PROVIDE TO THE COUNTY, FROM EACH OF THE ABOVE
DENOTED SUBCONTRACTORS, A CONTRACT DISCLOSURE STATEMENT
(PROPOSAL PAGES 24-32) AND THE REQUIRED DISCLOSURE OF
RELATIONSHIPS TO COUNTY (PROPOSAL PAGES 33-34)**

COMPLETE THIS FORM USING BLACK INK ONLY

INFORMATION FOR BIDDERS



2. INFORMATION FOR BIDDERS

DEPARTMENT OF PUBLIC WORKS

Division of Engineering

INFORMATION FOR BIDDERS

1. ADDENDA AND INTERPRETATION

No interpretation of the meaning of the plans, specifications or other contract documents will be made to any bidder orally. Every request for such interpretation should be in writing addressed to the Westchester County Department of Public Works, Division of Engineering, Room 512, Michaelian Office Building, White Plains, New York, and to be given consideration must be received at least five (5) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be posted on the internet not later than three (3) days prior to the date fixed for the opening of bids. Revisions to plans or drawings requiring the issuance of additional or revised drawings will be noted on the internet with instructions how to acquire copies of such revised plans or drawings. Failure of any bidder to receive any such addendum or interpretation or any other form, instrument or document shall not relieve any bidder from any obligation under its bid as submitted. All addenda so issued shall become part of the contract documents.

A bidder's failure to request a clarification, interpretation, etc. of any portion of the plans, specifications, or contract or to point out any inconsistency therein will preclude such bidder from thereafter claiming any ambiguity, inconsistency, or error which should have been discovered by a reasonably prudent bidder and from asserting any claim for damages arising directly or indirectly therefrom.

2. VOIDED CLAUSES

Wherever in this booklet any page is stamped "VOID", only the section(s) or paragraph(s) so stamped are void. All other sections(s) and paragraph(s) remain in full force and effect.

3. PRE-BID SITE INSPECTION

Unless otherwise stated, on building construction work, bidders are free and encouraged to examine the work site during normal work hours preceding the date on which bids are to be opened. For those bidders requesting further clarification of the conditions, an appointment with the County's representative, on the eighth day (Tuesday) prior to the bid opening date, can be requested, by contacting the, Department of Public Works, Division of Engineering at (914) 995-2553.

Each bidder must inform itself fully of the conditions relating to the work to be performed. Failure to do so will not relieve a successful bidder of the obligation to furnish all material and labor necessary to carry out the provisions of the contract documents and to complete the contemplated work for the consideration set forth in its Bid.

At the time of the opening of bids each bidder will be presumed to have inspected the sites and to have read and to be thoroughly familiar with the Plans and Contract Documents (including all addenda).

4. BID SECURITY

Bid Security shall be provided in accordance with the "Notice to Contractors." Where

INFORMATION FOR BIDDERS

a Performance and Payment bond is required in the Notice to Contractors, the executed “Bid Bond and Consent of Surety” of the Proposal Pages must be submitted with the Bid when the bid is more than \$100,000. The successful bidder, no matter the size of its bid, will be required to furnish a Performance and Payment Bond.

Where a Performance and Payment Bond is not specified in the Notice to Contractors, then the required Security may be furnished in the form of a Certified Check; drawn to the order of “County of Westchester, clipped to the top of the front cover and submitted with the Bid.

Certified checks submitted will be returned to all bidders submitting certified checks within three (3) days after the opening of bids unless the bidder or bidders submitting certified checks are among the two lowest bidders. At any time after the opening of bids, the second lowest bidder, if the second lowest bidder has submitted a certified check, may substitute a bid bond for the certified check by presenting the bond to the Secretary of the Board of Acquisition and Contract. This bond shall be in the form and coverage required by the County and shall be in an amount not less than the amount of the bidder's certified check. After receipt, approval and acceptance of the bond by the County, the County will forward to the bidder a County check in an amount equal to the bidder's certified check.

All certified checks submitted will be returned to the two lowest bidders within 48 hours after the successful bidder executes the required contract and furnishes the County with all necessary bonds and insurance certificates.

In the event that the successful bidder has not executed the required contract and furnished the required bonds and insurance certificates within forty-five (45) days after the opening of bids, the County, upon demand from a bidder (except for the successful bidder), will send a County check to the bidder in the amount of the bidder's certified check.

Failure of the successful bidder to execute the contract and furnish the necessary bonds and insurance certificates shall result in forfeiture of the bid security, such sum to be retained by the County as liquidated damages.

5. PERFORMANCE AND PAYMENT BOND

If required pursuant to "Notice to Contractors."

If a Performance and Payment bond is required in accordance with the “Notice to Contractors”, the “Bid Bond and Consent of Surety” of the Proposal Pages must be executed by the Contractor’s Surety Company and submitted with the Bid for all bids over \$100,000.

Simultaneously with its delivery of the executed contract, the successful bidder shall deliver to the County an executed bond in the amount of one hundred percent of the accepted bid as security for the faithful performance of its contract and in the amount of one hundred percent for the payment of all persons performing labor or furnishing materials in connection therewith, prepared in satisfactory form and having as surety thereon such bond underwriter or surety that appears on the U.S. Treasury’s listing of approved sureties (Department Circular 570), and is licensed to transact business in New York State. In the event such Surety ceases to appear on the U.S. Treasury’s listing of approved sureties (Department Circular 570) or ceases to be licensed to transact business in New York State or becomes insolvent or enters liquidation proceedings, the Contractor, at its sole cost, shall furnish a replacement bond from a surety satisfactory to the County.

INFORMATION FOR BIDDERS

The form of contract and Performance and Payment Bond to be used in connection with this Contract and to become a part of the contract documents is attached in the section entitled "Sample Contract and Bond for Construction".

6. INDEMNIFICATION AGREEMENT

The Contractor agrees:

- A. that except for the amount, if any, of damage contributed to, caused by or resulting from the negligence of the County, the Contractor agrees to indemnify and hold harmless the County of Westchester, its officers, employees, elected officials, and agents from and against any and all liability, damage, claims, demands, costs, judgments, fees, attorneys' fees or loss arising directly or indirectly out of the performance or failure to perform hereunder by the Contractor or third parties under the direction or control of the Contractor; and
- B. to provide defense for and defend, at its sole expense, any and all claims, demands or causes of action directly or indirectly arising out of the Agreement and to bear all other costs and expenses related thereto.

7. INSURANCE REQUIREMENTS

The Contractor, upon award of the contract and throughout the term of the Agreement, shall obtain at its own cost and expense the required insurance as delineated below from insurance companies licensed in the State of New York, carrying a Best's financial rating of A or better. Contractor shall provide evidence of such insurance to the County of Westchester ("County"), either by providing a copy of policies and/or certificates as may be required and approved by the Director of Risk Management of the County ("Director"). The policies or certificates thereof shall provide that ten (10) days prior to cancellation or material change in the policy, notices of same shall be given to the Board of Acquisition and Contract of the County of Westchester by registered mail, return receipt requested, for all of the following stated insurance policies, with a copy also sent to the Director of Risk Management of the County. All notices shall name the Contractor and identify the Contract Number.

If at any time any of the policies required herein shall be or become unsatisfactory to the Director, as to form or substance, or if a company issuing any such policy shall be or become unsatisfactory to the Director, the Contractor shall upon notice to that effect from the County, promptly obtain a new policy, and submit the policy or the certificate as requested by the Director to the Office of Risk Management of the County for approval by the Director. Upon failure of the Contractor to furnish, deliver and maintain such insurance, the Agreement, at the election of the County, may be declared suspended, discontinued or terminated.

Failure of the Contractor to take out, maintain, or the taking out or maintenance of any required insurance, shall not relieve the Contractor from any liability under the Agreement, nor shall the insurance requirements be construed to conflict with or otherwise limit the contractual obligations of the Contractor concerning indemnification.

All property losses shall be made payable to the "County of Westchester" and adjusted with the appropriate County personnel.

In the event that claims, for which the County may be liable, in excess of the insured amounts provided herein are filed by reason of Contractor's negligent acts or omissions under the

INFORMATION FOR BIDDERS

agreement or by virtue of the provisions of the labor law or other statute or any other reason, the amount of excess of such claims or any portion thereof, may be withheld from payment due or to become due the Contractor until such time as the Contractor shall furnish such additional security covering such claims in form satisfactory to the Director.

In the event of any loss, if the Contractor maintains broader coverage and/or higher limits than the minimums identified herein, the County shall be entitled to the broader coverage and/or higher limits maintained by the Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the County.

The Contractor shall provide proof of the following coverage. (Other coverage may be required by the County of Westchester based on specific needs. If such other coverages are required for a specific contract, those coverages will be described in the "Special Clauses" of the contract specifications):

- a) Workers' Compensation and Employer's Liability. Certificate form C-105.2 or State Fund Insurance Company form U-26.3 is required for proof of compliance with the New York State Workers' Compensation Law. State Workers' Compensation Board form DB-120.1 is required for proof of compliance with the New York State Disability Benefits Law. Location of operation shall be "All locations in Westchester County, New York."

Where an applicant claims to not be required to carry either a Workers' Compensation Policy or Disability Benefits Policy, or both, the employer must complete NYS form CE-200, available to download at: <http://www.wcb.ny.gov>.

If the employer is self-insured for Workers' Compensation, he/she should present a certificate from the New York State Worker's Compensation Board evidencing that fact (Either SI-12, Certificate of Workers' Compensation Self-Insurance, or GSI-105.2, Certificate of Participation in Workers' Compensation Group Self-Insurance).

- b) Commercial General Liability Insurance with a combined single limit of \$1,000,000 (c.s.1) per occurrence and a \$2,000,000 aggregate limit naming the "County of Westchester" as an additional insured on a primary and non-contributory basis. This insurance shall include the following coverages:
 - i. Premises - Operations.
 - ii. Broad Form Contractual.
 - iii. Independent Contractor and Sub-Contractor.
 - iv. Products and Completed Operations.

NOTE: Additional insured status shall be provided by standard or other endorsement that extends coverage to the County of Westchester for both on-going and completed operations.

All Contracts involving the use of explosives, demolition and/or underground work shall provide proof that XCU is covered.

- c) Commercial Umbrella/Excess Insurance: \$2,000,000 each Occurrence and Aggregate naming the "County of Westchester" as additional insured, written on a "follow the form" basis.
- d) Owners Protective Liability Policy naming the County as insured, with a minimum limit of liability per occurrence of \$3,000,000 (where applicable, or as determined by the Director, Risk Management)
- e) Automobile Liability Insurance with a minimum limit of liability per occurrence of \$1,000,000 for bodily injury and a minimum limit of \$100,000 per occurrence for property damage or a

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combined single limit of \$1,000,000 unless otherwise indicated in the contract specifications. This insurance shall include for bodily injury and property damage the following coverages and name the "County of Westchester" as additional insured:

- i. Owned automobiles.
 - ii. Hired automobiles.
 - iii. Non-owned automobiles.
- f) Construction Insurance: For the construction, renovation or repair of bridges, viaducts or similar structures, the Contractor at its own cost and expense shall provide and maintain a "Bridge Builder's Risk Form, All Risk Insurance Contract," with flat premium endorsement, until the construction contract is accepted by the Board of Acquisition and Contract of the County of Westchester. The coverage shall be written for 100% of the completed value, covering the Contractor and County of Westchester as the insureds. The Contractor shall provide the original and duplicate policy to the County (unless the County shall accept, in lieu thereof, all contained endorsements including all applicable provisions and coverages).

For the construction of (a) new buildings and (b) for additions or repairs of existing buildings or structures, the Contractor at its own cost and expense shall provide and maintain a "Builder's Risk Form, All Risk Insurance Contract," with flat premium endorsement, until the construction contract is accepted by the Board of Acquisition and Contract of the County of Westchester. The coverage shall be written for 100% of the completed value, covering the Contractor and County of Westchester as the insureds. The Contractor shall provide the original and duplicate policy to the County (unless the County shall accept, in lieu thereof, all contained endorsements including all applicable provisions and coverages).

All policies of the Contractor shall be endorsed to contain the following clauses:

(a) Insurers shall have no right to recovery or subrogation against the County (including its employees and other agents and agencies), it being the intention of the parties that the insurance policies so effected shall protect both parties and be primary coverage for any and all losses covered by the above-described insurance.

(b) The clause "other insurance provisions" in a policy in which the County is named as an insured, shall not apply to the County.

(c) The insurance companies issuing the policy or policies shall have no recourse against the County (including its agents and agencies as aforesaid) for payment of any premiums or for assessments under any form of policy.

(d) Any and all deductibles in the above described insurance policies shall be assumed by and be for the account of, and at the sole risk of, the Contractor.

INFORMATION FOR BIDDERS

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8. PREVAILING WAGE RATES AND SUPPLEMENTS

A. Wages to be Paid and Supplements to be Provided

Each laborer, workman or mechanic employed by the Contractor(s), Sub-contractor(s) or other person(s) doing or contracting to do the whole or part of the work contemplated by this Contract, shall be paid the prevailing wages and provide the supplements (including but not limited to health, welfare and pension benefits) as required by Article 8 (Section 220-223) and Article 9 (230-239) of the New York State Labor Law.

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B. Schedule of Hourly Rates/Supplements

The "Schedule of Hourly Rates and Supplements" shows the prevailing hourly rates of wages to be paid and supplements to be provided. It is the County's preference that such supplements shall be paid to a Federally qualified Pension, Health and Welfare program and New York State Registered Apprentice Training Program.

Classifications not appearing on the rate sheet can be used only with the consent of the Commissioner of Public Works and then the rate to be paid will be given by the Commissioner of Public Works after advising with the State Department of Labor.

C. Grounds for Cancellation of Contract

In the event of a failure, to pay the prevailing wages and provide the supplements in accordance with the New York State Labor Law, and as described in this Contract, it shall be considered a material breach. For the breach or violation of this provision, without limiting any other rights or remedies to which the County or any individual may be entitled or any civil or criminal penalty for which any violator may be liable, the County shall have the right, in its discretion, to terminate this agreement immediately upon notice. In such event, the Contractor(s), Sub-Contractor(s), et al shall be liable to the County for any additional costs incurred by the County in the completion of the project.

In addition to any other remedies available to the County and irrespective of any applicable penalties pursuant to law, the County may deduct from the amount payable to the Contractor under this contract five hundred (\$500.00) dollars as reimbursement for the costs it incurs in investigating any violation of Section 220 of the Labor Law.

D. Records to be kept on Site

The Contractor(s), Sub-contractor(s), et al. shall certify their payrolls and keep them on site and available, in addition to the following informative records:

- 1) Record of hours worked by each workman, laborer and mechanic on each day;
- 2) Record of days worked each week by each workman, laborer and mechanic;
- 3) Schedule of occupation or occupations at which each workman, laborer and mechanic on the project is employed during each work day and week;
- 4) Schedule of hourly wage rates paid to each workman, laborer and mechanic for each occupation.
- 5) A statement or declaration signed by each workman, laborer and mechanic attesting that they have been provided with a written notice, informing them of the prevailing wage rates and supplements requirement for this contract.

E. Responsibility of the Contractor, Sub-Contractor, et al.

The Contractor(s), Sub-Contractor(s), et al. will display the posters in a conspicuous location at the site and distribute the wallet cards to the employees. These posters and wallet cards will inform the employees that they are entitled to receive the prevailing wages and supplements as determined by the Department of Labor and will list the

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Department of Labor's Public Work field offices, with phone numbers for individuals to call if they believe their rights are being violated.

F. Pay for a Legal Day's Work & Use of Apprentices

The wages to be paid for a legal day's work, as hereinbefore defined, to laborers, workmen or mechanics upon such public works, shall be not less than the prevailing rate of wages as hereinafter defined. Serving laborers, helpers, assistants and apprentices shall not be classified as common labor and shall be paid not less than the prevailing rate of wages as hereinafter defined. No employee shall be deemed to be an apprentice unless he is individually registered in an apprenticeship program which is duly registered with the Industrial Commissioner in conformity with the provision of Article 23 of the Labor Law. The wages to be paid for a legal day's work, as hereinbefore defined, to laborers, workmen or mechanics upon any material to be used upon or in connection therewith shall be not less than the prevailing rate for a day's work in the same trade or occupation in the locality within the state where such public work on, about or in connection with which such labor is performed in its final or completed form is to be situated, erected or used and shall be paid in cash; provided, however, that an employer may pay his employees by check upon a Certificate of the Industrial Commissioner to be issued only after a hearing upon the application to pay by check, which hearing shall be with notice of at least five days to be served personally or by mail on all interested persons, or if not served as aforesaid, then to be published in a manner directed by the Industrial Commissioner, which shall afford interested persons the opportunity to appear and to be heard at such hearing, and after proof has been furnished satisfactorily to the Industrial Commissioner of the employer's financial responsibility and the employer gives assurance that such checks may be cashed by employees without difficulty and for the full amount for which they are drawn. Such Contracts shall contain a provision that each laborer, workman or mechanic, employed by such Contractor, Subcontractor or other person about or upon such public works, shall be paid the wages herein provided.

G. Fiscal Officer's Duty to Determine Schedule of Wages

It shall be the duty of the fiscal officer (the "New York State Commissioner of Labor"), to ascertain and determine the schedule of wages to be paid workmen, laborers and mechanics on each such public work, prior to the time of the advertisement for bids, and such schedule of wages shall be annexed to and form a part of the specifications for the work. Such fiscal officer shall file with the department having jurisdiction such schedule of wages to the time of the commencement of the advertisement for bids on all public works proposed to be constructed. The term "Contract" as used in this subdivision also shall include reconstruction and repair of any such public work.

Where Contracts are not awarded within ninety days of the date of the establishment of the prevailing rate of wages by the fiscal officer, the department of jurisdiction shall request of the fiscal officer a redetermination of a schedule of wages.

H. Penalty for Payment of Less than Prevailing Wages

Any person or corporation that willfully pays after entering into such Contract, less than such stipulated wage scale as established by the fiscal officer shall be guilty of a

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misdemeanor and upon conviction shall be punished for such first offense by a fine of five hundred dollars or by imprisonment for not more than thirty days, or both fine and imprisonment; for a second offense by a fine of one thousand dollars, and in addition thereto the Contract on which the violation has occurred shall be forfeited and no such person or corporation shall be entitled to receive any sum nor shall any officer, agent, or employee of the state, municipal corporation or commission or board appointed pursuant to law pay the same or authorize its payment from the funds under his charge or control to any person or corporation for work done upon any Contract, on which the Contractor has been convicted for a second offense in violation of the provisions of this section.

9. LABOR AND COMPLIANCE WITH LABOR LAW

A. Preference for Westchester Residents

The Contractor agrees that in the performance of the work under this Contract he will give preference, and so far as legally possible, to employ citizens and residents of Westchester County.

B. Certifications To Be Filed

It is agreed that, in accordance with Section 220-d of the Labor Law as amended before final payment by or on behalf of the County for any sum due on account of a Contract for a public improvement, the Contractor and each and every Subcontractor of the Contractor or a Subcontractor is required to file a statement in writing in form satisfactory to the Commissioner of Finance certifying to the amounts then due and owing from such Contractor or Subcontractor filing such statement to or on behalf of any and all laborers for daily or weekly wages or supplements on account of labor performed upon the work under the Contract, setting forth therein the names of the persons whose wages or supplements are unpaid and the amount due to each or on behalf of each respectively, which statement so to be filed shall be verified by the oath of the Contractor or Subcontractor as the case may be that he has read such statement subscribed by him and knows the contents thereof, and that the same is true to his own knowledge.

C. Retention of Funds

It is further agreed that in accordance with Section 220b of the Labor Law, as amended:

- 1) In case any interested person shall have previously filed a protest in writing objecting to the payment to any Contractor or Subcontractor to the extent of the amount or amounts due or become due to him/her for daily or weekly wages or supplements for labor performed on the public improvement for which such Contract was entered into, or if for any other reason it may be deemed advisable, the Commissioner of Finance may deduct from the whole amount of any payment on account thereof the sum or sums admitted by any Contractor or Subcontractor in such statement or statements so filed to be due and owing by him on account of labor performed on such public improvement before making payment of the amount certified for payment in any estimate or voucher, and may withhold the amount so deducted for the benefit of the laborers, workmen or mechanics whose

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wages or supplements are unpaid or not provided, as the case may be, as shown by the verified statements filed by any Contractor or Subcontractor, and may pay directly to any person the amount or amounts shown to be due to him or his duly authorized collective bargaining labor organization, as the case may be, for such wages or supplements by the statements filed as hereinbefore required, thereby discharging the obligation of the Contractor or Subcontractor to the person or his duly authorized collective bargaining labor organization receiving such payment to the extent of the amount thereof, or

- 2) When any interested person shall file a written complaint with the fiscal officer as defined in section 220-b of the Labor Law, alleging unpaid wages or supplements due for labor performed on a public improvement for which a Contract has been entered into, and said labor is alleged to have been performed within the two year period immediately preceding the date of the filing of said complaint, or if, on the fiscal officer's own initiative, unpaid wages or supplements appear to be due, the fiscal officer shall immediately so notify the financial officer of the civil division interested, or, if there are insufficient moneys still due to the Contractor or Subcontractor to satisfy said wages and supplements, including interest and penalty, the financial officer of another civil division which has entered or subsequently enters into a public improvement contract with the Contractor or Subcontractor, who shall withhold from any payment due or earned by the Contractor or Subcontractor executing said public improvement, sufficient moneys to satisfy said wages and supplements, including interest at the rate provided herein, and any civil penalty that may be assessed as provided herein, pending a final determination. The Commissioner of Finance shall immediately confirm in writing to the fiscal officer the amount of money withheld.
- 3) Moneys withheld pursuant to this section shall be held by the Commissioner of Finance for the sole and exclusive benefit of the workers employed on said public improvement and for payment of any civil penalty that may be assessed as provided herein and shall not be used for any other purpose except upon court order. Any person, partnership, association, corporation or governmental body who files a lien or commences a judicial proceeding with respect to any moneys withheld pursuant to this section shall notify the fiscal officer in writing of the lien or claim on or before the date of filing of the lien or commencement of the judicial proceeding. In any proceeding to obtain moneys withheld pursuant to this section by any person, partnership, association, corporation or governmental body, the Commissioner of Labor shall have the right to appear and be heard.
- 4) The fiscal officer shall then cause an investigation to be made to determine whether any amounts are due to the laborers, workmen or mechanics, or on their respective behalves, on such public improvement, for labor performed after the commencement of the three-year period immediately preceding the filing of the complaint or the commencement of the investigation on his own initiative, as the case may be, and shall order a hearing therein at a time and place to be specified and shall give notice thereof, together with a copy of such complaint, or a statement of the facts disclosed upon such investigation, which notice shall be served personally or by mail on all interested persons, including the person complained

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against and upon the financial officer of the civil division; such person complained against shall have an opportunity to be heard in respect to the matters complained of, at the time and place specified in such notice, which time shall be not less than five days from the service of said notice. The fiscal officer in such an investigation shall be deemed to be acting in a judicial capacity and shall have the rights to issue subpoenas, administer oaths and examine witnesses. The enforcement of a subpoena issued under this section shall be regulated by the Civil Practice Law and Rules. Such investigation and hearing shall be expeditiously conducted, and upon such hearing and investigation, the fiscal officer shall determine the issues raised thereon and shall make and file an order in his office stating such determination and forthwith serve a copy of such order, either personally or by mail, together with notice of filing, upon the parties to such proceedings, and if the fiscal officer be the Comptroller, upon the Commissioner of the Department of Labor. Such order shall direct payment of wages or supplements found to be due, including interest at the rate of interest then in effect as prescribed by the Superintendent of Banks pursuant to Section fourteen (a) of the Banking law per annum from the date of the underpayment to the date of payment.

- 5) In addition to directing payment of wages or supplements, including interest found to be due, the order of the fiscal officer may direct payment of a further sum as a civil penalty in an amount not exceeding twenty-five percent of the total amount found to be due. In assessing the amount of the penalty, due consideration shall be given to the size of the employer's business, the good faith of the employer, the gravity of the violation, the history of previous violations of the employer or any successor or substantially-owned affiliated entity or any of the partners if the Contractor or Subcontractor is a partnership or any of the five largest shareholders of the Contractor or Subcontractor, as determined by the fiscal officer, and any officer of the Contractor or Subcontractor who knowingly participated in the violation of this article, and the failure to comply with record keeping or other non-wage requirements. Upon the fiscal officer's determination of the penalty, where the fiscal officer is the Commissioner of the Department of Labor, the penalty shall be paid to said Commissioner for deposit in the State Treasury.
- 6) Upon the entry and service of such order, the Commissioner of Finance shall pay to the claimant, from the moneys due to the Contractor or Subcontractor, the amount of the claim as determined by the fiscal officer and the amount of the civil penalty, if any, shall be paid as provided herein, provided that no proceeding pursuant to Article Seventy-Eight of the Civil Practice Law and Rules for review of said order is commenced by any party aggrieved thereby within thirty days from the date of said order was filed in the office of the fiscal officer. Said proceeding shall be directly in the appellate division of the Supreme Court. Where the fiscal officer is the Commissioner of the Department of Labor, the civil penalty shall be paid to said Commissioner for deposit in the State Treasury. In the event that such a proceeding for review is instituted, moneys sufficient to satisfy the claim and civil penalty shall be set aside by the Commissioner of Finance, subject to the order of the Court.

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- 7) When final determination has been made and such determination is in favor of the complainant, said complainant may in addition to any other remedy provided by this article, institute an action in any Court of appropriate jurisdiction against the person or corporation found violating this article, any substantially-owned affiliated entity or any successor of the Contractor or Subcontractor, any officer of the Contractor or Subcontractor who knowingly participated in the violation of this article, and any of the partners if the Contractor or Subcontractor is a partnership or any of the five largest shareholders of the Contractor or Subcontractor, as determined by the fiscal officer, for the recovery of the difference between the sum, if any, actually paid to him by the Commissioner of Finance pursuant to said order and the amount found to be due him as determined by said order. Such action must be commenced, within three years from the date of the filing of said order, or if the said order is reviewed in a proceeding pursuant to Article Seventy-eight of the Civil Practice Law and Rules, within three years after the termination of such review proceeding.

- 8) When two final determinations have been rendered against a Contractor, Subcontractor, successor, or any substantially owned affiliated entity of the Contractor or Subcontractor, any of the partners if the Contractor or Subcontractor is a partnership, any officer of the Contractor or Subcontractor who knowingly participated in the violation of this article, any of the five largest shareholders of the Contractor or Subcontractor or any successor within any consecutive six-year period determining that such Contractor, Subcontractor, successor, or any substantially-owned affiliated entity of the Contractor or Subcontractor, any of the partners or any of the five largest shareholders of the Contractor or Subcontractor, any officer of the Contractor or Subcontractor who knowingly participated in the violation of this article has willfully failed to pay the prevailing rate of wages or to provide supplements in accordance with this article, whether such failures were concurrent or consecutive and whether or not such final determinations concerning separate public work projects are rendered simultaneously, such Contractor, Subcontractor, successor, or any substantially-owned affiliated entity of the Contractor or Subcontractor, any of the partners if the Contractor or Subcontractor is a partnership or any of the five largest shareholders of the Contractor or Subcontractor, any officer of the Contractor or Subcontractor who knowingly participated in the violation of this article shall be ineligible to submit a bid on or be awarded any public work contract or subcontract with the State, any municipal corporation or public body for a period of five years from the second final determination, provided, however, that where any such final determination involves the falsification of payroll records or the kickback of wages or supplements, the Contractor, Subcontractor, successor, or any substantially-owned affiliated entity of the Contractor or Subcontractor, any partner if the Contractor or Subcontractor is a partnership or any of the five largest shareholders of the Contractor or Subcontractor, any officer of the Contractor or Subcontractor who knowingly participated in the violation of this article shall be ineligible to submit a bid on or be awarded any public work contract with the State, any municipal corporation or public body for a period of five years from the first final determination.

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- 9) Nothing in this subdivision shall be construed as affecting any provision of any other law or regulation relating to the awarding of public contracts.

Pursuant to Section 220-C of the Labor law, any Contractor or Subcontractor who shall upon his oath verify any statement required to be filed herein, which is known by him to be false, shall be guilty of perjury and punishable as provided by the Penal Law.

10. CONTRACTOR'S REPORT OF EMPLOYMENT AND WEEKLY AFFIDAVIT

Each week the Contractor shall furnish to the Commissioner of Public Works the "Contractor's Report Of Employment And Weekly Affidavit" of the Sample Forms.

11. LAWS/REGULATIONS AND APPROPRIATIONS

- A. The Contractor shall, at its own cost and expense, comply with all provisions of the Labor Law (i.e. prevailing rate of wages and supplements), Lien Law, Workmen's Compensation Law and all other laws and ordinances affecting this contract or order, either Federal, State or local.
- B. It is recognized and understood by the Parties that when this Agreement is subject to future appropriation by the Westchester County Board of Legislators for funds not presently appropriated to pay for this Agreement; the County shall have no liability under this agreement beyond the funds, if any, that are appropriated and available for payment of the amounts due under this Agreement. The Parties understand and intend that the obligation of the County to pay the amounts due hereunder shall constitute a current expense of the County and shall not in any way be construed to be a debt of the County in contravention of any applicable constitutional or statutory limitations or requirements concerning the creation of indebtedness by the County, nor shall anything contained in this Agreement constitute a pledge of the general tax revenues, funds or monies of the County. The County shall pay amounts due under this Agreement exclusively from legally available funds appropriated for this purpose. Notwithstanding the foregoing, the County will do all things lawfully within its power to obtain, maintain, and properly request and pursue funds from which payments under this Agreement may be made, including: (i) the County Executive making provisions for such payments to the extent necessary in the annual budget submitted to the Board of Legislators for the purpose of obtaining funding; and (ii) using its reasonable efforts to have such portion of the budget approved.

12. REFUSAL TO ANSWER QUESTIONS

It is understood and agreed by the Contractor that he/she bears an affirmative obligation to answer questions specifically or directly relating to this agreement before any official, board or agency authorized or empowered to inquire into such matters. This section shall not be construed as barring the Contractor, its directors, officers or employees from exercising their constitutional privilege against self-incrimination.

The foregoing, however, shall not be construed as limiting the rights and remedies of the County in the event of such refusal, and when such body or agency is wholly civil in nature,

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failure or refusal to fully cooperate with and diligently answer the inquiries of such official, board or agency may constitute grounds for the termination of this agreement and/or the exercise of any and all other rights or remedies which the County may have by reason of such failure or refusal.

Any and all contracts made with the State, the County of Westchester, or any public department, agency or official thereof, since July 1, 1959 by such person and by any firm, partnership or corporation of which he is a member, partner, director or officer, may be canceled or terminated by the County of Westchester, without incurring any penalty or damages on account of such cancellation or termination, but any monies owing pursuant to said transaction or contract prior to the cancellation and termination, shall be paid.

The successful bidder will be required to make all books and records concerning this contract available during business hours, upon reasonable notice, to duly authorized County personnel for the purpose of ascertaining compliance and/or performance of all provisions of this contract. This provision shall survive the termination of this agreement and for a period of six (6) years thereafter.

13. BID REQUIREMENTS

The Bid must be made on the "Proposal Pages" included in this specification or as provided with an addendum. All blank spaces on said Proposal Pages must be filled in and no change shall be made in the phraseology or in the items as contained therein.

Any bid which fails to name a price per unit of measurement for each of the items for which quantities are given, may be held to be informal and rejected. Bids submitted on Proposal Pages that contain any omissions, alterations, additions or items not called for in the bid documents, or that are illegible, unbalanced, conditional, incomplete or contain irregularities of any kind, may be rejected as informal. If the various parts of the work have been divided into classes and/or items to enable the bidder to bid for different portions of the work in accordance with its estimate of their costs, in the event of any increase or decrease in the quantity will be paid for at the price bid for that particular item. The sum of the amounts for each class or item, obtained by multiplying the approximate quantity by the unit price, shall constitute the total sum bid.

In the event of a discrepancy between the written bid amount and the numerical bid amount, the written amount will take precedence and be controlling as to the amount of the Bid. Any such discrepancy shall be corrected as set forth in Article "Correction Of Errors" of the Information for Bidders.

14. MISCELLANEOUS ADDITIONAL WORK (ITEM W-800)

A. Description - Under this item each Contractor shall furnish all labor, material and equipment required to accomplish miscellaneous additional work:

- 1) Necessitated by encountering during the course of the work field conditions of a nature not determinable during design; or
- 2) For which no unit prices are applicable.

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- B. Method of Measurement - Only that miscellaneous additional work shall be performed by the Contractor and will be paid for by the County, which has been authorized by the Commissioner or the Construction Administrator in writing, prior to its commencement.
- C. Article “Increase or Decrease of Quantities: Elimination of Items” of the Information for Bidders, will still apply relative to the percentage of the total awarded contract price that the work under the contract may be increased or decreased.
- D. Payment - The total amount paid to the Contractor will be determined in strict accordance with the provisions of Article “Extra Work: Increased Compensation/ Decreased Work: Credit to the Owner” of the General Clauses, and such payment will include only that overhead and profit that is applicable to the work performed under this item.
- E. Each Contractor shall include in its total bid the lump sum printed in the Proposal and any bid other than the specified amount will be considered informal.

15. CORRECTION OF ERRORS

Relative to dollar bid items and the required computations as submitted and performed by bidders on the proposal sheets, if there are any inconsistencies derived in multiplying unit bid prices by the stated quantities, the Commissioner reserves the right to reconcile the unit bid prices or the products of the unit bid prices and the stated quantities, when in the Commissioner's professional opinion such reconciliation(s) would concur with the apparent intent of a bidder and the Commissioner's estimated values of the respective bid items of the proposed contract work. In addition to the foregoing, the Commissioner reserves the right to correct all mathematical errors in additions or subtractions.

16. SHOWN QUANTITIES

All bids shall be submitted upon the following express conditions, which shall apply to and become a part of every bid received. The Bidders accept the quantities shown on the Proposal Pages opposite items of the work for which unit prices are to be bid as being approximate estimated quantities. Bidders shall satisfy themselves by personal examination of the location of the proposed work and surroundings thereof, and by such other means as they may prefer, as to the scope of the work and the accuracy of the approximate estimated quantities; and shall not at any time after submission of their bids dispute such approximate estimated quantities nor assert that there was any misrepresentation by the County or any misunderstanding by the Contractor in regard to the quantity or kind of materials to be furnished, or work to be done.

17. QUALIFICATION OF BIDDERS

The County may make such investigation as it deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish all information and data for this purpose as may be requested. The County reserves the right to reject any bid if the evidence submitted by, or the investigation of such bidder fails to satisfy the County, in the County's sole discretion, that it is properly qualified to carry out the obligations of the contract and to complete the contemplated work.

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18. REQUIRED EXPERIENCE

The County requires that each contractor possess not less than five (5) year's experience in performing work substantially similar in scope and size to the work for which it is bidding. The contractor agrees that upon request of the County the contractor will furnish a detailed statement of each project that it has performed during the most recent five (5) years (including but not limited to the name and address of the project, the name of the awarding entity/owner, the name of the awarding entity's/owner's representative, a current telephone number where that representative can be reached, the description of the project, general scope of the contractor's work, contract price, dates of performance, whether the contract was terminated for cause or convenience, whether the contract was completed and whether liquidated damages were assessed against the contractor [and if so, provide a written explanation]). The County reserves the right to require additional information as it deems appropriate concerning the history of the contractor's performance of each such contract. The final determination of whether the contractor possesses the requisite experience rests in the sole discretion of the County.

19. INCREASE OR DECREASE OF QUANTITIES: ELIMINATION OF ITEMS

In entering into this contract, the Contractor agrees that quantities shown on the Proposal Pages opposite items of the work for which unit prices have been requested are approximate estimated quantities, and that during the progress of the work the County may find it advisable and shall have the right to omit portions of the work, and to increase or decrease the shown approximate estimated quantities, or the scope of the whole work; and that the County reserves the right to add to or take from the total amount of the work up to a limit of thirty percent of the total amount of the contract based upon the executed contract price for all the specified work.

The Contractor shall make no claim for anticipated profits or loss of profits, because of any difference between the quantities of the various classes of work actually done, or of the materials actually furnished, and the original specified scope of work and the shown approximate estimated quantities.

The aforesaid thirty- percent pertains to the total amount of the contract and not to any individual item. Individual items may be increased or decreased any amount or may be eliminated entirely if so ordered by the Commissioner, excepting that the total amount of the contract as adjusted shall not result in a net increase or decrease of more than thirty percent except by mutual agreement between both parties thereto.

The Contractor waives all claims of any nature due to a misunderstanding of the location, character, or other conditions surrounding the work or of the shown approximate estimated quantities of items of the work.

20. BREAKDOWN COST OF LUMP SUM ITEMS AND CONTRACTS

After award of the contract and prior to actual start of the work, the successful bidder shall submit an itemized schedule of its estimated costs of lump sum items and or lump sum total contract work, for approval by the County. The schedule shall be submitted as an outline series with minor subdivisions, in accordance with the directives of the County. As part of

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this Schedule, the Contractor will be required to include a sum sufficient, as determined in the County's sole discretion, for the preparation and submission of approved final "As-builts", record drawings, guarantees, warranties, and operations and maintenance manuals.

21. ENGINEERING CHARGES

In addition to any and all other remedies available to the County when the work embraced in the contract is not completed on or before the date specified herein, engineering and inspection expenses incurred by the County of Westchester upon the work from the completion date originally fixed in the contract to the final date of completion of the work may be charged to the Contractor and be deducted from monies due the Contractor. Consideration of any extra work or supplemental contract work added to the original contract, as well as extenuating circumstances beyond the control of the Contractor, will be given due consideration by the County before assessing engineering and inspection charges against the Contractor. Such charges will be assessed, however, in cases where in the opinion of the Commissioner, the Contractor has delayed the work.

22. ESTIMATES AND PAYMENTS

As the work progresses but not more often than once a month and then on such days as the Construction Administrator may fix, the Contractor will submit a requisition in writing of the amount and value of the work performed and the materials and equipment provided to the date of the requisition, less any amount previously paid to the Contractor. The Contractor must complete at least ten (10%) percent of the work before submitting any claims for mobilization. From each requisition, the County will retain five percent (5%) plus one hundred fifty percent (150%) of the amount necessary to satisfy any claims, liens or judgments against the Contractor that have not been suitably discharged. The Commissioner will thereupon cause the balance of the requisition therein to be paid to the Contractor. In lieu of all or part of the cash retainage the County shall only accept bonds or notes of United States of America, New York State or political subdivisions thereof. As a condition to the making of any progress payment as set forth in this paragraph, the County, in its sole discretion may require the Contractor to submit such document as may be reasonably required to establish that the Contractor (and its subcontractor(s)) have timely and properly paid their respective subcontractor(s) and materialmen of whatever tier.

VENDOR DIRECT PAYMENT: All payments made by the County to the Contractor will be made by electronic funds transfer ("EFT") pursuant to the County's Vendor Direct program. The Contractor is required to complete the Vendor Direct Payment Authorization Form, which is located in the Forms Section on page 11 and 12. Payments will be automatically credited to the Contractor's designated bank account at the Contractor's financial institution. Payments are anticipated to be deposited two business days after the voucher/invoice is processed for payment. Saturdays, Sundays, and legal holidays are not considered business days. Under the Vendor Direct program you will receive an e-mail notification two days prior to the day the payment will be credited to your designated account. The e-mail notification will come in the form of a remittance advice with the same information that currently appears on County check stubs and will contain the date that the funds will be credited to your account. If there is a discrepancy in the amount received please contact

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your Westchester County representative as you would have in the past if there were a discrepancy in a check.

In the unlikely event that you do not receive the money in your designated bank account on the date indicated in the e-mail, please contact the Westchester County Accounts Payable Department at 914-995-3748. Whenever you change your bank or change or close your account a new Vendor Direct Payment Authorization Form must be submitted. Please contact the Westchester County Accounts Payable Department at 914-995-3748 and a new form will be e-mailed to you. When completing the payment authorization form you must either supply a voided check or have it signed by a bank official to ensure the authenticity of the account being set up to receive your payments. Failure to return the completed authorization form prior to award of the contract may result in the bid being considered non-responsive and the bid may be rejected.

When the work or major portion thereof, as contemplated by the terms of the contract (see Substantial Completion Payment and Final Payment later in this article), are substantially completed in the judgment of the Commissioner, the Contractor shall submit a requisition for the remainder of the contract balance. An amount equal to two (2) times the value of the remaining items to be completed plus one hundred fifty percent (150%) of the amount that the Commissioner deems necessary to satisfy to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged shall be deducted from the requisition. As the remaining items of work are satisfactorily completed or corrected, the County will, upon receipt of a requisition, pay for these items less one hundred fifty percent (150%) of the amount necessary to satisfy any claims, liens or judgments.

Contractor agrees, in the event of any withdrawal by the contractor of amounts retained from payments to the contractor pursuant to the terms hereof, that notwithstanding any contrary interpretation of Section 106 of the New York General Municipal Law, the contractor will be obliged to maintain the market value of securities deposited in an amount equal to the amount withdrawn pursuant to said Section 106. The Contractor will, within five (5) days of demand therefore by the fiscal officer of the County, deposit with such fiscal officer cash, or securities of the kind provided in Section 106, of a market value sufficient to maintain the market value of all securities on deposit at a level equal (as of the date such notice of the fiscal officer is given to the contractor) to the amount which the County shall be entitled to retain from payments to the contractor pursuant to the terms of the contract.

All estimates will be made for actual quantities for work performed and materials and equipment incorporated in the work as determined by the measurements of the Engineer, and this determination shall be accepted as final, conclusive and binding upon the Contractor. All estimates will be subject to correction in any succeeding estimate.

Payment will be made for materials pertinent to the project which have been delivered to the site or off-site by the Contractor and/or Subcontractor and suitably stored and secured in first-class condition as required by the Construction Administrator. Payment may be limited to materials in short and/or critical supply and materials specially fabricated for the project, as defined by the contract. Payment will be made only upon the written request of the contractor. The Contractor must submit certified copies of the manufacturer's or vendor's invoices or statements establishing the true purchase value of the material or equipment; freight bills, release of liens and certificate of insurance covering all equipment and materials. Then the County will include in the following monthly payment an amount not to

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exceed the lesser of the bid breakdown or the total purchase price of the stored equipment and materials less retainage provided that such equipment and materials are suitable for their intended use.

The Contractor shall be responsible for safeguarding stored equipment and materials against loss or damage of any nature whatsoever, shall retain title until incorporated into the work and acceptance by the County and in case of loss or damage, the Contractor shall replace such lost or damaged equipment and materials at no cost to the County.

After receipt of payment, the Contractor shall not remove from the site equipment and materials for which such payment was made without written authorization from the Commissioner.

No major equipment item shall be brought to the site until the following conditions are met:

- 1) The County must have received the manufacture's recommendations for on-site storage in writing.
- 2) The structure in which the equipment is to be installed is roofed (roofing must be watertight) and has such protection of doorways, windows, and other openings that will provide reasonable protection from the weather.
- 3) Prior to the County making a Partial Payment on a major equipment item the following conditions must be met:
 - a. The Contractor must certify to the County, in writing, that the equipment has been properly stored.
 - b. The Shop Drawings must be approved and the draft Operation and Maintenance Manuals must have been submitted.

The Contractor shall furnish to the Construction Administrator, prior to the making up of any Partial or Final Estimate, a copy of its and its Subcontractors' weekly payrolls for each and every preceding payroll period. The payroll submitted shall be a certified true copy and shall contain full information including but not limited to the number of hours worked, rate, classification and total sum paid each employee charged to or working on the job. With all except the first estimate, the Contractor shall furnish to the Construction Administrator a sworn statement listing all unpaid bills and liabilities incurred under the Contract.

A. Substantial Completion Payment

- 1) Within thirty (30) days after receiving written notice from the Contractor of substantial completion of the work under this Agreement, the Commissioner will cause an inspection to be made of the work done under this contract. If, upon such inspection, the Engineer determines that the work is substantially complete, a Substantial Completion Payment to the Contractor for the work done under this Contract, less any and all deductions authorized to be made by the Commissioner under this contract or by law, will be issued.
- 2) Such a Payment shall be considered a Partial and not a Final Payment.
- 3) As a condition precedent to receiving payment therefore, the Contractor must have received County approval of all Shop Drawing submittals, the Operation and Maintenance Manuals, and As-Built Drawing(s). Together with its application for substantial completion payment the Contractor shall also deliver to the

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Construction Administrator a verified statement certifying that all claims or liabilities arising from the completed work, including all charges for Extra Work, Change Orders, additional time, damages or credits (collectively referred to as “claims”) have been presented to the County. All such claims shall be described in sufficient detail so as to be easily identified. The Contractor’s failure to submit the verified statement shall constitute a full and final waiver of all claims against the County from the beginning of the project through the date of substantial completion as established by the County. The presentation of the verified statement to the County shall not constitute an acknowledgement by the County that any such claim is valid. The County expressly reserves its right to assert that any such claim(s) is waived or precluded by reason of other provisions of the contract documents. Only claims particularly identified on the Contractor’s verified statement shall be preserved; all other claims whatever nature shall be deemed waived and released. It shall also submit proof of title of the materials and equipment covered by the contract. The Contractor shall also, prior to the issuance of said Substantial Completion Payment, supply to the County affidavits and certificates for labor, material and equipment (where applicable).

B. Final Payment

- 1) Within ten (10) days after receiving written notice from the Contractor of completion of all the work, the Engineer will make a final inspection. If upon inspection the Engineer determines that no further work is needed, the Commissioner will request that the Board of Acquisition and Contract approve the completion of the project and authorize payment of the Final Estimate. Also required prior to the Board of Acquisition and Contract approval is a Condition Report by the Contractor that any damage of public or privately owned properties resulting from the Contractor’s work has been satisfactorily repaired.
- 2) As a condition precedent to receiving Final Payment therefore the Contractor shall submit a supplementary verified statement similar to that required under, “A. Substantial Completion Payment”, hereof. This verified statement must include only those charges for Extra Work, Change Orders, additional time, damages or credits (collectively referred to as “claims”) that accrued between substantial completion and final completion. The Contractor’s failure to submit the verified statement shall constitute a full and final waiver of all claims against the County from the beginning of the project through the date of substantial completion as established by the County. The presentation of the verified statement to the County shall not constitute an acknowledgement by the County that any such claim is valid. The County expressly reserves its right to assert that any such claim is waived or precluded by reason of other provisions of the contract documents. Only claims particularly identified on the Contractor’s supplementary verified statement shall be preserved; all other claims of whatever nature shall be deemed waived and released.
- 3) The Contractor shall also, prior to the issuance of Final Payment, supply to the County affidavits and certificates for labor, material and equipment (where applicable).

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- 4) The County will, not less than thirty (30) days after the Final Acceptance of the work under this contract, by the Board of Acquisition and Contract, pay the Contractor upon the receipt of all required documentation the balance of funds due thereunder after deduction of all previous payments, liens and all percentages and amounts to be kept and retained under provision of this contract.

All prior Partial Payments, being merely estimates made to enable the Contractor to prosecute the work more advantageously, shall be subject to correction in the Final Estimate and Payment

- 5) The acceptance by the Contractor or by anyone claiming by or through him of the Final Payment shall operate as and shall be a release to the County and every officer and agent thereof, from any and all claims of the Contractor for anything done or furnished in connection with this work or project and for any act or omission of the County or of any others relating to or affecting the work. No payment, however, final or otherwise, shall operate to release the Contractor or its Sureties from any obligation under this contract or the Performance and Payment Bond. Should the Contractor refuse to accept the final payment as tendered by the County, it shall constitute a waiver of any rights to interest thereon. Nor shall refusal to accept final payment extend any applicable statute of limitation.

23. PAYMENTS TO SUBCONTRACTORS AND MATERIALMEN BY CONTRACTOR

Within fifteen calendar days of the receipt of any payment from the County, the contractor shall pay each of its sub-contractors and materialmen the proceeds from the payment representing the value of the work performed and/or materials furnished by the subcontractor and/or materialmen as reflected in the payment from the owner less an amount necessary to satisfy any claims, liens or judgment against the subcontractor or materialman which have not been suitably discharged and less any retained amount as hereafter described. The contractor shall retain not more than five per centum of each payment to the subcontractor and/or materialman except that the contractor may retain in excess of five per centum but not more than ten per centum of each payment to the subcontractor provided that prior to entering into a subcontract with the contractor, the sub-contractor is unable or unwilling to provide a performance bond and a labor and material bond both in the full amount of the sub-contract at the request of the contractor. However, the contractor shall retain nothing from those payments representing proceeds owed the subcontractor and/or materialman from the County's payments to the contractor for the remaining amounts of the contract balance as provided in Article "Estimates and Payments" of the Information For Bidders. Within fifteen calendar days of the receipts of payment from the contractor, the subcontractor and/or materialman shall pay each of its subcontractors and materialmen in the same manner as the contractor has paid the subcontractor.

Nothing provided herein shall create any obligation on the part of the County to pay or to see the payment of any moneys to any subcontractor or materialman from any contractor nor shall anything provided herein serve to create any relationship in contract or otherwise, implied or expressed between the subcontractor or materialman and the County. Notwithstanding anything to the foregoing, the County may tender payments to the Contractor in the form of joint or dual payee checks.

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NOTICE: No direct payment will be made for work done or materials furnished under the General Clauses, Information for Bidders, General Clauses and Special Clauses, except where expressly stated elsewhere, but compensation shall be deemed to be included in the contract lump sum price for the total work and/or the contract unit prices for the various items of the work.

24. TIME OF STARTING

Time being of the essence, all bidders shall take notice that the timely completion of the work called for under this contract is of the greatest importance. The contractor shall commence its work within ten (10) days after "notice to proceed" has been given it by the Commissioner (unless a definite starting date is stated). Prior to commencing its work, the Contractor shall notify the Director of Project Management, Division of Engineering and Department of Public Works, at least forty-eight (48) hours prior to the planned date of its "start", so that a Construction Administrator can be assigned to the work.

25. SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION AND DEMOLITION WORK

At all times the Contractor shall use all required and necessary precautions for the safety and protection of the public, County personnel, construction employees, and private and public property on or adjacent to the work.

The Contractor shall comply fully with all the applicable provisions of the following listed governmental regulations and standards, noting that in case of conflict, the Contractor shall comply with the most stringent rule or regulation:

- 1) State of New York, Department of Labor, Bureau of Standards and Appeals, Industrial Code Rule 23 "Protection of Persons Employed in Construction and Demolition Work."
- 2) United States Department of Labor, Bureau of Labor Standards, "Safety and Health Regulations for Construction," as promulgated in accordance with the Occupational Safety and Health Act of 1970, Public Law 91-596; 84 Stat. 1590, Laws of 91st Congress - 2nd Session.

It shall be the sole responsibility of the Contractor to ascertain which of the regulations and standards contained in the foregoing listed publications effect its construction activities, and it shall be solely responsible for the penalties resulting from its failure to comply with such applicable rules and regulations. Copies of the listed publications are available for reference purposes only, in the Westchester County Department of Public Works, Division of Engineering, Design Section, Room 500, Michaelian Office Building, White Plains, New York.

The West Nile Mosquito control program:

- 1) Routinely, the work site should be inspected for potential habitats (i.e. stagnant/standing water) for mosquitoes.
- 2) Conditions that would require remediation include: improper site grading, ruts/other depressions, water in debris (i.e. containers, tires, etc.), stored or

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discarded materials, and excavations, and those cited by the Construction Administrator.

- 3) Under the direction of the Construction Administrator, the Contractor shall take all necessary preventive and/or corrective action to eliminate the potential breeding grounds.

26. ACCIDENT PREVENTION AND FIRST AID FACILITIES

In addition to conforming to the applicable governmental regulations and standards referred to in Article "Fire Prevention And Control" of the Information For Bidders, the Contractor shall conduct its work in accordance with the recommendations contained in the latest edition of the "Manual of Accident Prevention in Construction," as published by the Associated General Contractors of America, Inc. and the most recent safety codes approved by the American Standards Association. In case of the conflict with the referenced governmental regulations and standards, the most stringent regulation, standard or recommendation shall govern.

Further, and without in any way limiting the Contractor's obligations hereunder, and in accordance with the instructions of the Construction Administrator, the Contractor shall provide barricades, warning lights, danger and caution signs and other safeguards at all places where the work in any way is a hazard to the public.

The Contractor shall also provide and maintain upon the site at each location where major work is in progress, a completely equipped first aid kit that shall be readily accessible when construction activities are in progress. Posted on each first aid kit shall be the name, location and telephone number of the nearest hospital or doctor with whom the Contractor has previously made arrangements for emergency treatment in case of accident.

27. FIRE PREVENTION AND CONTROL

The Contractor shall abide by such rules and instructions as to fire prevention and control as the municipality having jurisdiction may prescribe. It shall take all necessary steps to prevent its employees from setting fires not required in the construction of the facility and shall be responsible for preventing the escape of fires set in connection with the construction.

It shall at all times provide the proper housekeeping to minimize potential fire hazards, and shall provide approved spark arresters on all steam engines, internal combustion engines and fuels.

Free access to fire hydrants and standpipe connections shall be maintained at all times during construction operations, and portable fire extinguishers shall be provided by the Contractor and made conveniently available throughout the construction site. The Contractor shall also notify its employees of the location of the nearest fire alarm box at all locations where work is in progress.

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28. STATE AND LOCAL SALES TAX EXEMPTION

The Contractor's attention is directed to Section 1115 of the Tax Law of New York State, Chapters 513 and 514 of the Laws of 1974. In connection with capital improvement contracts entered into on or after September 1, 1974, all tangible personal property which will become an integral component of a structure, building or real property of New York State, or any of its political sub-divisions, including the County of Westchester, is exempt from State and local retail sales tax and compensating use tax.

Bidders' proposals shall exclude dollar amounts for the payment of State and Local retail sales tax and compensating use tax, for tangible personal property defined above.

The successful bidder shall be obliged to file the required Contractor Exempt Purchase Certificates, which may be obtained from the New York State Department of Taxation and Finance (1-800-462-8100), in order to utilize such exemption.

29. APPRENTICES

The attention of all bidders is directed to Section 220(3-e) of the New York State Labor Law, which is hereby incorporated herein by reference, which requires, among other things, that "Apprentices who are registered under a Bona Fide New York State Registered Apprentice Training Program shall be permitted to work."

30. AFFIRMATIVE ACTION PROVISION

During the performance of this Contract, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, age or handicap. Contractor shall take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, national origin, age or handicap. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoffs or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to include, or require the inclusion of the above provision in any subcontract made pursuant to its contract with the County.

31. AFFIRMATIVE ACTION PROGRAM REQUIREMENT

Relative to the award of this Contract, it is required that all bidders completely answer all questions contained in the questionnaire entitled "Affirmative Action Program Requirement" of the Proposal Pages, and properly attest to same.

It is also required that all subcontractors completely answer all questions contained in the questionnaire entitled "Affirmative Action Program Requirement-Subcontractors" of the Sample Forms, and properly attest to same. This form is to be submitted with the request to utilize subcontractor(s).

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32. AUTHORITY TO DO BUSINESS IN NEW YORK

Any corporation not incorporated under the Laws of New York State, must furnish a copy of its certificate of authority, from the New York State Secretary of State, to do business in the State of New York, in accordance with Article 13 of the New York State Business Corporation Law.

33. LICENSE REQUIREMENTS (ELECTRICAL)

- A. In accordance with the requirements of Local Law No. 20-1997 of Westchester County, no person shall perform work under any contract with the County of Westchester except (i) a licensed Master Electrician; (ii) a licensed "Special Electrician"; or (iii) a Journeyman Electrician working under the direct supervision and control of a Master Electrician.

In no event shall the County incur any liability to pay for any electrical work performed in violation of the licensing requirements of Local Law No. 20-1997 of Westchester County.

- B. Contract with separate bids:

If the project is one where separate bid specifications are required pursuant to the provisions of the New York General Municipal Law, then any person, partnership, corporation, business organization or other business entity submitting a bid for the electrical portion of the project must possess, at the time of submission of the Bid, a valid Master/"Special" Electrician's license issued by the Westchester County Electrical Licensing Board in accordance with Chapter 277 Article XVII of the Laws of Westchester County and the Westchester County Electrical Licensing Board Rules & Regulations, in particular No. 11, which states as follows:

No individual holding a Master Electrician's License shall lend such License to any person or allow any other person to carry on, engage in, or labor at the business as defined herein of installing, removing, altering, testing, replacing, or repairing electrical systems. A violation of this section by any person holding a License shall be sufficient cause for revocation of such License.

However, nothing herein shall be construed to prohibit the use of a License by the holder thereof for or on behalf of a partnership, corporation or other business association, provided that fifty-one (51) percent or more of the control of the voting capital stock of such partnership, corporation, or other business association is owned by one (1) or more holders of a Westchester County Master Electrical License and that all work performed by such partnership, corporation or other business association is performed by or under the direct supervision of such License holder or holders.

- C. Contract with single bid:

Where the project does not involve separate bids pursuant to the New York General Municipal Law but where some electrical work is contemplated along with other work, the person, firm, partnership or corporation engaged to perform said electrical work

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must possess a valid Master/"Special" Electrician's license issued by the Westchester County Electrical Licensing Board.

- D. An electrical bidder must complete the "Certificate of License (Electrical)" of the Proposal Pages and will be required to furnish a copy of such license with the sealed Bid. Other bidders will be required to furnish a copy of such license for the applicable person engaged to perform the electrical work when request by the County, prior to awarding the contract.
- E. The license must be maintained at all times during the performance of the work contemplated under the contract. The suspension, revocation or the failure to maintain or renew such license shall, in addition to any other right or remedy available to the County, be grounds for immediate termination of the contract, effective immediately upon notice from the Commissioner.

34. LICENSE REQUIREMENTS (PLUMBING)

- A. In accordance with the requirements of Chapter 277, Article XV of the Laws of Westchester County, no person shall perform plumbing work under any contract with the County of Westchester except (i) a licensed Master Plumber; (ii) a certified Journey Level Plumber employed by and under the direction of a licensed Master Plumber; or (iii) an Apprentice Plumber working under the direct supervision and control of a Master Plumber or under the direct supervision and control of a certified Journey Level Plumber in the employ of a licensed Master Plumber.

In no event shall the County incur any liability to pay for any plumbing work performed in violation of the licensing requirements of Chapter 277, Article XV of the Laws of Westchester County.

- B. Contract with separate bids:

If the project is one where separate bid specifications are required pursuant to the provisions of the New York General Municipal Law, then any person, partnership, corporation, business organization or other business entity submitting a bid for the plumbing portion of the project must possess, at the time of submission of the Bid, a valid Master Plumber's license issued by the Westchester County Board of Plumbing Examiners in accordance with the Westchester County Board of Plumbing Examiners Rules and Regulations and Chapter 277 Article XV of the Laws of Westchester County, in particular Section 277.509A, which states as follows:

- A. No holder of a license or certification issued under this article shall authorize, consent to or permit the use of his or her license or certification by or on behalf of any other person. No person who has not qualified or obtained a license or certification under this article shall represent himself or herself to the public as holder of a license or certification issued under this article, either directly, by means of signs, sign cards metal plates or stationery, or indirectly in any other manner whatsoever. However, nothing herein shall be construed to prohibit the use of a license by the holder thereof for or on behalf of a partnership, corporation or other business association, provided that 51 percent or more of the control of the voting capital stock of such partnership, corporation or other business

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association is owned by one or more holders of a Westchester County master plumbing license and that all work performed by such partnership, corporation or other business association is performed by or under the direct supervision of such license holder or holders.

C. Contract with single bid:

Where the project does not involve separate bids pursuant to the New York General Municipal Law but where some plumbing work is contemplated along with other work, the person, firm, partnership or corporation engaged to perform said plumbing work must possess a valid Master Plumber's license issued by the Westchester County Board of Plumbing Examiners.

D. A plumbing bidder must complete the "Certificate of License (Plumbing)" of the Proposal Pages and will be required to furnish a copy of such license and the County issued identity badge with the sealed Bid. Other bidders will be required to furnish a copy of such license and the County issued identity badge for the applicable person engaged to perform the plumbing work when request by the County, prior to awarding the contract.

E. A restricted Master Plumber's license issued by the Westchester County Board of Plumbing Examiners shall satisfy the requirements of this section provided such restricted license authorizes the Master Plumber to engage in the business of plumbing within the local municipality in which the work under the contract is to be performed.

F. The license must be maintained at all times during the performance of the work contemplated under the contract. The suspension, revocation or the failure to maintain or renew such license shall, in addition to any other right or remedy available to the County, be grounds for immediate termination of the contract, effective immediately upon notice from the Commissioner.

35. LICENSE REQUIREMENTS (HAULERS)

(Haulers Of Solid Waste; Recyclables; Construction And Demolition Debris; Garden And Yard Waste And/Or Scrap Metal)

A. DEFINITIONS:

- 1) "Class A" refers to all haulers except those whose hauling business is limited solely to Class C, Class D or Class E activities or whose recycling business is limited to Class B activities. Class A Licensees may also conduct Class B, Class C, Class D and Class E activities.
- 2) "Class B" refers to Recyclable brokers. Class B Licensees may also conduct Class C, Class D and Class E activities.
- 3) "Class C" refers to haulers who exclusively handle construction and demolition debris. Class C Licensees may also conduct Class D and Class E activities. With respect to Class C haulers, the following shall apply: a. Class "C-1" shall refer to a business or subsidiary which generates construction and demolition debris, as defined herein, and which, incidental to such business, transports, stores, processes, transfers or disposes of the construction and demolition debris generated by the

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operations of such business or subsidiary. Class "C-1" Licensees may also conduct Class E activities; b. Class "C-2" shall refer to all other businesses which otherwise transport, collect, store, transfer, process, or dispose of construction and demolition debris. Class "C-2" haulers may also conduct Class "C-1", Class D and Class E activities.

- 4) "Class D" refers to (i) haulers who collect, store, transport, transfer, process or dispose of garden and yard waste generated, originated or brought within the County where such garden and yard waste was previously generated by a person or entity other than the Licensees and/or (ii) haulers who collect, store, transport, transfer, process or dispose of garden and yard waste and which own, lease, or control one or more vehicles having three (3) or more axles which vehicles will be used in the collection, storage, transfer, transportation, processing or disposal of garden and yard waste generated, originated or brought within the County.
- 5) "Class E" refers to haulers who exclusively conduct a scrap peddler business.
- 6) "Construction and Demolition Debris" means uncontaminated Solid Waste resulting from the construction, remodeling, repair and demolition of structures and roads, and uncontaminated Solid Waste consisting of vegetation resulting from land clearing and grubbing, utility line maintenance and seasonal and storm-related cleanup. Such waste includes, but is not limited to, bricks, concrete and other masonry materials, soil, rock, wood, wall coverings, plaster, drywall, plumbing fixtures, non-asbestos insulation, roofing shingles, asphaltic pavement, glass, plastics that are not sealed in a manner that conceals other waste, electrical wiring and components containing no hazardous liquids, metals, and trees or tree limbs that are incidental to any of the above.
- 7) "Hauler" means any person excluding municipalities, the County and any County district including, but not limited to, Refuse Disposal District No. 1 and all County sewer and water districts, who, for a fee or other consideration, collects, stores, processes, transfers, transports or disposes of Solid Waste, Recyclables or construction and demolition debris that is generated or originated within the County or brought within the boundaries of the County for disposal, storage, transfer or processing.
- 8) "Recyclables" means those materials defined as "Recyclables" under Section 825.30 (8) of the Westchester County Source Separation Law.
- 9) "Scrap Peddler" shall mean any person who collects scrap materials for sale to a Recyclable broker using no more than one vehicle for collection and transportation of such materials.
- 10) "Solid Waste" means all putrescible and non-putrescible materials or substances, except as described in Paragraph 4 of 6 NYCRR Part 360-1.2(a), and/or regulated under 6 NYCRR Part 364, that are discarded or rejected as being spent, useless, worthless or in excess to the owners at the time of such discard or rejection including, but not limited to, garbage, refuse, commercial waste, rubbish, ashes, incinerator residue and construction and demolition debris. "Solid Waste" shall not be understood to include Recyclables as defined above.

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- B. **PLEASE TAKE NOTICE** - In accordance with the requirements of Chapter 826-a, Article III of the Laws of Westchester County, it is unlawful for any person to collect, store, transfer, transport or dispose of solid waste; recyclables; construction and demolition debris; garden and yard waste and/or scrap metal, as defined herein, that is generated or originated within the County or brought within the boundaries of the County for disposal, storage, transfer or processing, or to conduct any activities defined as Class A, Class B, Class C, Class D or Class E activities under Chapter 826-a of the Laws of Westchester County, in Westchester County (hereinafter collectively referred to as "hauling") without having first obtained a license therefore from the Westchester County Solid Waste Commission.

In no event shall the County incur any liability with respect to any hauling activities conducted by the bidder or any subcontractor of the bidder in violation of Chapter 826-a of the Laws of Westchester County.

- C. Where the project necessitates that hauling be performed, either the bidder or the person, partnership, corporation, business organization or other business entity engaged to perform such hauling work on behalf of the bidder (hereinafter the "subcontractor") must possess a valid license issued by the Westchester County Solid Waste Commission at the time of submission of the bid and throughout the duration of any contract issued pursuant thereto.
- D. A hauler bidder must complete the "Certificate of License (Hauler)" of the Proposal Pages and will be required to furnish a copy of such license with the sealed bid. Other bidders will be required to furnish a copy of such license for the applicable person engaged to perform the hauling work when requested by the County, prior to awarding the contract.
- E. The suspension, revocation, or the failure to maintain or renew such license may, in addition to any other right or remedy available to the County, be grounds for termination of the contract, effective immediately upon notice from the Commissioner. The bidder which is awarded the contract hereunder shall have a continuing obligation to notify the Commissioner, within (2) business days, of any suspension, revocation or other action taken with respect to any license issued by the Westchester County Solid Waste Commission which may limit or impair the bidder's ability, or the ability of any authorized subcontractor, to perform such hauling work in the County of Westchester.

It shall be the bidder's responsibility to ensure that any subcontractor who will perform the hauling services required under any contract issued pursuant to this bid specification has a valid license for the duration of the term of any contract awarded hereunder.

- F. In the event that a license held by the bidder or its subcontractor is revoked, suspended or otherwise discontinued by the Westchester County Solid Waste Commission, or in the event that the bidder is otherwise required to obtain the services of a new or alternate subcontractor for the hauling work, the bidder shall immediately notify the Commissioner and seek the Commissioner's approval for the use of such subcontractor to provide the hauling services which are required under the contract, and shall provide the Commissioner with a copy of the license issued by the Westchester County Solid Waste Commission to such subcontractor. No bidder or subcontractor shall provide

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hauling services under the contract until a copy of its license has been provided to the Commissioner and the Commissioner has approved of such bidder or subcontractor.

36. MINORITY PARTICIPATION POLICY

- A. Pursuant to Chapter 308 of the Laws of the County of Westchester, the County encourages the meaningful and significant participation of business enterprises owned by persons of color and women - Minority Business Enterprise (MBE) and Women Business Enterprise(WBE); on County of Westchester contracts.
- B. It is the goal of the County of Westchester to use its best efforts to encourage, promote and increase participation of business enterprises owned and controlled by persons of color or women (MBE/WBE) in contracts and projects funded by all departments of the County and to develop a policy to efficiently and effectively monitor such participation.
- C. In recognition of the need to promote the development of business enterprises owned and controlled by persons of color and women to achieve a goal of equal opportunity, and overcome the existing under representation of these groups in the business community, the County of Westchester acting through its Office of Economic Development shall as a lawful public and County purpose provide technical and informational assistance to such business enterprises with a particular emphasis on education programs to encourage participation in the contract procurement process.
- D. For the purposes of this Local Law, a business enterprise owned and controlled by women or persons of color shall be construed to mean a business enterprise including a sole proprietorship, partnership or corporation that is: (a) at least 51% owned by one or more persons of color or women; (b) an enterprise in which such ownership by persons of color or women is real, substantial and continuing; (c) an enterprise in which such ownership interest by persons of color or women has and exercises the authority to control and operate, independently, the day-to-day business decisions of the enterprise; and (d) an enterprise authorized to do business in this state which is independently owned and operated. In addition, a business enterprise owned and controlled by persons of color or women shall be deemed to include any business enterprise certified as an MBE or WBE pursuant to Article 15-a of the New York State Executive Law and implementing regulations, 9 NYCRR Subtitle N Part 540 et seq., or as a small disadvantaged business concern pursuant to the Small Business Act, 15 U.S.C. 631 et seq., and the relevant provisions of the Code of Federal Regulations as amended.
- E. The Contractor hereby acknowledges and agrees:
 - 1) That in the hiring of employees for the performance of work under this contract or any subcontract hereunder, no contractor, subcontractor, nor any person acting on behalf of such contractor or subcontractor, shall be reason of race, creed, color, religion, gender, age, ethnicity, disability, sex, alienage or citizenship status, national origin, marital status, sexual orientation, familial status, genetic predisposition or carrier status discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates;

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- 2) That no contractor, subcontractor, nor any person on its behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, creed, color, religion, gender, age, ethnicity, disability, sex, alienage or citizenship status, national origin, marital status, sexual orientation, familial status, genetic predisposition or carrier status;
 - 3) That there may be deducted from the amount payable to the contractor by the County under this contract a penalty of fifty (50) dollars for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the contract;
 - 4) That this contract may be canceled or terminated by the County, and all moneys due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this section of the contract; and
 - 5) The aforesaid provisions of this section covering every contract for or on behalf of the County for the manufacture, sale or distribution of materials, equipment or supplies shall be limited to operations performed within the territorial limits of the State of New York.
 - 6) Contractor agrees to include, or require the inclusion of the above provision in any subcontract made pursuant to its contract with the County.
- F. In furtherance of the Contractor's obligation to make documented good faith efforts to utilize Minority Business Enterprises (MBE) and Women's Business Enterprises (WBE) for the Work required by this Contract, the Contractor shall provide the Minority/Women Business Enterprise Questionnaire signed by an officer of the Contractor, and any additional information requested by the County, including but not limited to the following, which shall be delivered to the Construction Administrator and _____, Program Manager of Minority- and Women-Owned Business Program, County of Westchester, Room 911, 148 Martine Avenue, White Plains, New York 10601 coincident with the Contractor's delivery to the County of its bid and shall be provided by the Contractor with any request for approval of subcontractors:
- 1 (a) The name, address, telephone number and contact person of each MBE and WBE solicited verbally by Contractor during the applicable period for the performance of any portion of the Contractor's Work and the date(s) that each such solicitation was made;
 - 1 (b) A description of the portion of the Contractor's Work for which each such solicitation is made.
 - 1 (c) A listing of the project documents, if any, furnished to each such MBE and WBE.
 2. A copy of each written solicitation sent by the Contractor to each MBE and WBE and the name and address of each MBE and WBE to whom the solicitation was made.
 - 3) The name and address of each MBE and WBE that performs any portion of the Contractor's Work, a description of such portion of the Work and the dollar

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amount therefore.

- 4) A statement that the Contractor reviewed a list of MBE and WBE contractors in their outreach efforts. A list can be found at www.westchestergov.com/mwob.
- 5) Indicate those MBE and WBE contractors found on the list that provided the type of subcontractor services required for this project. If none were found, please indicate.
- 6) Describe other outreach efforts, including other MBE and/or WBE lists, organizations or individuals that were contacted.

The failure of the low bidder to comply with the provisions of this subparagraph F may result in the County NOT awarding this contract to your firm. Failure of the Contractor to comply with the provisions of this subparagraph F may constitute a material breach of this Contract. Failure to comply with the Minority Participation Policy may be considered by the County when awarding contracts.

37. SEXUAL HARASSMENT POLICY

- A. As with discrimination involving race, color, religion, age, sexual orientation, disability, and national origin, Westchester County also prohibits sex discrimination, including sexual harassment of its employees in any form. The County will take all steps necessary to prevent and stop the occurrence of sexual harassment in the workplace.
 - 1) **This policy applies to all County employees and all personnel in a contractual relationship with the County.** Depending on the extent of the County's exercise of control, this policy may be applied to the conduct of non-County employees with respect to sexual harassment of County employees in the workplace.
 - 2) This sexual harassment policy includes, but is not limited to, inappropriate forms of behavior described by the Equal Employment Opportunity Commission.
- B. Sexual advances that are not welcome, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitutes sexual harassment when:
 - 1) Submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment; -OR-
 - 2) Submission to or rejection of such conduct by an individual is used as the basis for employment decisions, such as promotion, transfer, or termination, affecting such individuals; -OR-
 - 3) Such conduct has the purpose or effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile or offensive working environment.
- C. Sexual harassment refers to behavior that is not welcome, that is personally offensive, that fails to respect the rights of others, that lowers morale and that, therefore, interferes

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with an employee's work performance and effectiveness or creates an intimidating, hostile or offensive working environment.

38. SMOKE-FREE WORKPLACE POLICY

- A. By way of Executive Order No. 5 of 1998 and Local Law 3 of 2003, it is now the policy of the County of Westchester to institute a smoke-free “workplace”.
- B. Every indoor County “workplace”, shall become a smoke-free area. The smoking or carrying of lighted cigarettes, cigars, pipes, or any other tobacco-based products, or products that result in smoke, is hereby banned.
- C. Every indoor County “workplace” shall be covered under this Executive Order, including the County Jail in Valhalla and the Westchester County Center in White Plains. This Executive Order shall not, however, apply to County-owned facilities that are not County “workplaces”, such as employees housing or privately run restaurants on County property (e.g. at the County golf courses).
- D. The Richard J. Daronco County Courthouse shall not, for purposes of this Executive Order, be considered a County “workplace”, and therefore shall not be required to be smoke-free.
- E. This Executive Order is intended to be consistent with, and not modify, any provisions of the New York State Public Health Law.
- F. This Executive Order shall take effect immediately and remain in full force and effect until otherwise superseded or revoked.

39. COUNTY ENERGY EFFICIENT PURCHASING POLICY

- A. By way of Executive Order No. 9 of 2002, it is now the policy of the County of Westchester to institute an Energy Efficient Purchasing Policy.
- B. This policy shall apply to all purchases made by and for the County in accordance with applicable laws, rules and regulations.
- C. Wherever the price is reasonably competitive and the quality adequate for the purpose intended, purchase and utilization of products that meet Energy Star requirements for energy efficiency as determined by the United States Environmental Protection Agency and the United States Department of Energy is hereby recommended.
- D. If the Energy Star label is not available with respect to a particular product, than it is recommended that products in the upper twenty-five percent of energy efficiency as designated by the United States Federal Energy Management Program shall be purchased and utilized if the prices of those products are reasonably competitive and the quality adequate for the purpose intended.

40. RESTRICTION ON USE OF TROPICAL HARDWOODS

- A. The bidder/proposer shall not use or propose to use any tropical hardwoods or tropical hardwood products in any form, except in accordance with State Finance Law § 165 (Use of Tropical Hardwoods), as may be amended from time to time. Pursuant to the

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State Finance Law § 165, any bid/proposal which proposes or calls for the use of any tropical hardwood or wood product in the performance of the contract shall be deemed non-responsive.

41. DISCLOSURE OF RELATIONSHIPS TO COUNTY

- A. The successful bidder is required to complete the form entitled “Required Disclosure of Relationships to County” on Proposal Pages 32-33 before award of the contract.
- B. In the event that any information provided on the completed Proposal Pages entitled “Required Disclosure of Relationships to County” changes during the term of this agreement, the Contractor shall notify the Commissioner in writing within ten (10) days of such event by submitting a revised “Required Disclosure of Relationships to County” form.

42. CONTRACTOR DISCLOSURE STATEMENT

The Contractor and each Major Subcontractor represents that all information provided by the Contractor and Major Subcontractor in the form entitled “Contractor Disclosure Statement” on Proposal Pages 23-31 is in all respects true and correct. In the event the information provided on that document changes during the term of this agreement or for a period of three (3) years after the date that the Contractor and/or the Major Subcontractor receives final payment under this agreement, the Contractor and/or Major Subcontractor shall notify the Commissioner in writing within ten (10) days of such event by submitting a revised “Contractor/Major Subcontractor Disclosure Statement”. Bidders must complete the Required Disclosure of Relationships to County form. The Required Disclosure of Relationships to County form is located on Proposal Pages 32-33.

43. CRIMINAL BACKGROUND INFORMATION

Pursuant to Executive Order 1-2008 and subject to the applicable provisions of New York Correction Law §§ 752 and 753, the County shall have the right to bar the following “Persons Subject to Disclosure” (Persons shall mean individuals or legal entities) from providing work or services to the County or from being on County property:

(a) Consultants, Contractors, Licensees, Lessees of County owned real property, their principals, agents, employees, volunteers or any other person acting on behalf of said Contractor, Consultant, Licensee, or Lessee who is at least sixteen (16) years old, including but not limited to Subconsultants, Subcontractors, Sublessees or Sublicensees who are providing services to the County; and

(b) Any family member or other person, who is at least sixteen (16) years old, residing in the household of a County employee who lives in housing provided by the County located on County property.

If any of the above mentioned Persons Subject to Disclosure has either one of the following:

(a) A conviction of a crime (all felonies and misdemeanors as defined under the New York State Penal Law or the equivalent under Federal law or the laws of any other State);

(b) A pending criminal proceeding for a crime(s) as defined above; or

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(c) A refusal to answer such questions.

Where the following criteria apply:

(a) If any of the Persons Subject to Disclosure providing work or services to the County in relation to a County Contract are not subject to constant monitoring by County staff while performing tasks and/or while such persons are present on County property pursuant to the County Contract; and

(b) If any of the Persons Subject to Disclosure providing work or services to the County, in relation to a County Contract may, in the course of providing those services, have access to sensitive data (for example, Social Security Numbers and other personal/secure data); facilities (secure facilities and/or communication equipment); and/or vulnerable populations (for example, children, seniors and the infirm).

Accordingly, the Contractor is required to review the Instructions found in the instructions and complete “Contractor and all persons subject to Disclosure Certification Forms” located at Forms Pages 11-13 as well as any other applicable criminal disclosure forms (i.e., Forms Pages 14 through 19,” together with Forms Pages 11-13 collectively referred to as “Disclosure Forms”).

However, the following Persons Subject to Disclosure are **exempt** from Executive Order 1-2008: (i) those persons for whom the County has already conducted a background check and issued a security clearance that is in full force and effect; or (ii) those persons for whom another state or federal agency having appropriate jurisdiction has conducted a security and/or background clearance or has implemented other protocols or criteria for this purpose that apply to the subject matter of this Contract that is in full force and effect.

If a Person Subject to Disclosure is exempt from the disclosure described in Executive Order 1-2008 because of either “i” or “ii” above, then the Contractor shall notify the Procuring Officer¹ in the respective Department of its claim of exemption and it shall be the responsibility of the Procuring Officer to verify each exemption. If the Procuring Officer determines that the Contractor is exempt under sections “i” or “ii” above, the Procuring Officer shall confirm same with the Contractor and maintain a written record including all supporting details of the verification of and acknowledgement of said exemption.

If the Procuring Officer determines that the Contractor is not exempt under sections “i” or “ii” above, the Procuring Officer shall notify the Contractor in writing, and the appropriate Disclosure Forms shall be required.

It shall be the Contractor’s duty to disclose and to inquire of each and every Person Subject to Disclosure, whether they have been convicted of a crime or whether they are currently subject to pending criminal charges. It shall be the duty of the Contractor to submit a completed Certification Form “Forms Pages 11-13”annexed hereto as ,” which certifies that the Contractor and every Person Subject to Disclosure has been asked whether they have been convicted of a crime or are currently subject to pending criminal charges.

Should the Contractor or any Person Subject to Disclosure (also referred to as “Person”)

¹ “Procuring Officer” shall mean the head of the department or the individual(s) authorized by the head(s) of the department(s) undertaking the procurement and with respect to those matters delegated to the Bureau of Purchase and Supply pursuant to Section 161.11(a) of the Laws of Westchester County, the Purchasing Agent.

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affirmatively advise that they have been convicted of a crime said Person shall be identified in Forms Page 14 entitled “Names And Titles Of Persons Subject To Disclosure That Answered Yes” to any questions on Forms Pages 11-13 and shall complete Forms Pages 15-16 entitled, “Criminal Background Disclosure Form For Persons Who Have Been Convicted of A Crime.”

Should the Contractor or any Person Subject to Disclosure advise that they are subject to pending criminal charges, said Person shall be identified in Forms Page 14 and shall complete the form annexed hereto as Forms Pages 17-18 entitled, “Criminal Background Disclosure Form For Persons Who Are Subject to Pending Criminal Charges.”

Should the Contractor or any Person Subject to Disclosure refuse to answer whether they have been convicted of a crime or are currently subject to pending criminal charges, the name and title of said Person(s) shall be listed on Forms Page 19 entitled “Persons That refused To Answer”.

It shall be the duty of the Contractor to submit to the Procuring Officer all of the attached applicable Disclosure Forms prior to the commencement of this Contract. It is the responsibility of each Contractor to assure that all of their proposed Subcontractors complete the criminal background and disclosure certification forms and submit the forms to the Procuring Officer before they will be approved to perform work on the contract.

Under no circumstances shall the existence of a language barrier serve as a basis for the waiver of or an exception to this obligation. If the Contractor needs to obtain translation services to fulfill this obligation, it shall be at the sole cost and expense of the Contractor.

The Contractor shall be required to make the same inquiry and forward updated Disclosure Forms to the Procuring Officer regarding additional Persons Subject to Disclosure in connection with this Contract during the term of this Contract. **NO NEW PERSON SUBJECT TO DISCLOSURE SHALL PERFORM WORK OR SERVICES OR ENTER ONTO COUNTY PREMISES UNTIL THE UPDATED DISCLOSURE FORMS ARE FILED WITH THE PROCURING OFFICER.**

THE CONTRACTOR HAS A CONTINUING OBLIGATION TO MAINTAIN THE ACCURACY OF THE DISCLOSURE FORMS FOR THE DURATION OF THIS CONTRACT, INCLUDING ANY AMENDMENTS OR EXTENSIONS THERETO AND SHALL PROVIDE ANY UPDATES TO THE PROCURING OFFICER AS NECESSARY TO COMPLY WITH THE DISCLOSURE REQUIREMENTS BY EXECUTIVE ORDER 1-2008.

Any failure by the Contractor to comply with the disclosure requirements of Executive Order 1-2008, absent proof of exemption deemed satisfactory by the County Procuring Officer, may be considered by the County, a material breach by the Contractor and may be grounds for immediate termination of this Agreement by the County.

44. MANDATORY OSHA CONSTRUCTION SAFETY AND HEALTH TRAINING

Pursuant to NYS Labor Law §220-h – On all public work projects of at least \$250,000 all laborers, workers and mechanics employed, in the performance of the contract on the public work site, either by the contractor, sub-contractor or other person doing or contracting to do the

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whole or a part of the work contemplated by the contract, are required to be certified as having successfully completed an OSHA construction safety and health course of at least 10 hours prior to performing any work on the project.



3. GENERAL CLAUSES

DEPARTMENT OF PUBLIC WORKS

Division of Engineering

GENERAL CLAUSES

1. MATERIAL AND WORKMANSHIP

It is the intent of these specifications to require first-class work and new and best quality materials. For any unexpected features arising during the progress of the work and not fully covered herein the specifications shall be interpreted to require first-class work and materials, and such interpretations shall be binding upon the Contractor.

- 1) Upon award of the Contract, the Contractor shall furnish in writing to the Construction Administrator the sources of supply for concrete, and other materials that it proposes to use in the work, and material shall not be furnished from other sources of supply except after written approval by the Construction Administrator. The Contractor shall, before ordering equipment verify that Suppliers of equipment will provide the required warranties, guarantees, and maintenance services.

2. DEFINITIONS

COMMISSIONER - The head of the Department of Public Works of the County of Westchester.

CONSTRUCTION ADMINISTRATOR- The representative of the Commissioner of Public Works at the project site who, unless specifically designated otherwise in the Contract, shall in the first instance, make such determinations as are necessary for the expeditious completion of the Work, except for those determinations that are reserved to the Commissioner.

CONTRACT - Shall mean each of the various parts of these documents both as a whole or severally and except for titles, subtitles, headings and table of contents, shall include the Notice to Bidders, Information for Bidders, the Proposal, the Specifications, the Performance Bond, the Plans, the Contract Form, and all addenda and provisions required by law.

CONTRACTOR - Party of the second part to the Contract acting directly or through its agents, subcontractors, or employees, and who is responsible for all debts pertaining to and for the acceptable performance of the work for which it had contracted.

COUNTY - Party of the first part to the Contract as represented by the Board of Acquisition and Contract and the Commissioner of Public Works for the County of Westchester.

ENGINEER - An Engineer or Architect that designed the project and is serving as the duly authorized representative of the Commissioner of Public Works who, in addition to the duties set forth in the Contract, shall, in the first instance, make such determinations as are necessary to ensure the Contractor's compliance with its obligations for the preparation and submission of shop drawings and all other submittals required for the Work. If there is no Engineer the duties of the Engineer shall be performed by the Construction Administrator and all references in this

GENERAL CLAUSES

Agreement to the Engineer shall be deemed to mean the Construction Administrator.

MAJOR SUBCONTRACTOR- Subcontractors performing all or a portion of the work for Electrical; Heating, Ventilating and Air Conditioning; Fire Prevention; General Construction; and/or any Subcontractor whose subcontract price is equal to or greater than ten percent (10%) of the Contract Price.

OWNER - The County of Westchester.

PLANS - All official drawings or reproductions of drawings pertaining to the work or to any structure connected therewith.

SPECIFICATIONS - The body of directions, requirements, etc. contained in this present volume, together with all documents of any descriptions and agreements made (or to be made), pertaining to the methods(or manner) of performing the work or to the quantities and quality. Specifications shall also include the Notice to Contractors, Instructions to Bidders, Bond, Proposal and Contract Agreement.

SURETY - The corporate body, which is bound with and for the Contractor and which engages to be responsible for the faithful performance of the contract, and to indemnify the County against all claims for damages.

A.A.S.H.O. - American Association of State Highway Officials

A.R.E.A. - American Railway Engineering Association

A.S.T.M. - American Society for Testing Materials

A.W.W.A. - American Water Works Association

N.E.C. - National Electrical Code

N.E.M.A. - National Electric Manufacturers Association

3. BOUNDARIES OF WORK

The County will provide land or rights-of-way for the work specified in this Contract. Other contractors, employees or concessionaires of the county, may for all necessary purposes enter upon the work and premises used by the Contractor, and the Contractor shall give to other contractors and employees of the County all reasonable facilities and assistance for the completion of adjoining work.

4. OVERLAPPING WORK

The Contractor shall take notice that because of work on other contracts within and adjacent to the contract limits it may not have exclusive occupancy of the territory within or adjacent

GENERAL CLAUSES

to the contract limits, and that during the life of this contract the owners and operators of Public Utilities may make changes in their facilities.

The said changes may be made by utility employees or by contract within or adjacent to the contract limits and may be both temporary and permanent.

The Contractor shall cooperate with other Contractors and owners of various utilities and shall coordinate and arrange the sequence of its work to conform with the progressive operations of work already or to be put under contract. Cooperation with Contractors already or to be engaged upon the site is essential to properly coordinate the construction efforts of all Contractors, Utility Owners and Subcontractors engaged in work within and adjacent to the contract limits.

The Contractor shall coordinate the work of its various Subcontractors. Their respective operations shall be arranged and conducted so that delays are avoided. Where the work of the Contractor or Subcontractor overlaps or dovetails with that of other Contractors, materials shall be delivered and operations conducted so as to carry on the work continuously in an efficient and workmanlike manner. The Contractor shall coordinate its work to be done hereunder with the work of the other Contractor(s) and the Contractor shall fully cooperate with such other Contractor(s) and carefully fit its own work to that provided under other contracts as may be directed by the Construction Administrator. If the Construction Administrator shall determine that the Contractor is failing to coordinate its work with the work of the other Contractor(s) as the Construction Administrator has directed, then the Commissioner shall have the right, at its sole option, to withhold any payments otherwise due hereunder until the Construction Administrator's directions are complied with by the Contractor and/or deduct the costs incurred by the County due to the Contractor's failure or refusal to so cooperate. Delays or oversights on the part of the Contractor or Subcontractors or Utility Owners in performing their work in the proper manner thereby causing cutting, removing and replacing work already in place, shall not be the basis for a claim for extra compensation.

In the event of interference between operations of Utility Owners and other Contractors, or among the Contractors themselves, the Construction Administrator shall be the sole judge of the rights of each Contractor insofar as the sequence of work necessary to expedite the completion of the entire project, and in all cases its decision shall be final. The Contractor agrees that it has included in its unit prices bid for the various items of the contract the possible additional cost of performing the work under this contract because it may not have a clear site for its work and because of possible interference of roadway use, other Contractors and necessary utility work, and the necessity or desirability of opening certain sections of pavement to traffic before the entire work is completed. The County shall not be liable for any damages suffered by any Contractor by reason of another Contractor's failure to comply with the directions of the Construction Administrator, or by reason of another Contractor's default in performance or by any act or failure to act of any Utility Owner or anyone working on its behalf, it being understood that the County does not guarantee the responsibility or continued efficiency of any Contractor or Utility Owner and under no circumstances shall the County be liable to any Contractor or Utility Owner for any delays, interferences or any other impediment or hindrance to the Contractor's or Utility Owner's work .

GENERAL CLAUSES

Should the Contractor sustain any damage through any act or omission of any other contractor having a Contract with the County for the performance of work upon the site or of work which may be necessary to be performed for the proper prosecution of the work to be performed hereunder, or through any act or omission of a supplier or subcontractor of whatever tier of such contractor, the Contractor shall have no claim against the County for such damage, but shall have a right to recover such damage from the other contractor under the provision similar to the following provision that has been or will be inserted in the Contracts with such other contractors.

Should any other Contractor having or who shall hereafter have a Contract with the County for the performance of work upon the site sustain any damage through any act or omission of the Contractor hereunder or through the act or omission of any subcontractor of whatever tier of the Contractor, the Contractor agrees to reimburse such other Contractor for all such damages and to defend at his own expense any suit based upon such claim and if any judgment or claims against the County shall be allowed the Contractor shall pay or satisfy such judgment or claim and pay all costs and expenses, including attorney's fees, incurred by the County in connection therewith and to indemnify and hold the County harmless from all such claims.

The County's right to indemnification hereunder shall not be diminished or waived by its assessment against the Contractor of liquidated damages as may be provided elsewhere herein.

Delays in availability of any part of the site or any delays due to interference between the several Contractors and the Utility Owners shall be compensated for by the Construction Administrator solely through granting an extension of time in which to complete the work of the contract without assessment of Engineering charges. The Contractor in submitting its bid hereby agrees that it shall make no other claim against the County for any damages due to such delays or interference.

5. PROPER METHOD OF WORK AND PROPER MATERIALS

The Construction Administrator shall have the power in general to direct the order and sequence of the work, which will be such as to permit the entire work under this contract to be begun and to proceed as rapidly as possible, and such as to bring the several parts of the work to a successful completion at about the same time.

If at any time before the commencement or during the progress of the work the materials and appliances used or to be used appear to the Construction Administrator as insufficient or improper for securing the quality of work required, or the required rate of progress, he may order the Contractor to increase their efficiency or to improve their character, and the Contractor shall promptly conform to such order; but the failure of the Construction Administrator to demand any increase of such efficiency or improvement shall not release the Contractor from its obligation to secure the quality of work or the rate of progress specified.

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6. CONTROL OF AREA

Unloading of materials and parking of equipment shall be subject to the orders of the Construction Administrator so far as he may find necessary for the protection and safety of the traveling public and the preservation of property.

7. PERMITS, FEES, ETC.

The County will obtain at its sole cost the necessary New York State Pollutant Discharge Elimination System (“SPDES”) Permit and will sign the associated Notice of Intent (“NOI”). The Contractor and its subcontractors will sign the required Certification Statement (a copy of which is contained as Proposal Page) when it signs the contract.

All necessary permits from County, State or other concerned Public Authorities shall be secured at the cost and expense of the Contractor. It shall also give all notices required by law, ordinance, or the rules and regulations of the concerned Public Bureaus or Departments, and also as a part of the Contract, comply without extra charge or compensation with all State Laws and all other Ordinances or Regulations that may be applicable to this work. Contractor, however, shall first notify the Commissioner before proceeding with securing of all necessary permits and the giving of required notices.

8. TRAFFIC

The General Contractor shall be responsible for the Maintenance and Protection of traffic at all times until the date of completion and acceptance of its work.

During the whole course of the work the Contractor shall so conduct its work and operations so as to interfere with traffic passing the work as little as possible and effect by every reasonable means the safety and comfort of pedestrians, vehicles and vehicle passengers passing the work.

9. INSPECTION

The Contractor shall at all times provide convenient access and safe and proper facilities for the inspection of all parts of the work. No work, except such shop work as may be so permitted, shall be done except in the presence of the Construction Administrator or his/her assistants. No material of any kind shall be used upon the work until it has been inspected and accepted by the Construction Administrator. All materials rejected shall be immediately removed from the work and not again offered for inspection. Any materials or workmanship found at any time to be defective shall be remedied at once, regardless of previous inspection. The inspection and supervision of the work by the Construction Administrator is intended to aid the Contractor in supplying labor and materials in accordance with the specifications, but such inspection shall not operate to release the Contractor from any of its contract obligations.

10. STOPPING WORK

The Commissioner, Construction Administrator or Engineer may stop by written order any work or any part of the work under this contract if, in his/her opinion, the methods employed

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or conditions are such that unsatisfactory work might result. When work is so stopped it shall not be resumed until the methods or conditions are revised to the satisfaction of the Commissioner, which must be signified in writing. The Contractor agrees to make no claim for increased costs arising from the issuance of any stop work order.

11. DIMENSIONS

Figured dimensions on the plans shall be given preference over scaled dimensions, but shall be checked by the Contractor before starting construction. Any errors, omissions or discrepancies shall be brought to the attention of the Engineer and his/her decision thereon shall be final.

12. PAYMENTS TO COUNTY

Wherever in the Contract Documents the Contractor is required to make a payment to the County, the Contractor agrees that the County has the option to withhold such sum(s) from payments otherwise due to the Contractor and that all such sums withheld shall be deemed not to be earned by the Contractor.

13. PROTECTION OF UTILITIES AND STRUCTURES

The Contractor shall be responsible for the preservation of all public and private underground and surface utilities/structures at or adjacent to the construction work; insofar as they may be endangered by the work. This shall hold true whether or not they are shown on the contract drawings. If they are shown on the drawings, the County does not guarantee their locations even though the information will be from the best available sources.

The Contractor shall give ample and reasonable notice to all private, corporate or municipal owners before work is done near their utility or structure; shall properly protect all utilities/structures encountered; shall at their expense repair/replace any items that are damaged; and shall proceed with caution to prevent undue interruptions to utility services.

Investigation and/or on-site mark-out, by the County, must be done prior to excavation work at the Valhalla Campus. This investigation/mark-out is to serve as a guide for the Contractor and does not absolve the Contractor from the responsibility to repair/replace identified or non-identified utilities/structures, at no cost to the County.

All excavation work performed at the Valhalla Campus requires the submission of a completed "Ground Penetration" form/sketch(es) will be distributed to the appropriate utility owners. Therefore, the Contractor should assume that no excavation work can be performed until approximately twenty (20) working days after submission of the form/sketch(es), but not prior to approval by the DPW-BO Superintendent of Buildings.

14. PROTECTION OF WATER RESOURCES & THE ENVIRONMENT

The Contractor is responsible to review the specifications and drawings as they relate to this Agreement to ascertain what procedures must be followed in order to comply with all applicable stormwater management, water quality control, erosion, and sediment control

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laws, rules, regulations and permits. If the Contractor is of the opinion that any work required, necessitated, or contained in the specifications or otherwise ordered conflicts with the applicable stormwater management, water quality control, erosion, and sediment control laws, rules, regulations, procedures, and permits, including, without limitation, all applicable provisions of the New York State Stormwater Management Design Manual, and the New York Standards and Specifications for Erosion and Sediment Control as they may be amended from time to time, it must promptly notify the First Deputy Commissioner of the Department of Public Works in writing.

In addition to all other requirements contained in this Agreement, the Contractor recognizes and understands that it is an essential element of this Agreement that the Contractor complies with the County's policies to protect water resources and the environment. The Contractor must comply with all applicable stormwater management, water quality control, erosion, and sediment control laws, rules, regulations, permits, procedures and specifications, including, without limitation, all applicable provisions of the New York State Stormwater Management Design Manual,¹ the New York Standards and Specifications for Erosion and Sediment Control as they may be amended from time to time. All of these documents should be obtained from the New York State Department of Environmental Conservation to ensure that the Contractor has the latest version. It should be noted that the standards set forth in the New York State Stormwater Management Design Manual, and the New York Standards and Specifications for Erosion and Sediment Control apply to ALL work done for the County, regardless of the size of the project. In case of a conflict among the governmental regulations and standards, the most stringent regulation, standard or recommendation shall apply to the work done under this Agreement.

The Contractor and its subcontractors shall execute the required Stormwater Pollution Prevention Certification, which is located at Proposal Page 20. In addition, the Contractor acknowledges that if the work required under this Agreement requires that a State Pollutant Discharge Elimination System ("SPDES") permit be obtained from the New York State Department of Environmental Conservation, then the Contractor must comply with the terms and conditions of the SPDES permit for stormwater discharges from construction activities and the Contractor will not take any action or fail to take any necessary action that will result in the County being held to be in violation of said permit or any other permit. The Contractor shall cooperate with the County in obtaining the permit and comply with the SPDES permit and all other applicable laws, rules, regulations and permits.

The Contractor shall provide, as the Commissioner or his designee may request, proof of compliance with the County's policies to protect water resources and the environment, and all applicable stormwater management, water quality control, erosion and sediment control laws, rules, regulations, permits, procedures and specifications.

The Contractor is responsible to ascertain which of the laws, rules, regulations, permits and standards referenced above affect its construction activities, and the Contractor shall be solely responsible for all costs and expenses, including any penalties or fines, incurred by the County, due to the Contractor's failure to comply with such applicable laws, rules,

¹ available at <http://www.dec.state.ny.us/website/dow/swmanual/swmanual.html> - The location of this reference is provided to assist the Contractor; it does not relieve the Contractor from the obligation of obtaining and complying with the latest version of the document.

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permits, regulations, standards and County policies. The Contractor shall be responsible to defend and indemnify the County from any and all claims resulting from the Contractor's failure to comply with the applicable laws, rules, regulations, permits, standards and County policies.

Failure of the Contractor to comply with the County's policies to protect water resources and the environment, and all applicable stormwater management, water quality control, erosion and sediment control laws, rules, regulations, permits, procedures and specifications may result in the withholding of progress payments to the Contractor by the County. Such withholding of progress payments shall not relieve the Contractor of any requirements of the Agreement including the completion of the work within the specified time, and any construction sequence requirement of the Agreement.

The Contractor acknowledges that its failure to comply with the County's policies to protect water resources and the environment, and all applicable stormwater management, water quality control, erosion and sediment control laws, rules, regulations, permits, procedures and specifications shall constitute a material breach under this contract. For the breach or violation of this provision, without limiting any other rights or remedies to which the County may be entitled, the County shall have the right, in its sole discretion to suspend, discontinue or terminate this Agreement immediately upon notice to the Contractor. In such event, the Contractor shall be liable to the County for any additional costs incurred by the County in the completion of the project.

The failure of the Contractor to comply with these requirements could lead to a determination that the Contractor is not a responsible bidder when the Contractor is bidding on other projects.

15. SANITARY REGULATIONS

The Contractor shall obey and enforce such sanitary regulations and orders and shall take such precautions against infectious diseases as may be deemed necessary. The building of shanties or other structures for housing the men, tools, machinery or supplies will be permitted only at approved places, and the sanitary condition of the grounds in and at such shanties or other structures must be at all times maintained in a satisfactory manner.

16. CLEANING UP

Upon completion of the work, the Contractor shall remove all equipment, rubbish, debris and surplus materials from the buildings, and grounds, and provide a suitable dumping place for such materials. The premises shall be left in a neat, clean and acceptable condition.

No litter, debris of any kind shall be allowed to accumulate for more than one day in any portion of the buildings or grounds, and must be removed from the area at the end of each workday.

17. PREVENTION OF DUST HAZARD

In accordance with the New York State Labor Law, Section 22a, in the event a silica or other harmful dust hazard is created due to construction operations under the contract, the Contractor shall install, maintain and keep in effective operation the appliances and methods

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for the elimination of such silica dust or other harmful dust as have been recommended and approved by State and local authorities.

18. REPRESENTATIVE ALWAYS PRESENT

The Contractor in case of its absence from the work shall have a competent representative **fluent in English** or foreman present, who shall obey without delay, all instructions of the Construction Administrator in the prosecution and completion of the work in conformity with this contract, and shall have full authority to supply labor and material immediately.

19. WORK IN BAD WEATHER

During freezing, stormy or inclement weather, no work shall be done except such as can be done satisfactorily and in a manner to secure first-class construction throughout.

20. PROTECTION OF WORK UNTIL COMPLETION

The Contractor shall be responsible for the protection and maintenance of its work until the same has been accepted by the Owner and shall make good any damage to the work caused by floods, storms, settlements, accidents, or acts of negligence by its employees or others so that the complete work when turned over to the Owner will be in first-class condition and in accordance with the plans and specifications.

21. REMOVAL OF TEMPORARY STRUCTURES AND CLEANING UP

On or before the completion of the work the Contractor shall, without charge therefore, tear down and remove all buildings and other structures built by him for facilitating the carrying out of the work, shall remove all rubbish of all kinds from the grounds which he has occupied, shall do any small amount of additional trimming and grading and shall leave the entire work and premises clean, neat and in good condition. The Contractor shall provide at its own expense suitable dumping places for such material. When the necessity for protecting traffic ends, the Contractor shall remove all signs, lighting devices, barricades and temporary railings from the site of the work.

22. GROSS LOADS HAULED ON HIGHWAY

The Contractor shall at no time during the construction of this contract, haul gross loads exceeding the legal limit prescribed by the Highway Law over the highways of access to, or the highway included in this contract.

23. CONCRETE BATCH PROPORTIONS - YIELD

No Construction Administrator or Engineer is authorized to instruct or inform the Contractor, or any of its agents or employees, or its concrete supplier as to the weights of the ingredients to be used to produce a cubic yard of concrete or as to the yield to be used to produce a cubic yard of concrete or as to the yield to be expected from any batch. The Contractor shall make its own determination and give its own instructions to its agents, employees and concrete supplier as to the total quantity of ingredients to be purchased as a

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cubic yard of concrete. The right is reserved to the Construction Administrator and Engineer, however, to verify yields after batch weights have been established by the Contractor and to order a reduction in total weight per load in the event his/her calculations show that the rated capacity of truck mixers, if approved for use, will be exceeded.

24. DAMAGE DUE TO CONTRACTOR'S OPERATIONS

In the event that damage is caused to structures, surfacing, pavement, shrubbery, trees or to grassed areas through trucking operations, delivery of materials, the actual performance of the work, or other causes, the Contractor shall fully restore the same to their original condition at its own expense. In the event that more than one contractor causes damages to any one area, the Director of Project Management will apportion the amount of repair work to be done by each contractor. The decision of the Director of Project Management shall be final and binding upon the Contractor(s) and may not be challenged except pursuant to a proceeding brought pursuant to Article 78 of the Civil Practice Law and Rules.

25. PROPERTY DAMAGE

The Contractor shall not enter upon nor make use of any private property along the line of work except when written permission is secured from the owner of that property. In case of any damage or injury done along the line of work in consequence of any act or omission on the part of the Contractor, or any one in its employ, in carrying out the contract, the Contractor shall at its own expense restore the same or make repairs as are necessary in consequence thereof in a manner satisfactory to the owner of the affected property; provided, however, that the obligation thus assumed by the Contractor shall not inure directly or indirectly to the benefit of any insurer of physical damage to property or loss of use, rents or profits of property regardless of whether the insurer has actually paid the claim or made only a loan to its insured, nor to the latter if it shall waive or abandon any claim against its insurer or insurers.

In case of failure on the part of the Contractor to restore or repair such property in a manner satisfactory to the owner of the affected property, the party of the first part may upon forty-eight hours notice to the Contractor proceed with such restoration or repair. The expense of such restoration or repair shall be deducted from any monies, which are due or may become due the Contractor under its contract. The Construction Administrator shall be the sole judge as to what constitutes failure to restore or repair as above stated and service of notice by mail addressed to the Contractor at the address stated in the proposal shall be sufficient.

26. CLAIMS FOR DAMAGES

The Contractor agrees that it will make no claim against the County or any of its representatives for damages for delay, interference or disruption of any kind in the performance of its Contract and further agrees that any such claim arising from acts or failure to act of the County or any of its representatives shall be fully and exclusively compensated for by an extension of time to complete the performance of the work as provided herein.

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27. EXTENSIONS OF TIME

An extension or extensions of time may be granted only by the Commissioner and only upon a verified application therefore by the Contractor. Each application for an extension of time must set forth in detail the nature of each cause of delay in the completion of the work, the date upon which each such cause of delay began and ended, and the number of days attributable to each of such causes. If the schedule for this project is based upon the Critical Path Method, the Contractor must also demonstrate that the delay for which an extension of time is sought occurred on the critical path. A formal written notice of the Contractor's intent to apply for an extension of time must be submitted to the Commissioner within seven (7) calendar days of the start of the alleged delay. The formal application for the extension of time must be submitted to the Commissioner no later than ten (10) calendar days after the end of the delay, but in no event later than the Contractor's submittal of its application for its substantial completion payment. The failure of the Contractor to timely submit either its formal written notice of its intent to apply for an extension of time or the application thereof shall be deemed a waiver of any entitlement to any extension of time.

The Contractor shall be entitled to an extension of time for delay in completion of the work caused solely (1) by the acts or omissions of the County, its officers, agents or employees; or (2) by the acts or omissions of other Contractors on this project; or (3) by supervening conditions entirely beyond the control of either party hereto (such as, but not limited to, Acts of God, excessive inclement weather, war, or any other national emergency making performance temporarily impossible or illegal, or strikes or labor disputes not brought about by any act or omission of the Contractor).

The Contractor shall not be entitled to receive a separate extension of time for each of several causes of delay operating concurrently, but, if at all, only for the actual period of delay in completion of the work as determined by the Engineer or Commissioner. If one of multiple causes of delay operating concurrently results from any act or omission of the Contractor or of its subcontractors of whatever tier, and would of itself (irrespective of concurrent causes) have delayed the work, no extension of time will be allowed for the period of delay resulting from such act or omission and the Contractor shall re-arrange his Progress Schedule and operations so as to complete the Work within the time set forth in the Contract and minimize the impact of the Work on the other Prime Contractors.

The determination made by the Commissioner or Engineer on an application for an extension of time shall be binding and conclusive on the Contractor and may not be challenged except in a proceeding commenced pursuant to Article 78 of the Civil Practice Law and Rules.

Permitting the Contractor to continue with the work after the time fixed for its completion has expired, or after the time to which such completion may have been extended has expired, or the making of any payment to the Contractor after such time, shall not operate as waiver on the part of the County of any of its rights or remedies under this contract nor shall it relieve the Contractor from his obligation under the Contract, including without limitations its liability to the County for liquidated damages, engineering costs, delays, damages, and/or costs incurred by the County.

If the Commissioner deems it advisable and expedient to have the Contractor complete and furnish the Work after the expiration of the time of Completion of Work (see "Required

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Time For Completion Of The Work” of the General Requirements) and in order that the County’s fiscal officers may be permitted to make payment to the Contractor for Work performed beyond that date, the Commissioner may extend the Contract solely for the purpose of enabling the Contractor to be paid for Work performed. This extension shall in no way relieve the Contractor from his obligation under the Contract, including without limitations its liability to the County for liquidated damages, engineering costs, delays, damages, attorney’s fees and/or costs incurred by the County, nor shall such extension of time be asserted by the Contractor in any action or proceeding as evidence that it completed its work in a timely manner.

The time necessary for review by the Engineer of all submittals including vendors, shop drawings, substitutions, etc., and delays incurred by normal seasonal and weather conditions should be anticipated and is neither compensatory nor eligible for Extensions of Time.

When the Work embraced in the Contract is not completed on or before the date specified herein, engineering and inspection expenses incurred by the County of Westchester upon the Work from the completion date originally fixed in the Contract to the final date of completion of the Work may be charged to the Contract and be deducted from the final monies due the Contractor.

28. REQUEST FOR APPROVAL OF EQUAL

A. GENERAL REQUIREMENTS

Wherever in the Contract Documents an article, material, apparatus, product or process is called for by trade name or catalog reference, or by the name of the patentee, manufacturer or dealer, it is understood that it constitutes the standard requirement to meet the contract specifications. Where two or more articles, materials, apparatus, products or processes are listed as acceptable by reference to trade name or otherwise, the choice of these will be optional to the bidder.

Bidders may base their bid on one of the specified items, or they may base their bid on an “equal”. However, the bidder should be aware that the County makes the final determination as to what constitutes an equal.

If the Engineer shall reject the proposed equal as not being the equal of that specifically named in the contract, the successful bidder (Contractor) shall immediately proceed to furnish the designated article, material, apparatus, product or process as specified or an approved equal without additional cost or time delay to the County.

B. REVIEW PROCESS

- 1) Within fifteen (15) days from the Notice to Proceed, requests for approval of equals must be proposed to the Commissioner on the “Request For Approval Of Equal” form of the Sample Forms. This Period for submitting requests will be strictly enforced. Such requests shall conform to the requirements of this Article.
- 2) Requests for approval of equals will be received and considered from Prime Contractors only and not from manufacturers, suppliers, Subcontractors, or other third parties.
- 3) If the materials and equipment submitted are offered as equals to the Contract

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Documents the Contractor shall advise the County and the Engineer of the requested equal and comply with the requirements hereinafter specified in this Article.

- 4) Where the acceptability of an equal is conditioned upon a record of satisfactory operation and the proposed equal does not fulfill this requirement, the Engineer, at his/her sole discretion, may accept the equal if the Contractor provides a bond or cash deposit which guarantees replacement at no cost to the County for any failure occurring within the specified time. The equal item must meet all other technical requirements contained in the Specification.
- 5) The successful bidder shall furnish such information as required by the Engineer to demonstrate that the equal article, material, apparatus, product or process is the equal of that specified in quality, finish, design, efficiency and durability and has been elsewhere demonstrated to be equally serviceable for the purpose for which it is intended. The Contractor shall set forth the reasons for desiring to utilize the proposed equal.
- 6) Contractor shall submit:
 - a. For each proposed request for approved equal sufficient details, complete descriptive literature and performance data together with samples of the materials, where feasible, to enable the Engineer to determine if the proposed request for approved equal is equal, including manufacturer's brand or trade names, model numbers, description of specification of item, performance data, test reports, samples, history of service, and other data as applicable.
 - b. Certified tests, where applicable, by an independent laboratory attesting that the proposed equal is equal.
 - c. A list of installations where the proposed equal equipment or materials is performing under similar conditions as specified.
- 7) Requests for approval of equal after the period set forth in B. REVIEW PROCESS, Paragraph 1, above will not be accepted for evaluation except in case of strikes, discontinuance of manufacturer or other reason deemed valid by the Engineer whereby the specified products or those approved are unattainable. In such case the Contractor shall provide substantial proof that the acceptable products are unavailable.
- 8) Where the approval of an equal requires revision or redesign of any part of Work, including that of other Contracts, all such revision and redesign, and all new drawings and details required therefore, shall be provided by the Contractor at its own cost and expense, and shall be subject to the approval of the Commissioner.
- 9) In the event that the Engineer is required to provide additional engineering services, then the engineer's charges for such additional services shall be promptly paid by the Contractor to the County.
- 10) Any modifications in the Work required under other Contracts to accommodate the changed design will be incorporated in the appropriate Contracts and any resulting increases in Contract prices will be paid by the Contractor who initiated the

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changed design to the County.

- 11) In all cases the Engineer shall be the judge as to whether a proposed equal is to be approved. The Contractor shall abide by his/her decision when proposed equal items are judged to be unacceptable and shall in such instances furnish the item specified or indicated. No equal items shall be used in the Work without written approval of the Engineer.
- 12) In making request for approval of equal, Contractor represents that:
 - a. Contractor has investigated proposed equal, and determined that it is equal to or superior in all respects to the product, manufacturer or method specified.
 - b. Contractor will provide the same or better warranties or bonds for proposed equal as for product, manufacturer or method specified.
 - c. Contractor waives all claims for additional costs or extension of time related to proposed equal that subsequently may become apparent.
 - d. Contractor shall have and make no claim for an extension of time or for damages by reason of the time taken by the Engineer in considering an equal proposed by the Contractor or by reason of refusal of the Engineer to approve an equal proposed by the Contractor. Any delays arising out of consideration, approval, or utilization of an equal shall be the sole responsibility of the Contractor requesting the equal and it shall arrange its operations to make up the time lost.
- 13) Proposed Equal Will Not Be Accepted If:
 - a. Acceptance will require substantial revision of Contract Documents.
 - b. They will change design concepts or Technical Specifications.
 - c. They will delay completion of the Work, or the Work of other Contractors.
 - d. They are indicated or implied on a Shop Drawing and are not accompanied by a formal request for approval of equal from Contractor.
- 14) Only those products originally specified and/or added by approved requests for equals submitted in accordance with the preceding paragraphs may be used in the Work. Whenever requests for equals are approved, it shall be understood that such approval is conditional upon strict conformance with all requirements of the Contract and further subject to the following:
 - a. Any material or article submitted for approval in accordance with the above procedure must be equal, in the sole opinion of the Engineer, to the material or article specified. It must be readily available in sufficient quantity to prevent delay of any Work; it must be available in an equivalent color, texture, dimension, gauge, type and finish as to the item or article specified; it must be equal to the specified item in strength, durability, efficiency, serviceability, compatibility with existing systems, ease and cost of maintenance; it must be compatible with the design and not necessitate substantial design modifications; it must be equal in warranties and guarantees; its use must not impose substantial additional Work, or require substantial changes in the Work of any

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- other Contractor. Availability of spare parts shall be assured for the useful life of the Project.
- b. The Engineer reserves the right to disapprove, for aesthetic reasons, any material or equipment on the basis of design or color considerations alone, without prejudice to the quality of the material or equipment, if the manufacturer cannot meet the required colors or design.
 - c. All requests for approval of equals of materials or other changes from the contract requirements shall be accompanied by an itemized list of all other items affected. The Engineer shall have the right, if such is not done, to rescind any approvals for equals or changes and to order such Work removed and replaced with Work conforming to the specified requirements of the contract, all at the Contractor's expense, or to assess all additional costs resulting from the equal to the Contractor.
- 15) Approval of an equal will not relieve Contractor from the requirement to submit Shop Drawings or any of the provisions of the Contract Documents.
- 16) In the event that the Engineer is required to provide additional engineering services as a result of a request for approval of an equal of materials or equipment which are not "or equal" by the Contractor, or changes by the Contractor in dimension, weight, power requirements, etc., of the equipment and accessories furnished, or as a result of Contractor's errors, omissions or failure to conform to the requirements of the Contract Documents or if the Engineer is required to examine and evaluate any changes proposed by the Contractor solely for the convenience of the Contractor, or for evaluation of deviations from Contract Documents, then the Engineer's charges in connection with such additional services shall be paid by the Contractor to the County.
- 17) The Contractor shall respond to required submittals with complete information and with a degree of accuracy to achieve approvals within three (3) submissions. All costs to the Engineer involved with subsequent submissions requiring approval, will be paid by the Contractor to the County.

29. SUBSTITUTION

- A. Should the Contractor desire to substitute other articles, materials, apparatus, products or processes than those specified or approved as equal, the Contractor shall apply to the Engineer in writing for approval of such substitution. It should be noted that the bid shall not be based on a substituted article, material, apparatus, product or process. With the application shall be furnished such information as required by the Engineer to demonstrate that the article, material, apparatus, product or process he wishes to use is the equivalent of that specified in quality, finish, design, efficiency and durability and has been elsewhere demonstrated to be equally serviceable for the purpose for which it is intended. The Contractor shall set forth the reasons for desiring to make the substitution and shall further state what difference, if any, will be made in the construction schedule and the contract price for such substitution should it be accepted; it being the intent hereunder that any savings shall accrue to the benefit of the County.

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- B. If the Engineer shall reject any such desired substitution as not being the equivalent of that specifically named in the contract, or if it shall determine that the adjustment in price in favor of the County is insufficient, the Contractor shall immediately proceed to furnish the designated article, material, apparatus, product or process.
- C. Request for substitutes must be proposed to the Commissioner on the "Request For Approval Of Substitution" form of the Sample Forms. Such requests shall conform to the requirements of this Article.
- D. Requests for substitutions shall include full information concerning differences in cost, and any savings in cost resulting from such substitutions shall be passed on to the County.
- E. Requests for utilization of substitutes will be reviewed during the course of the project. The impact on the project and the timeliness of submission will be of key consideration.
- F. The approval of utilization of a substitute is subject to the sole and final discretion of the Engineer.
- G. REVIEW PROCESS
 - 1) Requests for approval of substitutions will be received and considered from Prime Contractors only and not from manufacturers, suppliers, Subcontractors, or other third parties.
 - 2) If the materials and equipment submitted are offered as substitutions to the Contract Documents or approved equal the Contractor shall advise the County and the Engineer of the requested substitutions and comply with the requirements hereinafter specified in this Article.
 - 3) Where the acceptability of substitution is conditioned upon a record of satisfactory operation and the proposed substitution does not fulfill this requirement, the Engineer, at his/her sole discretion, may accept the substitution if the Contractor provides a bond or cash deposit which guarantees replacement at no cost to the County for any failure occurring within the specified time. The substitution item must meet all other technical requirements contained in the Specification.
 - 4) The Contractor shall furnish such information as required by the Engineer to demonstrate that the equal article, material, apparatus, product or process is the equivalent of that specified in quality, finish, design, efficiency and durability and has been elsewhere demonstrated to be equally serviceable for the purpose for which it is intended and/or that it offers substantial benefits to the County in saving of time and/or cost. The Contractor shall set forth the reasons for desiring to make this substitution.
 - 5) Contractor shall submit:
 - a. For each proposed request for approved substitute sufficient details, complete descriptive literature and performance data together with samples of the materials, where feasible, to enable the Engineer to determine if the proposed request for approval should be granted, including manufacturer's brand or trade names, model numbers, description of specification of item, performance data, test reports, samples, history of service, and other data as applicable.

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- b. Certified tests, where applicable, by an independent laboratory attesting to the performance of the substitute.
 - c. A list of installations where the proposed substitute equipment or materials is performing under similar conditions as specified.
- 6) Where the approval of a substitute requires revision or redesign of any part of Work, including that of other Contracts, all such revision and redesign, and all new drawings and details required therefore, shall be provided by the Contractor at its own cost and expense, and shall be subject to the approval of the Engineer.
- 7) In the event that the Engineer is required to provide additional engineering services, then the engineer's charges for such additional services shall be paid by the Contractor to the County.
- 8) Any modifications in the Work required under other contracts to accommodate the changed design will be incorporated in the appropriate contracts and any resulting increases in contract prices will be charged to the Contractor by the County who initiated the changed design.
- 9) In all cases the Engineer shall be the judge as to whether a proposed substitute is to be approved. The Contractor shall be bound by his/her decision. No substitute items shall be used in the Work without written approval of the Engineer.
- 10) In making request for approval of substitute, Contractor represents that:
- a. Contractor has investigated proposed substitute, and determined that it is equal to or superior in all respects to the product, manufacturer or method specified or offers other specified advantages to the County.
 - b. Contractor will provide the same or better warranties or bonds for proposed substitute as for product, manufacturer or method specified.
 - c. Contractor waives all claims for additional costs or extension of time related to proposed substitute that subsequently may become apparent.
 - d. Contractor shall have and make no claim for an extension of time or for damages by reason of the time taken by the Engineer in considering a substitute proposed by the Contractor or by reason of failure of the Engineer to approve a substitute proposed by the Contractor. Any delays arising out of consideration, approval, or utilization of a substitute shall be the sole responsibility of the Contractor requesting the substitute and it shall arrange its operations to make up the time lost.
- 11) Proposed substitute will not be accepted if:
- a. Acceptance will require substantial revision of Contract Documents.
 - b. They will substantially change design concepts or Technical Specifications.
 - c. They will delay completion of the Work, or the Work of other Contractors.
 - d. They are indicated or implied on a Shop Drawing and are not accompanied by a formal request for approval of substitute from Contractor.
- 12) The Engineer reserves the right to disapprove, for aesthetic reasons, any material or

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equipment on the basis of design or color considerations alone, without prejudice to the quality of the material or equipment, if the manufacturer cannot meet the required colors or design.

- 13) All requests for approval of substitutes of materials or other changes from the contract requirements, shall be accompanied by an itemized list of all other items affected by such substitution or change. The Engineer shall have the right, if such is not done, to rescind any approvals for substitutions and to order such Work removed and replaced with Work conforming to the specified requirements of the contract, all at the Contractor's expense, or to assess all additional costs resulting from the substitution to the Contractor.
- 14) Approval of a substitute will not relieve Contractor from the requirement to submit Shop Drawings or any of the provisions of the Contract Documents.
- 15) In the event that the Engineer is required to provide additional engineering services as a result of a request for approval of a substitute results in changes by the Contractor in dimension, weight, power requirements, etc., of the equipment and accessories furnished, or as a result of Contractor's errors, omissions or failure to conform to the requirements of the Contract Documents or if the Engineer is required to examine and evaluate any changes proposed by the Contractor solely for the convenience of the Contractor, or for evaluation of deviations from Contract Documents, then the Engineer's charges in connection with such additional services shall be paid by the Contractor.
- 16) Structural design shown on the Drawing is based upon the configuration of and maximum loading for major items of equipment as indicated on the Drawings and as specified. If the substituted equipment furnished differs from said features, the Contractor shall pay to the County all costs of redesign and for any construction changes required to accommodate the equipment furnished, including the Engineer's charges in connection therewith.
- 17) The Contractor shall respond to required submittals with complete information and with a degree of accuracy to achieve approvals within two (2) submissions. All costs to the Engineer involved with subsequent submissions of Shop Drawings, Samples or other items requiring approval, will be paid by the Contractor to the County, by deducting such costs from payments due for Work completed. In the event an approved item is requested by the Contractor to be changed or substituted for, all costs involved in the reviewing and approval process will likewise be backcharged to the Contractor unless determined by the Engineer that the need for such substitution and/or deviation from Contract Documents is beyond the control of the Contractor.

30. EXTRA WORK: INCREASED COMPENSATION/DECREASED WORK: CREDIT TO THE OWNER

The Director of Project Management may, at any time, by a written order, and without notice to the sureties, require the performance of Extra Work or require or approve changes in the work, or Decreased Work ("work" to include but not be limited to specified methods of performing work) as he may deem necessary or desirable. The amount of compensation

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to be paid to the Contractor for any Extra Work, as so ordered, or credit to the Owner for such decreased work, as so ordered or approved, shall be determined as follows:

- 1) **First:** By such applicable unit prices, if any, as set forth in the Contract; or
- 2) **Second:** If no such prices are so set forth, then by unit prices or by a lump sum, or sums, mutually agreed upon by the Director of Project Management and the Contractor; or
- 3) **Third:** If, in the opinion of the Director of Project Management, the aforesaid unit prices, under "First" above, are not applicable, or if the two parties hereto cannot reach agreement as to new unit prices or a lump sum, or sums, under "Second" above, then by the actual net cost in money to the Contractor of the materials and of the wages of applied labor (including cost of supplements provided and premiums for Workmen's Compensation Insurance, FICA, and Federal and State Unemployment Insurance) required for such Extra Work, plus twenty (20%) percent as compensation for all items of profit and costs or expenses including administration, overhead, superintendence, insurance (other than those specifically noted above) materials used in temporary structures, allowances made by the Contractor to subcontractors, including those made for overhead and profit, additional premiums upon the performance bond of the Contractor and the use of small tools and any and all other costs and expenses not enumerated above, plus such rental for plant and equipment (other than small tools) required and approved for such extra work. Where extra work is performed by a Subcontractor, the twenty percent stipulated above shall be divided between the Contractor and the Subcontractor as per their contractual agreement, or if not defined therein, then as the Contractor sees fit.

Rental rates for any power operated machinery, trucks or equipment, which it may be found necessary to use as in "Third" above, shall be reasonable and shall be based on those prevailing in the area of the County where such work is to be done, and they shall be agreed upon in writing before the work is begun.

In no case shall the rental rates submitted exceed the rates set up in the current edition of "Equipment Watch" plus the cost of fuel and lubricants.

These rates shall include all repairs, fuel, lubricants, applicable taxes, insurance, depreciation, storage and all attachments complete, ready to operate, but excluding operators. Operators shall be paid as stated here in above for labor.

For equipment, which is already on the project, the rental period shall start when ordered to work by the Construction Administrator, and shall continue until ordered to discontinue by him. The minimum payment for any one rental period shall be four hours, unless otherwise agreed upon between the Construction Administrator and the Contractor.

For equipment which has to be brought to the project, specifically for use as in "Third" above, the County will pay all loading and unloading costs, also all transportation costs will not be paid, if the equipment is used for work other than in "Third" above while on the project. The rental period shall begin at the time the equipment has been unloaded on the

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project, and shall end on and include the day the order to discontinue the use of the equipment as in "Third" above is given to the Contractor by the Construction Administrator.

The daily rate shall apply for rental periods of four calendar days or less, the weekly rate shall apply for rental periods of more than four and not exceeding twenty-one calendar days, and the monthly rate shall apply for rental periods in excess of twenty-one calendar days. For fractional periods above the full unit rental period (day, week, month) reimbursement shall be proportioned on the basis of the applicable rental period. (Day-8 hrs.; Week-7 calendar days; Month-30 calendar days).

No percentage shall be added to the amounts of equipment rental prices agreed upon, but the price agreed upon shall be the total compensation allowed for the use of such equipment.

The provisions hereof shall not affect the power of the Contractor to act in case of emergency.

31. DISPUTED WORK - NOTICE OF CLAIMS FOR DAMAGES

If the Contractor is of the opinion that any work required, necessitated, or ordered violates or conflicts with or is not required by the terms and provisions of this Contract, it must promptly, within five (5) calendar days after being directed to perform such work, notify the Construction Administrator, in writing, of its contentions with respect thereto and request a final determination thereon. If the Construction Administrator determines that the work in question is contract and not extra work, or that the order complained of is proper, he will direct the Contractor in writing to proceed and the Contractor shall promptly comply. In order, however, to preserve its right to claim compensation for such work or damages resulting from such compliance, the Contractor must, within seven (7) calendar days after receiving notice of the Construction Administrator's determination and direction, notify the Construction Administrator, in writing that the work is being performed or that the determination and direction is being complied with, under protest. Failure of the Contractor to so notify shall be deemed as a waiver of claim for extra compensation or damages therefore.

While the Contractor is performing disputed work or complying with a determination or order under protest in accordance with this Article, in each such case the Contractor shall furnish the Construction Administrator daily with three copies of written statements signed by the Contractor's representatives at the site showing:

- 1) the name of each worker employed on such work or engaged in complying with such determination or order, the number of hours employed thereon, and the character of the work each is doing; and
- 2) the nature and quantity of any materials, plant and equipment furnished or used in connection with the performance of such work or compliance with such order, and from whom purchased or rented.

It is expressly agreed that no dispute over the scope of the Contractor's work or any portion thereof shall cause any delay or interruption to the Contractor's work.

In addition to the foregoing statements, the Contractor shall, upon notice from the Board of Acquisition and Contract, produce for examination by the duly appointed representative of

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the Board of Acquisition and Contract, all its books of accounts, bills, invoices, payrolls, subcontracts, time books, daily reports, bank deposit books, bank statements, check books and canceled checks, showing all of its acts and transactions in connection with or relating to or arising by reason of this contract, and submit itself, its agents, servants and employees for examination under oath by any duly appointed representative designated by the Board of Acquisition and Contract to investigate claims made against the County. Unless the aforesaid statements shall be made and filed within the time aforesaid and the aforesaid records submitted for examination and the Contractor, its agents, servants, and employees submit themselves for examination as aforesaid, the County shall be released from all claims arising under, relating to or by reason of this contract, except for the sums certified by the Construction Administrator to be due and agreed that no person has power to waive any of the foregoing provisions, and that in any action against the County to recover any sum in excess of the sums certified by the Construction Administrator to be due under or by reason of this contract, the Contractor must allege in its complaint and prove, at the trial, strict compliance with the provisions of this article.

Before final acceptance of the work by the County, all matters of dispute must be adjusted to the mutual satisfaction of the parties thereto. Determinations and decisions in case any question shall arise, shall constitute a condition precedent to the right of the Contractor to receive the money therefore, until the matter in question has been adjusted.

32. CONTRACTOR'S SUBCONTRACTS AND MATERIAL LISTS

Within fifteen (15) days after execution of the Contract, the successful bidder shall submit to the County for approval a list of the subcontractors, materialmen and materials that he/she plans to use in the performance of the work and statements of the work they are to perform. The format and content of the list shall be in accordance with directives from the Construction Administrator. He/sit shall also submit additional information regarding their qualifications as may be later requested by the County. No part of the work may be sublet until after the Contractor has received the County's approval.

The Contractor shall be fully responsible for all acts and omissions of its subcontractors and persons directly or indirectly employed by them, and the County's approval to sublet parts of the work will in no way relieve the Contractor of any of its obligations under the Contract. All dealings of the Construction Administrator with the subcontractors shall be through the Contractor, subcontractors being recognized by the County only as employees of the Contractor.

By executing the Agreement, the Contractor represents that the Contractor shall insert appropriate clauses in all subcontracts to bind the subcontractors to the Contractor by all applicable provisions of the Contract Documents executed between the Contractor and the County, but this shall not be construed as creating any contractual relationships between subcontractors and the County. Prior to approval of the subcontractors, the County has the right to review and recommend changes in the subcontracts. The County reserves the right to reject any subcontractor proposed by the Contractor if in the reasonable opinion of the County such subcontractor lacks the experience, capability or integrity to perform its subcontract work or is otherwise non-responsible.

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By executing the Agreement, the Contractor represents that the Contractor shall insert appropriate clauses in each subcontract that require that if the Contractor is terminated by the County either for default or convenience that at the sole option of the County the subcontract shall automatically attach to the County and the subcontractor shall continue without delay or interruption to fully perform all of the obligations required by its subcontract.

Where the specifications permit the Contractor a choice of different materials or manufactured products, it shall state the choice he has made in making up its bid, with the understanding that all choices must subsequently be approved by the Commissioner, after award of the contract to the successful bidder. If the bidder wishes to propose utilization of materials or manufactured products other than those specified, it shall so state and submit the required information in accordance with Article "Request For Approval Of Equal" of the General Clauses."

33. ASSIGNMENT OF CONTRACT

The Contractor shall not assign, transfer, convey or otherwise dispose of the contract or any part of it or any monies due and payable under the contract, without prior written approval of the County. If such approvals are granted by the County, they shall in no way relieve the Contractor or from any obligations under the terms of this Contract.

All documents assigning the contract or any part of it or any monies due and payable under the contract shall contain a clause stating that all monies to be paid the assignee in accordance with the terms of the Contractor's contract with the County, are subject to a prior lien for services rendered or materials and equipment supplied, in favor of all persons, firms or corporations rendering such services or supplying such materials and equipment.

34. PAYMENT FOR GENERAL PROVISIONS

No direct payment will be made for work done or materials furnished in compliance with the General Provisions of the specifications, unless otherwise noted. All compensation to the Contractor for its performance of the requirements of any general provision shall be considered to have been included in the prices he has bid for the individual items if a unit price contract and/or for a lump sum price if a lump sum contract.

In the event the Contractor fails or refuses to proceed with its work and/or correct or repair deficient or defective work then without prejudice to any and all of the County's other rights and remedies, and upon three (3) days notice to Contractor, the County may perform and/or employ any other person or persons to correct and/or repair any or all such work. All costs incurred by the County pertaining thereto shall be paid forthwith by the Contractor to the County.

35. COSTS INCURRED BY COUNTY

Wherever in these Contract Documents the County is entitled to recover costs from the Contractor or charge the Contractor for the costs incurred for the correction, supervision or for any other reason related to the Contractor's work or arising from the Contractor's failure or refusal to proceed with its work in a timely manner, such costs and/or charges shall be

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deemed to include, but not be limited to, the County's costs and fees for inspection(s), engineering, consultant(s) and attorneys.

36. GUARANTEE OF WORK

- A. Except as otherwise specified, all work performed under the Contract shall be guaranteed by the Contractor against defects resulting from the use of inferior materials, equipment or workmanship for one year from the guarantee starting date (which shall be defined as the date of the County's approval of the final Certificate for Payment or the date of actual full occupancy of the building, whichever is earlier). The building, section thereof, or item of equipment, shall be occupied or put into actual use by the Owner only after judged completed by the Construction Administrator and Owner and approved by him as ready for occupancy.
- B. If, within any guarantee period, repairs or changes are required in connection with guaranteed work, which in the opinion of the Construction Administrator or Owner is rendered necessary as a result of the materials, equipment or workmanship which are inferior, defective, or not in accordance with terms of the Contract, the Contractor shall promptly upon receipt of notice from the Construction Administrator or Owner and without expense to the Construction Administrator or Owner:
 - 1) Place in satisfactory condition, in every particular, all of such guaranteed work, correct all defects thereof, and
 - 2) Make good all damages to the building or site, or equipment or contents thereof, and
 - 3) Make good any work or material, or equipment and contents of said building or site disturbed in fulfilling any such guarantee.
- C. In any case where in fulfilling requirements of the Contract or of any guarantee embraced in or required thereby the Contractor disturbs any work, it shall restore such disturbed work to a condition satisfactory to the Construction Administrator.
- D. If the Contractor, after notice, fails to proceed promptly to comply with terms of its guarantee, the Owner may have the defects corrected and the Contractor shall be liable for all expenses incurred.
- E. All special guarantees applicable to definite parts of the work that may be stipulated in the Specifications or other papers forming a part of the Contract shall be subject to the requirements and term of this article.

37. SEPARATE CONTRACTS

- A. Contractor's attention is specifically directed to the fact that, because of the work of other contracts within and adjacent to the limits of this Contract they may not have exclusive occupancy of the territory within or adjacent to the limits of this Contract.
- B. Contractor's attention is further directed to the fact that, during the life of this Contract the owners and operators of Public Utilities may make changes in their facilities. These changes may be made by the Utility employees or by contract within the limit or adjacent to these contracts and may be both temporary and permanent.

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- C. Contractor shall be required to cooperate with other contractors and the owners of the various utilities, and to coordinate and arrange the sequence of their work to conform to the progressive operations of the work already under contract and to be put under contract.
- D. Contractor shall be responsible for the coordination of the work of their various subcontractors. Their respective operations shall be arranged and conducted so that delays will be avoided. Where the work of a subcontractor overlaps or dovetails with that of other subcontractors, materials shall be delivered and operations conducted so as to carry on the work continuously in an efficient and workmanlike manner. Delays or oversights on the part of Contractor or its subcontractors or utility owners in getting any or all of their work done in the proper way thereby causing cutting, removing and replacing work already in place, shall not be the basis for claim for extra compensation.
- E. In case of interference between the operations of the utility owners and different Contractors, the Construction Administrator will be the sole judge of the rights of each Contractor and the sequence of work necessary to expedite the completion of the entire project, and in all cases the Construction Administrator's decision shall be accepted as final and may not be challenged except in a proceeding brought pursuant to Article 78 of the Civil Practice Law and Rules.

38. COOPERATION WITH OWNER

Each Contractor shall cooperate with the Owner as to parking of vehicles, availability of storage and working areas and confining of activities and personnel to same. **NO PARKING FOR CONTRACTOR'S EMPLOYEES.**

39. JOB MEETINGS & PROJECT SUPERINTENDANT

- A. An officer of the Contractor, or its project manager or superintendent, who is fluent in English and authorized to make binding decision on behalf of the Contractor shall attend job meetings with the Commissioner and/or the Construction Administrator, and any subcontractors whom the Inspector may designate; for the purpose of discussing expedition, execution and coordination of the work.
- B. Job meetings will be scheduled periodically (the first to be prior to commencement of construction) at a time and place designated by the Construction Administrator.
- C. The Contractor shall not commence any work prior to the first (pre-construction) meeting between the Contractor, Commissioner and/or Construction Administrator, client, and other concerned governmental and utility company representatives.
- D. At the pre-construction meeting, the scheduling of the work on an arrow-flow diagram (showing chronologically and in detail the sequence and methods that will be followed) will be provided, and details for the proper execution and special requirements of the work will be explained and discussed.
- E. The Contractor shall be responsible for providing a detailed construction schedule that provides for a Critical Path Method ("CPM") and which is compatible with any of the state of the art CPM Method scheduling software.

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F. Updated coordinated arrow-flow diagrams or CPM schedules, as the case may be, will be provided by the Contractor, as above, on a monthly basis to the County.

The Contractor shall indicate on the construction schedules noted above, time for shop drawing preparation, approvals, fabrication and delivery of materials and equipment for major items. The County may request that additional important items be included on the schedule.

G. The Contractors shall ensure that its Project Superintendent shall be on site full time at all times when the Contractor's Work is being performed.

40. PATENT WARRANTY

A. Contractor expressly represents, warrants and agrees that he has the legal right to furnish and install and to authorize the County to purchase and use the equipment hereby offered and each and every one of its several parts and every feature thereof, under one or the other, or partly under one and partly under the other of the following representations.

- 1) That the Contractor possesses a valid patent(s) covering the equipment to be furnished hereunder or part or features thereof or has or will obtain permit(s) and license(s) authorizing the Contractor to furnish and install same and to authorize the purchase and use thereof by the County.
- 2) The Contractor is responsible before ordering material, equipment, parts, systems, etc, to verify that the suppliers of all such material, equipment, parts, systems, etc, will supply the required warranty, guarantee, O & P manual, and maintenance service schedule.
- 3) That the equipment offered or certain parts or features thereof are not covered by any valid patent(s) within the knowledge of the Contractor.

B. Contractor further warrants and agrees that if any patent(s) is hereafter issued to any person whatsoever with respect to the equipment or any part or features thereof, to be furnished and installed hereunder, the Contractor will obtain such permit(s) or license(s) from the Patentee as may be necessary to authorize the use of the equipment by the County.

C. Contractor further represents, warrants and agrees that he and its sureties shall hold themselves responsible for and defend any claims made against the County for any infringement of patents due to the purchase and use by the County of said equipment or any part or feature thereof; that they will indemnify and save harmless the County from all costs, expenses and damages which it shall be obliged to pay by reason of any such infringement of patent(s); that in case the use of any such equipment is enjoined, they will bear the expenses of removing same and replacing same with equipment which will satisfactorily perform the function without constituting an infringement of any patent(s); and in case the use of any equipment shall be enjoined, that they shall pay to the County the sum of \$1,000.00 per day, as liquidated damages, for each and every day during which the County shall be enjoined from using the same up to the day on which such

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equipment is replaced by other equipment which will satisfactorily perform the same function but which will not constitute an infringement of any other patent(s).

- D. The Contractor further agrees in the event the use of any of the equipment is enjoined and the Contractor is unable within a reasonable time to devise other equipment which will satisfactorily perform the same functions without infringement on any patent(s), that he will remove the equipment and refund to the County the entire cost of its purchase and installation, plus the sum of \$ 1,000.00 per day as liquidated damages for each and every day until the substitute equipment has been purchased and installed by the County, excepting however that such period shall not exceed three months.
- E. The Contractor further agrees in the event that any claim or notice of claim for infringement of patent(s) are made or filed prior to the making of payment by the County for the equipment and/or material proposed to be furnished and installed hereunder, that the County may withhold any sum due to the Contractor for such equipment and/or material until such claims shall have been settled or adjudicated or until additional surety bonds or other guarantees of indemnification shall have been posted, if deemed necessary by the County for its protection.

41. MATERIALS

A. Quality

- 1) It is the intent of these Specifications to describe definitely and fully the character of materials and workmanship required with regard to all ordinary conditions of the work and to require first-class work and new and best quality materials in all particulars. For unexpected conditions arising during the progress of the work and not fully covered herein, the Specifications shall be interpreted by the Construction Administrator to require first-class work and materials and such interpretations shall be accepted by the Contractor.
- 2) The Contractor is responsible before ordering material, equipment, parts, systems, etc, to verify that the suppliers of all such material, equipment, parts, systems, etc, will supply the required warranty, guarantee, O & P manual, and maintenance service schedule.
- 3) Where materials or devices are specified in these documents by reference to government, manufacturer's association, or professional society standards, the pertinent sections of the latest edition of such standards shall have the same force and effect as if set forth in full in these Specifications. The following abbreviations shall be used as indicated for the principal societies:

AASHO	American Association of State Highway Officials
ACI	American Concrete Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute

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ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
AWI	American Woodworking Institute
AWS	American Welding Society
BHMA	Builders Hardware Manufacturers Association
CS	Commercial Standards
FS	Federal Specifications
IEEE	Institute of Electrical and Electronic Engineers
NEC	National Electric Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
SDI	Steel Deck Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association, Incorporated
TCA	Tile Council of America, Incorporated
TMCA	Tile and Marble Contractors of America
UL	Underwriter's Laboratories, Incorporated

B. Delivery, Storage and Handling:

- 1) Materials shall be delivered in manufacturer's original sealed containers with complete identification of contents and manufacturer, and kept sealed in original containers until used. Labels shall not be removed until materials have been installed and inspected.
- 2) Materials shall be delivered, stored, and handled with proper equipment and in a manner to protect them from damage.
- 3) The Contractor shall make arrangements for the receipt of materials delivered to the construction site. No representative of the County will accept any materials ordered by the Contractor.
- 4) Finish materials shall be protected from dirt and damage, and perishable materials shall be stored within appropriate weatherproof enclosures.
- 5) Delivery of materials shall be coordinated with the Operations Schedule.
- 6) The Contractor shall confine the apparatus, the storage of materials and the operations of the workmen to the limits indicated by law, ordinances, permits, or directions of the Construction Administrator, and shall not encumber the premises beyond the contract limits.

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- 7) The Contractor shall not load or permit any part of the structure to be loaded with a weight that will endanger its safety.
- 8) Whenever the Contract Documents require delivery by the Contractor of any materials, equipment, or other items, the term delivery shall be deemed to include unloading and storing with proper protection where directed.

C. Federal Regulations

- 1) Should the Federal Government, because of Declaration of an Emergency, or other cause, establish controls over the use of certain construction materials, then the Contractor, immediately after signing the Contract or immediately after Declaration of an Emergency, shall furnish the Commissioner with an itemized list of all critical materials required for use on the project. For each item, the quantity required and the approximate date on which delivery will be required shall be indicated.

D. Name Plates

- 1) Each piece of operable equipment to be furnished and installed by a Contractor under its Contract such as motors, pumps, heaters, fans, transformers, switch and fuse racks and other similar equipment shall be provided with a substantial name plate of non-corrodible metal securely fastened in place and clearly and permanently inscribed with the manufacturer's name, the model or type designation, the serial number, the principal rated capacities, the electrical or other power characteristics and other similar and appropriate information.
- 2) Manufacturer's identification shall be inconspicuous, but where nameplates contain information relative to characteristics or maintenance, they shall be clearly visible and located for easy access.
- 3) The nameplate of a subcontractor or a distributor will not be permitted.

E. Manufacturer's Certification

- 1) Prior to the delivery of any water or sewer pipe to the construction site, the Contractor shall furnish properly attested documents certifying as to the type, class, name of manufacturer and source of supply of the pipe. One copy of each document shall be forwarded to the Construction Administrator at the construction site and to the Director of Project Management care of the Engineering Division, Michaelian Office Building, White Plains, New York.

F. Samples

- 1) The Contractor shall furnish, for approval of the Engineer, any samples required by the specifications or that may be requested by the Owner, of all materials he proposes to use, and shall pay all shipping charges for the samples. The Contractor shall send all samples to the office of the Engineer, except when directed otherwise. The sample of approved material will remain on file in the Engineer's office. A disapproved sample will be returned to the Contractor.
- 2) No samples are to be submitted with bids.
- 3) No materials or equipment of which samples are required to be submitted for

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approval shall be used on the work until such approval has been given by the Engineer or Construction Administrator, save only at the Contractor's risk and expense.

- 4) Each sample shall have a label indicating the material represented, its place of origin and the names of the producer, the Contractor and the Contract for which the material is intended.
- 5) Approval of any sample shall be only for characteristics or for uses named in such approval, and no other. No approval of a sample shall be taken in itself to change or modify any Contract requirement. When a material has been approved, no additional sample of that material will be considered and no change in brand or make will be permitted. Approved samples held by the Engineer will be returned to the Contractor upon completion of the work, if requested.
- 6) Transactions with manufacturers or subcontractors shall be through the Contractor.

G. Dissimilar Materials

- 1) Where metals are placed in contact with or fastened to dissimilar metals, concrete, masonry, wood or other absorptive materials subject to repeated wetting or wood treated with a preservative non-compatible with the metal or if drainage from dissimilar materials passes over the work; treat the contact surfaces with a heavy coat of approved alkali-resident bituminous paint.
- 2) Where one of the metals is aluminum, a coat of zinc-chromate primer shall be applied prior to the bituminous paint.

42. STANDARD OF QUALITY

Wherever in the contract documents an article, material, apparatus, device, product or process is called for by trade name or catalog reference, or by the name of the patentee, manufacturer or dealer, it shall be construed as establishing a standard of quality and not construed as limiting competition. In such instances, the Contractor may use any article, material, etc. which, in the judgment of the Engineer, expressed in writing, is equal to and acceptable for the intent specified.

43. PROPRIETARY ITEM

Whenever less than three names are used in proprietary item specifications, it has been determined that:

- A. The use of trade names is necessary for effective and workable specifications for the item.
- B. All manufacturers known by the individuals familiar with the trade involved have been listed.
- C. Equal items may be approved in accordance with Article "Request For Approval Of Equal" of the General Clauses.

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44. SHOP DRAWINGS

A. Shop Drawing Schedule

- 1) Within fifteen (15) days after the Notice to Proceed, the Contractor shall prepare and submit two (2) copies of its schedule of Shop Drawing submissions to the Engineer for review and approval. The schedule is to be submitted on the “Shop Drawing Schedule” form of the Sample Forms.
- 2) In order to maintain the construction schedule for this project the Contractor shall submit all Shop Drawings per approved schedule. The Contractor is expressly cautioned that its failure or refusal to timely submit a shop drawing schedule acceptable to the Engineer and/or any deviation from the approved shop drawing schedule shall be deemed a default under this Contract.
- 3) Shop Drawings shall be submitted without fail in time to permit correction, resubmission and final approval, as hereinafter specified, without causing any delay in the construction of any Work.
- 4) Samples and Shop Drawings, which are related to the same unit of Work or Specification Section, shall be submitted at the same time. If related Shop Drawings and Samples are submitted at different times, they cannot be reviewed until both are furnished to the Engineer.
- 5) The schedule shall be updated every four-(4) weeks or more frequently as required by the Engineer.
- 6) Two (2)-updated copies of the schedule shall be submitted to the Engineer with each application for Partial Payment.
- 7) Form of Schedule

Schedule shall be in tabular form with appropriate spaces to insert the following information for principal items of equipment and materials:

- a. Date on which Shop Drawings are requested and received from the manufacturer.
- b. Dates on which Shop Drawings are transmitted to the Engineer by the Contractor.
- c. Dates on which Shop Drawings are returned by the Engineer for revisions.
- d. Dates on which Shop Drawings are revised by manufacturer and resubmitted to the Engineer.
- e. Date on which Shop Drawings are returned by Engineer annotated either “Approved” or “Approved as Noted”.
- f. Date on which accepted Shop Drawings are transmitted to manufacturer and Contractor’s Invoice Number.
- g. Date of manufacturer’s scheduled delivery.
- h. Date on which delivery is actually made.

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i. Sample of schedule follows on next page.

B. Shop Drawing Requirements

- 1) Shop Drawings for the Work shall include working and setting drawings, schedules, shop details, wiring diagrams, manufacturer's catalog cuts and brochures and all other drawings, schedules and diagrams necessary for the proper correlation of the Work.

Insofar as it is practicable, all drawings shall be uniform in size. They shall be dated, numbered consecutively and shall be identified with the Contract Number and Title, a description of the material or equipment and the area of the work and where it is to be installed. Shop drawings shall accurately and clearly show sizes, work, erection dimensions, arrangement and sectional views, necessary details including information for making connection with the work of other items as may be required, materials and finishes, detailed parts lists, and performance characteristics and capacities as may be required.

- 2) All detailing for structural components shall be done in accordance with the provisions for design and workmanship in the latest additions of the publications listed below except as may be modified in the Contract Documents:
 - a. "Manual of Steel Construction" of the American Institute of Steel Construction.
 - b. "Building Code Requirements for Reinforced Concrete" and "Manual of Standard Practice for Detailing Reinforced Concrete Structures" of American Concrete Institute.
- 3) Detailing practices for other components shall be done to conform to the best trade practices.
- 4) Contractor Responsibilities
 - a. Before submitting Shop Drawings to the Engineer all submittals from its Subcontractors, manufacturers or suppliers shall be sent directly to the Contractor for preliminary review, coordination and checking.

Contractor shall be responsible for their submission at the proper time so as to prevent delays in delivery of material or equipment. Contractor shall thoroughly check all drawings for accuracy and conformance to the intent of the Contract Documents. Drawings found to be inaccurate or otherwise in error shall be returned to the Subcontractors, manufacturers, or suppliers by the Contractor for correction.

- b. All submittals, including Shop Drawings prepared by or under the direction of the various Contractors, shall be thoroughly checked by the Contractor for accuracy and checked by the Contractor for accuracy and conformance to the intent of the Contract Documents before being submitted to the Engineer and shall bear the Contractor's signature certifying that they have been so checked. Before submitting them to the Engineer, all submittals shall be properly labeled and consecutively numbered. In a clear space above the title block, the Contractor shall provide the "Shop Drawing ID" form of the Sample Forms, and enter the required information:

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- c. Shop Drawings shall be submitted as a single package including all associated drawings for any operating system and shall include all items of equipment and any mechanical units involved or necessary for the functioning of such system. Where applicable, the submittal shall include elementary wiring diagrams showing circuit functioning and necessary interconnecting wiring diagrams for construction.
- d. If the submittals contain any departures from the Contract Documents, specific mention thereof shall be made in the Contractor's letter of transmittal. Otherwise, the review of such submittals shall not constitute approval of the departure. The Contractor shall also call the Engineer's attention to any changes by the use of larger letters of at least 1" in height on the Shop Drawings along with a letter by the Contractor advising the Engineer to the recommended change and the reason therefore. If this is not done, even if the Work is incorporated in the construction, it will not be accepted by the Engineer even if Shop Drawings are "Approved".
- e. No materials or equipment shall be ordered, fabricated or shipped or any Work performed until the Engineer returns to the Contractor the submittals herein required, annotated "Approved".
- f. Where errors, deviations, and/or omissions are discovered at a later date in any of the submittals, the Engineer's prior review of the submittals does not relieve the Contractor of the responsibility for correcting all errors, deviations and/or omissions.
- g. Two (2) copies of Preliminary Operations and Maintenance Manuals shall be submitted with the final Shop Drawings for each item of equipment.
- h. Submittals shall be transmitted in strict compliance with Special Clause 10. A.2 and in sufficient time to allow the Engineer adequate time for review and processing so as not to delay the Project per the approved Shop Drawing Schedule.
- i. Contractor shall transmit five (5) prints of each submittal to the Engineer for review. Any submissions, which in the opinion of the Engineer, are not legible will not be reviewed and will be returned to the Contractor annotated "Disapproved".
- j. Contract drawings are for engineering and general arrangement purposes only and are not to be used as Shop Drawings.
- k. Shop Drawings shall accurately and clearly present the following:
 - All working and installation dimensions.
 - Arrangement and sectional views.
 - Units of equipment in the proposed positions for installation, details of required attachments and connections, and dimensioned locations between units and in relation to the structures.
 - Necessary details and information for making connections between the

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various trades including, but not limited to, power supplies and interconnecting wiring between units, accessories, appurtenances, etc.

- l. Structural and all other layout drawings prepared specifically for the Project shall have a plan scale of not less than 1/4-inch equal to 1 foot and they shall be not larger than the size of the Contract Drawings.
 - m. Where manufacturer's publications in the form of catalogs, brochures, illustrations, compliance certificates, or other data sheets are submitted in lieu of prepared Shop Drawings, such submissions shall specifically indicate the item for which approval is requested. Identification of items shall be made in ink, and submissions showing only general information are not acceptable.
 - n. The Contractor shall provide all required copies for the use of the various trades and at the Site, and one (1) copy of approved Shop Drawings shall be provided by the Contractor to each of the other Prime Contractors unless otherwise noted in writing by the Engineer.
 - o. The Contractor shall respond to required submittals with complete information and accuracy to achieve required approvals within three (3) submissions. All costs to the Owner involved with subsequent submissions of Shop Drawings, Samples or other items requiring approval, will be backcharged to the Contractor, at the rate of 3.0 times direct technical labor cost, by deducting such costs from payments due for Work completed. In the event an approved item is requested by the Contractor to be changed or substituted, all involved costs in the review process will likewise be paid by the Contractor to the County unless determined by the Director of Project Management or Commissioner that the need for such deviation is beyond the control of the Contractor. Contractor shall be responsible for coordinating its Work and submittals with its Subcontractors.. Should Contractor cause the need for additional submissions or reviews of previous submissions all involved costs will similarly be paid to the County.
- 5) Procedure for Review
- a. Shop Drawings will be checked for design conformance with the Contract Documents and general arrangement only.
 - b. Submittals will be annotated by the Engineer in one of the following ways:
 - "Approved" - no exceptions are taken.
 - "Approved as Noted" - minor corrections are noted and shall be made and a resubmittal is required.
 - "Disapproved because" - with specific deficiencies noted.
 - "Disapproved" - based on the information submitted, the submission is not in conformance with the Contract Documents. The deviations from the Contract Documents are too numerous to list and a completely revised submission of the proposed equipment or a submission of other equipment is required.

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- c. One copy of the reviewed submittals will be returned to the Contractor. It is the Contractor's responsibility to provide copies to:
- Its Subcontractors.
 - Its Materialmen and Suppliers.
- unless notified otherwise in writing by the Engineer.
- 6) Disapproved drawings will be returned to the Contractor for correction and resubmission. After the Contractor has had the required corrections made on the original drawing, it shall again submit five copies for review by the Engineer.
- 7) The acceptance of Shop Drawings by the Engineer shall be only general in nature and shall not relieve the Contractor of any responsibility for the accuracy of the drawings, the proper fitting and construction of the Work or for the furnishing of materials or other Work required by the Contract Documents, but not shown on the Shop Drawings. Acceptance of Shop Drawings by the Engineer shall not be construed as approving departures from the Contract requirements unless specifically noted by the Engineer. Acceptance of Shop Drawings for one item shall not be construed as approval for other changes even if noted by the Contractor on the drawing.
- 8) Shop Drawings submitted other than in accordance with the outlined procedures will be returned to the Contractor for resubmission and the Contractor shall bear all expense and risk of all delays as if no Shop Drawings had been submitted.
- 9) No Work shall be performed until the Shop Drawings have been accepted by the Owner, and the Contractor shall be responsible for all costs and damages, which may result from proceeding prior to the approval of the Shop Drawings.

45. SEQUENCE OF CONSTRUCTION OPERATIONS

- A. It is mandatory that the premises continue to be occupied and facilities therein shall continue to function during the performance of the construction work.
- B. Detailed sequence of construction and availability of spaces in areas through which services must pass shall be coordinated between the Owner and the Contractor, before actual commencement of the Work.
- 1) To enable the Work to be laid out and prosecuted in an orderly and expeditious manner, Contractor shall provide a proposed Progress Schedule, within fifteen (15) days after the issuance of the Notice to Proceed of this Contract unless otherwise directed in writing by the Construction Administrator. The proposed Progress Schedule shall show the anticipated time of commencement and completion of each of the various operations to be performed under this Contract; together with all necessary and appropriate information regarding the sequence and correlation of Work; and the Schedule of Shop Drawings and delivery of all materials and equipment required for the Work. The Contractor shall prepare a Master Progress Schedule (Schedule) for the Work. Contractor as directed by the Construction Administrator shall revise the proposed Schedule until each activity is properly sequenced to provide that the Work will be completed in the proper order and

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within the allotted Contract duration, without any conflicts. When the Construction Administrator has accepted the Schedule the Contractor will sign it. The Contractor shall then provide one (1) copy of such approved Schedule to each Subcontractor and two (2) copies to the Construction Administrator. Contractor shall afford its Subcontractors a reasonable opportunity for the introduction and storage of their materials and the execution of their Work and shall properly connect and coordinate its Work with others.

Contractor shall strictly adhere to the Schedule unless changed as provided for in the following paragraph.

- 2) Within five (5) days after receiving notice of any change in the Contract, or of any Extra Work to be performed, or of any suspension of the whole or any portion of the Work, or of any other conditions which are likely to cause or are actually causing delays, Contractor must notify the Construction Administrator in writing of the effect, if any, of such change or Extra Work or suspension or other condition upon the previously approved schedule, and must state in what respects, if any, the Schedule should be revised, with the reasons therefor. These proposed changes in the Schedule shall be reviewed and, if appropriate, approved, in writing, by the Construction Administrator. Contractor must strictly adhere to the revised Schedule. Distribution of the revised Schedule shall be as described in paragraph B-1 above. Contractor's compliance with the requirements of this paragraph is in addition to, and not in lieu of, compliance with other notice requirements pertaining to delays and extensions of time contained elsewhere in the contract.
 - 3) The Schedule shall be reviewed by Contractor every two (2) weeks or as directed by the Construction Administrator.
 - 4) If Contractor shall fail to adhere to the approved Schedule, or to the Schedule as revised, they must promptly adopt additional means and methods of construction with no additional cost to the County that will make up for the lost time and will assure completion in accordance with such Schedule. The proposed means and methods shall be described in writing to the County within two (2) days after the Contractor discovered or should have reasonably discovered that the Schedule would not be met as originally proposed. Failure to comply with this requirement may result in the County enforcing its rights under the Contract including, without limitation, default of the Contract.
- C. From time to time as the Work progresses and in the sequence indicated by the approved Schedule, the Contractor must submit to the Construction Administrator a specific request in writing for each item of information or approval required. These requests shall be submitted sufficiently in advance of the date upon which the information or approval is actually required by the Contractor to allow for the time the Construction Administrator may reasonably take to act upon such submissions or resubmissions. The Contractor shall not have any right to an Extension of Time on account of delays due to its failure to timely submit requests for the information or approvals.
- D. Certain construction work shall be required, which will be disruptive to the Owner's staff insofar as noise, dirt and dust is concerned. The Contractor, therefore, shall

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perform such work during other than normal working hours. Subject to the requirements of law, the Owner imposes no limitation on the Contractor's working hours and whatever overtime work may be necessary or required shall be considered by the Contractor and reflected in its Bid Proposal without the benefit of extra compensation.

46. PROTECTION

- A. The Contractor shall at all times exercise all necessary precautions for the safety of the public, employees performing the work and County personnel. The Contractor shall provide and maintain barricades, danger signals and other safeguards about the work and shall be held responsible for all accidents or damages to persons or property caused by failure to do so throughout the progress of the work, and shall comply with all applicable provisions of Federal, State and County Safety Laws.
- B. The Contractor shall during the performance of its work, protect at all times all adjacent portions of the existing surfaces and existing equipment from damage due to the performance of the construction work.
- C. The Contractor shall furnish temporary facilities and/or temporary dust-proof partitions separating all work areas and access routes from those areas not involved in active alterations, so that this work will not interfere with the Owner's access or normal use of areas not allocated to the Contractor, or any essential service to such areas, when ordered by the Construction Administrator.

47. CLEANUP AND REMOVAL OF DEBRIS

- A. At the end of each working day, the Contractor shall sweep up and collect all the rubbish and place it in appropriate containers, furnished by the Contractor. Containers shall be kept at a location on, or adjacent to the work site, as designated by the Construction Administrator. Wood or cardboard crates and other debris of a similar nature shall be broken up, securely bundled and neatly stacked alongside the containers. Once each week and at the completion of the work, the Contractor shall remove all accumulated debris and rubbish.
- B. At the completion of the work, the Contractor shall clean all equipment, fixtures, surfaces and accessories, removing all dust and other foreign matter, ready for use by the Owner.

48. TEMPORARY SERVICE

- A. Sanitary facilities will be provided by the Owner for the Contractor and its personnel.
- B. The Owner will supply and pay for the cost of all-temporary water and temporary electric power (120 volt, 60 hertz). The Contractor shall furnish and install all temporary electrical and water connections required for work under this Contract, at and to locations as designated by the Construction Administrator.

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49. OPERATING TESTS

- A. Where operating tests are specified the Contractor shall test the work as it progresses and shall make satisfactory preliminary tests in all cases before applying to the Engineer for official tests.
- B. Official tests will be made in the manner specified for the different branches of the work, in the presence of the Construction Administrator or Engineer. Should defects appear they shall be corrected by the Contractor and the test repeated until the installation is acceptable to the Construction Administrator or Engineer and to any authorities having jurisdiction.
- C. No work of any kind shall be covered or enclosed before it has been tested and approved.
- D. The Contractor shall furnish all materials and apparatus, make connections and conduct tests, without extra compensation unless noted otherwise.

50. OPERATING INSTRUCTIONS AND PARTS LISTS

- A. Where the Specifications require any Contractor to supply equipment operating and maintenance instructions and spare parts lists prior to the completion of the work it shall provide three copies of the publications for each piece of equipment he has furnished and installed under the Contract, upon receipt of the approved shop drawings.
- B. Publications shall be prepared for the specific equipment furnished and installed, containing the following information, and shall not refer to other sizes, types or models of similar equipment:
 - 1) Clear and concise instructions for the operation, adjustment, lubrication and other maintenance of the equipment, including a complete lubrication chart.
 - 2) A complete listing of all parts for the equipment, with catalog numbers and other data necessary for ordering replacement parts.
- C. Advertising literature will not be acceptable.

51. CUTTING AND PATCHING

Contract with Single Bid:

- A. Where the project does not involve separate bids pursuant to the New York General Municipal Law the following will apply:
 - 1) Where walls, floors, ceilings, roofs or other items require cutting for the installation of new work, all such cutting shall be done by the Contractor with the approval of the Construction Administrator; and the Contractor shall patch the opening to make the cut portions match the adjacent finished surfaces, unless otherwise indicated.
 - 2) The Contractor shall not endanger any existing condition by its operations.
 - 3) The cost of all cutting and patching caused by the Contractor's negligence shall be

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borne by the Contractor.

Contract with Separate Bids:

- B. If the project is one where separate bid specifications are required pursuant to the New York General Municipal Law the following will apply:
- 1) A sufficient time in advance of the construction of new floors, walls, ceilings, roofs, or other items, each Contractor shall be responsible for properly locating and providing in place all sleeves, inserts and forms required for their work, and shall furnish the Contractor for General Construction with complete information relative to exact locations and dimensions of all required openings in the General Contractor's work. Other Contractors shall periodically consult the Job Progress Chart of the General Contractor so that they will not be delayed by their work requirements, but the General Contractor shall be obliged to give all other Contractors at least seventy-two hours notice before commencing the previously mentioned new construction work.
 - 2) The cost shall be borne by the responsible Contractor for all cutting, patching, re-waterproofing and re-caulking of new work necessary for reception of the work of a Contractor, caused by the Contractor's failure to timely or properly locate and provide in place all sleeves, inserts and forms required for its own work, or by a Contractor's failure to inform the General Contractor of required openings. The General Contractor shall do all cutting, patching, re-waterproofing and re-caulking of all new work no matter how or by whom such work was caused and shall be reimbursed for such extra work by the responsible Contractor, in accordance with the terms of the Contract. All cutting and patching shall have prior approval of the Construction Administrator.
 - 3) Where sleeves, inserts, forms or openings are required in existing walls, floors, ceilings roofs, or other existing items, all necessary cutting, patching, re-waterproofing and re-caulking required shall be done by the individual responsible Contractor, except for finished surfaces. The responsible Contractor shall do all rough patching to bring the cut areas to the proper surface ready to receive the finished surface. All finishing work required to make the cut portions match the adjacent finished surfaces shall be performed by the General Contractor.
 - 4) Each Contractor shall be responsible for coordinating their work with the work of all other Contractors engaged on the project. If directed, Contractors shall submit coordinated shop drawings showing how the fitting of the various parts of the work will be accomplished, for the Construction Administrator's acceptance.
 - 5) All cutting and patching shall be governed by the applicable divisions of the Specifications with regard to workmanship, materials and methods.
 - 6) No Contractor shall endanger any work by unauthorized cutting, excavating, or other alteration of the work, unless previously authorized by the Construction Administrator.

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52. CONFLICTS AMONG CONTRACT DOCUMENTS

In the event of any conflict among the Contract Documents, the Contractor shall notify the Commissioner and comply with the Commissioner's interpretation, according to the following priorities:

<u>Priority Order</u>	<u>Document</u>
1.....	Modification issued after execution of Agreement
2.....	Agreement between Owner and Contractor
3.....	Addenda issued prior to the execution of the Agreement (Later date to take precedence)
4.....	Special Notices
5.....	Technical Specifications
6.....	Construction Drawings:
6A.....	Schedule on Construction Drawings
6B.....	Notes on Construction Drawings
6C.....	Large Scale Details on Construction Drawings
6D.....	Small Scale Details on Construction Drawings
7.....	General Requirements
8.....	Special Clauses
9.....	Information for Bidders and General Clauses

53. RECORD DRAWINGS

- A. The Owner shall furnish, at the first job meeting, one set of "paper" copies of the contract drawing(s) - this is in addition to the five sets of contract drawings as described in the Article "Contract Drawings" of the General Requirements; for the Contractor's use to indicate change(s) as they occur for the duration of the construction work. Upon request from the Contractor, the County will supply the Contractor a copy of the original Contract Drawings in AutoCAD format.
- B. The Contractor shall record neatly and legibly, using reasonable drafting care, all approved change(s) (including minor revisions or corrections of pipes, ducts, electric outlets, circuit panels and other features, as well as invert elevations and locations of underground lines).
- C. When all approved changes are recorded and clearly identified, the Contractor shall prepare a set of "as-built" (record) drawings, in the latest version of AutoCAD, using the approved County format and associated CAD layering guidelines, with 24" x 36" drawing sizes, showing the project as built including all changes in the work made during construction based on marked-up prints, drawings, and other data. These drawings shall be filed on a CD and submitted to the Construction Administrator.
- D. All additional "paper" or reproducible drawings are to be obtained by the Contractor at their own expense.

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54. TIME

- A. All time limits (see Article “Required Time For Completion Of The Work” of the General Requirements, and, Article “Time Of Starting” of the Information For Bidders) stated in the specifications are of the essence of the Contract.
- B. The Contractor may perform all necessary labor during other than normal working hours. The Owner imposes no limitation of the Contractor's working hours and whatever overtime work may be necessary or required shall be considered by the Contractor and reflected in its Bid Proposal without the benefit or extra compensation. The Contractor must give a minimum of four (4) hours notice to the Construction Administrator when overtime Work is necessary. The Contractor shall promptly pay to the County the additional cost of the Engineer and Construction Administrator for inspection services during the overtime Work.

55. ACCELERATION OF THE WORK

The Owner may, at its sole discretion and for any reason, require the Contractor to accelerate the schedule of performance by providing overtime, extended day, extra crews, Saturday, Sunday and/or holiday work and/or by having all or any subcontractors designated by the Owner provide overtime, extended day, extra crews, Saturday, Sunday or holiday work by the Contractor’s or his subcontractor’s own forces, and such requirements is independent of and not related in any way to any apparent inability of the Contractor to comply with the schedule(s), Milestone(s) and/or completion date requirements, the Owner, pursuant to a written change order as signed by the Commissioner shall reimburse the Contractor for the direct cost to the Contractor of the premium time for the labor utilized by the Contractor in such overtime, extended day, extra crews, Saturday, Sunday or holiday work (but not for the straight time costs of such labor) together with any social security and state or federal unemployment insurance taxes in connection with such premium time. However, no overhead, supervision costs, commissions, profit or other costs and expenses of any nature whatsoever, including impact costs or costs associated with lost efficiency or productivity, shall be payable in connection therewith. Anything to the foregoing notwithstanding, in the event that the Contractor has fallen behind schedule or in the Owner’s judgment appears likely to fall behind schedule, Owner shall have the absolute right to direct the Contractor to accelerate the performance of its work, including that of its subcontractors, and the full costs for such acceleration shall be borne solely by the Contractor.

56. ULTRA LOW SULFUR DIESEL FUEL

- A. Contractors and Subcontractors operating onroad and nonroad vehicles to perform County work must power those vehicles with ultra low sulfur diesel fuel. Ultra low sulfur diesel fuel is any diesel fuel that has a sulfur content of no more than fifteen parts per million.
- B. In addition, all onroad and nonroad diesel vehicles used to perform County work and equipped with a model year 2003 or older engine shall utilize the best available

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technology² in accordance with the following schedule:

- a) effective September 1, 2007 - 35% of all such motor vehicles used on this project;
 - b) effective September 1, 2008 - 65% of all such motor vehicles used on this project;
 - c) effective September 1, 2009 - 100% of all such motor vehicles used on this project.
- C. All onroad and nonroad diesel vehicles to perform County work having a gross vehicle weight rating of more than 14,000 pounds shall utilize the best available technology or be equipped with an engine certified to the applicable 2007 United States Environmental Protection Agency (“EPA”) standard for particulate matter as set forth in Section 86.007-11 of Title 40 of the Code of Federal Regulations or to any subsequent EPA standard for such pollutant that is at least as stringent, in accordance with the following schedule:
- a) by September 1, 2007 - 35% of all such motor vehicles;
 - b) by September 1, 2008 - 65% of all such motor vehicles;
 - c) by September 1, 2009 - 100% of all such motor vehicles
- D. Any contractor who violates any provision of Section 873.1329 shall be liable for a civil penalty not to exceed ten thousand dollars plus twice the amount of money saved by such contractor for failure to comply with this section.
- E. Any contractor who makes a false claim may be liable for a civil penalty not to exceed twenty thousand dollars, in addition to twice the amount of money saved by such contractor as a result of having made such false claim.
- F. Nothing in this section shall be construed to limit the County’s authority to cancel or terminate a contract, deny or withdraw approval to perform a subcontract or provide supplies, issue a non-responsibility finding, issue a non-responsiveness finding, deny a person or entity pre-qualification as a vendor, or otherwise deny a person or entity public entity business.
- G. If sufficient quantities of ultra low sulfur diesel fuel are not available to meet the needs of a contractor to fulfill the requirements of this contract, the Contractor may submit a written request to the Commissioner to use diesel fuel with a sulfur content of no more than thirty parts per million as long as the contractor shall use whatever quantity of ultra low sulfur diesel fuel that is available. Such determination shall be made in writing on a case by case basis upon written application to the Commissioner. If the Commissioner grants such authority it shall expire sixty days thereafter and may be renewed upon written request for additional periods of sixty days.

² Best Available Technology means a system for reducing the emission of pollutants which is based on technology verified by the U.S. Environmental protection Agency or the California Air Resources Board or which has been identified pursuant to NYC’s Department of Environmental Protection that (1) reduces diesel particulate matter emissions by at least 85 percent, as compared to a similar engine operating on traditional diesel fuel without emission control technology, or reduces engine emissions to 0.01 grams diesel particulate matter per brake horsepower per hour or less; and 2) achieves the greatest reduction in emissions of nitrogen oxides at a reasonable cost and in no case produces a net increase in nitrogen oxides in excess of 10%.

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H. The Contractor, in order to comply with Subsections B & C above, must retrofit its vehicles to include both of the following in order to comply with the Best Available Technology Requirements:

- Diesel Oxidation Catalysts (DOC)
- Crankcase Vent Filters (CVF)

If the Contractor wants to propose an alternative technology it must submit a written request to the Commissioner with sufficient detail to enable the Commissioner to make a determination as to whether to accept the alternative technology. Any approval of alternative technology must be in writing.

57. QUALIFIED TRANSPORTATION FRINGE PROGRAM

EXECUTIVE ORDER NO. 7-2005

Requires that contractors, concessionaires and vendors doing business with the County enroll in a Qualified Transportation Fringe Program as defined in §132(f)(1) of the IRS Tax Code for all contracts for goods or services of \$100,000 or more in any twelve month period during the contract term if such contractor, concessionaire or vendor employs more than 25 individuals who utilize public transportation and/or pay for commuter parking at least 1 day per week regardless of whether those employees are engaged in work pursuant to the contract.

Bidders shall submit the signed statement on Proposal Page 34. Notwithstanding the above, a Bidder may submit a Waiver Application on Proposal Page 35 to the Commissioner.

58. USE OF FLUORESCENT LIGHT BULBS & ENERGY EFFICIENT BULBS

The use of incandescent light bulbs is prohibited in County-owned buildings and facilities. Only fluorescent light bulbs may be installed in County buildings and facilities. Exterior lights must utilize energy-efficient bulbs. For further details see Article 58 of the General Clauses.

59. COUNTY OF WESTCHESTER PHOSPHORUS-FREE LAWN FERTILIZER POLICY

Executive Order 8-2007 limits the use of lawn fertilizers containing phosphorous and other compounds containing phosphorous, such as phosphate on County owned property.

EXECUTIVE ORDER NO.8 OF 2007

WHEREAS, the New York City water supply watershed is a critical drinking water source for approximately eight million New York City consumers and approximately one million upstate consumers. Over eighty-five percent (85%) of Westchester County's residents consume water from the New York City water supply system; and

WHEREAS, eutrophication is a natural aging process of lakes or streams brought on by

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nutrient enrichment. Eutrophication can be greatly accelerated by human activities that increase the rate at which nutrients and organic substances enter aquatic ecosystems from their surrounding watersheds; and

WHEREAS, as a result of accelerated eutrophication, enhanced plant growth reduces dissolved oxygen in the water creating severely impaired water bodies with unpleasant water taste and odor, discoloration, release of toxins and increased turbidity that interferes with the health and diversity of indigenous fish, plant, and animal populations and with the recreational use of rivers, lakes and wetlands. Consequently, eutrophication restricts water use for fisheries, recreation, industry, and drinking due to the increased growth of undesirable algae and aquatic weeds and the oxygen shortages caused by their death and decomposition; and

WHEREAS, nutrient pollution due to human activities is one of the leading causes of eutrophication in the NYC Watershed, and is specifically accelerated by the introduction of excessive phosphorus into the environment. In fact, most reservoirs in the East of Hudson portion of the New York City Watershed (5 of the 7 located in Westchester County) are designated as phosphorous-restricted basins in accordance with the New York City Watershed Rules & Regulations due to excessive phosphorous volumes which have not been reduced despite phosphorous reductions mandated by the New York State Department of Environmental Conservation (NYSDEC); and

WHEREAS, one unnecessary source of phosphorus pollution in the watershed is the many pounds of lawn fertilizer applied by residents and businesses in the County of Westchester each year; and

WHEREAS, when phosphorus fertilizer is applied to phosphorus-rich lawns, much of the excess simply runs off of the lawn into the storm drainage systems where it can be carried into rivers, lakes, streams, and wetlands, causing eutrophication; and

WHEREAS, soil tests conducted pursuant to a six-year study by the Cornell Cooperative Extension, an extension of the State's designated Land-Grant University, have shown that approximately 90% of the lawns in Westchester County have medium-to-high levels of phosphorus; and

WHEREAS, the New York City Watershed Pesticide and Fertilizer Technical Working Group, established by the New York City Watershed Memorandum of Agreement, issued a report in 2000, noting the high percentage of phosphorus in regional soils and recommending that phosphorus-based lawn fertilizers be added only when a soil analysis identifies phosphorus deficiencies.

WHEREAS, the proposed Stormwater Phase II regulations recently issued by the New York State Department of Environmental Conservation, and which are expected to go into effect in January of 2008, will allow the use of phosphorus-based lawn fertilizers on municipally-owned land only where soil testing indicates that phosphorus concentrations are inadequate, in order to ensure that municipalities in the New York City Watershed are

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taking satisfactory steps to achieve the above-referenced mandatory phosphorous reductions.

WHEREAS, the United States Environmental Protection Agency has also determined that a Nonpoint Source Implementation Plan was necessary in the Croton Watershed because the phosphorus reductions necessary to meet the targeted applicable water quality standards could not be achieved by wastewater treatment plant upgrades alone; and

WHEREAS, Section 110.11 of the Laws of Westchester County places the responsibility to supervise, direct and control, subject to law, the administrative services and departments of the county, upon the County Executive; and

WHEREAS, I have determined that restricting the application and use of lawn fertilizer containing phosphorus on all County-owned property will address one source of unnecessary and preventable phosphorus pollution and will improve water quality in the County; and

WHEREAS, the Department of Planning, after review of the applicable regulations under the State Environmental Quality Review Act, has advised that this Executive Order has been classified as a Type II action, pursuant to 6 N.Y.C.R.R. § 617.5(c)(20), “routine or continuing agency administration and management, not including new programs or major reordering of priorities that may affect the environment,” and 6 N.Y.C.R.R. § 617.5(c)(27), “adoption of regulations, policies, procedures and local legislative decisions in connection with any action on this list.” As such, no further environmental review is required.

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NOW THEREFORE, I, _____, County Executive of the County of Westchester, in light of the aforementioned, do hereby order and direct each and every department, board, agency, and commission of the County of Westchester under my jurisdiction to ensure that the policies and procedures set forth in the following Phosphorus-Free Lawn Fertilizer Policy are complied with.

COUNTY OF WESTCHESTER
PHOSPHORUS- FREE LAWN FERTILIZER POLICY

I. Definitions:

(1) "Certified laboratory" means any laboratory certified by the New York State Department of Health pursuant to section five hundred two of the New York State Public Health Law to conduct soil analysis.

(2) "Commercial fertilizer" means any substances containing one or more recognized plant nutrients which is used for its plant nutrient content, and which is designed for use or claimed to have value in promoting plant growth, except unmanipulated animal or vegetable manures, agricultural liming material, wood ashes, gypsum and other products exempted by regulation of the New York State Commissioner of Agriculture and Markets.

(3) "Lawn fertilizer" means a commercial fertilizer distributed primarily for non-farm use, such as lawns, shrubbery, flowers, golf courses, municipal parks, cemeteries, greenhouses and nurseries, and such other use as the commissioner may define by regulation. Lawn fertilizer does not include fertilizer products intended primarily for garden and indoor plant application.

II. Use and Application of Lawn Fertilizer:

(1) Any lawn fertilizer that is labeled as containing more than 0% phosphorus or other compound containing phosphorus, such as phosphate, shall not be applied upon any County-owned property, except as provided in section III. Of this Executive Order.

(2) No lawn fertilizer shall be applied upon County-owned property when the ground is frozen.

(3) Lawn fertilizer shall not be applied to any impervious surface upon County-owned property, including parking lots, roadways, and sidewalks. If such application occurs, the fertilizer must be immediately contained and either applied to turf in a manner consistent with this Executive Order or placed in an appropriate container.

III. Exemptions:

The prohibition against the use of lawn fertilizer under section II of this Executive Order shall not apply to:

GENERAL CLAUSES

(1) Newly established turf or lawn areas during their first growing season.

(2) Turf or lawn areas that soil tests, performed within the past three years by a certified laboratory or by the Cornell University Cooperative Extension of Westchester County, confirm the need for additional phosphorus application in accordance with the phosphorus levels established by the Cornell University Cooperative Extension of Westchester County. The lawn fertilizer application shall not contain an amount of phosphorus exceeding the amount and rate of application recommended in the soil test evaluation.

(3) Agricultural uses, vegetable and flower gardens, or application to trees or shrubs.

IV. The transition to phosphorus-free lawn fertilizer shall occur as soon as possible in a manner that avoids wasting of existing inventories; accommodates establishment of supply chains for new products; enables the training of County employees and licensees in appropriate work methods; and allows the phase-out of products and practices inconsistent with this Executive Order. However, in no event shall lawn fertilizer containing phosphorus (i.e., labeled as containing more than 0% phosphorus or other compound containing phosphorus, such as phosphate) be applied upon County-owned property after January 1, 2009, unless an exemption set forth in Section III of this Executive Order applies.

V. This Executive Order shall take effect on the date hereof, and shall remain in effect until otherwise superseded, repealed, modified or revoked.



SAMPLE FORMS

DEPARTMENT OF PUBLIC WORKS

Division of Engineering

SAMPLE FORMS

AFFIRMATIVE ACTION PROGRAM REQUIREMENT- SUBCONTRACTOR(S)

County of Westchester, Department of Public Works

(To Be Completed By Subcontractor and Submitted with Request to Utilize Subcontractor)

Affirmative Action Program

An approved Affirmative Action Plan shall be required for all Subcontractors for public work where the subcontracted work exceeds \$50,000 or more than fourteen (14) persons are employed by the Subcontractor.

Does the Subcontractor participate in an approved Affirmative Action Program? Yes [] No []

If Yes, give name of Program: _____

If No, how many employees will the Subcontractor employ on this project? _____

An approved Affirmative Action Program shall mean a plan approved or adopted by Westchester County including but not limited to, the Home-Town Plan, the Recruitment Training Program or any other program approved or meeting the requirements of the State or Federal government.

The "Monthly Employment Utilization Report" of the Sample Forms, shall be filled out by the Contractor and/or Subcontractor(s) who are required to have an Affirmative Action Program, prior to the start of the work.

SAMPLE FORMS

CONTRACTOR'S REPORT OF EMPLOYMENT AND WEEKLY AFFIDAVIT

County of Westchester, Department of Public Works

Contract No. _____

Report No. _____

Week(s) ending _____

Title of Contract and Location _____

Contractor or Subcontractor _____

Address _____

STATE OF _____)
COUNTY OF _____) SS.:

I, _____, being duly sworn, depose and say:

1. I pay or supervise the payment of the persons employed by _____
(Contractor or Subcontractor)

in connection with the above referenced contract;

2. During the payment period commencing on the ____ day of _____,
20____ and ending on the _____ day of _____, 20____, all persons employed by
_____ in connection with such contract have been paid in full
(Contractor or Subcontractor)

weekly wages and supplements earned by such persons except the following: (strikeout, if not applicable)

3. Such persons have been paid the prevailing rate of wages and the supplements as determined and required by Section 220 of the New York State Labor Law.

SAMPLE FORMS

4. No rebates or deductions have been deducted from such wages and supplements except as authorized or required by applicable statutes or regulations of the Federal, State and County Governments.

5. The following is a true and accurate summary of wages and supplements paid:

_____ During the week _____ Total to date

Number of names on payroll _____

Hours worked _____

Total wages earned _____

6. I have read the foregoing statement of wages and supplement, know the contents thereof, and the same is true to my own knowledge.

(Signature)

STATE OF NEW YORK)
COUNTY OF WESTCHESTER) ss.:

On this _____ day of _____, 20___, before me personally came _____ to me known, and known to me to be the person who executed the above instrument, and who being duly sworn did say that he executed the same.

Sworn to before me
this _____ day of _____

License No.

Notary Public - State of New York

SAMPLE FORMS

MONTHLY EMPLOYMENT UTILIZATION REPORT
County of Westchester, Department of Public Works

<u>MONTHLY EMPLOYMENT UTILIZATION REPORT</u>										CONTRACT NO.:	
WESTCHESTER COUNTY DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING										REPORTING PERIOD: FROM: _____ TO: _____	
JOB TITLE:										TOTAL NUMBER OF EMPLOYEES	
NAME AND LOCATION OF CONTRACTOR:											
CONSTRUCTION TRADE	CLASSIFICATION	TOTAL ALL EMPLOYEES BY TRADE						MINORITY PERCENTAGE %	FEMALE PERCENTAGE %	TOTAL NUMBER OF EMPLOYEES	
		M	HRS	F	HRS	M	F			M	F
	JOURNEY WORKER										
	APPRENTICE										
	TRAINEE										
	SUB-TOTAL										
	JOURNEY WORKER										
	APPRENTICE										
	TRAINEE										
	SUB-TOTAL										
	JOURNEY WORKER										
	APPRENTICE										
	TRAINEE										
	SUB-TOTAL										
	JOURNEY WORKER										
	APPRENTICE										
	TRAINEE										
	SUB-TOTAL										
	TOTAL JOURNEY WORKER										
	TOTAL APPRENTICES										
TOTAL TRAINEES											
GRAND TOTAL (#HRS & #EMPL)											
COMPANY OFFICIAL'S SIGNATURE AND TITLE:										DATE SIGNED:	
TELEPHONE NUMBER (Include Area Code):										PAGE: _____ OF _____	

This report must be filled out by all contractors (both prime and sub) who are required to have an Affirmative Action Program, and must be filed with the Engineer by the 5th day of each month during the term of the Contract, and shall include the total work hours of each employee classification in each trade in the covered area for the Monthly Reporting Period. The Prime Contractor shall submit a report for its Aggregate Work Force and collect and submit reports for each subcontractor's Aggregate Work Force to the Engineer.

SAMPLE FORMS

SHOP DRAWING SCHEDULE
County of Westchester, Department of Public Works

SHOP DRAWING SCHEDULE											
SPECIFICATION NUMBER	DESCRIPTION OF ITEM/MODEL #	SUBMISSION	REQUEST FROM CONTRACTOR TO MANUFACTURER	RECEIVED BY CONTRACTOR FROM MANUFACTURER	RECEIVED BY COUNTY FROM CONTRACTOR	RETURNED BY COUNTY TO CONTRACTOR	RETURNED BY CONTRACTOR TO MANUFACTURER	APPROVED BY COUNTY	APPROVED SHOP DRAWING MANAGER FROM CONTRACTOR	INVOICE NO. AND SCHEDULED DELIVERY DATE	ACTUAL DELIVERY DATE
		ORIGINAL									
		2									
		3									
		4									
		ORIGINAL									
		2									
		3									
		4									
		ORIGINAL									
		2									
		3									
		4									
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		2									
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		4									
		ORIGINAL									
		2									
		3									
		4									

SAMPLE FORMS

SHOP DRAWING ID

County of Westchester, Department of Public Works

WESTCHESTER COUNTY DRAWING _____ OF _____

NAME OF PROJECT

Date _____

Contract No. _____

Item/Model No. _____

Manufacturer _____

Contract Drawing No. _____

Specification Section _____

This document has been reviewed, coordinated and checked for accuracy of content and for compliance with the Contract Documents. The information contained herein has been coordinated with all other Contract Work.

Contractor _____

Signed _____

SAMPLE FORMS

CONTRACTOR'S ULTRA LOW SULFUR DIESEL FUEL AFFIDAVIT

County of Westchester, Department of Public Works

Contract No. _____ Period Included in this Report: _____, 20__ to _____, 20__

Title of Contract and Location _____

Contractor _____

Address _____

Subcontractor _____

Address _____

STATE OF _____) ss.:
COUNTY OF _____)

I, _____ being duly sworn, depose and say:
(print name) (print title)

1. I certify under penalty of perjury that I agree to comply with the requirements of Chapter 878, Article XIII, Section 873.13.29 of the Laws of Westchester County.
2. During the period _____ through _____, all diesel-powered vehicles, used in the performance of Contract No. _____, were powered by ultra low sulfur diesel fuel (15 ppm Sulfur Maximum).
3. No fuel other than Ultra Low Sulfur Diesel Fuel (15 ppm Sulfur Maximum) was utilized on this project for the above described vehicles.
4. The annexed Ultra Low Sulfur Diesel Fuel Log is a true and accurate summary of the low sulfur diesel fuel (15 ppm Sulfur Maximum) purchased and utilized in the performance of this project.
5. I have read the foregoing statement, have full knowledge of the contents thereof, and it is my intent that the County of Westchester will rely on the statements contained herein.

(Signature)

STATE OF _____) ss.:
COUNTY OF _____)

On this _____ day of _____, 20__, before me personally came _____ to me known, and known to me to be the person who executed the above instrument, and who being duly sworn did say that he/she executed the same.

Sworn to before me this
_____ day of _____, 20__.

Notary Public

The Ultra Low Sulfur Diesel Fuel-Log must be attached.

This Certification also has to be submitted by your subcontractor(s). *Additional copies of this form can be acquired from the Department of Public Work.*

- New
 Change
 No Change

Electronic Funds Transfer (EFT) Vendor Direct Payment Authorization Form

INSTRUCTIONS: Please complete both sections of this Authorization form and attach a voided check. See the reverse for more information and instructions (Forms Page 21). If you previously submitted this form and there is no change to the information previously submitted, **ONLY** complete lines 1 through 6 of section 1.

Section I - Vendor Information

1. Vendor Name:

2. Taxpayer ID Number or Social Security Number:

--	--	--	--	--	--	--	--	--	--

3. Vendor Primary Address

4. Contact Person Name:

Contact Person Telephone Number:

5. Vendor E-Mail Addresses for Remittance Notification:

6. Vendor Certification: *I have read and understand the Vendor Direct Payment Program and hereby authorize payments to be received by electronic funds transfer into the bank that I designate in Section II. I further understand that in the event that an erroneous electronic payment is sent, Westchester County reserves the right to reverse the electronic payment. In the event that a reversal cannot be implemented, Westchester County will utilize any other lawful means to retrieve payments to which the payee was not entitled.*

Authorized Signature

Print Name/Title

Date

Section II- Financial Institution Information

7. Bank Name:

8. Bank Address:

9. Routing Transit Number:

--	--	--	--	--	--	--	--	--	--

10. Account Type:
(check one)

Checking

Savings

11. Bank Account Number:

12. Bank Account Title:

13. Bank Contact Person Name:

Telephone Number:

14. FINANCIAL INSTITUTION CERTIFICATION (required **ONLY** if directing funds into a Savings Account **OR** if a voided check is not attached to this form): *I certify that the account number and type of account is maintained in the name of the vendor named above. As a representative of the named financial Institution, I certify that this financial Institution is ACH capable and agrees to receive and deposit payments to the account shown.*

Authorized Signature

Print Name / Title

Date

**(Leave Blank - to be completed by
Westchester County) - Vendor number assigned**

--	--	--	--	--	--	--	--	--	--

Electronic Funds Transfer (EFT) Vendor Direct Payment Authorization Form

GENERAL INSTRUCTIONS

Please complete both sections of the Vendor Direct Payment Authorization Form and forward the completed form (along with a voided check for the account to which you want your payments credited) to: Westchester County Board of Acquisition and Contract, 148 Martine Ave, Room 104, White Plains, NY 10601, Attention: Vendor Direct. Please see item 14 below regarding attachment of a voided check.

Section I - VENDOR INFORMATION

1. Provide the name of the vendor as it appears on the W-9 form.
2. Enter the vendor's Taxpayer ID number or Social Security Number as it appears on the W-9 form.
3. Enter the vendor's complete primary address (not a P.O. Box).
4. Provide the name and telephone number of the vendor's contact person.
5. Enter the business e-mail address for the remittance notification. THIS IS VERY IMPORTANT. This is the e-mail address that we will use to send you notification and remittance information two days prior to the payment being credited to your bank account. We suggest that you provide a group mailbox (if applicable) for your e-mail address. You may also designate multiple e-mail addresses.
6. Please have an authorized Payee/Company official sign and date the form and include his/her title.

Section II - FINANCIAL INSTITUTION INFORMATION

7. Provide bank's name.
8. Provide the complete address of your bank.
9. Enter your bank's 9 digit routing transit number.
10. Indicate the type of account (check one box only).
11. Enter the vendor's bank account number.
12. Enter the title of the vendor's account.
13. Provide the name and telephone number of your bank contact person.
14. If you are directing your payments to a Savings Account OR you can not attach a voided check for your checking account, this line needs to be completed and signed by an authorized bank official. IF YOU DO ATTACH A VOIDED CHECK FOR A CHECKING ACCOUNT, YOU MAY LEAVE THIS LINE BLANK.



SAMPLE CONTRACT AND BOND
FOR CONSTRUCTION

DEPARTMENT OF PUBLIC WORKS

Division of Engineering

WESTCHESTERGOV . COM

**DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

CONTRACT AND BOND

FOR CONTRACT

NOTE: ONLY PROVIDED AS A SAMPLE IN THESE SPECIFICATIONS FOR INFORMATIONAL PURPOSES AND NOT TO BE EXECUTED WHEN SUBMITTING THE BID PROPOSAL. THE SUCCESSFUL BIDDER WILL BE REQUIRED TO EXECUTE THESE DOCUMENTS, AS MORE FULLY DESCRIBED IN THE PROPOSAL REQUIREMENTS.

CONTRACT NO.

Amount of Contract \$

THIS AGREEMENT made this ____ day of _____, 200__, by and between the COUNTY OF WESTCHESTER, a municipal corporation of the State of New York, hereinafter, "County", and

hereinafter called the "Contractor", WITNESSETH as follows:

WHEREAS, the Commissioner of Public Works, hereinafter called "Commissioner", by virtue of the power and authority in him vested did advertise for proposals and bids for:

Westchester County, New York, to furnish all labor, tools, implements and materials that may be requisite and necessary to the execution and completion of the work according to the plans, specifications, profiles and other drawings relating to such work, as approved by the County of Westchester and now on file in the Office of the Commissioner, and

WHEREAS, the Contractor did bid for said work in the manner and form as required by said plans and specifications and, being the lowest responsible bidder therefore, was duly awarded the Contract for such work at prices named in the itemized proposal by a resolution of the Board of Acquisition and Contract of the said County of Westchester.

NOW THEREFORE, the Contractor, in consideration of the prices so named for the various items of work to be paid for as hereinafter provided, does for itself, its representatives, agents, executors, administrators, successors or assigns, covenant and agree with the County that it, the said Contractor, shall and will at its own proper costs and charges and in conformity with said plans and specifications which are made a part of this Contract without setting forth same herein, provide all manner and kind of materials, molds, models, cartage, appliances and appurtenances required and of every description necessary for the due and proper performance of this Contract and the completion of said work to be done under the supervision and direction of the Commissioner, in a good workmanlike manner and in conformity with said plans and specifications without any alteration, deviation, additions, or omissions therefrom except upon due request and under the written direction of said Commissioner.

The Contractor acknowledges receipt of the "Information for Bidders, General and Special Clauses, Specification, Proposal and Plans" relating to this Contract, as well as all issued Addenda thereto, all of which are expressly incorporated in this Contract as if fully set forth herein.

IT IS FURTHER UNDERSTOOD AND AGREED by and between the parties to this Contract that if in the opinion of the said Commissioner of the County of Westchester it shall become necessary to make any change in the work called by the plans and specifications which are a part of this Contract, whereby, consistent with the Information for Bidders, the work contemplated by said plans and specifications is modified and reduced and the costs and expenses of such work lessened, that then and in that event the Contractor will do the work as changed and modified and the said Commissioner shall estimate the difference between the original estimate of quantities therefor and the amount that should be paid by reason of the modification and change and the difference shall be deducted from the original estimate of quantities therefore of said Contract and said Contractor shall be paid accordingly. The estimate of said Commissioner shall be final and conclusive upon the parties hereto and may not be challenged except in a proceeding commenced pursuant to Article 78 of the Civil Practice Law and Rules. Any changes, modifications or deductions shall in no way invalidate this Contract and said Contractor agrees that in the event of any such change or modification reducing the original, estimated quantities therefore, it will not make any claim for any profit, or loss of profit by reason thereof. Notwithstanding any dispute or disagreement arising hereunder, Contractor agrees that the Work shall not be delayed nor disrupted by reason thereof.

The County hereby covenants and agrees with the said Contractor, in consideration of the covenants and agreements herein being strictly and in all respects complied with by the said Contractor as specified, that it will well and truly pay unto the said Contractor the unit prices set forth in the Proposal for the various items included in the Contract.

All partial payments will be made in accordance with the provisions set forth in the "Information for Bidders" and especially that part thereof which relates to "Estimates and Payments".

Furthermore, all partial payments will be made on the claim voucher and verified certificate of the Commissioner, both of which shall be filed in the Office of the Commissioner of Finance of the County of Westchester. The said claim voucher shall show the value of the work completed and the verified certificate shall show the said work was done in accordance with the plans and specifications.

With the final estimate the Contractor shall furnish to the Construction Administrator a sworn statement listing all unpaid bills and liabilities incurred under this Contract up to and including the date of the estimate. Where there are any bills or liabilities in excess of moneys due under any estimate under this Contract, the Construction Administrator may withhold payment of the estimate pending a satisfactory proof of settlement or adjustment of any excess claims. No final estimate will be approved or passed for payment unless and until the Contractor furnishes satisfactory proof that all bills and liabilities incurred under the Contract are paid in full and complies with the requirements of Section 220-a of the Labor Law.

Acceptance shall be effected as follows: whenever, in the opinion of the Commissioner, the Contractor shall have completely performed the Contract on his part to be performed, the Commissioner shall so certify in writing to the Board of Acquisition and Contract of the County and file such certificate with the said Board, stating therein, in substance that the work has been duly examined by him and that the same has been fully performed and completed in accordance

with the terms of the Contract therefor, and recommending the acceptance thereof. When the Board of Acquisition and Contract by resolution duly adopts, approves and ratifies, the said acceptance shall be complete. No final payment shall be made under this Contract until such certificate of completion and recommendation of acceptance have been approved and ratified by a resolution of said Board of Acquisition and Contract.

Unless otherwise provided for in the contract documents, the Commissioner may take over, use, occupy or operate any part of the Work at any time prior to Final Acceptance upon written notification to the Contractor. The Engineer shall inspect the part of the Work to be taken over, used, occupied or operated, and will furnish the Contractor with a written statement of the Work, if any, that remains to be performed on such part. The Contractor shall not object to, nor interfere with, the Commissioner's decision to exercise the rights granted herein. In the event the Commissioner takes over, uses, occupies or operates any part of the work: (i) the Commissioner shall issue a written determination of Substantial Completion with respect to such part of the Work; and (ii) the Contractor shall be relieved of its absolute obligation to protect such part of the unfinished work in accordance with Article 20 of the General Clauses.

The Commissioner will approve a final estimate for final payment consistent with the authorization of final acceptance from the Board of Acquisition and Contract less previous payments and any and all deductions authorized to be made by the Commissioner under the Contract or law. Payment pursuant to such final estimate less any additional deductions authorized to be made by the Commissioner of Finance under the Contract or law shall constitute the final payment and shall be made by the Commissioner of Finance. If the contract is terminated prior to final acceptance the Commissioner is authorized to prepare a final payment as otherwise authorized by the Board of Acquisition and Contract subject to the above noted adjustments.

Upon the completion and acceptance of this Contract by the Board of Acquisition and Contract, as aforesaid, the Commissioner shall proceed with all reasonable diligence to ascertain from actual measurements the whole amount of work done by the Contractor, and also the value of such work under and according to the terms of this Contract, and thereupon make out in writing a final estimate therefor.

After the completion and acceptance as herein above-mentioned, the Commissioner of Public Works shall file with the Commissioner of Finance of the County of Westchester the original verified certificate, claim voucher and the certification required by Section 220-a of the Labor Law, together with a certified copy of the resolution of approval and ratification of the Board of Acquisition and Contract of the said verified certificate and claim voucher and the resolution of acceptance of completion.

IT IS FURTHER UNDERSTOOD AND AGREED by and between the parties to this Contract that the Contractor will accept the unit prices named in the proposal for all additions to or deductions from the original quantities as given in the specifications. It is agreed that the Commissioner will make estimates of the value for the work completed as provided in the specifications and the final estimate will be made accordingly.

The Contractor further agrees that if at any time before or within thirty days after the whole of the work herein agreed to be performed has been completed and accepted any person or persons claiming to have performed any labor or furnished any material towards the performance and completion of this contract shall file with the proper officials any such notice as is described in the Lien Law, or any other act of the Legislature of the State of New York, the Contractor shall cause such Lien to be discharged of record. Otherwise and in every case and until the Lien is discharge of record the County shall retain, anything herein to the contrary notwithstanding, from the moneys under its control and due or to grow due under this Contract the sum of one hundred fifty (150%) percent of the amount of such Lien, unless otherwise authorized to withhold a larger amount. The Contractor further agrees to pay the County upon demand the costs, including but not limited to attorney's fees, incurred by the County in any action(s) brought to foreclose or otherwise enforce said Lien.

The Contractor covenants and agrees to commence the work embraced in this Contract within Ten [10] calendar days after service upon him, by the Commissioner, of written notice instructing him to begin the work and shall complete the same in all respects within _____ consecutive calendar days computed from the date of such Notice to Commence.

It is further understood and agreed by the parties hereto that the time of completion is of the essence of this Contract.

It is further understood and agreed by the Contractor that before entering upon the performance of this Contract it shall have approved by the County Attorney the Bond required to be furnished by it in the sum of-----
[\$ _____] conditioned for the faithful performance of the work.

The Contractor hereby covenants and agrees to observe the plans, specifications and directions of the Commissioner in the doing of the work provided for under this Contract and to furnish the necessary materials and implements required therefore and to remove condemned material and rubbish as provided by plans and specifications and to employ a competent and sufficient force of workmen to complete the work of this improvement within the time specified. Should the Contractor at any time become insolvent, make an assignment for the benefit of creditors, abandon the Work, reduce its working force to a number which, if maintained, would be insufficient, in the sole opinion of the Commissioner, to complete the Work in accordance with the approved progress schedule; sublet, assign or otherwise dispose of this Contract other than as permitted elsewhere herein, refuse or neglect to supply a sufficiency of properly skilled workmen, or of material of the proper quantity or fail in any respect to prosecute the work with promptness and diligence, or fail in any other way in the performance of any of the agreements herein contained; all the foregoing being deemed acts of default, and such default being certified by the Commissioner, the County of Westchester, acting by the Board of Acquisition and Contract, shall be at liberty after five days written notice to the Contractor to provide any such labor or materials, use any and all sums due or to become due to the Contractor under this Contract, to pay for such labor and material, and if the Commissioner shall certify that such default is sufficient ground for such action, the County of Westchester acting by the Board of Acquisition and Contract, shall also be at liberty to terminate the employment of the Contractor for the said work and to enter upon the premises and take possession for the purpose of completing the work included under this Contract of all materials, tools and appliances thereon

and to employ any other person or persons to finish the work and provide the materials therefore. Upon the Contractor's receipt of a notice from the County the Contractor shall immediately discontinue all further operations under this Contract. In case of such termination, the Contractor shall not be entitled to receive any further payment under this Contract until the said work shall be wholly finished, at which time if the unpaid balance of the amount to be paid under this Contract shall exceed the reasonable value of the work performed and the material furnished or the total costs therefor, whichever is greater, in finishing the work, such excess shall be paid by the County of Westchester to the Contractor, but if such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the County.

The expense incurred by the County and the total costs as herein provided either for furnishing materials or for finishing the work and any damage incurred through such default shall be certified by the Commissioner whose certificate thereof shall be final and conclusive upon the parties and may not be challenged except in a proceeding commenced pursuant to Article 78 of the Civil Practice Law and Rules.

In case the County shall declare the Contractor in default as to a part of the work only, the Contractor shall immediately discontinue such part, shall continue performing the remainder of the Work in strict conformity with the terms of the Contract.

In completing the whole or any part of the Work under the provisions of this Contract, the Commissioner shall have the power to depart from or change or vary the terms and provisions of this Contract. Such departure, change or variation, even to the extent of accepting a lesser or different performance, shall not affect the conclusiveness of the Commissioner's certification of the cost of completion referred to above, nor shall it constitute a defense to an action to recover the amount by which such certificate exceeds the amount which would have been payable to the Contractor hereunder but for his default or partial default.

In addition to termination as provided for above, the County may terminate this Contract for the convenience of the County by written notice to the Contractor from the Commissioner. In such event and upon receipt of such notice the Contractor shall stop work on the date specified in the notice; take such actions as may be necessary to protect and preserve the County's materials and property; cancel all cancelable orders for material and equipment; assign to the County and deliver to the jobsite or any other location designated by the Commissioner any non-cancelable orders for material and equipment that is not capable of use except in the performance of this Contract and which has been specifically fabricated for the sole purpose of this Contract and not incorporated in the Work; and take no action that will increase the amounts payable by the County under this Contract.

In the event the contract is cancelled for the convenience of the County the following provisions shall apply:

- (a) For Work completed prior to the notice of termination, the Contractor shall be paid the fair and reasonable value of its work determined by the pro rata portion of the lump sum bid amount based upon the percent completion of the Work as of the date of termination as determined by the Commissioner, plus work completed pursuant to approved change orders, less amounts

previously paid. For purposes of determining the pro rata portion of the lump sum bid amount to which the Contractor is entitled, the Contractor's approved bid breakdown pursuant to Article 21 of the Information for Bidders shall be considered but shall not be dispositive as to the fair and reasonable value.

- (b) For non-cancelable material and equipment that is not capable of use except in the performance of this Contract and which has been specifically fabricated for the sole purpose of this Contract, but not yet incorporated in the Work, the Contractor shall be paid the fair and reasonable value thereof as determined by the Commissioner, but not more than the Contractor's cost for such material and equipment, plus an additional sum of two (2%) percent of such fair and reasonable value.
- (c) In the event the County terminates a lump sum Contract for convenience within thirty (30) days after the Contractor has received the Notice of Award from the County, the Contractor shall be paid one (1%) percent of the difference between the total lump sum bid amount and the total of all payments made prior to the notice of termination plus all payments allowed pursuant to (a) and (b).
- (d) On all unit price Contracts, or on unit price items in a Contract, the County will pay the Contractor the sum of (e) and (f) below, less all payments previously made pursuant to this Contract:
- (e) For all completed units, the unit price stated in the Contract, and
- (f) For units that have been ordered but are only partially completed, the Contractor will be paid (i) a pro rata portion of the unit price as stated in the Contract based upon the percent completion of the unit as determined by the Commissioner and (ii) for non-cancelable material and equipment, payment will be made pursuant to (b), above.
- (g) The Commissioner's determination(s) hereunder shall be final, binding and conclusive and subject to review only pursuant to Article 78 of the New York Civil Practice Law and Rules.
- (h) The County shall not be liable to the Contractor for any payment or claim if the termination for convenience results in a reduction of thirty (30%) percent or less of the original contract price as bid.

On all Contracts or items in a Contract where time and material records are specified as the basis for payment of the Work, the Contractor shall be paid in accordance with Article 29 of the General Clauses, less all payments previously made pursuant to this Contract.

In no event shall any payments made pursuant to a termination for convenience exceed the Contract price for such items, either individually or collectively.

All payments made pursuant to a termination for convenience shall be in the nature of liquidated damages and shall be accepted by the Contractor in full satisfaction of all claims against the County.

The County may deduct or set off against any sums due and payable arising from a termination for convenience, any claims it may have against the Contractor.

In the event the County terminates the Contractor for default and it is subsequently determined that the Contractor was not in default, said termination shall automatically be converted for all purposes into a termination for convenience.

It is further understood and agreed between the parties hereto that no certificate given or payment made under this Contract, except the final certificate or final payment shall be conclusive evidence of the performance of this Contract either wholly or in part and that no payment shall be construed to be an acceptance of defective work or improper materials. If the Contractor shall fail to replace any defective work or materials, the County may cause such defective materials to be removed and defective work to be replaced and the expense thereof shall be deducted from the amount to be paid the Contractor.

Anything to the contrary in the preceding paragraph notwithstanding, the Contractor is responsible for the repair of defects in materials and workmanship for a period of one year from the date of final acceptance of the work by the Board of Acquisition and Contract, unless a longer term is specified in the specifications.

The Contractor further agrees not to assign, transfer, convey, sublet or otherwise dispose of this Contract, or its right, title or interest in or to the same, or any part hereof without the previous consent in writing of the Board of Acquisition and Contract of the County. Before a Subcontractor shall proceed with any work, the Commissioner must first recommend and the Board of Acquisition and Contract must approve the use of the Subcontractor on this Contract. If a Subcontractor is not approved it may not work on this Contract. The Contractor specifically waives any claim due to the failure or refusal of the Commissioner or the Board of Acquisition and Contract to approve said Subcontractor.

The Contractor agrees to hold himself responsible for any claims made against the County for any infringement of patents by the use of patented articles in the construction and completion of the work or any process connected with the work agreed to be performed under this Contract or of any material used upon the said work, and shall indemnify and save harmless the County for the costs, expenses and damages which the County may be obligated to pay by reason of any infringement of patents used in the construction and completion of the work.

The parties hereto agree that no laborer, workman or mechanic in the employ of the Contractor, Subcontractor or other person doing or contracting to do the whole or part of the work contemplated by the Contract shall be permitted or required to work more than eight hours in any one calendar day or more than five days in any one week except in cases of extraordinary emergency including fire, flood or danger to life or property. No such person shall be so employed more than eight hours in any day or more than five days in any one week except in such emergency. Time lost in any week because of inclement weather by employees engaged in

the construction, reconstruction and maintenance of highways outside of the limits of cities and villages may be made up during that week and/or the succeeding three weeks.

The Contractor further agrees to erect and maintain during construction all necessary guards, rails and signals to prevent accidents to persons, vehicles or to the adjoining property and also agrees to use all necessary precautions in blasting and that he will indemnify and save the County of Westchester harmless from all suits and actions of any kind and nature whatsoever from or on account of the construction of said work.

It is further understood and agreed by the parties hereto that should any dispute arise respecting the true construction, interpretation or meaning of the Contract plans, specifications or conditions herein, or the measurements for the payment thereunder, same shall be referred to and decided by the said Commissioner and his decision thereon shall be final and conclusive upon the parties thereto and may not be challenged except in a proceeding commenced pursuant to Article 78 of the Civil Practice Law and Rules. This provision shall also apply to the true value of and duly authorized extra work or any work permitted by agreement in case any work shall be ordered performed, or any work called for shall be so omitted under and upon the direction of said Commissioner.

The Contractor by the submitting of bids and execution of this Contract hereby covenants and agrees that he has examined the plans, specifications and the site work, as to local conditions, difficulties and accuracy of approximate estimate of quantities and does hereby further covenant and agree that he will not make any claim for damages by reason of any such local conditions, difficulties or variation of approximate estimate of quantities.

The Contractor represents and warrants to the County with the knowledge and expectation that this warranty will be relied upon by the County that it is not now participating and has not at any time participated, either directly or through any substantially owned or affiliated person, firm, partnership or corporation, in an international boycott in violation of the provisions of United States Export Administration Act of 1969, 50 USC 2401 et seq. or the regulations promulgated thereunder.

The Contractor further warrants and represents that it is financially solvent, and sufficiently experienced and competent to perform the work and that the facts provided by it to the County in its bid and supporting documents, and contract documents are true and correct in all respects.

This Contract shall become void and any rights of the Contractor hereunder shall be forfeited if, subsequent to the execution hereof, the Contractor is convicted of a violation of the provision of the United States Export Administration Act of 1969, 50 USC 2401 et seq. as amended or has been found upon the final determination of the United States Commerce Department or any other appropriate agency of the United States or the State of New York to have violated such act or regulations.

If the Contractor, any officer, director, or any party holding a controlling interest (defined as five (5%) percent or more, or in the case of a corporation, any stockholder owning five (5%) percent or more of the outstanding shares) is convicted of a crime (excluding Class B and

Unclassified Misdemeanors as defined under the New York State Penal Law and their equivalent in any city, state or under Federal law related to the type of services or activities which are the subject matter of this Contract) or if a related or affiliated company, partnership or corporation is convicted of a crime (excluding Class B and Unclassified Misdemeanors as defined above) after this Contract is fully executed, the County shall have the right to terminate this Agreement immediately and without penalty. An "affiliated company" as used herein means any affiliate which is a partnership, corporation, proprietorship, association or other entity (i) in which a 50% or greater ownership interest (as defined below) is directly or indirectly held by the Contractor or any of its management personnel (as defined below) or directors, (ii) which directly or indirectly holds 50% or more of the ownership interest in the Contractor, (iii) in which an aggregate 20% or greater ownership interest is directly or indirectly held by one or more shareholders (or partners or proprietors, in the case of a partnership or proprietorship) which or who in the aggregate hold a 20% or greater ownership interest in the Contractor, or (iv) which, whether by Contract or otherwise, directly or indirectly controls, is controlled by or is under common control with the Contractor. An "ownership interest" means the ownership, whether legally or beneficially, of the stock of or assets employed by a corporation, of a partnership interest in or assets employed by a partnership or of a similar interest in or assets employed by any other entity. "Management personnel" means executive officers and all other persons, whether or not officers or employees, who perform policy-making functions similar to those of executive officers.

The Contractor represents that at the time of execution of this Contract, no individual or entity, as described above, has been convicted of a crime during the five (5) year period preceding the execution of this Contract.

The parties hereto recognize that it is the goal of Westchester County to use its best efforts to encourage, promote and increase participation of business enterprises owned and controlled by persons of color or women (MBE/WBE) in contracts or projects funded by all Departments of the County and to effectively and efficiently monitor such participation. Therefore, the Contractor agrees to complete the MBE/WBE Questionnaire, which is attached hereto as Schedule "A," in furtherance of this goal and in accordance with Local Law No. 27-1997.

It is recognized and understood by the parties that this Contract is subject to appropriation by the Westchester County Board of Legislators. The County shall have no liability under this Contract beyond the funds, if any, that are appropriated and available for payment of the amounts due under this Contract. Notwithstanding the foregoing, the County will do all things lawfully within its power to obtain, maintain and properly request and pursue funds from which payments under this Contract may be made.

The parties hereto for themselves, their legal representatives, successors and assigns, expressly agree that any legal action or proceeding that may arise out of or relating to this Contract shall be brought and maintained only in the courts of the State of New York ("New York State Court") located in the County of Westchester. With respect to any action between the County and Contractor in New York State Court, the Contractor hereby expressly waives and relinquishes any rights it may otherwise have (i) to move to dismiss on grounds of *forum non*

conveniens; (ii) to remove to Federal Court; and (iii) to move for a change of venue to a New York State Court outside of Westchester County.

This Contract and its terms, covenants, obligations, conditions and provisions shall be binding upon all the parties hereto, their legal representatives, successors and assigns.

SAMPLE

This Contract shall not be enforceable until it is signed by all parties and approved by the Office of the County Attorney.

IN WITNESS WHEREOF, the parties hereto have executed this agreement, THE COUNTY OF WESTCHESTER pursuant to law by:

_____ its **Commissioner**

and the CONTRACTOR:

By: _____ its _____
(Type or Print Name) (Title)

THE COUNTY OF WESTCHESTER:

By: _____
Commissioner

CONTRACTOR:

By: _____
(Signature)

ATTEST:

(SEAL)

By: _____
(Signature)

Recommended:

Deputy Commissioner of Public Works

Approved as to form and manner of execution
this ____ day of _____, 200__

County Attorney

CONTRACTOR'S ACKNOWLEDGMENT
(If Corporation)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this ____ day of _____, 200__, before me personally came _____ to me known, and known to me to be the _____ of _____, the Corporation described in and which executed the within instrument, who being by me duly sworn did depose and say that the said _____ resides at _____ and that he/she is the _____ of said Corporation and that he/she signed his/her name thereto by order of the Board of Directors of said Corporation and, if operating under any trade name, that the certificate required by the New York State General Business Law Section 130 has been filed with the Secretary of State of the State of New York.

Notary Public

CONTRACTOR'S ACKNOWLEDGMENT
(If Individual)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this ____ day of _____, 200__, before me personally came _____ to me known, and known to me to be the same person described in and who executed the within instrument and duly acknowledged to me that he/she executed the same for the purpose herein mentioned and, if operating under any trade name, that the certificate required by the New York State General Business Law Section 130 has been filed with the County Clerk of Westchester County.

Notary Public

CONTRACTOR'S ACKNOWLEDGMENT
(If Co-Partnership)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this ____ day of _____, 200__, before me personally came _____ to me known, and known to me to be a member of the firm of _____ and the person described in, and who executed the within instrument in behalf of said firm, and he/she acknowledged to me that he/she executed the same in behalf of, and as the act of said firm for the purposes herein mentioned and, if operating under any trade name, that the certificate required by the New York State General Business Law Section 130 has been filed with the County Clerk of Westchester County.

Notary Public

CERTIFICATE OF AUTHORITY

I, _____
(Officer other than officer signing contract)

certify that I am _____ of
(Title)

the _____
(Name of Corporation)

organized and in good standing under the _____
(Law under which organized)

named in the foregoing agreement; that _____
(Person executing agreement)

who signed said agreement on behalf of the Contractor was, at the time of execution the
_____ of the Corporation; that said agreement was duly
(Title of such person)

signed for and on behalf of said Corporation by authority of its Board of Directors, thereunto
duly authorized and is in full force and effect at the date hereof.

(Signature)

(SEAL)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this ____ day of _____, 200__, before me personally came
_____ to me known, and known to me to be the
_____ of _____,
the Corporation described in and which executed the above certificate, who being by me duly
sworn did depose and say that the said _____ resides at
_____ and that he/she is
_____ of said Corporation and knows the Corporate Seal of the said
Corporation; that the seal affixed to the above certificate is such Corporate Seal and was so
affixed by order of the Board of Directors of said Corporation, and that he/she signed his/her
name thereto by like order.

Notary Public

PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that we

(hereinafter called the "Principal"), and the _____

_____ a Corporation created and existing under the laws of the State of _____

and having its principal office at _____

in the City of _____ (hereinafter called the "Surety"), are held and firmly bound unto The County of Westchester (hereinafter called the "Obligee") in the penal sum of-----**DOLLARS**-----**AND**-----/100-----

--[\$]

lawful money of the United States of America, for the payment of which, well and truly to be made, the said Principal binds itself, (himself, themselves) and its (his, their) successors and assigns, and the said Surety binds itself and its successors and assigns, all jointly and severally, firmly by these presents. Said penal sum shall apply separately and independently, in its total amount, to the payment provision and the performance provision of this Bond shall not reduce or limit the right of the Obligee to recover under the other said provision.

Signed, sealed and dated this _____ day of _____, 200__.

WHEREAS, said Principal has entered into a certain written contract with said Obligee, dated this _____ day of _____, 200__, (hereinafter called the "Contract")

For ----**CONTRACT #** _____ a copy of which Contract is hereto annexed and hereby made a part of this bond as if herein set forth in full.

NOW THEREFORE, THE CONDITIONS OF THE ABOVE OBLIGATIONS ARE SUCH THAT, if the said Principal, and its (his, their) successors or assigns, or any or either of them shall,

(1) well and truly and in good, sufficient and workmanlike manner, perform or cause to be performed such Contract, and any amendment or extension of or addition thereto, and each and every of the covenants, promises, agreements and provisions therein stipulated and contained to be performed by said Principal, and complete the same within the period therein mentioned, and in each and every respect, comply with the conditions therein mentioned to be complied with by said Principal, and fully indemnify and save harmless the Obligee from all costs and damages which it may suffer by reason of failure so to do and fully reimburse and repay the Obligee all outlay and expense which it may incur in making good any such default, and

(2) also pay or cause to be paid the wages and compensation for labor performed and services rendered of all persons engaged in the prosecution of the work provided for therein, whether such persons by agents, servants or employees of the Principal, and of its (his, their) successors or assigns, or any Subcontractor or of any assignee thereof, including all persons so engaged who perform the work of laborers or of mechanics regardless of any contractual relationship between the Principal, or its (his, their) successors or assigns, or any Subcontractor or any designee thereof, and such laborers or mechanics, but not including office employees not regularly stationed at the site of the work, and further, shall pay or cause to be paid all lawful claims of Subcontractors and of materialmen and other third persons out of or in connection with said Contract and the work, labor, services, supplies and material furnished in and about the performance and completion thereof, then these obligations shall be null and void, otherwise they shall remain in full force and effect.

PROVIDED, however, that this bond is subject to the following additional conditions and limitations:

- (a) All persons who have performed labor or rendered services, as aforesaid, all Subcontractors, and all persons, firms, corporations, including materialmen and third persons, as aforesaid, furnishing work, labor, services, supplies and material under or in connection with said Contract or in or about the performance and completion thereof, shall have a direct right of action (subject to the prior right of the Obligee under any claim which it may assert against the Principal or its (his, their) successors and assigns, and/or the Surety and its successors and assigns) against the Principal and its (his, their) successors and assigns on this bond, which right of action shall be asserted in proceedings instituted in the State in which such work, labor, services, supplies or material was performed, rendered or furnished or where work, labor, services, supplies or material has been performed, rendered or furnished, as aforesaid, in more than one State, than in any such State. Insofar as permitted by the laws of such State, said right of action shall be asserted in a proceeding instituted in the name of Obligee to the use and benefit of the person, firm or corporation instituting such action and of all other persons, firms and corporations having claims hereunder, and any other person, firm or corporation having a claim hereunder shall have the

right to be made a party to such proceedings (but not later than twelve months after the performance of said Contract and final settlement thereof) and to have such claim adjudicated in such action and judgment rendered thereon. Prior to the institution of such a proceeding by a person, firm or corporation in the name of the Obligee, as aforesaid, such person, firm or corporation shall furnish the Obligee with a Bond of Indemnity for costs, which Bond shall be in an amount satisfactory to the Obligee.

- (b) The Surety or its successors or assigns shall not be liable hereunder for any damages or compensation recoverable under any worker's compensation or employer's liability statute.
- (c) In no event shall the Surety or its successors or assigns be liable under either the foregoing clause (1) or the foregoing clause (2) for a greater sum than the penalty of this Bond provided; however, that said penalty is separately applicable, in its total amount to each of the foregoing clauses (1) and (2), or subject to any suit, action or proceeding hereon that is instituted by any person, firm or corporation under the provisions of the above section (a) later than twelve months after the complete performance of said Contract and final settlement thereof.

The Principal, for itself (himself, themselves) and its (his, their) successors and assigns, and the Surety, for itself and its successors and assigns, do hereby expressly waive any objections that might be interposed as to the right of the Obligee to require a Bond containing the foregoing provisions, and they do hereby further expressly waive any defense which they or either of them might interpose to an action brought hereon by any person, firm or corporation, including Subcontractors, materialmen, and third persons, for work, labor, services, supplies or material performed, rendered or furnished as aforesaid, upon the ground that there is no law authorizing the said Obligee to require the foregoing provision to be placed in this Bond.

And Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligations of said Surety and of its successors and assigns and this Bond shall in no way be impaired or affected by an extension of time, modification, omission, addition or change in or to the said Contract or the work to be performed thereunder, or by any payment thereunder, before the time required therein, or by any waiver of any provision thereof, or by an assignment, subletting or other transfer thereof, or of any part thereof, or of any work to be performed, or of any moneys due or to become due thereunder; and the said Surety, for itself and its successors and assigns, does hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers, and hereby stipulates and agrees that any and all things done and omitted to be done by and in relation to (executors, administrators), successors, assigns, Subcontractors, and other transferees, shall have the same effect as to said Surety and its successors and assigns, as though done or omitted to be done by and in relation to said Principal.

And Surety, for value received, hereby stipulates and agrees, if requested to do so by Obligee, to fully perform and complete the work to be performed under the Contract, pursuant to the terms, conditions and covenants thereof, if for any cause, the Principal fails or neglects to so

fully perform and complete such Work. The Surety further agrees to commence such Work of Completion within twenty-five (25) calendar days after written notice thereof from the Obligee, and to complete such Work within twenty-five (25) calendar days from the expiration of the time allowed the Principal in the Contract for the completion of such Work.

WITNESSETH our hands and seals this ____ day of _____, 200__.

PRINCIPAL:

By: _____
(Signature)

(SEAL)

ATTEST:

(Surety)

By: _____
(Signature)

(SEAL)

ATTEST:

If the Contractor (Principal) is a partnership, the Bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a Corporation, the Bond should be signed in its correct corporate name by a duly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the Bond corresponding to the number of counterparts of the Contract.

Each executed Bond should be accompanied by:

- (a) appropriate acknowledgments of the respective parties;
- (b) appropriate duly certified copy of Power of Attorney or other Certificate of Authority where Bond is executed by agent, officer or other representative of Principal or Surety;
- (c) a duly certified extract from By-laws or resolutions of Surety under which Power of Attorney or other Certificate of Authority of its agent, officer or representative was issued, and
- (d) duly certified copy of latest published financial statement of assets and liabilities of Surety.

CONTRACTOR'S ACKNOWLEDGMENT
(If Corporation)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this ____ day of _____, 200__, before me personally came _____ to me known, and known to me to be the _____ of _____, the Corporation described in and which executed the within instrument, who being by me duly sworn did depose and say that the said _____ resides at _____ and that he/she is the _____ of said Corporation and knows the Corporate Seal of the said Corporation; that the seal affixed to the within instrument is such Corporate Seal and that it was so affixed by order of the Board of Directors of said Corporation and that he/she signed his/her name thereto by like order.

Notary Public

CONTRACTOR'S ACKNOWLEDGMENT
(If Individual)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this ____ day of _____, 200__, before me personally came _____ to me known, and known to me to be the same person described in and who executed the within instrument and he/she duly acknowledged to me that he/she executed the same for the purpose herein mentioned.

Notary Public

CONTRACTOR'S ACKNOWLEDGMENT
(If Co-Partnership)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this ____ day of _____, 200__, before me personally came _____ to me known, and known to me to be a member of the firm of _____ and the person described in, and who executed the within instrument in behalf of said firm, and acknowledged to me that he/she executed the same in behalf of, and as the act of said firm for the purposes herein mentioned.

Notary Public



SCHEDULE OF HOURLY RATES
AND SUPPLEMENTS

DEPARTMENT OF PUBLIC WORKS

Division of Engineering



Andrew M. Cuomo, Governor

Roberta Reardon, Commissioner

Westchester County DPW & T

Yolanda Spraggins, Secretary II
148 Martine Ave., Rm 518
White Plains NY 10601

Schedule Year 2020 through 2021
Date Requested 05/11/2021
PRC# 2021004711

Location Vernon Plaza Family Center
Project ID# 21-514
Project Type Boiler Replacement and Associated Work, Vernon Plaza Family Center

PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Wage Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2020 through June 2021. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website www.labor.ny.gov. Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: _____ Date Cancelled: _____

Name & Title of Representative: _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

General Provisions of Laws Covering Workers on Article 8 Public Work Contracts

Introduction

The Labor Law requires public work contractors and subcontractors to pay laborers, workers, or mechanics employed in the performance of a public work contract not less than the prevailing rate of wage and supplements (fringe benefits) in the locality where the work is performed.

Responsibilities of the Department of Jurisdiction

A Department of Jurisdiction (Contracting Agency) includes a state department, agency, board or commission; a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporation; a public benefit corporation; and a public authority awarding a public work contract.

The Department of Jurisdiction (Contracting Agency) awarding a public work contract MUST obtain a Prevailing Rate Schedule listing the hourly rates of wages and supplements due the workers to be employed on a public work project. This schedule may be obtained by completing and forwarding a "Request for wage and Supplement Information" form (PW 39) to the Bureau of Public Work. The Prevailing Rate Schedule MUST be included in the specifications for the contract to be awarded and is deemed part of the public work contract.

Upon the awarding of the contract, the law requires that the Department of Jurisdiction (Contracting Agency) furnish the following information to the Bureau: the name and address of the contractor, the date the contract was let and the approximate dollar value of the contract. To facilitate compliance with this provision of the Labor Law, a copy of the Department's "Notice of Contract Award" form (PW 16) is provided with the original Prevailing Rate Schedule.

The Department of Jurisdiction (Contracting Agency) is required to notify the Bureau of the completion or cancellation of any public work project. The Department's PW 200 form is provided for that purpose.

Both the PW 16 and PW 200 forms are available for completion [online](#).

Hours

No laborer, worker, or mechanic in the employ of a contractor or subcontractor engaged in the performance of any public work project shall be permitted to work more than eight hours in any day or more than five days in any week, except in cases of extraordinary emergency. The contractor and the Department of Jurisdiction (Contracting Agency) may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project.

There are very few exceptions to this rule. Complete information regarding these exceptions is available on the ["Request for a dispensation to work overtime" form \(PW30\)](#) and ["4 Day / 10 Hour Work Schedule" form \(PW 30.1\)](#).

Wages and Supplements

The wages and supplements to be paid and/or provided to laborers, workers, and mechanics employed on a public work project shall be not less than those listed in the current Prevailing Rate Schedule for the locality where the work is performed. If a prime contractor on a public work project has not been provided with a Prevailing Rate Schedule, the contractor must notify the Department of Jurisdiction (Contracting Agency) who in turn must request an original Prevailing Rate Schedule form the Bureau of Public Work. Requests may be submitted by: mail to NYSDOL, Bureau of Public Work, State Office Bldg. Campus, Bldg. 12, Rm. 130, Albany, NY 12240; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website www.labor.ny.gov.

Upon receiving the original schedule, the Department of Jurisdiction (Contracting Agency) is REQUIRED to provide complete copies to all prime contractors who in turn MUST, by law, provide copies of all applicable county schedules to each subcontractor and obtain from each subcontractor, an affidavit certifying such schedules were received. If the original schedule expired, the contractor may obtain a copy of the new annual determination from the NYSDOL website www.labor.ny.gov.

The Commissioner of Labor makes an annual determination of the prevailing rates. This determination is in effect from July 1st through June 30th of the following year. The annual determination is available on the NYSDOL website www.labor.ny.gov.

Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. As per Article 6 of the Labor law, contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemporaneous, true, and accurate payroll records. At a minimum, payrolls must show the following information for each person employed on a public work project: Name, Address, Last 4 Digits of Social Security Number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid

or provided, and Daily and weekly number of hours worked in each classification.

The filing of payrolls to the Department of Jurisdiction is a condition of payment. Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury. The Department of Jurisdiction (Contracting Agency) shall collect, review for facial validity, and maintain such payrolls.

In addition, the Commissioner of Labor may require contractors to furnish, with ten (10) days of a request, payroll records sworn to as their validity and accuracy for public work and private work. Payroll records include, but are not limited to time cards, work description sheets, proof that supplements were provided, cancelled payroll checks and payrolls. Failure to provide the requested information within the allotted ten (10) days will result in the withholding of up to 25% of the contract, not to exceed \$100,000.00. If the contractor or subcontractor does not maintain a place of business in New York State and the amount of the contract exceeds \$25,000.00, payroll records and certifications must be kept on the project worksite.

The prime contractor is responsible for any underpayments of prevailing wages or supplements by any subcontractor.

All contractors or their subcontractors shall provide to their subcontractors a copy of the Prevailing Rate Schedule specified in the public work contract as well as any subsequently issued schedules. A failure to provide these schedules by a contractor or subcontractor is a violation of Article 8, Section 220-a of the Labor Law.

All subcontractors engaged by a public work project contractor or its subcontractor, upon receipt of the original schedule and any subsequently issued schedules, shall provide to such contractor a verified statement attesting that the subcontractor has received the Prevailing Rate Schedule and will pay or provide the applicable rates of wages and supplements specified therein. (See NYS Labor Laws, Article 8 . Section 220-a).

Determination of Prevailing Wage and Supplement Rate Updates Applicable to All Counties

The wages and supplements contained in the annual determination become effective July 1st whether or not the new determination has been received by a given contractor. Care should be taken to review the rates for obvious errors. Any corrections should be brought to the Department's attention immediately. It is the responsibility of the public work contractor to use the proper rates. If there is a question on the proper classification to be used, please call the district office located nearest the project. Any errors in the annual determination will be corrected and posted to the NYSDOL website on the first business day of each month. Contractors are responsible for paying these updated rates as well, retroactive to July 1st.

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. To the extent possible, the Department posts rates in its possession that cover periods of time beyond the July 1st to June 30th time frame covered by a particular annual determination. Rates that extend beyond that instant time period are informational ONLY and may be updated in future annual determinations that actually cover the then appropriate July 1st to June 30th time period.

Withholding of Payments

When a complaint is filed with the Commissioner of Labor alleging the failure of a contractor or subcontractor to pay or provide the prevailing wages or supplements, or when the Commissioner of Labor believes that unpaid wages or supplements may be due, payments on the public work contract shall be withheld from the prime contractor in a sufficient amount to satisfy the alleged unpaid wages and supplements, including interest and civil penalty, pending a final determination.

When the Bureau of Public Work finds that a contractor or subcontractor on a public work project failed to pay or provide the requisite prevailing wages or supplements, the Bureau is authorized by Sections 220-b and 235.2 of the Labor Law to so notify the financial officer of the Department of Jurisdiction (Contracting Agency) that awarded the public work contract. Such officer MUST then withhold or cause to be withheld from any payment due the prime contractor on account of such contract the amount indicated by the Bureau as sufficient to satisfy the unpaid wages and supplements, including interest and any civil penalty that may be assessed by the Commissioner of Labor. The withholding continues until there is a final determination of the underpayment by the Commissioner of Labor or by the court in the event a legal proceeding is instituted for review of the determination of the Commissioner of Labor.

The Department of Jurisdiction (Contracting Agency) shall comply with this order of the Commissioner of Labor or of the court with respect to the release of the funds so withheld.

Summary of Notice Posting Requirements

The current Prevailing Rate Schedule must be posted in a prominent and accessible place on the site of the public work project. The prevailing wage schedule must be encased in, or constructed of, materials capable of withstanding adverse weather conditions and be titled "PREVAILING RATE OF WAGES" in letters no smaller than two (2) inches by two (2) inches.

The "Public Work Project" notice must be posted at the beginning of the performance of every public work contract, on each job site.

Every employer providing workers' compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

Every employer subject to the NYS Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers, notices furnished by the State Division of Human Rights.

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the NYS Department of Labor.

Apprentices

Employees cannot be paid apprentice rates unless they are individually registered in a program registered with the NYS Commissioner of Labor. The allowable ratio of apprentices to journeyworkers in any craft classification can be no greater than the statewide building trade ratios promulgated by the Department of Labor and included with the Prevailing Rate Schedule. An employee listed on a payroll as an apprentice who is not registered as above or is performing work outside the classification of work for which the apprentice is indentured, must be paid the prevailing journeyworker's wage rate for the classification of work the employee is actually performing.

NYSDOL Labor Law, Article 8, Section 220-3, require that only apprentices individually registered with the NYS Department of Labor may be paid apprenticeship rates on a public work project. No other Federal or State Agency of office registers apprentices in New York State.

Persons wishing to verify the apprentice registration of any person must do so in writing by mail, to the NYSDOL Office of Employability Development / Apprenticeship Training, State Office Bldg. Campus, Bldg. 12, Albany, NY 12240 or by Fax to NYSDOL Apprenticeship Training (518) 457-7154. All requests for verification must include the name and social security number of the person for whom the information is requested.

The only conclusive proof of individual apprentice registration is written verification from the NYSDOL Apprenticeship Training Albany Central office. Neither Federal nor State Apprenticeship Training offices outside of Albany can provide conclusive registration information.

It should be noted that the existence of a registered apprenticeship program is not conclusive proof that any person is registered in that program. Furthermore, the existence or possession of wallet cards, identification cards, or copies of state forms is not conclusive proof of the registration of any person as an apprentice.

Interest and Penalties

In the event that an underpayment of wages and/or supplements is found:

- Interest shall be assessed at the rate then in effect as prescribed by the Superintendent of Banks pursuant to section 14-a of the Banking Law, per annum from the date of underpayment to the date restitution is made.
- A Civil Penalty may also be assessed, not to exceed 25% of the total of wages, supplements, and interest due.

Debarment

Any contractor or subcontractor and/or its successor shall be ineligible to submit a bid on or be awarded any public work contract or subcontract with any state, municipal corporation or public body for a period of five (5) years when:

- Two (2) willful determinations have been rendered against that contractor or subcontractor and/or its successor within any consecutive six (6) year period.
- There is any willful determination that involves the falsification of payroll records or the kickback of wages or supplements.

Criminal Sanctions

Willful violations of the Prevailing Wage Law (Article 8 of the Labor Law) may be a felony punishable by fine or imprisonment of up to 15 years, or both.

Discrimination

No employee or applicant for employment may be discriminated against on account of age, race, creed, color, national origin, sex, disability or marital status.

No contractor, subcontractor nor any person acting on its behalf, shall by reason of race, creed, color, disability, sex or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates (NYS Labor Law, Article 8, Section 220-e(a)).

No contractor, subcontractor, nor any person acting on its behalf, shall in any manner, discriminate against or intimidate any employee on account of race, creed, color, disability, sex, or national origin (NYS Labor Law, Article 8, Section 220-e(b)).

The Human Rights Law also prohibits discrimination in employment because of age, marital status, or religion.

There may be deducted from the amount payable to the contractor under the contract a penalty of \$50.00 for each calendar day during which such person was discriminated against or intimidated in violation of the provision of the contract (NYS Labor Law, Article 8, Section 220-e(c)).

The contract may be cancelled or terminated by the State or municipality. All monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of the anti-discrimination sections of the contract (NYS Labor Law, Article 8, Section 220-e(d)).

Every employer subject to the New York State Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers notices furnished by the State Division of Human Rights.

Workers' Compensation

In accordance with Section 142 of the State Finance Law, the contractor shall maintain coverage during the life of the contract for the benefit of such employees as required by the provisions of the New York State Workers' Compensation Law.

A contractor who is awarded a public work contract must provide proof of workers' compensation coverage prior to being allowed to begin work.

The insurance policy must be issued by a company authorized to provide workers' compensation coverage in New York State. Proof of coverage must be on form C-105.2 (Certificate of Workers' Compensation Insurance) and must name this agency as a certificate holder.

If New York State coverage is added to an existing out-of-state policy, it can only be added to a policy from a company authorized to write workers' compensation coverage in this state. The coverage must be listed under item 3A of the information page.

The contractor must maintain proof that subcontractors doing work covered under this contract secured and maintained a workers' compensation policy for all employees working in New York State.

Every employer providing worker's compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

Unemployment Insurance

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the New York State Department of Labor.



Andrew M. Cuomo, Governor

Roberta Reardon, Commissioner

Westchester County DPW & T

Yolanda Spraggins, Secretary II
148 Martine Ave., Rm 518
White Plains NY 10601

Schedule Year 2020 through 2021
Date Requested 05/11/2021
PRC# 2021004711

Location Vernon Plaza Family Center
Project ID# 21-514
Project Type Boiler Replacement and Associated Work, Vernon Plaza Family Center

Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

Contractor Information

All information must be supplied

Federal Employer Identification Number: _____		
Name: _____		
Address: _____ _____		
City: _____	State: _____	Zip: _____
Amount of Contract: \$ _____	Contract Type:	
Approximate Starting Date: ____/____/____	<input type="checkbox"/> (01) General Construction	
Approximate Completion Date: ____/____/____	<input type="checkbox"/> (02) Heating/Ventilation	
	<input type="checkbox"/> (03) Electrical	
	<input type="checkbox"/> (04) Plumbing	
	<input type="checkbox"/> (05) Other : _____	

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

Social Security Numbers on Certified Payrolls:

The Department of Labor is cognizant of the concerns of the potential for misuse or inadvertent disclosure of social security numbers. Identity theft is a growing problem and we are sympathetic to contractors' concern regarding inclusion of this information on payrolls if another identifier will suffice.

For these reasons, the substitution of the use of the last four digits of the social security number on certified payrolls submitted to contracting agencies on public work projects is now acceptable to the Department of Labor. This change does not affect the Department's ability to request and receive the entire social security number from employers during its public work/ prevailing wage investigations.

Construction Industry Fair Play Act: Required Posting for Labor Law Article 25-B § 861-d

Construction industry employers must post the "Construction Industry Fair Play Act" notice in a prominent and accessible place on the job site. Failure to post the notice can result in penalties of up to \$1,500 for a first offense and up to \$5,000 for a second offense. The posting is included as part of this wage schedule. Additional copies may be obtained from the NYS DOL website, www.labor.ny.gov. <https://labor.ny.gov/formsdocs/ui/1A999.pdf>

If you have any questions concerning the Fair Play Act, please call the State Labor Department toll-free at 1-866-435-1499 or email us at: dol.misclassified@labor.ny.gov .

Worker Notification: (Labor Law §220, paragraph a of subdivision 3-a)

Effective June 23, 2020

This provision is an addition to the existing wage rate law, Labor Law §220, paragraph a of subdivision 3-a. It requires contractors and subcontractors to provide written notice to all laborers, workers or mechanics of the *prevailing wage and supplement rate* for their particular job classification *on each pay stub**. It also requires contractors and subcontractors to *post a notice* at the beginning of the performance of every public work contract *on each job site* that includes the telephone number and address for the Department of Labor and a statement informing laborers, workers or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her job classification. The required notification will be provided with each wage schedule, may be downloaded from our website www.labor.ny.gov or be made available upon request by contacting the Bureau of Public Work at 518-457-5589. *In the event the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.

(12.20)

**To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND**

Budget Policy & Reporting Manual

B-610

Public Work Enforcement Fund

effective date December 7, 2005

1. Purpose and Scope:

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, maintenance and repair, and announces the recently-enacted increase to the percentage of the dollar value of such contracts that must be deposited into the Fund. This item also describes the roles of the following entities with respect to the Fund:

- New York State Department of Labor (DOL),
- The Office of the State of Comptroller (OSC), and
- State agencies and public benefit corporations.

2. Background and Statutory References:

DOL uses the Fund to enforce the State's Labor Law as it relates to contracts for construction or reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law. State agencies and public benefit corporations participating in such contracts are required to make payments to the Fund.

Chapter 511 of the Laws of 1995 (as amended by Chapter 513 of the Laws of 1997, Chapter 655 of the Laws of 1999, Chapter 376 of the Laws of 2003 and Chapter 407 of the Laws of 2005) established the Fund.

3. Procedures and Agency Responsibilities:

The Fund is supported by transfers and deposits based on the value of contracts for construction and reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law, into which all State agencies and public benefit corporations enter.

Chapter 407 of the Laws of 2005 increased the amount required to be provided to this fund to .10 of one-percent of the total cost of each such contract, to be calculated at the time agencies or public benefit corporations enter into a new contract or if a contract is amended. The provisions of this bill became effective August 2, 2005.

**To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND**

OSC will report to DOL on all construction-related ("D") contracts approved during the month, including contract amendments, and then DOL will bill agencies the appropriate assessment monthly. An agency may then make a determination if any of the billed contracts are exempt and so note on the bill submitted back to DOL. For any instance where an agency is unsure if a contract is or is not exempt, they can call the Bureau of Public Work at the number noted below for a determination. Payment by check or journal voucher is due to DOL within thirty days from the date of the billing. DOL will verify the amounts and forward them to OSC for processing.

For those contracts which are not approved or administered by the Comptroller, monthly reports and payments for deposit into the Public Work Enforcement Fund must be provided to the Administrative Finance Bureau at the DOL within 30 days of the end of each month or on a payment schedule mutually agreed upon with DOL.

Reports should contain the following information:

- Name and billing address of State agency or public benefit corporation;
- State agency or public benefit corporation contact and phone number;
- Name and address of contractor receiving the award;
- Contract number and effective dates;
- Contract amount and PWEF assessment charge (if contract amount has been amended, reflect increase or decrease to original contract and the adjustment in the PWEF charge); and
- Brief description of the work to be performed under each contract.

Checks and Journal Vouchers, payable to the "New York State Department of Labor" should be sent to:

Department of Labor
Administrative Finance Bureau-PWEF Unit
Building 12, Room 464
State Office Campus
Albany, NY 12240

Any questions regarding billing should be directed to NYSDOL's Administrative Finance Bureau-PWEF Unit at (518) 457-3624 and any questions regarding Public Work Contracts should be directed to the Bureau of Public Work at (518) 457-5589.



Required Notice under Article 25-B of the Labor Law

**Attention All Employees, Contractors and Subcontractors:
You are Covered by the Construction Industry Fair Play Act**

The law says that you are an employee unless:

- You are free from direction and control in performing your job, **and**
- You perform work that is not part of the usual work done by the business that hired you, **and**
- You have an independently established business.

Your employer cannot consider you to be an independent contractor unless all three of these facts apply to your work.

It is against the law for an employer to misclassify employees as independent contractors or pay employees off the books.

Employee Rights: If you are an employee, you are entitled to state and federal worker protections. These include:

- Unemployment Insurance benefits, if you are unemployed through no fault of your own, able to work, and otherwise qualified,
- Workers' compensation benefits for on-the-job injuries,
- Payment for wages earned, minimum wage, and overtime (under certain conditions),
- Prevailing wages on public work projects,
- The provisions of the National Labor Relations Act, and
- A safe work environment.

It is a violation of this law for employers to retaliate against anyone who asserts their rights under the law. Retaliation subjects an employer to civil penalties, a private lawsuit or both.

Independent Contractors: If you are an independent contractor, **you must pay all taxes and Unemployment Insurance contributions required by New York State and Federal Law.**

Penalties for paying workers off the books or improperly treating employees as independent contractors:

- **Civil Penalty** First offense: Up to \$2,500 per employee
 Subsequent offense(s): Up to \$5,000 per employee
- **Criminal Penalty** First offense: Misdemeanor - up to 30 days in jail, up to a \$25,000 fine and debarment from performing public work for up to one year.
 Subsequent offense(s): Misdemeanor - up to 60 days in jail or up to a \$50,000 fine and debarment from performing public work for up to 5 years.

If you have questions about your employment status or believe that your employer may have violated your rights and you want to file a complaint, call the Department of Labor at (866) 435-1499 or send an email to dol.misclassified@labor.ny.gov. All complaints of fraud and violations are taken seriously. You can remain anonymous.

Employer Name:

IA 999 (09/16)

Attention Employees

THIS IS A: **PUBLIC WORK PROJECT**

If you are employed on this project as a **worker, laborer, or mechanic** you are entitled to receive the **prevailing wage and supplements rate** for the classification at which you are working.

Chapter 629 of the Labor Laws of 2007:

These wages are set by law and must be posted at the work site. They can also be found at:
www.labor.ny.gov

If you feel that you have not received proper wages or benefits, please call our nearest office.*

Albany	(518) 457-2744	Patchogue	(631) 687-4882
Binghamton	(607) 721-8005	Rochester	(585) 258-4505
Buffalo	(716) 847-7159	Syracuse	(315) 428-4056
Garden City	(516) 228-3915	Utica	(315) 793-2314
New York City	(212) 932-2419	White Plains	(914) 997-9507
Newburgh	(845) 568-5156		

* For New York City government agency construction projects, please contact the Office of the NYC Comptroller at (212) 669-4443, or www.comptroller.nyc.gov – click on Bureau of Labor Law.

Contractor Name: _____

Project Location: _____

Requirements for OSHA 10 Compliance

Article 8 §220-h requires that when the advertised specifications, for every contract for public work, is \$250,000.00 or more the contract must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training "prior to the performing any work on the project."

The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (*Note: Completion cards do not have an expiration date.*)
- Training roster, attendance record or other documentation from the certified trainer pending the issuance of the card.
- Other valid proof

**A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-457-5589.

WICKS

Public work projects are subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work, when the total project's threshold is \$3 million in Bronx, Kings, New York, Queens and, Richmond counties; \$1.5 million in Nassau, Suffolk and Westchester counties; and \$500,000 in all other counties.

For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or the use of a Project Labor Agreement (PLA), and must be open to public inspection.

Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.

The Commissioner of Labor shall have the power to enforce separate specification requirements on projects, and may issue stop-bid orders against public owners for non-compliance.

Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.

Contractors must pay subcontractors within a 7 days period.

(07.19)

Introduction to the Prevailing Rate Schedule

Information About Prevailing Rate Schedule

This information is provided to assist you in the interpretation of particular requirements for each classification of worker contained in the attached Schedule of Prevailing Rates.

Classification

It is the duty of the Commissioner of Labor to make the proper classification of workers taking into account whether the work is heavy and highway, building, sewer and water, tunnel work, or residential, and to make a determination of wages and supplements to be paid or provided. It is the responsibility of the public work contractor to use the proper rate. If there is a question on the proper classification to be used, please call the district office located nearest the project. District office locations and phone numbers are listed below.

Prevailing Wage Schedules are issued separately for "General Construction Projects" and "Residential Construction Projects" on a county-by-county basis.

General Construction Rates apply to projects such as: Buildings, Heavy & Highway, and Tunnel and Water & Sewer rates.

Residential Construction Rates generally apply to construction, reconstruction, repair, alteration, or demolition of one family, two family, row housing, or rental type units intended for residential use.

Some rates listed in the Residential Construction Rate Schedule have a very limited applicability listed along with the rate. Rates for occupations or locations not shown on the residential schedule must be obtained from the General Construction Rate Schedule. Please contact the local Bureau of Public Work office before using Residential Rate Schedules, to ensure that the project meets the required criteria.

Payrolls and Payroll Records

Contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemporaneous, true, and accurate payroll records.

Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury.

Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

Overtime

At a minimum, all work performed on a public work project in excess of eight hours in any one day or more than five days in any workweek is overtime. However, the specific overtime requirements for each trade or occupation on a public work project may differ. Specific overtime requirements for each trade or occupation are contained in the prevailing rate schedules.

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays.

The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. Although in most cases the payment or provision of supplements is straight time for all hours worked, some classifications require the payment or provision of supplements, or a portion of the supplements, to be paid or provided at a premium rate for premium hours worked. Supplements may also be required to be paid or provided on paid holidays, regardless of whether the day is worked. The Overtime Codes and Notes listed on the particular wage classification will indicate these conditions as required.

Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year. All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website (www.labor.ny.gov) for current wage rate information.

Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1,1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before a second Apprentice is allowed. The last ratio repeats indefinitely. Therefore, three more Journeyworkers must be present before a third Apprentice can be hired, and so on.

Please call Apprentice Training Central Office at (518) 457-6820 if you have any questions.

Title (Trade)	Ratio
Boilermaker (Construction)	1:1,1:4
Boilermaker (Shop)	1:1,1:3
Carpenter (Bldg.,H&H, Pile Driver/Dockbuilder)	1:1,1:4
Carpenter (Residential)	1:1,1:3
Electrical (Outside) Lineman	1:1,1:2
Electrician (Inside)	1:1,1:3
Elevator/Escalator Construction & Modernizer	1:1,1:2
Glazier	1:1,1:3
Insulation & Asbestos Worker	1:1,1:3
Iron Worker	1:1,1:4
Laborer	1:1,1:3
Mason	1:1,1:4
Millwright	1:1,1:4
Op Engineer	1:1,1:5
Painter	1:1,1:3
Plumber & Steamfitter	1:1,1:3
Roofer	1:1,1:2
Sheet Metal Worker	1:1,1:3
Sprinkler Fitter	1:1,1:2

If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12240

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518
Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Westchester County General Construction

Boilermaker **06/01/2021**

JOB DESCRIPTION Boilermaker

DISTRICT 4

ENTIRE COUNTIES

Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES

Per Hour:	07/01/2020	01/01/2021
Boilermaker	\$ 61.24	\$63.38
Repairs & Renovations	61.24	63.38

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2020	01/01/2021
Boilermaker	32% of hourly	32% of hourly
Repair \$ Renovations	Wage Paid + \$ 25.35	Wage Paid + TBA

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay.

Repairs & Renovation Includes replacement of parts and repairs & renovation of existing unit.

OVERTIME PAY

See (D, O) on OVERTIME PAGE
 Repairs & Renovation see (B,E,Q)

HOLIDAY

Paid: See (8, 16, 23, 24) on HOLIDAY PAGE
 Overtime: See (5, 6, 8, 11, 12, 15, 16, 22, 23, 24, 25) on HOLIDAY PAGE

NOTE: *Employee must work in pay week to receive Holiday Pay.
 **Employee gets 4 times the hourly wage rate for working Labor Day.

REGISTERED APPRENTICES

Wage per hour:
 (1/2) Year Terms at the following percentage of Boilermaker's Wage

1st	2nd	3rd	4th	5th	6th	7th
65%	70%	75%	80%	85%	90%	95%

Supplemental Benefits Per Hour:

	07/01/2020	01/01/2021
Apprentice(s)	32% of Hourly Wage Paid Plus Amount Below	32% of Hourly Wage Paid Plus Amount Below
1st Term	\$ 19.38	\$ TBA
2nd Term	20.24	TBA
3rd Term	21.08	TBA
4th Term	21.94	TBA
5th Term	22.79	TBA
6th Term	23.65	TBA
7th Term	24.48	TBA

NOTE: "Hourly Wage Paid" shall include any and all premium(s)

4-5

Carpenter **06/01/2021**

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per hour: 07/01/2020

Piledriver	\$ 55.93
Dockbuilder	\$ 55.93

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker \$ 52.44

OVERTIME PAY

See (B, E2, O) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE.

Paid: for 1st & 2nd yr.

Apprentices See (5,6,11,13,25)

Overtime: See (5,6,11,13,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

Wages per hour

(1)year terms:

1st	2nd	3rd	4th
\$22.37	\$27.97	\$36.35	\$44.74

Supplemental benefits per hour:

All Terms: \$ 34.34

8-1556 Db

Carpenter

06/01/2021

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per hour: 07/01/2020

Carpet/Resilient

Floor Coverer \$ 54.00

INCLUDES HANDLING & INSTALLATION OF ARTIFICIAL TURF AND SIMILAR TURF INDOORS/OUTDOORS.

SUPPLEMENTAL BENEFITS

Per hour:

\$ 46.99

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (18, 19) on HOLIDAY PAGE.

Paid for 1st & 2nd yr.

Apprentices See (5,6,11,13,16,18,19,25)

Overtime: See (5,6,11,13,16,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

Wage per hour - (1) year terms:

1st	2nd	3rd	4th
\$24.20	\$27.20	\$31.45	\$39.33

Supplemental benefits per hour:

1st	2nd	3rd	4th
\$16.06	\$17.56	\$21.16	\$23.16

8-2287

Carpenter

06/01/2021

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per Hour: 07/01/2020

Marine Construction:

Marine Diver \$ 70.80
Marine Tender 50.34

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker \$ 52.34

OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (18, 19) on HOLIDAY PAGE
Overtime: See (5, 6, 10, 11, 13, 16, 18, 19) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages per hour:
One (1) year terms.

1st year \$ 22.37
2nd year 27.97
3rd year 36.35
4th year 44.74

Supplemental Benefits
Per Hour:

All terms \$ 34.34

8-1456MC

Carpenter

06/01/2021

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per hour: 07/01/2020

Building
Millwright \$ 55.70

SUPPLEMENTAL BENEFITS

Per hour:

Millwright \$ 54.16

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (18,19) on HOLIDAY PAGE.

Overtime See (5,6,8,11,13,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

Wages per hour:
One (1) year terms:

1st.	2nd.	3rd.	4th.
\$29.99	\$35.44	\$40.89	\$51.79

Supplemental benefits per hour:
One (1) year terms:

1st.	2nd.	3rd.	4th.
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\$34.79 \$38.49 \$42.84 \$49.60

8-740.1

Carpenter **06/01/2021**

JOB DESCRIPTION Carpenter **DISTRICT 8**

ENTIRE COUNTIES
 Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per Hour: 07/01/2020

Timberman \$ 51.05

SUPPLEMENTAL BENEFITS

Per Hour: 07/01/2020

\$ 51.79

OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE.

Paid: for 1st & 2nd yr.
 Apprentices See (5,6,11,13,25)

Overtime: See (5,6,11,13,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

Wages per hour:

One (1) year terms:	1st	2nd	3rd	4th
	\$20.42	\$25.53	\$33.18	\$40.84

Supplemental benefits per hour:
 All terms \$ 34.07

8-1556 Tm

Carpenter **06/01/2021**

JOB DESCRIPTION Carpenter **DISTRICT 8**

ENTIRE COUNTIES
 Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Westchester

PARTIAL COUNTIES
 Orange: South of but including the following, Waterloo Mills, Slate Hill, New Hampton, Goshen, Blooming Grove, Mountainville, east to the Hudson River.
 Putnam: South of but including the following, Cold Spring, TompkinsCorner, Mahopac, Croton Falls, east to Connecticut border.
 Suffolk: West of Port Jefferson and Patchogue Road to Route 112 to the Atlantic Ocean.

WAGES

Per hour: 07/01/2020 10/18/2020

Core Drilling:
 Driller \$ 41.19 \$ 41.74

Driller Helper 32.62 32.92

Note: Hazardous Waste Pay Differential:
 For Level C, an additional 10% above wage rate per hour
 For Level B, an additional 10% above wage rate per hour
 For Level A, an additional 10% above wage rate per hour
 Note: When required to work on water: an additional \$ 0.50 per hour.

SUPPLEMENTAL BENEFITS

Per hour:
 Driller and Helper \$ 27.95

OVERTIME PAY

OVERTIME: See (B,E,K*,P,R**) on OVERTIME PAGE.

HOLIDAY

Paid: See (5,6) on HOLIDAY PAGE.
 Overtime: * See (5,6) on HOLIDAY PAGE.
 ** See (8,10,11,13) on HOLIDAY PAGE.

8-1536-CoreDriller

Carpenter - Building / Heavy&Highway

06/01/2021

JOB DESCRIPTION Carpenter - Building / Heavy&Highway

DISTRICT 11

ENTIRE COUNTIES
 Putnam, Rockland, Westchester

WAGES

WAGES:(per hour)		
	07/01/2020	07/01/2021
BUILDING/HEAVY & HIGHWAY/TUNNEL:		Additional
Carpenter		\$ 0.40
Base Wage	\$ 37.69	
	+ \$7.61*	

*For all hours paid straight or premium.

SHIFT DIFFERENTIAL: When it is mandated by a Government Agency irregular or off shift can be worked. The Carpenter shall receive an additional fifteen percent (15%) of wage plus applicable benefits.

NOTE:Carpenters employed in the removal or abatement of asbestos or any toxic or hazardous material or required to work near asbestos or any toxic or hazardous material and required to wear protective equipment shall receive two (2) hours extra pay per day, plus applicable supplemental benefits.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker	\$ 31.53
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OVERTIME PAY

BUILDING:
 See (B, E, Q) on OVERTIME PAGE.

HEAVY&HIGHWAY/TUNNEL:
 See (B, E, P, *R, **T, X) on OVERTIME PAGE.

*R applies to Heavy&Highway/Tunnel Overtime Holiday Code 25 with benefits at straight time rate.
 **T applies to Heavy&Highway/Tunnel Overtime Holiday Codes 5 & 6 with benefits at straight time rate.

HOLIDAY

BUILDING:
 Paid: See (1) on HOLIDAY PAGE.
 Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE.
 Holidays that fall on Sunday will be observed Monday.

HEAVY&HIGHWAY/TUNNEL:
 Paid: See (5, 6, 25) on HOLIDAY PAGE including benefits.
 Overtime: See (5, 6, 25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

1 year terms at the following wage rates:

Indentured before July 1 2016				
1st	2nd	3rd	4th	
\$ 18.85	\$ 22.61	\$ 26.38	\$ 30.15	
+3.55*	+3.55*	+3.55*	+3.55*	
Indentured after July 1 2016				
1st	2nd	3rd	4th	5th
\$ 18.85	\$ 22.61	\$ 24.50	\$ 26.38	\$ 30.15
+3.55*	+3.55*	+3.55*	+3.55*	+3.55*

*For all hours paid straight or premium

SUPPLEMENTAL BENEFITS per hour:

All terms \$ 16.28 11-279.1B/HH

Electrician **06/01/2021**

JOB DESCRIPTION Electrician **DISTRICT 9**

ENTIRE COUNTIES
 Bronx, Kings, New York, Queens, Richmond, Westchester

WAGES

Per hour:	07/01/2020	03/10/2021
Service Technician	\$ 33.90	\$34.40

Service and Maintenance on Alarm and Security Systems.

Maintenance, repair and /or replacement of defective (or damaged) equipment on, but not limited to, Burglar - Fire - Security - CCTV - Card Access - Life Safety Systems and associated devices. (Whether by service contract of T&M by customer request.)

SUPPLEMENTAL BENEFITS

Per hour:		
Journeyworker:	\$ 18.43	\$ 19.32

OVERTIME PAY
 See (B, E, Q) on OVERTIME PAGE

HOLIDAY
 Paid: See (5, 6, 11, 15, 16, 17, 25, 26) on HOLIDAY PAGE
 Overtime: See (5, 6, 11, 15, 16, 17, 25, 26) on HOLIDAY PAGE

9-3H

Electrician **06/01/2021**

JOB DESCRIPTION Electrician **DISTRICT 8**

ENTIRE COUNTIES
 Westchester

WAGES

Per hour:	07/01/2020
Electrician/A-Technician	\$ 52.75
Teledata	\$ 52.75

Note: On a job where employees are required to work on bridges over navigable waters, transmission towers, light poles, bosun chairs, swinging scaffolds , etc. 40 feet or more above the water or ground or under compressed air, or tunnel projects under construction or where assisted breathing apparatus is required, they will be paid at the rate of time and one-half for such work except on normal pole line or building construction work.

SUPPLEMENTAL BENEFITS

Per hour:	07/01/2020
Journeyworker	\$ 51.80

OVERTIME PAY
 See (A, G, *J, P) on OVERTIME PAGE
 *NOTE: Emergency work on Sunday and Holidays is at the time and one-half overtime rate.

HOLIDAY
 Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

(1) year terms at the following wage rates:

	07/01/2020
1st term	\$ 13.00
2nd term	15.00
3rd term	17.00
4th term	19.00
MIJ 1-12 months	23.00
MIJ 13-18 months	26.50

Supplemental Benefits per hour:

	07/01/2020
1st term	\$ 9.49
2nd term	12.39
3rd term	13.72
4th term	15.05
MIJ 1-12 months	12.08
MIJ 13-18 months	13.38

8-3/W

Electrician

06/01/2021

JOB DESCRIPTION Electrician

DISTRICT 8

ENTIRE COUNTIES

Westchester

WAGES

07/01/2020

Electrician	\$ 26.50
H - Telephone	\$ 26.50

Electrical and Teledata work of limited scope, consisting of repairs and /or replacement of defective electrical and teledata equipment.
 - Includes all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls and washing and cleaning of foregoing fixtures.

See Electrician/A Technician classification for all new installations of wiring, conduit, junction boxes and light fixtures.

SUPPLEMENTAL BENEFITS

07/01/2020

Electrician & H - Telephone	\$ 13.38
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OVERTIME PAY

See (B, G, *J, P) on OVERTIME PAGE

*Note: Emergency work on Sunday and Holidays is at the time and one-half overtime rate.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

8-3m

Elevator Constructor

06/01/2021

JOB DESCRIPTION Elevator Constructor

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

PARTIAL COUNTIES

Rockland: Entire County except for the Township of Stony Point

Westchester: Entire County except for the Townships of Bedford, Lewisboro, Cortland, Mt. Kisco, North Salem, Pound Ridge, Somers and Yorktown.

WAGES

Per hour:

	07/01/2019	03/17/2021
Elevator Constructor	\$ 69.56	\$ 72.29
Modernization & Service/Repair	\$ 54.56	\$ 56.77

SUPPLEMENTAL BENEFITS

Per Hour:

Elevator Constructor	\$ 41.92	\$ 42.92
Modernization & Service/Repairs	\$ 40.86	\$ 41.82

OVERTIME PAY

Constructor See (D, M, T) on OVERTIME PAGE.

Modern/Service See (B, F, S) on OVERTIME PAGE.

HOLIDAY

Paid: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE
 Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

WAGES PER HOUR:

*Note: 1st Term is based on Average wage of Constructor & Modernization.
 Terms 2 thru 4 Based on Journeymans wage of classification Working in.

1 YEAR TERMS:

1st Term*	2nd Term	3rd Term	4th Term
50%	55%	65%	75%

SUPPLEMENTAL BENEFITS

Elevator Constructor

1st Term	\$ 33.38	\$ 34.05
2nd Term	34.20	34.91
3rd Term	35.55	36.30
4th Term	36.89	37.70

Modernization &
 Service/Repair

1st Term	\$ 33.33	\$ 34.00
2nd Term	33.82	34.50
3rd Term	35.09	35.83
4th Term	36.36	37.15

4-1

Elevator Constructor

06/01/2021

JOB DESCRIPTION Elevator Constructor

DISTRICT 1

ENTIRE COUNTIES

Columbia, Dutchess, Greene, Orange, Putnam, Sullivan, Ulster

PARTIAL COUNTIES

Delaware: Towns of Andes, Bovina, Colchester, Davenport, Delhi, Harpersfield, Hemdon, Kortright, Meredith, Middletown, Roxbury, Hancock & Stamford

Rockland: Only the Township of Stony Point.

Westchester: Only the Townships of Bedford, Lewisboro, Cortland, Mt. Kisco, North Salem, Pound Ridge, Somers and Yorktown.

WAGES

Per Hour	07/01/2020	01/01/2021
Mechanic	\$ 60.49	\$62.51
Helper	70% of Mechanic Wage Rate	70% of Mechanic Wage Rate

Four (4), ten (10) hour days may be worked for New Construction and Modernization Work at straight time during a week, Monday thru Thursday or Tuesday thru Friday.

***Four (4), ten (10) hour days are not permitted for Contract Work/Repair Work

NOTE - In order to use the '4 Day/10 Hour Work Schedule' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule', form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour	07/01/2020	01/01/2021
Journeyman/Helper	\$ 34.765*	\$ 35.825*

(*)Plus 6% of regular hourly if less than 5 years of service. Plus 8% of regular hourly rate if more than 5 years of service.

OVERTIME PAY

See (D, O) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 15, 16) on HOLIDAY PAGE
 Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE

Note: When a paid holiday falls on Saturday, it shall be observed on Friday. When a paid holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES

Wages per hour:

0-6 mo*	6-12 mo	2nd yr	3rd yr	4th yr
50 %	55 %	65 %	70 %	80 %

(*)Plus 6% of the hourly rate, no additional supplemental benefits.

Supplemental Benefits per hour worked:

Same as Journeyperson/Helper

1-138

Glazier

06/01/2021

JOB DESCRIPTION Glazier

DISTRICT 8

ENTIRE COUNTIES

Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES

Per hour:	7/01/2020	5/01/2021
Glazier	\$ 57.55	\$ 58.60
*Scaffolding	58.55	59.55
Glass Tinting & Window Film	29.17	29.60
**Repair & Maintenance	29.17	29.60

*Scaffolding includes swing scaffold, mechanical equipment, scissor jacks, man lifts, booms & buckets 24' or more, but not pipe scaffolding.

**Repair & Maintenance- All repair & maintenance work on a particular building, whenever performed, where the total cumulative contract value is under \$148,837. All Glass tinting, window film, regardless of material or intended use, and all affixing of decals to windows or glass.

SUPPLEMENTAL BENEFITS

Per hour:	7/01/2020	5/01/2021
Journeyworker	\$ 34.59	\$ 36.04
Glass tinting & Window Film	20.29	21.19
Repair & Maintenance	20.29	21.19

OVERTIME PAY

See (B,H,V) on OVERTIME PAGE.

For 'Repair & Maintenance' and 'Glass Tinting & Window Film' see (B, B2, I, S) on overtime page.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
 Overtime: See (4, 6, 16, 25) on HOLIDAY PAGE
 For 'Repair & Maintenance' and 'Glass Tinting & Window Film' Only
 Paid: See(5, 6, 16, 25)
 Overtime: See(5, 6, 16, 25)

REGISTERED APPRENTICES

Wage per hour:
 (1) year terms at the following wage rates:

	7/01/2020	5/01/2021
1st term	\$ 20.14	\$ 20.72
2nd term	28.21	28.66
3rd term	34.10	34.67
4th term	45.80	46.62

Supplemental Benefits:

(Per hour)		
1st term	\$ 16.16	\$ 16.58
2nd term	22.76	23.57

3rd term	25.16	26.09
4th term	29.73	30.91

8-1087 (DC9 NYC)

Insulator - Heat & Frost **06/01/2021**

JOB DESCRIPTION Insulator - Heat & Frost **DISTRICT 8**

ENTIRE COUNTIES
 Dutchess, Orange, Putnam, Rockland, Westchester

WAGES

Per hour:	07/01/2020	05/31/2021
Insulator	\$ 55.00	\$ 2.00
Discomfort & Additional Training**	57.96	
Fire Stop Work*	29.44	

* Applies on all exclusive Fire Stop Work (When contract is for Fire Stop work only). No apprentices on these contracts only.

**Applies to work requiring: garb or equipment worn against the body not customarily worn by insulators; psychological evaluation; special training, including but not limited to "Yellow Badge" radiation training

Note: Additional \$0.50 per hour for work 30 feet or more above floor or ground level.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker	\$ 34.35
Discomfort & Additional Training	36.30
Fire Stop Work: Journeyworker	17.52

OVERTIME PAY

See (B, E, E2, Q, *T) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Note: Last working day preceding Christmas and New Years day, workers shall work no later than 12:00 noon and shall receive 8 hrs pay.

Overtime: See (2*, 4, 6, 16, 25) on HOLIDAY PAGE.

*Note: Labor Day triple time if worked.

REGISTERED APPRENTICES

(1) year terms:

Insulator Apprentices:

1st	2nd	3rd	4th
\$ 29.44	\$ 34.55	\$ 39.66	\$ 44.78

Discomfort & Additional Training Apprentices:

1st	2nd	3rd	4th
\$ 30.99	\$ 36.41	\$ 41.83	\$ 47.26

Supplemental Benefits paid per hour:

Insulator Apprentices:

1st term	\$ 17.52
2nd term	20.89
3rd term	24.25
4th term	27.61

Discomfort & Additional Training Apprentices:

1st term	\$ 18.50
2nd term	22.06

3rd term	25.62
4th term	29.18

8-91

Ironworker **06/01/2021**

JOB DESCRIPTION Ironworker **DISTRICT 9**

ENTIRE COUNTIES
 Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES
 Per Hour: 07/01/2020 01/01/2021

Ironworker Rigger \$ 67.13 \$ 67.99

Ironworker Stone
 Derrickman \$ 67.13 \$ 67.99

SUPPLEMENTAL BENEFITS
 Per hour: \$ 40.94 \$ 41.44

OVERTIME PAY
 See (B, D1, *E, Q, **V) on OVERTIME PAGE
 *Time and one-half shall be paid for all work on Saturday up to eight (8) hours and double time shall be paid for all work thereafter.
 ** Benefits same premium as wages on Holidays only

HOLIDAY
 Paid: See (18) on HOLIDAY PAGE
 Overtime: See (5, 6, 8, 25) on HOLIDAY PAGE
 *Work stops at schedule lunch break with full day's pay.

REGISTERED APPRENTICES
 Wage per hour:

1/2 year terms at the following hourly wage rate:

	1st	2nd	3rd	4th
07/01/2020	\$33.12	\$47.19	\$52.50	\$57.82
01/01/2021	\$33.55	\$47.94	\$53.34	\$58.74

Supplemental benefits:
 Per hour:

07/01/2020	\$20.93	\$31.23	\$31.23	\$31.23
01/01/2021	\$21.18	\$31.45	\$31.45	\$31.45

9-197D/R

Ironworker **06/01/2021**

JOB DESCRIPTION Ironworker **DISTRICT 4**

ENTIRE COUNTIES
 Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES
 Per Hour: 07/01/2020 01/01/2021

Ornamental \$ 45.65 \$ 45.90
 Chain Link Fence 45.65 45.90
 Guide Rail 45.65 45.90

SUPPLEMENTAL BENEFITS
 Per hour:
 Journeyworker: \$ 58.05 \$ 59.05

OVERTIME PAY
 See (B, B1, Q, V) on OVERTIME PAGE

HOLIDAY
 Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
 Apprentices hired before 8/31/2018:
 (1/2) year terms at the following percentage of Journeyman's wage.
 5th Term 80%

Supplemental Benefits per hour:		
5th Term	52.38	53.48
Apprentices Hired after 9/1/18:		
1 year terms		
1st Term	\$ 21.13	\$ 21.13
2nd Term	24.77	24.77
3rd Term	36.32	28.40
4th Term	TBD	32.06
Supplemental Benefits per hour:		
1st Term	\$ 17.61	\$ 17.89
2nd Term	18.86	19.14
3rd Term	52.58	20.40
4th Term	TBD	21.66

4-580-Or

Ironworker **06/01/2021**

JOB DESCRIPTION Ironworker **DISTRICT 4**

ENTIRE COUNTIES
 Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

PER HOUR:

	07/01/2020	01/01/2021
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Ironworker:		
Structural	\$ 52.70	\$ 53.45
Bridges		
Machinery		

SUPPLEMENTAL BENEFITS

PER HOUR PAID:

Journeyman	\$ 81.35	\$ 82.35
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OVERTIME PAY

See (B, B1, Q, *V) on OVERTIME PAGE
 *NOTE: Benefits are calculated for every hour paid

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6, 18, 19) on HOLIDAY PAGE

REGISTERED APPRENTICES

WAGES PER HOUR:

6 month terms at the following rate:

1st	\$27.45	\$27.83
2nd	\$28.05	\$28.43
3rd - 6th	\$28.66	\$29.04

Supplemental Benefits

PER HOUR PAID:

All Terms	\$56.15	\$56.90
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4-40/361-Str

Ironworker **06/01/2021**

JOB DESCRIPTION Ironworker **DISTRICT 4**

ENTIRE COUNTIES
 Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

PARTIAL COUNTIES
 Rockland: Southern section - south of Convent Road and east of Blue Hills Road.

WAGES

Per hour: 07/01/2020

Reinforcing &

Metal Lathing	\$ 56.25
"Base" Wage	\$ 54.70 plus \$ 1.55

"Base" Wage is used to calculate overtime hours only.

SUPPLEMENTAL BENEFITS

Per hour:

Reinforcing & Metal Lathing	\$ 38.30
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OVERTIME PAY

See (B, E, Q, *X) on OVERTIME PAGE

*Only \$22.00 per Hour for non worked hours

Supplemental Benefit Premiums for Overtime Hours worked:

Time & One Half	\$ 45.08
Double Time	\$ 51.33

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6, 11, 13, 18, 19, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

(1) year terms at the following wage rates:

1st term	2nd term	3rd term	4th Term
Wage Per Hour: \$ 22.55	\$ 28.38	\$ 34.68	\$ 37.18
"Base" Wage \$ 21.00 plus \$1.55	\$ 26.80 plus \$1.58	\$ 33.10 plus \$1.58	\$ 35.60 plus \$1.58

"Base" Wage is used to calculate overtime hours ONLY.

SUPPLEMENTAL BENIFITS

Per Hour:

1st term	2nd term	3rd term	4th Term
\$ 18.17	\$ 21.34	\$ 22.00	\$ 20.50

4-46Reinf

Laborer - Building **06/01/2021**

JOB DESCRIPTION Laborer - Building

DISTRICT 8

ENTIRE COUNTIES

Putnam, Westchester

WAGES

07/01/2020

Laborer	\$ 35.30 plus \$4.60**
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Laborer - Asbestos & Hazardous Materials Removal	\$ 41.55*
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* Abatement/Removal of:

- Lead based or lead containing paint on materials to be repainted is classified as Painter.
- Asbestos containing roofs and roofing material is classified as Roofer.

** This portion is not subject to overtime premium.

NOTE: Upgrade/Material condition work plan for work performed during non-outage under a wage formula of 90% wage/100% fringe benefits at nuclear power plants.

SUPPLEMENTAL BENEFITS

Per hour: 07/01/2020

Journeyworker \$ 26.40

OVERTIME PAY

See (B, E, E2, Q, *V) on OVERTIME PAGE

*Note: For Sundays and Holidays worked benefits are at the same premium as wages.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

LABORER ONLY

Hourly terms at the following wage:

Level A	Level B	Level C	Level D	Level E
0-1000	1001-2000	2001-3000	3001-4000	4001+
\$ 23.90	\$ 27.50	\$ 31.50	\$ 38.00	\$ 39.80

Supplemental Benefits per hour:

Apprentices

Level A	\$ 12.35
Level B	15.20
Level C	17.80
Level D	18.20
Level E	26.40

8-235/B

Laborer - Heavy&Highway

06/01/2021

JOB DESCRIPTION Laborer - Heavy&Highway

DISTRICT 8

ENTIRE COUNTIES

Putnam, Westchester

WAGES

PUTNAM: APPLIES TO ALL HEAVY & HIGHWAY WORK EXCLUDING HIGHWAYS, STREETS, AND BRIDGES

GROUP I: Blaster and Quarry Master

GROUP II: Burner, Drillers(jumbo, joy, wagon, air track, hydraulic), Drill Operator, Self Contained Rotary Drill, Curbs/ Asphalt Screedman/Raker, Bar Person.

GROUP III: Pavement Breakers, Jeeper Operator, Jack Hammer, Pneumatic Tools (all), Gas Driller, Guniting, Railroad Spike Puller, Pipelayer, Chain Saw, Deck winches on scows, Power Buggy Operator, Power Wheelbarrow Operator, Bar Person Helper.

GROUP IV: Concrete Laborers, Asph. Worker, Rock Scaler, Vibrator Oper., Bit Grinder, Air Tamper, Pumps, Epoxy (adhesives, fillers and troweled on), Barco Rammer, Concrete Grinder, Crack Router Operator, Guide Rail-digging holes and placing concrete and demolition when not to be replaced, distribution of materials and tightening of bolts.

GROUP V: Drillers Helpers, Common Laborer, Mason Tenders, Signal Person, Pit Person, Truck Spotter, Powder Person, Landscape/Nursery Person, Dump Person, Temp. Heat.

GROUP VIA: Asbestos/Toxic Waste Laborer-All removal (Roads, Tunnels, Landfills, etc.) Confined space laborer

Wages:(per hour) 07/01/2020

GROUP I	\$44.45*
GROUP II	43.10*
GROUP III	42.70*
GROUP IV	42.35*
GROUP V	42.00*
GROUP VIA	44.00*
Operator Qualified	
Gas Mechanic	54.45*
Flagperson	35.65*

*NOTE: To calculate overtime premiums, deduct \$0.10 from above wages

SHIFT WORK: A shift premium will be paid on Public Work contracts for off-shift or irregular shift work when mandated by the NYS D.O.T. or other Governmental Agency contracts. Employees shall receive an additional 15% per hour above current rate for all regular and irregular shift work. Premium pay shall be calculated using the 15% per hour differential as base rate.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker:

First 40 Hours	
Per Hour	\$24.35
Over 40 Hours	
Per Hour	18.10

OVERTIME PAY

See (B, E, P, R, S) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 8, 9, 15, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 9, 15, 25) on HOLIDAY PAGE

NOTE: For Holiday Overtime: 5, 6 - Code 'S' applies

For Holiday Overtime: 8, 9, 15, 25 - Code 'R' applies

REGISTERED APPRENTICES

	1st term 1-1000hrs	2nd term 1001-2000hrs	3rd term 2001-3000hrs	4th term 3001-4000hrs
07/01/2020	\$ 23.90	\$ 28.20	\$ 32.50	\$ 36.70

Supplemental Benefits per hour:

1st term	\$ 3.85 - After 40 hours: \$ 3.60
2nd term	\$ 3.95 - After 40 hours: \$ 3.60
3rd term	\$ 4.45 - After 40 hours: \$ 4.00
4th term	\$ 5.00 - After 40 hours: \$ 4.50

8-60H/H

Laborer - Tunnel

06/01/2021

JOB DESCRIPTION Laborer - Tunnel

DISTRICT 11

ENTIRE COUNTIES

Columbia, Dutchess, Greene, Orange, Otsego, Putnam, Rockland, Sullivan, Ulster, Westchester

PARTIAL COUNTIES

Chenango: Townships of Columbus, Sherburne and New Berlin.

Delaware: Townships of Andes, Bovina, Middletown, Roxbury, Franklin, Hamden, Stamford, Delhi, Kortright, Harpersfield, Merideth and Davenport.

WAGES

Class 1: All support laborers/sandhogs working above the shaft or tunnel.

Class 2: All laborers/sandhogs working in the shaft or tunnel.

Class 4: Safety Miners

Class 5: Site work related to Shaft/Tunnel

WAGES: (per hour)

	07/01/2020	07/01/2021	07/01/2022
Class 1	\$ 50.45	\$ 51.95	\$ 53.45
Class 2	52.60	54.10	55.60
Class 4	59.00	60.50	62.00
Class 5	42.25	43.50	44.80

Toxic and hazardous waste, lead abatement and asbestos abatement work will be paid an additional \$ 3.00 an hour.

SHIFT DIFFERENTIAL...On all Government mandated irregular shift work:

- Employee shall be paid at time and one half the regular rate Monday through Friday.
- Saturday shall be paid at 1.65 times the regular rate.
- Sunday shall be paid at 2.15 times the regular rate.

SUPPLEMENTAL BENEFITS

Per hour:

Benefit 1	\$ 32.15	\$ 33.25	\$ 34.45
Benefit 2	48.15	49.80	51.60
Benefit 3	64.15	66.35	68.75

Benefit 1 applies to straight time hours, paid holidays not worked.

Benefit 2 applies to over 8 hours in a day (M-F), irregular shift work hours worked, and Saturday hours worked.

Benefit 3 applies to Sunday and Holiday hours worked.

OVERTIME PAY

See (B, E, Q, X) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 15, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 15, 16, 25) on HOLIDAY PAGE

When a recognized Holidays falls on Saturday or Sunday, holidays falling on Saturday shall be recognized or observed on Friday and holidays falling on Sunday shall be recognized or observed on Monday. Employees ordered to work on the Saturday or Sunday of the holiday or on the recognized or the observed Friday or Monday for those holidays falling on Saturday or Sunday shall receive double time the established rate and benefits for the holiday.

REGISTERED APPRENTICES

FOR APPRENTICE RATES, refer to the appropriate Laborer Heavy & Highway wage rate contained in the wage schedule for the County and location where the work is to be performed.

11-17/60/235/754Tun

Lineman Electrician

06/01/2021

JOB DESCRIPTION Lineman Electrician

DISTRICT 6

ENTIRE COUNTIES

Westchester

WAGES

Below rates apply to electrical overhead and underground distribution and maintenance work and overhead and underground transmission line work, electrical substations, switching structures, continuous pipe-type underground fluid or gas filled transmission conduit and cable installations, maintenance jobs or projects, railroad catenary installations and maintenance, third rail installations, the bonding of rails and the installation of fiber optic cable. (Ref #14.04.01)

Includes Teledata Work performed within ten (10) feet of high voltage (600 volts or over) transmission lines.

Per hour: 07/01/2020

Lineman, Tech, Welder	\$ 56.51
Crane, Crawler Backhoe	56.51
Cable Splicer-Pipe Type	62.16
Digging Mach Operator	50.86
Cert. Welder-Pipe Type	59.34
Tractor Trailer Driver	48.03
Groundman, Truck Driver	45.21
Equipment Mechanic	45.21
Flagman	33.91

Additional \$1.00 per hour for entire crew when a helicopter is used.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM TO 4:30 PM REGULAR RATE
2ND SHIFT	4:30 PM TO 1:00 AM REGULAR RATE PLUS 17.3%
3RD SHIFT	12:30 AM TO 9:00 AM REGULAR RATE PLUS 31.4%

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. Tuesday thru Friday may be worked with no make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked (but also required on non-worked holidays):

Journeyman	\$ 24.90
	*plus 6.75% of

hourly wage

*The 6.75% is based on the hourly wage paid, straight time or premium time.

OVERTIME PAY

See (B, E, Q,) on OVERTIME PAGE. *Note* Double time for emergency work designated by the Dept of Jurisdiction.
 NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked.
 Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.
 Overtime See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES

WAGES per hour: 1000 hour terms.

	07/01/2020
1st term	\$ 33.91
2nd term	36.73
3rd term	39.56
4th term	42.38
5th term	45.21
6th term	48.03
7th term	50.86

SUPPLEMENTAL BENEFITS per hour: Same as Journeyman

6-1249aWest

Lineman Electrician - Teledata

06/01/2021

JOB DESCRIPTION Lineman Electrician - Teledata

DISTRICT 6

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

Per hour:

For outside work, stopping at first point of attachment (demarcation).

	07/01/2020	01/01/2021
Cable Splicer	\$ 33.77	\$ 34.78
Installer, Repairman	\$ 32.05	\$ 33.01
Teledata Lineman	\$ 32.05	\$ 33.01
Tech., Equip. Operator	\$ 32.05	\$ 33.01
Groundman	\$ 16.99	\$ 17.50

NOTE: EXCLUDES Teledata work within ten (10) feet of High Voltage (600 volts and over) transmission lines. For this work please see LINEMAN.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED:

1ST SHIFT	REGULAR RATE
2ND SHIFT	REGULAR RATE PLUS 10%
3RD SHIFT	REGULAR RATE PLUS 15%

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman	\$ 5.06	\$ 5.06
	*plus 3% of wage paid	*plus 3% of wage paid

*The 3% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 16) on HOLIDAY PAGE

6-1249LT - Teledata

Lineman Electrician - Traffic Signal, Lighting

06/01/2021

JOB DESCRIPTION Lineman Electrician - Traffic Signal, Lighting

DISTRICT 6

ENTIRE COUNTIES

Westchester

WAGES

Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors which includes, but is not limited to road loop wires; conduit and plastic or other type pipes that carry conductors, flex cables and connectors, and to oversee the encasement or burial of such conduits or pipes.

A Groundman/Groundman Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/truck driver may assist in installing conduit, pipe, cables and equipment.

A flagger's duties shall consist of traffic control only.
(Ref #14.01.03)

Per hour: 07/01/2020

Lineman, Technician	\$ 51.61
Crane, Crawler Backhoe	51.61
Certified Welder	54.19
Digging Machine	46.45
Tractor Trailer Driver	43.87
Groundman, Truck Driver	41.29
Equipment Mechanic	41.29
Flagman	30.97

Above rates are applicable for installation, testing, operation, maintenance and repair on all Traffic Control (Signal) and Illumination (Lighting) projects, Traffic Monitoring Systems, and Road Weather Information Systems. Includes digging of holes for poles, anchors, footer foundations for electrical equipment; assembly of all electrical materials or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM TO 4:30 PM REGULAR RATE
2ND SHIFT	4:30 PM TO 1:00 AM REGULAR RATE PLUS 17.3%
3RD SHIFT	12:30 AM TO 9:00 AM REGULAR RATE PLUS 31.4%

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

Tuesday thru Friday may be worked with no make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked (but also required on non-worked holidays):

Journeyman	\$ 24.90
	*plus 6.75% of hourly wage

*The 6.75% is based on the hourly wage paid, straight time rate or premium rate.

Supplements paid at STRAIGHT TIME rate for holidays.

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE. *Note* Double time for emergency work designated by the Dept. of Jurisdiction.
 NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked.
 Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid: See (5, 6, 8, 13, 25) on HOLIDAY PAGE and Governor of NYS Election Day.
 Overtime: See (5, 6, 8, 13, 25) on HOLIDAY PAGE and Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES

WAGES per hour: 1000 hour terms.

	07/01/2020
1st term	\$ 30.97
2nd term	33.55
3rd term	36.13
4th term	38.71
5th term	41.29
6th term	43.87
7th term	46.45

SUPPLEMENTAL BENEFITS per hour: Same as Journeyman

6-1249aWestLT

Mason - Building **06/01/2021**

JOB DESCRIPTION Mason - Building

DISTRICT 9

ENTIRE COUNTIES
 Nassau, Rockland, Suffolk, Westchester

WAGES

Per hour:	07/01/2020	12/07/2020
Tile Setters	\$ 60.09	\$ 60.86

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2020	12/07/2020
	\$ 24.81*	\$ 24.91*
	+ \$9.72	+ \$9.73

* This portion of benefits subject to same premium rate as shown for overtime wages.

OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE
 Work beyond 10 hours on Saturday shall be paid at double the hourly wage rate.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage per hour:

Tile Setters:
 (750 hour) term at the following wage rate:

Term:	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
	1-750	751-1500	1501-2250	2251-3000	3001-3750	3751-4500	4501-5250	5251-6000	6001-6750	6501-7000
07/01/2020	\$20.35	\$25.11	\$32.09	\$36.83	\$40.25	\$43.50	\$46.95	\$51.69	\$54.34	\$58.19

Supplemental Benefits per hour:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
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\$12.55*	\$12.55*	\$15.06*	\$15.06*	\$16.06*	\$17.56*	\$18.56*	\$18.56*	\$16.56*	\$21.81*
+\$.66	+\$.70	+\$.80	+\$.85	+\$ 1.23	+\$ 1.27	+\$ 1.62	+\$ 1.67	+\$ 5.82	+\$ 6.31

* This portion of benefits subject to same premium rate as shown for overtime wages.

9-7/52A

Mason - Building **06/01/2021**

JOB DESCRIPTION Mason - Building **DISTRICT 11**

ENTIRE COUNTIES
 Putnam, Rockland, Westchester

PARTIAL COUNTIES
 Orange: Only the Township of Tuxedo.

WAGES

Per hour:
07/01/2020

Bricklayer	\$ 42.09
Cement Mason	42.09
Plasterer/Stone Mason	42.09
Pointer/Caulker	42.09

Additional \$1.00 per hour for power saw work
 Additional \$0.50 per hour for swing scaffold or staging work

SHIFT WORK: When shift work or an irregular work day is mandated or required by state, federal, county, local or other governmental agency contracts, the following premiums apply:

- Irregular work day requires 15% premium
- Second shift an additional 15% of wage plus benefits to be paid
- Third shift an additional 25% of wage plus benefits to be paid

SUPPLEMENTAL BENEFITS

Per hour:
 Journeyman \$ 35.00

OVERTIME PAY

OVERTIME:
 Cement Mason See (B, E, Q, W) on OVERTIME PAGE.
 All Others See (B, E, Q) on OVERTIME PAGE.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6) on HOLIDAY PAGE
 Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

REGISTERED APPRENTICES

Wages per hour:
 750 hour terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour
 750 hour terms at the following percentage of journeyman supplements

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Apprentices indentured before June 1st, 2011 receive full journeyman benefits

11-5wp-b

Mason - Building **06/01/2021**

JOB DESCRIPTION Mason - Building **DISTRICT 9**

ENTIRE COUNTIES
 Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Building	07/01/2020	01/01/2021
Wages per hour:		
Mosaic & Terrazzo Mechanic	\$57.42	\$ 57.92
Mosaic & Terrazzo Finisher	\$55.82	\$ 56.32

SUPPLEMENTAL BENEFITS

Per hour:		
Mosaic & Terrazzo Mechanic	\$ 25.61* + \$11.47	\$ 25.81* + \$11.72
Mosaic & Terrazzo Finisher	\$ 25.61* + \$11.45	\$ 25.81* + \$ 11.70

*This portion of benefits subject to same premium rate as shown for overtime wages.

OVERTIME PAY

See (A, E, Q) on OVERTIME PAGE
 Deduct \$6.60 from hourly wages before calculating overtime.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

Easter Sunday is an observed holiday. Holidays falling on a Saturday will be observed on that Saturday. Holidays falling on a Sunday will be celebrated on the Monday.

REGISTERED APPRENTICES

Wages per hour:
 (750 Hour) terms at the following wage rate.

	1st	2nd	3rd	4th	5th	6th	7th	8th
07/01/2020	\$25.40	\$27.94	\$30.49	\$33.03	\$35.57	\$38.11	\$43.20	\$48.28
01/01/2021	\$25.65	\$28.22	\$30.79	\$33.36	\$35.92	\$38.48	\$43.62	\$48.95

Supplemental benefits per hour:

07/01/2020	\$12.81* +\$9.04	\$14.09* +\$9.94	\$15.37* +\$10.84	\$16.65* +\$11.75	\$17.93* +\$12.65	\$19.21* +\$13.55	\$21.77* +\$15.36	\$24.33* +\$17.16
01/01/2021	\$12.91* +\$9.16	\$14.20* +\$10.08	\$15.49* +\$11.00	\$16.78* +\$11.90	\$18.07* +\$12.82	\$19.36* +\$13.74	\$21.94* +\$15.58	\$24.52* +\$17.40

Apprentices hired after 07/01/2017:

Wages Per hour:	1st	2nd	3rd	4th	5th	6th
	0- 1500	1501- 3000	3001- 3750	3751- 4500	4501- 5250	5251- 6000
07/01/2020	\$22.20	\$22.88	\$30.49	\$35.57	\$40.65	\$45.73
01/01/2021	\$22.44	\$28.85	\$30.79	\$35.92	\$41.05	\$46.18

Supplemental Benefits per hour:

07/01/2020	\$4.55* +\$6.32	\$11.52* +\$8.13	\$15.37* +\$10.84	\$17.93* +\$12.65	\$20.49* +\$14.46	\$23.05* +\$16.22
01/01/2021	\$4.55* +\$6.42	\$5.85* +\$8.24	\$15.49* +\$11.00	\$18.07* +\$12.82	\$20.65* +\$14.66	\$23.23* +\$16.48

*This portion of benefits subject to same premium rate as shown for overtime wages.

Mason - Building **06/01/2021**

JOB DESCRIPTION Mason - Building **DISTRICT 9**

ENTIRE COUNTIES
 Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES
 Per hour: 07/01/2020 01/01/2021

Building-Marble Restoration:
 Marble, Stone & Terrazzo Polisher, etc
 \$ 44.66 \$ 45.37

SUPPLEMENTAL BENEFITS

Per Hour:
 Journeyworker:

Building-Marble Restoration:
 Marble, Stone & Polisher
 \$ 28.41 \$ 28.80

OVERTIME PAY

See (B, *E, Q, V) on OVERTIME PAGE
 *ON SATURDAYS, 8TH HOUR AND SUCCESSIVE HOURS PAID AT DOUBLE HOURLY RATE.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE
 1ST TERM APPRENTICE GETS PAID FOR ALL OBSERVED HOLIDAYS.

REGISTERED APPRENTICES

WAGES per hour:

900 hour term at the following wage:

	1st 1- 900	2nd 901- 1800	3rd 1801- 2700	4th 2701
07/01/2020	\$31.19	\$35.68	\$40.16	\$44.66
01/01/2021	\$31.74	\$36.30	\$40.82	\$45.37

Supplemental Benefits Per Hour:

07/01/2020	\$25.78	\$26.66	\$27.54	\$28.41
01/01/2021	\$26.10	\$26.99	\$27.91	\$28.80

9-7/24-MP

Mason - Building **06/01/2021**

JOB DESCRIPTION Mason - Building **DISTRICT 9**

ENTIRE COUNTIES
 Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES
 Wages: 07/01/2020 01/14/2021

Marble Cutters & Setters
 \$ 60.35 \$ 60.89

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker
 \$ 37.24 \$ 37.65

OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage Per Hour:

750 hour terms at the following wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
1-750	751-1500	1501-2250	2251-3000	3001-3750	3751-4500	4501-5250	5251-6000	6001-6751	6751-7500	
07/01/2020	\$24.15	\$27.15	\$30.16	\$33.19	\$36.20	\$39.20	\$42.15	\$45.26	\$51.28	\$57.34
01/14/2021	\$24.36	\$27.38	\$30.43	\$33.48	\$36.53	\$39.56	\$42.61	\$45.66	\$51.74	\$57.83

Supplemental Benefits per hour:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
07/01/2020	\$20.14	\$21.58	\$23.02	\$24.42	\$25.85	\$27.29	\$28.72	\$30.12	\$32.98	\$35.81
01/14/2021	\$20.31	\$21.77	\$23.22	\$24.66	\$26.09	\$27.55	\$28.99	\$30.44	\$33.33	\$36.22 9-7/4

Mason - Building **06/01/2021**

JOB DESCRIPTION Mason - Building

DISTRICT 9

ENTIRE COUNTIES

Nassau, Rockland, Suffolk, Westchester

WAGES

Per hour: 07/01/2020 12/07/2020

Tile Finisher \$ 46.21 \$ 46.69

SUPPLEMENTAL BENEFITS

Per Hour: \$ 21.56* \$ 21.91
+ \$9.65 + \$9.55

*This portion of benefits subject to same premium rate as shown for overtime wages

OVERTIME PAY

See (B, E, Q, *V) on OVERTIME PAGE

Work beyond 10 hours on a Saturday shall be paid at double the hourly wage rate.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

9-7/88A-tf

Mason - Building **06/01/2021**

JOB DESCRIPTION Mason - Building

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour: 07/01/2020 01/01/2021

Marble, Stone, etc.
 Maintenance Finishers: \$ 25.53 \$ 26.10

Note 1: An additional \$2.00 per hour for time spent grinding floor using "60 grit" and below.

Note 2: Flaming equipment operator shall be paid an additional \$25.00 per day.

SUPPLEMENTAL BENEFITS

Per Hour:

Marble, Stone, etc
 Maintenance Finishers: \$ 13.85 \$ 13.96

OVERTIME PAY

See (B, *E, Q, V) on OVERTIME PAGE
 *Double hourly rate after 8 hours on Saturday

HOLIDAY

Paid: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE
 Overtime: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE
 1st term apprentice gets paid for all observed holidays.

REGISTERED APPRENTICES

WAGES per hour:	07/01/2020	01/01/2021
0-750	\$17.87	\$20.99
751-1500	\$18.89	\$21.67
1501-2250	\$19.92	\$22.36
2251-3000	\$20.93	\$23.03
3001-3750	\$22.47	\$24.06
3751-4500	\$24.51	\$25.42
4501+	\$25.53	\$26.10

Supplemental Benefits:
 Per hour:

0-750	\$ 13.73	\$11.12
751-1500	\$ 13.75	\$11.50
1501-2250	\$ 13.76	\$11.87
2251-3000	\$ 13.78	\$12.26
3001-3750	\$ 13.80	\$12.82
3751-4500	\$ 13.83	\$13.58
4501+	\$ 13.85	\$13.96

9-7/24M-MF

Mason - Building / Heavy&Highway **06/01/2021**

JOB DESCRIPTION Mason - Building / Heavy&Highway **DISTRICT 9**

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour:	07/01/2020	01/14/2021
Marble-Finisher	\$ 47.92	\$ 48.27

SUPPLEMENTAL BENEFITS

Journeyworker:
 per hour

Marble- Finisher	\$ 34.99	\$ 35.25
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OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY

Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

* Work beyond 8 hours on a Saturday shall be paid at double the rate.

** When an observed holiday falls on a Sunday, it will be observed the next day.

9-7/20-MF

Mason - Heavy&Highway **06/01/2021**

JOB DESCRIPTION Mason - Heavy&Highway **DISTRICT 11**

ENTIRE COUNTIES

Putnam, Rockland, Westchester

PARTIAL COUNTIES

Orange: Only the Township of Tuxedo.

WAGES

Per hour:

07/01/2020

Bricklayer	\$ 42.60
Cement Mason	42.60
Marble/Stone Mason	42.60
Plasterer	42.60
Pointer/Caulker	42.60

Additional \$1.00 per hour for power saw work
 Additional \$0.50 per hour for swing scaffold or staging work

SHIFT WORK: When shift work or an irregular work day is mandated or required by state, federal, county, local or other governmental contracts, the following rates apply:

- Irregular work day requires 15% premium
- Second shift an additional 15% of wage plus benefits to be paid
- Third shift an additional 25% of wage plus benefits to be paid

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman	\$ 34.99
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OVERTIME PAY

Cement Mason	See (B, E, Q, W, X)
All Others	See (B, E, Q, X)

HOLIDAY

Paid:	See (5, 6, 15, 25) on HOLIDAY PAGE
Overtime:	See (5, 6, 15, 25) on HOLIDAY PAGE

Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

REGISTERED APPRENTICES

Wages per hour:

750 hour terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour

750 hour terms at the following percentage of journeyman supplements

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Apprentices indentured before June 1st, 2011 receive full journeyman benefits

11-5WP-H/H

Operating Engineer - Building

06/01/2021

JOB DESCRIPTION Operating Engineer - Building

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, New York, Putnam, Queens, Richmond, Westchester

PARTIAL COUNTIES

Dutchess: that part of Dutchess County lying south of the North City Line of the City of Poughkeepsie.

WAGES

NOTE:Construction surveying

Party chief--One who directs a survey party

Instrument Man--One who runs the instrument and assists Party Chief.

Rodman--One who holds the rod and assists the Survey Crew

Wages:(Per Hour) 07/01/2020

Building Construction:

Party Chief	\$ 74.75
Instrument Man	\$ 59.53

Rodman	\$ 40.79
Steel Erection:	
Party Chief	\$ 78.44
Instrument Man	\$ 62.74
Rodman	\$ 44.39

Heavy Construction-NYC counties only:
 (Foundation, Excavation.)

Party Chief	\$ 83.87
Instrument man	\$ 63.61
Rodman	\$ 54.59

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2020
Building Construction & Steel	\$ 22.85* + 6.90
Heavy Construction	\$ 23.10* + 6.90

* This portion subject to same premium as wages

Non-Worked Holiday Supplemental Benefit:	\$ 16.45
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OVERTIME PAY

See (A, B, E, Q) on OVERTIME PAGE
 Code "A" applies to Building Construction and has double the rate after 7 hours on Saturdays.
 Code "B" applies to Heavy Construction and Steel Erection and had double the rate after 8 hours on Saturdays.

HOLIDAY

Paid: See (5, 6, 9, 11, 15, 16, 25) on HOLIDAY PAGE
 Overtime: See (5, 6, 9, 11, 15, 16, 25) on HOLIDAY PAGE

9-15Db

Operating Engineer - Building **06/01/2021**

JOB DESCRIPTION Operating Engineer - Building **DISTRICT 8**

ENTIRE COUNTIES

Putnam, Westchester

PARTIAL COUNTIES

Dutchess: All the counties of Westchester and Putnam and the southern part of Dutchess County defined by the northern boundary line of the City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to Van Wagner Road, then north along Van Wagner Road to Bower Road, then east along Bower Road to Route 44 and along Route 44 east to Route 343, then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to the border line of the State of Connecticut and bordered on the west by the middle of the Hudson River.

WAGES

GROUP I:

Cranes (All Types up to 49 tons), Boom Trucks, Cherry Pickers (All Types), Clamshell Crane, Derrick (Stone and Steel), Dragline, Franki Pile Rig or similar, High Lift (Lull or similar) with crane attachment and winch used for hoisting or lifting, Hydraulic Cranes, Pile Drivers, Potain and similar.

Cranes (All types 50-99 tons), Drill Rig Casa Grande (CAT or similar), Franki Pile Rig or similar, Hydraulic Cranes (All types including Crawler Cranes- No specific boom length).

Cranes (All types 100 tons and over), All Tower Cranes, All Climbing Cranes irrespective of manufacturer and regardless of how the same is rigged, Franki Pile Rig or similar, Conventional Cranes (All types including Crawler Cranes-No specific boom length), Hydraulic Cranes.

GROUP I-A: Barber Green Loader-Euclid Loader, Bulldozer, Carrier-Trailer Horse, Concrete Cleaning Decontamination Machine Operator, Concrete-Portable Hoist, Conway or Similar Mucking Machines, Elevator & Cage, Excavators all types, Front End Loaders, Gradall, Shovel, Backhoe, etc. (Crawler or Truck), Heavy Equipment Robotics Operator/Mechanic, Hoist Engineer-Material, Hoist Portable Mobile Unit, Hoist (Single, Double or Triple Drum), Horizontal Directional Drill Locator, Horizontal Directional Drill Operator and Jersey Spreader, Letourneau or Tournapull (Scrapers over 20 yards Struck), Lift Slab Console, etc., Lull HiLift or Similar, Master Environmental Maintenance Mechanics, Mucking Machines Operator/Mechanic or Similar Type, Overhead Crane, Pavement Breaker (Air Ram), Paver (Concrete), Post Hole Digger, Power House Plant, Road Boring Machine, Road Mix Machine, Ross Carrier and Similar Machines, Rubber tire double end backhoes and similar machines, Scoopmobile Tractor-Shovel Over 1.5 yards, Shovel (Tunnels), Spreader (Asphalt) Telephie (Cableway), Tractor Type Demolition Equipment, Trenching Machines-Vermeer Concrete Saw Trencher and Similar, Ultra High Pressure Waterjet Cutting Tool System, Vacuum Blasting Machine operator/mechanic, Winch Truck A Frame.

GROUP I-B: Compressor (Steel Erection), Mechanic (Outside All Types), Negative Air Machine (Asbestos Removal), Push Button (Buzz Box) Elevator.

GROUP II: Compactor Self-Propelled, Concrete Pump, Crane Operator in Training (Over 100 Tons), Grader, Machines Pulling Sheep's Foot Roller, Roller (4 ton and over), Scrapers (20 yards Struck and Under), Vibratory Rollers, Welder.

GROUP III-A: Asphalt Plant, Concrete Mixing Plants, Forklift (All power sources), Joy Drill or similar, Tractor Drilling Machine, Loader (1 1/2 yards and under), Portable Asphalt Plant, Portable Batch Plant, Portable Crusher, Skid Steer (Bobcat or similar), Stone Crusher, Well Drilling Machine, Well Point System.

GROUP III-B: Compressor Over 125 cu. Feet, Conveyor Belt Machine regardless of size, Compressor Plant, Ladder Hoist, Stud Machine.

GROUP IV-A: Batch Plant, Concrete Breaker, Concrete Spreader, Curb Cutter Machine, Finishing Machine-Concrete, Fine Grading Machine, Hepa Vac Clean Air Machine, Material Hopper (sand, stone, cement), Mulching Grass Spreader, Pump Gypsum etc, Pump-Plaster-GROUT-Fireproofing. Roller (Under 4 Ton), Spreading and Fine Grading Machine, Steel Cutting Machine, Siphon Pump, Tar Joint Machine, Television Cameras for Water, Sewer, Gas etc. Turbo Jet Burner or Similar Equipment, Vibrator (1 to 5).

GROUP IV-B: Compressor (all types), Heater (All Types), Fire Watchman, Lighting Unit (Portable & Generator) Pump, Pump Station (Water, Sewer, Portable, Temporary), Welding Machine (Steel Erection & Excavation).

GROUP V: Mechanics Helper, Motorized Roller (walk behind), Stock Attendant, Welder's Helper.

GROUP VI-B: Utility Man, Warehouse Man.

WAGES: (per hour)

	07/01/2020
GROUP I	
Cranes- up to 49 tons	\$ 61.70
Cranes- 50 tons to 99 tons	63.86
Cranes- 100 tons and over	72.99
GROUP I-A	53.95
GROUP I-B	49.68
GROUP II	52.03
GROUP III-A	50.11
GROUP III-B	47.67
GROUP IV-A	49.60
GROUP IV-B	41.85
GROUP V	45.17
GROUP VI-A	52.96
GROUP VI-B	
Utility Man	42.83
Warehouse Man	44.92

An additional 20% to wage when required to wear protective equipment on hazardous/toxic waste projects.
 Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional \$2.00 per hour.
 Engineers operating cranes with booms 149 feet or over in length will be paid an additional \$3.00 per hour.
 Loader operators over 5 cubic yard capacity additional .50 per hour.
 Shovel operators over 4 cubic yard capacity additional \$1.00 per hour.

SUPPLEMENTAL BENEFITS

Per hour:

	07/01/2020
Journeyworker	\$ 28.52

OVERTIME PAY

OVERTIME:..... See (B, E, P, R*, T**, U***, V) on OVERTIME PAGE.

HOLIDAY

Paid:..... See (5, 6, 11, 12, 15, 25) on HOLIDAY PAGE.
Overtime:..... See (5, 6, 11, 12, 15, 25) on HOLIDAY PAGE.
* For Holiday codes 11, 12, 15, 25, code R applies.
** For Holiday code 28, code T applies
*** For Holiday codes 5 & 6, code U applies

8-137B

Operating Engineer - Heavy&Highway

06/01/2021

JOB DESCRIPTION Operating Engineer - Heavy&Highway

DISTRICT 8

ENTIRE COUNTIES

Putnam, Westchester

PARTIAL COUNTIES

Dutchess: All the counties of Westchester and Putnam and the southern part of Dutchess County defined by the northern boundary line of the City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to Van Wagner Road, then north along Van Wagner Road to Bower Road, then east along Bower Road to Route 44 and along Route 44 east to Route 343, then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to the border line of the State of Connecticut and bordered on the west by the middle of the Hudson River.

WAGES

GROUP I: Boom Truck, Cherry Picker, Clamshell, Crane, (Crawler, Truck), Dragline, Drill Rig (Casa Grande, Cat, or Similar), Floating Crane (Crane on Barges) under 100 tons, Gin Pole, Hoist Engineer-Concrete (Crane-Derrick-Mine Hoist), Knuckle Boom Crane, Rough Terrain Crane.

GROUP I-A: Auger (Truck or Truck Mounted), Boat Captain, Bulldozer-All Sizes, Central Mix Plant Operator, Chipper (all types), Close Circuit T.V., Combination Loader/Backhoe, Compactor with Blade, Concrete Finishing Machine, Gradall, Grader (Motor Grader), Elevator & Cage (Materials or Passenger), Excavator (and all attachments), Front End Loaders (1 1/2 yards and over), High Lift Lull and similar, Hoist (Single, Double, Triple Drum), Hoist Portable Mobile Unit, Hoist Engineer (Material), Jack and Bore Machine, Log Skidders, Mill Machines, Mucking Machines, Overhead Crane, Paver (concrete), Post Pounder (of any type), Push Cats, Road Reclaimer, Robot Hammer (Brokk or similar), Robotic Equipment (Scope of Engineer Schedule), Ross Carrier and similar, Scrapers (20 yard struck and over), Side Boom, Slip Form Machine, Spreader (Asphalt), Trenching Machines (Telephies-Vermeer Concrete Saw), Tractor Type Demolition Equipment, Vacuum Truck.

GROUP I-B: Asphalt Mobile Conveyor/Transfer Machine, Road Paver (Asphalt).

GROUP II-A: Ballast Regulators, Compactor Self Propelled, Fusion Machine, Rail Anchor Machines, Roller (4 ton and over), Scrapers (20 yard struck and under), Vibratory Roller (Riding), Welder.

GROUP II-B: Mechanic (Outside) All Types.

GROUP III: Air Tractor Drill, Asphalt Plant, Batch Plant, Boiler (High Pressure), Concrete Breaker (Track or Rubber Tire), Concrete Pump, Concrete Spreader, Excavator Drill, Farm Tractor, Forklift (all types), Gas Tapping (Live), Hydroseeder, Loader (1 1/2 yards and under), Locomotive (all sizes), Machine Pulling Sheeps Foot Roller, Portable Asphalt Plant, Portable Batch Plant, Portable Crusher (Apprentice), Powerhouse Plant, Roller (under 4 ton), Sheer Excavator, Skid Steer/Bobcat, Stone Crusher, Sweeper (with seat), Well Drilling Machine.

GROUP IV: Service Person (Grease Truck).

GROUP IV-B: Conveyor Belt Machine (Truck Mounted), Heater (all types), Lighting Unit (Portable), Maintenance Engineer (For Crane Only), Mechanics Helper, Pump (Fireproofing), Pumps-Pump Station/Water/Sewer/Gypsum/Plaster, etc., Pump Truck (Sewer Jet or Similar), Welders Helper, Welding Machine (Steel Erection), Well Point System.

GROUP V: All Tower Cranes-All Climbing Cranes and all cranes of 100-ton capacity or greater (3900 Manitowac or similar) irrespective of manufacturer and regardless of how the same is rigged, Hoist Engineer (Steel), Engineer-Pile Driver, Jersey Spreader, Pavement Breaker/Post Hole Digger.

WAGES: Per hour: 07/01/2020

Group I	\$ 62.38
Group I-A	54.95
Group I-B	57.92
Group II-A	52.61
Group II-B	54.26
Group III	51.68
Group IV	46.93
Group IV-B	40.24
Group V	
Engineer All Tower, Climbing and Cranes of 100 Tons	70.72

Hoist Engineer(Steel)	64.00
Engineer(Pile Driver)	68.27
Jersey Spreader,Pavement Breaker (Air Ram)Post Hole Digger	53.83

SHIFT DIFFERENTIAL:

A 15% premium on all hours paid, including overtime hours for 2nd, 3rd shifts on all government mandated off-shift work

Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional \$2.00 per hour over the rate listed in the Wage Schedule. Engineers operating cranes with booms 149 feet or over in length will be paid an additional \$3.00 per hour over the rate listed in the Wage Schedule. Loader and Excavator Operators: over 5 cubic yards capacity \$0.50 per hour over the rate listed in the Wage Schedule. Shovel Operators: over 4 cubic yards capacity \$1.00 per hour over the rate listed in the Wage Schedule.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday; Friday may be used as a make-up day.

NOTE - In order to use the 4 Day/10 Hour Work schedule Registration for Use of 4 Day/10 Hour Work Schedule, form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker:	07/01/2020
	\$ 30.50 up to 40 Hours
	After 40 hours \$ 21.35* PLUS \$ 1.15 on all hours worked

*This amount is subject to premium

OVERTIME PAY

See (B, E, E2, P, *R, **U) on OVERTIME PAGE

HOLIDAY

Paid:..... See (5, 6, 8, 9, 15, 25) on HOLIDAY PAGE

Overtime..... See (5, 6, 8, 9, 15, 25) on OVERTIME PAGE

* For Holiday codes 8,9,15,25 code R applies

** For Holiday Codes 5 & 6 code U applies

Note: If employees are required to work on Easter Sunday they shall be paid at the rate of triple time.

REGISTERED APPRENTICES

(1)year terms at the following rate.

07/01/2020

1st term	\$ 27.48
2nd term	32.97
3rd term	38.47
4th term	43.96

Supplemental Benefits per hour:

\$ 22.50

8-137HH

Operating Engineer - Heavy&Highway

06/01/2021

JOB DESCRIPTION Operating Engineer - Heavy&Highway

DISTRICT 9

ENTIRE COUNTIES

Putnam, Westchester

PARTIAL COUNTIES

Dutchess: South of the North city line of Poughkeepsie

WAGES

Party Chief - One who directs a survey party
Instrument Man - One who runs the instrument and assists Party Chief
Rodman - One who holds the rod and in general, assists the Survey Crew
Categories cover GPS & Underground Surveying

Per Hour: 07/01/2020

Party Chief \$ 81.06

Instrument Man 61.32

Rodman 52.53

SUPPLEMENTAL BENEFITS

Per Hour: 07/01/2020

All Categories
Straight Time: \$ 23.10* plus \$6.90

Premium:
Time & 1/2 \$ 34.65* plus \$6.90

Double Time \$ 46.20* plus \$6.90

Non-Worked Holiday Supplemental Benefits:
\$ 16.45

OVERTIME PAY

See (B, *E, Q) on OVERTIME PAGE

* Doubletime paid on all hours in excess of 8 hours on Saturday

HOLIDAY

Paid: See (5, 6, 7, 11, 12) on HOLIDAY PAGE

Overtime: See (5, 6, 7, 11, 12) on HOLIDAY PAGE

9-15Dh

Operating Engineer - Heavy&Highway - Tunnel

06/01/2021

JOB DESCRIPTION Operating Engineer - Heavy&Highway - Tunnel

DISTRICT 8

ENTIRE COUNTIES

Putnam, Westchester

PARTIAL COUNTIES

Dutchess: All the counties of Westchester and Putnam and the southern part of Dutchess County defined by the northern boundary line of the City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to Van Wagner Road, then north along Van Wagner Road to Bower Road, then east along Bower Road to Route 44 and along Route 44 east to Route 343, then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to the border line of the State of Connecticut and bordered on the west by the middle of the Hudson River.

WAGES

GROUP I: Boom Truck, Cherry Picker, Clamshell, Crane(Crawler,Truck), Dragline, Drill Rig Casa Grande(Cat or Similar), Floating Crane(Crane on Barge-Under 100 Tons), Hoist Engineer(Concrete/Crane-Derrick-Mine Hoist), Knuckle Boom Crane, Rough Terrain Crane.

GROUP I-A: Auger(Truck or Truck Mounted), Boat Captain, Bull Dozer-all sizes, Central Mix Plant Operator, Chipper-all types, Close Circuit T.V., Combination Loader/Backhoe, Compactor with Blade, Concrete Finishing Machine, Gradall, Grader(Motor Grader), Elevator & Cage(Materials or Passengers), Excavator(and all attachments), Front End Loaders(1 1/2 yards and over), High Lift Lull, Hoist(Single, Double, Triple Drum), Hoist Portable Mobile Unit, Hoist Engineer(Material), Jack and Bore Machine, Log Skidder, Milling Machine, Moveable Concrete Barrier Transfer & Transport Vehicle, Mucking Machines. Overhead Crane, Paver(Concrete), Post Pounder of any type, Push Cats, Road Reclaimer, Robot Hammer(Brokk or similar), Robotic Equipment(Scope of Engineer Schedule), Ross Carrier and similar machines, Scrapers(20 yards struck and over), Side Boom, Slip Form Machine, Spreader(Asphalt), Trenching Machines, Telephies-Vermeer Concrete Saw, Tractor type demolition equipment, Vacuum Truck.

GROUP I-B: Asphalt Mobile Conveyor/Transfer Machine, Road Paver(Asphalt).

GROUP II-A: Ballast Regulators, Compactor(Self-propelled), Fusion Machine, Rail Anchor Machines, Roller(4 ton and over), Scrapers(20 yard struck and under), Vibratory Roller(riding), Welder.

GROUP II-B: Mechanic(outside)all types.

GROUP III: Air Tractor Drill, Asphalt Plant, Batch Plant, Boiler(High Pressure), Concrete Breaker(Track or Rubber Tire), Concrete Pump, Concrete Spreader, Excavator Drill, Farm Tractor, Forklift(all types of power), Gas Tapping(Live), Hydroseeder, Loader(1 1/2 yards and under), Locomotive(all sizes), Machine Pulling Sheeps Foot Roller, Portable Asphalt Plant, Portable Batch Plant, Portable Crusher(Apprentice), Powerhouse Plant, Roller(under 4 ton), Sheer Excavator, Skidsteer/Bobcat, Stone Crusher, Sweeper(with seat), Well Drilling Machine.

GROUP IV-A: Service Person(Grease Truck).

GROUP IV-B: Conveyor Belt Machine(Truck Mounted), Heater(all types), Lighting Unit(Portable), Maintenance Engineer(for Crane only), Mechanics Helper, Pump(Fireproofing), Pumps-Pump Station/Water/Sewer/Gypsum/Plaster, etc., Pump Truck(Sewer Jet or similar), Welding Machine(Steel Erection), Welders Helper.

GROUP V-A: Engineer(all Tower Cranes, all Climbing Cranes & all Cranes of 100 ton capacity or greater),Hoist Engineer(Steel-Sub Structure), Engineer-Pile Driver, Jersey-Spreader, Pavement breaker, Post Hole Digger

WAGES: (per hour)

07/01/2020

GROUP I	\$ 62.38
GROUP I-A	54.95
GROUP I-B	57.92
GROUP II-A	52.61
GROUP II-B	54.26
GROUP III	51.68
GROUP IV-A	46.93
GROUP IV-B	40.24
GROUP V-A	
Engineer-Cranes	70.72
Engineer-Pile Driver	68.27
Hoist Engineer	64.00
Jersey Spreader	53.83
Pavement Breaker	53.83
Post Hole Digger	53.83

SHIFT DIFFERENTIAL:

A 15% premium on all hours paid, including overtime hours for 2nd, 3rd shifts on all government mandated off-shift work

An additional 20% to wage when required to wear protective equipment on hazardous/toxic waste projects. Operators required to use two buckets pouring concrete on other than road pavement shall receive \$0.50 per hour over scale. Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional \$2.00 per hour. Engineers operating cranes with booms 149 feet or over in length will be paid an additional \$3.00 per hour. Operators of shovels with a capacity over (4) cubic yards shall be paid an additional \$1.00 per hour. Operators of loaders with a capacity over (5) cubic yards shall be paid an additional \$0.50 per hour.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker:

07/01/2020

\$ 22.50
+ \$8.00
(Limited to
first 40 hours)

OVERTIME PAY

See (D, O, *U, V) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 8, 9, 15, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 9, 15, 25) on HOLIDAY PAGE

* Note: For Holiday codes 5 & 6, code U applies.

Note: If employees are required to work on Easter Sunday, they shall be paid at the rate of triple time.

REGISTERED APPRENTICES

(1)year terms at the following rates:

07/01/2020

1st term	\$ 27.48
2nd term	32.97
3rd term	38.47

4th term 43.96

Supplemental Benefits per hour:

All terms 07/01/2020
 \$ 22.50

8-137Tun

Operating Engineer - Marine Dredging

06/01/2021

JOB DESCRIPTION Operating Engineer - Marine Dredging

DISTRICT 4

ENTIRE COUNTIES

Albany, Bronx, Cayuga, Chautauqua, Clinton, Columbia, Dutchess, Erie, Essex, Franklin, Greene, Jefferson, Kings, Monroe, Nassau, New York, Niagara, Orange, Orleans, Oswego, Putnam, Queens, Rensselaer, Richmond, Rockland, St. Lawrence, Suffolk, Ulster, Washington, Wayne, Westchester

WAGES

These wages do not apply to Operating Engineers on land based construction projects. For those projects, please see the Operating Engineer Heavy/Highway Rates. The wage rates below for all equipment and operators are only for marine dredging work in navigable waters found in the counties listed above.

Per Hour:	07/01/2020	10/01/2020
CLASS A1 Deck Captain, Leverman Mechanical Dredge Operator Licensed Tug Operator 1000HP or more.	\$ 40.31	\$ 41.42
CLASS A2 Crane Operator (360 swing)	35.92	36.91
CLASS B Dozer, Front Loader Operator on Land	To conform to Operating Engineer Prevailing Wage in locality where work is being performed including benefits.	
CLASS B1 Derrick Operator (180 swing) Spider/Spill Barge Operator Operator II, Fill Placer, Engineer, Chief Mate, Electrician, Chief Welder, Maintenance Engineer Licensed Boat, Crew Boat Operator	34.86	35.82
CLASS B2 Certified Welder	32.82	33.72
CLASS C1 Drag Barge Operator, Steward, Mate, Assistant Fill Placer	31.92	32.80
CLASS C2 Boat Operator	30.89	31.74
CLASS D Shoreman, Deckhand, Oiler, Rodman, Scowman, Cook, Messman, Porter/Janitor	25.66	26.37

SUPPLEMENTAL BENEFITS

Per Hour:

THE FOLLOWING SUPPLEMENTAL BENEFITS APPLY TO ALL CATEGORIES

	07/01/2020	10/01/2020
All Classes A & B	\$11.58 plus 7.5% of straight time wage, Overtime hours add \$ 0.63	\$11.98 plus 8% of straight time wage, Overtime hours add \$ 0.63

All Class C	\$11.28 plus 7.5% of straight time wage, Overtime hours add \$ 0.48	11.68 plus 8% of straight time wage, Overtime hours add \$ 0.48
All Class D	\$10.98 plus 7.5% of straight time wage, Overtime hours add \$ 0.33	11.38 plus 8% of straight time wage, Overtime hours add \$ 0.33

OVERTIME PAY

See (B2, F, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6, 8, 15, 26) on HOLIDAY PAGE

4-25a-MarDredge

Operating Engineer - Survey Crew - Consulting Engineer **06/01/2021**

JOB DESCRIPTION Operating Engineer - Survey Crew - Consulting Engineer **DISTRICT 9**

ENTIRE COUNTIES
 Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, Westchester

PARTIAL COUNTIES
 Dutchess: That part in Dutchess County lying South of the North City line of Poughkeepsie.

WAGES
 Feasibility and preliminary design surveying, any line and grade surveying for inspection or supervision of construction.

Per hour: 07/01/2020
 Survey Classifications

Party Chief	\$ 45.32
Instrument Man	37.85
Rodman	33.14

SUPPLEMENTAL BENEFITS

Per Hour:
 All Crew Members: \$ 19.50

OVERTIME PAY

OVERTIME:.... See (B, E*, Q, V) ON OVERTIME PAGE.
 *Doubletime paid on the 9th hour on Saturday.

HOLIDAY

Paid: See (5, 6, 7, 11, 16) on HOLIDAY PAGE
 Overtime: See (5, 6, 7, 11, 16) on HOLIDAY PAGE

9-15dconsult

Painter **06/01/2021**

JOB DESCRIPTION Painter **DISTRICT 8**

ENTIRE COUNTIES
 Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, Westchester

WAGES
 Per hour: 07/01/2020

Brush	\$ 49.20*
Abatement/Removal of lead based or lead containing paint on materials to be repainted.	49.20*
Spray & Scaffold	\$ 52.20*
Fire Escape	52.20*
Decorator	52.20*
Paperhanger/Wall Coverer	51.96*

*Subtract \$ 0.10 to calculate premium rate.

SUPPLEMENTAL BENEFITS

Per hour:	07/01/2020
Paperhanger	\$ 30.70
All others	28.81
Premium	32.10**

**Applies only to "All others" category,not paperhanger journeyworker.

OVERTIME PAY

See (A, H) on OVERTIME PAGE

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

One (1) year terms at the following wage rate.

Per hour:	07/01/2020
Appr 1st term...	\$ 19.12*
Appr 2nd term...	24.52*
Appr 3rd term...	29.72*
Appr 4th term...	39.75*

*Subtract \$ 0.10 to calculate premium rate.

Supplemental benefits:

Per Hour:	07/01/2020
Appr 1st term...	\$ 14.32
Appr 2nd term...	17.78
Appr 3rd term...	20.50
Appr 4th term...	25.89

8-NYDC9-B/S

Painter

06/01/2021

JOB DESCRIPTION Painter

DISTRICT 8

ENTIRE COUNTIES

Putnam, Suffolk, Westchester

PARTIAL COUNTIES

Nassau: All of Nassau except the areas described below: Atlantic Beach, Ceaderhurst, East Rockaway, Gibson, Hewlett, Hewlett Bay, Hewlett Neck, Hewlett Park, Inwood, Lawrence, Lido Beach, Long Beach, parts of Lynbrook, parts of Oceanside, parts of Valley Stream, and Woodmere. Starting on the South side of Sunrise Hwy in Valley Stream running east to Windsor and Rockaway Ave., Rockville Centre is the boundary line up to Lawson Blvd. turn right going west all the above territory. Starting at Union Turnpike and Lakeville Rd. going north to Northern Blvd. the west side of Lakeville road to Northern blvd. At Northern blvd. going east the district north of Northern blvd. to Port Washington Blvd. West of Port Washington blvd.to St.Francis Hospital then north of first traffic light to Port Washington and Sands Point, Manor HAven, Harbour Acres.

WAGES

Per hour:	07/01/2020
Drywall Taper	\$ 49.20*

*Subtract \$ 0.10 to calculate premium rate.

SUPPLEMENTAL BENEFITS

Per hour:	07/01/2020
Journeyman	\$ 28.81

OVERTIME PAY

See (A, H) on OVERTIME PAGE

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages - Per Hour:	07/01/2020
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1500 hour terms at the following wage rate:

1st term	\$ 19.12*
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2nd term	24.52*
3rd term	29.72*
4th term	39.75*

*Subtract \$ 0.10 to calculate premium rate.

Supplemental Benefits - Per hour:
 One year term (1500 hours) at the following dollar amount.

1st year	\$ 14.32
2nd year	17.78
3rd year	20.40
4th year	25.89

8-NYDCT9-DWT

Painter - Bridge & Structural Steel

06/01/2021

JOB DESCRIPTION Painter - Bridge & Structural Steel

DISTRICT 8

ENTIRE COUNTIES

Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES

Per Hour:

STEEL:

Bridge Painting:	07/01/2020	10/01/2020	10/01/2021
	\$ 50.25	\$ 51.50	\$ 53.00
	+ 7.88*	+ 8.63*	+ 9.63*

ADDITIONAL \$6.00 per hour for POWER TOOL/SPRAY, whether straight time or overtime.

NOTE: All premium wages are to be calculated on base rate per hour only.

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (no cap).

NOTE: Generally, for Bridge Painting Contracts, ALL WORKERS on and off the bridge (including Flagmen) are to be paid Painter's Rate; the contract must be ONLY for Bridge Painting.

SHIFT WORK:

When directly specified in public agency or authority contract documents for an employer to work a second shift and works the second shift with employees other than from the first shift, all employees who work the second shift will be paid 10% of the base wage shift differential in lieu of overtime for the first eight (8) hours worked after which the employees shall be paid at time and one half of the regular wage rate. When a single irregular work shift is mandated in the job specifications or by the contracting agency, wages shall be paid at time and one half for single shifts between the hours of 3pm-11pm or 11pm-7am.

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker:	07/01/2020	10/01/2020	10/01/2021
	\$ 10.20	\$ 10.90	\$ 10.90
	+ 29.65*	+ 30.00*	+ 30.60*

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (no cap).

OVERTIME PAY

See (B, F, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
 Overtime: See (4, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage - Per hour:

Apprentices: (1) year terms			
	07/01/2020	10/01/2020	10/01/2021
1st year	\$ 20.10 + 3.15*	\$ 20.60 + 3.45*	\$ 21.20 + 3.86*
2nd year	\$ 30.15 + 4.73*	\$ 30.90 + 5.18*	\$ 31.80 + 5.78*
3rd year	\$ 40.20 + 6.30*	\$ 41.20 + 6.90*	\$ 42.40 + 7.71*
Supplemental Benefits - Per hour:			
1st year	\$.25 + 11.86*	\$.25 + 12.00*	\$.25 + 12.24*
2nd year	\$ 10.20 + 17.79*	\$ 10.90 + 18.00*	\$ 10.90 + 18.36*
3rd year	\$ 10.20 + 23.72*	\$ 10.90 + 24.00*	\$ 10.90 + 24.48*

NOTE: All premium wages are to be calculated on base rate per hour only.

8-DC-9/806/155-BrSS

Painter - Line Striping **06/01/2021**

JOB DESCRIPTION Painter - Line Striping

DISTRICT 8

ENTIRE COUNTIES

Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES

Per hour:

	07/01/2020	07/01/2021	07/01/2022
Painter (Striping-Highway):			
Striping-Machine Operator*	\$ 30.10	\$ 30.32	\$ 31.53
Linerman Thermoplastic	\$ 36.53	\$ 36.93	\$ 38.34

Note: * Includes but is not limited to: Positioning of cones and directing of traffic using hand held devices. Excludes the Driver/Operator of equipment used in the maintenance and protection of traffic safety.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour paid:	07/01/2020	07/01/2021	07/01/2022
Journeyworker:			
Striping Machine Operator:	\$ 9.16	\$ 10.03	\$ 10.03
Linerman Thermoplastic:	\$ 9.16	\$ 10.03	\$ 10.03

OVERTIME PAY

See (B, B2, E2, F, S) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 20) on HOLIDAY PAGE
 Overtime: See (5, 20) on HOLIDAY PAGE

REGISTERED APPRENTICES

One (1) year terms at the following wage rates:

	07/01/2020	12/31/2020
1st Term:	\$ 12.04	\$ 12.50
2nd Term:	\$ 18.06	\$ 18.19
3rd Term:	\$ 24.08	\$ 24.26

Supplemental Benefits per hour:

1st term:	\$ 9.16	\$ 10.03
2nd Term:	\$ 9.16	\$ 10.03
3rd Term:	\$ 9.16	\$ 10.03

8-1456-LS

Painter - Metal Polisher

06/01/2021

JOB DESCRIPTION Painter - Metal Polisher

DISTRICT 8

ENTIRE COUNTIES

Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuylar, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

	07/01/2020
Metal Polisher	\$ 36.33
Metal Polisher*	37.43
Metal Polisher**	40.33

*Note: Applies on New Construction & complete renovation

** Note: Applies when working on scaffolds over 34 feet.

SUPPLEMENTAL BENEFITS

Per Hour: 07/01/2020

Journeyworker:
 All classification \$ 9.94

OVERTIME PAY

See (B, E, P, T) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE
 Overtime: See (5, 6, 9, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages per hour:

One (1) year term at the following wage rates:

	07/01/2020
1st year	\$ 16.00
2nd year	17.00
3rd year	18.00
1st year*	\$ 16.39
2nd year*	17.44
3rd year*	18.54
1st year**	\$ 18.50
2nd year**	19.50
3rd year**	20.50

*Note: Applies on New Construction & complete renovation

** Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:

Per hour:

1st year	\$ 6.69
2nd year	6.69

3rd year 6.69

8-8A/28A-MP

Plumber **06/01/2021**

JOB DESCRIPTION Plumber

DISTRICT 8

ENTIRE COUNTIES

Putnam, Westchester

WAGES

Per hour:

07/01/2020

Plumber and
Steamfitter

\$ 57.86

SHIFT WORK:

When directly specified in public agency or authority contract documents, shift work outside the regular hours of work shall be comprised of eight (8) hours per shift not including Saturday, Sundays and holidays. One half (1/2) hour shall be allowed for lunch after the first four (4) hours of each shift. Wage and Fringes for shift work shall be straight time plus a shift premium of twenty-five (25%) percent. A minimum of five days Monday through Friday must be worked to establish shift work.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker

\$ 37.56

OVERTIME PAY

See (B, E, E2, Q, V) on OVERTIME PAGE

OVERTIME:... See on OVERTIME PAGE.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

(1)year terms at the following wages:

1st Term	\$ 21.44
2nd Term	24.62
3rd Term	28.42
4th Term	40.61
5th Term	43.58

Supplemental Benefits per hour:

1st term	\$ 15.59
2nd term	17.38
3rd term	20.69
4th term	27.20
5th term	28.82

8-21.1-ST

Plumber - HVAC / Service **06/01/2021**

JOB DESCRIPTION Plumber - HVAC / Service

DISTRICT 8

ENTIRE COUNTIES

Dutchess, Putnam, Westchester

PARTIAL COUNTIES

Delaware: Only the townships of Middletown and Roxbury

Ulster: Entire County(including Walkkill and Shawangunk Prisons) except for remainder of Town of Shawangunk and Towns of Plattekill, Marlboro, and Wawarsing.

WAGES

Per hour:

07/01/2020

HVAC Service

\$ 39.68
+ \$ 4.32*

*Note: This portion of wage is not subject to overtime premium.

SUPPLEMENTAL BENEFITS

Per hour:

07/01/2020

Journeyworker HVAC Service
 \$ 25.14

OVERTIME PAY
 See (B, F, R) on OVERTIME PAGE

HOLIDAY
 Paid: See (5, 6, 16, 25) on HOLIDAY PAGE
 Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
 HVAC SERVICE

(1)year terms at the following wages:

07/01/2020					
1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.	
\$ 18.05	\$ 21.33	\$ 26.66	\$ 32.76	\$ 35.46	
+\$2.37*	+\$2.67*	+\$3.22*	+\$3.84*	+\$4.07*	

*Note: This portion of wage is not subject to overtime premium.

Supplemental Benefits per hour:

Apprentices	07/01/2020
1st term	\$ 19.03
2nd term	20.09
3rd term	21.30
4th term	22.90
5th term	24.07

8-21.1&2-SF/Re/AC

Plumber - Jobbing & Alterations **06/01/2021**

JOB DESCRIPTION Plumber - Jobbing & Alterations **DISTRICT 8**

ENTIRE COUNTIES
 Dutchess, Putnam, Westchester

PARTIAL COUNTIES
 Ulster: Entire county (including Wallkill and Shawangunk Prisons in Town of Shawangunk) EXCEPT for remainder of Town of Shawangunk, and Towns of Plattekill, Marlboro, and Wawarsing.

WAGES
 Per hour: 07/01/2020
 Journeyworker: \$ 44.91

Repairs, replacements and alteration work is any repair or replacement of a present plumbing system that does not change existing roughing or water supply lines.

SHIFT WORK:
 When directly specified in public agency or authority contract documents, shift work outside the regular hours of work shall be comprised of eight (8) hours per shift not including Saturday, Sundays and holidays. One half (1/2) hour shall be allowed for lunch after the first four (4) hours of each shift. Wage and Fringes for shift work shall be straight time plus a shift premium of twenty-five (25%) percent. A minimum of five days Monday through Friday must be worked to establish shift work.

SUPPLEMENTAL BENEFITS
 Per hour:
 Journeyworker
 \$ 31.60

OVERTIME PAY
 See (B, *E, E2, Q, V) on OVERTIME PAGE
 *When used as a make-up day, hours after 8 on Saturday shall be paid at time and one half.

HOLIDAY
 Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6, 8, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

(1) year terms at the following wages:

1st year	\$ 19.52
2nd year	21.65
3rd year	23.42
4th year	32.92
5th year	34.76

Supplemental Benefits per hour:

1st year	\$ 10.21
2nd year	12.05
3rd year	15.88
4th year	21.42
5th year	23.29

8-21.3-J&A

Roofer **06/01/2021**

JOB DESCRIPTION Roofer **DISTRICT 9**

ENTIRE COUNTIES
 Bronx, Dutchess, Kings, New York, Orange, Putnam, Queens, Richmond, Rockland, Sullivan, Ulster, Westchester

WAGES

Per Hour: 07/01/2020

Roofer/Waterproofer \$ 44.25
 + \$7.00*

* This portion is not subject to overtime premiums.

Note: Abatement/Removal of Asbestos containing roofs and roofing material is classified as Roofer.

SUPPLEMENTAL BENEFITS

Per Hour: \$ 27.87

OVERTIME PAY

See (B, H) on OVERTIME PAGE

Note: An observed holiday that falls on a Sunday will be observed the following Monday.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

(1) year term

	1st	2nd	3rd	4th
	\$ 15.49	\$ 22.13	\$ 26.55	\$ 33.19
		+ 3.00*	+ 4.20*	+ 5.26*

Supplements:

	1st	2nd	3rd	4th
	\$ 3.57	\$ 14.10	\$ 16.85	\$ 20.98

9-8R

Sheetmetal Worker **06/01/2021**

JOB DESCRIPTION Sheetmetal Worker **DISTRICT 8**

ENTIRE COUNTIES
 Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

WAGES

SheetMetal Worker 07/01/2020
 \$ 43.65
 + 3.27*

*This portion is not subject to overtime premiums.

SHIFT WORK

For all NYS D.O.T. and other Governmental mandated off-shift work:
 10% increase for additional shifts for a minimum of five (5) days

SUPPLEMENTAL BENEFITS

Journeyworker \$ 42.55

OVERTIME PAY

OVERTIME: See (B, E, Q,) on OVERTIME PAGE.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6, 8, 15, 16, 23) on HOLIDAY PAGE

REGISTERED APPRENTICES

1st	2nd	3rd	4th	5th	6th	7th	8th
\$ 16.16	\$ 18.18	\$ 20.21	\$ 22.23	\$ 24.24	\$ 26.27	\$ 28.77	\$ 31.27
+ 1.31*	+ 1.47*	+ 1.64*	+ 1.80*	+ 1.96*	+ 2.13*	+ 2.29*	+ 2.45*

*This portion is not subject to overtime premiums.

Supplemental Benefits per hour:

Apprentices

1st term	\$ 18.31
2nd term	20.60
3rd term	22.88
4th term	25.19
5th term	27.47
6th term	29.75
7th term	31.56
8th term	33.39

8-38

Sheetmetal Worker

06/01/2021

JOB DESCRIPTION Sheetmetal Worker

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per Hour:	07/01/2020	8/01/2020
Sign Erector	\$ 50.79	\$ 52.29

NOTE: Structurally Supported Overhead Highway Signs(See STRUCTURAL IRON WORKER CLASS)

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2020	8/01/2020
Sign Erector	\$ 49.82	\$ 51.26

OVERTIME PAY

See (A, F, S) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 10, 11, 12, 16, 25) on HOLIDAY PAGE
 Overtime: See (5, 6, 10, 11, 12, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Per Hour:
 6 month Terms at the following percentage of Sign Erectors wage rate:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
35%	40%	45%	50%	55%	60%	65%	70%	75%	80%

SUPPLEMENTAL BENEFITS

Per Hour:

07/01/2020

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 13.96	\$ 15.81	\$ 17.68	\$ 19.56	\$ 27.26	\$ 29.65	\$ 32.80	\$ 35.26	\$ 37.71	\$ 40.15

8/01/2020

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 14.34	\$ 16.26	\$ 18.17	\$ 20.10	\$ 28.02	\$ 30.47	\$ 33.72	\$ 36.27	\$ 38.77	\$ 41.29

4-137-SE

Sprinkler Fitter **06/01/2021**

JOB DESCRIPTION Sprinkler Fitter **DISTRICT 1**

ENTIRE COUNTIES
 Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

WAGES
 Per hour
 07/01/2020
 Sprinkler \$ 45.52
 Fitter

SUPPLEMENTAL BENEFITS
 Per hour
 Journeyperson \$ 27.57

OVERTIME PAY
 See (B, E, Q) on OVERTIME PAGE

HOLIDAY
 Paid: See (1) on HOLIDAY PAGE
 Overtime: See (5, 6) on HOLIDAY PAGE

Note: When a holiday falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double time rate. When a holiday falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double time rate.

REGISTERED APPRENTICES
 Wages per hour

One Half Year terms at the following percentage of journeyperson's wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 21.97	\$ 24.41	\$ 26.59	\$ 29.02	\$ 31.45	\$ 33.88	\$ 36.31	\$ 38.74	\$ 41.17	\$ 43.60

Supplemental Benefits per hour

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 8.27	\$ 8.27	\$ 18.70	\$ 18.70	\$ 18.95	\$ 18.95	\$ 18.95	\$ 18.95	\$ 18.95	\$ 18.95 1-669.2

Teamster - Building / Heavy&Highway **06/01/2021**

JOB DESCRIPTION Teamster - Building / Heavy&Highway **DISTRICT 8**

ENTIRE COUNTIES
 Putnam, Westchester

WAGES
 GROUP A: Straight Trucks (6-wheeler and 10-wheeler), A-frame, Winch, Dynamite Seeding, Mulching, Agitator, Water, Attenuator, Light Towers, Cement (all types), Suburban, Station Wagons, Cars, Pick Ups, any vehicle carrying materials of any kind.
 GROUP AA: Tack Coat
 GROUP B: Tractor & Trailers (all types).
 GROUP BB: Tri-Axle, 14 Wheeler
 GROUP C: Low Boy (carrying equipment).
 GROUP D: Fuel Trucks, Tire Trucks.
 GROUP E: Off-road Equipment (over 40 tons): Athey Wagons, Belly Dumps, Articulated Dumps, Trailer Wagons.
 GROUP F: Off-road Equipment (over 40 tons) Euclid, DJB.
 GROUP G: Off-road Equipment (under 40 tons) Athey Wagons, Belly Articulated Dumps, Trailer Wagons.
 GROUP H: Off-road Equipment (under 40 tons), Euclid.
 GROUP HH: Off-road Equipment (under 40 tons) D.J.B.
 GROUP I: Off-road Equipment (under 40 tons) Darts.
 GROUP II: Off-road Equipment (under 40 tons) RXS.

WAGES:(per hour)
 07/01/2020

GROUP A	\$ 42.47*
GROUP AA	45.27*
GROUP B	43.09*
GROUP BB	42.59*
GROUP C	45.22*

GROUP D	42.92*
GROUP E	43.47*
GROUP F	44.47*
GROUP G	43.22*
GROUP H	43.84*
GROUP HH	44.22*
GROUP I	43.97*
GROUP II	44.34*

* To calculate premium wage, subtract \$.20 from the hourly wage.

Note: Fuel truck operators on construction sites addit. \$5.00 per day.
For work on hazardous/toxic waste site addit. 20% of hourly rate.

Shift Differential: NYS DOT or other Governmental Agency contracts shall receive a shift differential of Fifteen(15%)percent above the wage rate

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour:
Journeyworker

First 40 hours	\$ 33.64
41st-45th hours	15.18
Over 45 hours	0.26

OVERTIME PAY

See (B, E, P, R) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 8, 9, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 9, 15, 25) on HOLIDAY PAGE

Overtime Codes

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule. Additional requirements may also be listed in the HOLIDAY section.

NOTE: Supplemental Benefits are 'Per hour worked' (for each hour worked) unless otherwise noted

- (AA) Time and one half of the hourly rate after 7 and one half hours per day
- (A) Time and one half of the hourly rate after 7 hours per day
- (B) Time and one half of the hourly rate after 8 hours per day
- (B1) Time and one half of the hourly rate for the 9th & 10th hours week days and the 1st 8 hours on Saturday.
Double the hourly rate for all additional hours
- (B2) Time and one half of the hourly rate after 40 hours per week
- (C) Double the hourly rate after 7 hours per day
- (C1) Double the hourly rate after 7 and one half hours per day
- (D) Double the hourly rate after 8 hours per day
- (D1) Double the hourly rate after 9 hours per day
- (E) Time and one half of the hourly rate on Saturday
- (E1) Time and one half 1st 4 hours on Saturday; Double the hourly rate all additional Saturday hours
- (E2) Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
- (E3) Between November 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week
- (E4) Saturday and Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
- (E5) Double time after 8 hours on Saturdays
- (F) Time and one half of the hourly rate on Saturday and Sunday
- (G) Time and one half of the hourly rate on Saturday and Holidays
- (H) Time and one half of the hourly rate on Saturday, Sunday, and Holidays
- (I) Time and one half of the hourly rate on Sunday
- (J) Time and one half of the hourly rate on Sunday and Holidays
- (K) Time and one half of the hourly rate on Holidays
- (L) Double the hourly rate on Saturday
- (M) Double the hourly rate on Saturday and Sunday
- (N) Double the hourly rate on Saturday and Holidays
- (O) Double the hourly rate on Saturday, Sunday, and Holidays
- (P) Double the hourly rate on Sunday
- (Q) Double the hourly rate on Sunday and Holidays
- (R) Double the hourly rate on Holidays
- (S) Two and one half times the hourly rate for Holidays

- (S1) Two and one half times the hourly rate the first 8 hours on Sunday or Holidays One and one half times the hourly rate all additional hours.
- (T) Triple the hourly rate for Holidays
- (U) Four times the hourly rate for Holidays
- (V) Including benefits at SAME PREMIUM as shown for overtime
- (W) Time and one half for benefits on all overtime hours.
- (X) Benefits payable on Paid Holiday at straight time. If worked, additional benefit amount will be required for worked hours. (Refer to other codes listed.)

Holiday Codes

PAID Holidays:

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

OVERTIME Holiday Pay:

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays. The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule. The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

- (1) None
- (2) Labor Day
- (3) Memorial Day and Labor Day
- (4) Memorial Day and July 4th
- (5) Memorial Day, July 4th, and Labor Day
- (6) New Year's, Thanksgiving, and Christmas
- (7) Lincoln's Birthday, Washington's Birthday, and Veterans Day
- (8) Good Friday
- (9) Lincoln's Birthday
- (10) Washington's Birthday
- (11) Columbus Day
- (12) Election Day
- (13) Presidential Election Day
- (14) 1/2 Day on Presidential Election Day
- (15) Veterans Day
- (16) Day after Thanksgiving
- (17) July 4th
- (18) 1/2 Day before Christmas
- (19) 1/2 Day before New Years
- (20) Thanksgiving
- (21) New Year's Day
- (22) Christmas
- (23) Day before Christmas
- (24) Day before New Year's
- (25) Presidents' Day
- (26) Martin Luther King, Jr. Day
- (27) Memorial Day
- (28) Easter Sunday



NEW YORK STATE DEPARTMENT OF LABOR
Bureau of Public Work - Debarment List

**LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE
AWARDED ANY PUBLIC WORK CONTRACT**

Under Article 8 and Article 9 of the NYS Labor Law, a contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work or public building service contract/sub-contract with the state, any municipal corporation or public body for a period of five (5) years from the date of debarment when:

- Two (2) final determinations have been rendered within any consecutive six-year (6) period determining that such contractor, sub-contractor and/or its successor has WILLFULLY failed to pay the prevailing wage and/or supplements;
- One (1) final determination involves falsification of payroll records or the kickback of wages and/or supplements.

The agency issuing the determination and providing the information, is denoted under the heading 'Fiscal Officer'. DOL = New York State Department of Labor; NYC = New York City Comptroller's Office; AG = New York State Attorney General's Office; DA = County District Attorney's Office.

Debarment Database: To search for contractors, sub-contractors and/or their successors debarred from bidding or being awarded any public work contract or subcontract under NYS Labor Law Articles 8 and 9, or under NYS Workers' Compensation Law Section 141-b, access the database at this link: <https://applications.labor.ny.gov/EDList/searchPage.do>

For inquiries where WCB is listed as the "Agency", please call 1-866-546-9322

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AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	NYC	*****9839	A.J.S. PROJECT MANAGEMENT, INC.		149 FIFTH AVENUE NEW YORK NY 10010	12/29/2016	12/29/2021
DOL	DOL	*****4018	ADIRONDACK BUILDING RESTORATION INC.		4156 WILSON ROAD EAST TABERG NY 13471	03/26/2019	03/26/2024
DOL	AG	*****1812	ADVANCED BUILDERS & LAND DEVELOPMENT, INC.		400 OSER AVE #2300HAUPPAUGE NY 11788	09/11/2019	09/11/2024
DOL	DOL	*****1687	ADVANCED SAFETY SPRINKLER INC		261 MILL ROAD P.O BOX 296EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	NYC	*****6775	ADVENTURE MASONRY CORP.		1535 RICHMOND AVENUE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	NYC		AGOSTINHO TOME		405 BARRETTO ST BRONX NY 10474	05/31/2018	05/31/2023
DOL	DOL		AJ TORCHIA		10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	DOL		AMADEO J TORCHIA	TORCHIA'S HOME IMPROVEMENT	10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	NYC		AMJAD NAZIR		2366 61ST ST BROOKLYN NY 11204	12/15/2016	12/15/2021
DOL	NYC		AMJED PARVEZ		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL		ANGELO F COKER		2610 SOUTH SALINA STREET SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		ANGELO F COKER		2610 SOUTH SALINA STREET SUITE 14SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL		ANITA SALERNO		158 SOLAR ST SYRACUSE NY 13204	01/07/2019	01/07/2024
DOL	NYC		ANTHONY J SCLAFANI		149 FIFTH AVE NEW YORK NY 10010	12/29/2016	12/29/2021
DOL	DOL		ANTHONY PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10323	01/23/2017	01/23/2022
DOL	DOL		ANTONIO ESTIVEZ		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		ARNOLD A. PAOLINI		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	NYC		ARSHAD MEHMOOD		168-42 88TH AVENUE JAMAICA NY 11432	11/20/2019	11/20/2024
DOL	DOL		ARVINDER ATWAL		65 KENNETH PLACE NEW HYDE PARK NY 11040	07/19/2017	07/19/2022
DOL	NYC	*****6683	ATLAS RESTORATION CORP.		35-12 19TH AVENUE ASTORIA NY 11105	08/02/2017	08/02/2022
DOL	NYC	*****5532	ATWAL MECHANICALS, INC		65 KENNETH PLACE NEW HYDE PARK NY 11040	07/19/2017	07/19/2022
DOL	NYC	*****2591	AVI 212 INC.		260 CROSEY AVENUE APT 11GBROOKLYN NY 11214	10/30/2018	10/30/2023
DOL	NYC		AZIDABEGUM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	NYC		BALWINDER SINGH		421 HUDSON ST SUITE C5NEW YORK NY 10014	02/20/2019	02/20/2024
DOL	NYC	*****8416	BEAM CONSTRUCTION, INC.		50 MAIN ST WHITE PLAINS NY 10606	01/04/2019	01/04/2024
DOL	NYC	*****2113	BHW CONTRACTING, INC.		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL		BIAGIO CANTISANI			06/12/2018	06/12/2023
DOL	DOL	*****4512	BOB BRUNO EXCAVATING, INC		5 MORNINGSIDE DR AUBURN NY 13021	05/28/2019	05/28/2024
DOL	DOL		BOGDAN MARKOVSKI		370 W. PLEASANTVIEW AVE SUITE 2.329HACKENSACK NJ 07601	02/11/2019	02/11/2024
DOL	DOL	*****8551	BRANDY'S MASONRY		216 WESTBROOK STREET P O BOX 304SAYRE PA 18840	08/09/2016	08/09/2021
DOL	DOL	*****1449	BRRESTORATION NY INC		140 ARCADIA AVENUE OSWEGO NY 13126	09/12/2016	09/12/2021
DOL	DOL		BRUCE P. NASH JR.		5841 BUTTERNUT ROAD EAST SYRACUSE NY 13057	09/12/2018	09/12/2023
DOL	DOL	*****0225	C&D LAFACE CONSTRUCTION, INC.		8531 OSWEGO RD BALDWINVILLE NY 13027	02/03/2020	01/09/2023
DOL	DOL	*****8809	C.B.E. CONTRACTING CORPORATION		310 MCGUINNESS BLVD GREENPOINT NY 11222	03/07/2017	03/07/2022

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DOL	DOL	*****9383	C.C. PAVING AND EXCAVATING, INC.		2610 SOUTH SALINA ST SUITE 12SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL	*****9383	C.C. PAVING AND EXCAVATING, INC.		2610 SOUTH SALINA ST SUITE 12SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	NYC		CALVIN WALTERS		465 EAST THIRD ST MT. VERNON NY 10550	09/09/2019	09/09/2024
DOL	DOL		CANTISANI & ASSOCIATES LTD		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CANTISANI HOLDING LLC			06/12/2018	06/12/2023
DOL	DOL		CARMEN RACHETTA		8531 OSWEGO RD BALDWINVILLE NY 13027	02/03/2020	02/03/2025
DOL	DOL		CARMENA RACHETTA		8531 OSWEGO ROAD BALDWINVILLE NY 13027	02/03/2020	01/09/2023
DOL	DOL	*****3812	CARMODY "2" INC			06/12/2018	06/12/2023
DOL	DOL	*****1143	CARMODY BUILDING CORP	CARMODY CONTRACTING AND CARMODY CONTRACTING CORP.	442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY CONCRETE CORPORATION			06/12/2018	06/12/2023
DOL	DOL		CARMODY ENTERPRISES, LTD.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY INC		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****3812	CARMODY INDUSTRIES INC			06/12/2018	06/12/2023
DOL	DOL		CARMODY MAINTENANCE CORPORATION		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY MASONRY CORP		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****8809	CBE CONTRACTING CORP		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	AG		CESAR J. AGUDELO		81-06 34TH AVENUE APT. 6EJACKSON HEIGHTS NY 11372	02/07/2018	02/07/2023
DOL	DOL		CHARLES ZIMMER JR		216 WESTBROOK STREET P O BOX 304SAYRE PA 18840	08/09/2016	08/09/2021
DOL	DOL		CHRISTOPHER J MAINI		19 CAITLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL		CHRISTOPHER PAPASTEFANOU A/K/A CHRIS PAPASTEFANOU		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL	*****1927	CONSTRUCTION PARTS WAREHOUSE, INC.	CPW	5841 BUTTERNUT ROAD EAST SYRACUSE NY 13057	09/12/2018	09/12/2023
DOL	DOL	*****2524	CSI ELECTRICAL & MECHANICAL INC		42-32 235TH ST DOUGLSTON NY 11363	01/14/2019	01/14/2024
DOL	NYC		DALJIT KAUR BOPARAI		185-06 56TH AVE FRESH MEADOW NY 11365	10/17/2017	10/17/2022
DOL	DOL		DANICA IVANOSKI		61 WILLET ST. PASSAIC NJ 07503	10/26/2016	10/26/2021
DOL	DOL		DARIAN L COKER		2610 SOUTH SALINA ST SUITE 2CSYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		DARIAN L COKER		2610 SOUTH SALINA ST SUITE 2CSYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	NYC		DAVID WEINER		14 NEW DROP LANE 2ND FLOORSTATEN ISLAND NY 10306	11/14/2019	11/14/2024
DOL	DOL		DEBBIE STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	AG		DEBRA MARTINEZ		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		DELPHI PAINTING & DECORATING CO INC		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL		DENNIS SCHWANDTNER		C/O YES SERVICE AND REPAIR 145 LODGE AVEHUNTINGTON STATION NY 11476	08/09/2016	08/09/2021
DOL	DOL		DF CONTRACTORS OF ROCHESTER, INC.		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DF CONTRACTORS, INC.		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	NYC		DIMITRIOS TSOMAS		35-12 19TH AVENUE	08/02/2017	08/02/2022

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DOL	DOL		DOMENICO LAFACE		8531 OSWEGO RD BALDWINSVILLE NY 13027	02/03/2020	01/09/2023
DOL	DOL	*****3242	DONALD R. FORSAY	DF LAWN SERVICE	1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DONALD R. FORSAY		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	NYC		DUARTE LOPES		66-05 WOODHAVEN BLVD. STE 2REGO PARK NY 11374	04/20/2017	04/20/2022
DOL	DOL	*****5175	EAGLE MECHANICAL AND GENERAL CONSTRUCTION LLC		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	DOL		EAST COAST PAVING		2238 BAKER RD GILLET PA 16923	03/12/2018	03/12/2023
DOL	NYC	*****4269	EAST PORT EXCAVATION & UTILITIES		601 PORTION RD RONKONKOMA NY 11779	11/18/2016	11/18/2021
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTR		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/3002
DOL	NYC	*****5917	EPOCH ELECTRICAL, INC		97-18 50TH AVE CORONA NY 11368	04/19/2018	04/19/2024
DOL	DOL	*****7403	F & B PAINTING CONTRACTING INC		2 PARKVIEW AVENUE HARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL		FAIGY LOWINGER		11 MOUNTAIN RD 28 VAN BUREN DRMONROE NY 10950	03/20/2019	03/20/2024
DOL	DOL		FRANK BENEDETTO		19 CATLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL		FRANK BENEDETTO		C/O F & B PAINTING CONTRA 2 PARKVIEW AVENUEHARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL	*****4722	FRANK BENEDETTO AND CHRISTOPHER J MAINI	B & M CONCRETE	19 CAITLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	NYC		FRANK MAINI		1766 FRONT ST YORKTOWN HEIGHTS NY 10598	01/17/2018	01/17/2023
DOL	NYC	*****6616	G & G MECHANICAL ENTERPRISES, LLC.		1936 HEMPSTEAD TURNPIKE EAST MEDOW NY 11554	11/29/2019	11/29/2024
DOL	DOL		GABRIEL FRASSETTI			04/10/2019	04/10/2024
DOL	DOL		GALINDA ROTENBERG		C/O GMDV TRANS INC 67-48 182ND STREETFRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	DOL		GEOFF CORLETT		415 FLAGGER AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
DOL	DOL		GIGI SCHNECKENBURGER		261 MILL RD EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	DOL		GIOVANNI LAFACE		8531 OSWEGO RD BALDWINSVILLE NY 13027	02/03/2020	01/09/2023
DOL	NYC	*****3164	GLOBE GATES INC	GLOBAL OVERHEAD DOORS	405 BARRETTO ST BRONX NY 10474	05/31/2018	05/31/2023
DOL	DOL	*****5674	GMDV TRANS INC		67-48 182ND STREET FRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	NYC		GREAT ESTATE CONSTRUCTION, INC.		327 STAGG ST BROOKLYN NY 11206	10/10/2017	10/10/2022
DOL	DOL		GREGORY S. OLSON		P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		HANS RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	NYC	*****3228	HEIGHTS ELEVATOR CORP.		1766 FRONT ST YORKTOWN HEIGHTS NY 10598	01/17/2018	01/17/2023
DOL	DOL	*****5131	INTEGRITY MASONRY, INC.	M&R CONCRETE	722 8TH AVE WATERVLIET NY 12189	06/05/2018	06/05/2023
DOL	DOL		IRENE KASSELIS		32 PENNINGTON AVE WALDWICK NJ 07463	05/30/2019	05/30/2024
DOL	DOL	*****9211	J. WASE CONSTRUCTION CORP.		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	DOL		J.A. HIRES CADWALLADER		P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		JAMES C. DELGIACCO		722 8TH AVE WATERVLIET NY 12189	06/05/2018	06/05/2023

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DOL	DOL		JAMES LIAZONE		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		JAMES RACHEL		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL	*****5368	JCH MASONRY & LANDSCAPING INC.		35 CLINTON AVE OSSINING NY 10562	09/12/2018	09/12/2023
DOL	NYC		JENNIFER GUERRERO		1936 HEMPSTEAD TURNPIKE EAST MEADOW NY 11554	11/29/2019	11/29/2024
DOL	DOL		JESSICA WHITESIDE		C/O BRRESTORATION NY INC 140 ARCADIA AVENUEOSWEGO NY 13126	09/12/2016	09/12/2021
DOL	AG		JOHN ANTHONY MASSINO		36-49 204TH STREET BAYSIDE NY 11372	02/07/2018	02/07/2023
DOL	DOL		JOHN F. CADWALLADER		200 LATTA BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL	*****4612	JOHN F. CADWALLADER, INC.	THE GLASS COMPANY	P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		JOHN GOCEK		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL		JOHN WASE		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	AG	*****0600	JOHNCO CONTRACTING, INC.		36-49 204TH STREET BAYSIDE NY 11372	02/07/2018	02/07/2023
DOL	DOL		JON E DEYOUNG		261 MILL RD P.O BOX 296EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	DOL		JORI PEDERSEN		415 FLAGER AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	DOL		JOSE CHUCHUCA		35 CLINTON AVE OSSINING NY 10562	09/12/2018	09/12/2023
DOL	NYC		JOSEPH FOLEY		66-05 WOODHAVEN BLVD. STE 2REGO PARK NY 11374	04/20/2017	04/20/2022
DOL	DOL	*****9273	JOSEPH M LOVETRO		P O BOX 812 BUFFALO NY 14220	08/09/2016	08/09/2021
DOL	NYC		JOSEPH MARTINO		1535 RICHMOND AVENUE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	DOL		JOY MARTIN		2404 DELAWARE AVE NIGARA FALLS NY 14305	09/12/2018	09/12/2023
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002
DOL	DOL	*****5062	K R F SITE DEVELOPMENT INC		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	NYC		K.S. CONTRACTING CORP.		29 PHILLIP DRIVE PARSIPPANY NJ 07054	02/13/2017	02/13/2022
DOL	DOL		KARIN MANGIN		796 PHELPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	DOL		KATE E. CONNOR		7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KATIE BURDICK		2238 BAKER RD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL	*****2959	KELC DEVELOPMENT, INC		7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KENNETH FIORENTINO		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	DOL	*****3490	L & M CONSTRUCTION/DRYWALL INC.		1079 YONKERS AVE YONKERS NY 10704	08/07/2018	08/07/2023
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL	*****4505	LARAPINTA ASSOCIATES INC		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		LAVERN GLAVE		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	06/24/2016	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	06/24/2016	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	01/17/2017	09/19/2022

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DOL	DOL	****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	08/14/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	08/14/2017	08/14/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	01/17/2017	09/19/2022
DOL	DA	****4460	LONG ISLAND GLASS & STOREFRONTS, LLC		4 MANHASSET TRL RIDGE NY 11961	09/06/2018	09/06/2023
DOL	AG	****4216	LOTUS-C CORP.		81-06 34TH AVENUE APT. 6EJACKSON HEIGHTS NY 11372	02/07/2018	02/07/2023
DOL	NYC		LUBOMIR PETER SVOBODA		27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024
DOL	NYC		M & L STEEL & ORNAMENTAL IRON CORP.		27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024
DOL	DOL		M ANVER BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL		M. ANVER BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL	****1784	MADISON AVE CONSTRUCTION CORP		39 PENNY STREET WEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL	****2196	MAINSTREAM SPECIALTIES, INC.		11 OLD TOWN RD SELKIRK NY 12158	02/02/2021	02/02/2026
DOL	DA		MANUEL P TOBIO		150 KINGS STREET BROOKLYN NY 14444	08/19/1998	08/19/2998
DOL	DA		MANUEL TOBIO		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	NYC		MAREK FABIJANOWSKI		50 MAIN ST WHITE PLAINS NY 10606	01/04/2019	01/04/2024
DOL	NYC		MARTINE ALTER		1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	DOL		MARVIN A STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		MASONRY CONSTRUCTION, INC.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	****3333	MASONRY INDUSTRIES, INC.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	NYC		MATINA KARAGIANNIS		97-18 50TH AVE CORONA NY 11368	04/19/2018	04/19/2023
DOL	DOL		MATTHEW P. KILGORE		4156 WILSON ROAD EAST TABERG NY 13471	03/26/2019	03/26/2024
DOL	DOL		MAURICE GAWENO		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	****6416	MCCALL MASONRY		P O BOX 304 SAYRE PA 18840	08/09/2016	08/09/2021
DOL	DOL		MCLEAN "MIKKI BEANE"		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		MCLEAN "MIKKI" DRAKE		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		MCLEAN M DRAKE-BEANE		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL	****9445	MCLEAN M WALSH	ELITE PROFESSION AL PAINTING OF CNY	1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL	****9445	MCLEAN M WALSH	ELITE PROFESSION AL PAINTING OF CNY	1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		MICHAEL LENIHAN		1079 YONKERS AVE UNIT 4YONKERS NY 10704	08/07/2018	08/07/2023
DOL	AG		MICHAEL RIGLIETTI		31 BAY ST SYRACUSE NY 13201	03/28/2018	03/28/2023

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DOL	DOL	****4829	MILESTONE ENVIRONMENTAL CORPORATION		704 GINESI DRIVE SUITE 29MORGANVILLE NJ 07751	04/10/2019	04/10/2024
DOL	NYC	****9926	MILLENNIUM FIRE PROTECTION, LLC		325 W. 38TH STREET SUITE 204NEW YORK NY 10018	11/14/2019	11/14/2024
DOL	NYC	****0627	MILLENNIUM FIRE SERVICES, LLC		14 NEW DROP LNE 2ND FLOORSTATEN ISLAND NY 10306	11/14/2019	11/14/2024
DOL	NYC	****3826	MOVING MAVEN OF NY, INC.		1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	NYC	****3550	MOVING MAVEN, INC		1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	AG		MSR ELECTRICAL CONSTRUCTION CORP.		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		MUHAMMAD BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL		MUHAMMAD BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	NYC		MUHAMMED A. HASHEM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DA	****9786	NATIONAL INSULATION & GC CORP		180 MILLER PLACE HICKSVILLE NY 11801	12/12/2018	12/12/2023
DOL	NYC		NICHOLAS FILIPAKIS		7113 FORT HAMILTON PARKWA BROOKLYN NY 11228	12/09/2016	12/09/2021
DOL	DOL	****7429	NICOLAE I. BARBIR	BESTUCCO CONSTRUCTION, INC.	444 SCHANTZ ROAD ALLENTOWN PA 18104	09/17/2020	09/17/2025
DOL	DOL	****6966	NORTH COUNTRY DRYWALL AND PAINT		23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL	****0065	NORTHEAST LANDSCAPE AND MASONRY ASSOC		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	DOL	****1845	OC ERECTERS, LLC A/K/A OC ERECTERS OF NY INC.		1207 SW 48TH TERRACE DEERFIELD BEACH FL 33442	01/16/2018	01/16/2023
DOL	NYC	****0818	ONE TEN RESTORATION, INC.		2366 61ST ST BROOKLYN NY 11204	12/15/2016	12/15/2021
DOL	NYC		PARESH SHAH		29 PHILLIP DRIVE PARSIPPANY NJ 07054	02/13/2017	02/13/2022
DOL	DOL		PAULINE CHAHALES		935 S LAKE BLVD MAHOPAC NY 10541	03/02/2021	03/02/2026
DOL	NYC	****9422	PELIUM CONSTRUCTION, INC.		22-33 35TH ST. ASTORIA NY 11105	12/30/2016	12/30/2021
DOL	DOL		PETER M PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	DOL		PETER STEVENS		11 OLD TOWN ROAD SELKIRK NY 12158	02/02/2021	02/02/2026
DOL	DOL		PIERRE LAPORT		224 COUNTY HIGHWAY 138 BROADALBIN NY 12025	03/07/2017	03/07/2022
DOL	DOL	****1543	PJ LAPORT FLOORING INC		224 COUNTY HIGHWAY 138 BROADALBIN NY 12025	03/07/2017	03/07/2022
DOL	NYC	****5771	PMJ ELECTRICAL CORP		7113 FORT HAMILTON PARKWA BROOKLYN NY 11228	12/09/2016	12/09/2021
DOL	DOL	****0466	PRECISION BUILT FENCES, INC.		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
DOL	NYC	****4532	PROFESSIONAL PAVERS CORP.		66-05 WOODHAVEN BLVD. REGO PARK NY 11374	04/20/2017	04/20/2022
DOL	DA	****6817	QUADRANT METAL BUILDINGS LLC		2740 SW MARTIN DOWNS BLVD PALM CITY FL 34990	08/25/2016	08/25/2021
DOL	NYC		RASHEL CONSTRUCTION CORP		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DOL	****1068	RATH MECHANICAL CONTRACTORS, INC.		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	DOL	****2633	RAW POWER ELECTRIC CORP		3 PARK CIRCLE MIDDLETOWN NY 10940	01/30/2018	01/30/2023
DOL	AG	****7015	RCM PAINTING INC.		69-06 GRAND AVENUE 2ND FLOORMASPETH NY 11378	02/07/2018	02/07/2023
DOL	DOL		REGINALD WARREN		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DA		RIANN MULLER		2740 SW MARTIN DOWNS BLVD PALM CITY FL 34990	08/25/2016	08/25/2021

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DOL	DOL	*****9148	RICH T CONSTRUCTION		107 WILLOW WOOD LANE CAMILLUS NY 13031	11/13/2018	11/13/2023
DOL	DOL		RICHARD MACONE		8617 THIRD AVE BROOKLYN NY 11209	09/17/2018	09/17/2023
DOL	DOL		RICHARD REGGIO		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
DOL	DOL	*****9148	RICHARD TIMIAN	RICH T CONSTRUCTION	108 LAMONT AVE SYRACUSE NY 13209	10/16/2018	10/16/2023
DOL	DOL		RICHARD TIMIAN JR.		108 LAMONT AVE SYRACUSE NY 13209	10/16/2018	10/16/2023
DOL	DOL		RICHARD TIMIAN JR.		108 LAMONT AVE SYRACUSE NY 13209	11/13/2018	11/13/2023
DOL	DOL		ROBBYE BISSEsar		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	01/11/2003	01/11/3003
DOL	DOL		ROBERT A. VALERINO		3841 LANYARD COURT NEW PORT RICHEY FL 34652	07/09/2019	07/09/2024
DOL	DOL		ROBERT BRUNO		3 GAYLORD ST AUBURN NY 13021	11/15/2016	11/15/2021
DOL	DOL		ROBERT BRUNO		5 MORNINGSIDE DRIVE AUBURN NY 13021	05/28/2019	05/28/2024
DOL	NYC		ROBERT HOHMAN		149 FIFTH AVE NEW YORK NY 10010	12/29/2016	12/29/2021
DOL	DOL		RODERICK PUGH		404 OAK ST SUITE 101SYRACUSE NY 13203	07/23/2018	07/23/2023
DOL	DOL	*****4880	RODERICK PUGH CONSTRUCTION INC.		404 OAK ST SUITE 101SYRACUSE NY 13203	07/23/2018	07/23/2023
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DOL		RONALD MESSEN		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL		ROSEANNE CANTISANI			06/12/2018	06/12/2023
DOL	DOL		RYAN ALBIE		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	DOL	*****3347	RYAN ALBIE CONTRACTING INC		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	DOL	*****1365	S & L PAINTING, INC.		11 MOUNTAIN ROAD P.O BOX 408MONROE NY 10950	03/20/2019	03/20/2024
DOL	DOL	*****7730	S C MARTIN GROUP INC.		2404 DELAWARE AVE NIAGARA FALLS NY 14305	09/12/2018	09/12/2023
DOL	DOL		SALVATORE A FRESINA			08/26/2016	08/26/2021
DOL	DOL		SAM FRESINA			08/26/2016	08/26/2021
DOL	NYC	*****0349	SAM WATERPROOFING INC		168-42 88TH AVENUE APT.1 AJAMAICA NY 11432	11/20/2019	11/20/2024
DOL	NYC		SANDEEP BOPARAI		185-06 56TH AVE FRESH MEADOW NY 11365	10/17/2017	10/17/2022
DOL	DOL	*****9751	SCW CONSTRUCTION		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	NYC	*****6597	SHAIRA CONSTRUCTION CORP.		421 HUDSON STREET SUITE C5NEW YORK NY 10014	02/20/2019	02/20/2024
DOL	DOL	*****1961	SHANE BURDICK	CENTRAL TRAFFIC CONTROL, LLC.	2238 BAKER ROAD GILLET PA 16923	03/12/2018	03/12/2023
DOL	DOL		SHANE BURDICK		2238 BAKER ROAD GILLET PA 16923	03/12/2018	03/12/2023
DOL	DOL		SHANE NOLAN		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		SHULEM LOWINGER		11 MOUNTAIN ROAD 28 VAN BUREN DRMONROE NY 10950	03/20/2019	03/20/2024
DOL	DOL	*****0816	SOLAR ARRAY SOLUTIONS, LLC		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL	*****2221	SOUTH BUFFALO ELECTRIC, INC.		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	DOL	*****3496	STAR INTERNATIONAL INC		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	08/11/2003	08/11/3003
DOL	DOL	*****6844	STEAM PLANT AND CHX SYSTEMS INC.		14B COMMERCIAL AVENUE ALBANY NY 12065	11/14/2019	11/14/2024

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DOL	DOL	*****9933	STEED GENERAL CONTRACTORS, INC.		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL		STEFANOS PAPASTEFANOU, JR. A/K/A STEVE PAPASTEFANOU, JR.		256 WEST SADDLE RIVER RD UPPER SADDLE RIVER NJ 07458	05/30/2019	05/30/2024
DOL	DOL	*****9751	STEPHEN C WAGAR		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	DOL		STEVE TATE		415 FLAGER AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	NYC		STEVEN GOVERNALE		601 PORTION RD RONKONKOMA NY 11779	11/18/2016	11/18/2021
DOL	DOL		STEVEN MARTIN		2404 DELWARE AVE NIAGARA FALLS NY 14305	09/12/2018	09/12/2023
DOL	DOL		STEVEN P SUCATO		15-68 208TH STREET BAYSIDE NY 11360	06/23/2016	06/23/2021
DOL	DOL		STEVEN TESTA		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022
DOL	NYC	*****5863	SUKHMANY CONSTRUCTION, INC.		185-06 56TH AVE FRESH MEADOW NY 11365	10/17/2017	10/17/2022
DOL	DOL	*****1060	SUNN ENTERPRISES GROUP, LLC		370 W. PLEASANTVIEW AVE SUITE 2.329HACKENSACK NJ 07601	02/11/2019	02/11/2024
DOL	DOL	*****8209	SYRACUSE SCALES, INC.		158 SOLAR ST SYRACUSE NY 13204	01/07/2019	01/07/2024
DOL	DOL		TALAILA OCAMPA		1207 SW 48TH TERRACE DEERFIELD BEACH FL 33442	01/16/2018	01/16/2023
DOL	DOL		TERRY THOMPSON		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	DOL		TEST		P.O BOX 123 ALBANY NY 12204	05/20/2020	05/20/2025
DOL	DOL	*****5570	TESTA CORP		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022
DOL	DOL	*****5766	THE COKER CORPORATION	COKER CORPORATION	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL	*****5766	THE COKER CORPORATION	COKER CORPORATION	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL	*****3453	TORCHIA'S HOME IMPROVEMENT		10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	DOL	*****8311	TRIPLE B FABRICATING, INC.		61 WILLET ST. PASSAIC NJ 07503	10/26/2016	10/26/2021
DOL	DOL	*****9407	TURBO GROUP INC		15-68 208TH STREET BAYSIDE NY 11360	06/23/2016	06/23/2021
DOL	DOL	*****6392	V.M.K CORP.		8617 THIRD AVE BROOKLYN NY 11209	09/17/2018	09/17/2023
DOL	DOL	*****6418	VALHALLA CONSTRUCTION, LLC.		796 PHLEPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	NYC	*****7361	VIABLE HOLDINGS, INC.	MOVING MAVEN	1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	DOL		VICTOR ALICANTI		42-32 235TH ST DOUGLSTON NY 11363	01/14/2019	01/14/2024
DOL	DOL		VICTOR ROTENBERG		C/O GMDV TRANS INC 67048 182ND STREETFRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	NYC		VIKTAR PATONICH		2630 CROPSEY AVE BROOKLYN NY 11214	10/30/2018	10/30/2023
DOL	DOL		VIKTORIA RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	NYC		VITO GARGANO		1535 RICHMOND AVE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	NYC	*****3673	WALTERS AND WALTERS, INC.		465 EAST AND THIRD ST MT. VERNON NY 10550	09/09/2019	09/09/2024
DOL	DOL		WAYNE LIVINGSTON JR	NORTH COUNTRY DRYWALL AND PAINT	23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL	*****3296	WESTERN NEW YORK CONTRACTORS, INC.		3841 LAYNARD COURT NEW PORT RICHEY FL 34652	07/09/2019	07/09/2024
DOL	DOL		WHITE PLAINS CARPENTRY CORP		442 ARMONK RD	06/12/2018	06/12/2023
DOL	DOL		WILLIAM C WATKINS		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022

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DOL	DOL		WILLIAM DEAK		C/O MADISON AVE CONSTR CO 39 PENNY STREETWEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL	*****4043	WINDSHIELD INSTALLATION NETWORK, INC.		200 LATTA BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL	*****4730	XGD SYSTEMS, LLC	TDI GOLF	415 GLAGE AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	DOL	*****7345	YES SERVICE AND REPAIRS CORPORATION		145 LODGE AVE HUNTINGTON STATION NY 11476	08/09/2016	08/09/2021
DOL	NYC		ZAKIR NASEEM		30 MEADOW ST BROOKLYN NY 11206	10/10/2017	10/10/2022
DOL	NYC	*****8277	ZHN CONTRACTING CORP		30 MEADOW ST BROOKLYN NY 11206	10/10/2017	10/10/2022

TECHNICAL SPECIFICATIONS

DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
Division of Engineering

SECTION 012500 – PRODUCT OPTIONS AND SUBSTITUTIONS (Coordinate with Article 29 of the General Clauses)

1.1 GENERAL

- A. All Contractors, Subcontractors, Sub-subcontractors, Vendors and the like shall be required to familiarize themselves with said provisions.

1.2 REQUIREMENTS INCLUDED

- A. Approved Equal Clause
- B. Options
- C. Contractor's Representation
- D. Reimbursements

1.3 APPROVED EQUAL CLAUSE

- A. Throughout the Specifications, types of material may be specified by manufacturer's name and catalog number in order to establish standards of quality and performance and not for the purpose of limiting competition.

Inclusion by name, of more than one manufacturer or fabricator, does NOT necessarily imply acceptability of standard products of those named. All manufacturers, named or proposed, shall conform, with modification as necessary, to criteria established by Contract Documents for performance, efficiency, materials and special accessories.

- B. Contractor may assume the phrase "or approved equal" except that the burden is upon the Contractor to prove such equality and to satisfy Architect that proposed substitute is equal to, or superior to, the item specified.

However, in the event three (3) or more manufacturers are nominated within the technical specifications for a particular item, it shall be assumed that they have been predetermined as equal to each other and that the Contractor must furnish and install materials, equipment or apparatus of one of these so named. CONSERVATION: Coordinate construction operations to assure that operations are carried out with consideration given to conservation of energy, water, and materials.

1.4 SUBSTITUTION REQUESTS

- A. If the Contractor elects to prove such equality, he must request the Architect's and the Owner's approval in writing for substitution of such items for the specified items, stating

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the differences involved with and submitting supporting data and samples, if required, to permit a fair evaluation of the proposed substitution with respect to:

1. Performance
2. Capacity
3. Delivery times and effect on schedules, if any
4. Changes in space requirements or effect on other elements of work (if applicable)
5. Efficiency
6. Safety
7. Function
8. Appearance
9. Quality and durability
10. Any required license fees or royalties
11. Availability of maintenance service, and source of replacement materials
12. Warranty terms and conditions
13. Cost data comparing the proposed substitution with the product specified

The contractor shall submit a separate request for each product, supported with complete data, with drawings and samples as are appropriate to substantiate the above.

- B. The Architect will review requests for substitutions with reasonable promptness, and notify the Contractor, in writing, of the decision to accept or reject the requested substitution.

1.5 OPTIONS

- A. Where Technical Specifications permit Contractor to select optional materials, items, systems, or equipment, the selection of such options is subject to the following conditions.
1. Once an option has been selected and approved, it shall be used for the entire contract.
 2. The Contractor shall coordinate his selection with the drawings and specifications and make all necessary adjustments without additional cost to the Owner.

1.6 CONTRACTOR'S REPRESENTATION

- A. A request for a substitution constitutes a representation that the Contractor:
1. Has investigated the proposed product and determined that it is equal to or superior in all respects to that specified.
 2. Will provide the same warranties or bonds for the substitution as for the product specified.
 3. Will coordinate the installation of an accepted substitution in the work, and make such other changes in the work as maybe required for installation to make the work complete in all respects.
 4. Will waive all claims for additional costs, under its responsibility, which may subsequently become apparent.
 5. **Will have coordinated installation with all affected trade contractors, specialty**

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- contractors and the like and will be responsible for any and all costs which may arise as a result of this substitution.**
6. Changes in work of other trades, such as structural supports, which are required as a result of substitution and the associated costs for such changes shall be the complete responsibility of Contractor proposing substitution (there shall be NO additional expense to the Owner).

END OF SECTION 012500

SUBSTITUTION REQUEST FORM

To: _____ Project: _____

Section	Page	Paragraph	Specified Item

THE UNDERSIGNED REQUESTS CONSIDERATION OF THE FOLLOWING SUBSTITUTION: Attached data shall include, in a tabular format to provide a line by line comparison -product description, specifications, drawings, photographs, performance and laboratory tests and the like with applicable portions of said data clearly identified.

FURTHER, The Proposed Substitution WILL (OR WILL NOT) Affect:

- Dimensions indicated on the drawings? _____
- Wiring, piping, ductwork, or other building services indicated on the drawings? _____
- Other trades and abutting or interconnection work? _____
- Manufacturer's guarantees and warranties? _____
- The construction schedule? _____
- Maintenance and service parts locally available? _____

(NOTE -If Substitution WILL affect any item above, explain in detail.)

In addition to the above, the undersigned agrees to pay for

- 1 Any and all changes to the building design, including structural, civil or electro/mechanical systems engineering (if any), detailing; and
- 2 Any and all additional construction costs caused by the requested substitution.

The undersigned further states that the function, appearance and quality of the Proposed Substitution are equivalent or superior to the Specified Item.

SUBMITTED:		DESIGN PROFESSIONAL'S COMMENTS	
By:		Accepted	Accepted as Noted
Firm:		Not Accepted	Received Too Late
Address:			By:
Date:			Date:
Telephone/Fax:			Remarks:
Approved For Subcontractor Submittal:			
By:		Contractor:	Date:

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DIVISION 1 - GENERAL REQUIREMENTS

SECTION 013114 – COORDINATION DRAWINGS AND PROCEDURES

1.1 GENERAL

- A. All Contractors, Subcontractors, Sub-subcontractors, Vendors and the like shall be required to familiarize themselves with said provisions.
- B. Coordination of the work shall be performed as outlined below.

1.2 REQUIREMENTS INCLUDED

- A. Scheduling (Coordinate with Section 01 32 00)
- B. Coordination Drawings and Procedures -General Construction Work
- C. Coordination Drawings and Procedures -Mechanical/Plumbing/Electrical Work
- D. Meetings

1.3 SCHEDULING

- A. Development of coordination drawings shall begin immediately.
- B. Progress of coordination drawings must be reported at every project meeting until accepted.

1.4 COORDINATION DRAWINGS AND PROCEDURES-GENERAL
CONSTRUCTION WORK

- A. The Contractor shall provide fully integrated building, structural, mechanical/plumbing/electrical coordination drawings and field installation layouts for such work as directed by the Architect and/or required by job requirements so as to resolve tight field conditions except as modified in Paragraph 1.5 below.
- B. These composite shop drawings and field installation layouts shall be coordinated in the field among the Contractors to verify the proper relationship to the work of other trades based on field conditions, and shall be checked for accuracy and approved by the Contractors before submission to the Architect for his review and concurrence and shall become the basis for more specific shop drawing submittals as required by the technical specifications.

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1.5 COORDINATION DRAWINGS AND PROCEDURES –
MECHANICAL/ELECTRICAL WORK

- A. Mechanical/electrical work shall be coordinated as indicated by the following procedure.
- B. The HVAC Contractor and/or the Sheet Metal Subcontractor shall prepare a complete draft set of drawings on “bond” to act as background drawings at scale not less than 3/8 inch equals 1 foot, showing structure and other information as needed for coordination. He shall show sheet metal layout thereon. Upon acceptance of these “bond” drawings, the HVAC Contractor shall plot, or have plotted, a final coordination set on Vellum and these will be the Coordination Drawings.
- C. ALL FIREWALLS AND SMOKE PARTITIONS MUST BE HIGHLIGHTED ON THE SHEET METAL DRAWINGS FOR APPROPRIATE COORDINATION
- D. The main paths of egress and for equipment removal, from mechanical and electrical rooms must be clearly shown on the coordination drawings.
- E. Each of the below specialty trades shall add its work to these background drawings with appropriate elevations and grid dimensions using a color coding system to be developed between trades.

Specialty trade information is required for fan rooms and mechanical rooms, horizontal exits from duct shafts, crossovers, and for spaces in and above ceilings where congestion of work may occur such as corridors, and even entire floors.

Drawings shall indicate horizontal and vertical dimensions, to avoid interference with structural framing, ceilings, partitions, and other services.

1. Specialty Trades

- Sheet Metal Subcontractor
- Fire Protection Subcontractor
- HVAC Piping and Associated Control Systems
- Plumbing System
- Electrical
- General Contractor

- F. Each specialty trade shall sign and date each mylar coordination drawing. Return drawings to the Sheet Metal Subcontractor, who shall route them sequentially to all specialty trades.
- G. Where conflicts occur with placement of materials of various trades, the Sheet Metal Subcontractor will be responsible to coordinate the available space to accommodate all trades. Any resulting adjustments shall be initialed and dated by the specialty trade. The Sheet Metal Subcontractor shall then final date and sign each drawing. If he cannot

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resolve conflicts, the decision of the General Contractor shall be final.

- H. A Subcontractor who fails to promptly review and incorporate his work on the drawings shall assume full responsibility of any installation conflicts affecting his work and of any schedule ramifications.
- I. Sheet Metal Subcontractor shall make copies of all coordination drawings. Fabrication shall not start until such transparencies of completed coordination drawings are received by the Architect/Engineer and have been reviewed.
- J. Review of coordination drawings shall not diminish responsibility under this Contract for final coordination of installation and maintenance clearances of all systems and equipment with Architectural, Structural, Mechanical, Electrical and other work.
- K. After Architect/Engineer Review:
1. After review of coordination drawings, the method used to resolve interferences not previously identified shall be as in 1.6 "MEETINGS" below
 2. All changes to reviewed coordination drawings shall be approved in writing by the Architect/Engineer prior to start of work in affected area
- L. Distribution of Coordination Drawings:
1. The Sheet Metal Subcontractor shall provide the following distribution of document
 - One vellum of each Coordination Drawing to each specialty trade and affected Contractor for their use
 - One vellum of each Coordination Drawing to Owner
 - One vellum of each coordination drawing to General Trades Contractor
 - One vellum of each coordination drawing to the Construction Manager
- M. Coordination Drawings include but are not necessarily limited to:
1. Structure
 2. Partition/room layout
 3. Ceiling tile and grid
 4. Light fixtures
 5. Access panels
 6. Sheet metal, coils, boxes, grilles, diffusers, etc.
 7. HVAC piping and valves
 8. Smoke and fire dampers
 9. Soil, waste and vent piping
 10. Water piping
 11. Roof drain piping
 12. Major electrical conduit runs, panel boards, feeder conduit and racks of branch conduit
 13. Above ceiling miscellaneous metal
 14. Fire Protection Systems
 15. Heat tracing of piping
 16. Equipment support, anchors, guides and seismic restraints

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- N. The color coded transparencies shall be kept at the Owner's Representative's field office for future reference in the event of conflict between the trades.
- O. All coordination drawings shall be delivered to the Architect at the end of the project as part of the record drawing requirements set forth in Article 53 of the General Clauses.

1.6 MEETINGS – Coordinate with Article 39 of the General Clauses

- A. Coordination meetings to resolve interferences in the work will be held at the project site under the direction of the Architect and Owner's Representative.

Representatives of each Contractor shall be present at each meeting.

Each Contractor shall provide the necessary manpower and/or overtime to insure that the coordination process described herein does not delay the Project Schedule.

END OF SECTION 013114

SECTION 013200 – SCHEDULING AND PROGRESS (Coordinate with Article 45 of the General Clauses)

1.1 DESCRIPTION

- A. The Contractor shall develop a full schedule, in sufficient detail and clarity of form and technique so that the contractor can plan and control his work properly and the Architect and Owner can readily monitor and follow the progress for all portions of the work. The Contractor shall complete the detailed schedule within 15 days after contract award.
- B. The schedule shall comply with the various limits imposed by the scope of work any by any contractually intermediate milestone dates and completion dates included in the contract.
- C. The activities identified in the schedule shall be analyzed in detail to determine activity time durations in units of whole working days. All duration's shall be the result of definitive manpower and resource planning by the Contractor.
- D. The activity data shall include activity codes to facilitate selection, sorting and preparation of summary reports and graphics. Activity codes shall be developed for:
 - 1. Area: Subdivision of the building and site into logical modules or blocks and levels
 - 2. Responsibility: contractor or subcontractor responsible for the work
 - 3. Specifications: CSI Master Format 2004
 - 4. System: Division of the work into building systems for summary purposes
 - 5. Milestone: Work associated with completion of interim completion dates or milestones
 - 6. Pay Item: Work identified with a pay item on the Schedule of Values

1.2 REPORTS

- A. For initial submittal and each update the contractor shall prepare the following standard report.
 - 1. Tabular Schedule Report sorted by Activity code and Early Start

1.3 GRAPHICS

- A. For initial submittal the contractor shall prepare the following graphics:
 - 1. Pure logic diagram (Precedence Format) of entire data, not time scaled, grouped by Activity code
 - 2. Detailed bar chart sorted by Activity Code with Early Start and Early Finish
 - 3. Summary bar chart summarizing by Activity Code with Early Start and Early Finish
- B. For each update the contractor shall prepare the following graphic:

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1. Bar Chart showing work activities with Early Start in the next 40 work days sorted by Activity Code and Early Start
 2. Summary Bar Chart summarizing by Activity Code showing progress with Early Start and Early Finish
- C. For each Change Order involving adjustment in the contract time for performance the contractor shall prepare a pure logic diagram showing the changed work with all predecessor and successor activities.

1.4 SUBMITTALS

- A. In no case shall first application for payment be approved prior to submission of acceptable preliminary schedule, detailed submittal schedule, and schedule of values.
- B. Monthly updates, required schedules and graphics shall be submitted to the Architect and Owner within five working days following the end of the preceding month. Monthly updates, schedules and graphics shall be submitted in five copies.
- C. If any of the required submissions are returned to the Contractor for corrections or revisions, they shall be resubmitted within ten (10) calendar days after the return mailing date. Resubmittals shall be in the same quantities as noted above. Review and response by the Architect will be given within ten (10) calendar days after resubmission.

1.5 PAYMENT WITHELD

- A. If the Contractor fails to submit the required material as indicated in this section within the time prescribed or revision thereof within the requested time, the Architect may withhold approval of Progress Payment Estimates until such time as the Contractor submits the required information.

1.6 UPDATES

- A. Updates of the Schedule shall be made at the end of each month reflecting actual or reasonably anticipated progress as of the last working day of the month. Monthly updates of the Detailed Schedule will be made each month until all work is substantially complete.
- B. The Contractor will meet with the Architect and Owner at the end of the updated period to review information in draft form before preparation of the required schedules and graphics. The Contractor will present data, prepared in advance, for review and approval of the Architect and Owner including:
 1. Actual Start Dates
 2. Actual Completion Dates
 3. Activity percent complete and/or Remaining Duration

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4. Revised logic, changes in activity duration's or resource assignments
 5. Narrative report discussing progress through the update period; changes, delays or other circumstances affecting progress; status of the project with respect to completion schedule; and any efforts by the Contractor to improve progress
- C. The update meeting will establish the values to be submitted for payment and will be directly related to the schedule of values in the application for payment.
- D. The Contractor shall prepare a report of the meeting and make all changes, additions or corrections to the data resulting from the review. The contractor shall promptly prepare the monthly submittal following the update meeting.

1.7 CHANGES, DELAYS AND EXTENSIONS OF TIME

- A. When changes or delays are experienced, the Contractor shall submit to the Architect and Owner a Time Impact Analysis illustrating the influence of each change or delay on the current Contract scheduled completion date. Each time analysis shall include a network analysis demonstrating how the Contractor proposed to incorporate the change or delay into the Detailed Schedule. Additionally, the analysis shall demonstrate the time impact based on the date the change was given to the Contractor, the status of construction at that point in time, and the activity duration of all effected activities. The activity duration used in this analysis shall be those included in the latest update of the Detailed Schedule, closest to the time of delay or as adjusted by mutual agreement.
- B. Each Time Impact Analysis shall be submitted within ten (10) calendar days after a delay occurs or a notice of change order is given to the Contractor. In cases where the Contractor does not submit a Time Impact Analysis for a specific change or delay with a specified period of time, it shall be mutually agreed that no time extension is required. Final evaluation of each Time Impact Analysis by the Architect and Owner shall be made within fourteen (14) calendar days after receipt unless subsequent meetings and negotiations are necessary. Adjustments in the Contract time for performance shall be made only by written change order approved by the Owner. Upon approval of the Owner, Network diagrams illustrating the influence of changes and delays shall be incorporated into the Detailed Schedule by the contractor during the first update after agreement is reached.

END OF SECTION 013200

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SECTION 013300 – SUBMITTAL REQUIREMENTS

1.1 GENERAL

- A. All Contractors, Subcontractors, Sub-subcontractors, Vendors and the like shall be required to familiarize themselves with said provisions.
- B. Submittals shall be made in groupings where installations are complimentary, i.e. porcelain tile, grout, metal studs, gypsum board; etc. Failure to comply with this requirement will be cause for rejection of any or all submittals.
- C. For purposes of LEED certification of this project, if sought by the Owner, the Contractor shall, as part of the submittal package. Submit the following documentation of:
 - 1. Recycled content from manufacturer for products with specified recycled content.
 - 2. Manufacturing locations and origins of materials for products either “manufactured” and/or “manufactured and sourced” within 500 miles of the project site.

1.2 REQUIREMENTS INCLUDED

- A. Approved Equal Clause/Substitutions/Options
- B. Certification
- C. Manufacturer's Instructions
- D. Shop Drawings
- E. Samples
- F. Material Safety Data Sheet (MSDS) Submittals
- G. Scheduling of Submittals
- H. Job Progress Schedule – See Section 01 32 00
- I. Coordination Drawings – See Section 01 31 14
- J. Progress Photographs
- K. Certificates
- L. Construction Waste Management Procedures and Certifications – See Section 01 74 19.
- M. V.O.C. Compliance certification – See individual technical sections.

1.3 APPROVED EQUAL CLAUSE/SUBSTITUTIONS/OPTIONS -Section 01 25 00

1.4 CERTIFICATION

- A. Certification of compliance with specification performance standards and manufacturers’ specifications and directions shall be furnished for any portion of this work for which specific performance requirements and/or manufacturers’ specifications are listed.

It shall be the responsibility of the Contractor to secure two (2) copies of each certification when required and transmit same to the Architect.

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- B. Sample Certification Form (2 pages) is attached as an exhibit at the close of this Section. Each item requiring certification shall be so noted and affidavits shall be filed singly to cover each specified material, installation, application and the like.

CERTIFICATIONS SHALL BE SUBMITTED AS PART OF THE CLOSE OUT DOCUMENT REQUIREMENTS SET FORTH IN SECTION 01 77 00.

1.5 MANUFACTURERS' INSTRUCTIONS

- A. Where in these specifications an item is called for to be installed in accordance with the manufacturer's directions, specifications or recommendations, the Contractor shall furnish the Architect with two (2) printed copies of said directions, specifications or recommendations, before the item is installed.

1.6 SHOP DRAWINGS

- A. The following serves as a further definition of the requirements for shop drawing submittals as covered in Article 44 of the General Clauses:
1. The Contractor shall submit to the Architect with such promptness as to cause no delay in the work, layout, detail, schedule, setting, product data and shop drawings for each part of the work as specified or required.
 2. BEFORE SUBMITTING ANY DATA FOR APPROVAL, THE CONTRACTOR SHALL CHECK THE SUBMITTALS OF ALL SUBCONTRACTORS FOR ACCURACY AND CONTRACT COMPLIANCE.

Contractor shall see that all work contiguous with and having bearing on work indicated on drawings is accurately and distinctly illustrated and that work shown is in conformity with contract requirements.

3. Shop drawings shall be numbered consecutively and shall represent:
 - a. All working and erection dimensions.
 - b. Arrangement and sectional views.
 - c. Necessary details, including information for making connections to other work.
 - d. Kinds of materials and finishes. Colors, where applicable.
4. Shop drawings shall be dated, and shall generally contain:
 - a. Name and Number of project.
 - b. Name, address and telephone number of submitting Contractor.
 - c. Description of required equipment, materials, and classification item numbers.
 - d. Locations at which materials or equipment are to be installed in the Work.
 - e. Identification of drawings, schedules, notes and/or details and specification sections and related paragraphs to which they apply.
 - f. Equipment or fixture identification corresponding to that used in Contract Documents.
 - g. Accessories and special or non-standard features and materials which are being furnished.

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h. Properly marked with external connection identification as related to the project where they consist of standard factory assembly or field installation drawings.

In addition to the general data required above, applicable mechanical and electrical submissions shall contain:

- a. Manufacturer's specifications including materials of construction, metal gauge, thickness and finish.
- b. Certified dimensional drawings including clearances required for maintenance or access (coordinate with Section 01 31 14)
- c. Performance data, ratings, operating characteristics, and operating limits.
- d. Electrical ratings and characteristics.
- e. Wiring and control diagrams, where applicable.
- f. Certifications requested, including UL label or listing.
- g. List of accessories which are required but are NOT being provided by the product manufacturer or are NOT being furnished under this Section. Identify the Section(s) under which the accessories are being furnished.

5. Submission of data for approval shall be accompanied by letter of transmittal, in duplicate, containing the name of the project, Contractor's name, number of drawings, titles and other pertinent data.

6. Procedure for Submitting Shop Drawings and Product Data:

The contractor shall submit five (5) copies of data, for standard manufactured items, in the form of manufacturer's catalog sheets, showing illustrated cuts of the items to be furnished, scaled details, sizes, dimensions, performance characteristics, operating clearances, capacities, wiring diagrams and all other pertinent information.

NOTE - all such data shall have "review" stamp applied to each submittal prior to submittal.

Two copies of reviewed submissions will be returned to the contractor.

The average "turn around time" of any one in-house submittal by the Architect shall not exceed 15 business days for review and at least 20 business days when another consultant is involved.

- a. For drawings returned "Resubmit", "Amend & Resubmit", "disapproved", or "Rejected-Resubmit", the original drawings shall be corrected and resubmitted, without any additional charges to the Owner, until final approval.
- b. For drawings returned "Approved", "No Exceptions Taken", "approved as Noted", and "Make Corrections Noted", the contractor shall obtain and provide sufficient prints as required for the field.

NOTE: It is the responsibility of the contractor to confirm all dimensions, quantities,

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and the coordination of materials, systems and products supplied by him with other trades. Approval of shop drawings containing errors does not relieve the contractor from making corrections at his expense.

7. No work as called for by shop drawings shall be done until Architect's approval.
8. IF SUBMITTALS SHOW VARIATIONS FROM CONTRACT REQUIREMENTS BECAUSE OF STANDARD SHOP PRACTICES, OR OTHER REASONS, CONTRACTOR SHALL MAKE SPECIFIC MENTION OF SUCH VARIATION IN HIS LETTER OF TRANSMITTAL.
9. APPROVAL OF SHOP DRAWINGS IS GENERAL. IT SHALL NOT RELIEVE CONTRACTOR OF THE RESPONSIBILITY FOR ACCURACY OF SUCH DRAWINGS, NOR FOR THE FURNISHING OF MATERIALS OR PROVISION OF WORK REQUIRED BY THE CONTRACT AND NOT SHOWN ON THE SHOP DRAWINGS.

Unless it is an interpretation of design intent, approval of shop drawings shall not be construed as approval of departures from Contract.

10. If the Contractor should alter any information on previous submittals, besides the notations called for by the Architect, he must circle this new information to bring it to the Architect's attention.
11. **In submitting data for approval, all associated drawings, product data and the like, relating to a complete assembly shall be submitted at one and the same time so that each may be checked in relation to the entire proposed assembly.**

PARTIAL SUBMISSIONS WILL BE RETURNED WITHOUT ACTION TAKEN.

12. Contractor shall have copies of all approved shop drawings as listed in Paragraph 1.6.A.6 above on the job at all time and shall make them available to the Architect or the Owner's representatives.

1.7 SAMPLES

- A. The following serves as a further definition of the requirements for sample submittals as covered in Article 44 of the General Clauses:
 1. Names of proposed manufacturers, materials men and dealers who are to furnish materials, fixtures, appliances or other fittings shall, where practical, be submitted to the Architect for early approval to afford proper investigation and check.
 2. No manufacturer will be approved for any materials to be furnished under this contract unless he shall be of good reputation and shall have plant of ample capacity and shall have successfully produced similar products.
 3. All transactions with manufacturers and subcontractors shall be through the Contractor.
 4. Unless otherwise specified, samples shall be in duplicate (2) and of adequate size to show quality, type, color, range, finish, texture, etc.

INTERRELATED COLOR SELECTIONS WILL NOT BE MADE UNTIL ALL PERTINENT SAMPLES ARE MADE AVAILABLE TO ARCHITECT.

Deliver one (1) sample to field office and one (1) sample to Architect's office unless otherwise directed.

5. Each sample shall be labeled, bearing material and quality names, submitting Contractor's name, and project name, and other pertinent data.

In accordance with OSHA regulation Number 1910.1200, a Manufacturers Material Safety Data Sheet (MSDS) shall be submitted for each product to be incorporated in the work.

Failure to observe these submittal requirements will be cause for rejection of the entire submittal.

The safe handling of products by the applicator according to MSDS warnings is a safety issue, like any other, entirely within the purview of the General Contractor.

6. Where Specifications require manufacturer's printed installation directions, such directions and diagrams shall accompany samples. Coordinate with Paragraph 1.05 herein.
7. A duplicate letter of transmittal from the submitting Contractor requesting approval of the sample shall accompany the samples.
8. Transportation charges to designated locations must be prepaid on all samples.
9. Materials shall not be ordered until approval is received in writing from the Architect. All materials shall be furnished equal in all respects to the samples which were approved.

1.8 MATERIAL SAFETY DATA SHEET (MSDS) SUBMITTALS

- A. As specified in Paragraph 1.7 of this Section and within the technical sections forming this Specification, the Contractor is directed to the following requirements concerning "MSDS" submittals:
 1. Submit MSDS's for all products used during construction whether incorporated within the work or used in the performance of the work.
 2. Identify which products may be harmful to construction workers or other building occupants.
 3. Develop means and methods for protection of construction workers and other building occupants from potentially harmful products. **Submit said means and methods to the Owner for review and approval.**
- B. Further, the General Contractor with assistance from each individual contractor shall maintain a "MSDS" file on site, accessible to workers and otherwise in compliance with jurisdiction's "Right To Know" legislation.
- C. **Attention is directed Section 01 77 00, Article 1.4.A.12 for final closeout submittal**

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of MSDS compilation to the Owner.

1.9 SCHEDULING OF SUBMITTALS

- A. Within two (2) weeks after execution of the Contract, the Contractor shall submit a detailed listing of all items to be incorporated within the work, including all items of mechanical and electrical, as applicable.

Listing should state the following:

1. Date of shop drawing/sample submittals.
2. Guaranteed delivery date after shop drawing and/or sample approvals.
3. Date of installation start.
4. Date of installation completion.

1.10 PROGRESS PHOTOS

- A. This Article includes requirements for periodic construction photography by the General Contractor, utilizing digital camera equipment, to demonstrate construction progress and to serve as a communicative device when describing a given condition to others at a remote location, by means of the internet.
- B. Photography shall be taken using a digital camera and electronic program which will download the digital photos in a JPEG format to a computer with resolution adequate to demonstrate the item under discussion.
- C. One set of record prints will be required and filed with the monthly requisition. The JPEG files shall be transmitted to the appropriate parties who shall then have the option to view the picture(s) on screen or print them out using their own equipment.
- D. It is the intention of this Section to provide a tool to enhance communications and reduce the amount of time required to address questions arising at the Project site. In this end, the Contractor shall utilize good judgment in providing photographs that are informative, and not merely repeating what is shown in the other photographs.
- E. Provide factual representation of construction extent and conditions. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion, utilizing a normal lens.
- F. Before starting work, the Contractor shall take photographs of the site from different points of view sufficient in number to show all present conditions.
- G. The minimum requirements, per requisition period are six (6) photographs of each of the Building units, and three (3) photographs of the Site Work, from different points of view designated by the Architect.

1.11 CERTIFICATES

- A. Submit a Summary of Solid Wastes Generated, manifests, weight tickets, and the like in accordance with requirements of Section 017419 -Construction Waste Management.
- B. Submit, as required by each technical section a certification for V.O.C. compliance.

END OF SECTION 013300

SECTION 015719 - ENVIRONMENTAL PROTECTION DURING CONSTRUCTION

1.1 GENERAL

- A. All Contractors, Subcontractors, Sub-subcontractors, Vendors and the like shall be required to familiarize themselves with said provisions.

1.2 REQUIREMENTS INCLUDED

- A. Scope
- B. Applicable Regulations
- C. Notification
- D. Implementation
- F. Protection of Water Resources
- G. Burning
- H. Dust and Mud Control

1.3 SCOPE

- A. The work covered by this section consists of furnishing all labor, material and equipment and performing all work required for the prevention of environmental pollution during and as the result of construction operations under this contract except for those measures set forth in other Technical Provisions of these specifications.
- B. Compliance with the provisions of this section by all Subcontractors shall be the responsibility of the Contractor.

1.4 APPLICABLE REGULATIONS

- A. In order to provide for abatement and control of any environmental pollution arising from the construction activities of the Contractor and his subcontractors in the performance of this contract, they shall comply with all applicable Federal, State and local laws, and regulations concerning environmental pollution control and abatement as well as the specific requirements stated elsewhere in the contract specifications.

1.5 NOTIFICATION

- A. The Architect will notify the Contractor in writing of any noncompliance with the foregoing provisions. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply promptly, the Architect may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost on account of any such stop orders shall be made the subject of a claim for extension of time or for extra costs or damages by the Contractor unless it was later determined that the Contractor was in compliance.

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1.6 PROTECTION OF WATER RESOURCES

- A. At all times of the year, special measures shall be taken to prevent chemicals, fuels, oils, grease, bituminous materials, waste washings, herbicides and insecticides, and cement and surface drainage from entering public waters.
- B. If any waste material is dumped in unauthorized areas the Contractor shall remove the material and restore the area to the condition of the adjacent undisturbed area.

If necessary, contaminated ground shall be excavated, disposed of as directed by the Architect, refilled with clean material and compacted all at the expense of the Contractor.

1.7 BURNING

- A. Burning will not be permitted.

1.8 DUST AND MUD CONTROL

- A. The Contractor shall at all times provide adequate dust control measures. He shall accomplish this, without interference to building occupants, the public and county employees.

END OF SECTION 015719

SECTION 016100 - MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. All Contractors, Subcontractors, Sub-subcontractors, Vendors and the like shall be required to familiarize themselves with said provisions.

1.2 RELATED REQUIREMENTS

- A. General Standards
- B. Products
- C. Sustainability
- D. Transportation and Handling
- E. Storage and Protection

1.3 GENERAL STANDARDS APPLICABLE TO ALL SPECIFICATION SECTIONS

- A. These provisions, standards, and tolerances shall apply to all work under this Contract. Where stricter standards and tolerances are specified elsewhere in these Specifications or in references specified in these Specifications, they shall take precedence over these standards and tolerances.
- B. Build and install parts of the Work level, plumb, square, and in correct position unless specifically shown or specified otherwise.
 - 1. No part shall be out of plumb, level, square, or correct position so much as to impair the proper functioning of the part or the Work as judged by the Architect.
 - 2. No part shall be out of plumb, level, square, or correct position so much as to impair the aesthetic effect of the part or the Work as judged by the Architect.
- C. Make joints tight and neat. Provide uniform joints in exposed work. Arrange joints to achieve the best visual effect. Refer choices of questionable visual effect to the Architect.
- D. Under potentially damp conditions, provide galvanic insulation between different metals which are not adjacent on the galvanic scale.
- E. Manufacturers, subcontractors, and workmen shall be experienced and skillful in performing the work assigned to them.
- F. All paint used on all products shall conform to ANSI Z66.1, Specifications for Paints and Coatings Accessible to Children to Minimize Dry Film Toxicity.
- G. The Drawings do not attempt to show every item of existing work to be demolished and every item of repair required to existing surfaces. Perform work required to remove existing materials which are not to be saved and to restore existing surfaces to condition equivalent to new as judged by Architect. If possible, repairs shall be indistinguishable from adjacent sound surfaces. Where it is impossible to achieve repairs which are indistinguishable from adjacent sound surfaces to remain, notify Architect, and proceed

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according to his instructions.

1.4 PRODUCTS

- A. Products include material, equipment and systems.
- B. Comply with Specifications and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within a Specification Section shall be the same, and shall be interchangeable.
- D. In the case of an inconsistency between Drawings and the Specifications, or within either document which is not clarified by addendum, the product of greater quality or greater quantity of work shall be provided in accordance with the Designer's interpretation.
- E. Provide environmentally preferable products to the greatest extent possible. To the greatest extent possible, provide products and materials that have a lesser or reduced effect on the environment considering raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, and/or disposal of the product.

1.5 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of materials in accordance with construction schedules in order to avoid delay in, conflict with, or the impeding of the progress of the Work and conditions at the site.
- B. Deliveries shall be made during regular work hours, unless approved otherwise by the Owner.
- C. Deliver materials in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.

1.6 STORAGE AND PROTECTION

- A. Store materials in accordance with manufacturer's instructions, with seals and labels accessible for inspection
- B. Contractor shall be responsible for work and equipment until fully inspected, tested and accepted. Carefully store materials and equipment which are not immediately installed after delivery to site. Close open ends of work with temporary covers or plug during construction to prevent entry of obstructing material or damaging water.
- C. Materials stored on the Site shall be neatly arranged and protected, and shall be stored in an orderly fashion in locations that shall not interfere with the progress of the Work or with the operations of the Owner.
- D. Storage: Maintain temperature and humidity within the ranges required by manufacturer's instructions.

NOTE: If approval is given to store materials in any part of the building area, they shall be so stored as to cause no overloading of the existing structure.

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- E. Deliver materials in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 - 1. Store products subject to damage by the elements in weathertight enclosures
 - 2. Store fabricated products above the ground, on blocking or skids; prevent soiling or staining. Cover products subject to damage or deterioration with impervious sheet coverings; provide adequate ventilation to avoid condensation.
 - 3. Store loose granular materials in a well drained area on solid surfaces to prevent mixing with foreign matter. Locate away from drainage or areas subject to flooding or storm washes.

NOTE: Should it become necessary during the course of the Work to move materials or equipment stored on the Site, the Contractor, at the direction of the Owner's Representative, shall move such material or equipment at no additional cost to the Owner.

- F. 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 employed on the Work, the Contractor shall remove and restack such materials at no additional cost to the Owner.
- G. Protection After Installation.
 - 1. Provide adequate coverings to protect installed materials from damage resulting from natural elements, traffic, and subsequent construction.
 - 2. Remove when no longer needed.

END OF SECTION 016100

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DIVISION 1 - GENERAL REQUIREMENTS

SECTION 017329 – CUTTING AND PATCHING
(Coordinate with Article 51 of the General Clauses)

1.1 GENERAL

- A. All Contractors, Subcontractors, Sub-subcontractors, Vendors and the like shall be required to familiarize themselves with said provisions.
- B. Provide materials, labor, equipment and services necessary and/or required to execute the work of this Section as shown on the drawings, specified herein and/or required by job conditions.
- C. All cutting, removing, relocation, fitting, altering and rough patching for the installation and completion of his work in other than finished surfaces noted below shall be performed by the Trade or Subcontractor requiring said cutting and patching. FINISH PATCHING SHALL BE BY THE RESPECTIVE TRADE OR SUBCONTRACTOR THAT NORMALLY DOES THAT FINISH WORK

1.2 REQUIREMENTS INCLUDED

- A. Definitions
- B. Cutting and Patching Requirements
- C. Specific Requirements -All Trades

1.3 DEFINITIONS

The following definitions shall apply to all work of this Contract involving cutting, patching, filling and the like.

- A. Cutting -those operations required to expose existing construction, or required to permit the installation of work under this contract, or passage of new or relocated work through existing construction.
- B. Patching -Those operations required to bring surfaces to a level to permit the application of a finish treatment.

The Contractor responsible for performing the patching shall be responsible for the restoration of the substrate to match adjacent areas, whether new or existing, except for the following conditions:

- 1. The Contractor responsible for performing the patching shall be responsible for the

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restoration of the substrate to match adjacent areas, whether new or existing, except for the following conditions:

2. Those patched surfaces which are wholly contained within an area which is to receive a new finish treatment as called for elsewhere in the Contract Documents.
- C. Replace -Shall mean to furnish and install an entirely new element which matches the original element's material, color, dimension and design.
- D. Repair -Shall mean to make the existing element as nearly "new", as possible, by the means and methods indicated for each element.
- E. Fill -Shall mean to carefully and thoroughly remove, by approved methods, loose and deteriorated surface material and to install "new" material in the element so that the original contour is completely restored and color matched if exposed as a finished element. Follow manufacturers' instructions as applicable.
- F. Match Original -Where indicated, this type of replacement will match the best available representative element, in design, dimension, and installation, with improvements which represent the best standards of fabrication, so that even if an existing best example of an element is gouged or pitted, or otherwise worn, the new element shall be unworn and without defects and fabricated of new material. The Architect will provide identifications of all original elements.

1.4 CUTTING AND PATCHING REQUIREMENTS

- A. Where cutting, drilling or removals are required in existing and/or newly constructed wall, floor or roof construction, the work shall be done in a manner that will safeguard and not endanger the structure, and shall, in all cases, be as approved by the Architect.

Prior to any cutting, drilling or removals, the Contractor shall investigate both sides of the surface involved, shall determine the exact location of adjacent structural members by visual examination, and shall avoid interference with such members.

No structural members such as joists, beams, columns supporting work that is to remain shall be cut, drilled or removed unless such conditions are shown in detail on the Contract Documents and reinforcing of members affected or new members to compensate for such drilling, cutting and removals are shown.

Positive instructions shall be obtained from the Architect before cutting beams or other structural members, arches, lintels and the like and the Contractor shall be guided by such instructions.

- B. Each Trade Contractor shall provide all sleeves, inserts, hangers and the like required for the execution of their respective work; failing to provide such, said responsible Contractor shall reimburse the General Contractor who shall do all necessary cutting and patching required for the execution of his work.

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C. No Contractor shall:

1. endanger any work by cutting or drilling or otherwise
2. cut or alter the work of any other contractor except with the written consent of the Architect
3. cut or drill above the minimum needed to install work

D. All holes cut through masonry exposed to view in the finished work and concrete slabs shall be core drilled except for specific holes that have been structurally detailed per Contract Documents.

The Contractor shall locate adjacent structural members before core drilling to insure that structural members are not damaged.

No jack hammering will be permitted.

1.5 SPECIFIC REQUIREMENTS -ALL TRADES

- A. The Contractor shall perform, or cause to have performed by nominated trade and/or subcontractors as defined in Paragraph 1.3 herein, all cutting, rough and finish patching required to install the work under the Contract and as indicated on the drawings and/or as required.

Said contractor shall perform, or cause to have performed, all finish patching of openings at walls and slabs created by the removal of existing ductwork, piping, conduit, equipment or installation of new work.

END OF SECTION 017329

SECTION 017419 – CONSTRUCTION WASTE MANAGEMENT

1.1 GENERAL

- A. All Contractors, Subcontractors, Sub-subcontractors, Vendors and the like shall be required to familiarize themselves with said provisions.

1.2 DESCRIPTION OF WORK

- A. This Section specifies requirements for a complete program for implementation of waste management controls and systems for the duration of the Work.

1.3 INTENT

- A. The Owner has established that this Project shall generate the least amount of waste practical and that processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors shall be employed.
- B. Of the waste that is generated, as many of the waste materials as economically feasible shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized to the greatest extent practical.

With regard to these goals the Contractor shall develop, for Owner's Representative's review and Architect's review, a Waste Management Plan for this Project

Each Sub/Specialty Contractor shall be responsible for segregating their own waste into different dumpsters as directed by the Contractor

The Contractor shall be responsible for ensuring that debris will be disposed of at appropriately designated licensed solid waste disposal facilities, as defined by governing laws of the jurisdiction of the Work

1.4 WASTE MANAGEMENT PLAN

- A. Waste Management Plan: The Contractor shall provide a plan containing the following:
 - 1. Analysis of the proposed jobsite waste to be generated, including types and rough quantities
 - 2. Landfill Options: The name of the landfills where trash and building debris will be disposed of, the applicable landfill tipping fees, and the projected cost of disposing of all Project waste in the landfills
 - 3. Landfill Certification: Contractor's statement of verification that landfills proposed for use are licensed for types of waste to be deposited and have sufficient capacity to receive waste from this project
 - 4. Alternatives to Land filling: A list of each material proposed to be salvaged or

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recycled during the course of the Project. Include the following and any additional items proposed:

- Cardboard
 - Clean dimensional wood
 - Beverage containers
 - Concrete
 - Bricks and masonry
 - Gypsum boards
 - Acoustical ceiling material (grid separate)
 - Metals from framing, banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze
5. Meetings: A description of the regular meetings to be held to address waste management
 6. Materials Handling Procedures: A description of the means by which any waste materials identified above will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities
 7. Transportation: A description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site) and destination of materials.

Part 2 -PRODUCTS -NOT USED

Part 3 –EXECUTION

3.1 RECYCLING

- A. Metal, including but not limited to aluminum stairs, structural beams and sections, and reinforcing steel shall be recycled.
- B. Wood that is not painted and does not contain preservatives (i.e. creosote, arsenic, and chromium-containing preservatives) shall be segregated and recycled.

3.1 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. All sorting will be done “off site” by a recognized construction and demolition processing facility who will be responsible for provision of all documentation as to where loads were processed and the recycling rate achieved.
- B. Hazardous Wastes: Any unforeseen hazardous wastes shall be separated, stored, and disposed of according to local regulations.

END OF SECTION 017419

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DIVISION 1 – GENERAL REQUIREMENTS

SECTION 017700 – PROJECT CLOSE OUT

1.1 GENERAL

- A. All Contractors, Subcontractors, Sub-subcontractors, Vendors and the like shall be required to familiarize themselves with said provisions.

1.2 REQUIREMENTS INCLUDED

- A. Final Cleanup
- B. Required Close Out Documentation
- C. Project Close Out Inspections

1.3 FINAL CLEANUP

- A. The Contractor shall leave the work ready for use and occupancy without the need of further cleaning of any kind.
- B. The Contractor shall remove all tools, appliances, project signs, material and equipment from the phased areas as soon as possible upon completion of the work.
- C. The work is to be turned over to the Owner in new condition, in proper repair and in perfect adjustment.

1.4 REQUIRED CLOSE OUT DOCUMENTATION

- A. Prior to final payment, ***and as part of the final requisition***, the Owner shall receive, in addition to those documents required by the General Conditions, the following:
 - 1. Project record documents as per Section 017719.
 - 2. Coordination drawings as per Section 013114.
 - 3. The Contractor's general guarantee.
 - 4. Specific guarantees of material, equipment and systems installed in the work.
 - 5. A copy of all test data taken in connection with the work.
 - 6. Three (3) copies of all operation and maintenance manuals which shall include:
 - a. Sequence of Operation and Control Diagrams, corrected for as-built conditions.
 - b. Parts List, including illustrations, assembly drawings and diagrams required for maintenance, predicted life of parts subject to wear, and recommendations for stocking spare parts.
 - c. Copies of accepted shop drawings, charts and diagrams.
 - d. Names, addresses and telephone numbers of manufacturer's representative and service company.
 - e. Letters from each manufacturer certifying that his equipment was properly installed and is operating in accordance with manufacturer's intent.
 - f. MSDS sheets tabulated and indexed as per specification sections.

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- g. Copies of all test reports, including balancing, and with corrections confirmed, must be provided with the contractor's request for a substantial completion inspection.
- h. An "Underwriter's Certificate" shall be provided in the O&M manuals to be provided to the Owner.
- 7. Preventative Maintenance Schedule Sheets.
- 8. Copies of all Certification of Specifications Compliance as per Section 01 33 00.
- 9. Record of Manufacturers Material Safety Data Sheets (MSDS).
- 10. Certified Payroll Records.

1.5 PROJECT CLOSE OUT INSPECTIONS

- A. When the Work has reached such a point of completion that the building or buildings, equipment, apparatus or phase of construction or any part thereof required by the Owner for occupancy or use can be so occupied and used for the purpose intended, the Contractor, prior to notification to the Architect, shall make a preliminary inspection of the Work to insure that all the requirements of the Contract have been met and the Work is substantially complete and is acceptable.

Upon such notification, the Owner or the Architect shall make a detailed inspection of the Work to insure that all the requirements of the Contract have been met and that the Work is complete and is acceptable.

- B. A copy of the report of the inspection shall be furnished to the Contractor as the inspection progresses so that the Contractor may proceed without delay with any part of the Work found to be incomplete or defective.
- C. When the items appearing on the report of inspection have been completed or corrected, the Contractor shall so advise the Owner and the Architect. After receipt of this notification, the Owner or the Architect shall inform the Contractor of the date and time of final inspection.

A copy of the report of the final inspection containing all remaining contract exceptions, omissions and in completions shall be furnished to the Contractor.

- D. After the receipt of notification of completion and all remaining contract exceptions, omissions and in completions from the Contractor, the Owner and the Architect will re-inspect the Work to verify completion of the exception items appearing on the report of final inspection.

Upon completion of re-inspection, the Architect will prepare a certificate of final acceptance or will furnish to the Contractor a copy of the report of the Architect's re-inspection detailing Work that is incomplete or obligations that have not been fulfilled but are required for final acceptance.

END OF SECTION 017700

SECTION 017719 – PROJECT RECORD DOCUMENTS
(Coordinate with Article 53 of the General Clauses)

1.1 GENERAL

- A. All Contractors, Subcontractors, Sub-subcontractors, Vendors and the like shall be required to familiarize themselves with said provisions.

1.2 REQUIREMENTS INCLUDED

- A. Project Record Drawings
- B. Record Drawing Certification

1.3 PROJECT RECORD DRAWINGS

- A. The purpose of the project drawings is to record the actual location of the work in place, and to record changes in the work.
- B. In addition to the sets of contract drawings that are required by the Contractor on the site to perform the work, the Contractor shall maintain, at the site, one (1) copy of all drawings, specifications and addenda that are part of the Contract as awarded.

Each of these documents should be clearly marked "Project Record Copy", maintained in a clean and neat condition available at all times for inspection by the Owner or the Architect, and shall not be used for any other purpose during the progress of the work.

- C. Project Record Requirements
 - 1. The Contractor shall mark-up the "Project Record Copy" to show:
 - a. Approved changes in the work
 - b. Location of concealed work
 - c. Details not shown in the original Contract Documents
 - d. Any relocation of work including piping, conduits, ducts and the like
 - e. All changes in dimensions
 - f. Revisions to any electrical circuitry
- D. The project record drawings are to be submitted by the Contractor to the Owner or the Architect when all the work is completed and is approved by the Owner and the Architect before the Contractor may request final payment
- E. In addition to the drawings required as mentioned above, the Contractor shall submit a list of all approved Shop Drawings of the Work as installed.

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DIVISION 1-GENERAL REQUIREMENTS

1.4 RECORD DRAWING CERTIFICATION

- A. The record drawings required under the terms and conditions of this Section shall be reviewed and processed by the Contractor as part of their overall contractual responsibility.
- B. This certification may be issued for individual trades or as a collective document to cover the entire record drawing requirements of the project

The format of this certification shall be as follows:

These record drawings prepared by:
for _____ have
been reviewed by the undersigned and:

*Appear to be an accurate representation of the work incorporated within the project
and are accepted as submitted in accordance with the technical documents.*

This record document review made by this office is for determination of compliance to the requirements of the contract documents.

Firm Name: _____

Review Date: _____ By: _____

END OF SECTION 017719

CONTRACT NO. 21-514
DIVISION 2 – SITE CONSTRUCTION

SECTION 020700 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Information for Bidders, General Clauses and Special Clauses, apply to this Section.
- B. Provide all material, labor, equipment and operations required or reasonably implied to complete demolition and removal work or alterations and restoration work in accordance with drawings and specifications herein.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Demolition, removal and disposal as shown on the contract drawings.
 - 2. Patching and repairs.

1.3 WORK OF THIS SECTION

Removals:

- 1. Perform demolition of items as specified and in areas indicated in the drawings.
- 2. All cutting, patching and repairing in connection with the contract work shall be performed in such a manner that the finished work will be structurally sound and unmarred as though no cutting, patching and repairing had been executed.
- 3. All other work incidental thereto and reasonably inferable as needed to make the work of this Section complete.

1.4 GENERAL REQUIREMENTS

- 1. The premises shall be accepted as found at the start of demolition.
- 2. No construction (e.g. chutes, elevators, etc.) will be permitted on the exterior of the building or structures adjacent thereto.
- 3. The Contractor shall refer to the applicable Special Clauses, e.g. Cutting and Patching, Protection and Clean-up, and Removal of Debris.

1.5 DEFINITIONS

- A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Owner's property.
- B. Remove and Salvage: Items indicated to be removed and salvaged remain the Owner's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to Owner's designated storage area-as applicable.
- C. Existing to Remain: Protect construction indicated to remain against damage and soiling during

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DIVISION 2 – SITE CONSTRUCTION

selective demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.

1.6 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the Owner's property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition at the Contractor's option.

1.7 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract.
- B. Proposed dust-control measures.
- C. Proposed noise-control measures.

1.8 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Engage an experienced firm that has successfully completed selective demolition Work similar to that indicated for this Project.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.9 PROJECT CONDITIONS

- A. Owner will occupy portions of the building immediately adjacent to selective demolition area. Conduct selective demolition so that Owner's operations will not be disrupted. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.
- B. Storage or sale of removed items or materials on-site will not be permitted.

1.10 SCHEDULING

- A. Arrange selective demolition schedule so as not to interfere with Owner's on-site operations.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.
 - 1. Provide temporary weather protection, during interval between demolition and removal of existing construction, on exterior surfaces and new construction to ensure that no water leakage or damage occurs to structure or interior areas.
 - 2. Protect walls, ceilings, floors, and other existing finish work that are to remain and are exposed during selective demolition operations.

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3.2 POLLUTION CONTROLS

- A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.
 - 1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
- B. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.

3.3 PATCHING AND REPAIRS

- A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.
- B. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
 - 1. Completely fill holes and depressions in existing masonry walls to remain with an approved masonry patching material, applied according to manufacturer's printed recommendations.
- C. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.
- D. GC is responsible for coordination with other crafts.

3.4 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.5 CLEANING

- A. Sweep the building broom clean on completion of selective demolition operation.

END OF SECTION 020700

CONTRACT NO. 21-514
DIVISION 3 – CONCRETE

SECTION 033000 – CAST IN PLACE CONCRETE

Part 1 – GENERAL

- 1.01 Drawings and General Provisions of the Contract, including information for Bidders, General Clauses and Division 1, General Requirements apply to this Section.
- 1.02 DESCRIPTION OF WORK
- A. The work of this Section consists of the provision of all plant, materials, labor and equipment and the like necessary and/or required for the complete execution of the concrete, forms, reinforcing and finishing work for this project as required by the schedules, keynotes and drawings.
- 1.03 RELATED WORK SPECIFIED ELSEWHERE – Entire Project Specification and drawings.
- 1.04 QUALITY ASSURANCE
- A. Unless specifically specified otherwise herein or by local ordinance, accomplish all work in accordance with the following codes, standards and specifications, and such requirements shall be binding if specified directly herein. Only the latest specifications shall form part of this Specification to the extent indicated by the reference thereto.
- B. The work of this section shall further conform to the Codes, Rules and Regulations of the State of New York as promulgated within the New York State Uniform Fire Prevention and Building Code.
- C. Reference Standards
1. American Concrete Institute (ACI):
 - a. ACI - 117 “Standard Specifications for Tolerance for Concrete Construction and Materials”.
 - b. ACI – 211 “Recommended Practice for Selecting Proportions for Concrete”.
 - c. ACI – 214 “Recommended Practice for Evaluation of Compression Test Results of Field Concrete”.
 - d. ACI – 301 “Specifications for Structural Concrete for Buildings”.
 - e. ACI – 302.1 “Guide for Concrete Floor and Slab Construction”.
 - f. ACI – 303R “Guide to Cast-in-Place Architectural Concrete Practice”.
 - g. ACI – 303.1 “Standard Specification for Cast-in-Place Architectural Concrete”.
 - h. ACI – 304 “ Recommended Practice for Measuring, Mixing and Placing Concrete”.
 - i. ACI – 305R “Recommended Practice for Hot Weather Concreting”.
 - j. ACI – 306R “Recommended Practice for cold Weather Concreting”.
 - k. ACI – 308 “Standard Practice for Curing Concrete”.
 - l. ACI – 309 “Consolidation of Concrete”.

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- m. ACI – 311 “Recommended Practice for Concrete Inspection”.
 - n. ACI – 315 “Manual of Standard Practice for Detailing Reinforced Concrete Construction”.
 - o. ACI – 318 “Building Code Requirements for Reinforced Concrete”.
 - p. ACI – 347 “Recommended Practice for Concrete Formwork”.
2. Concrete Reinforcing Steel Institute (CRSI):
- a. CRSI – 93 “Recommended Practice for Placing Reinforcing Bars”.
 - b. CRSI – 93 “Recommended practice for Placing Bar Supports, Specifications and Nomenclature”.
3. National Ready Mix Concrete Association (NRMCA): “Concrete Plant Standards “ and “Truck Mixer and Agitator Standards”.
4. American Welding Society (AWS): AWS D12.1 “Recommended Practice for Welding Reinforcing Steel, Metal Insets and Connections in Reinforced Concrete Construction”.
5. Wire Reinforcement Institute (WRI): “Manual of Standard Practice”.
6. American Society for Testing and Materials (ASTM):
- a. ASTM A 123 “Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products”.
 - b. ASTM A 185 “Standard Specification for Welded Steel Wire Fabric for Concrete Reinforcement”.
 - c. ASTM A 615 “Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement”.
 - d. ASTM C 31 “Standard Method of Making and Curing Concrete Test Specimens in the Field”.
 - e. ASTM C 33 “Standard Specification for Concrete Aggregate”.
 - f. ASTM C 39 “Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens”.
 - g. ASTM C 42 “Standard Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete”.
 - h. ASTM C 94 “Standard Specification for Ready-Mix Concrete”.
 - i. ASTM C 138 “Test for Unit Weight, Yield and Air Content (Gravimetric of Concrete)”.
 - j. ASTM C 150 “Standard Specification for Portland Cement”.
 - k. ASTM C 172 “Standard Method of Sampling Fresh Concrete”.
 - l. ASTM C 192 “Standard Method of Making and Curing Concrete Test Specimens in the Laboratory”.
 - m. ASTM C 330 “Standard Specification for Lightweight Aggregates for Structural Concrete”.
- D. The ACI Field Reference Manual, SP-15 shall be kept at the job site, and the practices set forth therein, shall be strictly adhered to.

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- E. Coordinate with testing and quality control requirements and:
 - 1. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
 - a. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade I, according to ACI CP-01 or an equivalent certification program.
 - b. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician – Grade I.
Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician – Grade II.
- F. The Contractor shall conform to requirements of the above codes and standards unless specified otherwise herein below. In case of apparent conflict between standards or between standards and the Specifications herein below, the more restrictive requirement shall apply.
- G. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- H. Manufacture qualification: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C certified according to NRMCA’s “Certification of Ready Mixed Concrete Production Facilities”.

1.05 SUBMITTALS

- A. Product Data: Submit data for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish material, and others as requested by Architect.
- B. Shop Drawings: Shop and erection drawings shall be prepared only by competent detailers, checked prior to submission.
 - 1. Reinforcement: Submit original shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315 “Details and Detailing of Concrete Reinforcement” showing:
 - a. bar schedules;
 - b. elevations of top and bottom of concrete and shelves and block-out;
 - c. dimensions of concrete work with specified reinforcement clearances;
 - d. ledges, brackets, openings, sleeves or other items furnished by other Sections where interference with reinforcement may occur;
 - e. bending diagrams;
 - f. assembly diagrams;
 - g. splices and laps of reinforcement;
 - h. temperature and shrinkage reinforcement;

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- i. construction join reinforcement;
- j. shapes, dimensions, grade designations, and details of reinforcement and accessories.

NOTE: Show dowels with concrete work to be placed first. Make coordinated drawings showing size and location of openings and sleeves and incorporate this information on the reinforcing drawings.

- 2. Formwork Drawings:
 - a. Construction joints and control joints with methods of forming for structured slabs;
 - b. General arrangement, sizes and grades of lumber, panels and alignment;
 - c. Slab edge layouts as well as all openings and edge details for same.
- C. Except as otherwise noted, approval of Shop Drawings will be for size and arrangement of components. Errors in dimensions shown on Shop Drawings shall be the responsibility of Contractor. Check and coordinate concrete work with work of other trades before submitting Shop Drawings.
- D. Do not proceed with fabrication of material or performance of work until corresponding item on Shop Drawing has been approved in writing by the Architect.
- E. Submit samples of materials as requested by Architect, including names, sources and descriptions.
- F. Certification of Specification Compliance.
- G. Provide materials certificates in lieu of materials laboratory test reports when permitted by Architect. Material certificates shall be signed by manufacturer and Contractor, certifying that each material item complies with, or exceeds, specified requirements. Provide certification from admixture manufacturers that chloride content complies with specification requirements.
- H. Submit laboratory test reports for concrete materials and mix design test.
- I. Mill Test Certification: Submit prior to delivery of reinforcing steel or concrete to job site, certified mill test reports of reinforcing steel and cement, (including names and locations of mills and shops, and analyses of chemical and physical properties, properly correlated to concrete to be used in this project. When material is scheduled to be galvanized, submit certification from galvanizer as to weights and properties applicable to same.
- J. Manufacturers Material Safety Data Sheet (MSDS) must be submitted for each product.

NOTE: Maintain at least one copy of each final shop drawing available in the Contractor's field office.

- K. Outline of procedures, materials to be incorporated and curing techniques for patching of existing concrete surfaces at tie-ins of new construction to existing.

1.06 LEED CERTIFICATION LANGUAGE

- A. Product data. Unless otherwise indicated, submit the following for each type of product provide under work of this Section:
 - 1. Recycled Content:

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- a. Indicate recycled content; indicate percentage of pre-consumer and post-consumer recycled content per unit of product.
 - b. Indicate relative dollar value of recycled content product to total dollar value of product included in project.
 - c. If recycled content product is part of an assembly, indicate the percentage of recycled content product in the assembly by weight.
 - d. If recycled content product is part of an assembly, indicate relative dollar value of recycled content product to total dollar value of assembly.
2. Local/Regional Materials:
- a. Sourcing location(s): Indicate location of extraction, harvesting, and recovery; indicate distance between extraction, harvesting, and recover and the project site.
 - b. Manufacturing location(s): Indicate location of manufacturing facility; indicate distance between manufacturing facility and the project site.
 - c. Product Value: Indicate dollar value of product containing local/regional materials; include materials cost only.
 - d. Product Component (s) Value: Where product components are sourced or manufactured in separate locations, provide location information for each component. Indicate the percentage by weight of each component per unit of product.

1.07 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Reinforcement according to released Shop Drawing shall be delivered to the job site at such time as it is required by the program of operations. Reinforcement and metal accessories shall have each rod or bundle identified by metal tag showing size and location in accordance with setting plans and shall be stored off the ground, protected from deterioration by weather, dirt and construction operations.
- B. Forms of fiberglass or of steel are to be stored out of contact with the ground, and with such protection as prevents rust, change of shape and other damage.
- C. Store and protect all other materials strictly in accordance with the Manufacturer's instruction. Particular attention is called to the maintenance of correct temperatures to prevent the deterioration of certain products. Any materials not so stored will be subject to rejection by the Architect.

1.08 SUBSTITUTIONS

- A. Substitutions for member sizes, type(s) of concrete, connection details or any other modifications proposed by Contractor will be considered by Architect only under following conditions:
 1. That request has been made and accepted prior to submission of Shop Drawings;
 2. That there is a substantial cost advantage or time advantage to the Owner; or that proposed revision is necessary to obtain required materials or methods at proper times to accomplish work in time scheduled;

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3. That sufficient sketches, engineering calculations, and other data have been submitted to facilitate checking by Architect, including cost reductions or savings in time to complete work; and
4. That the cost of reviewing the substitutions shall be borne entirely by the Contractor.

1.09 TESTING AND INSPECTION

- A. The Contractor shall retain the services for testing, inspection and control of the concrete at the batching plant and in the field and provide all reports to the Architect and Owner.
- B. Testing, inspection and control shall be performed by the Contractor's testing organization as directed by the Architect. The testing services listed in ACI Standard 301 shall be the minimum required as well as required conformance to the requirements of **Chapter 17 of the building code of the jurisdiction of the Work** are complied with and will provide and/or supervise inspection and testing requirements, as necessary.
 1. Maintain on site representation to the extent necessary to perform the following:
 - a. Review the Contractor's proposed materials for compliance with the specifications as requested by the Owner.
 - b. Review the proposed design mixes.
 2. Conduct strength tests in accordance with the following procedures: (A strength test consists of 4 concrete cylinders).
 - a. Secure composite samples in accordance with ASTM C 172. Each test shall be obtained from a different batch of concrete on a representative, truly random basis. When pumping or pneumatic placing equipment is used, samples shall be taken from discharge end.
 - b. Mold 4 specimens from each sample in accordance with requirements of ASTM C 31 and cure same in accordance with Division 7(a) and (b) of said method.
 - c. Test 3 specimens: 1 at 7 days and 2 at 28 days in accordance with ASTM C 39. The 28 day test result shall be the average of the 2 strengths of the 2 specimens. If the average of the 2 specimens is less than the required strength, test the 4th at 45 days.
 - d. Make 1 strength test for each 50 cu. yds. or fraction thereof from each design mix of concrete placed in any one day; except that in no case shall a given mix design be represented by less than five tests.
 3. Prepare additional cylinders as required by the contractor for determination of concrete strengths required for removal of shoring.
 4. Determine slump of concrete sample for each strength test and whenever consistency of concrete appears to vary in accordance with ASTM C 143.
 5. Determine air content of concrete sample for each strength test in accordance with either ASTM C 231, C 173 or C 138.
 6. Determine temperature of concrete for each strength test.

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7. Test results will be reported in writing to Architect, Structural Engineer and Contractor within 24 hours after tests. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials; compressive breaking strength and type of break for both 7-day tests and 28-day tests. Submit all test reports indicating nonconformance to the specifications on colored paper.
8. Nondestructive Testing: Windsor probes, sonoscope, or other nondestructive device as may be **approved for use by the Engineer of Record**, but shall not be used as the sole basis for acceptance or rejection.
9. Additional Tests: The testing service will make additional tests of in place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Architect. Testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed. Contract shall pay for such tests when unacceptable concrete is verified.
10. Maintain continuous liaison with the Architect/Engineer, alerting him immediately of conditions that adversely affect the performance of the work.

1.08 CONSTRUCTION PROCEDURES

- A. Forms, bracing, construction procedures, erection methods, equipment, and safety requirements are outside the scope of this specification, and are solely the responsibility of this Contractor. Periodic visits to the site by the inspector or engineer, including the approval of design aspects, are not be interpreted as approval of these activities, and in no way to relieve the Contractor of this responsibility.
- B. If faulty construction procedures or material result in defective work that requires additional engineering time to devise corrective measures, professional fees for such work may be charged to the Contractor at the standard hourly rate for extra work. Such fees may be withheld from the Contractor's payment.

1.09 SUSTAINABILITY

- A. In the selection of the products and materials of this section as well as for the entire project, preference will be given to those with the following characteristics:
 1. Water based.
 2. Water-soluble.
 3. Can be cleaned up with water.
 4. Non-flammable.
 5. Biodegradable.
 6. Low or preferably no Volatile Organic Compound (VOC) content.
 7. Manufactured without compounds that contribute to ozone depletion in the upper atmosphere.

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8. Manufactured without compounds that contribute to smog in the lower atmosphere.
9. Do not contain methylene-chloride.
10. Do not contain chlorinated hydrocarbon.
11. Contains the least possible of post-consumer or post-industrial waste.

Part 2 – PRODUCTS

2.01 CONCRETE CONSTITUENTS

- A. Cement: American made Portland Cement free from water soluble salts or alkalis which will cause efflorescence on exposed surfaces. Unless otherwise noted on the drawings, Portland Cements shall be Type I or II, each conforming to ASTM C 150.

Cementitious Materials: Portland Cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

Use only one brand of cement for each type of cement throughout project. Contractor shall be responsible for whatever steps are necessary to insure that no visual variations in color will result in exposed concrete and shall place on order and secure in advance a sufficient quantity of this (these) cement(s) to complete concrete work specified herein.

- B. Normal Weight Aggregates: ASTM C 33, and as herein specified. Provide aggregates from a single source for exposed concrete. Local aggregates not complying with ASTM C 33 but which have shown by special test or actual service to produce concrete of adequate strength and durability may be used when acceptable to Architect.

Maximum designated sizes for normal weight coarse aggregate to be used in concrete sections shall be as noted below, except that sizes shall also be chosen in conjunction with required clearances.

1. Aggregates larger than $\frac{3}{4}$ inch may not be used except for foundation elements, where $1\frac{1}{2}$ inch aggregate may be used in work below finished grade provided the size of the coarse aggregate does not exceed $\frac{3}{4}$ of the clear distance between the reinforcing bars, nor the clear distance between the reinforcement and the face of the concrete member in which it is placed.
 2. For column or wall elements with minimum dimension less than or equal to 8 inches, use pea stone ($\frac{3}{8}$ inch) gravel maximum.
 3. For all other concrete, maximum aggregate size shall be $\frac{3}{4}$ inch.
- C. Water: drinkable
- D. Admixtures

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1. Water reducing agents for general project use and required for concrete flatwork exposed to weather as specified in Section “Pavements and Surfaces” shall be one of the following:
 - a. “Sikament 300” or “Plastocrete 161” by Sika Corporation;
 - b. “WRDA Hycol” by Grace Construction Products;
 - c. “Pozzolith 200N” by BASF Construction Chemicals – Building Systems;
 - d. “PDA25” by Protex Industries;
 - e. “Eucon WR-75 or WR-89” by Euclid Chemical Co. each conforming to ASTM C 494, Type A for interior work; Type F for exterior work.
2. Air entrainment agents:
 - a. “Darex AEA” or “Daravair” by Grace;
 - b. “MB-WR” or “MB-AE” by BASF Construction Chemicals – Building Systems;
 - c. “PROTEX AEA” by Protex;
 - d. “Air-Mix” by Euclid Chemical Co.
 - e. “Sika AER” or Sika AEA-15” by Sika Corp.
3. High-Range Water-Reducing Admixtures (Superplasticizer): ASTM C 494, Type F or Type G and containing not more than 0.05 percent chloride ions.
 - a. “Sikament 300 or Sikament 86” by Sika Corp.
 - b. “Eucon 37” by Euclid Chemical Co.
 - c. “Daracem-100” by Grace
 - d. “Rheobuild 1000” by BASF Construction Chemicals – Building Systems
4. Water Reducing, Non-Corrosive Accelerating Admixture: The admixture shall conform to ASTM C 494, Type C or E, and not contain more chloride ions than are present in municipal term non-corrosive test data from an independent testing laboratory (of at least a year’s duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures.
 - a. “Accelguard 80” by Euclid Chemical Co.
 - b. “Daraset” by Grace
 - c. “Plastocrete 161 FL” by Sika Corp.Water-Reducing, Retarding Admixture: ASTM C 494, Type D, and contain no more that 0.05 percent chloride ions.
 - a. “Pozzolith Retarder” by BASF Construction Chemicals – Building Systems
 - b. “Eucon Retarder 75” by Euclid Chemical Co.
 - c. “Daratard” by Grace
 - d. “Plastiment” by Sika Corp.

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5. Corrosion inhibitor:
 - a. “DCI” by Grace added to specified concrete at the rate of 3 gallons per cu. Yd.;
 - b. “2000 Armatec” by Sika Corporation added to specified concrete at the rate of ½ gallon per cu. Yd.;
 - c. “Sikagard 3020 ARmatec” by Sika Corporation directly applied to specified concrete by spray, brush or roller.
6. Admixtures such a calcium chloride, thycyanates or other such materials containing more than 0.05 percent chloride ions are not permitted.
7. Certification: Written conformance to the above mentioned requirements and the chloride ion content of admixtures will be required from the admixture manufacturer prior to mix design review by the Engineer; coordinate with Article 1.04 herein.

2.02 CONCRETE MIXTURES

- A. The Contractor shall recommend, on the basis of trial mixes and strength curves specified below, design mixes for each type and strength of concrete. The Testing Agency will verify that the proposed mix designs conform to all specification requirements.
- B. Sufficient materials for concrete mix design shall be furnished by contractor not less than two weeks before use. Duplicate small samples plainly and neatly labeled with source, where proposed to be used, date, and name of collector shall be provided and presented to Testing Agency for permanent reference.
- C. Design mixes in accordance with Section 5.3, “Proportioning on the Baiss of Field Experience and/or Trial Mixtures” of ACI 318 and the requirements of this Section. All concrete is to be normal weight unless specifically designated otherwise; air-dry weight not to exceed 150 pounds per cu. Ft. If previously used mixes are submitted, all materials shall be from the same sources and with the same brand names as the previously utilized mix. If trial batches are used, the mix design shall be prepared by an independent testing laboratory and shall achieve an average compressive strength 1,200 psi higher than the specified strength. The proposed mix designs shall be accompanied by complete standard deviation analysis or trial mixture test data. The testing facility shall not be the same as used for field quality control testing. Design mixes to provide normal weight concrete with the strengths and properties indicated on the drawings.
- D. Limiting values shown in Table A apply or specific strengths of concrete with coarse aggregates less than 1-1/2 inches unless noted otherwise.

Table A

Min. Allowable Compr. Strength at 28 day (psi)	Max. Allowable Water/Cement Ratio*	Min. Permissible Cement Factor LBS/CU. YD.**
4,000	0.50	550

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3,000	0.60	450
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* Maximum; decrease if possible. This represents total water in mix at time of mixing, including free water on aggregate.

** Minimum; increase as necessary to meet other requirements.

- E. In all slabs and walls exposed to weather, all concrete shall contain the approved air-entraining admixture as per manufacturer's written instructions, to provide entrained air, by volume, in the cured concrete within 4.5 to 6.5 percent.
- F. Water-Reducing Admixtures:
1. Use water-reducing admixture or high range water-reducing admixture (superplasticizer) in all concrete as required for placement and workability.
 2. Use non-corrosive, non-chloride accelerating admixture in concrete slabs placed at ambient temperatures below 50 degrees F (10 degrees C).
 3. Use high-range water-reducing admixture (superplasticizer) in ALL pumped concrete, including all slabs, both structural and on-grade, concrete required to be watertight, concrete with ultimate strength of 5,000 psi or more, and concrete with water/cement ratios below 0.50.
 4. Use admixtures for water-reducing and set-control in strict compliance with manufacturer's directions.
- G. Water-Cement Ratio: Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows:
1. Subjected to freezing and thawing; W/C min. 0.45, max. 0.50.
 2. Subjected to deicers/watertight; W/C 0.40.
 3. Slabs on grade; W/C 0.45.
 4. Reinforced concrete subjected to brackish water, salt spray or deicers; W/C 0.35.
- Any deviation from approved mix design, which Contractor deems desirable under certain project conditions, will not be allowed without written approval of Architect.
- H. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:
1. Ramps slabs, and sloping surfaces: Not more than 4 inches.
 2. Reinforced foundation systems: Not less than 2 inches and not more than 5 inches.
 3. Concrete containing HRWR admixture (superplasticizer): Not more than 8 inches, 7 inches preferred, unless otherwise approved by the Architect. The concrete shall arrive at the job site at a slump of 2 inches to 3 inches, be verified, then the high-range water-reducing admixture added to increase the slump to the approved level.
 4. Other Concrete: Not less than 1 inch nor more than 4 inches.
- I. Chloride Ion Level: Chloride ion content of aggregate shall be tested by the laboratory making the trial mixes. The total chloride ion content of the mix including all constituents shall not exceed the limitations set forth in Table 4.5.4 of ACI 318-83 for

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concrete subjected to deicers or exposed to chloride in service (0/15 chloride ions by weight of cement).

2.03 CONCRETE MIXING

- A. Ready-Mix Concrete: Comply with requirements of ASTM C 94, and as herein specified.
- B. Provide batch ticket for each batch discharged and used in work, indicating project identification name and number, date, mix type, mix time, quantity, and amount of water in approved mix design.
- C. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C 94 may be required. When air temperature is between 85 degrees F (30 degrees C) and 90 degrees F (32 degrees C), reduce maximum mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 degrees F (32 degrees C), reduce maximum mixing and delivery time to 60 minutes or as established in ACI Hot Weather Standards.
- D. No water shall be added after mixing to concrete containing HRWR (superplasticizer). If loss of slump occurs, HRWR may be redosed at the site as long as a “flash set” has not occurred. Redosage procedures must be discussed and approved by the Engineer and the manufacturer at the Pre-Concrete Conference as required in Part I of this Section.

2.04 FORM MATERIALS

- A. Forms for Exposed Finish Concrete: Unless otherwise indicated, construct of plywood, metal, metal plywood faced, or other acceptable panel type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings. Provide form material with sufficient strength and thickness to withstand pressure of newly placed concrete without bow or deflection.
 - 1. Use plywood complying with U.S. Product Standard PS-1 “B-B (Concrete Form) Plywood”, Class I, Exterior Grade or better, mill oiled and edge sealed, with each piece bearing legible inspection trademark.
- B. Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit.
- C. Chamfer Strips: ½ inch minimum (¾ inch maximum), 45 degree prefabricated extruded “PVC” or milled poplar wood strips, nailed 6 inches on center, and installed in inside corners of all forms, unless otherwise directed by Architect.
- D. Form Ties and Spreaders: Shall be similar and equal to Dayton/Richmond “Type A-3”, Heavy Duty with Type A-2” cones. Wire ties shall not be used. Ties for foundation walls shall be snap-ties or type specified above with removal cones and shall incorporate water seal washer. Ties shall be arranged in a symmetrical manner.
- E. Form Coatings/Release Agents: Provide VOC compliant commercial formulation form coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces. Suitable products are:

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1. “Enviroform” or “Aquastrip” by Conspec
2. “Crete-Lease 20 VOC” by Cresset Chemical Co.
3. “Formshield WB by Tamms Industries
4. “Duogard II” by W.R. Meadows

2.05 REINFORCEMENT AND ACCESSORIES

- A. Reinforcing Steel Bars: Newly rolled deformed billet steel conforming to ASTM A 615, Grade 50 (unless otherwise indicated on the drawings). Bars shall be bent cold.
- B. Welded Wire Fabric: ASTM A 185 and supplied in sheets only, **rolls not permitted**.
- C. Reinforcement Accessories: Conform to Product Standard PS7-866, Class C, as manufactured by Superior Concrete Accessories, Inc.; Dayton Sure-Grip Co.; R.K.L. Building Specialties Co., Inc.; or approved equal. Reinforcement accessories shall include spacers, chairs, ties, slab bolsters, clips, chair bars, and other devices for properly assembling, placing, spacing, supporting, and fastening reinforcement. Tie wire shall be galvanized or stainless wire of sufficient strength for intended purpose, but not less than No. 18 gauge. Metal supports shall be of such type as not to penetrate surface of formwork and show through surface of concrete. **Tie wires shall be cut in such a manner that no loose ends be produced that fall into the formwork.** Accessories touching interior formed surfaces exposed to view shall have not less than 1/8 inch of plastic between metal and concrete surface. Plastic tips shall extend not less than ½ inch up on metal legs. Individual and continuous slab bolsters and chairs shall be of type to suit various conditions encountered and must be capable of supporting 300 pound load without damage or permanent distortion.
- D. In areas exposed to weather, all steel reinforcement and embedded items shall be hot-dip galvanized after fabrication in accordance with ASTM A 123. All hot-dip galvanized steel shall be inspected for compliance with ASTM A 123 and shall be marked with a stamp that indicates that ASTM number of ounces of zinc per square foot of steel. After galvanizing, the bars shall be dipped in a 0.2 percent chromic acid solution. A notarized Certificate of Compliance with all of the above shall be required from the galvanizer.

2.06 MISCELLANEOUS MATERIALS

- A. Grout – ready to use non-metallic non-shrink grout shall be a factory pre-mixed grout and shall conform to ASTM C 1107, “Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-Shrink)”. In addition, the grout manufacturer shall furnish test data from an independent laboratory indicating that the grout when placed at a fluid consistency shall achieve 95% bearing under a 4 foot square base plate.
 1. “Euco-NS” by Euclid Chemical Co.
 2. “Five Star Grout” by U.S. Grout Corp.
 3. “Masterflow 713” by BASF Construction Chemicals – Building Systems
 4. “SikaGrout 212” by Sika Corporation
 5. “SonogROUT 10K” by Sonneborn
 6. “Supreme” by Cormix Construction Chemicals or approved equal.

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- B. Vapor Barrier/Reinforced Vapor Retarder shall be similar and equal to Griffolyn Type 65.
1. Material: 3-ply laminate, combining two layers of high-density polyethylene and one high-strength non-woven cord grid.
 2. Weight: 37 lb./1,000 sq. ft. (18.1 kg/100 sq. m), when tested in accordance with ASTM D 3776.
 3. Puncture Propagation Tear: 28 lb. (124 N), when tested in accordance with ASTM D 2582.
 4. Permeance (Perm): 0/038 grains/hr-sq ftin Hg (2.18 ng/(Pa-s-sq m), when tested in accordance with ASTM E 96.
 5. Drop Dart: 500 g, when tested in accordance with ASTM D 1709.
 6. Tensile Strength: 96 lb/4,442 psi (427 N/37, 522 kPa), when tested in accordance with ASTM D 882, 3 inch (76 mm) long test specimen.
 7. Puncture Strength: 24 lb (107 N), when tested in accordance with ASTM D 4833.
 8. Usable Temperature Range: Minus 25 to 170 degrees F (minus 32 to 77 degrees C).
 8. Mastic Tape: Griffolyn Fab Tape; Black, double-sided, asphaltic, pressure-sensitive, mastic tape; Weight: 3.75 pounds per 100 feet 91.7 kg per 30 m); Thickness: 35 mils (0.9 mm); 3 Inch Seam Shear: 35 pounds (156N).
 9. Self-Adhesive Repair Tape: Griffolyn Griff-Tape.
 10. Pipe Boots: Griffolyn Pipe Boots, factory-fabricated.
- C. Curing Mediums:
1. Membrane Clear Curing and Sealing Compound (VOC Compliant): ASTM C 309, Type I. Product used shall be shown to be compatible with subsequent applications of beddings and floor adhesives where applicable. **Compounds containing sodium silicates are prohibited.**
 2. Absorptive Cover: Burlap cloth made from jute or kenaf, weighting approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.
 3. Moisture-Retaining Cover: One of the following, complying with ASTM C 171.
 - a. Waterproof paper.
 - b. Polyethylene film
 - c. Polyethylene-coated burlap.
- D. Chemical Hardener: Sonneborn Division, BASF Construction Chemicals – Building Systems or approved equal.
- E. Expansion Joint Fillers – ASTM D 1751 with “skip-slit” tear strip to allow for poured top filler of ½ inch depth by width of joint. Poured filler shall be Type IA sealant as specified under Section 07 90 00 and accomplished as part of the work therein. Coordinate with Part 3 herein.
- F. Special Sealer System/Penetrating Anti-Spalling Sealer: The sealer shall be a silane/siloxane based compound which conforms to the following. In addition, the sealer treated concrete must exhibit no scaling when exposed to 125 cycles of freezing and

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thawing. The system shall conform to the requirements with ASTM C 957-81. The tests must be by an independent testing laboratory. Product shall be similar and equal to ProSoCo “Consolideck Saltguard WB”.

1. NCHRP 244 Series II Reduction of Water absorption (compared to untreated control) 89%
2. NCHRP 244 Series IV Reduction in total chloride ion concentration (compared to untreated control) 91%
3. AASHTO T259/60 Chloride penetration 2.8; Total Chlorides, pcy 2.1
4. ASTM C 140 Reduction of water absorption (compared to untreated control) 92%
5. ASTM C 67 Reduction of water absorption (compared to untreated control) 94%
6. ASTM E 514 Wind-driven rain penetration (percent reduction of control) 89%
7. Surface deterioration/discoloration: None
8. Penetration (depending on substrate) 1/10mm
9. Resistance to: Sunlight – Excellent; Alkalinity – Excellent
10. Surface Appearance (after application) – No change

Part 3 – EXECUTION

3.01 INSPECTION AND ACCEPTANCE

- A. Examine all surfaces and contiguous elements to receive work of this section and correct, as part of the Work of this Contract, any defects affecting installation. Commencement of work will be construed as complete acceptability of surfaces and contiguous elements.

3.02 HANDLING, STORAGE, AND PROTECTION OF MATERIALS

- A. Handle and store materials separately in such manner as to prevent intrusion of foreign mater, segregation, or deterioration. Do not use foreign materials or those containing ice. Remove improper and rejected materials immediately from point of use. Cover materials, including steel reinforcement and accessories, during construction period. Stockpile concrete constituents properly to assure uniformity throughout project.

3.03 ERECTION OF FORMWORK, SHORING AND RESHORING

- A. Set and maintain formwork to insure complete concrete work within tolerance limits listed in ACI 347 latest edition, “Recommended Practice for Concrete Formwork” and ACI 117 “Standard Specifications for Tolerances and Concrete Construction and Materials”.
 1. Building vertical alignment including slab edges, column locations, wall and bottom wedges shall not exceed the tolerances listed in the reference standards or 1, whichever is less.
- B. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place

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concrete with bottom forms only. Kerf wood insets for forming keyways, reglets, recesses, and the like, to prevent swelling and for easy removal.

- C. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete. Securely brace temporary openings and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings on forms at inconspicuous locations.
- D. Chamfer exposed corners and edges as indicated, using materials specified in Part 2 fabricated to produce uniform smooth lines and tight edge joints.
- E. For a minimum of one hour prior to concrete placement, wet forms continuously with water to well forms in order to prevent leakage of concrete matrix and to minimize absorption of concrete matrix water by form materials. This requirement may be waived by Architect for those specific cases where he deems it unnecessary or impractical. Care must be exercised to prevent a buildup of water at base of forms, or washing away of the form release agents.
- F. Before reusing form materials, surfaces that will be in contact with freshly cast concrete shall be thoroughly cleaned, damages areas repaired and projecting nails withdrawn. Reuse of form material is subject to approval by Architect.
- G. Provisions for Other Trades: Provide openings in concrete form work to accommodate work or other trades. Determine size and location of openings, recesses and chases from trades providing such items. Accurately place and securely support items built into forms.

3.04 UNDER SLAB DRAINAGE COURSE

- A. Provide free drainage porous fill, minimum of 6 inches deep over entire area of grade slab.
- B. Material shall be well compacted and placed true to line and grade.
- C. Material shall be well compacted and placed true to line and grade; care shall be taken not to disturb or damage underdrain piping.

3.05 VAPOR BARRIER

- A. Install specified vapor barrier under all slabs on grade unless otherwise required by the drawings and/or specifications. Use greatest width available, lapping all joints a minimum of 6 inches and seal all joints.

3.06 PLACING OF REINFORCEMENT

- A. Place reinforcement in accordance with reference standards set forth in 1.03 above and with further requirements below.
- B. Reinforcement shall be accurately placed in accordance with Contract Documents and be firmly secured in position by wire ties, chairs, spacers, and hangers, each of type approved by Architect.
- C. Bending, welding or cutting reinforcement in field in any manner other than as shown on Drawings, is prohibited, unless specific approval for each case is given by Architect.

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- D. Reinforcement shall be continuous through construction joints unless otherwise indicated on Drawings.
- E. Reinforcement shall be spliced only in accordance with requirements of Contract Documents or as otherwise specifically approved by Architect. Splices of reinforcement at points of maximum stress shall generally be avoided. Welded wire fabric shall lap 6 inches or one space plus 2 inches whichever is larger, and shall be wired together.
- F. Protect stored materials so as not to bend or distort prior to concrete placement, reinforcement shall be free of loose or excessive rust, scale or other coatings that will destroy or reduce bond requirements. Reinforcement expected to be exposed to weather for a considerable length of time shall be painted with a heavy coat of cement grout. Protect stored materials so as not to end or distort bars in any way. Bars that become damaged will be rejected.
- G. Before concrete is cast, check all reinforcement after it is placed to insure that reinforcement conforms to Contract Documents and approved Shop Drawings. Such checking shall be done only by qualified experienced personnel. In addition, the Architect shall be notified at least 48 hours prior to concrete placement and given opportunity to inspect completed reinforcement and formwork before concrete placement. **Prior approval of Shop Drawings shall in no way limit Architect's right to demand modifications or additions to reinforcement or accessories.**

3.07 JOINTS

- A. Construction Joints: Locate and install construction joints as indicated, or if not indicated, locate so as not to impair strength and appearance of the structure, as acceptable to Architect.
- B. Provide keyways at least 1-1/2 inches deep in construction joints in walls, slabs and between walls and footings; accepted bulkheads designed for this purpose may be used for slabs.
- C. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints, except as otherwise indicated.

3.08 INSTALLATION OF EMBEDDED ITEMS

- A. The Drawings will, in general, indicate work of other trades for which holes, sleeves, slots, recesses, etc., will be required, but the Contractor shall obtain the necessary information as to their exact location and cooperate with the interested trades so that they may be incorporated into the work.
- B. Conform to requirements of ACI 318, Paragraph 6.3, "Conduits and Pipes Embedded in Concrete", and as specified below.
- C. The Contractor shall provide for the installation of reglets, inserts, hangers, metal ties, anchor bolts for steel columns and beams, dowels, thimbles, slots, nailing strips, blocking grounds and other fastening devices required for attachment of all work. They shall be properly located in cooperation with other trades and shall be secured in position before

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concrete is placed; the locations of sleeves shall be subject to the approval of the Architect/Engineer.

- D. In concrete walls, columns, and spandrel beams, shown to be faced with brick, block or other masonry, furnish and install in continuous vertical lines metal dovetail slot inserts at a spacing of 16 inches on center. Where columns or piers are faced with masonry, there shall be at least two such slots in any one face and where masonry walls abut columns or piers at least one such slot shall be provided.
- E. Set and build into work anchorage devices and other embedded items required for other work that is attached to, or supported by, cast in place concrete. Use setting drawings, diagrams, instructions and directions provided by suppliers of items to be attached thereto.
- F. Install reglets to receive to top edge of foundation sheet waterproofing, and to receive through wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, relieving angles, and other conditions.
- G. Edge Forms and Screed Strips for Slabs: Set edge forms or bulkheads and intermediate screed strips for slabs to obtain required elevations and contours in finished slab surface. Provide and secure units sufficiently strong to support types of screed strips by use of strike off templates or accepted compacting type screeds.
- H. Electric conduit and pipes shall not be embedded in concrete, **unless specifically authorized in writing by the Architect/Engineer**. This does not preclude pipes from passing or where allowed in preformed holes. The following applies to conduits and pipes authorized by the Architect/Engineer which may be embedded in the concrete, and to sleeves. Sizes refer to outside diameter. The term conduit includes sleeves and pipes.
 - 1. Conduits shall be coated with paint or enamel or otherwise except galvanizing or its approved equivalent, and in no case shall conduits of aluminum be embedded.
 - 2. Reinforcing shall not be cut nor, except as authorized, be substantially displaced from its indicated position to accommodate conduits; in particular, conduits shall not be placed between forms and bottom slab rods, nor shall vertical displacement of reinforcement be allowed.
 - 3. In slabs and walls embedded conduit shall not be larger than $\frac{1}{4}$ the slab or wall thickness and shall be placed within the middle two quarters of that thickness.
 - 4. Conduit larger than $\frac{1}{6}$ the slab or wall thickness shall be run roughly parallel and at right angles to the reinforcing (not diagonally).
 - 5. Conduit nearly parallel shall be placed at least three diameters on center.
 - 6. In columns, conduits shall be run vertically to connect with branches in the slabs. Such conduits shall not occupy more than 4 percent of the gross area of the column, and shall be within the column ties, and not in contact with the vertical reinforcement.
- I. Contractor shall coordinate this work with the other phases of the construction, and afford all cooperation and access to the setting of sleeves for such piping as may pass through the foundation work.

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- J. Place sleeves for all pipe penetrations and standards for railings in concrete work where indicated on the Drawings. Sleeves shall be of size and spacing required by the drawings to receive the standards and shall be set true and properly stayed to prevent displacement during the pouring of concrete. Where sleeves are not set true in proper locations, or are out of alignment, they shall be removed and properly replaced.

3.09 JOINTS

- A. Construction Joints: Locate and install construction joints as indicated, or if not indicated, locate so as not to impair strength and appearance of the structure, as acceptable to Architect.
- B. Provide keyways at least 1-1/2 inches deep in construction joints in walls, slabs and between walls and footings; accepted bulkheads designed for this purpose may be used for slabs.
- C. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints, except as otherwise indicated.

3.10 PREPARATION OF FORM SURFACES

- A. If approved for reuse, clean reused forms of concrete matrix residue, repair and patch as required to return forms to acceptable surface condition.
- B. Coat contact surfaces of all new and reused forms with a form coating compound before reinforcement is placed.
- C. Thin form coating compounds only with thinning agent of type, and amount, and under conditions of form coating compound manufacturer's directions. Do not allow excess form coating material to accumulate in forms or to come into contact with in place concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.
- D. Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting. Rust stained steel formwork is not acceptable.

3.11 CONCRETE PLACEMENT

- A. Comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete", and as herein specified.
- B. Transport ready mixed concrete to site in watertight agitator or mixer trucks loaded not in excess of rated capacities. Discharge at site shall be within 1-1/2 hours after cement was first introduced into mix. Central mixed concrete shall be plant mixed a minimum of 5 minutes. Agitation shall begin immediately after premixed concrete is placed in truck and shall continue without interruption until discharged. Transit mixed concrete shall be mixed at mixing speed for at least 10 minutes immediately after charging truck followed by agitation without interruption until discharged.

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- C. All concrete not placed within this time period shall be rejected and removed from the site. Re-tempering or remixing with or without the addition of water is not permitted under any circumstances.
- D. Remove water and foreign matter from forms and excavations and, except in freezing weather or as otherwise directed, thoroughly wet wood forms just prior to placing concrete. Do not place concrete on frozen soil and provide adequate protection against frost action during freezing weather.
- E. To secure full bond at construction joints, surfaces of concrete already placed, including vertical and inclined surfaces, shall be thoroughly cleaned of foreign materials and laitance, roughened with suitable tools such as chipping hammers or wire brushes, and re-cleaned by stream of water or compressed air. Before new concrete is deposited, saturate joints with water. After free or glistening water disappears give all such joints apply a thorough coating of bonding agent per manufacturer's recommendations before new concrete is deposited.
- F. Do not place concrete having slump outside of allowable slump range.
- G. Transport concrete from mixer to place of final deposit as rapidly as practical by methods which prevent separation of ingredients and displacement of reinforcement, and which avoid re-handling.
- H. Place concrete in such manner as to prevent segregation, and accumulations of hardened concrete on forms or reinforcement above mass of concrete being placed. To achieve this end, suitable hoppers, spouts with restricted outlets and tremies shall be used as required.
- I. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI recommended practices. Use and type of vibrators shall conform to ACI 309 "Recommended Practice for Consolidation of Concrete". Do not use vibrators to transport concrete inside forms. Inset and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.
- J. Vertical lifts shall not exceed 18 inches and/or tolerance of the form design. Vibrate completely through successive lifts to avoid pour lines. Vibrate first lift thoroughly until top of lift glistens to avoid stone pockets, honeycomb, and segregation.
- K. Deposit concrete continuously, and in layers of such thickness that no concrete will be deposited on concrete which has hardened sufficiently to cause formation of seams and planes of weakness within section. If section cannot be placed continuously between planned construction joints, as specified, field joint and

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additional reinforcement shall be introduced so as to preserve structural continuity. Notify Architect in any such case.

- L. Cold joints, particularly in exposed concrete, including “honeycomb”, are unacceptable. If they occur in concrete surfaces exposed to view, Architect may require that entire section in which blemish occurs be removed and replaced with new materials at Contractor’s expense.
- M. When placing exposed concrete walls or columns, strike corners of forms rapidly and repeatedly from outside along full height while depositing concrete and vibrating.
- N. Thoroughly clean chutes, hoppers, spouts, adjacent work, etc. before and after each run and water and debris shall be discharged outside form.
- O. Placing Concrete Slabs:
 - 1. Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed. **Maximum slab on grade pour area, 10,000 square feet; with no dimension exceeding 1-1/2 times the other. Provide saw cut control joints at 15 foot maximum spacing or as approved by the Architect.**
 - 2. Placement of concrete in all floor slabs shall be brought to the prescribed level by the wet screed methods using laser light to produce the required elevation. Tolerance in level shall not exceed those given in ACI 302, Paragraph 7.15 and further defined in this section.
NOTE: Slope floors to drains; depress slabs for finish flooring and equipment as shown on the Drawings and/or required by equipment schedule.
 - 3. Do not disturb slab surfaces prior to beginning finishing operations. See also “MONOLITHIC SLAB FINISHES” below.
 - 4. **Concrete pours for concrete with corrosion resistant additive shall be limited to 60 foot lengths in each direction.**
- P. Hot Weather Placing: When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 as herein specified.
 - 1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees F (32 degrees C). Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is Contractor’s option.
 - 2. Cover reinforcing steel with water soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
 - 3. Fog spray forms, reinforcing steel and subgrade just before concrete is placed.

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4. Use water-reducing retarding admixture when required by high temperatures, low humidity, or other adverse placing conditions.

3.12 FINISH OF FORMED SURFACES

- A. Rough Form Finish: For formed concrete surfaces not exposed to view in the finish work or by other construction, unless otherwise indicated. This is the concrete surface having texture imparted by form facing material used, with tie holes and defective areas repaired and patched, fins and other projections exceeding ¼ inch in height rubbed down or chipped off.
- B. Smooth Form Finish (Class B): For formed concrete surfaces exposed to view, or that are to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, damp proofing, painting or other similar system. This is an as cast concrete surface obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams. Repair and patch defective areas with fins or other projections completely removed and smoothed.
- C. Related Unformed Surfaces: At tops of walls, horizontal offsets and similar unformed surfaces occurring adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.13 MONOLITHIC SLAB FINISHES

- A. Scratch Finish: Apply scratch finish to monolithic slab surfaces that are to receive concrete floor topping or mortar setting beds for tile, Portland cement or synthetic bonded terrazzo, and other bonded applied cementitious finish flooring material, and as otherwise indicated. After placing, surface shall be leveled to an FF15/FL17 tolerance. Slope surfaces uniformly to drains where required. After leveling, roughen surface before final set, with stiff brushes, brooms or rakes.
- B. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as hereinafter specified, and slab surfaces which are to be covered with membrane or elastic water proofing, membrane or elastic roofing, or sand bed terrazzo, and as otherwise indicated. After screeding, consolidation, and leveling concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power driven floats, or both. Consolidate surface with power driven floats, or by hand floating if area is small or inaccessible to power units. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture. Surface shall achieve an FF20/FL17 tolerance.
- C. Trowel Finish: Apply trowel finish to monolithic slab surfaces to be exposed to view, and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or other thin film finish coating system. After floating, begin first trowel finish operation using a power driven trowel. Begin final troweling when surface produces a

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ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand troweling operation, free of trowel marks, uniform in texture and appearance, and with a surface leveled to an FF25/FL17 tolerance. Grind smooth surface defects which would telegraph through applied floor covering system.

- D. Non-Slip Broom Finish: Apply non-slip broom finish to exterior concrete platforms, steps and ramps, and elsewhere as indicated. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.
- E. Non-slip Aggregate Finish: Apply non-slip aggregate finish to concrete stair treads, platforms, ramps, sloped walks, and elsewhere as indicated.

NOTE: Non-slip aggregate shall not be used where floors or other such areas are designated to be painted or otherwise schedule to receive applied surfacing.

After completion of float finishing, and before starting trowel finish, uniformly spread 25 pounds of dampened non-slip aggregate per 100 square feet of surface. Tamp aggregate flush with surface using a steel trowel, but do not force below surface. After broadcasting and tamping, apply trowel finishing as herein specified.

After curing, lightly work surface with a steel wire brush, or an abrasive stone, and water to expose non-slip aggregate.

- F. Penetrating Anti-Spalling Sealer Usage: All horizontal surfaces exposed to the weather and not receiving an applied surface shall be sealed with the specific penetrating anti-spalling sealer. Surface penetration of the slabs and the sealer application shall be in strict accordance with the directions of the manufacturer.

Provide Field Service, upon 5 days notice, by the manufacturer of the sealant to assist the Contractor in obtaining the maximum benefits of the product under the prevailing jobsite conditions. In addition, the representative shall attend the preinstallation conference with the Architect/Engineer and Contractor to discuss proper equipment and procedures.

3.14 CONCRETE CURING AND PROTECTION

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
 - 1. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.
 - 2. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.

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3. In order to avoid plastic or drying shrinkage cracks during warm, dry or windy weather, ACI 302 and ACI 308 shall be followed using wind breaks and sun shades when recommended. Evaporation retardant shall be as specified in Part 2 above.
- B. Curing Methods: Perform curing of concrete by curing and sealing compound, by moist curing, by moisture retaining cover curing, and by combinations thereof, as herein specified.
1. Provide moisture curing by following methods. Keep concrete surface continuously wet by covering with water. Continuous water fog spray. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4 inch lap over adjacent absorptive covers.
 2. Provide moisture cover curing as follows: Cover concrete surfaces with moisture retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 3. Provide curing and sealing compound to exposed interior slabs not receiving a liquid densifier application, and to all troweled slabs receiving mastic applied adhesives or “shake-on” hardeners. This compound shall also be used on exterior slabs, sidewalks and curbs not receiving a penetrating sealer.
 4. Use dissipating resin type curing compounds on surfaces which are to be covered with finish or coating material applied directly to concrete, as such liquid floor hardener, waterproofing, damp proofing, membrane roofing, flooring, painting, and other coatings and finish materials. If curing compound is not compatible with coating materials, moisture or moisture-cover curing shall be used.
- C. Cure formed concrete surfaces, including undersides of beams, supported slabs and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.
- D. Cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by applications of the specified curing compound or a continuous moist curing method approved by the Architect.
- E. Sealer and Dustproofer: Apply compound to exposed interior slabs noted on the drawings. These slabs must have received an initial coat of the curing and sealing compound.

3.15 REMOVAL OF FORMWORK, SHORING AND RESHORING

- A. Contractor shall be responsible for proper removal of formwork, shoring, and reshoring.

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- B. Remove forms only after concrete has attained sufficient strength to support its shown weight, construction loads to be placed thereon and lateral loads, without damage to structure of excessive deflection.
- C. Forms and supports shall remain in place for not less than minimum periods of time noted below. These periods represent cumulative number of days or fractions thereof, consecutive unless otherwise approved by Architect during which time mean daily air temperature at surfaces of concrete is above 50 degrees F.
 - 1. Vertical surfaces: Concrete shall have reached 100-day degrees and shall have attained strength of not less than 30% of requirements. Where such forms also support formwork for slab or beam soffits, removal times for later shall govern.
 - 2. Horizontal surfaces: Except as noted below, concrete shall have reached 300 day-degrees of curing and attained strength of not less than 60% of stated strength.
 - a. Soffits of beams or girders shall remain supported and in place until concrete has attained 600 day-degrees.
 - b. Forms and supports of floor slabs shall remain in place until concrete has reached 400 day-degrees.

Definition of day-degrees: Total number of days times mean daily air temperature at surfaces of concrete. For example, five days at temperature of 60 degrees F equals 300 day degrees. Days or fraction of days in which temperature is below 50 degrees F shall not be included in calculation of day-degree.

- D. Form removal shall be so performed that reshores are placed at same time as stripping operations, and that no area larger than one quarter of a slab panel is unsupported at any time.
- E. Any test cylinders required to verify the specified minimum strengths for form removal shall be field cured under the same conditions as the concrete they represent. Such cylinders and testing shall be at the Contractor's expense.

3.16 MISCELLANEOUS CONCRETE ITEMS

- A. Fill in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place and cure concrete as herein specified, to blend with in place construction. Provide other miscellaneous concrete filling shown or required to complete work.

3.17 CONCRETE SURFACE AND REPAIRS

- A. Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Architect. Cut out honeycomb, rock pockets, voids and holes left by tie rods and bolts, down to solid concrete, but in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen

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- with water, and brush coat the area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.
- B. For exposed to view surfaces, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match color surrounding surface. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
- C. Repair of Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Architect. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets; fins and other projections on surface; and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry pack mortar, or precast cement cone plugs secured in place with bonding surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness, using a template having required slope.
- D. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. If defects cannot be repaired, remove and replace concrete.
- E. Repair of Unformed Surfaces: Repair finished unformed surfaces that contain defects which affect durability of concrete. Surface defects, as such, include crazing, cracks in excess of 0.015 inch wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets, and other objectionable conditions. Cracks in slab on grades are acceptable up to .02 inch wide.
- F. Correct high areas in unformed surfaces by grinding, after concrete has cured at least 14 days.
- G. Correct low areas in unformed surfaces during or immediately after completion of surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Proprietary patching compounds may be used when acceptable to Architect.
- H. Repair defective areas, except random cracks and single holes not exceeding 1 inch diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least $\frac{3}{4}$ inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place compact and finish to blend with adjacent finished concrete. Cure in the same manner as adjacent concrete.
- I. Repair isolated random cracks and single holes not over 1 inch to diameter by dry pack method. Groove top of cracks and cut out holes to sound concrete and clean free of dust, dirt and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Mix dry pack, consisting of 1 part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling

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and placing. Place dry pack after bonding compound has dried. Compact dry pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for not less than 72 hours.

- J. Structural Repairs: All structural repairs shall be made with prior approval of the Engineer as to method and procedure.

3.18 CUTTING AND PATCHING

- A. Contractor for concrete work shall be responsible for all cutting, removing and patching work where concrete surfaces are not installed within the limits shown on the drawings or specified herein. All such work shall meet with the approval of the Architect/Engineer.
- B. Where cutting and patching is required to accommodate the work of other subcontractors, such cutting shall be done at the expense of said subcontractors but shall be performed by the Contractor for concrete work.
- C. The location and extent of cutting in completed concrete work and the patching thereof shall meet with the approval of the Architect/Engineer.

3.19 CLEANING

- A. Clean concrete surfaces free from objectionable stains as determined by the Architect. Materials containing acid in any form or methods which will damage “skin” of concrete surfaces shall not be employed, except where otherwise specified.

3.20 CONCRETE FOR CAST-IN-PLACE CONCRETE CURB

- A. *Conventionally Formed Curb and Curb & Gutter.* The material requirements, mix preparation and manufacturing of the concrete shall conform to the requirements for Class A Concrete as specified in New York State DOT Standard Specifications, Section 501, Portland Cement Concrete - General.
- B. CONSTRUCTION DETAILS
1. General.
Curb found to be dirty, damaged or out of alignment shall be cleaned, repaired, or replaced as necessary by the Contractor to the satisfaction of the Engineer prior to final acceptance of the work.
 2. Cast-In-Place Concrete Curb.
Cast-in-place concrete curb and curb shall either be conventionally formed or machine formed to the size and shape shown on the Standard Sheets or as indicated in the Contract Documents. If no width is indicated in the Contract Documents, the width shall be the minimum shown on the Standard Sheet.
 - a. Forms.
Forms shall be free from warp and of such construction that there will be no interference to inspection for grade and alignment. All forms shall extend to the full curb depth and be secured so no displacement will occur during the placement of concrete.
 - b. Casting Segments.
Curb and curb & gutter shall be cast in segments having a uniform length of approximately 10 feet. The joints between segments shall not exceed

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1/4 inch in width. When curb and curb & gutter is constructed next to concrete pavement, the curb joints shall line up with the pavement joints or additional joints shall be provided in the curb which line up with the pavement joints.

c. Expansion Joints.

Expansion joints shall be 11/16 inches wide and contain Premoulded Resilient Joint Filler. The filler shall be cut to conform to the cross section of the curb and curb & gutter. Expansion joints shall be located at all immovable objects, adjacent to expansion joints in the pavement, and where shown in the Contract Documents or directed by the Engineer. Expansion joints will not be required at regular intervals unless otherwise shown in the Contract Documents.

d. Concrete Placing and Vibrating. Concrete shall be placed in the forms in accordance with the applicable requirements of §555-3.04 and shall be compacted with an immersion type mechanical vibrator. The vibrator shall be of a size and weight capable of thoroughly vibrating the concrete without damaging or misaligning the forms. The forms shall be left in place until the concrete has hardened sufficiently to permit removal without damage to the curb and curb & gutter. The front form may be removed before the other forms to facilitate finishing the curb and removal of the joint dividers. After removal of the forms, the exposed faces of the curb and curb & gutter shall be immediately rubbed to a uniform surface. No plastering will be permitted.

END OF SECTION 033000

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DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and General Provisions of the Contract, including information for Bidders, General Clauses and Division 1, General Requirements apply to this Section.

1.2 SUMMARY

- A. The work of this Section consists of the provision of all plant, materials, labor and equipment and the like necessary and/or required for the complete execution of all caulking and sealing work for this project as required by the schedules, keynotes and drawings, including, but not limited to the following:

NOTE: Sealant supplier shall perform a "bond" test on all substrates to determine adhesion properties and requirement, if any, for primer application; coordinate with Article 1.05 herein.

1. Provide sealant systems in all joints between dissimilar materials on building exterior as indicated and/or required to obtain water and air tight seals; using the following material types for respective locations.
2. Provide building to building expansion joint system – seismic design using compressible, color seal joint system; carry same up and over coping juncture.
3. Provide expansion and/or control joint sealant systems within masonry (coordinate with Section 04 20 00 – work to be accomplished as part of these operations) -Type I OR II material with Type III backer system OR, at option of Contractor, DOUBLE SEAL system with internal rod using product similar and equal to #150.
4. Provide all interior joints between dissimilar materials as indicated or required to insure positive seals

Door frames	VI
Window surrounds	VI
Plumbing fixtures	II
Sound integrity	VI, Exposed; V, Concealed
Water penetration	II
Light seals	VI
Mill & counter work	VI, Dry; II for Wet

NOTE: Sealants are generally required at the following locations:

- a. Interior door frames to surrounding face construction;
- b. Interior window trim/reveals to window frames;
- c. Plumbing fixtures and accessories where same abut finished surfaces;
- d. **Where gypsum wall board is in contact with concrete slabs, walls and columns (tops, bottoms and sides)**

- e. *Where concrete block is in contact with concrete slabs, walls and columns (tops, bottoms and sides)*
 - f. *At fire rated gypsum partition systems (coordinate with Section 9)*
and like locations where dissimilar materials about each other in finished areas.
5. Perform balance of caulking and sealing as may be necessary and/or required to insure conformance to guarantee/warranty provisions contained herein.

1.3 RELATED WORK SPECIFIED ELSEWHERE -Entire Project Specification

- A. Bond testing shall be performed as noted in Paragraph 1.02.A above and results submitted to Architect for file.
- B. All surfaces to receive sealant shall be dry and cleaned of all foreign matter as specified in Part 3.
- C. Application devices shall have nozzles of proper size and shall provide sufficient pressure to completely fill joints as detailed.
- D. Consult sealant manufacturer for recommendations for application of sealant when air temperature is below 40°F. Provide written recommendation to Architect prior to application.
- E. Sealants shall comply with VOC requirements of the Jurisdiction of the Work, or in absence of said regulation, all material shall comply with the following as applicable for particular application and shall **not** contain or be formulated with aromatic solvents, halogenated solvents, fibrous talc or asbestos, formaldehyde, mercury, lead, cadmium, hexavalent chromium or their derivatives.
- F. Reference Standards
 - 1. ASTM C 834 -Latex Sealing Compounds
 - 2. ASTM C 919 – Standard Practice for Use of Sealants in Acoustical Applications
 - 3. ASTM C 920 -Elastomeric Joint Sealants
 - 4. ASTM C 1193 -Standard Guide for Use of Joint Sealants
 - 5. ASTM C 1311 – Solvent Release Sealants
 - 6. ASTM C 1330 – Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants
 - 7. ASTM C 1401 – Standard Guide for Structural Sealant Glazing
 - 8. ASTM C 1481 – Standard Guide for Use of Joint Sealants with Exterior Insulation and Finish Systems (EFIS)
 - 9. ASTM D 1056 -Flexible Cellular Materials, Sponge or Expanded Rubber.
 - 10. SWRI (Sealant, Waterproofing and Restoration Institute) Sealant and Caulking Guide Specification

1.4 SUBMITTALS

Provide documentation of manufacturer's take-back programs for products provided under this Section.

- A. Product Data indicating for each type of sealant and component used in this work - chemical characteristics; performance criteria; substrate preparation; limitations; color availability; and the like affecting the use of each product.
- B. Samples of all components to be used in the work of this section
- C. Color charts for selection.
- D. Manufacturer's installation instructions indicating, if any, special procedures; surface preparation; perimeter conditions requiring special attention; and like items affecting installation of each product.
- E. Results of bond tests shall be incorporated in installation recommendations.
- F. Certification of specification compliance.
- G. Manufacturers Material Safety Data Sheet (MSDS) must be submitted for each manufactured product.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver products in original factory packaging bearing identification of product, manufacturer, and batch number. Provide Material Safety Data Sheets for each product.
- B. Store products in a location protected from freezing, damage, construction activity, precipitation, and direct sunlight in strict accordance with manufacturer's recommendations.
- C. Condition products to approximately 60 to 70 degrees F (16 to 21degrees C) for use in accordance with manufacturer's recommendations.
- D. Handle all products with appropriate precautions and care as stated on Material Safety Data Sheet.

1.6 QUALITY CONTROL

- A. Preconstruction Sealant Tests for Adhesion and Compatibility: Submit sealant samples for each material to be sealed in the work including, but not limited to metal flashing, painted wood at windows, glazing gaskets, glazing materials, framing members, masonry and stone of each type used, and all other components and accessories, to sealant manufacturer to verify sealant compatibility and to determine, by testing in compliance with ASTM C 794, as well as the type of primer required for each condition to ensure sealant adhesion to substrates.
 - 1. Cost of Testing: The sealant manufacturers shall perform and/or the Contractor shall, at his own expense employ an independent testing agent acceptable to the Architect to perform tests and certifications indicated. No costs shall be passed to the Owner.

2. Test Samples: Submit to the testing agency or sealant manufacturer at least 5 pieces of each type, finish, kind, condition, and form of material to which sealant is to be attached.
3. Scheduling: Scheduling sufficient time for testing, analysis, and reporting of results.
4. Test Reports and Recommendations: Obtain written reports and recommendations regarding proper sealant material, primer, and application for each condition. Use sealants and substrates only in combinations for which favorable adhesion and compatibility results have been obtained.

- B. Construction Sealant Adhesion Tests shall be performed as specified under "Field Quality Control" in Part 3 of this Section.

1.7 SPECIAL GUARANTEE/ WARRANTY TERMS

- A. This Contractor shall guarantee that caulking and sealing work will be free from defects of materials and workmanship for 2 years from the date of final acceptance of this work.
- B. The following types of failure will be adjudged defective work: leakage, hardening, chalking, crumbling, melting, shrinking or running of caulking; or staining of adjacent work by caulking.
- C. Repair and replace work which becomes defective during the guarantee term, without cost to the Owner.

1.8 SUSTAINABILITY

- A. In the selection of the products and materials of this section as well as for the entire project, preference will be given to those with the following characteristics:
 1. Water based
 2. Water-soluble
 3. Can be cleaned up with water
 4. Non-flammable
 5. Biodegradable
 6. Low or preferably no Volatile Organic Compound (VOC)
 7. Manufactured without compounds that contribute to ozone depletion in the upper atmosphere
 8. Manufactured without compounds that contribute to smog in the lower atmosphere
 9. Do not contain methylene-chloride
 10. Do not contain chlorinated hydrocarbons
 11. Contains the least possible of post-consumer or postindustrial waste

PART 2- PRODUCTS

2.1 GENERAL

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- A. Joint primer, sealer and/or conditioner shall be as recommended by sealant manufacturer
- B. Preformed joint fillers shall be non-staining compatible with sealant and primer, and of a resilient nature and shall be one of the following:
 - 1. Expanded Polyethylene Joint Filler (for existing joints) Flexible, compressible, closed-cell polyethylene of not less than 10 psi compression deflection (25%)
- C. Backer Rod for General Vertical Use: ASTM C 1330, Types B or C, rod stock closed cell polyethylene foam, closed cell neoprene foam, or open cell urethane foam, as recommended by sealant manufacturers being compatible both with the sealant used and the primer.
- D. Closed Cell Neoprene Joint Filler for all joint systems within stucco systems as specified in Section 09 24 00 -ASTM D 1056, Class SCE41 similar and equal to Williams Products "Expand-O-Foam" cord.
- E. Accessory Items:
 - 1. Bond Breaker Tape -Polyethylene or other plastic tape as recommended by the sealant manufacturer; non-bonding to sealant; self-adhesive where applicable; thickness, minimum 0.012 inch.
 - 2. Cleaning Solvents -Oil free solvents as recommended by the sealant manufacturer. Do not use reclaimed solvents
 - 3. Masking Tape -Removable paper or fiber tape, self-adhesive, non-staining.
 - 4. Materials impregnated with oil, bitumen or similar materials shall not be used.
- F. Sealant Colors
 - 1. Exposed materials, provide color as indicated or, if not indicated, as selected by the Architect from manufacturer's standard colors.
 - 2. Concealed materials provide the natural color which has the best overall performance characteristics.

2.2 MATERIAL TABLE

NOTE: At the Contractors' option, a "Silyl-Terminated Polyether" compound as manufactured by Sonneborn/ Degussa Admixtures under the name "Sonolastic 150" or "ProSil^{sc} 1" by Pecora acceptable for use in lieu of Type I and Type II materials as specified below.

- A. Sealant materials shall be as follows and shall relate to scope of work described herein and shall form a general material reference for all sections performing sealant operations. Backer systems shall be as specified in Paragraph 2.01 above and as suitable for intended substrate and joint conditions.
- B. Type -I (For use in vertical expansion joints where extensive movement occurs and for general exterior sealant operations.)

Sealant compound -2 component non-sag Polyurethane similar and equal to:

- 1. Tremco (Dymeric 240/240FC)
- 2. Sonneborn (Sonolastic NP2)

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3. Pecora (Dynatrol II)

- C. Type -II -GENERAL (For use in vertical expansion joints where extensive movement occurs and for general exterior sealant operations.)

Sealant compound -1 part, low-modulus silicone sealant similar and equal to:

1. Dow Corning (795)
2. General Electric (Silpruf)
3. Pecora (864)
4. Sonneborn (Omniseal)
5. Tremco (Spectrem 1 or 2 as suitable for intended application)

Backing -Type "A" backer rod as per Paragraph 2.01.C above for general use and Type III sealant for moving joints.

- D. Type -IIA -GLAZING SYSTEMS

Sealant compound -Silicone rubber of design recommended by the manufacturer for the intended application and similar and equal to:

1. General Electric -SSG 4000 OR 4200 Structural Glazing Sealant; 3211 or 3103 Insulating Glass Sealant; 2000 Weather Seal.
2. Dow Corning – 795, 895, 983 or 995 as suitable for encountered conditions.
3. Tremco Inc.– Tremco Proglaze SG or Spectrem 2 Structural Glazing Sealant; Tremco Proglaze II Insulation Glass Sealant.
4. Pecora #895 or other suitable combination as recommended by the nominated manufacturer of the overall window/curtain wall assembly.

- E. Type -III (For use as a primary sealant expansion joint systems and as backup to Type II material for aesthetic affect; horizontal deck sealants and other such applications as may be noted on the drawings.)

Sealant compound -Compressible, polyurethane sponge

MANUFACTURERS:

First List, Primary Sealant; Second List, Backer Seal

1. Emseal USA, Inc. (Emseal precompressed, sheathed)
2. WillSeal USA (Willseal 600)
3. Tremco (illmod 600)

OR

1. Emseal USA, Inc. (BackerSeal precompressed, sheathed)
2. WillSeal, USA (Willseal)
3. Tremco (illmod)
4. Polytite Manufacturing (Polytite B)

- F. Type -IV (For use in connection with roofing, flashing and waterproofing work)

Sealant compound -Single component non-sag Polyurethane similar and equal to:

1. Tremco(Vulkem-116)

2. Sonneborn (Sonolastic NP1)
3. Sika Chemical Company (Sikaflex -1a)
4. Tremco (Dymonic)
5. Pecora (Dynatrol I)

G. Type -V (For use in acoustical sealing operations)

Sealant compound -Butyl Rubber or Latex Base for developing acoustical requirements specified. Material shall be similar and equal to:

1. Pecora (BA-98)
2. W.W. Henry (313)
3. U.S. Gypsum (Acoustical Sealant)
4. Tremco (Acoustical Sealant)

H. Type -VI (For interior sealant systems around door frames, window reveals and like locations in painted surfaces)

Sealant compound -Acrylic Latex or Paintable Silicone material of suitable nature similar and equal to that as manufactured by Tremco, DAP/USG, Dow Corning, or Pecora Backing -as required.

Color -Grey or white for paint

I. Type -VII – Fire Rated Caulking compound for bedding and/or sealing of joints in rated gypsum wall systems shall be similar and equal to: “AC20 – FTR” by Pecora; “Tremstop Acrylic” by Tremco; “Blockade” by DAP or approved equal.

PART 3- EXECUTION

3.1 INSPECTION AND ACCEPTANCE

- A. Examine all surfaces and contiguous elements to receive work of this section and correct, as part of the Work of this Contract, any defects affecting installation. Commencement of work will be construed as complete acceptability of surfaces and contiguous elements.

3.2 JOINT DESIGN

- A. Joints shall be a maximum of 3/8 inch deep by minimum 3/8 inch wide

B. Joints in concrete or masonry:

1. Depth of sealant shall equal width of joints in joints up to 1/2 inch wide; joints 1/2 inch to 1 inch wide, depth shall be 1/2 inch.
2. For expansion joints or other joints 1 inch to 2 inch wide depth shall not be greater than 1/2 the applied sealant width and no greater than 5/8 inch for Type I nor 1/2 inch for Type II materials.

- C. Joints in metal, glass and other non-porous surfaces: Depth shall be a minimum of 1/2 the applied sealant width, and shall in no case exceed the applied sealant width

3.3 PREPARATION

- A. Clean joint surfaces immediately before installation of sealant another materials specified in this Section:
 - 1. Remove all loose materials, dirt, dust, rust, oils and other foreign matter that will impair the performance of materials installed under this Section.
 - 2. Remove lacquers, protective coatings and similar materials from joint faces with manufacturer's recommended solvents.
 - 3. Do not limit cleaning of joint surfaces to solvent wiping; use methods such as grinding, etching or other approved and manufacturer's recommended means, if required, to clean the joint surfaces, assuring that the sealant materials will obtain positive and permanent adhesion.

3.4 JOINT BACKING INSTALLATION

- A. Install bond breaker tape in relaxed condition as it comes off the roll. Do not stretch the tape. Lap individual lengths.
- B. Prevent three sided adhesion by use of bond breaker tapes or backer rods at the back of the joint.

Install backer rods for all liquid sealants, except where specifically recommended against by sealant manufacturers.

Install backer rods immediately before sealants, do not permit backer rods to get wet.

Install backer rods at the proper depth to create the specified sealant depth, avoid placing backer rods too deep which will result in sealant failure due to excessive sealant depth.

Backup material shall be suitable size and shape so that when compressed 20 to 50%, it will fit in all joints where required.

Do not cut or puncture the surface skin of the rod

- C. Apply masking tape where required by surfaces encountered, and as may be determined by mockup testing, in continuous strips in alignment with joint edge.

Remove tape immediately after joints have been sealed and tooled.

3.5 SEALANT INSTALLATION

- A. Prime surfaces where required with primer recommended by sealant manufacturer and as determined by "bond" test required in Part 1 of this Section
- B. Apply, tool and finish sealant in accordance with manufacturer's recommendations.

- C. Install sealants with ratchet hand gun or other approved mechanical gun. Where gun application is impracticable, install sealant by knife or by pouring, as applicable.

"Gun" devices shall have nozzles of proper size and shall provide sufficient pressure to completely fill joints as detailed.

- D. Finishing: Tool all vertical, non-sag sealants so as to compress the sealant, eliminating all air voids and providing a neat smoothly finished joint. Provide slightly concave joint surface, unless otherwise indicated or recommended by the manufacturer.

3.6 FIELD QUALITY CONTROL

A. Test Samples

1. If requested by the Architect, for each 1,000 linear feet of joint installed, cut out and carefully remove a 6 inch long sample of the undisturbed sealant and joint backer material from the newly installed Work. Remove the samples in the presence of the Testing Laboratory's Representative, who will retain them for evaluating and testing.
2. Reseal cutout areas with the same type materials.

3.7 CLEANING

- A. Immediately remove misapplied sealant and droppings from metal surfaces with solvents and wiping cloths. On other materials, remove misapplied sealant and droppings by methods and materials recommended in writing by the manufacturer of the sealant material.
- B. After sealants are applied and before skin begins to form on sealant, remove all masking and other protection. Clean up remaining defacement caused by the Work.
- C. All finished work shall be left in neat, clean condition.

3.8 WASTE MANAGEMENT-

- A. Separate waste in accordance with the Waste Management Plan.
- B. Close and seal tightly all partly used sealant containers and store protected in well-ventilated, fire-safe area at moderate temperature.
- C. Place used sealant tubes and containers in areas designated for hazardous materials.

END OF SECTION 079200

SECTION 099100 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Information for Bidders, General Clauses and Special Clauses, apply to this Section.

1.2 SUMMARY

- A. This Section includes surface preparation and field painting of the following:
 - 1. Epoxy coating of concrete floor in boiler room.
 - 2. Epoxy coating of concrete wall, cmu. block walls and concrete ceiling in boiler room.
 - 3. Paint factory primed galvanized door.
- B. Paint exposed surfaces, except where the drawings, specifications, or paint schedules indicate that a surface or material is not to be painted or is to remain natural. If the drawings, specifications, or paint schedules do not specifically mention an item or a surface, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. If the schedules do not indicate color or finish, the Architect will select from standard colors and finishes available.
- D. Related Sections include the following:
 - 1. Division 09 Section "Metal Fabrications".

1.3 REFERENCES

- A. ASTM International (ASTM):
 - 1. D4258 – Standard Practice for Surface Cleaning Concrete for Coating.
 - 2. D4259 - Standard Practice for Abrading Concrete.
 - 3. D4261 - Standard Practice for Surface Cleaning Concrete Unit Masonry for Coating.
- B. Master Painters Institute (MPI) – Approved Product List.
- C. Society for Protective Coatings (SSPC) – Painting Manual.

1.4 DEFINITIONS

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
 - 1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
 - 2. Eggshell refers to low-sheen finish with a gloss range between 5 and 20 when measured at a 60-degree meter.
 - 3. Satin refers to low-sheen finish with a gloss range between 15 and 35 when measured at a 60-degree meter.
 - 4. Semigloss refers to medium-sheen finish with a gloss range between 30 and 65 when measured at a 60-degree meter.
 - 5. Full gloss refers to high-sheen finish with a gloss range more than 65 when measured at a 60-degree meter.

1.5 SUBMITTALS

- A. Product Data: For each paint system specified.
 - 1. Material List: Provide an inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
 - 2. Manufacturer's Information: Provide manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material proposed for use.
 - 3. Certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).
- B. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for each type of finish-coat material indicated.
- B. Qualification Data: For firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- C. LEED Submittals:
 - 1. Product Data for Credit EQ 4.2: For paints and coatings, including printed statement of VOC content.
 - 2. Laboratory Test Reports for Credit EQ 4: For paints and coatings, documentation indicating that they meet the testing and product requirements of the California

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Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

1.6 QUALITY ASSURANCE

- A. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to that indicated for this Project with a record of successful in-service performance.
- B. Source Limitations: Obtain primers, and undercoat materials for each coating system from the same manufacturer as the finish coats.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:
 - 1. Product name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's stock number and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Thinning instructions.
 - 6. Application instructions.
 - 7. Color name and number.
 - 8. VOC content.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.
 - 1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.8 PROJECT CONDITIONS

- A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 and 90 deg F.
- B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 and 95 deg F.

1.9 EXTRA MATERIALS

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- A. Furnish extra paint materials from the same production run as the materials applied in the quantities described below. Package paint materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to the Owner.
 - 1. Quantity: Furnish the Owner with an additional 5 percent, but not less than 2 gal. or 1 case, as appropriate, of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products in the finish schedules, or approved equal. Underlined name indicates manufacturer specified herein for the purpose of establishing a standard of quality.
 - 1. Manufacturers Names:
 - a. Contract documents are based on Corotech products by **Benjamin Moore & Co.** www.corotechcoatings.com.
 - b. Glidden Professional
 - c. Sherwin Williams

2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide primers, undercoats, and finish-coat materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
- C. **Colors: Contractor to submit color samples for architect to choose from.**
- D. Paint Criteria:
 - 3. For architectural paints, coatings and primers applied to interior walls and ceilings: do not exceed the VOC content limits established in Green Seal Standard GS-11, paints, First Edition, May 20, 1993: Flats: 50g/L, Non-flats: 150 g/L.

4. For anti-corrosive and anti-rust paints applied to interior metal substrates: do not exceed the VOC contents limit of 250 g/L established in Green Seal Standard GC-03, Anti-Corrosive Paints, Second Edition, January 7, 1997.
5. For clear wood finishes, floor coatings, stains, and shellacs applied to interior elements: Do not exceed the VOC content limits established in south coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004.

2.3 MATERIALS – EPOXY COATINGS

- A. 100 Percent Solids Epoxy Coating:
 1. Product: 100% Solids Epoxy Coating V430.
 2. Resin type: Cycloaliphatic amine epoxy.
 3. VOC content: 0 grams per liter.
- B. Waterborne Amine Epoxy Coating:
 1. Product: Waterborne Amine Epoxy Coating V440.
 2. Resin type: Amine adduct epoxy.
 3. VOC content: Maximum 200grams per liter.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with the Applicator present, under which painting will be performed for compliance with paint application requirements.
 1. Do not begin to apply paint until unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 1. Notify the Architect about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before surface preparation and painting.

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1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease before cleaning.
 1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- B. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
- C. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following: SSPC-SP2 "Hand Tool Cleaning."
- D. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- E. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
 1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
 3. Use only thinners approved by paint manufacturer and only within recommended limits.

3.3 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
 1. Paint colors, surface treatments, and finishes are indicated in the schedules.
 2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 3. Provide finish coats that are compatible with primers used.
 4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, covers for finned-tube radiation, grilles, and similar

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components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.

5. Finish doors on tops, bottoms, and side edges the same as exterior faces.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
 2. Omit primer on metal surfaces that have been shop primed and touchup painted.
 3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.
- C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted.
 2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.
- E. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing.
- F. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

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- G. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
1. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
 2. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.7 PAINT SCHEDULE

- A. Exterior side of new shop primed hollow metal door and frame: Exterior Latex Satin.
1. Finish: 2 coats **SuperPaint A89-100 Series. Contractor to give architect standard manufacturers color samples to choose from.**
- B. Interior side of new shop primed hollow metal door and frame: Interior Latex Semi-Gloss.
1. Finish: 2 coats **Duration Home Interior Latex Semi-Gloss A98-1200 Series. Contractor to give architect standard manufacturers color samples to choose from.**
- C. Existing concrete floor in boiler room:
1. Perform any concrete slab surface repairs utilizing Sika Quick 1000 rapid hardening repair mortar.
 2. Surface to be coated must be clean, sound and dry. Freshly poured concrete must age at least thirty days before coating. All oil, grease, release agents, curing compounds, concrete hardeners, laitance and other surface contaminants must be removed before coating. Previous paint finishes that have deteriorated need to be removed to bare concrete; previous paint finishes that are in sound condition need to be cleaned and screened to a uniform dull condition. To remove dirt, oil, grease and form release agents, scrub the surface with Corotech V600 Oil & Grease Emulsifier. Rinse thoroughly with clean water, per label directions. Curing compounds, concrete hardeners and previous paint finishes can be removed by chemical or mechanical methods. Pick up residue and dispose of per local, state and federal requirements. Using mechanical method, abrade or shot blast the surface until curing compound, hardener or paint is completely removed. Vacuum dust before proceeding. For laitance removal and to assure a PH level of

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between seven and nine, acid etch using manufacturers' recommendations. When properly prepared, the bare concrete surface should resemble the texture of medium grade sandpaper (80 grit). Whenever acid etching and/or shot blasting methods of surface preparation are utilized, it is important to leave the concrete with a uniform profile texture. Over profiling the concrete surface could damage the concrete integrity and will result in reduced coverage of the coatings. For a 10 mil or greater coating application thickness, a profile of 2.5 to 3 mils is recommended. After the concrete floor has been prepared and allowed to dry (measuring 5% or less with moisture meter), apply One Coat of V155 100% Solids Epoxy Pre-Primer at 600-800 sq. ft. per gallon (1.5 mils) following label instructions. Do not allow to puddle. Allow at least 24 hours, but not more than 72 hours dry time before applying the 100% Solids Epoxy Floor Coating. If a previous paint finish, in good condition is already in place, clean and screen the finish and proceed to the 100% Solids Epoxy Finish.

3. Apply Benjamin Moore oil and grease emulsifier V600
4. Preparation: Clean and abrade surface.
5. Mixing instructions:
 - a. This is a two component kit and is pre-proportioned for error free mixing. DO NOT vary from these instructions. Mix "A" & "B" separately. 1. Carefully empty the entire contents of V430-90 activator into the can of V430-Part A component resin; scrape the sides of the pail of Part B to make sure all liquid has been added. Part A container is oversized to completely accept entire contents of Part B material. 2. Using a jiffy mixer at low speed, blend this mixture for three to five minutes until completely blended. Keep the mixing blade turning at a slow speed to minimize whipping air into material. Scrape sides of pail during the mixing process. 3. Care must be taken to assure both components are completely mixed in order to avoid partially cured spots in the coating. 4. Do not allow to induct – use immediately after mixing. It is extremely important to remember that Epoxy Coatings have a limited pot life; therefore, it is wise to make sure sufficient manpower and correct application tools are in order prior to starting the mixing sequence. Estimated pot life is: 30 Minutes @ 77°F (25°C) Do not thin this product – it is ready to use once both components are thoroughly mixed. Mixed Yield: 2 Gallon Kits Clear - 1.76 Gallons Colors - 2.00 Gallons 5 Gallon Kits Clear - 4.42 Gallons Colors - 5.00 Gallons
6. Application:
 - a. Component A mixed with Component B – pour the entire mixed contents of a kit in a bead of material in the form of a continuous ribbon onto the surface to be coated. The mixed material should not be left in the container because it will drastically shorten the pot life. 100% Solids Epoxy Finish can be applied by smooth/notched blade squeegee (which is preferable) or rolled. The use of a porcupine roller is recommended approximately 10 minutes after application to help in the removal of any air in the coating.
 - 1) Squeegee application:
When using a smooth/notched blade squeegee spread the ribbon of poured material by pulling the squeegee toward the applicator and spread material at a rate not to exceed 120 square feet per gallon. Apply as evenly as possible working from left to right then back again. After ten minutes, roll with a porcupine roller to remove excess air bubbles. Do not mix less than full batch/container quantities.
 - 2) Roller application:
Using a quality phenolic core cover, between 3/8" and 1/2" nap size, gently spread the ribbon of poured material by lightly working the material back

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and forth until even. Avoid overworking material; allow product to flow out and self level. Spread at a rate not to exceed 120 square feet per gallon. Avoid working back into the previously applied epoxy, particularly after ten minutes duration or color variations can occur in the lapped area. Do not mix less than full batch/container quantities. The floor area should be maintained at a minimum surface and ambient air temperature of 50°F and a maximum of 90°F throughout the entire recommended dry time. Do not apply if surface temperature is within 5 degrees of dew-point or if condensation or fog is expected before the product is fully dry. Not intended for use on vertical surfaces.

3) a. Anti-Slip Aggregate V630-00.

All high gloss surfaces can be slippery. When non skid properties are required, add a non-skid additive as needed. When using with V430, anti-slip additives must be broadcast into the applied paint film while wet. Do not mix it into the paint before application as this will leave the additive buried in the coating and will not allow for proper anti-slip properties

7. Finish: Contractor to give architect standard manufacturers color samples to choose from.

D. Existing concrete wall and c.m.u. walls in boiler room. Concrete slab ceiling in boiler room: Semi-Gloss Pre-Catalyzed Waterborne Epoxy.

1. Preparation: Remove existing paint, clean and abrade surface.
2. 2 coats: Benjamin Moore Corotech Pre-Catalyzed Waterborne Epoxy – Semi-Gloss V341.
3. Finish: Contractor to give architect standard manufacturers color samples to choose from.

END OF SECTION 099100

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SECTION 220510 - GENERAL PROVISIONS FOR PLUMBING WORK

1.1 RELATED DOCUMENTS

- A. This Section shall be coordinated with and is complementary to the General Conditions, Information for Bidders, General Clauses and Special Clauses.
- B. Where items of the General Conditions are repeated in this Section of the Specifications, it is intended to qualify or to call particular attention to them; it is not intended that any other parts of the General Conditions shall be assumed to be omitted if not repeated herein.
- C. This Section applies equally and specifically to all Contractors and Subcontractors supplying labor and/or equipment and/or materials as required under the Heating, Ventilating and Air Conditioning, Sections of the Specifications.

1.2 DEFINITIONS

- A. "The Contractor" or "Each Contractor" means specifically, the Contractor or Subcontractor working under his respective Section (Heating, Ventilating and Air Conditioning, Plumbing, or Electrical) of this Specification.
- B. "Provide" means to supply, erect, install, and connect up in complete readiness for regular operation, the particular work referred to.
- C. "Furnish" means to supply and deliver to the job.
- D. "Piping" includes, in addition to pipe, all fittings, valves, hangers, and other accessories related to such piping.
- E. "Concealed" means hidden sight as in chases, furred spaces shafts, hung ceilings, or embedded in construction.
- F. "Exposed" means, "not concealed" as defined above. Work in trenches, crawl spaces, and tunnels shall be considered "concealed" unless otherwise specifically noted.
- G. "Approved equal" means any equipment or material which, in the opinion of the Engineer, is equal in quality, durability, appearance, strength, design, performance, physical dimension, and arrangement to the equipment of material specified, and will function adequately in accordance with the general design.
- H. "Governmental" means all municipal, state and federal governmental agencies.
- I. Where any device or part of equipment is herein referred to in the singular number (such as "the pump"), such reference shall be deemed to apply to as many such devices as are required to complete the installation as shown on the Drawings.

1.3 CODES AND STANDARDS

- A. BOCA Basic Building Code, Basic National Mechanical Code, Energy Conservation Code
- B. N.Y. State Uniform Fire Prevention and Building Code, Plumbing Code, Mechanical Code, Fuel Gas Code.

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- C. NFPA National Fire Protection Association
- D. ASME American Society of Mechanical Engineers
- E. ANSI American National Standards Institute
- F. ASTM American Society for Testing Materials
- G. AWWA American Water Works Association
- H. IBR Institute of Boiler and Radiator Manufacturers
- I. NEMA National Electrical Manufacturers Association
- J. ASHRAE American Society of Heating, Refrigeration and Air Condition Engineers.
- K. SMACNA Sheet Metal and Air Conditioning Contractors National Association, Inc.
- L. ARI Air Conditioning and Refrigeration Institute
- M. AMCA Air Moving and Conditioning Association
- N. ADC Air Diffusion Council
- O. AABC Associated Air Balance Council
- P. National Standard Plumbing Code with all Amendments
- Q. Local Water Company Rules and Regulations
- R. NFPA-90A Air Conditioning and Ventilation Systems

1.4 INTENT

- A. It is the intention of the Specifications and Drawings to call for finished Work, tested, and ready for operation. All materials, equipment, and apparatus shall be new and of first-class quality.
- B. Any apparatus, appliance, material, or work not shown on Drawings, but mentioned in the Specifications, or vice versa, or any incidental accessories, or minor details not shown but necessary to make the work complete and perfect in all respects and ready for operation, even if not particularly specified, shall be provided without additional expense to the Owner.

1.5 DRAWINGS

- A. The Drawings are generally diagrammatic and are intended to convey the scope of Work and indicate general arrangement of equipment, piping, and fixtures.
- B. The locations of all items shown on the Drawings or called for in the Specifications that are not definitely fixed by dimensions are approximate only. The exact locations necessary to secure the best conditions and results must be determined at the project and shall have the approval of the Engineer before being installed. Do not scale Drawings.
- C. Follow Drawings in laying out work and check Drawings of other trades to verify spaces in which work will be installed. Maintain maximum headroom and space conditions at all points. Where headroom and space conditions appear inadequate, Engineer shall be notified before proceeding with installation.
- D. If directed by the Engineer, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trades or for proper execution of the work.

1.6 VISITING THE SITE

- A. Before submitting the final proposal, examine the site of the proposed work to determine the existing conditions that may effect work, as this Section will be held responsible for any assumptions in regard thereto.

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1.7 EQUIPMENT AND MATERIALS

- A. The proposal and bid must cover all items on the Drawings and in the Specifications as drawn and specified.
- B. Substitution of material and equipment of makes other than specifically named on the Drawings and in the Specifications will be subject to review by the Engineer. Contractor shall be responsible all costs associated with substitutions.
- C. To receive consideration, requests for substitutions must be accompanied by documentary proof of equality and difference in price and delivery, if any, in the form of certified quotations from suppliers of both specified and proposed equipment. In case of a difference in price, the Owner shall receive in the form of a credit on all benefit of the difference in cost involved in any substitution.
- D. The words "or approved equal" shall be understood to apply only to those items of equipment and material listed under the paragraph "List of Approved Manufacturers" or as otherwise indicated on the Drawings or in the Specifications.
- E. The Within twenty (20) working days after the acceptance of the proposal, and prior to the submission of any shop drawings for approval, a complete list of manufacturers shall be submitted to the Engineer for approval of all equipment and materials proposed for the work. No approvals will be rendered on shop drawings submitted before the complete list of manufacturers is approved.
- F. If material or equipment is installed before it is approved, and/or in the opinion of the Engineer the material or equipment does not meet the intent of the Drawings and Specifications, the removal and replacement shall be made at no extra cost to the Owner.
- G. The materials, workmanship, design, and arrangement of all work installed under the Contract shall be subject to the approval of the Engineer.
- H. If material or equipment is installed before it is approved, each trade installing same shall be liable for the removal and replacement at no extra charge to the Owner if, in the opinion of the Engineer, the material or equipment does not meet the intent of the Drawings and Specifications.
- I. The words "or approved equal" are understood to follow: The name of any manufacturer, vendor, equipment or materials. Any trade name, plate number, or catalog number; Any detailed description used to define equipment or material; except where otherwise indicated on the Drawings or in the Specifications.
- J. It is the intent of these Specifications that wherever a manufacturer of a product is specified, and the terms "other approved" or "or approved equal" are used, the substituted item must conform in all respects to the specified item. Consideration will not be given to claim that the substituted item meets the performance requirements with lesser construction (such as lesser heat exchange surface, etc.) Performance as delineated in schedules and in the Specifications shall be interpreted as minimum performance.
- K. All equipment and materials required for installation under these Specifications shall be new and without blemish or defect. All electrical equipment shall bear labels attesting to Underwriter's Laboratories approval. Where no specific indication as to the type or quality of the material or equipment is indicated, a first class standard article shall be furnished.
- L. Where it is proposed to use an item of equipment other than specified or detailed on the Drawings

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which requires any redesign of the structure, partitions, foundations, piping, or of any other part of the mechanical layout, all such redesign, and all new drawings and detailing required therefore shall, with the approval of the Engineer, be prepared at no additional cost to the Owner.

- M. Where such approved deviation requires a different quantity and arrangement of, piping, wiring, conduit, and equipment from that specified or indicated on the Drawings, with the approval of the Engineer, furnish and install any such , piping, structural supports, insulation, and any other additional equipment required by the system, at no additional cost to the Owner.
- N. All equipment of one type (such as vav's, diffusers, etc.) shall be the product of the same manufacturer.
- O. Note that the approval of shop drawings or other information submitted in accordance with the requirements herein specified does not assure that the Engineer or any other Owner's representative attests to the dimensional accuracy or dimensional suitability of the material or equipment involved or the mechanical performance of equipment. Approval of shop drawings does not invalidate the Plans and Specifications if the shop drawings are in conflict with the Plans and Specifications.

1.8 SHOP DRAWINGS

- A. Prior to delivery to job site, but sufficiently in advance of requirements necessary to allow Engineer ample time for review, submit for approval (5) copies of shop drawings of all equipment, materials, piping, and sleeves, etc., and further obtain written approval for same from the Engineer, before installing any of these items.
- C. Shop drawings shall consist of manufacturer's certified scale drawings, cuts, or catalogs, including descriptive literature and complete certified characteristics of equipment, showing dimensions, capacity, code requirements, motor and drive testing, as indicated on the Drawings or Specifications.
- D. Approval rendered on shop drawings shall not be considered as a guarantee of measurements or building conditions. Where drawings are approved, said approval does not in any way relieve responsibility, or necessity, of furnishing material or performing work as required by the Contract Drawings and Specifications.
- E. Failure to submit shop drawings in ample time for checking shall not entitle an extension of Contract time, and no claim for extension by reason of such default will be allowed.
- F. Prior to submission of shop drawings, thoroughly check each shop drawing, reject those not conforming to the Specifications, and indicate (by signature) that the shop drawings submitted meet Contract Requirements.
- I. Incorporate a numbering system to help keep track of shop drawing submittals as follows:
 - HV.....HVAC shop drawings
 - P.....P shop drawings.
- J. Label resubmitted shop drawings with a stamp indicating the submittal number, for example: SECOND SUBMISSION; THIRD SUBMISSION, etc. and send separate transmittals for each item being submitted so that one transmittal does not cover more than one specific item or group of items from one manufacturer.

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1.9 RECORD DRAWINGS

- A. During construction keep an accurate record of all deviations between the work as shown on the Drawings and that which is actually installed.
- B. Secure from the Engineer, a complete set of Mylar transparencies of the Drawings and note thereon all changes. Make a complete record of all changes and revisions in the original design which exist in the complete work. The cost for the Mylar transparencies shall be paid for by each trade.
- C. Contractor shall submit as-built drawings in autoCad format on CD, minimum 2002 format.

1.10 LAWS, ORDINANCES, PERMITS AND FEES

- A. Give all necessary notices, obtain all permits and pay all governmental taxes, fees, and other costs in connection with the work; file all necessary plans, prepare all documents, and obtain all necessary approvals of all governmental departments having jurisdiction; obtain all required certificates of Inspection for the work and deliver to the Engineer before request for acceptance and final payment for the work.
- B. Include in the work, without extra cost to the Owner, any labor, materials, services, apparatus, drawings, (in addition to Contract Drawings and Documents) in order to comply with all applicable laws, ordinances, rules and regulations, whether or not shown on Drawings and/or specified.
- C. All materials furnished and all work installed shall comply with the rules and recommendations of the National Fire Protection Association, with all requirements of local utility companies, with the recommendations of the fire insurance rating organization having jurisdiction, and with the requirements of all governmental departments having jurisdiction, including New York State Health Code.

1.11 ORGANIZATION OF WORK

- A. The work throughout shall be executed in the best and most thorough manner under the direction of and to the satisfaction of the Engineers, Owners and Project Coordinators, who will jointly interpret the meaning of the Drawings and Specifications, and shall have the power to reject any work and materials which, in the judgment, are not in full accordance therewith.
- B. The work called for under this Contract shall be carried on simultaneously with the work of other trades in a manner such as not to delay the overall progress of the work. Furnish promptly to other trades involved at the project, all information and measurements relating to the work which they may require. Cooperate with them in order to secure the harmony necessary in the interest of the project as a whole.
- C. Furnish and install all work as fast as possible to meet all construction schedules.
- D. Keep a competent superintendent in charge of the work at all times. Such superintendent shall be replaced if unsatisfactory to the Owner.
- E. Within thirty (30) days after award of contract submit five (5) copies of a preliminary list of major equipment, for approval, complete with name of manufacturer, dates of purchase orders, and delivery dates to the site. Also submit within thirty (30) days, five (5) copies of a preliminary schedule of installation of the various systems. This list shall be revised monthly and five (5) copies shall be

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submitted. The second submittal shall contain the names of manufacturers of scheduled equipment (with names, addresses, and telephone numbers of local representatives).

- F. Maintain a complete file of shop drawings at all times available to the Owner's representative.
- G. Where the work is to be installed in close proximity to work of other trades, or where there is evidence that the work is to interfere with work of other trades, assist in working out space conditions to make a satisfactory adjustment.

If so directed by the Engineer, prepare composite working drawings and sections at a suitable scale not less than $3/8" = 1'-0"$ clearly showing how the work is to be installed in relation to the work of other trades. If the installation is made before coordinating with other trades, make all necessary changes in the work without extra charge to the Owner.

- H. Provide a "Logical Sequence Method" construction schedule for review prior to the start of any work. Update the construction schedule as required during the project.

1.12 PROTECTION OF WORK AND PROPERTY

- A. Maintain and protect all equipment, materials and tools from loss or damage from all causes until final acceptance by the Owner.
- B. Assume responsibility for the protection of any finished work or other trades from damage or defacement by the operations and remedy any such injury or damages.

1.13 PIPE EXPANSION

- A. All pipe connections shall be installed to allow for freedom of movement of the pipe during the expansion and contraction without proper anchors and guides shall be provided where necessary and/or when shown on the Drawings. Anchors and guides shall be subject to the approval of the Engineer.

1.14 SCAFFOLDING, RIGGING, HOISTING

- A. Provide all scaffolding, rigging, hoisting and services necessary for erection and delivery into the premises of all equipment and materials furnished under this Section of the Specifications, and remove same from premises when no longer required.
- B. In the event that supplementary bracing of the basic building structure is required to assure a secure rigging procedure and a secure route for the equipment being handled, assume full responsibility for such supplementary bracing.

1.15 BASES AND SUPPORTS

- A. Provide all bases and supports not part of the building structure of required size, type and strength, as approved by the Engineer, for all equipment and materials furnished by him. All equipment, bases, and supports shall be adequately anchored to the building structure to prevent shifting of position under operation conditions.

1.16 SLEEVES, PIPE AND CONDUIT INSERTS AND ANCHOR BOLTS

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- A. Provide and assume responsibility for the location and maintenance in proper position of all sleeves, inserts, and anchor bolts required for the work. In the event that failure to do so requires cutting and patching of finished work, it shall be done without additional cost to the Owner.
- B. All pipes and conduits passing through masonry walls or partitions shall be provided with sleeves having an internal diameter larger than the outside diameter of the pipe or insulation enclosing the pipe or conduit. Sleeves shall be Schedule 40 black steel pipe.
- C. Sleeves through foundation walls shall be James B. Clow and Sons No. F-1430 or F-1435 cast iron wall sleeve with intermediate integral flange. Sleeves shall be set with ends flush with each face of wall. The space between sleeve and pipe shall be packed with oakum to within 2" of each face of the wall. The remaining space shall be packed and made watertight with a waterproof compound.
- D. Sleeves through concrete floors or interior masonry walls shall be Schedule 40 black steel pipe, set flush with finished wall surfaces, but extended 1/2" above finished floors. The open sleeve space shall be packed with non-combustible materials.
- E. Sleeves through non-masonry partitions shall be 22 gauge galvanized sheet steel, set flush with finished surfaces of partitions.
- F. Inserts shall be individual type of malleable iron construction with accommodation for removable nuts and threaded rods up to 3/4" diameter, permitting lateral adjustment, except as otherwise noted. Individual inserts shall be Grinnell Fig. 279 up to 5" pipe and conduit, Fig. 282.6" up to 8" pipe and conduit, Fig. 152 above 8" and up to 12" pipe and conduit. For figures 282 and 152, they shall come with an opening at the tip to allow reinforcing rods up to 1/2" diameter to be passed through the insert body. Rods shall extend a minimum of 4" on either side of the insert.
- G. In general, all piping and conduit shall be supported from structural steel building members only or approved malleable steel inserts imbedded in concrete pours.
- H. Where revisions are required and are approved, piping and conduit 3" and smaller may be supported at Intermediate Points by Phillips' 3/4" expansion bolts with lead shields, provided main supports are welded to structural steel and are not more than twenty feet on centers. Intermediate supports, for pipe 4" and larger shall be attached to concrete by means of 4" x 4" x 3/8" clip knee angles with 3/4" expansion bolt in shear and supporting rod at 90 degree from another bolt.
- I. Piping 3" and smaller shall be supported from existing slab by "Phillips" 3/4 expansion bolts with lead shields. Piping 4" and larger shall be supported by means of 4" x 4" x 3/8" clip knee angle with 3/4" expansion bolts in shear and supporting rod at 90 degree from another bolt.
- J. Provide sleeves for pipes passing through roofs, sleeves passing through roofs shall be as described on drawings or extend a minimum 12" above finished roof. All pipes passing through roof shall be minimum of 10" from walls or other construction to permit proper flashing.
- K. Where sleeves pass through waterproofed floors, they shall be IPS brass pipe sleeves of the required diameter, brazed at the bottom to 18" x 18", 16-ounce copper flashing for bond with waterproofing. The tops of the sleeves shall extend 1/2" above.
- L. Where sleeves pass through waterproofed floors, they shall be IPS brass pipe sleeves of the required diameter, brazed at the bottom to 18" x 18", 16-ounce copper flashing for bond with waterproofing. The tops of the sleeves shall extend 1/2" above.
- M. No piping or equipment shall be supported from corrugated decking construction. For this area

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provide supplementary steel to support ductwork, piping, conduit or equipment. Supplemental steel members shall be welded to building structural steel.

- N. All hangers, rods and supports shall be installed prior to construction fireproofing.
- O. The required fire resistance rating of floor or floor/ceiling assemblies and walls shall be maintained where a penetration is made for electrical, mechanical, plumbing pipes, conduits, ducts and systems. Fire stopping shall be provided at openings around vents, pipes, ducts, conduits at floor levels and walls with non-combustible materials, such as rockwool or equal.

1.17 ESCUTCHEONS

- A. Provide escutcheons on pipes wherever they pass through ceilings, walls, or partitions.
- B. Escutcheons or pipes passing through outside walls shall be Ritter Pattern and Casting Co., No. 1, solid, cast brass, flat type secured to pipe with set screw.
- C. Escutcheons for pipes passing through floors shall be Ritter Pattern and Casting Co., No. 36A, split-hinged, cast brass type, designed to fit pipe on one end and cover sleeve projecting through floor on the other end.
- D. Escutcheons for pipes passing through interior walls, partitions, and ceilings shall be Ritter Pattern and Casting Co., No. 3A, split-hinged, cast beams chromium plated type.

1.18 MANUFACTURERS' IDENTIFICATION

- A. Manufacturer's nameplate, name or trademark, shall be permanently affixed to all equipment and material furnished under this Specification. Where such equipment is in a finished occupied space, the nameplate shall be in a concealed but accessible location. The nameplate of a Subcontractor or Distributor will not be acceptable.

1.19 EQUIPMENT NAMEPLATES

- A. Provide for domestic hot water heater, a permanently attached nameplate made of black surface, white core laminated bakelite with incised letters. Subcontractor furnishing equipment shall provide nameplate. Pneumatic, electric and mechanically actuated gauges shall have a brief, but complete description of their function. Stating the air pressure or voltage range alone is not acceptable. Nameplates shall be a minimum pf 3" long by 1/2" high white letters as designated in the equipment schedule. Mounting screws shall have chrome plated acorn headed screws.

1.20 TAGS AND CHARTS

- A. Furnish and attach to each valve as hereinafter specified, a 1-1/2" diameter brass tag with 1/2" indented numerals filled with durable black compound. Tags shall be securely attached to stems of valves with copper wire and "S" hooks.
- B. Valve charts shall consist of schematic drawings of piping layouts, showing and identifying each valve and describing the function. Upon completion of the work, one (1) copy of each chart, sealed to rigid backboard with clear lacquer placed under glass and framed, shall be hung in a conspicuous location in the main equipment room, unless otherwise directed by the Engineer. Two (2) additional unmounted

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copies in 8-1/2" x 11" leather ring binders shall be delivered to the Engineer. Also furnish three (3) copies of schematic flow chart with corresponding valve numbers noted on chart.

- C. Provide tags for the following valves:
 1. Zone control, bypass, shut-off, check and balancing valves.
 2. Building and area shut-off and balancing valves.
 3. Control, by-pass, shut-off, balancing and drain valves for domestic hot water heaters.
 4. System drain valves, safety and relief valves.
 5. Vacuum breakers.
 6. Backflow Preventor.
 7. Pressure Regulator.

1.21 IDENTIFICATION

- A. Identification shall be in accordance with "Scheme for Identification of Piping System ANSI A13.1" and OSHA safety color regulation.
- B. Markers shall be snap-on type as manufactured by Seton Nameplate Corp., New Haven, Conn. (Setmark System) or approved equal. Markers shall completely encircle the pipe with a substantial overlap. No adhesive shall be used. They shall be manufactured of U.L. approved, self-extinguishing plastic. When the pipe including insulation (if any) is larger than 6 inches diameter and larger, markers shall be strap-on type.
- C. Provide identification of piping for all mechanical work.
- D. Pipe shall be lettered and valves tagged in accordance with the schedule below. Lettering shall be located near each valve and branch connection and at intervals of not over 40 feet (10 feet on fire lines) on straight runs of pipe. Provide flow arrows for all piping at each marker. Adjacent to the legend, stencil the size of the pipe, conduit or ductwork.

STENCIL AND VALVE TAG SCHEDULE

<u>Service</u>	<u>Stencil</u>	<u>Color</u>	<u>Tag Designation</u>
Cold Water	Cold Water	Green	CW
Heating Hot Water	Heating Hot Water	Red	HHWS
Heating Hot Water Return	Heating Hot Water Return	Yellow	HHWR
Domestic Hot Water	Domestic Hot Water	Orange	DHWS
Domestic Hot Water Return	Domestic Hot Water Return	Yellow	DHWR

1.22 TOOLS

- A. All specified tools for proper operation and maintenance of the equipment shall be delivered to the Owner's representative and a receipt requested for same at no additional cost to the Owner.

1.22 QUIET OPERATION

- A. All equipment and material shall operate under all conditions of load without any sound or vibration which, in the opinion of the Engineer, is objectionable. Where sound or vibration conditions arise which are considered objectionable by the Engineer, eliminate same in a manner approved by the Engineer.

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1.23 RUBBISH REMOVAL

- A. See to it that the Project is, at all times, maintained free of all rubbish, rubble, waste material, packaging materials, etc. accumulating as a result of his work. Assume responsibility for the cleaning up of packaging removed from materials and equipment furnished by other trades for the installation. Note that final acceptance of the work is contingent upon the project being free of all excess and waste materials resulting from the work.

1.24 CLEANING, PIPING AND EQUIPMENT

- A. Clean all piping, and equipment of all foreign substances inside and out before being placed in operation.
- B. If any part of a system should be stopped by foreign matter after being placed in operation, the system shall be disconnected, cleaned, and reconnected wherever necessary to locate and remove obstructions. Any work damaged in the course of removing obstructions shall be repaired when the system is reconnected at no additional cost to the Owner.
- C. During construction, properly cap all pipes and equipment nozzles so as to prevent the entrance of sand, dirt, etc.

1.25 DELIVERY OF MATERIAL

- A. Deliver the material and store same in spaces indicated by the Engineer and assume full responsibility for damage to structure caused by any overloading of the material. Contractor shall be aware that the building does not have a loading dock and limited space will be available for storage of materials. Coordinate delivery with building access and site activities. Deliveries shall be coordinated with building representative.

1.26 ALTERATIONS

- A. When new work and alterations render equipment and piping useless, such equipment and piping when exposed to view, shall be removed and connections thereof to lines or ducts remaining shall be properly capped or plugged and left in construction. If construction, such as hung ceiling, furred beams, chase, etc., is opened up and removed during the course of the construction, the useless pipe therein shall be treated as though exposed to view. When required to accommodate new work, useless piping concealed in construction shall be treated as though exposed to view.
- B. When existing piping systems, at points of connection to new work or in rerouting are found defective, such defective portions shall be removed and replaced with new materials without cost to the Owner.
- C. Provide temporary supports where required.
- D. Where alterations reveal piping, conduit circuits, wiring, and accessories that must necessarily remain in service, same shall be rerouted, replaced or altered as required to make same completely concealed in the new work at no additional cost to the Owner.
- E. Cutting in existing building shall be done by each Contractor as approved by the Engineer. Rough patching shall be done by each Contractor. Finish patching, ceiling construction slabs by General Contractor.

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- F. Cutting existing slab for drain piping by this contractor.

1.28 EXCAVATION AND BACKFILL

- A. All excavation and backfill and trenching shall be done by this contractor.

1.29 PAINTING

- A. Paint all unpainted, non-insulated, non-galvanized, ferrous metal surfaces of pipes, conduits, ducts, equipment, fixtures, hangers, supports and accessories as follows:
- B. Exposed - one prime coat of oil varnish based paint.
- C. Concealed - one coat of black asphaltum paint.
- D. Underground - two coats of black asphaltum paint.
- E. Nameplates on all equipment shall be cleaned and left free of paint.
- F. All lead bends and lead safes and flashing shall be painted with two coats of waterproof black asphaltum varnish.

1.30 TESTS

- A. All piping, wiring, and equipment shall be tested as specified under the various section of the work. Labor materials, instruments and power required for testing shall be furnished under the particular Section of the Specification.
- B. Tests shall be performed satisfaction of the Engineer. The Engineer will be present at such test, when he deems necessary and such other parties as may have legal jurisdiction.
- C. Pressure tests shall be applied to piping only before connection of equipment and installation of insulation. In no case shall piping, equipment, or accessories be subjected to pressure exceeding their rating.
- D. All defective work shall be promptly repaired or replaced and the tests shall be repeated until the particular system and component parts thereof receive the approval of the Engineer.
- E. Any damages resulting from tests shall be repaired or replaced and the tests shall be repeated until the particular system and component parts thereof receive the approval of the Engineer.
- F. The duration of tests shall be as determined by all authorities having jurisdiction, but in no case less than the time prescribed in each Section of the Specification.
- G. Tests shall be performed on individual equipment, systems, and their controls. Whenever the equipment or system under test is interrelated with and depends upon the operation of other equipment, systems and controls for proper operation, functioning, and performance, the latter shall be operated simultaneously with the equipment or system being tested.

1.31 OPERATING INSTRUCTIONS

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- A. Prior to final inspection of the installation by the Owner, five (5) copies of a complete Instruction Manual, bound in booklet form and suitably indexed, shall be submitted to the Engineer for approval.
- B. The Manual shall contain the following items:

Table of Contents

- I. Introduction - Explanation of Manual and its use.
- II. Description of Systems
 - 1. Complete schematic drawings of all systems.
 - 2. Functional and sequential description of all systems.
 - 3. Relationship of system where applicable to the supervisory data system.
- III. Systems Operation
 - 1. Start-up procedures.
 - 2. Shut-down procedures.
 - 3. Reset and adjustment and balancing procedures.
 - 4. Seasonal operation.
 - 5. All posted instruction charts.
- IV. Maintenance
 - 1. Cleaning and replacement - lines, components, filters, strainers, ducts, fans, etc.
 - 2. Lubrication.
 - 3. Charging and filling.
 - 4. Purging and draining.
 - 5. Systems trouble shooting charts.
 - 6. Instruments checking and calibration.
 - 7. Recommended list of spare parts.
- V. Listing of Manufacturers
- VI. Manufacturer's Data (Where multiple model, type and size listings are included, clearly and conspicuously indicate those that are pertinent to this installation.
 - 1. Description - Literature, drawings, illustration, certified performance charts, technical data, etc.
 - 2. Operation.
 - 3. Maintenance - including complete trouble shooting charts.
 - 4. Parts List
 - 5. Names, addresses and telephone numbers of local recommended repair and service companies.
 - 6. Guarantee data.
 - 7. Model No. and Serial No. of all equipment.

1.32 GUARANTEE

- A. The Contractor guarantees by his acceptance of the Contract that all work installed will be free from any and all defects and that all apparatus will develop capacities and characteristics specified, and that if during a period of one year from date of completion and acceptance of work any such defects in workmanship, material or performance appear, he shall immediately replace, repair, or otherwise correct the defect or deficiency without cost to the Owner within a reasonable time. Notify the Engineer in writing of the time required to do work
- B. Replace or repair to the satisfaction of the Owner any and all damage done to the building or its

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contents or to the work of other trades in consequence of work performed in fulfilling guarantee.

- C. This Article is general in nature and will not waive stipulations of other claims which specify guarantee periods in excess of one (1) year.
- D. In the event default on this Guarantee, the Owner may have such work done as required & charge the cost to the Contractor.
- E. The date of acceptance shall be the date of final payment by the Owner or notice of acceptance by the Owner, whichever is later.

1.33 OPERATION PRIOR TO COMPLETION

- A. The Owner may require operation of parts or all of the installation for the beneficial occupancy prior to final completion and acceptance of the building.
- B. The operation shall not be construed to mean acceptance of the work by the Engineer for the Owner. The Owner will furnish supervisory personnel to direct operation of the entire system and the Contractor shall continue to assume this responsibility until final acceptance.

END OF SECTION 220510

SECTION 220719 - PIPING INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Piping insulation.
- B. Jackets and accessories.
- C. Insulation of new and existing work.
- D. Equipment insulation

1.02 REFERENCES

- A. ASTM C195 - Standard Specification for Mineral Fiber Thermal Insulating Cement.
- B. ASTM C449/C449M - Standard Specification for Mineral Fiber Hydraulic-Setting Thermal Insulating and Finishing Cement.
- C. ASTM C547 - Standard Specification for Mineral Fiber Preformed Pipe Insulation.
- D. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation.
- E. ASTM C578 - Standard Specification for Preformed, Cellular Polystyrene Thermal Insulation.
- F. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials.
- G. ASHRAE 90-75 - Insulation Standards.

1.03 SUBMITTALS FOR REVIEW

- A. Submittals as per contract requirements.
- B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.
- C. Manufacturer's Instructions: Indicate installation procedures that ensure acceptable workmanship and installation standards will be achieved.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years experience.

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1.05 REGULATORY REQUIREMENTS

- A. Conform to maximum flame spread/smoke developed rating of 25/50 in accordance with NFPA 255.
- B. Insulation thickness shall comply with applicable Energy Conservation Codes.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Manufacturer: Knauf 1000° pipe insulation (**Specified Model: Earthwise 1000 with ASJ+**)
- B. Certainteed Corporation.
- C. Armstrong Corporation.
- D. Shuller zeston or proto pvc jacketing fitting covers.
- E. Owens-Corning Fiberglass Corporation

2.02 INSULATION

- A. **Type A:** Inorganic glass strands insulation with ASJ+; UL Classified, ANSI/ASTM C547; 'k' value of 0.23 at 75° F; noncombustible. Minimum density of 3.5 lbs./cu. Ft.; temperature range 0° F to 1000° F. Knauf Earthwise 1000° Fiberglass, or equal.

2.03 JACKETS

- A. Interior Applications:
 - 1. Insulation Type A - Factory applied, white, flame retardant, all service (ASJ) vapor barrier jacket of .001" aluminum foil laminated to Kraft paper with a flame retardant snuffer type adhesive reinforced with glass fibers and having a self sealing lap. Provide 2" longitudinal lap and 4" circumferential sealing strips. Permeability .02 perm. Schuller Micro 10k AP-t plus, or approved equal.

2.04 ACCESSORIES

- A. Insulation Bands: ¾" wide; 0.007 inch thick aluminum.
- B. Metal Jacket Bands: 3/8" wide; 0.015 inch thick aluminum.
- C. Insulating Cement: ANSI/ASTM C195; hydraulic setting mineral wool.
- D. Finishing Cement: ASTM C449

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- E. Fibrous Glass Cloth: Untreated; 9 oz/sq. yd weight.
- F. Adhesives: Compatible with insulation and fire retardant.

2.05 EQUIPMENT INSULATION

- A. RPZ assembly and similar odd shaped plumbing items shall be insulated. Insulation thickness shall match that of attached piping. Insulation shall be pre formed or cut block insulation. Insulation shall be fabricated in sections to allow future removal and service of equipment. Jacketing shall be formed Aluminum 0.020 thickness. Insulation shall be held in place with aluminum bands. Joints shall be sealed.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials.
- B. Verify that surfaces are clean and dry, with all foreign material removed. This includes but is not limited to water, oil, dirt, scale and rust.
- C. Only insulation and finish materials including adhesive cements and mastic, which conform to the requirements of all-governing codes and ordinances, shall be used.

3.02 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions and the best practice of the trade.
- B. Install in accordance with NAIMA National Insulation Standards.
- C. On insulated piping insulate all fittings, valves, unions, flanges, strainers, flexible connections, expansion joints, etc. Fit insulation to pipe staggering longitudinal joints. Apply fabricated segments of insulation or pre-molded fitting insulation covers of equal thickness of adjoining pipe covering on fittings, valves, and other specialties. Vapor seal all exposed edges with jacket material and vapor barrier type adhesive on cold piping. All piping insulation shall be installed with a vapor barrier.
- D. Apply insulation to completely cover metal surface. Surface shall be applied to present a tight, smooth appearance.
- E. Exposed Piping: Locate insulation and cover seams in least visible locations.
- F. Neatly finish insulation at supports, protrusions, and interruptions.
- G. Do not use staples on vapor barrier insulation.
- K. Jackets:

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1. Indoor, Concealed and Exposed Applications: Insulated dual-temperature pipes or pipes conveying fluids below ambient temperature shall have vapor barrier jackets, factory-applied or field-applied. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Insulation shall be provided with all service jacket and vapor barrier.
- L. Inserts and Shields: Provide galvanized steel insulation shields for piping less than 2". Hangers shall be sized for insulated pipe with shield.
1. Application: Piping 2 inches diameter or larger.
 2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.
 3. Insert location: Between support shield and piping and under the finish jacket.
 4. Insert configuration: Minimum 6 inches long, of same thickness and contour as adjoining insulation; may be factory fabricated.
 5. Insert material: Hydrous calcium silicate insulation or other heavy density insulating material suitable for the planned temperature range.
- M. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. All pipe penetrations through garage wall and boiler room wall shall be firestopped.
- N. Pipe Exposed in Mechanical Equipment Rooms or Finished Areas. Finish with glass cloth jacket, PVC jacket at fittings and valves.

3.03 SCHEDULE

<u>Piping</u>	<u>Type</u>	<u>Pipe Size</u>	<u>Insulation Thickness</u>
Domestic Hot Water	A	Up to 1" Above 1"	3/4" 1 "
Domestic Cold Water	A	Up to 1 1/4" Above 1 1/4"	1/2" 1/2"

END OF SECTION 220719

SECTION 221116 - DOMESTIC WATER PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Clauses, apply to this Section.

1.2 SUMMARY

- A. This Section includes domestic water piping inside and outside the building.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide components and installation capable of producing domestic water piping systems with 125 psig, unless otherwise indicated.

1.4 QUALITY ASSURANCE

- A. Piping materials shall bear label, stamp, or other markings of specified testing agency.
- B. Comply with NSF 61, "Drinking Water System Components - Health Effects; Sections 1 through 9," for potable domestic water piping and components.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.
- 2. Nibco pipe and fittings, or equal

2.2 PIPING MATERIALS

- A. Transition Couplings for Aboveground Pressure Piping: Coupling or other manufactured fitting the same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.

2.3 COPPER TUBE AND FITTINGS

- A. Hard Copper Tube: ASTM B 88, Type K, water tube, drawn temper.
 - 1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought- copper, solder-joint fittings. Furnish wrought-copper fittings if indicated.
 - 2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint ends. Furnish Class 300 flanges if required to match piping.
 - 3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces, and solder-joint or threaded ends.
- B. Soft Annealed copper tubing for buried water service
 - 1. Type K, ASTM B 88, water tube, soft copper, annealed. Use brazed joint connections, AWS A5.8 BCuP series for copper tubing.

2.4 VALVES:

- A. Union Ball Valves: MSS SP-122, with full-port ball, threaded detachable end connectors, and pressure rating not less than 125 psig at 73 deg F.
- B. Check Valves: Swing or ball-check design and pressure rating not less than 150 psig at 73 deg F.
- C. Gate Valves – Stockham B-105, or equal.

PART 3 - EXECUTION

3.1 PIPE AND FITTING APPLICATIONS

- A. Transition and special fittings with pressure ratings at least equal to piping rating may be used in applications below, unless otherwise indicated.
- B. Flanges may be used on aboveground piping, unless otherwise indicated.
- C. Fitting Option: Extruded-tee connections and brazed joints may be used on aboveground copper tubing.
- D. Domestic Water Piping , NPS 4 and Smaller: Hard copper tube, Type K; copper pressure fittings; and soldered joints.
- E. Aboveground Domestic Water Piping: Use any of the following piping materials for each size range:

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1. NPS 1 and Smaller: Hard copper tube, Type K; copper pressure fittings; and soldered joints.
 2. NPS 1-1/4 and NPS 1-1/2: Hard copper tube, Type K; copper pressure fittings; and soldered joints.
 3. NPS 2: Hard copper tube, Type K copper pressure fittings; and soldered joints.
 4. NPS 2-1/2 to NPS 3-1/2: Hard copper tube, Type K; copper pressure fittings; and soldered joints.
- F. Non-Potable-Water Piping: Use any of the following piping materials for each size range:
1. NPS 3-1/2 and Smaller: Hard copper tube, Type L; copper pressure fittings; and soldered joints.

3.2 VALVE APPLICATIONS

- A. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
1. Shutoff Duty: Use bronze ball or gate valves for piping NPS 2 and smaller. Use gate valves with flanged ends for piping NPS 2-1/2 and larger.
 2. Throttling Duty: Use bronze ball or globe valves for piping NPS 2 and smaller. Use cast-iron butterfly valves with flanged ends for piping NPS 2-1/2 and larger.
 3. Drain Duty: Hose-end drain valves.
- B. Install shutoff valve close to water main on each branch and riser serving plumbing fixtures or equipment, on each water supply to equipment, and on each water supply to plumbing fixtures that do not have supply stops. Use ball or gate valves for piping NPS 2 and smaller. Use gate valves for piping NPS 2-1/2 and larger.
- C. Install drain valves for equipment at base of each water riser, at low points in horizontal piping, and where required to drain water piping.
1. Install hose-end drain valves at low points in water mains, risers, and branches.
 2. Install stop-and-waste drain valves where indicated.

3.3 PIPING INSTALLATION

- A. Install shutoff valve, hose-end drain valve, strainer, pressure gage, and test tee with valve, inside the building at each domestic water service entrance.
- B. Install domestic water piping level with 0.25 percent slope downward toward drain and plumb.

3.4 JOINT CONSTRUCTION

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- A. Soldered Joints: Use ASTM B 813, water-flushable, lead-free flux; ASTM B 32, lead-free-alloy solder; and ASTM B 828 procedure, unless otherwise indicated.
- B. Threaded Joints: make up threaded joints with proper sealing compounds.

3.5 HANGER AND SUPPORT INSTALLATION

- A. Install the following:
 - 1. Vertical Piping: MSS Type 8 or Type 42, clamps.
 - 2. Individual, Straight, Horizontal Piping Runs: According to the following:
 - a. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
 - b. Longer Than 100 Feet: MSS Type 43, adjustable roller hangers.
 - c. Longer Than 100 Feet: MSS Type 49, spring cushion rolls, if indicated.
 - 3. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
 - 4. Base of Vertical Piping: MSS Type 52, spring hangers.
- B. Support vertical piping and tubing at base and at each floor.
- C. Rod diameter may be reduced 1 size for double-rod hangers, to a minimum of 3/8 inch.
- D. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 3/4 and Smaller: 60 inches with 3/8-inch rod.
 - 2. NPS 1 and NPS 1-1/4: 72 inches with 3/8-inch rod.
 - 3. NPS 1-1/2 and NPS 2: 96 inches with 3/8-inch rod.
 - 4. NPS 2-1/2: 108 inches with 1/2-inch rod.
 - 5. NPS 3 to NPS 5: 10 feet with 1/2-inch rod.
- E. Install supports for vertical copper tubing every 10 feet.

3.6 CONNECTIONS

- A. Install piping adjacent to equipment and machines to allow service and maintenance.
- B. Connect domestic water piping to exterior water-service piping. Use transition fitting to join dissimilar piping materials.
- C. Connect domestic water piping to water-service piping with shutoff valve, and extend and connect to the following:
 - 1. Plumbing Fixtures: Cold- and hot-water supply piping in sizes indicated, but not smaller than required by plumbing code. Refer to Division 15 Section "Plumbing Fixtures." Valves shall be provide to isolate fixtures for service.

2. Equipment: Cold- and hot-water supply piping as indicated, but not smaller than equipment connections. Provide shutoff valve and union for each connection. Use flanges instead of unions for NPS 2-1/2 and larger.

3.7 FIELD QUALITY CONTROL

A. Inspect domestic water piping as follows:

1. Do not enclose, cover, or put piping into operation until it has been inspected and approved by authorities having jurisdiction.
2. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction:
 - a. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.
 - b. Final Inspection: Arrange final inspection for authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.
3. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.
4. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.

B. Test domestic water piping as follows:

1. Fill domestic water piping. Check components to determine that they are not air bound and that piping is full of water.
2. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
3. Leave new, altered, extended, or replaced domestic water piping uncovered and unconcealed until it has been tested and approved. Expose work that was covered or concealed before it was tested.
4. Cap and subject piping to static water pressure of 50 psig above operating pressure, without exceeding pressure rating of piping system materials. Isolate test source and allow to stand for four hours. Leaks and loss in test pressure constitute defects that must be repaired.
5. Repair leaks and defects with new materials and retest piping or portion thereof until satisfactory results are obtained.
6. Prepare reports for tests and required corrective action.

3.8 ADJUSTING

A. Perform the following adjustments before operation:

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1. Close drain valves, hydrants, and hose bibs.
2. Open shutoff valves to fully open position.
3. Open throttling valves to proper setting.
4. Remove plugs used during testing of piping and plugs used for temporary sealing of piping during installation.
5. Remove and clean strainer screens. Close drain valves and replace drain plugs.
6. Remove filter cartridges from housings and verify that cartridges are as specified for application where used and are clean and ready for use.
7. Check plumbing specialties and verify proper settings, adjustments, and operation.

3.9 CLEANING

- A. Clean and disinfect potable and non-potable domestic water piping as follows:
 1. Purge new piping and parts of existing domestic water piping that have been altered, extended, or repaired before using.
 2. Use purging and disinfecting procedures prescribed by authorities having jurisdiction or, if methods are not prescribed, procedures described in either AWWA C651 or AWWA C652: Follow procedures required by Department of Health for placing water supply in service.
- B. Clean interior of domestic water piping system. Remove dirt and debris as work progresses.

END OF SECTION 221116

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SECTION 230510 - GENERAL PROVISIONS FOR MECHANICAL WORK

1.1 RELATED DOCUMENTS

- A. This Section shall be coordinated with and is complementary to the Information for Bidders, General Clauses and General Requirements.
- B. Where items of the General Requirements are repeated in this Section of the Specifications, it is intended to qualify or to call particular attention to them; it is not intended that any other parts of the General Requirements shall be assumed to be omitted if not repeated herein.
- C. This Section applies equally and specifically to all Contractors and Subcontractors supplying labor and/or equipment and/or materials as required under the Heating, Ventilating and Air Conditioning, Sections of the Specifications.

1.2 DEFINITIONS

- A. "Provide" means to supply, erect, install, and connect up in complete readiness for regular operation, the particular work referred to.
- B. "Furnish" means to supply and deliver to the job.
- C. "Piping" includes, in addition to pipe, all fittings, valves, hangers, and other accessories related to such piping.
- D. "Concealed" means hidden sight as in chases, furred spaces shafts, hung ceilings, or embedded in construction.
- E. "Exposed" means, "not concealed" as defined above. Work in trenches, crawl spaces, and tunnels shall be considered "concealed" unless otherwise specifically noted.
- F. "Approved equal" means any equipment or material which, in the opinion of the Engineer, is equal in quality, durability, appearance, strength, design, performance, physical dimension, and arrangement to the equipment of material specified, and will function adequately in accordance with the general design.
- G. "Governmental" means all municipal, state and federal governmental agencies.
- H. Where any device or part of equipment is herein referred to in the singular number (such as "the pump"), such reference shall be deemed to apply to as many such devices as are required to complete the installation or as shown on the Drawings.

1.3 CODES AND STANDARDS

- A. BOCA Basic Building Code, Basic National Mechanical Code, Energy Conservation Code
- B. N.Y. State Uniform Fire Prevention and Building Code
- C. NFPA National Fire Protection Association
- D. ASME American Society of Mechanical Engineers
- E. ANSI American National Standards Institute

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- F. ASTM American Society for Testing Materials
- G. AWWA American Water Works Association
- H. IBR Institute of Boiler and Radiator Manufacturers
- I. NEMA National Electrical Manufacturers Association
- J. ASHRAE American Society of Heating, Refrigeration and Air Condition Engineers.
- K. SMACNA Sheet Metal and Air Conditioning Contractors National Association, Inc.
- L. ARI Air Conditioning and Refrigeration Institute
- M. AMCA Air Moving and Conditioning Association
- N. ADC Air Diffusion Council
- O. AABC Associated Air Balance Council
- P. National Standard Plumbing Code with all Amendments
- Q. Local Water Company Rules and Regulations
- R. NFPA-90A Air Conditioning and Ventilation Systems

1.4 INTENT

- A. It is the intention of the Specifications and Drawings to call for finished Work, tested, and ready for operation. All materials, equipment, and apparatus shall be new and of first-class quality.
- B. Any apparatus, appliance, material, or work not shown on Drawings, but mentioned in the Specifications, or vice versa, or any incidental accessories, or minor details not shown but necessary to make the work complete and perfect in all respects and ready for operation, even if not particularly specified, shall be provided without additional expense to the Owner.

1.5 DRAWINGS

- A. The Drawings are generally diagrammatic and are intended to convey the scope of Work and indicate general arrangement of equipment, piping, and fixtures.
- B. The locations of all items shown on the Drawings or called for in the Specifications that are not definitely fixed by dimensions are approximate only. The exact locations necessary to secure the best conditions and results must be determined at the project and shall have the approval of the Engineer before being installed. Do not scale Drawings.
- C. Follow Drawings in laying out work and check Drawings of other trades to verify spaces in which work will be installed. Maintain maximum headroom and space conditions at all points. Where headroom and space conditions appear inadequate, Engineer shall be notified before proceeding with installation.
- D. If required for routing and as directed by the Engineer, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trades or for proper execution of the work.
- E. Contractor shall provide full pipe and equipment layout shop drawings.

1.6 VISITING THE SITE

- A. A pre-bid meeting will be arranged at the site.

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1.7 EQUIPMENT AND MATERIALS

- A. The proposal and bid must cover all items on the Drawings and in the Specifications as drawn and specified.
- B. Substitution of material and equipment of makes other than specifically named on the Drawings and in the Specifications according to the provisions of the general clause sections 28 and 29.
- C. To receive consideration, requests for substitutions must be accompanied by documentary proof of equality and difference in price and delivery, if any, in the form of certified quotations from suppliers of both specified and proposed equipment. In case of a difference in price, the Owner shall receive in the form of a credit on all benefit of the difference in cost involved in any substitution.
- D. The words "or approved equal" shall be understood to apply only to those items of equipment and material listed under the paragraph "List of Approved Manufacturers" or as otherwise indicated on the Drawings or in the Specifications.
- E. Within twenty (20) working days after the acceptance of the proposal, and prior to the submission of any shop drawings for approval, a complete list of manufacturers shall be submitted to the Engineer for approval of all equipment and materials proposed for the work. No approvals will be rendered on shop drawings submitted before the complete list of manufacturers is approved.
- F. If material or equipment is installed before it is approved, and/or in the opinion of the Engineer the material or equipment does not meet the intent of the Drawings and Specifications, the removal and replacement shall be made at no extra cost to the Owner.
- G. The materials, workmanship, design, and arrangement of all work installed under the Contract shall be subject to the approval of the Engineer.
- H. If material or equipment is installed before it is approved, each trade installing same shall be liable for the removal and replacement at no extra charge to the Owner if, in the opinion of the Engineer, the material or equipment does not meet the intent of the Drawings and Specifications.
- I. The words "or approved equal" are understood to follow:
- J. The name of any manufacturer, vendor, equipment or materials;
- K. Any trade name, plate number, or catalog number;
- L. Any detailed description used to define equipment or material; except where otherwise indicated on the Drawings or in the Specifications.
- M. It is the intent of these Specifications that wherever a manufacturer of a product is specified, and the terms "other approved" or "or approved equal" are used, the substituted item must conform in all respects to the specified item. Consideration will not be given to claim that the substituted item meets the performance requirements with lesser construction (such as lesser heat exchange surface, etc.) Performance as delineated in schedules and in the Specifications

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shall be interpreted as minimum performance.

- N. All equipment and materials required for installation under these Specifications shall be new and without blemish or defect. All electrical equipment shall bear labels attesting to Underwriter's Laboratories approval. Where no specific indication as to the type or quality of the material or equipment is indicated, a first class standard article shall be furnished.
- O. Where it is proposed to use an item of equipment other than specified or detailed on the Drawings which requires any redesign of the structure, partitions, foundations, piping, or of any other part of the mechanical layout, all such redesign, and all new drawings and detailing required therefore shall, with the approval of the Engineer, be prepared at no additional cost to the Owner.
- P. Where such approved deviation requires a different quantity and arrangement of, piping, wiring, conduit, and equipment from that specified or indicated on the Drawings, with the approval of the Engineer, furnish and install any such , piping, structural supports, insulation, and any other additional equipment required by the system, at no additional cost to the Owner.
- Q. All equipment of one type (such as Chillers, Blower Coil Units, Air handling Units, etc.) shall be the product of the same manufacturer.
- R. Note that the approval of shop drawings or other information submitted in accordance with the requirements herein specified does not assure that the Engineer or any other Owner's representative attests to the dimensional accuracy or dimensional suitability of the material or equipment involved or the mechanical performance of equipment. Approval of shop drawings does not invalidate the Plans and Specifications if the shop drawings are in conflict with the Plans and Specifications.

1.8 SHOP DRAWINGS

- A. Prior to delivery to job site, but sufficiently in advance of requirements necessary to allow Engineer ample time for review, submit for approval (5) copies of shop drawings of all equipment, materials, piping, and sleeves, etc., and further obtain written approval for same from the Engineer, before installing any of these items.
- C. Shop drawings shall consist of manufacturer's certified scale drawings, cuts, or catalogs, including descriptive literature and complete certified characteristics of equipment, showing dimensions, capacity, code requirements, motor and drive testing, as indicated on the Drawings or Specifications.
- D. Approval rendered on shop drawings shall not be considered as a guarantee of measurements or building conditions. Where drawings are approved, said approval does not in any way relieve responsibility, or necessity, of furnishing material or performing work as required by the Contract Drawings and Specifications.
- E. Failure to submit shop drawings in ample time for checking shall not entitle an extension of Contract time, and no claim for extension by reason of such default will be allowed.
- F. Prior to submission of shop drawings, thoroughly check each shop drawing, reject those not

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conforming to the Specifications, and indicate (by signature) that the shop drawings submitted meet Contract Requirements.

- I. Incorporate a numbering system to help keep track of shop drawing submittals as follows:
 - M.....Mechanical shop drawings
- J. Label resubmitted shop drawings with a stamp indicating the submittal number, for example: SECOND SUBMISSION; THIRD SUBMISSION, etc. and send separate transmittals for each item being submitted so that one transmittal does not cover more than one specific item or group of items from one manufacturer.
- K. Detailed to General Clause section 44 for shop drawings for additional requirements.

1.9 RECORD DRAWINGS

- A. During construction keep an accurate record of all deviations between the work as shown on the Drawings and that which is actually installed.
- B. Secure from the Engineer, a complete set of Mylar transparencies of the Drawings and note thereon all changes. Make a complete record of all changes and revisions in the original design which exist in the complete work. The cost for the Mylar transparencies shall be paid for by each trade.
- C. **Contractor shall submit as-built drawings in autoCad format on CD, minimum 2007 or later format.**
- D. Refer to General Clause Section 53 for additional requirements.

1.10 LAWS, ORDINANCES, PERMITS AND FEES

- A. Give all necessary notices, obtain all permits and pay all governmental taxes, fees, and other costs in connection with the work; file all necessary plans, prepare all documents, and obtain all necessary approvals of all governmental departments having jurisdiction; obtain all required certificates of Inspection for the work and deliver to the Engineer before request for acceptance and final payment for the work.
- B. Include in the work, without extra cost to the Owner, any labor, materials, services, apparatus, drawings, (in addition to Contract Drawings and Documents) in order to comply with all applicable laws, ordinances, rules and regulations, whether or not shown on Drawings and/or specified.
- C. All materials furnished and all work installed shall comply with the rules and recommendations of the National Fire Protection Association, with all requirements of local utility companies, with the recommendations of the fire insurance rating organization having jurisdiction, and with the requirements of all governmental departments having jurisdiction, including New York State Building Code and New York State Health Code.

1.11 ORGANIZATION OF WORK

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- A. The work throughout shall be executed in the best and most thorough manner under the direction of and to the satisfaction of the Engineers, Owners and Project Coordinators, who will jointly interpret the meaning of the Drawings and Specifications, and shall have the power to reject any work and materials which, in the judgment, are not in full accordance therewith.
- B. The work called for under this Contract shall be carried on simultaneously with the work of other trades in a manner such as not to delay the overall progress of the work. Furnish promptly to other trades involved at the project, all information and measurements relating to the work which they may require. Cooperate with them in order to secure the harmony necessary in the interest of the project as a whole.
- C. Furnish and install all work as fast as possible to meet all construction schedules.
- D. Keep a competent superintendent in charge of the work at all times. Such superintendent shall be replaced if unsatisfactory to the Owner.
- E. Upon award of contract, consult with the Engineer and negotiate with subcontractors and manufacturers, and within twenty (20) days submit five (5) copies of a preliminary list of major equipment, for approval, complete with name of manufacturer, dates of purchase orders, and delivery dates to the site. Also submit within twenty (20) days, five (5) copies of a preliminary schedule of installation of the various systems. This list shall be revised monthly and five (5) copies shall be submitted. The second submittal shall contain the names of manufacturers of scheduled equipment (with names, addresses, and telephone numbers of local representatives).
- F. Maintain a complete file of shop drawings at all times available to the Owner's representative.
- G. Where the work is to be installed in close proximity to work of other trades, or where there is evidence that the work is to interfere with work of other trades, assist in working out space conditions to make a satisfactory adjustment.
- I. Prepare composite working drawings and sections at a suitable scale not less than 3/8" = 1'-0" clearly showing how the work is to be installed in relation to the work of other trades. If the installation is made before coordinating with other trades, make all necessary changes in the work without extra charge to the Owner.
- J. Provide a "Logical Sequence Method" construction schedule for review prior to the start of any work. Update the construction schedule as required during the project.

1.12 PROTECTION OF WORK AND PROPERTY

- A. Maintain and protect all equipment, materials and tools from loss or damage from all causes until final acceptance by the Owner.
- B. Assume responsibility for the protection of any finished work or other trades from damage or defacement by the operations and remedy any such injury or damages.

1.13 SHUTDOWNS

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- A. When installation of a new system requires the temporary shutdown of an existing operating system, the connection of the new system shall be performed at such regular time or at nighttime/weekends when designated by the Owner. No additional payment will be made for shut downs at night time or weekends.
- B. The Owner shall be notified of the estimated duration of the shutdown period at least ten (10) days in advance of the date the work is to be performed.
- C. Work shall be arranged for continuous performance, including overtime, when approved by the Owner, if required, to assure that existing operating services will be shut down only during the time actually required to make necessary connections.

1.14 PIPE EXPANSION

- A. All pipe connections shall be installed to allow for freedom of movement of the pipe during the expansion and contraction without proper anchors and guides shall be provided where necessary and/or when shown on the Drawings. Anchors and guides shall be subject to the approval of the Engineer.

1.15 SCAFFOLDING, RIGGING, HOISTING

- A. Provide all scaffolding, rigging, hoisting, motorized lifts and services necessary for erection and delivery into the premises of all equipment and materials furnished under this Section of the Specifications or materials furnished by others, and remove same from premises when no longer required.
- B. In the event that supplementary bracing of the basic building structure is required to assure a secure rigging procedure and a secure route for the equipment being handled, assume full responsibility for such supplementary bracing.
- C. All equipment and steel rigging using cranes or hoists, if required, shall be performed by a rigger and hoister licensed and certified by New York State.
- D. Contractor is responsible for evaluating building dimensions elevations and clearances to establish rigging plan requirements.

1.16 BASES AND SUPPORTS

- A. Provide all bases and supports not part of the building structure of required size, type and strength, as approved by the Engineer, for all equipment and materials furnished by others. All equipment, bases, and supports shall be adequately anchored to the building structure to prevent shifting of position under operation conditions.

1.17 SLEEVES, PIPE AND CONDUIT INSERTS AND ANCHOR BOLTS

- A. Provide and assume responsibility for the location and maintenance in proper position of all sleeves, inserts, and anchor bolts required for the work. In the event that failure to do so requires cutting and patching of finished work, it shall be done without additional cost to the Owner.
- B. All pipes and conduits passing through masonry walls or partitions shall be provided with

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sleeves having an internal diameter larger than the outside diameter of the pipe or insulation enclosing the pipe or conduit. Sleeves shall be Schedule 40 black steel pipe.

- C. Sleeves through foundation walls shall be James B. Clow and Sons No. F-1430 or F-1435 cast iron wall sleeve with intermediate integral flange. Sleeves shall be set with ends flush with each face of wall. The space between sleeve and pipe shall be packed with oakum to within 2" of each face of the wall. The remaining space shall be packed and made watertight with a waterproof compound.
- D. Sleeves through concrete floors or interior masonry walls shall be Schedule 40 black steel pipe, set flush with finished wall surfaces, but extended 1/2" above finished floors. The open sleeve space shall be packed with non-combustible materials.
- E. Sleeves through non-masonry partitions shall be 22 gauge galvanized sheet steel, set flush with finished surfaces of partitions.
- F. Inserts shall be individual type of malleable iron construction with accommodation for removable nuts and threaded rods up to 3/4" diameter, permitting lateral adjustment, except as otherwise noted. Individual inserts shall be Grinnell Fig. 279 up to 5" pipe and conduit, Fig. 282.6" up to 8" pipe and conduit, Fig. 152 above 8" and up to 12" pipe and conduit. For figures 282 and 152, they shall come with an opening at the tip to allow reinforcing rods up to 1/2" diameter to be passed through the insert body. Rods shall extend a minimum of 4" on either side of the insert.
- G. In general, all piping and conduit shall be supported from structural steel building members only or approved malleable steel inserts imbedded in concrete pours.
- H. Where revisions are required and are approved, piping and conduit 3" and smaller may be supported at Intermediate Points by Phillips' 3/4" expansion bolts with lead shields, provided main supports are welded to structural steel and are not more than twenty feet on centers. Intermediate supports, for pipe 4" and larger shall be attached to concrete by means of 4" x 4" x 3/8" clip knee angles with 3/4" expansion bolt in shear and supporting rod at 90 degree from another bolt.
- I. Piping 3" and smaller shall be supported from existing structure by "Phillips" 3/4 expansion bolts with lead shields. Piping 4" and larger shall be supported by means of 4" x 4" x 3/8" clip knee angle with 3/4" expansion bolts in shear and supporting rod at 90 degree from another bolt.
- J. Where sleeves pass through waterproofed floors, they shall be IPS brass pipe sleeves of the required diameter, brazed at the bottom to 18" x 18", 16-ounce copper flashing for bond with waterproofing. The tops of the sleeves shall extend 1/2" above.
- K. No piping or equipment shall be supported from corrugated decking construction. For this area provide supplementary steel to support ductwork, piping, conduit or equipment. Supplemental steel members shall be welded to building structural steel.
- L. All hangers, rods and supports shall be installed prior to construction fireproofing.
- M. The required fire resistance rating of floor or floor/ceiling assemblies and walls shall be maintained where a penetration is made for electrical, mechanical, plumbing pipes, conduits, ducts and systems. Fire stopping shall be provided at openings around vents, pipes, ducts, conduits at floor levels and walls with non-combustible materials, such as rockwool or equal.

1.18 ESCUTCHEONS

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- A. Provide escutcheons on pipes wherever they pass through ceilings, walls, or partitions.
- B. Escutcheons on pipes passing through outside walls shall be Ritter Pattern and Casting Co., No. 1, solid, cast brass, flat type secured to pipe with set screw.
- C. Escutcheons for pipes passing through floors shall be Ritter Pattern and Casting Co., No. 36A, split-hinged, cast brass type, designed to fit pipe on one end and cover sleeve projecting through floor on the other end.
- D. Escutcheons for pipes passing through interior walls, partitions, and ceilings shall be Ritter Pattern and Casting Co., No. 3A, split-hinged, cast brass chromium plated type.

1.19 MANUFACTURERS' IDENTIFICATION

- A. Manufacturer's nameplate, name or trademark, shall be permanently affixed to all equipment and material furnished. Where such equipment is in a finished occupied space, the nameplate shall be in a concealed but accessible location. The nameplate of a Subcontractor or Distributor will not be acceptable.

1.20 EQUIPMENT NAMEPLATES

- A. Provide a permanently attached nameplate made of black surface, white core laminated bakelite with incised letters. Subcontractor furnishing equipment shall provide nameplate. Pneumatic, electric and mechanically actuated gauges shall have a brief, but complete description of their function. Stating the air pressure or voltage range alone is not acceptable. Nameplates shall be a minimum of 3" long by 1/2" high white letters as designated in the equipment schedule. Mounting screws shall have chrome plated acorn headed screws.

- a. Provide Nameplates for:
 - i. Boilers
 - ii. Primary Hot Water Pumps
 - iii. Secondary Hot Water Pumps
 - iv. Secondary Hot Water Pump for Domestic HX (Existing)
 - v. Air Separator
 - vi. Expansion Tank
 - vii. Combustion Air Intake Fan
- b. Provide Nameplates for
 - i. Burner Control Panels
 - ii. Boiler Control Panel
 - iii. Pump Control VFD
 - iv. Combustion Air Intake Fan Control Panel

1.21 TAGS AND CHARTS

- A. Furnish and attach to each valve as hereinafter specified, a 1-1/2" diameter brass tag with 1/2" indented numerals filled with durable black compound. Tags shall be securely attached to stems of valves with copper wire and "S" hooks.

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- B. Valve charts shall consist of schematic drawings of piping layouts, showing and identifying each valve and describing the function. Upon completion of the work, one (1) copy of each chart, sealed to rigid backboard with clear lacquer placed under glass and framed, shall be hung in a conspicuous location in the main equipment room, unless otherwise directed by the Engineer. Two (2) additional unmounted copies in 8-1/2" x 11" leather ring binders shall be delivered to the Engineer. Also furnish three (3) copies of schematic flow chart with corresponding valve numbers noted on chart.
- C. Provide tags for the following valves:
 - 1. Zone control, bypass, shut-off, check and balancing valves.
 - 2. Building and area shut-off and balancing valves.
 - 3. Control, by-pass, shut-off, balancing and drain valves.
 - 4. System drain valves, safety and relief valves. Vacuum breakers.

1.22 IDENTIFICATION

- A. Identification shall be in accordance with "Scheme for Identification of Piping System ANSI A13.1" and OSHA safety color regulation.
- E. All piping shall receive nameplate tags by Marking Services Inc., Phone: (800) 234-0135. Tags shall be rigid type, bolt on or stainless steel straps Style MS-995 Maxiliar Markers.
- F. Provide identification of piping for all mechanical work.
- C. Pipe shall be lettered and valves tagged in accordance with the schedule below. Lettering shall be located near each valve and branch connection and at intervals of not over 40 feet (10 feet on fire lines) on straight runs of pipe. Provide flow arrows for all piping at each marker. Adjacent to the legend, stencil the size of the pipe, conduit or ductwork.

STENCIL AND VALVE TAG SCHEDULE

<u>Tag</u> <u>Service</u>	<u>Stencil</u>	<u>Color</u>	<u>Designation</u>
Heating Hot Water	Primary Hot Water Supply	Yellow	PHWS
Heating Hot Water	Primary Hot Water Return	Yellow	PHWR
Heating Hot Water	Secondary Hot Water Supply	Yellow	SHWS
Heating Hot Water	Secondary Hot Water Return	Yellow	SHWR
Heating Hot Water	Domestic Cold Water Supply	Green	CWS
Heating Hot Water	Expansion Line	Yellow	EXP

1.23 TOOLS

- A. All specified tools for proper operation and maintenance of the equipment shall be delivered to the Owner's representative and a receipt requested for same at no additional cost to the Owner.

1.24 QUIET OPERATION

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- A. All equipment and material shall operate under all conditions of load without any sound or vibration which, in the opinion of the Engineer, is objectionable. Where sound or vibration conditions arise which are considered objectionable by the Engineer, eliminate same in a manner approved by the Engineer.

1.24 RUBBISH REMOVAL

- A. See to it that the Project is, at all times, maintained free of all rubbish, rubble, waste material, packaging materials, etc. accumulating as a result of this work. Assume responsibility for the cleaning up of packaging removed from materials and equipment furnished by other trades for the installation. Note that final acceptance of the work is contingent upon the project being free of all excess and waste materials resulting from the work.

1.25 CLEANING, PIPING AND EQUIPMENT

- A. Clean all piping, and equipment of all foreign substances inside and out before being placed in operation.
- B. If any part of a system should be stopped by foreign matter after being placed in operation, the system shall be disconnected, cleaned, and reconnected wherever necessary to locate and remove obstructions. Any work damaged in the course of removing obstructions shall be repaired when the system is reconnected at no additional cost to the Owner.
- C. During construction, properly cap all pipes and equipment nozzles so as to prevent the entrance of sand, dirt, etc.

1.26 DELIVERY OF MATERIAL

- A. Deliver the material and store same in spaces indicated by the Engineer and assume full responsibility for damage to structure caused by any overloading of the material. Contractor shall be aware that the building does not have a loading dock and limited space will be available for storage of materials. Coordinate delivery with building access and site activities. Deliveries shall be coordinated with building representative.

1.27 ALTERATIONS

- A. When new work and alterations render equipment and piping useless, such equipment and piping when exposed to view, shall be removed and connections thereof to lines or ducts remaining shall be properly capped or plugged and left in construction. If construction, such as hung ceiling, furred beams, chase, etc., is opened up and removed during the course of the construction, the useless pipe therein shall be treated as though exposed to view. When required to accommodate new work, useless piping concealed in construction shall be treated as though exposed to view.
- B. When existing piping systems, at points of connection to new work or in rerouting are found defective, such defective portions shall be removed and replaced with new materials without cost to the Owner.
- C. Provide temporary supports where required.

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- D. Where alterations reveal piping, conduit circuits, wiring, and accessories that must necessarily remain in service, same shall be rerouted, replaced or altered as required to make same completely concealed in the new work at no additional cost to the Owner.
- E. Cutting in existing building and rough patching shall be done by the Contractor. Finish patching, ceiling construction removal, new ceiling in existing building shall be done by the Contractor.

1.28 EXCAVATION AND BACKFILL

- A. All excavation and backfill and trenching, if required under this contract, shall be done by Contractor.

1.29 PAINTING

- A. Paint all unpainted, non-insulated, non-galvanized, ferrous metal surfaces of pipes, conduits, ducts, equipment, fixtures, hangers, supports and accessories as follows:
- B. Exposed - one prime coat of oil varnish based paint. One top coat of oil based industrial varnish.
- C. Concealed - one coat of black asphaltum paint.
- D. Underground - two coats of black asphaltum paint.
- E. Nameplates on all equipment shall be cleaned and left free of paint.

1.30 TESTS

- A. All piping, wiring, and equipment shall be tested as specified under the various section of the work. Labor materials, instruments and power required for testing shall be furnished under the particular Section of the Specification.
- B. Tests shall be performed satisfaction of the Engineer. The Engineer will be present at such test, when he deems necessary and such other parties as may have legal jurisdiction.
- C. Pressure tests shall be applied to piping only before connection of equipment and installation of insulation. In no case shall piping, equipment, or accessories be subjected to pressure exceeding their rating.
- D. All defective work shall be promptly repaired or replaced and the tests shall be repeated until the particular system and component parts thereof receive the approval of the Engineer.
- E. Any damages resulting from tests shall be repaired or replaced and the tests shall be repeated until the particular system and component parts thereof receive the approval of the Engineer.
- F. The duration of tests shall be as determined by all authorities having jurisdiction, but in no case less than the time prescribed in each Section of the Specification.
- G. Tests shall be performed on individual equipment, systems, and their controls. Whenever the equipment or system under test is interrelated with and depends upon the operation of other

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equipment, systems and controls for proper operation, functioning, and performance, the latter shall be operated simultaneously with the equipment or system being tested.

- H. Perform Testing and Balancing procedures on each system according to the procedures contained in SMACNA's "HVAC Systems—Testing, Adjusting, and balancing" and this section.
- I. If applicable, Adjust terminal inlets for each space to design airflows within specified tolerances of design values. Make adjustments using the dampers at the air terminals.
- J. If applicable, Set HVAC system airflow rates within the flowing tolerances:
 - 1) Exhaust: Plus 5 to plus 10 percent.
 - 2) Air inlets: 0 to minus 10 percent.
- K. If applicable, Final Report: Provide a typewritten report for tested and balanced system including the following test data:
 - 1) Total airflow rate in CFM.
 - 2) Total system static pressure in inches WG.
 - 3) Fan RPM.
 - 4) Discharge static pressure in inches WG.
 - 5) Suction static pressure in inches WG.
 - 6) Chilled water, hot water flow pressure temperatures in deg F.

1.31 OPERATING INSTRUCTIONS

- A. Prior to final inspection of the installation by the Owner, five (5) copies of a complete Instruction Manual, bound in booklet form and suitably indexed, shall be submitted to the Engineer for approval.
- B. The Manual shall contain the following items:

Table of Contents

- I. Introduction - Explanation of Manual and its use.
- II. Description of Systems
 - 1. Complete schematic drawings of all systems.
 - 2. Functional and sequential description of all systems.
 - 3. Relationship of system where applicable to the supervisory data system.
- III. Systems Operation
 - 1. Start-up procedures.
 - 2. Shut-down procedures.
 - 3. Reset and adjustment and balancing procedures.
 - 4. Seasonal operation.
 - 5. All posted instruction charts.
- IV. Maintenance
 - 1. Cleaning and replacement - lines, components, filters, strainers, ducts, fans, etc.
 - 2. Lubrication.
 - 3. Charging and filling.
 - 4. Purging and draining.

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5. Systems trouble shooting charts.
6. Instruments checking and calibration.
7. Recommended list of spare parts.

V. Listing of Manufacturers

VI. Manufacturer's Data (Where multiple model, type and size listings are included, clearly and conspicuously indicate those that are pertinent to this installation.

1. Description - Literature, drawings, illustration, certified performance charts, technical data, etc.
2. Operation.
3. Maintenance - including complete trouble shooting charts.
4. Parts List
5. Names, addresses and telephone numbers of local recommended repair and service companies.
6. Guarantee data.
7. Model No. and Serial No. of all equipment.

1.32 GUARANTEE

- A. The Contractor guarantees by his acceptance of the Contract that all work installed will be free from any and all defects and that all apparatus will develop capacities and characteristics specified, and that if during a period of one year from date of completion and acceptance of work any such defects in workmanship, material or performance appear, he shall immediately replace, repair, or otherwise correct the defect or deficiency without cost to the Owner within a reasonable time. Notify the Engineer in writing of the time required to do work
- B. Replace or repair to the satisfaction of the Owner any and all damage done to the building or its contents or to the work of other trades in consequence of work performed in fulfilling guarantee.
- C. This Article is general in nature and will not waive stipulations of other claims which specify guarantee periods in excess of one (1) year.
- D. In the event default on this Guarantee, the Owner may have such work done as required & charge the cost to the Contractor.
- E. The date of acceptance shall be the date of final payment by the Owner or notice of acceptance by the Owner, whichever is later.

1.33 OPERATION PRIOR TO COMPLETION

- A. The Owner may require operation of parts or all of the installation for the beneficial occupancy prior to final completion and acceptance of the building.
- B. The operation shall not be construed to mean acceptance of the work by the Engineer for the Owner. The Owner will furnish supervisory personnel to direct operation of the entire system and the Contractor shall continue to assume this responsibility until final acceptance.

1.34 ABATEMENT

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- A. Contractor shall notify Engineer immediately if asbestos is encountered. Abatement shall be performed by others.

1.35 PHASING

- A. Contractor shall only be permitted to work in areas as authorized. Contractor shall coordinate with other trades on site.

END OF SECTION 230510

SECTION 230513 - COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes general requirements for single-phase and polyphase, general-purpose, horizontal, small and medium, squirrel-cage induction motors for use on ac power systems up to 600 V and installed at equipment manufacturer's factory or shipped separately by equipment manufacturer for field installation.

1.3 COORDINATION

- A. Coordinate features of motors, installed units, and accessory devices to be compatible with the following:
 - 1. Motor controllers.
 - 2. Torque, speed, and horsepower requirements of the load.
 - 3. Ratings and characteristics of supply circuit and required control sequence.
 - 4. Ambient and environmental conditions of installation location.

PART 2 - PRODUCTS

2.1 GENERAL MOTOR REQUIREMENTS

- A. Comply with NEMA MG 1 unless otherwise indicated.
- B. Comply with IEEE 841 for severe-duty motors.

2.2 MOTOR CHARACTERISTICS

- A. Duty: Continuous duty at ambient temperature of 40 deg C and at altitude of 3300 feet above sea level.
- B. Capacity and Torque Characteristics: Sufficient to start, accelerate, and operate connected loads at designated speeds, at installed altitude and environment, with indicated operating sequence, and without exceeding nameplate ratings or considering service factor.

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2.3 POLYPHASE MOTORS

- A. Description: NEMA MG 1, Design B, medium induction motor.
- B. Efficiency: Energy efficient, as defined in NEMA MG 1.
- C. Service Factor: 1.15.
- D. Multispeed Motors: Variable torque.
 - 1. For motors with 2:1 speed ratio, consequent pole, single winding.
 - 2. For motors with other than 2:1 speed ratio, separate winding for each speed.
- E. Multispeed Motors: Separate winding for each speed.
- F. Rotor: Random-wound, squirrel cage.
- G. Bearings: Regreasable, shielded, antifriction ball bearings suitable for radial and thrust loading.
- H. Temperature Rise: Match insulation rating.
- I. Insulation: Class F
- J. Code Letter Designation:
 - 1. Motors Smaller than 15 HP: Manufacturer's standard starting characteristic.
- K. Enclosure Material: rolled steel for motor frame sizes smaller than 324T.

2.4 POLYPHASE MOTORS WITH ADDITIONAL REQUIREMENTS

- A. Motors Used with Reduced-Voltage and Multispeed Controllers: Match wiring connection requirements for controller with required motor leads. Provide terminals in motor terminal box, suited to control method.
- B. Motors Used with Variable Frequency Controllers: Ratings, characteristics, and features coordinated with and approved by controller manufacturer.
 - 1. Windings: Copper magnet wire with moisture-resistant insulation varnish, designed and tested to resist transient spikes, high frequencies, and short time rise pulses produced by pulse-width modulated inverters.
 - 2. Energy- and Premium-Efficient Motors: Class B temperature rise; Class F insulation.
 - 3. Inverter-Duty Motors: Class F temperature rise; Class H insulation.
 - 4. Thermal Protection: Comply with NEMA MG 1 requirements for thermally protected motors.
- C. Severe-Duty Motors: Comply with IEEE 841, with 1.15 minimum service factor.

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2.5 SINGLE-PHASE MOTORS

- A. Motors larger than 1/20 hp shall be one of the following, to suit starting torque and requirements of specific motor application:
 - 1. Permanent-split capacitor.
 - 2. Split phase.
 - 3. Capacitor start, inductor run.
 - 4. Capacitor start, capacitor run.
- B. Multispeed Motors: Variable-torque, permanent-split-capacitor type.
- C. Bearings: Prelubricated, antifriction ball bearings or sleeve bearings suitable for radial and thrust loading.
- D. Motors 1/20 HP and Smaller: Shaded-pole type.
- E. Thermal Protection: Internal protection to automatically open power supply circuit to motor when winding temperature exceeds a safe value calibrated to temperature rating of motor insulation. Thermal-protection device shall automatically reset when motor temperature returns to normal range.

2.6 VARIABLE FREQUENCY DRIVES

- A. Refer to Specification Section 230922 "Instrumentation and Controls for HVAC" for variable frequency drive details.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 230513

SECTION 230519 - METERS AND GAGES FOR HVAC PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Liquid-in-glass thermometers.
 - 2. Thermowells.
 - 3. Dial-type pressure gages.
 - 4. Differential Type pressure gages.
 - 5. Gage attachments.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Wiring Diagrams: For power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of meter and gage, from manufacturer.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For meters and gages to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 LIQUID-IN-GLASS THERMOMETERS

- A. Metal-Case, Industrial-Style, Liquid-in-Glass Thermometers:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

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2. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - a. Terice, H. O. Co. (**Model# BX9-3-403-07**)
 - b. Winters Instruments - U.S.
 - c. Approved equal
3. Standard: ASME B40.200.
4. Case: Cast Aluminum with blue epoxy finish and 9 inch nominal size.
5. Case Form: Adjustable angle.
6. Tube: Glass with magnifying lens red organic liquid.
7. Tube Background: Non-reflective aluminum with permanently etched scale markings graduated in 10 deg F with 2 deg F minor divisions
8. Range: 30-240 deg F
9. Window: UVW - UV protective Plastic
10. Stem: Stainless Steel and of length to suit installation.
 - a. Design for Thermowell Installation: Bare stem.
11. Connector: 1-1/4 inches, with ASME B1.1 screw threads.
12. Accuracy: Plus or minus 1 percent of scale range or one scale division, to a maximum of 1.0 percent of scale range.

2.2 THERMOWELLS

A. Thermowells: (**Terice, H.O. Co. Model# 3-3-F-5**)

1. Standard: ASME B40.200.
2. Type: Industrial
3. External Thread: 1/2" NPT
4. Stem Length: 3-1/2"
5. Lagging Extension: 1"
6. Material: 304SS

2.3 PRESSURE GAGES

A. Direct-Mounted, Metal-Case, Dial-Type Pressure Gages:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
2. Basis-of-Design Product: Subject to compliance with requirements, provide or comparable product by one of the following:
 - a. Terice, H. O. Co. (**Model# 700LFSS-60-04-L-A-120**)
 - b. Winters Instruments - U.S.
 - c. Approved Equal
3. Standard: ASME B40.100.

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4. Case: Liquid-filled, Stainless Steel; 6-inch nominal diameter.
5. Pressure-Element Assembly: Bourdon tube unless otherwise indicated.
6. Pointer: Micro adjustable with black finish.
7. Window: Plastic
8. Ring: 304 Stainless steel
9. Accuracy: Grade A, plus or minus 1 percent Full Scale.
10. Dial Face: Aluminum, white background with black graduations and markings.
11. Range: 0-160 psi
12. Optional: Pressure relief plug

B. Direct-Mounted, Metal-Case, Differential Pressure Gages:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
2. Basis-of-Design Product: Subject to compliance with requirements, provide or comparable product by one of the following:
 - a. Ashcroft (**Model# 5509**)
 - b. Approved Equal
3. Standard: ASME B40.100.
4. Case: Silicone-filled, 316 Stainless Steel; 6-inch nominal diameter.
5. Pressure-Element Assembly: Diaphragm
6. Pointer: Black painted aluminum with external adjustment feature.
7. Window: Polycarbonate window
8. Ring: 316 Stainless steel
9. Accuracy: Grade A, plus or minus 1 percent Full Scale.
10. Dial Face: Aluminum, white background with black graduations and markings.
11. Range: 0-160 psi
12. Optional: pipe mounting bracket
13. Connection size: 1/2" NPT

2.4 GAGE ATTACHMENTS

- A. Snubbers: Trerise H.O. Co. **Model# 872-11**, ASME B40.100, SS; with NPS 1/2, ASME B1.20.1 pipe threads and piston or porous-metal-type surge-dampening device. Include extension for use on insulated piping.
- B. Valves: Trerise H.O. Co. **Model# 740-11** 316SS needle valve, NPS 1/2, ASME B1.20.1 pipe threads.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install thermowells with socket extending to center of pipe and in vertical position in piping tees.

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- B. Install thermowells of sizes required to match thermometer connectors. Include bushings if required to match sizes.
- C. Install thermowells with extension on insulated piping.
- D. Fill thermowells with heat-transfer medium.
- E. Install direct-mounted thermometers in thermowells and adjust vertical and tilted positions.
- F. Install direct-mounted pressure gages in piping tees with pressure gage located on pipe at the most readable position. Provide mounting brackets and supports, if needed, for gauge assemblies.
- G. Install valve and snubber in piping for each pressure gage for fluids.
- H. Install thermometers in the following locations:
 - 1. Inlet and outlet of each hydronic zone in work area.
 - 2. Inlet and outlet of each hydronic boiler.
 - 3. And as shown on contract drawings.
- I. Install pressure gages in the following locations:
 - 1. Discharge of each pressure-reducing valve.
 - 2. Suction and discharge of each pump.
 - 3. And as shown on contract drawings.

3.2 CONNECTIONS

- A. Install meters and gages adjacent to machines and equipment to allow service and maintenance of meters, gages, machines, and equipment.

3.3 ADJUSTING

- A. After installation, calibrate meters according to manufacturer's written instructions.
- B. Adjust faces of meters and gages to proper angle for best visibility.

3.4 THERMOMETER SCHEDULE

- A. Thermometers shall be the following:
 - 1. Compact, Industrial-style, liquid-in-glass type.
 - 2. Test plug with EPDM self-sealing rubber inserts.
- B. Thermometer stems shall be of length to match thermowell insertion length.
- C. Refer to drawings HV-2 and HV-3 for locations.

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3.5 THERMOMETER SCALE-RANGE SCHEDULE

- A. Scale Range for Heating, Hot-Water Piping: 0 to 240 deg F.

3.6 PRESSURE-GAGE SCHEDULE

- A. Pressure gages shall be the following:
 - 1. Liquid-filled, Sealed, direct-mounted, metal case.
 - 2. Test plug with EPDM self-sealing rubber inserts.
- B. Refer to drawings for locations.

3.7 PRESSURE-GAGE SCALE-RANGE SCHEDULE

- A. Scale Range for Heating, Hot-Water Piping: 0 to 160 psi

END OF SECTION 230519

SECTION 230523 - GENERAL-DUTY VALVES FOR HVAC PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Triple Duty valves
 - 2. Bronze Swing check valves
 - 3. Iron swing check valves
 - 4. Bronze gate valves
 - 5. Iron gate valves
 - 6. Bronze globe valves
 - 7. Iron globe valves
 - 8. Butterfly Valves

1.3 DEFINITIONS

- A. CWP: Cold working pressure.
- B. EPDM: Ethylene propylene copolymer rubber.
- C. NRS: Nonrising stem.
- D. OS&Y: Outside screw and yoke.
- E. RS: Rising stem.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of valve indicated.

1.5 QUALITY ASSURANCE

- A. Source Limitations for Valves: Obtain each type of valve from single source from single manufacturer.
- B. ASME Compliance:

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1. ASME B16.10 and ASME B16.34 for ferrous valve dimensions and design criteria.
2. ASME B31.1 for power piping valves.
3. ASME B31.9 for building services piping valves.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Prepare valves for shipping as follows:

1. Protect internal parts against rust and corrosion.
2. Protect threads, flange faces, grooves, and weld ends.
3. Set gate and globe valves closed to prevent rattling.
4. Set ball and plug valves open to minimize exposure of functional surfaces.
5. Block check valves in either closed or open position.

B. Use the following precautions during storage:

1. Maintain valve end protection.
2. Store valves indoors and maintain at higher than ambient dew point temperature. If outdoor storage is necessary, store valves off the ground in watertight enclosures.

C. Use sling to handle large valves; rig sling to avoid damage to exposed parts. Do not use handwheels or stems as lifting or rigging points.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR VALVES

A. Valve Pressure and Temperature Ratings: Not less than indicated and as required for system pressures and temperatures.

B. Valve Sizes: Same as upstream piping unless otherwise indicated.

C. Valves in Insulated Piping: With 2-inch stem extensions and the following features:

1. Gate Valves: With rising stem.
2. Ball Valves: With extended operating handle of non-thermal-conductive material, and protective sleeve that allows operation of valve without breaking the vapor seal or disturbing insulation.
3. Butterfly valves- stem extension to clear insulation.

D. Valve-End Connections:

1. Flanged: With flanges according to ASME B16.1 for iron valves.
2. Solder Joint: With sockets according to ASME B16.18.
3. Threaded: With threads according to ASME B1.20.1.
4. Grooved or wafer lug style.

E. Valve Bypass and Drain Connections: MSS SP-45.

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2.2 TRIPLE DUTY VALVES

A. Class 150, Heavy Duty Cast Iron Triple Duty Valves:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Bell & Gossett. **(Model# 3DS)**
 - b. Approved Equal
2. Description:
 - a. Standard: MSS SP-80
 - b. CWP Rating: 175 psig
 - c. Body Material: Cast Iron with Bronze Seat
 - d. Disc: Brass with EPDM Seat Insert
 - e. Stem: Stainless Steel
 - f. Spring: Stainless Steel
 - g. Packing: Asbestos Free Teflon Graphite
 - h. Gasket: Asbestos Free
 - i. Readout Valve: Brass with EPT insert, Check Valve & Gasket
 - j. Ends: Flanged.

2.3 BRONZE SWING CHECK VALVES

A. Class 150, Bronze Swing Check Valves with Bronze Disc:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. NIBCO INC. **(Model# T-433)**
 - b. Approved Equal
2. Description:
 - a. Standard: MSS SP-80
 - b. CWP Rating: 300 psig
 - c. Body Design: Horizontal flow.
 - d. Body Material: Bronze ASTM B 62
 - e. Bonnet: Bronze ASTM B 62
 - f. Seat Disc: Bronze ASTM B 62
 - g. Ends: Threaded.

2.4 IRON SWING CHECK VALVES

A. Class 150, Ductile Iron Swing Check Valves with Metal Seats:

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1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. NIBCO INC. (**Model# F-938-31**)
 - b. Approved Equal
2. Description:
 - a. Standard: MSS SP-136
 - b. CWP Rating: 250 psig
 - c. Body: Ductile Iron ASTM A395
 - d. Bonnet: Ductile Iron ASTM A395
 - e. Body Gasket: Asbestos Free Synthetic Fibers
 - f. Disc: Bronze ASTM B584
 - g. Disc Nut: Bronze ASTM B371
 - h. Seat Ring: Bronze ASTM B584
 - i. Trim: Bronze.
 - j. Ends: Flanged.

2.5 BRONZE GATE VALVES

A. Class 150, RS Bronze Gate Valves:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. NIBCO INC. (**Model# T-134**)
 - b. Approved Equal
2. Description:
 - a. Standard: MSS SP-80
 - b. CWP Rating: 300 psig
 - c. Body Material: Bronze ASTM B62, with integral seat and screw-in bonnet.
 - d. Bonnet: Bronze ASTM B62
 - e. Stem: Bronze ASTM B371
 - f. Wedge: Bronze ASTM B62
 - g. Packing: Asbestos free Aramid Fibers with Graphite.
 - h. Packing Gland: Bronze ASTM B62
 - i. Packing Nut: Bronze ASTM B62
 - j. Handwheel: Malleable iron ASTM A47
 - k. Ends: Threaded

2.6 IRON GATE VALVES

A. Class 150, OS&Y, Ductile Iron Gate Valves:

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1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. NIBCO INC. (**Model# F-637-31**)
 - b. Approved Equal
2. Description:
 - a. Standard: MSS SP-128.
 - b. CWP Rating: 250 psig
 - c. Body Material: Ductile Iron ASTM A395
 - d. Body Gasket: Asbestos Free Synthetic Fibers
 - e. Handwheel: Iron ASTM A126 Class B
 - f. Bonnet: Ductile Iron ASTM A395
 - g. Bonnet Cap: Ductile Iron ASTM A536
 - h. Packing: PTFE Braided
 - i. Packing Gland: Brass
 - j. Stem: Bronze ASTM B371
 - k. Stem Collar: Bronze ASTM B371
 - l. Wedge: Ductile Iron ASTM A395
 - m. Ends: Flanged.

2.7 BRONZE GLOBE VALVES

A. Class 150, Bronze Globe Valves with Bronze Disc:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. NIBCO INC. (**Model# T-235-Y**)
 - b. Approved Equal
2. Description:
 - a. Standard: MSS SP-80
 - b. CWP Rating: 300 psig
 - c. Body Material: Bronze ASTM B62, with integral seat and screw-in bonnet.
 - d. Stem: Bronze ASTM B371
 - e. Disc: Bronze ASTM B62
 - f. Bonnet: Bronze ASTM B62
 - g. Packing Gland: Bronze ASTM B62 or ASTM B584
 - h. Packing Nut: Bronze ASTM B62 or ASTM B584
 - i. Packing: Aramid Fibers with Graphite, Asbestos Free
 - j. Handwheel: Malleable iron ASTM A47
 - k. Ends: Threaded

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2.8 IRON GLOBE VALVES

A. Class 150, Ductile Iron Globe Valves:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. NIBCO INC. (**Model# F-738-31**)
 - b. Approved Equal
2. Description:
 - a. Standard: MSS SP-85
 - b. CWP Rating: 250 psig
 - c. Body Material: Ductile Iron ASTM A395 with bolted bonnet.
 - d. Trim: Bronze.
 - e. Handwheel: Iron ASTM A126 Class B
 - f. Bonnet: Ductile Iron ASTM A395
 - g. Stem: Brass ASTM B371
 - h. Disc: Cast Bronze ASTM B584 Alloy C84400
 - i. Seat Ring: Cast Bronze ASTM B584 Alloy C84400
 - j. Packing and Gasket: Asbestos free.
 - k. Ends: Flanged.

2.9 BUTTERFLY VALVES

- A. Butterfly valves 2-1/2" and larger for heating hot water service shall be grooved end, flanged, lug wafer style. Valves shall be rated to 300 psi WOG and be both bi-directional and dead-end service capable to full rated pressure. All valves used on Heating Hot water service shall have a working temperature rating of 225 deg F. Body material shall be ductile iron with blow-out proof stainless steel stems and electroless nickel coated ductile iron disc. Seat material shall be EPDM (or lubricated nitrile or fluoroelastomer) and have a full 360° continuous contact with the seating surface. Stem seals shall be of the same material grade as the seats. Disc shall be offset from the centerline of the stems and shall be connected to the stem without the use of fasteners or pins. Valve ends shall be grooved, flanged ends, or wafer lug style. Valve shall have standard ISO flange mounting for ease of actuation. Operators shall be as specified or required for installation.
- B. The standard handle valve 2 - 8" shall include latch lock, infinitely variable and memory stop features. As manufactured by **Victaulic – 300 Master Seal Valve**, or approved equal. Flanged or wafer style lug butterfly valves shall be **Nibco LD-2000**, or approved equal.
- C. Butterfly Valves, NPS 2-1/2" and larger: Flanged, grooved ends, or wafer lug style, 150 PSIG CWP rating, ferrous alloy, with EPDM liner. Wafer Style Butterfly valves between welded flange faces may also be used subject to review of product submittal and shop drawing. Wafer style butterfly valves are not permitted between two Vic flanges due to interference per victaulic guidelines.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine valve interior for cleanliness, freedom from foreign matter, and corrosion. Remove special packing materials, such as blocks, used to prevent disc movement during shipping and handling.
- B. Operate valves in positions from fully open to fully closed. Examine guides and seats made accessible by such operations.
- C. Examine threads on valve and mating pipe for form and cleanliness.
- D. Examine mating flange faces for conditions that might cause leakage. Check bolting for proper size, length, and material. Verify that gasket is of proper size, that its material composition is suitable for service, and that it is free from defects and damage.
- E. Do not attempt to repair defective valves; replace with new valves.

3.2 VALVE INSTALLATION

- A. Install valves with unions or flanges at each piece of equipment arranged to allow service, maintenance, and equipment removal without system shutdown.
- B. Locate valves for easy access and provide separate support where necessary.
- C. Install valves in horizontal piping with stem at or above center of pipe.
- D. Install valves in position to allow full stem movement.
- E. Install check valves for proper direction of flow and as follows:
 - 1. Swing Check Valves: In horizontal position with hinge pin level.
- F. Any valve installed on grooved pipe system shall be in accordance with valve and grooved coupling manufacturer recommendation with regard to internal clearances and matting of part. Required support for piping at valves shall be provided.

3.3 ADJUSTING

- A. Adjust or replace valve packing after piping systems have been tested and put into service but before final adjusting and balancing. Replace valves if persistent leaking occurs.

3.4 GENERAL REQUIREMENTS FOR VALVE APPLICATIONS

- A. If valve applications are not indicated, use the following:
 - 1. Shutoff Service: Gate valves, butterfly valves.

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2. Throttling Service: Globe valves, triple duty valve, balancing valve
 3. Pump-Discharge: Triple Duty Valve
- B. If valves with specified SWP classes or CWP ratings are not available, the same types of valves with higher SWP classes or CWP ratings may be substituted.
- C. Select valves with the following end connections:
1. For Copper Tubing, NPS 2 and Smaller: Threaded ends, grooved, sweat
 2. For Steel Piping, NPS 2-1/2 to NPS 4: Flanged ends, grooved, wafer lug
 3. For Steel Piping, NPS 5 and Larger: Flanged ends, grooved, wafer lug.

3.5 HEATING-WATER VALVE SCHEDULE

- A. Pipe NPS 2 and Smaller:
1. Bronze Swing Check Valves: Class 150, bronze disc.
 2. Bronze Gate Valves: Class 150, RS.
 3. Bronze Globe Valves: Class 150, bronze disc.
- B. Pipe NPS 2-1/2 and Larger:
1. Iron Swing Check Valves: Class 150 metal seats.
 2. Iron Gate Valves: Class 150 OS&Y
 3. Iron Globe Valves: Class 150 OS&Y
 4. Iron Butterfly Valves: Class 150

END OF SECTION 230523

SECTION 230529 - HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Metal pipe hangers and supports.
 - 2. Thermal-hanger shield inserts.
 - 3. Fastener systems.

1.3 PERFORMANCE REQUIREMENTS

- A. Contractor shall be responsible for selection and sizing of supports and application of supports for pipes, valves, and equipment.
- B. Contractor shall provide pipe supports for all pipe, valves, tanks, and related equipment. All supports shall be detailed as part of the contractor submittal.
- C. Support submittal shall accompany pipe layout shop drawings for approval.
- D. Structural Performance: Hangers and supports for HVAC piping and equipment shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.
 - 1. Supports for multiple pipes, including pipe stands, capable of supporting combined weight of supported systems, system contents, and test water.
 - 2. Equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show fabrication and installation details and include calculations for the following; include Product Data for components:
 - 1. Trapeze pipe hangers.
 - 2. Metal framing systems.
 - 3. Equipment supports.

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4. Clevis
5. Fabricated Supports
6. Pedestal Type Supports

1.5 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

1.6 QUALITY ASSURANCE

- A. Structural Steel Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Pipe Welding Qualifications: Qualify procedures and operators according to ASME Boiler and Pressure Vessel Code.

PART 2 - PRODUCTS

2.1 METAL PIPE HANGERS AND SUPPORTS

- A. Carbon-Steel Pipe Hangers and Supports:
 1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
 2. Galvanized Metallic Coatings: Pregalvanized or hot dipped.
 3. Nonmetallic Coatings: Plastic coating, jacket, or liner.
 4. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
 5. Hanger Rods: Continuous-thread rod, nuts, and washer made of heavy galvanized steel.

2.2 THERMAL-HANGER SHIELD INSERTS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 1. Carpenter & Paterson, Inc.
 2. Pipe Shields, Inc.; a subsidiary of Piping Technology & Products, Inc.
 3. Approved Equal
- C. Insulation-Insert Material for Cold Piping: ASTM C 552, Type II cellular glass with 100-psig or ASTM C 591, Type VI, Grade 1 polyisocyanurate with 125-psig minimum compressive strength and vapor barrier.
- D. Insulation-Insert Material for Hot Piping: Water-repellent treated, ASTM C 533, Type I calcium silicate with 100-psig, ASTM C 552, Type II cellular glass with 100-psig or

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ASTM C 591, Type VI, Grade 1 polyisocyanurate with 125-psig minimum compressive strength.

- E. For Trapeze or Clamped Systems: Insert and shield shall cover entire circumference of pipe.
- F. For Clevis or Band Hangers: Insert and shield shall cover lower 180 degrees of pipe.
- G. Insert Length: Extend 2 inches beyond sheet metal shield for piping operating below ambient air temperature.

2.3 FASTENER SYSTEMS

- A. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.
- B. Mechanical-Expansion Anchors: Insert-wedge-type, stainless steel anchors, for use in hardened portland cement concrete; with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

2.4 MISCELLANEOUS MATERIALS

- A. Structural Steel: ASTM A 36/A 36M, carbon-steel plates, shapes, and bars; black and galvanized.
- B. Grout: ASTM C 1107, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.
 - 1. Properties: Nonstaining, noncorrosive, and nongaseous.
 - 2. Design Mix: 5000-psi 28-day compressive strength.

PART 3 - EXECUTION

3.1 HANGER AND SUPPORT INSTALLATION

- A. Metal Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Install hangers, supports, clamps, and attachments as required to properly support piping from the building structure.
- B. Metal Trapeze Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Arrange for grouping of parallel runs of horizontal piping, and support together on field-fabricated trapeze pipe hangers.
 - 1. Pipes of Various Sizes: Support together and space trapezes for smallest pipe size or install intermediate supports for smaller diameter pipes as specified for individual pipe hangers.
 - 2. Field fabricate from ASTM A 36/A 36M, carbon-steel shapes selected for loads being supported. Weld steel according to AWS D1.1/D1.1M.

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- C. Thermal-Hanger Shield Installation: Install in pipe hanger or shield for insulated piping.
- D. Fastener System Installation:
 - 1. Install powder-actuated fasteners for use in lightweight concrete or concrete slabs less than 4 inches thick in concrete after concrete is placed and completely cured. Use operators that are licensed by powder-actuated tool manufacturer. Install fasteners according to powder-actuated tool manufacturer's operating manual.
 - 2. Install mechanical-expansion anchors in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.
- E. Install hangers and supports complete with necessary attachments, inserts, bolts, rods, nuts, washers, and other accessories.
- F. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
- G. Install lateral bracing with pipe hangers and supports to prevent swaying.
- H. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 and larger and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.
- I. Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
- J. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by ASME B31.9 for building services piping.
- K. Insulated Piping:
 - 1. Attach clamps and spacers to piping.
 - a. Piping Operating above Ambient Air Temperature: Clamp may project through insulation.
 - b. Piping Operating below Ambient Air Temperature: Use thermal-hanger shield insert with clamp sized to match OD of insert.
 - c. Do not exceed pipe stress limits allowed by ASME B31.9 for building services piping.
 - 2. Install MSS SP-58, Type 39, protection saddles if insulation without vapor barrier is indicated. Fill interior voids with insulation that matches adjoining insulation.
 - a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.
 - 3. Install MSS SP-58, Type 40, protective shields on cold piping with vapor barrier. Shields shall span an arc of 180 degrees.

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- a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.
4. Shield Dimensions for Pipe: Not less than the following:
 - a. NPS 1/4 to NPS 3-1/2: 12 inches long and 0.048 inch thick.
 - b. NPS 4: 12 inches long and 0.06 inch thick.
 - c. NPS 5: 18 inches long and 0.06 inch thick.
5. Thermal-Hanger Shields: Install with insulation same thickness as piping insulation.

3.2 EQUIPMENT SUPPORTS

- A. Grouting: Place grout under supports for equipment and make bearing surface smooth.
- B. Base plates shall be clean and free from oil and allow proper bond.

3.3 METAL FABRICATIONS

- A. Cut, drill, and fit miscellaneous metal fabrications for pipe hangers.
- B. Fit exposed connections together to form hairline joints. Field weld connections that cannot be shop welded because of shipping size limitations.
- C. Field Welding: Comply with AWS D1.1/D1.1M procedures for shielded, metal arc welding; appearance and quality of welds; and methods used in correcting welding work; and with the following:
 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. Finish welds at exposed connections so no roughness shows after finishing and so contours of welded surfaces match adjacent contours.

3.4 ADJUSTING

- A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.
- B. Trim excess length of continuous-thread hanger and support rods to 1-1/2 inches

3.5 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

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1. Apply paint by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- B. Touchup: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metals as required.
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A780.

3.6 HANGER AND SUPPORT SCHEDULE

- A. Specific hanger and support requirements are in Sections specifying piping systems and equipment.
- B. Comply with MSS SP-69 for pipe-hanger selections and applications that are not specified in piping system Sections.
- C. Use hangers and supports with galvanized metallic coatings for piping and equipment that will not have field-applied finish.
- D. Use nonmetallic coatings on attachments for electrolytic protection where attachments are in direct contact with copper tubing.
- E. Use stainless-steel pipe hangers and stainless-steel or corrosion-resistant attachments for hostile environment applications.
- F. Use copper-plated pipe hangers and copper or stainless-steel attachments for copper piping and tubing.
- G. Use padded hangers for piping that is subject to scratching.
- H. Use thermal-hanger shield inserts for insulated piping and tubing.
- I. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
 1. Adjustable, Steel Clevis Hangers (MSS Type 1): For suspension of non-insulated or insulated, stationary pipes NPS 1/2 to NPS 30
 2. Yoke-Type Pipe Clamps (MSS Type 2): For suspension of up to 1050 deg F, pipes NPS 4 to NPS 24, requiring up to 4 inches of insulation.
 3. Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3): For suspension of pipes NPS 3/4 to NPS 36, requiring clamp flexibility and up to 4 inches of insulation.
 4. Steel Pipe Clamps (MSS Type 4): For suspension of cold and hot pipes NPS 1/2 to NPS 24 if little or no insulation is required.
 5. Pipe Hangers (MSS Type 5): For suspension of pipes NPS 1/2 to NPS 4, to allow off-center closure for hanger installation before pipe erection.
- J. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

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1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers NPS 3/4 to NPS 24.
 2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): For support of pipe risers NPS 3/4 to NPS 24 if longer ends are required for riser clamps.
- K. Hanger-Rod Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel Turnbuckles (MSS Type 13): For adjustment up to 6 inches for heavy loads.
 2. Steel Clevises (MSS Type 14): For 120 to 450 deg F piping installations.
 3. Swivel Turnbuckles (MSS Type 15): For use with MSS Type 11, split pipe rings.
 4. Steel Weldless Eye Nuts (MSS Type 17): For 120 to 450 deg F piping installations.
- L. Building Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel or Malleable Concrete Inserts (MSS Type 18): For upper attachment to suspend pipe hangers from concrete ceiling.
 2. Top-Beam C-Clamps (MSS Type 19): For use under roof installations with bar-joist construction, to attach to top flange of structural shape.
 3. Side-Beam or Channel Clamps (MSS Type 20): For attaching to bottom flange of beams, channels, or angles.
 4. Center-Beam Clamps (MSS Type 21): For attaching to center of bottom flange of beams.
 5. Welded Beam Attachments (MSS Type 22): For attaching to bottom of beams if loads are considerable and rod sizes are large.
 6. C-Clamps (MSS Type 23): For structural shapes.
 7. Top-Beam Clamps (MSS Type 25): For top of beams if hanger rod is required tangent to flange edge.
 8. Side-Beam Clamps (MSS Type 27): For bottom of steel I-beams.
 9. Steel-Beam Clamps with Eye Nuts (MSS Type 28): For attaching to bottom of steel I-beams for heavy loads.
 10. Linked-Steel Clamps with Eye Nuts (MSS Type 29): For attaching to bottom of steel I-beams for heavy loads, with link extensions.
 11. Malleable-Beam Clamps with Extension Pieces (MSS Type 30): For attaching to structural steel.
 12. Welded-Steel Brackets: For support of pipes from below or for suspending from above by using clip and rod. Use one of the following for indicated loads:
 - a. Light (MSS Type 31): 750 lb
 - b. Medium (MSS Type 32): 1500 lb
 - c. Heavy (MSS Type 33): 3000 lb
 13. Side-Beam Brackets (MSS Type 34): For sides of steel or wooden beams.
 14. Plate Lugs (MSS Type 57): For attaching to steel beams if flexibility at beam is required.
 15. Horizontal Travelers (MSS Type 58): For supporting piping systems subject to linear horizontal movement where headroom is limited.
- M. Saddles and Shields: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

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1. Steel-Pipe-Covering Protection Saddles (MSS Type 39): To fill interior voids with insulation that matches adjoining insulation.
 2. Protection Shields (MSS Type 40): Of length recommended in writing by manufacturer to prevent crushing insulation.
 3. Thermal-Hanger Shield Inserts: For supporting insulated pipe.
- N. Spring Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Restraint-Control Devices (MSS Type 47): Where indicated to control piping movement.
 2. Spring Cushions (MSS Type 48): For light loads if vertical movement does not exceed 1-1/4 inches.
 3. Spring-Cushion Roll Hangers (MSS Type 49): For equipping Type 41, roll hanger with springs.
 4. Spring Sway Braces (MSS Type 50): To retard sway, shock, vibration, or thermal expansion in piping systems.
 5. Variable-Spring Hangers (MSS Type 51): Preset to indicated load and limit variability factor to 25 percent to allow expansion and contraction of piping system from hanger.
 6. Variable-Spring Base Supports (MSS Type 52): Preset to indicated load and limit variability factor to 25 percent to allow expansion and contraction of piping system from base support.
 7. Variable-Spring Trapeze Hangers (MSS Type 53): Preset to indicated load and limit variability factor to 25 percent to allow expansion and contraction of piping system from trapeze support.
 8. Constant Supports: For critical piping stress and if necessary to avoid transfer of stress from one support to another support, critical terminal, or connected equipment. Include auxiliary stops for erection, hydrostatic test, and load-adjustment capability. These supports include the following types:
 - a. Horizontal (MSS Type 54): Mounted horizontally.
 - b. Vertical (MSS Type 55): Mounted vertically.
 - c. Trapeze (MSS Type 56): Two vertical-type supports and one trapeze member.
- O. Comply with MSS SP-69 for trapeze pipe-hanger selections and applications that are not specified in piping system Sections.
- P. Comply with MFMA-103 for metal framing system selections and applications that are not specified in piping system Sections.
- Q. Use mechanical-expansion anchors instead of building attachments where required in concrete construction.

END OF SECTION 230529

SECTION 230553 - MECHANICAL IDENTIFICATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special Clauses, apply to this Section.

1.2 SUMMARY

- A. Identification material shall be provided for pipe, valves, and related equipment installed by contractor.
- B. This Section includes the following mechanical identification materials and their installation:
 - 1. Equipment nameplates.
 - 2. Access panel.
 - 3. Pipe markers.
 - 4. Valve tags.
 - 5. Warning tags.

1.3 SUBMITTALS

- A. Product Data: Provide submittal for each type of product indicated.

1.4 COORDINATION

- A. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- B. Coordinate installation of identifying devices with location of access panels and doors.
- C. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 EQUIPMENT IDENTIFICATION DEVICES

- A. Equipment Nameplates: Metal, with data engraved or stamped, for permanent attachment on equipment and shall be Marking Services, Inc., Milwaukee, WI or approved equal.
 - 1. Data:

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- a. Manufacturer, product name, model number, and serial number.
 - b. Capacity, operating and power characteristics, and essential data.
 - c. Labels of tested compliances.
2. Location: Accessible and visible.
 3. Fasteners: As required to mount on equipment.
- B. Access Panel: 1/16-inch thick, engraved laminated plastic, with abbreviated terms and numbers corresponding to identification. Provide 1/8-inch center hole for attachment.
1. Fasteners: Self-tapping, stainless-steel screws or contact-type, permanent adhesive.

2.2 PIPING IDENTIFICATION DEVICES

- A. Manufactured Pipe Markers, General: Preprinted, color-coded, with lettering indicating service, and showing direction of flow and shall be Marking Services, Inc., Milwaukee, WI or approved equal.
- B. All piping install shall receive pipe markers.
1. Colors: Comply with ASME A13.1, unless otherwise indicated.
 2. Lettering: Use piping system terms and abbreviate only as necessary for each application length.
 3. Pipes with OD, Including Insulation, Less Than 6 Inches: Full-band pipe markers extending 360 degrees around pipe at each location.
 4. Pipes with OD, Including Insulation, 6 Inches and Larger: Full-band pipe markers at least three times letter height and of length required for label.
 5. Arrows: Integral with piping system service lettering to accommodate both directions; or as separate unit on each pipe marker to indicate direction of flow.

2.3 VALVE TAGS

- A. Valve Tags: Stamped or engraved with 1/4-inch letters for piping system abbreviation and 1/2-inch numbers, with numbering scheme. Provide 5/32-inch hole for fastener. Product shall be Marking Services, Inc., Milwaukee, WI or approved equal.
1. Material: 0.032-inch thick brass.
 2. Material: or suitable plastic.
 3. Valve-Tag Fasteners: Brass wire-link or beaded.

2.4 WARNING TAGS

- A. Warning Tags: Preprinted or partially preprinted, accident-prevention tags; of plasticized card stock with matte finish suitable for writing. Product shall be Marking Services, Inc., Milwaukee, WI or approved equal.
1. Size: 3 by 5-1/4 inches.
 2. Fasteners: Brass grommet and wire.

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3. Nomenclature: Large-size primary caption such as DANGER, CAUTION, or DO NOT OPERATE.
4. Color: Yellow background with black lettering.

PART 3 - EXECUTION

3.1 APPLICATIONS, GENERAL

- A. All pipes, valves, duct, and equipment installed shall receive tags, ID markers.

3.2 EQUIPMENT IDENTIFICATION

- A. Install and permanently fasten equipment nameplates on each major item of mechanical equipment that does not have nameplate or has nameplate that is damaged or located where not easily visible. Locate nameplates where accessible and visible. Include nameplates for the following general categories of equipment:

1. Boilers.
2. Primary Hot Water Pumps
3. Secondary Hot Water Pumps
4. Air Separator
5. Expansion Tank
6. Boiler Control Panels
7. Burner Control Panels
8. VFD's
9. Combustion Air Intake Control Panels
10. Andover Control Panels (new and/or existing)

3.3 PIPING IDENTIFICATION

- A. Install manufactured pipe markers indicating service on each piping system. Install with flow indication arrows showing direction of flow.
- B. Locate pipe markers and color bands where piping is exposed in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior nonconcealed locations as follows:
 1. Near each valve and control device.
 2. Near each branch connection, excluding short takeoffs for fixtures and terminal units. Where flow pattern is not obvious, mark each pipe at branch.
 3. Near penetrations through walls, floors, ceilings, and nonaccessible enclosures.
 4. At access doors, manholes, and similar access points that permit view of concealed piping.
 5. Near major equipment items and other points of origination and termination.
 6. Spaced at maximum intervals of 25 feet along each run.
 7. On piping above removable acoustical ceilings. Omit intermediately spaced markers.

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3.4 VALVE-TAG INSTALLATION

- A. Install tags on valves and control devices in piping systems, except check valves; valves within factory-fabricated equipment units; plumbing fixture supply stops; shutoff valves; faucets; convenience connections; and HVAC terminal devices and similar roughing-in connections of end-use fixtures and units. List tagged valves in a valve schedule.
- B. Valve-Tag Application Schedule: Tag valves according to size, shape, and color scheme and with captions similar to those indicated in the following:
 - 1. Valve-Tag Size and Shape:
 - a. Primary Heating Hot Water Supply: 2 inches, round.
 - b. Primary Heating Hot Water Return: 2 inches round.
 - c. Secondary Heating Hot Water Supply: 2 inches, round.
 - d. Secondary Heating Hot Water Return: 2 inches round.
 - e. Domestic Cold Water Supply: 2" round.
 - f. Expansion Line: 2" round
 - 2. Valve-Tag/Letter Color:
 - a. Primary Heating Hot Water Supply: Red/Black.
 - b. Primary Heating Hot Water Return: Yellow/Black.
 - c. Secondary Heating Hot Water Supply: Red/Black.
 - d. Secondary Heating Hot Water Return: Yellow/Black.
 - e. Domestic Cold Water Supply: Green/Black
 - f. Expansion Line: Red/Black

3.5 WARNING-TAG INSTALLATION

- A. Write required message on, and attach warning tags to, equipment and other items where required.

3.6 ADJUSTING

- A. Relocate mechanical identification materials and devices that have become visually blocked by other work.

3.7 CLEANING

- A. Clean faces of mechanical identification devices.

END OF SECTION 15075

SECTION 230719 - HVAC PIPING INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Insulation required on all new piping and existing piping disturbed and/or damaged by contract scope of work.

1.2 SUMMARY

- A. Section includes insulating the following HVAC piping systems:
 - 1. Steam piping, indoors
 - 2. Steam Condensate Return, indoors
 - 3. Make-up water piping, indoors
 - 4. Exposed and concealed breeching for new boilers

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include thermal conductivity, water-vapor permeance thickness, and jackets (both factory and field applied if any).
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail application of protective shields, saddles, and inserts at hangers for each type of insulation and hanger.
 - 2. Detail insulation application at elbows, fittings, flanges, valves, and specialties for each type of insulation.
 - 3. Detail removable insulation at piping specialties.
 - 4. Detail application of field-applied jackets.
 - 5. Detail application at linkages of control devices.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Application of insulation shall be performed by qualified personnel with specialty training.
- C. Field quality-control reports.

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1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Skilled mechanics who have successfully completed an apprenticeship program or another craft training program certified by the Department of Labor, Bureau of Apprenticeship and Training.
- B. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84, by a testing and inspecting agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.
 - 1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Packaging: Insulation material containers shall be marked by manufacturer with appropriate ASTM standard designation, type and grade, and maximum use temperature.

1.7 COORDINATION

- A. Coordinate clearance requirements with piping Installer for piping insulation application. Before preparing piping Shop Drawings, establish and maintain clearance requirements for installation of insulation and field-applied jackets and finishes and for space required for maintenance.
- B. Coordinate installation and testing of heat tracing.

1.8 SCHEDULING

- A. Schedule insulation application after pressure testing systems and, where required, after installing and testing heat tracing. Insulation application may begin on segments that have satisfactory test results.
- B. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

- A. Comply with requirements in "Piping Insulation Schedule, General" and "Indoor Piping Insulation Schedule" articles for where insulating materials shall be applied.
- B. Products shall not contain asbestos, lead, mercury, or mercury compounds.

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- C. Mineral-Fiber Blanket Insulation: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 553, Type II and ASTM C 1290, factory-applied FSK jacket. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Johns Manville; Microlite.
 - b. Knauf Insulation; Friendly Feel Duct Wrap.
 - c. Owens Corning; SOFTR All-Service Duct Wrap.
 - d. Approved Equal
- D. Mineral-Fiber, Preformed Pipe Insulation:
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Johns Manville;
 - b. Knauf Insulation; 1000-Degree Pipe Insulation (**Specified Model: Earthwise 1000 with ASJ+**)
 - c. Owens Corning; Fiberglas Pipe Insulation.
 - d. Approved Equal.
 2. Type I, 850 deg F Materials: Inorganic glass strands bonded with a thermosetting resin. Comply with ASTM C 547, UL Listed, Type I, Grade A, ANSI/ASTM C547, with with factory-applied ASJ-SSL. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.
- E. High Temperature Board Insulation: Boiler Flue Breeching Connection high temperature rock wool board or calcium silicate.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Johns Manville; Super Firetemp M.
 - b. Delta Insulation.
 - c. Approved Equal.
- F. High Temperature Blanket Insulation: Boiler Flue Breeching Connection high temperature rock wool board or calcium silicate.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Johns Manville; Firetemp Wrap.
 - b. Delta Insulation.
 - c. Approved Equal.
- G. Calcium Silicate: Boiler Flue Breeching Connection high temperature rock wool board or calcium silicate.

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1. Products: Subject to compliance with requirements available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Industrial Insulation Group (IIG); Thermo-12 Gold.
 - b. Approved Equal
2. Preformed Pipe Sections: Flat-, curved-, and grooved-block sections of noncombustible, inorganic, hydrous calcium silicate with a non-asbestos fibrous reinforcement. Comply with ASTM C 533, Type I.
3. Flat-, curved-, and grooved-block sections of noncombustible, inorganic, hydrous calcium silicate with a non-asbestos fibrous reinforcement. Comply with ASTM C 533, Type I.
4. Prefabricated Fitting Covers: Comply with ASTM C 450 and ASTM C 585 for dimensions used in preforming insulation to cover valves, elbows, tees, and flanges.

2.2 INSULATING CEMENTS

- A. Mineral-Fiber Insulating Cement: Comply with ASTM C 195.
 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Ramco Insulation, Inc.; Super-Stik.
 - b. Approved Equal.

2.3 ADHESIVES

- A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated unless otherwise indicated.
- B. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.
 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-127.
 - b. Eagle Bridges - Marathon Industries; 225.
 - c. Mon-Eco Industries, Inc.; 22-25.
 - d. Approved Equal.
 2. For indoor applications, adhesive shall have a VOC content of 80 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 3. Adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

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2.4 FACTORY-APPLIED JACKETS

- A. Insulation system schedules indicate factory-applied jackets on various applications. When factory-applied jackets are indicated, comply with the following:
1. ASJ: White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
 2. ASJ-SSL: ASJ with self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C 1136, Type I.
 3. FSK Jacket: Aluminum-foil, fiberglass-reinforced scrim with kraft-paper backing; complying with ASTM C 1136, Type II.
 - a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following: (for chilled water application)
 - 1) Dow Chemical Company (The); Saran 540 Vapor Retarder Film and Saran 560 Vapor Retarder Film.
 - 2) Approved Equal.
 4. Vinyl Jacket: White vinyl with a permeance of 1.3 perms when tested according to ASTM E 96/E 96M, Procedure A, and complying with NFPA 90A and NFPA 90B.

2.5 FIELD-APPLIED FABRIC-REINFORCING MESH

- A. Woven Glass-Fiber Fabric: Approximately 2 oz./sq. yd. with a thread count of 10 strands by 10 strands/sq. in. for covering pipe and pipe fittings.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; Chil-Glas Number 10.
 - b. Approved Equal
- B. Woven Polyester Fabric: Approximately 1 oz./sq. yd. with a thread count of 10 strands by 10 strands/sq. in., in a Leno weave, for pipe.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following]:
 - a. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; Mast-A-Fab.
 - b. Vimasco Corporation; Elastafab 894.
 - c. Approved Equal.

2.6 FIELD-APPLIED JACKETS

- A. Field-applied jackets shall comply with ASTM C 921, Type I, unless otherwise indicated.

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- B. PVC Jacket: High-impact-resistant, UV-resistant PVC complying with ASTM D 1784, Class 16354-C; thickness as scheduled; roll stock ready for shop or field cutting and forming. Thickness is indicated in field-applied jacket schedules.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Johns Manville; Zeston.
 - b. P.I.C. Plastics, Inc.; FG Series.
 - c. Approved Equal
 2. Adhesive: As recommended by jacket material manufacturer.
 3. Color: White.
 4. Factory-fabricated fitting covers to match jacket if available; otherwise, field fabricate.
 - a. Shapes: 45- and 90-degree, short- and long-radius elbows, tees, valves, flanges, unions, reducers, end caps, soil-pipe hubs, traps, mechanical joints, and P-trap and supply covers for lavatories.

2.7 TAPES

- A. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ABI, Ideal Tape Division; 428 AWF ASJ.
 - b. Compac Corporation; 104 and 105.
 - c. Venture Tape; 1540 CW Plus, 1542 CW Plus, and 1542 CW Plus/SQ.
 - d. Approved Equal.
 2. Width: 3 inches.
 3. Thickness: 11.5 mils.
 4. Adhesion: 90 ounces force/inch in width.
 5. Elongation: 2 percent.
 6. Tensile Strength: 40 lbf/inch in width.
 7. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.
- B. FSK Tape: Foil-face, vapor-retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C 1136.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ABI, Ideal Tape Division; 491 AWF FSK.
 - b. Compac Corporation; 110 and 111.
 - c. Venture Tape; 1525 CW NT, 1528 CW, and 1528 CW/SQ.
 - d. Approved Equal.

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2. Width: 3 inches.
3. Thickness: 6.5 mils.
4. Adhesion: 90 ounces force/inch in width.
5. Elongation: 2 percent.
6. Tensile Strength: 40 lbf/inch in width.
7. FSK Tape Disks and Squares: Precut disks or squares of FSK tape.

C. Aluminum-Foil Tape: Vapor-retarder tape with acrylic adhesive.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ABI, Ideal Tape Division; 488 AWF.
 - b. Compac Corporation; 120.
 - c. Venture Tape; 3520 CW.
 - d. Approved Equal.
2. Width: 2 inches.
3. Thickness: 3.7 mils.
4. Adhesion: 100 ounces force/inch in width.
5. Elongation: 5 percent.
6. Tensile Strength: 34 lbf/inch in width.

2.8 SECUREMENTS

A. Bands:

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ITW Insulation Systems; Gerrard Strapping and Seals.
 - b. RPR Products, Inc.; Insul-Mate Strapping, Seals, and Springs.
 - c. Approved Equal.
2. Stainless Steel: ASTM A 167 or ASTM A 240/A 240M, Type 304 or Type 316; 0.015 inch thick, 1/2 inch wide with wing seal or closed seal.

B. Wire: 0.062-inch soft-annealed, stainless steel

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. C & F Wire.
 - b. Approved Equal.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of insulation application.
 - 1. Verify that systems to be insulated have been tested and are free of defects.
 - 2. Verify that surfaces to be insulated are clean and dry.
 - 3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.
- B. Surface Preparation: Clean and prepare surfaces to be insulated. Before insulating, apply a corrosion coating to insulated surfaces as follows:
 - 1. Carbon Steel: Coat carbon steel operating at a service temperature between 32 and 300 deg F with an epoxy coating. Consult coating manufacturer for appropriate coating materials and application methods for operating temperature range.
- C. Coordinate insulation installation with the trade installing heat tracing. Comply with requirements for heat tracing that apply to insulation.
- D. Mix insulating cements with clean potable water; if insulating cements are to be in contact with stainless-steel surfaces, use demineralized water.

3.3 GENERAL INSTALLATION REQUIREMENTS

- A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties.
- B. Install insulation materials, jackets, and thicknesses required for each item of pipe system as specified in insulation system schedules.
- C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.
- D. Install insulation with longitudinal seams at top and bottom of horizontal runs.
- E. Install multiple layers of insulation with longitudinal and end seams staggered.
- F. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.
- G. Keep insulation materials dry during application and finishing.

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- H. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.
- I. Install insulation with least number of joints practical.
- J. Apply adhesives and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.
- K. Install insulation with factory-applied jackets as follows:
 - 1. Draw jacket tight and smooth.
 - 2. Cover circumferential joints with 3-inch- wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.
 - 3. Overlap jacket longitudinal seams at least 1-1/2 inches. Install insulation with longitudinal seams at bottom of pipe. Clean and dry surface to receive self-sealing lap. For below-ambient services, apply vapor-barrier mastic over staples.
 - 4. Cover joints and seams with tape, according to insulation material manufacturer's written instructions, to maintain vapor seal.
 - 5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to pipe flanges and fittings.
- L. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.
- M. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.
- N. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

3.4 PENETRATIONS

- A. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.
- B. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions.
- C. Insulation Installation at Floor Penetrations:
 - 1. Pipe: Install insulation continuously through floor penetrations.
 - 2. Seal penetrations through fire-rated assemblies.

3.5 GENERAL PIPE INSULATION INSTALLATION

- A. Requirements in this article generally apply to all insulation materials except where more specific requirements are specified in various pipe insulation material installation articles.
- B. Insulation Installation on Fittings, Valves, Strainers, Flanges, and Unions:
1. Install insulation over fittings, valves, strainers, flanges, unions, and other specialties with continuous thermal and vapor-retarder integrity unless otherwise indicated.
 2. Insulate pipe elbows using preformed fitting insulation or mitered fittings made from same material and density as adjacent pipe insulation. Each piece shall be butted tightly against adjoining piece and bonded with adhesive. Fill joints, seams, voids, and irregular surfaces with insulating cement finished to a smooth, hard, and uniform contour that is uniform with adjoining pipe insulation.
 3. Insulate tee fittings with preformed fitting insulation or sectional pipe insulation of same material and thickness as used for adjacent pipe. Cut sectional pipe insulation to fit. Butt each section closely to the next and hold in place with tie wire. Bond pieces with adhesive.
 4. Insulate valves using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. For valves, insulate up to and including the bonnets, valve stuffing-box studs, bolts, and nuts. Fill joints, seams, and irregular surfaces with insulating cement.
 5. Insulate strainers using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. Fill joints, seams, and irregular surfaces with insulating cement. Insulate strainers so strainer basket flange or plug can be easily removed and replaced without damaging the insulation and jacket. Provide a removable reusable insulation cover. For below-ambient services, provide a design that maintains vapor barrier.
 6. Insulate flanges and unions using a section of oversized preformed pipe insulation. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker.
 7. Cover segmented insulated surfaces with a layer of finishing cement and coat with a mastic. Install vapor-barrier mastic for below-ambient services and a breather mastic for above-ambient services. Reinforce the mastic with fabric-reinforcing mesh. Trowel the mastic to a smooth and well-shaped contour.
 8. For services not specified to receive a field-applied jacket except for flexible elastomeric and polyolefin, install fitted PVC cover over elbows, tees, strainers, valves, flanges, and unions. Terminate ends with PVC end caps. Tape PVC covers to adjoining insulation facing using PVC tape.
 9. Stencil or label the outside insulation jacket of each union with the word "union." Match size and color of pipe labels.
- C. Insulate instrument connections for thermometers, pressure gages, pressure temperature taps, test connections, flow meters, sensors, switches, and transmitters on insulated pipes. Shape insulation at these connections by tapering it to and around the connection with insulating cement and finish with finishing cement, mastic, and flashing sealant.

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- D. Install removable insulation covers at locations indicated. Installation shall conform to the following:
1. Make removable flange and union insulation from sectional pipe insulation of same thickness as that on adjoining pipe. Install same insulation jacket as adjoining pipe insulation.
 2. When flange and union covers are made from sectional pipe insulation, extend insulation from flanges or union long at least two times the insulation thickness over adjacent pipe insulation on each side of flange or union. Secure flange cover in place with stainless-steel or aluminum bands. Select band material compatible with insulation and jacket.
 3. Construct removable valve insulation covers in same manner as for flanges, except divide the two-part section on the vertical center line of valve body.
 4. When covers are made from block insulation, make two halves, each consisting of mitered blocks wired to stainless-steel fabric. Secure this wire frame, with its attached insulation, to flanges with tie wire. Extend insulation at least 2 inches over adjacent pipe insulation on each side of valve. Fill space between flange or union cover and pipe insulation with insulating cement. Finish cover assembly with insulating cement applied in two coats. After first coat is dry, apply and trowel second coat to a smooth finish.
 5. Unless a PVC jacket is indicated in field-applied jacket schedules, finish exposed surfaces with a metal jacket.

3.6 INSTALLATION OF MINERAL-FIBER INSULATION

A. Insulation Installation on Straight Pipes and Tubes:

1. Secure each layer of preformed pipe insulation to pipe with wire or bands and tighten bands without deforming insulation materials.
2. For insulation with factory-applied jackets on above-ambient surfaces, secure laps with outward-clinched staples at 6 inches o.c.
3. For insulation with factory-applied jackets on below-ambient surfaces, do not staple longitudinal tabs. Instead, secure tabs with additional adhesive as recommended by insulation material manufacturer and seal with vapor-barrier mastic and flashing sealant.

B. Insulation Installation on Pipe Flanges:

1. Install preformed pipe insulation to outer diameter of pipe flange.
2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with mineral-fiber blanket insulation.
4. Install jacket material with manufacturer's recommended adhesive, overlap seams at least 1 inch, and seal joints with flashing sealant.

C. Insulation Installation on Pipe Fittings and Elbows:

1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed insulation elbows and fittings are not available, install mitered sections of pipe insulation, to a thickness equal to adjoining pipe insulation. Secure insulation materials with wire or bands.

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D. Insulation Installation on Valves and Pipe Specialties:

1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed sections are not available, install mitered sections of pipe insulation to valve body.
3. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
4. Install insulation to flanges as specified for flange insulation application.

3.7 FIELD-APPLIED JACKET INSTALLATION

A. Where PVC jackets are indicated, install with 1-inch overlap at longitudinal seams and end joints; for horizontal applications. Seal with manufacturer's recommended adhesive.

1. Apply two continuous beads of adhesive to seams and joints, one bead under lap and the finish bead along seam and joint edge.

3.8 FINISHES

A. Pipe Insulation with ASJ, Glass-Cloth, or Other Paintable Jacket Material: Paint jacket with paint system identified below

1. Flat Acrylic Finish: Two finish coats over a primer that is compatible with jacket material and finish coat paint. Add fungicidal agent to render fabric mildew proof.
 - a. Finish Coat Material: Interior, flat, latex-emulsion size.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Perform tests and inspections.

C. Tests and Inspections:

1. Inspect pipe, fittings, strainers, and valves, randomly selected by Construction Manager, by removing field-applied jacket and insulation in layers in reverse order of their installation. Extent of inspection shall be limited to three locations of straight pipe, three locations of threaded fittings, three locations of welded fittings, two locations of threaded strainers, two locations of welded strainers, three locations of threaded valves, and three locations of flanged valves for each pipe service defined in the "Piping Insulation Schedule, General" Article.

D. All insulation applications will be considered defective Work if sample inspection reveals noncompliance with requirements.

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3.10 PIPING INSULATION SCHEDULE, GENERAL

- A. Acceptable preformed pipe and tubular insulation materials and thicknesses are identified for each piping system and pipe size range. If more than one material is listed for a piping system, selection from materials listed is Contractor's option.
- B. Items Not Insulated: Unless otherwise indicated, do not install insulation on the following:
 - 1. All existing piping that already have insulation.

3.11 INDOOR PIPING INSULATION SCHEDULE

- A. Steam and Condensate Return, 200 Deg F and Below:
 - 1. NPS 6 and Smaller: Insulation shall be the following:
 - a. Mineral-Fiber, Preformed Pipe, Type I: 2 inches thick.
- B. City Water Piping/Make-up water
 - 1. NPS 2" and Smaller: Insulation shall be of following:
 - a. Mineral Fiber, Performed Pipe, Type I: 3/4" inches thick with PVC fitting covers.

3.12 INDOOR, FIELD-APPLIED JACKET SCHEDULE

- A. Install jacket over insulation material. For insulation with factory-applied jacket, install the field-applied jacket over the factory-applied jacket.
- B. If more than one material is listed, selection from materials listed is Contractor's option.
- C. Piping, Concealed:
 - 1. Seal factory applied Jacket on pipe and provide PVC fitting covers
- D. Piping, Exposed:
 - 1. Seal factory applied Jacket on pipe and provide PVC pipe jacket and PVC fitting covers.

3.13 INDOOR, HIGH TEMPERATURE INSULATION

- A. Install high temperature rock wool or calcium silicate insulation board with cement on rear of boilers exposed sections.

END OF SECTION 230719

SECTION 232213 - STEAM AND CONDENSATE HEATING PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following for **LP** steam and condensate piping:
 - 1. Pipe and fittings.
 - 2. Strainers.
 - 3. Safety valves.
 - 4. Steam traps.
 - 5. Thermostatic air vents and vacuum breakers.
 - 6. Expansion Joints
 - 7. Control Valves.

1.3 DEFINITIONS

- A. LP Systems: Low-pressure piping operating at 15 psig or less as required by ASME B31.9.
- B. RTRF: Reinforced thermosetting resin (fiberglass) fittings.
- C. RTRP: Reinforced thermosetting resin (fiberglass) pipe.

1.4 PERFORMANCE REQUIREMENTS

- A. Components and installation shall be capable of withstanding the following minimum working pressures and temperatures:
 - 1. LP Steam Piping: 125 psig.
 - 2. Condensate Piping: 125 psig at 250 deg F
 - 3. Makeup-Water Piping: 80 psig at 150 deg F
 - 4. Blowdown-Drain Piping: Equal to pressure of the piping system to which it is attached.
 - 5. Air-Vent and Vacuum-Breaker Piping: Equal to pressure of the piping system to which it is attached.
 - 6. Safety-Valve-Inlet and -Outlet Piping: Equal to pressure of the piping system to which it is attached.

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1.5 SUBMITTALS

- A. Product Data: For each type of the following:
 - 1. Pipe and Fittings.
 - 2. Steam trap.
 - 3. Strainers.
 - 4. Safety/Control valves.
- B. Shop Drawings: Detail, 1/8 inch equals 1 foot scale, fabrication of pipe anchors, hangers, pipe, multiple pipes, alignment guides, and expansion joints and loops and their attachment to the building structure. Detail locations of anchors, alignment guides, and expansion joints and loops.
- C. Qualification Data: For Installer.
- D. Welding certificates.
- E. Field quality-control test reports.
- F. Operation and Maintenance Data: For valves, safety valves, control valves, steam traps, air vents, vacuum breakers and strainers, to include in emergency, operation, and maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Fiberglass Pipe and Fitting Installers: Installers of RTRF and RTRP shall be certified by the manufacturer of pipes and fittings as having been trained and qualified to join fiberglass piping with manufacturer-recommended adhesive.
- B. Steel Support Welding: Qualify processes and operators according to AWS D1.1, "Structural Welding Code - Steel."
- C. Pipe Welding: Qualify processes and operators according to the following:
 - 1. Comply with provisions in ASME B31 Series, "Code for Pressure Piping."
 - 2. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current.
- D. ASME Compliance: Comply with ASME B31.9, "Building Services Piping" for materials, products, and installation. Safety valves and pressure vessels shall bear the appropriate ASME label. Fabricate and stamp flash tanks to comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.

PART 2 - PRODUCTS

2.1 STEEL PIPE AND FITTINGS

- A. Steel Pipe: ASTM A 53/A 53M, black steel, plain ends, Type, Grade, and Schedule as indicated in Part 3 piping applications articles.
- B. Malleable-Iron Threaded Fittings: ASME B16.3; Classes 150 and 300 as indicated in Part 3 piping applications articles.
- C. Malleable-Iron Unions: ASME B16.39; Classes 150, 250, and 300 as indicated in Part 3 piping applications articles.
- D. Wrought-Steel Fittings: ASTM A 234/A 234M, wall thickness to match adjoining pipe.
- E. Wrought-Steel Flanges and Flanged Fittings: ASME B16.5, including bolts, nuts, and gaskets of the following material group, end connections, and facings:
 - 1. Material Group: 1.1.
 - 2. End Connections: Butt welding.
 - 3. Facings: Raised face.
- F. Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M, black steel of same Type, Grade, and Schedule as pipe in which installed.
- G. Stainless-Steel Bellows, Flexible Connectors:
 - 1. Body: Stainless-steel bellows with woven, flexible, bronze, wire-reinforced, protective jacket.
 - 2. End Connections: Threaded or flanged to match equipment connected.
 - 3. Performance: Capable of 3/4-inch misalignment.
 - 4. CWP Rating: 150-psig.
- H. Maximum Operating Temperature: 250 deg F

2.2 STRAINERS

- A. Y-Pattern Strainers:

Hoffman Specialty, Model 420C Series or approved equal.

- 1. Body: ASTM A 126, Class B cast iron, with bolted cover and bottom drain connection.
- 2. End Connections: Threaded ends for strainers NPS 2 and smaller; flanged ends for strainers NPS 2-1/2 and larger.
- 3. Strainer Screen: Stainless-steel, 20 mesh strainer, and perforated stainless-steel basket with 50 percent free area.
- 4. Tapped blowoff plug.
- 5. CWP Rating: 250-psig pressure.

2.3 STEAM TRAPS

A. Thermostatic Traps:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Hoffman Specialty, Series 17C Balanced Pressure Steam Traps or a comparable product by one of the following:
 - a. Armstrong International, Inc.
 - b. Barnes & Jones, Inc.
 - c. Dunham-Bush, Inc.
 - d. Spirax Sarco, Inc.
 - e. Sterling.
2. Body: Bronze angle-pattern body with integral union tailpiece and screw-in cap.
3. Trap Type: Balanced-pressure.
4. Bellows: Stainless steel or Monel.
5. Head and Seat: Replaceable, hardened stainless steel.
6. Pressure Class: 125.

B. Float and Thermostatic Traps:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
3. Product: Basis-of-Design Product: Subject to compliance with requirements, provide Hoffman Specialty, Series H Float and Thermostatic Steam Traps or a comparable product by one of the following:
 - a. Armstrong International, Inc.
 - b. Barnes & Jones, Inc.
 - c. Dunham-Bush, Inc.
 - d. Spirax Sarco, Inc.
 - e. Sterling.
4. Body and Bolted Cap: ASTM A 126, cast iron.
5. End Connections: Threaded.
6. Float Mechanism: Replaceable, stainless steel.
7. Head and Seat: Hardened stainless steel.
8. Trap Type: Balanced pressure.
9. Thermostatic Bellows: Stainless steel or monel.
10. Thermostatic air vent capable of withstanding 45 deg F of superheat and resisting water hammer without sustaining damage.
11. Vacuum Breaker: Thermostatic with phosphor bronze bellows, and stainless steel cage, valve, and seat.
12. Maximum Operating Pressure: 125 psig.

PART 3 - EXECUTION

3.1 LP STEAM PIPING APPLICATIONS

- A. LP Steam Piping, NPS 2 and Smaller: Schedule 40, Type S, Grade B, steel pipe; Class 125 cast-iron fittings; and threaded joints.
- B. LP Condensate piping, NPS 2 and smaller: Schedule- 80, Type-S, Grade- B, steel pipe; Class-125 cast-iron fittings; and threaded joints.
- C. LP Steam Piping, NPS 2-1/2 and UP: Schedule 40, Type S, Grade B, steel pipe; Steel Butt-welding fittings, 125 lb; and welded joints.
- D. LP Condensate piping, NPS 2-1/2 and UP: Schedule- 80, Type-S, Grade- B, steel pipe; -Steel Butt-welding fittings, 250 lb; and welded pipe joints.

3.2 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Use indicated piping locations and arrangements if such were used to size pipe and calculate friction loss, expansion, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
- B. Install piping at indicated slope, free of sags and bends, in concealed interior and exterior locations, except in equipment rooms and service areas and allow for application of insulation plus 1-inch clearance around insulation.
- C. Exposed interior and exterior piping shall be installed at right angles or parallel to building walls. Diagonal runs are prohibited, unless otherwise indicated.
- D. Install
 - 1. piping
 - a. to permit valve servicing.
 - b. parallel to each other
 - 2. shutoff duty valves at branch connections to steam supply mains, at steam supply connections to equipment, and at the outlet of steam traps.
 - 3. steam traps assemblies as indicated on the Contract Drawings.
 - a. steam trap, thermostatic radiator valves, remote sensor, and all pipe, nipples, unions, and fittings required for a complete installation.
 - 1) full-port ball valve, strainer, and union upstream from trap; install union, check valve, and full-port ball valve downstream from trap unless otherwise indicated
 - 2) Pipe nipples shall schedule 80 thickness, fittings and unions shall be malleable iron 350 lbs. rated.
 - 4. components with pressure rating equal to or greater than system operating pressure.
 - 5. fittings for changes in direction and branch connections.
 - a. Eccentric reducer fitting installed with level side down to reduce pipe sizes.
 - b. Branch connections to mains using-mechanically formed tee fittings in main pipe, with the branch connected to top of main pipe.

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6. couplings according to manufacturer's written instructions.
7. valves according to Section 230523 "General-Duty Valves for HVAC Piping."
8. unions in piping, NPS 2 and smaller, adjacent to valves, at final connections of equipment, and elsewhere as indicated.
9. flanges in piping, NPS 2-1/2 and larger, at final connections of equipment and elsewhere as indicated.
10. strainers on supply side of control valves, pressure-reducing valves, steam traps, and elsewhere as indicated.
11. NPS 3/4 nipple and full port ball valve in blowdown connection of strainers NPS 2 and larger. Match size of strainer blowoff connection for strainers smaller than NPS 2.
12. expansion loops, expansion joints, anchors, and pipe alignment guides as specified in Section 230516 "Expansion Fittings and Loops for HVAC Piping."
13. drains, consisting of a tee fitting, NPS 3/4 full port-ball valve, and short NPS 3/4 threaded nipple with cap, at low points in piping system mains and elsewhere as required for system drainage.
14. drip legs at low points and natural drainage points such as ends of mains, bottoms of risers, and ahead of pressure regulators, and control valves.
 - a. On straight runs with no natural drainage points, install drip legs at intervals not exceeding 40'.
 - b. Size drip legs same size as main. In steam mains NPS 6 and larger, drip leg size can be reduced, but to no less than NPS 4.
15. sleeves and sleeve seals for piping penetrations of walls, ceilings, and floors. Sleeves shall be sufficient to protect pipe from abrasion from penetrated material. DO NOT constrict free movement of pipe required to prevent stress due to thermal expansion and contraction. Do not use expanding foam caulking to seal annular space between pipe and penetration.
16. escutcheons for piping penetrations of walls, ceilings, and floors.

E. Slope

1. steam-supply piping at a minimum uniform grade of 0.2 percent downward in direction of steam flow.
2. condensate-return piping at a minimum uniform grade of 0.4 percent downward in direction of condensate flow.

F. Identify piping as specified in Section 230553 "Identification for HVAC Piping and Equipment."

1. PVC-Pipe Sleeves: ASTM D 1785, Schedule 40.

3.3 STEAM-TRAP INSTALLATION

A. Install.

3.4 HANGERS AND SUPPORTS

A. Refer to the following sections

1. Section 230529 "Hangers and Supports for HVAC Piping and Equipment." Comply with requirements below for maximum spacing.
2. Section 230548 "Vibration and Seismic Controls for HVAC Piping and Equipment."

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B. Install

1. adjustable steel clevis hangers for individual horizontal piping less than 20 feet long.
2. adjustable roller hangers and spring hangers for individual horizontal piping 20 feet or longer.
 - a. Pipe Roller: MSS SP-58, Type 44 for multiple horizontal piping 20 feet or longer, supported on a trapeze.
 - b. Spring hangers to support vertical runs.

C. Space hangers with the following maximum spacing and minimum rod sizes:

	Maximum Span	Minimum Rod Size
NPS 3/4	9 feet	1/4 inch
NPS 1	9 feet	1/4 inch
NPS 1-1/2	12 feet	3/8 inch
NPS 2	13 feet	3/8 inch
NPS 2-1/2	14 feet	3/8 inch
NPS 3	15 feet	3/8 inch
NPS 4	17 feet	1/2 inch
NPS 6	21 feet	1/2 inch
NPS 8	24 feet	5/8 inch
NPS 10	26 feet	3/4 inch
NPS 12	30 feet	7/8 inch

- D. Fiberglass Piping Hanger Spacing: Space hangers according to pipe manufacturer's written instructions for service conditions. Avoid point loading. Space and install hangers with the fewest practical rigid anchor points.

3.5 PIPE JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.

3.6 TERMINAL EQUIPMENT CONNECTIONS

A. Install

1. same size or larger than equipment connections.
2. traps and control valves in accessible locations close to connected equipment
3. bypass piping with globe valve around control valve. If parallel control valves are installed, only one bypass is required.
4. vacuum breakers downstream from control valve, close to coil inlet connection.
5. drip leg at coil outlet.

3.7 FIELD QUALITY CONTROL

A. Prepare steam and condensate piping according to ASME B31.9, "Building Services Piping," and as follows:

1. Leave joints, including welds, uninsulated and exposed for examination during test.
2. Provide temporary restraints for expansion joints that cannot sustain reactions due to test pressure. If temporary restraints are impractical, isolate expansion joints from testing.
3. Flush system with clean water. Clean strainers.
4. Isolate equipment from piping. If a valve is used to isolate equipment, its closure shall be capable of sealing against test pressure without damage to valve. Install blinds in flanged joints to isolate equipment.

B. Perform the following tests on steam and condensate piping:

1. Use ambient temperature water as a testing medium unless there is risk of damage due to freezing. Another liquid that is safe for workers and compatible with piping may be used.
2. Subject piping system to hydrostatic test pressure that is not less than 1.5 times the working pressure. Test pressure shall not exceed maximum pressure for any vessel, pump, valve, or other component in system under test. Verify that stress due to pressure at bottom of vertical runs does not exceed 90 percent of specified minimum yield strength.
3. After hydrostatic test pressure has been applied for at least 10 minutes, examine piping, joints, and connections for leakage. Eliminate leaks by tightening, repairing, or replacing components, and repeat hydrostatic test until there are no leaks.

C. Prepare written report of testing.

END OF SECTION 232213

SECTION 232545 - CHEMICAL TREATMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cleaning of piping systems.
- B. Treatment of closed systems.

1.02 SUBMITTALS

- A. Product Data: Provide chemical treatment materials, chemicals, and equipment including connection requirements.
- B. Manufacturer's Installation Instructions: Indicate placement of equipment in systems, piping configuration, and connection requirements.
- C. Manufacturer's Field Reports: Submit under provisions of the contract.
- D. Manufacturer's Field Reports: Indicate start-up of treatment systems when completed and operating properly. Indicate analysis of system water after cleaning and after treatment.

1.03 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of the contract.
- B. Operation and Maintenance Data: Include data on all equipment including procedures, and treatment programs. Include step by step instructions on test procedures including target concentrations.

1.04 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing or producing services and products specified in this Section with minimum ten years documented experience. Company shall have local representatives with water analysis laboratories and full time service personnel.

1.05 REGULATORY REQUIREMENTS

- A. Conform to applicable code for addition of non-potable chemicals to building mechanical systems, and for to public sewage systems.

1.06 WATER TREATMENT SERVICE

- A. Furnish services of a water treatment company for initial boil out and cleaning of new boiler and piping.

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- B. Provide initial treatment and one follow-up visit after two months from the date of initial treatment.
- C. Provide the owner a service instruction manual complete with written instructions for chemical feeding, bleed-off, testing procedures and safety and handling procedures, complete with Material Safety Data Sheets on all materials supplied.
- D. Demonstrate to owner's personnel the proper application of written instructions by following the service instruction manual with a minimum of four (4) hours training in the safety handling application and maintenance procedures.
- E. Provide all chemicals, chemical feeding equipment and testing equipment as required.
- F. Provide technical service visits to perform field inspections and make water analysis on site. Detail findings in writing on proper practices, chemical treating requirements, and corrective actions needed. Submit two copies of field service report after each visit.
- G. Provide laboratory and technical assistance services during this maintenance period.
- H. Provide on site inspections of equipment during scheduled shutdown to properly evaluate success of treatment program, and make recommendations in writing based upon these inspections.
- I. Strainers and equipment low points shall be periodically observed to strain out loosened debris.

1.07 MAINTENANCE MATERIALS

- A. Provide maintenance materials under provisions of the contract.
- B. Provide one year supply of chemicals and testing equipment for treatment and testing.

PART 2 PRODUCTS

2.01 MANUFACTURER/SERVICE PROVIDER

- A. Rhomar Water Management Inc.
- B. Substitutions: Under provisions of the contract.

2.02 MATERIALS

- A. System shall have:
 - 1. Chemical Dispensing Pump
 - 2. Boiler Pro 903 chemical treatment
 - 3. Treatment Test Kit
 - 4. Blowdown Tester

PART 3 EXECUTION

3.01 PREPARATION

- A. Systems shall be operational, filled, started, and vented prior to cleaning. Use water meter to record capacity in each system.
- B. Place terminal control valves in open position during cleaning.

3.02 CLEANING SEQUENCE

- A. New boiler shall be boiled out with an alkaline boiling out compound to remove grease, oil and foreign matter, at the rate of 50 pounds per 1000 gallons of water in the boiler or as recommended by the manufacturer. Boil out period shall be a minimum of 48 hours or as recommended by boiler manufacturer.
- B. Circulate for 48 hours then drain quickly as possible. Refill with clean water and circulate for 24 hours then drain. Refill and repeat procedure until system cleaner is removed. Use neutralizing agents as recommended by the supplier. Clean strainers and screens after each cycle.
- C. Isolate boiler and thoroughly clean and flush to remove all mill scale and oil. Verify chemical compatibility with the boiler manufacturer prior to cleaning. Petroleum based cleaners shall not be used.
- D. This work shall be performed by this Contractor under the supervision of a qualified representative of the water treatment contractor.

3.03 SYSTEM TREATMENT

- A. Install isolating and drain valves and necessary piping and connect into existing water systems as per manufacturer's recommendations. Chemicals shall be introduced when need is indicated by sample testing.
- B. Provide initial treatment chemicals and test water for proper concentrations. Submit lab test results to the Engineer.
- C. Service provider shall return after two months of operation to check and adjust treatment chemicals and retest water for proper concentrations. Submit lab test results to the engineer.
- D. Thoroughly train facility representative in methods of testing and adding chemicals. Provide equipment and materials to permit owner to perform future testing and addition of chemicals. Provide product ordering information for replacements.

END OF SECTION

SECTION 235100 - BREECHINGS, CHIMNEYS, AND STACKS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Listed double-wall vents.

1.3 ACTION SUBMITTALS

- A. Shop Drawings: For vents, breechings, chimneys, and stacks. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, methods of field assembly, components, hangers and seismic restraints, and location and size of each field connection.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain listed system components through one source from a single manufacturer.
- B. Certified Sizing Calculations: Manufacturer shall certify venting system sizing calculations.

1.5 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of venting system that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, structural failures caused by expansion and contraction.
 - 1. Warranty Period: Standard 1 Year and Extended 15 Year Warranty from date of Substantial Completion (15 & 1 Commercial Warranty)

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PART 2 - PRODUCTS

2.1 DOUBLE WALL VENTS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- C. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
 - 1. Selkirk Inc.
 - 2. Approved Equal
- D. Description: Double-wall metal vents tested according to UL 641 and rated for 570 deg F continuously, or 1700 deg F for 10 minutes; with positive flue pressure complying with NFPA.
- E. Construction (For Boilers and Domestic Hot Water Heater): Inner shell and outer jacket separated by at least a 2-inch airspace filled with high-temperature ceramic-fiber insulation.
- F. Inner Shell: ASTM A 666, Type 304 stainless steel.
- G. Outer Jacket: Stainless steel.
- H. Accessories: Refer to Equipment schedule on Drawing.

2.2 GUYING AND BRACING MATERIALS

- A. Cable: Three galvanized, stranded wires of the following thickness:
 - 1. ID Sizes 4 to 15 Inches: 5/16 inch.
- B. Pipe: Two galvanized steel, NPS 1-1/4.
- C. Angle Iron: Two galvanized steel, 2 by 2 by 0.25 inch
- D. Coordinate with roofing installation for setting any guy wire anchors or clips as required. All material furnished and installed under this section. Roofing/sealing by other sections.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of work.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF LISTED VENTS AND CHIMNEYS

- A. Locate to comply with minimum clearances from combustibles and minimum termination heights according to product listing or NFPA 211, whichever is most stringent.
- B. Seal between sections of positive-pressure vents according to manufacturer's written installation instructions, using sealants recommended by manufacturer.
- C. Support vents at intervals recommended by manufacturer to support weight of vents and all accessories, without exceeding appliance loading. Provide all modular straight sections, fittings, supports, guides, expansion joints, guy sections, guy tensioners, roof thimbles, roof flashings, storm collars and stack cap terminations as required to provide a complete system per the manufacturer's installation instructions. Coordinate all work with roof replacement and provide all openings and support steel as required.
- D. Slope breechings down in direction of appliance, with condensate drain connection at lowest point piped to nearest drain.
- E. Lap joints in direction of flow.
- F. Connect base section to foundation using anchor lugs of size and number recommended by manufacturer.
- G. Join sections with acid-resistant joint cement to provide continuous joint and smooth interior finish.
- H. Erect stacks plumb to finished tolerance of no more than 1 inch out of plumb from top to bottom.

3.3 CLEANING

- A. After completing system installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris and repair damaged finishes.
- B. Clean breechings internally, during and after installation, to remove dust and debris. Clean external surfaces to remove welding slag and mill film. Grind welds smooth and apply touchup finish to match factory or shop finish.
- C. Provide temporary closures at ends of breechings, chimneys, and stacks that are not completed or connected to equipment.

END OF SECTION 235100

SECTION 235113 - DRAFT CONTROL DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Combustion-air intake fan System.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show fabrication and installation details for fan. Include plans, elevations, sections, details, and attachments to other work. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, hangers and location and size of each field connection.
 - 1. Wiring Diagrams: Power, signal, and control wiring.
 - 2. Detailed connections to burner panel and any remote connections into Building Management System.

1.4 INFORMATIONAL SUBMITTALS

- A. Warranty: Special warranty specified in this Section.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For draft control devices to include in emergency, operation, and maintenance manuals.
- B. Test and Balance Data, start-up/check-out commissioning coordinated with boiler operation.

1.6 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

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- B. Listed to ANSI/UL 705
- C. Compliance with fuel codes for boiler safety interlock.

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of combustion-air fan that fail in materials or workmanship within specified warranty period.
 - 1. Failures include failure of the fan due to corrosion.
 - 2. Warranty Period: Two years from date of Substantial Completion.
 - 3. All combustion air automation equipment shall guarantee against defects in materials and/or workmanship for a period of 12 months from the date of installation. The warranty shall be provided by the contractor and shall include parts and labor necessary to repair or replace all defective parts and materials covered.

PART 2 - PRODUCTS

2.1 COMBUSTION-AIR FAN

- A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated or a comparable product::
 - 1. Tjernlund Products, Inc. (**Model# EC1800MF with options listed and specified**)
 - 2. Approved Equal
- B. Representative: Mr. Steven Brady
M.A.P. Sales
Telephone: (908) 310-4923
Email: mapbradysr@gmail.com
- C. System: Modulating combustion air system manufactured in the USA.
- D. Fan Construction: Housing is constructed from galvanized sheet metal with the seams folded to give the fan an air tight casing.
- E. Motor: Fan shall have a mixed flow impeller and external rotor EC motors, UL listed.
- F. Modulating Controller (MPCI): Modulating Pressure Controller – Interlocked shall have plug and play installation. 2 button set point adjustment and integrated pressure transducer.
- G. Additional Appliance Interlock (MAC4E): required to interlock three appliances (Boiler 1, Boiler2 and domestic hot water heater)
- H. Indoor Pressure Sensor Decorative Cover Fitting (IPS-1)
- I. Fire and Freeze Protection Limit (FFP-1)

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- J. All sensing tubes, communication wire harness, disconnect, and interlocks.

2.2 MOTORS

- A. Comply with requirements in Section 230513 "Common Motor Requirements for HVAC Equipment."

2.3 CAPACITIES AND CHARACTERISTICS

- A. Fan:
 - 1. Manufacturer: Tjernlund Products, Inc.
 - 2. Model No: EC1800MF
 - 3. Airflow: 0-1200 cfm
 - 4. Speed: 1750 rpm.
 - 5. Static Pressure: 0.8 inches wg
 - 6. Duct collars on both ends.
 - 7. Electrical Characteristics:
 - a. Motor Horsepower: 366 watts
 - b. Volts: 120 V.
 - c. Phase: Single
 - d. Hertz: 60.
 - e. Full-Load Amperes: 7

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install combustion air intake fan according to manufacturer's written instructions.
- B. All electrical conduit wiring, disconnects for power, control and interlock shall be provided. Separation of conduits for control and power as required by the manufacturer. Provide separate conduits for VFD line and load side.
- C. Combustion air shall vary with boiler/DHW heater firing
 - 1. with one boiler running, system shall provide 40% of combustion air.
 - 2. with just domestic hot water heater running, system shall provide 20% combustion air.
 - 3. With one boiler and hot water heater running, system shall provide 60% combustion air.
 - 4. with both boiler running, system shall provide 80% combustion air.
 - 5. with both boiler and domestic hot water heater running, system shall provide 100% combustion air.
- D. Pressure control shall be set-up and available as an option for use.
- E. Air outlets and ductwork shall be installed complete.

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- F. Any air pressure sensing tube required shall be installed.

3.2 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service.
 - 1. Complete installation and startup checks according to manufacturer's written instructions.
 - 2. Factory shall supply service technicians having experience in system start-up, troubleshooting in system start-up, troubleshooting and preventive maintenance.
 - 3. Verify all electrical and communications wiring connections.
 - 4. Test run the operation of the Modulating Combustion Air System
 - 5. Test safety interlocks.
- B. Remove and replace malfunctioning components and recheck.

3.3 ADJUSTING

- A. Set field-adjustable switches and controls as indicated.

3.4 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain draft control devices.

END OF SECTION 235113

DIVISION 26 - TECHNICAL ELECTRICAL SPECIFICATIONS

260000 – GENERAL PROVISIONS

1.1 SCOPE OF WORK

- A. A. The work under this Division shall include furnishing and installing all labor, material, and equipment necessary to complete the electrical installations and interconnections as shown on the contract drawings for the Boiler Replacement and Associated Work, Vernon Plaza Family Center, 17 South Second Avenue, Mount Vernon, New York.

1.2 WORK INCLUDED

- A. The following is a list of general work to be performed under this contract. The work shall not be limited by these descriptions
 - 1. Contractor shall disconnect and remove all existing branch circuitry from equipment shown on contract drawing and properly dispose of in the proper manner.
 - 2. Contractor shall furnish and install, branch circuitry, circuit breakers, MC Cable, conduit, junction boxes, equipment, all associated hardware, material, and labor to install his work.
 - 3. Contractor shall perform all wire and cable terminations, cutting, drilling, and patching.
 - 4. All work shall comply with 2020 NEC and NFPA codes.

1.3 CODES AND STANDARDS

- A. All materials furnished and all work installed shall comply, where applicable, with the requirements of the current New York State Building Code, Local Codes, and the 2014 National Electrical Code. Whenever reference is made of "National Electrical Code, or "NEC", it shall mean the 2020 National Electrical Code, NFPA No. 70-2020.
- B. Material and work shall comply with other Codes and Standards as may be specified or referenced.
- C. Where applicable or specified herein, all material and devices furnished shall meet requirements of Underwriters Laboratories, Inc., shall be U.L. listed, and where further applicable, shall bear the U.L. listing mark.

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1.4 ELECTRICAL SYMBOLS

- A. Unless otherwise indicated, electrical symbols used in this Contract plans conform to ANSI Y32.9 "Graphic Symbols for Electrical Wiring and Layout Diagrams used in Architectural and Building Construction; and ANSI Y32.2 "Graphic Symbols for Electrical and Electronic Diagram."

1.5 GENERAL AND SPECIAL CLAUSES

- A. The Contractor shall take notice that, in addition to the requirements under Division 26, he shall be governed by the General Clauses and Special Clauses which are indicated as covering the contract(s) comprising the work for this project, and which make reference to specific responsibilities of the Contractor(s)

1.6 POWER SHUTDOWN

- A. Any work performed which includes the cutting off of any power shall be fully coordinated with the County Construction Coordinator and Engineer. If special precautions are required, they will be enumerated under Item 26.1.10, Execution of Work.

1.7 GROUND FAULT PROTECTION

- A. The Contractor shall provide Ground Fault Protection for Personnel at the construction site in accordance with Article 215.9 of the 2020 NEC

1.8 FINAL TEST AND INSPECTION

- A. The Contractor shall be required to demonstrate to the satisfaction of the County Construction Coordinator and Engineer that all the electrical systems, equipment and devices operate as specified.

1.9 RECORD DRAWINGS

- A. The Contractor shall submit AS-BUILT drawings as described in the Special Clauses.

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1.10 EXECUTION OF WORK

- A. All work shall be performed in a phased and orderly manner and completely coordinated with the County Construction Coordinator and Engineer.

1.11 INTENT

- A. Drawings are diagrammatic. All systems and portions thereof shall be installed in strict accordance with the manufacturer's recommendations and specifications, complete in all details, utilizing the best quality components, and workmanship assuring adequate design and trouble free operation. Before submitting his proposal, each bidder shall visit the site, examine existing conditions and ascertain the full extent of the work to be performed. He shall examine the plans for all trades where applicable and note all conditions of work by others and their relation to his own work and shall become fully informed as to the extent and character of the work to be performed under this contract. No consideration will be granted for alleged misunderstanding of materials to be furnished, work to be done, or conditions to be dealt with during the course of the job.

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Electrical equipment coordination and installation.
2. Common electrical installation requirements.
3. Cutting and Patching for Electrical Construction.
4. Field Quality Control.
5. Cleaning.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Shall be UL listed and labeled as defined in NFPA 70, Article 100, and marked for intended use.
- B. All work to comply with NFPA 70 2020 standards.

1.4 SUBMITTALS

- A. Product Data: For circuit breakers, wire, conduit, fire alarm devices.

1.5 COORDINATION

- A. Coordinate arrangement, mounting, and support of electrical conduit:
 1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
 2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
 3. So connecting raceways will be clear of obstructions and of the working and access space of other equipment.

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- B. Coordinate installation of required supporting devices, conduits, circuit breakers, wire, junction boxes, fire alarm devices/cabling, fiber optic cable, and cutting and patching with mechanical contractor and facilities manager prior to performing any work.
- C. Coordinate application of firestopping specified in Division 26 Section "Through-Penetration Firestop Systems.

PART 2 - EXECUTION

2.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

- A. Comply with NEC 2020.
- B. All work shall be performed in a phased and orderly manner and be coordinated with the County Construction coordinator, Mechanical Contractor, and with the Engineer.
- C. All conduits and junction boxes shall be properly supported and mounted to comply with NEC 2020 code.

2.2 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Electrical penetrations occur when raceways, cables, wireways, cable trays, or busways penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.
- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- D. Cut sleeves to length for mounting flush with both surfaces of walls.
- E. Size pipe sleeves to provide annular clear space between sleeve and raceway as recommend by seal manufacture, unless indicated otherwise.
- F. Seal space outside of sleeves with grout for penetrations of concrete and masonry
 - 1. Promptly pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.
- G. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint.
- H. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable

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penetration sleeves with firestop materials. Comply with requirements in Division 26 Section "Through Penetration Firestop Systems."

2.3 FIRESTOPPING

- A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 26 Section "Through Penetration Firestop Systems."

2.4 CUTTING AND PATCHING

- A. The electrical contractor shall perform all cutting and patching for the installation of material and equipment as required to complete the work.
- B. The electrical contractor shall repair and refinish all disturbed areas and surfaces to match existing conditions and install new fireproofing where it has been disturbed.

2.6 FIELD QUALITY CONTROL

- C. Inspect installed components for damage and faulty work, including the following:
 - 1. Raceways.
 - 2. Building wire and connectors.
 - 3. Supports for electrical components
 - 4. Electrical identification.
 - 5. Electrical demolition.
 - 6. Cutting and patching for electrical installations.

2.5 CLEANING

- A. On completion of work electrical contractor shall be responsible to remove all construction debris created by him.

END OF SECTION 260500

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SECTION 260512 – THROUGH - PENETRATION FIRESTOP SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special Clauses apply to this Section.

1.2 SUMMARY

- A. This Section includes through-penetration Firestop systems for penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items.
 - 1. Floors, walls, ceilings, and partitions.

1.3 PERFORMANCE REQUIREMENTS

- A. General: For the following constructions, provide through-penetration Firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated.
 - 1. Fire-resistance-rated walls including partitions with fire protection rated openings.
 - 2. Fire-resistance-rated floors.
- B. Rated Systems: Provide through-penetration Firestop systems with the following ratings determined per ASTM E 814 or UL 1479:
 - 1. F-Rated Systems: Provide through-penetration Firestop systems with F-ratings indicated, but not less than that equaling or exceeding fire-resistance rating of constructions penetrated.
 - 2. T-Rated Systems: For the following conditions, provide through-penetration Firestop systems with T-ratings indicated, as well as F-ratings, where systems protect penetrating items exposed to potential contact with adjacent materials in occupied floor areas:
 - a. Penetrations located outside wall cavities.
 - b. Penetrations located outside fire-resistance-rated shaft enclosures.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each through-penetration Firestop system, show each type of construction condition penetrated, relationships to adjoining construction and type of penetrating item.

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Include Firestop design designation of qualified testing and inspecting agency that evidences compliance with requirements for each condition indicated.

1. Submit documentation, including illustrations, from a qualified testing and inspecting agency that is applicable to each through-penetration Firestop system configuration for construction and penetrating items.
- C. Qualification Data: Must provide proof that that installer has completed other projects using Firestopping materials.
- D. Product Certificates: For through-penetration Firestop system products, signed by product manufacturer that products furnished comply with requirements.
- E. Product Test Reports: From a qualified testing agency indicating through-penetration firestop system complies with requirements, based on comprehensive testing of current products.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: The installer must be an experienced installer who has completed other projects using the same or similar material and products to perform through – penetration Firestop systems.
- B. Source Limitations: Obtain through-penetration Firestop systems, for each kind of penetration and construction condition indicated, through one source from a single manufacturer.
- C. Fire-Test-Response Characteristics: Provide through-penetration Firestop systems that comply with the following requirements and those specified in Part 1 "Performance Requirements" Article:
1. Firestopping tests are performed by a qualified testing and inspecting agency. A qualified testing and inspecting agency is UL listed.
 2. Through-penetration Firestop systems are identical to those tested per ASTM E 814.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver through-penetration Firestop system products to Project site in original, unopened containers or packages with intact and legible manufacturers' labels identifying product and manufacturer, date of manufacture, lot number, shelf life if applicable, qualified testing and inspecting agency's classification marking applicable to Project, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials for through-penetration Firestop systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

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1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install through-penetration firestop systems when ambient or substrate temperatures are outside limits permitted by through-penetration firestop system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Ventilate through-penetration Firestop systems per manufacturer's written instructions by natural means or, where this is inadequate, forced-air circulation.

1.8 COORDINATION

- A. Coordinate construction of openings and penetrating items to ensure that through-penetration Firestop systems are installed according to specified requirements.
- B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration Firestop systems.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the through-penetration Firestop systems indicated for each application in the Through-Penetration Firestop System Schedule at the end of Part 3 that are produced by one of the following manufacturers:
 - 1. A/D Fire Protection Systems Inc.
 - 2. Grace, W. R. & Co. - Conn.
 - 3. Hilti, Inc.
 - 4. Johns Manville.
 - 5. Nelson Firestop Products.
 - 6. NUCO Inc.
 - 7. RectorSeal Corporation (The).
 - 8. Specified Technologies Inc.
 - 9. 3M; Fire Protection Products Division.
 - 10. Tremco; Sealant/Weatherproofing Division.
 - 11. USG Corporation.
 - 12. DAP Inc.

2.2 FIRESTOPPING, GENERAL

- A. Compatibility: Provide through-penetration Firestop systems that are compatible with one another; with the substrates forming openings; and with the items, if any, penetrating through-penetration Firestop systems, under conditions of service and application, as demonstrated by through-penetration Firestop system manufacturer based on testing and field experience.

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- B. Accessories: Provide components for each through-penetration Firestop system that are needed to install fill materials and to comply with Part 1 "Performance Requirements" Article. Use only components specified by through-penetration Firestop system manufacturer and approved by qualified testing and inspecting agency for Firestop systems indicated. Accessories include, but are not limited to, the following items:
1. Permanent forming/damming/backing materials, including the following:
 - a. Slag-/rock-wool-fiber insulation.
 - b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
 - c. Fire-rated form board.
 - d. Fillers for sealants.
 2. Temporary forming materials.
 3. Substrate primers.
 4. Collars.
 5. Steel sleeves.

2.3 FILL MATERIALS

- A. General: Provide through-penetration Firestop systems containing the types of fill materials indicated in the Through-Penetration Firestop System Schedule at the end of Part 3 by referencing the types of materials described in this Article. Fill materials are those referred to in directories of referenced testing and inspecting agencies as "fill," "void," or "cavity" materials.
- B. Latex Sealants: Single-component latex formulations that after cure do not re-emulsify during exposure to moisture.
- C. Firestop Devices: Factory-assembled collars formed from galvanized steel and lined with intumescent material sized to fit specific diameter of penetrant.
- D. Intumescent Composite Sheets: Rigid panels consisting of aluminum-foil-faced elastomeric sheet bonded to galvanized steel sheet.
- E. Intumescent Putties: Nonhardening dielectric, water-resistant putties containing no solvents, inorganic fibers, or silicone compounds.
- F. Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on one side.
- G. Mortars: Prepackaged dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar.
- H. Pillows/Bags: Reusable heat-expanding pillows/bags consisting of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents, and fire-retardant additives.

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- I. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.
- J. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below:
 - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces, and nonsag formulation for openings in vertical and other surfaces requiring a nonslumping, gunnable sealant, unless indicated firestop system limits use to nonsag grade for both opening conditions.
 - 2. Grade for Horizontal Surfaces: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces.
 - 3. Grade for Vertical Surfaces: Nonsag formulation for openings in vertical and other surfaces.

2.4 MIXING

- A. For those products requiring mixing before application, comply with through-penetration Firestop system manufacturer's written instructions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected

3.2 PREPARATION

- A. Surface Cleaning: Clean out openings immediately before installing through-penetration Firestop systems to comply with Firestop system manufacturer's written instructions and with the following requirements:
 - 1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of through-penetration Firestop systems.
 - 2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with through-penetration Firestop systems. Remove loose particles remaining from cleaning operation.
 - 3. Remove laitance and form-release agents from concrete.

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- B. Priming: Prime substrates where recommended in writing by through-penetration Firestop system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.
- C. Masking Tape: Use masking tape to prevent through-penetration Firestop systems from contacting adjoining surfaces that will remain exposed on completion of Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from Firestop system materials. Remove tape as soon as possible without disturbing Firestop system's seal with substrates.

3.3 THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATION

- A. General: Install through-penetration Firestop systems to comply with Part 1 "Performance Requirements" Article and with Firestop system manufacturer's written installation instructions and published drawings for products and applications indicated.
- B. Install forming/damming/backing materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
 - 1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of Firestop systems.
- C. Install fill materials for Firestop systems by proven techniques to produce the following results:
 - 1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.
 - 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
 - 3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 IDENTIFICATION

- A. Identify through-penetration Firestop systems with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within **6 inches (150 mm)** of edge of the Firestop systems so that labels will be visible to anyone seeking to remove penetrating items or Firestop systems. Use mechanical fasteners for metal labels. For plastic labels, use self-adhering type with adhesives capable of permanently bonding labels to surfaces on which labels are placed and, in combination with label material, will result in partial destruction of label if removal is attempted. Include the following information on labels:
 - 1. The words "Warning - Through-Penetration Firestop System - Do Not Disturb. Notify Building Management of Any Damage."
 - 2. Contractor's name, address, and phone number.
 - 3. Through-penetration firestop system designation of applicable testing and inspecting agency.

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4. Date of installation.
5. Through-penetration firestop system manufacturer's name.
6. Installer's name.

3.5 CLEANING AND PROTECTING

- A. Clean off excess fill materials adjacent to openings as Work progresses by methods and with cleaning materials that are approved in writing by through-penetration firestop system manufacturers and that do not damage materials in which openings occur.
- B. Provide final protection and maintain conditions during and after installation that ensure that through-penetration firestop systems are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated through-penetration firestop systems immediately and install new materials to produce systems complying with specified requirements.

END OF SECTION 260512

DIVISION 26-TECHNICAL ELECTRICAL SPECIFICATIONS

SECTION 260519 - CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special Clauses, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Building wires and cables rated 600 V and less.
 - 2. Connectors, splices, and terminations rated 600 V and less.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: UL Listed and labeled as defined in NFPA 70, Article 100, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. The Okonite Company.
 - 2. Alcan Products Corporation; Alcan Cable Division.
 - 3. American Insulated Wire Corp.; a Leviton Company.
 - 4. General Cable Corporation.
 - 5. Senator Wire & Cable Company.
 - 6. Southwire Company.

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2.2 600 VOLT WIRE

- A. Wire shall be type XHHW unless otherwise specified and shall have 600 volt rated, cross-linked polyethylene insulation. THWN or THHN may be substituted for conductor sizes #10 and smaller.
- B. Wire shall have a copper conductor, sized as shown on the plans, if not shown it shall be sized as required by 2020 NEC.
- C. All wire furnished shall bear U.L. labeling indicating type, voltage rating and conductor size.
- D. Each wire shall be color coded and constant phase line or circuit color coding shall be maintained. Insulation shall be provided in colors indicated in the following paragraph:

Color Coding for 208/120v circuits shall be as follows:

Phase A - Black Neutral – White.

Phase B – Red Ground – Green or Bare.

Phase C – Blue.

Color Coding for 480/277v circuits shall be as follows:

Phase A – Brown Neutral – Grey.

Phase B – Orange Ground – Green or Bare.

Phase C – Yellow

As shown, if not shown, as required by NEC.

- E. There shall be no splices in raceways.
- F. Wire splices shall have an insulation at least equal to that of the original wire. Splices shall be made with crimp connectors and subject to the approval of the engineer.
- G. Wiring may be grouped in a raceway at the option of the contractor providing complete compliance with the 2020 NEC is maintained including limitations on the number of conductors and providing conductor size is modified to meet derating criteria.

2.3 METAL CLAD CABLE (TYPE MC)

- A. Type MC Cable shall be continuously welded and corrugated impervious aluminum metal sheath, and shall be U.L. labeled.
- B. Type MC Cable shall meet all requirements of 2020 NEC Article 330 for Metal Clad Cable and shall comply with Article 300-22(b) for Wiring in Ducts or Plenums used for Environmental Air.

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- C. Cable shall consist of the number of solid copper conductors as shown on the drawing minimum size 12 AWG and one number 12 green ground conductor with separation tape and fillers
- D. Conductors shall be type THHN rated at 600 volts and shall be color coded, as described in Section 260519, PART 2.2, 600 Volt Wire.

PART 3 - EXECUTION

3.1 CONDUCTORS

- A. Wire splices shall be as described in Section 260519, PART 2.2, 600 Volt Wire.
- B. Required couplings and fittings shall be suitable for the purpose and designed for use with this type of cable.
- C. Contractor shall submit shop drawings and sample of the type MC cable he intends to furnish.
- D. When branch circuits are exposed, Type XHHW, single conductors in a raceway are to be used.

3.2 INSTALLATION OF CONDUCTORS

- A. Use pulling means; including fish tape, cable, rope, and basket-weave wire/cable grips that will not damage cables.
- B. Support MC Cable according to NEC article 330.30.

3.3 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

3.4 FIELD QUALITY CONTROL

- A. After installing conductors and before the electric circuit is energized physically inspect all work that it meets 2020 NEC codes.

END OF SECTION 260519

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SECTION 260526 - GROUNDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special Clauses, apply to this Section.

1.2 SUMMARY

- A. This Section includes grounding of electrical systems and equipment. Grounding requirements specified in this Section may be supplemented by special requirements of systems described in other Sections.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: UL listed and labeled as defined in NFPA 70, Article 100, and marked for intended use.
 - 1. Comply with UL 467.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Grounding Conductors, Cables, and Connectors:
 - a. Apache Grounding/Erico Inc.
 - b. Chance/Hubbell.
 - c. Copperweld Corp.
 - d. Erico Inc.; Electrical Products Group.
 - e. Framatome Connectors/Burndy Electrical.
 - f. Ideal Industries, Inc.
 - g. ILSCO.
 - h. Kearney/Cooper Power Systems.
 - i. O-Z/Gedney Co.; a business of the EGS Electrical Group.
 - j. Raco, Inc.; Division of Hubbell.
 - k. Thomas & Betts, Electrical.

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2.2 GROUNDING CONDUCTORS

- A. Material: Copper.
- B. Equipment Grounding Conductors: Insulated with green-colored insulation.

2.3 CONNECTOR PRODUCTS

- A. Comply with IEEE 837 and UL 467; listed for use for specific types, sizes, and combinations of conductors and connected items.
- B. Bolted Connectors: Bolted-pressure-type connectors, or compression type.

PART 3 - EXECUTION

3.1 APPLICATION

- A. In raceways, use insulated equipment grounding conductors.
- B. Equipment Grounding Conductor Terminations: Use bolted pressure clamps.
- C. The Contractor shall provide a grounding system electrically continuous throughout with necessary ground straps, ground wire, and ground bushing required to provide a complete interconnected system ground throughout the work as recommended by the N.E.C. Article 250.

3.2 EQUIPMENT GROUNDING CONDUCTORS

- A. Comply with NFPA 70, Article 250, for types, sizes, and quantities of equipment grounding conductors, unless specific types, larger sizes, or more conductors than required by NFPA 70 are indicated.
- B. Install equipment grounding conductors in all feeders and circuits.
- C. Install insulated equipment grounding conductor with circuit conductors for the following items, in addition to those required by NEC:
 - 1. Feeders and Branch circuits.
 - 2. Single-phase motors branch circuits.
 - 3. Three-phase motors branch circuits.
 - 4. Flexible raceway runs.

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3.3 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

3.4 CONNECTIONS

- A. General: Make connections so galvanic action or electrolysis possibility is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
 - 1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer to order of galvanic series.
 - 2. Make connections with clean, bare metal at points of contact.
 - 3. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.
- B. Equipment Grounding Conductor Terminations: For No. 12 AWG and smaller grounding conductors may be terminated with winged pressure-type connectors.
- C. Noncontact Metal Raceway Terminations: If metallic raceways terminate at metal housings without mechanical and electrical connection to housing, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to grounding bus or terminal in housing. Bond electrically noncontinuous conduits at entrances and exits with grounding bushings and bare grounding conductors, unless otherwise indicated.
- D. Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A.
- E. Compression-Type Connections: Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Use tools and dies recommended by connector manufacturer. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on grounding conductor.

END OF SECTION 260526

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawing and general provisions of the Contract, including General and Special Clauses, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Hangers and supports for electrical equipment and systems.

1.3 DEFINITIONS

- A. EMT: Electrical Metal Conduit

1.4 PERFORMANCE REQUIREMENTS

- A. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- B. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- C. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads imposed for this Project, with a minimum structural safety factor of four times the applied force.

1.5 QUALITY ASSURANCE

- A. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Raceway and Cable Supports: As described in NECA 1 and NECA 101.

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- B. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- C. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.
- D. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
 - 1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened Portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Hilti Inc.
 - 2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
 - 3) MKT Fastening, LLC.
 - 4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.
 - 2. Mechanical-Expansion Anchors: Insert-wedge-type, stainless steel, for use in hardened Portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Cooper B-Line, Inc.; a division of Cooper Industries.
 - 2) Empire Tool and Manufacturing Co., Inc.
 - 3) Hilti Inc.
 - 4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
 - 5) MKT Fastening, LLC.
 - 3. Concrete Inserts: Steel slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
 - 4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
 - 5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
 - 6. Toggle Bolts: All-steel springhead type.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.

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- B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for IMC as scheduled in NECA 1, where its Table 1 lists maximum spacings less than stated in NFPA 70. Minimum rod size shall be **1/4 inch (12.7 mm)** in diameter.

3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- B. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus **200 lb (90 kg)**.
- C. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
 - 1. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 - 2. To Existing Concrete: Expansion anchor fasteners.
 - 3. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
 - 4. To Light Steel: Sheet metal screws.
- D. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.3 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
 - 1. Apply paint by brush or spray to provide minimum dry film thickness of **2.0 mils (0.05 mm)**.
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 260529

SECTION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special Clauses apply to this Section.

1.2 SUMMARY

- A. This Section includes raceways, fittings, boxes, enclosures, for electrical wiring.
- B. Related Sections include the following:
 - 1. Division 26 Section "Through – Penetration Firestop Systems" for firestopping materials and installation at penetrations through walls, ceilings and other fire-rated elements.
 - 2. Division 26 Section "Electrical Identification." For Identification Products.

1.3 DEFINITIONS

- A. EMT: Electrical Metallic Tubing.
- B. MC: Metal Clad Cable.
- C. RGS: Rigid Galvanized Steel Conduit.

1.4 SUBMITTALS

- A. Product Data: For surface raceways, wireways, fittings, and boxes.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: UL Listed and labeled as defined in NFPA 70, Article 100, and marked for intended use.
- B. Comply with NFPA 70.

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PART 2 - PRODUCTS

2.1 METAL CONDUIT AND TUBING

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AFC Cable Systems, Inc.
 2. Alflex Inc.
 3. Allied Tube & Conduit; a Tyco International Ltd. Co.
 4. Anamet Electrical, Inc.; Anaconda Metal Hose.
 5. Electri-Flex Co.
 6. Manhattan/CDT/Cole-Flex.
 7. Maverick Tube Corporation.
 8. O-Z Gedney; a unit of General Signal.
 9. Wheatland Tube Company.
- B. EMT: Shall be UL labeled, galvanized steel, and 3/4" trade size minimum.
- C. EMT: ANSI C80.3.
- D. MC: ANSI/UL 1569.
- E. RGS: ANSI C80.1
- F. Fittings and connections for all EMT conduit shall be **Steel compression type**.
- G. Joint Compound for Rigid Steel Conduit: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.
- H. Couplings, conduit bodies, fittings and conduit support components shall be galvanized.
- I. Rigid steel conduit shall be threaded, hot dipped galvanized inside and out and shall be UL labeled. Conduit shall be gasketed and watertight in hazardous, wet, and corrosive locations.
- J. All RGS fittings shall be screwed threaded type, drawn tight, with a minimum of 5 threads engaged.
- K. Insulated bushings shall be provided at all terminal boxes or panels.
- L. All fittings for conduit and cable shall follow NEMA FB 1 standards.

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2.2 PULL BOXES AND JUNCTION BOXES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
 2. EGS/Appleton Electric.
 3. Erickson Electrical Equipment Company.
 4. Hoffman.
 5. Hubbell Incorporated; Killark Electric Manufacturing Co. Division.
 6. O-Z/Gedney; a unit of General Signal.
 7. RACO; a Hubbell Company.
 8. Robroy Industries, Inc.; Enclosure Division.
 9. Scott Fetzer Co.; Adalet Division.
 10. Spring City Electrical Manufacturing Company.
 11. Thomas & Betts Corporation.
 12. Walker Systems, Inc.; Wiremold Company (The).
 13. Woodhead, Daniel Company; Woodhead Industries, Inc. Subsidiary.
- B. Each junction box shall be a UL listed junction box (or pull box) fabricated of code gauge sheet steel with a screw fastened removable cover unless some other construction or material is shown.
- C. Junction boxes shall be provided as required for pulling wire and change in direction.
- D. All provisions of N.E.C Article 314 shall apply except as specified herein or shown on the plans.
- E. Each weatherproof junction box shall be UL listed.
- F. Each shall be ferrous cast body and cover with neoprene gasket and stainless steel cover screws.
- G. Each shall be supplied with hot dip galvanized finish.
- H. All provision of N.E.C. Article 314 shall apply except as specified herein or shown on plans.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
1. Exposed Conduit: Rigid Galvanized Steel Conduit.
 2. Concealed Conduit: Electrical Metallic Tubing shall be galvanized steel or MC Cable.

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- B. Indoors:
 - 1. Exposed, Not Subject to Physical Damage: Concealed Conduit: Electrical Metallic Tubing shall be galvanized steel or MC Cable. Exposed and subject to Physical Damage: Rigid Galvanized Steel Conduit. All unfinished areas shall use conduit appropriate for environmental conditions.
- C. Minimum Raceway Size: **3/4-inch** trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
 - 1. EMT Conduit: All connections and fittings shall be **steel compression** type, unless otherwise indicated. Set screw fittings are not acceptable.

3.2 INSTALLATION

- A. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- B. Contractor shall supply necessary couplings, fittings, elbows, and boxes to make a complete, workable, and continuous system.
- C. EMT shall be continuous and serve as a ground.
- D. All joints shall be secure and tight.
- E. Complete raceway installation before starting conductor installation.
- F. Support conduits as specified in 2020 N.E.C Articles 330.30, 344.30, and 358.30.
- G. Arrange stub-ups so curved portions of bends are not visible above the finished slab.
- H. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.
- I. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.
- J. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire.
- K. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:
 - L. Where otherwise required by NFPA 70.

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3.3 PROTECTION

- A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.

END OF SECTION 260533

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SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special Clauses apply to this Section.

1.2 SUMMARY

- A. This section includes electrical identification materials and devices required to comply with ANSI C2, NFPA 70, OSHA standards, and authorities having jurisdiction.

1.3 SUBMITTALS

- A. Product Data: For each electrical identification product indicated.
- B. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.

1.4 QUALITY ASSURANCE

- A. Comply with ANSI A13.
- B. Comply with NFPA 70.
- C. Comply with ANSI Z535.4 for safety signs and labels.
- D. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

PART 2 - PRODUCTS

2.1 RACEWAY AND CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size.
- B. Colors for Raceways Carrying Circuits at 600 V or Less:
 - 1. Black letters on an orange field.
 - 2. Legend: Indicate voltage and service.

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- C. Snap-Around Labels for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- D. Snap-Around, Color-Coding Bands for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches (50 mm) long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- E. Brass or aluminum tags 2 by 2 by 0.05 inch (50 by 50 by 1.3 mm), with stamped legend, punched for use with self-locking cable tie fastener.

2.2 WARNING LABELS AND SIGNS

- A. Comply with NFPA 70 and 29 CFR 1910.145.
- B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.
- C. Baked-Enamel Warning Signs:
 - 1. Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application.
 - 2. 1/4-inch (6.4-mm) grommets in corners for mounting.
 - 3. Nominal size, 7 by 10 inches (180 by 250 mm).
- D. Metal-Backed, Butyrate Warning Signs:
 - 1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch (1-mm) galvanized-steel backing; and with colors, legend, and size required for application.
 - 2. 1/4-inch (6.4-mm) grommets in corners for mounting.
 - 3. Nominal size, 10 by 14 inches (250 by 360 mm).

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

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- E. Power-Circuit Identification, 600 V or Less: Metal tags or aluminum, wraparound marker bands for cables, feeders switchboards, pull and junction boxes.
 - 1. Color-Coding of Secondary Conductors, 600 V or Less: Use colors listed below for service, feeder, and branch circuit conductors.
 - a. Color shall be factory applied the entire length of conductors.
 - b. Colors for 208/120-V Circuits:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - 4) Neutral: White.
 - 5) Ground: Green
 - c. Colors for 480/277-V Circuits:
 - 1) Phase A: Brown.
 - 2) Phase B: Orange.
 - 3) Phase C: Yellow.
 - 4) Neutral: grey.
 - 5) Ground: Green
- F. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power and control, unless equipment is provided with its own identification.
 - a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be self-adhesive, engraved, laminated acrylic or melamine label.
 - b. Enclosures and electrical cabinets.
 - c. Access doors and panels for concealed electrical items.
 - d. Enclosed switches.
 - e. Enclosed circuit breakers.

END OF SECTION 260553

SECTION 262816 –PANELBOARD CIRCUIT BREAKERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special clauses apply to this Section.

1.2 SUMMARY

- 1. This Section includes Circuit Breakers.

1.3 GENERAL REQUIREMENTS FOR CIRCUIT BREAKERS.

- A. Each circuit breaker shall be bolt on type, molded case, ampere rated as shown on the plan.
- B. Each shall be rated for use in the panelboard shown.
- C. Each circuit breaker shall be UL listed and conform to NEMA standards.
- D. Each circuit breaker shall provide overcurrent protection in each pole by means of a thermal element and magnetic element.
- E. Each branch circuit breaker shall be UL listed and match existing rms symmetrical amperes interrupting capacity of panelboard it is installed in.
- F. Ratings shall be clearly visible on the face of each circuit breaker.
- G. Multiple circuit breakers shall be of the common trip type with a single handle.
- H. Each circuit breakers shall be installed in the panelboard indicated on the panels and if so indicated shall be installed in the pole spaces indicated.
- I. The contractor shall submit shop drawings of the circuit breakers he intends to furnish.

1.4 CIRCUIT BREAKERS

- A. Manufacturers: Subject to compliance with requirements, **provide products by the following manufacturer** or approved equal.
 - 1. Cutler Hammer and GE.

DIVISION 26 – TECHNICAL ELECTRICAL SPECIFICATIONS

1.5 SUBMITTALS

- A. Product Data: For each type of circuit breaker include and manufacturers' technical data on features, performance, and electrical characteristics.
 - 1. Current and voltage ratings.
 - 2. Short-circuit current ratings (interrupting and withstand, as appropriate).

1.6 QUALITY ASSURANCE

- A. Comply with NEMA PB1 Panelboards.
- B. Circuit Breakers: Listed and labeled as defined in NFPA 70 and marked for intended location and application.
- C. Comply with National Electrical Code (NEC) and NFPA 70 for components and installation.

1.6 INSTALLATION

- A. Install circuit breakers with tops at uniform height unless otherwise indicated. Comply with NECA.
- B. Contractor shall Load balance panelboard.

END OF SECTION 262816