



George Latimer, Westchester County Executive

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

**SITE WORK IMPROVEMENTS  
BLUE MOUNTAIN RESERVATION  
TOWN OF CORTLANDT AND CITY OF PEEKSKILL, NEW YORK**

**Contract No. 17-519**

**Bid Opening: May 26, 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

**QUESTIONS DURING BIDDING**

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 shall be in writing addressed to the Westchester County Project Manager. The inquiries shall be sent to:

**Esther Rivas**  
**Westchester County Department of Public Works and Transportation,**  
**148 Martine Avenue, Suite 500**  
**White Plains, New York 10601**  
([egr3@westchestergov.com](mailto:egr3@westchestergov.com))

To be given consideration, questions must be received by the close of business on **May 18, 2021 at 5:00 PM**. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications.

Addenda to the Bid Documents will be published on the 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. 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.

**SPECIAL NOTICE**

County of Westchester  
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**BASE BID AND ADD ALTERNATES**

This contract consists of the Base Bid and three Add Alternates, Alternate #1 thru Alternate # 3 as defined in the Specifications and on the Drawings.

The Base Bid shall include the all necessary labor, material and equipment required to:

- Upgrade additions of a force main connecting to an existing sanitary system and water services connecting to an existing water main. The installation of a 30kW and 50kW generators. Convert the sanitary system to force main services, upgrade electrical services throughout the site, remove and replace water services. Additionally, the restoration of pavement, walkways, sidewalks, railings, benches, finish grading, site work and landscaping within the Blue Mountain Reservation site.

The alternates are as follows:

**ALTERNATE #1:** Dickey Brook Trail Lower Bridge – Includes all necessary labor, material and equipment required to replace the bridge as shown on the drawings..

**ALTERNATE #2:** Dickey Brook Trail Upper Bridge – Includes all necessary labor, material and equipment required to replace the bridge as shown on the drawings.

**ALTERNATE #3:** Parking Lot Stairs – Includes all necessary labor, material and equipment required to construct the parking lot stairs as shown on the drawings.

It is the goal of the County to award the Base Bid and Alternates 1 thru 3, if the low bid for all items are within the amount budgeted for this project. If the Base Bid and Alternates 1 thru 3 exceed the amount budgeted for this project, the contract will be awarded to the bidder submitting the lowest Base Bid plus additional Alternate Bid Items in the order they are listed, to include as many Alternate Bid Items as possible, up to an amount that does not exceed the project budget. If the Base Bid and Alternate 1 exceed the amount budgeted for this project, the contract will be awarded to the bidder submitting the lowest Base Bid.

**SPECIAL NOTICE**

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**PRE-BID SITE INSPECTION**

- A. Superseding the first paragraph of Article “Pre-Bid Site Inspection” of the Information for Bidders, bidders will be permitted to examine the work site only under escort by the County’s representative at 10:00 a.m. on Tuesday, May, 11, 2021 at a meeting at Main Lodge Entrance.
- B. Bidders shall indicate their interest in the site examination by contacting Esther Rivas, Department of Public Works, Division of Engineering at (914) 995-5584.
- C. All other portions of Article “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

**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.

**SPECIAL NOTICE**

County of Westchester  
New York

**PROOF OF PAYMENT BY CONTRACTOR TO SUBCONTRACTORS  
AND MATERIALMEN.**

In addition to and without limiting any of the provisions set forth in Section 23 of the Information for Bidders, after the Contractor completes 50% of the work under the contract, the Contractor shall supplement each requisition submitted to the County with documentation that establishes that the Contractor has timely and properly paid its subcontractors and materialmen as required by Section 23 of the Information For Bidders. Such documentation shall include copies of both sides of cancelled check(s) paid to the order of the subcontractors and materialmen and such other documentation as may be reasonably requested by the Commissioner. If the Contractor fails to submit such documentation, the Commissioner may, in his sole discretion, withhold payment of the requisition until such time as the documentation is properly submitted. Nothing herein is intended or shall be construed to confer upon or give any subcontractor or materialman, or its successors and assigns, any third party beneficiary rights, remedies or basis for reliance upon, under or by reason of the contract or this Special Notice provision.



**SPECIAL NOTICE**

County of Westchester  
New York

**PREVAILING WAGE**

All public works contracts are subject to the payment of the prevailing wage and supplements as set forth by the laws of the State of New York, including, but not limited to, Articles 8 and 9 of the New York Labor Law (the "Prevailing Wage Laws"). Westchester County has an active Prevailing Wage Enforcement Officer who enforces the Prevailing Wage Laws within the County for public works contracts, including reviewing certified payroll records, visiting job sites, interviewing the employer and employees (See IFB Article 12) and, if necessary, requesting copies of cancelled checks.

Any Contractor who fails to comply with the Prevailing Wage Laws, including, but not limited to, failing to pay the prevailing wage rates and supplements, failing to submit certified payroll records to the County or failing to post the prevailing wage rates and supplements at the work site, will be subject to enforcement as provided for in the Contract and laws of the State of New York through the Westchester County District Attorney's office, the Commissioner of the New York State Department of Labor, the County and/or the employee who suffered the underpayment. This enforcement could include, but is not limited to, criminal penalties, civil penalties, debarment from future bid awards, the withholding of payment under the Contract to satisfy the unpaid wages and supplements, including interest and civil penalty. In addition, such a failure shall constitute grounds for cancellation of the Contract (IFB 8(C)). Moreover, a prime contractor is responsible for its subcontractor's failure to comply with, or evasion of, the provisions of the Prevailing Wage Laws.

## **NOTICE TO CONTRACTORS**

County of Westchester  
New York

Sealed proposals for the following construction work:

CONTRACT NO: 17-519

ADVERTISING: April 30, 2021  
PRE-BID INSPECTION: May 11, 2021

### **SITE WORK IMPROVEMENTS BLUE MOUNTAIN RESERVATION TOWN OF CORTLANDT AND CITY OF PEEKSKILL, 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, May 26, 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** 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.**

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 fr:

- **The site work improvements at Blue Mountain Reservation, which includes replacement of electric service and communications both primary into the Park and secondary to each facility, repair and rebuild the sanitary systems for each facility, replace potable water service to each facility, rebuild and resurface pathways and small footbridges, repair drainage structures, channels, retaining walls and terraces and all paving, and associated site work and landscaping.**

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.

## GENERAL REQUIREMENTS

### 2. SUBCONTRACTING & DIRECT EMPLOYMENT OF LABOR

The Contractor shall not subcontract more than forty nine (49%) percent of its bid. The Contractor must directly employ at least fifty one (51%) 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 **540** 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.
- 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

## GENERAL REQUIREMENTS

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.
- 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.



## GENERAL REQUIREMENTS

- 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 17-519

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>SHEET</u>			<u>DPW FILE</u>
<u>NO.</u>	<u>DWG NO.</u>	<u>TITLE</u>	<u>NUMBER</u>
1	G-001	COVER SHEET	24-86-T-4
2	G-002	SYMBOLS , ABBREVIATIONS, AND NOTES	24-86-G-5
3	G-003	WATER SERVICE DIAGRAM	24-86-G-6
4	G-004	SANITARY SERVICE DIAGRAM	24-86-G-7
5	C-001	EXISTING CONDITIONS AND DEMOLITION PLAN	24-86-G-8
6	C-002	OVERALL SITE PLAN	24-86-G-9
7	C-003	SITE PLAN NO. 1	24-86-G-10
8	C-004	SITE PLAN NO. 2	24-86-G-11
9	C-005	SITE PLAN NO. 3	24-86-G-12
10	C-006	SITE PLAN NO. 4	24-86-G-13
11	C-007	SITE PLAN NO. 5	24-86-G-14
12	C-008	SANITARY FORCE MAIN PLAN AND PROFILE NO. 1	24-86-G-15
13	C-009	SANITARY FORCE MAIN PLAN AND PROFILE NO. 2	24-86-G-16
14	C-010	SANITARY FORCE MAIN PLAN AND PROFILE NO. 3	24-86-G-17
15	C-011	BRIDGE PLANS, SECTIONS AND DETAILS 1	24-86-G-18
16	C-012	BRIDGE PLANS, SECTIONS AND DETAILS 2	24-86-G-19
17	C-013	TIMBER STAIRCASE PLAN AND SECTIONS	24-86-G-20
18	C-014	SITE DETAILS NO. 1	24-86-G-21
19	C-015	SITE DETAILS NO. 2	24-86-G-22
20	C-016	BACKFLOW PREVENTION DEVICE DETAILS	24-86-G-23
21	C-017	EROSION AND SEDIMENT CONTROL DETAILS	24-86-G-24
22	E-001	OVERALL SITE PLAN - EXISTING CONDITIONS AND DEMOLITION PLAN	24-86-G-25
23	E-002	OVERALL SITE PLAN - POWER PLAN	24-86-G-26
24	E-003	MAINTENANCE GARAGE AND TRAIL LODGE DEMOLITION PLANS	24-86-G-27

Contract Drawings 1

## GENERAL REQUIREMENTS

<u>SHEET</u>			<u>DPW FILE</u>
<u>NO.</u>	<u>DWG NO.</u>	<u>TITLE</u>	<u>NUMBER</u>
25	E-004	MAINTENANCE GARAGE AND RESIDENCE POWER PLANS	24-86-G-28
26	E-005	RESTROOM NO. 1 AND BATH HOUSE POWER PLANS	24-86-G-29
27	E-006	ENTRANCE TICKET BOOTH POWER PLANS	24-86-G-30
28	E-007	TRAIL LODGE POWER PLAN	24-86-G-31
29	E-008	POWER AND COMMUNICATION SINGLE LINE DIAGRAM	24-86-G-32
30	E-009	TRENCH DETAILS I	24-86-G-33
31	E-010	TRENCH DETAILS II	24-86-G-34
32	E-011	PANELBOARD SCHEDULES	24-86-G-35
33	E-012	30 KW AND 50 KW GENERATOR DETAILS	24-86-G-36
34	E-013	DETAILS I	24-86-G-37
35	E-014	DETAILS II	24-86-G-38

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**

**SITE WORK IMPROVEMENTS  
BLUE MOUNTAIN RESERVATION  
TOWN OF CORTLANDT AND CITY OF PEEKSKILL, NEW YORK**

**Contract No. 17-519**

**Bid Opening: May 26, 2021**

**By Bidder (Please Print)**

Firm/Business Name: \_\_\_\_\_

Address: \_\_\_\_\_

**For Official Use Only**

\_\_\_\_\_

\_\_\_\_\_

**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 \_\_\_\_\_

Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_

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 - BASE BID**

ITEM NO.	APPROXIMATE QUANTITIES	PAY UNIT	ITEM DESCRIPTION	UNIT BID PRICE		AMOUNT BID	
				DOLLARS	CTS.	DOLLARS	CTS.
1	1	L.S.	BASE BID: Payment for Item 1 will be a lump sum bid. Work to be performed under this Contract and in accordance with these Specifications consists of, but is not limited to, furnishing of all equipment, superintendents, labor, skill, material, sanitary services, electric services, water services, site work, landscaping, site restoration including pavement, walkways, sidewalks, railings, finish grading, benches, plantings, as built survey and all other items necessary for the Base Bid located at Blue Mountain Reservation; Town of Cortlandt, City of Peekskill, New York.	\$ _____	_____	\$ _____	_____
2	500	CY	ROCK REMOVAL: Payment for Item 2 will be a unit price bid of a quantity of 500 cubic yards of Rock Removal. Work to be performed under this Contract and in accordance with these Specifications consists of, but is not limited to, furnishing of all equipment, superintendents, labor, skill, and all other items necessary for the Rock Removal located at Blue Mountain Reservation; Town of Cortlandt, City of Peekskill, New York. This unit price bid shall be calculated based on the contract drawings and technical specifications divisions 1 through 35.	\$ _____	_____	\$ _____	_____
Subtotal of All Items Above:						\$ _____	_____

**ITEMIZED PROPOSAL - BASE BID**

ITEM NO.	APPROXIMATE QUANTITIES	PAY UNIT	ITEM DESCRIPTION	UNIT BID PRICE		AMOUNT BID	
				DOLLARS	CTS.	DOLLARS	CTS.
W699.020001	NEC	LS	MOBILIZATION (Must not exceed 2.00% of Subtotal Shown Above/Previous Page)			\$ _____	_____
W699.040002	NEC	LS	CONTRACT BONDS AND INSURANCE (Must not exceed 3.00% of Subtotal Shown Above/Previous Page)			\$ _____	_____
W800	300000	DC	MISCELLANEOUS ADDITIONAL WORK			\$ 300,000	00
W851	25000	DC	TESTING OF MATERIALS AND FIELD TESTING EQUIPMENT			\$ 25,000	00
Gross Sum of Total Base Bid Written in Figures:							
						DOLLARS	CTS.
						\$ _____	_____

ITEMIZED PROPOSAL - ADD ALTERNATE #1

ITEM NO.	APPROXIMATE QUANTITIES	PAY UNIT	ITEM DESCRIPTION	UNIT BID PRICE		AMOUNT BID	
				DOLLARS	CTS.	DOLLARS	CTS.
ALT 1	1	L.S.	LOWER BRIDGE: Payment for Alternate Bid Item 1 will be a lump sum bid. Work to be performed under this Contract and in accordance with these Specifications consists of, but is not limited to, furnishing of all equipment, superintendents, labor, excavation, skill, material, footings and all other items necessary for the Lower Bridge located at Blue Mountain Reservation; Town of Cortlandt, City of Peekskill, New York. This lump sum bid price shall be calculated based on the contract drawing sheet C-11 and technical specifications divisions 1 through 35.	\$ _____	_____	\$ _____	_____

Gross Sum of Total Bid Add Alternate #1 Written in Figures:	DOLLARS	CTS.
	\$ _____	_____

ITEMIZED PROPOSAL - ADD ALTERNATE #2

ITEM NO.	APPROXIMATE QUANTITIES	PAY UNIT	ITEM DESCRIPTION	UNIT BID PRICE		AMOUNT BID	
				DOLLARS	CTS.	DOLLARS	CTS.
ALT 2	1	L.S.	UPPER BRIDGE: Payment for Alternate Bid Item 2 will be a lump sum bid. Work to be performed under this Contract and in accordance with these Specifications consists of, but is not limited to, furnishing of all equipment, superintendents, labor, skill, material and all other items necessary for the Upper Bridge located at Blue Mountain Reservation; Town of Cortlandt, City of Peekskill, New York. This lump sum bid price shall be calculated based on the contract drawing sheet C-12 and technical specifications divisions 1 through 35.	\$ _____	_____	\$ _____	_____
Gross Sum of Total Bid Add Alternate #2 Written in Figures:							
\$ _____							

ITEMIZED PROPOSAL - ADD ALTERNATE #3

ITEM NO.	APPROXIMATE QUANTITIES	PAY UNIT	ITEM DESCRIPTION	UNIT BID PRICE		AMOUNT BID	
				DOLLARS	CTS.	DOLLARS	CTS.
ALT 3	1	L.S.	PARKING LOT STAIRCASE: Payment for Alternate Bid Item 3 will be a lump sum bid. Work to be performed under this Contract and in accordance with these Specifications consists of, but is not limited to, furnishing of all equipment, superintendents, labor, skill, material and all other items necessary for the Parking Lot Staircase located at Blue Mountain Reservation; Town of Cortlandt, City of Peekskill, New York. This lump sum bid price shall be calculated based on the contract drawing sheet C-13 and technical specifications divisions 1 through 35.	\$ _____	_____	\$ _____	_____
Gross Sum of Total Bid Add Alternate #3 Written in Figures:							
				DOLLARS		CTS.	
				\$ _____		_____	

CONTRACT NO. 17-519

**BID SUMMARY SHEET**

TOTAL BID FOR BASE BID (Written in Figures)	DOLLARS	CENTS
	\$ _____	_____

TOTAL BID FOR BASE BID + ALTERNATE #1 (Written in Figures)	DOLLARS	CENTS
	\$ _____	_____

TOTAL BID FOR BASE BID + ALTERNATE #1 THRU ALTERNATE #2 (Written in Figures)	DOLLARS	CENTS
	\$ _____	_____

CONTRACT NO. 17-519

**BID SUMMARY SHEET**

TOTAL BID FOR BASE BID + ALTERNATE #1 THRU ALTERNATE #3 (Written in Figures)	DOLLARS	CENTS
	\$ _____	_____

CONTRACTOR: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

BY: \_\_\_\_\_

This contract consists of the Base Bid and three Add Alternates, Alternate 1 thru Alternate 3 as defined in the Specifications and on the Drawings.

It is the goal of the County to award the Base Bid and Alternates 1 through 3 if the low bid for all items are within the amount budgeted for this project. If the Base Bid and Alternates 1 through 3 exceed the amount budgeted for this project, the contract will be awarded to the bidder submitting the lowest Base Bid plus additional Add Alternate Bid Items in the order they are listed, to include as many Add Alternate Bid Items as possible, up to an amount that does not exceed the project budget. If the Base Bid and Alternate 1 exceed the amount budgeted for this project, the contract will be awarded to the bidder submitting the lowest Base Bid.



**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**

## **CONTRACTOR'S ACKNOWLEDGMENT**

(If Corporation/Sole Officer)

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

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, before me  
personally came \_\_\_\_\_ to me known and  
(Name)

known to me to be the \_\_\_\_\_  
(Title)

of \_\_\_\_\_, the corporation described in and which  
(Name of Corporation)

executed the within instrument, who being by me duly sworn did depose and say that he/she,  
resides at \_\_\_\_\_

and that he/she signed the within instrument, on behalf of said corporation, in his/her capacity  
as the \_\_\_\_\_ and sole officer and director of said corporation  
(Title)

and that he/she owns all the issued and outstanding capital stock of said corporation.

Notary Public

**COMPLETE THIS FORM USING BLACK INK ONLY**

## LIMITED LIABILITY COMPANY ACKNOWLEDGMENT

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

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, before me

personally came \_\_\_\_\_ to me known to be the individual  
(Name of individual who signed agreement)

who executed the foregoing instrument, and who, being duly sworn by me, did depose and say that

(s)he is (the)(a) \_\_\_\_\_ of \_\_\_\_\_,  
                     (member)(manager)                         (name of limited liability company)

a \_\_\_\_\_ limited liability company, and that (s)he has authority  
(name of state)

to sign the same, and acknowledged that (s)he executed the same as the act and deed of said limited liability company.

Sworn to before me this \_\_\_\_ day  
of \_\_\_\_\_, 20\_\_

Notary Public

My Commission Expires on: \_\_\_\_\_

**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

\_\_\_\_\_ of the Contractor; that said agreement was  
(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**

# CERTIFICATE OF AUTHORITY-LIMITED LIABILITY COMPANY

I, \_\_\_\_\_,  
(member or manager other than person executing the agreement)

certify that I am a \_\_\_\_\_ of \_\_\_\_\_  
*(member/manager)* *(Name of Limited Liability Company)*

(the “LLC”) duly organized under the Laws of the State of \_\_\_\_\_; that  
(Name of State)

\_\_\_\_\_ who signed said agreement on behalf of the LLC.  
(Person Executing Agreement)

was, at the time of execution, a manager of the LLC; that said Contract was duly signed for and on behalf of said LLC and as the act of said LLC for the purposes herein mentioned.

(Signature)

[illegible]

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came  
\_\_\_\_\_, to me known, and known to me to be the \_\_\_\_\_  
(name of member/manager) (member/manager)  
described in and who executed the above certificate, who being be me duly sworn did depose and say  
that he resides at \_\_\_\_\_, and he is a  
(member/manager) of said LLC; that he is duly authorized to execute said certificate on behalf of said  
LLC, and that he signed his name thereto pursuant to such authority.

*Notary Public*

County

My Commission Expires on: \_\_\_\_\_

**COMPLETE THIS FORM USING 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)

\_\_\_\_\_  
(Signature) Principal

\_\_\_\_\_  
(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:

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

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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.

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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.

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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.

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

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

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**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.

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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.

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

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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.

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**COMPLETE THIS FORM USING BLACK INK ONLY**

CONTRACTOR'S DISCLOSURE STATEMENT

10. Is the Contractor Controlled by another Business Entity? \_\_\_\_ Yes \_\_\_\_ No. If you answered yes, please identify the name, Business Address and telephone number of that Controlling Business Entity and list any contracts that the Controlling Business Entity has had with Westchester County in the past five (5) years?

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11. If the Contractor has Control of any other Business Entity that has had a Contract with the County of Westchester in the past five (5) years, please identify the name, Business Address and telephone number of that Controlled Business Entity.

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12. List any and all contract sanctions imposed on the Contractor or on a Business Entity listed in response to #3 above that was imposed by a Government Agency during the prior five (5) years, including, but not limited to, all cautions, suspensions, debarments, cancellations of a contract based on business conduct, declarations of default, determinations of ineligibility to bid or whether any proceedings to determine eligibility to bid are pending.

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13. List the contract sanction history for the past five (5) years, as defined in #12 above, for any Affiliate of the Contractor.

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**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.

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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.

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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.

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**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.

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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.

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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.

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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.

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**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.

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**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**<sup>1</sup> 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: \_\_\_\_\_

<sup>1</sup> "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.<sup>1</sup> 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

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<sup>1</sup> 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 Officer<sup>2</sup>. 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.

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<sup>2</sup> 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.

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*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

**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



### INFORMATION FOR BIDDERS

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.

## INFORMATION FOR BIDDERS

### 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

## INFORMATION FOR BIDDERS

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

## INFORMATION FOR BIDDERS

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

## INFORMATION FOR BIDDERS

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

## INFORMATION FOR BIDDERS

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.

## INFORMATION FOR BIDDERS

- 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.



## INFORMATION FOR BIDDERS

- 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,

## INFORMATION FOR BIDDERS

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.

## INFORMATION FOR BIDDERS

- 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.

## INFORMATION FOR BIDDERS

### 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

## INFORMATION FOR BIDDERS

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 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.

## INFORMATION FOR BIDDERS

**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

## INFORMATION FOR BIDDERS

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;

## INFORMATION FOR BIDDERS

- 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

## INFORMATION FOR BIDDERS

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](http://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

## INFORMATION FOR BIDDERS

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

## INFORMATION FOR BIDDERS

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

## INFORMATION FOR BIDDERS

(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 Officer<sup>1</sup> 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”)

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<sup>1</sup> “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.

## INFORMATION FOR BIDDERS

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



## INFORMATION FOR BIDDERS

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.

## GENERAL CLAUSES

### 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

## GENERAL CLAUSES

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,<sup>1</sup> 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,

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<sup>1</sup> 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

## GENERAL CLAUSES

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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technology<sup>2</sup> 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.

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<sup>2</sup> 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:

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(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.





**George Latimer, Westchester County Executive**

## **4. SPECIAL CLAUSES**

## **SPECIAL CLAUSES**

### **1. INTENT**

The Special Clauses modify or supplement the Information to Bidders, the General Clauses and the Standard Itemized Specifications and govern where there is conflict with those documents.

### **2. CONTRACT ITEMS**

All Materials of Construction, General Construction Items and Item Specifications, and Roadside Development Payment Items and Item Specifications not prefixed with the letter "W" shall be as specified in Section 200 thru 600 of the latest version of the State of New York, Department of Transportation Design and Construction Division Standard Specifications including any Addenda thereto, hereafter referred to as the "NYSDOT Standard Specifications". In utilizing the State Standard Specifications, the following substitutions in the text shall be made:

- A. For State, substitute County of Westchester.
- B. For Department or Division, substitute Westchester County Department of Public Works and Transportation.
- C. For Superintendent or Deputy Superintendent, substitute Commissioner of Public Works and Transportation.
- D. For Chief Engineer, Deputy Chief Engineer, District Engineer, or Engineer in Charge, substitute Engineer.
- E. For Comptroller, substitute Commissioner of the Westchester County Department of Finance.

Copies of the State publication are available for reference purposes in the offices of the Engineering Division, Westchester County Department of Public Works and Transportation, Room 500, County Office Building, White Plains, New York. They are also available on line at the NYSDOT website.

### **3. PRE-CONSTRUCTION CONFERENCE**

The Contractor shall not commence any work under the contract prior to a pre-construction conference between the Contractor, the County's representatives and other concerned governmental and utility company representatives. At this conference all special requirements of the work, the scheduling of the work and details for the proper maintenance and protection of traffic during the work will be fully explained and discussed.

In the event the Contractor desires to use traffic control devices other than those specified, it shall submit his request with samples or detailed sketches and descriptions of the proposed devices, for approval by the County.

## **SPECIAL CLAUSES**

### **4. PRESERVATION OF NATURAL FEATURES**

The Contractor shall exercise the utmost care to preserve and protect the natural features of all public and private property on or adjacent to the work site which will not be directly affected by the required construction. Before commencing work under the contract, the Contractor shall secure the Engineer's approval of proposed locations for temporary access roads not specified, storage areas for his equipment and materials, and parking areas for his own vehicles and those of his workmen. Thereafter, unless otherwise approved by the Engineer, the Contractor shall restrict all such activities to these locations. Before completion of the contract work, the Contractor shall restore at his own expense to their original condition or better, all temporary access, storage or parking areas and all other areas on or adjacent to the work site not directly affected by the required construction which have been disturbed in any way by the Contractor's operations.

The Contractor shall be responsible for the preservation and protection of all parts of existing trees within and bordering on the contract limits. As may be required, at his own expense the Contractor shall protect the trunks of trees against injury by the proper use of burlap padding, boards or other protective devices and means approved by the Engineer.

### **5. USE OF EXPLOSIVES**

Unless expressly permitted by the contract documents, no blasting shall be allowed.

If blasting is permitted, explosives for blasting shall be stored, handled and used in accordance with the laws, ordinances and regulations of the State of New York and the local municipalities involved, and following the safety recommendations contained in the latest edition of the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, Inc., and the latest editions of the pamphlets published by the Institute of Makers of Explosives entitled, "Do's and Don'ts - Instructions and Warnings in Using, Transporting, Handling and Storing Explosives" and "Safety in the Handling and Use of Explosives".

The Contractor shall limit all blasting operations to a minimum and shall notify the Engineer and local municipal authorities at least seventy-two hours in advance of all such operations. No blasting of any kind shall be done during other than normal working hours on normal working days, unless permission is first secured from the Engineer and from local municipal authorities. The Contractor shall protect the traveling public from all damage to person and property and shall be responsible for damage to pipe lines, conduits, cables and any other surface or subsurface lines or structures that may be encountered, and for damage caused by blast shocks or debris.

The Contractor shall utilize only thoroughly trained and experienced men in all blasting operations, and blasting crews shall be held to the minimum consistent with efficient operation. They shall be thoroughly familiar with all recommended safety practices and shall be adequately supervised to insure that they adhere to those practices. No person under eighteen years of age shall be permitted to handle, use or be near explosives.

## **SPECIAL CLAUSES**

In accordance with the New York State Penal Law, Section 1918 as amended, the Contractor or his subcontractor shall not discharge explosives in the ground unless written notice is first given seventy-two hours in advance to the person, corporation or municipality engaged in the distribution of combustible gas in the area. It shall further ascertain if there are any gas lines within a radius of two hundred feet from the point of discharge which are being maintained by a person, corporation or municipality other than the person, corporation or municipality servicing the territory. If there are, it shall give written notice seventy-two hours in advance to those parties. Thereafter the work shall be performed in such manner as to avoid damages to any pipe conveying combustible gas.

In any emergency, if explosives must be discharged in order to protect persons from immediate and substantial danger of death or serious personal injury, the seventy-two hour notice requirements of this article will be waived, provided the Engineer, the concerned persons, corporations or municipalities are notified as soon as reasonably possible before any such discharge is undertaken.

### **6. CONSTRUCTIONS, EXCAVATION AND DEMOLITION CONTRACTS AT OR NEAR UNDERGROUND FACILITIES - INDUSTRIAL CODE RULE NO. 53**

The utility companies can be alerted to impending construction by the Contractor by contacting the Underground Utilities Call Center at 811 or 1-800-962-7962.

Notification to the Call Center is the responsibility of the Contractor who must allow ample time for investigation and identification of any and all services of the utility companies located at the project site.

All costs associated with verification of the location of underground facilities pursuant to Industrial Code Rule No. 53, as amended shall be included in the prices bid for the respective contract items involved unless separate payment is otherwise provided for in the Contract. All test holes excavated, by written direction of the Engineer, for purposes other than for compliance with Industrial Code Rule No. 53 or Subsection 105-06 of the Standard Specifications, will be paid for at the unit bid price for Trench and Culvert Excavation in the Contract unless a test pit item is expressly included in the contract.

### **7. CONSTRUCTION NEAR PIPES CONVEYING COMBUSTIBLE GAS**

In accordance with the New York State Penal Law, Section 1918 as amended, the Contractor shall not excavate any existing street, highway or public place unless written notice shall have been given at least seventy-two hours in advance to the person, corporation or municipality engaged in the distribution of gas in such territory. It shall further ascertain whether there is within one hundred feet in such street, highway or public place any other person, corporation or municipality conveying combustible gas in pipe, and if there is such pipe, it shall also give similar notice to such person, corporation or municipality.

### **8. NOTICES TO UTILITY OWNERS**

At least 3 working days before breaking ground for construction, the Contractor shall give written notice to all concerned utility owners that valve boxes, curb boxes, manholes and

## **SPECIAL CLAUSES**

other similar structures must be adjusted to the finished surfaces of roadway, shoulder or sidewalk areas, or that pipes, conduits, poles or other structures must be altered, removed or relocated. Thereafter the Contractor shall give a reasonable opportunity to the owner of the utility or structure to have the work done. All work adjusting structures or altering, removing, relocating or installing pipes, conduits, poles or other structures will be done at the expense of the owners of the utility or structure, utilizing their own facilities if they so choose, or by utilizing the forces of the Contractor under separate contract.

### **9. FILLING AND BACKFILLING AT STRUCTURES, CULVERTS AND PIPES**

All filling and backfilling at structures, culverts and pipes shall be done in accordance with the provisions of Section 200, Earthwork; subsection 203-3.15, "Fill and Backfill at Structures, Culverts and Direct Burial Cables", in the New York State Department of Transportation Specifications,

### **10. PIPES AND CULVERTS IN FILL AREAS**

Where pipes or culverts are to be placed in fill areas, the Contractor shall first place and compact the fill to a plane one foot above the design elevation of the top of the pipe and thereafter excavate the trench.

### **11. PAYMENT LINES AND LIMITS**

Payment Limit - A payment limit defines the boundary beyond which no quantities will be measured for payment. Whenever payment limits are indicated, only the work which is actually directed and completed within these limits will be measured and computed for payment. Payment limits may be revised in writing by the Engineer prior to performing the work.

Payment Line - Defines the exact line from which the work quantity will be computed. Whenever payment lines are indicated, quantities representing work completed will be computed from these lines only. No other lines or locations will be used to compute quantities. Payment lines may be revised in writing by the Engineer prior to performing the work.

### **12. PIPE CERTIFICATION DOCUMENTS**

Prior to the delivery of any 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 Engineer at the construction site and to the appropriate contact at the Department of Public Works and Transportation as determined by the Engineer, County Office Building, White Plains, New York.

### **13. AREAS INACCESSIBLE TO ROLLER**

In areas inaccessible to conventional compactors, or where maneuvering space is limited, impact rammers, plate or small drum vibrators, or pneumatic buttonhead compaction equipment may be used with layer thickness not exceeding 6 inches before compaction.

## **SPECIAL CLAUSES**

However, materials placed for subbase course construction shall have a maximum compacted thickness of 6 inches. Hand tampers shall not be permitted. The Engineer may approve or reject any of the above described mechanical devices based upon the results of appropriate on-site field tests.

### **14. DELIVERY OF MATERIALS**

The Contractor shall make his own arrangements for the receipt of materials delivered to the construction site. No representative of the County will accept any materials ordered by the Contractor.

### **15. BITUMINOUS PAVEMENT ON EXISTING CONCRETE PAVEMENT**

Where bituminous pavement of any type is to be placed on existing concrete pavement, the Contractor shall prepare the road surface as specified under Section 600, Incidental Construction, subsection 633, Conditioning Existing Pavement Prior to Hot Mix Asphalt (HMA) Overlay.

Prior to the placement of asphalt concrete pavement on existing concrete pavement, a tack coat of bituminous material as specified in the contract documents shall be applied to the cleaned concrete pavement at a rate as specified in the contract documents, subject to the directions of the Engineer. Payment for the foregoing work shall be deemed to be included in the unit price the Contractor has bid for the appropriate asphalt concrete item.

Prior to the placement of asphalt concrete pavement, the contact surfaces of all structures within or adjacent to the area of the new pavement shall be painted with the same bituminous material.

### **16. RESURFACING AT STRUCTURES NOT RAISED**

Prior to the placement of resurfacing material, the Contractor shall cut out and remove the existing bituminous pavement within the area so indicated on the plans or five feet distance from all exterior faces of each structure not requiring raising for the resurfacing work, in accordance with the instructions of the Engineer. Payment for all the foregoing work shall be deemed to be included in the unit price the Contractor has bid for the various items of the Contract.

### **17. REPLACEMENT OF EXISTING CASTINGS**

All municipally owned castings which are excessively worn or are cracked shall be replaced when ordered by the Engineer. Existing castings shall be removed utilizing equipment and in a manner approved by the Engineer, and disposition of the castings shall be in accordance with Article 21, "Salvable Materials" of the Special Clauses. The design of new castings shall conform to the standards of the municipality in which the work is being performed, unless otherwise directed by the Engineer. After castings have been set in place, they shall be painted with asphaltum or other approved coating material.

## **SPECIAL CLAUSES**

Payment for the work of removing existing castings and furnishing and placing new castings shall be deemed to be included in the unit price the Contractor has bid for the item of work indicated in the Itemized Proposal, or from Item W800, Miscellaneous Additional Work, when so ordered by the Engineer, except that castings broken through the sole negligence of the Contractor shall be removed and replaced by him at his own expense.

### **18. PROTECTION OF PAVEMENT**

No equipment other than equipment with rubber tires will be allowed on any existing pavement to remain or new pavement within the limits of the contract, unless the pavement has been first protected by planking or other means approved by the Engineer.

### **19. PROTECTION OF STRUCTURES FROM BITUMINOUS MATERIALS**

Before applying any bituminous materials, the Contractor shall protect as may be necessary all inlets, catch basins, manholes, vaults, water valve boxes, walls, curbs, gutters and other similar structures to prevent their defacement by such materials. Structures shall be completely covered or treated to prevent bituminous materials from entering their covers, gratings or crevices, or to prevent their concealment. After the application of the bituminous materials has been completed, the Contractor shall inspect all structures within the area of such construction activities and remove all remaining bituminous defacements caused by his operations.

### **20. SALVABLE MATERIALS**

All existing construction materials such as manhole and catch basin frames and castings, pipe, curbs, signs, guide railings and other similar salvable materials encountered in the work and owned by the County, a political subdivision of the County or third parties, which the Engineer directs to be salvaged but not reused in the work, shall be removed and stored by the Contractor at areas on or adjacent to the work site. The Contractor shall then notify the respective owners in writing that the salvaged material is awaiting their disposition. If the material is not claimed or removed by the owners within a reasonable time after written notices have been given, as determined by the Engineer, the materials shall then become the property of the Contractor and shall be removed by him before completion of the work under the contract.

Similar construction material which is removed by the Contractor and which the Engineer orders not to be salvaged, shall become the property of the Contractor and shall be immediately removed by him from the site of the work.

### **21. CLEANING OF CATCH BASINS AND MANHOLES**

After completion of all other work under the contract, the Contractor shall thoroughly clean out all catch basins and manholes that have been built, altered or adjusted as part of the work of the contract, and shall remove from all other catch basins and manholes within the limits of the contract, all materials and debris deposited therein as the direct result of his operations under the contract. Payment for all the foregoing work shall be deemed to be included in the

## **SPECIAL CLAUSES**

unit prices that the Contractor has bid for the appropriate payment item for buildings, altering or adjusting catch basins and manholes.

### **22. NOISY MANHOLE COVERS**

After the work of resurfacing old pavement or the placement of new pavement has been completed, the Contractor shall check all structures within the limits of the contract for the existence of noisy manhole covers. All such manhole covers shall then be treated with an approved anti-rattling compound, in accordance with the directions of the Engineer. Payment for all the foregoing work shall be deemed to be included in the unit prices the Contractor has bid for the appropriate payment item for building, altering or adjusting catch basins and manholes.

### **23. GUARANTEE OF THE WORK UNDER THE CONTRACT**

Unless otherwise stated in other parts of the specifications, all work performed under the contract shall be guaranteed by the Contractor against all defects resulting from the use of inferior materials, equipment or workmanship, for a period of one year from the date of final completion and acceptance of the work, or from the date the County takes possession and makes full use of the constructed facility.

### **24. CONTRACT WORK BY GENERAL CONTRACTOR**

Contract work amounting to not less than 51 percent of the executed contract price shall be performed by the Contractor's own organization which shall be construed to include only workmen directly employed and paid by the Contractor, and equipment owned or rented by the Contractor, such equipment being furnished with or without operators.

The only exception to the foregoing requirement shall relate to "Specialty Items" as designated by the County in these specifications or during the course of the actual contract construction work. "Specialty Items" shall be construed to be limited to contract work requiring highly specialized knowledge, craftsmanship or equipment not ordinarily available in the contracting organizations qualified to bid on this contract as a whole, and in general, shall be limited to minor components of the total contract. Such "Specialty Items" of the contract work may be sublet by the Contractor, but only after he has solicited permission to do so from the County and the County has granted such permission and has approved the Contractor's proposed subcontractor.

The total sum of all County approved "Specialty Item" subcontracts as negotiated directly by the Contractor will be deducted from the contract price as executed between the Contractor and the County, before the County computes the final dollar amount of contract work that the Contractor must and shall perform with his own organization.

### **25. EXISTING VEGETATION**

The Contractor shall give particular attention and care to protect from damage all existing vegetation, including turf, trees, ornamental plantings, etc., which is not within the actual



## **SPECIAL CLAUSES**

construction limits. Every attempt shall be made to protect and save the vegetation that is near the construction limits according to the instruction of the Engineer.

### **26. EXISTING ROADS**

Existing roads used for the hauling of materials shall be kept free from debris and maintained by the Contractor and left in a condition satisfactory to the Engineer. The Contractor is warned that it shall be held responsible for any damage to County, Town, City or Village roads or streets caused by the operation of his equipment, and that adequate repairs for such damage shall be required at his expense.

### **27. SIGN RELOCATIONS**

All regulatory and directional traffic signs that require relocation due to roadway widening or other appurtenant work, as directed by the Engineer, will be done so by the Contractor with no direct payment for said work. The cost for this sign removal and relocation shall be deemed included in the various items of the Contract..

### **28. PORTLAND CEMENT CONCRETE**

Unless otherwise specified, it is intended that all concrete placed under the Contract shall be air-entraining concrete. The type of Portland Cement to be used shall be Type 2 with an approved air-entraining agent as specified in Section 701-01 Portland Cement and Section 711-08 Admixtures of the Standard Specification. The amount of air-entrainment shall be as required in Table 501-3 of the same specifications.

### **29. ACCURACY OF PLANS AND SPECIFICATIONS**

The detail plans and specifications for the contract have been prepared with care and are intended to show as clearly as is practicable the work required to be done. The contractor must realize however, that construction details can not always be accurately anticipated and that in executing the work, field conditions may require reasonable modifications in the details of the plans and quantities of work involved. Work under all items in the contract must be carried out to meet these field conditions to the satisfaction of the Engineer and in accordance with his instructions and the contract specifications.

The Contractor shall take no advantage of any apparent errors or omission in the plans or specifications. In the event the Contractor discovers an error or omission in the plans or specifications, it shall immediately notify the Engineer. The Engineer will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of the plans and specifications.

### **30. CONFORMITY WITH PLANS AND SPECIFICATIONS**

All work performed and all materials furnished shall be in reasonably close conformity with the lines, grades, cross sections, dimensions and materials requirements, including tolerances, shown on the plans or indicated in the specifications.

## **SPECIAL CLAUSES**

Plan dimensions and contract specification values are to be considered as the target value to be strived for and complied with as the design value from which any deviations are allowed. It is the intent of the specifications that the materials and workmanship shall be uniform in character and shall conform as nearly as realistically possible to the prescribed target value or to the middle portion of the tolerance range. The purpose of the tolerance range is to accommodate occasional minor variations from the median zone that are unavoidable for practical reasons. When a maximum or minimum value is specified, the production and processing of the material and the performance of the work shall be so controlled that material or work shall not be preponderantly of borderline quality or dimension.

In the event that the Engineer finds the materials or the finished product in which the materials are used not within reasonably close conformity with the plans and specifications but that reasonably acceptable work had been produced, he shall then make a determination if the work shall be accepted and remain in place. In this event, the Engineer will document the basis of acceptance by contract modification which will provide for an appropriate adjustment in the contract price for such work or materials as he deems necessary to conform to his determination based on engineering judgment.

In the event that the Engineer finds the materials or the finished product in which the materials are used not within reasonably close conformity with the plans and specifications and have resulted in an inferior or unsatisfactory product, the work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor.

All traffic control devices (signs, signals, markings, and devices placed by the authority of a public body or official having jurisdiction for the purpose of regulating, warning or guiding traffic) shall be in conformity with the edition of the New York State Manual of Uniform Traffic Control Devices which is current on the date of advertisement for bids.

### **31. STAKEOUT**

The Contractor will establish the lines, grades and measurements necessary in his opinion to properly locate the work, by setting suitably marked offset or reference stakes. These stakes will be referenced to the control points, coordinates and similar data that may be shown on the contract drawings, but the County reserves the right to modify that information. The Contractor shall inform the Engineer a reasonable time in advance of the time and place he intends to do this layout work.

The Contractor carefully and properly preserve all stakes, pins and markers set, and if any are destroyed or disturbed, they shall be reset at no cost to the County. All existing property lines and survey monuments which may of necessity have to be disturbed during the construction work will be properly tied to fixed points and reset by the Contractor, and the cost of replacement of any other existing property lines and survey monuments or temporary witness stakes set by the Engineer, which are disturbed by the Contractor's operations, shall be charged against the Contractor and deducted from future payments.

The Engineer shall check all lines, grades and measurements established by the Contractor, and shall satisfy himself as to their accuracy before allowing construction of any required structure or facility.

## SPECIAL CLAUSES

### 32. BAN ON WORK PERFORMED BY NON-COUNTY ENTITIES

Any work which may be required or desired by non-County of Westchester entities (i.e. Con Edison, the Telephone Company, Cable TV, other governmental agencies, private corporations or individuals, etc.) within the specified limits of the project shall in no manner be performed by said Contractor(s) or Subcontractors retained by The County of Westchester under this Contract unless prior written approval is granted by the Commissioner of Public Works.

### 33. SIGNIFICANT CHANGES IN THE CHARACTER OF WORK.

In accordance with 23 CFR 635.109(a)(3):

*The Engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall not invalidate the contract nor release the Surety, and the Contractor agrees to perform the work as altered.*

*If the alterations or changes in quantities significantly change the character of work under the contract, whether such alterations or changes are in themselves significant changes in the character of work, or by affecting other work cause such other work to become significantly different in character, an adjustment, excluding anticipated profits, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made by the Department, either for or against the Contractor, in such amount as determined to be fair and equitable.*

*If the alterations or changes in quantities do not significantly change the character of the work to be performed under the contract, the altered work will be paid for as provided elsewhere in the contract.*

*The term "significant change" shall be construed to apply only to the following circumstances: when the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction; or when a Major Item of work, defined as , is increased in excess of 125 percent, or decreased below 75 percent of the original contract quantity.*

*Any allowance for a change in unit price shall apply only to that portion of work in excess of 125 percent of the original contract item quantity, or in the case of a decrease below 75 percent, to the actual amount of work performed.*

The County will administer the above Federal regulations as follows:

## **SPECIAL CLAUSES**

The County may make, in writing, at any time during the work, any necessary changes in quantities and alterations to the work in order to satisfactorily complete the project. If the Contractor or the County discovers a change that constitutes a significant change in the character of work as defined below, the party discovering the change shall promptly provide the other party written notice of the significant change in the character of work before additional work is performed. The Contractor shall comply with notice and recordkeeping provisions of §104-06A 1 through 4, §104-06B 1 through 4 and §104-06C - Notice and Recordkeeping of the NYSDOT Standard Specifications.

The Contractor or the County, as the case may be, must make written notice to the other party of the existence of an apparent significant change in the character of work if that party wishes to adjust the contract price or time of performance, including direct costs and/or time related compensation, if applicable. Such notice shall be given within 15 calendar days of the time at which the party had knowledge, or should have had knowledge of an event, matter or occasion which results in a significant change in the character of work. The County will have no liability and no adjustment will be made for any damages which accrued more than 15 calendar days prior to the filing of such a notice with the Engineer.

Upon written notice, the Engineer will investigate the changes and if it is determined that the alterations or changes in quantities significantly change the character of work, whether such alterations or changes are in themselves significant changes in the character of work, or by affecting other work, cause such other work to become significantly different in character, an adjustment, excluding anticipated profits, will be made to the contract. The Engineer will make an initial response in writing to the Contractor, within 21 calendar days, with a determination whether or not an adjustment to the contract is warranted. Situations requiring examination of the site or input from other County personnel may require additional time to resolve. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made by the County, either for or against the Contractor, in such amount as determined to be fair and equitable.

No contract adjustment will be allowed unless the Contractor has provided the required written notice, or written notice was provided to the Contractor by the County.

If an agreement on an adjusted price has not been reached before the work begins, the Contractor shall keep daily records and make reports of all labor, material and equipment used in connection with such work and the cost thereof as specified in §30 – “Extra Work: Increased Compensation/Decreased Work: Credit To The Owner” of the General Clauses.

Compensation for increased costs of the work resulting from significant changes in the character of work will be made in accordance with §30 – “Extra Work: Increased Compensation/Decreased Work: Credit to the Owner” of the General Clauses.

Compensation for time related costs, if any, will be made in accordance with §26 – “Claims for Damages” and §27 – “Extensions of Time” of the General Clauses.

**A. Character of Work.** The term "significant change" shall be construed to apply only when the character of the work differs materially in kind or nature from that involved or included in the original proposed construction.

## **SPECIAL CLAUSES**

**B. Major Items.** The term "significant change" shall be construed to apply to Major Items only when the quantity of a Major Item is more than 125%, or is less than 75% of the original contract quantity. A Major Item is defined as:

Major Item: Any contract pay item for which the original unit bid price multiplied by the original item quantity exceeds the following minimum major item value based on total contract bid price.

<u>Total Contract Bid Price</u>	<u>Major Item Value</u>
≤ \$1,333,333	\$20,000
> \$1,333,333 - \$66,500,000	1.5% of the total contract bid price
> \$66,500,000	\$1,000,000

Any allowance for a change in the unit price shall apply only to that portion of work in excess of 125% of the original contract item quantity, or to the actual amount of work performed if the quantity decreases below 75% of the original contract item quantity. The Contractor or the County, as the case may be, must make written notice to the other party of the "significant change" in the quantity of a major item if that party wishes to adjust the contract price or time of performance. Knowledge of a "significant change" in quantity could result from receipt of a change order (approved or unapproved), a letter directing a change in the contract work, review of plan details and estimates, review of work completed or progress payment quantities, or a combination of the above.

Total payments made for all work on a Major Item that decreases to below 75% of the original contract item quantity, will not exceed the total payments which would have been made if the original contract quantity had been completed at the original unit price bid. No payments will be made for items eliminated in their entirety.

**C. Minor Items.** The term 'significant change' shall be construed to apply to Minor Items only when extra work both (1) increases the quantity of a Minor Item to more than 200% of the original contract quantity and (2) results in an increase of more than \$5,000 from the original contract amount. A Minor Item is defined as:

Minor Item: Any contract pay item that does not meet the definition of a Major Item.

Any allowance for a change in the unit price shall apply only to that portion of work both in excess of 200% of the original contract item quantity, and in excess of \$5,000 greater than the original contract amount.

**D. Lump Sum Items.** Certain items of work may be Lump Sum items, wherein a single bid amount is intended to provide payment for all necessary work during the execution of the contract. The term "significant change" shall be construed to apply to lump sum items only to the extent that changes in other contract work items result in a significant change in the character of work required to complete "Lump Sum" items of work.



## **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**

<b><u>MONTHLY EMPLOYMENT UTILIZATION REPORT</u></b>										JOB TITLE:		CONTRACT NO.:					
WESTCHESTER COUNTY DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING										NAME AND LOCATION OF CONTRACTOR:		REPORTING PERIOD: FROM: _____ TO: _____					
CONSTRUCTION TRADE	CLASSIFICATION	TOTAL ALL EMPLOYEES BY TRADE				BLACK (NOT HISPANIC ORIGINAL)		WORK HOURS OF EMPLOYMENT				MINORITY PERCENTAGE %	FEMALE PERCENTAGE %	TOTAL NUMBER OF EMPLOYEES		TOTAL NUMBER OF MINORITY EMPLOYEES	
		M	HRS	F	HRS	M	F	M	F	HISPANIC	ASIAN OR PACIFIC ISLANDERS			AMERICAN INDIAN OR ALASKAN NATIVE	M		F
	JOURNEY WORKER																
	APPRENTICE																
	TRAINEE																
	SUB-TOTAL																
	JOURNEY WORKER																
	APPRENTICE																
	TRAINEE																
	SUB-TOTAL																
	JOURNEY WORKER																
	APPRENTICE																
	TRAINEE																
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	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:										TELEPHONE NUMBER (Include Area Code):				DATE SIGNED:		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 5<sup>th</sup> 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.

**SHOP DRAWING SCHEDULE**  
**County of Westchester, Department of Public Works**

Forms Page 5

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 \_\_\_\_\_

**REQUEST FOR APPROVAL OF EQUAL**  
**County of Westchester, Department of Public Works**

NO.

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ITEMEQUAL

(WC DPW E Version 11/3/08)

**County of Westchester, Department of Public Works**

**Attach a separate sheet here if more space is required.**

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.*

SAMPLE FORMS

**ULTRA LOW SULFUR DIESEL FUEL (15 ppm Sulfur Maximum) – LOG**

Period of Log: \_\_\_\_\_ through \_\_\_\_\_

Contract No. \_\_\_\_\_

Title of Contract and Location \_\_\_\_\_

\_\_\_\_\_

Contractor or Subcontractor \_\_\_\_\_

Address \_\_\_\_\_

<b>Date of Purchase</b>	<b>Name and Address of Vendor (Print)</b>	<b>Gallons Purchased</b>

***A Separate Copy of this Certification will also have to be signed by each of your subcontractors that utilize diesel powered vehicles, fifty horsepower or greater, on the above project. Additional copies of this form can be acquired from the Department of Public Works.***



- ☐ 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:

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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**

(WC DPW E Version 11/3/08)

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Forms Page 11

## 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

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

---

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 Oblige, 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.

**BOND**

**BOND**

**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



**BOND**

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

---

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 03/25/2021  
PRC# 2021002924

Location Blue Mountain Reservatoin  
Project ID# 17-519  
Project Type Site Work Improvements, Blue Mountain Reservation, Cortlandt and Peekskill, New York

### 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](http://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](http://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](http://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](http://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 03/25/2021  
PRC# 2021002924

Location Blue Mountain Reservatoin  
Project ID# 17-519  
Project Type Site Work Improvements, Blue Mountain Reservation, Cortlandt and Peekskill, New York

### 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](http://www.labor.ny.gov). <https://labor.ny.gov/formsdocs/ui/IA999.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](mailto: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](http://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.

**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*

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#### **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](mailto: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](http://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](http://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](http://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

<b>Boilermaker</b>	<b>04/01/2021</b>
--------------------	-------------------

### 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	Wage Paid
	+ \$ 25.35	+ 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	32% of Hourly
	Wage Paid Plus	Wage Paid Plus
	Amount Below	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

<b>Carpenter</b>	<b>04/01/2021</b>
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### 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

04/01/2021

**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

04/01/2021

**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

04/01/2021

**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**

**04/01/2021**

**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**

**04/01/2021**

**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

04/01/2021

**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

## 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

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**Electrician****04/01/2021**

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**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

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**Electrician****04/01/2021**

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**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**

**04/01/2021**

**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

**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**

**04/01/2021**

**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**

04/01/2021

**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*	\$ 34.825*

(\*)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

04/01/2021

### 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	5/31/2021 Additional
Glazier	\$ 57.55	\$ 2.00
*Scaffolding	58.55	
Glass Tinting & Window Film	29.17	
**Repair & Maintenance	29.17	

\*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
Journeyworker	\$ 34.59
Glass tinting & Window Film	20.29
Repair & Maintenance	20.29

### 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
1st term	\$ 20.14
2nd term	28.21
3rd term	34.10
4th term	45.80

Supplemental Benefits:

(Per hour)

1st term	\$ 16.16
2nd term	22.76

3rd term 25.16  
4th term 29.73

8-1087 (DC9 NYC)

**Insulator - Heat & Frost**

**04/01/2021**

**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

<b>Ironworker</b>	<b>04/01/2021</b>
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**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

<b>Ironworker</b>	<b>04/01/2021</b>
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**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

<b>Ironworker</b>	<b>04/01/2021</b>
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**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

<b>Ironworker</b>	<b>04/01/2021</b>
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**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

04/01/2021

**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

04/01/2021

**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, Jeep 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

04/01/2021

**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

04/01/2021

**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**

**04/01/2021**

**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

04/01/2021

**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 04/01/2021

**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:		
	\$ 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

<b>Mason - Building</b>	<b>04/01/2021</b>
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**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
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**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

<b>Mason - Building</b>	<b>04/01/2021</b>
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**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
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Mosaic & Terrazzo Finisher	\$55.82	\$ 56.32
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## 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 0- 1500	2nd 1501- 3000	3rd 3001- 3750	4th 3751- 4500	5th 4501- 5250	6th 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.

<b>Mason - Building</b>	<b>04/01/2021</b>
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**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 & \$ 44.66 \$ 45.37

Terrazzo Polisher, etc

**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

<b>Mason - Building</b>	<b>04/01/2021</b>
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**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

9-7/4

**Mason - Building** **04/01/2021**

**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** **04/01/2021**

**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**

04/01/2021

**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

# **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**

04/01/2021

**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

04/01/2021

**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

#### 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

04/01/2021

**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
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**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**

**04/01/2021**

**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 scheduleRegistration 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**

**04/01/2021**

**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**

**04/01/2021**

**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

04/01/2021

**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 \$ 40.31 \$ 41.42

Deck Captain, Leverman  
Mechanical Dredge Operator  
Licensed Tug Operator 1000HP or more.

CLASS A2 35.92 36.91

Crane Operator (360 swing)

CLASS B To conform to Operating Engineer  
Dozer, Front Loader Prevailing Wage in locality where work  
Operator on Land is being performed including benefits.

CLASS B1 34.86 35.82

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

CLASS B2 32.82 33.72

Certified Welder

CLASS C1 31.92 32.80

Drag Barge Operator,  
Steward, Mate,  
Assistant Fill Placer

CLASS C2 30.89 31.74

Boat Operator

CLASS D 25.66 26.37

Shoreman, Deckhand, Oiler,  
Rodman, Scowman, Cook,  
Messman, Porter/Janitor

### 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%	\$11.98 plus 8%
	of straight time	of straight time
	wage, Overtime hours	wage, Overtime hours
	add \$ 0.63	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**

**04/01/2021**

**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**

**04/01/2021**

**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

04/01/2021

#### 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

04/01/2021

**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

<b>Painter - Line Striping</b>	<b>04/01/2021</b>
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**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:

Painter (Striping-Highway):	07/01/2020	07/01/2021	07/01/2022
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**

**04/01/2021**

**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, Schuyler, 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
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Journeyworker:

All classification	\$ 9.94
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**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**

**04/01/2021**

**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**

**04/01/2021**

**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 Walkill 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**

**04/01/2021**

**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

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**Roofer****04/01/2021**

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**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

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**Sheetmetal Worker****04/01/2021**

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**JOB DESCRIPTION** Sheetmetal Worker

**DISTRICT** 8

**ENTIRE COUNTIES**

Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

**WAGES**

07/01/2020  
SheetMetal Worker \$ 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

04/01/2021

**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

<b>Sprinkler Fitter</b>	<b>04/01/2021</b>
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**JOB DESCRIPTION** Sprinkler Fitter

**DISTRICT** 1

**ENTIRE COUNTIES**

Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

**WAGES**

Per hour

07/01/2020

Sprinkler  
Fitter

\$ 45.52

**SUPPLEMENTAL BENEFITS**

Per hour

Journey person

\$ 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 journey person'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

<b>Teamster - Building / Heavy&amp;Highway</b>	<b>04/01/2021</b>
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**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

8-456

#### Welder

04/01/2021

#### JOB DESCRIPTION Welder

#### DISTRICT 1

#### 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, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

#### WAGES

Per hour 07/01/2020

Welder: To be paid the same rate of the mechanic performing the work.\*

\*EXCEPTION: If a specific welder certification is required, then the 'Certified Welder' rate in that trade tag will be paid.

#### OVERTIME PAY

#### HOLIDAY

1-As Per Trade

## 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  
State Office Building Campus  
Building 12 - Room 130  
Albany, New York 12240

**REQUEST FOR WAGE AND SUPPLEMENT INFORMATION**

As Required by Articles 8 and 9 of the NYS Labor Law

Fax (518) 485-1870 or mail this form for new schedules or for determination for additional occupations.

**This Form Must Be Typed**

Submitted By:

(Check Only One)

☐

Contracting Agency

☐

Architect or Engineering Firm

☐

Public Work District Office

Date:

**A. Public Work Contract to be let by:** (Enter Data Pertaining to Contracting/Public Agency)

1. Name and complete address ☐ (Check if new or change)

Telephone: ( )

Fax: ( )

E-Mail:

2. NY State Units (see Item 5)

☐ 01 DOT

☐ 02 OGS

☐ 03 Dormitory Authority

☐ 04 State University  
Construction Fund

☐ 05 Mental Hygiene  
Facilities Corp.

☐ 06 OTHER N.Y. STATE UNIT

☐ 07 City

☐ 08 Local School District

☐ 09 Special Local District, i.e.,  
Fire, Sewer, Water District

☐ 10 Village

☐ 11 Town

☐ 12 County

☐ 13 Other Non-N.Y. State  
(Describe)

3. SEND REPLY TO ☐ (check if new or change)  
Name and complete address:

Telephone:( )

Fax: ( )

E-Mail:

4. SERVICE REQUIRED. Check appropriate box and provide project information.

☐ New Schedule of Wages and Supplements.

APPROXIMATE BID DATE :

☐ Additional Occupation and/or Redetermination

PRC NUMBER ISSUED PREVIOUSLY FOR  
THIS PROJECT :

OFFICE USE ONLY

**B. PROJECT PARTICULARS**

5. Project Title

Description of Work

Contract Identification Number

Note: For NYS units, the OSC Contract No.

6. Location of Project:

Location on Site

Route No/Street Address

Village or City

Town

County

7. Nature of Project - Check One:

☐ 1. New Building

☐ 2. Addition to Existing Structure

☐ 3. Heavy and Highway Construction (New and Repair)

☐ 4. New Sewer or Waterline

☐ 5. Other New Construction (Explain)

☐ 6. Other Reconstruction, Maintenance, Repair or Alteration

☐ 7. Demolition

☐ 8. Building Service Contract

8. OCCUPATION FOR PROJECT :

☐ Construction (Building, Heavy  
Highway/Sewer/Water)

☐ Tunnel

☐ Residential

☐ Landscape Maintenance

☐ Elevator maintenance

☐ Exterminators, Fumigators

☐ Fire Safety Director, NYC Only

☐ Guards, Watchmen

☐ Janitors, Porters, Cleaners,  
Elevator Operators

☐ Moving furniture and  
equipment

☐ Trash and refuse removal

☐ Window cleaners

☐ Other (Describe)

9. Has this project been reviewed for compliance with the Wicks Law involving separate bidding?

YES ☐

NO ☐

10. Name and Title of Requester

Signature



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**



**NYSDOL Bureau of Public Work Debarment List    01/13/2021**

**Article 8**

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	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 CROPEY 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	*****3915	BEACON RESTORATION INC		SUITE B-8 782 PELHAM PARKWAY SOUTHBRONX NY 10462	04/21/2016	04/21/2021
DOL	NYC	*****8416	BEAM CONSTRUCTION, INC.		50 MAIN ST WHITE PLAINS NY 10606	01/04/2019	01/04/2024
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 MORSEY		C/O KENT HOLLOW SIDING LL 29A BRIDGE STREETNEW MILFORD CT 06776	01/15/2016	01/15/2021
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	*****0000	C.D.E. CONTRACTING		342 ALBANY STREET ALBANY NY 12206	08/07/2017	08/07/2022

**NYSDOL Bureau of Public Work Debarment List    01/13/2021**

**Article 8**

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		CARIBBEAN POOLS		C/O DOUGLAS L MALARKEY 64 VICTORIA DRIVEBINGHAMTON NY 13904	02/04/2016	02/04/2021
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 PAPASTEFANO A/K/A CHRIS PAPASTEFANO		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	NYC	*****2164	CREATIVE TRUCKING INC		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	DOL	*****2524	CSI ELECTRICAL & MECHANICAL INC		42-32 235TH ST DOUGLASTON NY 11363	01/14/2019	01/14/2024
DOL	DOL	*****7761	D L MALARKEY CONSTRUCTION		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****7888	D L MALARKEY CONSTRUCTION INC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****5629	DAKA PLUMBING AND HEATING LLC		2561 ROUTE 55 POUGHQUAG NY 12570	02/19/2016	02/19/2021
DOL	NYC		DALJIT KAUR BOPARAI		185-06 56TH AVE FRESH MEADOW NY 11365	10/17/2017	10/17/2022
DOL	DOL		DANICA IVANOSKI		61 WILLETT 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	DOL		DAVID MARTINEZ		C/O EMPIRE TILE INC 6 TREMONT COURTHUNTINGTON STATION NY 11746	03/08/2016	03/08/2021
DOL	NYC		DAVID WEINER		14 NEW DROP LANE 2ND FLOORSTATEN ISLAND NY 10306	11/14/2019	11/14/2024

**NYSDOL Bureau of Public Work Debarment List    01/13/2021**

**Article 8**

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		DEDA GAZIVODAN		C/O DAKA PLUMBING AND H 2561 ROUTE 55POUGHQUAG NY 12570	02/19/2016	02/19/2021
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 REPAI 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 TSOUMAS		35-12 19TH AVENUE ASTORIA NY 11105	08/02/2017	08/02/2022
DOL	DOL		DOMENICO LAFACE		8531 OSWEGO RD BALDWINVILLE 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	*****7404	DOSANJH CONSTRUCTION CORP		9439 212TH STREET QUEENS VILLAGE NY 11428	02/25/2016	02/25/2021
DOL	DOL		DOUGLAS L MALARKEY	MALARKEY CONSTRUCTI ON	64 VICTORIA DRIVE B INGHAMTON NY 13904	02/04/2016	02/04/2021
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 GILLETT 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	DOL	*****3270	EMPIRE TILE INC		6 TREMONT COURT HUNTINGTON STATION NY 11746	03/08/2016	03/08/2021
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 BALDWINVILLE NY 13027	02/03/2020	01/09/2023

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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		HARMEL SINGH		15 CLINTON LANE HICKSVILLE NY 11801	02/25/2016	02/25/2021
DOL	NYC		HAROLD KUEMMEL		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
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 WATERVLIT NY 12189	06/05/2018	06/05/2023
DOL	DOL		IRENE KASELIS		32 PENNINGTON AVE WALDWICK NJ 07463	05/30/2019	05/30/2024
DOL	AG		J A M CONSTRUCTION CORP		SUITE 125 265 SUNRISE HIGHWAYROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021
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 WATERVLIT NY 12189	06/05/2018	06/05/2023
DOL	AG		JAMES FALCONE		SUITE 125 265 SUNRISE HIGHWAYROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021
DOL	DOL		JAMES LIACONE		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		JASON W MILLIMAN		C/O ROCHESTER ACOUSTICAL P O BOX 799HILTON NY 14468	02/19/2016	02/19/2021
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	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	AG		JOSEPH FALCONE		SUITE 125 265 SUNRISE HIGHWAYROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021
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

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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		KATIE BURDICK		2238 BAKER RD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL		KENNETH FIORENTINO		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	DOL	*****9732	KENT HOLLOW SIDING LLC		29A BRIDGE STREET NEW MILFORD CT 06776	01/15/2016	01/15/2021
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	AG	*****4643	LALO DRYWALL, INC.		221 OLD FORD ROAD NEW PLATZ NY 12561	05/20/2016	05/20/2021
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
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	AG		LUIS MARTINEZ	LALO DRYWALL	211 MAIN ST. NEW PALTZ NY 12561	05/20/2016	05/20/2021
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		39 PENNY STREET	11/02/2016	11/02/2021

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DOL	DOL		MALARKEY'S BAR & GRILL LLC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****0705	MALARKEY'S PUB & GRUB LLC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
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	DOL		MARIACHI'S PIZZERIA		C/O DOUGLAS L MALARKEY 64 VICTORIA DRIVEBINGHAMTON NY 13904	02/04/2016	02/04/2021
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 PROFESSIONAL PAINTING OF CNY	1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL	*****9445	MCLEAN M WALSH	ELITE PROFESSIONAL PAINTING OF CNY	1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	NYC		MICHAEL HIRSCH		C/O MZM CORP 163 S MAIN STREETNEW CITY NY 10956	01/28/2016	01/28/2021
DOL	DOL		MICHAEL LENIHAN		1079 YONKERS AVE UNIT 4YONKERS NY 10704	08/07/2018	08/07/2023
DOL	AG		MICHAEL RIGLIETTI		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
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	NYC	*****3613	MZM CORP		163 S MAIN STREET NEW CITY NY 10956	01/28/2016	01/28/2021
DOL	DA	*****9786	NATIONAL INSULATION & GC CORP		180 MILLER PLACE HICKSVILLE NY 11801	12/12/2018	12/12/2023

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DOL	NYC	*****4839	NEW YORK RIGGING CORP		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	NYC		NICHOLAS FILIPAKIS		7113 FORT HAMILTON PARKWA BROOKLYN NY 11228	12/09/2016	12/09/2021
DOL	DOL	*****7429	NICOLAE I. BARBIR	BESTUCCO CONSTRUCTI ON, 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	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		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
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 CONSTRUCTI ON	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	*****3859	ROCHESTER ACOUSTICAL CORP		P O BOX 799 HILTON NY 14468	02/19/2016	02/19/2021

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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	NYC		SABIR MUHAMMED		SUITE B-8 782 PELHAM PARKWAY SOUTHBRONX NY 10462	04/21/2016	04/21/2021
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	AG		SERGIO RAYMUNDO		109 DUBOIS RD. NEW PALTZ NY 12561	05/20/2016	05/20/2021
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 GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL		SHANE BURDICK		2238 BAKER ROAD GILLETT 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
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.		185-06 56TH AVE	10/17/2017	10/17/2022



**NYSDOL Bureau of Public Work Debarment List    01/13/2021**

**Article 8**

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	*****9852	TAP STEEL INC		ROUTE 26 3101 P O BOX 457CONSTABLEVILLE NY 13325	01/28/2016	01/28/2021
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 CORPORATIO N	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL	*****5766	THE COKER CORPORATION	COKER CORPORATIO N	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		TIMOTHY A PALUCK		C/O TAP STEEL INC RTE 26 3101/ P O BOX 457CONSTABLEVILLE NY 13325	01/28/2016	01/28/2021
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 PHELEPS 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 DOUGLASTON 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
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**

WESTCHESTER COUNTY

BLUE MOUNTAIN

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**SECTION 01 11 00**

**SUMMARY OF WORK**

**PART 1 - GENERAL**

**1.1 SCOPE OF WORK**

- A. The Work to be performed under the Contract and in accordance with these Specifications consists of, but is not limited to, furnishing of all equipment, superintendents, labor, skill, material and all other items necessary for the Site Work Improvements located at Blue Mountain Reservation; Town of Cortlandt, City of Peekskill, New York. The Contractor shall perform all Work required for such construction in accordance with the Contract Documents and subject to the terms and conditions of the Contract, complete and ready for use.
- B. The Contractor shall furnish all labor, materials, equipment and appurtenant work necessary to construct all work as shown, specified and required for the Site Work Improvements at Blue Mountain Reservation.

**1. General Project Requirements**

- a. Locate existing utilities, retain an independent contractor to assist in locating all on-site utilities.
  - 1) NOTE: The Montrose Improvement District 16" water main must be protected. Shutdowns of this water main are not permitted.
- b. Installation of erosion control measures.
- c. Sawcut trench, excavation.
- d. Removal of existing sanitary sewer and water utilities.
- e. Installation of new sanitary sewer, water, buried electrical utilities and associated appurtenances (generator, power panels/outlets, sanitary sewer manhole, sewage grinder pumps, valves, water fountains, etc.).
- f. Removal of existing electrical utilities.
- g. Trench backfill and compaction. Either topsoil and seed or pavement restoration; base, binder, and top course.
- h. Removal of two (2) existing wood bridges and concrete foundations, and one (1) exterior wood stairs.

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DIVISION 1 - GENERAL REQUIREMENTS

- i. Installation of two (2) new wood bridges and concrete foundations, and one (1) new exterior wood stairs.
- j. Paving of asphalt top course for walking paths.
- k. Installation of concrete sidewalk ramp.
- l. General site improvements: Parking striping, overlay  $\frac{3}{4}$ " stone in parking area, new picnic tables and grills.
- m. Final site restoration and seeding.
- n. Final As-Built Survey.

1.2 GENERAL

- A. The Instructions for Bidders, General Conditions, Supplementary Conditions and Division 1 of the Technical Specifications, shall apply equally to all Work under the Contract for this Project.
- B. Where the words "Contract" and "Contractor" are used in Sections of Division 1, they shall apply equally to all parties entering into agreements with the Owner to perform Work specified herein and to all Contracts derived from said agreements.
- C. Where the word "Owner" is used in these Specifications, it shall refer to the Westchester County Parks Department and Westchester County Department of Public Works.

1.3 CONTRACT DOCUMENTS

- A. The Work to be done is shown on the set of Contract Drawings entitled Site Work Improvements, Blue Mountain Reservation.

1.4 GENERAL ARRANGEMENT

- A. The Contract Drawings indicate the extent and general arrangement of the Work. The specific equipment proposed for use by the Contractor on the Project may require changes in the construction detailed on the Contract Drawings, and all such changes shall be performed in accordance with the requirements of the Supplementary Conditions and shall be made without additional cost to the District and shall include the increase in costs of the other Contracts.

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**1.5 TIME OF WORK**

- A. Overtime work shall conform to the requirements of Division 1, Supplementary Conditions, shall be considered as normal procedure under this Contract, and the Contractor shall make no claims for extra compensation as a result thereof.
- B. Unless otherwise specifically permitted, all work that would be subject to damage shall be stopped during inclement, stormy or freezing weather. Only such work as will not suffer injury to workmanship or materials will be permitted. The Contractor shall carefully protect his Work against damage or injury from the weather, and when work is permitted during freezing weather shall provide and maintain approved facilities for heating the materials and for protecting the finished Work.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION**

NO TEXT ON THIS PAGE



**SECTION 01 20 00**

**PRICE AND PAYMENT PROCEDURES**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. The items listed below beginning with Article 1.3, refer to and are the same pay items listed in the Proposal. They constitute all the pay items for the completion of the Work. No direct or separate payment will be made for providing miscellaneous temporary or accessory works, plant services, layout surveys, job signs, sanitary requirements, testing, reparation of damages produced by Contractor, safety devices, approval and Record Drawings, water supplies, power, maintaining traffic, removal of waste, watchmen, Bonds, insurance, and all other requirements of the Contract, General and Supplementary Conditions. Compensation for all such services, things and materials shall be included in the price stipulated for the lump sum listed herein.

**1.2 RELATED PROVISIONS SPECIFIED ELSEWHERE**

- A. Payments to Contractor: Refer to Contract, General Conditions and Supplementary Conditions.

**1.3 CONTRACT - GENERAL CONSTRUCTION**

- A. For providing all mobilization, temporary systems, surveying, demobilization, permitting, traffic control, dewatering, restoration, etc. and all labor, material and equipment necessary to complete all work as shown on the contract drawings and in accordance with the project manual and specifications. Demolition and legal disposal of all brush and tree debris, and other material not otherwise defined herein shall be included in the lump sum price.

**1.4 BID PROPOSAL ITEMS**

- A. The Contract consists of the Base Bid, Rock Removal and Alternates 1, 2, and 3
- B. Item 1 – Base Bid

Payment for Item 1 will be a lump sum bid. Work to be performed under this Contract and in accordance with these Specifications consists of, but is not limited to, furnishing of all equipment, superintendents, labor, skill, material, sanitary services, electric services, water services, site work, landscaping, site restoration including pavement, walkways, sidewalks, railings, finish grading, benches, plantings, as built survey and all other items necessary for the Base Bid located at Blue Mountain Reservation; Town of Cortlandt, City of Peekskill, New York.

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DIVISION 1 - GENERAL REQUIREMENTS

This lump sum bid price shall be calculated based on the contract drawings and technical specifications divisions 1 through 35.

C. Item 2 – Rock Removal

Payment for Item 2 will be a unit price bid of a quantity of 500 cubic yards of Rock Removal. Work to be performed under this Contract and in accordance with these Specifications consists of, but is not limited to, furnishing of all equipment, superintendents, labor, skill, and all other items necessary for the Rock Removal located at Blue Mountain Reservation; Town of Cortlandt, City of Peekskill, New York. This unit price bid shall be calculated based on the contract drawings and technical specifications divisions 1 through 35.

D. Item 3 – Contract Bonds and Insurance

This item provides payment for Contract Bonds and Insurances which must not exceed 3% of the subtotal of Bid Items 1 and 2.

E. Item W800 – Miscellaneous Additional Work

This item provides for miscellaneous additional work to be accomplished as ordered by the Owner as described in Article 14 of the Information for Bidders (W-800). The cost of this item shall be included in the total amount bid for the project.

F. Alternate Bid Item 1 – Lower Bridge

Payment for Alternate Bid Item 1 will be a lump sum bid. Work to be performed under this Contract and in accordance with these Specifications consists of, but is not limited to, furnishing of all equipment, superintendents, labor, excavation, skill, material, footings and all other items necessary for the Lower Bridge located at Blue Mountain Reservation; Town of Cortlandt, City of Peekskill, New York. This lump sum bid price shall be calculated based on the contract drawing sheet C-11 and technical specifications divisions 1 through 35.

G. Alternate Bid Item 2 – Upper Bridge

Payment for Alternate Bid Item 2 will be a lump sum bid. Work to be performed under this Contract and in accordance with these Specifications consists of, but is not limited to, furnishing of all equipment, superintendents, labor, skill, material and all other items necessary for the Upper Bridge located at Blue Mountain Reservation; Town of Cortlandt, City of Peekskill, New York. This lump sum bid price shall be calculated based on the contract drawing sheet C-12 and technical specifications divisions 1 through 35.

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DIVISION 1 - GENERAL REQUIREMENTS

H. Alternate Bid Item 3 – Parking Lot Staircase

Payment for Alternate Bid Item 3 will be a lump sum bid. Work to be performed under this Contract and in accordance with these Specifications consists of, but is not limited to, furnishing of all equipment, superintendents, labor, skill, material and all other items necessary for the Parking Lot Staircase located at Blue Mountain Reservation; Town of Cortlandt, City of Peekskill, New York. This lump sum bid price shall be calculated based on the contract drawing sheet C-13 and technical specifications divisions 1 through 35.

1.5 DAMAGES BY CONTRACTOR

A. No payments shall be made for reparation of damages caused by Contractor.

1.6 CONTRACTOR PAY REQUISITIONS

- A. The Contractors shall submit monthly payment requisitions, prepared as directed by the Engineer. A maximum of one payment requisition shall be submitted each month.
- B. The Contractor may, at the approval of the Engineer, submit payment for unit cost items based upon agreed upon estimated amounts each month prior to completion of as built surveys.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 01 33 00**

**SUBMITTAL PROCEDURES**

**PART 1 – GENERAL**

**1.1 SECTION INCLUDES**

- A. This Section specifies the requirements for making submissions for the project.

**1.2 IDENTIFICATION OF SUBMITTALS**

- A. Each and every submission shall be provided by the Contractor and shall be accompanied by a SUBMISSION TRANSMITTAL FORM. Identify each submittal and re-submittal using the form.
- B. It is incumbent on the Contractor to initially assign the submission log number designation to each submission. Submissions not containing a log number, as specified above, will be returned to the Contractor un-reviewed by the Engineer/Architect.
- C. Every submittal shall also be accompanied by a Transmittal Letter addressed to the Engineer/Architect's Project Manager.

**1.3 COORDINATION OF SUBMITTALS**

- A. Prior to submitting to the Engineer/Architect, fully coordinate all interrelated work. As a minimum, do the following:
  - 1. Determine and verify all field dimensions and conditions by field measuring existing conditions and the installed work of this Contract and work by others.
  - 2. Coordinate with all trades, subcontractors, vendors, system and equipment suppliers and manufacturers, public agencies, and utility companies and secure all necessary approvals, in writing.
  - 3. Provide a space approximately 4" x 4" on submission transmittal form, transmittal letter, and shop drawings to record the Engineer's review, approval markings and the action taken.
- B. Make submittals in groups containing all associated items that in some way depend upon each other.
  - 1. The Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

2. The Engineer/Architect may elect not to review partial or incomplete submissions, whereupon he will notify the Contractor of the additional submissions that are required before a review can be made.

#### 1.4 TIMING OF SUBMITTALS

- A. Make submittals far enough in advance of scheduled dates of installation to provide time for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery. The Engineer/Architect will review submittals in a manner as expedient as possible, and will generally send a written response to the Contractor within seven (7) calendar days of receipt of submittals.
- B. Submissions may be returned reviewed, rejected, returned conditioned upon submission of related items, or for other reasons set forth in the Contract Documents.
- C. Make submissions well in advance as the returning, rejecting or disapproval of submissions or other similar circumstances are possible and are deemed "avoidable delays". Costs for these delays or those attributed to Contractor's tardiness in making submittals shall be borne by the Contractor.
- D. Submittals requiring Engineer/Architect's review (except operations manuals) as required under the technical specifications of these documents shall be submitted prior to installation.
- E. Operations and maintenance manuals shall be submitted at least thirty (30) consecutive calendar days prior to scheduled start-up of the unit or system.
- F. If material or equipment is installed before it has been deemed to be in general compliance with the Contract Documents, as determined by the Engineer/Architect, the Contractor shall be liable for its removal and replacement at no extra charge and without an increase in contract time.
- G. No extension of Contract Time will be authorized because of failure to transmit submittals to the Engineer.

#### 1.5 DESTINATION OF SUBMITTALS

- A. Submissions shall be sent to the Engineer/Architect's office to the attention of the Project Manager whom will be named in the Notice to Proceed or at the Construction Kick-Off meeting.
- B. When submitting samples, the contractor shall arrange for the delivery of said samples to the office of the Engineer. Samples shall be clearly marked with name of the project and the Engineer/Architect's project manager.

- C. The Contractor is responsible for the pick-up of the sample from the Engineer's office following approval. In the event that a sample is not retrieved from the Engineer's office within thirty days of approval, it will be disposed of.

#### 1.6 CONTRACTOR'S REPRESENTATION

- A. By making a submission, the Contractor represents that he has determined and verified all field measurements and dimensions, field construction criteria, site and building constraints in terms of limitations in moving equipment into an enclosed space, materials, catalog and model numbers and similar data and that he has checked and coordinated each submission with other work at or adjacent to the project site as required

#### 1.7 ENGINEER/ARCHITECT'S REVIEW

- A. Engineer/Architect will review and comment on each submission conforming to the requirements of this Section.
  - 1. Engineer/Architect's review will be for conformance with the design concept of the project and will be confined to general arrangement and compliance with the Contract Documents only, and will not be for the purpose of checking dimensions, weights, clearances, fittings, laying lengths, tolerances, interference's, for coordinating the work by others or subcontractors.
  - 2. The Engineer/Architect's review of a separate item, or portion of a system, does not represent a review of an assembly or system in which the item functions.
- B. The Engineer/Architect will mark submittals as follows:
  - 1. APPROVED\_- No corrections, no marks. The content of this submittal has been reviewed by the Engineer/Architect and been found to be in general compliance with the Contract Documents. No further submission of this  
  
submittal is required and the information contained in the submittal may be built into the work in accordance with the Contract Documents.
  - 2. APPROVED AS NOTED\_- Minor amount of corrections. The content of this submittal has been reviewed by the Engineer/Architect and has been found in general to be in compliance with the Contract Documents. The notations made on the submittal by the Engineer/Architect shall be incorporated into the work in accordance with the terms and conditions of the Contract Documents. No further submission of this submittal is required.

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3. REVISE AND RESUBMIT\_- The content of this submittal has been reviewed by the Engineer/Architect and this review has determined that additional data and/or modification to the submitted data or other changes are required to bring the work represented in this submittal into compliance with the Contract Documents. This submittal shall be reviewed and revised in accordance with the Engineer/Architect's comments and resubmitted to the Engineer/Architect for review. The information contained on the resubmittal shall not be incorporated into the work until the submittal is returned to the Contractor marked "APPROVED" or "APPROVED AS NOTED".
  4. DISAPPROVED\_- The content of this submittal has been reviewed by the Engineer/Architect and has been determined not to be in accordance with the requirements contained in the Contract Document and requires too many corrections or other justifiable reason. The submittal shall be corrected and resubmitted or a submittal of an alternate shall be provided. No items are to be fabricated under this mark.
  5. RECEIVED\_- This submittal is accepted on the project and filed for record purposes only, in accordance with the terms and conditions of the Contract Documents. Documents marked "RECEIVED" will not be returned.
- C. No payment will be made on any item for which a submission is required if such submission:
1. Has not been made,
  2. Has been made but was not stamped "Approved" by Engineer/Architect,
  3. Has been made and stamped "Approved As Noted", but contractor has not complied with Engineer/Architect's notes marked on the submittal,
  4. Has been made and stamped "Approved", but item provided does not conform to the shop drawing nor to the Contract Documents.
- D. Submittals not required by these specifications will not be recognized or processed.
- E. Provide space for the Engineer/Architect's review stamp.

1.8 RESUBMISSIONS

- A. Prepare new and additional submissions, make required corrections, and resubmit corrected copies until found in compliance with the Contract Documents.



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DIVISION 1 - GENERAL REQUIREMENTS

- B. On, or with, resubmittals, clearly describe revisions and changes made, other than the corrections requested by Engineer/Architect, which did not appear on the previous submissions.

1.9 CONTRACTOR'S RESPONSIBILITIES

- A. Engineer/Architect's review of submittals shall not relieve the Contractor of his/her responsibility for any deviation from the requirements of the Contract Documents nor relieve the Contractor from responsibility for errors or omissions in the submittals.
- B. No portion of the work requiring a submission shall be commenced until the Engineer/Architect has found the submission in general compliance with the Contract Documents.
- C. The Contractor shall provide notification of any specification or drawing deviation.

1.10 MISCELLANEOUS SUBMITTALS

- A. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.11 SUBCONTRACTOR LIST

- A. The Contractor shall submit, on AIA Form G805, within ten (10) calendar days after the date of the Notice to Proceed, a list of all subcontractors, including the names of the major subcontractors that were submitted at the time of the bid.

1.12 MATERIAL SAFETY DATA SHEETS (MSDS)

- A. Comply with "Right to Know" requirements of Chapter 551 of Laws of New York, 1980, concerning notification of the use of toxic substances.
- B. Any product or substance used by the Contractor or its subcontractors which is listed in Subpart Z of OSHA Part 1910 Title 29 of the Code of Federal Regulations entitled "Toxic and Hazardous Substances" shall be identified to the Owner/Engineer/Architect by the Contractor's submission of a standard Material Safety Data Sheet (MSDS) in accordance with "Right To Know" requirements.
- C. Products will not be permitted to be kept on site without a MSDS.

1.13 SHOP DRAWINGS

- A. Submit shop drawings for all fabricated work, for all manufactured items and for items specifically required by the specifications.

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DIVISION 1 - GENERAL REQUIREMENTS

- B. Submit one (1) copy of each standard drawing, catalog cut, or other material. The Engineer/Architect will return one (1) copy to the Contractor. The Contractor shall be responsible for providing approved shop drawings to their own subcontractors.
- C. Subcontractors shall submit shop drawings directly to the Contractor for checking. Thoroughly check subcontractors' shop drawings for measurements, sizes of members, details, materials, and conformance with the Contract Documents.
  - 1. Return submittals which are found to be inaccurate or in error.
  - 2. Do not submit to the Engineer/Architect until all corrections have been made.
- D. Clearly show the relationship of the various parts of the project and where the information provided on the submission depends upon field measurements and existing conditions.
- E. The Contractor shall make all measurements, confirm existing conditions, and include them on the shop drawings before making a submission to the Engineer/Architect.

1.14 CERTIFICATIONS

- A. Submit certifications of compliance indicated in the Contract Documents.
- B. Certifications shall be complete and exact, they shall be properly authenticated by the written signature, in ink, of an owner, officer or duly authorized representative of the person, firm or organization issuing such certification and they shall guarantee that the materials or equipment are in complete conformance with the requirements of these specifications.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION**

**SECTION 01 45 00**  
**QUALITY CONTROL**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section specifies administrative and procedural requirements for quality control services.
- B. Quality control services include inspections and tests and related actions including reports, performed by independent agencies, governing authorities, and the Contractor. They do not include Contract enforcement activities performed by the Engineer.
- C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Contract Document requirements.
- D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
  - 1. Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities. Those requirements, including inspections and tests, cover production of standard products as well as customized fabrication and installation procedures.
  - 2. Inspections, test and related actions specified are not intended to limit the Contractor's quality control procedures that facilitate compliance with Contract Document requirements.
  - 3. Requirements for the Contractor to provide quality control services required by the Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

**1.3 RESPONSIBILITIES**

- A. Contractor Responsibilities: The Contractor shall provide inspections, tests and similar quality control services, specified in individual Specification Sections and required by governing authorities, except where they are specifically indicated to be the Owner's responsibility, or are provided by another identified entity; these

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services include those specified to be performed by an independent agency and not by the Contractor. Costs for these services shall be included in the Contract Sum.

The Contractor shall employ and pay an independent agency, to perform specified quality control services.

Where the Owner has engaged a testing agency or other entity for testing and inspection of a part of the Work, and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the Owner, unless otherwise agreed in writing with the Owner.

- B. Retesting: The Contractor is responsible for retesting where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance with Contract Document requirements, regardless of whether the original test was the Contractor's responsibility.

Cost of retesting construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.

- C. Associated Services: The Contractor shall cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include but are not limited to:

1. Providing access to the Work and furnishing incidental labor and facilities necessary to facilitate inspections and tests.
2. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.
3. Providing facilities for storage and curing of test samples, and delivery of samples to testing laboratories.
4. Providing the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
5. Security and protection of samples and test equipment at the Project site.

- D. Duties of the Testing Agency: The independent testing agency engaged to perform inspections, sampling and testing of materials and construction specified in individual Specification Sections shall cooperate with the Engineer and Contractor in performance of its duties, and shall provide qualified personnel to perform required inspections and tests.

1. The agency shall notify the Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of

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its services.

2. The agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work.
3. The agency shall not perform any duties of the Contractor.

#### 1.4 SUBMITTALS

The independent testing agency shall submit a certified written report of each inspection, test or similar service, to the Engineer, in duplicate, unless the Contractor is responsible for the service. If the Contractor is responsible for the service, submit a certified written report of each inspection, test or similar service through the Contractor, in duplicate.

- A. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to:
  1. Date of issue.
  2. Project title and number.
  3. Name, address and telephone number of testing agency.
  4. Dates and locations of samples and tests or inspections.
  5. Names of individuals making the inspection or test.
  6. Designation of the Work and test method.
  7. Identification of product and Specification Section.
  8. Complete inspection or test data.
  9. Test results and interpretations of test results.
  10. Ambient conditions at the time of sample-taking and testing.
  11. Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements.
  12. Name and signature of laboratory inspector.
  13. Recommendations on retesting.

#### 1.5 QUALITY ASSURANCE

- A. Qualification for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, which are prequalified as complying with "Recommended Requirements for Independent Laboratory

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Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.

Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the State in which the Project is located.

**1.6 REPAIR AND PROTECTION**

- A. General: Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes. Comply with Contract Document requirements for section 1045 "Cutting and Patching."

Protect construction exposed by or for quality control service activities, and protect repaired construction.

Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

**END OF SECTION**

**SECTION 01 55 26**

**TRAFFIC CONTROL**

**PART 1 - GENERAL**

**1.1 SCOPE OF WORK**

- A. This section includes the provisions of maintaining vehicular and pedestrian traffic within and without Blue Mountain Reservation and protection for both the public and the Contractor's employees from all damage to person and property during the site work improvements.
- B. Maintenance and protection of traffic is the responsibility of the General Contractor.

**1.2 SUBMITTALS**

- A. The Contractor shall notify the roadway Owner and the Engineer at least seventy-two (72) hours prior to the closing of any portion of a road as might be necessary to perform the work and shall adequately describe the detour to be followed.
- B. The Contractor shall submit detailed drawings showing all signs, barricades, etc. for the closing of any portion of a road. These drawings shall be submitted for the Engineer's approval prior to any road closings. Only after drawing approval can the Contractor submit a request for road closing 72 hours prior to the anticipated closure. These shop drawings must be in full conformance with the requirements of the Manual of Uniform Traffic Control Devices.

**PART 2 - MATERIALS**

**2.1 TRAFFIC DEVICES**

- A. All temporary signs, delineators, barricades, lighting, and other warning and guiding devices shall be as shown and specified on the plans, the New York State Manual of Uniform Traffic Control Devices, the Traffic Maintenance Details of the standard details, and/or as required by the roadway owner.
- B. Unless otherwise specified, all materials used will remain the property of the Contractor.

### **PART 3 - EXECUTION**

#### **3.1 PREPARATION**

- A. The Contractor shall obtain, supply and pay for all required electrical energy, services, permits, equipment, certificates, etc.

#### **3.2 PERFORMANCE**

- A. Traffic shall be maintained over a reasonably smooth traveled way, which shall be marked by signs, delineations, and/or other methods so that a person who has no knowledge of conditions can safely and with a minimum of discomfort and inconvenience, travel the area under construction. Standards for maintenance of traffic shall be based on the New York State Manual of Uniform Traffic Control Devices (referred to as "Manual") current edition.
- B. Adequate advance warning according to the "Manual" must be provided whenever traffic is interfered with or lanes are closed. All signs, markings, signals, barricades, lighting devices, and flagger operations shall conform to the "Manual". All necessary traffic control devices shall be available and in place before the particular construction operations are started. In case of emergency construction where there is not sufficient time to prepare a traffic plan, the Contractor shall be responsible for following the guidelines set forth in the "Manual."
- C. Access for emergency vehicles is of the utmost importance and provision shall be made by the Contractor to provide such access.
- D. Adequate provisions shall also be made for business and commercial establishments, schools, and public buildings.
- E. The Contractor shall generally maintain two (2) way traffic on streets where work is in progress and in no case shall he be permitted to work in adjacent streets.
- F. The Contractor shall maintain within the work limits the entire pavement, drainage and sewage facilities, and other street elements unless otherwise specified. The traveled way shall be kept well drained, reasonably smooth, cleaned and hard at all times. Foreign objects, sand, rocks, spillage of materials shall immediately be removed and the area cleaned to the satisfaction of the Engineer. Spillage outside the work limits is the Contractor's responsibility and the Owner will entertain no claim for work necessary to clean the areas affected. The Contractor shall be required to remove snow on those streets where roads are not passable by snow plows due to the Contractor's operation.
- G. Traffic delays shall be kept to a minimum. A period of five (5) minutes shall be considered the maximum time allowed for stopping traffic.



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DIVISION 1 – GENERAL REQUIREMENTS

- H. Detour signs, barricades, and other facilities shall be furnished and erected as called for on the contractors approved plan and/or as directed by the roadway owner. The route of the detour shall be clearly marked at the beginning and end with directions at intermediate points along its entire length.
- I. The Contractor shall be responsible for notifying all interested agencies when detours or construction will interfere with the normal traffic flow. These agencies include, but are not limited to:
  - 1. City of Peekskill Fire and Police Departments
  - 2. Westchester County Parks Department
  - 3. School Districts
  - 4. City of Peekskill (for City Roads)
- J. The Contractor will not be permitted to store spoil, materials, equipment, or supplies that will interfere with sight distances within thirty (30) feet of an intersection or areas where sight distance is critical.
- K. When travel must be diverted from the accustomed traveled way on to some other area, the Contractor shall grade, repair, stabilize, and provide ramps if necessary to provide for the smooth flow of traffic. Upon completion of construction, the area utilized shall be restored to its original condition.
- L. The Contractor shall construct and maintain, where called for on the plans or as directed by the roadway owner, temporary bridges or bridging over excavations, obstructions, and newly laid pavements to provide access for pedestrian and vehicular traffic and access to fire hydrants. During construction, the Contractor shall take particular care to allow the ingress and egress of emergency vehicles from firehouses, police stations, hospitals, etc. Adequate provisions shall also be made for business and commercial establishments, schools, and for public buildings. Plating and/or bridging is required at all main intersections and heavily traveled crossings.
- M. Street signs, route markers, and other signs that fall under public jurisdiction, i.e., Bus Stop, Stop Signs, Parking Signs, etc., shall be protected and maintained or removed, stored, cleaned, and replaced when ordered by the roadway owner. The roadway owner may also order that these signs be temporarily relocated and then reinstalled in their original location. If in the course of construction it becomes necessary to temporarily move a Bus Stop, the temporary site shall be approved by the County or local jurisdiction.

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- N. The Contractor shall provide protection from damage to person or property by protective screens, fences, devices, or methods that are approved by the roadway owner.
- O. All signs, lights, barricades, and other materials installed to direct or warn the traveling public shall be maintained, repaired, and replaced by the Contractor. Vandalism or theft shall not preclude requirement and special attention shall be given to Traffic Maintenance and Protection during nonworking hours, weekends, holidays, and other periods or temporary shutdown of work.
- P. Materials, equipment, and workmanship for lighted barricades shall be in strict compliance with the National Electric Code and only a licensed electrician may perform the work.
- Q. Signs or markers lost, damaged, or removed by the Contractor shall be replaced at no cost to the Owner. Signs not to be replaced shall be cleaned and delivered to the Engineer.
- R. Temporary reflectorized pavement markings shall be placed where existing markings are obliterated, whenever it is determined that the roadway would be void of traffic markings for two (2) weeks or more, or as otherwise directed by the roadway owner and Engineer. The temporary markings shall provide the same number of through travel lanes as the previously existing markings.
- S. Sheeting
  - 1. Sheeting around excavations shall project four (4) feet above the surface of the ground to form a tight barricade. Where this requirement cannot be met, the excavation shall be surrounded with a metal fabric supported by approved uprights, set at maximum eight (8) foot intervals.
- T. Flagmen
  - 1. Competent flagmen shall be provided by the Contractor when ordered by the roadway owner or Engineer or as directed by the specifications. These flagmen shall have no function other than the direction of traffic. They shall wear safety vests and shall direct traffic with a red flag as required by the New York State Manual of Uniform Traffic Control Devices.
- U. Watchmen
  - 1. The Contractor shall provide watchmen service, during all nonworking hours for continuous patrol of the work site whenever excavations are left open overnight.

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2. The watchmen will be responsible for making sure all signs, barricades, and markers are up and in good condition.
3. Watchmen shall maintain daily logs of their patrols. Copies of these logs shall be made available to the Owner.
4. In the event that any unusual or emergency condition arises, the watchmen shall immediately notify the Contractor, the Engineer and the appropriate regulatory agency or emergency agency for assistance.
5. The Contractor may apply to the Owner for suspension of the watchmen service following construction but prior to completion of the work (when punch list items remain).
6. A deduction of three hundred (300) dollars per eight hour shift will be made for watchmen services not provided when required.

V. Traffic Signal Maintenance

1. The maintenance of the traffic signals shall be in accordance with the latest Westchester County Specifications. Traffic signals on local City of Peekskill roads shall be maintained in accordance with the latest Standard Specifications, Construction and Materials of the City.
2. The Contractor shall safeguard the traffic signal equipment and cable in such a condition that it is free from any damage or malfunction for the protection of public safety.
3. The Department of Public Works and Transportation shall be immediately notified of any damage, malfunction, or for a final inspection of the traffic signal equipment within the work limits.
4. The Contractor shall maintain a telephone number for twenty-four (24) hour a day emergency traffic signal trouble calls. The Contractor shall be responsible for informing the local police precinct, the Westchester County Department of Public Works and Transportation of emergency signal troubles.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 015719**

**TEMPORARY ENVIRONMENTAL CONTROLS**

**PART 1 - GENERAL**

**1.1 SCOPE OF WORK**

- A. Provide and maintain methods, equipment, and temporary construction, as necessary to provide controls over environmental conditions at the construction site and adjacent areas. Remove physical evidence of temporary facilities at completion of Work.

**1.2 RELATED WORK**

- A. Not used.

**1.3 NOISE CONTROL**

- A. Contractor's vehicles and equipment shall be such as to minimize noise to the greatest degree practicable. Noise levels shall conform to the latest OSHA standards and local codes.

**1.4 DUST CONTROL**

- A. Contractor shall be responsible for controlling objectionable dust caused by his operation of vehicles and equipment, clearing or for any reason whatever to the satisfaction of the Engineer.

**1.5 PEST AND RODENT CONTROL**

- A. Provide rodent and pest control as necessary to prevent infestation of construction or staging areas.
  - 1. Employ methods and use materials which will not adversely affect conditions at the Site or on adjoining properties.

**1.6 WATER CONTROL**

- A. Provide methods to control surface water and water from excavations to prevent damage to the Work, the Site, or adjoining properties.
  - 1. Control fill, grading and ditching to direct water away from excavations, pits, and other construction areas; and to direct drainage to proper runoff courses so as to prevent any erosion, damage or nuisance.

- B. Provide, operate and maintain equipment and facilities of adequate size to control surface water.
- C. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the Site or to adjoining areas and in conformance with all environmental requirements.

#### 1.7 POLLUTION CONTROL

- A. Provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by the discharge of noxious substances from construction operations.
- B. Provide equipment and personnel, perform emergency measures required to contain any spillages, and to remove contaminated soils or liquids.
  - 1. Excavate and dispose of any contaminated earth off-site, and replace with suitable compacted fill and topsoil.
- C. Take special measures to prevent harmful substances from entering public waters.
  - 1. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams, or in sanitary or storm sewers.
- D. Provide systems for control of atmospheric pollutants.
  - 1. Prevent toxic concentrations of chemicals.
  - 2. Prevent harmful dispersal of pollutants into the atmosphere.
- E. All Contractor's equipment used during construction shall conform to all current federal, state, local laws and regulations.

#### **PART 2 – PRODUCTS (NOT USED)**

#### **PART 3 – PAYMENT**

##### 3.1 MEASUREMENT AND PAYMENT

- A. No separate payment for the item “Environmental Protection Procedures” will be made. The costs of same shall be included in the Lump Sum Base Bid.

**END OF SECTION**

**SECTION 01 60 00**

**PRODUCT REQUIREMENTS**

**PART 1 - GENERAL**

**1.1 GENERAL**

- A. Contractor shall make all arrangements for transportation, delivery, storage and handling of equipment and materials required for prosecution and completion of the Work.
- B. Shipments of materials to Contractor or Subcontractors shall be delivered to the Site only during regular working hours. Shipments shall be addressed and consigned to the proper party giving name of Project, street and city. Shipments shall not be delivered to Owner except where otherwise directed.
- C. If necessary to move stored materials and equipment during construction, Contractor shall move or cause to be moved materials and equipment without any additional compensation.

**PART 2 - PRODUCTS**

**2.1 DELIVERY**

- A. Arrange deliveries of products in accordance with construction schedules and in ample time to facilitate inspection prior to installation.
- B. Coordinate deliveries to avoid conflict with Work and conditions at site and to accommodate the following:
  - 1. Work of Owner.
  - 2. Limitations of storage space.
  - 3. Availability of equipment and personnel for handling, products.
  - 4. Owner's use of premises.
- C. Do not have products delivered to Project Site until related Shop Drawings have been approved by the Engineer.
- D. Do not have products delivered to Site until adequate storage facilities have been provided.

- E. Have products delivered to Site in manufacturer's original, unopened, labeled containers. Keep the Engineer informed of delivery of all material to be incorporated in the Work.
- F. Partial deliveries of component parts of material shall be clearly marked to identify the material, to permit easy accumulation of parts and to facilitate assembly.
- G. Immediately on delivery, inspect shipment to assure:
  - 1. Product complies with requirements of Contract Documents and reviewed submittals.
  - 2. Quantities are correct.
  - 3. Containers and packages are intact, labels are legible.
  - 4. Products are properly protected and undamaged.

## 2.2 PRODUCT HANDLING

- A. Provide equipment and personnel necessary to handle products by methods to prevent soiling or damage to products or packaging.
- B. Provide additional protection during handling as necessary to prevent scraping, marring or otherwise damaging products or surrounding surfaces.
- C. Handle products by methods to prevent bending or overstressing.
- D. Lift heavy components only at designated lifting points.
- E. Materials and equipment shall at all times be handled in a safe manner and as recommended by manufacturer or supplier so that no damage will occur to them. Do not drop, roll or skid products off delivery vehicles. Hand carry or use suitable materials handling equipment.

## **PART 3 - EXECUTION**

### 3.1 REMOVING, HAULING, AND INSTALLING EQUIPMENT AND MATERIALS

- A. The Contractor shall inspect all items including all boxes, crates and packages containing equipment and materials for damage that may have occurred during shipment prior to its removal from the truck or other conveyance. Any damage shall immediately be reported to the Engineer. The Contractor shall then carefully remove the equipment and materials from the truck or trucks on which it is shipped.



The equipment and materials shall then be transported to the place of installation at the job Site. The Contractor shall be liable for loss or damage that the equipment or materials may receive while being unloaded, transported, stored or installed. The Contractor shall employ competent workers experienced in the installation of the types of materials to be furnished, and shall ensure that all materials are installed in accordance with the recommendations of the manufacturer. All material that arrives at the job Site during normal working hours shall be unloaded as soon as practicable.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 01 71 23**

**FIELD ENGINEERING**

**PART 1 – GENERAL**

**1.1 GENERAL**

- A. The Contractor will establish benchmarks for use by the Contractor and his subcontractors, all other layout work shall be in accordance with the Contract Documents. The Engineer shall provide the Contractor with an AUTOCAD disk of the design drawings for his use.
- B. Contractor shall:
  - 1. Provide civil, structural or other professional engineering services specified, or required to execute Contractor's construction methods.
  - 2. Develop and make all detail surveys and measurements needed for construction.
  - 3. Provide a transit and leveling instrument, stakes and accessories on the site at all times and a skilled instrument man employed or obtained whenever necessary for layout of the Work.
  - 4. Provide all material required for benchmarks, control points, batter boards, grade stakes, and other items.
  - 5. Be solely responsible for all locations, dimensions and levels. No data other than written order of the Owner shall justify departure from the dimensions and levels required by the Drawings.

**1.2 DATUM PLANE**

- A. All elevations shown on the Contract Plans or specified refer to the Project Datum, which has its benchmark as shown on the Contract Plans.

**1.3 CONTRACTOR'S FIELD ENGINEER**

- A. The Contractor shall employ and retain at the Site of the Work a field engineer and/or superintendent capable of performing all engineering tasks required of the Contractor. Tasks shall include as a minimum:

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1. A projection of work to be completed the following day must be submitted to the Engineer by 4:00 p.m. of the preceding work day. This projection must include:
  - a. Location of all areas in which construction will be done.
  - b. Number of workers required each day
  - b. Major construction equipment utilized.
  - c. Equipment and materials to be installed.
2. Furnish all required lines and grades for construction operations. Check all formwork, reinforcing, subgrade, asphalt, other materials and equipment.
3. Maintain field office files and drawings, and Record Drawings. Prepare Layout and Coordination Drawings for construction operations.
4. Check and coordinate Work for conflicts and interferences and immediately advise the Engineer of all discrepancies noted.
5. Cooperate with Engineer in field inspections as required.
6. Follow without delay all instructions of the Engineer or assistants in the prosecution and completion of the work in conformity with this Contract. The Contractor's representative shall have full authority to supply labor and materials immediately.
7. The Contractor shall also have a competent representative available to receive telephone messages and provide a reasonable reply as soon as possible, but not later than 24 hours.

1.4 QUALIFICATIONS OF FIELD SUPERINTENDENT

- A. Qualified superintendent acceptable to the Engineer and Owner.

1.5 CONTRACTOR COST FOR ENGINEERS SERVICES

- A. In the event that the Engineer is required to provide additional engineering services as a result of substitution 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 the 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

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Contractor, then the Engineer's charges in connection with such additional services shall be charged to the Contractor by the Owner.

B. For all Shop Drawings related to this Contract:

1. The Contractor shall respond to required submittals with complete information and accuracy to achieve required approvals within two submissions. All costs to the Consulting Engineer involved with subsequent submission of the Shop Drawings, Samples or other items requiring approval, will be back charged to the Contractor at a rate of \$150 per shop drawing submittal or the actual cost based upon the number of hours to review the submittal times the Engineers' normal billing rate, whichever is greater. These costs shall be deducted from payments due for Work completed by the Contractor. In the event an approved item is requested by the Contractor to be changed or substituted for, all involved costs in the reviewing and approval process will likewise be back charged to the Contractor unless judged by the Engineer that the need for such deviation from previously approved data is beyond the control of the Contractor.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 -EXECUTION (NOT USED)**

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 01 73 29**

**CUTTING AND PATCHING**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

**A. Scope of work:**

1. This Section specifies all cutting and patching to be completed to execute all cutting and patching, including excavation, backfill and fitting required to:
  - a. Remove samples of installed Work as required for testing.
  - b. Remove or relocate utilities and pipes installed by others which obstruct the Work to which connections must be made.
  - c. Make connections or alterations to new facilities.
  - d. Restore all areas to a state equal to that which it was in prior to cutting and restore new Work to the standards of these Specifications.

**1.2 SUBMITTALS**

- A.** Prior to cutting which may affect integrity and design function of Project or owner's operations, submit written notice to Engineer, requesting consent to proceed with cutting, including:
1. Identification of Project.
  2. Description of proposed Work:
    - a. Scope of cutting and patching.
    - b. Contractor, Subcontractor or trade to execute Work.
    - c. Products proposed to be used.
    - d. Extent of refinishing.
    - e. Schedule of operations.
    - f. Alternatives to cutting and patching, if any.

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- g. Designation of party responsible for cost of cutting and patching.
  - h. Description of impact on traffic and permits required/ obtained if necessary
- B. Should conditions of Work, or schedule, indicate change of materials or methods, submit written recommendation to Engineer, including:
  - 1. Conditions indicating change.
  - 2. Recommendations for alternative materials or methods.
  - 3. Submittals as required for substitutions.
- C. Submit written notice to Engineer, designating time Work will be uncovered, to provide for observation. Do not begin cutting or patching operations until authorized by the Engineer.
- D. Provide shoring, bracing and support as required to maintain structural integrity of exposed areas and protect adjacent Work from damage during cutting and patching.
- E. Conform to all applicable Specifications for application and installation of materials used for patching.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

**END OF SECTION**



**SECTION 01 74 00**

**CLEANING AND WASTE MANAGEMENT**

**PART 1 - GENERAL**

**1.1 GENERAL**

- A. Execute cleaning during progress of the Work, at completion of the Work, and as specified herein.
- B. Requirements of Regulatory Agencies:
  - 1. In addition to the requirements herein, maintain the cleanliness of the Work and surrounding premises within the Work limits so as to comply with federal, state and local anti-pollution laws, ordinances, codes and regulations when disposing of waste materials, debris and rubbish.
- C. Scheduling of Cleaning and Disposal Operations: So that dust, wash water or other contaminants generated during such operations do not damage finished surfaces.
  - 1. To prevent accumulation of dust, dirt, debris, rubbish and waste materials on or within the Work or on the premises surrounding the Work.
- D. Waste Disposal:
  - 1. Dispose of all waste materials, surplus materials, debris and rubbish off the site.
  - 2. Do not burn or bury rubbish and waste materials on the construction site.
  - 3. Do not dispose of volatile or hazardous wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.
- E. Cleaning Materials:
  - 1. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
  - 2. Use each type of cleaning material on only those surfaces recommended by the cleaning material manufacturer.
  - 3. Use only materials which will not create hazards to health or property.

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F. During Construction:

1. The Contractor shall remove and dispose of all debris resulting from work, at least twice a week and more often if same interferes with the work or presents a fire hazard. All debris and excess material shall be removed from the Owner's property. Burying of any debris or excess material within the premises will not be permitted. Burning of same will be strictly forbidden.
2. The Contractor shall provide a dumpster or other approved means of refuse removal for the use.
  - a. Dumpster shall be located where directed by the Owner.
  - b. Placing of the refuse in the dumpster shall be the responsibility of each individual Contractor.
  - c. Dumpster shall be emptied and replaced as required so that refuse may be disposed of as quickly as possible.
3. Keep the work and surrounding premises within work limits free of accumulations of dirt, dust, waste materials, debris and rubbish.
4. Keep dust generating areas wetted down or apply approved dust palliative at no additional cost to the Owner.
5. Dispose of waste, debris and rubbish off Site at legal disposal areas in accordance with local, state and federal codes and regulations.

G. Owners Right to Clean

1. Should the Contractor fail or refuse or neglect to remove rubbish and waste materials and temporary work or clean the buildings and premises as required herein, then the Owner may or shall, without obligation to do so, remove and dispose of said rubbish, waste materials and temporary work, and clean the buildings and premises and deduct the cost thereof from any money due or to become due the Contractor under his Contract.

H. When Project is Completed:

1. Contractor shall clean and maintain the Site in accordance with Division 1, Section 017700, Contract Closeout.

**END OF SECTION**

**SECTION 01 77 00**  
**CLOSEOUT PROCEDURES**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
  - 1. Inspection procedures.
  - 2. Project record document submittal.
  - 3. Operating and maintenance manual submittal.
  - 4. Submittal of warranties.
  - 5. Final cleaning.
- B. Closeout requirements for specific construction activities are included in the appropriate Sections.

**1.3 SUBSTANTIAL COMPLETION**

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.

In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.

- 1. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.

Advise Owner of pending insurance change-over requirements.

Submit specific warranties, workmanship bonds, maintenance agreements, final

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certifications and similar documents.

Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.

Submit record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar final record information.

Deliver tools, spare parts, extra stock, and similar items.

Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change-over in security provisions.

Complete testing of systems. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.

Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

- B. Inspection Procedures: On receipt of a request for inspection, the Engineer will either proceed with inspection or advise the Contractor of unfilled requirements. The Engineer will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
1. The Engineer will repeat inspection when requested and assured that the Work has been substantially completed.
  2. Results of the completed inspection will form the basis of requirements for final acceptance.

#### 1.4 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
  2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
  3. Submit a certified copy of the Engineer's final inspection list of items to be completed or corrected, stating that each item has been completed or

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otherwise resolved for acceptance, and the list has been endorsed and dated by the Engineer.

4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the Work.
5. Submit consent of surety to final payment.
6. Submit a final liquidated damages settlement statement.
7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Reinspection Procedure: The Engineer will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Engineer.

1. Upon completion of reinspection, the Engineer will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, reinspection will be repeated.

## 1.5 RECORD DOCUMENT SUBMITTALS

A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Engineer's reference during normal working hours.

B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
3. Note related Change Order numbers where applicable.

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4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.
1. Upon completion of the Work, submit record Specifications to the Engineer for the Owner's records.
- D. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.
- Upon completion of mark-up, submit complete set of record Product Data to the Architect for the Owner's records.
- E. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Architect and the Owner's personnel to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area.
- F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Engineer for the Owner's records.
- G. Maintenance Manuals: Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:

1. Emergency instructions.

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2. Spare parts list.
3. Copies of warranties.
4. Wiring diagrams.
5. Recommended "turn around" cycles.
6. Inspection procedures.
7. Shop Drawings and Product Data.
8. Fixture lamping schedule.

1.6 CLOSEOUT PROCEDURES

A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:

1. Maintenance manuals.
2. Record documents.
3. Spare parts and materials.
4. Tools.
5. Lubricants.
6. Fuels.
7. Identification systems.
8. Control sequences.
9. Hazards.
10. Cleaning.
11. Warranties and bonds.
12. Maintenance agreements and similar continuing commitments.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

**END OF SECTION**

NO TEXT ON THIS PAGE



**SECTION 02 40 00**

**DEMOLITION, REMOVALS AND MODIFICATIONS**

**PART 1 - GENERAL**

**1.1 SCOPE OF WORK**

- A. Contractor shall furnish all labor, materials, equipment and incidentals required for demolition, removals and disposal Work shown, specified and required to complete the project. Included are all modifications of existing facilities as shown and required to complete the Work.
- B. Included, but not limited to, are demolition and removals of existing materials, equipment, or work necessary to install the new Work as shown and specified and to connect same with existing work in an approved manner. The Work includes foundations, wooden exterior structures, manholes, piping, power lines, electrical and mechanical equipment, appurtenances, paving, walks, trees, shrubs, utilities and similar existing facilities.
- C. Demolitions, removals and modifications which may be specified under other Sections shall conform to requirements of this Section.
- D. Protection of site work and adjacent structures.
- E. Disconnection, capping and removal of utilities.
- F. Dismantled items to be retained by the Owner and to be reinstalled.
- G. No explosives are permitted.
- H. Related Work Specified Elsewhere:
  - 1. Section 31 00 00, Earthwork.

**1.2 SUBMITTALS**

In accordance with the procedures and requirements set forth in the General Conditions and Division I, the Contractor shall submit the following to the Engineer for approval

- A. Schedule: Submit for approval proposed methods, equipment, and operations sequence. Include coordination for shut-off, capping, temporary services, continuation of utility services, and other applicable items to ensure no interruption of sewage flow or treatment.
- B. Submit selective demolition schedule.

- C. Informational Submittals: Submit copies of any notifications, authorizations and permits required to perform the Work. Submit a shipping receipt or bill of lading for all universal waste shipped.

### 1.3 JOB CONDITIONS

A. Protection

1. Contractor shall execute the demolition and removal Work to prevent damage or injury to structures, existing building services, occupants thereof and adjacent features which might result from falling debris or other causes, and so as not to interfere with the use, and free and safe passage to and from adjacent structures.
2. Contractor shall provide interior and exterior shoring, bracing and support to prevent movement, settlement, or collapse of existing structures or facilities. The Owner assumes no responsibility for the actual condition of the structures or facilities adjacent to the Work or the structures or facilities designated for removal or modifications.
3. Closing or obstructing of roadways, sidewalks, and passageways adjacent to the Work by the placement or storage of materials will not be permitted without proper permits and notifications, and all operations shall be conducted with a minimum interference to vehicular or pedestrian traffic.
4. Contractor shall erect and maintain barriers, lights, sidewalk sheds, and other required protective devices.
5. Contractor shall repair damages caused by his operation to facilities to remain, or to any property belonging to the Owner, utilities, or occupants of the facilities.
6. Contractor shall design, erect, install and maintain temporary partitions and enclosures required to eliminate dust, noise and debris from adjacent buildings.
7. The Work shall comply with the applicable provisions and recommendation of ANSI AIO.2, Safety Code for Building Construction, all governing codes and as hereinafter specified.
8. Contractor shall exercise precautions for fire protection. Burning of debris shall not be permitted.

B. Scheduling

1. Contractor shall carry out all operations so as to avoid interference with operations.
2. The Contractor shall proceed with the removal of the equipment, piping and appurtenances in a sequence designed to maintain stormwater and sanitary sewer flows.
3. The Contractor shall be solely responsible for making all necessary arrangements and for performing all necessary work involving the discontinuance or interruption of all utilities or services.
4. Any equipment piping or appurtenances removed without proper authorization, shall immediately be replaced to the satisfaction of the Engineer at no cost to the Owner.

C. Notification

1. At least 48 hours prior to commencement of a demolition or removal, Contractor shall notify the Engineer in writing of his proposed schedule therefore. Owner will inspect the existing equipment and review with the Contractor those items which are to remain the property of the Owner. No removals shall be started without the permission of the Engineer.

D. Explosives

1. Do not bring explosives on site. No explosives will be permitted for this Project.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION**

3.1 GENERAL

A. Disposition of Materials and Equipment.

1. All materials and equipment removed from existing work, shall become the property of the Contractor, except for those items which the Owner has identified and marked, to remain the property of the Owner. All materials and equipment so marked by the Owner shall be carefully removed by the Contractor, so as not to be damaged, and shall be cleaned of all solids and stored on or adjacent to the site in a protected place specified by the Owner.

2. Contractor shall dispose of all demolition materials, equipment, debris, and all other items not to remain as property of Owner, off the site and in conformance with all existing applicable laws and regulations.
- B. Pollution Controls: Use water sprinkling, temporary enclosures, and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level. Comply with governing regulations pertaining to environmental protection.
1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.
  2. Clean adjacent structures, facilities, and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to conditions existing prior to the start of the Work.
- C. Demolition and Removals:
1. Unless otherwise approved by Engineer, proceed with demolition and removals from the top of the structure.
  2. Locate, identify, disconnect and seal or cap off utilities in buildings/ structures to be demolished.
  3. Demolish concrete and masonry in small sections.
  4. Break up and remove foundations and slabs where shown.
  5. Locate demolition and removal equipment throughout the structure in such a way and remove materials as frequently as necessary so as to not impose excessive loads to supporting walls, floors or framing.
- D. The Contractor, Owner, and Engineer shall jointly survey the condition of the adjoining structures prior to the execution of the work. Photographs and records shall be made of any prior settlement or cracking of structures, pavements, and the like, that may become the subject of possible damage claims. Photographs shall be taken in accordance with the requirements of the General and Supplementary Conditions.
- E. Do not close or obstruct streets, walks, drives or other occupied or used spaces or facilities without the written permission of the Owner and the authorities having jurisdiction. Do not interrupt utilities servicing occupied or used facilities without the written permission of the Owner and authorities having jurisdiction. If necessary, provide temporary utilities.

- F. Cease operations if public safety or remaining structures are endangered. Perform corrective measures immediately. Notify authority having jurisdiction and the Owner. Do not resume operations until directed by the Owner.
- G. Do not damage building/mechanical/electrical elements and improvements indicated to remain.
- H. Do not use demolition debris as backfill.

### 3.2 STRUCTURAL REMOVALS

- A. Contractor shall remove concrete and structures to the lines and grades shown unless otherwise directed by the Engineer. Where no limits are shown, the limits shall be 4 inches outside the item to be installed. The removal of masonry beyond these limits shall be at the Contractor's expense and these excess removals shall be reconstructed to the satisfaction of the Engineer with no additional compensation to the Contractor.
- B. Locate, identify, disconnect and seal or cap off existing utilities in buildings, tanks, chambers and structures to be demolished.
- C. Determine the thickness of existing concrete to be removed and the extent to which they are reinforced. No additional compensation will be made because of variations from the thickness shown or for variations in the amount of reinforcement.
- D. All concrete, brick, tile, concrete block, roofing materials, reinforcement, structural or miscellaneous metals, plaster, wire mesh and other items contained in or upon the structure shall be removed and taken from the site, unless otherwise approved by the Engineer. Demolished items shall not be used in backfill.
- E. After removal of parts or all of masonry walls, slabs and like work which tie into new Work or existing work, the point of junction shall be neatly repaired so as to leave only finished edges and finished surfaces exposed.

### 3.3 PAVEMENT, CURB AND SIDEWALK REMOVALS

- A. Remove existing pavement and gravel roadway including base and surface courses, stabilized sub-bases, curbs, and gutters as required to construct new facilities or as shown. Before removing, saw a straight full depth joint between sidewalk and pavement designated for removal and that left in place. Provide neat saw cuts at limits of pavement removal as indicated. Curbs and gutters shall be removed to the nearest construction joint beyond the end of demolition symbol shown on the Contract Drawings.
- B. Determine the thickness of existing pavement, base, sub-base, curb, gutter, driveway pavement, and sidewalk to be removed and the extent to which they are reinforced.

No additional compensation will be made because of variations from the thickness shown or for variations in the amount of reinforcement.

- C. Provide for satisfactory transition between replaced pavement and sidewalks and the portions remaining in place.

### 3.4 MISCELLANEOUS REMOVALS

- A. Contractor shall remove miscellaneous concrete walls, trees and shrubs, slabs, pipe supports, equipment pads, and curbs where shown on the Drawings or where necessary for the modification of the existing structures. Anchor bolts shall be cut back one inch below the surface and patched.

### 3.5 MODIFICATIONS AND CLOSURES

- A. Modifications shall conform with all applicable Specifications, the Drawings, and the directions and approvals of the Engineer.
- B. Where alterations require cutting or drilling into existing floors, walls, and roofs the damages shall be repaired in an approved manner. Contractor shall repair such openings with the same or matching materials as the existing floor, wall, or roof or as otherwise approved by the Engineer. All repairs shall be smoothly finished unless otherwise approved by the Engineer.
- C. Openings in existing concrete slabs, ceilings, roofs, masonry walls, floors and partitions which are not to be used in the new Work shall be closed and sealed as shown.
- D. All existing structures are to remain in service, demolish the portions to be removed, repair damages, and leave the structure in proper condition for the intended use. Remove concrete and masonry to the lines designated by drilling, chipping, and other suitable methods. Leave the resulting surfaces true and even, with sharp straight edges that will result in neat joints with new construction or be satisfactory for the purpose intended. Where existing reinforcing rods are to extend into new construction, remove the concrete so that the reinforcing is clean and undamaged. Cut off other reinforcing flush with the surface.
- E. New Work shall be keyed into the existing in an acceptable manner. In general, the same or matching materials as the existing adjacent surface shall be used. The finished closure shall be a smooth, tight, sealed, permanent closure with all exposed surfaces smooth finished and acceptable to the Engineer.
- F. Where existing reinforcement is to be exposed and incorporated into new concrete work, this reinforcement shall be sand blasted clean of all rust and concrete residue and painted with a zinc-rich primer paint.

3.8 CLEANUP

- A. Contractor shall remove from the site all debris resulting from the demolition operations as it accumulates. Upon completion of the Work, all materials, equipment, waste, and debris of every sort shall be removed and premises shall be left, clean, neat and orderly.

**END OF SECTION**

NO TEXT ON THIS PAGE



**SECTION 03 11 00**  
**CONCRETE FORMWORK**

**PART 1 GENERAL**

**1.1 RELATED WORK SPECIFIED ELSEWHERE**

- A. Steel Concrete Reinforcement: Section 03 21 00.
- B. Cast-In-Place Concrete: Section 03 30 00.

**1.2 REFERENCES**

- A. Except as shown or specified otherwise, the Work of this Section shall conform to the requirements of Specifications for Structural Concrete for Buildings ACI 301-99 of the American Concrete Institute.

**1.3 DESIGN REQUIREMENTS**

- A. ACI 301, Section 2.1 – Formwork and formwork accessories, General:
  - 1. Add the following to 2.1.1 Description:

The formwork shall be designed for loads, lateral pressure, and allowable stresses outlined in Chapter 2 - Design of “Guide to Formwork for Concrete” (ACI 347-01).

**1.4 SUBMITTALS**

- A. Shop Drawings:
- B. Product Data: Manufacturer’s catalog sheets, specifications, and installation/application instructions for the following:
  - 1. Form systems and ties.
  - 2. Textured (architectural) form linings.

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

- A. Chamfer Strips: Wood, metal, PVC or rubber; 1 inch chamfer, unless otherwise indicated on the Drawings.

### **PART 3 - EXECUTION**

#### **3.1 PREPARATION OF FORM SURFACES**

- A. Apply form-coating material in accordance with manufacturer's instructions.

#### **3.2 INSTALLATION**

- A. Provide chamfer on all exposed external corners of concrete.
- B. Provisions for Work of Related Contracts: Provide openings in concrete formwork to accommodate Work of related contracts. Obtain information for size and location of openings, recesses and chases from contractor requiring such items.
- C. Shores and Supports:
  - 1. Concrete members subject to additional loads during construction shall be shored in such a manner as will protect the member from damage by the loads.
  - 2. Place shores supporting successive stories directly over those below or so design the shores to transmit the load directly to them.
  - 3. Do not remove shores until the member supported has acquired sufficient strength to safely support its weight and any weight imposed thereon.

#### **3.3 REMOVAL OF FORMS**

- A. ACI 301, Section 2.3.2 - Removal of Forms:
  - 1. Change paragraph 2.3.2.5 to read as follows:

2.3.2.5 Forms and shoring used to support the weight of concrete in beams, slabs and other structural members shall be removed in accordance with recommendations in paragraph 3.7.2.1 of Article 3.7 - Removal of Forms and Supports of "Recommended Practice for Concrete Formwork" (ACI 347-01).
  - 2. Add the following paragraphs:

2.3.2.7 All formwork shall be removed after the concrete has sufficiently hardened, except in inaccessible spaces where approved.

2.3.2.8 After the ends or end fasteners of form ties have been removed, the embedded portion of the ties shall terminate not less than 3/4 inch from the formed surfaces of concrete.

3.4 RE-USE OF FORMS

- A. Split, frayed, delaminated or otherwise damaged form facing material shall not be used.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 03 20 00**

**CONCRETE REINFORCEMENT**

**PART 1 - GENERAL**

**1.1 RELATED WORK SPECIFIED ELSEWHERE**

- A. Concrete Formwork: Section 03 11 00.
- B. Cast-In-Place Concrete: Section 03 30 00.

**1.2 REFERENCES**

- A. Except as shown or specified otherwise, the Work of this Section shall conform to the applicable requirements of the following:
  - 1. Specifications for Structural Concrete, ACI 301-16 of the American Concrete Institute (ACI).
  - 2. Manual of Standard Practice, MSP 1-01 of the Concrete Reinforcing Steel Institute (CRSI).

**1.3 SUBMITTALS**

- A. Shop Drawings: Placing drawings for bar reinforcement.
- B. Samples:
  - 1. Bar Supports: Full size.
  - 2. Fabric Reinforcement: 8 inches square, each wire size.
  - 3. Fabric Reinforcement Supports: 3'-0" long pieces.
  - 4. Reed Clips: 2'-6" long pieces.
- C. Quality Control Submittals:
  - 1. Certificates: Affidavit required under Quality Assurance Article.

**1.4 QUALITY ASSURANCE**

- A. Certifications: Affidavit by the bar reinforcement manufacturer certifying that bar material meets the contract requirements.

1. Submit evidence of steel material compliance with this Specification. Evidence shall consist of certification of source of material, copies of purchase orders and manufacturer's certifications. For stock material, submit copies of latest mill or purchase orders for material replacement.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Epoxy-Coated Bar Reinforcement: Deliver, store and handle reinforcement in accordance with fabricator's recommendations and as specified.
  1. Use padded or nylon bundling bands.
  2. Lift and hoist bundles of bars with nylon or padded wire rope slings at the third points or use spreader bars.
  3. Store bars on wood or padded cribbing.
  4. Do not drop bars, and do not drag bars over the ground or over other bars.

### **PART 2 - PRODUCTS**

#### 2.1 MATERIALS

- A. Bar Reinforcement: ASTM A 615, Grade 60, deformed steel bars.
  1. Epoxy-Coated Bar Reinforcement: ASTM A 775.
    - a. Epoxy Coating Patching Material: ASTM A 775.
- B. Welded Wire Reinforcement: ASTM A 185, welded wire fabric, fabricated into flat sheets unless otherwise indicated.

Note: Below ASTM Standards can also be used for epoxy-coated ASTM A 82 steel wire.

1. Epoxy-Coated Fabric Reinforcement: ASTM A 884, Class A.
    - a. Epoxy Coating Patching Material: ASTM A 775.
- C. Bar Supports; Either of the Following Types:
  1. Galvanized steel or AISI Type 430 stainless steel, and without plastic tips.

2. Insoluble plastic, with minimum 1,500 psi tensile strength and capable of retaining fabricated shape at temperatures between 5 degrees F and 170 degrees F.
  3. Bar Supports for Epoxy-Coated Bar Reinforcement: Bar supports made of dielectric material compatible with concrete, or wire bar supports coated with dielectric material compatible with concrete for a minimum distance of 2 inches from the point of contact with the reinforcing bar. Reinforcing bars used as support bars and spreader bars shall be epoxy-coated.
- D. Welded Wire Reinforcement Supports:
1. Shall comply with CRSI RB4.1
  2. Tie Wire for Epoxy-Coated Reinforcement: Wire coated with nylon, plastic or epoxy.
- E. Tie Wire: Black annealed wire, 16-1/2 gage or heavier.
- F. Steel Wire: ASTM A 82, cold-drawn plain steel wire, size No. W2.9 unless otherwise indicated.
- G. Reed Clips: ASTM A 185, rigid type reed clips, fabricated of W1.4 steel cross wires spaced 12 inches apart and looped at edges of flanges, and W1.4 longitudinal wire. Reinforcement shall have two longitudinal wires for flanges 9 inches to 15 inches in width, and three longitudinal wires for flanges over 15 inches in width. Cross wires shall be welded to longitudinal wire(s).

### **PART 3 - EXECUTION**

#### **3.1 PLACING**

- A. ACI 301, Section 3.3 Execution:
1. Replace the first sentence in paragraph 3.3.2.1 Tolerances- with the following:  
  
Place, support, and fasten reinforcement as shown on the project drawing or approved shop submittal.  
  
3.3.2.3.f Bar Reinforcement: In rectangular panels of two-way construction, place the steel in the short direction first with the longer bars on top in the opposite direction.

3.3.2.5.c Welded Wire Reinforcement: Offset end laps in adjacent sheets to prevent continuous joints at ends of sheets.

In concrete slabs supported by steel joists, place welded wire reinforcement approximately 3/4 inch below top surface of the concrete.

5.5.12 Epoxy-Coated Reinforcement:

5.5.12.1 Field Bending: Field bending shall be done by cold methods only, and only when ambient and bar temperatures are 40 degrees F or higher. Epoxy coating damaged by field bending shall be repaired, or the damaged reinforcement shall be replaced, in accordance with specified tolerances.

5.5.12.2 Field Repair: Repair damaged epoxy coating with epoxy coating patching material in accordance with the material manufacturer's recommendations. Also coat cut ends, welds, and steel splice members if such procedures are permitted.

5.5.12.3 Tolerances for Coating Damage: Coating damage need not be repaired where the damaged area is less than 0.1 square inch. The maximum amount of coating damage, including repaired and unrepaired areas, shall not exceed 2 percent of the surface area of the bar.

3.2 SCHEDULE

A. Unless other reinforcing is shown on the Drawings, reinforce the following items of concrete as indicated below:

1. Concrete Slabs on Grade: 6 x 6 - W2.9 x W2.9 welded wire reinforcement.
2. Concrete Floor Fills 2-1/2 Inches Thick or Less: 6 x 6 - W2.1 x W2.1 welded wire reinforcement.
3. Concrete Floor Fills Greater than 2-1/2 Inches Thick: 6 x 6 - W4 x W4 welded wire reinforcement.
4. Concrete Slabs Supported by Steel Joists: 6 x 6 - W2.1 x W2.1 welded wire reinforcement.

**END OF SECTION**



**SECTION 03 30 00**

**CAST-IN-PLACE CONCRETE**

**PART 1 - GENERAL**

**1.1 RELATED WORK SPECIFIED ELSEWHERE**

- A. Concrete Formwork, Section 03 11 00.
- B. Concrete Reinforcing, Section 03 20 00.

**1.2 REFERENCES**

- A. Except as shown or specified otherwise, the Work of this Section shall conform to the requirements of American Concrete Institute (ACI) and American Society for Testing and Materials (ASTM) documents.
  - 1. ACI 301-05: Specification for Structural Concrete for Buildings.
  - 2. ACI 302.1R-04: Guide for Concrete Floor and Slab Construction.
  - 3. ACI 304.2R-96: Placing Concrete by Pumping Methods.
  - 4. ACI 305R-10: Hot Weather Concreting.
  - 5. ACI 306R-10: Cold Weather Concreting.
  - 6. ACI 308.1-11: Standard Specification for Curing Concrete.
  - 7. ACI 318 -05 Building Code Requirements for Structural Concrete.
  - 8. ASTM C 94/C 94M – 11b: Standard Specification for Ready- Mixed Concrete.
  - 9. ASTM C 494/C 494M - 11: Standard Specification for Chemical Admixtures for Concrete.

**1.3 DEFINITIONS**

- A. ACI 301, Section 1.2 - Definitions:
  - 1. Add the following definitions:
    - a. Cementitious Material: Cementitious materials include cement, ground blast furnace slag and fly ash.

- b. Corrosion Inhibitor Admixture: A liquid admixture, calcium nitrite that inhibits corrosion of concrete-embedded steel in the presence of chloride ions.
- c. Pumped Concrete: Concrete that is conveyed by pumping pressure through rigid pipe or flexible hose.
- d. Water-to-Cementitious Ratio (w/c): An ratio representing quantity in pounds of free moisture available for cement hydration divided by quantity of cementitious materials in pounds per cubic yard concrete.

#### 1.4 SUBMITTALS

- A. Submittals Package: Submit product data for design mix(es) and materials for concrete specified below at the same time as a package.
- B. Product Data:
  - 1. Mix Design: Submit proposed concrete design mix(es) together with name and location of batching plant at least 28 days prior to the start of concrete work.
    - a. Include test results of proposed concrete proportions based on previous field experience or laboratory trial batches in accordance with ACI 301, Section 4.
    - b. Pumped Concrete: Include test results of proposed design mix(es) tested under actual field conditions with the maximum horizontal run and vertical lift required for this project.
  - 2. Portland Cement: Brand and manufacturer's name.
  - 3. Fly Ash: Name and location of source, and DOT test numbers.
  - 4. Air-entraining Admixture: Brand and manufacturer's name.
  - 5. Water-reducing Admixture: Brand and manufacturer's name.
  - 6. High Range Water-reducing Admixture (Superplasticizer): Brand and manufacturer's name.
  - 7. Corrosion Inhibitor Admixture: Brand and manufacturer's name.
  - 8. Accelerating Admixture: Brand and manufacturer's name.
  - 9. Aggregates: Name and location of source, and DOT test numbers.

10. Chemical Hardener (Dustproofing): Brand and manufacturer's name, and application instructions.
  11. Chemical Curing and Anti-Spalling Compound: Brand and manufacturer's name, and application instructions.
  12. Bonding Agent (Adhesive): Brand and manufacturer's name, and preparation and application instructions.
  13. Expansion Joint Fillers: Brand and manufacturer's name.
  14. Waterstop: Brand and manufacturer's name, and installation instructions.
  15. Emery Aggregate: Brand and manufacturer's name, and application instructions.
  16. Integral Water-Repellent Admixture: Brand, manufacturer name, specifications, and application instructions.
- C. Quality Control Submittals:
1. Batching Plant Records: At the end of each day of placing concrete, furnish the Director's Representative with a legible copy of all batch records for the concrete placed.
  2. Concrete Pumping Equipment Data: Include manufacturer's name and model of principal components, type of pump, and type and diameter of pipe/hose.

## 1.5 QUALITY ASSURANCE

- A. Qualifications of Crew Pumping Concrete: Workers pumping concrete shall have had at least one year of experience pumping concrete.
- B. Concrete batching plants shall be currently approved as concrete suppliers by the New York State Department of Transportation.
- C. Truck mixers for concrete shall be currently approved by the New York State Department of Transportation.
- D. Pumping equipment for pumped concrete shall be subject to the approval of the Director.
- E. Fly ash supplier shall be on the New York State Department of Transportation's current "Approved List of Suppliers of Fly Ash".

- F. Source Quality Control: The District reserves the right to inspect and approve the following items, at his own discretion, either with his own forces or with a designated inspection agency:
  - 1. Batching and mixing facilities and equipment.
  - 2. Sources of materials.
- G. ACI 301, Section 1.3 Reference standards and cited publications:
  - 1. Add the following to the list of ASTM Standards:
    - a. C 311-11a Standard Methods of Sampling and Testing Fly Ash or Natural Pozzolans For Use As A Mineral Admixture in Portland Cement Concrete.

## 1.6 DELIVERY

- A. ASTM C 94/C 94M, Article 14 - Batch Ticket Information: In addition to the information required by Paragraph 14.1, also include the following:
  - 1. Type and brand, and amount of cement.
  - 2. Weights of fine and coarse aggregates.
  - 3. Class and brand, and amount of fly ash (if any).

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Cement: ASTM C 150, Type II Portland cement.
- B. Water: Potable
- C. Air-entraining Admixture: ASTM C 260, and on the New York State Department of Transportation's current "Approved List".
- D. Water-reducing Admixture: ASTM C 494/C 494M, Type A, and on the New York State Department of Transportation's current "Approved List".
- E. High Range Water-reducing Admixture (Superplasticizer): ASTM C 494/C 494M, Type F, and on the New York State Department of Transportation's current "Approved List".

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- F. Corrosion-Inhibiting Admixture: ASTM C 494/C 494M, for use in resisting corrosion of steel reinforcement.
  - 1. DCI Corrosion Inhibitor by W. R. Grace & Co., - Conn., 62 Whittemore Ave., Cambridge, MA 02140, (617) 876-1400 and Rheocrete CNI by Master Builders/ BASF Building Systems, 23700 Chagrin Blvd., Cleveland, OH 44122, (800) 628-9990.
  - 2. DCI - S Corrosion Inhibitor by W. R. Grace & Co., - Conn., 62 Whittemore Ave., Cambridge, MA 02140, (617) 876-1400.
- G. Retarding Admixture: ASTM C 494, Type D, Water-reducing and retarding, for use in hot weather concreting, and on the New York State Department of Transportation's current "Approved List".
- H. Accelerating Admixture: Non-corrosive admixture, containing no chloride, complying with ASTM C 494, Type C or E, and on the New York State Department of Transportation's current "Approved List".
- I. Fly Ash: ASTM C 618, including Table 1 (except for footnote A), Class F except that loss on ignition shall not exceed 4.0 percent.
- J. ACI 301, Section 4.2.1.2 - Aggregates:
  - 1. Add the following paragraph:
    - a. Fine aggregate for pumped concrete shall meet the requirements of ASTM C 33, except 15 to 30 percent shall pass the No. 50 sieve and 5 to 10 percent shall pass the No. 100 sieve. The fineness modulus of the fine aggregate for pumped concrete shall not vary more than 0.20 from the average value used in proportioning.
- K. Chemical Curing and Anti-Spalling Compound: ASTM C-309, Type 1D, Class B, with a minimum 18 percent total solids content. No thinning of material allowed.
  - 1. SureCure Emulsion, Kaufman Products, Inc. 3811 Curtis Avenue, Baltimore, MD 21226, (800) 637-6372.
  - 2. Cure & Seal by Symons Corp., 200 East Touhy Ave., PO Box 5018, Des Plaines, IL 60017-5018, (847) 298-3200.
  - 3. Kure-N-Seal by Sonneborn/ BASF Building Systems, 889 Valley Park Dr., Shakopee, MN 55379, (800) 433-9517.
  - 4. Day-Chem Cure & Seal UV 26 percent (J-22 UV) by Dayton Superior Corp., 721 Richard St., Miamisburg, OH 45342, (800) 745-3700.

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5. Acrylseal HS by Master Builders/ BASF Building Systems, 23700 Chagrin Blvd., Cleveland, OH 44122, (800) 628-9990.
- L. Chemical Hardener (Dustproofing): Colorless aqueous solution of magnesium-zinc fluosilicate.
1. Lapidolith by Sonneborn/ BASF Building Systems, 889 Valley Park Dr., Shakopee, MN 55379, (800) 433-9517.
  2. Surfhard by The Euclid Chemical Co., 19218 Redwood Rd., Cleveland, OH 44110, (216) 531-9222.
  3. Pena-Lith by W.R. Meadows, Inc., PO Box 543, Elgin, IL 60121, (847) 683-4500.
  4. FluoHard by L & M Construction Chemicals, Inc., 14851 Calhoun Rd., Omaha, NE 68152, (402) 453-6600.
  5. Armortop by Anti Hydro International, Inc., 265 Badger Ave., Newark, NJ 07108, (800) 777-1773.
  6. Diamond by Kaufman Products , Inc., 3811 Curtis Avenue, Baltimore, MD 21226, (800) 637-6372.
- M. Type 1 Expansion Joint Filler: Preformed, resilient, nonextruding cork units complying with ASTM D 1752, Type II.
- N. Epoxy Bonding Agent (Adhesive): 100 percent solids epoxy-resin-base bonding compound, complying with ASTM C 881, Types I, II, IV and V, Grade 2 (horizontal areas) or Grade 3 (overhead/vertical areas), and Class B (40-60 degrees Fahrenheit) or Class C (60 degree Fahrenheit and above).
1. SurePoxxy HM Series by Kaufman Products, Inc., 3811 Curtis Avenue, Baltimore, MD 21226, (800) 637-6372.
  2. Sikadur Hi-Mod 32 by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071, (800) 933-7452.
  3. Epogrip by Sonneborn/-BASF Building Systems, 889 Valley Park Drive, Shakopee, MN 55379, (800) 433-9517.
- O. Waterstop: Water swelling sealant; minimum 3/4 inch wide by 3/8 inch thick, unless otherwise indicated; minimum tensile strength (ASTM D 412) 100 psi minimum ultimate elongation (ASTM D 412) 500 percent.
1. MC-2010M by Adeka Ultra Seal Corporation, PO Box 459, Spearfish, SD 57783, (605) 642-3959.

2. Volclay Waterstop RX-101 by Colloid Environmental Technologies Company, Building Materials Division, 1350 W. Shure Drive, Arlington Heights, IL 60004, (708) 392-5800.
- P. Expansion Joint Dowels: Smooth steel expansion joint dowel with minimum 5 inch long steel dowel cap, unless otherwise indicated.
- Q. Integral Water-Repellent Admixture:
1. Hydrocide Powder by Sonneborn/ BASF Building Systems, 889 Valley Park Drive, Shakopee, MN 55379, (800) 433-9517.
  2. Darapel by W. R. Grace & Co., - Conn., 62 Whittemore Ave., Cambridge, MA 02140, (617) 876-1400.

## 2.2 PROPORTIONING OF MIXES

- A. Cast-in-place concrete shall be air-entrained normal weight concrete.
1. Normal weight concrete, except as otherwise specified, shall have a minimum compressive strength of 4000 psi, with a minimum of 611 pounds of cement per cubic yard. Slump: Maximum 4 inches; minimum 2 inches before the addition of any water-reducing admixtures or high-range water-reducing admixtures (superplasticizers) at the Site.
  2. Normal weight concrete for garage floors, and for exterior slabs, ramps and stairs shall have a minimum compressive strength of 4000 psi, with a minimum of 611 pounds of cement per cubic yard. Slump: Maximum 3 inches; minimum 2 inches before the addition of any water-reducing admixtures or high-range water-reducing admixtures (superplasticizers) at the Site.
  3. Optional Material: Fly ash may be substituted for (Portland) cement in normal weight and lightweight concrete up to a maximum of 15 percent by weight of the required minimum (Portland) cement. If fly ash is incorporated in a concrete design mix, make necessary adjustments to the design mix to compensate for the use of fly ash as a partial replacement for (Portland) cement.
    - a. Adjustments shall include the required increase in air-entraining admixture to provide the specified air content.
    - b. Lower early strength of the concrete shall be considered in deciding when to remove formwork.
- B. Slump for Pumped Concrete: When a water-reducing admixture is not used, maximum slump shall be 4 inches. When a water-reducing admixture is used,

maximum slump shall be 6 inches and when a high-range water-reducing admixture (superplasticizers) is used, maximum slump shall be 8 inches.

- C. Design Air Content: Design air content for concrete shall be 6 percent by volume, with an allowable tolerance of plus or minus 1.5 percent for total air content, except as otherwise specified. Use air-entraining admixture, not air-entrained cement.
- D. Water-Cement Ratio: Cast-in-place concrete shall have a maximum water-cement ratio of 0.40.
- E. Application Rate for Corrosion-Inhibiting Admixture: The application rate for the corrosion-inhibiting admixture shall be 3 gallons per cubic yard of concrete for all concrete placements where indicated on the drawings.
- F. Admixtures: Do not use admixtures in concrete unless specified or approved in writing by the District.
- G. ACI 301, Section 4.1.2.1 - Mixture Proportions:
  - 1. Add the following to paragraph 4.1.2.1:
    - a. Proposed design mix(es) for pumped concrete and the pumping equipment shall have been tested under actual field conditions with the maximum horizontal run and vertical lift required for this project.
- H. Application Rate for Integral Water Repellent Admixture:
  - 1. Hydrocide Powder, 1 lb. for each 94 lb. of cement
  - 2. Darapel, 3 to 6 oz. for each 100 lb. of cement.

## 2.3 JOINTS

- A. ACI 301, Section 5.3.2.6 - Construction joints and other bonded joints:
  - 1. Delete the following subparagraphs:
    - a. Use an acceptable adhesive applied in accordance with the manufacturer's recommendations;
    - b. Use an acceptable surface retarder in accordance with manufacturer's recommendations;



- c. Roughen the surface in an acceptable manner that exposes the aggregate uniformly and does not leave laitance, loosened particles of aggregate, or damaged concrete at the surface; or
    - d. Use Portland-cement grout of the same proportions as the mortar in the concrete in an acceptable manner.
  - 2. Add the following in place of the above subparagraph:
    - a. The use of bonding agent (adhesive).
    - b. The use of cement grout.
- B. ACI 301, Section 10.2.5 – Isolation-joint filler materials:
  - 1. Add the following paragraphs:
    - a. Except as otherwise shown on the Drawings, expansion joints shall be as follows:
    - b. In joints required to receive a sealant, the joint filler shall be 1/2 inch thick and recessed as required to form a caulking slot.
    - c. In joints not required to receive a sealant, the joint filler shall be 1/2 inch thick and extend through the full cross-section of the concrete.
    - d. Tool edges of concrete with 1/8 inch radius edging tool.

## 2.4 PRODUCTION OF CONCRETE

- A. Provide ready-mixed concrete, either central-mixed or truck-mixed, unless otherwise approved in writing by the Director.
- B. ACI 301, Section 5.3.2.1 Weather considerations
  - 1. Delete paragraph under 5.3.2.1.c - Hot Weather, and add the following:
    - a. 5.3.2.1.c Provide adequate controls to insure that the temperature of the concrete when placed does not exceed 90 degrees F., and make every effort to place it at a lower temperature. The temperature of the concrete as placed shall not be so high as to cause difficulty from loss of slump, flash set or cold joints. Ingredients may be cooled before mixing by shading the aggregates, fog spraying the coarse aggregate, chilling the mixing water or other approved means. Mixing water may be chilled with flake ice or well-crushed ice of a size that will melt completely

during mixing, providing the water equivalent of the ice is calculated into the total amount of mixing water.

- C. Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placement and curing.
  - 1. In cold weather, comply with ACI 306R.
    - a. When air temperature is below 40 degrees F (4 degrees C) heat the mixing water and, if necessary, the aggregates to obtain a concrete mixture temperature of not less than 50 degrees F (10 degrees C) and not more than 80 degrees F (27 degrees C) at point of placement. If the mixing water is heated, do not exceed a temperature of 140 degrees F at the time it is added to the cement and aggregates.
  - 2. In hot weather, comply with ACI 305R.
    - a. When air temperature is between 85 degrees F (30 degrees C ) and 90 degrees F (32 degrees C), reduce 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 mixing and delivery time to 60 minutes.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION AND PREPARATION**

- A. Do not use items of aluminum for mixing, chuting, conveying, forming or finishing concrete, except magnesium alloy tools may be used for finishing.
- B. Check items of aluminum required to be embedded in the concrete and insure that they are coated, painted or otherwise isolated in an approved manner.
- C. Install waterstops in accordance with manufacturer's printed instructions.
- D. Hardened concrete, reinforcement, forms, and earth which will be in contact with fresh concrete shall be free from frost at the time of concrete placement.
- E. Do not deposit concrete in water. Keep excavations free of water by pumping or by other approved methods.
- F. Prior to placement of concrete, remove all hardened concrete spillage and foreign materials from the space to be occupied by the concrete.

#### **3.2 ADMIXTURE ADDITIONS AT THE SITE**

- A. Site additions shall be limited to high-range water-reducers, non-chloride accelerators, and corrosion inhibitors. Comply with manufacturers' printed instructions for discharge of admixtures shall be furnished.
- B. High-Range Water-Reducers:
  - 1. Concrete shall arrive at a slump of 2 to 4 inches (50 to 100 mm). Water additions at the Site shall be limited to comply with water-to-cementitious ratio requirements.
  - 2. Following addition of high-range water-reduced concrete, a minimum of 70 revolutions or 5 minutes of mixing shall be completed to assure a consistent mixture.
- C. All concrete with other admixture additions shall mix a minimum of 70 revolutions or 5 minutes to assure a consistent mixture.

### 3.3 PLACING

- A. ACI 301, Section 5.3.2.3 Conveying equipment:
  - 1. Add the following paragraphs:
    - a. 5.3.2.3.d When pumping concrete, the lubricating mortar for the delivery line shall not be discharged into an area of concrete placement.
    - b. 5.3.2.3.e The inside diameter of the delivery lines for pumped concrete shall be the greater of either a minimum of 5 inches or 3 times the maximum size of coarse aggregate.
- B. ACI 301, Section 5.3.2.2 - Conveying:
  - 1. Add the following paragraph:
    - a. Operation of truck mixers and agitators and discharge limitations shall conform to the requirements of ASTM C 94.
- C. ACI 301, Section 5.3.2.4 - Depositing:
  - 1. Add the following paragraph:
    - a. Do not allow concrete to free fall more than 4 feet.

### 3.4 REPAIRING SURFACE DEFECTS

- A. ACI 301, Section 5.3.7 – Repair of surface defects:
  - 1. Add the following paragraph:
    - a. 5.3.7.1.a Finish patched areas to match the texture of the surrounding surface.
- B. ACI 301, Section 5.3.7.2 - Repair of tie holes:
  - 1. Delete last paragraph in 5.3.7.2 and replace with the following:
    - a. The patch mixture shall consist of a mixture of dry-pack mortar, consisting of one part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for placing and handling. For surfaces exposed to view, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.

### 3.5 FINISHING FORMED SURFACES

- A. Finish Schedule: Except where indicated otherwise on the Drawings, provide the finishes below:
  - 1. Rough Form Finish for concrete surfaces not exposed to view.
  - 2. Smooth Form Finish for concrete surfaces exposed to view.
- B. ACI 301, Section 5.3.3.3 - As-cast Finishes:
  - 1. Add the following to paragraph 5.3.3.3:
    - a. Fins shall be completely removed on surfaces to receive waterproofing.

### 3.6 SLABS

- A. Slabs On Grade: Provide key type joints unless otherwise shown. Tool exposed joints.
- B. ACI 301, Section 5.3.4 – Finishing unformed surfaces:
  - 1. Add the following paragraph to section 5.3.4.1 Placement:
    - a. Provide monolithic finishes on concrete floors and slabs without the addition of mortar or other filler material. Finish surfaces in

true planes, true to line, with particular care taken during screeding to maintain an excess of concrete in front of the screed so as to prevent low spots. Screed and darby concrete to true planes while plastic and before free water rises to the surface. Do not perform finishing operations during the time free water (bleeding) is on the surface.

C. Finish Schedule: Except where indicated otherwise on the Drawings, provide the finishes below:

1. Floated Finish for:

- a. Treads and platforms of exterior steps and stairs.
- b. Slabs and fill over which waterproofing, roofing, vapor barrier, insulation, terrazzo, or resin bound flooring is required.

2. Troweled Finish for:

- a. Interior slabs that are to be exposed to view.
- b. Slabs and fill over which resilient wood flooring, resilient tile or sheet flooring, carpet, or thin-film coating system is required.
- c. Slabs and fill over which thin-set ceramic tile is required, except fine-broom finished surface.
- d. Treads and platforms of interior steps and stairs.

3. Broom or Belt Finish for:

- a. Exterior slabs. Texture as approved by the District.

D. ACI 302 Chapter 8.2.8.2 - Tools for jointing; Saw-cutting.

1. Add the following paragraph:

- a. Early-entry dry-cut saws are preferred in place of conventional wet-cut saws.

E. ACI 302 Chapter 8.3.12

1. Add the following to Conventional wet-cut saw cutting:

- a. Begin saw-cutting as soon as the saw will not dislodge the aggregate or ravel the edge of the saw-cut, but in no case longer than 12 hours after the slab is placed. Saw-cut a minimum of one quarter of the slab depth leaving a clean, sharp edge in the pattern

shown on the Contract Documents. Provide sufficient personnel and equipment to complete saw-cutting operations within 18 hours after the slab is placed.

- F. Exposed surfaces with fibrous reinforcement: After curing of the concrete, remove any protruding fibers in a manner which will not harm the parent concrete.
- G. Floor flatness and levelness tolerances: For flatness and levelness tolerances of floor slabs refer to ACI 302 Chapter 8.15. Floor surface tolerances shall be 1/8 inch over a horizontal distance of 10 feet in any direction, unless otherwise specified by floor profile quality classifications in ACI 302..
  - 1. When flatness or levelness tolerances are not met then the floor shall be ground or scarified and repoured to meet specifications.

### 3.7 CURING AND PROTECTION

- A. Hot Weather Concreting: Comply with ACI 305R whenever the atmospheric temperature or the form surface temperature is at or above 90 degrees F., or climatic conditions of wind and/or low humidity will cause premature drying of the concrete.
- B. Curing Temperature: Maintain the temperature of the concrete at 50 degrees F. or above during the curing period. Keep the concrete temperature as uniform as possible and protect from rapid atmospheric temperature changes. Avoid temperature changes in concrete which exceeds 5 degrees F. in any one hour and 50 degrees F. in any 24-hour period.
- C. Curing and Moisture Mitigation for Resilient Flooring:
  - 1 Acceptable curing and drying conditions include a minimum ambient temperature of 70 degrees F and a maximum relative humidity of 50%.
    - a. Air movement at 15 mph.
  - 2. Do not cure slabs by adding water; ponding or wet burlap method.
  - 3. Do not use curing compounds or cure-and-seal materials unless such use is approved in writing by the adhesive and floor covering manufacturers. The curing product manufacturer's conformance to ASTM c 1315 is not a substitute for the adhesive and floor covering manufacturer's approval.
  - 4. Cure the slab by covering with waterproof paper, plastic sheets, or a combination of the two for 3 to 7 days.

### 3.8 CHEMICAL HARDENER (DUSTPROOFING)

- A. Apply chemical hardener to all troweled finished interior floors which are to be left exposed.
- B. Do not apply chemical hardener until concrete has cured the number of days recommended in manufacturer's instructions.
- C. Prepare surfaces and apply chemical hardener in accordance with manufacturer's printed instructions and recommendations.

### 3.9 FIELD QUALITY CONTROL

- A. ACI 301, Section 1.6.4.2 - Testing Services:
  - 1. Add the following paragraph:
    - a. 1.6.4.2. j Strength Tests for Pumped Concrete: Prepare strength test specimens and make strength tests from concrete samples obtained at the truck discharge chute and at the end of the pump delivery line in accordance with paragraph 16.3.4.4.
- B. ACI 301, Section 1.6.3.3 – Tests required of Contractor's testing agency:
  - 1. Add the following paragraph:
    - a. 1.6.3.3.c Make available to the Director's Representatives whatever test samples are required to make tests. Furnish shipping boxes for compression test cylinders.
- C. Adjustment to Concrete Mixes: Mix design adjustments may be requested by the Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, at no additional cost to the State and as accepted by the Director. Laboratory test data for revised mix design and strength results must be submitted to and accepted by the Director's Representative before using in the work.
- D. Test results will be reported in writing to the Director's Representative, Ready-Mix Producer, 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.
- E. Nondestructive Testing: Impact hammer, Windsor probe, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.

- F. Additional Tests: The State shall 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 the Director's Representative. The testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed. Pay for such tests when unacceptable concrete is verified, including all inspection and Engineering fees when non-conforming work is verified.
- G. Moisture Testing: Test all slabs-on-grade for moisture content that will receive resilient flooring. For a preferred moisture testing method and limits; consult the written instructions of the floor covering manufacturer, the adhesive manufacturer, the patching/underlayment manufacturer, or combination thereof. Test repeatedly until the desired moisture content is obtained.
- H. pH Testing: Test concrete floors for pH level prior to the installation of resilient flooring. Do not exceed the recommended pH level of the resilient flooring manufacturer or the adhesive manufacturer, or both.

**END OF SECTION**



## **SECTION 03 60 00**

### **GROUT**

#### **PART 1 - GENERAL**

##### **1.1 DESCRIPTION**

- A. The Contractor shall furnish all materials, labor, and equipment required to provide all grout used in concrete work and as bearing surfaces for base plates as indicated on the Contract Drawings, in accordance with the requirements of the Contract Specifications and as specified herein.

##### **1.2 RELATED SPECIFICATIONS**

- B. Section 03 30 00, Concrete (Cast-in-Place).

##### **1.3 QUALITY ASSURANCE**

- A. Reference Standards and Codes: Comply with applicable provisions and recommendations of the following except as otherwise shown or specified:
  - 1. ASTM C109 - Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2 inch or 50 mm Cube Specimens).
  - 2. ASTM C531 - Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts and Monolithic Surfacing.
  - 3. ASTM C579 - Test Method for Compressive Strength of Chemical-Resistant Mortars and Monolithic Surfacing.
  - 4. ASTM C939 - Test Method for Flow of Grout for Preplaced-Aggregate Concrete (Flow Cone Method).
  - 5. ASTM C1107 - Packaged Dry, Hydraulic Cement Grout (Nonshrink).
  - 6. CRD-C 621 - Corps of Engineers Specification for Nonshrink Grout.
- B. Field Tests: Compression test specimens will be taken during construction from the first placement of each type of grout and at intervals thereafter as selected by the Engineer to ensure continued compliance with these Specifications.
  - 1. Compression tests and fabrication of specimens for cement grout and nonshrink grout will be performed as specified in ASTM C109 at intervals during construction as selected by the Engineer. A set of three specimens will be made for testing at seven days, 28 days and any additional time period as appropriate.

2. Compression tests and fabrication of specimens for epoxy grout will be performed as specified in ASTM C579, Method B, at intervals during construction as selected by the Engineer. A set of three specimens will be made for testing at seven days and any other time period as appropriate.
- C. Testing Agency: Testing of materials and of resulting grout for compliance with the technical requirements of the specification shall be the duty of the Contractor through the use of an approved testing agency.
1. The testing agency shall be responsible to and report directly to the Contractor.
  2. Payment for services rendered by the testing agency shall be the responsibility of the Contractor.
  3. The Contractor shall be charged for the cost of any additional tests and investigation on work performed which does not meet the specifications.
- D. All grout which has already been placed and which fails to meet the requirements of these Specifications, is subject to removal and replacement by the Contractor at no additional cost to the County.

#### 1.4 SUBMITTALS

- A. The Contractor shall submit shop drawings and material specifications for the approval of the Engineer in accordance with the requirements of the General Conditions G31, "Shop Drawings and Submittals," and Section 01300, "Additional Submittals." Shop drawings shall include, but not be limited to:
1. Material certifications and technical data sheets.
  2. Samples of all materials to be used.
- B. The Contractor shall also submit the following:
1. Certified test results verifying the compressive strength, shrinkage and expansion requirements specified herein.
  2. Manufacturer's literature containing instructions and recommendations on the mixing, handling, placement and appropriate uses for each type of grout used in the work.

#### 1.5 SERVICES OF MANUFACTURER'S REPRESENTATIVE

- A. The Contractor shall provide the services of a qualified manufacturer's technical representative who shall instruct the Contractor's personnel in the mixing, proper use and application of the nonshrink grout and nonshrink epoxy grout.

- B. The manufacturer's representative shall provide written certification that materials have been mixed and applied properly and surfaces to receive these products have been prepared properly, all in conformance with manufacturer's requirements.
- C. The on-site time required for the manufacturer's representative to achieve a successful installation shall be at the expense of the Contractor. The manufacturer's representative shall sign in and out at the office of the Resident Engineer and provide written verification of the areas he has approved on each day he is at the project.

## **PART 2 - PRODUCTS**

### **2.1 CEMENT GROUT**

- A. Cement grout shall be composed of Portland cement, sand and water. The sand to be used shall be selected to suit the spacing for placement. Where sand is not usable, the grout shall be composed of cement and water only.
- B. Gradation of sand and mix proportioning shall be in accordance with the following table for grouts using natural sands and having a minimum 28-day compressive strength of 4,000 psi. For higher strength grouts or those using manufactured sands, strength shall be established by trial mixes.

#### **1. Gradation for Natural Sand:**

<u>Sieve Size</u>	<u>Spaces less than 1 inch</u>	<u>Spaces 1 inch or more</u>
Passing 3/8		100
Passing 4	100	95-100
Passing 8	95-100	80-100
Passing 16	70-100	50-85
Passing 30	40-75	25-60
Passing 50	10-35	10-30
Passing 100	2-15	2-10
Passing 200	--	--

2. Mix Proportioning:

	Non-Air Entrained Grouts (Maximum 4 Percent <u>Entrapped Air</u> )		Air Entrained Grouts (Air 8 Percent to <u>10 Percent</u> )	
	Spaces less than <u>1 inch</u>	Spaces 1 inch or <u>more</u>	Spaces less than <u>1 inch</u>	Spaces 1 inch or <u>more</u>
<u>By Weight</u>				
Cement (bags)	10.8	10.5	11.3	11.0
Sand (lb)	2,150	2,240	1,930	1,990
Maximum water (gals)	59.5	57.8	57.5	55.8
Maximum water (gals per bag)	5.5	5.5	5.1	5.1
<u>By Volume</u>				
Cement	1	1	1	1
Sand (dry rodded)	1.85	2.10	1.6	1.7
Sand (damp and loose)	2.30	2.35	2.0	2.1
Maximum water (gals per bag)	5.5	5.5	5.1	5.1

- C. Water shall be kept to a minimum, the amounts noted in the preceding table are the maximum for grout. Proportioning by volume shall be limited to small quantities mixed at the job site.
- D. White Portland cement shall be mixed with the Portland cement as required to match the color of adjacent concrete.

2.2 NONSHRINK GROUT

- A. The grout material shall be an approved ready to use mixture requiring only water for use at the job site. The compressive strength of 2-inch cubes shall be 3,000 psi at 7 days.
- B. Nonshrink grout shall conform to CRD-C 621 and ASTM C1107, Grade B or C when tested at a maximum fluid consistency of 30 seconds per ASTM C939 at temperature extremes of 45 degrees Fahrenheit and 90 degrees Fahrenheit and an extended working time of 15 minutes.

- C. Nonshrink grout shall be Euco N-S manufactured by Euclid Chemical Company; Masterflow 713 Plus manufactured by Master Builders; Sikagrout 212 manufactured by Sika Corporation or approved equal.
- D. Nonshrink grouts depending on oxidation to limit shrinkage and containing additives such as iron or steel particles shall not be used.

### 2.3 NONSHRINK EPOXY GROUT

- A. Epoxy grout shall be modified as required for each particular application with aggregate per manufacturer's instructions.
- B. Nonshrink epoxy grout shall be Sikadur 32 Hi-Mod manufactured by Sika Corporation; Euco #452 manufactured by Euclid Chemical Company; or Apxandcrete-S by Anti-Hydro Company, or approved equal.

### 2.4 DRY PACK

- A. Dry pack (to be packed or tamped in place) shall be made at no slump consistency.
- B. When mixing the batch, only enough water shall be added to the dry materials to produce a rather stiff mixture, then additions of water may be made in small increments until the desired consistency is obtained.

### 2.5 CURING MATERIALS

- A. Curing materials for cement grout shall be as specified in Section 03300, Cast-in-Place Concrete, and as recommended by the manufacturer for prepackaged grouts.

### 2.6 HIGH STRENGTH, NON-SHRINK GROUT

- A. The grout material shall be an approved ready to use mixture requiring only water for use at the job site. The compressive strength of 2-inch cubes shall be 4,000 psi minimum at 1 day and 9,000 psi minimum at 28 days. Volume change shall be +0.07% at 1 day and +0.07% at 28 days.
- B. High strength, non-shrink grout shall conform to CRD-C 621 and ASTM C1107, Grades A, B or C. The grout shall be a positive expansive grout as per ASTM C1090.
- C. High strength, non-shrink grout shall be Hi-Flow Grout manufactured by Euclid Chemical Company, Masterflow 830 manufactured by Master Builders, or approved equal.
- D. Contractor shall use special procedures as recommended by the manufacturer to control temperature increase when placing grout in thicknesses exceeding 4 inches. These special procedures may include but not be limited to mixing 3/8"

pea stone gravel into the mixture prior to placement. Proposed procedures shall be submitted to the Engineer for review and approval.

- E. Non-shrink grouts depending on oxidation to limit shrinkage and/or containing metallic additives shall not be used.

### **PART 3 - EXECUTION**

#### **3.1 GROUT USES**

- A. The different types of grout shall be used for the applications stated below unless noted otherwise in the Contract Specifications or on the Contract Drawings. Where grout is called for in the Contract Specifications or on the Contract Drawings which does not fall under any of the applications stated below, nonshrink grout shall be used.
  - 1. Cement grout shall be used for grout toppings and for patching of fresh concrete.
  - 2. Nonshrink grout shall be used for grouting beneath base plates of equipment and structural metal framing.
  - 3. Nonshrink epoxy grout shall be used for bonding new concrete to hardened concrete.
  - 4. High strength non-shrink grout shall be used for grouting drilled surfaces.
- B. New concrete surfaces to receive cement grout shall be as specified in Section 03 30 00, Concrete (Cast-in-Place), and shall be cleaned of all dirt, grease and oil-like films.
  - 1. Existing concrete surfaces shall likewise be cleaned of all similar contamination and debris, including chipping or roughening the surface if a laitance or poor condition of concrete is evident. The finish of the grout surface shall match that of the adjacent concrete.
  - 2. Curing and protection of cement grout shall be as specified in Section 03 30 00, Concrete (Cast-in-Place).
- C. All mixing, surface preparation, handling, placing, consolidation, and other means of execution for prepackaged grouts shall be done according to the instructions and recommendations of the manufacturer.

3.2 INSTALLATION

- A. The consistency of grouts shall be that necessary to completely fill the space to be grouted for the particular application. Dry pack consistency shall be such that the grout is plastic and moldable but will not flow.
- B. Measurements for cement grout shall be made accurately by weight or by volume using containers. All measurements shall be made in a manner satisfactory to the Engineer. Prepackaged grouts shall have ingredients measured by means recommended by the manufacturer.
- C. Grout shall be placed quickly and continuously, shall completely fill the space to be grouted, be thoroughly compacted and free of air pockets. The grout may be poured in place, pressure grouted by gravity, or pumped.
- D. For grouting beneath base plates, grout shall be poured from one side only and shall flow across to the open side to avoid air-entrapment.
- E. The use of pneumatic pressure or dry-packed grouting requires approval of the Engineer.

**END OF SECTION**

NO TEXT ON THIS PAGE



**SECTION 05 56 00**

**CASTINGS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

**A. Scope:**

1. Contractor shall furnish all labor, materials, equipment and incidentals required to provide all castings as shown and specified.

**B. Castings shall include, but not be limited to the following:**

1. Catch basin, manhole, etc., frames, and grates.
2. Clean out frames and covers.

**C. Related Work Specified Elsewhere:**

1. Section 33 31 13, Site Sanitary Sewerage Gravity Piping.

**1.2 SUBMITTALS**

**A. Shop Drawings: Submit for approval the following in accordance with Section 01 33 00, "Submittal Procedures":**

1. Shop Drawings for the fabrication and erection of all casting assemblies:
  - a. Include plane, elevations, and details of sections and connections. Show anchorage and accessory items.
  - b. Include setting drawings for location and installation of castings and anchorage devices.
2. Copies of manufacturer's specifications, load tables, dimension diagrams, anchor details and installation instructions.
3. Provide lettering to be cast into the top of the casting such as "Drain," "Sewer," etc.

### 1.3 QUALITY ASSURANCE

- A. Reference Standards: Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.
  - 1. ASTM A 48, Gray Iron Castings.
  - 2. ASTM A 536, Ductile Iron Castings.
- B. Shop Assembly: Preassemble items in the shop to the greatest extent possible, so as to minimize field splicing and assembly of units at the site. Disassemble units only to the extent necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

### 1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the site to ensure uninterrupted progress of the Work. Deliver anchor bolts and anchorage devices, which are to be embedded in cast-in-place concrete in ample time to not delay that Work.
- B. Store materials to permit easy access for inspection and identification. Keep materials off the ground, using pallets, platforms or other supports.

## **PART 2 - PRODUCTS**

### 2.1 DETAILS OF CONSTRUCTION

- A. General:
  - 1. Design all frames, covers and grates to prevent rocking and rattling under traffic.
  - 2. All castings shall be free from pouring faults, cracks, blow holes, or other defects affecting their strength and value for the service intended.
  - 3. Castings shall be manufactured using tough, close grained material without the admixture of cinder iron or metal of inferior quality. Angles shall be boldly filleted and corners kept sharp and perfect.
  - 4. No plugging of defective castings will be permitted.
  - 5. Castings shall be fabricated true to pattern so that component parts fit together. The dimensions of all castings shall have a tolerance of plus or minus 1/16 inch and an additional tolerance of plus or minus 1/16 inch per foot of dimension. The weight deviation tolerance is 5%. Notwithstanding

the above tolerances, all manhole frames rings and covers of the same nominal size shall assemble interchangeably.

- B. Catch Basin, Manhole, Dry Well, etc., Frames and Grates:
  - 1. Material: Cast iron conforming to ASTM A 48 Class 30.
  - 2. Size: As shown on the Drawings.
  - 3. Construction: Heavy duty with machined bearing surfaces.

### **PART 3 - EXECUTION**

#### **3.1 INSTALLATION**

- A. Follow manufacturer's printed instructions and approved Shop Drawings.
- B. Set castings accurately to required location, alignment and elevation, plumb, level, true and free of rock, measured from established lines and levels. Brace temporarily or anchor temporarily in formwork.
- C. Protection from Dissimilar Materials: Painting, coat all surfaces of aluminum in contact with dissimilar materials such as concrete, masonry and steel or iron.
- D. Castings shall be delivered to the project site unpainted and, after installation, all exposed surfaces shall receive two coats of asphaltic paint.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 06 10 00**

**ROUGH CARPENTRY**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

**A. Scope:**

1. Contractor shall furnish all labor, material, equipment and incidentals required to provide rough carpentry for the timber staircase as shown and specified.
2. The extent of the carpentry work is shown on the Drawings.
3. The types of carpentry work required includes the following:
  - a. Pressure-treated wood components.
  - b. Lumber for temporary protection.
  - c. Lumber for temporary support of masonry.

**C. Related Work specified Elsewhere:**

**1.2 QUALITY ASSURANCE**

**A. Lumber Standard Design Criteria: Comply with American Lumber Standard Committee PS-20, except as otherwise specified.**

**B. Source Quality Control:**

1. Factory-mark each piece of lumber and type, grade, mill and grading agency, except omit marking from surfaces to be exposed with transparent finish or without finish.
2. Shop-fabricate carpentry work to the extent feasible and where shop fabrication will result in better workmanship than feasible for on-site fabrication.

**C. Reference Standards: Comply with applicable provisions and recommendations of the following, except where otherwise shown or specified:**

1. American Lumber Standard Committee, National Grading Rule for Dimension Lumber, PS-20.

2. American Lumber Standard Committee, Plywood Standard, PS-1.
3. American Wood Preservers' Bureau Standard (AWPB), LP-2.
4. Occupational Safety and Health Administration (OSHA).
5. Southern Pine Inspection Bureau (SPIB), Grading Rules.
6. Western Wood Products Association (WWPA), Grading Rules.
7. AWPA-CA-Preservative Standards, Lumber and Plywood.
8. AWPA-C20-Fire Retardant Lumber Standards.
9. AWPC-C27-Fire Retardant Plywood Standards.
10. AWPA-M4-Standards for Care of Preservative-Treated Wood Products.
11. APA-Guide to Plywood Grades.
12. AFPA Manual of Wood Framing Construction.

### 1.3 SUBMITTALS

A. Manufacturer's Data:

1. Submit for approval copies of chemical treatment manufacturer's instructions for proper use of each type of treated material.
2. For water-borne preservatives, include statement that moisture content of treated materials was reduced to maximum of 15 percent prior to shipment to Project site.

B. Shop Drawings: Shop drawings shall include, but not be limited to:

1. Complete layout and installation drawings and schedules with clearly indicated dimensions.
2. Detail drawings of all construction details.

C. Pressure Treatment Certificates: Provide certification by treating plant stating chemicals and process used, net amount of salts retained and conformance with applicable standards.

#### 1.4 PRODUCT DELIVERY STORAGE AND HANDLING

- A. Storage of Materials: Keep materials dry during delivery and storage. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber and provide air circulation within stacks.
- B. Handling Materials: Handle all treated products as specified in American Wood Preservers' Association, M4.

### **PART 2 - PRODUCTS**

#### 2.1 MATERIALS

- A. Lumber, General:
  - 1. Nominal sizes are shown, except as shown by detail dimensions. Provide actual sizes as required by American Lumber Standard Committee, National Grading Rule for Dimension Lumber PS-20, for the moisture content specified for each use.
    - a. Provide dressed lumber, S4S, unless otherwise shown or specified.
    - b. Provide seasoned lumber with 15 percent maximum moisture content at time of dressing.
  - 2. Provide the following grade and species:
    - a. No. 2 Dimension Grade Douglas Fir – Larch (North), WWPA.
    - b. No. 1 Dimension Grade Southern Pine, SPIB.
- B. Accessories:
  - 1. Nails, Spikes, and Staples: Galvanized for exterior locations, high humidity locations, and treated wood; size and type to suit application.
  - 2. Bolts, Nuts, Washers, Lags, and Screws: Medium carbon steel; size and type to suit application; galvanized for exterior locations, high humidity locations, and treated wood. Lab bolts and screws shall conform to ANSI/ASME B18.2.1.
  - 3. Fasteners: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Explosive actuated type anchors shall not be used.
- D. Lumber for Protection and Temporary Support: Size and grades to meet applicable requirements of OSHA and structural requirements.

## 2.2 WOOD TREATMENT

- A. Preservative Treatment: Where lumber is specified herein to be treated, comply with the applicable requirements of the American Wood Preservers Bureau (AWPB). Mark each treated item to comply with the AWPB Quality Mark requirements for the specified requirements.
  - 1. Pressure-treat aboveground Micronized Copper Azole (MCA) or Alkaline Copper Quaternary (ACQ) preservatives complying with AWPB (US-040). After treatment, kiln-dry to a maximum moisture content of 19 percent.
- B. Where items are cut after treatment, coat cut surfaces with heavy brush coat of same chemical used for treatment. Inspect each piece of lumber after drying and discard damaged or defective pieces.

## PART 3 - EXECUTION

### 3.1 INSPECTION

- A. Contractor shall examine the substrate and conditions under which the carpentry work is to be performed, and notify the Engineer in writing of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Engineer.

### 3.2 INSTALLATION

- A. General:
  - 1. Discard units of material with defects which might impair the quality of the work, and units which are too small to fabricate the work with minimum joints or the optimum joint arrangement.
  - 2. Set carpentry work accurately to required levels and lines, with members plumb and true and accurately cut and fitted.
  - 3. Securely attach carpentry work to substrates by anchoring and fastening as shown and as required by recognized standards. Countersink nail heads on exposed carpentry work and fill holes. Use galvanized wire nails, except as otherwise shown. Make tight connections between members. Install fasteners without splitting of wood, predrill as required.

### 3.3 TEMPORARY CONSTRUCTION

- A. Provide all lumber and accessories required for scaffolding, safety and protection of the work.



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- B. Provide and install all temporary protection in accordance with applicable provisions of the Contract Documents, OSHA regulations, and as follows:
1. Temporary protection shall also include wood doors, railings, protection on floor or roof openings, temporary partitions, and the like; adequately maintained in good repair during the life of the Contract.
  2. Furnish and set temporary partitions with wood doors at all exterior doorways, exterior openings in exterior walls or in locations exposed to weather. These doors shall be substantially built and hung, equipped with proper hinges, locks and other necessary hardware, and shall be removed and reset whenever required to accommodate the work of other Contracts and shall be kept in good repair at all times.
  3. Provide substantial temporary wood covering over all openings left in roof for ducts, shafts, etc., using rough planking at least 2 inches thick, cleated together and otherwise made sufficiently strong and put in place wherever required.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 26 05 00**

**GENERAL ELECTRICAL REQUIREMENTS**

**PART 1 GENERAL**

**1.1 GENERAL**

- A. Applicable provisions of the Information for Bidders, General and Special Clauses, General Requirements, govern the work of this section.

**1.2 WORK INCLUDED**

- A. The work under this Division and applicable sections of Division 1 shall consist of all labor, materials, equipment and services necessary and required to complete all electrical as shown on the Drawings, as described in the specifications, or as inferable from the Drawings and Specifications. Where the words provide or install are used singularly or in combination, it shall mean to furnish and install complete for fully functioning and operational systems. The work shall include but not necessarily be limited to the following:
1. Disconnection and removal of existing medium voltage service cables.
  2. Installation of underground medium voltage service cables.
  3. Manholes.
  4. Utility metering.
  5. Utility pad mounted transformers.
  6. Power panelboards, in accordance with drawings, all as indicated on the drawings.
  7. Building mains and feeders, automatic transfer switches in accordance with the drawing.
  8. Conduit, wiring, outlet boxes, switches, convenience receptacles, etc.
  9. Communications, conduits and the like.
  10. Temporary light and power for construction.
  11. Setting of all sleeves, hanger supports and the like.
  12. Cutting and patching for installation of electric work.

13. Testing, adjustments and instructions.
14. Provide shop drawings for all work.
15. Inspection of all electrical work by a licensed third party agency. Contractor shall pay all fees.

### 1.3 WORK NOT INCLUDED

- A. The following related items will be covered in other sections of these specifications:
  1. Trenching, excavation and backfill, ductbank.

### 1.4 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 2017 National Electrical Code. Whenever reference is made of "National Electrical Code" or "NEC," it shall mean the 2017 National Electrical Code.
- 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.

### 1.5 POWER SHUTDOWN

- A. The Contractor may be permitted power shutdowns during normal working hours of 8 a.m. to 3 p.m. Tuesday through Thursday only. Arrange for connections to existing systems as directed by the Engineer, Owner and Utility Company.
- B. The Contractor will schedule and coordinate shutdowns a minimum of two weeks in advance with the Engineer and Owner. Provide generator for all shutdowns.
- C. The Contractor shall include the cost of performing work during other than normal work hours at overtime or premium wage rates in the bid price. The Contractor will not receive any separate or additional payment for work during other than normal working hours above lump sum bid work included under this Contract.

1.6 FINAL TEST AND INSPECTION

- A. The Contractor shall be required to demonstrate to the satisfaction of the Engineer that all the electrical systems, equipment and devices operate as specified.
- B. All existing systems shall first be tested by owner to insure total system functioning. The contractor shall adapt, connect to, or modify systems as required.
- C. Provide fire underwriters certificate of inspection.

1.7 TEMPORARY ELECTRIC LIGHT AND POWER AND GENERATOR

- A. The Electrical Contractor shall be responsible for furnishing, installing, maintaining, and upon completion removing, a system of temporary light and power for the use of all construction trades and contracts. If the electrical contractor requires the de-energizing of the utility electric service prior to the power system being installed, then he shall provide a generator sized to accommodate the buildings, essential system. Installation of cable, overcurrent devices shall be included in the electrical contractor's bid. This shall include all overtime required to complete work between Tuesday and Thursday. See Power Shutdown Paragraph 1.5 above.

1.8 CUTTING AND PATCHING

- A. The Contractor shall provide all necessary cutting of the walls, floors, ceilings, etc. for installation of conduit, outlet boxes, etc. Cutting shall be kept to a minimum, all areas shall be spray painted for approval prior to any cutting.
- B. All finished patching and painting to be by this Contractor. The Electrical Contractor shall completely fill all openings left by the removal of conduit, equipment, etc., with regard to floor openings, plywood shall be attached to the underside of the slab to facilitate the filling of the opening completely.

1.9 FIREPROOFING

- A. All openings through fire proof barriers shall be fully resealed to maintain the fire rating with 3M CP25WB caulking or approved equal.
- B. Fire rated barrier and non-flammable supports for floor openings to be KBS Sealbags or equal.

1.10 HEAT SCAN

- A. Upon completion of all work under the contract, the Contractor shall perform a heat scan survey of all his work.

- B. Scan shall be performed while the facility is under full operation, and equipment at full load.
- C. Equipment shall be capable of taking pictures of all areas, especially problem locations.
- D. Results shall be neatly assembled and labeled in three (3) binders for the Owner after the Engineer's approval.

#### 1.11 PERFORMANCE REQUIREMENTS

- A. The electrical contractor shall verify that all terminations on contract equipment is proper. Testing for phase rotation, continuity and full operation of the equipment shall be performed.
- B. The electrical contractor shall render full assistance to all trades for control wiring sequence and unit operation testing.

#### 1.12 ROOF PENETRATIONS

- A. No conduit penetrations shall be made through roofs without prior permission of the Owner.
- B. Any penetrations allowed will be performed using pitch pockets as approved by the Owner.

#### 1.13 WALL PENETRATIONS

- A. All wall penetrations for conduit shall be performed using pre-manufactured wall sleeves as manufactured by Link Seal, OZ Gedney or equal.

#### 1.14 TORQUE REQUIREMENTS

- A. All equipment and cable connections shall be tightened to the torque values determined by the manufacturer.
- B. Assemble all information after the work is complete in a binder for the owner.

#### 1.15 WORKMANSHIP

- A. The Contractor shall perform all operations necessary for the proper installation and operation of all systems.

- B. All work performed shall be first class work in every respect. The work shall be performed by mechanics skilled in their respective trades, who shall at all times be under the supervision of competent persons.
- C. Work that is slipshod, poorly laid out, not perfectly aligned, or that is not consistent with the requirements generally accepted in the trade for “first class work” will not be acceptable.
- D. In addition to the materials specified elsewhere, all other miscellaneous items be necessary for the completion of the work shall be furnished and installed by the Contractor to the extent that all system be complete and operative.
- E. Electrical Contractor shall submit references for the foreman to run the project. Electrical Foreman shall have a minimum of five (5) years experience as a working foreman.

#### 1.16 REGULATIONS AND CERTIFICATES

- A. All work required by the Drawings and Specifications shall be installed to comply with all applicable building laws, regulations and ordinances of the State of New York, and local laws and regulations as may apply, except where these requirements are exceeded by the Drawings and Specifications in quality or quantity.
- B. Any and all changes in the arrangement of the work, either before or after installation, to suit conditions in the building or the work of other trades, and any and all changes required by agencies having jurisdiction shall be made without extra charge, unless the charges are in consequence of changes made by the Owner.

#### 1.17 OPENINGS

- A. The admittance into the building of all equipment and materials furnished under this Contract shall be through finished openings. The Contractor shall refer to the Owner for specific requirements relative to the use of building freight elevator if exists and other existing facilities.

#### 1.18 NOT APPLICABLE

#### 1.19 EXPEDITING THE WORK

- A. The Contractor shall take all measurements at the job, verify all figured dimensions indicated on the construction drawings, familiarize himself to assure complete knowledge of code requirements and coordinate the work with other trades so as to cause no delay in the work and to eliminate wherever possible

future cutting and patching. Any discrepancies or interference shall be reported immediately to the Owner.

#### 1.20 PROTECTION OF THE WORK

- A. The Contractor shall provide temporary covering and do all work required to protect work, materials, machinery and equipment from all damage from moisture.
- B. After the work is completed, the Contractor shall clean all equipment and piping.

#### 1.21 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. The Contractor shall furnish to the Owner one set for initial review and four sets of final written operating, maintenance and lubrication instructions for all installed systems and equipment. Instructions shall include copies of all designated approved shop drawings, manufacturer's descriptive data, control diagrams, wiring diagrams, performance test data, test and balance reports and installation and operating instructions as specified.
- B. Operation and Maintenance Submittal Instructions
  - 1. Organize all instructions as follows:
    - a. All instructions shall be submitted in electronic format on CD-ROM in the formats described below.
    - b. Information shall be organized and saved in separate data files, clearly named.
    - c. CD-ROMs submitted shall be clearly labeled, and shall be submitted with a table of contents referencing the specification section of the files contained on them.
    - d. Text shall be submitted in Rich Text Format (RFT), or Microsoft Word (doc).
    - e. All graphics shall be submitted in Joint Photographics Expert Group (jpeg or jpg) format.
    - f. Text shall include written instruction on operating and maintaining the equipment, and at minimum shall include:
      - 1) Startup instructions
      - 2) Standard operation instructions
      - 3) Any emergency or non-standard operating instruction



- 4) Design criteria for the equipment, in the table format.

Information shall include standard size information, such as length, width, or diameter, and capacity information such as flow and head that is not included in the nameplate table.

- 5) A description of the controls provided with the equipment.

- 6) Troubleshooting in the table format as follows:

PROBLEM	POSSIBLE CAUSES	CORRECTIVE ACTION

- 7) Nameplate data for the equipment in table format. Nameplate information shall include data for the overall assembly and any major components such as motors, gear reducers, etc.

- 8) Manufacturer and local vendor information, including address, phone numbers, email addresses, and web sites.

- 9) Information needed for ordering new parts.

- 10) Preventive maintenance and lubrication instructions and schedule including recommended lubricants, application points, and a list of special tools required for operation and maintenance.

- 11) List of spare parts supplied with the equipment, identified by manufacturer's part number.

- 12) Assembly and disassembly instruction for each preventative or corrective maintenance task.

- g. Graphics shall be provided in high resolution (75 dpi or greater) with a maximum width of 820 pixels, and shall include, at minimum:

- 1) Complete electrical and control schematics with labeled terminations
- 2) Parts diagrams with parts clearly identified with manufacturer's part numbers
- 3) Diagrams required for maintenance including lubrication locations, pump packing arrangements, etc.

- 4) Performance diagrams, such as pump curves, blower curves, etc.
- C. The above instructions, charts, etc. shall be submitted to the Engineer as a rough draft and after the required corrections are made, six (6) sets in looseleaf, hardback binders, CDs, suitable indexed and identified, shall be furnished to the Owner.
- D. The Owner's designated operating personnel shall be instructed in the proper operation and maintenance of the equipment as well as the operation and maintenance of the controls for the various systems by the vendor's representative. Informal or unwitnessed instructions, or instructions to non-designated personnel will not be acceptable. In addition to the instruction periods specified elsewhere, the Contractor shall furnish instruction for a minimum of two (2) working day straight time not necessarily consecutive. Prior arrangements for instruction periods shall be made with the Owner.
- E. Final payment will not be granted until all manuals and training have been provided to the Owner/Owner's representative.

#### 1.22 RECORD DRAWINGS

- A. The Contractor shall maintain an accurate record set of reproducible as-built drawings of any deviations in work as actually installed from the work as indicated on the design drawings. The Contractor shall utilize the contract design drawings for marking up any deviations to the drawings. The record shall be kept current and available at the site for inspection.
- B. As-built drawings shall be updated at the site as work progresses.
- C. Final payment will not be granted until all final as-built drawings are delivered to the Owner/Owner's Representative.
- D. Contractor shall furnish as-built drawings to Engineer at 30%, 60%, and 100% of project completion. As-builts are to be submitted in AutoCAD computer format. Submit three sets of discs and three sets of blueprints.

#### 1.23 GUARANTEE

- A. The Contractor shall guarantee clean power throughout the new systems.
- B. The Contractor shall guarantee that the capacity of all new equipment installed meets Specification requirements.
- C. The Contractor shall guarantee that all new systems will operate without excessive noise and vibration.

- D. The Contractor shall obtain from the various manufacturers or vendors standard guarantees or warranties for their particular equipment or components for a period of at least one year, and deliver them to the Owner.
- E. The Contractor shall guarantee all their work and workmanship for a period of one (1) year from final acceptance of the entire project.

#### 1.24 EQUIPMENT GROUNDING

- A. All equipment, panels and devices (except motors) which require electrical connections shall be furnished with a factory-welded (prior to finish painting) ground lug in a concealed and accessible location.

#### 1.25 FINAL INSPECTION

- A. The Contractor shall conduct a final inspection of all work installed under each Section of the Specification after the installation have been completed; the testing hereinafter specified has been performed; and test reports have been submitted.
- B. During the conduct of the final inspection, the Contractor shall have present a representative of the various manufacturers and a representative of the manufacturers of other pertinent equipment as direct by the Owner.
- C. The Contractor shall include in his bid a testing period of two (2) working days wherein all aspects of the electrical systems specified herein will be tested in accordance with detailed test procedures which will be issued by the Owner at a later date. The Contractor shall provide sufficient technical personnel and instruments to perform the tests as directed by the Owner. Personnel for each working day shall include one mechanic, one helper, manufacturer's representative as required, plus GC supervisory personnel. The testing period specified herein is in addition to all other testing or instruction periods included in the specifications.
- D. The Contractor shall demonstrate, to the satisfaction of the Owner, that the systems installed meet Specification requirements and that the capacities and performances of the equipment meets schedule requirements. The contractor shall make all changes, modifications and adjustments to the installed systems, as directed by the Owner, to meet Specifications requirements, at no additional cost to the Owner.

#### 1.26 1.26 ALTERATION AND REMOVAL OF EXISTING WORK

- A. The Contractor shall refer to the Contract Documents, for specific requirements relative to the existing facilities and the Sequence of work.

- B. All existing systems shall be maintained in operation during the construction period as directed by the Owner. Existing systems shall not be shut down nor shall connections be made thereto without prior approval of the Owner.
- C. The Contractor shall relocate all existing conduit hangers and supports, as required to accommodate the new installation at no additional costs to the Owner. This includes all work in spaces where new work is specified under this Contract.
- D. Unless otherwise specified or indicated on the Drawings, all equipment, piping, appurtenances, etc. are indicated to be removed from the site when directed by the Owner.

#### 1.27 CONSTRUCTION PHASING SCHEDULE

- A. See the General Conditions, and Temporary Light and Power and Generator, above.

#### 1.28 SHOP DRAWINGS

- A. The Contractor shall submit copies of manufacturer's shop drawings and descriptive literature together with the manufacturer's installation, operating and maintenance instructions, for all equipment to be incorporated in the work including all required wiring diagrams and shall obtain approval before proceeding with the installation.
- B. The Contractor shall submit copies of shop drawings at 1/4 inch scale or larger showing all conduit mains, including connections to equipment, and all equipment layouts and shall obtain approval before proceeding with the work. Shop drawings shall be accurately dimensioned so that conduit clears all structural members and other work incorporated in the project. The Contractor shall take all shop drawing measurements at the building.
- C. The Contractor shall submit the following shop drawings, manufacturer's brochures, manufacturer's installation and operating instructions, etc. for approval before proceeding with the work:
  - 1. Medium voltage cable
  - 2. Manholes
  - 3. Transformer pads.
  - 4. Wire
  - 5. Raceways
  - 6. Wiring Devices

7. Disconnects
  8. Mechanical sleeve seals
  9. Electrical Identification materials
  10. Panelboards
  11. Automatic Transfer Switches
- D. Acceptance of shop drawings does not absolve the Contractor to provide specified materials and function in the intended manner.

**1.29 SHOP DRAWING SUBMISSION**

- A. All shop drawings submitted shall be in multiple sets (minimum 8), and identified by transmittal.
- B. The transmittal shall have all appropriate information including, project name, date, specification section, submission number, and item description. It is recommended that the attached transmittal form be used to expedient turn over.
- C. If this format is not followed, the Engineer reserves the right to reject any submission.
- D. Facsimiles will not be accepted for shop drawings.

**END OF SECITON**

NO TEXT ON THIS PAGE

**SECTION 26 05 10**

**UTILITY SERVICE ENTRANCE**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. Electrical service from source to service meter.
- B. Overhead service entrance and pole.
- C. Underground services.
- D. Pad mounted transformers.

**1.2 REFERENCES**

- A. ANSI/NFPA 70 National Electrical Code.
- B. Con Edison - Specifications for electric installations.

**1.3 SYSTEM DESCRIPTION**

- A. System Characteristics – 2400 volts, single-phase, 60 Hertz as shown on Drawings.
- B. Service Entrance - New overhead 5 kV primary equipment.
- C. Service Distribution – Underground w/utility transformers.

**1.4 SUBMITTALS**

- A. Submit all submittals.
- B. Submit utility company prepared drawings.
- C. Submit to the Engineer and the utility company the following:
  - 1. New overhead primary service, underground distribution, and Utility transformers and secondary metering.
  - 2. Final locations of metering and transformers.
  - 3. Contract Drawings and other equipment submittals as required by the utility.
- D. Submit a copy of the letter from the utility company indicating approval of the installation.

- E. Submit utility company approved service layout for review and approval.

## 1.5 QUALITY ASSURANCE

- A. Perform work in accordance with utility company requirements.
- B. Maintain one copy of utility company and inspection agency documents on site.

## 1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. or testing firm acceptable to authority having jurisdiction as suitable for purpose specified and shown.
- C. Conform to requirements of the utility.

## 1.7 UTILITY COORDINATION

- A. Coordinate with the utility and arrange for a pre-installation conference to convene two weeks prior to commencing work of this section. Conference shall be at the site of the work and include the Owner and Engineer.
- B. The Engineer has made initial contact with the utility on behalf of the Owner regarding service(s) at these facilities.
- C. The Contractor is responsible for completing any applications including all required application or fees relative to permanent equipment, cable or devices. Owner will be responsible for payment of equipment, coordination, testing, inspection fees by the utility.
- D. Coordinate with the electric utility for connection of electrical service. Abide by utility requirements.

## 1.8 FIELD MEASUREMENTS

- A. Verify that field measurements are as on utility company drawings.

## 1.9 EXISTING SYSTEM

- A. The Contractor shall schedule and coordinate his work so that at no time shall service to the existing equipment be interrupted, except when specifically approved by the Owner.

# **PART 2 - PRODUCTS**

- 2.1 See contract drawings.



### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Verify existing conditions and power system.
- B. Verify that service equipment is ready to be connected and energized.
- C. Provide and pay for inspection certificates other than utility.

#### **3.2 PREPARATION**

- A. Make arrangements with utility company to obtain permanent electric service to the project.
- B. Coordinate location of utility company's facilities to ensure proper access is available.

#### **3.3 INSTALLATION**

- A. Install new overhead 5 kV equipment, utility transformers, and metering.
- B. Accept utility equipment at property line and install.
- C. Install RHW conductors in HDPE conduit as required for secondary services to the meter, primary cable in HDPE conduit. Conduit stubs from manholes to be 10 feet rigid steel conduit and conduit on pole to have steel elbows and 10 feet rigid steel up the pole.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 26 05 13**

**5 KV MEDIUM VOLTAGE CABLE**

**PART 1 - GENERAL**

**1.1 WORK INCLUDED**

- A. Medium voltage cable.
- B. Cable terminations.

**1.2 REFERENCES**

- A. ANSI/IEEE C2 - National Electrical Safety Code.
- B. ANSI/NFPA 70 - National Electrical Code.
- C. IEEE 48 - Test Procedures and Requirements for High Voltage Alternating Current Cable Terminations.
- D. NEMA WC3 - Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
- E. NEMA WC5 - Thermoplastic Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
- F. NEMA WC8 - Ethylene Propylene Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
- G. NETA ATS (International Electrical Testing Association) - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems (International Electrical Testing Association).

**1.3 PURPOSE AND INTENT**

- A. This specification covers the construction and testing of 5KV solid dielectric ethylene propylene insulated distribution cables. These cables utilize a concentric neutral, and a black heavy duty hypalon jacket shall be used in conduits and in transformer vaults for primary wiring on 5KV systems.

**1.4 ABBREVIATIONS**

- A. AEIC - Association of Edison Illuminating Companies.
- B. ICEA - Insulated Cable Engineering Association.
- C. NEMA - National Electrical Manufacturers Association.

- D. ASTM - American Society of Testing Manufacturers.
- E. EPR - Ethylene-Propylene Rubber.
- F. HTK - High Temperature Kerite.
- G. UL - Underwriters Laboratories.

#### 1.5 SHOP DRAWINGS

- A. Shop drawings shall be submitted and approved prior to ordering cables. The following shall be the minimum submitted for approval:
  - 1. Complete manufacturer's construction details and specifications for the cables, including physical and electrical characteristics of insulation, shields and jackets.
  - 2. Overall dimension and ampacity of cable.
  - 3. Splicing and termination data, including the following:
    - a. Written statement from cable manufacturer that splices and terminations submitted are acceptable.
    - b. Written statement from splicing/termination manufacturer that splices and terminations submitted are suitable for the proposed application.
    - c. Details of cable preparation.
    - d. Method of connecting conductors.
    - e. List of materials.
    - f. Method of applying materials (including quantities).
    - g. Precautionary measures.
    - h. Drawings showing method of splicing, complete with dimensions.
  - 4. Testing certificates as required in Article 1.06.
  - 5. Written statement from the cable manufacturer consenting to the terms of the warranty; refer to Article 1.12.

#### 1.6 QUALIFICATION TESTING

- A. Qualification tests shall be performed by the manufacturer initially on each design of cable and whenever any change occurs in the insulation system or in any other

cable component. These tests shall be performed in accordance with AEIC No. CS6 prior to shipment, as applicable.

- B. The completed cable, while on the shipping reel, shall be tested at room temperature at 35KV DC and 9 KV AC for 5 minutes. The insulation resistance shall also be measured and the insulation resistance constant shall not be less than 21,000 megohms/1,000 feet corrected to 60 degrees F.

OR

- C. The completed EPR cable shall be subjected to a partial discharge test and an insulation resistance test for each reel. The partial discharge corona test shall be as outlined in ICEA Standard S-68-516, AEIC CS6-96, and meet the following:

Vt/Vg Ratio	1.0	1.5	2.5	3.0	4.0
Maximum particle	5	5	5	5	10
Discharge in picocoulombs	8.5	13.0	21.5	26.0	35.0

The insulation resistance shall not be less than 50,000 megohm/1,000 feet at 60 degrees F with an applied voltage of 44KVAC for 5 minutes.

The conductor shield, conductor shield-insulation interface, insulation, and insulation-insulation shield interface shall be tested according to AEIC No. CS6 to determine the size and magnitude of voids and contaminants. The contact area between the insulation and the shield extrusions shall be tested according to AEIC No. CS6 to determine the size of protrusions. The test results shall meet the requirements of AEIC No. CS6.

- D. Certification shall be provided to show that test samples of cable insulated with the same insulating system as that to be supplied have been subjected to and passed the following test:

As described in ICEA S-68-516, Paragraph 6.23.3, with the energy source equal to a minimum of 250 volts/mil of insulation thickness, cable shall withstand this test for a minimum of 200 hours without failure. EPR cables employing single or double extrusions must apply this test and withstand it for a minimum of 200 hours. However, EPR cables employing triple tandem extrusion need not comply with this test.

The tests shall be made on #2 (7 stranded) AWG copper conductor insulated with an inner stress control layer and 115 mil minimum average wall of insulating material.

- E. The conductor resistance and shield continuity shall be measured on each shipping

length of cable and recorded. Each end of every shipping length shall also be inspected for water in strands and checked dimensionally for conformance with the above standards.

- F. Each length of completed cable on the shipping reel shall be tested dry and shall pass an AC voltage withstand test applied for 1 minute at a test voltage of 9 KV, and dc voltage test at 31KV.
- G. The insulation resistance shall again be measured according to the criteria stated above.
- H. The Engineer reserves the right to witness all tests. Schedule of testing to be provided to the Owner two weeks before the test date.
- I. Visual examination of both ends of every shipping length of cable shall be made to assure that no water is in the completed cable when shipped.
- J. Test Reports - Indicate results of cable test in tabular form and in plots of current versus voltage for incremental voltage steps, and current versus time at 30-second intervals at maximum voltage.

#### 1.7 QUALIFICATIONS

- A. All manufacturers shall have a minimum successful track record in production and use of their materials as proposed as follows:
  - 1. Cable - 20 years.
  - 2. Terminations - 10 years.
  - 3. Splices - 10 years.
- B. Any workers performing splices or terminations on high voltage cable shall have a minimum of 10 years of experience.
- C. Contractor shall submit manufacturer's and splicer's experience as specified above including references to projects completed. Five installations shall be provided and considered only if no failures have occurred.

#### 1.8 CABLE APPROVAL

- A. Submit the following for final approval:
  - 1. Cable manufacturers certified test data, including full documentation package.
  - 2. Two 2-foot samples of each cable, taken from reels at job site prior to installation. Reseal cable on reel. Additional samples may be required

during the contract period. Include the following additional information on the sample labels; the maximum voltage at which the conductor is designed to be used, date of manufacturer. Certify ethylene content if EPR cable is furnished.

3. Samples of all splicing and termination materials. Samples of complete kits will be returned and if approved may be used in the work. Samples shall include a full roll of all tapes in original box or container, with the date of manufacture indicated thereon, other materials in sufficient quantity to construct a complete splice and labeled for identification, entire factory packaged kit if splice or termination is of the kit type. Provide three spare splice kits of each type to Owner.
4. Written statement from cable manufacturer indicating recommended pulling compounds and pulling tensions.
5. Product Data - Submit manufacturer's catalog sheets for all products.

#### 1.9 QUALITY ASSURANCE

- A. Manufacturer's Representative - Secure the services of cable manufacturer's representative for minimum of three days (not necessarily consecutive) for the consultation on method of installing cable, inspection of equipment for installing cable, witness representative amount of cable pulling, witness construction of at least one splice and one termination by each cable splicer, certify to the Engineer in writing that the aforementioned particulars are satisfactory and the cable has been installed in accordance with cable manufacturer's recommendations.
- B. If the splices or terminations are other than the cable manufacturer's, secure the services of the splice and termination manufacturer's representative to concurrently witness construction of the splices and terminations and also certify with an affidavit that the splices and terminations were constructed in accordance with the splice and termination manufacturer's recommendation.

#### 1.10 TESTING COMPANY

- A. Secure the services of one of the following companies for performing a high voltage after installation test on cables having a rated voltage of 5,000 volts or higher:
  1. Electrical Testing Laboratories, 2 East End Avenue, New York, NY 10021 (212) 288-2600.
  2. General Electric Co., Installation and Service Engineering Div., 3532 James Street, P.O. Box 1021, Syracuse, NY 13201, (315) 456-7718.
  3. Westinghouse Electric Corp., Apparatus Service Center, P.O. Box 270, Utica, NY 13503, (315) 736-3021.

4. Advanced Testing Systems, Inc., P.O. Box 27, Carmel, NY 10512, (914) 225-3110.
- B. Submit names and addresses for approval of or equal companies.
- C. Third party testing is required.

#### 1.11 MANUFACTURER'S REPRESENTATIVE

- A. The cable manufacturer shall designate a manufacturer's representative to ensure compliance with the provisions of the warranty specified in Article 1.12. The manufacturer's representative shall be designated by full name, title, business address, and telephone number. In the event of any change in representation, the manufacturer shall notify the Owner in writing as follows: \_\_\_\_\_.

#### 1.12 HIGH VOLTAGE CABLE WARRANTY

- A. The cable manufacturer shall warranty the cable and installation as follows:

The cable manufacturer \_\_\_\_\_ (state manufacturer name) warrants solely to the County of Westchester, its successors and assigns, hereinafter collectively known as "Purchaser," that any wire or cable of its own manufacture ("Product") supplied for Project No. 17-519 Blue Mountain Reservation Site Work Improvements (project description) will be free from defects in material and workmanship provided the wire and cable is employed under conditions contemplated and covered by the design specifications, and provided further that the wire and cable is installed, spliced, terminated, maintained and operated in accordance with the manufacturers recommended standards and procedures.

If a product fails electrically while in service, Purchaser shall notify the manufacturer within five (5) days of the discovery of such failure, and shall permit a representative of the manufacturer a reasonable opportunity to inspect the Product. If the failure is the result of defective material or workmanship, the manufacturer's sole responsibility under this warranty shall be to repair or replace the defective Product, the choice of which will be at the manufacturer's option. If the manufacturer chooses to replace the defective Product, the new Product will be delivered free of charge to the above noted project site.

THE FOREGOING WARRANTY SUPPLEMENTS ALL OTHER WARRANTIES. THIS WARRANTY SHALL BE EFFECTIVE FOR A PERIOD OF 40 YEARS FROM DATE OF ACCEPTANCE BY PURCHASER.

The manufacturer, in signing this document, additionally declares that they have inspected all installations, splices, terminations, tests, etc. and have deemed the installation acceptable. Any further testing by the purchaser will also be witnessed by the manufacturer.



This warranty is executed by an employee of the manufacturer with full authority to bind the manufacturer to the terms hereof.

_____	_____	_____
Name	Title	Date

Notary Public and Corporate Seal Required

**1.13 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, store, protect, and handle products to site.
- B. Accept cable and accessories on site in manufacturer's packaging. Inspect for damage.
- C. Store and protect in accordance with manufacturer's instructions.
- D. Protect from weather. Provide adequate ventilation to prevent condensation. Protect cable ends from moisture.

**1.14 PROJECT CONDITIONS**

- A. Verify that field measurements are as shown on Drawings.
- B. Verify routing and termination locations of cable bank prior to rough-in.
- C. Cable routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

**PART 2 - PRODUCTS**

**2.1 MANUFACTURERS**

- A. Kerite.
- B. Okonite.

**2.2 CABLES**

- A. One single conductor cable making up a single-phase circuit, unless otherwise indicated on the Drawings. Each cable shall consist of a copper conductor, semiconducting layer, insulation, semiconducting layer, concentric neutral as required by local utility, jacket separator, if required and outer jacket. Grounding wire shall be 600 volt insulated copper wire, Type XHHW.

**2.3 CABLE CONSTRUCTION**

- A. Cables shall be single conductors, concentric neutral, and jacketed. Keep ends of cables sealed at all times, except when making splices or terminations. Use heat shrinkable plastic end caps with sealant as manufactured by Raychem Corp., Thomas & Betts Co., or other methods approved by cable manufacturer. Cable shall be UL listed, Type MV-105, and comply with U.L. 1072 medium voltage cable.
- B. Marking and Tagging - Mark and tag cables for delivery to the site. Entire length of cable shall be color labeled or color coded.

- C. Date of Manufacture - No insulated cable over one year old, from date of manufacture when installed, will be acceptable.
- D. Conductor
  - 1. The copper wire to be used for stranding shall be annealed uncoated in accordance with ASTM B3 and B8.
  - 2. Central conductor shall be Class B concentric copper in accordance with the current ASTM Standard B-8.
  - 3. The conductor sizes shall be from 2 AWG up to 1000 kcmil.
- E. Insulation shall be as follows:
  - 1. Kerite insulated conductors shall be rated 5KV between phases, ungrounded, 133 percent insulation level, Permashield insulation system shall consist of a permashield and a high temperature kerite (HTK) insulation, insulation shield, copper tape shield minimum 5.0 mils thick or concentric neutral as required by local utility, uncoated, fabric separator tape over metal tape shield as required, outer heavy duty black jacket. Kerite insulated cable shall meet the intent for testing cables per ICEA S-68-516/NEMA WC-8. Manufacturer shall be Kerite Company, a subsidiary of Hubbel Corporation.

OR

EPR insulated conductors shall be rated 5 KV between phases, ungrounded 133 percent insulation level, insulation shall be a high-quality, heat, moisture, impact and ozone-resistant flexible thermosetting ethylene-propylene rubber based elastomer. The content of the elastomer used in the insulation compound shall not exceed 72 percent by weight of ethylene. The insulation shall be concentrically extruded directly over the semiconducting conductor shield.

- 2. All insulations must be compounded and mixed by the cable manufacturer in its own facilities to ensure maximum control and continuity of quality.

The insulation thickness on all conductor sizes 2 AWG through 1000 kcmil shall be 115 mils, and a minimum at any one point shall not be less than 90 percent of this value.

The insulation shield shall be an extruded semiconducting compound with a volume resistivity not in excess of 500 ohm-meters at 90 degrees when tested per AEIC No. CS6. The insulation shield shall also be an EPR, clean stripped and shall have a peel strength from the insulation between 6 and 24 lbs./0.5 inch width when tested per AEIC No. CS6. Kerite insulated cables shall employ single extrusions while EPR cables shall be triple tandem extruded for conductor shield, insulation, and insulation shield.

Cables shall utilize a concentric neutral as required by local utility.

3. Cross-linked polyethylene insulated cables will not be accepted.
- F. Jacket - The overall jacket over the concentric neutral shall be heavy duty black Hypalon accepted by local utility in accordance with ICEA S-68-516 (NEMA WC-8). The jacket thickness on complete size range from 2 AWG up to 500 kcmils shall be 80 mils and 110 mils for larger conductors.
- G. The conductor temperatures shall not exceed 90 degrees C (194 degrees F) under normal operating temperature, 130 degrees C (266 degrees F) for emergency overload, and 250 degrees C (482 degrees F) for short circuit conditions.
- H. Listing Agency - Cable types for which UL provides product listing service shall be listed and bear the listing mark.

## 2.4 TERMINATIONS

- A. Provide cable manufacturer's terminations. If cable manufacturer does not fabricate terminations, provide terminations by one of the manufacturers listed below if acceptable to the cable manufacturer. All materials shall be the standard product of one manufacturer. Ampere rating of termination shall not be less than ampere rating of cable. Voltage rating of termination shall not be less than voltage rating of cable.
- B. Terminations
  1. Elastimold elbow with test point and shield adapter.
  2. G&W Slip-On Terminators.
  3. Cooper Deadbreak Elbows, feed throughs and underground connection systems.
  4. RTE.
  5. Mac Products.
- C. Hand-applied terminations shall be 166CR elbow with test point and with voltage rated stress cones.

## 2.5 SPLICES

- A. The high voltage cable splice shall be a factory engineered kit containing all necessary components to reinsulate the primary cable installation, metallic shielding/grounding system and overall jacket.
- B. Each splice shall consist of a linear stress relief system with a high outer conductive layer for shielding.

- C. Each splice shall pass the following electrical tests IEEE-48-1975, and IEEE-404-1986 and shall pass ANSI-C 119.2-1974 water immersion test. The splice manufacturer shall provide test reports demonstrating compliance with the above requirements.
- D. All splices shall have the following ratings:
  - 1. Voltage Class 5KV.
  - 2. Minimum corona extinction voltage less than or equal to 3pc at 4 KV, for EPR cables.
    - a. AC With Stand      1 minute      9 KV
    - b. DC With Stand      15 minutes      25 KV
    - c. Impulse With Stand      1.2 x 50      37 KV, microseconds
  - 3. Continuous current rating equal to cable capacity.
- E. Furnish splices of type that are capable of being disconnected, deadened, or reconnected at future times without destruction to original splices. All materials shall be the standard product of one manufacturer. Ampere rating of splice shall not be less than ampere rating of cable. Field made epoxy-resin units are not acceptable. Provide one set of special tools required for the assembly of premolded splices to facility.
- F. All Applications
  - 1. Elastimold premolded splices.
  - 2. G & W Electric Specialty Co. Universal Splice System.
  - 3. Raychem Thermofit Heat-Shrinkable High Voltage Termination System.
- G. All splice kits to be approved by cable manufacturers.

## 2.6 POTHEADS

- A. Manufacturers
  - 1. G&W.
  - 2. A.B. Chance Company
- B. Description - IEEE 48; Class 1 termination. Pothead with porcelain insulators, cable connector and aerial lug, sealed cable entrance and support, and insulating compound.

- C. Conductors - One.

## 2.7 TAGS

- A. Phenolic Type - Standard phenolic nameplates with 3/8-inch minimum size lettering engraved thereon.
- B. Embossed Aluminum - Standard stamped or embossed aluminum tags. Tech Products, Inc., Seton Name Plate Corp.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Provide and install all high voltage cables with all connections complete, as specified herein and as indicated on the Drawings.
- B. Install cables in conduit after conduit system is complete and cleaned.
- C. Keep ends of cables sealed watertight at all times, except when making splices and terminations.
- D. No grease, oil, lubricant other than approved pulling compound may be used to facilitate the pulling-in of cables.
- E. Use pulling eye factory installed to conductor(s) for pulling in cables. Cable grip will not be allowed. Seal pulling eye attachment watertight.
- F. Pull all cables with a dynamometer or strain gauge incorporated into the pulling equipment. Do not pull cables unless the designated representative is present to observe readings on the dynamometer or strain gauge during the time of actual pulling. Total strain shall not exceed manufacturer's recommendations.
- G. Splice and terminate primary cables in accordance with manufacturers approved installation instructions. Ground shield at all splices and terminations. Incorporate solder dam or other method to prevent moisture from entering splices through grounding conductor.
- H. Arc Proofing - Arc proof new feeders installed in manholes where splices occur, arc proof each feeder as a unit with half-lapped layer of arc proofing tape and random wrapped or laced with glass cloth tape or glass-fiber cord.
- I. Identification of Feeders - Identify feeders in manholes, pullboxes and in equipment to which they connect with phenolic or embossed aluminum tags:
- J. Install tags on each insulated conductor indicating phase leg. Attach tags with non-ferrous metal wire. Install phase leg tags under arc proofing tapes. Install tags on

each feeder indicating feeder number, date installed, (month, year), type of cable, voltage rating, size, and manufacturer. Attach tags so that they are easily read without moving adjacent feeders or requiring removal of arc proofing tapes.

- K. High Voltage After Installation Test - Perform test after cable has been installed complete with all splicing, bonding, etc., and prior to placing cable into service. Perform test with potential and duration specified by the manufacturer after approval of manufacturers certified test data. Test methods shall be in accordance with latest applicable ICEA and AEIC Specification. Do not make tests until test voltages and duration have been specified in writing by the manufacturer. List results of the tests on standard form supplied by the testing company. Leakage during test shall be read on a micro-ammeter. Perform test in the presence of the designated representative. Send results to Engineer and manufacturer for approval and designated representative for informational purposes.
- L. Avoid abrasion and other damage to cables during installation.
- M. Sustain cable pulling tensions and bending radii below manufacturer's recommended limits.
- N. Ground cable shield at each termination and splice.
- O. Install cables in manholes along wall providing longest route.
- P. Arrange cable in manholes to avoid interference with duct entrances.
- Q. Use suitable manufacturer-approved lubricants and pulling equipment.

### 3.2 PREPARATION

- A. Use swab to clean conduits and ducts before pulling cables.

### 3.3 EXISTING WORK

- A. Remove abandoned medium-voltage cable, install pull rope.

### 3.4 INSTALLATION TESTING

- A. Sample Field Test Instructions - Direct current acceptance tests on cable after installations (Hi-Potential Proof Test).
- B. After installation and prior to connecting into service, test cables with a direct potential of 9KV for 15 consecutive minutes.
- C. Test Procedure
  - 1. Set up test equipment. Do not connect test lead to cables, but temporarily hang the lead free with a plastic bag over the clip. Raise the voltage to the

same final level at which the cables are to be tested. The leakage current seen on the DC meter is leakage in the test lead, and should be subtracted from the readings taken later during the cable test. Shut the set off and discharge the lead.

2. Clear the circuit of any connected equipment so as to preclude damage to such equipment during the test, i.e., remove pothead taps, disconnect transformers, accessible switch taps, etc.
3. Seal and protect cable ends from moisture to prevent high leakage readings.
4. Check that adequate clearance exists between the circuit ends under test and ground and to other equipment to prevent flashovers.
5. Megger cable with minimum 1,000 volts.
6. Perform insulation resistance test phase to phase and phase to ground on all cables. If satisfactory, proceed with current leakage test.
7. Ground circuit phases not under test.
8. Apply the direct current voltage slowly, increasing in steps of 3 KV. Record the micro-ampere leakage at each step. When the specified test voltage is reached, record current leakage at required durations on current leakage test chart.
9. Reduce test voltage control to zero. Permit residual voltage on circuit to reduce to about 50 to 20 percent of test value before discharging by application of manual grounds.
10. Repeat Steps 4 to 9 for remainder of phases of each feeder to be tested.
11. It should be recognized that DC charges remaining on a cable can build up to potentially dangerous voltages if grounds have not been applied for a sufficient length of time. The cable shall remain grounded for as long a period as possible, but in no case for less than one hour.
12. Copies of all hi-potential proof tests shall be sent to the following parties within three working days after the test via first class mail.
  - a. Engineer.
  - b. Facility superintendent.
  - c. Cable manufacturer.

D. If the cable does not pass any of the tests, the contractor and manufacturer shall remedy the situation and/or replace defective cable. If not, installation will not be accepted.



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- E. An additional high potential proof test will be required one month before one year has passed since original acceptance. Test results shall be sent to Owner for approval.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 26 05 19**

**LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Copper building wire rated 600 V or less.
  - 2. Connectors, splices, and terminations rated 600 V and less.

**1.2 ACTION SUBMITTALS**

- A. Product Data: For each type of product.

**PART 2 - PRODUCTS**

**2.1 COPPER BUILDING WIRE**

- A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Belden Inc.
  - 2. General Cable Technologies Corporation.
  - 3. Southwire Company.
- C. Standards:
  - 1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
  - 2. RoHS compliant.
  - 3. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."
- D. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B496 for stranded conductors.

E. Conductor Insulation:

1. Type XHHW-2: Comply with UL 83.
2. Color Code all insulations for Black, Red, White, and Green.

2.2 CONNECTORS AND SPLICES

- A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AFC Cable Systems; a part of Atkore International.
  2. Gardner Bender.
  3. Service Wire Co.
- C. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.
1. Material: Copper.
  2. Type: Two hole with standard barrels.
  3. Termination: Compression.

**PART 3 - EXECUTION**

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper; solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Feeders: Copper for all feeders.
- C. Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.

3.2 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.

- B. Complete raceway installation between conductor and cable termination points according to Section 26 05 33 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.
- C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- E. Support cables according to Section 26 05 29 "Hangers and Supports for Electrical Systems."

### 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-486B.
- B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

### 3.4 IDENTIFICATION

- A. Identify and color-code conductors and cables according to Section 26 05 53 "Identification for Electrical Systems."
- B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

### 3.5 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies.

### 3.6 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly as required.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 26 05 26**

**GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section includes grounding and bonding systems and equipment.
- B. Section includes grounding and bonding systems and equipment, plus the following special applications:

**1.2 ACTION SUBMITTALS**

- A. Product Data: For each type of product.

**1.3 INFORMATIONAL SUBMITTALS**

- A. Coordination Drawings: Plans showing dimensioned as-built locations of grounding features specified in "Field Quality Control" Article.
- B. Qualification Data: For testing agency and testing agency's field supervisor.

**1.4 CLOSEOUT SUBMITTALS**

- A. Operation and maintenance data.
  - 1. Plans showing as-built, dimensioned locations of grounding features specified in "Field Quality Control" Article, including the following:
    - a. Ground rods.
  - 2. Instructions for periodic testing and inspection of grounding features at ground rings grounding connections for separately derived systems based on NETA MTS and NFPA 70B.
    - a. Tests shall determine if ground-resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if values do not.
    - b. Include recommended testing intervals.

**1.5 QUALITY ASSURANCE**

- A. Testing Agency Qualifications: Certified by NETA.

## **PART 2 - PRODUCTS**

### **2.1 SYSTEM DESCRIPTION**

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

### **2.2 MANUFACTURERS**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Burndy; Part of Hubbell Electrical Systems.
  - 2. Siemens Industry, Inc., Energy Management Division.

### **2.3 CONDUCTORS**

- A. Insulated Conductors: Copper wire or cable insulated for 600 V shall be colored green unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
  - 1. Solid Conductors: ASTM B 3.
  - 2. Stranded Conductors: ASTM B 8.
  - 3. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter.
  - 4. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
  - 5. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.
  - 6. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

### **2.4 CONNECTORS**

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.



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- B. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions for ground rods.
- C. Bus-Bar Connectors: Mechanical type, cast silicon bronze, solderless compression type wire terminals, and long-barrel, two-bolt connection to ground bus bar.
- D. Bus-Bar Connectors: Compression type, copper or copper alloy, with two wire terminals.
- E. Beam Clamps: Mechanical type, terminal, ground wire access from four directions, with dual, tin-plated or silicon bronze bolts.
- F. Cable-to-Cable Connectors: Compression type, copper or copper alloy.
- G. Cable Tray Ground Clamp: Mechanical type, zinc-plated malleable iron.
- H. Conduit Hubs: Mechanical type, terminal with threaded hub.
- I. Lay-in Lug Connector: Mechanical type, copper rated for direct burial terminal with set screw.
- J. Service Post Connectors: Mechanical type, bronze alloy terminal, in short- and long-stud lengths, capable of single and double conductor connections.
- K. Signal Reference Grid Clamp: Mechanical type, stamped-steel terminal with hex head screw.
- L. U-Bolt Clamps: Mechanical type, copper or copper alloy, terminal listed for direct burial.
- M. Water Pipe Clamps:
  - 1. Mechanical type, two pieces with zinc-plated bolts.
    - a. Material: Die-cast zinc alloy.
    - b. Listed for direct burial.
  - 2. U-bolt type with malleable-iron clamp and copper ground connector.

2.5 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad steel , sectional type; 5/8 inch by 10 feet.
- B. Ground Plates: 1/4 inch (6 mm) thick, hot-dip galvanized.

## **PART 3 - EXECUTION**

### **3.1 APPLICATIONS**

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.
- B. Underground Grounding Conductors: Install insulated copper conductor.
  - 1. Bury at least 24 inches (600 mm) below grade.
- C. Conductor Terminations and Connections:
  - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
  - 2. Underground Connections: Welded connectors and as otherwise indicated.
  - 3. Connections to Structural Steel: Welded connectors.

### **3.2 GROUNDING AT THE SERVICE**

- A. Equipment grounding conductors and grounding electrode conductors shall be connected to the ground bus. Install a main bonding jumper between the neutral and ground buses.

### **3.3 GROUNDING SEPARATELY DERIVED SYSTEMS**

- A. Generator and Transformers: Install grounding electrode(s) at the transformers and generator locations. The electrode shall be connected to the equipment grounding conductor and to the frame of the generator and transformer. For generator locations, use the connection receptacle location as the approximate location of the generator for use by the owner.

### **3.4 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS**

- A. Comply with IEEE C2 grounding requirements.
- B. Grounding Manholes: Install a driven ground rod through manhole, close to wall, and set rod depth so 4 inches (100 mm) will extend above finished floor. If necessary, install ground rod before manhole is placed and provide No. 1/0 AWG bare, tinned-copper conductor from ground rod into manhole through a waterproof sleeve in manhole wall. Protect ground rods passing through concrete floor with a double wrapping of pressure-sensitive insulating tape or heat-shrunk insulating sleeve from 2 inches (50 mm) above to 6 inches (150 mm) below concrete. Seal floor opening with waterproof, nonshrink grout.
- C. Grounding Connections to Manhole Components: Bond exposed-metal parts such as inserts, cable racks, pulling irons, ladders, and cable shields within each

manhole or handhole, to ground rod or grounding conductor. Make connections with No. 4 AWG minimum, stranded, hard-drawn copper bonding conductor. Train conductors level or plumb around corners and fasten to manhole walls. Connect to cable armor and cable shields according to written instructions by manufacturer of splicing and termination kits.

- D. Pad-Mounted Transformers and Switches: Install two ground rods and ground ring around the pad. Ground pad-mounted equipment and noncurrent-carrying metal items associated with substations by connecting them to underground cable and grounding electrodes. Install tinned-copper conductor not less than No. 2 AWG for ground ring and for taps to equipment grounding terminals. Bury ground ring not less than 6 inches (150 mm) from the foundation.

### 3.5 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits.
- B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
  - 1. Feeders and branch circuits.
  - 2. Receptacle circuits.
  - 3. Single-phase motor and appliance branch circuits.
  - 4. Flexible raceway runs.

### 3.6 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Ground Rods: Drive rods until tops are 2 inches (50 mm) below finished floor or final grade unless otherwise indicated.
  - 1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
- C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
  - 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.

2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
3. Use exothermic-welded connectors for outdoor locations.

D. Grounding and Bonding for Piping:

1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use a bolted clamp connector or bolt a lug-type connector to a pipe flange by using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.

3.7 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at individual ground rods. Make tests at ground rods before any conductors are connected.
  - a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
  - b. Perform tests by fall-of-potential method according to IEEE 81.
4. Prepare dimensioned Drawings locating each ground rod and ground-rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location, and include

observations of weather and other phenomena that may affect test results.  
Describe measures taken to improve test results.

- B. Grounding system will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.
- D. Report measured ground resistances that exceed the following values: 5 ohms.
- E. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer. promptly and include recommendations to reduce ground resistance.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 26 05 29**

**HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

**A. Section Includes:**

1. Steel slotted support systems.
2. Conduit and cable support devices.
3. Support for conductors in vertical conduit.
4. Structural steel for fabricated supports and restraints.
5. Mounting, anchoring, and attachment components, including powder-actuated fasteners, mechanical expansion anchors, concrete inserts, clamps, through bolts, toggle bolts, and hanger rods.
6. Fabricated metal equipment support assemblies.

**1.2 ACTION SUBMITTALS**

**A. Product Data:** For each type of product.

**B. Shop Drawings:** For fabrication and installation details for electrical hangers and support systems.

1. Hangers. Include product data for components.
2. Slotted support systems.
3. Equipment supports.
4. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment. Include adjustable motor bases, rails, and frames for equipment mounting.

**C. Delegated-Design Submittal:** For hangers and supports for electrical systems.

1. Include design calculations and details of hangers.
2. Include design calculations for seismic restraints.

### 1.3 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, and coordinated with each other, using input from installers of the items involved.
- B. Seismic Qualification Data: Certificates, for hangers and supports for electrical equipment and systems, accessories, and components, from manufacturer.
- C. Welding certificates.

### 1.4 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1/D1.1M.
  - 2. AWS D1.2/D1.2M.

## **PART 2 - PRODUCTS**

### 2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Hangers and supports shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
  - 1. The term "withstand" means "the supported equipment and systems will remain in place without separation of any parts when subjected to the seismic forces specified and the supported equipment and systems will be fully operational after the seismic event".
  - 2. Component Importance Factor: 1.5
- B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Flame Rating: Class 1.
  - 2. Self-extinguishing according to ASTM D 635.

### 2.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.



- B. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for nonarmored 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 made of malleable iron.
- C. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M steel plates, shapes, and bars; black and galvanized.
- 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.
  - 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 where used.
  - 3. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
  - 4. Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are 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.
  - 7. Hanger Rods: Threaded steel.

## 2.3 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

## PART 3 - EXECUTION

### 3.1 APPLICATION

- A. Comply with the following standards for application and installation requirements of hangers and supports, except where requirements on Drawings or in this Section are stricter:
  - 1. NECA 1.

2. NECA 101
  3. NECA 102.
  4. NECA 105.
  5. NECA 111.
- B. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping materials and installation for penetrations through fire-rated walls, ceilings, and assemblies.
- C. Comply with requirements for raceways and boxes specified in Section 260533 "Raceways and Boxes for Electrical Systems."
- D. Maximum Support Spacing and Minimum Hanger Rod Size for Raceways: Space supports for EMT per NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.
- E. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
- F. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch (38-mm) and smaller raceways serving branch circuits and communication systems and for fastening raceways to trapeze supports.

### 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. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.

**END OF SECTION**

## **SECTION 26 05 33**

### **RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Metal conduits and fittings.
  - 2. Handholes and boxes for exterior underground cabling.

##### **1.2 ACTION SUBMITTALS**

- A. Product Data: For each type of product.

##### **1.3 INFORMATIONAL SUBMITTALS**

- A. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved:
  - 1. Structural members in paths of conduit groups with common supports.
- B. Seismic Qualification Data: Certificates, for enclosures, cabinets, and conduit racks and their mounting provisions, including those for internal components, from manufacturer.

#### **PART 2 - PRODUCTS**

##### **2.1 METAL CONDUITS AND FITTINGS**

- A. Metal Conduit:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. AFC Cable Systems; a part of Atkore International.
    - b. Allied Tube & Conduit; a part of Atkore International.
    - c. NEC, Inc.

2. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
  3. GRC: Comply with ANSI C80.1 and UL 6.
  4. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.
- B. Metal Fittings: Comply with NEMA FB 1 and UL 514B.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Allied Tube & Conduit; a part of Atkore International.
    - b. Calconduit.
    - c. FSR Inc.
  2. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
  3. Fittings, General: Listed and labeled for type of conduit, location, and use.
  4. Fittings for EMT:
    - a. Material: Steel
    - b. Compression.
  5. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.

## 2.2 BOXES, ENCLOSURES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Crouse-Hinds, an Eaton business.
  2. Hubbell Incorporated; Wiring Device-Kellems.
  3. Wiremold / Legrand.
- B. General Requirements for Boxes, Enclosures: Boxes, enclosures installed in wet locations shall be listed for use in wet locations.

- C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- D. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- E. Box extensions used to accommodate new building finishes shall be of same material as recessed box.
- F. Device Box Dimensions: Refer to floor plans for exact device dimensions.
- G. Gangable boxes are allowed.

## 2.3 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

- A. General Requirements for Handholes and Boxes:
  - 1. Boxes and handholes for use in underground systems shall be designed and identified as defined in NFPA 70, for intended location and application.
  - 2. Boxes installed in wet areas shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

## PART 3 - EXECUTION

### 3.1 RACEWAY APPLICATION (CON ED = HDPE) PRIOR TO METER.

- A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
  - 1. Exposed Conduit: Rigid Steel
  - 2. Concealed Conduit, Aboveground: Rigid Steel.
  - 3. Underground Conduit: RNC, HDPE, concrete encased. Rigid Steel for branch circuits not concrete encased.
  - 4. Connection to Vibrating Equipment (Including Transformers and Motor-Driven Equipment). Liquid tight flexible metal conduit with ground.
  - 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 4XSS.
- B. Indoors: Apply raceway products as specified below unless otherwise indicated.
  - 1. Exposed, Not Subject to Physical Damage: Rigid Steel
  - 2. Exposed, Not Subject to Severe Physical Damage: Rigid Steel

3. Connection to Vibrating Equipment (Including Transformers, Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
  4. Damp or Wet Locations: GRC
  5. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4XSS in institutional and commercial kitchens and damp or wet locations.
- C. Minimum Raceway Size: 3/4-inch trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
1. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20. Coordinate first paragraph below with Drawings.

### 3.2 INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies.
- B. 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.
- C. Comply with requirements in Section "Hangers and Supports for Electrical Systems" for hangers and supports.
- D. Arrange stub-ups so curved portions of bends are not visible above finished slab.
- E. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches (300 mm) of changes in direction.
- F. Conceal conduit within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- G. Support conduit within 12 inches ((300 mm)) of enclosures to which attached.
- H. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- I. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.

- J. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch (35-mm) trade size and insulated throat metal bushings on 1-1/2-inch (41-mm) trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.
- K. 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. Cap underground raceways designated as spare above grade alongside raceways in use.
- L. Expansion-Joint Fittings:
  - 1. Install in each run of aboveground raceway that is located where environmental temperature change may exceed 30 deg F (17 deg C) and that has straight-run length that exceeds 25 feet (7.6 m).
  - 2. Install type and quantity of fittings that accommodate temperature change listed for each of the following locations:
    - a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F (70 deg C) temperature change.
    - b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F (86 deg C) temperature change.
    - c. Indoor Spaces Connected with Outdoors without Physical Separation: 125 deg F (70 deg C) temperature change.
  - 3. Install fitting(s) that provide expansion and contraction.
  - 4. Install expansion fittings at all locations where conduits cross building or structure expansion joints.
  - 5. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.
- M. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches (1830 mm) of flexible conduit for PUMPS subject to vibration, noise transmission, or movement; and for transformers and motors.
- N. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
- O. Locate boxes so that cover or plate will not span different building finishes.

- P. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.
- Q. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

### 3.3 INSTALLATION OF UNDERGROUND CONDUIT

#### A. Direct-Buried Conduit, Coordinate with General Contract:

1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom for pipe less than 6 inches (150 mm) in nominal diameter.
2. After installing PVC conduit concrete encase with red dyed concrete and backfill and compact. Finish to match original condition. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches (300 mm) of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction.
3. Install manufactured PVC coated steel elbows for stub-up at poles and equipment and at building entrances through floor unless otherwise indicated. Encase elbows for stub-up ducts throughout length of elbow.
- . Underground Warning Tape: Comply with requirements in Section 26 05 53 "Identification for Electrical Systems."

### 3.4 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies.

### 3.5 FIRESTOPPING

- A. Install firestopping at penetrations of fire-rated floor and wall assemblies.

### 3.6 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
  1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.



2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

**END OF SECTION**

NO TEXT ON THIS PAGE

## **SECTION 26 05 44**

### **SLEEVES AND SLEEVE SEALS FOR ELECTRICAL RACEWAYS AND CABLING**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

**A. Section Includes:**

1. Sleeves for raceway and cable penetration of non-fire-rated construction walls and floors.
2. Sleeve-seal systems.
3. Sleeve-seal fittings.
4. Grout.
5. Silicone sealants.

##### **1.2 ACTION SUBMITTALS**

**A. Product Data:** For each type of product.

#### **PART 2 – PRODUCTS**

##### **2.1 SLEEVES**

**A. Wall Sleeves:**

1. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, zinc coated, plain ends.
2. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop unless otherwise indicated.

**B. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies:** Galvanized-steel sheet; 0.0239-inch (0.6-mm) minimum thickness; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.

**C. Sleeves for Rectangular Openings:**

1. Material: Galvanized sheet steel.
2. Minimum Metal Thickness:

- a. For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and with no side larger than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).
- b. For sleeve cross-section rectangle perimeter 50 inches (1270 mm) or more and one or more sides larger than 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).

## 2.2 GROUT

- A. Description: Nonshrink; recommended for interior and exterior sealing openings in non-fire-rated walls or floors.
- B. Standard: ASTM C 1107/C 1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
- C. Design Mix: 5000-psi (34.5-MPa), 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

## 2.3 SILICONE SEALANTS

- A. 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 that are not fire rated.
- B. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

# PART 3 - EXECUTION

## 3.1 SLEEVE INSTALLATION FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS

- A. Comply with NECA 1.
- B. Comply with NEMA VE 2 for cable tray and cable penetrations.
- C. Sleeves for Conduits Penetrating Above-Grade Non-Fire-Rated Concrete and Masonry-Unit Floors and Walls:
  - 1. Interior Penetrations of Non-Fire-Rated Walls and Floors:
    - a. Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint.

- b. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect material while curing.
  - 2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
  - 3. Size pipe sleeves to provide [1/4-inch (6.4-mm)] annular clear space between sleeve and raceway or cable unless sleeve seal is to be installed.
  - 4. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of walls. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.
- D. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies:
- 1. Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.
  - 2. Seal space outside of sleeves with approved joint compound for gypsum board assemblies.
- E. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- F. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- G. Underground, Exterior-Wall and Floor Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch (25-mm) annular clear space between raceway or cable and sleeve for installing sleeve-seal system.

### 3.2 SLEEVE-SEAL-SYSTEM INSTALLATION

- A. Install sleeve-seal systems in sleeves in exterior concrete walls and slabs-on-grade at raceway entries into building.
- B. Install type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

### 3.3 SLEEVE-SEAL-FITTING INSTALLATION

- A. Install sleeve-seal fittings in new walls and slabs as they are constructed.

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- B. Assemble fitting components of length to be flush with both surfaces of concrete slabs and walls. Position waterstop flange to be centered in concrete slab or wall.
- C. Secure nailing flanges to concrete forms.
- D. Using grout, seal the space around outside of sleeve-seal fittings.

**END OF SECTION**

## **SECTION 26 05 53**

### **IDENTIFICATION FOR ELECTRICAL SYSTEMS**

#### **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. Color and legend requirements for raceways, conductors, and warning labels and signs.
  - 2. Labels.
  - 3. Bands and tubes.
  - 4. Tapes and stencils.
  - 5. Tags.
  - 6. Signs.
  - 7. Cable ties.
  - 8. Fasteners for labels and signs.

##### **1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
- B. Samples: For each type of label and sign to illustrate composition, size, colors, lettering style, mounting provisions, and graphic features of identification products.

#### **PART 2 - PRODUCTS**

##### **2.1 PERFORMANCE REQUIREMENTS**

- A. Comply with ASME A13.1[ and IEEE C2].
- B. Comply with NFPA 70.

- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

## **2.2 COLOR AND LEGEND REQUIREMENTS**

- A. Raceways and Cables Carrying Circuits at 600 V or Less:
  - 1. Black letters on an orange field.
  - 2. Legend: Indicate voltage and system or service type.
- B. Color-Coding for Phase and Neutral Identification, 600 V or Less: Use colors listed below for conductors.
  - 1. Color shall be factory applied.
  - 2. Colors for 240/120-V Circuits:
    - a. Phase A: Black.
    - b. Phase B: Red.
    - c. Neutral : White.
  - 3. Colors for 240-V Circuits:
    - a. Phase A: Black.
    - b. Phase B: Red.
- C. Warning Label Colors:
  - 1. Identify system voltage with black letters on an orange background.
- D. Warning labels and signs shall include, but are not limited to, the following legends:
  - 1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
  - 2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES (915 MM)."
- E. Equipment Identification Labels:



1. Black letters on a white field.

## 2.3 LABELS

- A. Vinyl Wraparound Labels: Preprinted, flexible labels laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.
- B. Snap-around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeves, with diameters sized to suit diameter and that stay in place by gripping action.
- C. Self-Adhesive Wraparound Labels: Preprinted, 3-mil- (0.08-mm-) thick, vinyl flexible label with acrylic pressure-sensitive adhesive.
  1. Self-Lamination: Clear; UV-, weather- and chemical-resistant; self-laminating, protective shield over the legend. Labels sized such that the clear shield overlaps the entire printed legend.
  2. Marker for Labels: Permanent, waterproof, black ink marker recommended by tag manufacturer.
  3. Marker for Labels: Machine-printed, permanent, waterproof, black ink recommended by printer manufacturer.
- D. Self-Adhesive Labels: Vinyl, thermal, transfer-printed, 3-mil- (0.08-mm-) thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for intended use and location.
  1. Minimum Nominal Size:
    - a. 1-1/2 by 6 inches (37 by 150 mm)for raceway and conductors.
    - b. 3-1/2 by 5 inches (76 by 127 mm)for equipment.
    - c. As required by authorities having jurisdiction.
- E. Underground-Line Warning Tape:
  1. Tape:
    - a. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical [and communications ]utility lines.
    - b. Printing on tape shall be permanent and shall not be damaged by burial operations.

- c. Tape material and ink shall be chemically inert and not subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.
- 2. Color and Printing:
  - a. Comply with ANSI Z535.1, ANSI Z535.2, ANSI Z535.3, ANSI Z535.4, and ANSI Z535.5.
  - b. Inscriptions for Red-Colored Tapes: "ELECTRIC LINE, HIGH VOLTAGE"
  - c. Inscriptions for Orange-Colored Tapes: "COMMUNICATIONS CABLE."
- 3. Tag:
  - a. Pigmented polyolefin, bright colored, compounded for direct-burial service.
  - b. Width: 3 inches (75 mm).
  - c. Thickness: 4 mils (0.1 mm).
  - d. Weight: 18.5 lb/1000 sq. ft. (9.0 kg/100 sq. m).
  - e. Tensile according to ASTM D 882: 30 lbf (133.4 N) and 2500 psi (17.2 MPa).

## **2.4 TAGS**

- A. Write-on Tags:
  - 1. Polyester Tags: 0.015 inch (0.38 mm) thick, with corrosion-resistant grommet and cable tie for attachment.
  - 2. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.
  - 3. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

## **2.5 CABLE TIES**

- A. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.
  - 1. Minimum Width: 3/16 inch (5 mm).

2. Tensile Strength at 73 Deg F (23 Deg C) according to ASTM D 638: 12,000 psi (82.7 MPa).
3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
4. Color: Black.

## **2.6 MISCELLANEOUS IDENTIFICATION PRODUCTS**

- A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Retain paint system applicable for surface material and location (exterior or interior).
- B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.
- B. Install identifying devices before installing acoustical ceilings and similar concealment.
- C. Verify identity of each item before installing identification products.
- D. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.
- E. Apply identification devices to surfaces that require finish after completing finish work.
- F. Install signs with approved legend to facilitate proper identification, operation, and maintenance of electrical systems and connected items.
- G. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.
- H. System Identification for Raceways and Cables under 600 V: Identification shall completely encircle cable or conduit. Place identification of two-color markings in contact, side by side.

1. Secure tight to surface of conductor, cable, or raceway.
- I. System Identification for Raceways and Cables over 600 V: Identification shall completely encircle cable or conduit. Place adjacent identification of two-color markings in contact, side by side.
1. Secure tight to surface of conductor, cable, or raceway.
- J. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from the floor.
- K. Vinyl Wraparound Labels:
1. Secure tight to surface at a location with high visibility and accessibility.
  2. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to the location and substrate.
- L. Snap-around Labels: Secure tight to surface at a location with high visibility and accessibility.
- M. Self-Adhesive Wraparound Labels: Secure tight to surface of raceway or cable at a location with high visibility and accessibility.
- N. Self-Adhesive Labels:
1. On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
  2. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high label; where two lines of text are required, use labels 2 inches (50 mm) high.
- O. Snap-around Color-Coding Bands: Secure tight to surface at a location with high visibility and accessibility.
- P. Heat-Shrink, Preprinted Tubes: Secure tight to surface at a location with high visibility and accessibility.
- Q. Marker Tapes: Secure tight to surface at a location with high visibility and accessibility.
- R. Self-Adhesive Vinyl Tape: Secure tight to surface at a location with high visibility and accessibility.
1. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches (150 mm) where splices or taps are

made. Apply last two turns of tape with no tension to prevent possible unwinding.

- S. Tape and Stencil: Comply with requirements in painting Sections for surface preparation and paint application.
- T. Floor Marking Tape: Apply stripes to finished surfaces following manufacturer's written instructions.
- U. Underground Line Warning Tape:
  - 1. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 6 to 8 inches (150 to 200 mm) below finished grade. Use multiple tapes where width of multiple lines installed in a common trench exceeds 16 inches (400 mm) overall.
  - 2. Install underground-line warning tape for cables in raceways.
- V. Write-on Tags:
  - 1. Place in a location with high visibility and accessibility.
  - 2. Secure using UV-stabilized cable ties.
- W. Cable Ties: General purpose, for attaching tags, except as listed below:
  - 1. Outdoors: UV-stabilized nylon.
  - 2. In Spaces Handling Environmental Air: Plenum rated.

### **3.2 IDENTIFICATION SCHEDULE**

- A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.
- B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.
- C. junction boxes, manholes, and handholes, use snap-around color-coding bands to identify the phase.
  - 1. Locate identification at changes in direction, at penetrations of walls and floors, at 50-foot (15-m) maximum intervals in straight runs, and at 25-foot (7.6-m) maximum intervals in congested areas.
- D. Locations of Underground Lines: Underground-line warning tape for power, lighting, communication, and control wiring.

- E. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power: Self-adhesive equipment labels.
  - 1. Apply to exterior of door, cover, or other access.
  - 2. For equipment with multiple power or control sources, apply to door or cover of equipment, including, but not limited to, the following:
    - a. Power-transfer switches.
    - b. Controls with external control power connections.
- F. Equipment Identification Labels:
  - 1. Indoor Equipment: Self-adhesive label.
  - 2. Outdoor Equipment: Laminated acrylic.

**END OF SECTION**

**SECTION 26 08 00**

**TESTING AND INSPECTION**

**PART 1 GENERAL**

**1.1. SCOPE**

- A. Electrical power distribution and control circuit testing.

**1.2. SUBMITTALS**

- A. Submit test records and reports for all testing.

**1.3. CERTIFICATION OF TESTING**

- A. Perform all tests in the presence of a duly authorized representative of the Owner unless waived in writing by the Engineer. When the presence of such representative is so waived, certified results of the tests made and the results thereof shall be furnished by the Contractor.
- B. Perform all tests in the presence of the Engineer. Give the Engineer written notice of all tests at least two weeks in advance.

**1.4. TEST EQUIPMENT**

- A. Furnish all instruments and a qualified engineer to properly perform all tests required.

**1.5. FACTORY TRAINED SUPERVISION**

- A. Provide necessary factory trained supervision to check over equipment for proper functioning before putting the equipment into operation as may be required by these specifications. This shall include establishing a simulated fault on checking out the coordination of the protective devices.
- B. Make necessary adjustments and testing in cooperation with the respective manufacturers and other Contractors when necessary. Perform all tests in accordance with the latest standards of the ANSI, IPCEA, IEEE and NEMA.

**1.6. COSTS**

- A. Costs of all tests shall be borne by the Contractor and shall be included in the contract price.

**1.7. DAMAGES**

- A. If damage is indicated or observed during testing or from the review of tabulated data, replace defective or damaged materials and retest at no cost to the Owner.

## **PART 2 MATERIALS**

### **2.1. TESTING EQUIPMENT**

- A. Furnish all test equipment required to correctly perform the system tests.

### **2.2. SPECIAL EQUIPMENT REQUIREMENTS**

- A. 500-volt dc Megger - For maximum 300-volt systems, use a hand crank only.
- B. 1,000-volt dc Megger - For maximum 600-volt systems, use a hand crank only.
- C. 35,000-volt dc Hi-Potential Tester - For maximum 13,800-volt systems.

## **PART 3 EXECUTION**

### **3.1. GENERAL**

- A. After completion of the work, thoroughly test the entire electrical system, including electrical work required for instrumentation, control and power, and adjust electrical system as required.
- B. Test all electrical circuits to insure circuit continuity, insulation resistance, proper splicing, and freedom from improper grounds.
- C. System performance test runs are required. Coordinate test runs of electrical systems with test runs of equipment served thereby (i.e., mechanical, heating, air conditioning, process systems and plumbing).

### **3.2. GENERAL TESTING METHODS**

- A. Panels - Test each panel with mains disconnected from the feeder, branches connected, branch circuit breakers closed, all fixtures in place and permanently connected, lamps removed or omitted from the sockets, and all wall switches closed.
- B. Feeders - Test with the feeders disconnected from the panels.
- C. Individual Power Circuits - Test each individual power circuit at the panel or motor control center with the power equipment connected for proper operation.

### **3.3. EQUIPMENT TESTING (600 VOLTS AND BELOW)**

- A. Megohmmeter Tests
  - 1. Conduct megohmmeter tests of the insulation resistance of rotating machines, services, and power distribution feeders down to panelboard feeders. The results will be accepted when the megger shows the insulation



resistance to be not less than 50 megohms at 20 degrees C using either a 500 volt or 1,000 volt megger. Wait 1 minute between each test for all conductors in the same enclosure and each conductor and ground.

2. Perform megohmmeter testing (Insulation Resistance Test) of all motor power and control wiring after the cables are in place and just prior to final terminations. Record all data as per Exhibit A. Lighting and receptacle panelboard branch circuits are not megohmmeter tested.
3. Provide readings as part of Contractor's closeout package.

B. Voltage and Amperage Testing

1. Check all motor amperage while the unit is running at as close to operating load as possible. Record voltage on each line and the amp draw for each leg. Provide results in a typed report format and submit as part of the Contractor's closeout package.
2. Check the load current in each phase of each distribution, lighting and receptacle panelboard feeder and make modifications to the circuit loading to correct load unbalance to within 1 kVA phase to phase for each panelboard.

3.4. GROUNDING SYSTEM

- A. Test the grounding system to verify a resistance to ground of 5 ohms or less. If the resistance is greater than 5 ohms, modifications shall be made to the system by adding additional ground rods or plates to bring the resistance test value to 5 ohms or less. Submit a record/report to the Engineer. Include the following:
  1. Time, date, temperature, frost information depth (if applicable), and weather conditions.
  2. Moisture content of earth at time of measurement (wet, dry, etc.).
  3. Ground test equipment, model numbers, and last date of calibration.
  4. Detailed description of method used.
  5. Plot of "distance from ground grid versus resistance." Resistances shall range from 0 to 50 ohms with enough points to produce a smooth curve.
  6. Maintenance information and recommendations (if applicable).
- B. Test all grounding conductors and grounding systems for continuity. Where continuity does not exist, conditions will be corrected by an approved method and the system retested.

### 3.5. SYSTEM LOAD BALANCING

- A. Check the load current in each phase of each distribution panel feeder and make modifications to the circuit loading to correct load unbalance to within 1 kVA phase to phase for distribution panels.

### 3.6. SYSTEM CHECKS

#### A. Preliminary

1. Connect all motors to protective devices and controls to give proper motor acceleration and correct motor rotation. Interconnect the control wiring to all the control devices associated with a machine, a group of machines, or other device to produce the correct operation, timing, and/or sequencing of the equipment.
2. Adjust overload elements in motor starters and check for coordination with the actual installed motor characteristics. Replace any overload element that is inadequate.
3. Check all motor nameplates for verification of proper voltage, horsepower, speed, phase, and power factor.

#### B. Operational

1. Then give the equipment an operational test to determine that all components including motors, controls, protective and switching devices, and auxiliary associated equipment are in operable condition and can function as described and shown on relevant specifications, operating instructions, and drawings.
2. Take motor current reading at full load or as close to full load as the driven machine will develop. If the ammeter reading is over the rated full load current or the proper current for the load at which the machine was operated, determine the reason for the discrepancy and take the necessary corrective action.
3. Remove the cause of any motor operating above full load rating instead of increasing the overload relay trip rating.

### 3.7. CLOSEOUT PROCEDURES

- A. General - Sequence closeout procedures so that work will not be endangered or damaged, and so that every required performance will be fully tested and demonstrated. Closeout shall be in accordance with Close Out Documents, Record Documents, and as required herein.

- B. Final Operational Check- Make a check of each item in each system to determine that it is set for proper operation. With the Engineer present, operate each system in a test run of appropriate duration to demonstrate compliance with performance requirements. During the following test runs, make final corrections or adjustments of systems to refine and improve performances where possible, including noise and vibration reductions, elimination of hazards, better response of controls, signals and alarms, and similar system performance improvements. Provide testing or inspection devices to permit observation of actual system performances and shall demonstrate that controls and items requiring service or maintenance are accessible.
- C. Cleaning and Lubrication - After final performance test run of each electrical system, clean system both externally and internally, comply with manufacturer's instructions for lubrication of both power and hand operated equipment, and remove excess lubrication, touch up minor damage to factory painted finishes and other painting specified as electrical work, and refinish work where damage is extensive.
- D. Operating Instructions - General operating instructions are required. In addition to specific training of the Owner's operating personnel specified in the individual sections, and in addition to preparation of written operating instructions and compiled maintenance manuals specified elsewhere in these specifications, provide general operating instructions for each operational system and equipment item of electrical work, and coordinate instructions with instructions for mechanical work, and other equipment where associated with electrical systems or equipment.
- E. System Description and Operation
  - 1. Perform in the presence of the Owner, the Owner's operating personnel, and the Engineer.
  - 2. Describe each basic electrical system and explain identification system, displayed diagrams, signals, alarms and audio visual provisions.
  - 3. Describe interfaces with mechanical equipment, including interlocks, sequencing, startup, shutdown, emergency, safety, system failure, security, and similar provisions.
  - 4. In the presence of the Owner's personnel, display and conduct a "thumb through" explanation of maintenance manuals, record drawings, spare parts inventory, storage and extra materials, meter readings, and similar service items.
  - 5. Provide Fire Underwriter's Certificate of Inspection.

3.8. CONTINUED SYSTEM OPERATIONS SUPPORT

- A. Coordinate the Owner's takeover of electrical systems with takeover of mechanical systems, including the provision of skilled electrical operating and maintenance personnel until the time the Owner's personnel take over operation of entire mechanical and electrical plant. Respond promptly with continued consultation and services (beyond takeover date) on electrical systems, matching required continued services on associated mechanical systems and equipment until the end of the warranty period.

3.9. DOCUMENTATION PROCEDURE

- A. Signed commitments are required. The transfer of electrical systems to the Owner for operation will not proceed until guarantees, warranties, performance certifications, maintenance agreements and similar commitments to be signed by Contractor and other entities have been executed and transmitted to and accepted by the Engineer for placement in the Owner's records.

**END OF SECTION**

**SECTION 26 11 80**

**DUCTBANK**

**PART 1 GENERAL**

**1.1. WORK INCLUDED**

- A. HDPE, PVC conduit.
- B. Duct.
- C. Manholes.

**1.2. REFERENCES**

- A. ASTM A48 - Gray Iron Castings.
- B. ASTM C857 - Minimum Structural Design Loading for Underground Precast Concrete Utility Structures.
- C. ASTM C858 - Underground Precast Concrete Utility Structures.
- D. ASTM C891 - Installation of Underground Precast Utility Structures.
- E. ASTM C1037 - Inspection of Underground Precast Utility Structures.
- F. IEEE C2 - National Electrical Safety Code.
- G. NEMA FB-1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
- H. NEMA TC-2 - Conduit (PVC 40).
- I. NEMA TC-3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing.
- J. NEMA TC-6 - PVC and ABS Plastic Utilities Duct for Underground Installation.
- K. NEMA TC-9 - Fittings for ABS and PVC Plastic Utilities Duct for Underground Installation.
- L. NEMA TC-10 - PVC and ABS Plastic Communications Duct and Fittings for Underground Installation.
- M. NEMA TC-14 - Filament Wound Reinforced Thermosetting Resin Conduit and Fittings.

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- N. NFPA 70 - National Electrical Code.
- O. UL 651A - Type EB and A PVC Conduit and HDPE Conduit.

1.3. SUBMITTALS FOR REVIEW

- A. Product Data - Provide for nonmetallic conduit, manhole accessories.
- B. Shop Drawings - Indicate dimensions, reinforcement, size and locations of openings, and accessory locations for precast manholes.

1.4. SUBMITTALS FOR INFORMATION

- A. Manufacturer's Instructions - Indicate application conditions and limitations of use stipulated by product testing agency specified under Article 1.08. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.5. SUBMITTALS FOR CLOSEOUT

- A. Project Record Documents - Record actual routing and elevations of underground conduit and duct, and locations and sizes of manholes.

1.6. QUALIFICATIONS

- A. Manufacturer - Company specializing in manufacturing the products specified in this section with minimum three years' documented experience, and with service facilities within 100 miles of project.

1.7. REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70.
- B. Products - Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

1.8. FIELD SAMPLES

- A. Provide field sample of PVC conduit, two each at 2 feet long.

1.9. FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated.
- B. Verify routing and termination locations of ductbank prior to excavation for rough in.

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- C. Verify locations of manholes prior to excavating for installation.
- D. Ductbank routing is shown in approximate locations unless dimensions are indicated. Route as required to complete duct system.
- E. Manhole and handhole locations are shown in approximate locations unless dimensions are indicated. Locate as required to complete ductbank system.

**PART 2 PRODUCTS**

**2.1. PVC CONDUIT**

- A. Manufacturer - Carlon.
- B. Rigid Conduit - NEMA TC 2, Schedule 40 PVC, with fittings and conduit bodies to NEMA TC-3.
- C. Rigid Plastic Underground Conduit - UL 651A, Type A PVC
- D. Provide HDPE conduit where utility requirement before all meterings in primary and secondary circuits above or below ground.

**2.2. PRECAST CONCRETE MANHOLES**

- A. Manufacturers - A. C. Miller.
- B. Description - Precast manhole/handhole designed in accordance with ASTM C858, comprising modular, interlocking sections complete with accessories.
- C. Loading - ASTM C857, H20 wheel loading.
- D. Shape - Rectangular, as indicated.
- E. Nominal Inside Dimensions - As indicated.
- F. Inside Depth - As indicated.
- G. Wall Thickness - As indicated.
- H. Base Section - Include 3-inch deep x 14-inch round sump with cast sleeve, and two 1-inch ground rod openings.
- I. Top Section - Include 39-inch diameter grooved opening for frame and cover.
- J. Riser Casting - As indicated.

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- K. Frames and Covers - ASTM A48; Class 30B gray cast iron, 30-inch size, machine finished with flat bearing surfaces. Provide cover marked "ELECTRIC, COMMUNICATIONS."
- L. Duct Entry Provisions - Window knockouts.
- M. Duct Entry Locations - As indicated.
- N. Duct Entry Size - 4-inch.
- O. Cable Pulling Irons - Use galvanized rod and hardware. Locate opposite each duct entry. Provide watertight seal.
- P. Cable Rack Inserts - Minimum load rating of 800 lbs. Locate two on each wall.
- Q. Cable Rack Mounting Channel - 1-1/2-inch x 3/4-inch fiberglass channel, 48-inch long. Provide cable rack arm mounting slots on 1-1/2-inch centers.
- R. Cable Racks - Fiberglass channel, 1-1/2-inch x 3/4-inch x 14 inches with fastener to match mounting channel.
- S. Cable Supports - Porcelain clamps and saddles.
- T. Source Quality Control - Inspect manholes in accordance with ASTM C1037.

2.3. ACCESSORIES

- A. Underground Warning Tape - 4-inch wide plastic tape, detectable type, colored red with suitable warning legend describing buried electrical lines; as manufactured by Boddington.

2.4. CAST-IN-PLACE MANHOLE ACCESSORIES

- A. Frames and Covers - ASTM A48; Class 30B gray cast iron, 30-inch size, machine-finished with flat bearing surfaces. Provide cover marked "ELECTRIC, COMMUNICATIONS."
- B. Cable Pulling Irons - Use galvanized rod and hardware.
- C. Cable Rack Inserts - Minimum load rating of 800 lbs.
- D. Cable Rack Mounting Channel - 1-1/2-inch x 3/4-inch fiberglass channel, 48-inch length.
- E. Provide cable rack arm mounting slots on 1-1/2-inch centers.



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- F. Cable Racks - Fiberglass channel, 1-1/2-inch x 3/4-inch x 14 inches, with fastener to match mounting channel.
- G. Cable Supports - Porcelain clamps and saddles.

**PART 3 EXECUTION**

**3.1. DUCTBANK INSTALLATION**

- A. Install duct to locate top of ductbank at depths as indicated on Drawings.
- B. Install duct with minimum slope of 4 inches per 100 feet (0.33 percent). Slope duct away from building entrances.
- C. Concrete encase all conduits using red dyed concrete.
- D. Cut duct square using saw or pipe cutter; deburr cut ends.
- E. Insert duct to shoulder of fittings; fasten securely.
- F. Join non-metallic duct using adhesive as recommended by manufacturer.
- G. Wipe non-metallic duct dry and clean before joining. Apply full even coat of adhesive to entire area inserted in fitting. Allow joint to cure for 20 minutes, minimum.
- H. Install no more than equivalent of three 90-degree bends between pull points.
- I. Provide suitable fittings to accommodate expansion and deflection where required.
- J. Terminate duct at manhole entries using end bell.
- K. Stagger duct joints vertically in concrete encasement 6 inches minimum.
- L. Use suitable separators and chairs installed not greater than 4 feet on centers.
- M. Band ducts together before placing concrete.
- N. Securely anchor duct to prevent movement during concrete placement.
- O. Place concrete under ductbank as indicated. Use mineral pigment to color concrete red.
- P. Provide minimum 3-inch concrete cover at bottom, top, and sides of ductbank.

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- Q. Provide two No. 4 steel reinforcing bars in top of bank under paved areas.
- R. Connect to existing concrete encasement using dowels.
- S. Connect to manhole wall using dowels.
- T. Provide suitable pull string in each empty duct except sleeves and nipples.
- U. Swab duct. Use suitable caps to protect installed duct against entrance of dirt and moisture.
- V. Backfill trenches, coordinate with General Contractor.
- W. Interface installation of underground warning tape with backfilling. Install tape 6 inches below finished surface.

3.2. PRECAST MANHOLE INSTALLATION

- A. Excavate for manhole installation under the provisions of Section 31 00 00, Earthwork.
- B. Install and seal precast sections in accordance with ASTM C891.
- C. Install manholes/handholes plumb.
- D. Use precast neck and shaft sections to bring manhole cover to finished elevation.
- E. Attach cable racks to inserts after manhole installation is complete.
- F. Provide 1/3 cubic yard crushed gravel bed.
- G. Dampproof exterior surfaces, joints, and interruptions of manholes after concrete has cured 28 days.
- H. Backfill manhole/handhole excavation under the provisions of Section 31 23 33, Trenching and Backfilling.

3.3. CAST-IN-PLACE MANHOLE INSTALLATION

- A. Excavate for manhole installation.
- B. Formwork - Form inside and outside manhole surfaces in accordance with ANSI standards.
- C. Reinforcing - Install reinforcing as indicated.

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- D. Concrete - Provide air entrained, 4000 psi compressive strength at 28 days.
- E. Shape - Rectangular, as indicated.
- F. Nominal Dimensions - As indicated.
- G. Inside Depth - As indicated.
- H. Wall Thickness - As indicated.
- I. Base - Include 14-inch drain opening and two 1-inch ground rod openings. Slope to drain at 0.25 inch per foot (2 percent).
- J. Top - Include 39-inch diameter opening; cast 1/2-inch rod in opening to accept ladder hook.
- K. Duct Entry - Cast duct openings in walls as indicated.
- L. Cable Pulling Irons - Locate opposite each duct entry.
- M. Cable Rack Inserts - Locate as needed.
- N. Construct brick collar with 30-inch clear opening to bring cover to proper elevation.
- O. Attach cable racks to inserts after manhole construction is complete.
- P. Install manholes in 1/3 cu yd crushed gravel bed.
- Q. Dampproof exterior surfaces, joints, and interruptions of manholes after concrete has cured 28 days.
- R. Backfill manhole excavation and finish to match adjacent grade in dimension and type.

**END OF SECTION**



**SECTION 26 24 16**  
**PANELBOARDS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

A. Section Includes:

1. Lighting panelboards.

**1.2 ACTION SUBMITTALS**

A. Product Data: For each type of panelboard.

B. Shop Drawings: For each panelboard and related equipment.

1. Include dimensioned plans, elevations, sections, and details.
2. Detail enclosure types including mounting and anchorage, environmental protection, knockouts, corner treatments, covers and doors, gaskets, hinges, and locks.
3. Detail bus configuration, current, and voltage ratings.
4. Short-circuit current rating of panelboards and overcurrent protective devices.
5. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
6. Include wiring diagrams for power, signal, and control wiring.
7. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards.
8. All circuit breakers.

**1.3 INFORMATIONAL SUBMITTALS**

A. Panelboard schedules for installation in panelboards.

**1.4 CLOSEOUT SUBMITTALS**

A. Operation and maintenance data.

1.5 FIELD CONDITIONS

A. Service Conditions: NEMA PB 1, usual service conditions, as follows:

1. Ambient temperatures within limits specified.
2. Altitude not exceeding 6600 feet

1.6 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace panelboards that fail in materials or workmanship within specified warranty period.

1. Panelboard Warranty Period: 12 months from date of Substantial Completion.

**PART 2 - PRODUCTS**

2.1 PANELBOARDS COMMON REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NEMA PB 1.
- C. Comply with NFPA 70.
- D. Enclosures: Surface-mounted, dead-front cabinets.
  1. Rated for environmental conditions at installed location.
    - a. Indoor Dry and Clean Locations: Type 1.
  2. Height: 84 inches (2.13 m) maximum.
  3. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box. Trims shall cover all live parts and shall have no exposed hardware.
  4. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover. Trims shall cover all live parts and shall have no exposed hardware, (door within a door).
- E. Incoming Mains Location: as needed.
- F. Phase, Neutral, and Ground Buses: Hard-drawn copper, 98 percent conductivity.

- G. Conductor Connectors: Suitable for use with conductor material and sizes.
  - 1. Material: Hard-drawn copper, 98 percent conductivity.
  - 2. Main and Neutral Lugs: Mechanical type, with a lug on the neutral bar for each pole in the panelboard.
  - 3. Ground Lugs and Bus-Configured Terminators: Mechanical type, with a lug on the bar for each pole in the panelboard.
- H. Future Devices: Panelboards shall have mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.
- I. Panelboard Short-Circuit Current Rating to be 50,000 AIC with bolt on circuit breakers minimum 10,000 AIC.
- J. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

## 2.2 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Panelboards shall withstand the effects of earthquake motions determined according to [ASCE/SEI 7]
  - 1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."

## 2.3 LIGHTING PANELBOARDS

- A. Manufacturers:
  - 1. Eaton.
  - 2. General Electric Company; GE Energy Management - Electrical Distribution.
  - 3. Siemens Industry, Inc., Energy Management Division.
  - 4. Square D; by Schneider Electric.
- B. Panelboards: NEMA PB 1.
- C. Doors: Secured with vault-type latch with tumbler lock; keyed alike.
  - 1. For doors more than 42 inches high, provide two latches, keyed alike.
- D. Mains. Circuit breaker. See drawings.

E. Branch Overcurrent Protective Devices.

## 2.4 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

A. Manufacturers:

1. Eaton.
2. General Electric Company; GE Energy Management - Electrical Distribution.
3. Siemens Industry, Inc., Energy Management Division.
4. Square D; by Schneider Electric.

B. MCB: Comply with UL 489.

1. Thermal-Magnetic Circuit Breakers:
  - a. Inverse time-current element for low-level overloads.
  - b. Instantaneous magnetic trip element for short circuits.
  - c. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
2. Subfeed Circuit Breakers: mounted As required in field

## 2.5 IDENTIFICATION

- A. Panelboard Label: Manufacturer's name and trademark, voltage, amperage, number of phases, and number of poles shall be located on the interior of the panelboard door.
- B. Breaker Labels: Faceplate shall list current rating, UL and IEC certification standards, and AIC rating.
- C. Circuit Directory: Directory card inside panelboard door, mounted in transparent card holder

## 2.6 ACCESSORY COMPONENTS AND FEATURES

- A. Portable Test Set: For testing functions of solid-state trip devices without removing from panelboard. Include relay and meter test plugs suitable for testing panelboard meters and switchboard class relays.



## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Comply with NECA 1.
- B. Install panelboards and accessories according to NECA 407 and NEMA PB 1.1.
- C. Mount top of trim 90 inches above finished floor unless otherwise indicated.
- D. Mount panelboard cabinet plumb and rigid without distortion of box.
- E. Install overcurrent protective devices and controllers not already factory installed.
- F. Make grounding connections and bond neutral for services and separately derived systems to ground. Make connections to grounding electrodes, separate grounds for isolated ground bars, and connections to separate ground bars.
- G. Install filler plates in unused spaces.

### **3.2 IDENTIFICATION**

- A. Identify field-installed conductors, interconnecting wiring, and components; install warning signs complying with requirements in Section 26 05 53 "Identification for Electrical Systems."
- B. Create a directory to indicate installed circuit loads; incorporate Owner's final room designations. Obtain approval before installing. Handwritten directories are not acceptable. Install directory inside panelboard door.
- C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Section 26 05 53 "Identification for Electrical Systems."
- D. Device Nameplates: Label each branch circuit device in power panelboards with a nameplate complying with requirements for identification specified in Section 26 05 53 "Identification for Electrical Systems."

### **3.3 FIELD QUALITY CONTROL**

- A. Perform tests and inspections.
- B. Acceptance Testing Preparation:
  - 1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
  - 2. Test continuity of each circuit.

C. Tests and Inspections:

1. Perform each visual and mechanical inspection and electrical test for low-voltage air circuit breakers stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

D. Panelboards will be considered defective if they do not pass tests and inspections.

E. Prepare test and inspection reports, including a certified report that identifies panelboards included and that describes scanning results, with comparisons of the two scans. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

**END OF SECTION**

**SECTION 26 27 13**  
**ELECTRICITY METERING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section includes electricity metering and work to accommodate utility company revenue meters.

**1.2 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
- B. Shop Drawings: For electricity-metering equipment.
  - 1. Include elevation views of front panels of control and indicating devices and control stations.
  - 2. Include diagrams for power, signal, and control wiring.
  - 3. Wire Termination Diagrams and Schedules: Include diagrams for power, signal, and control wiring. Identify terminals and wiring designations and color-codes to facilitate installation, operation, and maintenance. Indicate recommended types, wire sizes, and circuiting arrangements for field-installed wiring, and show circuit protection features. Differentiate between manufacturer-installed and field-installed wiring.
  - 4. Include series-combination rating data for modular meter centers with main disconnect device.

**1.3 INFORMATIONAL SUBMITTALS**

- A. Coordination Drawings: Submit evidence that meters are compatible with connected monitoring and control devices and systems.
- B. Field quality-control reports.
- C. Sample warranty.

**1.4 CLOSEOUT SUBMITTALS**

- A. Operation and maintenance data.

**1.5 QUALITY ASSURANCE**

- A. Testing Agency Qualifications: An NRTL.

1.6 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of metering equipment that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: Cost to repair or replace any parts for one year from date of Substantial Completion.

1.7 COORDINATION

- A. Electrical Service Connections: Coordinate with utility companies and utility-furnished components.

**PART 2 - PRODUCTS**

2.1 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with UL 916.

2.2 UTILITY METERING INFRASTRUCTURE

- A. Install metering accessories furnished by the utility company, complying with its requirements.
- B. Meter Sockets:
  - 1. Comply with requirements of electrical-power utility company.
  - 2. Meter Sockets: Steady-state and short-circuit current ratings shall meet indicated circuit ratings.

2.3 ELECTRICITY METERS

- A. Furnished by utility.

**PART 3 - EXECUTION**

3.1 INSTALLATION

- A. Comply with equipment installation requirements in NECA 1.

- B. Install meters furnished by utility company. Install raceways and equipment according to utility company's written instructions. Provide empty conduits for metering leads and extend grounding connections as required by utility company.
- C. Comply with requirements for identification specified in Section 26 05 53 "Identification for Electrical Systems."

3.2 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:
- D. Provide inspection by third party agency.
- E. Prepare test and inspection reports.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 26 27 26**  
**WIRING DEVICES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Straight-blade convenience receptacles.
  - 2. GFCI receptacles.
  - 3. Wall plates.

**1.2 DEFINITIONS**

- A. Abbreviations of Manufacturers' Names:
  - 1. Cooper: Copper Wiring Devices; Division of Cooper Industries, Inc.
  - 2. Hubbell: Hubbell Incorporated: Wiring Devices-Kellems.
  - 3. Leviton: Leviton Mfg. Company, Inc.
  - 4. Pass & Seymour: Pass& Seymour/Legrand.

**1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
- B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.

**1.4 INFORMATIONAL SUBMITTALS**

- A. Field quality-control reports.

**1.5 CLOSEOUT SUBMITTALS**

- A. Operation and maintenance data.

## **PART 2 - PRODUCTS**

### **2.1 GENERAL WIRING-DEVICE REQUIREMENTS**

- A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.
- C. Devices for Owner-Furnished Equipment:
  - 1. Receptacles: Match plug configurations.
- D. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

### **2.2 STRAIGHT-BLADE RECEPTACLES**

- A. Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498, and FS W-C-596.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Eaton (Arrow Hart).
    - b. Hubbell Incorporated; Wiring Device-Kellems.
    - c. Leviton Manufacturing Co., Inc.

### **2.3 GFCI RECEPTACLES**

- A. General Description:
  - 1. 125 V, 20 A, straight blade.
  - 2. Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498, UL 943 Class A, and FS W-C-596.
  - 3. Include indicator light that shows when the GFCI has malfunctioned and no longer provides proper GFCI protection.

### **2.4 WALL PLATES**

- A. All-Locations Weatherproof Cover Plates: NEMA 250, complying with Type 3R, weather-resistant, In Service clear plastic, lockable.



## 2.5 FINISHES

- A. Device Color:
  - 1. White
- B. Wall Plate Color: For plastic covers, match device color.

## **PART 3 - EXECUTION**

### 3.1 INSTALLATION

- A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.
- B. Coordination with Other Trades:
  - 1. Protect installed devices and their boxes. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of boxes.
  - 2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
- C. Conductors:
  - 1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.
  - 2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
  - 3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
  - 4. Existing Conductors:
    - a. Cut back and pigtail, or replace all damaged conductors.
    - b. Straighten conductors that remain and remove corrosion and foreign matter.
    - c. Pigtail existing conductors is permitted, provided the outlet box is large enough.

D. Device Installation:

1. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches (152 mm) in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.
10. Do not use push in connections, screw type connections only.
11. Provide electrical tape around all connections to avoid inadvertent short circuits.

E. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles down, and on horizontally mounted receptacles to the right.

F. GFCI Receptacles: Install non-feed-through-type GFCI receptacles where protection of downstream receptacles is not required.

G. Install ground wire to receptacle ground, screw and box.

3.2 FIELD QUALITY CONTROL

A. Test Instruments: Use instruments that comply with UL 1436.

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- B. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.
- C. Wiring device will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.

**END OF SECTION**

NO TEXT ON THIS PAGE

## **SECTION 26 28 16**

### **ENCLOSED SWITCHES AND CIRCUIT BREAKERS**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Fusible switches.
  - 2. Nonfusible switches.
  - 3. Molded-case circuit breakers (MCCBs).
  - 4. Enclosures.

##### **1.2 ACTION SUBMITTALS**

- A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include nameplate ratings, dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.
  - 1. Include time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device.
- B. Shop Drawings: For enclosed switches and circuit breakers.
  - 1. Include plans, elevations, sections, details, and attachments to other work.
  - 2. Include wiring diagrams for power, signal, and control wiring.

##### **1.3 INFORMATIONAL SUBMITTALS**

- A. Qualification Data: For qualified testing agency.
- B. Seismic Qualification Certificates: For enclosed switches and circuit breakers, accessories, and components, from manufacturer.
- C. Field quality-control reports.

##### **1.4 CLOSEOUT SUBMITTALS**

- A. Operation and maintenance data.

## 1.5 QUALITY ASSURANCE

### A. Testing Agency Qualifications: Accredited by NETA.

1. Testing Agency's Field Supervisor: Currently certified by NETA to supervise on-site testing.

## 1.6 WARRANTY

### A. Manufacturer's Warranty: Manufacturer and Installer agree to repair or replace components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One year from date of Substantial Completion.

## **PART 2 - PRODUCTS**

### 2.1 PERFORMANCE REQUIREMENTS

#### A. Seismic Performance: Enclosed switches and circuit breakers shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

### 2.2 GENERAL REQUIREMENTS

#### A. Source Limitations: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single manufacturer.

#### B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for enclosed switches and circuit breakers, including clearances between enclosures, and adjacent surfaces and other items. Comply with indicated maximum dimensions.

#### C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.

#### D. Comply with NFPA 70.

### 2.3 FUSIBLE SWITCHES

#### A. Type HD, Heavy Duty:

1. Single throw.

2. Two pole.

3. 250V ac.

B. Accessories:

1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.

2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.

3. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.

4. Service-Rated Switches: Labeled for use as service equipment.

2.4 NONFUSIBLE SWITCHES

A. Type HD, Heavy Duty, Three Pole, Single Throw, 240V ac, 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

B. Accessories:

1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.

2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.

3. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.

4. Service-Rated Switches: Labeled for use as service equipment.

2.5 MOLDED-CASE CIRCUIT BREAKERS

A. Circuit breakers shall be constructed using glass-reinforced insulating material. Current carrying components shall be completely isolated from the handle and the accessory mounting area.

B. Circuit breakers shall have a toggle operating mechanism with common tripping of all poles, which provides quick-make, quick-break contact action. The circuit-breaker handle shall be over center, be trip free, and reside in a tripped position between on and off to provide local trip indication. Circuit-breaker escutcheon shall be clearly marked on and off in addition to providing international I/O markings. Equip circuit breaker with a push-to-trip button, located on the face of

the circuit breaker to mechanically operate the circuit-breaker tripping mechanism for maintenance and testing purposes.

- C. The maximum ampere rating and UL, IEC, or other certification standards with applicable voltage systems and corresponding interrupting ratings shall be clearly marked on face of circuit breaker. Circuit breakers shall be 100 percent rated.
- D. MCBs shall be equipped with a device for locking in the isolated position.
- E. Standards: Comply with UL 489 with interrupting capacity to comply with available fault currents.
- F. Thermal-Magnetic Circuit Breakers: Inverse time-current thermal element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
- G. Adjustable, Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.

## 2.6 ENCLOSURES

- A. Enclosed Switches and Circuit Breakers: UL 489, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.
- B. Enclosure Finish: The enclosure shall be finished with gray baked enamel paint, electrodeposited on cleaned, phosphatized steel NEMA 250 Type 1 gray baked enamel paint, electrodeposited on cleaned, a brush finish on Type 304 stainless steel (NEMA 250 Type 4-4X stainless steel).
- C. Conduit Entry: NEMA 250 Types 4, 4X, and 12 enclosures shall contain no knockouts. NEMA 250 Types 7 and 9 enclosures shall be provided with threaded conduit openings in both endwalls.
- D. Operating Mechanism: The circuit-breaker operating handle shall be externally operable with the operating mechanism being an integral part of the box, not the cover. The cover interlock mechanism shall have an externally operated override. The override shall not permanently disable the interlock mechanism, which shall return to the locked position once the override is released. The tool used to override the cover interlock mechanism shall not be required to enter the enclosure in order to override the interlock.
- E. Enclosures designated as NEMA 250 Type 4, stainless steel shall have a dual cover interlock mechanism to prevent unintentional opening of the enclosure cover when the circuit breaker is ON and to prevent turning the circuit breaker ON when the enclosure cover is open.



## **PART 3 - EXECUTION**

### **3.1 ENCLOSURE ENVIRONMENTAL RATING APPLICATIONS**

- A. Enclosed Switches and Circuit Breakers: Provide enclosures at installed locations with the following environmental ratings.
  - 1. Outdoor Locations: NEMA 250, Type 4XSS.

### **3.2 INSTALLATION**

- A. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
  - 1. Notify Owner no fewer than 2 weeks in advance of proposed interruption of electric service.
  - 2. Indicate method of providing temporary electric service.
  - 3. Do not proceed with interruption of electric service without Owner's written permission.
  - 4. Comply with NFPA 70E.
- B. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.
- C. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.
- D. Temporary Lifting Provisions: Remove temporary lifting of eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.
- E. Install fuses in fusible devices. Provide spare fuses (3).
- F. Comply with NFPA 70 and NECA 1.

### **3.3 IDENTIFICATION**

- A. Comply with requirements in Section 26 05 53 "Identification for Electrical Systems."
  - 1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.

2. Label each enclosure with engraved metal or laminated-plastic nameplate.

### 3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- C. Perform tests and inspections.
- D. Tests and Inspections for Switches:
  1. Visual and Mechanical Inspection:
    - a. Inspect physical and mechanical condition.
    - b. Inspect anchorage, alignment, grounding, and clearances.
    - c. Verify that the unit is clean.
    - d. Verify blade alignment, blade penetration, travel stops, and mechanical operation.
    - e. Verify that fuse sizes and types match the Specifications and Drawings.
    - f. Verify that each fuse has adequate mechanical support and contact integrity.
    - g. Inspect bolted electrical connections for high resistance using one of the two following methods:
      - 1) Use a low-resistance ohmmeter.
        - a) Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of the lowest value.
      - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or NETA ATS Table 100.12.
        - a) Bolt-torque levels shall be in accordance with manufacturer's published data. In the absence of

manufacturer's published data, use NETA ATS Table 100.12.

- h. Verify that operation and sequencing of interlocking systems is as described in the Specifications and shown on the Drawings.
- i. Verify correct phase barrier installation.
- j. Verify lubrication of moving current-carrying parts and moving and sliding surfaces.

2. Electrical Tests:

- a. Perform resistance measurements through bolted connections with a low-resistance ohmmeter. Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
- b. Measure contact resistance across each switchblade fuseholder. Drop values shall not exceed the high level of the manufacturer's published data. If manufacturer's published data are not available, investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
- c. Perform insulation-resistance tests for one minute on each pole, phase-to-phase and phase-to-ground with switch closed, and across each open pole. Apply voltage in accordance with manufacturer's published data. In the absence of manufacturer's published data, use Table 100.1 from the NETA ATS. Investigate values of insulation resistance less than those published in Table 100.1 or as recommended in manufacturer's published data.
- d. Measure fuse resistance. Investigate fuse-resistance values that deviate from each other by more than 15 percent.
- e. Perform ground fault test according to NETA ATS 7.14 "Ground Fault Protection Systems, Low-Voltage."

E. Tests and Inspections for Molded Case Circuit Breakers:

1. Visual and Mechanical Inspection:

- a. Verify that equipment nameplate data are as described in the Specifications and shown on the Drawings.
- b. Inspect physical and mechanical condition.

- c. Inspect anchorage, alignment, grounding, and clearances.
- d. Verify that the unit is clean.
- e. Operate the circuit breaker to ensure smooth operation.
- f. Inspect bolted electrical connections for high resistance using one of the two following methods:
  - 1) Use a low-resistance ohmmeter.
    - a) Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of the lowest value.
  - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or NETA ATS Table 100.12.
    - a) Bolt-torque levels shall be in accordance with manufacturer's published data. In the absence of manufacturer's published data, use NETA ATS Table 100.12.
- g. Inspect operating mechanism, contacts, and chutes in unsealed units.
- h. Perform adjustments for final protective device settings in accordance with the coordination study.

2. Electrical Tests:

- a. Perform resistance measurements through bolted connections with a low-resistance ohmmeter. Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
- b. Perform insulation-resistance tests for one minute on each pole, phase-to-phase and phase-to-ground with circuit breaker closed, and across each open pole. Apply voltage in accordance with manufacturer's published data. In the absence of manufacturer's published data, use Table 100.1 from the NETA ATS. Investigate values of insulation resistance less than those published in Table 100.1 or as recommended in manufacturer's published data.

- c. Perform a contact/pole resistance test. Drop values shall not exceed the high level of the manufacturer's published data. If manufacturer's published data are not available, investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
    - d. Perform insulation resistance tests on all control wiring with respect to ground. Applied potential shall be 500-V dc for 300-V rated cable and 1000-V dc for 600-V rated cable. Test duration shall be one minute. For units with solid state components, follow manufacturer's recommendation. Insulation resistance values shall be no less than two megohms.
  - 3. Test and adjust controls, remote monitoring, and safeties. Replace damaged and malfunctioning controls and equipment.
- F. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.
- G. Prepare test and inspection reports.
  - 1. Test procedures used.
  - 2. Include identification of each enclosed switch and circuit breaker tested and describe test results.
  - 3. List deficiencies detected, remedial action taken, and observations after remedial action.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 26 32 13**

**30 KW PACKAGED ENGINE GENERATOR SYSTEMS - DIESEL OUTDOOR**

**PART 1 - GENERAL**

**1.1 SCOPE OF WORK**

- A. Furnish and install 30 kW, outdoor, diesel generator with sub-base fuel tank at the Trail Lodge.

**1.2 CODES AND STANDARDS**

- A. The generator set installation and on-site testing shall conform to the requirements of the following codes and standards:
  - 1. CSA 282, 1989 Emergency Electrical Power Supply for Buildings.
  - 2. IEEE446 – Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications.
  - 3. NFPA37 –
  - 4. NFPA70 – National Electrical Code. Equipment shall be suitable for use in systems in compliance to Article 700, 701, and 702.
  - 5. NFPA99 – Essential Electrical Systems for Health Care Facilities.
  - 6. NFPA110 – Emergency and Standby Power Systems. The generator set shall meet all requirements for Level 1 systems. Level 1 prototype tests required by this standard shall have been performed on a complete and functional unit, component level type tests will not substitute for this requirement.
- B. The generator set and supplied accessories shall meet the requirements of the following standards:
  - 1. NEMA MG1-1998 part 32. Alternator shall comply with the requirements of this standard.
  - 2. UL142 – Sub-base Tanks.
  - 3. UL1236 – Battery Chargers.
  - 4. UL2200. The generator set shall be listed to UL2200 or submit to an independent third party certification process to verify compliance as installed.

- C. The control system for the generator set shall comply with the following requirements.
  - 1. CSA C22.2, No. 14 – M91 Industrial Control Equipment.
  - 2. EN50082-2, Electromagnetic Compatibility – Generic Immunity Requirements, Part 2: Industrial.
  - 3. EN55011, Limits and Methods of Measurement of Radio Interference Characteristics of Industrial, Scientific and Medical Equipment.
  - 4. FCC Part 15, Subpart B.
  - 5. IEC8528 part 4. Control Systems for Generator Sets.
  - 6. IEC Std 801.2, 801.3, and 801.5 for susceptibility, conducted, and radiated electromagnetic emissions.
  - 7. UL508. The entire control system of the generator set shall be UL508 listed and labeled.
  - 8. UL1236 –Battery Chargers.
- D. The generator set manufacturer shall be certified to ISO 9001 International Quality Standard and shall have third party certification verifying quality assurance in design/development, production, installation, and service, in accordance with ISO 9001.

### 1.3 SUBMITTALS

- A. Shop Drawings: Indicate electrical characteristics and connection requirements. Show plan and elevation views with overall and interconnection point dimensions, fuel consumption rate curves at various loads, ventilation and combustion air requirements, and electrical diagrams including schematic and interconnection diagrams.
- B. Product Data: Provide data showing dimensions, weights, ratings, interconnection points, and internal wiring diagrams for engine, generator, microprocessor control panel, battery, battery rack, battery charger, exhaust silencer, vibration isolators, fuel tank, trailer and radiator.
- C. Prototype Test Reports: Submittals will not be received without submission of prototype test report as specified herein.
- D. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of Product.



- E. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.
- F. Alternator data indicating sub transient reactance and temperature rise rating to meet requirements specified herein.

#### 1.4 OPERATION AND MAINTENANCE

- A. Manuals: Furnish four (4) Operation and Maintenance manuals.
- B. Operation & Maintenance Data: Include instructions for routine maintenance requirements, service manuals for engine and day tank, oil sampling and analysis for engine wear, and emergency maintenance procedures.

#### 1.5 QUALITY ASSURANCE

- A. To provide proven reliability of the Generator set, three series of tests shall be performed, no exceptions taken:
  - 1. Prototype model tests
  - 2. Fully assembled factory production model tests
  - 3. Field acceptance tests
- B. The manufacturer shall provide documentation demonstrating satisfactory prototype and production test results. Generator sets that have not been prototype tested and Factory Production tested as described herein shall not be acceptable.
- C. Generator set Prototype Tests: These tests and evaluations must have been performed on a prototype generator set representative of the model specified. A summary of the generator set testing results shall be submittal for review. The manufacturer's standard series of components development tests on the generator system, engine and other major components shall be performed and available for review, but shall not be acceptable as a substitute for a prototype testing on the complete representative generator set prototype.
- D. Torsiograph Analysis and Test: The manufacturer of the generator set shall verify that the engine generator set, as configured, is free from harmful torsional stresses. The analysis shall include correlation of empirical data from tests on a representative prototype. The empirical data must include spectrum analysis of the torsional transducer output within the operating speed range of the engine generator set. Calculations based on engine and generator separately are not acceptable.
- E. Temperature Rise Test: Complete thermal evaluation of a prototype generator rotor and starter must include actual measurement of internal generator and exciter temperatures by embedded detector method, and measurement of average temperature rise by resistance method. No position measured any place in the

windings may exceed the temperature rise limits of NEMA for the particular type of insulation system used. Resistance method temperature rise data shall be confirmed by a full load test on the generator set prototype to include conducted and radiated heat from the engine.

- F. Short Circuit Test: A test on a prototype generator set shall have demonstrated that the generator set is designed to withstand the mechanical forces associated with a short circuit condition. With the generator set operating at rated load and speed, the generator terminals must be short circuited on all three phases for a duration of 20 seconds. At the conclusion of this test, the generator set must be capable of full load operation.
- G. Endurance Run Test: A minimum of 500 continuous hours of endurance testing with a representative generator set prototype operating as defined by the manufacturer's standby rating shall have been performed. Endurance testing shall be used to verify structural soundness and durability.
- H. Maximum Power Test: With the prototype generator set at normal operating temperature and with all power consuming auxiliaries in place, the maximum power available at rated speed shall be determined with the governor set at its fuel stop. The generator set shall maintain this power for a minimum of two (2) minutes.
- I. Linear Vibration Test: A test for in-line motion of components occurring along a repeatable path shall meet the manufacturer's acceptable criteria.
- J. Cooling System Test: A cooling system test shall demonstrate the ability of the generator set cooling system to maintain normal operating temperature while operating at full rated load and power factor at the highest ambient temperature (104 °F) of the system rating. Cooling air requirements, radiator air flow and maximum allowable restriction at radiator discharge shall be verified by this test.
- K. Maximum Motor Starting KVA Test: Motor starting KVA shall be determined by test, based on a sustained RMS recovery voltage of at least 90 percent on no load voltage with the specified load KVA at near zero power factor applied to the generator set.
- L. Transient Response, Steady State Speed Control and Voltage Regulation Test: Prototype generator set tests shall demonstrate consistent performance as follows; stable voltage and frequency at all loads from no load to full rated load, consistent frequency kp on load acceptance and rejection and restoration to steady state after sudden load changes. Transient response is a complete generator set (engine, generator, exciter, and regulator) performance criteria and cannot be established on generator data alone.
- M. Witness-Generator Set Factory Production Tests: On the equipment to be shipped, an eight-(8) hour test shall be performed at rated load and 0.8 PF. These tests shall include certified data to document the following: run at full load,

maximum power, voltage regulation, transient and steady state governing, single step load pickup and safety shutdowns. Provide a factory test record of the production testing. The Contractor and/or equipment supplier at their expense shall coordinate and provide all transportation and lodging for the owner and Owner's engineering representative to witness the above stated factory test. Tests performed at facilities other than the manufacturer's factory shall not be acceptable.

N. Factory Test: The unit shall completely assembled and all preliminary adjustments made before the test is initiated. 30 KW genset shall be tested with the complete radiator and fan assembly to be shipped. Outside radiator, heat exchanger attachments shall not be acceptable.

O. Testing Procedure:

1. Test diesel-alternator unit at 0.8 PF in the following sequence:
2. 0.5 hour at  $\frac{1}{4}$  load.
3. 1.0 hours at  $\frac{1}{2}$  load.
4. 1.0 hours at  $\frac{3}{4}$  load.
5. 2 hours at full load.

P. Above testing shall be strip chart recorded and certified. During this test, the following measurements shall be taken and recorded on a certified report format:

1. Barometric Pressure.
2. Intake Air Pressure.
3. RPM.
4. Output voltage per phase.
5. Output amperes per phase.
6. Power Factor.
7. KW.
8. Winding temperature.
9. Transient response testing sequence:
10. 0-25%, 25%-0.
11. 0-50%, 50%-0.

- 12. 0-75%, 75%-0.
- 13. 0-100%, 100%-0.
- Q. Above testing shall be strip chart recorded. Provide necessary equipment and instruments to measure voltage dips and frequency dips. Comparison shall be made to the herein specified alternator performance characteristics prior to acceptance.
- R. Field Acceptance Tests: Generator supplier shall provide and conduct a four (4) hour load bank test at unity power factor for the generator set. Contractor must provide portable load bank for testing generator set at 100% load. Load bank test shall test each generator at full nameplate KW ratings. Generator manufacturer's representative shall record test data, as described below. Test data shall be tabulated and typed for submission and approval by the engineer for final acceptance. No handwritten field notes will be allowed.
- S. Initial start up and field acceptance tests are to be conducted by the authorized representative of the system manufacturer who supplies the equipment. Contractor responsible for protection of testing equipment and any additional cable, etc., required if equipment cannot be located internally during testing.
- T. Test data shall be collected and recorded on the following: Time of day, coolant temperature, operating oil pressure, battery charging rate, cranking time, crank-to-rated frequency time, voltage and frequency overshoot, load assumption-to-steady state voltage and frequency stabilization time, operating voltage, frequency, current, kilowatts and power factor. All data shall be taken every fifteen (15) minutes.

## 1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum ten (10) years documented experience, and with an authorized distributor offering 24 hour parts and service availability within 50 miles of the project. Proposed engine/generator combination shall have been in production a minimum of five (5) years.
- B. Supplier: Authorized distributor of specified manufacturer with minimum five (5) years documented experience with specified products and factory-trained service technicians.

## 1.7 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70, NFPA 110, and NFPA 101.
- B. Furnish Products listed and classified by Underwriters Laboratories as suitable for purpose specified and indicated.

## 1.8 PRE-INSTALLATION CONFERENCE

- A. Convene one (1) week prior to commencing work of this Section.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site.
- B. Accept unit on site mounted on trailer. Inspect for damage. Provide written verification that Genset tested and Genset received are one and the same.
- C. Protect equipment from dirt and moisture by securely wrapping in heavy plastic during construction.

#### 1.10 EXTRA MATERIALS

- A. Provide two (2) of each fuel, oil and air filter element, engine belts and hoses.

#### 1.11 WARRANTY

- A. A no deductible comprehensive warranty shall be provided for all products against defects in materials and workmanship for a five-year or 1500 hour period from the start-up date. Warranty shall cover all costs of covered repairs, including travel expenses.

#### 1.12 SERVICE AGREEMENT

- A. Manufacturer shall provide Owner with a two (2) year service agreement that includes changing all fluids and filters once a year and a minor inspection six (6) months after each change.

### **PART 2 - PRODUCTS**

#### 2.1 MANUFACTURERS

- A. Approved manufacturer:
  - 1. Cummins Power Generation, model C30 D6 rated for STANDBY POWER with BB96 Frame Alternator as distributed by Cummins Power Generation, 890 Zerega Avenue, Bronx, NY 10473. Contact Ed Cheung: 718-892-2400, ext. 217.
- B. It is intended that all products specified herein be of standard ratings, therefore, the KW and KVA, starting KVA and maximum allowable voltage dip, ratings, etc., shall be the manufacturer's next size or rating to exactly meet the specifications. No exceptions.

## 2.2 DIESEL ENGINE-GENERATOR SET

### A. Ratings

1. The generator set shall operate at 1800 rpm and at a voltage of: 120/240 Volts AC, 1-phase, 3-wire, 60 hertz.
2. The generator set shall be rated at 30 kW, 37.5 kVA at 0.8 PF, standby rating, based on site conditions of: Altitude 1,000 ft., ambient temperatures up to 104 degrees F (40 degrees C).

### B. Performance

1. Voltage regulation shall be plus or minus 0.5 percent for any constant load between no load and rated load. Random voltage variation with any steady load from no load to full load shall not exceed plus or minus 0.5 percent.
2. Frequency regulation shall be isochronous from steady state no load to steady state rated load. Random frequency variation with any steady load from no load to full load shall not exceed plus or minus 0.25%.
3. The diesel engine-generator set shall accept a single step load of 100% nameplate kW and power factor, less applicable derating factors, with the engine-generator set at operating temperature.
4. Motor starting capability shall be a minimum of 112 kVA. The generator set shall be capable of recovering to a minimum of 90% of rated no load voltage following the application of the specified kVA load at near zero power factor applied to the generator set. Maximum voltage dip on application of this load, considering both alternator performance and engine speed changes shall not exceed 15% –based on gensize calculations.
5. The alternator shall produce a clean AC voltage waveform, with not more than 5% total harmonic distortion at full linear load, when measured from line to neutral, and with not more than 3% in any single harmonic, and no 3rd order harmonics or their multiples. Telephone influence factor shall be less than 40.
6. The generator set shall be certified by the engine manufacturer to be suitable for use at the installed location and rating, and shall meet all applicable exhaust emission requirements at the time of commissioning.

### C. Construction

1. The engine-generator set shall be mounted on a heavy-duty steel base to maintain alignment between components. The base shall incorporate a battery tray with hold-down clamps within the rails.

2. All switches, lamps, and meters in the control system shall be oil-tight and dust-tight. All active control components shall be installed within a UL/NEMA 3R enclosure. There shall be no exposed points in the control (with the door open) that operate in excess of 50 volts.

D. Connections

1. The generator set load connections shall be composed of silver or tin plated copper bus bars, drilled to accept mechanical or compression terminations of the number and type as shown on the drawings. Sufficient lug space shall be provided for use with cables of the number and size as shown on the drawings.
2. Power connections to auxiliary devices shall be made at the devices, [with required protection located at a wall-mounted common distribution panel] If walk-in enclosure.
3. Generator set control interfaces to other system components shall be made on a permanently labeled terminal block assembly. Labels describing connection point functions shall be provided.

2.3 ENGINE AND ENGINE EQUIPMENT

- A. The engine shall be diesel, EPA TIER 4 Certified, 4 cycle, radiator and fan cooled. Minimum displacement shall be 199 cubic inches, with 4 cylinders. The horsepower rating of the engine at its minimum tolerance level shall be sufficient to drive the alternator and all connected accessories. Two cycle engines are not acceptable.
- B. A digital electronic governor system shall provide automatic isochronous frequency regulation. The governing system dynamic capabilities shall be controlled as a function of engine coolant temperature to provide fast, stable operation at varying engine operating temperature conditions. The control system shall actively control the fuel rate and excitation as appropriate to the state of the generator set. Fuel rate shall be regulated as a function of starting, accelerating to start disconnect speed, accelerating to rated speed. The governing system shall include a programmable warm up at idle and cooldown at idle function. While operating in idle state, the control system shall disable the alternator excitation system.
- C. Skid-mounted radiator and cooling system rated for full load operation in 104 degrees F (40 degrees C) ambient as measured at the alternator air inlet. Radiator fan shall be suitable for use in a system with 0.5 in H<sub>2</sub>O restriction. Radiator shall be sized based on a core temperature that is 20F higher than the rated operation temperature, or prototype tested to verify cooling performance of the engine/radiator/fan operation in a controlled environment. Radiator shall be provided with a duct adapter flange. The equipment manufacturer shall fill the cooling system with a 50/50-ethylene glycol/water mixture prior to shipping.

Rotating parts shall be guarded against accidental Electric starter(s) capable of three complete cranking cycles without overheating.

## 2.4 ENGINE ACCESSORY EQUIPMENT

A. The engine for the generator shall include the following accessories:

1. Positive displacement, contact.
2. Mechanical, full pressure, lubrication oil pump.
3. Full flow lubrication oil filters with replaceable spin-on canister elements and dipstick oil level indicator.
4. An engine driven, mechanical, positive displacement fuel pump. Fuel filter with replaceable spin-on canister element. Fuel cooler, suitable for operation of the generator set at full rated load in the ambient temperature specified shall be provided if required for operation due to the design of the engine and the installation.
5. Replaceable dry element air cleaner with restriction indicator.
6. Flexible supply and return fuel lines.
7. Engine mounted battery charging alternator, 40-ampere minimum, and solid-state voltage regulator.

B. Coolant heater

1. Engine mounted, thermostatically controlled, coolant heater(s) for each engine. Heater voltage shall be as shown on the project drawings. The coolant heater shall be UL499 listed and labeled.
2. The coolant heater shall be installed on the engine with silicone hose connections. Steel tubing shall be used for connections into the engine coolant system wherever the length of pipe run exceeds 12 inches. The coolant heater installation shall be specifically designed to provide proper venting of the system. The coolant heaters shall provisions to isolate the heater for replacement of the heater element without draining the coolant from the generator set. The quick disconnect/automatic sealing couplers shall allow the heater element to be replaced without draining the engine cooling system or significant coolant loss.
3. The coolant heater shall be provided with a 24VDC thermostat, installed at the engine thermostat housing. An AC power connection box shall be provided for a single AC power connection to the coolant heater system.
4. The coolant heater(s) shall be 120V, 1500 watts and sized as recommended



by the engine manufacturer to warm the engine to a minimum of 104F (40C) in a 40F (4C) ambient, in compliance with NFPA110 requirements, or the temperature required for starting and load pickup requirements of this specification.

- C. Provide vibration isolators, spring/pad type, quantity as recommended by the generator set manufacturer. Isolators shall include seismic restraints if required by site location.
- D. Starting and Control Batteries shall be calcium/lead antimony type, 12 volt DC, sized as recommended by the engine manufacturer, complete with battery cables and connectors. The batteries shall be capable of a minimum of three complete 15-second cranking cycles at 40F ambient temperature when fully charged.
- E. Provide exhaust silencer(s) for each engine of size and type as recommended by the generator set manufacturer and approved by the engine manufacturer. The mufflers shall be critical grade. Exhaust system shall be installed inside the sound enclosure.
- F. A UL listed/CSA certified 10 amp voltage regulated battery charger shall be provided for each engine-generator set. The charger may be located in an automatic transfer switch, or may be wall mounted, at the discretion of the installer. Input AC voltage and DC output voltage shall be as required. Chargers shall be equipped with float, taper and equalize charge settings. Operational monitors shall provide visual output along with individual form C contacts rated at 4 amps, 120 VAC, 30VDC for remote indication of:
  - 1. Loss of AC power - red light
  - 2. Low battery voltage - red light
  - 3. High battery voltage - red light
  - 4. Power ON - green light (no relay contact)
- G. Charger shall include an Analog DC voltmeter and ammeter, 12 hour equalize charge timer, and AC and DC fuses.

## 2.5 AC ALTERNATOR

- A. The AC generator shall be; synchronous, four pole, 2/3 pitch, revolving field, drip-proof construction, single prelubricated sealed bearing, air cooled by a direct drive centrifugal blower fan, and directly connected to the engine with flexible drive disc. All insulation system components shall meet NEMA MG1 temperature limits for Class H insulation system and shall be UL1446 listed. Actual temperature rise measured by resistance method at full load shall not exceed 105 degrees Centigrade.

- B. The generator shall be capable of delivering rated output (kVA) at rated frequency and power factor, at any voltage not more than 5 percent above or below rated voltage.
- C. Provide 120VAC alternator anti-condensation heater, size as recommended by manufacturer.
- D. A permanent magnet generator (PMG) shall be included to provide a reliable source of excitation power for optimum motor starting and short circuit performance. The PMG and controls shall be capable of sustaining and regulating current supplied to a single phase or three phase fault at approximately 300% of rated current for not more than 10 seconds.
- E. The subtransient reactance of the alternator shall not exceed 7 percent, based on the 105°C rise rating.
- F. Alternator shall be rated for a minimum of 33 KW at a 105°C, standby.

## 2.6 ENGINE GENERATOR SET CONTROL

- A. Generator set Control. The generator set shall be provided with a microprocessor-based control system that is designed to provide automatic starting, monitoring, and control functions for the generator set. The control system shall also be designed to allow local monitoring and control of the generator set, and remote monitoring and control as described in this specification.
- B. The control shall be mounted on the generator set, or may be mounted in a free-standing panel next to the generator set if adequate space and accessibility is available. The control shall be vibration isolated and prototype tested to verify the durability of all components in the system under the vibration conditions encountered.
- C. Control Switches
  - 1. Mode Select Switch. The mode select switch shall initiate the following control modes. When in the RUN or MANUAL position the generator set shall start, and accelerate to rated speed and voltage as directed by the operator. A separate push-button to initiate starting is acceptable. In the OFF position the generator set shall immediately stop, bypassing all time delays. In the AUTO position the generator set shall be ready to accept a signal from a remote device to start and accelerate to rated speed and voltage.
  - 2. EMERGENCY STOP switch. Switch shall be Red "mushroom-head" push-button. Depressing the emergency stop switch shall cause the generator set to immediately shut down, and be locked out from automatic restarting.

3. RESET switch. The RESET switch shall be used to clear a fault and allow restarting the generator set after it has shut down for any fault condition.
  4. PANEL LAMP switch. Depressing the panel lamp switch shall cause the entire panel to be lighted with DC control power. The panel lamps shall automatically be switched off 10 minutes after the switch is depressed, or after the switch is depressed a second time.
- D. Generator Set AC Output Metering. The generator set shall be provided with a metering set including the following features and functions:
1. Digital metering set, .5% accuracy, to indicate generator RMS voltage and current, frequency, output current, output KW, KW-hours, and power factor. Generator output voltage shall be available in line-to-line and line-to-neutral voltages, and shall display all three-phase voltages (line to neutral or line to line) simultaneously.
  2. Analog voltmeter, ammeter, frequency meter, power factor meter, and kilowatt (KW) meter. Voltmeter and ammeter shall display all three phases. Meter scales shall be color coded in the following fashion: green shall indicate normal operating condition, amber shall indicate operation in ranges that indicate potential failure, and red shall indicate failure impending. Metering accuracy shall be within 1% at rated output. Both analog and digital metering are required.
  3. The control system shall monitor the total load on the generator set, and maintain data logs of total operating hours at specific load levels ranging from 0 to 110% of rated load, in 10% increments. The control shall display hours of operation at less than 30% load and total hours of operation at more than 90% of rated load.
  4. The control system shall log total number of operating hours, total kWh, and total control on hours, as well as total values since reset.
- E. Generator Set Alarm and Status Display.
1. The generator set control shall include LED alarm and status indication lamps. The lamps shall be high-intensity LED type. The lamp condition shall be clearly apparent under bright room lighting conditions. Functions indicated by the lamps shall include:
    - a. The control shall include five configurable alarm-indicating lamps. The lamps shall be field adjustable for any status, warning, or shutdown function monitored by the genset. They shall also be configurable for color, and control action (status, warning, or shutdown).

- b. The control shall include green lamps to indicate that the generator set is running at rated frequency and voltage, and that a remote start signal has been received at the generator set. The running signal shall be based on actual sensed voltage and frequency on the output terminals of the generator set.
  - c. The control shall include a flashing red lamp to indicate that the control is not in automatic state, and red common shutdown lamp.
  - d. The control shall include an amber common warning indication lamp.
2. The generator set control shall indicate the existence of the warning and shutdown conditions on the control panel. All conditions indicated below for warning shall be field-configurable for shutdown. Conditions required to be annunciated shall include:
- a. low oil pressure (warning)
  - b. low oil pressure (shutdown)
  - c. oil pressure sender failure (warning)
  - d. low coolant temperature (warning)
  - e. high coolant temperature (warning)
  - f. high coolant temperature (shutdown)
  - g. high oil temperature (warning)
  - h. engine temperature sender failure (warning)
  - i. low coolant level (warning)
  - j. fail to crank (shutdown)
  - k. fail to start/overcrank (shutdown)
  - l. overspeed (shutdown)
  - m. low DC voltage (warning)
  - n. high DC voltage (warning)
  - o. weak battery (warning)
  - p. low fuel-daytank (warning)

- q. high AC voltage (shutdown)
  - r. low AC voltage (shutdown)
  - s. under frequency (shutdown)
  - t. over current (warning)
  - u. over current (shutdown)
  - v. short circuit (shutdown)
  - w. ground fault (warning) (optional--when required by code or specified)
  - x. over load (warning)
  - y. emergency stop (shutdown)
  - z. (4) configurable conditions
3. Provisions shall be made for indication of four customer-specified alarm or shutdown conditions. Labeling of the customer-specified alarm or shutdown conditions shall be of the same type and quality as the above-specified conditions. The non-automatic indicating lamp shall be red and shall flash to indicate that the generator set is not able to automatically respond to a command to start from a remote location.

F. Engine Status Monitoring.

- 1. The following information shall be available from a digital status panel on the generator set control
  - a. engine oil pressure (psi or kPA)
  - b. engine coolant temperature (degrees F or C)
  - c. engine oil temperature (degrees F or C)
  - d. engine speed (rpm)
  - e. number of hours of operation (hours)
  - f. number of start attempts
  - g. battery voltage (DC volts)
- 2. The control system shall also incorporate a data logging and display provision to allow logging of the last 10 warning or shutdown indications

on the generator set, as well as total time of operation at various loads, as a percent of the standby rating of the generator set.

3. Provide and install a 20-light LED type remote alarm annunciator with horn, located as shown on the Drawings or in a location that can be conveniently monitored by facility personnel. The remote annunciator shall provide all the audible and visual alarms called for by NFPA Standard 110 for level 1 systems for the local generator control panel. Spare lamps shall be provided to allow future addition of other alarm and status functions to the annunciator. Provisions for labeling of the annunciator in a fashion consistent with the specified functions shall be provided. Alarm silence and lamp test switch(es) shall be provided. LED lamps shall be replaceable, and indicating lamp color shall be capable of changes needed for specific application requirements. Alarm horn (when switched on) shall sound for first fault, and all subsequent faults, regardless of whether first fault has been cleared, in compliance with NFPA110 3-5.6.2. The interconnecting wiring between the annunciator and other system components shall be monitored and failure of the interconnection between components shall be displayed on the annunciator panel.

The annunciator shall include the following alarm labels, audible annunciation features, and lamp colors:

<b>Condition</b>	<b>Lamp Color</b>	<b>Audible Alarm</b>
Genset Supplying Load	Amber	No
Charger AC Failure	Amber	Yes
Low Coolant Level	Amber	Yes
Low Fuel Level	Red	Yes
Check Genset	Amber	No
Not In Auto	Red	Yes
Genset Running	Amber	No
High Battery Voltage	Amber	Yes
Low Battery Voltage	Red	Yes
Weak Battery	Red	Yes
Fail to Start	Red	Yes

Condition	Lamp Color	Audible Alarm
Low Coolant Temperature	Red	Yes
Pre-High Engine Temperature	Amber	Yes
High Engine Temperature	Red	Yes
Pre-Low Oil Pressure	Red	Yes
Low Oil Pressure	Red	Yes
Overspeed	Red	Yes
(4) Spares	Configurable	Configurable

## 2.7 ENGINE CONTROL FUNCTIONS

- A. The control system provided shall include a cycle cranking system, which allows for user selected crank time, rest time, and # of cycles. Initial settings shall be for 3 cranking periods of 15 seconds each, with 15-second rest period between cranking periods.
- B. The control system shall include an idle mode control, which allows the engine to run in idle mode in the RUN position only. In this mode, the alternator excitation system shall be disabled. Total duration of operating time in the idle mode shall be controlled by the system, to prevent degradation of the engine capabilities due to excess operating time at idle.
- C. The control system shall include an engine governor control, which functions to provide steady state frequency regulation as noted elsewhere in this specification. The governor control shall include adjustments for gain, damping, and a ramping function to control engine speed and limit exhaust smoke while the unit is starting.
- D. The control system shall include time delay start (adjustable 0-300 seconds) and time delay stop (adjustable 0-600 seconds) functions.
- E. The control system shall include sender failure monitoring logic for speed sensing, oil pressure, and engine temperature which is capable of discriminating between failed sender or wiring components, and an actual failure conditions.

## 2.8 ALTERNATOR CONTROL FUNCTIONS

- A. The generator set shall include a full wave rectified automatic digital voltage regulation system that is matched and prototype tested by the engine manufacturer with the governing system provided. It shall be immune from misoperation due to load-induced voltage waveform distortion and provide a pulse width modulated

output to the alternator exciter. The voltage regulation system shall be equipped with three-phase line to neutral RMS sensing and shall control buildup of AC generator voltage to provide a linear rise and limit overshoot. The system shall include a torque-matching characteristic, which shall reduce output voltage in proportion to frequency below an adjustable frequency threshold. Torque matching characteristic shall be adjustable for roll-off frequency and rate, and be capable of being curve-matched to the engine torque curve with adjustments in the field. The voltage regulator shall include adjustments for gain, damping, and frequency roll-off. Adjustments shall be broad range, and made via digital raise-lower switches, with an alphanumeric LED readout to indicate setting level. Rotary potentiometers for system adjustments are not acceptable.

- B. Controls shall be provided to monitor the output current of the generator set and initiate an alarm (over current warning) when load current exceeds 110% of the rated current of the generator set on any phase for more than 60 seconds. The controls shall shut down and lock out the generator set when output current level approaches the thermal damage point of the alternator (over current shutdown). The protective functions provided shall be in compliance to the requirements of NFPA70 article 445.
- C. Controls shall be provided to individually monitor all three phases of the output current for short circuit conditions. The control/protection system shall monitor the current level and voltage. The controls shall shut down and lock out the generator set when output current level approaches the thermal damage point of the alternator (short circuit shutdown). The protective functions provided shall be in compliance to the requirements of NFPA70 article 445.
- D. Controls shall be provided to monitor the KW load on the generator set, and initiate an alarm condition (over load) when total load on the generator set exceeds the generator set rating for in excess of 5 seconds. Controls shall include a load shed control, to operate a set of dry contacts (for use in shedding customer load devices) when the generator set is overloaded.
- E. An AC over/under voltage monitoring system that responds only to true RMS voltage conditions shall be provided. The system shall initiate shutdown of the generator set when alternator output voltage exceeds 110% of the operator-set voltage level for more than 10 seconds, or with no intentional delay when voltage exceeds 130%. Under voltage shutdown shall occur when the output voltage of the alternator is less than 85% for more than 10 seconds.
- F. When required by National Electrical Code or indicated on project drawings, the control System shall include a ground fault monitoring relay. The relay shall be adjustable from 3.8-1200 amps, and include adjustable time delay of 0-10.0 seconds. The relay shall be for indication only, and not trip or shut down the generator set. Note bonding and grounding requirements for the generator set, and provide relay that will function correctly in system as installed.



## 2.9 OTHER CONTROL FUNCTIONS

- A. A battery monitoring system shall be provided which initiates alarms when the DC control and starting voltage is less than 25VDC or more than 32 VDC. During engine cranking (starter engaged), the low voltage limit shall be disabled, and DC voltage shall be monitored as load is applied to the battery, to detect impending battery failure or deteriorated battery condition.

## 2.10 GENERATOR MAIN LINE CIRCUIT BREAKER

- A. The generator set shall be provided with dual mounted main line circuit breakers, rated 100 amps and 60 amps. The circuit breaker shall incorporate an electronic trip unit that operates to protect the alternator under all overcurrent conditions, or a thermal-magnetic trip with other overcurrent protection devices that positively protect the alternator under overcurrent conditions. The supplier shall submit time overcurrent characteristic curves and thermal damage curve for the alternator, demonstrating the effectiveness of the protection provided.

## 2.11 OUTDOOR WEATHER-PROTECTIVE SOUND ATTENUATED ENCLOSURE

- A. Construction:
  - 1. Steel - UL2200 listed Sound Attenuated, Weatherproof Genset Enclosure
    - a. Package shall comply with the requirements of the NEC for all wiring materials and components.
    - b. Sound attenuation rating of 67.5 dBA @ 7m.
    - c. The enclosure shall be designed in which allows generator set to operate at full rated load in an ambient temperature of up to 104 F.
- B. The enclosure will consist of a cambered roof, two sidewalls, two end walls, and a nominal 74 Gallon fuel tank base, incorporating prepainted aluminum construction and application-specific non-hydroscopic acoustic insulation, air handling equipment designed to provide the specified level of sound attenuation.
- C. Exhaust silencer shall be installed inside enclosure. The exhaust shall exit the enclosure through a rain collar and terminate with rain cap.
- D. The enclosure shall include flexible coolant and lubricating oil drain lines, that extend to the exterior of the enclosure with internal drain valves.
- E. External radiator fill provision must be provided.
- F. Doors shall be recessed, lockable with retainers to hold doors open for easy access.
- G. Inlet of enclosure shall be provided with rodent barriers.

## 2.12 SUBBASE FUEL TANK

- A. Provide a sub-base nominal 74 gallon fuel tank for the generator set. The sub-base fuel tank shall be UL142 listed and labeled. Installation shall be in compliance to NFPA 37. The fuel tank shall be a double-walled, steel construction and include the following features:
  - 1. Emergency tank and basin vents.
  - 2. Mechanical level gauge.
  - 3. Fuel supply and return lines, connected to generator set with flexible fuel lines as recommended by the engine manufacturer and in compliance to UL2200 and NFPA 37 requirements.
  - 4. Leak detection provisions, wired to the generator set control for local and remote alarm indication.
  - 5. Low level float switches to indicate fuel level. Wire switches to generator control for local and remote indication of fuel level.
  - 6. Basin drain.
  - 7. Integral lifting provisions.

## **PART 3 - EXECUTION**

### 3.1 ACCEPTANCE

- A. Equipment shall be initially started and operated by representatives of the manufacturer.
- B. All equipment shall be physically inspected for damage. Scratches and other installation damage shall be repaired prior to final system testing. Equipment shall be thoroughly cleaned to remove all dirt and construction debris prior to final testing of the system.

### 3.2 TRAINING

- A. The equipment supplier shall provide training for the facility operating personnel covering operation and maintenance of the equipment provided. The training program shall be not less than two (2) four (4) hours sessions in duration and the class size shall be limited to five (5) persons. Training date shall be coordinated with the facility owner.

3.3 DEMONSTRATION

- A. Provide systems demonstration. Electric Contractor shall provide fuel for testing and shall fill tank complete after all testing is done and before turning over to Owner.
- B. Describe loads connected to standby system and restrictions for future load additions.
- C. Simulate power outage by interrupting normal source, and demonstrate that system operates to provide standby power.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 26 32 14**

**50 KW PACKAGED ENGINE GENERATOR SYSTEMS - DIESEL OUTDOOR**

**PART 1 - GENERAL**

**1.1 SCOPE OF WORK**

- A. Furnish and install 50 kW, outdoor, diesel generator with sub-base fuel tank at the Maintenance Building.

**1.2 CODES AND STANDARDS**

- A. The generator set installation and on-site testing shall conform to the requirements of the following codes and standards:
  - 1. CSA 282, 1989 Emergency Electrical Power Supply for Buildings.
  - 2. IEEE446 – Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications.
  - 3. NFPA37 –
  - 4. NFPA70 – National Electrical Code. Equipment shall be suitable for use in systems in compliance to Article 700, 701, and 702.
  - 5. NFPA99 – Essential Electrical Systems for Health Care Facilities.
  - 6. NFPA110 – Emergency and Standby Power Systems. The generator set shall meet all requirements for Level 1 systems. Level 1 prototype tests required by this standard shall have been performed on a complete and functional unit, component level type tests will not substitute for this requirement.
- B. The generator set and supplied accessories shall meet the requirements of the following standards:
  - 1. NEMA MG1-1998 part 32. Alternator shall comply with the requirements of this standard.
  - 2. UL142 – Sub-base Tanks.
  - 3. UL1236 – Battery Chargers.
  - 4. UL2200. The generator set shall be listed to UL2200 or submit to an independent third party certification process to verify compliance as installed.

- C. The control system for the generator set shall comply with the following requirements.
1. CSA C22.2, No. 14 – M91 Industrial Control Equipment.
  2. EN50082-2, Electromagnetic Compatibility – Generic Immunity Requirements, Part 2: Industrial.
  3. EN55011, Limits and Methods of Measurement of Radio Interference Characteristics of Industrial, Scientific and Medical Equipment.
  4. FCC Part 15, Subpart B.
  5. IEC8528 part 4. Control Systems for Generator Sets.
  6. IEC Std 801.2, 801.3, and 801.5 for susceptibility, conducted, and radiated electromagnetic emissions.
  7. UL508. The entire control system of the generator set shall be UL508 listed and labeled.
  8. UL1236 –Battery Chargers.
- D. The generator set manufacturer shall be certified to ISO 9001 International Quality Standard and shall have third party certification verifying quality assurance in design/development, production, installation, and service, in accordance with ISO 9001.

### 1.3 SUBMITTALS

- A. Shop Drawings: Indicate electrical characteristics and connection requirements. Show plan and elevation views with overall and interconnection point dimensions, fuel consumption rate curves at various loads, ventilation and combustion air requirements, and electrical diagrams including schematic and interconnection diagrams.
- B. Product Data: Provide data showing dimensions, weights, ratings, interconnection points, and internal wiring diagrams for engine, generator, microprocessor control panel, battery, battery rack, battery charger, exhaust silencer, vibration isolators, fuel tank, trailer and radiator
- C. Prototype Test Reports: Submittals will not be received without submission of prototype test report as specified herein.
- D. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency. Include instructions for

storage, handling, protection, examination, preparation, installation, and starting of Product.

- E. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.
- F. Alternator data indicating sub transient reactance and temperature rise rating to meet requirements specified herein.

#### 1.4 OPERATION AND MAINTENANCE

- A. Manuals: Furnish four (4) Operation and Maintenance manuals.
- B. Operation & Maintenance Data: Include instructions for routine maintenance requirements, service manuals for engine and day tank, oil sampling and analysis for engine wear, and emergency maintenance procedures.

#### 1.5 QUALITY ASSURANCE

- A. To provide proven reliability of the Generator set, three series of tests shall be performed, no exceptions taken:
  - 1. Prototype model tests
  - 2. Fully assembled factory production model tests
  - 3. Field acceptance tests
- B. The manufacturer shall provide documentation demonstrating satisfactory prototype and production test results. Generator sets that have not been prototype tested and Factory Production tested as described herein shall not be acceptable.
- C. Generator set Prototype Tests: These tests and evaluations must have been performed on a prototype generator set representative of the model specified. A summary of the generator set testing results shall be submittal for review. The manufacturer's standard series of components development tests on the generator system, engine and other major components shall be performed and available for review, but shall not be acceptable as a substitute for a prototype testing on the complete representative generator set prototype.
- D. Torsiograph Analysis and Test: The manufacturer of the generator set shall verify that the engine generator set, as configured, is free from harmful torsional stresses. The analysis shall include correlation of empirical data from tests on a representative prototype. The empirical data must include spectrum analysis of the torsional transducer output within the operating speed range of the engine generator set. Calculations based on engine and generator separately are not acceptable.

- E. Temperature Rise Test: Complete thermal evaluation of a prototype generator rotor and starter must include actual measurement of internal generator and exciter temperatures by embedded detector method, and measurement of average temperature rise by resistance method. No position measured any place in the windings may exceed the temperature rise limits of NEMA for the particular type of insulation system used. Resistance method temperature rise data shall be confirmed by a full load test on the generator set prototype to include conducted and radiated heat from the engine.
- F. Short Circuit Test: A test on a prototype generator set shall have demonstrated that the generator set is designed to withstand the mechanical forces associated with a short circuit condition. With the generator set operating at rated load and speed, the generator terminals must be short circuited on all three phases for a duration of 20 seconds. At the conclusion of this test, the generator set must be capable of full load operation.
- G. Endurance Run Test: A minimum of 500 continuous hours of endurance testing with a representative generator set prototype operating as defined by the manufacturer's standby rating shall have been performed. Endurance testing shall be used to verify structural soundness and durability.
- H. Maximum Power Test: With the prototype generator set at normal operating temperature and with all power consuming auxiliaries in place, the maximum power available at rated speed shall be determined with the governor set at its fuel stop. The generator set shall maintain this power for a minimum of two (2) minutes.
- I. Linear Vibration Test: A test for in-line motion of components occurring along a repeatable path shall meet the manufacturer's acceptable criteria.
- J. Cooling System Test: A cooling system test shall demonstrate the ability of the generator set cooling system to maintain normal operating temperature while operating at full rated load and power factor at the highest ambient temperature (104 °F) of the system rating. Cooling air requirements, radiator air flow and maximum allowable restriction at radiator discharge shall be verified by this test.
- K. Motor Starting KVA Test: Motor starting KVA shall be determined by test, based on a sustained RMS recovery voltage of at least 90 percent on no load voltage with the specified load KVA at near zero power factor applied to the generator set.
- L. Transient Response, Steady State Speed Control and Voltage Regulation Test: Prototype generator set tests shall demonstrate consistent performance as follows; stable voltage and frequency at all loads from no load to full rated load, consistent frequency kp on load acceptance and rejection and restoration to steady state after sudden load changes. Transient response is a complete generator set (engine, generator, exciter, and regulator) performance criteria and cannot be established on generator data alone.



- M. Witness-Generator Set Factory Production Tests: On the equipment to be shipped, an eight-(8) hour test shall be performed at rated load and 0.8 PF. These tests shall include certified data to document the following: run at full load, maximum power, voltage regulation, transient and steady state governing, single step load pickup and safety shutdowns. Provide a factory test record of the production testing. The Contractor and/or equipment supplier at their expense shall coordinate and provide all transportation and lodging for the owner and Owner's engineering representative to witness the above stated factory test. Tests performed at facilities other than the manufacturer's factory shall not be acceptable.
- N. Factory Test: The unit shall completely assembled and all preliminary adjustments made before the test is initiated. 50 KW genset shall be tested with the complete radiator and fan assembly to be shipped. Outside radiator, heat exchanger attachments shall not be acceptable.
- O. Testing Procedure:
1. Test diesel-alternator unit at 0.8 PF in the following sequence:
  2. 0.5 hour at  $\frac{1}{4}$  load.
  3. 1.0 hours at  $\frac{1}{2}$  load.
  4. 1.0 hours at  $\frac{3}{4}$  load.
  5. 2 hours at full load.
- P. Above testing shall be strip chart recorded and certified. During this test, the following measurements shall be taken and recorded on a certified report format:
1. Barometric Pressure.
  2. Intake Air Pressure.
  3. RPM.
  4. Output voltage per phase.
  5. Output amperes per phase.
  6. Power Factor.
  7. KW.
  8. Winding temperature.
  9. Transient response testing sequence:

10. 0-25%, 25%-0.
  11. 0-50%, 50%-0.
  12. 0-75%, 75%-0.
  13. 0-100%, 100%-0.
- Q. Above testing shall be strip chart recorded. Provide necessary equipment and instruments to measure voltage dips and frequency dips. Comparison shall be made to the herein specified alternator performance characteristics prior to acceptance.
- R. Field Acceptance Tests: Generator supplier shall provide and conduct a four (4) hour load bank test at unity power factor for the generator set. Contractor must provide portable load bank for testing generator set at 100% load. Load bank test shall test each generator at full nameplate KW ratings. Generator manufacturer's representative shall record test data, as described below. Test data shall be tabulated and typed for submission and approval by the engineer for final acceptance. No handwritten field notes will be allowed.
- S. Initial start up and field acceptance tests are to be conducted by the authorized representative of the system manufacturer who supplies the equipment. Contractor responsible for protection of testing equipment and any additional cable, etc., required if equipment cannot be located internally during testing.
- T. Test data shall be collected and recorded on the following: Time of day, coolant temperature, operating oil pressure, battery charging rate, cranking time, crank-to-rated frequency time, voltage and frequency overshoot, load assumption-to-steady state voltage and frequency stabilization time, operating voltage, frequency, current, kilowatts and power factor. All data shall be taken every fifteen (15) minutes.

#### 1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum ten (10) years documented experience, and with an authorized distributor offering 24 hour parts and service availability within 50 miles of the project. Proposed engine/generator combination shall have been in production a minimum of five (5) years.
- B. Supplier: Authorized distributor of specified manufacturer with minimum five (5) years documented experience with specified products and factory-trained service technicians.

#### 1.7 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70, NFPA 110, and NFPA 101.

- B. Furnish Products listed and classified by Underwriters Laboratories as suitable for purpose specified and indicated.

#### 1.8 PRE-INSTALLATION CONFERENCE

- A. Convene one (1) week prior to commencing work of this Section.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site.
- B. Accept unit on site mounted on trailer. Inspect for damage. Provide written verification that Genset tested and Genset received are one and the same.
- C. Protect equipment from dirt and moisture by securely wrapping in heavy plastic during construction.

#### 1.10 EXTRA MATERIALS

- A. Provide two (2) of each fuel, oil and air filter element, engine belts and hoses.

#### 1.11 WARRANTY

- A. A no deductible comprehensive warranty shall be provided for all products against defects in materials and workmanship for a five-year or 1500 hour period from the start-up date. Warranty shall cover all costs of covered repairs, including travel expenses.

#### 1.12 SERVICE AGREEMENT

- A. Manufacturer shall provide Owner with a two (2) year service agreement that includes changing all fluids and filters once a year and a minor inspection six (6) months after each change.

### **PART 2 - PRODUCTS**

#### 2.1 MANUFACTURERS

- A. Approved manufacturer:
  - 1. Cummins Power Generation, model C50 D6 rated for STANDBY POWER with BB96 Frame Alternator as distributed by Cummins Power Generation, 890 Zerega Avenue, Bronx, NY 10473. Contact Ed Cheung: 718-892-2400, ext. 217.

- B. It is intended that all products specified herein be of standard ratings, therefore, the KW and KVA, starting KVA and maximum allowable voltage dip, ratings, etc., shall be the manufacturer's next size or rating to exactly meet the specifications. No exceptions.

## 2.2 DIESEL ENGINE-GENERATOR SET

### A. Ratings

1. The generator set shall operate at 1800 rpm and at a voltage of: 120/240 Volts AC, 1-phase, 3-wire, 60 hertz.
2. The generator set shall be rated at 50 kW, 62.5 kVA at 0.8 PF, standby rating, based on site conditions of: Altitude 1,000 ft., ambient temperatures up to 104 degrees F (40 degrees C).

### B. Performance

1. Voltage regulation shall be plus or minus 0.5 percent for any constant load between no load and rated load. Random voltage variation with any steady load from no load to full load shall not exceed plus or minus 0.5 percent.
2. Frequency regulation shall be isochronous from steady state no load to steady state rated load. Random frequency variation with any steady load from no load to full load shall not exceed plus or minus 0.25%.
3. The diesel engine-generator set shall accept a single step load of 100% nameplate kW and power factor, less applicable derating factors, with the engine-generator set at operating temperature.
4. Motor starting capability shall be a minimum of 180 kVA. The generator set shall be capable of recovering to a minimum of 90% of rated no load voltage following the application of the specified kVA load at near zero power factor applied to the generator set. Maximum voltage dip on application of this load, considering both alternator performance and engine speed changes shall not exceed 15% –based on gensize calculations.
5. The alternator shall produce a clean AC voltage waveform, with not more than 5% total harmonic distortion at full linear load, when measured from line to neutral, and with not more than 3% in any single harmonic, and no 3rd order harmonics or their multiples. Telephone influence factor shall be less than 40.
6. The generator set shall be certified by the engine manufacturer to be suitable for use at the installed location and rating, and shall meet all applicable exhaust emission requirements at the time of commissioning.

### C. Construction

1. The engine-generator set shall be mounted on a heavy-duty steel base to maintain alignment between components. The base shall incorporate a battery tray with hold-down clamps within the rails.
2. All switches, lamps, and meters in the control system shall be oil-tight and dust-tight. All active control components shall be installed within a UL/NEMA 3R enclosure. There shall be no exposed points in the control (with the door open) that operate in excess of 50 volts.

D. Connections

1. The generator set load connections shall be composed of silver or tin plated copper bus bars, drilled to accept mechanical or compression terminations of the number and type as shown on the drawings. Sufficient lug space shall be provided for use with cables of the number and size as shown on the drawings.
2. Power connections to auxiliary devices shall be made at the devices.
3. Generator set control interfaces to other system components shall be made on a permanently labeled terminal block assembly. Labels describing connection point functions shall be provided.

2.3 ENGINE AND ENGINE EQUIPMENT

- A. The engine shall be diesel, EPA TIER 4 Certified, 4 cycle, radiator and fan cooled. Minimum displacement shall be 272 cubic inches, with 4 cylinders. The horsepower rating of the engine at its minimum tolerance level shall be sufficient to drive the alternator and all connected accessories. Two cycle engines are not acceptable.
- B. A digital electronic governor system shall provide automatic isochronous frequency regulation. The governing system dynamic capabilities shall be controlled as a function of engine coolant temperature to provide fast, stable operation at varying engine operating temperature conditions. The control system shall actively control the fuel rate and excitation as appropriate to the state of the generator set. Fuel rate shall be regulated as a function of starting, accelerating to start disconnect speed, accelerating to rated speed. The governing system shall include a programmable warm up at idle and cooldown at idle function. While operating in idle state, the control system shall disable the alternator excitation system.
- C. Skid-mounted radiator and cooling system rated for full load operation in 104 degrees F (40 degrees C) ambient as measured at the alternator air inlet. Radiator fan shall be suitable for use in a system with 0.5 in H<sub>2</sub>O restriction. Radiator shall be sized based on a core temperature that is 20F higher than the rated operation temperature, or prototype tested to verify cooling performance of the

engine/radiator/fan operation in a controlled environment. Radiator shall be provided with a duct adapter flange. The equipment manufacturer shall fill the cooling system with a 50/50-ethylene glycol/water mixture prior to shipping. Rotating parts shall be guarded against accidental Electric starter(s) capable of three complete cranking cycles without overheating.

## 2.4 ENGINE ACCESSORY EQUIPMENT

A. The engine for the generator shall include the following accessories:

1. Positive displacement, contact.
2. Mechanical, full pressure, lubrication oil pump.
3. Full flow lubrication oil filters with replaceable spin-on canister elements and dipstick oil level indicator.
4. An engine driven, mechanical, positive displacement fuel pump. Fuel filter with replaceable spin-on canister element. Fuel cooler, suitable for operation of the generator set at full rated load in the ambient temperature specified shall be provided if required for operation due to the design of the engine and the installation.
5. Replaceable dry element air cleaner with restriction indicator.
6. Flexible supply and return fuel lines.
7. Engine mounted battery charging alternator, 40-ampere minimum, and solid-state voltage regulator.

B. Coolant heater

1. Engine mounted, thermostatically controlled, coolant heater(s) for each engine. Heater voltage shall be as shown on the project drawings. The coolant heater shall be UL499 listed and labeled.
2. The coolant heater shall be installed on the engine with silicone hose connections. Steel tubing shall be used for connections into the engine coolant system wherever the length of pipe run exceeds 12 inches. The coolant heater installation shall be specifically designed to provide proper venting of the system. The coolant heaters shall provisions to isolate the heater for replacement of the heater element without draining the coolant from the generator set. The quick disconnect/automatic sealing couplers shall allow the heater element to be replaced without draining the engine cooling system or significant coolant loss.
3. The coolant heater shall be provided with a 24VDC thermostat, installed at the engine thermostat housing. An AC power connection box shall be

provided for a single AC power connection to the coolant heater system.

4. The coolant heater(s) shall be 120V, 1500 watts and sized as recommended by the engine manufacturer to warm the engine to a minimum of 104F (40C) in a 40F (4C) ambient, in compliance with NFPA110 requirements, or the temperature required for starting and load pickup requirements of this specification.
- C. Provide vibration isolators, spring/pad type, quantity as recommended by the generator set manufacturer. Isolators shall include seismic restraints if required by site location.
- D. Starting and Control Batteries shall be calcium/lead antimony type, 12 volt DC, sized as recommended by the engine manufacturer, complete with battery cables and connectors. The batteries shall be capable of a minimum of three complete 15-second cranking cycles at 40F ambient temperature when fully charged.
- E. Provide exhaust silencer(s) for each engine of size and type as recommended by the generator set manufacturer and approved by the engine manufacturer. The mufflers shall be critical grade. Exhaust system shall be installed inside the sound enclosure.
- F. A UL listed/CSA certified 10 amp voltage regulated battery charger shall be provided for each engine-generator set. The charger may be located in an automatic transfer switch, or may be wall mounted, at the discretion of the installer. Input AC voltage and DC output voltage shall be as required. Chargers shall be equipped with float, taper and equalize charge settings. Operational monitors shall provide visual output along with individual form C contacts rated at 4 amps, 120 VAC, 30VDC for remote indication of:
  1. Loss of AC power - red light
  2. Low battery voltage - red light
  3. High battery voltage - red light
  4. Power ON - green light (no relay contact)
- G. Charger shall include an Analog DC voltmeter and ammeter, 12 hour equalize charge timer, and AC and DC fuses.

## 2.5 AC ALTERNATOR

- A. The AC generator shall be; synchronous, four pole, 2/3 pitch, revolving field, drip-proof construction, single prelubricated sealed bearing, air cooled by a direct drive centrifugal blower fan, and directly connected to the engine with flexible drive disc. All insulation system components shall meet NEMA MG1 temperature limits for Class H insulation system and shall be UL1446 listed. Actual temperature rise

measured by resistance method at full load shall not exceed 105 degrees Centigrade.

- B. The generator shall be capable of delivering rated output (kVA) at rated frequency and power factor, at any voltage not more than 5 percent above or below rated voltage.
- C. Provide 120VAC alternator anti-condensation heater, size as recommended by manufacturer.
- D. A permanent magnet generator (PMG) shall be included to provide a reliable source of excitation power for optimum motor starting and short circuit performance. The PMG and controls shall be capable of sustaining and regulating current supplied to a single phase or three phase fault at approximately 300% of rated current for not more than 10 seconds.
- E. The subtransient reactance of the alternator shall not exceed 7 percent, based on the 105°C rise rating.
- F. Alternator shall be rated for a minimum of 55 KW at a 105°C, standby.

## 2.6 ENGINE GENERATOR SET CONTROL

- A. Generator set Control. The generator set shall be provided with a microprocessor-based control system that is designed to provide automatic starting, monitoring, and control functions for the generator set. The control system shall also be designed to allow local monitoring and control of the generator set, and remote monitoring and control as described in this specification.
- B. The control shall be mounted on the generator set, or may be mounted in a free-standing panel next to the generator set if adequate space and accessibility is available. The control shall be vibration isolated and prototype tested to verify the durability of all components in the system under the vibration conditions encountered.
- C. Control Switches
  - 1. Mode Select Switch. The mode select switch shall initiate the following control modes. When in the RUN or MANUAL position the generator set shall start, and accelerate to rated speed and voltage as directed by the operator. A separate push-button to initiate starting is acceptable. In the OFF position the generator set shall immediately stop, bypassing all time delays. In the AUTO position the generator set shall be ready to accept a signal from a remote device to start and accelerate to rated speed and voltage.
  - 2. EMERGENCY STOP switch. Switch shall be Red "mushroom-head" push-button. Depressing the emergency stop switch shall cause the



generator set to immediately shut down, and be locked out from automatic restarting.

3. RESET switch. The RESET switch shall be used to clear a fault and allow restarting the generator set after it has shut down for any fault condition.
4. PANEL LAMP switch. Depressing the panel lamp switch shall cause the entire panel to be lighted with DC control power. The panel lamps shall automatically be switched off 10 minutes after the switch is depressed, or after the switch is depressed a second time.

D. Generator Set AC Output Metering. The generator set shall be provided with a metering set including the following features and functions:

1. Digital metering set, .5% accuracy, to indicate generator RMS voltage and current, frequency, output current, output KW, KW-hours, and power factor. Generator output voltage shall be available in line-to-line and line-to-neutral voltages, and shall display all three-phase voltages (line to neutral or line to line) simultaneously.
2. Analog voltmeter, ammeter, frequency meter, power factor meter, and kilowatt (KW) meter. Voltmeter and ammeter shall display all three phases. Meter scales shall be color coded in the following fashion: green shall indicate normal operating condition, amber shall indicate operation in ranges that indicate potential failure, and red shall indicate failure impending. Metering accuracy shall be within 1% at rated output. Both analog and digital metering are required.
3. The control system shall monitor the total load on the generator set, and maintain data logs of total operating hours at specific load levels ranging from 0 to 110% of rated load, in 10% increments. The control shall display hours of operation at less than 30% load and total hours of operation at more than 90% of rated load.
4. The control system shall log total number of operating hours, total kWH, and total control on hours, as well as total values since reset.

E. Generator Set Alarm and Status Display.

1. The generator set control shall include LED alarm and status indication lamps. The lamps shall be high-intensity LED type. The lamp condition shall be clearly apparent under bright room lighting conditions. Functions indicated by the lamps shall include:
  - a. The control shall include five configurable alarm-indicating lamps. The lamps shall be field adjustable for any status, warning, or shutdown function monitored by the genset. They shall also be

- configurable for color, and control action (status, warning, or shutdown).
- b. The control shall include green lamps to indicate that the generator set is running at rated frequency and voltage, and that a remote start signal has been received at the generator set. The running signal shall be based on actual sensed voltage and frequency on the output terminals of the generator set.
  - c. The control shall include a flashing red lamp to indicate that the control is not in automatic state, and red common shutdown lamp.
  - d. The control shall include an amber common warning indication lamp.
2. The generator set control shall indicate the existence of the warning and shutdown conditions on the control panel. All conditions indicated below for warning shall be field-configurable for shutdown. Conditions required to be annunciated shall include:
- a. low oil pressure (warning)
  - b. low oil pressure (shutdown)
  - c. oil pressure sender failure (warning)
  - d. low coolant temperature (warning)
  - e. high coolant temperature (warning)
  - f. high coolant temperature (shutdown)
  - g. high oil temperature (warning)
  - h. engine temperature sender failure (warning)
  - i. low coolant level (warning)
  - j. fail to crank (shutdown)
  - k. fail to start/overcrank (shutdown)
  - l. overspeed (shutdown)
  - m. low DC voltage (warning)
  - n. high DC voltage (warning)
  - o. weak battery (warning)

- p. low fuel-daytank (warning)
  - q. high AC voltage (shutdown)
  - r. low AC voltage (shutdown)
  - s. under frequency (shutdown)
  - t. over current (warning)
  - u. over current (shutdown)
  - v. short circuit (shutdown)
  - w. ground fault (warning) (optional--when required by code or specified)
  - x. over load (warning)
  - y. emergency stop (shutdown)
  - z. (4) configurable conditions
3. Provisions shall be made for indication of four customer-specified alarm or shutdown conditions. Labeling of the customer-specified alarm or shutdown conditions shall be of the same type and quality as the above-specified conditions. The non-automatic indicating lamp shall be red, and shall flash to indicate that the generator set is not able to automatically respond to a command to start from a remote location.

F. Engine Status Monitoring.

- 1. The following information shall be available from a digital status panel on the generator set control
  - a. engine oil pressure (psi or kPA)
  - b. engine coolant temperature (degrees F or C)
  - c. engine oil temperature (degrees F or C)
  - d. engine speed (rpm)
  - e. number of hours of operation (hours)
  - f. number of start attempts
  - g. battery voltage (DC volts)

2. The control system shall also incorporate a data logging and display provision to allow logging of the last 10 warning or shutdown indications on the generator set, as well as total time of operation at various loads, as a percent of the standby rating of the generator set.
3. Provide and install a 20-light LED type remote alarm annunciator with horn, located as shown on the Drawings or in a location that can be conveniently monitored by facility personnel. The remote annunciator shall provide all the audible and visual alarms called for by NFPA Standard 110 for level 1 systems for the local generator control panel. Spare lamps shall be provided to allow future addition of other alarm and status functions to the annunciator. Provisions for labeling of the annunciator in a fashion consistent with the specified functions shall be provided. Alarm silence and lamp test switch(es) shall be provided. LED lamps shall be replaceable, and indicating lamp color shall be capable of changes needed for specific application requirements. Alarm horn (when switched on) shall sound for first fault, and all subsequent faults, regardless of whether first fault has been cleared, in compliance with NFPA110 3-5.6.2. The interconnecting wiring between the annunciator and other system components shall be monitored and failure of the interconnection between components shall be displayed on the annunciator panel.

The annunciator shall include the following alarm labels, audible annunciation features, and lamp colors:

Condition	Lamp Color	Audible Alarm
Genset Supplying Load	Amber	No
Charger AC Failure	Amber	Yes
Low Coolant Level	Amber	Yes
Low Fuel Level	Red	Yes
Check Genset	Amber	No
Not In Auto	Red	Yes
Genset Running	Amber	No
High Battery Voltage	Amber	Yes
Low Battery Voltage	Red	Yes

Condition	Lamp Color	Audible Alarm
Weak Battery	Red	Yes
Fail to Start	Red	Yes
Low Coolant Temperature	Red	Yes
Pre-High Engine Temperature	Amber	Yes
High Engine Temperature	Red	Yes
Pre-Low Oil Pressure	Red	Yes
Low Oil Pressure	Red	Yes
Overspeed	Red	Yes
(4) Spares	Configurable	Configurable

## 2.7 ENGINE CONTROL FUNCTIONS

- A. The control system provided shall include a cycle cranking system, which allows for user selected crank time, rest time, and # of cycles. Initial settings shall be for 3 cranking periods of 15 seconds each, with 15-second rest period between cranking periods.
- B. The control system shall include an idle mode control, which allows the engine to run in idle mode in the RUN position only. In this mode, the alternator excitation system shall be disabled. Total duration of operating time in the idle mode shall be controlled by the system, to prevent degradation of the engine capabilities due to excess operating time at idle.
- C. The control system shall include an engine governor control, which functions to provide steady state frequency regulation as noted elsewhere in this specification. The governor control shall include adjustments for gain, damping, and a ramping function to control engine speed and limit exhaust smoke while the unit is starting.
- D. The control system shall include time delay start (adjustable 0-300 seconds) and time delay stop (adjustable 0-600 seconds) functions.
- E. The control system shall include sender failure monitoring logic for speed sensing, oil pressure, and engine temperature which is capable of discriminating between failed sender or wiring components, and an actual failure conditions.

## 2.8 ALTERNATOR CONTROL FUNCTIONS

- A. The generator set shall include a full wave rectified automatic digital voltage regulation system that is matched and prototype tested by the engine manufacturer with the governing system provided. It shall be immune from misoperation due to load-induced voltage waveform distortion and provide a pulse width modulated output to the alternator exciter. The voltage regulation system shall be equipped with three-phase line to neutral RMS sensing and shall control buildup of AC generator voltage to provide a linear rise and limit overshoot. The system shall include a torque-matching characteristic, which shall reduce output voltage in proportion to frequency below an adjustable frequency threshold. Torque matching characteristic shall be adjustable for roll-off frequency and rate, and be capable of being curve-matched to the engine torque curve with adjustments in the field. The voltage regulator shall include adjustments for gain, damping, and frequency roll-off. Adjustments shall be broad range, and made via digital raise-lower switches, with an alphanumeric LED readout to indicate setting level. Rotary potentiometers for system adjustments are not acceptable.
- B. Controls shall be provided to monitor the output current of the generator set and initiate an alarm (over current warning) when load current exceeds 110% of the rated current of the generator set on any phase for more than 60 seconds. The controls shall shut down and lock out the generator set when output current level approaches the thermal damage point of the alternator (over current shutdown). The protective functions provided shall be in compliance to the requirements of NFPA70 article 445.
- C. Controls shall be provided to individually monitor all three phases of the output current for short circuit conditions. The control/protection system shall monitor the current level and voltage. The controls shall shut down and lock out the generator set when output current level approaches the thermal damage point of the alternator (short circuit shutdown). The protective functions provided shall be in compliance to the requirements of NFPA70 article 445.
- D. Controls shall be provided to monitor the KW load on the generator set, and initiate an alarm condition (over load) when total load on the generator set exceeds the generator set rating for in excess of 5 seconds. Controls shall include a load shed control, to operate a set of dry contacts (for use in shedding customer load devices) when the generator set is overloaded.
- E. An AC over/under voltage monitoring system that responds only to true RMS voltage conditions shall be provided. The system shall initiate shutdown of the generator set when alternator output voltage exceeds 110% of the operator-set voltage level for more than 10 seconds, or with no intentional delay when voltage exceeds 130%. Under voltage shutdown shall occur when the output voltage of the alternator is less than 85% for more than 10 seconds.

- F. When required by National Electrical Code or indicated on project drawings, the control System shall include a ground fault monitoring relay. The relay shall be adjustable from 3.8-1200 amps, and include adjustable time delay of 0-10.0 seconds. The relay shall be for indication only, and not trip or shut down the generator set. Note bonding and grounding requirements for the generator set, and provide relay that will function correctly in system as installed.

## 2.9 OTHER CONTROL FUNCTIONS

- A. A battery monitoring system shall be provided which initiates alarms when the DC control and starting voltage is less than 25VDC or more than 32 VDC. During engine cranking (starter engaged), the low voltage limit shall be disabled, and DC voltage shall be monitored as load is applied to the battery, to detect impending battery failure or deteriorated battery condition.

## 2.10 GENERATOR MAIN LINE CIRCUIT BREAKER

- A. The generator set shall be provided with dual mounted main line circuit breakers, rated 200 amps and 100 amps. The circuit breaker shall incorporate an electronic trip unit that operates to protect the alternator under all overcurrent conditions, or a thermal-magnetic trip with other overcurrent protection devices that positively protect the alternator under overcurrent conditions. The supplier shall submit time overcurrent characteristic curves and thermal damage curve for the alternator, demonstrating the effectiveness of the protection provided.

## 2.11 OUTDOOR WEATHER-PROTECTIVE SOUND ATTENUATED ENCLOSURE

- A. Construction:
  - 1. Steel - UL2200 listed Sound Attenuated, Weatherproof Genset Enclosure
    - a. Package shall comply with the requirements of the NEC for all wiring materials and components.
    - b. Sound attenuation rating of 70.3 dBA @ 7m.
    - c. The enclosure shall be designed in which allows generator set to operate at full rated load in an ambient temperature of up to 104 F.
- B. The enclosure will consist of a cambered roof, two sidewalls, two end walls, and a nominal 258 Gallon fuel tank base, incorporating prepainted aluminum construction and application-specific non-hydroscopic acoustic insulation, air handling equipment designed to provide the specified level of sound attenuation.
- C. Exhaust silencer shall be installed inside enclosure. The exhaust shall exit the enclosure through a rain collar and terminate with rain cap.

- D. The enclosure shall include flexible coolant and lubricating oil drain lines, that extend to the exterior of the enclosure with internal drain valves.
- E. External radiator fill provision must be provided.
- F. Doors shall be recessed, lockable with retainers to hold doors open for easy access.
- G. Inlet of enclosure shall be provided with rodent barriers.

## 2.12 SUBBASE FUEL TANK

- A. Provide a sub-base nominal 258 gallon fuel tank for the generator set. The sub-base fuel tank shall be UL142 listed and labeled. Installation shall be in compliance to NFPA 37. The fuel tank shall be a double-walled, steel construction and include the following features:
  - 1. Emergency tank and basin vents.
  - 2. Mechanical level gauge.
  - 3. Fuel supply and return lines, connected to generator set with flexible fuel lines as recommended by the engine manufacturer and in compliance to UL2200 and NFPA 37 requirements.
  - 4. Leak detection provisions, wired to the generator set control for local and remote alarm indication.
  - 5. Low level float switches to indicate fuel level. Wire switches to generator control for local and remote indication of fuel level.
  - 6. Basin drain.
  - 7. Integral lifting provisions.

## PART 3 - EXECUTION

### 3.1 ACCEPTANCE

- A. Equipment shall be initially started and operated by representatives of the manufacturer.
- B. All equipment shall be physically inspected for damage. Scratches and other installation damage shall be repaired prior to final system testing. Equipment shall be thoroughly cleaned to remove all dirt and construction debris prior to final testing of the system.



3.2 TRAINING

- A. The equipment supplier shall provide training for the facility operating personnel covering operation and maintenance of the equipment provided. The training program shall be not less than two (2) four (4) hours sessions in duration and the class size shall be limited to five (5) persons. Training date shall be coordinated with the facility owner.

3.3 DEMONSTRATION

- A. Provide systems demonstration. Electric Contractor shall provide fuel for testing and shall fill tank complete after all testing is done and before turning over to Owner.
- B. Describe loads connected to standby system and restrictions for future load additions.
- C. Simulate power outage by interrupting normal source, and demonstrate that system operates to provide standby power.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 26 36 00**

**AUTOMATIC TRANSFER SWITCHES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section includes automatic transfer switches rated 600 V and less.

**1.2 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
- B. Shop Drawings:
  - 1. Include plans, elevations, sections, details showing minimum clearances, conductor entry provisions, gutter space, and installed features and devices.
  - 2. Single-Line Diagram: Show connections between transfer switch, power sources, and load.

**1.3 INFORMATIONAL SUBMITTALS**

- A. Seismic Qualification Certificates: For transfer switches, accessories, and components, from manufacturer.
- B. Source quality control reports.
- C. Field quality-control reports.

**1.4 CLOSEOUT SUBMITTALS**

- A. Operation and maintenance data.

**1.5 WARRANTY**

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of transfer switch or transfer switch components that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: 12 months from date of Substantial Completion.

## **PART 2 - PRODUCTS**

### **2.1 PERFORMANCE REQUIREMENTS – ASCO 7000 SERIES**

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NEMA ICS 1.
- C. Comply with NFPA 99.
- D. Comply with NFPA 110.
- E. Comply with UL 1008 unless requirements of these Specifications are stricter.
- F. Indicated Current Ratings: Apply as defined in UL 1008 for continuous loading and total system transfer, including tungsten filament lamp loads not exceeding 30 percent of switch ampere rating, unless otherwise indicated.
- G. Tested Fault-Current Closing and Short-Circuit Ratings: Adequate for duty imposed by protective devices at installation locations in Project under the fault conditions indicated, based on testing according to UL 1008.
  - 1. Where transfer switch includes internal fault-current protection, rating of switch and trip unit combination shall exceed indicated fault-current value at installation location.
- H. Repetitive Accuracy of Solid-State Controls: All settings shall be plus or minus 2 percent or better over an operating temperature range of minus 20 to plus 70 deg C.
- I. Resistance to Damage by Voltage Transients: Components shall meet or exceed voltage-surge withstand capability requirements when tested according to IEEE C62.62. Components shall meet or exceed voltage-impulse withstand test of NEMA ICS 1.
- J. Electrical Operation: Accomplish by a nonfused, momentarily energized solenoid or electric-motor-operated mechanism. Switches for emergency or standby purposes shall be mechanically and electrically interlocked in both directions to prevent simultaneous connection to both power sources unless closed transition.
- K. Service-Rated Transfer Switch:
  - 1. Comply with UL 869A and UL 489.
  - 2. Provide terminals for bonding the grounding electrode conductor to the grounded service conductor.

3. In systems with a neutral, the bonding connection shall be on the neutral bus.
  4. Provide removable link for temporary separation of the service and load grounded conductors.
  5. Service Disconnecting Means: Externally operated, manual, mechanically actuated.
- L. Neutral Terminal: Solid and fully rated unless otherwise indicated.
- M. Oversize Neutral: Ampacity and switch rating of neutral path through units indicated for oversize neutral shall be double the nominal rating of circuit in which switch is installed.
- N. Factory Wiring: Train and bundle factory wiring and label, consistent with Shop Drawings, by color-code or by numbered or lettered wire and cable with printed markers at terminations. Color-coding and wire and cable markers are specified in Section 26 05 53 "Identification for Electrical Systems."
1. Designated Terminals: Pressure type, suitable for types and sizes of field wiring indicated.
  2. Power-Terminal Arrangement and Field-Wiring Space: Suitable for top, side, or bottom entrance of feeder conductors as indicated.
  3. Control Wiring: Equipped with lugs suitable for connection to terminal strips.
  4. Accessible via front access.
- O. Enclosures: General-purpose NEMA 250, Type 3R complying with NEMA ICS 6 and UL 508, unless otherwise indicated.

## 2.2 CONTACTOR-TYPE AUTOMATIC TRANSFER SWITCHES

- A. Comply with Level 1 equipment according to NFPA 110.
- B. Switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.
1. Limitation: Switches using molded-case switches or circuit breakers or insulated-case circuit-breaker components are unacceptable.
  2. Switch Action: Double throw; mechanically held in both directions.

3. Contacts: Silver composition or silver alloy for load-current switching. Contactor-style automatic transfer-switch units, rated 600 A and higher, shall have separate arcing contacts.
  4. Conductor Connectors: Suitable for use with conductor material and sizes.
  5. Material: Hard-drawn copper, 98 percent conductivity.
  6. Main and Neutral Lugs: Compression type.
  7. Ground Lugs and Bus-Configured Terminators: Compression type.
  8. Ground bar.
  9. Connectors shall be marked for conductor size and type according to UL 1008.
- C. Automatic Open-Transition Transfer Switches: Interlocked to prevent the load from being closed on both sources at the same time.
1. Sources shall be mechanically and electrically interlocked to prevent closing both sources on the load at the same time.
- D. Automatic Transfer-Switch Controller Features:
1. Controller operates through a period of loss of control power.
  2. Undervoltage Sensing for Each Phase of Normal and Alternate Source: Sense low phase-to-ground voltage on each phase. Pickup voltage shall be adjustable from 85 to 100 percent of nominal, and dropout voltage shall be adjustable from 75 to 98 percent of pickup value. Factory set for pickup at 90 percent and dropout at 85 percent.
  3. Voltage/Frequency Lockout Relay: Prevent premature transfer to generator. Pickup voltage shall be adjustable from 85 to 100 percent of nominal. Factory set for pickup at 90 percent. Pickup frequency shall be adjustable from 90 to 100 percent of nominal. Factory set for pickup at 95 percent.
  4. Time Delay for Retransfer to Normal Source: Adjustable from zero to 30 minutes, and factory set for 10 minutes. Override shall automatically defeat delay on loss of voltage or sustained undervoltage of emergency source, provided normal supply has been restored.
  5. Test Switch: Simulate normal-source failure.
  6. Switch-Position Pilot Lights: Indicate source to which load is connected.

7. Source-Available Indicating Lights: Supervise sources via transfer-switch normal- and emergency-source sensing circuits.
  - a. Normal Power Supervision: Green light with nameplate engraved "Normal Source Available."
  - b. Emergency Power Supervision: Red light with nameplate engraved "Emergency Source Available."
8. Unassigned Auxiliary Contacts: Two normally open, single-pole, double-throw contacts for each switch position, rated 10 A at 240-V ac.
9. Transfer Override Switch: Overrides automatic retransfer control so transfer switch will remain connected to emergency power source regardless of condition of normal source. Pilot light indicates override status.
10. Engine Starting Contacts: One isolated and normally closed, and one isolated and normally open; rated 10 A at 32-V dc minimum.
11. Engine Shutdown Contacts: Time delay adjustable from zero to five minutes, and factory set for five minutes. Contacts shall initiate shutdown at remote engine-generator controls after retransfer of load to normal source.
12. Engine-Generator Exerciser: Solid-state, programmable-time switch starts engine generator and transfers load to it from normal source for a preset time, then retransfers and shuts down engine after a preset cool-down period. Initiates exercise cycle at preset intervals adjustable from 7 to 30 days. Running periods shall be adjustable from 10 to 30 minutes. Factory settings shall be for 7-day exercise cycle, 20-minute running period, and 5-minute cool-down period. Exerciser features include the following:
  - a. Exerciser Transfer Selector Switch: Permits selection of exercise with and without load transfer.
  - b. Push-button programming control with digital display of settings.
  - c. Integral battery operation of time switch when normal control power is unavailable.

## 2.3 SOURCE QUALITY CONTROL

- A. Factory Tests: Test and inspect components, assembled switches, and associated equipment according to UL 1008. Ensure proper operation. Check transfer time and voltage, frequency, and time-delay settings for compliance with specified requirements. Perform dielectric strength test complying with NEMA ICS 1.

- B. Prepare test and inspection reports.
  - 1. For each of the tests required by UL 1008, performed on representative devices, for emergency systems, include results of test for the following conditions:
    - a. Overvoltage.
    - b. Undervoltage.
    - c. Loss of supply voltage.
    - d. Reduction of supply voltage.
    - e. Alternative supply voltage or frequency is at minimum acceptable values.
    - f. Temperature rise.
    - g. Dielectric voltage-withstand; before and after short-circuit test.
    - h. Overload.
    - i. Contact opening.
    - j. Endurance.
    - k. Short circuit.
    - l. Short-time current capability.
    - m. Receptacle withstand capability.
    - n. Insulating base and supports damage.

### **PART 3 – EXECUTION**

#### **3.1 INSTALLATION**

- A. Annunciator and Control Panel Mounting: Surface on wall unless otherwise indicated.
- B. Identify components according to Section 26 05 53 "Identification for Electrical Systems."
- C. Set field-adjustable intervals and delays, relays, and engine exerciser clock.
- D. Comply with NECA 1.



### 3.2 CONNECTIONS

- A. Wiring to Remote Components: Match type and number of cables and conductors to generator sets, motor controls, control, and communication requirements of transfer switches as recommended by manufacturer. Increase raceway sizes at no additional cost to Owner if necessary to accommodate required wiring.
- B. Wiring Method: Install cables in raceways and cable trays except within electrical enclosures. Conceal raceway and cables except in unfinished spaces.
  - 1. Comply with requirements for raceways and boxes specified in Section 26 05 33 "Raceways and Boxes for Electrical Systems."
- C. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.
- D. Ground equipment according to Section 26 05 26 "Grounding and Bonding for Electrical Systems."
- E. Route and brace conductors according to manufacturer's written instructions. Do not obscure manufacturer's markings and labels.
- F. Brace and support equipment according to Section 26 05 29 "Hangers and Supports for Electrical Systems".
- G. Final connections to equipment shall be made with liquidtight, flexible metallic conduit no more than 18 inches (457 mm) in length.

### 3.3 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
  - 1. Visual and Mechanical Inspection:
    - a. Compare equipment nameplate data with Drawings and Specifications.
    - b. Inspect physical and mechanical condition.
    - c. Inspect anchorage, alignment, grounding, and required clearances.
    - d. Verify that the unit is clean.
    - e. Verify appropriate lubrication on moving current-carrying parts and on moving and sliding surfaces.
    - f. Verify that manual transfer warnings are attached and visible.

- g. Verify tightness of all control connections.
- h. Inspect bolted electrical connections for high resistance using one of the following methods, or both:
  - 1) Use of low-resistance ohmmeter.
  - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method according to manufacturer's published data.
- i. Perform manual transfer operation.
- j. Verify positive mechanical interlocking between normal and alternate sources.
- k. Perform visual and mechanical inspection of surge arresters.
- l. Inspect control power transformers.
  - 1) Inspect for physical damage, cracked insulation, broken leads, tightness of connections, defective wiring, and overall general condition.
  - 2) Verify that primary and secondary fuse or circuit-breaker ratings match Drawings.
  - 3) Verify correct functioning of drawout disconnecting contacts, grounding contacts, and interlocks.

2. Electrical Tests:

- a. Perform insulation-resistance tests on all control wiring with respect to ground.
- b. Perform a contact/pole-resistance test. Compare measured values with manufacturer's acceptable values.
- c. Verify settings and operation of control devices.
- d. Calibrate and set all relays and timers.
- e. Verify phase rotation, phasing, and synchronized operation.
- f. Perform automatic transfer tests.
- g. Verify correct operation and timing of the following functions:

- 1) Normal source voltage-sensing and frequency-sensing relays.
  - 2) Engine start sequence.
  - 3) Time delay on transfer.
  - 4) Alternative source voltage-sensing and frequency-sensing relays.
  - 5) Automatic transfer operation.
  - 6) Interlocks and limit switch function.
  - 7) Time delay and retransfer on normal power restoration.
  - 8) Engine cool-down and shutdown feature.
3. Measure insulation resistance phase-to-phase and phase-to-ground with insulation-resistance tester. Include external annunciation and control circuits. Use test voltages and procedure recommended by manufacturer. Comply with manufacturer's specified minimum resistance.
- a. Check for electrical continuity of circuits and for short circuits.
  - b. Inspect for physical damage, proper installation and connection, and integrity of barriers, covers, and safety features.
  - c. Verify that manual transfer warnings are properly placed.
  - d. Perform manual transfer operation.
4. After energizing circuits, perform each electrical test for transfer switches stated in NETA ATS and demonstrate interlocking sequence and operational function for each switch at least three times.
- a. Simulate power failures of normal source to automatic transfer switches and retransfer from emergency source with normal source available.
  - b. Simulate loss of phase-to-ground voltage for each phase of normal source.
  - c. Verify time-delay settings.
  - d. Verify pickup and dropout voltages by data readout or inspection of control settings.

- e. Perform contact-resistance test across main contacts and correct values exceeding 500 microhms and values for one pole deviating by more than 50 percent from other poles.
  - f. Verify proper sequence and correct timing of automatic engine starting, transfer time delay, retransfer time delay on restoration of normal power, and engine cool-down and shutdown.
- B. Coordinate tests with tests of generator and run them concurrently.
- C. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation and contact resistances and time delays. Attach a label or tag to each tested component indicating satisfactory completion of tests.
- D. Transfer switches will be considered defective if they do not pass tests and inspections.
- E. Remove and replace malfunctioning units and retest as specified above.
- F. Prepare test and inspection reports.
- G. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each switch. Remove all access panels so joints and connections are accessible to portable scanner.
- 1. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
  - 2. Record of Infrared Scanning: Prepare a certified report that identifies switches checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

### 3.4 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain transfer switches and related equipment.
- B. Coordinate this training with that for generator equipment.

**END OF SECTION**

**SECTION 31 00 00**

**EARTHWORK**

**PART 1 - GENERAL**

**1.1 SUMMARY**

**A. Scope:**

1. Contractor shall perform all excavating, backfilling, compacting and disposing of earth materials as shown, specified, and required for the purpose of constructing pipelines, concrete work, grading, and other facilities.
2. All necessary preparation of subgrade shall be included.
3. For the purpose of disposal and relocation, excavated materials shall be classified as follows:
  - a. Organic materials, shall be disposed off-site at Department of Environmental Conservation approved disposal sites.
4. Compaction and testing.

**B. Classification**

1. Common excavation is defined as the excavation of all materials that can be excavated, transported, and unloaded using heavy ripping equipment and wheel tractor-scrapers with pusher tractors or that can be excavated and dumped into place or loaded onto hauling equipment by excavators equipped with attachments (shovel, bucket, backhoe, dragline, or clam shell) appropriate to the material type, character, and nature of the materials.
2. Rock excavation is defined as the excavation of all hard, compacted, or cemented materials that require the use of ripping and excavating equipment larger than defined for common excavation (blasting is not permitted). The excavation and removal of isolated boulders or rock fragments larger than 1 cubic yard encountered in materials otherwise conforming to the definition of common excavation shall be classified as rock excavation. The presence of isolated boulders or rock fragments larger than 1 cubic yard is not in itself sufficient cause to change the classification of the surrounding material.

**C. Sources of Materials**

1. Non-frost susceptible fill material shall be obtained from on-site sources, as necessary.

2. Crushed stone materials shall be obtained from off-site sources.
3. Topsoil, except for topsoil stripped from the work areas, shall be obtained from off-site sources.

D. Related Work Specified Elsewhere:

1. Section 31 25 13, Erosion and Sedimentation Control.
2. Section 33 05 05, Buried Pipe Installation.

## 1.2 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00, "Submittal Procedures":

1. Shop Drawings: Submit plans of open cut excavations showing side slopes and limits of the excavation at grade where not shown on the Contract Drawings.
2. Independent Testing Laboratory: Prior to conducting the required tests, the Contractor shall submit, to the Engineer, for approval, the name of the independent test laboratory which will facilitate the required testing.
3. Samples and Test Results:
  - a. At least 2 weeks prior to the date of anticipated use, the Contractor shall submit, to the Engineer, for approval, a representative sample of all off-site material required. The Contractor shall notify the Engineer in writing of the source of each sample.
  - b. The Contractor shall provide, along with the above samples, the required test results, excluding the field density test.
4. Disposal Sites: List of disposal sites for unsuitable materials and all required permits for use of the sites.
5. Manufacturer's Data: Submit for approval manufacturer's specifications, performance characteristics and operating instructions for the compaction equipment.

## 1.3 QUALITY ASSURANCE

- A. Permits and Regulations: Contractor shall perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

B. Reference Standards: Comply with applicable provisions and recommendations of the following except as otherwise shown or specified.

1. ASTM A 328, Steel Sheet Piling.
2. ASTM D 422, Particle-Size Analysis of Soils.
3. ASTM D 2922, Nuclear Density Gauge of Soils.
4. ASTM D 1557, Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, using 10-pound (4.54 kg) Rammer and 18-inch (457 mm) Drop.

C. Tests:

1. An independent testing laboratory shall be employed by the Contractor to perform the required tests.
  - a. Select Fill Samples: Gradation, ASTM D 422.
  - b. Compacted Select Fill: Compaction, ASTM D 1557.
  - c. Optimum Moisture: Maximum density curve for each soil used for backfill.
  - d. Field Density Tests on each lift of backfilled material: ASTM D1556, ASTM D2167 or ASTM D2922.

#### 1.4 JOB CONDITIONS

A. Existing Structures:

1. Shown on the Drawings are certain utilities and surface and underground structures located on or adjacent to the Work. This information has been obtained from existing records. It is not guaranteed to be correct or complete and is shown for the convenience of the Contractor. Contractor shall explore ahead of the required excavation to determine the exact location of all structures and utilities. They shall be supported and protected from injury by the Contractor. If they are broken or injured, they shall be restored immediately by the Contractor at no additional cost to the Owner.
2. Prior to execution of the Work, the Contractor shall check and verify governing dimensions and elevations. The Contractor and Engineer shall jointly survey the condition of adjoining structures. Photographs and records shall be made of any prior settlement or cracking of structures, pavements, and the like, that may become the subject of possible damage claims.

B. Existing Utilities:

1. Locate existing underground utilities in the areas of Work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
2. Should uncharted or incorrectly charted piping or utilities be encountered during excavation, consult the Owner in keeping respective services and facilities in operation. Repair damaged utilities to the satisfaction of the Engineer.
3. Do not interrupt existing utilities serving facilities occupied and used by the Owner or others, except when permitted in writing by Engineer.
4. Demolish and completely remove existing underground utilities indicated to be removed.

C. Protection of Persons and Property:

1. Barricade open excavations occurring as part of this Work and post with warning lights. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
2. Protect structures, utilities, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by Contractor's operations.
3. Consult Engineer and obtain his approval before removing or disturbing pipes, structures, or other facilities that are encountered on the line of the excavation.
4. Structures, utilities, sidewalks, pavements and other facilities removed or disturbed shall be replaced to their original condition, unless otherwise shown, specified or directed.

D. Dust Control: Contractor shall conduct all of his operations and maintain the area of his activities, including sweeping and sprinkling of roadways, so as to minimize creation and dispersion of dust. In addition, Contractor shall be responsible for controlling dust caused by his operation of vehicles and equipment, clearing or for any reason whatever.

E. Odor Control: As an odor abatement measure, cover, at the end of each work day, all areas of organic or odorous material which were exposed during excavation with a minimum 6-in and a maximum 24-inch deep of clean fill. Excavated organic or odorous material shall be immediately removed off-site and shall not be stockpiled on-site.



- F. Roadways and Walks: Unless otherwise approved by Engineer, excavated material and materials of construction shall be so deposited, and the Work shall be so conducted, as to leave open and free for vehicular traffic a roadway not less than 10 feet in width. All hydrants, valves, and other facilities which may require access during construction shall be kept accessible for use. During the progress of the Work, Contractor shall maintain such roadways in satisfactory condition and the Work shall at all times be so conducted as to cause a minimum of inconvenience to the Owner and Pedestrians.

## **PART 2 - PRODUCTS**

### **2.1 GENERAL REQUIREMENTS FOR ALL FILL MATERIAL**

- A. All fill material shall be free of refuse and organic matter, frozen material and other objectionable material.
- B. Excavated materials meeting these requirements and the requirements stipulated below for the appropriate type of fill material shall be used when approved by the Engineer. Otherwise the Contractor shall excavate, haul and place material from approved off-site sources.
- C. All materials shall be subject to inspection by the Engineer. Material not meeting the above specifications shall not be accepted. All costs associated with reprocessing of rejected material shall be borne by the Contractor.

### **2.2 SOIL MATERIALS**

- A. Select Fill: Well graded granular material or bank run gravel, free from organic matter. Not more than 80 percent by weight shall pass through a No. 40 sieve; not more than 10 percent by weight through a No. 200 sieve; and 100 percent shall pass a 3-inch square sieve.
- B. General Fill: Soil materials for general backfill and fill shall be free of organics, clay, debris, waste, frozen materials and other deleterious matter and shall conform to the following gradation.

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
6-inch	100
No. 40	0-70
No. 200	0-15

- C. Prepared General Fill: The Contractor shall sample and test prepared general fill material and submit the test data to the Engineer for approval prior to incorporating the material into the work. Testing shall be performed by an

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independent testing laboratory retained by the Contractor and approved by the Engineer. The Contractor shall sample and test the prepared general fill material as follows:

	<u>Test</u>	<u>Frequency</u>
ASTM D422	Grain Size Distribution	1/1,000 cubic yards
ASTM 1557	Moisture Density Relationship (Modified Proctor)	1/1,000 cubic yards

D. Nonfrost Susceptible Fill:

1. Nonfrost susceptible fill shall be subbase course, type 4, Item No. 304.05 in accordance with the New York State Department of Transportation.
2. Fill shall be installed beneath concrete foundation slabs, concrete decking and pavement as shown on the plans or directed by the Engineer.

E. Crushed aggregate: Shall consist of crushed stone or crushed gravel conforming to the following gradation:

<u>Sieve Size</u>	<u>Percent Retained on Sieve</u>
3/4-inch	85-100 (throughout)

F. Select Granular Fill: Materials furnished under these items shall be suitable and conform to the following requirements:

1. Gradation: Except when used as backfill material for aluminum pipe with Type 1R corrugations (Spiral Rib Pipe) or plastic pipe, the material shall have the following gradation:

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
100 mm	100
75 µm	0 to 15
425µm	0 to 70

When used as backfill for Corrugated Aluminum Pipe, Type 1R (Spiral Rib Pipe) 100% of the material shall also pass the 50 mm sieve. When used as backfill for plastic pipe, 100% of the material shall pass the 19 mm sieve.

2. Soundness: The materials shall be substantially free of shale and soft, poor durability particles. A material with Magnesium Sulfate Soundness Loss exceeding 30% will be rejected.

- 3. Composition: RAP shall not be used.
  - a. When used as backfill for aluminum pipe, the material shall be free of Portland cement or Portland cement concrete.
- G. Unsuitable Material: All soils not meeting the requirements of Paragraphs A, B, C, D, E and F, and all organic materials.
- H. Geotextile Materials:
  - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include, but are not limited to, the following:
    - a. Amoco Fabrics and Fibers Co.
    - b. Hoechst Celanese Corp.
    - c. Nicolon Mirafi Group.
  - 2. Warning Tape: Acid and alkali-resistant polyethylene film warning tape manufactured for marking and identifying, underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility. Provide tape colors to utilities as follows:
    - a. Red: Electric
    - b. Orange: Telephone and Communications
    - c. Blue: Water

### **PART 3 - EXECUTION**

#### **3.1 INSPECTION**

- A. Contractor shall provide Engineer with sufficient time and means to examine the areas and conditions under which excavating, filling, and grading are to be performed. Work shall not proceed until all unsatisfactory conditions have been corrected in a manner acceptable to Engineer.

#### **3.2 EROSION CONTROL**

See Section 31 25 13 "Erosion and Sedimentation Control".

### 3.3 EXCAVATION

#### A. General:

1. Contractor shall perform all excavation required to complete the Work as shown and specified. All material excavated shall be nonclassified. It shall include all materials such as earth, sand, clay, gravel, hardpan, boulders, organic materials, rock, rubbish and all other materials within the excavation limits.
2. Excavations shall be open type, shored and braced where necessary to prevent injury to workmen and to new and existing structures or pipelines.
3. All excavations shall be made in the dry.
4. Dispose of excavated material and waste materials as specified herein.

#### B. Pipeline Excavation:

1. Pipe trenches shall excavated below the pipe bottom to allow for pipe bedding material.
2. Trench width shall be minimized to greatest extent practical but shall conform to the following:
  - a. Sufficient to provide room for installing, jointing and inspecting piping, but in no case wider at top of pipe than pipe barrel outside diameter plus 2 feet.
  - b. Enlargements at pipe joints may be made if required and approved by Engineer.
  - c. Sufficient for sheeting, bracing and sloping.
  - d. Sufficient to allow thorough compacting of sand adjacent to bottom half of pipe.
  - e. Do not use excavating equipment which requires the trench to be excavated to excessive width.

#### C. Structure Excavation:

1. Excavation shall be made to the grades shown on the Contract Drawings and to such widths as will give suitable room for construction of the structures, for bracing and supporting, pumping and draining. The bottom

of the excavations shall be rendered firm and dry and in all respects acceptable to the Engineer.

2. Excavation shall be accomplished by methods which preserve the undisturbed state of subgrade soils. For structures having multiple bearing levels or adjacent structures at different levels, excavation and foundation construction shall first be accomplished at the lowest levels to prevent undermining foundations and disturbing adjacent bearing soils at higher levels.
3. Excavation equipment shall be satisfactory for carrying out the work in accordance with the Specifications. Earth shall not be plowed, scraped, or dug with machines so near to the finished subgrade as to result in excavation of, or disturbance of material below grade.
4. When excavation for foundations has reached final depths, the Engineer shall be notified and will inspect conditions. If materials and conditions are not satisfactory to the Engineer, the Engineer will issue instructions as to the procedures for correction of the unsatisfactory condition.
5. During final excavation to subgrade level, take precautions required to prevent disturbance of material. Hand excavate the final 6 inches as necessary to obtain a satisfactory undisturbed bottom.

D. Unsuitable Excavation:

1. If any over excavation occurs through error of the Contractor or for the Contractor's convenience, it shall be refilled at the Contractor's expense with concrete, select fill or other material satisfactory to the Engineer.
2. If Contractor fails to properly dewater the excavation or trench, or disturbs the subgrade or otherwise fails or neglects to conduct the excavation work in a manner that provides surface of subgrade in proper condition for construction, the Contractor shall remove all disturbed material and replace it with concrete, select fill, or other approved material at his own expense. The condition of the subgrade shall meet with the approval of the Engineer before any work is placed thereon.
3. If, in the opinion of the Engineer, the material, in its undisturbed natural condition, at or below the grade of the excavation indicated on the Drawings is unsuitable for foundations, or if organic or silty soil extends below excavation depth, it shall be removed and be replaced with select fill or other suitable material. Suitable material excavated from the site shall be used before select fill from an outside source is permitted.

### 3.4 SHEETING, SHORING AND BRACING

#### A. General:

1. Sheeting, shoring and bracing shall be used where necessary to prevent injury to workmen, structures, or pipe lines. Jetting for sheeting installation is prohibited.
2. All municipal, county, state and federal ordinances, codes, regulations and laws shall be observed. All trenches shall be shored with the minimal protection of sheeting listed in OSHA Regulations, 29 CFR, Part 1926, Subpart P - Excavations, Trenching and Shoring.
3. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.
4. Unless otherwise shown, specified, or ordered, all materials used for temporary sheeting shall be removed when work is completed. Such removal shall be made in a manner not injurious to the structure or its appearance or to adjacent Work.
5. The clearances and types of the temporary sheeting, insofar as they affect the character of the finished Work, will be subject to the approval of the Engineer but the Contractor shall be responsible for the adequacy of all sheeting, shoring, bracing and other related Work.
6. Safe and satisfactory installation of the sheeting shall be the entire responsibility of the Contractor.

#### B. Removal of Sheeting and Bracing:

1. Remove sheeting and bracing from excavation unless otherwise ordered in writing by the Engineer. Removal shall be done so as to not cause injury to the Work. Removal shall be equal on both sides of excavation to ensure no unequal loads on pipe or structure. Use of vibratory extractors is prohibited.
2. Defer removal of sheeting and bracing, where removal may cause soil to come into contact with concrete, until wall and floor framing up to and including grade level floors are in place and concrete has attained sufficient strength to withstand the soil and superimposed loads.

### 3.5 BACKFILL AND COMPACTION

- A. Fill excavations as promptly as Work permits, but not until completion of the following:
  - 1. Acceptance by Engineer of all Work within the excavation.
  - 2. Inspection, testing approval, and recording of locations of underground utilities, connections, branches, structures and other facilities.
  - 3. Removal of temporary shoring and bracing, and backfilling of voids with satisfactory materials.
  - 4. Removal of trash and debris.
- B. Excavation shall be kept dry during backfilling operations. Backfills around piping and structures shall be brought up evenly on all sides.
- C. All backfill shall be placed in layers not exceeding 6 inches in thickness, and each layer shall be compacted as specified below.
- D. All structures and pipe trenches shall be backfilled with the type of material listed below except where shown otherwise on the Contract Drawings.

<u>Type of Backfill</u>	<u>Location</u>
Select Fill	Replacement of unsuitable material, below bottom slabs of structures, below pipe beddings, and where shown on the drawing.
Select Granular Fill	In locations shown on the drawings.
Nonfrost Susceptible Fill	In locations shown on the drawings.
Crushed Stone or Gravel	In locations shown on the drawings.
General Fill	In all locations not enumerated above.

- E. Backfill above and adjacent to pipe, and adjacent to buildings and walls shall be compacted by light weight equipment, such as “walk behind” vibratory plate compactors. Heavy self propelled compactors shall not be used until the following criteria are met:
  - 1. A minimum of 18 inches of compacted backfill has been placed above the top of the pipe.

2. Area to be compacted is a minimum distance of 3 pipe diameters away from the adjacent pipe.
  3. Area to be compacted is a minimum of 10 feet from building walls.
- F. “Jumping jack” hammers shall not be used above pipes until a minimum of 3 feet of backfill has been placed and compacted.
- G. Compaction Density Requirements:
1. Unless otherwise noted, the degree of compaction required for all types of fills shall be 95 percent in accordance with ASTM D 1557 (Modified Proctor Test). Material shall be moistened or aerated as necessary to provide the moisture content that will facilitate obtaining the specified compaction.
  2. Nonfrost-susceptible fill shall be compacted with a vibratory plate compactor or vibratory rolling compactor. Three complete passes shall be made on each 6-inch thick loose layer. Such pass shall overlap the adjacent previously compacted area a minimum of 20%. Density requirement for nonfrost-susceptible fill will be considered satisfactory upon completion of compaction.
  3. The Contractor shall notify the Engineer a minimum of 24 hours prior to starting any compaction operation.
  4. Field density tests shall be made by an independent testing laboratory employed by the Contractor to determine the actual density attained in each layer of fill. No fill shall be placed over a layer which has not been tested and approved. Should these tests indicate that the density of any layer of fill or portion thereof is below the required density, the particular layer or portion thereof shall be reworked until the required density has been obtained. Field density test procedures shall conform with ASTM D2167, ASTM D1556, or ASTM D2922. All final test results shall be submitted to the Engineer for review. At least one test per lift or one test per 250 yards placed shall be performed, whichever is greater.
  5. The moisture content of the fill material shall be at or slightly below the optimum moisture content for the soils being utilized during the entire time when the compactor is working on the fill. If, in the opinion of the Engineer, the fill is too dry for proper compaction, the Contractor shall spray the fill with a sufficient quantity of clean water to bring the fill layer to the proper moisture content. No compactive effort shall be made if the fill is significantly above the optimum moisture content, unless specifically approved by the Engineer.



- 6. No fill material shall be placed, spread or compacted while the ground or fill is frozen or thawing or during unfavorable weather conditions. When work is interrupted, fill operations shall not be resumed unless the moisture content and density of the fill are as previously specified. The fill surface must be made smooth and free from ruts or indentations at the end of any working day when any significant precipitation is forecast and/or at the completion of the compaction operations in that areas, in order to prevent saturation of the fill material.
- H. Contractor shall repair, at no additional cost to Owner, after settlement that occurs. He shall make all repairs and replacements necessary within 30 days after notice from the Engineer.

### 3.6 GRADING

- A. Uniformly grade areas within limits of the Work, including adjacent transition areas. Smooth subgrade surface within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.
- B. Turfed Areas: Finish areas to receive topsoil to within not more than 1-inch above or below the required subgrade elevations.
- C. Slabs: Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of 1/4-inch when tested with a 10-foot straightedge.
- D. Compaction: After grading, compact subgrade surfaces to the depth and percentage of maximum density required.

### 3.7 Disposal of Excavated Materials

- A. No excavated materials suitable for common or select fill shall be removed from the site or disposed of by the Contractor except as directed by the Engineer. Materials shall be neatly piled at designated locations on-site.
- B. Organic material and material which does not conform to the requirements for backfill shall be disposed of in compliance with these specifications.
- C. Contractor shall not dump soil onto those areas designated as wetlands or waterways. Contractor shall not stockpile or store spoil, materials, tools or equipment on or near wetlands and waterways.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 31 23 33**

**TRENCHING AND BACKFILLING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Work Included: Under this Item, the Contractor shall furnish all labor, materials and equipment for the construction and maintenance of a satisfactory pavement over backfilled sewer, water main, buried electrical conduit, and similar trenches through pavement areas during a 90-day period. The work shall be done to the satisfaction of the Engineer of Westchester County Department of Public Works and Transportation and all other municipalities having jurisdiction, and during the period of settlement the Contractor shall maintain and repair said pavement in such a manner as to avoid uneven surface, depressions, etc., and any other condition which gives rise to complaints as to the condition of the road for a period of 90 days after placement of paving in the trench. The work shall include temporary pavement at manholes.
- B. Related Work Described Elsewhere:
  - 1. Section 31 00 00, Earthwork.
  - 2. Section 32 12 16, Asphalt Pavements.

**1.2 SUBMITTALS**

- A. General: Submit the following in accordance with Section 01 33 00, "Submittal Procedures":
  - 1. Product Data:
    - a. Manufacturer's specifications and other data required to demonstrate compliance with the specified requirements;
    - b. A completed materials list showing all items to be furnished and installed under this Section.

**1.3 QUALITY ASSURANCE**

- A. Standards:
  - 1. Referenced Specifications: The New York State Department of Transportation Standard Specifications (NYSDOT Specifications) for Construction and Materials, dated January 2, 1990, plus addenda when

referred to, shall become part of this specification for materials and construction requirements. A referenced New York State (NYS) Pay Item Number shall serve to describe the required work for this project providing materials and construction conforming to all applicable requirements under the NYSDOT Specifications for that New York State Item, except for measurement and payment. Where the referenced specification cites requirements differing from those included in these specifications, the more stringent, highest quality requirements shall govern.

- B. Qualifications of Manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production acceptable to the Engineer.

#### 1.4 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the materials of this section before, during and after installation and to protect the installed equipment and materials of other trades.
- B. Replacements: In the event of damage, the Contractor shall immediately make all repairs and/or replacements necessary, to the approval of the Engineer and at no additional cost to the Owner.

### **PART 2 - PRODUCTS**

#### 2.1 ASPHALT PAVEMENT

- A. All asphalt pavement courses shall be hot mix asphalt pavement conforming to material requirements of the Contract.

#### 2.2 OTHER MATERIALS

- A. All other materials not specifically described but required for proper and complete installation of the work of this Section, shall be as selected by the Contractor subject to the approval of the Engineer.

### **PART 3 - EXECUTION**

#### 3.1 GENERAL

- A. Examine the areas and conditions under which work of this Section will be installed. Correct conditions detrimental to proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

- B. As soon as possible after the trench has been backfilled to grade and compacted, the backfill shall be excavated to a depth of 2 inches below the adjacent pavement surface. All loose pieces of paving along the edge of the existing pavement shall be removed and edges shall be saw cut. The surface of the backfill shall be compacted by rolling with a trench roller exerting a pressure of 325 pounds per inch of tread, or other approved method.
- C. A minimum compacted thickness of 2 inches of hot, plant mixed asphalt concrete (surface course) shall be placed on the compacted backfill surface and compacted to the existing street grade. The asphalt concrete shall be maintained at the existing street grade by the addition of asphalt concrete for a period of 90 days minimum.
- D. Work shall be constructed on approved compacted subgrades in accordance with the requirements of the referenced New York State DOT Specifications, for each Item Number specified under Part Two of these specifications. These shall include all requirements for equipment, weather, placement, spreading, tolerances, temperature, protection testing, and all related and incidental construction requirements for each component of the pavement structure.

**END OF SECTION**

NO TEXT ON THIS PAGE

## **SECTION 31 25 13**

### **EROSION AND SEDIMENTATION CONTROLS**

#### **PART 1 - GENERAL**

##### **1.1 SCOPE OF WORK**

- A. Erosion control shall include all work, materials and measures necessary to comply with NYSDEC GP-0-15-002 to control soil erosion and sediment control resulting from construction operations, prevent flow of sediment from the construction site, and contain construction materials (including excavation and backfill) within protected working areas. In general, the work under this section shall include, but not be limited to, the work shown on the Soil Erosion and Sediment Control Plans and Details.

##### **1.2 QUALITY ASSURANCE**

- A. The contractor shall comply with the requirements of the NYSDEC as they relate to erosion control.

#### **PART 2 - PRODUCTS**

##### **2.1 EROSION CONTROL FABRIC**

- A. The Erosion Control Fabric shall be a permanent channel lining and turf reinforcement mat. The Erosion Control Fabric shall be a machine produced mat of 100% UV stabilized polypropylene.
- B. The Erosion Control Fabric shall have a consistent thickness of high denier polypropylene fiber evenly distributed over the entire area of the mat. The top surface of the mat shall be covered with UV stabilized black polypropylene netting having approximately a 1/2-inch by 1/2-inch mesh size. The bottom surface of the mat shall be covered with UV stabilized black polypropylene netting having approximately a 5/8-inch by 5/8-inch mesh size. The blanket shall be sewn together on 2-inch centers (maximum) using polyester thread. The sewing shall secure the netting on each side of the mat to maintain the nets relative to the fiber core.
- C. The Erosion Control Fabric shall have the following physical characteristics.

Fiber Matrix	Minimum of 0.70 lb./sq. yd. of high denier UV stabilized polypropylene fiber.
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Top Netting	UV stabilized polypropylene netting with approximately 1/2-inch by 1/2-inch mesh size. Approximate weight 5.0 lbs/1,000 sq. ft.
Bottom Netting	UV stabilized polypropylene netting with approximately 5/8-inch by 5/8-inch mesh size. Approximate weight 3.0 lbs/1,000 sq. ft.
Stitch	100% black polyester thread with a stitch spacing of no greater than 2.0 inches on center.
Roll Width	6.5 feet minimum.
Roll Length	No less than 80 feet.

- D. The Erosion Control Fabric shall be P300P as manufactured by North American Green, SFB-12 as manufactured by Bon Terra America, or approved equal.
- E. The Erosion Control Fabric shall be secured in place using heavy duty metal staples. The metal staples shall be U-shaped of the length shown on the Drawings, 1-1/2 inches wide and shall be fabricated from 9 gauge or greater diameter metal wire. The metal staples shall be furnished by the manufacturer of the erosion control fabric and shall be suitable for the installed product and consistent with the manufacturer's recommendations.

## 2.2 EROSION CONTROL BLANKET

- A. The Erosion Control Blanket shall be a temporary erosion control covering to protect the prepared seed bed from wind, precipitation and erosion, and allow for proper establishment of the vegetation. The Erosion Control Blanket shall be a machine produced mat of 70% agricultural straw and 30% coconut fiber.
- B. The Erosion Control Blanket shall have a consistent thickness with the straw and coconut mixture evenly distributed over the entire area of the mat. The top surface of the mat shall be covered with UV stabilized, black polypropylene netting having approximately a 5/8-inch by 5/8-inch mesh size. The bottom surface of the mat shall be a lightweight, photodegradable netting with approximately 1/2-inch x 1/2-inch mesh size. The blanket shall be sewn together on 2 inch centers (maximum) using biodegradable thread. The sewing shall secure the netting on each side of the mat to maintain the nets relative to the straw/coconut fiber core.
- C. The Erosion Control Blanket shall have the following physical characteristics:

Core Material	70% agricultural straw evenly distributed at 0.35 lbs/sq. yard., 30% coconut fiber evenly distributed at 0.15 lbs./sq. yard.
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Bottom Netting	Photodegradable netting with approximately 1/2-inch by 1/2-inch mesh size. Approximate weight 1.6 lb/1,000 sq. ft.
Top Netting	UV stabilized polypropylene netting with approximately 5/8-inch by 5/8-inch mesh size. Approximate weight 3.0 lbs/ 1,000 sq. ft.
Stitch	Biodegradable, with a stitch spacing no greater than 2.0 inches on center.
Roll Width	6.5 feet minimum.
Roll Length	No less than 80 feet.

- D. The Erosion Control Blanket shall be SC150 as manufactured by North American Green, CS-2 as manufactured by Bon Terra America, or approved equal.
- E. The Erosion Control Blanket shall be secured in place using heavy duty metal staples. The metal staples shall be U-shaped of the lengths shown on the Drawings, 1 inch wide and shall be fabricated from 11-gauge or greater diameter metal wire. The metal staples shall be furnished by the manufacturer of the Erosion Control Blanket and shall be suitable for the installed product and consistent with the manufacturer's recommendations.

### 2.3 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Each roll of erosion control material delivered to the site shall be labeled by the manufacturer identifying the manufacturer's name, product identification, roll dimensions and direction for unrolling. Each roll of erosion control material shall be supplied wrapped in a watertight and opaque protective cover.
- B. All erosion control material shall be properly stored to protect the materials from ultraviolet degradation, precipitation or other inundation, mud, dirt, dust, puncture, cutting, extreme heat caused by direct sunlight or any other damaging or deleterious conditions.
- C. Materials which are damaged during shipment, storage, handling or installation shall be rejected, removed from the job site and replaced at no additional cost to the Owner. The Contractor shall take special care to ensure that the integrity of the protective wrapping on each roll is maintained until the time of installation.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Settling basins, plastic filter fabrics, hay bales or other erosion and sediment control measures approved by NYSDEC and as specified and shown on the

Contract Plans shall be used where necessary to protect vegetation, wetlands and wetland buffer zones and to prevent sediment from either surface runoff or the dewatering operations from entering catch basins, surface waters, etc.

- B. All soil erosion and sediment control practices are to be installed prior to any major soil disturbance and maintained until permanent protection is established.
- C. Upon completion of construction activities, the area used for the tracking pad shall be returned to elevations and conditions which existed prior to start of construction.
- D. The contractor shall take necessary measures to maintain dust control. Dirt haul roads shall be sprinkled with water or given a surface of crushed stone or wood chips as required. Vehicles shall be cleaned, as necessary, prior to using public streets. Paved roads shall be sprinkled with water.
- E. All soil erosion and sediment control devices shall be located in the field as shown on the drawing or at the direction of the Engineer. The contract drawings are not intended to show the location and details for all such devices but are to be used as a reasonable guide.
- F. Any changes to the approved soil erosion and sediment control plans will require the submission of soil erosion and sediment control plans to the Engineer and the NYSDEC for re-approval. The revised plans must meet all current state soil erosion and sediment control practices. No extension of the contract time will be given to the Contractor should resubmission be required.
- G. Contractor shall obtain all required permits.
- H. Upon completion of construction work after final grading and when permanent stabilization has been established, the bales and silt fences shall be removed by the Contractor. However, no soil erosion devices shall be removed without written permission of the Engineer.
- I. All excess material, except for topsoil, shall be removed from the site by the Contractor in accordance with the Contract Documents or as ordered by the Engineer.
- J. Conduit outlets and catch basin inlets must be protected prior to start of construction.
- K. The contractor shall provide a detailed sequence of construction operations for review and submittal to the Engineer.
- L. The Contractor shall meet the Engineer on-site to define those areas which will require soil erosion and sediment control facilities, discuss their construction.

- M. All soil erosion and sediment control practices shall be left in place and maintained, including silt and sediment removal, until construction is completed, area is stabilized and the Engineer so directs.
- N. The Contractor shall restrict his operations to the areas of construction as shown on the Contract Drawings. Any encroachment outside the areas of construction shall be the Contractor's responsibility and he shall assume all costs for repairing any damaged caused by his operations.

### 3.2 EROSION CONTROL MATERIALS

- A. The erosion control materials shall be installed over the prepared seedbed which has been constructed in accordance with the requirements of these Specifications, as shown on the Drawings and as directed by the Owner.
- B. Prior to the placement of the erosion control materials in an area, the Contractor and the Engineer shall examine the prepared seedbed to ensure that it is smooth, stable, firm, evenly graded, free of protrusions, sharp stones, vehicle imprints or other damaging objects, properly and evenly seeded and free of erosion. The Contractor shall immediately repair any damage or defect in the prepared seedbed, including reseeding if necessary, prior to the installation of the erosion control materials.
- C. The Contractor shall handle and install the erosion control materials in such a manner to ensure that the material is not damaged in any way and does not damage the seed bed.
- D. The protective wrapping on each roll shall not be removed sooner than one hour prior to unrolling. Unused portions of rolls which are not used in the same day that they are unwrapped shall be rewrapped and properly stored. Unused portions of rolls which are shorter than 33% of the manufactured roll length shall be discarded unless specifically approved by the Engineer for a particular application.
- E. In the presence of wind, the erosion control material shall be weighted with sandbags or the equivalent. Such sandbags shall be installed during placement and shall remain in place until the installation of the erosion control material is completed. The sandbags shall not be left in place, incorporated into the Work or their contents deposited in the area of Work.
- F. The erosion control materials shall be cut using approved cutting instruments as recommended by the manufacturer. The method of cutting shall result in a neat, clean, controlled cut which does not cause pulling or unraveling of the material components.

- G. The erosion control materials shall be installed on the prepared seedbed within 36 hours of the placement of the seed and landscaping materials.
- H. The Contractor shall exercise extreme care during the placement and installation of the erosion control materials so as to minimize the disturbance to the prepared seedbed. The Contractor shall repair and reseed any damage to the prepared seeded at the expense of the Contractor at the direction of the Owner.

### 3.3 EROSION CONTROL FABRIC

- A. The Erosion Control Fabric shall be installed in accordance with the manufacturer's recommendations, as specified and as directed by the Owner.
- B. The first roll shall be centered longitudinally above the spillway. Subsequent rolls shall follow from center to edge in a staggered sequence behind the first roll. Adjacent panels (roll length edge) shall overlap a minimum of 6 inches. Overlap seams shall be secured at 3 feet intervals or less.
- C. The Erosion Control Fabric shall not be pulled taut during installation. The erosion control fabric shall be in intimate contact with the underlying soil surface. If trampolining is experienced, additional staples shall be installed to secure the fabric to the soil.
- D. The Erosion Control Fabric shall be stapled to the underlying soil using a uniform stapling pattern which will provide a staple (field) density of at least two staples per square yard. In addition, staples shall be installed on 2 feet centers at the toe of slope (corners) of the swale to ensure tight contact, and as required to prevent trampolining.
- E. The upstream end of the fabric shall be installed in an anchor slot at least 6 inches deep and at least 6 inches wide (12 inches upstream of a pipe, where appropriate). The fabric shall be installed to the horizontal bottom and upstream vertical face of the anchor slot with staples at least 3 feet on centers. The anchor slot shall be backfilled and compacted, and additional seed shall be distributed over disturbed surfaces. The fabric shall be unrolled downstream to cover the anchor slot.
- F. Check slots shall be installed every 25 feet by placing a fold at least 8 inches vertically into the soil. The fabric shall be stapled in the check slot every 2 feet and at each edge.
- G. Successive lengths of Erosion Control Fabric shall be over lapped at least 3 feet lengthwise, with the upstream length on top. The overlap shall be stapled by placing three staples across the end of each of the overlapping lengths and by placing three additional staples across the width of the center of the overlap area.

- H. The top edge of the swale sideslope blankets shall be anchored in a 6 inch deep by 6-inch wide trench. The fabric shall be stapled in the trench on 3 feet centers. The backfill, shall be compacted and the trench hand seeded.
- I. The downstream ends of the fabric shall be anchored in an anchor slot at least 8 inches deep. The fabric in the anchor slot shall be secured with staples 3 feet on center, and the anchor slot shall be backfilled, compacted and hand seeded.
- J. Additional staples shall be installed, as required, where the Erosion Control Fabric must be cut and penetrated to allow the planting of landscaping materials.

#### 3.4 EROSION CONTROL BLANKET

- A. The Erosion Control Blanket shall be installed in the areas shown on the Drawings in accordance with the manufacturer's recommendations, as specified and as directed by the Engineer.
- B. The Erosion Control Blanket shall be installed vertically downslope in the direction of water flow.
- C. The Erosion Control Blanket shall be anchored at the top of the slope in a 6-inch by 6-inch anchor trench and the blanket shall be stapled in the anchor trench on 3-foot centers. The trench areas shall be backfilled, compacted and hand reseeded.
- D. The blanket and fabric edges shall be overlapped at least 3 inches and secured with staples at least 3 feet on centers.
- E. The Erosion Control Blanket shall not be pulled taut during installation. The erosion control blanket shall be in intimate contact with the underlying soil surface. If trampolining is experienced, additional staples shall be installed to secure the fabric to the soil.
- F. The Erosion Control Blanket shall be stapled to the underlying soil using a uniform stapling pattern which will provide a staple (field) density of at least two staples per square yard.
- G. Check slots shall be installed every 50 feet by placing a fold at least 8 inches vertically into the soil. The Erosion Control Blanket shall be stapled in the check slot on 3 feet centers and at each edge. The check slots shall be backfilled, compacted and hand seeded.
- H. Successive lengths of Erosion Control Blanket shall be overlapped at least 1-foot shingle style, with upslope layer on top. The overlapped area shall be stapled on 1-foot centers.

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- I. The downslope end of the Erosion Control Blanket shall be anchored in an anchor slot at least 8 inches deep. The anchor slot shall be backfilled, compacted and hand seeded.

**END OF SECTION**

**SECTION 32 12 16**

**ASPHALT PAVEMENTS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

**A. Scope:**

1. Contractor shall furnish all labor, materials, equipment and incidentals required to provide hot mix-hot laid bituminous paving as shown and specified. In addition, any existing pavement damaged by the Contractor outside the removal limits shown on the Drawings shall be removed and replaced, as directed by the Engineer at no additional cost to the Owner.
2. The Contractor shall be furnish all labor, materials and equipment necessary for saw cutting, installing and removing and disposing of temporary pavement, preparing the subgrade; and constructing a bituminous pavement. The Work includes pavements comprised of one or more of the following:
  - a. Base course.
  - b. Tack coats.
  - c. Top course.
3. In order to prevent damage to the permanent pavement by the Contractor's operations, all permanent pavement materials, including the aggregate base course, shall not be installed until approved in writing by the Engineer. The finished course of paving shall not be installed until all buildings, structures, equipment, piping and outside facilities are substantially completed and at a time approved by the Engineer.

**B. Related Work Specified Elsewhere:**

1. Section 02 40 00, Demolition.
2. Section 31 00 00, Earthwork.
3. Section 32 16 00, Concrete Curbs and Sidewalks.

**1.2 QUALITY ASSURANCE**

- A. Plant Inspection:** All bituminous mixes will be subject to inspection, testing and approval by the Owner. The Contractor and suppliers shall furnish all necessary assistance and cooperation.

- B. Laboratory approval of the sources of supply of the fine aggregates, coarse aggregates, mineral filler, bituminous materials, liquefiers and any other materials used in the mix shall be submitted by the Contractor for approval. No delivery or mixed materials shall be made from any bituminous mixing plant until such approval is obtained.
- C. Testing Services:
1. General: Testing of materials and of compaction requirements for compliance with technical requirements of the Specifications shall be the duty of the testing laboratory provided by the Contractor.
  2. Testing Services: The testing laboratory will:
    - a. Test the Contractor's proposed materials in the laboratory and field for compliance with the Specifications.
    - b. Perform field density tests to assure that the specified compaction of surface and base course materials has been obtained.
    - c. Report all test results to the Engineer, and the Contractor.
  3. Authority and Duties of Testing Laboratory: Technicians representing the testing laboratory will inspect the materials in the field and perform compaction tests, and will report their findings to the Engineer and the Contractor. When the materials furnished or work performed by the Contractor fails to fulfill Specifications requirements, the technician will direct the attention of the Engineer and the Contractor to such failure.
    - a. The technician will not act as foreman or perform other duties for the Contractor. Work will be checked as it progresses, but failure to detect any defective work or materials shall not in any way prevent later rejection when such defect is discovered, nor will it obligate the Engineer for final acceptance. Technicians are not authorized to revoke, alter, relax, enlarge, or release any requirements of the Specifications, nor to approve or accept any portion of the Work.
  4. Responsibilities and Duties of Contractor: The use of testing services shall in no way relieve the Contractor of his responsibility to furnish materials and construction in full compliance with the Drawings and Specifications. To facilitate testing services, the Contractor shall:
    - a. Secure and deliver to the Engineer and the testing laboratory representative samples of the materials he proposes to use and which are required to be tested.



- b. Furnish such casual labor as is necessary to obtain and handle samples at the project or at other sources of material.
  - c. Advise the testing laboratory and Engineer sufficiently in advance of operations to allow for completion of quality tests and for the assignment of personnel.
- D. Reference Standards: Comply with the applicable provisions unless otherwise shown or specified.

### 1.3 SUBMITTALS

- A. Shop Drawings: Submit for approval job mix formula proposed, giving complete data on materials, including source, location, percentages, temperatures, date of last testing, and all other pertinent data.
- B. Submittals: Furnish certificate for approval, stating bedding course of well graded sand conforms to ASTM C33.

Furnish certificate for approval, stating the base course of crushed stone conforms to ASTM 2940, or approved equal.

### 1.4 JOB CONDITIONS

- A. Weather Limitations:
  - 1. Permanent paving materials, including the aggregate base course, shall be placed only when the air temperature is 40 degrees Fahrenheit and rising or warmer and the surface on which the paving is to be laid is 40 degrees Fahrenheit or higher. All temperatures are to be measured in the shade.
  - 2. Bituminous pavement for temporary access roads, staging area and other temporary uses, that are not and will not become part of a permanent pavement, will not be subject to the above regulations in regard to weather limitations. No pavement, however, shall be laid on a frozen subgrade.
- B. Grade Control: Establish and maintain the required lines and grades, including crown and cross-slope for each course during construction operations.

## PART 2 - PRODUCTS

### 2.1 PAVEMENT THICKNESS

- A. In-place compacted material thickness shall not be less than shown on the Contract Drawings. Temporary pavement shall be 2-inch minimum thickness.

## 2.2 MATERIALS

- A. Materials shall conform to the following:
1. Subgrade shall be virgin material or select fill conforming to the requirements of Section 31 00 00, Earthwork.
  2. Base Courses:
    - a. Permanent pavement base course shall be in conformance with Westchester County Standards.
    - b. Aggregate for Contractor's staging area and temporary access road base course shall consist of limestone screenings. Stone screenings shall be limestone and may be crusher run provided 100 percent passes a 1/2-inch screen, 15 percent to 35 percent passes a #20 screen and 5 percent passes a #200 screen. Screenings need not be washed provided they contain no clay, loam or other deleterious material. Screenings shall be from stone that passes the abrasion and soundness tests described under County Standard Material Specification M4 Coarse Aggregate.
  3. Pavement:
    - a. Provide a wearing surface for permanent pavement, consisting of a top course. Top course shall conform to County Standard for Asphalt Concrete Type 1A (Item 36D) (Flat Process) Top Courses.
    - b. Provide a one course wearing surface for temporary pavement, consisting of a 1 1/2-inch minimum top course as specified above.
  4. Tack Coat: Tack coat shall be an asphalt emulsion conforming to County Standard Material Specification M5 Bituminous Materials, Material Designation RS-1.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. The installation of all pavement materials shall be performed by experienced personnel.
- B. Preparing the mixtures, paving equipment, placing the mixes, and compacting the mixes shall be in accordance with the Specifications.

1. Preparing the mixtures include the plant equipment, stockpiling, heating, aggregate processing, mixing of aggregate and bituminous material, and transportation to job site.
  2. Paving equipment includes bituminous pavers, rolling equipment and hand tools.
  3. Placing the mixes includes paver placing, hand placing, spreading, tamping and jointing.
  4. Compacting the mixes includes breakdown rolling, second rolling and finish rolling.
- C. Regardless of the type of pavement restoration involved, the Contractor shall insure that all castings are set flush with the final surface. The Contractor is advised that there shall be no placement of bituminous concrete top course until:
1. All curbs, gutter aprons, driveway aprons, surface inlets, catch basins, and manholes have been constructed to their final elevation.
  2. All defective areas of the binder course have been repaired.
- D. Provide final surfaces of uniform texture, conforming to required grades and cross sections.
- E. Repair holes from test specimens as specified for patching defective work.

### 3.2 SUBGRADE PREPARATION

- A. Permanent Pavement: Preparation of the permanent pavement subgrade including compaction shall be completed for the full width of the area to be paved. All existing pavement edges shall be saw cut prior to installation of new pavement.
1. Fine grade earth subgrade and compact with self-powered rollers of sufficient size to provide a firm, unyielding surface to receive the aggregate base course. Remove and replace all unsuitable subgrade material as directed by the Engineer.
  2. Where the subgrade is constructed by excavation of the existing grade, the top 6 inches of the subgrade shall be compacted to at least 95 percent of maximum density at optimum moisture content as determined in ASTM D 698.
  3. When the subgrade is constructed on fill:

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- a. The existing grade shall be made smooth and compacted per section 3.2.A.2.
  - b. The subgrade shall be brought to the appropriate lines and grades utilizing select backfill and placed in accordance with the applicable requirements of Section 31 00 00, Earthwork.
- 4. Existing grades prior to placement of subbase or backfill shall be established such that when materials for construction are placed no rutting or displacement will occur.
- B. No materials shall be placed on subgrades which are muddy or have water thereon.
- 3.3 PERMANENT PAVEMENT BASE COURSE INSTALLATION
  - A. Construct base course to thickness as shown on Drawings in equal layers. Installation shall be in conformance with County Standard Specification.
- 3.4 LIMESTONE SCREENINGS INSTALLATION
  - A. Construct limestone screenings course in the staging areas to thickness shown on the Drawings or as directed by engineer (min. 2 inches).
  - B. The screenings shall be spread evenly and thoroughly rolled with an approved three-wheel roller, weighing not less than 10 tons, until thorough consolidation is obtained. All depressions shall be filled with screenings, and the process of rolling and filling shall continue until a thoroughly compacted uniform surface, satisfactory to the Engineer, is produced. No segregation of large or fine materials will be permitted, but the screenings shall be sprinkled with water at times and in the amounts necessary to provide consolidation.
- 3.5 PAVEMENT INSTALLATION
  - A. The contact surfaces of all curbs, gutters, castings and adjacent pavement edges shall be painted with a layer of tack coat before placing or repairing the pavement course.
  - B. Bituminous concrete shall be constructed to thicknesses as shown on the Drawings and rolled with 12-ton self-powered two-axle or three-axle tandem or three-wheel roller to a density of 94 percent of maximum.
  - C. Pavement shall be uniform in appearance, free of bumps and hollows, worked to drain, and free of bleeding.
  - D. Trim the existing pavement by saw cutting of all loose edges and broom and tack coat all edges prior to placing the transition pavement.

- E. In placing and compacting abutting courses of bituminous concrete pavements, joint heating devices shall be used on all joints (transverse, longitudinal and existing).
- F. Bituminous pavement shall butt with the existing pavement in a smooth, even transition including a top sealing of the pavement joint with a bead of asphalt concrete.
- G. Test bituminous pavement for conformity with the specified crown and grade immediately after initial compression. Correct variations by the removal or additional of materials and by continuous rolling.
- H. The finished surface shall not vary more than 1/4 inch when tested with a 16-foot straightedge applied parallel with, or at right angles to, the centerline.
- I. After final rolling, again test the smoothness of the course. Correct humps or depressions exceeding the specified tolerances or that retain water on the surface by removing the defective work and replacing with new material.

### 3.6 PATCHING

- A. As directed by the Engineer, remove and replace all defective areas in temporary and permanent pavements. Cut-out such areas and fill with fresh bituminous concrete top course as specified in the County Standard Specification. Compact to the required density.

### 3.7 CLEANING AND PROTECTION

- A. After completion of paving operations, clean surfaces of excess or spilled bituminous materials and all foreign matter.
- B. Protect newly finished pavement until it has become properly hardened by cooling.
- C. During the paving operation cover openings of drainage structures in the area of paving.

### 3.8 MAINTENANCE OF FORCE MAIN TRENCH (NOT USED)

### 3.9 MAINTENANCE AND ACCEPTANCE

- A. The Contractor shall maintain all paved surfaces until the roads and parking areas have been accepted. The paved areas will not be accepted until after the Contractor has completed all phases of the work, including all necessary transportation, hauling and severe usage of the paved areas. The Engineer shall be the sole judge in this matter. The warranty period shall be as noted in the Agreement.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 32 16 00**

**CURBS, GUTTERS, SIDEWALKS AND DRIVEWAYS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

**A. Scope of Work:**

1. Contractor shall furnish all labor, materials, equipment and incidentals required to provide concrete sidewalks and curbs, as shown on the Contract Drawings and specified herein.
2. The type of Work covered by this Specification is conventionally formed sidewalks.
3. The thickness and extent of sidewalks and curbs are shown on the Drawings.

**B. Related Work Specified Elsewhere:**

1. Section 03 20 00, Concrete Reinforcement.
2. Section 03 30 00, Cast-in-Place Concrete.
3. Section 03 60 00, Grouting.
4. Section 31 00 00, Earthwork.

**1.2 QUALITY ASSURANCE**

**A. Reference Standards:** Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.

1. ASTM D 1190, Concrete Joint Sealer, Hot Poured Elastic Type.

**1.3 SUBMITTAL**

**A. Samples:** Submit for approval samples, manufacturer's product data, test reports and material certifications as required in referenced Sections for concrete work.

**B. Certificates:** Manufacturer's certification that expansion joint sealer meets Specification requirements.

- C. Shop Drawings: In accordance with the procedures and requirements set forth in the General Conditions and Division 1, the Contractor shall submit the following to the Engineer for approval:
  - 1. Submit for approval copies of dimensioned layout of the Work, showing pattern, expansion joints and reinforcing.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. Welded Wire Fabric: Smooth wire fabric shall comply with requirements of Section 03 23 00, Reinforcing Steel. Furnish wire fabric in flat sheets, not rolls.
- B. Bar reinforcement shall comply with the requirements of Section 03 23 00, Reinforcing Steel.
- C. Concrete Materials: Comply with requirements of Section 03 30 00, Concrete:
- D. Polypropylene Fiber: Fiber length of 0.75 inches minimum and mixed at a rate of 1.5 pounds per cubic yard of concrete. The Contractor will submit documentation to Engineer and obtain approval of fiber material prior to use on the job.

## **PART 3 - EXECUTION**

### **3.1 SUBGRADE PREPARATION**

- A. Preparation of the subgrade including compaction shall be completed for the full width of the Work:
  - 1. Where the subgrade is construction by excavation of existing grade, the top 6-inches of the subgrade shall be compacted to at least 95 percent of maximum dry density at optimum moisture content.
  - 2. Where the subgrade is constructed on fill:
    - a. The existing grade shall be made smooth and compacted per Section 3.1.A.
    - b. The subgrade shall be brought to the final lines and grades utilizing select fill as specified in Section 31 00 00, Earthwork.
  - 3. Base: Base shall be provided as shown on the Contract Drawings. The material shall be select fill as specified in Section 31 00 00, Earthwork, and compacted as specified.



### 3.2 FORM CONSTRUCTION

- A. Set forms to line and grade. Install forms over full length of concrete. Forms shall be either of metal or of acceptable planed and matched lumber, and shall be of such construction as to allow for inspection for grade and alignment and that will produce a smooth surface on the finished curb.

### 3.3 REINFORCEMENT

- A. Locate, place, and support reinforcement as specified in Section 03 20 00, unless otherwise shown. Size of reinforcement shall be as shown.

### 3.4 CONCRETE PLACEMENT

- A. General: Comply with the requirements of Section 03 30 00 for mixing and placing concrete, and as specified.
- B. Place concrete in one course, monolithic construction, for the full width and depth of the pour.

### 3.5 JOINTS

- A. General: Construct expansion, contraction, and construction joints with faces perpendicular to surface of the sidewalk or curb. Construct transverse joints at right angles to the Work centerline and as shown.
- B. Contraction Joints: Provide these joints at 5 feet on centers for sidewalks.
- C. Construction Joints: Place joints at locations where placement operations are stopped for a period of more than 1/2-hour, except where such pours terminate at expansion joints.
- D. Expansion Joints: Provide 1/2-inch expansion joint filler where Work abuts structures; at returns; and at 20 foot spacing for straight runs. If sidewalk and curb is not poured monolithically, provide expansion joints where each abuts the other.
  - 1. Place top of expansion joint material not less than 1/2 inch or more than 1 inch below concrete surface. Apply joint sealer on top of expansion joint material flush with concrete surface, and in accordance with manufacturer's instructions. Expansion joint shall be Asphalt Expansion Joint Filler by W.R. Meadows, or equal.

### 3.6 CONCRETE FINISHING

- A. Smooth the exposed surface by screening and floating.

- B. Work edges of sidewalks and transverse joints; and round to 1/4-inch radius.
- C. Complete surface finishing by drawing a fine-hair broom across surface, perpendicular to line of traffic.

3.7 CURING

- A. Protect and cure finished concrete sidewalks and curbs, complying with applicable requirements of Section 03 30 00.

3.8 REPAIR AND CLEANING

- A. Repair or replace broken or defective sidewalks and curbs as directed by the Engineer.
- B. Sweep work and wash free of stains, discolorations, dirt or other foreign material.

3.9 MEASUREMENT AND PAYMENT

- A. No separate payment for the item, “Concrete Curbs and Sidewalks,” will be made for the installation of concrete curbs and sidewalk on the plant site. The cost of same shall be included in the Lump Sum Base Bid.

**END OF SECTION**

## **SECTION 32 34 13**

### **FABRICATED PEDESTRIAN BRIDGES**

#### **PART 1 - GENERAL**

##### **1.1 SPECIFICATION SCOPE FOR GLUED LAMINATED TIMBER SUPERSTRUCTURES**

- A. Provide a standard for production of glued laminated wood used in the bridge superstructure installation. This standard is intended to cover several types of glulam bridge structures. This standard is intended to augment, or support, design requirements that may be issued by the owner.

##### **1.2 DEFINITIONS AND ABBREVIATIONS**

- A. **STRUCTURAL GLUED LAMINATED TIMBER (WOOD):** An engineered stress-rated product of a timber laminating plant, comprised of wood laminations bonded together with adhesives. The grains of all laminations are approximately parallel longitudinally. See AITC 117 for a more detailed explanation.
- B. **GLULAM:** Structural glued laminated timber (wood)
- C. **AITC:** American Institute of Timber Construction
- D. **APA/EWS:** Trademark appears on products manufactured by APA - The Engineered Wood Association members
- E. **AWPA:** American Wood Protection Association
- F. **AASHTO:** American Association of State Highway and Transportation Officials
- G. **WWPI:** Western Wood Preservers Institute

##### **1.3 QUALIFICATIONS OF FABRICATOR**

- A. The glulam manufacturer shall be a qualified licensee of the AITC or APA/EWS.
- B. All Glued laminated timber shall be factory fabricated (as far as practical). This shall include cutting drilling and other fabrication as shown on shop drawings.

##### **1.4 CODES AND STANDARDS**

- A. In addition to complying with all pertinent codes and regulations, material and installation procedures shall comply with the following:

1. AASHTO. 2010. LRFD Standard Specifications for Highway Bridges, 5th edition.
2. American National Standard for Wood Products-Structural Glued Laminated Timber ANSI A190. 1- (Latest edition)
3. AITC 117-2010 Standard Specifications for Structural Glued Laminated Timber of Softwood Species.
4. AWPA Book of Standards (Latest Edition)
5. WWPI Best Management Practice for Treating Wood in Aquatic Environment

#### 1.5 CERTIFICATIONS

- A. Certifications required by the laminator: The laminator shall provide an AITC or APA/EWS Certificate of Conformance to AITC/ANSI A190.1-2007
- B. Preservative treatment certification required (if applicable). A Certificate of treatment shall be furnished by a certified AWPA treating facility. The treating certification shall list the identification of job, species of materials, type and retention preservative provided, as well as the AWPA standard used as the guide for treating. In the event treated timber originates from more than one treating facility then certification shall be furnished from each facility providing timber for this project.

#### 1.6 STRUCTURAL DESIGN

- A. The bridge shall be designed in accordance with good engineering practices and in accordance with the standard specifications as adopted by the American Association of State Highway and Transportation Officials (AASHTO). The Bridge design shall be a glulam system comprised of either longitudinal decks, stringer systems or transverse deck systems.
- B. The structure shall be designed for the following loads and dimensions:
  1. Dead Load (timber 50 PCF)
  2. Live Load 100 PSF, 20 PSF snow load
  3. Wet-Stress design values shall be used when applicable
  4. Live Load deflection (L/425)
  5. Overall length of span 33 (ft) and 33 (ft)

6. Overall Roadway width 12 (ft) and 8 (ft)
7. Skew 0 (degrees)

## **PART 2 - PRODUCTS**

### **2.1 TIMBER MATERIALS**

- A. Lumber-intended for glulam production shall be visually or mechanically graded in conformance with accepted standards for LRFD unit stresses (See AASHTO Section 8) and with the National Design Specifications for Wood Construction.
- B. Glulam members shall be finished to Industrial Appearance Grade as per
- C. AITC 110-2001
- D. All lumber utilized in these standards shall be either Coastal Douglas Fir or Southern Pine.

### **2.2 PRESERVATIVE TREATMENT**

- A. All timber to be treated with the following oil type preservatives in accordance with AASHTO Material Standards, M133 and M168 and shall conform to the AWPAs Use Code Standards
  1. Pentachlorophenol or Copper Naphthenate in Type A, heavy oil conforming to AWPAs Standard UC4B, P-8 & P9. Retention level shall be 0.6 PCF
  2. Coal Tar Creosote conforming to AWPAs Standard UC4B & P-1/P-13. Retention level shall be 12 PCF.
  3. Incising shall be required for all Douglas Fir materials as per AWPAs specifications.
  4. Timber pedestrian deck, curb and railings may be treated with the water borne preservative, CCA, to a net retention of 0.4 PCF conforming to AWPAs Standard UC4B & P-5 or Pentachlorophenol in Type C, light oil conforming to AWPAs Standard UC4B, P-8 & P9. Retention level shall be 0.3 PCF. Either treatment shall be performed prior to gluing. These treatments are limited to SP only.
  5. All preservative treatments shall be applied in accordance with Best Management Practices for Wood Preservatives in Aquatic Environments.
  6. AWPAs Treatment Spec References:

AWPA M2 Inspection of Treated Timber Products

AWPA M4 Care of Preservative Treated Timber Products

AWPA P1/13 Coal Tar Creosote for Land and, Fresh Water and Marine  
(Coastal Water Use)

AWPA P5 Waterborne Preservatives

AWPA P8 Oil-borne Preservatives

AWPA P9 Standards for Solvents

AWPA P5 Standard for Waterborne Preservatives

## 2.3 HARDWARE

- A. Fabricator shall provide all connection steel and hardware for joining wood members to each other and to their supports exclusive of anchoring embedded in concrete.
- B. All fasteners, except prestressing bars, shall be galvanized (ASTM A-123) mild steel ASTM A307. Washers to be cast iron or malleable iron, timber type.
- C. All steel plates and shapes to be galvanized (ASTM A-153) mild steel ASTM A-36
- D. Aluminum deck brackets to be cast aluminum alloy 356
- E. "C" Clips shall be galvanized (ASTM A-153) Cast iron Grade 30
- F. Prestressing bars and nuts for stress-laminated decks shall be galvanized (ASTM-123) high strength steel ASTM A-722 Type II with an ultimate yield stress of 150 KSI
- G. Hardware Specification References
  - 1. AASHTO. 2011. Standard Specifications for Transportation Materials and Methods of Sampling and Testing. 31st Edition.
  - 2. M111 Zinc (Hot-Dip Galvanized) Coatings for Iron and Steel Products
  - 3. M232 Zinc Coating (Hot-Dip) on Iron and Steel Hardware
  - 4. ASTM. 2011.(American Society of Testing and Materials) Annual Book of Standards

5. ASTM A36 Standard Specification for Structural Steel
6. ASTM A722 Standard Specification for Uncoated, High-Strength Steel Bar for Prestressing Concrete
7. ANSI/ASME. B18.2.1 Square and Hex Bolts and Screws (Inch Series), American Society of Mechanical Engineers

#### 2.4 BEARING PADS

- A. Fabricator shall provide neoprene or elastomeric bearing pads in areas where glulam girder or longitudinal decking material rests on steel or concrete abutments. Width shall be sufficient to support bearing.
- B. The durometer hardness shall be between 50 and 70, and shall have a minimum strength of 800 PSI.

### **PART 3 - EXECUTION**

#### 3.1 MATERIAL: DELIVERY, STORAGE AND HANDLING

- A. Special care shall be taken for all materials required for the project. Shipping, storage and erection practices shall be in accordance with industry standards.

**END OF SECTION**

NO TEXT ON THIS PAGE



**SECTION 32 91 20**

**TOPSOIL**

**PART 1 - GENERAL**

**1.1 SUBMITTALS**

**A. Samples:**

1. Topsoil for Testing: In the presence of the Owner's Representative, take a 5 lb sample from each 1000 cu yds of topsoil to be used on the project. Submit to the Owner's Representative the laboratory test results for the organic matter, Ph value, and gradation. These tests will be performed and signed by a certified soils laboratory.

**1.2 QUALITY ASSURANCE**

- A. Topsoil used on this project shall be tested, and approved before placement.
- B. Secure approval before stripping topsoil from a borrow area or delivering topsoil to the project site.

**PART 2 - PRODUCTS**

**2.1 TOPSOIL**

- A. Source: Provide topsoil from existing stockpiles stripped from the project site and approved by the Owner's Representative.
- B. Provide topsoil conforming to the following:
  1. Original loam topsoil, well drained homogeneous texture and of uniform grade, without the admixture of subsoil material and entirely free of dense material, hardpan, sod, or any other objectionable foreign material.
  2. Containing not less than 4 percent nor more than 20 percent organic matter in that portion of a sample passing a 1/4 inch sieve when determined by the wet combustion method on a sample dried at 105 degrees C.
  3. Containing a Ph value within the range of 4.5 to 7 on that portion of the sample which passes a 1/4 inch sieve.
  4. Containing the following gradations:

SIEVE DESIGNATION	PERCENT PASSING
1 inch	100
1/4 inch	97 - 100
No. 200	20 - 65 (of the 1/4 inch sieve)

## 2.2 LIMESTONE

- A. Provide ground limestone in the producer's standard bags containing not less than 90 percent of calcium and magnesium carbonates equivalent to not less than 45 percent of the mixed oxides of calcium and magnesium and conforming to the following gradations:

SIEVE DESIGNATION	PERCENT PASSING
No. 100	50 - 100
No. 20	100

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Grub out and remove all vegetation in the area of the approved topsoil source.

### 3.2 SPREADING TOPSOIL

- A. Perform topsoil spreading operations only during dry weather.
- B. To insure a proper bond with the topsoil, harrow or otherwise loosen the subgrade to a depth of 3 inches before spreading topsoil.
- C. Spread topsoil directly upon prepared subgrade to a minimum depth measuring 4 inches after natural settlement in areas to be seeded. In sodded areas the thickness of the topsoil after natural settlement plus the sod shall equal 4 inches. Smooth out unsightly variations, bumps, ridges, and depressions which will hold water. Remove stones, litter, or other objectionable material. Finished surfaces shall conform to the contour lines and elevations indicated on the drawings or fixed by the Owner's Representative.

### 3.3 SPREADING LIMESTONE

- A. Spread ground limestone evenly over the topsoiled surface. Incorporate limestone within the top 2 inches of soil prior to finish raking.

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- B. Apply limestone at the following rate per 1000 sq ft of topsoil area, corresponding to the hydrogen ion concentration (Ph) shown by the soil chemical analysis:

<b>PH</b>	<b>RATE (pounds)</b>
4.5 to 5.0	150
5.0 to 5.5	100
5.5 to 6.0	50
6.0 to 6.8	25
over 6.8	0

**END OF SECTION**

NO TEXT ON THIS PAGE

## **SECTION 32 92 19**

### **SEEDING**

#### **PART 1 - GENERAL**

##### **1.1 SUBMITTALS**

- A. Product Data; Hydro Mulch: Manufacturer's specifications and application rate.
- B. Product Data; Erosion Control Blanket: Manufacturer's specifications.

##### **1.2 QUALITY ASSURANCE**

- A. Field Examples: Seed samples will be taken by the Owner's Representative 30 days before sowing. Test analysis will indicate species, purity, percent of germination, and weed content. Results will be sent directly to the Owner for acceptance or rejection based on these tests. Pay all expenses incurred for testing.

##### **1.3 DELIVERY STORAGE AND HANDLING**

- A. Deliver fertilizer in manufacturer's standard size bags or cartons showing weight, analysis, and the name of the manufacturer. Store as approved by Owner's Representative.
- B. Store all seed at the site in a cool dry place as approved by the Owner's Representative. Replace any seed damaged during storage.
- C. Deliver seeds, 30 days in advance of anticipated use, in vendor's unopened packages bearing labels showing vendor's name and seed analysis by weight.
- D. Deliver erosion control blanket in manufacturer's standard packing material, showing the name of the manufacturer. Store as approved by the Owner's Representative.

##### **1.4 SCHEDULING**

- A. Time For Seeding: Optimum period to sow permanent grass seed is generally between April 1st and May 15th or between August 15th and October 1<sup>st</sup>. Schedule application for when weather conditions permit or as Directed.
  - 1. Provide temporary seed and mulch when final grading is complete while waiting for optimal seeding period.

2. Provide temporary seed and mulch for temporary cover on disturbed ground not to be worked on for more than 7 days.
3. Provide temporary seed and mulch on disturbed earth prior to temporary shutdown of construction.

## **PART 2 - PRODUCTS**

### **2.1 FERTILIZER**

- A. Fertilizer: Mixed commercial fertilizers shall contain total nitrogen, available phosphoric acid and soluble potash in the ratio of 10-6-4 (50% N/UF). 50% of total nitrogen shall be derived from ureaform furnishing a minimum of 3.5% water insoluble nitrogen (3.5% WIN). The balance of the nitrogen shall be present as methylene urea, water soluble urea, nitrate and ammoniacal compounds.
- B. Other fertilizers meeting DOT Specification Section 713-03 Fertilizer can be used.

### **2.2 SEED**

- A. Furnish fresh, clean, new-crop seed mixed in the proportions specified for species and variety, and conforming to Federal and State Standards.
- B. Acceptable material in a seed mixture other than pure live seed consists of nonviable seed, chaff, hulls, live seed of crop plants and inert matter. The percentage of weed seed shall not exceed 0.1 percent by weight.
- C. All seed will be rejected if the label or test analysis indicates any of the following contaminates: Timothy, Orchard Grass, Sheep Fescue, Meadow Fescue, Canada Blue Grass, Alta Fescue, Kentucky 31 Fescue, and Bent Grass.
- D. Provide the following seed mixture:  
  
A = Min. Percentage of Germination  
B = Min. Purity Percentage  
C = Weight Pure Live Seed in Mixture

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URBAN LAWN SEED MIX "A"

Name	Variety	A	B	C
Chewings Fescue (Festuca rubra commutata)	Banner, Highlight, Jamestown, or an approved equal.	85	97	25
Kentucky Bluegrass * (Poa pratensis)	Barron, Flyking, Glade, or an approved equal.	80	95	55
Perennial Ryegrass ** (Lolium perenne)	Manhattan II, Pennfine, Yorktown II, or an approved equal.	90	98	20

ROADSIDE SEED MIX "B"

Name	Variety	A	B	C
Tall Fescue (Festuca arundinacea)	Alta, Kentucky 13 or an approved equal.	95	---	15
Creeping Red Fescue (Festuca rubra trichophylla)	Ensylva	95	97	20
Kentucky Bluegrass * (Poa pratensis)	Baron, Flyking, Glade, or an approved equal.	75	95	25
Perennial Ryegrass ** (Lolium perenne)	Manhattan II, Pennfine, Yorktown II, or an approved equal.	90	95	40

\*Approximately equal proportions of 2 or more improved Bluegrass varieties as listed in the Cornell Recommendations for Turfgrass.

\*\*One or more of the improved Ryegrass varieties as listed in the Cornell Recommendations for Turfgrass.

SEED MIX "C" - WETLAND SEED MIX

Name	Variety	A	B	C
Annual Ryegrass (Loium multiflorum)	Commercial	98	97	35
Red Top (Agrostis alba)	Commercial	93	98	27
Switchgrass (Panicum virgatum)	Commercial	---	---	10
Meadow Foxtail	Commercial	89	98	10

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Name	Variety	A	B	C
(Alopecurus pratensis)				
Soft Stem Bulrush (Scirpus validus)	Commercial	---	---	10
Fox Sedge (Carex vulpinoidea)	Commercial	---	---	4
Joe Pye Weed (Eupatorium maculatus)	Commercial	---	---	4

SEED MIX "D" - WETLAND SEED MIX

Name	Variety	A	B	C
Annual Ryegrass (Lolium multiflorum)	Commercial	90	---	30
Switchgrass (Panicum virgatum)	Commercial	---	---	20
Redtop Panic Grass (Panicum rigidulum)	Commercial	---	---	20
Green Bulrush (Scirpus atrovirens)	Commercial	---	---	20
Fox Sedge (Carex vulpinoidea)	Commercial	---	---	10

SEED MIX "E" - WETLAND HUMMOCK MIX

Name	Variety	A	B	C
Fox Sedge (Carex vulpinoidea)	Commercial	---	---	45
Rice Cut Grass (Leersia oryzoides)	Commercial	---	---	4
Fringed Sedge (Carex crinita)	Commercial	---	---	17
Soft Rush (Juncus effusus)	Commercial	---	---	4
Green Bulrush (Scirpus atrovirens)	Commercial	---	---	15
Bladder Sedge (Carex intumescens)	Commercial	---	---	15



SEED MIX "F" - WILDFLOWER/RESTORATION EROSION MIX

Name	Variety	A	B	C
Red Fescue (Festuca rubra)	Commercial	92	98	42
Annual Ryegrass (Lolium multiflorum)	Commercial	98	97	41
Queen Anne's Lace ** (Daucus carota)	Commercial	---	---	1
Yarrow ** (Achillea millefolium)	Commercial	---	---	1
Ox-eye Daisy ** (Chrysanthemum leucanthemum)	Commercial	78	99	1
Smartweed ** (Polygonum pensylvanicum)	Commercial	---	---	1
Red Top (Agrostis alba)	Commercial	93	98	4
Bird's-foot Trefoil * (Lotus corniculatus)	Commercial	67	95	8
New England Aster ** (Aster novae-angliae)	Commercial	82	95	1

2.3 MULCH

- A. Dry Application, Straw: Stalks of oats, wheat, rye or other approved crops which are free of noxious weeds. Weight shall be based on a 15 percent moisture content.
- B. Hydro Application: Colored wood cellulose fiber product specifically designed for use as a hydro-mechanical applied mulch. Acceptable Product: Conwed Hydro Mulch, Conwed Fibers, 231 4th Street SW, Hickory, NC.

2.4 EROSION CONTROL BLANKET

- A. Erosion Control Blanket: Product - SC150 by North American Green, 14649 Highway 41 North, Evansville, IN 47725, (800) 772-2040, [www.nagreen.com](http://www.nagreen.com).
  - 1. Stakes: North American Green (6" Bio-Stake).

### **PART 3 - EXECUTION**

#### **3.1 PREPARATION**

- A. Seed Bed: Scarify soil to a depth of 3 inches in compacted areas. Smooth out unsightly variations, bumps, ridges, and depressions which will hold water. Remove stones, litter, or other objectionable material.
  - 1. Obtain written approval of seed bed from the Owner's Representative before commencing seeding operations.

#### **3.2 FERTILIZING**

- A. Apply 10-6-4 fertilizer evenly at the rate of 40 pounds per 1000 sq ft or 2 pounds of nitrogen per 1000 sq ft.

#### **3.3 SEEDING**

- A. Assume all risks when seed is sowed before approval of seed analysis.
- B. Do not seed when the wind velocity exceeds 5 miles per hour.
- C. Application Rate:
  - 1. Seed Mix "A": 5 pounds per 1,000 sq. ft.
  - 2. Seed Mix "B": 5 pounds per 1,000 sq. ft.
  - 3. Seed Mix "C": 15 pounds per acre.
  - 4. Seed Mix "D": 15 pounds per acre.
  - 5. Seed Mix "E": 3.25 pounds per acre.
  - 6. Seed Mix "F": 47 pounds per acre @ ration of 42 pounds grass seed mix; \* 4 pounds legume; \*\* 1 pound perennial wildflowers.
- D. Dry Application: Sow seed evenly by hand or seed spreader on dry or moderately dry soil.
- E. Hydroseeding:
  - 1. Apply seeding materials with an approved hydroseeder.
  - 2. Fill tank with water and agitate while adding seeding materials. Use sufficient fertilizer, mulch, and seed to obtain the specified application rate. Add seed to the tank after the fertilizer and mulch have been added.

Maintain constant agitation to keep contents in homogeneous suspension. Prolonged delays in application or agitation that may be injurious to the seed will be the basis of rejection of material remaining in tank.

3. Distribute uniformly a slurry mixture of water, seed, fertilizer, and mulch at a minimum rate of 57 gallons per 1000 sq ft (2500 gallons per acre). The Owner's Representative may order the amount of water increased if distribution of seeding materials is not uniform.

### 3.4 MULCHING

- A. Dry Application: Within one day after seeding, cover the seeded areas with a uniform blanket of straw mulch at the rate of 100 pounds per 1000 sq ft of seeded area.
- B. Hydro Application: Apply approved mulch in accordance with the manufacturer's written instructions and recommended rates of application.

### 3.5 EROSION CONTROL BLANKET

- A. Erosion Control Blanket: Within one day after seeding, cover sloped areas with a uniform blanket of erosion control blanket. Apply approved blanket in accordance with the manufacturer's written instructions. Do not apply straw mulch in area that erosion control blanket will be covering.
- B. Stakes: Install approved stakes in accordance with the manufacturer's written instructions.

### 3.6 LAWN ESTABLISHMENT

- A. Maintain the grass at heights between 3 inches and 3-1/2 inches on a weekly basis until the Final Acceptance of the Work.
- B. Water and protect all seeded areas until final acceptance of the lawn.

### 3.7 FINAL ACCEPTANCE

- A. Final acceptance of lawn areas will be granted when a uniform stand of acceptable grass is obtained, with a minimum of 95 percent coverage. Portions of the lawn areas may be accepted at various times at the discretion of the Owner's Representative.
- B. Unacceptable lawn areas, dry application: Reseed as specified and fertilized at one-half the specified rate.

- C. Unacceptable lawn areas, hydro application: Reseed, fertilize, and mulch at one-half the specified rate, use full water rate.
- D. At the physical completion of the Work, the Owner will assume maintenance responsibilities of the lawn areas.

**END OF SECTION**

**SECTION 33 01 10**

**OPERATION AND MAINTENANCE OF WATER UTILITIES**

**PART 1 GENERAL**

**1.1 QUALITY ASSURANCE**

- A. Conform to provisions of AWWA C-651 for water line disinfection. Do not use Tablet Method therein.
- B. Comply with all requirements of the New York State Department of Health for disinfection of potable water lines, valves, hydrants, storage tanks, and appurtenances.

**1.2 SUBMITTALS**

- A. Contract Closeout Submittals:
  - 1. Test Results.

**PART 2 - PRODUCTS**

**2.1 DISINFECTANT**

- A. Chlorine Gas meeting AWWA B301.
- B. Hypochlorites meeting AWWA B300.

**2.2 TEST KITS**

- A. High range test kit for chlorine residual (0-200 mg/l) Hach Chemical Co. Model CN-21P.
- B. DPD chlorine residual test kit (0-3.5 mg/l) Hach Chemical Co. Model CN-66.
- C. Test kits to remain property of the Contractor.

**PART 3 - EXECUTION**

**3.1 DISINFECTION - WATER MAINS**

- A. Flush mains with clear water at a minimum rate of 2.5 fps prior to disinfection. See Table 1.

TABLE 1 - WATER MAIN FLUSHING DATA		
PIPE DIAMETER (INCHES)	FLUSHING RATE GPM @ 2.5 fps	HYDRANT OPENINGS @ 40 psi
2	25	one - 2-1/2
4	100	one - 2-1/2
6	220	one - 2-1/2
8	390	one - 2-1/2
10	610	one - 2-1/2
12	880	one - 2-1/2
14	1200	two - 2-1/2
16	1570	two - 2-1/2
18	1985	two - 2-1/2
24	3525	one - 4-1/2 and one - 2-1/2

- B. Chlorine Gas: Apply with a solution-feed chlorinator in combination with a booster pump for injecting the chlorine gas-water mixture into the main. Do not use direct feed chlorinators.
- C. Hypochlorites: Apply solutions to water mains with a gasoline or electrically powered chemical feed pump designed for feeding chlorine solutions.
- D. Application (Continuous Feed Method).
  - 1. Connect chlorinator or force pump to water main upstream from point of repair or replacement, or new lines.
  - 2. Proportion application rate of chlorine solution to obtain a minimum concentration of 50 mg/l of available chlorine. Use high range test kit to determine concentration. See Table 2.

TABLE 2 - QUANTITY OF DISINFECTANT REQUIRED FOR 50 mg/l OF AVAILABLE CHLORINE PER 100 FT. OF PIPE							
PIPE DIAMETER (INCHES)	POUNDS		OUNCES			QUARTS	
	Cl GAS	SOLUTION	HYPOCHLORITE				
		70%	70%	14.7%	5.25%	14.7%	5.25%
2	0.1	0.1	0.2	0.8	2.1	0.1	0.1
4	0.1	0.1	0.6	3.0	8.3	0.1	0.3
6	0.1	0.1	1.4	6.7	18.7	0.2	0.6
8	0.1	0.2	2.5	11.9	33.2	0.4	1.1
10	0.2	0.3	3.9	18.5	51.9	0.6	1.6
12	0.3	0.4	5.6	26.7	74.7	0.9	2.4
14	0.4	0.5	7.6	36.3	102.0	1.2	3.2
16	0.5	0.7	10.1	47.5	133.0	1.5	4.2
18	0.6	0.8	12.6	60.0	168.0	1.9	5.3
24	1.0	1.4	22.4	107.0	298.0	3.4	9.4

3. In the absence of a meter, determine rate either by placing a pitot gage at discharge or by measuring the time to fill a container of known volume. See Table 3.

<b>TABLE 3 - TIME FOR DISINFECTANT TO FLOW THROUGH 100 FT. OF PIPE - MINUTES</b>			
<b>PIPE DIAMETER (INCHES)</b>	<b>@ 25 GPM</b>	<b>@ 100 GPM</b>	<b>@ 500 GPM</b>
2	0.7	0.2	0.04
4	2.6	0.7	0.13
6	5.9	1.5	0.3
8	10.5	2.6	0.5
10	16.3	4.1	0.8
12	23.5	5.9	1.2
14	32.0	8.0	1.6
16	41.8	10.5	2.1
18	52.9	13.2	2.7
24	94.0	23.5	4.7

4. Continue to apply chlorine solution until it reaches discharge. Check for the presence of chlorine at discharge by adding an orthotolidine reagent. In the presence of chlorine the reagent will turn red.
5. Maintain chlorinated water in the main for a minimum of 24 hours. At the end of this period chlorine concentration shall be at least 25 mg/l. Use high range test kit to determine concentration.
6. Operate all valves and hydrants to insure their proper disinfection.
7. Prevent back flow of super chlorinated water into existing distribution system.

E. Final Flushing:

1. After a 24-hour retention period, flush main until maximum chlorine concentration is 1.0 mg/l. Use DPD chlorine residual test kit.
2. Discharge super chlorinated water in a manner that will not adversely affect plants and animals. Comply with applicable State regulations for waste discharge.

F. Bacteriological Tests: Contact local health units for sampling criteria and procedures. Local health units may have more stringent criteria.



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1. Test water main for bacteriological quality before putting pipe into service. A minimum of two successive sets of samples shall be taken at 24-hour intervals. Both sets of samples shall indicate bacteriological safe water before putting the facility in operation. Pay all expenses incurred for testing.
  2. Tests shall be conducted by a laboratory approved by the New York State Health Dept.
- G. Give all test results to Director's Representative.
1. Should test results prove any part of the system bacteriologically unsafe, repeat disinfection procedures until satisfactory results are obtained.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 33 05 05**

**BURIED PIPING INSTALLATION**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

**A. Scope of Work**

1. Contractor shall furnish all labor, materials, equipment and incidentals as shown on the Drawings, specified and required to install and test all buried piping, fittings, specials, outside trench drain and appurtenances. The Work includes, but is not limited to, the following:
  - a. All types and sizes of buried piping, except as specified under other Sections. These include, but are not limited to: PVC, Copper, Ductile Iron, RCP etc.
  - b. Supports, restraints, thrust blocks and encasements.
  - c. Work on or affecting existing piping.
  - d. Piping beneath structures.
  - e. Testing, cleaning and disinfecting.
  - f. Also included are installation of all jointing and gasketing materials, specials, couplings, flexible couplings, flanged adapters, sleeves, tie rods, restraining plates, corrosion protection, and all other Work required to complete buried piping installation.
  - g. All valves, specials, sleeves and wall pipes shown or specified shall be incorporated into the piping system as required and as specified in the appropriate sections.
  - h. Unless otherwise shown or specified, buried piping installation includes all buried piping Work required, beginning at the outside face of structures or building foundations.

**B. Related Work Specified Elsewhere**

1. Section 31 00 00, Earthwork.
2. Section 03 30 00, Cast-In-Place Concrete.

3. 33 05 31.13, Polyvinyl Chloride Pipe/

1.2 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies:

1. Comply with applicable requirements of UL, FM and other authorities having jurisdiction.

B. Reference Standards: Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified:

1. ASTM D 2321, Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe.
2. AWWA C606, Grooved and Shouldered Type Joints.
3. AWWA M23, PVC - Design and Installation.
4. ASCE MOP No. 37, Design and Construction of Sanitary and Storm Sewers.
5. AWWA C600, Installation of Ductile Iron Water Mains and Appurtenances.

1.3 SUBMITTALS

A. Shop Drawings: Submit for approval Shop Drawings showing the following:

Laying schedules and detailed drawings in plan and profile for all piping.

1. Full details of piping, valves, specials, joints, harnessing and thrust blocks, and also connections to existing pipes and structures.
2. Refer to Section 01 33 00, Additional Submittals, for additional requirements.

B. Tests: Submit description of proposed testing methods, procedures and apparatus. Submit copies of all test results.

C. Certificate: Submit certificate of compliance with referenced standards.

D. Record Drawings: Submit in accordance with the requirements of Section 01 77 00, Contract Close Out.

#### 1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Handle all pipe, fittings and accessories carefully with approved handling devices. Do not drop or roll pipe off trucks. Do not otherwise drop, roll or skid pipe. Materials cracked, gouged, chipped, dented or otherwise damaged will not be acceptable and shall be removed from the site immediately.
- B. Store pipe and fittings on heavy wood blocking or platforms so they are not in contact with the ground.
- C. Pipe, fittings and specials shall be unloaded and stored in areas designated on the drawings. Interiors shall be kept completely free from dirt and foreign matter.
- D. No material furnished under this specification shall be shipped to the job site until all submittals have been approved.

### **PART 2 - PRODUCTS**

#### 2.1 MATERIALS

- A. Pipe bedding and backfill in accordance with Section 31 00 00, Earthwork.
- B. Pipe materials required are listed in the Piping Schedules. Refer to applicable Sections for detailed materials Specifications.

#### 2.2 RESTRAINED JOINTS

- A. Use restrained joints for thrust protection for all pressure and gravity piping systems except welded systems. Restrained joints shall be installed on all fittings and at structure penetrations.

### **PART 3 - EXECUTION**

#### 3.1 INSTALLATION

- A. General:
  - 1. Proper and suitable tools and appliances for the safe, convenient handling and laying of pipe shall be used.
  - 2. Install piping as shown on the Drawings, specified and as recommended by the manufacturer.

3. Request instructions from Engineer before proceeding if there is a conflict between the manufacturer's recommendations and the Drawings or Specifications.
4. Pipe, fittings and accessories that are cracked, damaged or in poor condition or with damaged linings will be rejected. At the time of laying, the pipe shall be examined carefully for defects, and should any pipe be discovered to be defective after being laid, it shall be removed and replaced with sound pipe by the Contractor at his expense.
5. Minimum cover over piping shall be 4 feet unless otherwise shown or approved by Engineer.
6. Earthwork required is specified in the applicable Sections of Division 32.
7. Excavation in excess of that required or shown and which is not authorized by the Engineer shall be replaced at Contractor's expense with approved select fill. It shall be furnished, placed and compacted in accordance with the requirements of the applicable Section of Division 32.

B. Bedding Pipe:

1. Bed pipe with materials as specified below and as shown on the Drawings.
  - a. Trenches shall be excavated below the pipe bottom by an amount sufficient for the placement of select fill material for pipe bedding as shown on the drawings or as specified. All loose and unsuitable material shall be removed from the trench bottom.
2. Carefully and thoroughly compact all pipe bedding and fill.
3. No piping shall be laid until Engineer approves the bedding condition.
4. No pipe shall be brought into position until the preceding length has been bedded and secured in its final position.

C. Laying Pipe:

1. Conform to manufacturer's instructions and requirements of the standards listed in paragraph 1.2, B., where applicable.
2. Install all pipe accurately to line and grade shown unless otherwise approved by Engineer. Remove and relay pipes that are not laid correctly.
3. Slope piping uniformly between elevations given.

4. Ensure that groundwater level in trench is at least 6 inches below bottom of pipe. Do not lay pipe in water. Maintain dry trench until jointing and backfilling are complete.
5. Start laying pipe at lowest point and proceed towards the higher elevations, unless otherwise approved by Engineer.
6. Place bell and spigot pipe so that bells face upstream unless otherwise approved by Engineer.
7. Excavate around joints in bedding and lay pipe so that only the barrel receives bearing pressure from the trench bottom.
8. Permissible deflections at joints shall not exceed 75 percent of the amount allowed by manufacturer.
9. Prior to laying pipe, every precaution shall be taken to ensure that no foreign material enters the piping.
10. All pipe and fittings shall be carefully examined for cracks, damage or other defects while suspended above the trench, before installation. Defective materials shall be immediately removed from site.
11. Interior of all pipe and fittings shall be inspected and all dirt, gravel, sand, debris or other foreign material shall be completely removed from pipe interior before it is moved into the trench. Bell and spigot mating surfaces shall be thoroughly wire brushed and wiped clean and dry immediately before pipe is laid.
12. Every time that pipe laying is not actively in progress the open ends of pipe shall be closed by a watertight plug.
13. Field cutting pipe, where required, shall be made with a machine specially designed for cutting piping. Cuts shall be carefully done, without damage to pipe or lining, so as to leave a smooth end at right angles to the axis of pipe. Cut ends shall be tapered and sharp edges filed off smooth. Flame cutting will not be allowed.
14. Blocking under piping shall not be permitted unless specifically excepted by Engineer for special conditions. If permitted, conform to requirements of AWWA C600.
15. Repair protective coatings and linings in a satisfactory manner prior to backfilling. Refer to specific pipe specifications for coating systems required.

D. Jointing Pipe:

1. Clean completely all jointing surfaces and adjacent areas immediately before making joint.
2. Lubricate and adjust gaskets and O-rings as recommended by manufacturer.
3. After O-rings are compressed and before pipe is brought fully home, each gasket shall be carefully checked for proper position around full circumference of the joint.
4. Conform to AWWA C111 and to all applicable manufacturers recommendations pertaining to jointing pipe.
5. For mechanical joints the plain end shall be centered and pushed into the bell and the gasket shall be firmly pressed evenly into the bell. The gland shall be slid to the bell for bolting. All bolts with oiled threads shall be alternately torque tightened 180 degrees opposite to each other to seat the gasket evenly. The maximum torque shall be as follows:

<u>Bolt Size</u> (inches)	<u>Applied Torque</u> (ft-lbs)
5/8	50
3/4	80
1	90
1-1/4	150

All bolts and nuts shall be heavily coated with an approved bituminous coating.

E. Restraints, Supports and Concrete Blocks:

1. Install restrained joints as specified.
2. Provide concrete and metal cradles, collars, and blocks as shown, required, or otherwise approved by Engineer.

F. Transitions from One Type of Pipe to Another:

1. Provide all necessary adapters, specials and connection pieces required when connecting different types and sizes of pipe or connecting pipe made by different manufacturers.

G. Closures:

1. Provide all closure pieces shown or required to complete the Work.



2. Locate closures in straight runs of pipe.

H. Backfilling:

1. Conform to applicable requirements of Section 31 00 00, Earthwork.
2. Backfill by hand until pipe is covered by at least one foot of fill.

3.2 WORK AFFECTING EXISTING PIPING

A. Location of Existing Piping:

1. Locations of existing piping shown shall be considered approximate.
2. Contractor is responsible for determining exact location of existing piping to which he must make connections, or which he may disturb during earth moving operations, or which may be affected by his work in any way. Test pits shall be constructed as required, at no additional cost to the Owner.
3. The Contractor shall remove existing concrete encasement and thrust blocks as necessary to connect to existing piping or construct new piping systems.

B. Work on Existing Pipelines:

1. Do not take pipelines out of service except where specified or approved by Engineer. Notify Engineer at least 48 hours prior to taking any pipeline out of service.
2. Cut or tap pipes as shown or required with machines specifically designed for this work.
3. Install temporary plugs to keep out all mud, dirt, water and debris.
4. Provide all necessary adapters, fittings, pipe and appurtenances required.
5. Refer to Section 31 00 00, Earthwork, for additional requirements.
6. The Contractor shall provide a temporary thrust restraint system for existing pipes wherever the installation of new pipes disturbs the existing pipe's thrust restraint. Upon completion of new pipe installation, the Contractor shall restore the existing pipe thrust restraint system to its condition at the onset of the job.

### 3.3 TESTING OF PIPING

#### A. General:

1. Test all piping as specified below except as otherwise authorized by Engineer.
2. Notify Engineer 48 hours in advance of testing.
3. Provide all testing apparatus, including pumps, hoses, gages, and fittings.
4. Unless otherwise noted, pipelines shall hold the specified test pressure for a period of 2 hours.
5. Pipelines which fail to hold specified test pressure or which exceed the allowable leakage rate shall be repaired and retested.
6. Test pressures required are at the lowest elevation of the pipeline section being tested unless otherwise specified.
7. Unless otherwise approved, conduct all tests in the presence of the Engineer. Repeat tests in the presence of local authorities having jurisdiction if required by them.
8. All pipe shall be tested between valves or bulkheads.

#### B. Pressure Test Procedure (Except for Fuel Oil Piping and Gravity Sewer Pipe):

1. Backfill and compaction shall be completed at least to the pipe centerline before testing, unless otherwise required or approved by Engineer. Backfill and compact around all blocking before testing and as required to assure restraint by harnessed joints.
2. Allow concrete for blocking to reach design strength before testing.
3. Fill section to be tested slowly with water and expel all air. Install corporation cocks, if necessary, to remove all air.
4. Test only one section of pipe at a time.
5. Maintain the test pressure for at least 2 hours.
6. Allowable Leakage Rates (in gallons per hour per 1,000 feet per inch diameter) except as otherwise noted:

- a. Buried Ductile iron and PVC - as specified herein and as specified in AWWA C.600 - Section 4 – Hydrostatic Testing.

<u>Nominal Pipe Diameter (inch)</u>	<u>Allowable Leakage Rate Per 1000 ft of Pipeline (gph)</u>
4	0.34
6	0.50
8	0.67
10	0.84
12	0.01

- b. Exposed Ductile iron and PVC and pipe in tunnels: No leakage.
- c. Copper, steel and Thermoplastic: No leakage.
- d. Sodium hypochlorite and caustic Solution: No leakage.
7. All visible leaks shall be made tight regardless of the amount of leakage or results of the leakage tests. If the pipes tested do not meet the leakage requirements of the leakage tests, they shall be repaired and retested as necessary until the leakage requirement is met.
8. All Work found defective shall be repaired or replaced at the expense of the Contractor.

B. Test Procedure for Gravity Drainage Piping:

1. Backfill and compaction shall be completed at least to the pipe centerline before testing, unless otherwise required or approved by the Engineer.
2. After pipe trenches have been satisfactorily backfilled to the required depth, piping shall be checked by the Engineer to determine if any displacement of pipe has occurred. If the pipe shows any sign of displacement, improper alignment or any other defects, the defect shall be corrected as determined by the Engineer. Upon satisfactory completion of the displacement test, the pipe shall be tested for leakage.
3. The Contractor shall test each section of gravity pipe for watertightness individually. No continuous sections shall be tested simultaneously.
4. The Contractor shall plug the downstream end of the pipeline under test and all outlets discharging into the upstream end.
5. The upstream end and the section of pipeline under test shall be filled by the Contractor with water. The elevations to which the pipe shall be filled is a minimum of 2 feet above the crown of the pipe, or at least 2 feet above

existing groundwater, whichever is higher. The Contractor shall provide all additional fittings, valves and piping as required to complete the testing procedures.

6. The pipe shall remain filled for an initial 1 hour period to allow for stabilization. Following the stabilization period, water shall be added to the required elevation.
7. Leakage loss shall be measured over a period of 6 hours. After the stabilization period, the Engineer will take 3 readings of the water level, and 6 hours later, take 3 more readings. An average of the readings will be used by the Engineer to calculate leakage.
8. If the measured rate of leakage is less than or equal to the allowable leakage rate, the section of pipeline tested is acceptable. If the test fails, the section of pipe must be repaired or replaced at the expense of the Contractor, and retested by the same procedures. Regardless of the results of the leakage test, all visible leaks shall be repaired.
9. The maximum allowable leakage rate for any section of pipeline under testing shall not exceed 1 gallon per hour per 1,000 feet per inch of diameter.
10. At the conclusion of the test, clean all pipelines by flushing with water or other means, and remove any debris which may have entered the pipeline during construction or testing.

### 3.4 CLEANING AND DISINFECTION

- A. All piping shall be thoroughly cleaned and flushed prior to placing in service in a manner approved by Engineer.
- B. Disinfection:
  1. Completely clean interior of all piping and flush piping smaller than 12 inches prior to disinfection with water at a minimum velocity of 2-1/2 feet per second.
  2. Conform to procedures described in AWWA C651 unless otherwise approved by the Engineer.
  3. Water for flushing, testing and chlorination shall be furnished by the Contractor.

3.5 MEASUREMENT AND PAYMENT

- A. No separate payment for the item, “Buried Piping Installation,” will be made. The cost of same shall be included in the Lump Sum Base Bid.

**END OF SECTION**

NO TEXT ON THIS PAGE

**SECTION 33 05 19**  
**DUCTILE IRON UTILITY PIPING**

**PART 1      GENERAL**

**1.1      RELATED WORK SPECIFIED ELSEWHERE**

- A.      Concrete for thrust blocks: Section 03 30 00, Cast-in-Place Concrete
- B.      Section 33 05 20, Buried Piping Installation
- C.      Section 33 14 17, Site Water Utility Services

**1.2      REFERENCES**

- A.      AWWA C104 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water
- B.      AWWA C105 - Polyethylene Encasement for Ductile-Iron Pipe Systems.
- C.      AWWA C110 - Ductile-Iron and Gray-Iron Fittings, 3 inches through 48 inches, for Water and Other Liquids
- D.      AWWA C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
- E.      AWWA C115 - Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges
- F.      AWWA C150/ANSI A21.50 - Thickness Design of Ductile Iron Pipe
- G.      AWWA C151/ANSI A21.51 - Ductile-Iron Pipe, Centrifugally Cast, for Water
- H.      AWWA C153 - Ductile-Iron Compact Fittings, 3 inches through 24 inches and 54 through 64 inches, for Water Service
- I.      AWWA C606 - Grooved and Shouldered Joints
- J.      ASTM A307 - Carbon Steel Externally Threaded Standard Fasteners
- K.      ASTM B98 - Copper Silicon Alloy Rod, Bar and Shapes
- L.      ASTM C283 - Resistance of Porcelain Enameled Utensils to Boiling Acid
- M.      DIPRA - Handbook of Ductile Iron Pipe
- N.      NY Spec 24-C-38 – Caulking

### 1.3 DESIGN AND MANUFACTURING REQUIREMENTS

- A. Ductile iron pipe shall conform to the American National Standards Institute (ANSI) and American Water Works Association (AWWA) Standards specified herein and recommendations as given in the Ductile Iron Pipe Research Association (DIPRA) "Handbook of Ductile Iron Pipe."

### 1.4 SUBMITTALS

- A. Contractor shall submit Shop Drawings for approval of the Engineer. Submittals shall include, but not limited to, the following:
  - 1. Shop Drawings.
  - 2. Results of Certified Shop Tests.
  - 3. Certified Letters of Compliance.
- B. Shop Drawings shall include, but not be limited to:
  - 1. Catalog data consisting of specifications, illustrations and a parts schedule that identifies the materials to be used for the various piping components and accessories. The illustrations shall be in sufficient detail to serve as a guide for assembly and disassembly.
  - 2. Complete layout and installation drawings, including plans, sections and cross-sections showing elevations with clearly marked dimensions. Piece numbers which are coordinated with the tabulated pipe layout schedule shall be clearly marked. Scale and size of the drawings shall conform to the Contract Documents. Piping layout drawings shall indicate information on pipe supports, location, support type, hanger rod size, insert type and the load in pounds.
  - 3. Details of pipe lining, coating, wrapping, insulation and painting of all pipe.
  - 4. Weights of all component parts.
  - 5. Tabulated pipe layout schedule shall include the following information for all pipe and fittings: service, pipe size, working pressure, joint type, wall thickness, piece number, and laying length.
  - 6. Flexible couplings, with harness details if required.
  - 7. Locations where pipe and valve identification signs will be placed.

### 1.5 QUALITY ASSURANCE

- A. The pipe and fittings covered by these specifications shall be provided by the Contractor through qualified manufacturers experienced in the fabrication, castings



and manufacture of the pipe materials specified herein. The pipe and fittings shall be designed, fabricated and installed in accordance with standards specified herein.

## 1.6 DELIVERY, STORAGE AND HANDLING

- A. The Contractor shall deliver, store and handle all pipe, fittings and couplings as specified in Contract Documents. Special care in handling shall be exercised during delivery, storage and handling of pipe to avoid damage and setting up stresses. Damaged pipe will be rejected and shall be replaced at the Contractor's expense. Pipe and specials stored prior to use shall be stored in such a manner as to keep the interior free from dirt and foreign matter.
- B. No material furnished under this Section shall be shipped to the job site until all submittals have been approved.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Ductile iron pipe and fittings shall be as manufactured by the following:
  - 1. American Cast Iron Pipe Co., Birmingham, AL
  - 2. McWane, Inc., Birmingham, AL
  - 3. United States Pipe and Foundry (U.S. Pipe), Birmingham, AL.
  - 4. Or approved equal.

### 2.2 DUCTILE IRON PIPE AND FITTINGS

- A. Pipe shall be in accordance with AWWA C151 for push-on or mechanical joint pipe and AWWA C115 for flanged pipe and shall be of grade 60 42 10 ductile iron. The above standards cover ductile iron pipe with nominal pipe sizes from three (3) inches up to and including sixty four (64) inches in diameter. Working pressure for the pipe shall be as called for in these Standards.
- B. Pipe
  - 1. All ductile iron pipe to be supplied under these specifications shall be manufactured in accordance with ANSI Specification A 21.51/AWWA C 151, latest revision. The thickness class for all ductile iron pipe up to and including 12" shall be class 56. Pipe is to be furnished with push on type joints per ANSI Specification A 21.11/AWWA C 111, latest revision, complete with gaskets and lubricant..

2. All ductile iron pipe furnished under this contract shall be factory applied double cement lined in accordance with ANSI Specification A21.4/AWWA C 10, latest revision, and seal coated inside and out. Minimum thickness of cement lining shall be as follows: 3" through 12" (inclusive) 1/8" cement lining; 14" through 24" (inclusive) 3/16" cement lining; 30" through 36" (inclusive) 1/4" cement lining.

C. Fittings

1. All fittings shall be "full-bodied" mechanical joint, shall be cement mortar and lined, and fittings of all sizes shall be class 250. All fittings shall be made in accordance with ANSI/AWWA; A21.11/C110, A21.11/C111, latest revision. Sealing gaskets, follower glands, lubricant, tee head bolts and hexagonal nuts shall be provided in sufficient quantities for each fitting. All fittings to be cement lined , NSF61 approved seal coat.
2. Concrete thrust blocks to be provided at all bends and tees in accordance with the detailed drawings.
3. Where compact fittings are shown or indicated, items shall be in accordance with AWWA C153.

D. Joints:

1. Unless otherwise specified, all joints for Ductile Iron Pipe shall be Push-On Joints, 2 degrees maximum deflection.

The following type joints shall be used as specified:

2. **PUSH-ON JOINTS** - Push-on joints shall be the Super Bell-Tite Joint of Amstead Industries, the Tyton Joint of U.S. Pipe and Foundry Company, the Fastite Joint of the American Cast Iron Company or such other joint as may be approved as equal by Westchester County. For each bell, there shall be furnished a rubber gasket. All of the above shall conform with the applicable provisions of ANSI Specification A21.11.
3. **MECHANICAL JOINTS** - The joint material shall conform to requirements of ANSI Specification A21.11. The mechanical joint installation shall conform to the latest ANSI Specifications. Surface of joint in contact with rubber gasket seal shall be brushed thoroughly with a wire brush just prior to assembly and all loose rust or foreign material shall be removed. The cleaned surface shall be brushed with soapy water just prior to slipping with torque indicating wrenches. The applied torque shall be within the ranges shown below:

SIZE OF BOLT          TORQUE (Foot-Pounds)

5/8"    40-60

3/4"    50-90

1"      70-100

When tightening bolts, the flanges shall be brought up toward the pipe flanges evenly by partially tightening first the bottom bolt, then the top bolt, then the side bolts and repeating the cycle until all bolts are within the specified torque range. Over stressing of bolts to obtain tightening will not be permitted.

Mechanical joints showing visible leakage at the maximum permitted torque shall be disassembled, thoroughly cleaned and reassembled.

4.    **FIELD LOK GASKET SYSTEM** - Field Lok Gasket Systems shall be as manufactured by the U.S. Pipe and Foundry Company or approved equal.

These gaskets shall be installed on Tyton Joint Pipe (4" thru 12") and Fittings.

5.    **JOINT RESTRAINT SYSTEMS** - The Contractor shall provide joint restraint systems to prevent against joint separation of joints on the water main and hydrant connections where restrained pipe is indicated on the Contract Drawings. The materials shall be the Meg-A-Lug restrained joint system as manufactured by EBBA IRON SALES, INC., or approved equal in lieu of the rodding system. The mechanical joint restraint system shall incorporate a restraining mechanism in the follower gland which shall impart a multiple wedging action against the pipe. Glands shall be manufactured of ductile iron conforming to ASTM A536-80. Restraining devices shall be of ductile iron heat treated to a minimum hardness of 370 BHN. All dimensions of each gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts conforming to ANSI/AWWA A21.11 and ANSI/AWWA C153/A21.53 of latest revision. Twist-off nuts shall be used to insure proper actuating of the restraining devices. If TR Flex pipe is utilized, pipe and fittings to be restrained shall be TR Flex restrained push-on joint type as manufactured by U.S. Pipe and Foundry Co., or approved equal. Restraint for field cut pipe shall be with TR Flex Gripper Rings or approved equal. Where Gripper Rings are to be installed on pipe in the field, the instructions of the pipe manufacturer shall be followed. In addition to the Gripper Rings, the Contractor will install tie-rodding to the first bell on each side of the fittings, or valves.

Where tie rods are used, the manufacturer's recommendation for the number of rods for size and pressure will be followed.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. All ductile iron pipe and fittings shall be installed in accordance with the manufacturer's recommendations, approved shop drawings and as specified in the Contract Documents.
- B. Where insulation is shown or specified in the Contract Documents, it shall be installed after the installation and testing of the pipe.
- C. Where ductile iron pipe is in contact with soils, the pipe shall be encased in polyethylene film in accordance with AWWA C105 to isolate the pipe surface from contact with the soils.
- D. Where field cutting of ductile iron pipe is permitted by the Engineer, ductile iron pipe shall be cut only by means of abrasive saws, hack saws, wheel type cutters or milling type cutters. The use of "squeeze" type pipe cutters and cutting torches will not be permitted. Also, the use of diamond points and dog chisels will not be permitted.
- E. Temporary Bulkheads:
  - 1. Temporary bulkheads shall be furnished at the ends of pipe sections where adjoining pipe have not been completed and are not ready to be connected.
  - 2. All temporary bulkheads shall be removed when they are no longer needed.

### **3.2 HANDLING AND DISTRIBUTION OF PIPE**

- A. Special care in handling shall be exercised during delivery and distribution of pipe to avoid damage. Damaged pipe shall be rejected and replaced at the Contractor's expense. The pipe shall be stored prior to use in such a manner as to keep the interior free from dirt and foreign matter. Any pipe that becomes contaminated shall be mechanically cleaned and then swabbed with a 1% chlorine solution before it is incorporated in the work. It must be stressed that contamination in the line will prolong and impede the disinfection operation. Flushing cannot be too heavily relied upon for cleaning.

### **3.3 PIPE MARKINGS**

- A. Each length of pipe shall be marked with its weight, pressure class, the year it was made, and the word "Ductile".

### 3.4 CONNECTIONS TO EXISTING SYSTEM

- A. Permanent connections are to be made to the existing distribution system at the locations shown on the Contract Drawings and shall be made up to conform to the details as shown. The Contractor shall verify by test pit excavation the location of the existing pipe where excavations are to be made. No pipe laying will be started until required test pits have been excavated where connections are to be made or at the direction of the Engineer.

### 3.5 PIPE BEDDING

- A. All pipes shall be laid on 6 inches of clean crushed stone which has been hand trimmed and compacted. The crushed stone shall be carried to the mid-diameter of the pipe, compacting in 6-inch layers. Bell holes shall be excavated in the bedding to provide the pipe with full length bearing. The material shall be well graded and the nominal size shall be 1/4 to 3/4-inch range. No recycled concrete shall be used for bedding.

### 3.6 LAYING PIPE

- A. Proper and suitable tools and appliances for the safe and convenient handling and laying of pipe and fittings shall be used, and shall in general agree with the manufacturer's recommendations. Deflections, however, shall not exceed 50 percent of the maximum amounts recommended. Deflections are to be performed after the pipe has been brought home in straight alignment. Care shall be taken to prevent the bell and cementing lining from being damaged. Any damaged pipe shall be repaired or replaced by the Contractor to the satisfaction of the Engineer.
- B. The pipe and fittings shall be thoroughly cleaned and carefully examined at the time of laying and no pipe or fitting shall be installed which is known to be defective. If any such pipe or fitting shall be discovered to be defective after being laid, it shall be removed and replaced with a sound pipe or fitting by the Contractor at his expense.
- C. The Contractor shall lay the pipe to conform to the lines and grades shown on the Contract Drawings or as directed by the Engineer. Following preparation of the subgrade, the pipe or fitting shall be carefully lowered into the trench so as to prevent dirt and other foreign substances from gaining entrance into the pipe. The pipe shall be clean inside, and both bell and spigot rings shall be examined carefully and burrs or spelter which might cut the rubber ring shall be removed.
- D. When it is necessary to cut ductile iron pipe in the field, such cuts shall be made carefully in a neat workmanlike manner using approved methods to produce a clean square cut. The outside edge of the cut end shall be conditioned for use by filing or grindings a small taper, at an angle of about 30°. If it is necessary to cut TR-Flex pipe in the field, such cuts shall be made to allow for one end to have the manufacture's "weldment" for installation into TR-Flex pipe or fittings. This requirement will also be necessary for the use of Gripper Rings or equal.

- E. At the close of work each day, the end of the pipeline shall be tightly sealed with a cap or plug so that no water, dirt or other foreign substance may enter the pipeline and this plug shall be kept in place until pipe laying is resumed.

### 3.7 THRUST BLOCKING

- A. Concrete blocking shall be provided at plugs, tees, bends, hydrants and at other locations as may be designated by the Engineer where a sizable unbalanced thrust will be developed. The blocking shall be, in general, of such shape and form that the load due to the thrust shall not exceed 2 tons per square foot against earth or 5 tons per square foot against rock when the water pressure in the line is carried at the test pressure. The excavation at such locations shall receive special attention with such hand trimming as may be required to provide a good bearing against undisturbed materials within as short a distance as possible from the pipe or fitting.
- B. Where reactions are in the vertical plane, provisions to restrain the thrust shall be made to meet the existing field conditions by concrete anchorages.
- C. Concrete shall conform to Item 03 30 00, "Cast-in-place Concrete", for thrust blocks are shown on the Contract Drawings and additional concrete thrust blocks ordered by the Engineer.

### 3.8 REMOVAL AND DISPOSAL OF WATER

- A. The Contractor shall provide and maintain ample means and equipment for dewatering and properly disposing of all water and sewage flows entering the trenches and other parts of the work. The excavation shall be maintained in a dry condition and no foundation materials, pipe or concrete shall be placed in water unless approved by the Engineer. Water and sewage flows shall be disposed of in a manner avoiding injury to property or inconvenience to the public with the approval of the Engineer. All costs for dewatering as specified will be included under this Item for payment. Costs shall also include continuous pumping and all labor to maintain a continuous system. Any disposal of water to existing storm systems or waterways shall be filtered by the use of hay bales or other filtering systems (See 1.40). Absolutely no silt will be allowed to enter these systems.

### 3.9 EXISTING STRUCTURES

- A. With exception of water, gas and sewer service connections, all known structures, including piping for water, sewers and drains, manholes, pavements, sidewalks, walls, fences, hydrants, poles and similar structures located on, or adjacent to, the proposed work are shown on the Contract Drawings. Such information is shown for the convenience of the contractor but is not guaranteed to be correct or complete. The location of underground structures shown may be inaccurate, and obstructions other than those shown may be encountered. The Contractor shall hereby distinctly understand that the Owner is not responsible for the correctness or sufficiency of the information given; that he shall have no claim for delay or extra compensation on account of incorrectness, insufficiency or absence of information regarding

obstructions revealed or not revealed by the Contract Drawings; and that he shall have no claim for relief from any obligation or responsibility under the contract because the extent, location, size or character of any pipe or other underground structure is incorrectly shown or has been omitted from the Contract Drawings.

- B. The location of the pipe to be laid as shown on the Contract Drawings is in accordance with the best information available as to the obstructions to be avoided, but can be considered only as approximate and may be changed by the Engineer if the progress of the work reveals other obstructions.

### 3.10 INTERRUPTED SERVICES

- A. The Contractor shall notify affected property owners at least forty-eight (48) hours in advance of his intent to open a trench or interrupt any public service. The Contractor shall again notify such affected owners at least three hours in advance of the contemplated operation.

### 3.11 TEMPORARY WATER SERVICES

- A. During the removal and replacement of the watermain, the contractor shall provide temporary water service to the buildings within George's Island Park as follows:
  - 1. Residence and Maintenance Buildings: The contractor shall provide temporary water service at all times.
  - 2. Lower and Upper Comfort Stations: The contractor shall provide temporary water service during the period from April 15th through November 1st.
- B. The contractor shall prepare a plan of the temporary water service and submit it to the engineer for approval, prior to construction.

### 3.12 MAINTENANCE OF OPERATIONS

- A. It is essential to the public health and safety that the operation of any public and private water supply, sanitary sewer and storm sewer services be maintained. The Contractor will be required to work in close cooperation and coordination with the Owner and its duly authorized agents to ensure that a minimum of interruptions of operations and nuisances result from his procedures. Only such interruptions of operations as are approved by the Engineer will be permitted.

### 3.13 MAINTENANCE OF UTILITY SERVICES

- A. Utility services to customers shall be maintained at all times except when interruptions are specifically permitted by the Owner or the authority having jurisdiction thereover.
- B. Gas, electric, water and any other services with the exception of drains which are found, in the opinion of the Engineer, to require relocation either in alignment or

elevation shall be so relocated by the Utility at the Owner's request. The Contractor shall coordinate each relocation with the Owner and shall have no claim for delay.

- C. Existing storm drains where noted on the Contract Drawings that require relocation in elevation, including modification of inlets or catch basins shall be included for payment under this item.
- D. Storm drains or drains (not noted on the Contract Drawings) that are found, in the opinion of the Engineer, to require relocation either by alignment or elevation shall be so relocated by the Contractor and paid for as extra work.
- E. Services which are damaged by the Contractor during construction and which do not require relocation shall be repaired or replaced at the expense of the Contractor.
- F. Sanitary sewers may require bypass pumping at water main crossings and locations where the sewers run parallel to the new water mains. The Contractor shall be responsible for bypassing. All costs associated with bypassing shall be included for payment under this Item.

### 3.14 PROTECTION OF PROPERTY AND STRUCTURES

- A. The Contractor shall, at his own expense, sustain in their places and protect from direct or indirect injury all pipes, poles, conduits, walls, buildings and other structures, utilities and property in the vicinity of his work. Such sustaining and protecting shall be carefully done by the Contractor and as required by the company or party owning the structure or department controlling it. The Contractor shall take all risks attending the presence or proximity of pipes, poles, conduits, walls, buildings and other structures, utilities and property in the vicinity of his work and he shall be responsible for all damage and assume all expense for direct or indirect injury, caused by his work, or to any person or property by reason of injury to them whether such structures are or are not shown on the Contract Drawings.

### 3.15 CONNECTION TO EXISTING MAINS

- A. Where connections are to be made to existing pipe, the locations of the existing mains are approximate. The Contractor shall verify by test pit excavation the location of the existing pipe where connections are to be made. The existing pipe is active and all precautions shall be made to prevent pipe separation when excavating in the vicinity of the thrust blocks and when removing the thrust block to make the connections. The cost to excavate, backfill and restore the test pit shall be included under this item.
- B. The Contractor's attention is directed to the possibility that compressed air may be present behind plugs and caps to be removed. Before removing thrust blocks at ends of plugs and caps, or before loosening plugs and caps on restrained pipe, the pressure behind the plugs and caps must be relieved by operation of existing corporation stops, house service connections, hydrants, or other positive means. The cost for making connections to existing mains shall be included under this Item.



3.16 FLUSHING AND TESTING

- A. The Contractor shall flush, hydrostatic test, and disinfect in this sequence the pipeline as follows:
- B. Keep Pipe Clean and Dry - Precautions shall be taken to protect pipe interiors, fittings and valves against contamination. Pipe delivered for construction shall be strung so as to minimize entrance of foreign material. When pipe laying is not in progress, as, for example, at the close of the day's work, all openings in the pipeline shall be closed by watertight plugs. Joints of all pipes in the trench shall be completed before work is stopped. If water accumulated in the trench, the plugs shall remain in place until the trench is dry.
- C. If dirt that, in the opinion of the Engineer will not be removed by the flushing operation enters the pipe, the interior of the pipe shall be cleaned and swabbed as necessary with a 5 percent hypochlorite disinfecting solution.
- D. Flushing - The Contractor shall flush the pipeline in sections governed by the sources of clean water and suitable discharge points. The pipe section shall be flushed until the water runs clear. The Contractor is advised that flushing does not create sufficient velocities to clear the pipeline of matter that may cause an unsatisfactory bacteriological test. Permission of the Engineer to stop flushing or directions to continue flushing shall involve no responsibility for the results of the bacteriological tests.
- E. Hydrostatic Tests - The Contractor shall make hydrostatic tests upon all sections of the pipeline in the presence of the Engineer. The hydrostatic tests shall be made in accordance with Westchester County Department of Health and AWWA Standard C600, Section 4-Hydrostatic Tests, and latest Edition and to the test gradients shown on the Contract Drawings.
- F. The Contractor shall furnish, install, complete with reaction blocking, necessary plugs and caps required for this operation. Main line valves shall be utilized wherever possible to segregate test sections except as directed by the Engineer.
- G. The Contractor shall furnish all test equipment including pumps, gages and meters. The test equipment shall be approved by the Engineer. Calibration tests shall be furnished.
- H. The line shall be filled with water for a period of no less than 24 hours then subjected to test pressure of 150 psi. During this test, the measured leakage over a period of 2 hours shall not exceed 50% of the allowable quantities as indicated in AWWA Standard C600, Section, 4, Hydrostatic Testing, for the size of pipe being tested. All air shall be purged from the line before testing.
- I. The contractor shall notify the Westchester County and the Engineer at least 48 hours prior to performing any testing.

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- J. The contractor shall retain, at the contractor's cost, a Licensed Professional Engineer to witness all testing and perform the necessary certifications and filings for acceptance of the completed works.

3.17 DISINFECTION

- A. Disinfect pipe and fittings in accordance with Section 331300 after completion of pressure and leakage tests.

**END OF SECTION**

**SECTION 33 05 31**

**THERMO PLASTIC UTILITY PIPE**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. The Contractor shall provide all polyvinyl chloride (PVC) pipe, fittings, flanges, unions, couplings, as specified in this section, shown on the Contract Drawings or as required for a complete installation.

**1.2 PAYMENT**

- A. There shall be no separate payment for the work of this Section; all costs shall be included in the Lump Sum price bid for the Contract, unless otherwise specified.
- B. No separate payment will be made for disinfection or testing piping, gaskets, bolts, nuts and other appurtenances and material required to erect the lines; the costs thereof shall be included in the prices bid for PVC pipe.

**1.3 RELATED SECTIONS**

- A. Section 330505, Buried Pipe Installation

**1.4 REFERENCES**

- A. The American Society of Mechanical Engineers (ASME) Standards:
  - 1. B1.1 Unified Inch Screw Threads (UN and UNR Thread Form)
  - 2. B18.2.1 Square, Hex, Heavy Hex, and Askew Head Bolts and Hex, Heavy Hex, Hex Flange, Lobed Head and Lag Screws (Inch Series)
- B. American Society of the International Association for Testing and Materials (ASTM) Specifications:
  - 1. A307 Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000 PSI Tensile Strength
  - 2. D1784 Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds
  - 3. D1785 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80 and 120

4. D2241 Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)
  5. D2464 Standard Specification for Threaded Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
  6. D2467 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
  7. D2564 Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems
  8. F656 Standard Specification for Primers for Use in Solvent Cement Joints of Poly(Vinyl Chloride) (PVC) Plastic Pipe and Fittings
- C. American Water Works Association (AWWA) Standards:
1. C207 Steel Pipe Flanges for Waterworks Service, Sizes 4 In. Through 144 In. (100 mm Through 3,600 mm)

## 1.5 DESIGN REQUIREMENTS

- A. PVC pipe shall conform to the latest standards of the American National Standards Institute (ANSI), the American Society for Testing and Materials (ASTM), the American Water Works Association (AWWA) and the National Sanitation Foundation (NSF).

## 1.6 SUBMITTALS

- A. Contractor shall submit Shop Drawings and material specifications for approval of the Engineer before fabricating or installing PVC pipelines. Submittals shall include, but not be limited to the following:
1. Completely detailed shop drawings in conformance with the specified requirements.
  2. Drawings shall show completely dimensioned piping layouts and schedules of all pipe, fittings, valves, expansion joints, flexible couplings, hangers, supports and other appurtenances. Schedules shall indicate the material and schedule number or thickness of all pipe, the material and class of all fittings and the rating and description of all valves.
  3. Details and materials of the support and hanging of pipe
  4. Points of location for pipe identification signs
  5. When any work is of special design, show in large detail and completely describe and dimension.

6. All data pertinent to the layout of PVC piping shall be included on the Contractor's Shop Drawings even though such information is not specifically mentioned in this section.

- B. Submit catalog data for pipe, couplings, expansion joints, hangers, supports and other appurtenances.

## 1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle all products and materials as described in Contract

## **PART 2 - PRODUCTS**

### 2.1 MANUFACTURERS

- A. Acceptable manufacturers are listed below.

1. PVC Pipe as manufactured by:

- a. B. F. Goodrich (now Lubrizol Advanced Materials, Inc.), Cleveland, OH.
- b. Lewis Pipe Company, Ardmore, AL.
- c. Or approved equal.

2. Solvent Cement as manufactured by:

- a. IPS Corporation, Compton, CA.
- b. Or approved equal.

3. Wall Sleeve Annular Seals as manufactured by:

- a. Thunderline Corp. (Link-Seal), Stafford, TX.
- b. The Metraflex Company, Chicago, IL.
- c. Or approved equal.

### 2.2 MATERIALS

- A. General

1. The pipe shall be as uniform as commercially practicable in color, capacity, density and other physical properties.

2. Nominal length of PVC piping shall be approximately 20 feet, unless otherwise specified.
- B. PVC Pipe and Fittings
1. Pipe and fittings shall be manufactured from PVC compounds meeting the requirements of ASTM D1784, Class 12454-B.
  2. Pipe and fittings shall be Schedule 80 and meet the requirements of ASTM D1785, Type I, Grade I, unless otherwise shown or specified.
  3. Socket type fittings shall conform to ASTM D2467.
  4. Threaded fittings shall conform to ASTM D2464.
- C. SDR Series Pipe: PVC pipe shall meet the requirement of ASTM D2241.
- D. Steel Flange
1. Where specifically captioned on the Contract Drawings or where explicitly required in this section, steel pipe flanges, cadmium plated, complying with AWWA C207 shall be furnished and installed as required herein.
  2. Bolts and stud bolts shall be of steel, ASTM A307, Grade B, cadmium plated. Bolts and stud bolts shall conform to the dimensional requirements of ASME B18.2.1 with rolled threads conforming to ASME B1.1, Coarse series, Class 2 fit. Bolts and stud bolts and nuts shall be of American Standard heavy unfinished hexagonal type.
- E. Sleeves: Unless otherwise shown or specified, provide steel pipe sleeves at all points where pipes pass through walls or floors of structures. Provide steel sleeves of Schedule 40 minimum thickness, with waterstop.
- F. Wall Sleeve Annular Seals: Provide modular mechanical type seals consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and the wall sleeve. Provide an elastomeric element that is of the size, quantity, type and material that the manufacturer recommends for the intended service and that will provide an effective hydrostatic seal.

## **PART 3 EXECUTION**

### **3.1 INSTALLATION**

- A. General: Install all PVC pipe and fittings in accordance with the Sections and in accordance with the manufacturers' recommendations and approved shop drawings.

- B. Solvent-Welded Joints: Make all solvent-welded PVC joints in accordance with ASTM D 2855 and the solvent manufacturer's approved instructions. After joint assembly, wipe excess cement from the pipe. A properly made joint will show a bead around the entire circumference. Any gaps in this bead indicate a defective joint, and the Contractor shall remake such joints at no additional cost to the City.
1. For PVC pipe, use primers and solvent cements meeting the requirements of ASTM F656 and ASTM D2564, respectively. Cement for joints up to 2 inches in diameter shall be:
    - a. IPS Corp. Weld-On 724.
    - b. Or approved equal.
  2. Cement for joints larger than 2 inches in diameter shall be:
    - a. IPS Corp. Weld-On 724.
    - b. Or approved equal.
  3. Cement for joints larger than 2 inches in diameter shall be:
    - a. IPS Corp.
    - b. Weld-On 724.
    - c. Or approved equal.
  4. The following procedure shall be followed to ensure proper gluing of PVC pipe.
    - a. Ensure the end of the pipe is beveled.
    - b. Apply primer to the female end.
    - c. Apply primer to the male end.
    - d. Reapply primer to the female end; the primer must not dry.
    - e. Apply glue to the male end using an appropriately sized brush.
    - f. Apply glue with the brush to the female end.
    - g. Reapply glue to the male end.
    - h. Join the male and female ends with a quarter turn twist and hold for 30 seconds.

- C. Couplings: Only use couplings to join standard lengths of pipe and as required to complete a straight run of pipe. Do not use couplings to join random lengths of pipe and cuttings from standard lengths.
- D. Reducing Fittings: Use reducing fittings for all changes in pipe size. Do not use bushings.
- E. Pipe Flexibility
  - 1. Make ample provisions for flexibility in all pipelines.
  - 2. Unless other forms of expansion compensation are specified, such as expansion joints, fabricate all runs of pipe subject to change in length shorter than their theoretical length to the extent of one half of the expansion and erect them such that they may be free to expand without increasing the stresses imposed when cold.
  - 3. When the foregoing method of compensation for expansion is not adequate, furnish and install in the pipelines expansion devices adequate to allow the lines to expand and contract freely without injury to any part of the piping system. The devices may be in the form of expansion joints, swivel joints, pipe bends or flexible couplings, and shall include such anchors as may be shown or required to make the devices effective.
- F. Venting
  - 1. Each high point in liquid lines shall be provided with a vent consisting of an automatic air release/vacuum relief valve and an outlet vent line. The automatic valve and vent line for pipelines up to and including 1-inch size shall be the same size as the carrier pipe. In larger carrier pipes, the valve and vent line shall be of the size given herein, but not smaller than 1 inch. The automatic valve shall have a cast or ductile-iron body and cover, stainless steel internals, and Viton or Buna N seal, unless otherwise specified in this section. The outlet vent line from the valve shall be Schedule 80 PVC and shall terminate at a point approximately 3 feet above the floor. A PVC valve shall be provided between the carrier pipe and the automatic valve to allow removal of the automatic valve for repair or replacement.
  - 2. Where vent valves are so located that liquids discharged therefrom would cause damage to structure or equipment, the vent shall be piped to the nearest gutter or drain in an approved manner. For chemical service piping, vent lines shall be piped to sumps or tanks compatible with the chemical or chemicals contained in the chemical service piping, as shown on the Contract Drawings or specified in this section.



3.2 CLEANING

- A. During construction, keep the lines free from foreign matter. The piping shall be left thoroughly clean to the satisfaction of the Engineer.
- B. Flush all process and potable water piping with clean water.

3.3 TESTING

- A. Test pipes in accordance with Section 33 05 05, Buried Pipe Installation.

3.4 DISINFECTION

- A. Disinfect all potable water piping in accordance with Section 33 05 05, Buried Pipe Installation.

3.5 SCHEDULES

- A. Refer to the schedules contained herein for information on the piping that is to be constructed using the pipe materials and methods specified herein.

**END OF SECTION**

NO TEXT ON THAT PAGE

**SECTION 33 05 33**

**POLYETHYLENE UTILITY PIPE**

**PART 1 - GENERAL**

**1.1 SECTION DESCRIPTION**

- A. This specification includes but is not limited to high-density polyethylene (PE 3408) (ductile iron pipe size O.D) pressure pipe primarily intended for the transportation of water and sewage either buried or above grade.

**1.2 REFERENCES**

- A. AWWA C901 Polyethylene (PE) pressure Pipe & Tubing, 'A inch through 3 inch for water
- B. AWWA C906 Polyethylene (PE) pressure Pipe & Fittings, 4 inch through 63 inch for water
- C. ASTM D3035 Standard Spec for PE Pipe (DR-PR) Based on Controlled Outside Diameter
- D. ASTM D3261 Butt Heat Fusion PE Fittings for PE Pipe & Tubing
- E. ASTM D3350 Standard Specification for PE Pipe & Fittings Materials
- F. ASTM D1238 Melt Flow Index
- G. ASTM D1505 Density of Plastics
- H. ASTM D2837 Hydrostatic Design Basis
- I. NSF Std.#14 Plastic Piping Components & Related Materials
- J. TR-33/2005 Generic Butt Fusion Joining Procedure for Field Joining of PE Pipe

**1.3 GENERAL**

- A. USE
  - 1. High Density Polyethylene (HDPE) pipes/fittings shall be allowed for use as water, wastewater and reclaimed water pressure pipe where compatible with the specific conditions of the project. The use of material other than HDPE pipe may be required by ASPA if it is determined that HDPE pipe is unsuitable for the particular application. All material used in the production of water main piping shall be approved by the National Sanitation Foundation (NSF).

1.4 DOCUMENTATION

- A. Documentation from the resin's manufacturer showing results of the following tests for resin identification:
  - 1. Melt Flow Index ASTM D1238
  - 2. Density ASTM D1505

1.5 MANUFACTURER

- A. All HDPE pipe and fittings shall be from a single manufacturer, who is fully experienced, reputable and qualified in the manufacture of the HDPE pipe to be furnished. The pipe shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications. Qualified manufacturers shall be: PLEXCO Division of Chevron Chemical Company, DRISCOPIPE as manufactured by Phillips Products Co., Inc., SCLAIRPIPE as manufactured by DuPont of Canada or equal as approved by the Utilities Engineer.

1.6 FINISHED PRODUCT EVALUATION

- A. Production staff shall check each length of pipe produced for the items listed below. The results of all measurements shall be recorded on production sheets, which become part of the manufacturer's permanent records.
  - 1. Pipe in process shall be checked visually, inside and out for cosmetic defects (grooves, pits, hollows, etc.)
  - 2. Pipe outside diameter shall be measured using a suitable periphery tape to ensure conformance with ASTM F714 or ASTM D3035, whichever is applicable.
  - 3. Pipe wall thickness shall be measured at 12 equally spaced locations around the circumference at both ends of the pipe to ensure conformance with ASTM F714 or ASTM D3035, whichever is applicable.
  - 4. Pipe length shall be measured.
  - 5. Pipe marking shall be examined and checked for accuracy.
  - 6. Pipe ends shall be checked to ensure they are cut square and clean.
  - 7. Subject inside surface to a "reverse bend test" to ensure the pipe is free of oxidation (brittleness).

1.7 STRESS REGRESSION TESTING

- A. The polyethylene pipe manufacturer shall provide certification that stress regression testing has been performed on the specific polyethylene resin being utilized in the manufacture of this product. This stress regression testing shall have been done in accordance with ASTM D2837 and the manufacturer shall provide a product supplying a minimum Hydrostatic Design Basis (HDB) of 1,600 psi as determined in accordance with ASTM D2837.

1.8 COMPATIBILITY

- A. Contractor is responsible for compatibility between pipe materials, fittings and appurtenances.

1.9 WARRANTY

- A. The pipe MANUFACTURER shall provide a warranty against manufacturing defects of material and workmanship for a period of ten years after the final acceptance of the project by the OWNER. The MANUFACTURER shall replace at no expense to the OWNER any defective pipe/fitting material including labor within the warranty period.

**PART 2 – PRODUCTS**

2.1 MATERIALS FOR PIPE SIZES 4-INCH DIAMETER AND LARGER

- A. Materials used for the manufacture of polyethylene pipe and fittings shall be made from a PE 3408 high density polyethylene resin compound meeting cell classification 345434C per ASTM D3350; and meeting Type III, Class C, Category 5, Grade P34 per ASTM D1238.
- B. High Density Polyethylene (HDPE) pipe shall comply with AWWA Specifications C906.
- C. If rework compounds are required, only those generated in the Manufacturer's own plant from resin compounds of the same class and type from the same raw material supplier shall be used.
- D. Dimensions and workmanship shall be as specified by ASTM F714. HDPE fittings and transitions shall meet ASTM D3261. HDPE pipe shall have a minimum density of 0.955 grams per cubic centimeter. All HDPE pipe and fittings shall have a Hydrostatic Design Basis (HDB) of 1,600 psi.
- E. HDPE pipe and accessories 4-inch diameter and larger, shall be 160 psi at 73.4°F meeting the requirements of Standard Dimension Ratio (SDR) 17 as MINIMUM STRENGTH.

- F. The pipe Manufacturer must certify compliance with the above requirements.

## 2.2 MATERIALS FOR PIPE SIZES 2-INCH DIAMETER AND LESS

- A. Materials used for the manufacture of polyethylene pipe and fittings shall be made from a PE 3408 high density polyethylene resin compound meeting cell classification 345434C per ASTM D3350; and meeting Type III, Class C, Category 5, Grade P34 per ASTM D1238.
- B. High Density Polyethylene (HDPE) pipes shall comply with AWWA Specifications C901.
- C. If rework compounds are required, only those generated in the Manufacturer's own plant from resin compounds of the same class and type from the same raw material supplier shall be used.
- D. Dimensions and workmanship shall be as specified by ASTM D3035. HDPE fittings and transitions shall meet ASTM D3261. HDPE pipe shall have a minimum density of 0.955 grams per cubic centimeter. All HDPE pipe and fittings shall have a Hydrostatic Design Basis (HDB) of 1,600 psi.
- E. HDPE pipe and accessories 2" and less in diameter, shall be 160 psi at 73.4°F meeting the requirements of Standard Dimension Ratio (SDR) 9 as MINIMUM STRENGTH.
- F. The pipe Manufacturer must certify compliance with the above requirements.

## 2.3 FITTINGS

- A. All molded fittings and fabricated fittings shall be fully pressure rated to match the pipe SDR pressure rating to which they are made. All fittings shall be molded or fabricated by the manufacturer. No Contractor fabricated fittings shall be used unless approved by the Engineer.
- B. The manufacturer of the HDPE pipe shall supply all HDPE fittings and accessories as well as any adapters and/or specials required to perform the work as shown on the Drawings and specified herein.
- C. All fittings shall be installed using butt-fused fittings, thermo-fused fittings/couplings, or flanged adapters and must be approved by the Engineer. NO size on size wet taps shall be permitted.
- D. All transition from HDPE pipe to ductile iron or PVC shall be made per the approval of ASPA Engineer and per the HDPE pipe manufacturer's recommendations and specifications. A molded flange connector adapter within a carbon steel back-up ring assembly shall be used for pipe type transitions. Ductile iron back-up rings shall mate with cast iron flanges per ANSI B16.1. A 316

stainless steel back-up ring shall mate with a 316 stainless steel flange per ANSI B16.1.

1. Transition from HDPE to ductile iron fittings and valves shall be approved by ASPA Engineer before installation.
2. No solid sleeves shall be allowed between such material transitions.
3. Fittings and transitions shall be as manufactured by Phillips DRISCOPIPE, Inc., 1000 Series Pressure Pipe, Chevron Chemical Company Plexco/Spiralite pipe, or equal.
4. The pipe supplier must certify compliance with the above requirements.

## 2.4 PIPE IDENTIFICATION

A. The following shall be continuously indent printed on the pipe or spaced at intervals not exceeding 5-feet:

1. Name and/or trademark of the pipe manufacturer.
2. Nominal pipe size.
3. Dimension ratio.
4. The letters PE followed by the polyethylene grade in accordance with ASTM
5. D1248 followed by the hydrostatic design basis in 160's of psi, e.g., PE 3408.
6. Manufacturing standard reference, e.g., ASTM F714 or D-3035, as required.
7. A production code from which the date and place of manufacture can be determined.
8. Color Identification, either stripped by co-extruding longitudinal identifiable color markings or shall be solid in color and as follows:
  - a. BLUE - Potable Water
  - b. GREEN - Sanitary Sewer

B. Tracing Wire

1. Open trench installation of HDPE shall be identifiable per ASPA Specification Sec. 02600, Part 2, 2.01 (A).

2. Directional Drilled HDPE shall have wire conforming to Copperhead Industries Reinforced #1245 Extra-High Strength Tracer Wire and affixed to the drilling head/reamer per Detail M-17.
- C. Marking Tape: Marking tape shall be installed per ASPA Engineer approval.

## **PART 3 - EXECUTION**

### **3.1 JOINING METHOD**

- A. The pipe shall be joined with butt, heat fusion joints as outlined in ASTM D2657 and conform to the Generic Butt Fusion Joining Procedure for Field Joining of Polyethylene Pipe, Technical Report TR-33/2005, published by the Plastic Pipe Institute (PPI). All joints shall be made in strict compliance with the manufacturer's recommendations. A factory qualified joining technician as designated by pipe manufacturer or experienced, trained technician shall perform all heat fusion joints in the presence of the ASPA inspector.
- B. Lengths of pipe shall be assembled into suitable installation lengths by the butt-fusion process. All pipes so joined shall be made from the same class and type of raw material made by the same raw material supplier. Pipe shall be furnished in standard laying lengths not to exceed 50 feet and no shorter than 20 feet.
- C. On days butt fusions are to be made, the first fusion shall be a trial fusion in the presence of an ASPA Inspector. The following shall apply:
  1. Heating plate surfaces shall be inspected for cuts and scrapes and shall be free of dirt and residue. Heater surfaces should be between 400 F (minimum) to 450 F (maximum). Measure the temperature @ 12:00, 3:00, 6:00 and 9:00 o'clock positions using a pyrometer or infrared thermometer at locations where the heating plate will contact the pipe/fitting ends. The maximum temperature difference between any two points on a single heating surface must not exceed 24 F. If this temperature is exceeded, the heating plate shall be cleaned per the manufacturer's recommendations.
  2. The fusion or test section shall be cut out after cooling completely for inspection.
  3. The test section shall be 12" or 30 times (minimum) the wall thickness in length and 1" or 1.5 times the wall thickness in width (minimum).
  4. The joint shall be visually inspected as to continuity of "beads" from the melted material, and for assurance of "cold joint" prevention (i.e. - joint shall have visible molded material between walls of pipe). Joint spacing between the walls of the two ends shall be a minimum of 1/16" to a maximum 3/16".



- D. The polyethylene flange adapters at pipe material transitions shall be backed up by stainless steel flanges conforming to ANSI B16.1 and shaped as necessary to suit the outside dimensions of the pipe. The flange adapter assemblies shall be connected with corrosion resisting bolts and nuts of Type 316 Stainless Steel as specified in ASTM A726 and ASTM A307. All bolts shall be tightened to the manufacturer's specified torques. Bolts shall be tightened alternatively and evenly. After installation, apply a bitumastic coating to bolts and nuts.

#### **PART 4 – INSTALLATION**

- 4.1 HIGH DENSITY POLYETHYLENE (HDPE) PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE INSTRUCTION OF THE MANUFACTURER, AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN. A FACTORY QUALIFIED JOINING TECHNICIAN AS DESIGNATED BY THE PIPE MANUFACTURER SHALL PERFORM ALL HEAT FUSION JOINTS.
- 4.2 HDPE SHALL BE INSTALLED EITHER BY OPEN TRENCH CONSTRUCTION OR DIRECTIONAL BORE METHOD.
- 4.3 CARE SHALL BE TAKEN IN LOADING, TRANSPORTING AND UNLOADING TO PREVENT DAMAGE TO THE PIPE. PIPE OR FITTING SHALL NOT BE DROPPED. ALL PIPE OR FITTING SHALL BE EXAMINED BEFORE INSTALLATION, AND NO PIECE SHALL BE INSTALLED WHICH IS FOUND TO BE DEFECTIVE. ANY DAMAGE TO THE PIPE SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER. IF ANY DEFECTIVE PIPE IS DISCOVERED AFTER IT HAS BEEN INSTALLED, IT SHALL BE REMOVED AND REPLACED WITH A SOUND PIPE IN A SATISFACTORY MANNER BY THE CONTRACTOR, AT HIS OWN EXPENSE.
- 4.4 UNDER NO CIRCUMSTANCES SHALL THE PIPE OR ACCESSORIES BE DROPPED INTO THE TRENCH OR FORCED THROUGH A DIRECTIONAL BORE UPON "PULL-BACK".
- 4.5 CARE SHALL BE TAKEN DURING TRANSPORTATION OF THE PIPE SUCH THAT IT WILL NOT BE CUT, KINKED OR OTHERWISE DAMAGED.
- 4.6 ROPES, FABRIC OR RUBBER PROTECTED SLINGS AND STRAPS SHALL BE USED WHEN HANDLING PIPES. CHAINS, CABLES OR HOOKS INSERTED INTO THE PIPE ENDS SHALL NOT BE USED. TWO SLINGS SPREAD APART SHALL BE USED FOR LIFTING EACH LENGTH OF PIPE.
- 4.7 PIPES SHALL BE STORED ON LEVEL GROUND, PREFERABLY TURF OR SAND, FREE OF SHARP OBJECTS, WHICH COULD DAMAGE THE PIPE. STACKING OF THE POLYETHYLENE PIPE SHALL BE LIMITED TO A HEIGHT THAT WILL NOT CAUSE EXCESSIVE DEFORMATION OF THE BOTTOM LAYERS OF PIPES UNDER ANTICIPATED TEMPERATURE CONDITIONS. WHERE NECESSARY DUE TO GROUND CONDITIONS, THE PIPE SHALL BE STORED ON WOODEN

SLEEPERS, SPACED SUITABLY AND OF SUCH WIDTH AS NOT TO ALLOW DEFORMATION OF THE PIPE AT THE POINT OF CONTACT WITH THE SLEEPER OR BETWEEN SUPPORTS.

- 4.8 PIPE SHALL BE STORED ON CLEAN LEVEL GROUND TO PREVENT UNDUE SCRATCHING OR GOUGING. THE HANDLING OF THE PIPE SHALL BE IN SUCH A MANNER THAT THE PIPE IS NOT DAMAGED BY DRAGGING IT OVER SHARP AND CUTTING OBJECTS. THE MAXIMUM ALLOWABLE DEPTH OF CUTS, SCRATCHES OR GOUGES ON THE EXTERIOR OF THE PIPE IS 5 PERCENT OF WALL THICKNESS. THE INTERIOR PIPE SURFACE SHALL BE FREE OF CUTS, GOUGES OR SCRATCHES.
- 4.9 PIPE SHALL BE LAID TO LINES AND GRADE SHOWN ON THE DRAWINGS WITH BEDDING AND BACKFILL AS SHOWN ON THE DRAWINGS.
- 4.10 WHEN LAYING IS NOT IN PROGRESS, INCLUDING LUNCHTIME, THE OPEN ENDS OF THE PIPE SHALL BE CLOSED BY FABRICATED PLUGS, OR BY OTHER APPROVED MEANS.
- 4.11 SECTIONS OF PIPE WITH CUTS, SCRATCHES OR GOUGES EXCEEDING 5 PERCENT OF THE PIPE WALL THICKNESS SHALL BE REMOVED COMPLETELY AND THE ENDS OF THE PIPELINE REJOINED.
- 4.12 THE PIPE SHALL BE JOINED BY THE METHOD OF THERMAL BUTT FUSION. ALL JOINTS SHALL BE MADE IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 4.13 MECHANICAL CONNECTIONS OF THE POLYETHYLENE PIPE TO AUXILIARY EQUIPMENT SUCH AS VALVES, PUMPS AND TANKS SHALL BE THROUGH FLANGED CONNECTIONS WHICH SHALL CONSISTS OF THE FOLLOWING:
  - A. A polyethylene flange shall be thermally butt-fused to the stub end of the pipe.
  - B. A 316 stainless steel back up ring shall mate with a 316 stainless steel flange.
  - C. A 316 stainless steel bolts and nuts shall be used.
- 4.14 FLANGE CONNECTIONS SHALL BE PROVIDED WITH A FULL-FACE NEOPRENE GASKET.
- 4.15 ALL HDPE PIPE MUST BE AT THE TEMPERATURE OF THE SURROUNDING SOIL AT THE TIME OF BACKFILLING AND COMPACTION.
- 4.16 IF A DEFECTIVE PIPE IS DISCOVERED AFTER IT HAS BEEN INSTALLED, IT SHALL BE REMOVED AND REPLACED WITH A SOUND PIPE IN A SATISFACTORY MANNER AT NO ADDITIONAL COST TO THE OWNER.

All pipe and fittings shall be thoroughly cleaned before installation, shall be kept clean until they are used in the work and when laid, shall conform to the lines and grades required. kinked or otherwise damaged.

**4.17 OPEN TRENCH INSTALLATION:**

- A. ASPA Standards and Specification, Section 02200 - Utility Excavation, Trenching, and Backfilling shall apply in its entirety.
- B. The centerline of the pipe shall not deviate from a straight line drawn between the centers of the openings at the ends of the pipe by more than 1/16-in per foot of length. If a piece of pipe fails to meet this requirement check for straightness, it shall be rejected and removed from the site. Laying instructions of the manufacturer shall be explicitly followed.
- C. Good alignment shall be preserved during installation. Deflection of the pipe shall occur only at those places on design drawings and as approved by the Engineer. Fittings, in addition to those shown on the Drawings, shall be used only if necessary or required by the Engineer.
- D. Each length of the pipe shall have the assembly mark aligned with the pipe previously laid and held securely until enough backfill has been placed to hold the pipe in place. Joints shall not be "pulled" or "cramped".
- E. Precautions shall be taken to prevent flotation of the pipe in the trench.
- F. When moveable trench bracing such as trench boxes, moveable sheeting, shoring or plates are used to support the sides of the trench, care shall be taken in placing and moving the boxes or supporting bracing to prevent movement of the pipe, or disturbance of the pipe bedding and the backfill. Trench boxes, moveable sheeting, shoring or plates shall not be allowed to extend below top of the pipe.
- G. As trench boxes, moveable sheeting, shoring or plates are moved, pipe bedding shall be placed to fill any voids created and the backfill shall be recompact to provide uniform side support for the pipe.
- H. Restrained joints shall be installed where shown on the Drawings or as directed by the Engineer.

**4.18 DIRECTIONAL BORE INSTALLATION:**

- A. Refer to ASPA Specification 02320 - Horizontal Directional Drilling in its entirety

**PART 5 - CLEANING**

- 5.1 AT THE CONCLUSION OF THE WORK, THOROUGHLY CLEAN ALL OF THE NEW PIPE LINES TO REMOVE ALL DIRT, STONES, PIECES OF WOOD OR OTHER MATERIAL WHICH MAY HAVE ENTERED DURING THE CONSTRUCTION

PERIOD BY FORCING A CLEANING SWAB THROUGH ALL MAINS 4" OR GREATER. FLUSHING VELOCITIES SHALL BE A MINIMUM OF 2.5 FEET PER SECOND. ALL FLUSHING SHALL BE COORDINATED WITH ASPA INSPECTOR AND WATER RESOURCES DEPARTMENT. DEBRIS CLEANED FROM THE LINES SHALL BE REMOVED FROM THE JOB SITE.

#### PART 6 - TESTING

- 6.1 PRESSURE TESTING SHALL BE CONDUCTED PER MANUFACTURER'S RECOMMENDATIONS AND AS APPROVED BY THE ASPA ENGINEER.
- 6.2 ALL HDPE WATER MAINS SHALL BE DISINFECTED PRIOR TO PRESSURE TESTING AS PER ASPA SPECIFICATION.
- 6.3 ALL HDPE MAINS SHALL BE FIELD-TESTED. CONTRACTOR SHALL SUPPLY ALL LABOR, EQUIPMENT, MATERIAL, GAGES, PUMPS, METERS AND INCIDENTALS REQUIRED FOR TESTING. EACH MAIN SHALL BE PRESSURE TESTED UPON COMPLETION OF THE PIPE LAYING AND BACKFILLING OPERATIONS, INCLUDING PLACEMENT OF ANY REQUIRED TEMPORARY ROADWAY SURFACING.
- 6.4 ALL MAINS SHALL BE TESTED AT 150 PERCENT OF THE OPERATING DESIGN PRESSURE OF THE PIPE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- 6.5 PRESSURE TESTING PROCEDURE SHALL BE PER MANUFACTURER'S RECOMMENDATIONS OR AS FOLLOWS:
  - A. Fill line slowly with water. Maintain flow velocity less than 2 feet per second.
  - B. Expel air completely from the line during filling and again before applying test pressure. Air shall be expelled by means of taps at points of highest elevation.
  - C. Apply initial test pressure and allow to stand without makeup pressure for two to three hours, to allow for diametric expansion or pipe stretching to stabilize.
  - D. After this equilibrium period, apply the specified test pressure and turn the pump off. The final test pressure shall be held for one to three hours.
  - E. Upon completion of the test, the pressure shall be bled off from a location other than the point where the pressure is monitored. The pressure drop shall be witnessed by the resident project representative and ASPA representative at the point where the pressure is being monitored and shall show on the recorded pressure read-out submitted to the Engineer of Record.
- 6.6 ALLOWABLE AMOUNT OF MAKEUP WATER FOR EXPANSION DURING THE PRESSURE TEST SHALL CONFORM TO CHART 6, ALLOWANCE FOR EXPANSION UNDER TEST PRESSURE, TECHNICAL REPORT TR 31/9-79,

PUBLISHED BY THE PLASTIC PIPE INSTITUTE (PPI). IF THERE ARE NO VISUAL LEAKS OR SIGNIFICANT PRESSURE DROPS DURING THE FINAL TEST PERIOD, THE INSTALLED PIPE PASSES THE TEST.

- 6.7 IF ANY TEST OF PIPE LAID DISCLOSED LEAKAGE SIGNIFICANT PRESSURE DROP GREATER THAN THE MANUFACTURER'S RECOMMENDED LOSS, THE CONTRACTOR SHALL, AT HIS/HER OWN EXPENSE, LOCATE AND REPAIR THE CAUSE OF LEAKAGE AND RETEST THE LINE. THE AMOUNT OF LEAKAGE, WHICH WILL BE PERMITTED, SHALL BE IN ACCORDANCE WITH AWWA C600 STANDARDS.
- 6.8 ALL VISIBLE LEAKS ARE TO BE REPAIRED REGARDLESS OF THE AMOUNT OF LEAKAGE.
- 6.9 THE CONTRACTOR MUST SUBMIT HIS PLAN FOR TESTING TO THE ENGINEER FOR REVIEW AT LEAST 10 DAYS BEFORE STARTING THE TEST AND SHALL NOTIFY ASPA INSPECTOR A MINIMUM OF 48 HOURS PRIOR TO TEST.

NO TEXT ON THIS PAGE

**SECTION 33 14 17**

**SITE WATER UTILITY SERVICES**

**PART 1 - GENERAL**

**1.1 DESCRIPTION:**

- A. Under this Section, the Contractor shall furnish all labor, materials and equipment for Water Service, as shown on the Plans.

**PART 2 – PRODUCTS**

**2.1 CORPORATION STOPS:**

- A. Corporation stops shall be Mueller "H-15000", or approved equal, and shall be equipped with the standard AWWA C800-66 inlet thread.
- B. The maximum size corporation stop permitted in the barrel of Gray-Iron or Ductile- Iron Pipe, without the use of service clamps, shall be as follows:

Pipe Size (inches)	4	6	8	10	12	16
Tap Size (inches)	3/4	3/4	1	1-1/2	1-1/2	2

- C. Connections larger than those appearing in the above table shall be made with a service clamp.
- D. Service clamps shall be Mueller "Single Strap Mueller Corporation Stop Thread", or equal, for services 1-inch and smaller and Mueller "Double Strap Mueller Corporation Stop Thread", or equal, for service 1-1/4 inch and larger.

**2.2 COPPER TUBING:**

- A. A continuous length of copper tubing shall be used between the corporation and curb stop, between curb stops, or between the curb stop and the blowoff, unless specifically permitted by the Engineer.
- B. Copper Tubing shall be seamless, Type K, soft drawn, conforming to ASTM B88, and shall be used for all general water service connections in the nominal sizes of 3/4", 1", 1-1/2" and 2" unless otherwise specified.
- C. Couplings for joining copper tubing shall be a Mueller "H15405", or approved equal.

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2.3 SERVICE BOXES:

- A. Service boxes used with curb stops of 1-1/4-inch size and smaller shall be Buffalo type, Mueller "H-10350", or approved equal.
- B. All service boxes shall be telescopic and shall have a collapsed length of 4 feet and a fully extended length of at least 5-1/2 feet. Covers shall be furnished with the word "WATER" cast in and provided with a cover bolt.
- C. Curb stops shall be the Mark II Oriseal type as manufactured by the Mueller Company, "H-15204", or approved equal.

**PART 3 - EXECUTION**

3.1 EXECUTION

- A. The Contractor shall furnish and install Type K copper tubing as directed or as shown on the Contract Drawings. The curb stops and boxes shall be located as shown on the Contract Drawings or as directed. All copper tubing shall be laid at a minimum depth of 5 feet from final grade. All joints shall be watertight.

3.2 HIGHWAY CROSSING:

- A. All water services crossing public highways, roads or streets shall be installed by jacking, boring or rodding. Installation by use of water jets is prohibited except by written permission of the authority having jurisdiction.

3.3 MEASUREMENT AND PAYMENT

- A. No separate payment for item "Site Water Utility Services" will be made. The cost shall be included in the Lump Sum Base Bid.

**END OF SECTION**



**SECTION 33 31 13**

**SITE SANITARY SEWERAGE GRAVITY PIPING**

**PART 1 - GENERAL**

**1.1 CONTRACT DOCUMENTS**

**A. Comply with Contract Documents:**

1. All Work of this Section shall comply with the requirements of the Conditions of the Contract (General, Supplementary and Special), with all Sections of Division 1 — General Requirements, with this Section, with the Drawings and with all other Contract Documents.

**1.2 SCOPE OF WORK**

- A.** The work of this Contract includes the providing of labor, materials, accessories, services and tests necessary to install a gravity sanitary sewer system complete with pipes, fittings and concrete sewer structures and related cast iron and steel products required for covers, steps and ladders.

**1.3 RELATED WORK SPECIFIED ELSEWHERE**

- A.** Section 31 00 00, Earthwork
- B.** Section 33 32 16, Packaged Wastewater Grinder Pump Assemblies.
- C.** Section 03 30 00, Cast-In-Place Concrete.

**1.4 SPECIFIC REQUIREMENTS**

- A.** Pipe and fitting shall conform to the latest ASTM Standards.

**PART 2 - PRODUCTS**

**2.1 MATERIAL**

- A.** PVC pipe shall be ASTM D1784 and ASTM D3034/SDR 26 with bell and spigot ends and flexible ring joints.
- B.** Fittings shall be as per ASTM D1784 and ASTM D3034, SDR 26.
- C.** Identification: Pipes, fittings, traps, materials and/or other devices used shall have cast, stamped, or indelibly marked on it the maker's name or mark, weight, and quality of the product when such marking is required by the approved standard.

- D. Joints shall be ASTM D3139 gasketed bell joints with ASTM F477 gaskets.
- E. Sanitary pipes shall be air tested before backfill. The piping shall be tested for exfiltration, and manholes shall be tested for exfiltration and infiltration. The leakage shall not exceed 100 gallons per 24 hours per inch diameter per mile.
- F. Cast-In-Place Concrete for Encasements, Manholes, and Vaults: Concrete shall be in accordance with Section 03 30 00, Cast-in-Place Concrete with related accessories.
- G. Precast Concrete Structures shall conform to the requirements of ASTM C478, ASTM C789, ASTM C850, and ASTM C858, as applicable.
- H. Pipe bedding shall be as defined in ASTM C4233 for fine aggregate.
- I. Castings for drainage structure shall conform to ASTM A536 for ductile iron to AASHTO M183 for structural steel.
- J. Interior and exterior surfaces of manholes shall be coated with bituminous /asphalt coating.
- K. Cleanouts: Grade cleanouts shall have adjustable sleeve-type housing, threaded brass plug with countersunk slot, and cast iron frame.

### **PART 3 - EXECUTION**

#### **3.1 INSPECTION**

- A. Inspect all pipe and fittings before laying in the trench. Remove defective pipe and fittings from the site.
- B. Do not backfill until inspection by the Owner's Representative.

#### **3.2 INSTALLATION**

- A. Excavating and backfilling, including compaction requirement shall conform to Section 31 00 00, Earthwork.
- B. Install products where indicated. Remove and reinstall products that are disturbed after installation. Ends of products to which future connections will be made shall be plugged.
- C. Connections to existing facilities shall be made with fittings and short bends to suit the actual conditions; connect products in accordance with the product manufacturer's printed installation instructions.

- D. Pipe and fittings shall be set to line and grade before joints are made up. Annular deflections of joints shall not exceed the recommendations of the pipe and fitting manufacturer. Should the alignment require deflection of joints to be in excess of those recommended use special bends to achieve the indicated deflection. Pipe ends shall be prepared in accordance with the manufacturer's recommendations. As a minimum pipe ends shall be sanded and cleaned, fittings shall be cleaned and solvent applied to both pipe and fittings.
- E. Comply with manufacturer's written requirements for the installation of the materials.

### 3.3 LAYING PIPE, GENERAL REQUIREMENTS

- A. Protect pipe and fittings during handling to prevent damage.
- B. Place, shape and compact bedding material to receive barrel of pipe. Type and thickness of bedding material as shown.
- C. Start laying pipe at lowest point; lay true to line and grade shown.
- D. Install pipe to bear on bedding material along entire length.
- E. Do not place the pipe on blocking material of any type.
- F. Do not use wedges while installing the pipe.
- G. Install pipe so that bells and grooves are on upstream end.
- H. Align each section of pipe with adjoining section with uniform annular space between bell and spigot and so as to prevent sudden offsets in flow line. As each section of pipe is laid, place sufficient backfill to hold it firmly in place. Apply lubricant to rubber gasket (O-rings) immediately before joining pipe sections.
- I. Keep interior of sewer clean as work progresses. Where small pipe size makes cleaning difficult, keep suitable swab or drag in pipe and pull through each joint immediately after joining is completed.
- J. Keep trenches and excavations free of water during construction and until backfilled.
- K. When work is not in progress, securely plug ends of pipe and fittings to prevent trench water or other substances from entering pipes and fittings.
- L. Cut pipe ends which project into a sewer structure flush with the inside face of the structure and cover exposed pipe reinforcement with grout.

- M. Where length of stub is not shown, install 4-foot length and seal free end with brick masonry bulkhead or approved stopper.
- N. Have work approved prior to covering pipe.
- O. Where shown on the bedding, place additional bedding material around and over pipe in lifts not exceeding 6 inches loose. Compact each lift before placement of next lift.
- P. Accomplish compaction by method that will avoid damage to pipe, and will not disturb its alignment and grade. The use of vibratory rollers is prohibited until compacted cover over pipe has reached 3 feet or half the pipe diameter, whichever is greater.
- Q. Make connections with existing public sanitary sewers in accordance with requirements of the jurisdictional authority.

### 3.4 PIPE CLEANOUTS

- A. Cleanouts shall be the same size as the pipe up to and including 4 inches, 6 inches and larger with 4 inches as a minimum. Cleanouts for sewer pipe shall consist of a long sweep 1/8 bend, or one or two 1/8 bends extended to the place indicated. Wall or accessible piping cleanouts shall be T-pattern, 90-degree branch drainage fittings having screw plugs. Cleanouts shall be provided at the base of each riser and shall consist of wye pattern fitting with a screw plug.

### 3.5 INSTALLATION OF MANHOLES

- A. Excavation and Backfill: Provide excavation, prepared subgrade, and backfill as specified in Section 31 00 00, Earthwork.
- B. Cast-in-Place Concrete Structures: Provide formwork, steel reinforcement, and concrete in accordance with applicable requirements of Section 03 00 00, Cast-in-Place Concrete.
- C. Precast Concrete Structures
  - 1. Install as indicated. Comply with applicable requirements of ASTM C891. Provide such appurtenances and installation accessories, including cement mortar and sealants, as required for a complete installation.
  - 2. Precast concrete manholes may be used where there are no conflicts with existing underground structures and utilities, which require changes in pipe location, size or type are subject to approval and shall be made without additional compensation.

3. Reinforcement steel, if required for handling, shall have a minimum 2-inch cover. Handling devices, if used, shall be removable and the holes filled with concrete.
  4. Provide a minimum of 12" compacted crushed stones beneath manhole.
- D. Inverts shall be constructed to cause the least possible resistance to flow. The shape of the inverts shall conform uniformly to inlet and outlet pipes. A smooth and uniform finish is required.
- E. Cast iron frames, grates and covers shall be fitted together and match-marked to avoid rocking of covers and grates. All castings shall be set firm and snug, and shall not rattle.
1. If castings are to be set in concrete or cement mortar, all anchors or bolts shall be in position before the concrete or mortar is placed. The casting shall not be disturbed until the mortar or concrete has set.
  2. When castings are to be placed upon previously constructed masonry, the bearing surface of masonry shall be brought to line and grade in order to present an even bearing surface so that the entire face or back of the casting can come in contact with the masonry. Castings shall be set in mortar beds or anchored to the masonry as indicated.
  3. Existing manhole castings shall be disposed of unless they are to be used on the Project.
  4. Install manhole covers and frames, and metal steps as indicated and in accordance with the manufacturer's instructions. Covers in roadways, parking areas, and concrete walks shall be installed flush with adjacent, abutting pavement.

### 3.6 LEAKAGE TESTS

A. Sanitary Pipe Line Tests, General:

1. Perform air tests on all installed sanitary sewer pipes upon completion of backfill.
2. Test all manholes for infiltration or exfiltration.
3. Test pipe sections by the exfiltration test.
4. Test sewer, 24 inch diameter or less, with low pressure Air-Test.

B. Exfiltration Tests:

1. Plug end of pipe at downstream manhole.
2. Fill sewer, and either upstream manhole or standpipe, with water.
3. Allow water to stand for not less than eight hours, but until pipe has become saturated. Refill manhole or pipe to measuring mark; and test.
4. Exfiltration to be determined as follows:
  - a. If standpipe has been filled, maintain a head of water not less than 5 feet not more than 15 feet above highest point in the line being tested.
    - 1) Exfiltration: that volume of water added to standpipe during a 20-hour period.
  - b. If upstream manhole has been filled, measure original water elevation and, after 20 hours, final water elevation; convert differences in elevation gallons. Head of water to be not less than 2 feet above highest point in line being tested or not less than 2 feet above existing groundwater table, whichever is greater.
    - 1) Exfiltration: that volume of water calculated from the difference in elevations during a 20-hour period.
5. Allowable Leakage
  - a. Not more than 200 gallons per 24 hours per diameter inch per mile of sewer.
  - b. If leakage exceeds permissible loss, sewer section will not be accepted.

C. Infiltration Test Method.

1. Tightly plug end of pipe at upstream manhole.
2. Install a 90-degree notch weir in downstream manhole.
3. Allow water to accumulate behind weir until overflow is constant.
4. Allowable leakage:
  - a. Not more than 200 gallons per 24 hours per diameter inch per mile of sewer.

- b. If measured infiltration is more than the allowable rate, sewer section will not be accepted.

D. Low-Pressure Air Test Method.

1. Clean and set sections of pipe to be tested before starting air test.
2. Plug pipe outlets with pneumatic plugs capable of resisting internal testing pressures.
3. Immediately following pipe cleaning and wetting supply air to plugged pipe until internal air pressure reaches 4 psi. Allow at least two minutes for temperature to stabilize before proceeding except slowly add air to maintain a 3-1/2 to 4 psi pressure. While temperature is stabilizing spray lugs, and hoses with soap solution and eliminate air leaks.
4. After temperature has stabilized, record time required for pressure to drop 3.5 psi to 2.5 psi.
5. For pressure to drop from 3.5 psi to 2.5 psi shall be not less than the time note herein. For intermediate lengths, time shall be prorated.

Lengths of Pipe (Ft)	Time in Seconds
25	18
50	35
75	53
100	70
125	83
150	106
175	123
200	141
225	158
250	176
275	194
300	211
250	227
499	300

E. Joint Pressure Testing

1. Insert sealing packer with joint testing capability, into sewer line.
2. Place sealing packer around joint and pressure test joint. If drop in air pressure occurs reseal the joint.
3. Repeat procedure for each joint.

F. Criteria for Acceptance:

1. Section of sewer being tested will be unacceptable if test results exceed allowable leakage or take less time than minimum holding time. If pipe proves to be unacceptable, immediately repair defective materials and workmanship. Contractor will not be permitted to change to another test if initial test method reveals system has failed.

**END OF SECTION**



## **SECTION 33 32 16**

### **PACKAGED WASTEWATER GRINDER PUMP ASSEMBLIES**

#### **PART 1 - GENERAL**

##### **1.1 DESCRIPTION**

- A. Under this Section, the Contractor shall furnish all labor, materials and equipment for installation and testing of Semi-Positive Displacement Grinder Pump Station, complete.
- B. The manufacturer shall furnish complete factory-built and tested grinder pump unit(s), each consisting of a grinder pump core suitably mounted on an integral stand of stainless steel, NEMA 6P electrical quick disconnect (EQD), pump removal harness discharge assembly/shut-off valve, anti-siphon valve/check valve assembly, electrical alarm assembly and all necessary internal wiring and controls. The pump shall be semipositive displacement type grinder unit. For ease of serviceability, all pump motor/grinder units shall be of like type and horsepower and completely interchangeable.

##### **1.2 REFERENCES**

AICS, American Institute of Steel Construction

AISI American Iron and Steel Institute

ANSI, American National Standards Institute

ASTM, American Society of Testing and Materials

AWS, American Welding Society

HI, Hydraulic Institute

IBC, International Building Code

IEC, International Electric Code

IEEE, Institute of Electrical and Electronics Engineers

NEC, National Electrical Code

NEMA, National Electrical Manufacturers Association SWPA, Submersible Wastewater Pump Association Underwriters Laboratory (UL and cUL)

### 1.3 RELATED SECTIONS

- A. Section 31 00 00, Earthwork
- B. Division 33, Utilities.
- C. Division 26, Electrical

### 1.4 SUBMITTALS

- A. Work Schedule: Submit a schedule of work for the start-up of all new equipment items.
- B. Submittals for equipment approval shall include the following items:
  - 1. Compliance Statement: With each submittal, include a Compliance Statement listing each Specification Section and Part 1, 2, and 3 Sub-Sections, stating paragraph-paragraph, compliance with the Specifications, each minor nonconformity that is within the intent of the Specification and proposed nonconformities. Provide short descriptions of minor nonconformities, and detailed explanation and drawings of other nonconformities.
  - 2. Detailed installation and user instructions for the product and evidence of an established service support program including parts list and service manual.
  - 3. Description of factory testing program.
  - 4. Certified agreement to the conditions of the warranty to cover all equipment supplied shall be supplied with the bid. Detail any exclusion from the warranty or additional cost items required to maintain the equipment in warrantable condition.
  - 5. Certified shop drawings showing complete assembly and parts list, anchor bolt location and installation drawings, together with detailed specifications and data covering material used, motor and volute components, parts, devices and other accessories forming a part of the equipment furnished, shall be submitted. Shop Drawings shall include main layout, list of specifications and recommendations furnished by the equipment manufacturer.
  - 6. Certified head/Capacity curves
  - 7. Descriptive product literature.
  - 8. Complete electrical and control schematic diagrams showing all remote devices shall be furnished along with a system one-line diagram and a

control panel outline and front view drawings. Complete manufacturer's data on control components, such as limit switches, timers, relays, and starters shall accompany the control drawings.

9. Complete motor and drive data.
10. The total weight of the equipment.
11. A complete bill of materials of all equipment.
12. List of manufacturer's recommended spare parts and special tools with prices including local supplier/representative with names and telephone numbers.
13. Submit necessary copies of the manufacturer's operation and maintenance instructions, including detailed operating and maintenance instructions and specifications relative to the assembly, alignment, checking, lubrication, placing in operation, adjustment, and maintenance of each unit of equipment and auxiliaries furnished under this Contract, together with complete parts lists and copies of dimension drawings.

#### 1.5 QUALITY ASSURANCE

- A. General: The grinder pump shall conform to requirements for materials, installation, and equipment approvals of State, local, Underwriters Laboratories, Inc., NEC, NEMA, ASTM, NSF, and other applicable codes.
- B. In order to assure uniform quality, ease of maintenance and minimal parts storage, it is the intent of these Specifications that all equipment called for under this Section shall be supplied by a single manufacturer. The equipment manufacturer shall, in addition to the CONTRACTOR, assume the responsibility for proper installation and functioning of the equipment.
- C. Naming a Manufacturer in paragraph 2.8.1 does not relieve them from complying with the performance requirements and salient features of the Contract Documents. The Contract Documents represent the minimum acceptable standards for the mechanical bar screen equipment for this project. All equipment shall conform fully in every respect to the requirements of the respective parts and sections of the drawings and specifications. Equipment that is a "standard product" with the manufacturer shall be modified, redesigned from the standard mode, and shall be furnished with special features, accessories, materials of construction or finishes as may be necessary to conform to the quality mandated by the technical and performance requirements of the specification.
- D. The equipment furnished hereunder shall be the product of a company experienced in the design and manufacture of grinder pumps specifically intended for use in low pressure systems. All manufacturers proposing equipment for this project shall have at least ten years' experience in the design and manufacture of

units of identical size and performance to the specified units. All manufacturers proposing equipment for this project must also have not less than five hundred (300) successful installations of low pressure sewer systems utilizing grinder pumps of like type to the grinder pumps specified herein. An installation is defined as a minimum of twenty-five (25) pumps discharging into a common force main forming a low pressure sewer system. Furthermore, the manufacturer shall submit detailed installation and user instructions for its product, and provide evidence of an established service support program including complete parts lists and service manuals, and be responsible for maintaining a continuing inventory of grinder pump replacement parts. The manufacturer shall also submit an installation list with contact person and phone number and date of installation.

## 1.6 WARRANTY

- A. The manufacturer shall warrant, in writing that all equipment supplied by them shall be free from defects in material and workmanship, for a period of twelve (12) months from the date of Substantial Completion or twenty-four (24) months from acceptance and/or beneficial occupancy by the Owner, whichever occurs first.
- B. The Manufacturer shall guarantee that the equipment furnished is suitable for the purpose intended and free from defects in design, materials and workmanship. In the event that the equipment fails to perform as specified the Manufacturer shall, at his option, promptly repair, modify or replace the defective equipment.

## PART 2 - PRODUCTS

### 2.1 PACKAGE GRINDER PUMP STATION MANUFACTURERS

- A. The materials and equipment covered by this Specification are intended to be standard materials and equipment of demonstrated successful performance, as manufactured by reputable concerns. Equipment shall be designed and constructed in accordance with the highest standards of the industry and shall be installed in accordance with the manufacturer's recommendations and the Contract Documents. The Specifications call attention to certain features but do not purport to cover all details entering into the construction of the equipment.

### 2.2 ACCEPTABLE MANUFACTURER

- A. The grinder pump shall be the upgrade model as manufactured by:
  - 1. Environment One Corporation
  - 2. Approved equal.

## 2.3 MATERIALS

- A. Iron casings, shapes and bars: ASTM A159 Class 30.
- B. Other Materials: Applicable ASTM specifications, unless otherwise specified.
- C. Corrosion Protection: All materials exposed to wastewater shall have inherent corrosion resistance or protection: i.e., cast iron, HDPE, stainless steel, PVC.

## 2.4 EQUIPMENT TYPE AND DESIGN

- A. Include all equipment, control, accessories and appurtenances necessary to make complete systems. Complete, factory built, NSF and UL listed, package lift station consisting of:
- B. The self-contained “pump core assembly” unit which contains the semi-positive displacement pump, electrical quick disconnect, wiring, level sensors, all controls necessary to operate the pump unit, pump removal system, electrical quick disconnect, anti-siphon valve, and check valve.

## 2.5 PUMP CORE ASSEMBLY

- A. Each grinder pump station shall have an easily removable core assembly consisting of pump, motor, grinder, all motor controls, check valve, anti-siphon valve, level controls, electrical quick disconnect and wiring. The watertight integrity of each core unit shall be established by a 100 percent factory test at a minimum of 5 PSIG.
- B. Pump: The pump shall be a custom designed, an integral, motor driven, vertical rotor, solids handling, grinder pump of the progressing cavity type provided with a single mechanical seal. Double radial O-ring seals are required at all casting joints to minimize corrosion and create a protective barrier. It shall be specifically designed for pressure sewer service. To prevent motor head misalignment that would result in grinder striking and binding, the pump shall be housed in a cast iron housing fully epoxy coated to 8-10 mil nominal dry thickness, wet applied.
- C. The pump rotor shall be through-hardened, highly polished, precipitation hardened stainless steel.
- D. The stator shall be of a specifically compounded ethylene propylene synthetic elastomer. This material shall be suitable for domestic wastewater service. Its physical properties shall include high tear and abrasion resistance, grease resistance, water and detergent resistance, temperature stability, excellent aging properties, and outstanding wear resistance. Buna-N is not acceptable as a stator material because it does not exhibit the properties as outlined above and required for wastewater service.

- E. The pump/core shall be provided with a mechanical shaft seal to prevent leakage between the motor and pump. The seal shall have a stationary ceramic seat and carbon rotating surface with faces precision lapped and held in position by a stainless steel spring.
- F. The grinder shall be placed immediately below the pumping elements and shall be direct-driven by a single, one-piece motor shaft. The grinder impeller (cutter wheel) assembly shall be securely fastened to the pump motor shaft by means of a threaded connection attaching the grinder impeller to the motor shaft. Attachment by means of pins or keys will not be acceptable. The grinder impeller shall be a one-piece, 4140 cutter wheel of the rotating type with inductively hardened cutter teeth. The cutter teeth shall be inductively hardened to Rockwell 50 - 60c for abrasion resistance. The shredder ring shall be of the stationary type and the material shall be white cast iron. The teeth shall be ground into the material to achieve effective grinding. The shredder ring shall have a staggered tooth pattern with only one edge engaged at a time, maximizing the cutting torque. These materials have been chosen for their capacity to perform in the intended environment as they are materials with wear and corrosive resistant properties. This assembly shall be dynamically balanced and operate without objectionable noise or vibration over the entire range of recommended operating pressures. The grinder shall be constructed so as to minimize clogging and jamming under all normal operating conditions including starting. Sufficient vortex action shall be created to scour the tank free of deposits or sludge banks which would impair the operation of the pump. These requirements shall be accomplished by the following, in conjunction with the pump:
  - 1. The grinder shall be positioned in such a way that solids are fed in an up-flow direction.
  - 2. To minimize jamming, the maximum flow rate through the cutting mechanism must not exceed 4 feet per second.
  - 3. The inlet shroud shall have a diameter of no less than 5 inches. Inlet shrouds that are less than 5 inches in diameter will not be accepted due to their inability to maintain the specified 4 feet per second maximum inlet velocity which by design prevents unnecessary jamming of the cutter mechanism and minimizes blinding of the pump by large objects that block the inlet shroud.
  - 4. The impeller mechanism must rotate at a nominal speed of no greater than 1800 rpm.
  - 5. The grinder shall be capable of reducing all components in normal domestic sewage, including a reasonable amount of sewage solids such as paper, sanitary napkins, disposable diapers, wood, plastic, glass, rubber, and the like to finely divided particles which will pass freely through the passages of the pump and the 1-1/4-inch diameter stainless steel discharge piping.

- G. The electric motor shall be a 1 HP, 1725 RPM, 120 Volt 60 Hertz, 1 Phase, capacitor start, ball bearing, air-cooled induction type with Class F installation, low starting current not to exceed 30 amperes and high starting torque of 8.4 foot pounds. The motor shall be press-fit into the casting for better heat transfer and longer winding life. Inherent protection against running overloads or locked rotor conditions for the pump motor shall be provided by the use of an automatic-reset, integral thermal overload protector incorporated into the motor. This motor protector combination shall have been specifically investigated and listed by Underwriters Laboratories, Inc., for the application. Non-capacitor start motors or permanent split capacitor motors will not be accepted. The wet portion of the motor armature must be 300 Series stainless.
- H. The pump/core shall be provided with a mechanical shaft seal to prevent leakage between the motor and pump. The seal shall have a stationary ceramic seat and carbon rotating surface with faces precision lapped and held in position by a stainless steel spring.
- I. The pump discharge shall be equipped with a factory installed, gravity operated, flapper-type integral check valve built into the stainless steel discharge piping. The check valve will provide a full-ported passageway when open, and shall introduce a friction loss of less than 6 inches of water at maximum rated flow. Moving parts will be made of a 300 Series stainless steel and fabric reinforced synthetic elastomer to ensure corrosion resistance, dimensional stability, and fatigue strength. A nonmetallic hinge shall be an integral part of the flapper assembly providing a maximum degree of freedom to assure seating even at a very low back-pressure. The valve body shall be an injection molded part made of an engineered thermoplastic resin. The valve shall be rated for continuous operating pressure of 235 psi. Ball-type check valves are unacceptable due to their limited sealing capacity in slurry applications.
- J. The pump discharge shall be equipped with a factory-installed, gravity-operated, flapper-type integral anti-siphon valve built into the stainless steel discharge piping. Moving parts will be made of 300 Series stainless steel and fabric-reinforced synthetic elastomer to ensure corrosion resistance, dimensional stability, and fatigue strength. A nonmetallic hinge shall be an integral part of the flapper assembly, providing a maximum degree of freedom to ensure proper operation even at a very low pressure. The valve body shall be injection-molded from an engineered thermoplastic resin. Holes or ports in the discharge piping are not acceptable anti-siphon devices due to their tendency to clog from the solids in the slurry being pumped. The anti-siphon port diameter shall be no less than 60% of the inside diameter of the pump discharge piping.
- K. Discharge Piping: Discharge piping shall be SCH 80 PVC
- L. Level Controls:
  - 1. All necessary motor starting controls shall be located in the cast iron

enclosure of the core unit secured by stainless steel fasteners. Locating the motor starting controls in a plastic enclosure is not acceptable. The wastewater level sensing controls shall be housed in a separate enclosure from motor starting controls. The level sensor housing must be sealed via a radial type seal; solvents or glues are not acceptable. The level sensing control housing must be integrally attached to pump assembly so that it may be removed from the station with the pump and in such a way as to minimize the potential for the accumulation of grease and debris accumulation, etc. The level sensing housing must be a high-impact thermoplastic copolymer over-molded with a thermo plastic elastomer. The use of PVC for the level sensing housing is not acceptable.

2. Non-fouling wastewater level controls for controlling pump operation shall be accomplished by monitoring the pressure changes in an integral air column connected to a pressure switch. The air column shall be integrally molded from a thermoplastic elastomer suitable for use in wastewater and with excellent impact resistance. The air column shall have only a single connection between the water level being monitored and the pressure switch. Any connections are to be sealed radially with redundant O-rings. The level detection device shall have no moving parts in direct contact with the wastewater and shall be integral to the pump core assembly in a single, readily-exchanged unit. Depressing the push to run button must operate the pump even with the level sensor housing removed from the pump.
3. All fasteners throughout the assembly shall be 304 Series stainless steel. High- level sensing will be accomplished in the manner detailed above by a separate air column sensor and pressure switch of the same type. Closure of the high-level sensing device will energize an alarm circuit as well as a redundant pump-on circuit. For increased reliability, pump ON/OFF and high-level alarm functions shall not be controlled by the same switch. Float switches of any kind, including float trees, will not be accepted. To assure reliable operation of the pressure switches, each core shall be equipped with a factory installed equalizer diaphragm that compensates for any atmospheric pressure or temperature changes. Tube or piping runs outside of the station tank or into tank-mounted junction boxes providing pressure switch equalization will not be permitted due to their susceptibility to condensation, kinking, pinching, and insect infestation. The grinder pump will be furnished with a 6 conductor 14 gauge, type SJOW cable, pre-wired and watertight to meet UL requirements with a factory installed NEMA 6P EQD half attached to it.

- M. The grinder pump core shall include a factory-installed NEMA 6P electrical quick disconnect (EQD) for all power and control functions. The contractor shall determine the length of electrical supply cable (ESC) to connect to the alarm panel. The EQD shall require no tools for assembly, seal against water before the electrical connection is made, and include radial seals to assure a watertight seal



regardless of tightening torque. Plug- type connections of the power cable onto the pump housing will not be acceptable due to the potential for leaks and electrical shorts. Junction boxes are not acceptable due to the large number of potential leak points. The EQD shall be so designed to be conducive to field wiring as required.

- N. Serviceability: The grinder pump core unit, including level sensor assembly, shall have two lifting eyes complete with lift-out harness connected to its top housing to facilitate easy core removal when necessary. The level sensor assembly must be easily removed from the pump assembly for service or replacement. All mechanical and electrical connections must provide easy disconnect capability for core unit removal and installation. Each EQD half must include a water-tight cover to protect the internal electrical pins while the EQD is unplugged. A pump push-to-run feature shall be provided for field trouble shooting. The push-to-run feature must operate the pump even if the level sensor assembly has been removed from the pump assembly. All motor control components shall be mounted on a readily replaceable bracket for ease of field service.
- O. All maintenance tasks for the grinder pump station must be possible without entry of the grinder pump station (as required by OSHA 1910.146 Permit required confined spaces). "Entry" means the action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.
- P. Maintenance: It is the intent of this Specification that the pump station and associated appurtenances require no periodic or scheduled maintenance. This would include items that are commonly recommended by manufacturers or accepted as standards of industrial practice, such as periodic or scheduled changing of motor or seal oil or cleaning of level control components. This is not meant to include maintenance that is required due to component failure or wear.
- Q. The grinder pump station shall be provided by the manufacturer to the Contractor with the electrical cable already connected to the grinder pump. The standard grinder pump station provided by the manufacturer shall include 50 linear feet of electrical cable. Should additional electrical cable be needed, the Contractor shall notify the manufacturer of the length and quantity. The manufacturer can provide grinder pump stations with electrical cable at 50, 75, 100, and 150 foot lengths. The Contractor shall review the plans to determine whether additional cable lengths are required beyond the standard length prior to ordering. The contractor will also be responsible for furnishing and installing longer lengths of factory electrical cable if required due to field conditions that require them at no additional cost. Due to voltage drop issues, the maximum length of electrical cable connected to the grinder pump shall not exceed 150 feet. Splicing of multiple electrical cables will not be allowed.

## 2.6 ALARM PANEL

- A. Each grinder pump station shall include a NEMA 4X; UL listed alarm panel suitable for wall or pole mounting. The NEMA 4X enclosure shall be manufactured of thermoplastic polyester to ensure corrosion resistance, and shall be UV stabilized for outdoor use. The enclosure shall include a hinged, lockable cover with padlock, preventing access to electrical components, and creating a secured safety front to allow access only to authorized personnel. The enclosure shall not exceed 10.5" W x 14" H x 7" D.
- B. For each core, the alarm panel shall contain one (1) 15 amp, double pole circuit breaker for the pump core power circuit and one (1) 15 amp single pole circuit breaker for the alarm circuit. The panel shall contain a push-to-run feature, an internal run indicator, and a complete alarm circuit. All circuit boards in the alarm panel are to be protected with a conformal coating on both sides and the AC power circuit shall include an auto resetting fuse.
- C. The Alarm Panel shall include the following features: external audio and visual alarm; push-to-run switch, push-to-silence switch; redundant pump start; and high level alarm capability. The alarm sequence is to be as follows:
  - 1. When liquid level in the sewage wet-well rises above the alarm level, the contacts on the pressure switch activate, audio and visual alarms are activated, and the redundant pump starting system shall be energized.
  - 2. The audio alarm shall be silenced by means of the externally mounted, push-to- silence button.
  - 3. Visual alarm shall remain illuminated until the sewage level in the wet well drops below the "off" setting of the alarm pressure switch.
- D. The visual alarm lamp shall be inside a red, oblong lens at least 3.75" L x 2.38" W x 1.5" H. Visual alarm shall be mounted to the top of the enclosure in such a manner as to maintain NEMA 4X rating.
- E. The audio alarm shall be externally mounted on the bottom of the enclosure, capable of 93 dB @ 2 feet. The audio alarm shall be capable of being deactivated by depressing a push-type switch that is encapsulated in a weatherproof silicone boot and mounted on the bottom of the enclosure (push-to-silence button).
- F. The entire Alarm Panel, as manufactured shall be listed by Underwriters Laboratories, Inc.

## 2.7 ELECTRICAL WIRING

- A. All power and control wiring as necessary for a complete and fully functional grinder pump station shall be completed in accordance with the Division 26 - Electrical Technical Specifications. Work shall be done by an experienced electrician with experience in similar installations.

### **PART 3 - EXECUTION**

#### **3.1 GENERAL**

- A. The equipment furnished shall be fabricated, assembled, erected and placed in proper operating condition in full conformity with approved drawings, specifications, engineering data, and/or recommendations furnished by the equipment manufacturer.
- B. Safety: The grinder pump shall be free from electrical and fire hazards as required in a residential environment. As evidence of compliance with this requirement, the completely assembled and wired grinder pump station in its tank shall be listed by Underwriters Laboratories, Inc., to be safe and appropriate for the intended use. UL listing of components of the station, or third-party testing to UL standard are not acceptable. The grinder pump shall meet New York State standards for plumbing equipment for use in or near residences, shall be free from noise, odor, or health hazards, and shall have been tested by an independent laboratory to certify its capability to perform as specified in either individual or low-pressure sewer system applications. As evidence of compliance with this requirement, the grinder pumps shall bear the seal of NSF International. Third-party testing to NSF standard is not acceptable.

#### **3.2 ANCHORS**

- A. Anchors shall be Type 316 stainless steel, minimum diameter of 1/2". All bolts, nuts, washers, and fasteners shall also be of T316 stainless steel. An anti-seize compound shall be applied to all field installed nuts and bolts.

#### **3.3 FACTORY TESTING**

- A. Each grinder pump shall be submerged and operated for 1.5 minutes (minimum). Included in this procedure will be the testing of all ancillary components such as, the antisiphon valve, check valve, discharge assembly and each unit's dedicated level controls and motor controls. All factory tests shall incorporate each of the above listed items. Actual appurtenances and controls which will be installed in the field shall be particular to the tested pump only. A common set of appurtenances and controls for all pumps shall not be acceptable. Certified test results shall be available upon request showing the operation of each grinder pump at two different points on its curve. Additional validation tests include: integral level control performance, continuity to ground and acoustic tests of the rotating components.
- B. The Engineer reserves the right to inspect such testing procedures with representatives of the Owner, at the grinder pump manufacturer's facility.

#### **3.4 DELIVERY AND STORAGE**

- A. The Positive Displacement Grinder Pump shall be appropriately crated and delivered to protect against damage during shipment.

- B. All grinder pump core units shall be delivered to the job site with the level controls completely assembled/attached and integrated with the pump core including wiring and factory testing. Level controls not assembled/factory wired to the pump core will not be accepted due to the potential workmanship issues that are associated with field assembly and associated wire connections. Grinder pump cores must also be boxed for ease of handling.
- C. An authorized representative of the Contractor shall inspect the Positive Displacement Grinder Pump on delivery to the jobsite and shall report any damage or missing components to the Manufacturer and the Engineer within 72 hours of receipt of the shipment.

### 3.5 ERECTION AND INITIAL OPERATION SUPERVISION

- A. Equipment shall be installed in accordance with the manufacturer's recommendations and the Contract Documents. Installation procedure shall not be modified without prior approval from the Engineer. The internal wiring of the grinder pump and level sensor shall be installed by the manufacturer, and the Contractor shall be responsible for all other wiring.
- B. The installation of the pumping equipment controls shall be inspected by the Contractor and manufacturer's representative.
- C. A startup test report shall be issued by the Manufacturer's Representative for each pump station, which shall present results for the following startup tests:
  - 1. power cable insulation test (meg Ohms);
  - 2. amperage reading;
  - 3. rated voltage/actual voltage;
  - 4. visual inspection of station and panel; and
  - 5. any noted issue(s) must be corrected by the Contractor before final acceptance is granted.

### 3.6 FACTORY TRAINED REPRESENTATIVE

- A. The Manufacturer shall provide the services of qualified and experienced factory technician(s) to instruct the Owner and his agents on the proper installation and wiring of the grinder pump systems prior to construction. The manufacturer shall allow two (2) eight-hour days for this instruction. The manufacturer shall provide transportation, lodging and meals for the representatives as necessary. Transportation shall not be included in the 8 hour training period.
- B. Upon completion of the installation, the authorized factory technicians shall perform the following test on each station:

1. Make certain the discharge shut-off valve is fully open. This valve must not be closed when the pump is operating.
2. Turn ON the alarm power circuit and verify the alarm is functioning properly.
3. Fill the wet well with water to a depth sufficient to verify the high level alarm is operating. Shut off water.
4. Turn ON pump power circuit. Initiate pump operations to verify automatic "on/off" controls are operative. Pump should immediately turn ON. [Within one (1) minute alarm light shall turn OFF. Within three (3) minutes the pump shall turn OFF.]

### 3.7 TRAINING

- A. In addition to startup time, on site services of the Manufacturer's Representative shall be furnished in (1/2) day increments as requested (with reasonable notice to the representative) by the Owner. A minimum of (2) (1/2) day visits comprised of two separate trips, not within the same week shall be provided for the purpose of informing and training the Owner's staff for a total of (8) hours. Startup time shall not count toward training.

**END OF SECTION**

NO TEXT ON THIS PAGE

## **ITEM W699.020001 – MOBILIZATION (2% MAXIMUM)**

### **DESCRIPTION**

Under this work the Contractor shall set up his necessary general plant, including shops, storage areas, office and such sanitary and other facilities as are required by local or state law or regulation. The Contractor shall also begin the process to acquire any necessary materials and/or equipment to complete the project in a timely manner.

### **MATERIALS**

Such materials as required for mobilization and that are not to be part of the completed contract shall be as determined by the Contractor, except that they shall conform to any pertinent local or State Law, regulation or code.

### **CONSTRUCTION DETAILS**

The work required to provide the above facilities and service for mobilization shall be done in a safe and workmanlike manner and shall conform with any pertinent local or State Law, regulation or code. Good housekeeping consistent with safety shall be maintained.

### **METHOD OF MEASUREMENT**

Payment for mobilization will be made on a lump sum basis.

### **BASIS OF PAYMENT**

The amount bid for mobilization shall not exceed two percent (2%) of the total contract bid price excluding the bid price for mobilization and any other items as specified in the contract proposal. Should the bidder exceed the foregoing two percent (2%), the Department will make the necessary adjustment to determine the total amount bid based on the arithmetically correct proposal.

The amount bid shall include the furnishing and maintaining of services and facilities noted under DESCRIPTION, to the extent and at the time the Contractor deems them necessary for his operations, consistent with the requirements of this work and the respective contract.

The amount bid shall be payable to the Contractor once ten percent (10%) of the monetary value of the contract has been completed.

*Payment will be made under:*

<b><u>Item No.</u></b>	<b><u>Item</u></b>	<b><u>Pay Unit</u></b>
W699.020001	Mobilization (2% Maximum)	Lump Sum

## **ITEM W699.040002 – CONTRACT BONDS AND INSURANCE**

### **DESCRIPTION**

Under this work the Contractor shall provide all necessary bonds, insurance, and prefinancing in accordance with §103-03 and §107-06 of the New York State Department of Transportation Standard Specifications including all updates and addenda and §5 and §7 of the Information For Bidders.

### **MATERIALS**

None.

### **CONSTRUCTION DETAILS**

The work required to provide all required contract bonds and insurance shall be completed prior to the start of construction.

### **METHOD OF MEASUREMENT**

Payment will be made on a lump sum basis.

### **BASIS OF PAYMENT**

The amount bid for contract bonds and insurance shall not exceed three percent (3%) of the total contract bid price excluding the bid price for mobilization, contract bonds and insurance and Miscellaneous Additional Work (Item W800).and Testing Of Materials And Field Testing Equipment (Item W851). 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.

*Payment will be made under:*

<b><u>Item No.</u></b>	<b><u>Item</u></b>	<b><u>Pay Unit</u></b>
699.040002	Contract Bonds and Insurance	Lump Sum



## **ITEM W800 - MISCELLANEOUS ADDITIONAL WORK**

### **DESCRIPTION:**

Under this item the Contractor shall furnish all labor, materials, 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

### **METHOD OF MEASUREMENT:**

Only that miscellaneous work shall be performed by the Contractor and will be paid for by the County, which has been authorized by the Inspector in writing, prior to its commencement.

Article 20 of the Information for Bidders, entitled " Increase or Decrease of Quantities: Elimination of Items", will still apply relative to the percentage of the total awarded contract price that the work under the contract may be increased or decreased.

### **PAYMENT:**

The total amount paid the Contractor under this item will be determined in accordance with the provisions of Article 28 of the General Clauses, entitled " Extra Work: Increased Compensation/Decreased Work: Credit to the Owner", and such payment will include only that overhead and profit that is applicable to the work performed under this item.

Each contractor shall include in his total bid the fixed lump sum printed in the Proposal, and any bid other than the specified amount will be considered informal.

## **ITEM W851 - TESTING OF MATERIALS AND FIELD TESTING EQUIPMENT**

### **DESCRIPTION:**

Under this item the Contractor shall include in their bid the sum printed in the Proposal opposite this item for testing and inspection fees and costs and for the purchase of field testing equipment.

Contract items shall be tested and inspected as per the item specification in such amounts as directed by the Engineer. The laboratories and arrangements for this testing shall be made by the Engineer only.

Field testing equipment, as needed, shall be purchased for the Engineer's use according to his direction. The equipment shall remain the property of the County.

The Contractor shall submit all bills and vouchers for testing and inspection services and costs and testing equipment to the Engineer for audit and approval before payment. After payment, a receipted copy of each bill or voucher shall be returned to the Engineer. All bills shall be paid within 30 days after their approval by the Engineer.

Bills not paid within 30 days will be paid by the County and the amounts of such payments shall be deducted from the Contractor's estimates together with a collection charge of 3% of the amounts so paid by the County.

### **METHOD OF MEASUREMENT:**

The dollar-cents amount set forth in the proposal is a fixed price for all bidders and shall not be changed. If the amount is altered, the new figure will be disregarded and the original amount used to determine the total amount bid for the contract.

### **PAYMENT:**

The amount paid the Contractor under this item shall be the actual total amount of the bills and vouchers approved by the Engineer for testing and inspection of materials and purchase of field testing equipment and an additional five percent (5%) for administrative costs.

The amount printed on the Proposal appears for purpose of canvas. Any bid other than the specified amount will be considered informal. The actual amount spent may be more or less than the amount stipulated in the Proposal.