

Project #M1514-00 REBID

Bulletin A

Revised 2021-6-28

STATE OF NEW JERSEY DEPARTMENT OF TREASURY  
DIVISION OF PROPERTY MANAGEMENT AND  
CONSTRUCTION PO BOX 034, TRENTON, NJ 08625-0034

PROJECT#: M1514-00 REBID

A/E: Mott MacDonald

DATE: September 28, 2021

### BULLETIN A

Bidder must acknowledge receipt of this Bulletin on bid form in the space provided therefor.

This Bulletin is issued for the purpose of amending certain requirements of the original Contract Documents, as noted hereinafter, and is hereby made part of and incorporated in full force as part of the Contract Documents. Unless specifically noted or specified hereinafter, all work shall comply with the applicable provisions of the Contract Documents.

#### A) DIANE B. ALLEN EQUAL PAY ACT

Pursuant to N.J.S.A. 34:11-56.14(b), any employer, regardless of the location of the employer, who enters into a contract with a public body to perform any public work for the public body shall provide to the Commissioner of the New Jersey Department of Labor and Workforce Development, through certified payroll records required pursuant to P.L.1963, c.150 (C.34:11-56.25 et seq.), information regarding the gender, race, job title, occupational category, and rate of total compensation of every employee of the employer employed in the State in connection with the contract. The employer shall provide the commissioner, throughout the duration of the contract or contracts, with an update to the information whenever payroll records are required to be submitted pursuant to P.L.1963, c.150 (C.34:11-56.25 et seq.).

Information regarding the Diane B. Allen Equal Pay Act and its requirements may be obtained from the New Jersey Department of Labor and Workforce Development (LWD) web site at:

<https://nj.gov/labor/equalpay/equalpay.html>

LWD forms may be obtained from the online web site at: [https://nj.gov/labor/forms\\_pdfs/equalpayact/MW-562withoutfein.pdf](https://nj.gov/labor/forms_pdfs/equalpayact/MW-562withoutfein.pdf)

#### B) IMPORTANT CONTRACTOR INFORMATION – FEDERAL SYSTEM FOR AWARD MANAGEMENT (SAM REGISTRATION):

Any firm seeking to be awarded a contract must register with the Federal System for Award Management (SAM) prior to contract award. In order to comply with this requirement, firms must register in SAM at <http://www.sam.gov>. In accordance with N.J.S.A. 52:32-44.1, the firm shall provide a written certification to DPMC that neither the firm nor the firm's affiliates are debarred at the federal level from contracting with a federal government agency.

C) EMPLOYEE MISCLASSIFICATION

In accordance with [Governor Murphy's Executive Order #25](#) and the [Task Force's July 2019 Report](#), employers are required to properly classify their employees. Workers are presumed to be employees and not independent contractors, unless the employer can demonstrate all three factors of the "ABC Test" below:

- A. Such individual has been and will continue to be free from control or direction of the performance of such service, but under his or her contract of service and in fact; and
- B. Such service is either outside the usual course of business for which such service is performed, or that such service is performed outside of all places of business of the enterprise for which such service is performed; and
- C. Such individual is customarily engaged in an independently established trade, occupation, profession or business.

These factors have been adopted by New Jersey under its Wage & Hour, Wage Payment and Unemployment Insurance Laws to determine whether a worker is properly classified. Under N.J.S.A. 34:1A-1.17 – 1.19, the Department of Labor and Workforce Development has the authority to investigate potential violations of these laws and issue penalties and stop work orders to employers found to be in violation of the laws.

D) NOTICE OF POST-BID MEETING:

- a. After the bids are received and opened, the Apparent Low Bidder is required to attend a Post-Bid meeting at the State's offices at the date, time and location listed herein.
- b. The Apparent Low Bidder must bring the following to the Post-Bid meeting concerning the work they are performing by their own forces:
  - i. The itemized estimate used in preparation of the bid submission;
  - ii. The estimator, or other authorized person who can discuss the itemized estimate;
  - iii. An employee of the company who is authorized to sign the Post-Bid Review meeting minutes.
- c. Each of the Apparent Low Bidder's "Named Sub-Contractors" must attend the meeting and bring the following concerning the work they are performing by their forces:
  - i. The itemized estimate used in preparation of the bid submission;
  - ii. The estimator, or other authorized person who can discuss the itemized estimate;
- d. A Post-Bid meeting will be held (tentative and to be confirmed after bids are reviewed):

DATE: November 19, 2021

TIME: 10:00 AM

LOCATION: DPMC, 20 W State St, Trenton, NJ or Teleconference

E) AMENDMENTS TO THE GENERAL CONDITIONS OF THE CONTRACT

Amend the General Conditions of the Contract as follows:

ARTICLE 4 – THE CONTRACTOR

4.11 EQUIPMENT AND MATERIALS

4.11.5 Delete the second sentence - *Wherever practicable, preference shall be given at all times to material and equipment manufactured or produced in the State of New Jersey, where such preference is reasonable and will best serve the interest of the State.*

4.18 PROJECT SIGN

Delete 4.18 in its entirety

Add the following paragraphs and sub-paragraphs:

4.18.1 SIGNS AT THE PROJECT SITE

4.18.1.1 The Contractor is not required to provide a project sign.

4.18.1.2 Signs provided by others will not be permitted at the site.

4.20 DPMC FIELD OFFICE

Delete 4.20.1 in its entirety and replace with the following language:

*A separate on-site field office for the use of DPMC personnel is not required for this project.*

Delete 4.20.2 in its entirety and replace with the following language:

*If required, a separate on-site field office for the use by the Contractor is specified elsewhere in the construction documents.*

ARTICLE 5 - SUBCONTRACTORS

Delete 5.2.3 in its entirety

ARTICLE 6 - CONSTRUCTION PROGRESS SCHEDULE

Revise Article 6 as follows:

6.1 GENERAL

Delete 6.1 in its entirety and replace with the following:

*The Contractor shall be required to provide Graphic Format progress schedules, as defined in section 6.4 below.*

6.2 CONSTRUCTION PROGRESS SCHEDULE (CRITICAL PATH METHOD - CPM CONSULTANT RETAINED BY THE STATE).

Delete 6.2 in its entirety:

6.3 CONSTRUCTION PROGRESS SCHEDULING PROVIDED BY THE CONTRACTOR.

Delete 6.3.1 in its entirety and replace with the following language:

6.3.1 *Schedule Format: The contractor shall be responsible for preparing, updating and distributing a Gantt chart progress schedule constructed using either Microsoft Project or a Microsoft Project compatible software ["Schedule"] for the project work in accordance with this Sub- paragraph.*

*6.3.1.1 The Schedule must be furnished as a Microsoft Project file and in paper format if required.*

6.3.2 *Requirements for what is included in the Schedule: The Schedule shall fully describe the project work in sufficient detail to satisfy the architect/ engineer and the Director.*

*6.3.2.1 The Schedule must be accurate in its depiction of all project activities.*

*6.3.2.2 The Schedule shall, at a minimum, indicate in suitable detail, all significant features of the work or work activities to be performed, including the placing of orders and anticipated delivery dates for critical items, dates for submissions and approvals of submittals and shop drawings, all change order work, all necessary inspections, the beginning and time duration for all tasks, predecessors and successors for each task, contract milestones, , the NTP, the dates of substantial and final completion of the work and significant Agency or State milestones, when applicable.*

*6.3.2.3 The Schedule must show the project's critical path.*

*6.3.2.4 The contractor may be required to add other information to the Schedule including, but not limited to, costs and resources.*

*6.3.2.5 The Schedule must show the durations in calendar day and acknowledge weekends and State holidays as non-working days, unless otherwise required by the contract.*

*6.3.2.6 The Schedule must show the date of Substantial Completion occurring on or before the contract duration end date unless otherwise approved by the architect / engineer and the Director.*

6.3.3 *The Schedule as the project record: The contractor agrees that the Schedule shall constitute the official historical record of project's progress.*

6.3.4 *Approved Schedule: All references herein to the Schedule shall mean a Schedule that is approved by the Project Team including, but not limited to the architect/engineer and the Director.*

*6.3.4.1 The architect/engineer or Director can request the addition of information to the schedule when it is, in their opinion, necessary to better describe the contractor's work effort prior to granting their approval.*

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- 6.3.5 *Complying with the Schedule: The contractor shall furnish sufficient labor, materials and equipment to ensure the prosecution of the work in accordance with the Schedule.*
- 6.3.6 *Recovery Schedule: The contractor is required to provide a recovery schedule if the completion time for any task deemed necessary for Substantial Completion is not scheduled to be complete prior to the contract duration allotted in the contract.*
- 6.3.6.1 *To create the recovery schedule the contractor shall, among other things, revise the sequence of tasks and /or the time for performance of tasks through concurrent operations, additional manpower or, when allowable, overtime or additional shifts etc. until it is assured that Substantial Completion will occur on or before the contract completion date.*
- 6.3.6.2 *The State will not allow any additional charges for work performed or made necessary in order for the contractor to comply with the dates shown in the recovery schedule i.e. no additional charges will be allowed the contractor for overtime, additional manpower, equipment, additional shifts, etc., except as provided for elsewhere in the contract.*
- 6.3.6.3 *The contractor is required to perform in accordance with the tasks and durations as shown in the recovery schedule including meeting the dates shown for Substantial and Final Completion.*
- 6.3.6.4 *The recovery schedule must comply with all requirements of this section and all references to and requirements for the Schedule shall also apply to the recovery schedule.*
- 6.3.7 *Submission and review requirements for the project schedule:*
- 6.3.7.1 *The contractor must submit and obtain approval of the initial schedule within 30 days after the Notice to Proceed, but in no case later than the first application for payment.*
- 6.3.7.2 *Subsequently the contractor must update and submit the project schedule immediately upon the occurrence of a change in an activity or event that may, in the architect's/engineers/s opinion, significantly change the current approved schedule, but at a minimum the schedule must be updated every two weeks and submitted at the bi-weekly progress meeting.*
- 6.3.7.3 *The updated schedule must include any activities that were added for any reason including, but not limited to change order work approved to date.*
- 6.3.7.4 *The updated progress schedule shall include the progress achieved for each activity that was scheduled including the actual dates the work was started and completed.*
- 6.4.7.5 *The project schedule shall be reviewed in detail at every bi-weekly progress meeting.*
- 6.3.7.6 *The absence of bi-weekly meetings does not relieve the contractor of his obligation to provide a schedule every two weeks.*
- 6.3.7.7 *The architect/engineer or Director reserves the right to cancel or reschedule the bi-weekly meeting or otherwise take preemptive action if the contractor does not have an approved progress schedule ready for submission as described herein.*
- 6.3.8 *Schedules and payments or extensions of time:*
- 6.3.8.1 *The contractor will make no claim for, and have no right to, additional payment or extension of time for completion of the work in accordance with the schedule, or any other concession because*

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*of any misinterpretation or misunderstanding on the contractor's part of the project schedule, or because of any failure on the contractor's part to become fully acquainted with all conditions relating to the project schedule and the manner in which it will be used on the project, or because of any other contractor's failure to properly participate in the development of a schedule or to perform the contract in accordance with the schedule.*

*6.3.8.2 A copy of the current, updated and approved schedule is a required attachment to each application for payment.*

*6.3.8.3 Failure to include a copy of the current, updated and approved schedule with the payment request shall be cause for rejection of the progress payment request.*

*6.3.9 Two week look ahead/look behind work plan: In addition to the project schedule requirements, the contractor is required to submit a two week look ahead/look behind work plan at every bi-weekly project meeting.*

*6.3.9.1 The work plan shall focus on the activities that have been completed in the last two weeks and those planned for the next two weeks.*

*6.3.9.2 The work plan shall be in greater depth than the overall project schedule.*

*6.3.9.3 The work plan shall identify the contractor's activities that impact the operations and occupants of the State building or facility of the subject project.*

*6.3.9.4 The work plan shall be a subset of the current schedule and all activities shall coordinate between them.*

*6.3.9.5 The absence of a bi-weekly meeting shall not relieve the contractor of his responsibility to provide this work plan.*

*6.3.9.6 This work plan is in addition to and not in lieu of the schedule requirements described in Sub-paragraph 6.4 et al.*

*6.3.10 The Contractor agrees that no time extension will be granted for time lost due to normal seasonal weather conditions. In order to qualify for consideration for a time extension due to adverse weather conditions, it must be shown by clear and convincing evidence that the weather conditions during a given quarterly period (summer, fall, winter, spring) were more severe than the previous five-year (5) average for the Project geographical area, and that these weather conditions critically impacted the final Project completion date by delaying the performance of work. If abnormal weather losses can be shown to have impacted the Project completion date, a non-compensable time extension will be considered for that portion of the proven weather-related delays, which exceeded normal weather losses that should have been anticipated for the quarterly period in question.*

*6.3.11 The "Construction Duration" identified on the Bid Proposal Form shall be from the Notice to Proceed to Substantial Completion.*

F) REVISIONS AND/OR CLARIFICATIONS TO THE DRAWINGS, SPECIFICATIONS AND/OR PROJECT REQUIREMENTS;

1. UCC Permits have been paid by the State.
2. All Technical Sections that reference manufacturers and products are hereby revised to include "Or Approved Equal." Technical Sections of the Specifications have not been reissued as part of this Bulletin A.

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3. "Approved Equal" requests must be presented in writing during the Question and Answer period of the Bid Phase, after which they will not be considered. The Question and Answer period will be provided by the DPMC during the bid phase or announced at the Pre-Bid Meeting. A response will be provided by the Consultant via Bulletin.
4. As it relates to testing and inspections, all testing and inspections indicated in the specifications shall be performed by a DPMC prequalified firm and arranged and paid for by the Contractor and in no situation by the Owner.
5. **INSTALLER, MANUFACTURER & FABRICATOR QUALITY ASSURANCE & QUALIFICATIONS:** Eliminate any and all references to "Installer" and/or "Fabricator" quality assurance requirements that pertain to minimum requirement statements such as years of experience, number of similar projects (ex. "5 similar projects"), etc. within the Quality Assurance & Qualifications sections of the specifications. Technical Sections of the Specifications have not been reissued as part of this Bulletin A.
6. Delete any and all references to "Supplemental General Conditions."
7. All businesses engaged in construction projects in the State must adopt policies that include, at a minimum, the requirements as per all Executive Orders, NJDOH and CDC recommendations regarding COVID. Please see the attached DPMC Notice dated June 28, 2021 to All Contractors and Project Personnel on DPMC Construction Projects.
8. Bidders are directed to replace in its entirety specification section 011000 – "Summary of Work", from the previously issued specification book and replace with the version attached to this Bulletin.
9. Bidders shall refer to specification section 011400 – Security Procedures, Section 1.3, A-1, second sentence, delete reference to "028313, Lead in Construction"
10. Bidders shall refer to specification section 028200 - 13, PART 2, Section 2.3 - Schedule, delete item E in its entirety.  
  
Replace the deleted item with "The total duration for the asbestos abatement work shall be 6 work shifts. The contractor is required to provide appropriate crew sizes with adequate supply of material and equipment to allow the work to proceed uninterrupted and at an appropriate pace to complete all the abatement work within the specified number of work shifts. The contractor will be required to pay for the costs of the consultant (through a credit change order) at a cost of \$1850 per work shift for each work shift the abatement work is performed beyond the specified durations".
11. Bidders are directed to delete specification section 028313 in its entirety.
12. Bidders shall refer to specification section 051200 -1, Section 1.1, add the following item:  
"I. – All work must conform to the AISC Standards referenced in the currently adopted building code"
13. Bidders are directed to replace in its entirety specification section 230548 – "Vibration and Wind Control for HVAC Systems", from the previously issued specification book and replace with the version attached to this Bulletin.
14. Bidders are directed to **Drawing S-1**, under Structural Steel Notes, Note #26, fourth line, delete "...to practice in the state of New Jersey."

15. Bidders are directed to **Drawing M-1**, under Mechanical Notes, Note #2, fifth line, delete “Contracting Officer’s” and replace with “Engineer’s”
16. Bidders are directed to **Drawing M-1**, under the “Mechanical Notes”, delete note #8 in its entirety
17. Bidders shall refer to **Drawings M-1 and M-2**, DEMOLITION/PHASING OF CONSTRUCTION, delete the following in its entirety:  
*“A requirement of this project is that the boiler plant must remain in operation during the construction period. It is estimated that the construction will begin on 4/12/21. This means that construction will begin during the heating season and continue into the non-heating season. The implications of this are that steam for heating, kitchen equipment, and domestic hot water needs to be provided beginning 4/12/21 and until 4/15/21, and from 10/15/21 until the end of construction which should be on approximately on 11/3/21. For the non-heating season, steam for absorption chillers, kitchen equipment and domestic hot water must be provided continuously from 4/15/2021 until the end of the heating season on 10/15/21. First, on 4/27/21, boiler #3 (500 bhp) can be taken out of service for the removal of the associated interior breeching/flue and the installation of the new vertical breeching/flue through the roof. A brief boiler plant shutdown will be required for patching of the horizontal breeching. The two boilers, boiler #1 (1,200 bhp) and boiler #2 (700 bhp), can remain in service for heating, kitchen equipment and domestic hot water during the heating season. Once the work on the boiler #3 (500 bhp) is completed and tested for operation (on about 6/7/21), the work on the next boiler can begin. It is expected for the work on boiler #1 (1,200 bhp) to begin on about 6/8/21 and be completed on 7/20/21 leaving the boiler #3 (500 bhp) and boiler #2 (700 bhp) in operation. The breeching/flue for the boiler #2 (700 bhp) is expected to be done between 7/21/21 through 9/6/21. All boilers shall be operational by the end of construction which should be on 11/3/21”.*

The following shall replace the deleted text:

**“The facility requires that only one boiler be taken out of service at a time, and that during the heating season from 10/15/21 to 4/15/22, Boiler #1 must remain in service. The Contractor shall phase the construction such that steam for building heating shall be provided without interruption during the heating period from 10/15/21 to 4/15/22. Steam for building heating shall also be provided outside of this period should unusually cold weather occur. The contractor shall also provide steam for the kitchen equipment & domestic hot water throughout the duration of construction, without interruption. The contractor shall phase the construction so that steam is provided to the absorption chiller, uninterrupted for cooling season from 4/16/21 – 10/14/21 and 4/16/22 – 10/14/22. The work for the next boiler shall begin only after the work on the first boiler is complete and tested for operation by the owner. Substantial Completion will be after all three (3) new boiler stacks have been installed, tested and accepted by the Owner and the existing flues and masonry stack have been demolished.”**

18. Bidders shall refer to **Drawings M-3 and M-4**, MECHANICAL NOTES, delete the following in its entirety:  
*“A requirement of this project is that the boiler plant must remain in operation during the construction period. It is estimated that the construction will begin on 4/12/21. This means that construction will begin during the heating season and continue into the non-heating season. The implications of this are that steam for heating, kitchen equipment, and domestic hot water needs to be provided beginning 4/12/21 and until 4/15/21, and from 10/15/21 until the end of construction which should be on approximately on 11/3/21. For the non-heating season, steam for absorption chillers, kitchen equipment and domestic hot water must be provided continuously from 4/15/2021 until the end of the heating season on 10/15/21. First, on 4/27/21, boiler #3 (500 bhp) can be taken out of service for the removal of the associated interior breeching/flue and the installation of the new vertical breeching/flue through the roof. A brief boiler plant shutdown will be required for patching of the horizontal breeching. The two boilers, boiler #1 (1,200 bhp) and boiler #2 (700 bhp), can remain in service for heating, kitchen*



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*equipment and domestic hot water during the heating season. Once the work on the boiler #3 (500 bhp) is completed and tested for operation (on about 6/7/21), the work on the next boiler can begin. It is expected for the work on boiler #1 (1,200 bhp) to begin on about 6/8/21 and be completed on 7/20/21 leaving the boiler #3 (500 bhp) and boiler #2 (700 bhp) in operation. The breeching/flue for the boiler #2 (700 bhp) is expected to be done between 7/21/21 through 9/6/21. All boilers shall be operational by the end of construction which should be on 11/3/21”.*

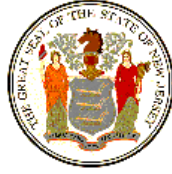
The following shall replace the deleted text: **“The facility requires that only one boiler be taken out of service at a time, and that during the heating season from 10/15/21 to 4/15/22, Boiler #1 must remain in service. The Contractor shall phase the construction such that steam for building heating shall be provided without interruption during the heating period from 10/15/21 to 4/15/22. Steam for building heating shall also be provided outside of this period should unusually cold weather occur. The contractor shall also provide steam for the kitchen equipment & domestic hot water throughout the duration of construction, without interruption. The contractor shall phase the construction so that steam is provided to the absorption chiller, uninterrupted for cooling season from 4/16/21 – 10/14/21 and 4/16/22 – 10/14/22. The work for the next boiler shall begin only after the work on the first boiler is complete and tested for operation by the owner. Substantial Completion will occur after all three (3) new boiler stacks have been installed, tested and accepted by the Owner and the existing flues and masonry stack have been demolished.”**

19. Bidders are directed to delete all previous reference to “Stack Testing” and any requirements associated to same. Stack Testing is not a requirement of this project.

ATTACHMENTS:

1. DPMC Notice dated June 28, 2021 to All Contractors and Project Personnel on DPMC Construction Projects.
2. Specification Section 011000 – Summary of Work
3. Specification Section 230548 – Vibration and Wind Control for HVAC Systems

END OF BULLETIN A



## State of New Jersey

DEPARTMENT OF TREASURY  
DIVISION OF PROPERTY MANAGEMENT & CONSTRUCTION  
P O BOX 034  
TRENTON NJ 08625-0034

PHILIP D. MURPHY  
*Governor*

ELIZABETH MAHER MUOIO  
*State Treasurer*

SHEILA Y. OLIVER  
*Lt. Governor*

CHRISTOPHER CHIANESE  
*Director*

June 28, 2021

### **To All Contractors and Project Personnel on DPMC Construction Projects:**

All businesses engaged in construction projects in the State must adopt policies that include, at minimum, the following requirements **as per all active Executive Orders, NJDOH and CDC recommendations regarding COVID.**

#### **These policies and procedures are as follows:**

- a. Prohibit non-essential visitors from entering the worksite;
- b. Engage in appropriate social distancing measures when picking up or delivering equipment or materials;
- c. For indoor gatherings require individuals to maintain six feet or more distance between them to the maximum extent possible with all individuals wearing cloth face coverings;
- d. Stagger work start and stop times where practicable to limit the number of individuals entering and leaving the worksite concurrently;
- e. Identify congested and "high-traffic areas," including but not limited to lunchrooms, breakrooms, portable rest rooms, and elevators, and limit the number of individuals at those areas concurrently where practicable and require individuals to wear cloth face coverings;
- f. Stagger lunch breaks and work times where practicable to enable operations to safely continue while utilizing the least number of individuals possible at the site;
- g. Require workers and visitors to the worksite to wear cloth face coverings while on the premises, in accordance with CDC recommendations, except where it is impracticable for an individual to wear a face mask, such as when the individual is eating or drinking or where a service being provided by the employer cannot be performed by an individual wearing a mask, and require workers to wear gloves while on the premises. Businesses must provide, at their expense, such face coverings. If a visitor refuses to wear a cloth face covering for non-medical reasons and if such covering cannot be provided to the individual by the business at the point of entry, then the business must decline entry to the individual. Nothing in the stated policy should prevent workers or visitors from wearing a surgical-grade mask or other more protective face covering if the individual is already in possession of such equipment, or if the businesses is otherwise required to provide such worker with more protective equipment due to the nature of the work involved. Where an individual declines to wear a face covering on the premises due to

## **COVID Policies on DPMC Construction Projects**

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- a medical condition that inhibits such usage, neither the business nor its staff shall require the individual to produce medical documentation verifying the stated condition;
- h. Require infection control practices, such as regular hand washing, coughing and sneezing etiquette, and proper tissue usage and disposal;
  - i. Limit sharing of tools, equipment, and machinery and any shared equipment should be cleaned between uses;
  - j. Where running water is not available, provide portable washing stations with soap and/or alcohol-based hand sanitizers that contain at least 60% alcohol and sanitizing wipes that are approved by the United States EPA for SARS0CoV-2 virus to employees and visitors at no cost to the individuals. Employers may also adopt policies that require employees to wear gloves while at the worksite;
  - k. Routinely clean and disinfect all high-touch areas particularly in spaces that are accessible to employees or other individuals, including but not limited to restrooms, hand rails, door knobs, breakrooms, machinery, safety equipment and other frequently touched surfaces including employee used equipment, and ensure cleaning procedures following a known or potential exposure are in compliance with CDC recommendations;
  - l. When the worksite is an occupied residence, require workers to sanitize work areas and keep a distance of at least six feet from the occupants; and
  - m. Place conspicuous signage at entrances and throughout the worksite detailing the above mandates.

### **Additionally, Contractors and Project Personnel on DPMC construction projects must continue to:**

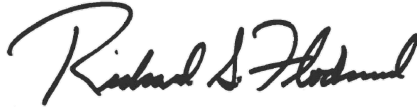
- a. Prior to each shift, conduct daily health checks of employees, such as temperature screenings, visual symptom checking, self-assessment checklists, and/or health questionnaires, consistent with CDC guidance including latest CDC guidance regarding COVID-19 symptoms, consistent with the confidentiality requirements of the ADA, NJLAD and any other applicable laws, and consistent with any guidance from the Equal Employment Opportunity Commission (“EEOC”) and the New Jersey Division on Civil Rights;
- b. Immediately separate and send home workers who appear to have symptoms, as defined by the CDC, consistent with COVID-19 illness upon arrival at work or who become sick during the day;
- c. Promptly notify workers of any known exposure to COVID-19 at the worksite, consistent with the confidentiality requirements of the Americans with Disabilities Act and any other applicable laws and consistent with the guidance from the EEOC;
- d. Clean and disinfect the worksite in accordance with current CDC guidelines when a worker at the site has been diagnosed with COVID-19 illness; and
- e. Continue to follow guidelines and directives issued by the New Jersey Department of Health, the CDC and the Occupational Health and Safety Administration, as applicable, for maintaining a clean, safe and healthy work environment.

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These protections, policies and directives issued in accordance with the referenced and all current Executive Orders and CDC recommendations shall remain in effect until revoked or modified by the Governor or as amended or clarified by the State Director of Emergency Management.

Respectfully,

A handwritten signature in black ink, appearing to read "Richard S. Flodmand". The signature is written in a cursive style with a large, prominent initial "R".

Richard Flodmand  
Deputy Director, Contract Administration  
Division of Property Management  
and Construction

## SECTION 011000 – SUMMARY OF WORK

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. Section Includes:
  - 1. Project information.
  - 2. Work covered by Contract Documents.
  - 3. Access to site.
  - 4. Coordination with occupants.
  - 5. Work restrictions.

## 1.3 PROJECT INFORMATION

- A. Project Identification: Powerhouse Stack Replacement. DPMC Project Number M1514-00.
  - 1. Project Location: Powerhouse, Woodbine Developmental Center, Woodbine, Cape May County, NJ.
    - a. 1175 DeHirsch Ave., Woodbine, NJ 08270
- B. Owner: State of New Jersey.
  - 1. Owner's Representative: Division of Property Management and Construction (DPMC).
- C. Architect: Mott MacDonald Architects PC, 111 Wood Ave. South, Suite 102, Iselin, NJ 08830-4112.

## 1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:

- 1. Powerhouse Stack Replacement:

- Demolish the existing powerhouse smokestack and replace it with a new system that serves all three boilers in the powerhouse - three individual stacks that exit the roof of the building. Provide new structural steel supports for the new boiler flues.

- Boilers shall continue to operate throughout construction. The existing stack shall be demolished after the new stack(s) are constructed and operational.

## 2. Permits:

Obtain all permits required for the project, excluding the NJDEP Air Pollution Control Operating Permit.

## 3. Hazardous Building Materials:

Abatement and disposal of Hazardous materials.

## 4. Lightning Protection:

Lightning Protection shall be provided for the three (3) new metal stacks above the roof.

## B. Type of Contract:

1. Project will be constructed under a single prime contract.

## C. Period of Construction:

1. The work shall be completed in 206 calendar days.

## 1.5 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Driveways, Walkways and Entrances: Keep driveways loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

a. Schedule deliveries to minimize use of driveways and entrances by construction operations.

b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

## 1.6 COORDINATION WITH OCCUPANTS

A. Full Owner Occupancy: Owner will occupy the building, site and adjacent building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

1.7 WORK RESTRICTIONS

- A. See the Woodbine Developmental Center regulations governing contractors and their employees.
- B. Work Hours: 7:00 am to 4:30pm Monday through Friday. No work shall be permitted on weekends or state holidays.
- C. Work Restrictions, General: Comply with restrictions on construction operations.
  1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
  1. Notify Owner not less than two days in advance of proposed disruptive operations.
  2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. Nonsmoking Campus: Smoking is not permitted on the property.
- F. Controlled Substances: Use of tobacco products and other controlled substances within the existing campus is not permitted.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

## SECTION 230548 - VIBRATION AND WIND CONTROLS FOR HVAC

## PART 1 - GENERAL

## 1.1 Description

## A. Scope:

1. Contractor shall provide all professional services, labor, materials, tools, equipment, and incidentals as shown, specified, and required to design, furnish, and install vibration control, and wind control for process mechanical, HVAC, plumbing, fire protection, electrical, instrumentation and control, and architectural components.
2. Extent of components requiring controls are described in this section and as required by laws and regulations. The work includes:
  - a. Vibration Controls for Components.
  - b. Wind Controls for Components.
3. The Work excludes:
  - a. Seismic controls are not required for this project. Information contained in this specification pertaining to seismic controls shall not apply for this project.

## B. Coordination:

1. Review installation procedures under this and other Sections and coordinate the installation of items that must be installed with, or before, the vibration, and wind controls Work.

## C. Related Sections:

1. Section 055000 - Metal Fabrications.
2. Section 235123 – Breeching, Chimney and Stacks

## 1.2 References

## A. Standards referenced in this Section are:

1. AWS D1.1, Structural Welding Code – Steel.
2. AWS D1.2, Structural Welding Code – Aluminum.
3. AWS D1.3, Structural Welding Code – Sheet Steel.
4. AWS D1.6, Structural Welding Code – Stainless Steel.
5. National Roofing Contractors Association (NRCA) Standards.

## 1.3 Definitions

## A. The following definitions are used in this Section:



1. Certificate of compliance: certificate provided by component manufacturer indicating that component has been tested or analyzed in accordance with laws and regulations, including applicable building code, and is capable of resisting design forces defined in laws and regulations.
2. Components: Process Mechanical, HVAC, plumbing, electrical, instrumentation and control, architectural, and other non-structural equipment, systems, and elements permanently attached to structures, including supporting structures and attachments.
3. Component Assembly: Component assembled by Contractor from individual components of different Suppliers.
4. Controls: Vibration Control, and Wind Control.
5. Controls Design Engineer: Professional Engineer responsible for Vibration Control, and Wind Control.
6. Essential Facility: Buildings and other structures intended to remain operational in event of extreme environmental loading from flood, wind, snow, or earthquakes.
7. Failure: Separation of an attachment between Components, or Components and structure, vertical permanent deformation greater than 1/8-inch, horizontal permanent deformation greater than 1/4-inch, or failure of the equipment to perform its function.
8. Hazardous Contents: Material that is highly toxic or potentially explosive in sufficient quantity to pose significant life-safety threat to personnel working in building or the general public if an uncontrolled release were to occur.
9. Importance Factor (Ip): Factor that accounts for degree of hazard to human life and damage to property.
10. Isolated Component: Component indirectly connected to structure through Control designed to prevent transmission of Component vibration to structure.
11. Lateral Forces: Horizontally applied forces resulting from wind or seismic event, combined with operational horizontal forces. Wind and seismic forces are considered separately.
12. Life Safety Systems: All systems involved with fire protection including sprinkler piping, water service piping, jockey pumps, fire pumps, fire dampers, smoke dampers, smoke exhaust systems, control panels and fire alarm panels associated with fire protection Components, and Components in Essential Facilities necessary for keeping the Essential Facility Operational.
13. Non-Isolated Component: Component that is connected to structure in such a way that allows transmission of Component vibration to structure.
14. Operational: Capable of providing intended function.
15. Process Mechanical: All mechanical Components that are not part of HVAC, plumbing and fire protection Components.
16. Seismic Control: Seismic restraining systems.
17. Seismic Use Group: Classification assigned to building based on use defined in applicable building code.
18. Vibration Control: Vibration isolating systems.
19. Wind Control: Wind restraining systems.

#### 1.4 Quality Assurance

##### A. Qualifications:

1. Supplier:
  - a. Minimum of five years of experience producing Controls substantially similar to those specified in the Contract Documents and able to provide evidence of at least five installations in satisfactory operation for at least five years in the United States.
  - b. Design and analysis delegated through Supplier shall be performed by a registered Professional Engineer licensed in the State of New Jersey.
  
2. Controls Design Engineer:
  - a. Engage registered Professional Engineer licensed in the state of New Jersey, who has a minimum of five years of experience in providing engineering services for Vibration, and Wind Controls.
  - b. Responsibilities include:
    - 1) Reviewing performance and design criteria for Controls specified in the Contract Documents.
    - 2) Determining sizes and locations of Controls.
    - 3) Preparing or supervising preparation of design calculations and related drawings, Shop Drawings and submittals, testing plan development, test result interpretation, and comprehensive engineering analysis verifying compliance of Controls with the Contract Documents.
    - 4) Signing and sealing all calculations, design drawings, and Shop Drawings.
    - 5) Certifying that:
      - a) Design of Controls was performed in accordance with performance and design criteria stated in the Contract Documents.
      - b) Design conforms to Laws and Regulations, and to prevailing standards of practice.
    - 6) Provide installation instructions and drawings.
    - 7) Provide field quality control in accordance with Paragraph 3.3 of this Section.
  
3. Installer:
  - a. Engage an experienced installer to perform the Work of this Section who specializes in installing Controls similar to that required for this Project.
  - b. Submit name and qualifications to Engineer with the following information on a minimum of three completed, successful projects:
    - 1) Names and telephone numbers of Owners, and Architects or Engineers responsible for project.
    - 2) Approximate cost of Control Work for which installer was responsible.
  
4. Welder:
  - a. Qualify welding processes and welding operators in accordance with AWS D1.1, D1.2, D1.3, and D1.6 as appropriate for material to be welded.

- b. Provide certification that welders employed on or to be employed for the Work have satisfactorily passed AWS qualification tests within previous 12 months. Ensure that all certifications are current.

## 1.5 Submittals

### A. Informational Submittals: Submit the following:

#### 1. Shop Drawings:

- a. Detailed schedules of flexible and rigidly mounted Components to receive Controls. Schedules shall be numbered and include Contract Drawing number references where Component is located.
- b. Fabrication details of Component bases including dimensions, structural member sizes, support point locations, and weight distribution.
- c. Specific details of Controls and anchorages, including number, size, and locations for each Component.
- d. Details of suspension and support for ceiling-hung Components.
- e. Details of attachment methods where walls, floors, slabs, or supplementary steel work are used for restraint attachment.
- f. Location of all attachment and support points and forces transferred to supporting structure at each location, as a result of each load combination of static forces and Lateral Forces.
- g. Detailed piping, ductwork, and conduit restraining system layout drawings showing their attachment to building or structure. Include dimensions, size, and location of restraints and attachment connections. Coordinate with system layout shop drawings provided under other sections, as applicable.

#### 2. Product Data:

- a. Supplier and model of Controls.
- b. Supplier's literature, performance data, weight, illustrations, specifications, identification of materials of construction, dimensions of individual parts, and finishes.
- c. Setting drawings, templates, and directions for installation of anchor bolts and other anchorages.

#### 3. Certifications:

- a. Provide completed Professional Design Services Performance Certification on Attachment A to this Section.

#### 4. Delegated Design Submittals:

- a. Information required to clearly demonstrate basis of design for Controls, including calculations, design dimensions, approach and assumptions, and Laws and Regulations on which design of Controls and anchorage is based. Design documents prepared by Controls Design Engineer shall bear the seal and original

signature and date of the Controls Design Engineer. State of Engineer's registration, name, and license number shall be clearly legible on the seal.

5. Test Reports:

- a. Component test reports to confirm statements made on Certificate of Compliance, for Components where a Certificate of Compliance is required.
- b. Test reports substantiating seismic restraint designs when calculations are not used.

6. Supplier's Instructions:

- a. Instructions for shipping, storage protection, handling, and installation.
- b. Routine maintenance requirements prior to start up.

7. Field Quality Control Submittals:

- a. Supplier's Field Reports: Submit reports confirming that Controls have been installed in accordance with Supplier's recommendations and approved Shop Drawings and submittals.
- b. Controls Design Engineer Report: Submit report confirming that Controls have been installed in accordance with the Controls design. Report shall bear the professional engineering seal, date, and original signature of the Controls Design Engineer.

8. Qualifications Statements: Submit qualifications for:

- a. Supplier.
- b. Controls Design Engineer.
- c. Installer.
- d. Welder.

B. Closeout Submittals:

1. Operation and Maintenance Data:

- a. Submit complete operation, and maintenance manuals, including, test reports, maintenance data and schedules, description of operation, and spare parts information.

## PART 2 - PRODUCTS

### 2.1 System Performance

A. System Description:

1. Schedules in Part 3 of this Section describe Components that are to receive Vibration Control and systems to receive Wind Control.

2. Tables in Part 3 and performance criteria specified in Paragraph 2.1.C of this Section describes Controls to be provided on Components and systems described in the schedules. Tables are general in nature and may include certain Components that may not be specified in the schedules to receive Controls, while the schedules are Project-specific.
3. Where components are subject to wind, design component and related anchorage to supporting structure to resist wind loads per applicable building code using wind load factors indicated on structural drawings. Using guy wires is allowed for assisting in support of components if compatible with the building/roof structure.
4. Design of Components, including Vibration Controls provided by Component Supplier if required, and associated anchorage to supporting structure, are delegated through Supplier. Design shall resist seismic forces according to requirements of Laws and Regulations using load factors. Design shall demonstrate that Component is capable of transferring Project-specific forces (at minimum) applied at Component's center of gravity, and center of gravity of Component's major elements, to supporting structure without losing structural integrity.
5. Interconnection design of Component Assemblies, including Vibration Controls if required, and anchorage to supporting structure, shall be by Controls Design Engineer. Design of individual Components within assembly to resist vibration forces is responsibility of individual Component Supplier. Component Assembly design shall resist vibration forces according to requirements of Laws and Regulations using load factors. Design shall demonstrate that Component Assembly is capable of transferring Project-specific forces (at minimum) applied at Component's center of gravity, and center of gravity of Component's major elements, to supporting structure without losing structural integrity. Coordinate design with each Supplier of Components used in the assembly and obtain approval of each Supplier prior to providing Shop Drawings for Component Assembly.
6. Equivalency: Products or methods specified for Controls are not intended to limit use of other products or methods of equivalent or superior quality and effectiveness.

B. Design Criteria:

1. Analyses for anchorage shall include calculated dead loads, Lateral Forces, and capacity of materials utilized for connections to Components and structure. Analysis for anchorage shall include anchoring methods, bolt diameter, embedment, and weld requirements. Design Controls to accept, without failure, forces acting through Component's center of gravity and distributed relative to Component's mass distribution.
2. Design Wind Controls to accept, without failure, wind forces acting on Component's exposed wind surface area. Analyses for wind forces shall consider Lateral Forces applied on a minimum of two orthogonal axes in two directions per axis. Overturning moments may result in uplift forces that exceed gravitational forces at ground level that shall be incorporated into analysis. Wind controls shall be designed for 131 mile per hour wind speeds.

C. Performance Criteria:

1. Design and provide Components to maintain structural integrity and to provide continuous load path to transfer Lateral Forces through elements of Component and through anchorage to supporting structure.
2. Internally Isolated Components, when provided in lieu of external isolation and restraint systems, shall conform to requirements of this Section.
3. Curb or roof rail-mounted Components shall be attached to the curb or rails that shall, in turn, be attached to supporting structure, creating continuous load path for vertical and Lateral Forces. Sheet metal screw attachment is unacceptable.
4. Where location and characteristics of elements of supporting structure are not appropriate for supporting Component and transferring vertical and Lateral Forces, notify Engineer in writing.
5. Where changes in specified Components or location of Components are proposed by Contractor for convenience of Contractor and accepted by Engineer, modifications to supporting structure required by such changes shall be responsibility of Contractor at no additional cost to Owner. Design of modification shall consider all vertical and Lateral Forces and be signed, dated, and sealed by Controls Design Engineer.

## 2.2 Manufacturers

### A. Provide products of one of the following:

1. Vibration Mountings and Controls, Inc.
2. Mason Industries.
3. Kinetics Noise Control.
4. Amber/Booth Company, Inc.
5. Or approved equal.

## 2.3 VIBRATION ISOLATION TYPES

### A. Type A: Spring Isolator - Free Standing

1. Spring isolators shall be free standing and laterally stable without housing, and complete with a molded neoprene cup or 1/4-inch neoprene acoustical friction pad between baseplate and support.
2. Mountings shall have leveling bolts rigidly bolted to the Component.
3. Spring diameters shall be no less than 0.8 of compressed height of spring at rated load.
4. Springs shall have minimum additional travel to solid equal to 50 percent of rated deflection.
5. Product and Manufacturer: Provide one of the following:
  - a. ASC, manufactured by Vibration Mountings and Controls.
  - b. SLF, manufactured by Mason Industries.
  - c. FSD, manufactured by Kinetics Noise Control.
  - d. Or approved equal.

### B. Type B: Seismically Restrained Spring Isolator

1. Restrained spring mountings shall have Type A spring isolator within rigid housing that includes vertical limit stops to prevent spring extension when weight is removed. Housing shall serve as blocking during erection. Remove steel spacer after adjustment. Installed and operating heights are equal. Provide minimum clearance of 1/4-inch around restraining bolts and internal neoprene deceleration bushings to avoid interfering with spring action. Limit stops shall be out of contact during normal operation. Because housings shall be bolted or welded in position, provide an internal isolation pad. Design housing to resist seismic forces.
2. Product and Manufacturer: Provide one of the following:
  - a. AWRS, ASCM, manufactured by Vibration Mountings and Controls.
  - b. SLR, manufactured by Mason Industries.
  - c. FLSS, manufactured by Kinetics Noise Control.
  - d. Or approved equal.

C. Type C: Combination Spring/Elastomer Hanger Isolator (30-degree Type)

1. Hangers shall consist of rigid steel frames containing minimum 1.25-inch thick neoprene elements at top and steel spring with general characteristics specified for Type A. Neoprene element shall have neoprene bushings projecting through steel box.
2. Spring diameters and hanger box lower hole sizes shall be large enough to allow hanger rod to swing through a 30-degree arc from side to side before contacting rod bushing and short-circuiting the spring.
3. Submittals shall include hanger drawing showing 30-degree capabilities.
4. Hanger locations requiring pre-compression for holding piping at fixed elevation shall be pre-compressed by manufacturer.
5. Product and Manufacturer: Provide one of the following:
  - a. RSH30, manufactured by Vibration Mountings and Controls.
  - b. 30N, manufactured by Mason Industries.
  - c. SRH, manufactured by Kinetics Noise Control.
  - d. Or approved equal.

D. Type D: Elastomer Double Deflection Hanger Isolator

1. Molded neoprene element, minimum 1.25-inch thick, with Projecting bushing lining rod clearance hole. Static deflection at rated load shall be minimum of 0.35 inches.
2. Steel retainer box encasing neoprene mounting capable of supporting Component up to four times rated capacity of element.
3. Product and Manufacturer: Provide one of the following:
  - a. RHD, manufactured by Vibration Mountings and Controls.
  - b. HD, manufactured by Mason Industries.
  - c. RH, manufactured by Kinetics Noise Control.
  - d. Or approved equal.

E. Type E: Combination Spring/Elastomer Hanger Isolator

1. Spring and neoprene elements in a steel retainer box with the features as specified in this Section for Type C and Type D isolators.
2. Hanger locations requiring pre-compression for holding piping at fixed elevation shall be pre-compressed by manufacturer.
3. Thirty-degree angularity feature is not required.
4. Product and Manufacturer: Provide one of the following:
  - a. RSH, manufactured by Vibration Mountings and Controls.
  - b. DNHS, manufactured by Mason Industries.
  - c. SRH, manufactured by Kinetics Noise Control.
  - d. Or approved equal.

F. Type F: Seismically Restrained Elastomer Floor Isolator

1. Neoprene mountings shall have minimum static deflection of 0.2 inches and all-directional seismic capability. Mount shall consist of two separated and opposing molded neoprene elements. Elements shall prevent central threaded sleeve and attachment bolt from contacting casting during normal operation. Shock absorbing neoprene materials shall be compounded to bridge-bearing specifications.
2. Product and Manufacturer: Provide one of the following:
  - a. RSM, manufactured by Vibration Mountings and Controls.
  - b. BR, manufactured by Mason Industries.
  - c. MB, manufactured by ISOTECH, Inc.
  - d. Or approved equal.

G. Type G: Pad Type Elastomer Isolator (Standard)

1. One layer of 3/4-inch thick neoprene pad consisting of two-inch square modules.
2. Use load distribution plates as required.
3. Provide bolting for seismic compliance. Provide neoprene and duck washers and bushings to prevent short circuiting.
4. Product and Manufacturer: Provide one of the following:
  - a. Maxiflex, manufactured by Vibration Mountings and Controls.
  - b. Super W, manufactured by Mason Industries.
  - c. RSP, manufactured by Kinetics Noise Control.
  - d. Or approved equal.

H. Type H: Pad Type Elastomer Isolator (High Density)

1. Laminated canvas duck and neoprene, minimum 1/2-inch thick, with loading capacity of 1,000 psi.
2. Use load distribution plate as required.
3. Bolting as required for seismic compliance. Provide neoprene and duck washers and bushings to prevent short circuiting.
4. Product and Manufacturer: Provide one of the following:



- a. Fabriflex, manufactured by Vibration Mountings and Controls.
  - b. HL, manufactured by Mason Industries.
  - c. NDF, manufactured by Kinetics Noise Control.
  - d. Or approved equal.
- I. Type I: Thrust Restraints
1. Spring element similar to that specified for Type A isolator shall be combined with steel angles, backup plates, threaded rod, washers, and nuts to produce a pair of devices capable of limiting movement of Components to 1/4-inch.
  2. Restraint shall be easily converted in field from compression type to tension type.
  3. Unit shall be factory pre-compressed.
  4. Product and Manufacturer: Provide one of the following:
    - a. RSHTR, manufactured by Vibration Mountings and Controls.
    - b. WBI \ D, manufactured by Mason Industries.
    - c. HSR, manufactured by Kinetics Noise Control.
    - d. Or approved equal.
- J. Type J: Pipe Anchors
1. Provide all-directional acoustical pipe anchor, consisting of two sizes of steel tubing separated by minimum 1/2-inch thick 60-durometer neoprene.
  2. Allowable loads on isolation material shall not exceed 500 psi. Balance design for equal resistance in all directions.
  3. Product and Manufacturer: Provide one of the following:
    - a. MDPA, manufactured by Vibration Mountings and Controls.
    - b. ADA, manufactured by Mason Industries.
    - c. KPA, manufactured by Kinetics Noise Control.
    - d. Or approved equal.
- K. Type K: Pipe Guides
1. Pipe guides shall consist of telescopic arrangement of two sizes of steel tubing separated by minimum 1/2-inch thick 60-durometer neoprene.
  2. Height of guides shall be pre-set with shear pin to allow vertical motion induced by pipe expansion and contraction. Shear pin shall be removable and re-insertable to allow selection of pipe movement.
  3. Guides shall be capable of minimum 1-5/8-inch motion in both directions
  4. Product and Manufacturer: Provide one of the following:
    - a. PG, manufactured by Vibration Mountings and Controls.
    - b. VSG, manufactured by Mason Industries.
    - c. KRG, manufactured by Kinetics Noise Control.
    - d. Or approved equal.
- L. Type L: Isolated Pipe Hanger System

1. Provide pre-compressed spring and elastomer isolation hanger combined with pipe support into one assembly. Replaces standard clevis, single or double rod roller, or double rod fixed support.
2. Provide with spring element specified for Type A, with steel lower spring retainer and upper elastomer retainer cup with integral bushing to insulate support rod from isolation hanger.
3. Neoprene element under lower steel spring retainer shall have integral bushing to insulate support rod from steel spring retainer.
4. Design and construct hangers to support loads over three times the rated load without Failure.
5. System shall be pre-compressed to allow for rod insertion and standard leveling.
6. Product and Manufacturer: Provide one of the following:
  - a. CIH, CIR, TIH, PIH, manufactured by KRG/D, manufactured by Kinetics Noise Control.
  - b. KRG/D, manufactured by Kinetics Noise Control.
  - c. 30NCC, manufactured by Mason Industries
  - d. Or approved equal.

## 2.4 Restraint Types

### A. Type I: Spring Isolator, Restrained

1. Refer to vibration isolation Type B.
2. Product and Manufacturer: Provide one of the following:
  - a. ASCM, AWR, manufactured by Vibration Mountings and Controls.
  - b. SLR, SLRS, manufactured by Mason Industries.
  - c. FLS, manufactured by Kinetics Noise Control.
  - d. Or approved equal.

### B. Type II: Seismically Restrained Elastomer Floor Isolator

1. Refer to vibration isolation Type F.
2. Product and Manufacturer: Provide one of the following:
  - a. RSM, manufactured by Vibration Mountings and Controls.
  - b. BR, manufactured by Mason Industries.
  - c. MB, manufactured by ISOTECH, Inc
  - d. Or approved equal.

### C. Type III: All-Directional Snubber

1. All-directional snubbers shall consist of interlocking steel members restrained by one piece molded neoprene bushing of bridge bearing neoprene. Bushing shall be replaceable and minimum of 1/4-inch thick. Rated loadings shall not exceed 1,000 psi. Minimum air gap of 1/8-inch shall be incorporated in snubber in all directions before contact is made between rigid and resilient surfaces. Snubber end caps shall

- be removable to allow inspection of internal clearances. Neoprene bushings shall be rotated to insure no short circuits exist before systems are activated.
2. Product and Manufacturer: Provide one of the following:
    - a. Type SR, manufactured by Vibration Mountings and Controls.
    - b. Z1225, manufactured by Mason Industries.
    - c. ER, manufactured by ISOTECH, INC.
    - d. Or approved equal.
- D. Type IV: Floor or Roof Anchorage
1. Rigid attachment to structure utilizing wedge-type anchor bolts, anchored plates machine screw, bolting or welding. Powder shots are unacceptable.
  2. Product and Manufacturer: Provide one of the following:
    - a. FA, manufactured by Vibration Mountings and Controls.
    - b. SSB, manufactured by Mason Industries.
    - c. SB-250, manufactured by VMC Group.
    - d. Or approved equal.
- E. Type V: Cable Restraints
1. Cable Restraints shall consist of steel aircraft cables sized to resist loads with minimum safety factor of 2.0, and arranged to provide all directional restraint. Cable end connections shall be steel assemblies that swivel to final installation angle and utilize two clamping bolts to provide proper cable engagement. Cables shall not bend across sharp edges. Single arm braces with resilient bushings can be substituted for cable restraints. Deck fitting shall have two through-bolts for attachment.
  2. Product and Manufacturer: Provide one of the following:
    - a. SCR, manufactured by Vibration Mountings and Controls.
    - b. SCB, manufactured by Mason Industries.
    - c. SCR, manufactured by The VMC Group.
    - d. Or approved equal.
- F. Type VI: Rigid Arm Brace
1. Solid braces shall consist of steel angles or channels to resist loads with minimum safety factor of 2.0, and arranged to provide all directional restraint. Solid brace end connectors shall be steel assemblies that swivel to final installation angle and utilize two through-bolts to provide attachment.
  2. Product and Manufacturer: Provide one of the following:
    - a. SAB, manufactured by Vibration Mountings and Controls.
    - b. SSB, manufactured by Mason Industries.
    - c. SAB, manufactured by The VMC Group.
    - d. Or approved equal.

#### G. Type VII: Internal Clevis Cross Brace

1. Internal clevis cross braces at seismic locations shall be pre-cut pipe sized for internal clevis dimensions.
2. Product and Manufacturer: Provide one of the following:
  - a. ICB, manufactured by Vibration Mountings and Controls.
  - b. CCB, manufactured by Mason Industries.
  - c. A668, manufactured by Portland Bolt.
  - d. Or approved equal.

### 2.5 Component Bases

#### A. General

1. All curbs and roof rails shall be anchored to building structural steel for resisting Lateral Forces. Fastening to metal deck is unacceptable.

#### B. Type B 1: Integral Structural Steel Base

1. Rectangular bases are preferred for all Components.
2. Centrifugal refrigeration machines and pump bases may be T- or L-shaped when there are space constraints. When the pump has pump-mounted suction and discharge fittings, base of pump shall include required supports.
3. All perimeter members shall be steel beams with minimum depth equal to 1/12 of the longest dimension of base.
4. Base depth need not exceed 12 inches provided that deflection and misalignment is within acceptable limits as determined by Supplier.
5. Height-saving brackets shall be employed on all mounting locations to provide minimum base clearance of two inches.
6. Product and Manufacturer: Provide one of the following:
  - a. WFB, manufactured by Vibration Mountings and Controls.
  - b. MSL, WSFL, manufactured by Mason Industries.
  - c. APVB66, manufactured by Simpson
  - d. Or approved equal.

#### C. Type B 4: Seismic Non-Isolated Curbs

1. Curbs shall conform to Type B-3 curbs except spring isolation is not required.
2. Product and Manufacturer: Provide one of the following:
  - a. Model P6000. Type RPFMA/SRPFMA manufactured by Vibration Mountings and Controls.
  - b. RRC, manufactured by Mason Industries.
  - c. LMCurbs manufacturer.
  - d. Or approved equal.

## 2.6 Materials of Construction And Finishes

- A. Controls including all miscellaneous structural steel and appurtenances shall be constructed of Type 316 stainless steel.
- B. Miscellaneous steel angles, supports, and appurtenances shall be cleaned and prime-coated in the shop and field-painted.
- C. Hardware in corrosive areas shall be Type 316 stainless steel. Hardware in non-corrosive areas shall be galvanized steel.
- D. Neoprene and elastomer parts shall be resistant to ultraviolet radiation and constructed from high grade materials suitable for exposure to high concentrations of hydrogen sulfides, mercaptans, chlorine, and moisture in air.

## 2.7 Identification

- A. Provide each Control device with Type 316 stainless steel tag embossed or engraved with serial number cross-referenced to Component schedule.

## 2.8 Miscellaneous Metal

- A. Miscellaneous metal fabrications shall be per Section 05 50 00 - Metal Fabrications.

# PART 3 - EXECUTION

## 3.1 Inspection

- A. Examine areas and conditions under which Control Work is to be performed and notify Engineer in writing of conditions detrimental to proper and timely completion of Work. Do not proceed with Work until unsatisfactory conditions have been corrected in a manner acceptable to Engineer.
- B. Coordinate anchorage of Components to receive Controls with installation locations. Examine roughing-in of reinforcing and cast-in-place anchor bolts to verify locations before installation.

## 3.2 Component Installation

- A. Install Controls in accordance with Supplier's written instructions and Shop Drawings and submittals accepted by Engineer.
- B. Rigid connections between Components and building structure shall not be made in a manner that degrades performance of Control systems.
- C. Do not rigidly connect Isolated Components to building structure.

- D. Bracing may occur from flanges of structural beams, upper truss chords in bar joist construction, and concrete inserts or cast-in-place anchor bolts. Component support shall not overstress the structure.
- E. Install cable restraints with minimum slack to avoid short-circuiting associated Component.
- F. Install cable assemblies without slack on Non-Isolated systems. Solid braces may be used in place of cables on rigidly attached systems except where single arm braces incorporate resilient bushings.
- G. At locations where restraints or solid braces are located, brace support rods as required to accept compressive loads.
- H. Minimum operating clearance under all Isolated Component bases shall be two inches.

### 3.3 Field Quality Control

#### A. Controls Design Engineer Services:

1. Controls design engineer shall check controls installation before controls and related equipment are placed into operation.
2. Controls design engineer shall make at least one visit to the site.
3. After controls installation is complete, controls design engineer shall inspect completed controls work and certify in writing to contractor that all systems are installed in accordance with design. Contractor shall submit control design engineer's report to engineer, certifying correctness of the work.

#### B. Supplier's Services:

1. Supplier shall check Controls installation before Controls and related equipment are placed into operation.
2. Supplier shall make at least one visit to the Site.
3. After installation of Controls is complete, Supplier shall inspect completed Controls Work and certify in writing to Contractor that Controls are installed in accordance with Supplier's recommendations and Shop Drawings and submittals accepted by Engineer. Contractor shall submit Supplier's report to Engineer certifying correctness of the Work.

### 3.4 Adjusting

- A. After entire system is started and under full operating load, adjust Controls so that Controls operate as designed.

### 3.5 Cleaning

- A. Remove debris from beneath Components and in and around the vibration isolator.

### 3.6 SUPPLEMENTS

A. Supplements listed below, following the “End of Section” designation, are a part of this Section:

1. Controls Schedules:

- a. Schedule of HVAC Components for Vibration Control.
- b. Schedule of HVAC Components for Wind Control.

2. Controls Tables:

- a. Table 23 05 48-A - HVAC and Process Mechanical System Components.
- b. Table 23 05 48-F - Minimum Deflection Guide.

3. Attachment 23 05 48-A – Professional Design Services Performance Certification.

END OF SECTION 23 05 48

CONTROLS SCHEDULES FOR SECTION 23 05 48

<b>Section 23 05 48</b>		
<b>Schedule of HVAC Components for Vibration Control</b>		
<b>Item No.</b>	<b>Component</b>	<b>Notes</b>
1	32" Ø flue	1.
2	38" Ø flue	1.
3	66"x44" flue	1.
4	48"x48" draft damper	1.
5	16" FRG valve	1.
6		
7		
8		
9		
10		

NOTES:



1. Vibration Controls shall be factory installed by the unit manufacturer in accordance with Section 23 05 48.

<b>Section 23 05 48</b>		
<b>Schedule of HVAC Components for Wind Control</b>		
<b>Item No.</b>	<b>Component</b>	<b>Notes</b>
1	32" $\theta$ flue	1
2	38" $\theta$ flue	1
3	66"x44" flue	1
4		
5		
6		
7		
8		
9		
10		

NOTES:



## SECTION 23 05 48 TABLES

Abbreviations for Tables 23 05 48-A, 23 05 48-B, 23 05 48-C, and 23 05 48-D:

ISOL	Vibration Isolator
DEFL	Deflection
RESTR	Seismic Restraint
MTNG	Mounting
MDG	Minimum Deflection Guide – Table 23 05 48-F

General Notes (G) for Tables 23 05 48-A, 23 05 48-B, 23 05 48-C, and 23 05 48-D:

Note G1: For variable speed Components with an operating speed below 600 rpm, select isolation deflection from Table 23 05 48-F, Minimum Deflection Guide.

Note G2: Determine static deflection based on Table 23 05 48-F, Minimum Deflection Guide.

Note G3: Deflections indicated are minimum at actual load and shall be selected for Supplier's nominal 5-, 4-, 3-, 2- and 1-inch deflection spring series; rpm is defined as lowest operating speed of Component.

Note G4: Single stroke compressors may require inertia bases with thickness greater than 14-inch maximum specified for Base B-2. Inertia base mass shall be sufficient to maintain double amplitude for 1/8-inch.

Note G4: For floor-mounted fans, substitute base Type B-2 for Class 2 or 3 and fan having static pressure over five inches of water column.

Note G5: Indoor utility sets with wheel diameters less than 24 inches need not have deflections greater than 0.75 inches.

Note G6: For Components with multiple motors, horsepower classification applies to largest single motor.

Reference Notes (R) for Tables 23 05 48-A, 23 05 48-B, 23 05 48-C, and 23 05 48-D:

Note R1: For roof applications, use base Type B-5.

Note R2: Curb Type B-3 shall use sound barrier RPFMA when there is no concrete underneath rooftop units. Curbs can be used for return plenums. (See Option No. 1 under Type B-3 base in Paragraph 2.5 of this Section.)

Note R3: Where curbs require supply and return sound attenuation package, use Type SRRFMA. (See Option No. 2 under Type B-3 base in Paragraph 2.5 of this Section.)

Note R4: Units may not be capable of point support. Refer to separate Specification Section for Component. If base is not specified in that Section and external isolation is required, provide Type B-1 base under this Section for entire unit.

Note R5: Use Type B-6 where Non-Isolated seismic support is required.

Note R6: Use Type B-4 where Non-Isolated seismic curbs are used.

**TABLE 23 05 48-A - HVAC and PROCESS MECHANICAL SYSTEM COMPONENTS**

COMPONENT	HP, CLASS, OR SIZE	MTN G	Mounted on Soil Supported Slab				Mounted on Suspended Slab and Floor or Roof System			
			ISOL	DEFL (in.)	BAS E	REST R	ISOL	DEFL (in.)	BASE	REST R
	>1 HP	Flr	B	0.75	---	IV	B	See MDG	---	IV
		Clg	E	0.75	---	V	E	See MDG	---	V
Curb Mtd. Equip. (Non-Isol.)		Roof	---	---	---	IV	---	---	B-6	IV

<b>Table 23 05 48-F – MINIMUM DEFLECTION GUIDE</b>	
<b>rpm</b>	<b>MINIMUM REQUIRED DEFLECTION (inches)</b>
Less than 400	3.5
401 to 600	2.5
601 to 900	1.5
Over 900	0.75

**ATTACHMENT 23 05 48-A**

**Professional Design Services Performance Certification**

1. My name is \_\_\_\_\_.
  
2. My New Jersey professional engineering license number is \_\_\_\_\_.
  
3. My license expires \_\_\_\_\_, 20\_\_\_\_.
  
4. The Project for which I have performed professional design services is described as \_\_\_\_\_.
  
5. The Specification Section(s) under which I have performed my services is/are \_\_\_\_\_.
  
6. The name and address of the individual or entity for whom I have performed professional design services is:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  
7. I hereby certify that, to the best of my knowledge, information, and belief, I have performed or supervised performance of the professional design services hereunder, and that said services have been performed in accordance with Laws and Regulations and in accordance with the standard of care currently expected of

professional engineers/architects performing similar services for Projects of similar size and complexity in New Jersey.

\_\_\_\_\_

Date

Signature

\_\_\_\_\_  
Type or Print Name

\_\_\_\_\_  
Name of Firm

\_\_\_\_\_  
Street Address

[ PROFESSIONAL SEAL ]

\_\_\_\_\_

City/State/Zip Code

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

END OF SECTION 23 05 48