SCOPE OF WORK

Power Stabilization
Electrical & Mechanical Upgrades

NJ Office of Information Technology Enterprise Data Center
Ewing, Mercer County, N.J.

Project No. A1357-01

STATE OF NEW JERSEY

Honorable Philip D. Murphy, Governor
Honorable Tahesha L. Way, Lt. Governor

DEPARTMENT OF THE TREASURY

Elizabeth Maher Muoio, Treasurer

DIVISION OF PROPERTY MANAGEMENT AND CONSTRUCTION

Christopher Chianese, Director

Date: January 26, 2024

Document Format Revision 8-1-2022

TABLE OF CONTENTS

SECTION **PAGE**

I. OBJECTIVE

The objective of this project is to construct primary and secondary electrical and mechanical systems in two phases which include the installation of a Combined Cooling, Heat and Power (CCHP) internally modular and expandable microturbine solution with 3N/2 6000A switchgear containing self-healing redundant PLC controls for resilient self-healing failure recovery as the prime energy source for the Enterprise Data Center located on the campus of the New Jersey State Police Headquarters in Ewing, New Jersey.

II. CONSULTANT QUALIFICATIONS

A. CONSULTANT & SUB-CONSULTANT PRE-QUALIFICATIONS

The Consultant shall be a firm pre-qualified with the Division of Property Management & Construction (DPMC) in the following discipline(s):

- **P002 Electrical Engineering**

The Consultant shall also have in-house capabilities or Sub-Consultants pre-qualified with DPMC in:

- **P003 HVAC Engineering**
- **P005 Civil Engineering**
- **P007 Structural Engineering**
- **P010 Fire Protection Engineering**
- **P025 Estimating/Cost Analysis**

As well as, **any and all** other Architectural, Engineering and Specialty Disciplines necessary to complete the project as described in this Scope of Work (SOW).

III. PROJECT BUDGET

A. CONSTRUCTION COST ESTIMATE (CCE)

The initial Construction Cost Estimate (CCE) for this project is $33,984,961.

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

B. CURRENT WORKING ESTIMATE (CWE)

The Current Working Estimate (CWE) for this project is $40,182,705.

The CWE includes the construction cost estimate and all consulting, permitting and administrative fees.

The CWE is the client agency's financial budget based on this project Scope of Work and shall not be exceeded during the design and construction phases of the project unless DPMC approves the change in Scope of Work through a Contract amendment.

C. CONSULTANT'S FEES

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

IV. PROJECT SCHEDULE

A. SCOPE OF WORK DESIGN & CONSTRUCTION SCHEDULE

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

PROJECT PHASE	ESTIMATED DURATION (Calendar Days)
1. Site Access Approvals & Schedule Design Kick-off Meeting	**14**
2. Program Phase	**42**
• *Project Team & DPMC Plan/Code Unit Review & Comment*	14
3. Schematic Design Phase	**42**
• *Project Team & DPMC Plan/Code Unit Review & Comment*	14
4. Design Development Phase	**42**
• *Project Team & DPMC Plan/Code Unit Review & Comment*	14
5. Final Design Phase	**42**
• *Project Team & DPMC Plan/Code Unit Review & Approval*	14

6. Final Design Re-Submission to Address Comments	**7**
• *Project Team & DPMC Plan/Code Unit Review & Approval*	14
7. DCA Submission Plan Review	**30**
8. Permit Application Phase	**7**
• *Issue Plan Release*	
9. Bid Phase	**42**
10. Award Phase	**28**
11. Construction Phase	**730**
12. Project Close Out Phase	**30**

B. CONSULTANT'S PROPOSED DESIGN & CONSTRUCTION SCHEDULE

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

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

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

V. PROJECT SITE LOCATION & TEAM MEMBERS

A. PROJECT SITE ADDRESS

The location of the project site is:

Office of Information Technology
Enterprise Data Center
1 Schwarzkopf Drive
Ewing, New Jersey 08628

See **Exhibit 'B'** for the project site location map.

B. PROJECT TEAM MEMBER DIRECTORY

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

1. DPMC Representative:

Name: Amit Mehta, Project Manager
Address: Division of Property Management & Construction
20 West State Street, 3rd Floor
Trenton, NJ 08608-1206
Phone No: (609) 947-5496
E-Mail: Amit.Mehta@treas.nj.gov

2. Office of Information Technology:

Name: Neil Apoldite, Project Manager
Address: Office of Information Technology
1 Schwarzkopf Drive
PO Box 212
West Trenton, NJ 08625
Phone No: 609-530-5927
E-Mail: Neil.Apoldite@tech.nj.gov

Name: Yolanda Windom, Project Owner
Address: Office of Information Technology
300 Riverview Plaza
PO Box 212
Trenton, NJ 08625
Phone No: 609-826-3630
E-Mail: Yolanda.Windom@tech.nj.gov

VI. PROJECT DEFINITION

A. BACKGROUND

1. General:

The Office of Information Technology (OIT) facility known as the Enterprise Data Center (formerly known as the HUB) is located on the campus of the New Jersey State Police Division Headquarters in West Trenton, NJ. The building was constructed in 1986 to house the State's computer operations. The facility now serves as the State's primary data center and supports the operation of distributed server applications for the State of New Jersey.

The OIT is committed to bringing the data center up to Tier III standards as defined by the Uptime Institute, LLC. A Tier III data center is concurrently maintainable, allowing for any planned maintenance activity of power and cooling systems to take place without disrupting the operation of computer hardware located in the data center. In terms of redundancy, Tier III offers N+1 availability. The facility requires a second power source to achieve Tier III standards.

2. Tier III Site Assessment and Master Plan:

The State procured the services of Gannett Fleming Architects, Inc. under project A1298-00 to assess the building and provide a Master Plan for the site to bring it up to Tier III-like standards. It is understood that, due to limitations within the building, full Tier III standards cannot be achieved and certification from the Uptime Institute will not be sought.

The Gannett Fleming assessment provided a detailed description of the existing building and electric and mechanical systems but focused on the electric utility (PSE&G) as the primary and secondary source of power for the building in their recommendations. Another option to provide power to the site though the construction of a trigeneration facility or Combined Cooling, Heat and Power (CCHP) plant was explored in a more recent energy audit.

3. Local Government Energy Audit:

A Local Government Energy Audit by TRC was performed on the Enterprise Data Center with a report issued on March 24, 2023. The audit, among many things, looked at the possibility of using combined cooling, heat and power (CCHP) to generate electricity for the facility utilize the waste heat to create chilled water to supply the cooling and hot water for heating needs of the data center and building. The facility staff have decided to pursue this option for primary and secondary sources of power for the building.

The project will require two phases to maintain operations within the data center. Phase one will result in the construction of the A-side CCHP system using microturbine technology with associated absorption chiller equipment and piping. Once phase one is completed, fully tested and operational, phase two can begin. Phase two will consist of demolition of the original electrical and mechanical equipment and installation of the secondary CCHP system for the B-side. See **Exhibit 'D'** (3 pages) for the proposed CCHP Configuration. Phase one is highlighted in grey. Phase two is the remaining equipment. Page 3 of **Exhibit 'D'** lists addition items for each phase that are not depicted on the first 2 pages.

B. FUNCTIONAL DESCRIPTION OF THE BUILDING

1. General:

The Office of Information Technology Enterprise Data Center is a single story, masonry and concrete structure occupying approximately 48,000 square feet. The building was constructed in 1986 to house the State's mainframe computer operations. The facility operates 24 hours a day, 365 days a year. The computer server racks and cabinets occupy the inner core space. A storage warehouse is attached to the facility.

The Office of Information Technology is in the process of reconfiguring and reorganizing space at the building under project A1357-00. Excess office space is being removed to create room for future equipment. A new loading dock will be added to the front of the building to allow access for this equipment. Remaining office and warehouse spaces are being reconfigured to meet needs, create more storage and address security concerns to allow for better visibility and control of visitors to the main entrance.

Existing chilled water piping is presently located in the ceiling. Project A1357-00 will create space below floor level utilizing existing hallways on three sides of the data center to create space for future redundant chilled water piping. Plans for A1357-00 will be made available to the consultant.

2. Electrical:

PSE&G delivers electrical power to the area with two (2) 13,200 volt distribution circuits that originate from their Fernwood and Lawrence substations. The Fernwood and Lawrence distribution circuits are brought to a PSE&G pad mounted automatic transfer switch located along Schwarzkopf Drive. This transfer switch serves the data center and the New Jersey Public Health, Environment & Agricultural Laboratory (NJPHEAL).

The data center has a single 2500kVA pad mounted transformer which provides power to the building. The 13,200 volt feed to this transformer is a single radial service from the automatic transfer switch. Both the transformer and radial feed represent a single point of failure in the normal power distribution. See **Exhibit 'C'** for a single line diagram.

A description of the building electrical system from a study done by Gannett Fleming as part of DPMC Contract No. J0303-00 was completed in November 2017. An arc flash and coordination study were also completed under this project. The studies will be provided to the Consultant.

3. HVAC:

The computer operations and network/communications are cooled by CRAH units located around the rooms. The CRAH units are supplied with chilled water from chiller units located outside the building. Cold air is fed to the computer/equipment racks through a raised floor serving as the supply plenum. The CRAH units capture the hot air via the open tops of the units.

VII. CONSULTANT DESIGN RESPONSIBILITIES

A. GENERAL

The information provided in this section of the Scope of Work is intended as a guide for the Consultant to understand the overall basic design services required for this project. The Consultant is expected to identify and include any item that may not be listed below in the project approach section of their technical proposal. It shall be the responsibility of the NJOIT in consultation with the Consultant to determine the final design criteria to make a complete working installation based on their experience with projects similar in size and scope to this one, and the equipment manufacturer's requirements.

B. PROGRAM PHASE

1. Optimal Trigeneration (CCHP) Facility Design & Configuration:

Design an optimal Combined Cooling, Heat and Power (CCHP) internally modular and expandable microturbine solution with 3N/2 6000A switchgear with self-healing redundant PLC controls which control the electrical and mechanical equipment to maximize data center efficiencies and buss availability. This system will be the prime energy source to feed a 2N+1 redundant critical buss. The 3N/2 microturbine power system must have the ability to achieve and maintain "island mode" for electric generation, utilizing natural gas as the primary fuel source with on-site propane storage as the backup fuel. The microturbines, switchgear, UPS systems, absorption chillers, and CRAHs are to be provided and deployed as an integrated data center infrastructure system, via intelligent controls for optimization of energy savings while maintaining the highest levels of data center availability. Refer to **Exhibit 'D'** for a proposed configuration by NJOIT.

Provide backup information supporting the recommendations made.

Describe the required performance guarantees, warranties, efficiencies of the recommended trigeneration equipment and systems as well as the maintenance requirements.

Determine the integration requirements of the new trigeneration facility equipment and systems with any existing facility equipment, systems and utility infrastructure.

2. Trigeneration (CCHP) Facility Space Requirements:

Determine the approximate physical size of the trigeneration (CCHP) facility based on the space requirements of the equipment, systems, infrastructure, and any required operational components.

Analyze and recommend the most efficient layout of the equipment and infrastructure in the facility.

3. Trigeneration (CCHP) Facility Operation:

Determine the manpower required to operate the facility and all related costs.

Describe the experience, licenses, training, and any other related requirements for the facility operators.

Determine the capability of the facility staff to operate the facility.

Determine recommended/required manufacturer servicing agreements.

C. DESIGN PHASE

1. General:

The consultant shall provide design, specification, bid/award and construction administration services to construct a combined cooling, heat and power plant (CCHP) using microturbine technology and associated absorption chiller equipment and piping to become the primary energy source for the Enterprise Data Center. The construction is expected to take place in two phases.

2. Phase One (A-Side):

Referring to **Exhibit 'D'**, the equipment highlighted in grey will be constructed in Phase One to create the A-side power configuration. Additional items to be built in Phase One are listed on page 3 of **Exhibit 'D'**. The A-side CCHP system must be fully tested and operational before proceeding with Phase Two.

3. Phase Two (B-Side):

Phase Two will consist of construction of remaining equipment not highlighted in grey in **Exhibit 'D'**, demolition of select components of the original electrical and mechanical equipment, and construction of additional items listed on page 3 of **Exhibit 'D'** to create the B-side configuration. The consultant and NJOIT shall be responsible for identifying which components of the existing system will be demolished or upgraded as required to interface with the CCHP equipment.

4. Retaining Wall:

It is anticipated that a retaining wall will be needed on the Southeast side of the building facing Schwarzkopf Drive to locate some of the equipment in similar fashion to the retaining wall on the Southwest side of the building. The Consultant and NJOIT shall determine the need for this area and provide the design and specifications for it as needed.

D. MANUFACTURER'S FIELD SERVICES

1. Start-up & Tests:

The Consultant shall coordinate and arrange scheduling for factory trained and authorized technicians from the manufacturer(s) to start up the CCHP, absorption chillers and associated equipment. The technician shall provide services to start-up, test and calibrate the equipment and controls. After the systems have been placed in operation, the technician shall ensure the equipment meets the manufacturer's performance standards and shall be adjusted for maximum efficiency. Provide test data and reports to the Project Manager upon commissioning of the systems.

The Contractor shall supply the initial charge of refrigerant for chillers.

2. Training:

Require that the Contractor make provisions for a training session for the facility engineers, operators, and other interested personnel to demonstrate the proper operation of the CCHP, absorption chillers, ancillary equipment, and controls. The Contractor shall use the manufacturer's representative or approved representative to conduct the training session. The training time required shall be estimated by the Consultant and approved by facility personnel.

Five (5) sets of drawings, equipment specifications, operating manuals, start up and operating sequence, recommended spare parts material lists, warranties, and all other relevant information shall be bound in a binder and forwarded to the DPMC Project Manager.

3. Spare Parts:

Identify any manufacturer's recommended spare parts and special tools or instruments needed for the operation or maintenance of the equipment and provide them as part of this project.

E. EXISTING DOCUMENTATION

Copies of the following documents will be provided to each Consulting firm at the pre-proposal meeting to assist in the bidding process.

- DPMC Project A1021-00: **HVAC Upgrades**, February 2, 2007, Gannett Fleming Engineers and Planners.
- DPMC Project A1235-01: **OIT HUB Data Center Fire Suppression Replacement**, 01/21/2021, M&E Engineers, Inc.
- DPMC Project A1156-00: **Campus Wide Electric Study Final Report**, December 2, 2013, Gannett Fleming.
- DPMC Project A1298-00: **TIER III Site Assessment and Master Plan**, January 2021, Gannett Fleming Architects, Inc.
- DPMC Project A1357-00: **Building Reconfiguration**, 8/30/2022, NV5 Architecture PC
- DPMC Contract No. J0303-00, **2017 Arc Flash Hazard Study**, November 2017, Gannett Fleming.
- DPMC Contract No. J0303-00, **Electrical System Observations and Recommendations**, November 2017, Gannett Fleming.
- DPMC Contract No. J0303-00, **Power System Analysis**, November 2017, Gannett Fleming.
- Local Government Energy Audit, March 24, 2023, TRC

Review these documents and any additional information that may be provided at a later date such as reports, studies, surveys, equipment manuals, as-built drawings, etc. The State does not attest to the accuracy of the information provided and accepts no responsibility for the consequences of errors by the use of any information and material contained in the documentation provided. It shall be the responsibility of the Consultant to verify the contents and assume full responsibility for any determination or conclusion drawn from the material used. If the information provided is insufficient, the Consultant shall take the appropriate actions necessary to obtain the additional information required.

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

VIII. PERMITS & APPROVALS

A. NJ UNIFORM CONSTRUCTION CODE PLAN REVIEW AND PERMIT

The project construction documents must comply with the latest adopted edition of the NJ Uniform Construction Code (NJUCC).

The latest NJUCC Adopted Codes and Standards can be found at:

http://www.state.nj.us/dca/divisions/codes/codreg/

1. NJ Uniform Construction Code (NJUCC) Plan Review

Consultant shall estimate the cost of the NJUCC Plan Review by DCA and include that amount in their fee proposal line item entitled **"Plan Review and Permit Fee Allowance"**, refer to paragraph X.A.

Upon approval of the Final Design Phase Submission by DPMC, the Consultant shall submit the construction documents to the Department of Community Affairs (DCA), Bureau of Construction Project Review to secure a complete plan release.

As of July 25, 2022, the Department of Community Affairs (DCA) is only accepting digital signatures and seals issued from a third party certificate authority. The DCA ePlans site can be found at:

https://www.nj.gov/dca/divisions/codes/offices/ePlans.html

Procedures for submission to the DCA Plan Review Unit can be found at:

https://www.state.nj.us/dca/divisions/codes/forms/pdf_bcpr/pr_app_guide.pdf

Consultant shall complete the "Project Review Application" and include the following on Block 5 as the "Owner's Designated Agent Name":

Joyce Spitale, DPMC
PO Box 235
Trenton, NJ 08625-0235
Joyce.Spitale@treas.nj.gov 609-943-5193

The Consultant shall complete the NJUCC "Plan Review Fee Schedule", determine the fee due and pay the NJUCC Plan Review fees, refer to Paragraph X.A.

The NJUCC "Plan Review Fee Schedule" can be found at:

http://www.state.nj.us/dca/divisions/codes/forms/pdf_bcpr/pr_fees.pdf

2. NJ Uniform Construction Code Permit:

Upon receipt of a complete plan release from the DCA Bureau of Construction Project Review, the Consultant shall complete the NJUCC permit application and all applicable technical sub-code sections. The "Agent Section" of the application and certification section of the building sub-code section shall be signed. These documents, with **six (6) sets of DCA approved, signed and sealed construction documents** shall be forwarded to the DPMC Project Manager.

The Consultant may obtain copies of all NJUCC permit applications at the following website:

http://www.state.nj.us/dca/divisions/codes/forms/

All other required project permits shall be obtained and paid for by the Consultant in accordance with the procedures described in Paragraph VIII.B.

3. Prior Approval Certification Letters:

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

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

4. Multi-building or Multi-site Permits:

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

5. Special Inspections:

In accordance with the requirements of the New Jersey Uniform Construction Code N.J.A.C. 5:23-2.20(b), Bulletin 03-5 and Chapter 17 of the International Building Code, the Consultant shall be responsible for the coordination of all special inspections during the construction phase of the project.

Bulletin 03-5 can be found at:

http://www.state.nj.us/dca/divisions/codes/publications/pdf_bulletins/b_03_5.pdf

a. Definition:

Special inspections are defined as an independent verification by a certified special inspector for **Class I buildings and smoke control systems in any class building**. The special inspector is to be independent from the Contractor and responsible to the Consultant so that there is no possible conflict of interest.

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

b. Responsibilities:

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

B. OTHER REGULATORY AGENCY PERMITS, CERTIFICATES AND APPROVALS

The Consultant shall identify and obtain all other State Regulatory Agency permits, certificates, and approvals that will govern and affect the work described in this Scope of Work. An itemized list of these permits, certificates, and approvals shall be included with the Consultant's Technical Proposal and the total amount of the application fees should be entered in the Fee Proposal line item entitled, **"Permit Fee Allowance."**

The Consultant may refer to the Division of Property Management and Construction "Procedures for Architects and Engineers Manual", Paragraph "**9. REGULATORY AGENCY APPROVALS"** which presents a compendium of State permits, certificates, and approvals that may be required for this project.

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

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

IX. ENERGY REBATE AND INCENTIVE PROGRAMS

The Consultant shall review any and all programs on the State and Federal level to determine if any proposed upgrades to the mechanical and/or electrical equipment and systems for this project qualify for approved rebates and incentives.

The Consultant shall review the programs available on the "New Jersey's Clean Energy Program" website at: http://www.njcleanenergy.com as well as federal websites and New Jersey electric and gas utility websites to determine if and how they can be applied to this project.

The Consultant shall identify all rebates and incentives in their technical proposal and throughout the design phase.

The Consultant shall be responsible to complete the appropriate registration forms and applications, provide any applicable worksheets, manufacturer's specification sheets, calculations, attend meetings, and participate in all activities with designated representatives of the programs and utility companies to obtain the entitled financial incentives and rebates for this project.

All costs associated with this work shall be estimated by the Consultant and the amount included in the base bid of its fee proposal.

X. ALLOWANCES

A. PLAN REVIEW AND PERMIT FEE ALLOWANCE

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

1. Permits:

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

2. Permit Costs:

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

NOTE: The NJ Uniform Construction Code permit is excluded since it will be paid for by the State.

3. Applications:

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

4. Consultant Fee:

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

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

XI. SOW SIGNATURE APPROVAL SHEET

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

The client agency approval signature on this page indicates that they have reviewed the design criteria and construction schedule described in this project Scope of Work (including the subsequent contract deliverables and exhibits) and verifies that the work will not conflict with the existing or future construction activities of other projects at the site.

SOW APPROVED BY: James Wright 1/26/2024
JAMES WRIGHT, MANAGER DATE
DPMC PROJECT PLANNING & INITIATION

SOW APPROVED BY: Yolanda Windom 1/30/2024
YOLANDA WINDOW, DIRECTOR DATE
OFFICE OF INFORMATION TECHNOLOGY REPRESENTATIVE

SOW APPROVED BY: amit mehta 01/30/2024
AMIT MEHTA, PROJECT MANAGER DATE
DPMC PROJECT MANAGEMENT GROUP

SOW APPROVED BY: 1/30/24
CHRISTOPHER GEARY, ASST. DEPUTY DIRECTOR DATE
DIV PROPERTY MGT & CONSTRUCTION

XII. CONTRACT DELIVERABLES

The following are checklists listing the Contract Deliverables that are required at the completion of each phase of this project. The Consultant shall refer to the DPMC publication entitled "Procedures for Architects and Engineers," 3.0 Edition, dated September 2022 available at https://www.nj.gov/treasury/dpmc/Assets/Files/ProceduresforArchitectsandEngineers.pdf for a detailed description of the deliverables required for each submission item listed. References to the applicable paragraphs of the "Procedures for Architects and Engineers" are provided.

Note that the Deliverables Checklist may include submission items that are "S.O.W. Specific Requirements". These requirements will be defined in the project specific scope of work and included on the deliverables checklist.

This project includes the following phases with the deliverables noted as "Required by S.O.W" on the Deliverables Checklist:

- **PROGRAM PHASE**
- **SCHEMATIC DESIGN PHASE**
- **DESIGN DEVELOPMENT PHASE**
- **FINAL DESIGN PHASE**
- **PERMIT APPLICATION PHASE**
- **BIDDING AND CONTRACT AWARD**
- **CONSTRUCTION PHASE**
- **PROJECT CLOSE-OUT PHASE**

XIII. EXHIBITS

A. SAMPLE PROJECT SCHEDULE FORMAT
B. PROJECT SITE LOCATION MAP
C. SINGLE LINE DIAGRAM
D. PROPOSED CCHP CONFIGURATION

END OF SCOPE OF WORK

DPMC Project No.: A1357-01

Deliverables Checklist
Program Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
12.3.1.	A/E Statement of Site Visit						
12.3.2.	Narrative Description of Project						
12.3.3.	Building Code Information Questionnaire						
12.3.4.	Space Analysis						
12.3.5.	Special Features						
12.3.6.	Catalog Cuts						
12.3.7.	Site Evaluation						
12.3.8.	Subsurface Investigation						
12.3.9.	Surveys						
12.3.10.	Fine Arts Inclusion						
12.3.11.	Design Rendering						
12.3.12.	Regulatory Approvals						
12.3.13.	Utility Availability						
12.3.14.	Diagrammatic Sketches/Drawings (6 Sets)						
12.3.15.	Outline Specifications (6 Sets)						
12.3.16.	Current Working Estimate/Cost Analysis						
12.3.17.	Project Schedule						
12.3.18.	Formal Presentation						
12.3.19.	Scope of Work Compliance Statement						
12.3.20.	Program Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1357-01

Deliverables Checklist
Schematic Design Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
13.4.1.	A/E Statement of Site Visit						
13.4.2.	Narrative Description of Project						
13.4.3.	Building Code Information Questionnaire						
13.4.4.	Space Analysis						
13.4.5.	Special Features						
13.4.6.	Catalog Cuts						
13.4.7.	Site Evaluation						
13.4.8.	Subsurface Investigation						
13.4.9.	Surveys						
13.4.10.	Arts Inclusion						
13.4.11.	Design Rendering						
13.4.12.	Regulatory Approvals						
13.4.13.	Utility Availability						
13.4.14.	Drawings (6 Sets)						
13.4.15.	Outline Specifications (6 Sets)						
13.4.16.	Current Working Estimate/Cost Analysis						
13.4.17.	Project Schedule						
13.4.18.	Formal Presentation						
13.4.19.	Scope of Work Compliance Statement						
13.4.20.	Schematic Design Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1357-01

Deliverables Checklist
Design Development Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
14.4.1.	A/E Statement of Site Visit						
14.4.2.	Narrative Description of Project						
14.4.3.	Building Code Information Questionnaire						
14.4.4.	Space Analysis						
14.4.5.	Special Features						
14.4.6.	Catalog Cuts						
14.4.7.	Site Evaluation						
14.4.8.	Subsurface Investigation						
14.4.9.	Surveys						
14.4.10.	Arts Inclusion						
14.4.11.	Design Rendering						
14.4.12.	Regulatory Approvals						
14.4.13.	Utility Availability						
14.4.14.	Drawings (6 Sets)						
14.4.15.	Outline Specifications (6 Sets)						
14.4.16.	Current Working Estimate/Cost Analysis						
14.4.17.	Project Schedule						
14.4.18.	Formal Presentation						
14.4.19.	Plan Review/Scope of Work Compliance Statement						
14.4.20.	Design development Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1357-01

Deliverables Checklist
Final Design Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
15.4.1.	A/E Statement of Site Visit						
15.4.2.	Narrative Description of Project						
15.4.3.	Building Code Information Questionnaire						
15.4.4.	Space Analysis						
15.4.5.	Special Features						
15.4.6.	Catalog Cuts						
15.4.7.	Site Evaluation						
15.4.8.	Subsurface Investigation						
15.4.9.	Surveys						
15.4.10.	Arts Inclusion						
15.4.11.	Design Rendering						
15.4.12.	Regulatory Approvals						
15.4.13.	Utility Availability						
15.4.14.	Drawings (6 Sets)						
15.4.15.	Outline Specifications (6 Sets)						
15.4.16.	Current Working Estimate/Cost Analysis						
15.4.17.	Project Schedule						
15.4.18.	Formal Presentation						
15.4.19.	Plan Review/Scope of Work Compliance Statement						
15.4.20.	Final Design Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1357-01

Deliverables Checklist
Permit Application Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
16.1.	N.J. UCC Permit Application						
16.4.	Drawings, Signed and Sealed (6 Sets)						
16.5.	Specifications, Signed and Sealed (6 Sets)						
16.6.	Current Working Estimate/Cost Analysis						
16.7.	Project Schedule						
16.8.	Plan Review/Scope of Work Compliance Statement						
16.9.	Permit Application Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC Project Manager the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1357-01

Deliverables Checklist
Bidding and Contract Award Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
17.1.1.	Notice of Advertising						
17.1.2.	Bid Proposal Form						
17.1.3.	Bid Clearance Form						
17.1.4.	Drawings (6 Sets)						
17.1.5.	Specifications (6 Sets)						
17.1.6.	Construction Schedule						
17.3	Pre-Bid Conference/Mandatory Site Visit						
17.3.1.	Meeting Minutes						
17.4	Bulletins						
17.5	Post Bid Meeting						
17.6.	Contract Award "Letter of Recommendation"						
17.8.	Bid Protests - Hearings						
17.9.	Bidding and Contract Award Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1357-01

Deliverables Checklist
Construction Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
18.2.	Pre-Construction Meeting						
18.3.	Submittal Log						
18.4.	Construction Schedule						
18.5.	Project Progress Meetings						
18.7.	Contractor's Invoicing and Payment Process						
18.8.	Contractor Submittals						
18.10.	Testing						
18.11.	Shop Drawings (6 Sets)						
18.12.	As-Built & Record Set Drawings (6 Sets)						
18.13.	Change Orders						
18.14.	Construction Photographs						
18.15.	Field Observations						
18.17.	Construction Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1357-01

Deliverables Checklist
Project Close-Out Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
19.3.	Development of Punch List and Inspection Reports						
19.5.	Determination of Substantial Completion						
19.6.	Correction/Completion of Punch List						
19.7.	Submission of Close-Out Documentation						
19.7.1.	As-Built and Record Sets of Drawing (6 Sets)						
19.8.	Final Payment						
19.9.1.	Contractors Final Payment						
19.9.2.	A/E's Final Payment						
19.10.	Project Close-Out Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

February 7, 1997
Rev.: January 29, 2002

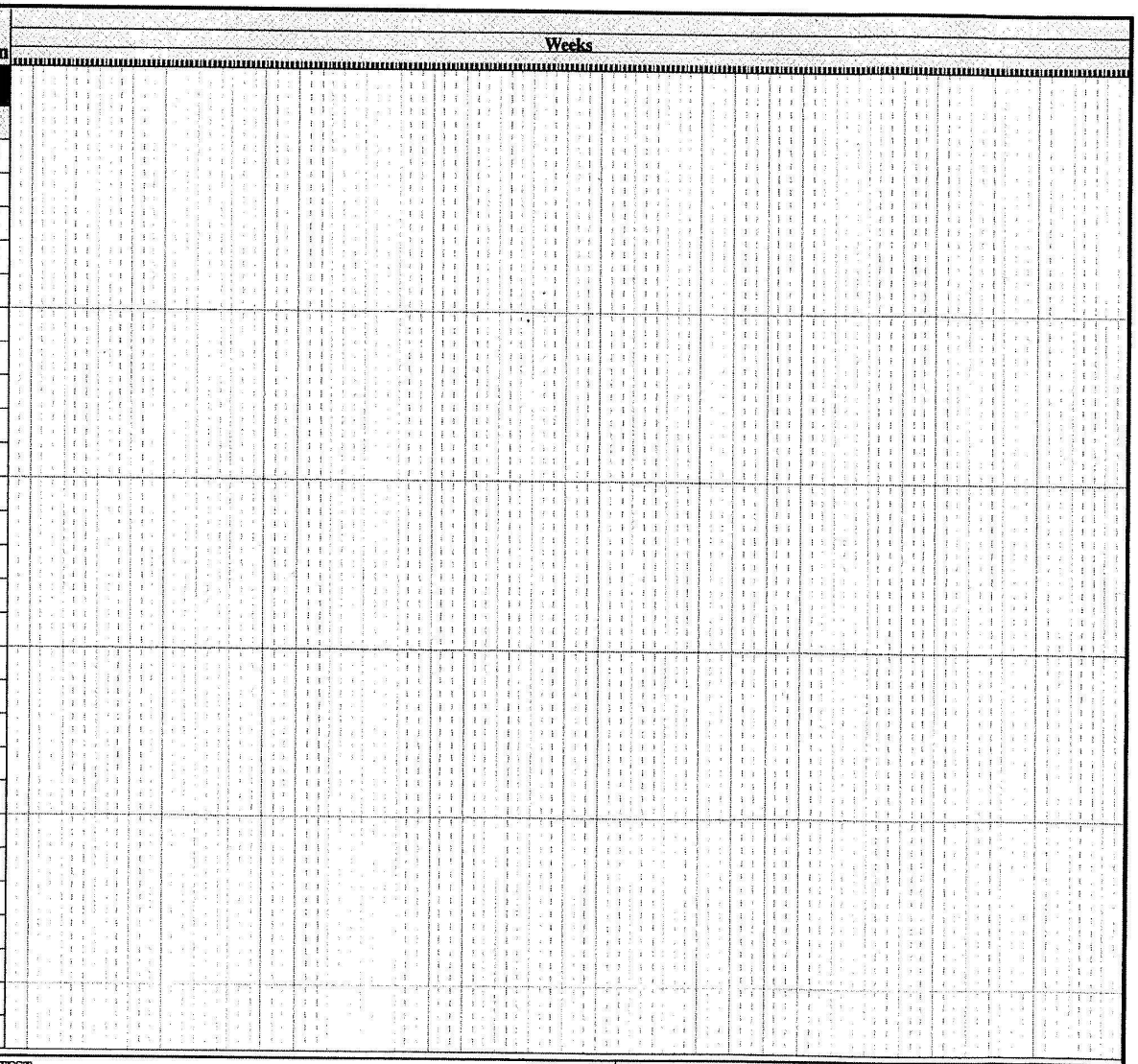
Responsible Group Code Table

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

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

EXHIBIT 'A'

Activity ID	Description	Rspn
<PROJ>		
Design		
CV3001	Schedule/Conduct Predesign/Project Kick-Off Mtg.	CM
CV3020	Prepare Program Phase Submittal	AE
CV3021	Distribute Program Submittal for Review	CM
CV3027	Prepare & Submit Project Cost Analysis (DPMC-38)	CM
CV3022	Review & Approve Program Submittal	CA
CV3023	Review & Approve Program Submittal	PR
CV3024	Review & Approve Program Submittal	CM
CV3025	Consolidate & Return Program Submittal Comments	CM
CV3030	Prepare Schematic Phase Submittal	AE
CV3031	Distribute Schematic Submittal for Review	CM
CV3037	Prepare & Submit Project Cost Analysis (DPMC-38)	CM
CV3032	Review & Approve Schematic Submittal	CA
CV3033	Review & Approve Schematic Submittal	PR
CV3034	Review & Approve Schematic Submittal	CM
CV3035	Consolidate & Return Schematic Submittal Comment	CM
CV3040	Prepare Design Development Phase Submittal	AE
CV3041	Distribute D. D. Submittal for Review	CM
CV3047	Prepare & Submit Project Cost Analysis (DPMC-38)	CM
CV3042	Review & Approve Design Development Submittal	CA
CV3043	Review & Approve Design Development Submittal	PR
CV3044	Review & Approve Design Development Submittal	CM
CV3045	Consolidate & Return D.D. Submittal Comments	CM
CV3050	Prepare Final Design Phase Submittal	AE
CV3051	Distribute Final Design Submittal for Review	CM
CV3052	Review & Approve Final Design Submittal	CA
CV3053	Review & Approve Final Design Submittal	PR
CV3054	Review Final Design Submitl for Constructability	OCS



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

DBCA - TEST

Sheet 1 of 3

Bureau of Design & Construction Services

EXHIBIT 'A'

Activity ID	Description	Rspn	Weeks
CV3055	Review & Approve Final Design Submittal	CM	
CV3056	Consolidate & Return Final Design Comments	CM	
CV3060	Prepare & Submit Permit Application Documents	AE	
CV3068	Prepare & Submit Bidding Cost Analysis (DPMC-38)	CM	
Plan Review-Permit Acquisition			
CV4001	Review Constr. Documents & Secure UCC Permit	PR	
CV4010	Provide Funding for Construction Contracts	CA	
CV4020	Secure Bid Clearance	CM	
Advertise-Bid-Award			
CV5001	Advertise Project & Bid Construction Contracts	CP	
CV5010	Open Construction Bids	CP	
CV5011	Evaluate Bids & Prep. Recommendation for Award	CM	
CV5012	Evaluate Bids & Prep. Recommendation for Award	AE	
CV5014	Complete Recommendation for Award	CP	
CV5020	Award Construction Contracts/Issue NTP	CP	
Construction			
CV6000	Project Construction Start/Issue NTP	CM	
CV6001	Contract Start/Contract Work (25%) Complete	CON	
CV6002	Preconstruction Meeting	CM	
CV6003	Begin Preconstruction Submittals	CON	
CV6004	Longest Lead Procurement Item Ordered	CON	
CV6005	Lead Time for Longest Lead Procurement Item	CON	
CV6006	Prepare & Submit Shop Drawings	CON	
CV6007	Complete Construction Submittals	CON	
CV6011	Roughing Work Start	CON	
CV6012	Perform Roughing Work	CON	
CV6010	Contract Work (50%+) Complete	CON	
CV6013	Longest Lead Procurement Item Delivered	CON	
CV6020	Contract Work (75%) Complete	CON	

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

DBCA - TEST

Sheet 2 of 3

Bureau of Design & Construction Services

EXHIBIT 'A'

Activity ID	Description	Rspn	Weeks
CV6014	Roughing Work Complete	CON	
CV6021	Interior Finishes Start	CON	
CV6022	Install Interior Finishes	CON	
CV6030	Contract Work to Substantial Completion	CON	
CV6031	Substantial Completion Declared	CM	
CV6075	Complete Deferred Punch List/Seasonal Activities	CON	
CV6079	Project Construction Complete	CM	
CV6080	Close Out Construction Contracts	CM	
CV6089	Construction Contracts Complete	CM	
CV6090	Close Out A/E Contract	CM	
CV6092	Project Completion Declared	CM	

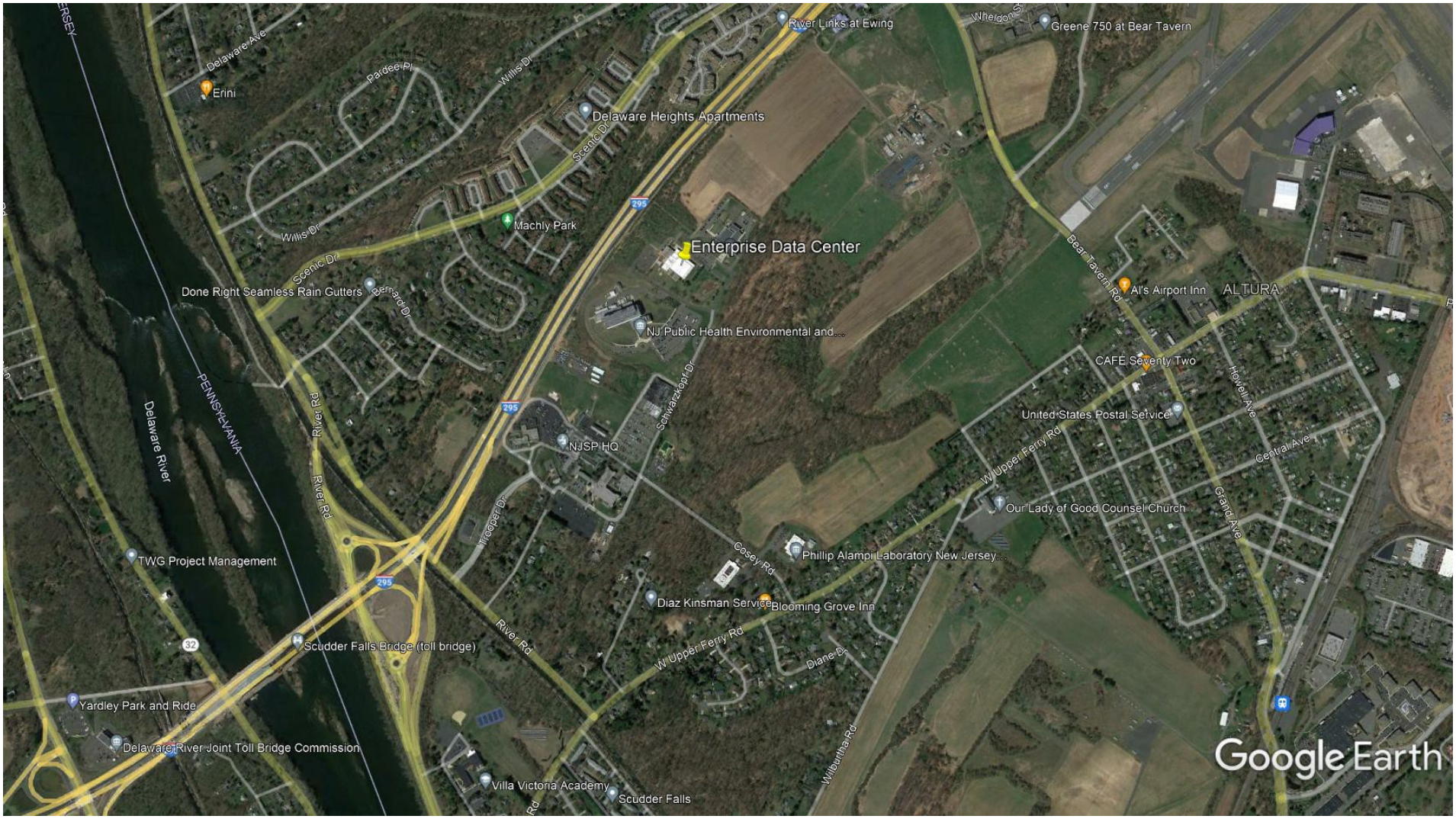
NOTE:
Refer to section "IV Project Schedule" of the Scope of Work for contract phase durations.

DBCA - TEST

Sheet 3 of 3

Bureau of Design & Construction Services

EXHIBIT 'A'



Project Site Location Map

Enterprise Data Center

EXHIBIT ‘B’

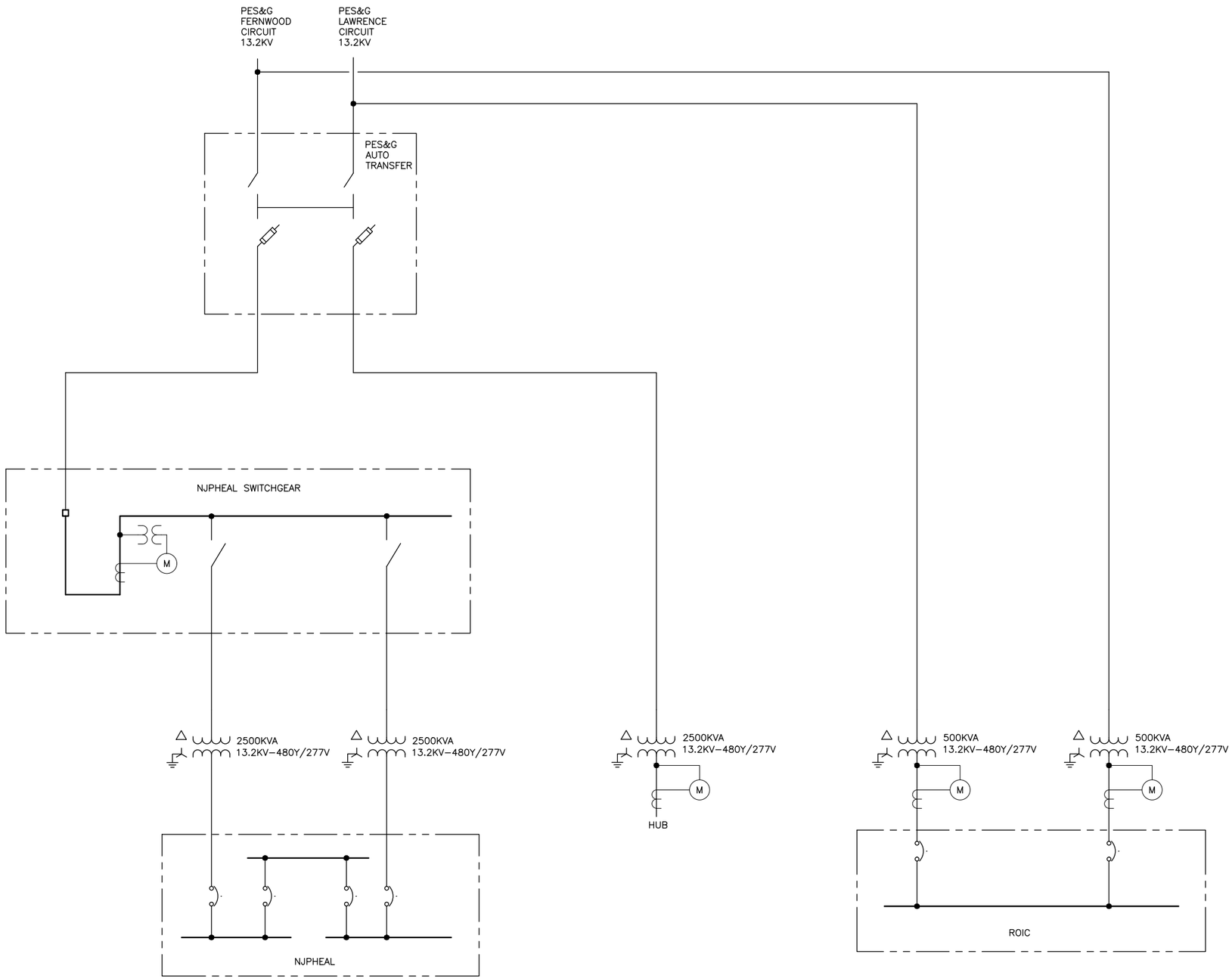


FIGURE 5

SINGLE LINE DIAGRAM
EXISTING PRIMARY CIRCUITS
TO NJPHEAL, HUB & ROIC

Gannett Fleming

1000 ATRIUM WAY,SUITE 300
MOUNT LAUREL, NJ 08054 TEL. (856-802-9930)
CERTIFICATE OF AUTHORIZATION NO. 24GA28032500

EXHIBIT 'C'

EDC (Enterprise Data Center)
Proposed CCHP Configuration
Phase 1

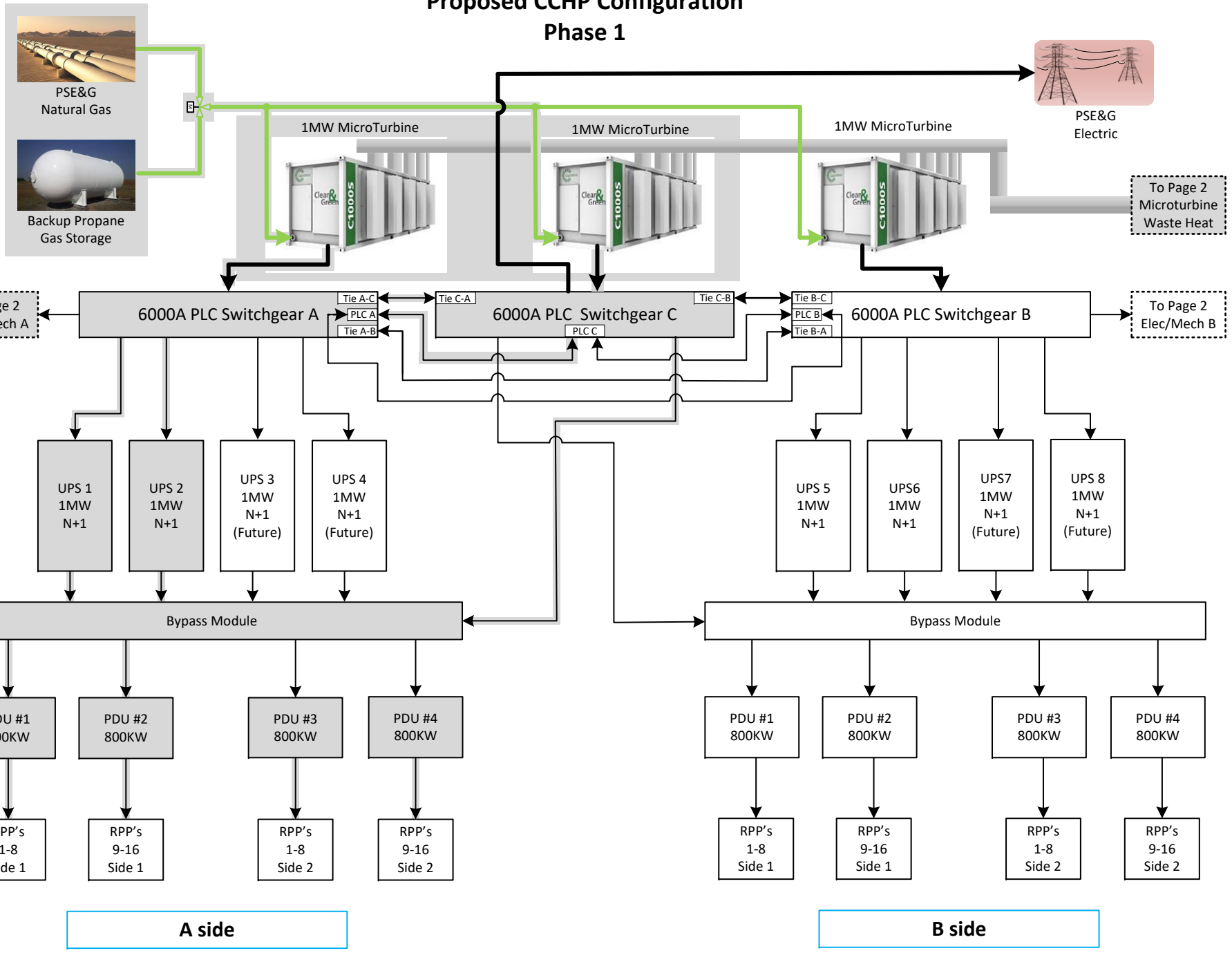


EXHIBIT 'D'

EDC (Enterprise Data Center)
Proposed CCHP Configuration
Phase 1

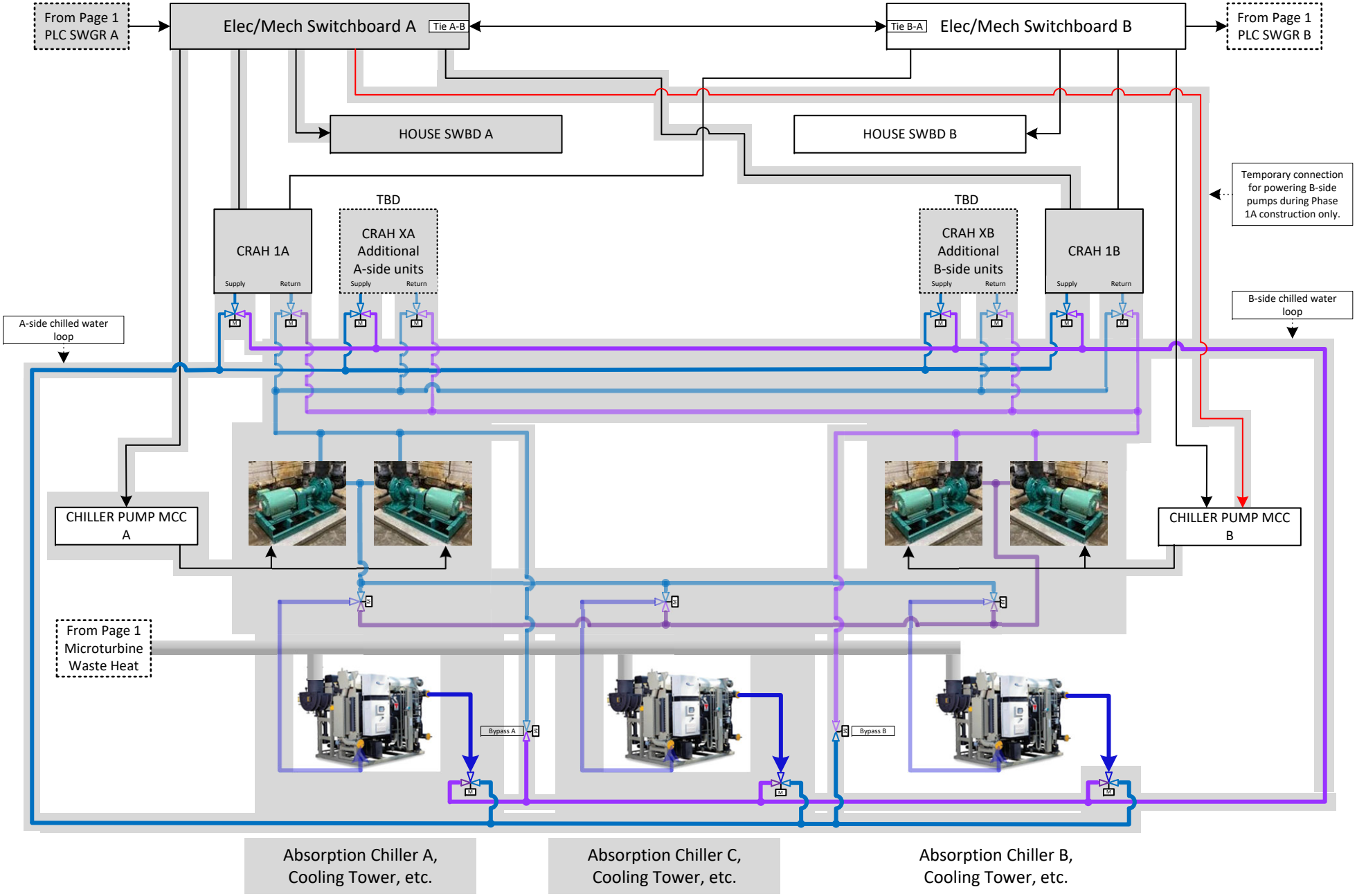


EXHIBIT ‘D’

Inclusions in Phase 1 but not shown on Pages 1 or 2:

1. One additional concrete mounting pad for future expansion of one additional microturbine enclosure for connection to 6000A Switchgear A. Pad should include empty capped conduit and capped gasline connection.

2. Two additional concrete mounting pads for future expansion of two additional microturbine enclosures for connection to 6000A Switchgear C. Pads should include empty capped conduits and capped gasline connections.

3. One additional concrete mounting pad for future expansion of one additional microturbine enclosure for connection to 6000A Switchgear B. Pad should include empty capped conduit and capped gasline connection.

4. Additional concrete mounting pads for future expansion of additional A-side UPS units 3 and 4 and their associated battery strings. Pads should include empty capped conduits if necessary.

5. Construct a new Fire Suppression zone for new A-side electrical and mechanical rooms.

6. Conversion of existing wet sprinkler system in the newly created A-side electrical and mechanical equipment area to a new pre-action zone. The existing sprinkler manifold will require expansion to accommodate the new zone.

7. Conversion of existing wet sprinkler system in the newly created A-side electrical and mechanical equipment area to a new pre-action zone. The existing sprinkler manifold will require expansion to accommodate the new zone.

8. Conversion of existing wet sprinkler system in the newly created A-side electrical and mechanical equipment area to a new pre-action zone. The existing sprinkler manifold will require expansion to accommodate the new zones.

9. Additional Liebert units for the UPS systems cooling.

10. New Building management system.

11. Hot water heating for the new mechanical rooms.
    - Heat exchanger
    - Pumps
    - Unit heaters
    - HW Valves
    - Bypass feeder

Inclusions in Phase 2 but not shown on Pages 1 or 2:

1. Demolition of existing A and B-side equipment and reconfiguration of existing A and B-side electrical and mechanical areas to accommodate new B-side electrical and mechanical equipment.

2. Additional concrete mounting pads for future expansion of additional B-side UPS units 7 and 8 and their associated battery strings. Pads should include empty capped conduits if necessary.

EXHIBIT ‘D’