

**Addendum
No. 1**

Meeting Date: August 5, 2026
Addendum Date: August 6, 2026
Project: Cooling Tower Replacement at TMC
DFM Project No: MC5508000005

The work herein shall be considered part of the bid documents for the referenced project and carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Acknowledge receipt of addendum on the bid form as indicated.

Pre-Bid Meeting Minutes / Clarifications:

1. Introductions:
 - a. State of DE OMB/DFM Project Manager – Brian Cotner
brian.cotner@delaware.gov / 302-739-5644
 - b. Studio JAED Project Manager – Dan Shurina
shurinad@studiojaed.com / 302-832-1652
2. See attached pre-bid sign in sheets for reference.
3. Review of bidding timeline.
 - a. Bids will be received by the State of Delaware, Office of Management and Budget, Division of Facilities Management, by way of the Bonfire Portal at <https://DFM/bonfirehub.com> until 10:00 AM, Thursday, August 20, 2026. Bids will be read aloud in the conference room at 11:00 AM.
 - b. Bidders are to submit questions in writing by email to Dan Shurina at the e-mail address noted above. Responses will be issued by addendum.
 - c. Bidder questions will be accepted until 4:00 PM Thursday, August 13, 2026.
4. All drawings must be purchased through RCI as noted in the bid advertisement. All information / addenda will be released through RCI for this bid. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THEY HAVE RECEIVED ALL ADDENDA FOR THE PROJECT.
5. The contractor is responsible for obtaining all required building permits and trade permits for the project.
6. The bid form is reissued with this addendum to include listed subcontractor categories. Listed subcontractor categories exclusively include HVAC, Electrical and Water Treatment.
7. The existing BAS is Automated Logic by Radius Systems. Modifications to existing BAS are to be performed by Radius Systems.

8. The project includes a \$10,000 allowance for unforeseen conditions which is to be included in contractor's base bid price and is to be used at the owner's discretion as project progresses. The allowance is not intended for any portion of work indicated in the bid documents. Any balance remaining in the allowance is to be returned to owner by credit change order at project conclusion.
9. Bid Form and Required Documents:
 - a. Bidders may not alter the bid form.
 - b. If bid form is reissued during the bidding process, the latest bid form is to be submitted.
 - c. Bidders are not to leave any blank lines on the bid form. Fill out bid form completely.
 - d. Bidders are to individually acknowledge receipt of each numbered addendum received on the bid form. Bidders must list themselves for any listed subcontractor scope of work if they intend to do the scope of work with their own work force.
 - e. Completed drug testing affidavit forms are required with each bid. The drug testing affidavit declares compliance with drug testing requirements for the bidder and all listed subcontractors.
 - f. A bid bond is required to be submitted with the bid. Bidders are to use the state bid bond form, a copy of which is found in the project manual.
10. In general, work is to be performed during normal business hours (Monday through Friday, 8:00 am through 4:30 pm with minor adjustments as needed to accommodate the owner's schedule unless noted otherwise in the documents – and the Contractor may begin the work once all materials to complete the project are in-hand and following Owner's approval of the Contractor's work schedule.
11. It was noted during the pre-bid meeting that work is to be sequenced seasonally such that the entire cooling system is operational between October 15th and April 15th, but that has changed. **The cooling system is to be operational between December 15th and February 15th, annually, with minor adjustments as required by the Owner to maintain building setpoints.** Contractor shall provide temporary cooling tower of equal capacity to new cooling tower with temporary electrical and condenser water connections – and modifications as required in the event the condenser water system is not operational by the required date.
12. The contractor shall shut down the cooling tower and leave connected for one week prior to cooling tower demolition in order to measure building performance without cooling tower function.

13. See 01 10 00 Summary of Work for requirements related to HVAC shutdowns, utility outages and work sequencing.
14. Immediately following the pre-bid meeting, a voluntary walkthrough was conducted at the project site.

Changes to Specifications:

1. Specification 00 41 13 – Bid Form
 - a. Amended to include subcontractor categories decided upon at mandatory pre-bid meeting.
 - b. See attached updated Bid Form.
2. Specification 01 10 00 – Summary
 - a. Amended scheduled cooling and heating seasons.
 - b. See attached updated specification.
3. Specification 23 25 00 – HVAC Water Treatment
 - a. New specification section added.
 - b. See attached specification.

Changes to Drawings:

1. Drawing M-500 – Mechanical Equipment Schedules & Details
 - a. Revised erroneous pipe size tags and flow directions.
 - b. See attached updated drawing.

Attachments:

1. Pre-Bid Sign-In Sheet (Scanned)
2. Pre-Bid Sign-In Sheet (Typed)
3. Specification 00 41 13 – Bid Form
4. Specification 01 10 00 – Summary
5. Specification 23 25 00 – HVAC Water Treatment
6. Drawing M-500 – Mechanical Equipment Schedules & Details

END



HEADQUARTERS

2500 WRANGLE HILL ROAD
FOX RUN OFFICE PLAZA, SUITE 110
BEAR, DE 19701

302.832.1652 PHONE
302.832.1423 FAX

ARCHITECTS

ENGINEERS

FACILITIES SOLUTIONS

Project: Cooling Tower Replacement at TMC
Project No.: MC5508000005

Start Time:
End Time:

Pre-Bid Meeting
August 5, 2026
SIGN IN SHEET

ATTACH BUSINESS CARD

and WRITE: Name, Firm, Phone, Email, Signature, Time

Name:	Justin Dennis
Firm:	Schlusser ; Associates
Phone:	302-738-7333
Email:	justin@schlusserandassociates.com
Signature:	Justin Dennis
Time:	9:53 AM
Name:	Edward Welch
Firm:	Flo Mechanical LLC
Phone:	302 530-1030
Email:	Jamese@flomechanical.com
Signature:	Edward Welch
Time:	9:55
Name:	Charles Pritt
Firm:	Merit Mechanical
Phone:	302-379-4256
Email:	charles@meritmec.com
Signature:	Charles Pritt
Time:	9:56

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and WRITE: Name, Firm, Phone, Email, Signature, Time

Name:	Jacob Giuliani
Firm:	ID Griffith Inc
Phone:	302-543-0990
Email:	amccracken@idgriffith.com
Signature:	Time: 9:57am
<i>Jacob Giuliani</i>	
Name:	Robert Stewart
Firm:	STATOWID Mechanical INC
Phone:	302-376-6117
Email:	RSTEWART@STATOWIDMECH.COM
Signature:	Time:
Name:	Darion Davis
Firm:	Joseph. T. Richardson
Phone:	302-398-8101
Email:	john@jtrmech.net
Signature:	Time: 10:00 am
<i>John Richardson</i>	



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August 5, 2026
SIGN IN SHEET

ATTACH BUSINESS CARD

and WRITE: Name, Firm, Phone, Email, Signature, Time

Ralph3@Degli.com

Name:	JORDAN Bellomo
Firm:	Energy Transfer Solutions
Phone:	302-563-2561
Email:	JBELLOMO@ETSHVAC.com
Signature:	Time: 10:00 am
Name:	Colin Kaufman
Firm:	ModernControls
Phone:	302-577-0539
Email:	ckaufman@moderncontrols.com
Signature:	Time: 10:00 am
Name:	Dave McKinley
Firm:	Ralph G. Degli Obizzi & Sons Inc.
Phone:	302-293-0467
Email:	David.McKinley@Degli.com
Signature:	Time: 10:00 am

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ARCHITECTS**ENGINEERS****FACILITIES SOLUTIONS**

Project: Cooling Tower Replacement at TMC
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Pre-Bid Meeting
August 5, 2026
SIGN IN SHEET

ATTACH BUSINESS CARD

and WRITE: Name, Firm, Phone, Email, Signature, Time

Name:	Jeff Connor
Firm:	Radius Systems LLC
Phone:	484-832-5804
Email:	jconnor@radiusystemsllc.com
Signature:	Jeff Connor
Name:	Shawn Rodgers
Firm:	Herc Rentals
Phone:	302-685-1279
Email:	Shawn.Rodgers@HercRentals.com
Signature:	Shawn Rodgers
Name:	Brandon Kessler
Firm:	East Coast Plumbing & HVAC
Phone:	(302) 545-8407
Email:	brandon@ecph.net
Signature:	Brandon Kessler

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Pre-Bid Meeting
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ATTACH BUSINESS CARD

and WRITE: Name, Firm, Phone, Email, Signature, Time

Name:	Steve Haass
Firm:	DeIDOT
Phone:	302 382 8031
Email:	Steve.Haass@DeIDOT.gov
Signature:	
Name:	
Firm:	
Phone:	
Email:	
Signature:	
Name:	
Firm:	
Phone:	
Email:	
Signature:	

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FAX

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ENGINEERS

FACILITIES SOLUTIONS

Project: Cooling Tower Replacement at Transportation Management Center (TMC)
Project No.: MC5508000005 Start Time: 11:00 AM
Date: August 5, 2026 End Time: 11:45 AM

**PRE-BID
SIGN IN SHEET**

1. Dan Shurina Studio JAED
302-832-1652
shurinad@studiojaed.com
2. Justin Dennis Schlosser & Associates
302-738-7333
justin@schlosserandassociates.com
3. Edward Welch FLO Mechanical LLC
302-530-1030
jamese@flomechanical.com
4. Charles Pruitt Merit Mechanical
302-379-4255
charles@meritmech.com



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Project: Cooling Tower Replacement at Transportation Management Center (TMC)
Project No.: MC5508000005 Start Time: 11:00 AM
Date: August 5, 2026 End Time: 11:45 AM

**PRE-BID
SIGN IN SHEET**

5. Jacob Giuliani ID Griffith Inc
302-593-0990
amccracken@idgriffith.com

6. Robert Stewart Statewide Mechanical Inc
302-376-6117
rstewart@statewidehvac.com

7. Darian Davis Joseph T Richardson
302-398-8101
john@jtrmech.com

8. Jordan Bellomo Energy Transfer Solutions
302-563-2561
jbello@etshvac.com

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2500 WRANGLE HILL ROAD

302.832.1652 **PHONE**

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302.832.1423 **FAX**

BEAR, DE 19701

ARCHITECTS**ENGINEERS****FACILITIES SOLUTIONS**

Project: Cooling Tower Replacement at Transportation Management Center (TMC)
Project No.: MC5508000005 Start Time: 11:00 AM
Date: August 5, 2026 End Time: 11:45 AM

**PRE-BID
SIGN IN SHEET**

-
- | | | |
|----|---------------|--|
| 9. | Colin Kaufman | Modern Controls |
| | | 302-577-0539 |
| | | ckaufman@moderncontrols.com |
-
-
- | | | |
|-----|---------------|---|
| 10. | Dave McKinley | Ralph Degli Obizzi & Sons Inc |
| | | 302-293-0467 |
| | | ralph3@degli.com / david.mckinley@degli.com |
-
-
- | | | |
|-----|---------------|--|
| 11. | Jeff O'Connor | Radius Systems LLC |
| | | 484-832-5804 |
| | | joconnor@radiussystemsllc.com |
-
-
- | | | |
|-----|---------------|--|
| 12. | Shaun Rodgers | Herc Rentals |
| | | 302-685-1279 |
| | | shaun.rodgers@hercrentals.com |



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Project: Cooling Tower Replacement at Transportation Management Center (TMC)
Project No.: MC5508000005 Start Time: 11:00 AM
Date: August 5, 2026 End Time: 11:45 AM

PRE-BID
SIGN IN SHEET

13. Brandon Kessler East Coast Plumbing & HVAC
302-545-8407
brandon@ecph.com

14. Steve Haass Delaware Department of Transportation
302-382-8031
steve.haass@delaware.gov

15. Brian Cotner Delaware OMB / Division of Facilities Management
302-739-5644
brian.cotner@delaware.gov

16. _____

COOLING TOWER REPLACEMENT
TRANSPORTATION MANAGEMENT CENTER
169 BRICK STORE LANDING ROAD, SMYRNA, DE 19977
CONTRACT # MC5508000005

BID FORM
00 41 13 - 1

BID FORM

COOLING TOWER REPLACEMENT
TRANSPORTATION MANAGEMENT CENTER
169 BRICK STORE LANDING ROAD, SMYRNA, DE 19977
CONTRACT # MC5508000005

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for thirty (30) days from the date of opening of bids (60 days for School Districts and Department of Education), and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

Should I/We be awarded this contract, I/We pledge to achieve substantial completion of all the work within _____ calendar days of the Notice to Proceed.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

(State of Corporation)

Business Address: _____

Witness: _____ By: _____
(SEAL) (Authorized Signature)

(Title)
Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Affidavit of Employee Drug Testing Program
Affidavit of Contractor Qualifications
Bid Security
(Others as Required by Project Manuals)

BID FORM

COOLING TOWER REPLACEMENT
TRANSPORTATION MANAGEMENT CENTER
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CONTRACT # MC5508000005

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 69, Section 6962(d)(10)b of the Delaware Code, the following subcontractor listing must accompany any bid submittal. The bidder must list **in each category** the full name and address (City & State) of the sub-contractor that the bidder will be using to perform the work and provide material for that subcontractor category. Should the bidder's listed subcontractor intend to provide any of their subcontractor category of work through a third-tier contractor, the bidder shall list that third-tier contractor's full name and address (City & State). **If the bidder intends to perform any category of work itself, it must list its full name and address.** For clarification, if the bidder intends to perform the work themselves, the bidder **may not** insert "not applicable", "N/A", "self" or anything other than its own full name and address (City & State). To do so shall cause the bid to be rejected. In addition, the failure to produce a completed subcontractor list with the bid submittal shall cause the bid to be rejected. If you have more than three (3) third-tier contractors to report in any subcontractor category, print out additional page(s) containing the appropriate category, complete the rest of your list of third-tier contractors for that category, notate the addition in parentheses as (CONTINUATION) next to the subcontractor category and an asterisk (*) next to any additional third-tier contractors, and submit it with your bid.

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>	<u>Subcontractors tax-payer ID # or Delaware Business license #</u>
1. HVAC			
A.			
B.			
C.			
2. Electrical			
A.			
B.			
C.			

BID FORM

COOLING TOWER REPLACEMENT
TRANSPORTATION MANAGEMENT CENTER
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CONTRACT # MC5508000005

SUBCONTRACTOR LIST CONTINUED

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>	<u>Subcontractors tax-payer ID # or Delaware Business license #</u>
3. Water Treatment			
A.			
B.			
C.			

BID FORM

COOLING TOWER REPLACEMENT
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CONTRACT # MC5508000005

**AFFIDAVIT
OF
CONTRACTOR QUALIFICATIONS**

We hereby certify that we will abide by the contractor's qualifications outlined in the construction bid specifications for the duration of the contract term.

In accordance with Title 29, Chapter 69, Section 6962(d)(10)b.3 of the Delaware Code, after a contract has been awarded the successful bidder shall not substitute another subcontractor whose name was submitted on the Subcontractor Form except for the reasons in the statute and not without written consent from the awarding agency. Failure to utilize the subcontractors on the list will subject the successful bidder to penalties as outlined in the General Requirements Section 5.2 of the contract.

Contractor Name: _____

Contractor Address: _____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID FORM

COOLING TOWER REPLACEMENT
TRANSPORTATION MANAGEMENT CENTER
169 BRICK STORE LANDING ROAD, SMYRNA, DE 19977
CONTRACT # MC5508000005

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date to the Office of Management and Budget, Division of Facilities Management.

All the terms and conditions of MC5508000005 have been thoroughly examined and are understood.

NAME OF BIDDER: _____

**AUTHORIZED REPRESENTATIVE
(TYPED):** _____

**AUTHORIZED REPRESENTATIVE
(SIGNATURE):** _____

TITLE: _____

ADDRESS OF BIDDER: _____

E-MAIL: _____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID FORM

COOLING TOWER REPLACEMENT
TRANSPORTATION MANAGEMENT CENTER
169 BRICK STORE LANDING ROAD, SMYRNA, DE 19977
CONTRACT # MC5508000005

**AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM**

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

END OF BID FORM

**SECTION 01 10 00
SUMMARY**

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: Cooling Tower Replacement at Transportation Management Center (TMC).
- B. Owner's Name: State of Delaware Office of Management and Budget / Division of Facilities Management.
- C. Architect / Engineer's Name: Studio JAED (SJ)
- D. The Project consists of:
 - 1. Demolition of select components of existing HVAC System.
 - 2. Installation of new HVAC Equipment, Piping and Appurtenances.
 - 3. Testing and balancing of existing HVAC equipment and pumps.
 - 4. Associated Electrical and HVAC Controls work.

1.02 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on a Stipulated Price as described in Division 00.

1.03 DESCRIPTION OF ALTERATIONS WORK

- A. Scope of demolition and removal work is shown on drawings.
- B. Scope of renovation work is shown on drawings and included in specifications.

1.04 WORK BY OWNER

- A. None.

1.05 OWNER OCCUPANCY

- A. Owner intends to continue to occupy portions of the existing building during the entire construction period.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner's occupancy.

1.06 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to the building premises.
- B. Provide access to and from site as required by law and by Owner:
 - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
 - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
 - 3. Adhere to owner's guidelines regarding entrance and egress to the site as identified during the pre-bid meeting.
- C. Utility Outages and Shutdown:
 - 1. Prevent accidental disruption of utility services to other facilities.
 - 2. Coordinate any interruption and/or shutdown of utilities with the owner at least 14 days in advance of the anticipated interruption and/or shutdown. Limit any interruptions/shutdowns to the absolute minimum amount of time.
 - 3. Any shutdown of a critical building system (including but not limited to HVAC, sprinkler, fire alarm, water, electric) is to occur during a coordinated, off-hours shutdown (either

daytime or overnight hours and either weekdays or weekends at owner's option).

Shutdown work is to proceed continuously until the critical building system is restored.

4. The owner reserves the right to reschedule construction shutdowns with minimal warning to the contractor as required to respond to emergencies.
5. The cooling system is to remain operational during cooling season (February 15th through December 15th) with minor adjustments as required by the Owner to maintain temperature and humidity setpoints. The cooling tower is to be replaced during a scheduled heating season (December 15th through February 15th) and the new tower is to be started prior to beginning of the following cooling season. In the event the new cooling tower is not started to the satisfaction of the owner prior to the subsequent cooling season, the Contractor is to provide a temporary cooling tower of equal capacity -- including staging, temporary hoses, breakers and feeders as required by NEC -- to facilitate mechanical cooling during the scheduled cooling season.

1.07 GENERAL STANDARDS

A. General Project Requirements

1. Notify the owner in the event any existing hazardous materials, such as asbestos, pcb's, lead, etc., are encountered on the project. The owner will arrange with a qualified specialist for the identification, testing, removal, handling and protection against exposure or environmental pollution, to comply with applicable regulations, laws and ordinances.
2. Prior to submitting bid, the contractor shall visit the site and be thoroughly familiar with the existing conditions and proposed construction. Contractor shall include in their bid all material, labor, and all incidentals for a complete installation whether specifically indicated or not. All errors, discrepancies and missed items shall be brought to the attention of the engineer during the bidding process by the contractor. These items shall be included in the bid price. No extra cost will be allowed for any discrepancy which could have been noticed at the site visit by the contractor.
3. Perform work as required by applicable codes, regulations, and laws of local, state, and federal governments and other authorities with lawful jurisdiction. All work shall be in accordance with the latest edition of the national electric code.
4. Material and equipment shall be UL, NEMA, ANSI, IEEE, ADA & CMB approved for intended purpose. Material and installation shall meet requirements of national and local electrical code.
5. Provide all labor, materials, tools, equipment, coordination, additional design and all incidentals necessary to provide a complete and operable system as detailed on plans to the satisfaction of the engineer and the owner. Coordinate all work with the engineer before the start of work.
6. Prior to submitting bid, the contractor shall visit the site and be thoroughly familiar with the existing conditions and proposed construction. Contractor shall include in their bid all material, labor, and all incidentals for a complete installation whether specifically indicated or not. All errors, discrepancies and missed items shall be brought to the attention of the engineer during the bidding process by the contractor. These items shall be included in the bid price. No extra cost will be allowed for any discrepancy which could have been noticed at the site visit by the contractor.
7. Perform work as required by applicable codes, regulations, and laws of local, state, and federal governments and other authorities with lawful jurisdiction. All work shall be in accordance with the latest edition of the national electric code.
8. Material and equipment shall be ul, nema, ansi, ieee, ada & cmb approved for intended purpose. Material and installation shall meet requirements of national and local electrical code.

9. The contractor shall be responsible for all additional costs incurred as a result of substitutions or deviations from the basis of design shown on these drawings.
10. Give notices, file plans, obtain permits, and licenses, pay fees and back charges, and obtain necessary approvals from authorities that have jurisdiction.
11. Maintain record drawings on site. Record set must be complete and current and available for inspection when requisitions for payment are submitted.
12. Guarantee work in writing per specifications, repair or replace defective materials or installation at no cost to owner during the guarantee period. Correct damage caused in making necessary repairs and replacements under guarantee at no cost to owner. Submit guarantee to owner before final payment.
13. Coordinate all electrical items with existing field conditions. Locations shown are approximate and may require minor adjustment in the field to satisfy the design intent.
14. Damage to existing facilities and equipment shall be repaired or replaced immediately by the contractor at no additional expense to the owner.
15. The locations on these plans are approximate and require coordination with all other trades and verification of existing conditions. The contractor is responsible for field verification of all existing associated conditions. Contractor is responsible for obtaining all other trade's drawings and specifications and coordinating with all other trades during bidding and construction.
16. Contractor shall be responsible for maintaining continuity of all power, control, fire alarm, security systems, and communications functions to all areas affected by demolition and/or new construction.
17. Repair and patch any disturbed areas to match adjacent construction.
18. Disconnect and make safe any equipment to be removed by others. Coordinate removal of equipment with other trades prior to demolition.
19. In any area requiring the performance of any trade's work, this contractor shall carefully remove and store any or all electrical items in path of work, reinstalling, and reconnecting same as required, in accordance with the plans and/or as directed after completion of other trade's work in that area.
20. Prior to the start of demolition, contractor shall field verify all branch circuits and maintain those circuits that extend outside the scope of work.
21. After renovating existing electrical work, the contractor shall ensure that all remaining and new equipment will operate properly, including but not limited to backfeeding of existing power and lighting circuits. Refer to single line diagram.
22. All electrical work indicated to remain shall be suitably protected to prevent any damage.
23. Where electrical systems pass through renovated areas to serve other portions of the premises, systems shall be suitably protected to prevent damage or relocated and the systems restored to normal operation. Any outages in systems shall be coordinated with owner. Restore power to existing to remain equipment if interrupted by demolished circuits in the area.
24. Contractor shall submit for review, shop drawings for all equipment and materials used on the project. Submittals shall be reviewed by the architect before purchase of materials.
25. All wiring shall be copper, 600v, 75°/90° rated, flame-retardant, heat and moisture resistant.
26. Permanently label all new electrical equipment, including but not limited to, device designation and supply circuit designation. Update or replace panel directories to include new circuit information resulting from this project.
27. Provide temporary power and lighting for all trades as required to complete the project. All temporary and interim equipment shall be installed in accordance with all applicable codes and standards including, but not limited to NFPA 110 and NFPA 70.

28. Refer to specifications for additional information that is not shown on the drawings.
29. Openings in existing concrete walls and floors required for conduit installation shall be core drilled. Maximum core drill size shall be 5" in diameter. Core drill locations shall be spaced a minimum of 6" from each other measured from the outside edge of the core drill. All core drill openings shall be properly sealed according to their location and application.
30. All outages shall be kept to a minimum. All work that requires a sustained equipment outage shall be performed continuously around the clock until work is completed unless noted otherwise. Coordinate outages with owner representative.
31. Provide for each branch circuit and feeder circuit a dedicated equipment ground wire. For single phase branch circuits of 120 v/1ph or 277v/1 phase, provide dedicated hot, dedicated neutral and dedicated equipment ground wires. Sharing of neutral or equipment ground wires is not permitted. Wiring to all HVAC equipment or other trade equipment shall be in conduit. All equipment and feeder wiring in boiler room/electrical room shall be in rigid conduit. Use of mc cable is limited to branch circuit wiring above recessed ceiling or concealed in wall. Wiring to outlets on table shall be provide in either EMT conduit or flexible metal conduit.
32. Provide identification labels for all branch circuits and feeders circuits at junction boxes, panelboards, troughs, and splice boxes.
33. Provide unspliced feeders from panelboard or switchboard to all equipment. Splicing is permitted for single phase circuits for lighting and outlets only.
34. All wiring devices located in the basement are to be surface mounted with circuit wiring routed in surface mounted conduit per specifications. All other wiring devices shall be recessed unless noted otherwise.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 23 25 00
HVAC WATER TREATMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Materials.
 - 1. Condenser water system treatment (cooling towers).
- B. Cleaning of piping systems.
- C. Chemical treatment.

1.02 RELATED REQUIREMENTS

- A. Section 23 21 13 - Hydronic Piping.
- B. Section 23 21 14 - Hydronic Specialties.
- C. Section 23 09 13 - Instrumentation and Control Devices for HVAC.
- D. Section 26 05 83 - Wiring Connections: Electrical characteristics and wiring connections.

1.03 SUBMITTALS

- A. See Section 01 33 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide chemical treatment materials, chemicals, and equipment including electrical characteristics and connection requirements.
- C. Shop Drawings: Indicate system schematic, equipment locations, and controls schematics, electrical characteristics and connection requirements.
- D. Manufacturer's Installation Instructions: Indicate placement of equipment in systems, piping configuration, and connection requirements.
- E. Manufacturer's Field Reports: Indicate start-up of treatment systems when completed and operating properly. Indicate analysis of system water after cleaning and after treatment.
- F. Certificate: Submit certificate of compliance from authority having jurisdiction indicating approval of chemicals and their proposed disposal.
- G. Project Record Documents: Record actual locations of equipment and piping, including sampling points and location of chemical injectors.
- H. Operation and Maintenance Data: Include data on chemical feed pumps, agitators, and other equipment including spare parts lists, procedures, and treatment programs. Include step by step instructions on test procedures including target concentrations.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum ten years of documented experience. Company shall have local representatives with water analysis laboratories and full time service personnel.
- B. Installer Qualifications: Company specializing in performing the type of work specified in this section, with minimum five years of documented experience and approved by manufacturer.

1.05 REGULATORY REQUIREMENTS

- A. Conform to applicable code for addition of non-potable chemicals to building mechanical systems and to public sewage systems.
- B. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose specified and indicated.

1.06 MAINTENANCE MATERIALS

- A. See Section 01 6000 - Product Requirements, for additional provisions.
- B. Supply sufficient chemicals for startup treatment.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. General Requirements (at Contractor's expense):
 - 1. Contractor is to work with existing water treatment vendor (Tustin).
 - 2. Prior to beginning the work, the water treatment vendor shall shut down the existing water treatment system, store and protect on site to facilitate the work.
 - 3. During the work, the water treatment vendor shall provide assistance to the Contractor to field-locate required injection points in new piping and any other required appurtenances to facilitate water treatment system reinstallation.
 - 4. At conclusion of the work, the Contractor shall flush and clean the existing condenser water system to the satisfaction of the water treatment vendor. The water treatment vendor shall reinstall water treatment system and provide startup services in coordination with cooling tower startup.
 - 5. Upon project conclusion, the water treatment vendor shall resume existing term maintenance service agreement.

2.02 MATERIALS

- A. Condenser Water System Treatment (Cooling Towers):
 - 1. Manufacturers:
 - a. AmSolv/Division of Amrep, Inc: www.amsolv.com/#sle.
 - b. GE Water Technologies: www.gewater.com/#sle.
 - c. Nalco Company: www.nalco.com/#sle.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
 - 2. Sequestering agent to inhibit scaling; phosphonates, sodium polyphosphates, lignin derivatives, synthetic polymer polyelectrolytes, or organic phosphates.
 - 3. Acid to reduce alkalinity and pH; sulphuric acid.
 - 4. Corrosion inhibitor; zinc-phosphate, phosphonate-phosphate, phosphonate-molybdate and phosphonate-silicate, sodium tolyltriazole, or low molecular weight polymers.
 - 5. Biocide chlorine release agents such as sodium hypochlorite or calcium hypochlorite or microbiocides such as quaternary ammonia compounds, tributyl tin oxide, methylene bis (thiocyanate).

PART 3 EXECUTION

3.01 PREPARATION

- A. Systems shall be operational, filled, started, and vented prior to cleaning. Use water meter to record capacity in each system.
- B. Place terminal control valves in open position during cleaning.
- C. Verify that electric power is available and of the correct characteristics.

3.02 CLEANING SEQUENCE

- A. Concentration:
 - 1. As recommended by manufacturer.
- B. Chilled Water and Condenser Water Systems:
 - 1. Circulate for 48 hours, then drain systems as quickly as possible.
 - 2. Refill with clean water, circulate for 24 hours, then drain.

3. Refill with clean water and repeat until system cleaner is removed.
- C. Use neutralizer agents on recommendation of system cleaner supplier and approval of Construction Manager, Architect or Engineer of Record.
- D. Flush open systems and glycol filled closed systems with clean water for one hour minimum. Drain completely and refill.
- E. Remove, clean, and replace strainer screens.
- F. Inspect, remove sludge, and flush low points with clean water after cleaning process is completed. Include disassembly of components as required.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

3.04 CLOSEOUT ACTIVITIES

- A. Training: Train Owner's personnel on operation and maintenance of chemical treatment system.
 1. Provide minimum of two hours of instruction for two people.
 2. Have operation and maintenance data prepared and available for review during training.
 3. Conduct training using actual equipment after treated system has been put into full operation.

END OF SECTION