

Addendum 1

October 30, 2017

NOTE: The following amendments, additions, and deletions shall be made to the Construction Documents and Contract Documents. Insofar as those documents are at variance with this Addendum, this Addendum shall govern.

Clarifications

- | <u>Item No.</u> | <u>Description</u> |
|-----------------|---|
| 1. | <u>Clarification:</u> Alternate 1 includes the work as shown on sheet M2A. For the add alternate pricing, sheet M2A will replace M2. Pump schedule found on sheet M3 is tagged Alternate 1. Electrical work shown on sheet E2 is noted to be provided in Alternate 1. |
| 2. | <u>Clarification:</u> For underground utility location coordinate with USC, and PUPS will mark underground utilities prior to excavation. |
| 3. | <u>Clarification:</u> Miscellaneous pipes and conduit that interfere with routing of new condenser water pipes to the connection point shall be relocated, and the cost of such included in the contractor's bid. |
| 4. | <u>Clarification:</u> It is at the contractor's option to route the new underground condenser water pipes under the existing storm drain pipe, similar to the existing routing, or to rework the storm drain pipe and elevation as required to allow the new pipes to route above the reworked storm drain. |
| 5. | <u>Clarification:</u> The tower fan motor variable frequency drives are located inside per drawing E2. |
| 6. | <u>Clarification:</u> The cooling tower basin heaters ship loose for field mounting. Power wiring required is shown on electrical plans. |
| 7. | <u>Clarification:</u> At the contractor's option welded pipe can be furnished. If pipe is welded, flexible couplings equal to Flex-Hose Pumpsaver flexible connectors type 321 shall be required at the new condenser water pump. |
| 8. | <u>Clarification:</u> |

Question: Will there be a need for a temporary cooling tower on this project? If so who would be responsible?

Answer: A temporary cooling tower will not be required for this project. Chiller will be shut down when tower is being replaced.

9. Clarification:

Question: Will the underground piping be black steel? Will it have a wrap on it?

Answer: Underground piping will be black steel. Underground piping will be insulated with Foamglas and jacketed with Pittwrap per addendum item below.

Drawings

Item No. Description

1. Revision: Reference Drawing M1, Site Plan at Blossom Street. The new cooling tower tag shall be changed to CT-3 to match the schedule on sheet M3.
2. Revision: Reference Drawing M3 Details, Notes, Schedules and Legend. Refer to Cooling Tower Schedule Note 1. Change note to read: "Provide two cell stainless steel construction counter flow cooling tower with belt drive premium efficiency fan motors and variable frequency drives."
3. Revision: Reference Drawing E1 Electrical Site Plan at Blossom Street. Clarify that underground electrical conduit shall be offset from condenser water piping.
4. Revision: Reference Drawing E1 Electrical Site Plan at Blossom Street. Clarify that electrical contractor shall include connections from basin heater controllers to heating elements.
5. Revision: Reference Drawing E2 West Energy Facility Basement Electrical Plan. Change description of mechanical controls for CT fans from starters to VFD's.

Specifications

Item No. Description

1. Revision: Reference SE-330 Lump Sum Bid Form. The attached SE-330 shall be used, and the Electrical sub shall be listed on the form.
2. Revision: Reference Specification Section 230010 General Provisions - HVAC. The following manufacturers are to be listed as prior approved.

Variable Frequency Drives: ABB, Danfoss, Square D

Energy Plant Repairs and Modifications
University of South Carolina
State Project Number: H27-Z215

3. Revision: Reference Specification Section 230500 HVAC. In Section 2.9 Pumps add paragraph:
 - D. Variable frequency drive shall be equal to Square D Altivar 660 with hand-off-auto selector, remote graphic keypad, Nema1 enclosure, bypass, and Bacnet interface.

4. Revision: Reference Specification Section 230700 HVAC Insulation. Add the following paragraphs:
 - 2.5 UNDERGROUND PIPING:
 - A. All piping insulation underground shall be Foamglas as manufactured by Pittsburg Corning or equal, jacketed with CW Plus Pittwrap jacketing.

 - 3.5 UNDERGROUND PIPING:
 - A. Insulation shall have all joints closely butted. Insulation shall be jacketed with the manufacturer's recommended waterproofing membrane, installed as per the manufacturer's suggested application procedures, see Supplemental Instructions for Field-Applied Jacketing in Pittwrap CW Plus Jacketing product data sheet.

END OF ADDENDUM

Attachments:

SE-330 – Rev1

E1 – Rev1

E2 – Rev1

Pre-Bid Meeting Sign in Sheet

SE-330 LUMP SUM BID FORM

Bidders shall submit bids on only Bid Form SE-330.

BID SUBMITTED BY: _____
(Bidder's Name)

BID SUBMITTED TO: _____
(Owner's Name)

FOR: PROJECT NAME: Energy Plant Repairs and Modifications
PROJECT NUMBER: H27-Z215

OFFER

- § 1. In response to the Invitation for Construction Services and in compliance with the Instructions to Bidders for the above-named Project, the undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with the Owner on the terms included in the Bidding Documents, and to perform all Work as specified or indicated in the Bidding Documents, for the prices and within the time frames indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.
- § 2. Pursuant to Section 11-35-3030(1) of the SC Code of Laws, as amended, Bidder has submitted Bid Security as follows in the amount and form required by the Bidding Documents:

Bid Bond with Power of Attorney Electronic Bid Bond Cashier's Check
(Bidder check one)

- § 3. Bidder acknowledges the receipt of the following Addenda to the Bidding Documents and has incorporated the effects of said Addenda into this Bid:
(Bidder, check all that apply. Note, there may be more boxes than actual addenda. Do not check boxes that do not apply.)

ADDENDA: #1 #2 #3 #4 #5

- § 4. Bidder accepts all terms and conditions of the Invitation for Bids, including, without limitation, those dealing with the disposition of Bid Security. Bidder agrees that this Bid, including all Bid Alternates, if any, may not be revoked or withdrawn after the opening of bids, and shall remain open for acceptance for a period of **60** Days following the Bid Date, or for such longer period of time that Bidder may agree to in writing upon request of the Owner.
- § 5. Bidder herewith offers to provide all labor, materials, equipment, tools of trades and labor, accessories, appliances, warranties and guarantees, and to pay all royalties, fees, permits, licenses and applicable taxes necessary to complete the following items of construction work:
- § 6.1 **BASE BID WORK** (as indicated in the Bidding Documents and generally described as follows): Replace cooling tower and condenser water pump in West Energy Plant.

\$ _____, which sum is hereafter called the Base Bid.
(Bidder to insert Base Bid Amount on line above)

SE-330
LUMP SUM BID FORM

§ 6.2 **BID ALTERNATES** as indicated in the Bidding Documents and generally described as follows:

ALTERNATE # 1 (Brief Description): Provide New Condenser Water Pump

ADD TO or **DEDUCT FROM BASE BID: \$** _____

(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)

ALTERNATE # 2 (Brief Description): _____

ADD TO or **DEDUCT FROM BASE BID: \$** _____

(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)

ALTERNATE # 3 (Brief Description): _____

ADD TO or **DEDUCT FROM BASE BID: \$** _____

(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)

§ 6.3 **UNIT PRICES:**

BIDDER offers for the Agency’s consideration and use, the following **UNIT PRICES**. The **UNIT PRICES** offered by **BIDDER** indicate the amount to be added to or deducted from the **CONTRACT SUM** for each item-unit combination. **UNIT PRICES** include all costs to the Agency, including those for materials, labor, equipment, tools of trades and labor, fees, taxes, insurance, bonding, overhead, profit, etc. The Agency reserves the right to include or not to include any of the following **UNIT PRICES** in the Contract and to negotiate the **UNIT PRICES** with **BIDDER**.

<u>No.</u>	<u>ITEM</u>	<u>UNIT OF MEASURE</u>	<u>ADD</u>	<u>DEDUCT</u>
<u>1.</u>	_____	_____	<u>\$</u> _____	<u>\$</u> _____
<u>2.</u>	_____	_____	<u>\$</u> _____	<u>\$</u> _____
<u>3.</u>	_____	_____	<u>\$</u> _____	<u>\$</u> _____
<u>4.</u>	_____	_____	<u>\$</u> _____	<u>\$</u> _____
<u>5.</u>	_____	_____	<u>\$</u> _____	<u>\$</u> _____
<u>6.</u>	_____	_____	<u>\$</u> _____	<u>\$</u> _____

**SE-330
LUMP SUM BID FORM**

§ 7. LISTING OF PROPOSED SUBCONTRACTORS PURSUANT TO SECTION 3020(b)(i), CHAPTER 35, TITLE 11 OF THE SOUTH CAROLINA CODE OF LAWS, AS AMENDED
(See Instructions on the following page BF-2A)

Bidder shall use the below-listed Subcontractors in the performance of the Subcontractor Classification work listed:

SUBCONTRACTOR CLASSIFICATION By License Classification and/or Subclassification <i>(Completed by Owner)</i>	SUBCONTRACTOR'S PRIME CONTRACTOR'S NAME <i>(Must be completed by Bidder)</i>	SUBCONTRACTOR'S PRIME CONTRACTOR'S SC LICENSE NUMBER <i>(Requested, but not Required)</i>
BASE BID		
Electrical		
ALTERNATE #1		
Electrical		
ALTERNATE #2		
ALTERNATE #3		

If a Bid Alternate is accepted, Subcontractors listed for the Bid Alternate shall be used for the work of both the Alternate and the Base Bid work.

SE-330
LUMP SUM BID FORM

**INSTRUCTIONS FOR
SUBCONTRACTOR LISTING**

1. Section 7 of the Bid Form sets forth an Owner developed list of contractor/subcontractor specialties by contractor license category and/or subcategory for which bidder is required to identify the entity (subcontractor(s) and/or himself) Bidder will use to perform the work of each listed specialty..
 - a. **Column A:** The Owner fills out this column, which identifies the contractor/subcontractor specialties for which the bidder must list either a subcontractor or himself as the entity that will perform this work. Subcontractor specialties are identified by contractor license categories or subcategories listed in Title 40 of the South Carolina Code of laws. Abbreviations of classifications to be listed after the specialty can be found at: <http://www.llr.state.sc.us/POL/Contractors/PDFFiles/CLBClassificationAbbreviations.pdf> . If the owner has not identified a specialty, the bidder does not list a subcontractor.
 - b. **Columns B and C:** In these columns, the Bidder identifies the subcontractors it will use for the work of each specialty listed by the Owner in Column A. Bidder must identify only the subcontractor(s) who will perform the work and no others. Bidders should make sure that their identification of each subcontractor is clear and unambiguous. A listing that could be any number of different entities may be cause for rejection of the bid as non-responsive. For example, a listing of M&M without more may be problematic if there are multiple different licensed contractors in South Carolina whose names start with M&M.
2. **Subcontractor Defined:** For purposes of subcontractor listing, a subcontractor is an entity who will perform work or render service to the prime contractor to or about the construction site pursuant to a contract with the prime contractor. Bidder should not identify sub-subcontractors in the spaces provided on the bid form but only those entities with which bidder will contract directly. Likewise, do not identify material suppliers, manufacturers, and fabricators that will not perform physical work at the site of the project but will only supply materials or equipment to the bidder or proposed subcontractor(s).
3. **Subcontractor Qualifications:** Bidder must only list subcontractors who possess a South Carolina Contractor's license with the license classification and/or subclassification identified by the Owner in the first column on the left. The subcontractor license must also be within the appropriate license group for the work of the specialty. If Bidder lists a subcontractor who is not qualified to perform the work, the Bidder will be rejected as non-responsive.
4. **Use of Own forces:** If under the terms of the Bidding Documents, Bidder is qualified to perform the work of a listed specialty and Bidder does not intend to subcontract such work but to use Bidder's own employees to perform such work, the Bidder must insert its own name in the space provided for that specialty.
5. **Use of Multiple Subcontractors:**
 - a. If Bidder intends to use multiple subcontractors to perform the work of a single specialty listing, Bidder must insert the name of each subcontractor Bidder will use, preferably separating the name of each by the word **"and"**. If Bidder intends to use both his own employees to perform a part of the work of a single specialty listing and to use one or more subcontractors to perform the remaining work for that specialty listing, bidder must insert his own name and the name of each subcontractor, preferably separating the name of each with the word **"and"**. Bidder must use each entity listed for the work of a single specialty listing in the performance of that work.
 - b. **Optional Listing Prohibited:** Bidder may not list multiple subcontractors for a specialty listing, in a form that provides the Bidder the option, after bid opening or award, to choose to use one or more but not all the listed subcontractors to perform the work for which they are listed. A listing, which on its face requires subsequent explanation to determine whether it is an optional listing, is non-responsive. If bidder intends to use multiple entities to perform the work for a single specialty listing, bidder must clearly set forth on the bid form such intent. Bidder may accomplish this by simply inserting the word **"and"** between the names of each entity listed for that specialty. Agency will reject as non-responsive a listing that contains the names of multiple subcontractors separated by a blank space, the word "or", a virgule (that is a /), or any separator that the Agency may reasonably interpret as an optional listing.
6. If Bidder is awarded the contract, bidder must, except with the approval of the Agency for good cause shown, use the listed entities to perform the work for which they are listed.
7. If bidder is awarded the contract, bidder will not be allowed to substitute another entity as subcontractor in place of a subcontractor listed in Section 7 of the Bid except for one or more of the reasons allowed by the SC Code of Laws.
8. Bidder's failure to identify an entity (subcontractor or himself) to perform the work of a subcontractor specialty listed in the first column on the left will render the Bid non-responsive.

SE-330 LUMP SUM BID FORM

§ 8. LIST OF MANUFACTURERS, MATERIAL SUPPLIERS, AND SUBCONTRACTORS OTHER THAN SUBCONTRACTORS LISTED IN SECTION 7 ABOVE (*FOR INFORMATION ONLY*):

Pursuant to instructions in the Invitation for Construction Services, if any, Bidder will provide to Owner upon the Owner's request and within 24 hours of such request, a listing of manufacturers, material suppliers, and subcontractors, other than those listed in Section 7 above, that Bidder intends to use on the project. Bidder acknowledges and agrees that this list is provided for purposes of determining responsibility and not pursuant to the subcontractor listing requirements of SC Code Ann § 11-35-3020(b)(i).

§ 9. TIME OF CONTRACT PERFORMANCE AND LIQUIDATED DAMAGES

a) CONTRACT TIME

Bidder agrees that the Date of Commencement of the Work shall be established in a Notice to Proceed to be issued by the Owner. Bidder agrees to substantially complete the Work within 90 Calendar Days from the Date of Commencement, subject to adjustments as provided in the Contract Documents.

b) LIQUIDATED DAMAGES

Bidder further agrees that from the compensation to be paid, the Owner shall retain as Liquidated Damages the amount of \$ 250.00 for each Calendar Day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted time for Substantial Completion as provided in the Contract Documents. This amount is intended by the parties as the predetermined measure of compensation for actual damages, not as a penalty for nonperformance.

§ 10. AGREEMENTS

- a) Bidder agrees that this bid is subject to the requirements of the laws of the State of South Carolina.
- b) Bidder agrees that at any time prior to the issuance of the Notice to Proceed for this Project, this Project may be canceled for the convenience of, and without cost to, the State.
- c) Bidder agrees that neither the State of South Carolina nor any of its agencies, employees or agents shall be responsible for any bid preparation costs, or any costs or charges of any type, should all bids be rejected or the Project canceled for any reason prior to the issuance of the Notice to Proceed.

§ 11. ELECTRONIC BID BOND

By signing below, the Principal is affirming that the identified electronic bid bond has been executed and that the Principal and Surety are firmly bound unto the State of South Carolina under the terms and conditions of the AIA Document A310, Bid Bond, included in the Bidding Documents.

ELECTRONIC BID BOND NUMBER: _____

SIGNATURE AND TITLE: _____

**SE-330
LUMP SUM BID FORM**

CONTRACTOR'S CLASSIFICATIONS AND SUBCLASSIFICATIONS WITH LIMITATION

SC Contractor's License Number(s): _____

Classification(s) & Limits: _____

Subclassification(s) & Limits: _____

By signing this Bid, the person signing reaffirms all representation and certification made by both the person signing and the Bidder, including without limitation, those appearing in Article 2 of the Instructions to Bidders, is expressly incorporated by reference.

BIDDER'S LEGAL NAME: _____

ADDRESS: _____

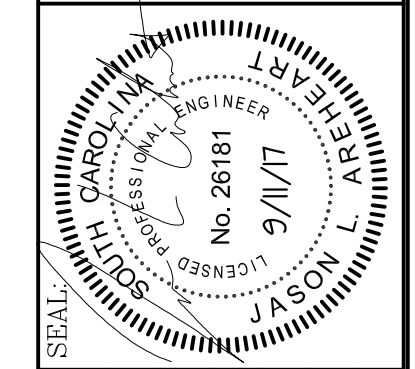
TELEPHONE: _____

EMAIL: _____

SIGNATURE: _____ **DATE:** _____

PRINT NAME: _____

TITLE: _____



CHECKED BY:	JLA
ORIG. BY:	JLA
DATE:	10/30/17
DRAWN BY:	JLA
DATE:	11 SEPT 17
DRAWING:	DESCRIPTION
BUILDING:	REV
ADDENDUM #1	

ENERGY PLANT REPAIRS AND MODIFICATIONS
STATE PROJECT NUMBER: H27-2215
University of South Carolina

PROJECT TITLE: ENERGY PLANT REPAIRS AND MODIFICATIONS
SHEET: E1
1 OF 2
SHEET IN SET: OF

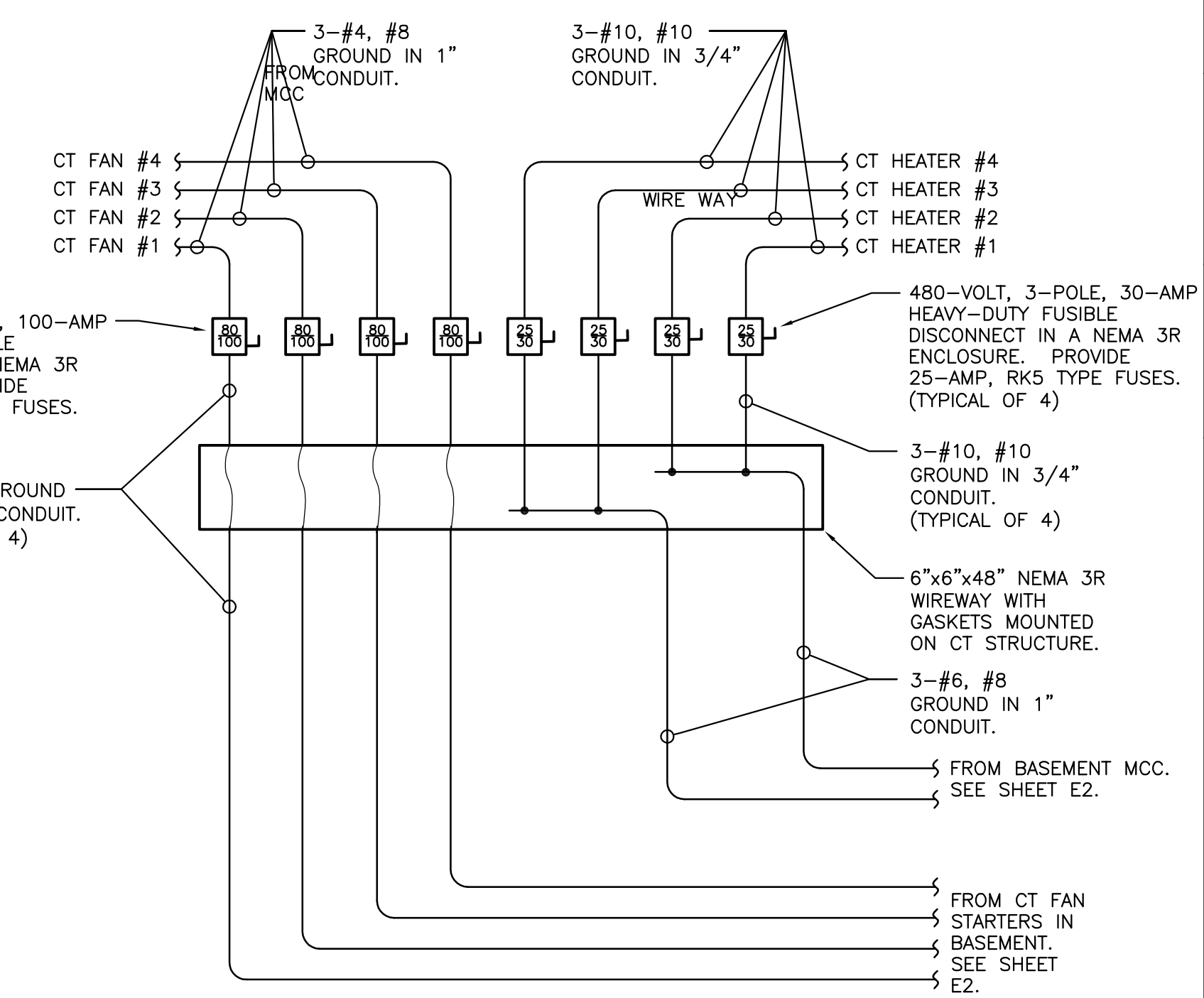
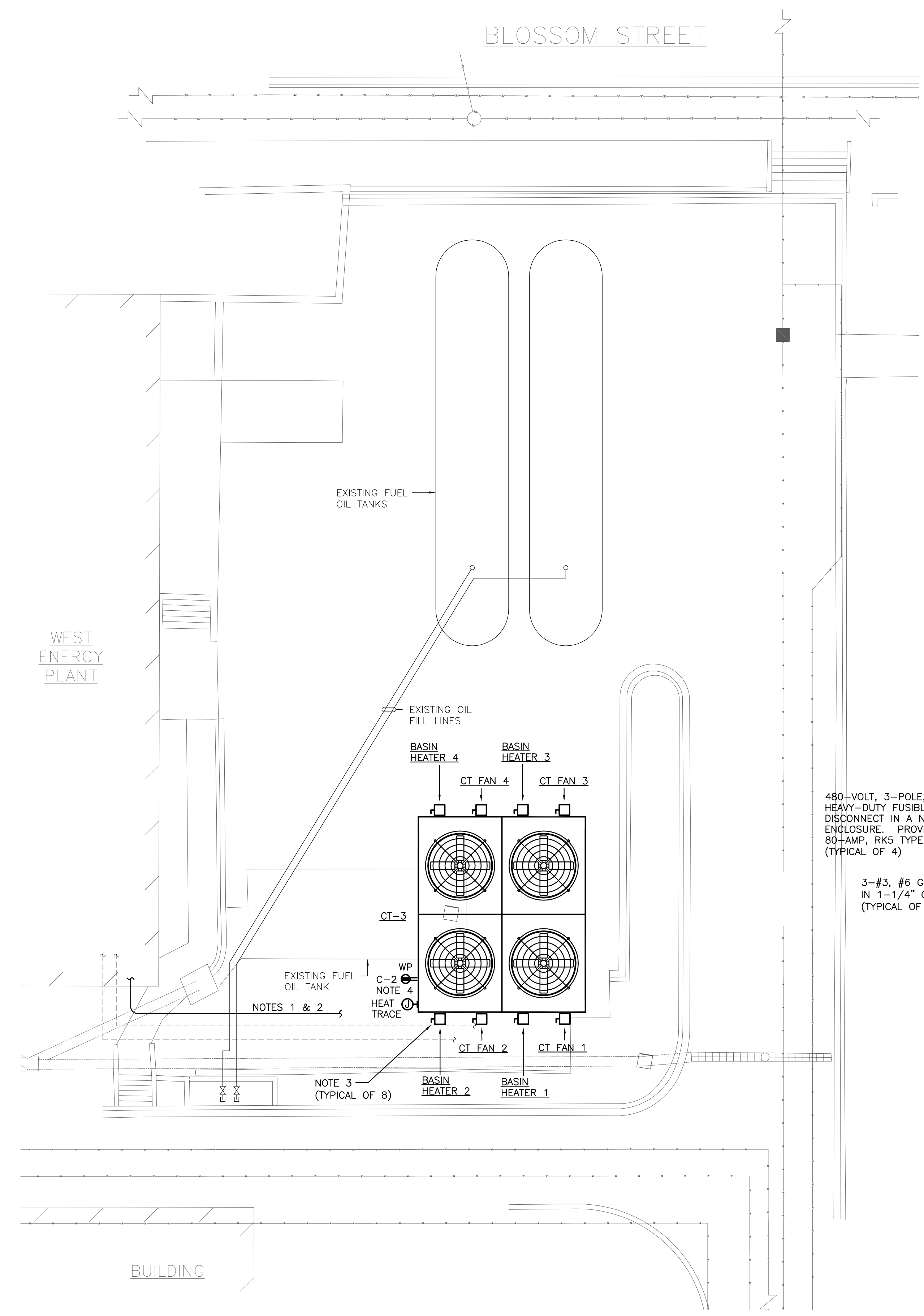
- PLAN NOTES
- DISCONNECT EXISTING BRANCH CIRCUITS FROM COOLING TOWER FANS AND BASIN HEATERS FOR REMOVAL BY DIVISION 23 CONTRACTOR. REMOVE CONDUCTORS AND EXPOSED RACEWAYS COMPLETELY BACK TO SOURCE. RACEWAYS BELOW GRADE SHALL BE ABANDONED IN PLACE.
 - EXTEND CONDUITS FROM BASEMENT (SHOWN ON SHEET E2) BELOW GRADE TO THE COOLING TOWER. CUTTING, PATCHING, AND TRENCHING THE EXISTING PARKING LOT AND SIDEWALKS SHALL BE BY DIVISION 23 CONTRACTOR. COORDINATE TRENCHING REQUIREMENTS WITH DIVISION 23 PRIOR TO START OF WORK. CONDUITS SHALL BE ADJACENT TO MECHANICAL PIPING (APPROXIMATELY 12" SEPARATION HORIZONTALLY). ROUTE CONDUITS UP TO WIREWAY MOUNTED TO COOLING TOWER STRUCTURE AND EXTEND TO THE DESIGNATED EQUIPMENT. SEE DETAIL 2/E1 ON THIS SHEET FOR MORE INFORMATION.
 - COORDINATE WITH MECHANICAL INSTALLER AND OWNER ON EXACT MOUNTING LOCATIONS OF WIREWAYS, PULL BOXES, JUNCTION BOXES, DISCONNECT SWITCHES, AND OTHER ELECTRICAL COMPONENTS ON STRUCTURAL SUPPORTS PRIOR TO INSTALL.
 - PROVIDE A 120-VOLT, 20-AMP, DUPLEX, GFCI TYPE RECEPTACLE IN A METALLIC "IN-USE" STYLE WEATHERPROOF BOX MOUNTED ON COOLING TOWER. EXTEND BRANCH CIRCUIT TO HEAT TRACE THROUGH A GFEP DEVICE.
 - PROVIDE ELECTRICAL CONNECTIONS FOR BASIN HEATERS THROUGH CONTROLLER(S) MOUNTED ON COOLING TOWER TO EACH INDIVIDUAL HEATER MOUNTED ON BASIS. COORDINATE EXACT QUANTITIES AND LOCATIONS WITH MECHANICAL CONTRACTOR.

- ELECTRICAL LEGEND
- DUPLEX RECEPTACLE (GFCI TYPE) MOUNTED AT 18" ABOVE FINISHED GRADE UNLESS NOTED OTHERWISE. "WP" INDICATES A METALLIC WEATHERPROOF "IN-USE" TYPE COVER.
 - SAFETY DISCONNECT SWITCH (FUSIBLE UNLESS SPECIFICALLY NOTED OTHERWISE). SWITCH SHALL BE AS DEFINED ON PLAN FOR EACH PIECE OF EQUIPMENT.
 - JUNCTION BOX AND/OR CONNECTION TO EQUIPMENT AS DEFINED ON PLANS.

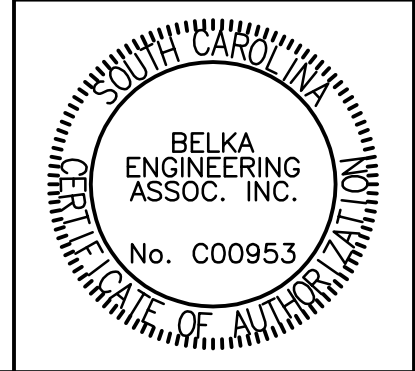
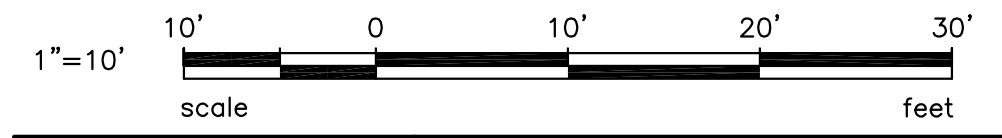
- GENERAL NOTES
- ALL ELECTRICAL EQUIPMENT TO BE REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL NOT DISPOSE OF ANY MATERIALS UNTIL RELEASED BY OWNER'S PROJECT MANAGER. MATERIALS THAT OWNER'S PROJECT MANAGER CHOOSES TO RETAIN SHALL BE DELIVERED BY THE CONTRACTOR TO A LOCATION DESIGNATED BY THE PROJECT MANAGER. ALL OTHER MATERIALS SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR.
 - REFER TO MECHANICAL PLANS FOR PHASING OF CONSTRUCTION.
 - WHERE INFORMATION SHOWN ON THESE DRAWINGS CONFLICTS WITH VERIFIED FIELD CONDITIONS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
 - PROVIDE FLEXIBLE CONDUIT FOR ALL CONDUITS CROSSING EXPANSION JOINTS.
 - FEEDER CONDUITS, BRANCH CIRCUITS AND CABLE TRAY ROUTING SHALL COMPLY WITH DETAILS ON DRAWINGS AND SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES BEFORE AND DURING CONSTRUCTION.
 - THE ARRANGEMENT, GROUPING, AND ROUTING OF BRANCH CIRCUITS SHALL BE PROVIDED AT THE CONTRACTOR'S DISCRETION IN ACCORDANCE WITH GENERALLY ACCEPTED PRACTICE FOR ELECTRICAL WORK, THE NATIONAL ELECTRICAL CODE REQUIREMENTS, LOCAL ORDINANCES, AND THE FOLLOWING:
 - A COMMON NEUTRAL SHALL NOT BE INSTALLED IN A HOMERUN FOR 2 OR 3 BRANCH CIRCUITS UNLESS DIRECTION IS PROVIDED BY THE ENGINEER IN WRITING FOR A SPECIFIC APPLICATION.
 - MULTIPLE SINGLE-POLE BRANCH CIRCUITS (UP TO 3 HOTS, 3 NEUTRALS, 1 GROUND) RATED FOR 30-AMPS OR LESS MAY BE PULLED INTO A SINGLE RACEWAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING THE RACEWAYS AND DERATING CONDUCTORS PER NEC ARTICLE 310.15.
 - A GROUND CONDUCTOR SHALL BE PROVIDED IN ALL RACEWAYS UNLESS NOTED OTHERWISE.
 - COORDINATE THE ROUTING OF UNDERGROUND CONDUCTORS/CONDUIT WITH STRUCTURAL FOOTINGS AND NEW AND EXISTING UNDERGROUND UTILITIES.
 - WHEREVER ON THE ELECTRICAL DRAWINGS THE WORD "PROVIDE" IS USED, IT SHALL MEAN "FURNISH AND INSTALL".
 - PROVIDE AND INSTALL AN ENGRAVED LAMINATED PLASTIC NAMEPLATE ON EACH ITEM OF ELECTRICAL EQUIPMENT SERVING MECHANICAL EQUIPMENT MATCH MECHANICAL DESCRIPTIONS TO INDICATE THE DESIGNATION OF THE UNIT ON THE PLANS & THE BRANCH CIRCUIT SERVING THE EQUIPMENT.
 - ALL BRANCH CIRCUITS ROUTED BELOW GRADE SHALL BE A MINIMUM OF 30" BELOW TOP OF FINISHED GRADE.
 - ALL CONNECTIONS TO MECHANICAL EQUIPMENT SHALL BE MADE WITH FLEXIBLE CONDUIT (WET-LISTED IN OUTDOOR LOCATIONS).

ELECTRICAL DRAWING INDEX

E1	ELECTRICAL SITE PLAN
E2	ELECTRICAL BASEMENT PLAN



2 PARTIAL POWER SINGLE-LINE
NOT TO SCALE

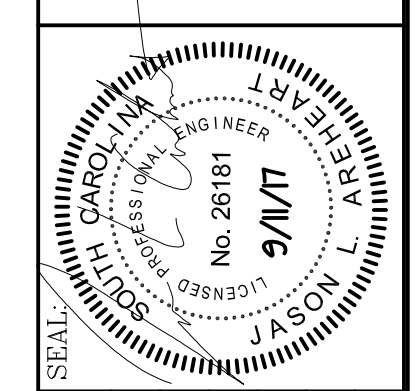


US21706
BELKA ENGINEERING ASSOCIATES, INC.
CONTACT: JASON AREHEART
7 CLUSTERS COURT, SUITE 201 | COLUMBIA, SC | 29210
(803) 731-0650 p | (803) 731-2880 f
JAREHEART@BEA-Consulting.com



CONSIDERABLE EFFORT HAS BEEN MADE TO DETERMINE THE EXTENT OF UNDERGROUND UTILITIES. SOME LOCATIONS ARE ACTUAL FIELD MEASUREMENTS AND SOME ARE TAKEN FROM UTILITY RECORDS. THIS PLAN DOES NOT WARRANT THAT UTILITIES ARE SHOWN ACCURATELY NOR THAT ALL UTILITIES ARE SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES PRIOR TO BEGINNING DIGGING OPERATIONS. CALL PALMETTO UTILITIES LOCATION SERVICE AT 811 A MINIMUM OF 3 WORKING DAYS BEFORE DIGGING. ANY UTILITIES DAMAGED OR DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. ADDITIONALLY, THE CONTRACTOR SHALL CONFIRM THE CONNECTION POINTS OF NEW UTILITIES TO EXISTING UTILITIES PRIOR TO BEGINNING NEW CONSTRUCTION.

1 ELECTRICAL SITE PLAN @ BLOSSOM STREET
SCALE: 1" = 10'



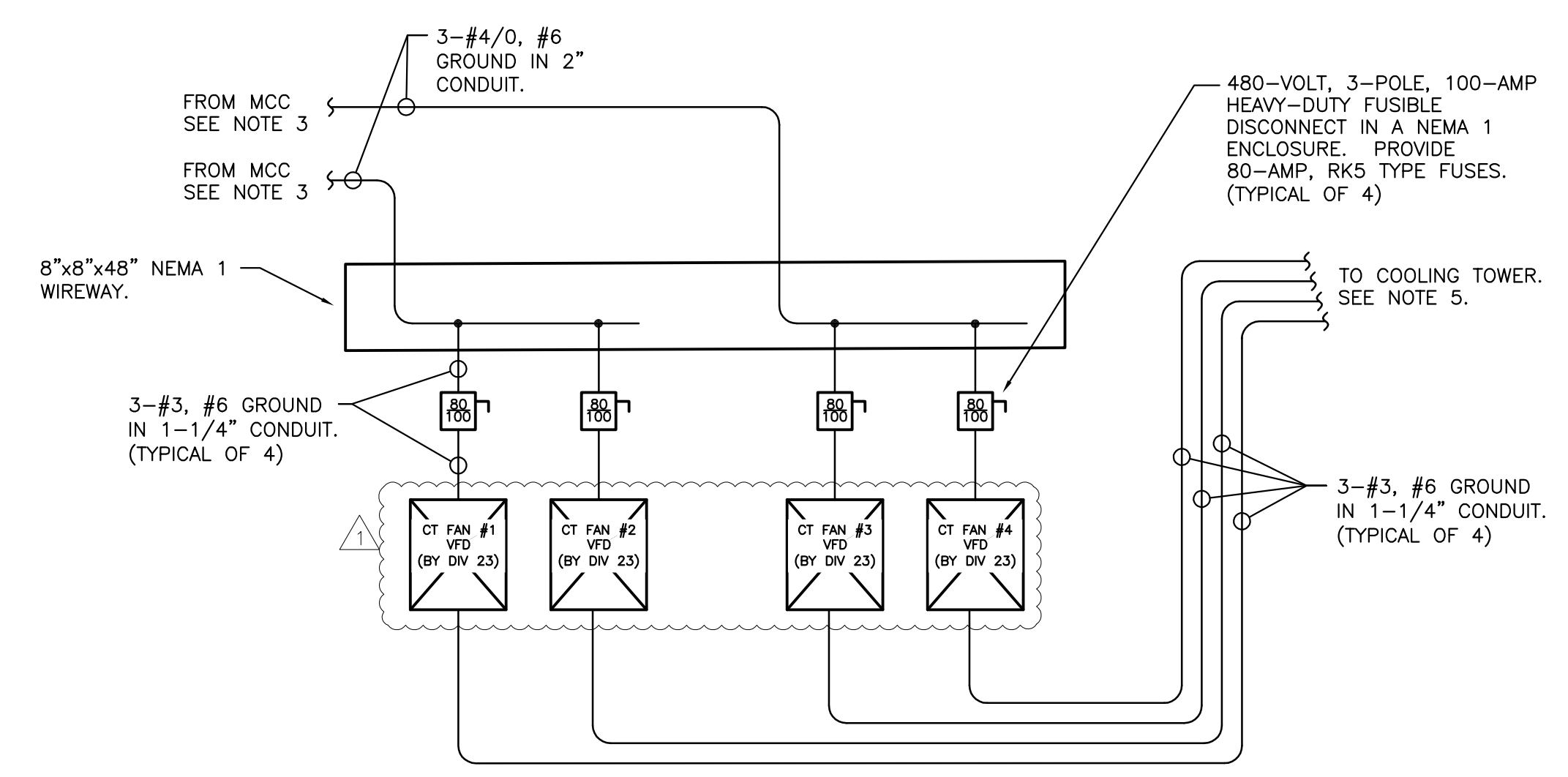
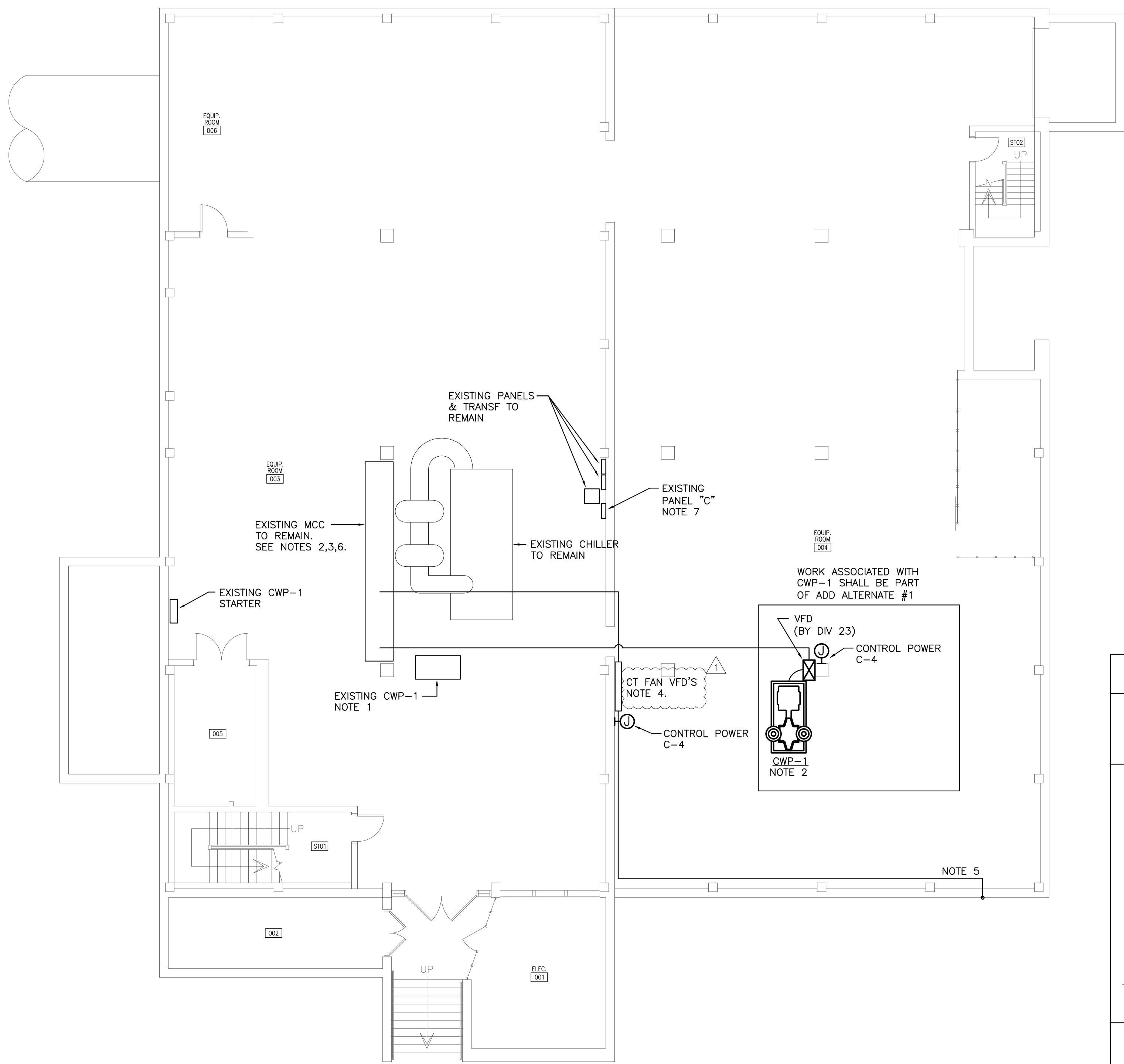
CHECKED BY:	JLA
ORIG. BY:	JLA
DATE:	10/30/17
DRAWN BY:	JLA
DATE:	11/09/17
DRAWING:	DESCRIPTION
BUILDING:	ADDITION #1
REV:	

ENERGY PLANT REPAIRS AND
MODIFICATIONS
STATE PROJECT NUMBER: H27-Z215
University of South Carolina

PROJECT TITLE:
SHEET:
E2
2 OF 2
SHEET IN SET:
OF

NOTES

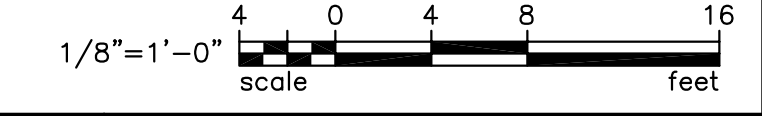
- AS PART OF ADD ALTERNATE #1: EXISTING CWP-1 TO BE REMOVED BY MECHANICAL CONTRACTOR. DISCONNECT EXISTING BRANCH CIRCUIT AND REMOVE ALL ASSOCIATED CONDUCTORS AND RACEWAYS FROM MCC, THROUGH STARTER, TO PUMP. A NEW CWP SHALL BE PROVIDED BY MECHANICAL CONTRACTOR IN A DIFFERENT LOCATION. SEE NOTE 2 BELOW FOR ADDITIONAL INFORMATION.
- AS PART OF ADD ALTERNATE #1: REPLACE THE EXISTING CIRCUIT BREAKER IN THE EXISTING CWP-1 BUCKET OF THE MCC WITH A 250-A CIRCUIT BREAKER. PROVIDE 3-250kcmil, #4 GROUND IN 2" CONDUIT FROM MCC THROUGH VFD (WITH INTEGRAL FUSIBLE DISCONNECT) FURNISHED BY MECHANICAL CONTRACTOR TO PUMP.
- REMOVE EXISTING CIRCUIT BREAKER AND CONTROLS IN THE TWO EXISTING COOLING TOWER BUCKETS IN THE EXISTING MCC. PROVIDE A 200-A CIRCUIT BREAKER IN EACH BUCKET TO FEED TWO COOLING TOWER FANS EACH. THE FEEDERS SHALL BE ROUTED TO A WIRING TROUGH ADJACENT TO COOLING TOWER FAN STARTER LOCATIONS SHOWN.
- PROVIDE WIREWAY AND FUSED DISCONNECTS AT LOCATION OF COOLING TOWER FAN VFD'S. SEE DETAIL 3 / E2 FOR ADDITIONAL INFORMATION.
- ROUTE RACEWAYS FROM STARTERS (FANS) AND MCC (HEATERS) TO COOLING TOWER. ROUTE OVERHEAD IN BASEMENT AS MUCH AS PRACTICAL AND PENETRATE EXTERIOR WALL BELOW GRADE AND EXTEND TO COOLING TOWER. SEE ELECTRICAL SITE PLAN ON SHEET E1 FOR ADDITIONAL INFORMATION.
- REMOVE EXISTING CIRCUIT BREAKER AND CONTROLS IN THE TWO EXISTING COOLING TOWER HEATER BUCKETS IN THE EXISTING MCC. PROVIDE A 50-A CIRCUIT BREAKER IN EACH BUCKET TO FEED THE BASIN HEATERS AT THE COOLING TOWER. PROVIDE 3-#6, #8 GROUND IN 1" CONDUIT ROUTED TO COOLING TOWER ADJACENT TO COOLING TOWER FAN BRANCH CIRCUITS. SEE SHEET E1 FOR ADDITIONAL INFORMATION.
- EXISTING PANEL "C" IS A 120/208-VOLT PANELBOARD. THERE IS AN EXISTING SPARE 70-AMP, 2-POLE CIRCUIT BREAKER IN SPACE 2,4 OF THE PANEL. REMOVE EXISTING BREAKER AND REPLACE WITH TWO 20-AMP, 1-POLE CIRCUIT BREAKERS IN THESE SPACES FOR CONTROL POWER.



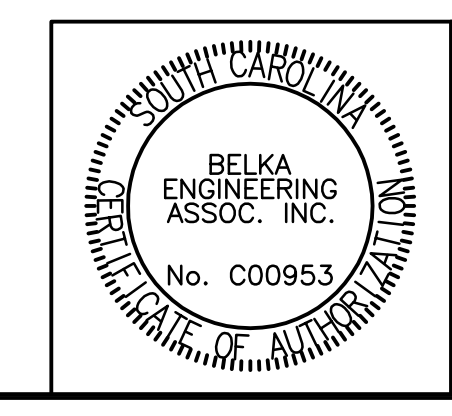
3 PARTIAL POWER SINGLE-LINE
NOT TO SCALE

CHILLED WATER PUMP #1	CHILLED WATER PUMP #2	CHILLED WATER PUMP #3	HEATER #1 NOTE 6	HEATER #2 NOTE 6	OUTSIDE COOLING TOWER #1 NOTE 3	OUTSIDE COOLING TOWER #2 NOTE 3	NO LABEL	"C" SECONDARY CHILLED WATER PUMP TO REMAIN IN PLACE	CONDENSER WATER PUMP #3 TO REMAIN IN PLACE	CWP-1 NOTE 2 250A	MAIN CIRCUIT BREAKER 1200-AMP TO REMAIN IN PLACE
TO REMAIN IN PLACE	TO REMAIN IN PLACE	TO REMAIN IN PLACE	50A	50A	200A	200A					

2 EXISTING MCC ELEVATION
NOT TO SCALE



1 WEST ENERGY FACILITY BASEMENT ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"



US21706
BELKA ENGINEERING ASSOCIATES, INC.
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**University of South Carolina
Pre Bid Sign In Sheet
Columbia, South Carolina**

Project Name: Energy Plant Repairs and Modifications
Project Number: H27-Z215
Pre Bid Date & Time: October 24, 2017 10:00 AM

SWMBE?	Name	Company Name	Address	Phone #	Email
Yes No	Juaquana Brooks	USC	1300 Pickens	803. 777.3596	jbrookin@fmc.sc.edu
Yes No	Terry Schmidt	MSI	745 Greenwood Rd West Columbia SC 29169	803 606.2429	terryschmidt@msiconst.com
Yes No	Nick Miller	DNB Electric		803) 360-8852	nick@dnbelectric.com
Yes No	Will Thompson	McCarteer Mechanical	685 South Dorro Rd Spartanburg, SC 29305	864-599 7883	willt@mcartermechanical.com
Yes No	Sam McLaw	GEC	2124 College St. Columbia SC.	803-608- 3618	smccon@gregoryelectric.com
Yes No	B.B. Bell	GCI	2124 College St. Columbia	803-748-1742	bbbell@gregoryindustrial.com
Yes No	Carlos Sandoval	Cayce Company	307 Diolet Rd Lettington, SC	803-888-3744	Cayce est @ bellSouth.com Carlos @ CayceCompany.com
Yes No	Baxter Oaden	PACE, INC		803-731-7979	bogder@pacewebst.com
Yes No	Charles McManus	Southern Crane	208 Flankers Dr Columbia, S.C.	803.4155 41470	Charles McManus @ Southern industrial, com

****By signing this sheet you agree to receive information electronically.

**University of South Carolina
Pre Bid Sign In Sheet
Columbia, South Carolina**

Project Name: Energy Plant Repairs and Modifications
Project Number: H27-2215
Pre Bid Date & Time: October 24, 2017 10:00 AM

SWMBE?	Name	Company Name	Address	Phone #	Email
Yes <input checked="" type="radio"/> No	JEFF GRIFFIN	W.O. BLACKSTONE & CO INC.	1941 SHIPPO COLUMBIA 29201	803/252-8222	JGRIFFIN@WOBLACKSTONE.COM
Yes No	Hunter Wilson	H&H	104 Vantage Point TR. LAYCE, SC	803 413 1933	hunter.wilson@hoffman-hoffman.com
Yes No	Troy Nelson	USC	743 Greene SE, Columbia SC	803-807-7308	tnelson@sc.edu
Yes No	Brian Langley	Cullum	chang	843-576 2670	Bids@culluminc.com
Yes No					
Yes No					
Yes No					
Yes No					
Yes No					

****By signing this sheet you agree to receive information electronically.