

PROJECT MANUAL

City of Dyersburg, Tennessee Waste Water Treatment Plant Generator Replacement TDEC ARPA ID # WW-PDC-1

February 1, 2024

Owner:
CITY OF DYERSBURG
PUBLIC WORKS DEPARTMENT
435 HIGHWAY 51 BYPASS SOUTH
DYERSBURG, TN 38024

WPN24.0090

APPROVED FOR CONSTRUCTION

THE DOCUMENT BEARING THIS STAMP HAS BEEN RECEIVED AND REVIEWED BY THE

**TENNESSEE DEPT. OF ENVIRONMENT & CONSERVATION
DIVISION OF WATER RESOURCES**

AND IS HEREBY APPROVED FOR CONSTRUCTION BY THE COMMISSIONER



02/06/2024

THIS APPROVAL SHALL NOT BE CONSTRUED AS CREATING A PRESUMPTION
OF CORRECT OPERATION OR AS WARRANTING BY THE COMMISSIONER THAT
THE APPROVED FACILITIES WILL REACH THE DESIGNED GOALS.

APPROVAL EXPIRES ONE YEAR FROM ABOVE DATE



Civil Engineering Solutions, LLC
317 West Market Street
Dyersburg, TN 38024
(731) 445-8406

DW Collier Engineering, Inc
720 Broadway Street; Suite 100
South Fulton, TN 382574
(731) 479-2115

Bid Number:	WW-PDC-1
Bid Title:	City of Dyersburg, Waste Water Treatment Plant Generator Project
Category:	
Status:	

DESCRIPTION

Advertisement for Bids

Waste Water Treatment Plant Generator Project

City of Dyersburg will be soliciting bids for [Waste Water Treatment Plant Generator Project on the property located at the City of Dyersburg Waste Water Treatment Plant, 2000 Honeydew Lane, Dyersburg, Tennessee. The Waste Water Treatment Plant Generator Project is for the replacement of the existing generator or the City of Dyersburg, Tennessee. The Project is for the removal of existing generator and replacement with new generator and transfer switch

This project is being supported with the Treasury, Coronavirus State and Local Recovery Fund grant funding. Therefore, certain restrictions and other federal requirements attach to this opportunity.

Separate sealed bids for Waste Water Treatment Plant Generator Project will be received by City of Dyersburg at Public Works Building, 435 Highway 51 By-Pass South, Dyersburg, Tennessee, 38024 until 10:00 A.M. o'clock, C.S.T., May 2, 2024 and then at said office publicly opened and read aloud. Any person with disability requiring special accommodations must contact the City of Dyersburg no later than 7 days prior to the bid opening.

A **NON - MANDATORY** Pre-bid Meeting will be held at 10:00 A.M. o'clock, C.S.T., April 23, 2024, City of Dyersburg Public Works Building, 435 Highway 51 By-Pass South, Dyersburg, Tennessee, 38024. All bidders are not required to attend the Pre-Bid Meeting and sign the attendance sheet at the meeting.

All bid documents may be examined at the following: City of Dyersburg at Public Works Building, 435 Highway 51 By-Pass South, Dyersburg, Tennessee, 38024. To obtain DIGITAL Plans and Specifications, please email Civil Engineering Solutions, LLC; Rusty Norville, PE at rbnorville@gmail.com.

City of Dyersburg hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, sex, or national origin in consideration for an award. City of Dyersburg is an Equal Opportunity Employer. Any contract that uses federal funds to pay for construction work is a “federally assisted construction contract” and must include the equal opportunity clause found in 2 C.F.R. Part 200, unless otherwise stated in 41 C.F.R. Part 60. We encourage all small and minority owned firms and women’s business enterprises to participate. No bidder may withdraw his bid within (60) days after the actual date of the opening thereof.

PLEASE NOTE: Official plan holders list will only be the list maintained by City of Dyersburg and/ or Civil Engineering Solutions, LLC. It is the sole responsibility of all plan holders, whether they have received digital downloads or paper copies of the plans and specifications, to periodically to check for Addenda which may have been posted on Go-DBE website.

The Copeland "Anti-Kickback" Act is also applicable, which prohibits workers on construction contracts from giving up wages that they are owed. Contractor's must not appear on Sam.gov disbarment list.

A detailed listing of all subcontractors shall be provided by the Bidder. In accordance with the Contract Documents, documentation that the prospective General Contractor and its subcontractors meet minimum qualifications shall be provided and submitted. Subcontractors must also not appear on Sam.gov disbarment list. Mark-ups on subcontractor work or Cost Plus Overhead will be disallowed for reimbursement.

A bid bond or certified check for five percent (5%) of the total bid amount must accompany each bid. The successful bidder will be required to furnish a performance bond in the amount of his bid and shall, before entering on the work of said contract, be licensed as a contractor of the City of Dyersburg.

The owner reserves the right to waive any informalities or to reject any or all bids.

Publication Date/Time

April 12, 2024

Closing Date/Time

May 2, 2024; 10:00 AM

Bid Opening Information

City of Dyersburg at Public Works Building, 435 Highway 51 By-Pass South, Dyersburg, Tennessee, 38024 until 10:00 A.M. o'clock, C.S.T., May 2 , 2024

Pre-bid Meeting:

A Non-Mandatory Pre-Bid Meeting 10:00 A.M. o'clock, C.S.T., April 23, 2024 , City of Dyersburg Public Works Building, 435 Highway 51 By-Pass South, Dyersburg, Tennessee, 38024

Contact Person

Civil Engineering Solutions, LLC; Attn: Rusty Norville, PE; 731-445-8406,
email: rbnorville@gmail.com

Plans and Specifications Available

To obtain DIGITAL Plans and Specifications, please email Rusty Norville, PE at rbnorville@gmail.com

Digital copy Plans and Specifications may be secured for no fee, all printing, shipping and other required costs are at the contractor's expense.

Plans and Specifications are also available at the City of Dyersburg at Public Works Building, 435 Highway 51 By-Pass South, Dyersburg, Tennessee, 38024 for a \$50.00 non refundable fee.

Plan Holders List

To obtain DIGITAL Plans and Specifications, please email [Rusty Norville, PE at rbnorville@gmail.com

INFORMATION FOR BIDDERS

1. Receipt and Opening of Bids:

The City of Dyersburg (herein called the "Owner"), invites bids on the form attached hereto, all blanks of which must be appropriately filled in. Bids will be received by the Owner at the office of Public Works Building; 435 Highway 51; Dyersburg, TN until 10:00 o'clock) X A.M. ___ P.M., X S.T. ___ D.S.T.) May 2, 2024 , and then at said office publicly opened and read aloud. The envelopes containing the bids must be sealed, Addressed to City of Dyersburg – Mayor John Holden at Public Works Building; 435 Highway 51; Dyersburg, TN and designated as bid for Waste Water Treatment Plant Generator Replacement Project.

The Owner may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 60 days after the actual date of the opening thereof.

2. Preparation of Bid: Each bid must be submitted on the prescribed form. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his/her address, the name of the project for which the bid is submitted and all other information required by State law. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in the bid form.

3. Subcontracts: The bidder is specifically advised that any person, for, or other party to whom it is proposed to award a subcontract under this contract must be acceptable to the owner after verification by the State of the current eligibility status.

4. Telegraphic Modification: Any bidder may modify his/her bid by telegraphic communication at any time prior to the scheduled closing time for receipt of bids provided such telegraphic communication is received by the Owner prior to the closing time, and, provided further, the Owner is satisfied that a written confirmation of the telegraphic modification over the signature of the bidder was mailed prior to the closing time. The telegraphic communication should not reveal the bid price but should provide the addition or subtraction or other modification so that the final pieces or terms will not be known by the Owner until the sealed bid is opened. If written confirmation is not received within two days from the closing time, no consideration will be given to the telegraphic modification.

5. Method of Bidding: The Owner invites bids for the following: Lump Sum Contract for Waste Water Treatment Plant Generator Replacement Project.

6. Qualification of Bidder: The Owner may make such investigations as s/he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

7. Bid Security: Each bid must be accompanied by cash, certified check of the bidder, or a bid bond prepared on the form of bid bond attached thereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner, in the amount of 5% of the bid. Such cash, checks or bid bonds will be returned to all except the three lowest bidders within three days after the opening of bids, and the remaining cash, checks or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the contract, or, if no award has been made within 60 days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as s/he has not been notified of the acceptance of his/her bid.

8. Liquidated Damages for Failure to Enter into Contract: The successful bidder, upon his/her failure or refusal to execute and deliver the contract and bonds required within 10 days after s/he has received notice of the acceptance of his/her bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his/her bid.

9. Time of Completion and Liquidated Damages: Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the project within 300 consecutive calendar days thereafter. Bidder must agree also to pay as liquidated damages, the sum of \$ 250.00 for each consecutive calendar day thereafter.

10. Condition of Work: Each bidder must inform him/herself fully of the conditions relating to the construction of the project and the employment of labor thereof. Failure to do so will not relieve a successful bidder of his/her obligation to furnish all material and labor necessary to carry out the provisions of his/her contract. Insofar as possible, the contractor, in carrying out the work, must employ such methods as will not cause any interruption of or interference with the work of any other contractor.

11. Addenda and Interpretations: No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally. Every request for such interpretation should be in writing addressed to

Russell Norville, P.E. at rbnorville@gmail.com; Civil Engineering Solutions, LLC; 317 W. Market Street; Dyersburg, TN 38024 (731) 445-8406 and to be given consideration must be received at least five days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed by certified mail with return receipt requested to all prospective bidders (at the respective addresses furnished for such purposes), not later than three days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his/her bid as submitted. All addenda so issued shall become part of the contract documents.

12. Security for Faithful Performance: Simultaneously with his/her delivery of the executed contract, the Contractor shall furnish a surety bond or bonds as security for faithful performance of this contract and for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract, as specified in the General Conditions included herein. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the Owner.
13. Power of Attorney: Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.
14. Notice of Special Conditions: Attention is particularly called to those parts of the contract documents and specifications which deal with the following:
 - a. Inspection and testing of materials.
 - b. Insurance requirements.
 - c. Wage rates, if applicable.
 - d. States allowances.
15. Laws and Regulations: The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though herein written out in full.
16. Method of Award – Lowest Responsible Bidder: If at the time this contract is to be awarded, the lowest base bid submitted by a responsible bidder does not exceed the amount of funds then estimated by the Owner as available to finance the contract, the contract will be awarded on the base bid only. If such bid exceeds such amount, the Owner may reject all bids or may award the contract on the base bid combined with such deductible alternates applied in numerical order in which they are listed in the Form of Bid, as produces a net amount which is within the available funds.

17. Obligation of Bidder: At the time of the opening of bids each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the plans and contract documents (including all addenda). The failure or omission of any bidder to examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect of his/her bid.
18. Safety Standards and Accident Prevention: With respect to all work performed under this contract, the contractor shall:
- a. Comply with the safety standards provisions of applicable laws, building and construction codes and the “Manual of Accident Prevention in Construction” published by the Associated General Contractors of America, the requirements of the Occupational Safety and Health Act of 1970 (Public Law 91-596), and the requirements of Title 29 of the Code of Federal regulations, Section 1518 as published in the “Federal Register”, Volume 36, No. 75, Saturday, April 17, 1971.
 - b. Exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees) and property.
 - c. Maintain at his/her office or other well known place at the job site, all articles necessary for giving first aid to the injured, and shall make standing arrangements for the immediate removal to a hospital or a doctor’s care of persons (including employees), who may be injured on the job site. In no case shall employees be permitted to work at a job site before the employer has made a standing arrangement for removal of injured persons to a hospital or a doctor’s care.
19. Drug-Free Workplace

Under the provisions of Tennessee Code Annotate §50-9-113 enacted by the General Assembly effective 2001, a) employers with five (5) or more employees who contract with either the state or a local government to provide construction services are required to submit an affidavit stating that they have a drug free workplace program that complies with Title 50, Chapter 9, in effect at the time of submission of a bid at least to the extent required of governmental entities. The statute imposes other requirements on the contractor, but the grantee’s responsibility is specifically limited in section (b) of the state as follows:

(b) A written affidavit by the principal officer of a covered employer provided to a local government at the time such bid or contract is submitted stating that the employer is in compliance with this section shall absolve the local government of all further responsibility under this section and any liability arising from the employer’s compliance or failure of compliance with the provisions of this section.

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,

as Principal, and _____ as

Surety, are hereby held and firmly bound unto _____

as Owner in the penal sum of _____ for the payment of

which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs,

executors, administrators, successors and assigns.

Signed, this _____ day of _____, 20_____.

The condition of the above obligation is such that whereas the Principal has submitted to

_____ a certain Bid, attached hereto and hereby made a

part hereof to enter into a contract in writing for the

NOW, THEREFORE,

- (a) If said Bid shall be rejected, or in the alternate.
- (b) If said bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void, otherwise the same shall remain in force and effect, it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The surety for value received, hereby stipulates the agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above

_____(L.S.)
(Principal)

(Surety)

SEAL

By: _____

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter call Contractor,
(Corporation, Partnership, Individual or Joint Venture)

and

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

(Name of Owner)

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____

_____ Dollars, \$(_____) in
lawful money of the United States, for the payment of which sum well and truly to be
made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these
presents, this sum being in the amount of one hundred percent (100%) of the contract
amount.

THE CONDITION OF THIS OBLIGATION is such that whereas, the contractor has
entered into a certain contract with the OWNER, dated the ____ day of _____,
20_, a copy of which is hereto attached and made a part hereto fore the construction
of:

NOW, THEREFORE, if the Contractor shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due to materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts
(number)

each one of which shall be deemed an original,

this the _____ day of _____, 20_____.

ATTEST:

(Contractor) Corporate Official

Contractor

(SEAL)

By: _____

Title: _____

Address: _____

Witness to Contractor

Address

ATTEST:

_____	_____
Witness to Surety	Surety
_____	By: _____
Address	Attorney-in-Fact
_____	_____
	Address

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

BOND is not valid unless accompanied by Power of Attorney.

IMPORTANT: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that

_____ (Name of Contractor)

_____ (Address of Contractor)

a _____, hereinafter called Contractor,
(Corporation, Partnership, Individual or Joint Venture)

and _____ (Name of Surety)

_____ (Address of Surety)

hereinafter called Surety, are held and firmly bound unto

_____ (Name of Owner)

_____ (Address of Owner)

hereinafter called OWNER, in the penal sum of _____

_____ Dollars, \$(_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmed by these presents, this sum being in the amount of one hundred percent (100%) of the contract amount.

THE CONDITION OF THIS OBLIGATION is such that whereas, the contractor has entered into a certain contract with the OWNER, dated the _____ day of _____, 20____, a copy of which is hereto attached and made a part hereof for the construction of :

NOW, THEREFORE, if the Contractor shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall full indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alternation or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts
(number)

each one of which shall be deemed an original, this the _____ day of _____, 20_____.

ATTEST:

(Contractor) Corporate Official

Contractor

(SEAL)

By: _____

Title: _____

Address: _____

Witness to Contractor

Address

ATTEST:

_____	_____
Witness to Surety	Surety
_____	By: _____
Address	Attorney-in-Fact
_____	_____
	Address

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

BOND is not valid unless accompanied by Power of Attorney.

IMPORTANT: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

BID FOR LUMP SUM CONTRACTS

Place City of Dyersburg WWTP

Date _____

Project No. ARPA #: WW-PDC-1

Proposal of _____ (hereinafter called "Bidder") a
(a corporation) (a partnership) (an individual doing business as _____)

STRIKE OUT INAPPLICABLE TERMS

To the _____

(hereinafter called "OWNER")

Dear Sir or Madam:

The Bidder, in compliance with your invitation for bids for the construction of a

_____, having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies; and to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in written "Notice to Proceed" of the Owner and to fully complete the project within _____ consecutive calendar days thereafter as stipulated in the specifications. Bidder further agrees to pay as liquidated damages, the sum of \$ _____ for each consecutive calendar day thereafter.

Bidder acknowledges receipt of the following addendum:

Bidder acknowledges receipt of the following addendum:

Bidder agrees to perform all the work described in the specifications and shown on the plans, for the following unit prices:

Item #	Description	Est. Qty.	Unit	Unit Price	Total Price
1	<u>Waste Water Treatment Plant Generator Replacement</u> : The work includes the removal and disposal of the existing generator and components, removal and disposal of a portion of existing concrete pad, earthwork, furnish and install new concrete pad, furnish and install new 300 kW Generator with 850-gallon subbase tank and transfer switch along with necessary conduit and wiring.	1	LS		
Total Amount Bid					

(Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.)

Dollars)

BASE PROPOSAL: Bidder agrees to perform all of the _____
work described in the specifications and shown on the plans for the sum
_____ (\$_____)

(Amount shall be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.)

ALTERNATE PROPOSALS

Alternate No. 1: _____

Deduct the sum of _____ (\$_____)

Alternate No. 2: _____

Deduct the sum of _____ (\$_____)

Alternate No. 3: _____

Deduct the sum of _____ (\$_____)

Alternate No. 4: _____

Deduct the sum of _____ (\$_____)

UNIT PRICES:

For changing quantities of work items from those indicated by the contract drawings upon written instructions from the architect/engineer, the following unit prices shall prevail:

1. _____ \$ _____

2. _____ \$ _____

3. _____ \$ _____

The above unit prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for. Changes shall be processed in accordance with Article 11.3.1 of the General Conditions.

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The bidder agrees that this bid shall be good and may not be withdrawn for a period of 60 calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal contract attached within 10 days and deliver a Surety Bond or Bonds as required by Article 5 of the General Conditions.

The bid security attached in the sum of:

_____ (\$_____)
is to become the property of the Owner in the event the contract and bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

Respectfully submitted:

By _____
(Signature)

(SEAL – *if bid is by a corporation*)

(Title)

(Business Address & Zip Code)

ACKNOWLEDGEMENT REGARDING BIDDER SAM REGISTRATION

Contractors procured directly by grantees, sub-grantees, and/or sub-recipients of Coronavirus State and Local Fiscal Recovery Fund (SLFRF) and American Rescue Plan Act (ARPA) funds, are required to have an active registration in the System of Award Management (SAM). This document shall be completed and submitted as part of the bid proposal.

1. By submitting this proposal, the prospective bidder certifies that it has an active registration in SAM that is not set to expire within the next 90 days.
2. By submitting this proposal, the prospective bidder certifies neither it, its principals nor affiliates, is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
3. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that an erroneous certification was rendered, in addition to other remedies available to the Federal Government, the Department or agency with which this transaction originated may pursue available remedies.
4. Further, the prospective bidder shall provide immediate written notice to the person to which this proposal is submitted if at any time the Participant learns that this certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. By submitting this proposal, it is agreed that should the proposed covered transaction be entered into, the prospective bidder will not knowingly enter into any lower-tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction unless authorized by the agency with which this transaction originated.
6. It is further agreed that by submitting this proposal, the prospective bidder will include Certification of Subcontractor Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion without modification, in all lower-tier covered transactions and in all solicitations for lower-tier covered transactions.

Provide the following information as detailed in the prospective bidder's SAM registration:

Entity Name _____

Address _____

City: _____ State: _____ Zip: _____

SAM Entity ID: _____ Expiration Date: _____

Active Exclusions: Yes No

CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

This certification is required pursuant to Executive Order 11246 (30 F. R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

Certification by Bidder

Bidder/Firm: _____

Address: _____

City: _____ State _____ Zip _____

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause. Yes No
2. Compliance reports were required to be filed in connection with such contract or subcontract. Yes No
3. Bidder has filed all compliance reports due under applicable instructions, including SF-100. Yes No None Req.
4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended? Yes No

Bidder Name: _____

Title: _____

Signature: _____

Date: _____

CERTIFICATION OF BIDDER REGARDING USE OF FEMALE/MINORITY SUBCONTRACTORS

This certification is required for the contractor to demonstrate that when subcontractors are to be used on this project, an attempt will be made to utilize female/minority owned firms.

Documentation must be on file to show who has been contacted.

Certification by Bidder

Bidder/Firm: _____

Address: _____

City: _____ State _____ Zip _____

I, _____, certify that every attempt was made to utilize female/minority contractors on this project.

Bidder Name: _____

Title: _____

Signature: _____

Date: _____

CERTIFICATION OF SUBCONTRACTOR REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND EXCLUSION

Subcontractors for projects that are funded in whole or in part by Coronavirus State and Local Fiscal Recovery Fund (SLFRF) and American Rescue Plan Act (ARPA) funds must provide information concerning the entity's debarment, suspension, ineligibility or exclusion status. This document shall be completed and provided to the prime contractor.

1. By signing and submitting this proposal, the prospective lower-tier participant certifies that neither it, its principals nor affiliates, is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. Further, the Participant provides the certification set out below:
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that an erroneous certification was rendered, in addition to other remedies available to the Federal Government, the Department or agency with which this transaction originated may pursue available remedies.
3. Further, the Participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the Participant learns that this certification was erroneous when submitted or has become erroneously reason of changed circumstances.
4. By submitting this document, it is agreed that should the proposed covered transaction be entered into, the Participant will not knowingly enter into any lower-tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction unless authorized by the agency with which this transaction originated.

The subcontracting entity may satisfy the requirement of this document via one of the two options below:

Option 1: SAM.gov Active Registration

Entity Name _____

Address _____

City: _____ State: _____ Zip: _____

SAM Entity ID: _____ Expiration Date: _____

Active Exclusions: Yes No

Option 2: Signed Certification

Entity Name _____

Address _____

City: _____ State: _____ Zip: _____

Entity Representative: _____ Title: _____

Signature _____

DRUG-FREE WORKPLACE AFFIDAVIT

STATE OF _____

COUNTY OF _____

The undersigned, principal officer of _____, an employer of five (5) or more employees contracting with _____ government to provide construction services, hereby states under oath as follows:

1. The undersigned is a principal officer of _____ (hereinafter referred to as the "Company"), and is duly authorized to execute this Affidavit on behalf of the Company.
2. The Company submits this Affidavit pursuant to T.C.A. § 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9, of the Tennessee Code Annotated.
3. The Company is in compliance with T.C.A. § 50-9-113.

Further affiant saith not.

Principal Officer

STATE OF _____

COUNTY OF _____

Before me personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this _____ day of _____, 20__.

Notary Public

My commission expires: _____

CERTIFICATION BY PROPOSED SUBCONTRACTOR REGARDING EQUAL EMPLOYMENT OPPORTUNITY

NAME OF PRIME CONTRACTOR: _____

PROJECT NUMBER: _____

This certification is required pursuant to Executive Order 11246 (30 F. R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the subcontractor has not filed a compliance report due under applicable instructions, such subcontractor shall be required to submit a compliance report before the owner approves the subcontract or permits work to begin under the subcontract.

SUBCONTRACTOR'S CERTIFICATION

Subcontractor Name: _____

Address: _____

City: _____ State _____ Zip _____

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause. Yes No
2. Compliance reports were required to be filed in connection with such contract or subcontract. Yes No
3. Bidder has filed all compliance reports due under applicable instructions, including SF-100. Yes No None Req.
4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended? Yes No

Name: _____

Title: _____

Signature: _____

Date: _____



STATE OF TENNESSEE

BYRD ANTI-LOBBYING AMENDMENT CERTIFICATION

Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352.

Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING – REQUIRED FOR CONTRACTS OVER \$100,000 *Certification for Contracts, Grants, Loans, and Cooperative Agreements*

The undersigned certifies, to the best of his or her knowledge and belief, that:

- No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Signature of Authorized Representative	Date
Printed Name and Title	Phone Number / Email Address



STATE OF TENNESSEE
CERTIFICATION REGARDING DEBARMENT, SUSPENSION
AND OTHER RESPONSIBILITY MATTERS

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

- Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- Have not within a three-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

Signature of Authorized Representative	Date
Printed Name	Phone Number / Email Address

I am unable to certify to the above statements. Explanation is attached.



STATE OF TENNESSEE
IRAN DIVESTMENT ACT CERTIFICATION

SUBJECT CONTRACT NUMBER(S):	
CONTRACTOR LEGAL ENTITY NAME:	
EDISON SUPPLIER IDENTIFICATION NUMBER:	

The Iran Divestment Act, Tenn. Code Ann. § 12-12-101 et. seq. requires a person that attempts to contract with the state, including a contract renewal or assumption, to certify at the time the bid is submitted or the contract is entered into, renewed, or assigned, that the person or the assignee is not identified on a list created pursuant to § 12-12-106.

Currently, the list is available online at the following website: <https://www.tn.gov/generalservices/procurement/central-procurement-office--cpo-/library-/public-information-library.html>

The Contractor, identified above, certifies by signature below that it is not included on the list of persons created pursuant to Tenn. Code Ann. § 12-12-106 of the Iran Divestment Act.

CONTRACTOR SIGNATURE

NOTICE: This certification MUST be signed by an individual with legal capacity to contractually bind the Contractor.

PRINTED NAME AND TITLE OF SIGNATORY

DATE



STATE OF TENNESSEE
NON-BOYCOTT OF ISRAEL CERTIFICATION

The Bidder certifies that it is not currently engaged in, and will not for the duration of the contract engage in, a boycott of Israel as defined by Tenn. Code Ann. § 12-4-119. This provision shall not apply to contracts with a total value of less than two hundred fifty thousand dollars (\$250,000) or to contractors with less than ten (10) employees.

According to the law, a boycott of Israel means engaging in refusals to deal, terminating business activities, or other commercial actions that are intended to limit commercial relations with Israel, or companies doing business in or with Israel or authorized by, licensed by, or organized under the laws of the State of Israel to do business, or persons or entities doing business in Israel, when such actions are taken:

- 1) In compliance with, or adherence to, calls for a boycott of Israel, or
- 2) In a manner that discriminates on the basis of nationality, national origin, religion, or other unreasonable basis, and is not based on a valid business reason. Tenn. Code Ann. § 12-4-119.

Signature of Authorized Representative	Date
Printed Name	Phone Number / Email Address



STATE OF TENNESSEE
CERTIFICATION OF BIDDER REGARDING
USE OF WOMEN/MINORITY SUBCONTRACTORS
****Construction Projects Only****

This certification is required for the contractor to demonstrate that when subcontractors are to be used on this project, an attempt will be made to utilize women/minority owned firms.

Documentation must be on file to show who has been contacted.

- I certify that every attempt was made to utilize female/minority contractors on this project.
- I am unable to certify to the above statements. Explanation is attached.

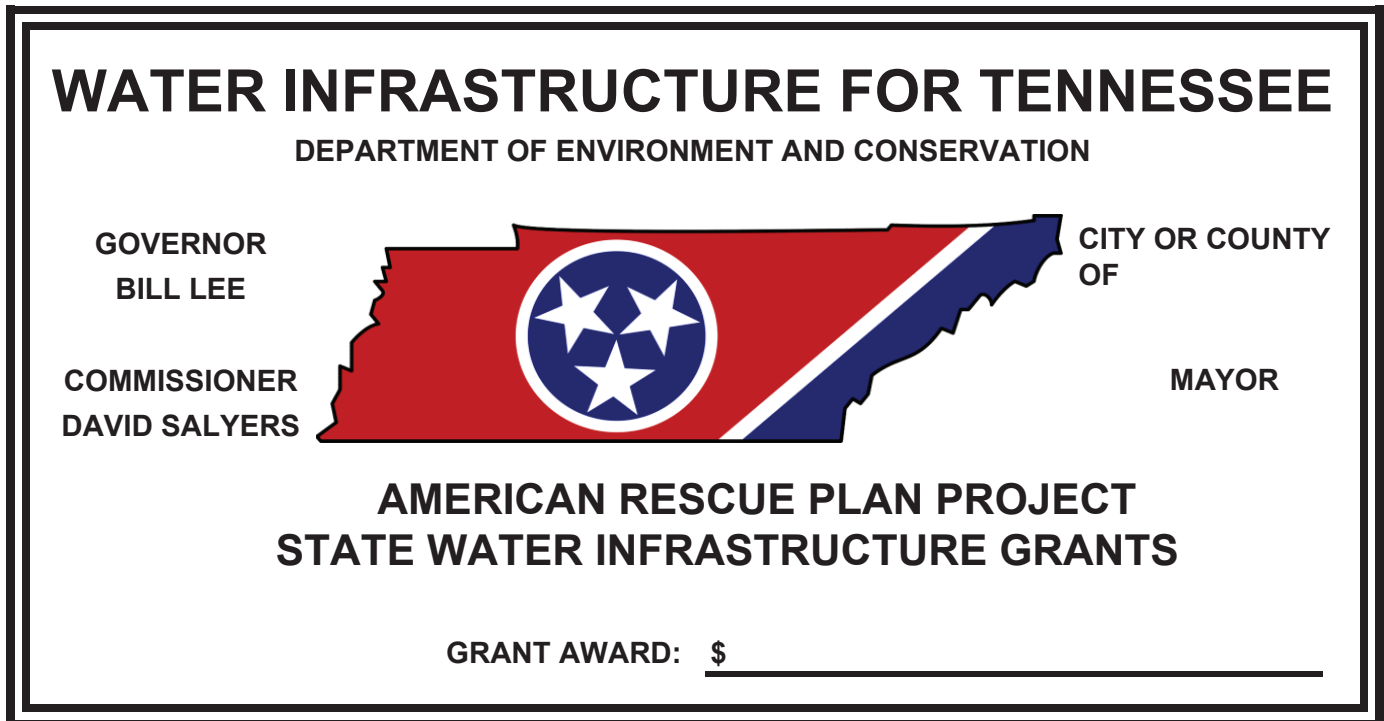
Signature of Authorized Representative	Date
Printed Name	Phone Number
Email Address	Address

STATE WATER INFRASTRUCTURE GRANTS

IDENTIFICATION SIGN

All plans and specifications for each project approved shall contain provisions for requiring the general contractor to provide identification signs. The signs shall conform to the following basic features:

1. The following diagram shall be used as a design:



2. The sign shall be a 4'0" X 8'0" sheet of exterior grade plywood and shall be built so as to remain erected during the entire construction phase of the project.
3. The background of both sides shall be white. The lettering shall be black and shall be large enough to take advantage of the full size of the plywood. The stars shall be white set on a blue field and surrounded by a white ring placed inside a state map in red with a stripe of white and blue on the right side. The sign shall be bordered by a one-inch blue stripe.

AGREEMENT (Contract)

THIS AGREEMENT, made this _____ day of _____, 20____, by and between _____, herein called "Owner", acting herein through its _____, and _____ (a corporation) (a partnership) (an individual doing business as _____)

STRIKE OUT INAPPLICABLE TERMS

of _____, County of _____, and State of _____, hereinafter called "Contractor".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the OWNER, the CONTRACTOR hereby agrees with the OWNER to commence and complete the construction described as follows:

hereinafter called the project, for the sum of _____

_____ Dollars (\$_____)

and all extra work in connection therewith, under the terms as stated in the General Conditions of the Contract; and at this (it's or their) own property cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the General Conditions, the plans, which include all maps, plats, blue prints, and other drawings and printed or written explanatory matter thereof, the specifications and contract documents therefore as prepared by _____, herein entitled the Architect/Engineer.

The Contractor hereby agrees to commence work under this contract on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the project within _____ consecutive calendar days thereafter.

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the contract, subject to additions and deductions, as provided in the General Conditions of the Contract.

IN WITNESS WHEREOF, the parties to these presents have executed this contract in six (6) counterparts, each of which shall be deemed an original, in the year and day first above mentioned.

(Seal)
ATTEST:

(Secretary) (Owner)

(Witness) By: _____

(Title)

(Seal)

(Secretary) (Owner)

(Witness) By: _____

(Title)

(Address and Zip Code)

NOTE: Secretary of the Owner should attest. If Contractor is a corporation, Secretary should attest.

DRUG-FREE WORKPLACE AFFIDAVIT

STATE OF _____

COUNTY OF _____

The undersigned, principal officer of _____, an employer of five (5) or more employees contracting with _____ government to provide construction services, hereby states under oath as follows:

- 1. The undersigned is a principal officer of _____ (hereinafter referred to as the "Company"), and is duly authorized to execute this Affidavit on behalf of the Company.
- 2. The Company submits this Affidavit pursuant to T.C.A. § 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9, of the *Tennessee Code Annotated*.
- 3. The Company is in compliance with T.C.A. § 50-9-113.

Further affiant saith not.

Principal Officer

STATE OF _____

COUNTY OF _____

Before me personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this _____ day of _____, 20__.

Notary Public

My commission expires: _____

**STATEMENT OF COMPLIANCE
CERTIFICATE FOR ILLEGAL IMMIGRANTS**

EACH CONTRACTOR BIDDING SHALL FILL IN AND SIGN THE
FOLLOWING

This _____ is _____ to _____ certify _____ that have fully complied with all the requirements of Chapter No. 878 (House Bill No. 111 and Senate Bill No. 411) which serves to amend Tennessee Code Annotated Title 12, Chapter 4, Part I, attached herein for reference.

All Bidders for construction services on this project shall be required to submit an affidavit (by executing this compliance document) as part of their bid, that attests that such Bidder shall comply with requirements of Chapter No. 878.

Signed: _____

State of _____)
) ss
County of _____)

Personally appeared before me, _____ the undersigned Notary Public, _____, the within named bargainer, with whom I am personally acquainted, and known to me to be the President / Owner / Partner (as applicable) of the _____, Corporation, Partnership, Sole Proprietorship (as applicable) and acknowledged to me that he executed the foregoing document for the purposes recited therein.

Witness my hand, at office, this _____ day of _____, 202__.

Notary Public

My commission expires _____

CERTIFICATE OF OWNER'S ATTORNEY

I, the undersigned, _____, the duly authorized and acting legal representative of _____ do hereby certify as follows:

I have examined the attached contract(s) and surety bonds and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority do execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions and provisions thereof.

Date: _____

State and Local Fiscal Recovery Funds (SLRF) Supplemental Conditions for Contracts

Equal Employment Opportunity

Any contract that uses federal funds to pay for construction work is a “federally assisted construction contract” and must include the equal opportunity clause found in 2 C.F.R. Part 200, unless otherwise stated in 41 C.F.R. Part 60. This contract provision is required for all procurements that meet the definition of a “federally assisted construction contract.”

During the performance of this contract, the contractor agrees as follows:

- (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- (4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and

applicants for employment.

- (5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law. (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through
- (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause

as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

Davis-Bacon Act

U.S. Treasury exercised its federal authority outlining the requirements for water infrastructure projects executed using ARP funds. Therefore, the requirements for prevailing wages and rates slightly differs from the standards of Davis-Bacon. Individual projects less than \$10 million dollars are not required to provide certification that prevailing wages and rates were followed. Individual projects of \$10 million dollars or more require certification like Davis-Bacon and are outlined below. Please note that any project using other funding sources, like Community Development Block Grants or SRF loans, are subject to requirements for those programs. When combining funding sources on a single and complete project or phase, other funding program requirements may trump the requirements for the use of ARP funds. We recommend Grantees and Project Owners discuss project requirements with TDEC when leveraging ARP funds with other funding programs to ensure all applicable rules and regulations are followed.

Individual Water Infrastructure Projects of \$10 million dollars or more

- (1) A recipient may provide a certification that, for the relevant project, all laborers and mechanics employed by contractors and subcontractors in the performance of such project are paid wages at rates not less than those prevailing, as determined by the U.S. Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code (commonly known as the “Davis-Bacon Act”), for the corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work in the civil subdivision of the State (or the District of Columbia) in which the work is to be performed, or by the appropriate State entity pursuant to a corollary State prevailing-wage-in-construction law (commonly known as “baby Davis-Bacon Acts”). If such certification is not provided, a recipient must provide a project employment and local impact report detailing:
 - a. The number of employees of contractors and sub-contractors working on the project;
 - b. The number of employees on the project hired directly and hired through a third party;
 - c. The wages and benefits of workers on the project by classification; and
 - d. Whether those wages are at rates less than those prevailing. 19 Recipients must maintain sufficient records to substantiate this information upon request.

- (2) A recipient may provide a certification that a project includes a project labor agreement, meaning a pre-hire collective bargaining agreement consistent with section 8(f) of the National Labor Relations Act (29 U.S.C. 158(f)). If the recipient does not provide such certification, the recipient must provide a project workforce continuity plan, detailing:
 - a. How the recipient will ensure the project has ready access to a sufficient supply of appropriately skilled and unskilled labor to ensure high-quality construction throughout the life of the project, including a description of any required professional certifications and/or in-house training;
 - b. How the recipient will minimize risks of labor disputes and disruptions that would jeopardize timeliness and cost-effectiveness of the project;

- c. How the recipient will provide a safe and healthy workplace that avoids delays and costs associated with workplace illnesses, injuries, and fatalities, including descriptions of safety training, certification, and/or licensure requirements for all relevant workers (e.g., OSHA 10, OSHA 30);
 - d. Whether workers on the project will receive wages and benefits that will secure an appropriately skilled workforce in the context of the local or regional labor market; and
 - e. Whether the project has completed a project labor agreement.
- (3) Whether the project prioritizes local hires.
- (4) Whether the project has a Community Benefit Agreement, with a description of any such agreement.
- a. All transactions regarding this contract shall be done in compliance with the Davis-Bacon Act (40 U.S.C. 3141- 3144, and 3146-3148) and the requirements of 29C.F.R. pt. 5 as may be applicable. The contractor shall comply with 40 U.S.C. 3141-3144, and 3146-3148 and the requirements of 29 C.F.R. pt. 5 as applicable.
 - b. b. Contractors are required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor.
 - c. c. Additionally, contractors are required to pay wages not less than once a week.

Copeland Anti-Kickback Act

The Copeland "Anti-Kickback" Act prohibits workers on construction contracts from giving up wages that they are owed. This requirement applies to all contracts for construction or repair work above \$2,000 in situations where the Davis-Bacon Act also applies.

- a. a. Contractor. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.
- b. b. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clause above and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
- c. c. Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12."

Contract Work Hours and Safety Standards Act

Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations at 29 C.F.R. Part 5. See 2 C.F.R. Part 200, Appendix II(E). Each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours.

Compliance with the Contract Work Hours and Safety Standards Act.

- (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours

worked in excess of forty hours in such workweek.

- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the t \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.
- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

Clean Air Act and Federal Water Pollution Control Act

For contracts over \$150,000, contracts must contain a provision requiring contractors to comply with the Clean Air Act and the Federal Water Pollution Control Act. If applicable, contracts must contain a provision that requires the contractor to agree to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. §§ 7401-7671q.) and the Federal Water Pollution Control Act as amended (33 U.S.C. §§ 1251-1387).

Clean Air Act

- (1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq
- (2) The contractor agrees to report each violation to the (name of subrecipient entering into the contract) and understands and agrees that the (name of the subrecipient entering into the contract) will, in turn, report each violation as required to assure notification to Treasury, and the appropriate Environmental Protection Agency Regional Office.
- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000

Federal Water Pollution Control Act

- (1) The contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 ets eq.
- (2) The contractor agrees to report each violation to the (name of the subrecipient entering into the contract) and understands and agrees that the (name of the subrecipient entering into the contract) will, in turn, report each violation as required to assure notification to the Treasury, and the appropriate Environmental Protection Agency Regional Office.
- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000

Debarment and Suspension

Non-federal entities, contractors and subcontractors are subject to debarment and suspension regulations. These regulations restrict awards, subawards, and contracts with certain parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs and activities. In general, an "excluded" party cannot receive a Federal grant award or a contract within the meaning of a "covered transaction," to include subawards and subcontracts. The debarment and suspension clause is required for all contracts and subcontracts for \$25,000 or more, all contracts that require the consent of an official of a federal agency, and all contracts for federally required audit services.

Suspension and Debarment

- (1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
- (2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- (3) This certification is a material representation of fact relied upon by (insert name of recipient/subrecipient/applicant). If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to (insert name of recipient/subrecipient/applicant), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- (4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

Byrd Anti-Lobbying Amendment

Contractors that apply or bid for a contract of \$100,000 or more under a federal grant must file the required certification. This is also applicable to subcontractors of more than \$100,000, must include a contract provision prohibiting the use of federal appropriated funds to influence officers or employees of the federal government. Contractors that apply or bid for a contract for more than \$100,000 must also file the required certification regarding lobbying.

Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

Procurement of Recovered Materials

A non-Federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

“In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired competitively within a timeframe providing for compliance with the contract performance schedule; meeting contract performance requirements; or at a reasonable price. Information about this requirement, along with the list of EPA-designated items, is available at [EPA’s Comprehensive Procurement Guidelines webpage](#).

The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.”

Domestic Preference for Procurement

As appropriate, and to the extent consistent with law, NFEs should, to the greatest extent practicable under a federal award, provide a preference for the purchase, acquisition, or use of goods, products or materials produced in the United States. This includes, but is not limited to, iron, aluminum, steel, cement, and other manufactured products.

“Domestic Preference for Procurements

As appropriate, and to the extent consistent with law, the contractor should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States. This includes, but is not limited to iron, aluminum, steel, cement, and other manufactured products.

For purposes of this clause:

Produced in the United States means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. Manufactured products mean items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.”

Access to Records

NFEs and their contractors and subcontractors must give the Department of Treasury and other authorized representatives access to records associated with their awards during the federally required record retention period and as long as the records are retained.

The following access to records requirements apply to this contract:

(1) The Contractor agrees to provide (insert name of state agency or local or Indian tribal government), (insert name of recipient), Treasury, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

(2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

(3) The Contractor agrees to provide the Treasury or authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

Contract Changes or Modifications

To be eligible for ARP SLFRF assistance under the non-Federal entity's Treasury grant or cooperative agreement, the cost of the change, modification, change order, or constructive change must be allowable, allocable, within the scope of its grant or cooperative agreement, and reasonable for the completion of project scope.

Compliance with Federal Law, Regulations and Executive Orders

The recipient and its contractors are required to comply with all Federal laws, regulations, and executive orders.

"This is an acknowledgement that Treasury ARP SLFRF financial assistance will be used to fund all or a portion of the contract. The contractor will comply with all applicable Federal law, regulations, executive orders, Treasury policies, procedures, and directives."

Program Fraud and False or Fraudulent Statements or Related Acts

Recipients must comply with the requirements of The False Claims Act (31 U.S.C. §§ 3729-3733) which prohibits the submission of false or fraudulent claims for payment to the federal government. It is that the non-Federal entity include a provision in its contract that the contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to its actions pertaining to the contract.

"The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor's actions pertaining to this contract."

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GENERAL CONDITIONS

CONTRACT AND CONTRACT DOCUMENTS

The project to be constructed and pursuant to this contract will be financed with assistance from Coronavirus State and Local Fiscal Recovery Fund (SLFRF) and American Rescue Plan Act (ARPA) and is subject to all applicable Federal laws and regulations.

The Plans, Specifications and Addenda, and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth. The table of contents, titles, headings, running headlines and marginal notes contained herein and in said documents are solely to facilitate reference to various provisions of the Contract Documents and in no way affect, limit or cast light on the interpretation of the provisions to which they refer.

This content is from the eCFR and is authoritative but unofficial.

Title 2 – Grants and Agreements

Subtitle A – Office of Management and Budget Guidance for Grants and Agreements

Chapter II – Office of Management and Budget Guidance

Part 200 – Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards

Source: 85 FR 49543, Aug. 13, 2020, unless otherwise noted.

Source: 85 FR 49539, Aug. 13, 2020, unless otherwise noted.

Authority: 31 U.S.C. 503

Source: 78 FR 78608, Dec. 26, 2013, unless otherwise noted.

Appendix II to Part 200—Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non-Federal entity under the Federal award must contain provisions covering the following, as applicable.

- (A) Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.
- (B) All contracts in excess of \$10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement.
- (C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of “federally assisted construction contract” in 41 CFR Part 60–1.3 must include the equal opportunity clause provided under 41 CFR 60–1.4(b), in accordance with Executive Order 11246, “Equal Employment Opportunity” (30 FR 12319, 12935, 3 CFR Part, 1964–1965 Comp., p. 339), as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at 41 CFR part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”
- (D) Davis-Bacon Act, as amended (40 U.S.C. 3141–3148). When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141–3144, and 3146–3148) as supplemented by Department of Labor regulations (29 CFR Part 5, “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part

3, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

- (E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701–3708). Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.
- (F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of “funding agreement” under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.
- (G) Clean Air Act (42 U.S.C. 7401–7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251–1387), as amended—Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401–7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251–1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).
- (H) Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.
- (I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any

other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

(J) See § 200.323.

(K) See § 200.216.

(L) See § 200.322.

[78 FR 78608, Dec. 26, 2013, as amended at 79 FR 75888, Dec. 19, 2014; 85 FR 49577, Aug. 13, 2020]

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GENERAL CONDITIONS

ARTICLE 1--DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

Addenda – Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the bidding documents or the Contract Documents.

Agreement – The written agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

Application for Payment – The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

Bid – The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

Bonds – Bid, performance and payment bonds and other instruments of security.

Change Order – A document recommended by ENGINEER, which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

Contract Documents – The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post-Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all amendments, modifications and supplements issued pursuant to paragraphs 3.4 and 3.5 on or after the Effective Date of the Agreement.

Contract Price – The moneys payable by OWNER to CONTRACTOR under the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.9.1 in the case of Unit Price Work).

Contract Time – The number of days (computed as provided in paragraph 17.2) or the date stated in the Agreement for the completion of the Work.

CONTRACTOR – The person, firm or corporation with whom OWNER has entered into the Agreement.

Defective – An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed

by OWNER at Substantial Completion in accordance with paragraph 14.8 or 14.10).

Drawings – The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by ENGINEER and are referred to in the Contract Documents.

Effective Date of the Agreement – The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

ENGINEER – The person, firm or corporation named as such in the Agreement.

Field Order – A written order issued by ENGINEER which orders minor changes in the Work in accordance with paragraph 9.5 but which does not involve a change in the Contract Price or the Contract Time.

General Requirements – Sections of Division 1 of the Specifications.

Laws and Regulations; Laws or Regulations – Laws, rules, regulations, ordinances, codes and/or orders.

Notice of Award – The written notice by OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

Notice to Proceed – A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR's obligations under the Contract Documents.

OWNER – The public body or authority, corporation, association, firm or person with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be provided.

Partial Utilization – Placing a portion of the Work in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion for all the Work.

Project – The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

Resident Project Representative – The authorized representative of ENGINEER who is assigned to the site or any part thereof.

Shop Drawings – All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.

Specifications – Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

Subcontractor – An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

Substantial Completion – The Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER as evidenced by ENGINEER's definitive certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents so that the Work (or specified part) can be utilized for the purpose for which it is intended; or if there be no such certificate issued, when final payment is due in accordance with paragraph 14.13. The terms "substantially complete" and "substantially completed" as applied to any Work refer to Substantial Completion thereof.

Supplementary Conditions – The part of the Contract Documents which amends or supplements these General Conditions.

Supplier – A manufacturer, fabricator, supplier, distributor, materialman or vendor.

Underground Facilities – All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

Unit Price Work – Work to be paid for on the basis of unit prices.

Work – The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

Work Directive Change – A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in paragraph 4.2 or 4.3 or to emergencies under paragraph 6.22. A Work Directive Change may not change the Contract Price or the Contract Time, but is evidence that the parties expect that the change directed or documented by a Work Directive Change will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Time as provided in paragraph 10.2.

Written Amendment – A written amendment of the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly Work-related aspects of the Contract Documents.

ARTICLE 2 – PRELIMINARY MATTERS

Delivery of Bonds:

2.1. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER

such Bonds as CONTRACTOR may be required to furnish in accordance with paragraph 5.1.

Copies of Documents:

2.2. OWNER shall furnish to CONTRACTOR up to ten copies (unless otherwise specified in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

Commencement of Contract Time; Notice to Proceed:

2.3. The Contract Time will commence to run on the thirtieth day after the Effective Date of the Agreement, of, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within thirty days after the Effective Date of the Agreement. In no event will the Contract Time commence to run later than the seventy-fifth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

Starting the Project:

2.4. CONTRACTOR shall start to perform the Work on the date when the Contract Time commences to run, but no Work shall be done at the site prior to the date on which the Contract Time commences to run.

Before Starting Construction:

2.5. Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

2.6. Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for review:

2.6.1. an estimated progress schedule indicating the starting and completion dates of the various stages of the Work;

2.6.2. a preliminary schedule of Shop Drawing submissions; and

2.6.3. a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work which will be confirmed in writing by CONTRACTOR at the time of submission.

2.7. Before any Work at the site is started, CONTRACTOR shall deliver to OWNER, with a copy to ENGINEER, certificates (and other evidence of insurance requested by OWNER) which

CONTRACTOR is required to purchase and maintain in accordance with paragraphs 5.3 and 5.4, and OWNER shall deliver to CONTRACTOR certificates (and other evidence of insurance requested by CONTRACTOR) which OWNER is required to purchase and maintain in accordance with paragraphs 5.6 and 5.7.

Preconstruction Conference:

2.8. Within twenty days after the Effective Date of the Agreement, but before CONTRACTOR starts the Work at the site, a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to discuss the schedules referred to in paragraph 2.6, to discuss procedures for handling Shop Drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

Finalizing Schedules:

2.9. At least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to finalize the schedules submitted in accordance with paragraph 2.6. The finalized progress schedule will be acceptable to ENGINEER as providing an orderly progression of the Work to completion within the Contract Time, but such acceptance will neither impose on ENGINEER responsibility for the progress or scheduling of the Work nor relieve CONTRACTOR from full responsibility thereof. The finalized schedule of Shop Drawing submissions will be acceptable to ENGINEER as providing a workable arrangement for processing the submissions. The finalized schedule of values will be acceptable to ENGINEER as to form and substance.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

Intent:

3.1. The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe Work, materials or equipment such word shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or Laws or Regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or

ENGINEER, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to ENGINEER, or any of ENGINEER's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provision of paragraph 9.15 or 9.16. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in paragraph 9.4.

3.3. If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to ENGINEER in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from ENGINEER; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

Amending and Supplementing Contract Documents:

3.4. The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

- 3.4.1. a formal Written Amendment,
- 3.4.2. a Change Order (pursuant to paragraph 10.4), or
- 3.4.3. a Work Directive Change (pursuant to paragraph 10.1).

As indicated in paragraphs 11.2 and 12.1, Contract Price and Contract Time may only be changed by a Change Order or a Written Amendment.

3.5. In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, in one or more of the following ways:

- 3.5.1. a Field Order (pursuant to paragraph 9.5),
- 3.5.2. ENGINEER's approval of a Shop Drawing or sample (pursuant to paragraphs 6.26 and 6.27), or
- 3.5.3. ENGINEER's written interpretation or clarification (pursuant to paragraph 9.4).

Reuse of Documents:

3.6. Neither CONTRACTOR nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER; and they shall not reuse any of them on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER.

ARTICLE 4—AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

Availability of Lands:

4.1. OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER's furnishing these lands, rights-of-way or easements entitles CONTRACTOR to an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Article 12. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

Physical Conditions:

4.2.1. *Explorations and Reports:* Reference is made to the Supplementary Conditions for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by ENGINEER in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such reports, but not upon nontechnical data, interpretations or opinions contained therein or for the completeness thereof for CONTRACTOR's purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to subsurface conditions at the site.

4.2.2. *Existing Structures:* Reference is made to the Supplementary Conditions for identification of those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities referred to in paragraph 4.3) which are at or contiguous to the site that have been utilized by ENGINEER in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such drawings, but not for the completeness thereof for CONTRACTOR's purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to physical conditions in or relating to such structures.

4.2.3. *Report of Differing Conditions:* If CONTRACTOR believes that:

4.2.3.1. any technical data on which CONTRACTOR is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is inaccurate, or

4.2.3.2. any physical condition uncovered or revealed at the site differs materially from that indicated, reflected or referred to in the Contract Documents,

CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work in connection therewith (except in an emergency as permitted by paragraph 6.22), notify OWNER and ENGINEER in writing about the inaccuracy or difference.

4.2.4. *ENGINEER's Review:* ENGINEER will promptly review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

4.2.5. *Possible Document Change:* If ENGINEER concludes that there is a material error in the Contract Documents or that

because of newly discovered conditions a change in the Contract Documents is required, a Work Directive Change or a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the inaccuracy or difference.

4.2.6. *Possible Price and Time Adjustments:* In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, will be allowable to the extent that they are attributable to any such inaccuracy or difference. If OWNER and CONTRACTOR are unable to agree as to the amount or length thereof, a claim may be made therefor as provided in Articles 11 and 12.

Physical Conditions – Underground Facilities:

4.3.1. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

4.3.1.1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and,

4.3.1.2. CONTRACTOR shall have full responsibility for reviewing and checking all such information and data, for locating all Underground Facilities shown or indicated in the Contract Documents, for coordination of the Work with the owners of such Underground Facilities during construction, for the safety and protection thereof as provided in paragraph 6.20 and repairing any damage thereto resulting from the Work, the cost of all of which will be considered as having been included in the Contract Price.

4.3.2. *Not Shown or Indicated.* If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of, CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency as permitted by paragraph 6.22), identify the owner of such Underground Facility and give written notice thereof to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents will be amended or supplemented to the extent necessary. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility as provided in paragraph 6.20. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any Underground Facility that was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of. If the parties are unable to agree as to the amount or length thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

Reference Points:

4.4. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work (unless otherwise specified in the General Requirements),

shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.

ARTICLE 5—BONDS AND INSURANCE

Performance and Other Bonds:

5.1. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as otherwise provided by Law or Regulation or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the forms prescribed by Law or Regulation or by the Contract Documents and be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of the authority to act.

5.2. If the surety on any Bond furnished by CONTRACTOR is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.1, CONTRACTOR shall within five days thereafter substitute another Bond and Surety, both of which must be acceptable to OWNER.

Contractor's Liability Insurance:

5.3. CONTRACTOR shall purchase and maintain such comprehensive general liability and other insurance as is appropriate for the Work being performed and furnished and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance and furnishing of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed or furnished by CONTRACTOR, by any Subcontractor, by anyone directly or indirectly employed by any of them to perform or furnish any of the Work, or by anyone for those acts any of them may be liable:

5.3.1. Claims under workers' or workmen's compensation, disability benefits and other similar employee benefit acts;

5.3.2. Claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

5.3.3. Claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

5.3.4. Claims for damages insured by personal injury liability coverage which are subordinated (a) by any person as a result of an offense directly or indirectly related to

the employment of such person by CONTRACTOR, or (b) by any other person for any other reason;

5.3.5. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom;

5.3.6. Claims arising out of operation of Laws or Regulations for damages because of bodily injury or death of any person or for damage to property; and

5.3.7. Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

The insurance required by this paragraph 5.3 shall include the specific coverages and be written for not less than the limits of liability and coverages provided in the Supplementary Conditions, or required by law, whichever is greater. The comprehensive general liability insurance shall include completed operations insurance. All of the policies of insurance so required to be purchased and maintained (or the certificates or other evidence thereof) shall contain a provision or endorsement that the coverage afforded will not be cancelled, materially changed or renewal refused until at least thirty days' prior written notice has been given to OWNER and ENGINEER by certified mail. All such insurance shall remain in effect until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing *defective* Work in accordance with paragraph 13.12. In addition, CONTRACTOR shall maintain such completed operations insurance for at least two years after final payment and furnish OWNER with evidence of continuation of such insurance at final payment and one year thereafter.

Contractual Liability Insurance:

5.4. The comprehensive general liability insurance required by paragraph 5.3 will include contractual liability insurance applicable to CONTRACTOR's obligations under paragraphs 6.30 and 6.31.

Owner's Liability Insurance:

5.5. OWNER shall be responsible for purchasing and maintaining OWNER's own liability insurance and, at OWNER's option, may purchase and maintain such insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

Property Insurance:

5.6. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property insurance upon the Work at the site to the full insurable value thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER and ENGINEER's consultants in the Work, all of whom shall be listed as insureds or additional insured parties, shall insure against the perils of fire and extended coverage and shall include "all risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage, and such other perils as may be provided in the Supplementary Conditions, and shall include damages, losses and expenses arising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers, architects, attorneys and other

professionals). If not covered under the "all risk" insurance or otherwise provided in the Supplementary Conditions, CONTRACTOR shall purchase and maintain similar property insurance on portions of the Work stored on and off the site or in transit when such portions of the Work are to be included in an Application for Payment.

5.7. OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER and ENGINEER's consultants in the Work, all of whom shall be listed as insured or additional insured parties.

5.8. All the policies of insurance (or the certificates or other evidence thereof) required to be purchased and maintained by OWNER in accordance with paragraphs 5.6 and 5.7 will contain a provision or endorsement that the coverage afforded will not be cancelled or materially changed or renewal refused until at least thirty days' prior written notice has been given to CONTRACTOR by certified mail and will contain waiver provisions in accordance with paragraph 5.11.2.

5.9. OWNER shall not be responsible for purchasing and maintaining any property insurance to protect the interests of CONTRACTOR, Subcontractors or others in the Work to the extent of any deductible amounts that are provided in the Supplementary Conditions. The risk of loss within the deductible amount, will be borne by CONTRACTOR, Subcontractor or others suffering any such loss and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

5.10. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policy, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

Waiver of Rights:

5.11.1. OWNER and CONTRACTOR waive all rights against each other for all losses and damages caused by any of the perils covered by the policies of insurance provided in response to paragraphs 5.6 and 5.7 and any other property insurance applicable to the Work, and also waive all such rights against the Subcontractors, ENGINEER, ENGINEER's consultants and all other parties named as insureds in such policies for losses and damages so caused. As required in paragraph 6.11, each subcontract between CONTRACTOR and a Subcontractor will contain similar waiver provisions by the Subcontractor in favor of OWNER, CONTRACTOR, ENGINEER, ENGINEER's consultants and all other parties named as insureds. None of the above waivers shall extend to the rights that any of the insured parties may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

5.11.2. OWNER and CONTRACTOR intend that any policies provided in response to paragraphs 5.6 and 5.7 shall protect all of the parties insured and provide primary coverage for all losses and damages caused by the perils covered thereby. Accordingly, all such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any of the parties named as insureds or additional insureds, and

if the insurers require separate waiver forms to be signed by ENGINEER or ENGINEER's consultant OWNER will obtain the same, and if such waiver forms are required of any Subcontractor, CONTRACTOR will obtain the same.

Receipt and Application of Proceeds:

5.12. Any insured loss under the policies of insurance required by paragraphs 5.6 and 5.7 will be adjusted with OWNER and made payable to OWNER as trustee for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.13. OWNER shall deposit in a separate account any money so received, and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

5.13. OWNER as trustee shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to OWNER's exercise of this power. If such objection is made, OWNER as trustee shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If required in writing by any party in interest, OWNER as trustee shall, upon the occurrence of an insured loss, give bond for the proper performance of such duties.

Acceptance of Insurance:

5.14. If OWNER has any objection to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by CONTRACTOR in accordance with paragraphs 5.3 and 5.4 on the basis of its not complying with the Contract Documents, OWNER shall notify CONTRACTOR in writing thereof within ten days of the date of delivery of such certificates to OWNER in accordance with paragraph 2.7. If CONTRACTOR has any objection to the coverage afforded by or other provisions of the policies of insurance required to be purchased and maintained by OWNER in accordance with paragraphs 5.6 and 5.7 on the basis of their not complying with the Contract Documents, CONTRACTOR shall notify OWNER in writing thereof within ten days of the date of delivery of such certificates to CONTRACTOR in accordance with paragraph 2.7. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided by each as the other may reasonably request. Failure by OWNER or CONTRACTOR to give any such notice of objection within the time provided shall constitute acceptance of such insurance purchased by the other as complying with the Contract Documents.

Partial Utilization – Property Insurance:

5.15. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, such use or occupancy may be accomplished in accordance with paragraph 14.10; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected the changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be cancelled or lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

Supervision and Superintendence:

6.1. CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence or procedure of construction which is indicated in and required by the Contract Documents. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

6.2. CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR’s representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

Labor, Materials and Equipment:

6.3. CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all work at the site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without OWNER’s written consent given after prior written notice to ENGINEER.

6.4. Unless otherwise specified in the General Requirements, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

6.5. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instruction of the applicable Supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective as assign to ENGINEER, or any of ENGINEER’s consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.15 or 9.16.

Adjusting Progress Schedule:

6.6. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.9) adjustments in the progress schedule to reflect the impact thereon of new developments; these will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

Substitutes or “Or-Equal” Items:

6.7.1. Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by ENGINEER if sufficient information is submitted by CONTRACTOR to allow ENGINEER to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by ENGINEER will include the following as supplemented in the General Requirements. Requests for review of substitute items of material and equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall make written application to ENGINEER for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will state that the evaluation and acceptance of the proposed substitution will not prejudice CONTRACTOR’s achievement of Substantial Completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish at CONTRACTOR’s expense additional data about the proposed substitute.

6.7.2. If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to ENGINEER, if CONTRACTOR submits sufficient information to allow ENGINEER to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in paragraph 6.7.1 as applied by ENGINEER and as may be supplemented in the General Requirements.

6.7.3. ENGINEER will be allowed a reasonable time within which to evaluate each proposed substitute. ENGINEER will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without ENGINEER’s prior written acceptance which will be evidenced by either a Change Order or an approved Shop

Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute. ENGINEER will record time required by ENGINEER and ENGINEER's consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not ENGINEER accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's consultants for evaluating each proposed substitute.

Concerning Subcontractors, Suppliers and Others:

6.8.1. CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including those acceptable to OWNER and ENGINEER as indicated in paragraph 6.8.2), whether initially or as a substitute, against whom OWNER or ENGINEER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

6.8.2. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials and equipment) to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Agreement for acceptance by OWNER and ENGINEER and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's or ENGINEER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case CONTRACTOR shall submit an acceptable substitute, the Contract Price will be increased by the difference in the cost occasioned by such substitution and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER or ENGINEER of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or ENGINEER to reject *defective* Work.

6.9. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between OWNER or ENGINEER any such Subcontractor, Supplier or other person or organization, not shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

6.10. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

6.11. All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER and contains waiver provisions as required by paragraph 5.11. CONTRACTOR shall pay each Subcontractor a just share of any insurance moneys received by CONTRACTOR on account of losses under policies issued pursuant to paragraphs 5.6 and 5.7.

Patent Fees and Royalties:

6.12. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. CONTRACTOR shall indemnify and hold harmless OWNER and ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorney's fees and court and arbitration costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any inventions, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

Permits:

6.13. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or if there are no Bids on the Effective Date of the Agreement, CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

Laws and Regulations:

6.14.1. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

6.14.2. If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, CONTRACTOR shall give ENGINEER prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 3.4. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws or Regulations, and without such notice to ENGINEER, CONTRACTOR shall bear all costs arising therefrom; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

Taxes:

6.15. CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

Use of Premises:

6.16. CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of

workers to the Project site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereto or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against OWNER or ENGINEER by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER and ENGINEER harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against OWNER or ENGINEER to the extent based on a claim arising out of CONTRACTOR's performance of the Work.

6.17. During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by OWNER. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

6.18. CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

Record Documents:

6.19. CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Directive Changes, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during construction. These record documents together with all approved samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, samples and Shop Drawings will be delivered to ENGINEER for OWNER.

Safety and Protection:

6.20. CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.20.1. all employees on the Work and other persons and organizations who may be affected thereby:

6.20.2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

6.20.3. other property at the site or adjacent thereto, including trees, shrubs, laws, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

CONTRACTOR shall comply with all applicable Laws and Regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 6.20.2 or 6.20.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR). CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.13 that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.21. CONTRACTOR shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR's superintendent unless otherwise designated in writing by CONTRACTOR to OWNER.

Emergencies:

6.22. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from ENGINEER or OWNER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document the consequences of the changes or variations.

Shop Drawings and Samples:

6.23. After checking and verifying all field measurements and after complying with applicable procedures specified in the General Requirements, CONTRACTOR shall submit to ENGINEER for review and approval in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.9), or for other appropriate action if so indicated in the Supplementary Conditions, five copies (unless otherwise specified in the General Requirements) of all Shop Drawings, which will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as ENGINEER may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable ENGINEER to review the information as required.

6.24. CONTRACTOR shall also submit to ENGINEER for review and approval with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.

6.25.1. Before submission of each Shop Drawing or sample CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.

6.25.2. At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to ENGINEER for review and approval of each such variation.

6.26. ENGINEER will review and approve with reasonable promptness Shop Drawings and samples, but ENGINEER's review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by ENGINEER, and shall return the required number of corrected copies of Shop Drawings and submit as required new samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.27. ENGINEER's review and approval of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of submission as required by paragraph 6.25.2 and ENGINEER has given written

approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of paragraph 6.25.1.

6.28. Where a Shop Drawing or sample is required by the Specifications, any related Work performed prior to ENGINEER's review and approval of the pertinent submission will be the sole expense and responsibility of CONTRACTOR.

Continuing the Work:

6.29. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.5 or as CONTRACTOR and OWNER may otherwise agree in writing.

Indemnification:

6.30. To the fullest extent permitted by Laws and Regulations CONTRACTOR shall indemnify and hold harmless OWNER and ENGINEER and their consultants, agents and employees from and against all claims, damages, losses and expenses, direct, indirect or consequential (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom and (b) is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder or arises by or is imposed by Law and Regulations regardless of the negligence of any such party.

6.31. In any and all claims against OWNER or ENGINEER or any of their consultants, agents or employees by any employee of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.30 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any such Subcontractor or other person or organization under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

6.32. The obligations of CONTRACTOR under paragraph 6.30 shall not extend to the liability of ENGINEER, ENGINEER's consultants, agents or employees arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications.

ARTICLE 7 – OTHER WORK

Related Work at Site:

7.1. OWNER may perform other work related to the Project at the site by OWNER's own forces, have other work performed by utility owners or let other direct contracts therefor which shall contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to CONTRACTOR prior to starting any such other work; and, if CONTRACTOR believes that such performance will involve additional expense to CONTRACTOR or requires additional time and the parties are unable to agree as to the extent thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

7.2. CONTRACTOR shall afford each utility owner and other contractor who is a party to such a direct contract (or OWNER, if OWNER is performing the additional work with OWNER's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs, CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

7.3. If any part of CONTRACTOR's Work depends for proper execution or results upon the work of any such other contractor or utility owner (or OWNER), CONTRACTOR shall inspect and promptly report to ENGINEER in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. CONTRACTOR's failure so to report will constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in the other work.

Coordination:

7.4. If OWNER contracts with others for the performance of other work on the Project at the site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified in the Supplementary Conditions, and the specific matters to be covered by such authority and responsibility will be itemized, and the extent of such authority and responsibilities will be provided, in the Supplementary Conditions. Unless otherwise provided in the Supplementary Conditions, neither OWNER nor ENGINEER shall have any authority or responsibility in respect of such coordination.

ARTICLE 8 – OWNER’S RESPONSIBILITIES

8.1. OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.2. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer against whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER. Any dispute in connection with such appointment shall be subject to arbitration.

8.3. OWNER shall furnish the data required of OWNER under the Contract Documents promptly and shall make payments to CONTRACTOR promptly after they are due as provided in paragraphs 14.4 and 14.13.

8.4. OWNER’s duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER’s identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing structures which have been utilized by ENGINEER in preparing the Drawings and Specifications.

8.5. OWNER’s responsibilities in respect of purchasing and maintaining liability and property insurance are set forth in paragraph 5.5 through 5.8.

8.6. OWNER is obligated to execute Change Orders as indicated in paragraph 10.4.

8.7. OWNER’s responsibility in respect of certain inspections, tests and approvals is set forth in paragraph 13.4.

8.8. In connection with OWNER’s right to stop Work or suspend Work, see paragraphs 13.10 and 15.1. Paragraph 15.2 deals with OWNER’s right to terminate services of CONTRACTOR under certain circumstances.

ARTICLE 9 – ENGINEER’S STATUS DURING CONSTRUCTION

Owner’s Representative:

9.1. ENGINEER will be OWNER’s representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER’s representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and ENGINEER.

Visits to Site:

9.2. ENGINEER will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. ENGINEER’s efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform to the Contract Documents. On the basis of such visits and on-site observations as an experienced and

qualified design professional, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defects and deficiencies in the Work.

Project Representative:

9.3. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in observing the performance of the Work. The duties, responsibilities and limitations of authority of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions. If OWNER designates another agent to represent OWNER at the site who is not ENGINEER’s agent or employee, the duties, responsibilities and limitations of authority of such other person will be as provided in the Supplementary Conditions.

Clarifications and Interpretations:

9.4. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If CONTRACTOR believes that a written clarification or interpretation justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in Article 11 or Article 12.

Authorized Variations in Work:

9.5. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER, and also on CONTRACTOR who shall perform the Work involved promptly. If CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in Article 11 or 12.

Rejecting Defective Work:

9.6. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be *defective*, and will also have authority to require special inspection or testing of the Work as provided in paragraph 13.9, whether or not the Work is fabricated, installed or completed.

Shop Drawings, Change Orders and Payments:

9.7. In connection with ENGINEER’s responsibility for Shop Drawings and samples, see paragraphs 6.23 through 6.29 inclusive.

9.8. In connection with ENGINEER’s responsibilities as to Change Orders, see Articles 10, 11 and 12.

9.9. In connection with ENGINEER’s responsibilities in respect of Applications for Payment, etc., see Article 14.

Determination for Unit Price:

9.10. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decisions thereon will be final and binding upon OWNER and CONTRACTOR, unless, within ten days after the date of any such decision, either OWNER or CONTRACTOR delivers to the other party to the Agreement and to ENGINEER written notice of intention to appeal from such a decision.

Decisions on Disputes:

9.11. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 11 and 12 in respect of changes in the Contract Price or Contract Time will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter will be delivered by the claimant to ENGINEER and the other party to the Agreement promptly (but in no event later than thirty days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within sixty days after such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim.

9.12. When functioning as interpreter and judge under paragraphs 9.10 and 9.11, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to paragraphs 9.10 and 9.11 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.16) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such claim, dispute or other matter.

Limitations on ENGINEER's Responsibilities:

9.13. Neither ENGINEER's authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

9.14. Wherever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved", or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.15 or 9.16.

9.15. ENGINEER will not be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

9.16. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

ARTICLE 10 – CHANGES IN THE WORK

10.1. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by a Written Amendment, a Change Order, or a Work Directive Change. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

10.2. If OWNER and CONTRACTOR are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Work Directive Change, a claim may be made therefor as provided in Article 11 or Article 12.

10.3. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraphs 3.4. and 3.5, except in the case of an emergency as provided in paragraph 6.22 and except in the case of uncovering Work as provided in paragraph 13.9.

10.4. OWNER and CONTRACTOR shall execute appropriate Change Orders (or Written Amendments) covering:

10.4.1. changes in the Work which are ordered by OWNER pursuant to paragraph 10.1, are required because of acceptance of *defective* Work under paragraph 13.13 or correcting *defective* Work under paragraph 13.14, or are agreed to by the parties;

10.4.2. changes in the Contract Price or Contract Time which are agreed to by the parties; and

10.4.3. changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 9.11;

provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal. CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.29.

10.5. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

ARTICLE 11 – CHANGE OF CONTRACT PRICE

11.1. The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

11.2. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by claimant's written statement that the amount claimed covers all known amounts (direct, indirect and consequential) to which the claimant is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Price shall be determined by ENGINEER in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree on the amount involved. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this paragraph 11.2.

11.3. The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

11.3.1. Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved (subject to the provisions of paragraphs 11.9.1 through 11.9.3, inclusive).

11.3.2. By mutual acceptance of a lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 11.6.2.1).

11.3.3. On the basis of the Cost of the Work (determined as provided in paragraphs 11.4 and 11.5) plus a CONTRACTOR's Fee for overhead and profit (determined as provided in paragraphs 11.6 and 11.7).

Cost of the Work:

11.4. The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include

superintendents and foremen at the site. The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by OWNER.

11.4.2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3. Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of ENGINEER, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR's Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work.

11.4.5. Supplemental costs including the following:

11.4.5.1. The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

11.4.5.2. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3. Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof—all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

11.4.5.4. Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

11.4.5.5. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or

for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

11.4.5.6. Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by CONTRACTOR in connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by OWNER in accordance with paragraph 5.9), provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's Fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7. The cost of utilities, fuel and sanitary facilities at the site.

11.4.5.8. Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.9. Cost of premiums for additional Bonds and insurance required because of changes in the Work and premiums for property insurance coverage within the limits of the deductible amounts established by OWNER in accordance with paragraph 5.9.

11.5. The term Cost of the Work shall not include any of the following:

11.5.1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR's principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.4.1 or specifically covered by paragraph 11.4.4-all of which are to be considered administrative costs covered by the CONTRACTOR's Fee.

11.5.2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.

11.5.3. Any of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

11.5.4. Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by sub-paragraph 11.4.5.9 above).

11.5.5. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of *defective* Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

11.5.6. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

Contractor's Fee:

11.6. The CONTRACTOR's Fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

11.6.1. a mutually acceptable fixed fee; or if none can be agreed upon.

(This space was left blank intentionally).

11.7. Whenever the cost of any Work is to be determined pursuant to paragraph 11.4 or 11.5, CONTRACTOR will submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

Cash Allowances:

11.8. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to ENGINEER, CONTRACTOR agrees that:

11.8.1. The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

11.8.2. CONTRACTOR's costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.

Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

Unit Price Work:

11.9.1. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER in accordance with Paragraph 9.10.

11.9.2. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

11.9.3. Where the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement and there is no corresponding adjustment with respect to any other item of Work and if CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof, CONTRACTOR may make a claim for an increase in the Contract Price in accordance with Article 11 if the parties are unable to agree as to the amount of any such increase.

ARTICLE 12 – CHANGE OF CONTRACT TIME

12.1. The Contract Time may only be changed by a Change Order or a Written Amendment. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within sixty days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by ENGINEER in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this paragraph 12.1.

12.2. The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if a claim is made therefor as provided in paragraph 12.1. Such delays shall include, but not be limited to, acts or neglect by OWNER or others performing additional work as contemplated by Article 7, or to fires, floods, labor disputes, epidemics, abnormal weather conditions or acts of God.

12.3. All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 12 shall not exclude recovery for damages (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) for delay by either party.

ARTICLE 13 – WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

Warranty and Guarantee:

13.1. CONTRACTOR warrants and guarantees to OWNER and ENGINEER that all Work will be in accordance with the Contract Documents and will not be *defective*. Prompt notice of all defects shall be given to CONTRACTOR. All *defective* Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 13.

Access to Work:

13.2. ENGINEER and ENGINEER's representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access.

Tests and Inspections:

13.3. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals.

13.4. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) to specifically be inspected, tested or approved. CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with OWNER's or ENGINEER's acceptance of a Supplier of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. The cost of all inspections, tests and approvals in addition to the above which are required by the Contract Documents shall be paid by OWNER (unless otherwise specified).

13.5. All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR (or by ENGINEER if so specified).

13.6. If any Work (including the work of others) that is to be inspected, tested or approved is covered without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation. Such uncovering shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.7. Neither observations by ENGINEER nor inspections, tests or approvals by other shall relieve CONTRACTOR from CONTRACTOR's obligations to perform the Work in accordance with the Contract Documents.

Uncovering Work:

13.8. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

13.9. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is *defective*, CONTRACTOR shall bear all direct, indirect and consequential costs of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, (including but not limited to fees and charges of engineers, architects, attorneys and other professionals), and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefor as provided in Article 11. If, however, such Work is not found to be *defective*, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

Owner May Stop the Work:

13.10. If the Work is *defective*, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party.

Correction or Removal of Defective Work:

13.11. If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all *defective* Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by ENGINEER, remove it from the site and replace it with *nondefective* Work. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby.

One Year Correction Period:

13.12. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be *defective*, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions, either correct such *defective* Work, or, if it has been rejected by OWNER, remove it from the site and replace it with *nondefective* Work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the *defective* Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and charges of engineer, architects, attorneys and other professionals) will be paid by CONTRACTOR. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendments.

Acceptance of Defective Work:

13.13. If, instead of requiring correction or removal and replacement of *defective* Work, OWNER (and, prior to ENGINEER's recommendation of final payment, also ENGINEER) prefers to accept it, OWNER may do so, CONTRACTOR shall bear all direct, indirect and consequential costs attributable to OWNER's evaluation of and determination to accept such *defective* Work (such costs to be approved by ENGINEER as to reasonableness and to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals). If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefor as provided in Article 11. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

OWNER May Correct Defective Work:

13.14. If CONTRACTOR fails within a reasonable time after written notice of ENGINEER to proceed to correct and to correct *defective* Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.11, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may include CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of OWNER in exercising such rights and remedies will be charged against CONTRACTOR in an amount approved as to reasonableness by ENGINEER, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefor as provided in Article 11. Such direct, indirect and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court and arbitration costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's *defective* Work, CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies hereunder.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

Schedule of Values:

14.1. The schedule of values established as provided in paragraph 2.9 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

Application for Progress Payment:

14.2. At least twenty days before each progress payment is scheduled (but not often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation warranting that OWNER has received the materials and equipment free and clear of all liens, charges, security interests and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect OWNER's interest therein, all of which will be satisfactory to OWNER. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

CONTRACTOR's Warranty of Title:

14.3. CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

Review of Applications for Progress Payment:

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14.5. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's on-site observations of the Work in progress as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules that the Work has progressed to the point indicated; that, to the best of ENGINEER's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.10, and to any other qualifications stated in the recommendation); and that CONTRACTOR is entitled to payment of the amount recommended. However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that exhaustive or continuous on-site inspections have been made to

check the quality or the quantity of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents or that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or OWNER to withhold payment to CONTRACTOR.

14.6. ENGINEER's recommendation of final payment will constitute an additional representation by ENGINEER to OWNER that the conditions precedent to CONTRACTOR's being entitled to final payment as set forth in paragraph 14.13 have been fulfilled.

14.7. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make such representations to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

14.7.1. the Work is *defective*, or completed Work has been damaged requiring correction or replacement,

14.7.2. the Contract Price has been reduced by Written Amendment or Change Order;

14.7.3. OWNER has been required to correct *defective* Work or complete Work in accordance with paragraph 13.14, or

14.7.4. of ENGINEER's actual knowledge of the occurrence of any of the events enumerated in paragraphs 15.2.1 through 15.2.9 inclusive.

OWNER may refuse to make payment of the full amount recommended by ENGINEER because claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work or Liens have been filed in connection with the Work or there are other items entitling OWNER to a set-off against the amount recommended, but OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action.

Substantial Completion:

14.8. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within fourteen days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons

therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said fourteen days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, heat, utilities, insurance and warranties. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

14.9. OWNER shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

Partial Utilization:

14.10. Use by OWNER of any finished part of the Work, which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER and CONTRACTOR agree constitutes a separately functioning and useable part of the Work that can be used by OWNER without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

14.10.1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER and ENGINEER that said part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraphs 14.8 and 14.9 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

14.10.2. OWNER may at any time request CONTRACTOR in writing to permit OWNER to take over operation of any such part of the Work although it is not substantially complete. A copy of such request will be sent to ENGINEER and within a reasonable time thereafter OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If CONTRACTOR does not object in writing to OWNER and ENGINEER that

such part of the Work is not ready for separate operation by OWNER, ENGINEER will finalize the list of items to be completed or corrected and will deliver such list to OWNER and CONTRACTOR together with a written recommendation as to the division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, utilities, insurance, warranties and guarantees for that part of the Work which will become binding upon OWNER and CONTRACTOR at the time when OWNER takes over such operation (unless they shall have otherwise agreed in writing and so informed ENGINEER). During such operation and prior to Substantial Completion of such part of the Work, OWNER shall allow CONTRACTOR reasonable access to complete or correct items on said list and to complete other related Work.

14.10.3. No occupancy or separate operation of part of the Work will be accomplished prior to compliance with the requirements of paragraph 5.15 in respect of property insurance.

Final Inspection:

14.11. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or *defective*. CONTRACTOR shall immediately take sure measures as are necessary to remedy such deficiencies.

Final Application for Payment:

14.12. After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in paragraph 6.19) and other documents-all as required by the Contract Documents, and after ENGINEER has indicated that the Work is acceptable (subject to the provisions of paragraph 14.16), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment.

Final Payment and Acceptance:

14.13. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation – all as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application to OWNER for payment. Thereupon ENGINEER will give written notice to OWNER and CONTRACTOR that the Work

is acceptable subject to the provisions of paragraph 14.16. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application. Thirty days after presentation to OWNER of the Application and accompanying documentation, in appropriate form and substance, and with ENGINEER's recommendation and notice of acceptability, the amount recommended by ENGINEER will become due and will be paid by OWNER to CONTRACTOR.

14.14. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

Contractor's Continuing Obligation:

14.15. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by ENGINEER, nor the issuance of a certificate of Substantial Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor the issuance of a notice of acceptability by ENGINEER pursuant to paragraph 14.13, nor any correction of *defective* Work by OWNER will constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents (except as provided in paragraph 14.16).

Waiver of Claims:

14.16. The making and acceptance of final payment will constitute:

14.16.1. a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from *defective* Work appearing after final inspection pursuant to paragraph 14.11 or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by OWNER of any rights in respect of CONTRACTOR's continuing obligations under the Contract Documents; and

14.16.2. a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND
TERMINATION

Owner May Suspend Work:

15.1. OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if CONTRACTOR makes an approved claim therefor as provided in Articles 11 and 12.

Owner May Terminate:

15.2. Upon the occurrence of any one or more of the following events:

15.2.1. if CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

15.2.2. if a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

15.2.3. if CONTRACTOR makes a general assignment for the benefit of creditors;

15.2.4. if a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR's creditors;

15.2.5. if CONTRACTOR admits in writing an inability to pay its debts generally as they become due;

15.2.6. if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.9 as revised from time to time);

15.2.7. if CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

15.2.8. if CONTRACTOR disregards the authority of ENGINEER; or

15.2.9. if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety, if there be one) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to

CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the Work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such costs incurred by OWNER will be approved as to reasonableness by ENGINEER and incorporated in a Change Order, but when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

15.3. Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.4. Upon seven days' written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed and any expense sustained plus reasonable termination expenses, which will include, but not be limited to, direct indirect and consequential costs (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs).

Contractor May Stop Work or Terminate:

15.5. If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within thirty days after it is submitted, or OWNER fails for thirty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written to OWNER and ENGINEER, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Agreement, if ENGINEER has failed to act on an Application for Payment or OWNER has failed to make any payment as aforesaid. CONTRACTOR may upon seven days' written notice to OWNER and ENGINEER stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of the obligations under paragraph 6.29 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

ARTICLE 16 – ARBITRATION

16.1. All claims, disputes and other matters in question between OWNER and CONTRACTOR arising out of, or relating to the Contract Documents or the breach thereof (except for claims which have been waived by the making or acceptance of final payment as provided by paragraph 14.16) will be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then obtaining subject to the limitations of this Article 16. This agreement so to

arbitrate and any other agreement or consent to arbitrate entered into in accordance herewith as provided in this Article 16 will be specifically enforceable under the prevailing law of any court having jurisdiction.

16.2. No demand for arbitration of any claim, dispute or other matter that is required to be referred to ENGINEER initially for decision in accordance with paragraph 9.11 will be made until the earlier of (a) the date on which ENGINEER has rendered a decision or (b) the tenth day after the parties have presented their evidence to ENGINEER if a written decision has not been rendered by ENGINEER before that date. No demand for arbitration of any such claim, dispute or other matter will be made later than thirty days after the date on which ENGINEER has rendered a written decision in respect thereof in accordance with paragraph 9.11; and the failure to demand arbitration within said thirty days' period shall result in ENGINEER's decision being final and binding upon OWNER and CONTRACTOR. If ENGINEER renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence but will not supersede the arbitration proceedings, except where the decision is acceptable to the parties concerned. No demand for arbitration of any written decision of ENGINEER rendered in accordance with paragraph 9.10 will be made later than ten days after the party making such demand has delivered written notice of intention to appeal as provided in paragraph 9.10.

16.3. Notice of the demand for arbitration will be filed in writing with the other party to the Agreement and with the American Arbitration Association, and a copy will be sent to ENGINEER for information. The demand for arbitration will be made within the thirty-day or ten-day period specified in paragraph 16.2 as applicable, and in all other cases within a reasonable time after the claim, dispute or other matter in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations.

16.4. No arbitration arising out of or relating to the Contract Documents shall include by consolidation, joinder or in any other manner any other person or entity (including ENGINEER, ENGINEER's agents, employees or consultants) who is not a party to this contract unless:

16.4.1. the inclusion of such other person or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration,

16.4.2. such other person or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings, and

16.4.3. the written consent of the other person or entity sought to be included and of OWNER and CONTRACTOR has been obtained for such inclusion, which consent shall make specific reference to this paragraph; but no such consent shall constitute consent to arbitration of any dispute not specifically described in such consent or to arbitration with any party not specifically identified in such consent.

16.5. The award rendered by the arbitrators will be final, judgment may be entered upon it in any court having jurisdiction thereof, and will not be subject to modification or appeal except to the extent permitted by Sections 10 and 11 of the Federal Arbitration Act (9 U.S.C. §§ 10,11).

ARTICLE 17 – MISCELLANEOUS

Giving Notice:

17.1. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

Computation of Time:

17.2.1. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.2.2. A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

General:

17.3. Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 17.3 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

17.4. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.30, 13.1, 13.12, 13.14, 14.3 and 15.2 and all of the rights and remedies available to OWNER and

ENGINEER thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representatives, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.

Technical Specifications

**TDEC ARPA ID WW-PDC-1
Waste Water Treatment Plant
Generator Replacement**

TECHINCAL SPECIFICATIONS

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Appendix A – Drawings

C1	Site Plan
S101	Foundation Detail
A035F947	Foundation Plan
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E-2	Electrical Plans

**DIVISION 01— GENERAL REQUIREMENTS
SECTION 01 11 00-SUMMARY OF WORK**

PART I -GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS/REQUIREMENTS INCLUDED

- A. The Work of this Contract comprises the general construction of: City of Dyersburg – Waste Water Treatment Plan Generator Replacement located at the Waste Water Treatment Plan on 435 Highway 51 in Dyersburg, Tennessee. The work includes but not limited the removal and disposal of the existing generator, removal and disposal of a portion of the existing concrete pad, earthwork for concrete pad, furnish and install new concrete pad, furnish and install new 300 kW Generator with 600-gallon subbase tank along with necessary conduit and wiring.

1.02 RELATED REQUIREMENTS

- A. General and Supplementary Conditions.

1.03 CONTRACTS

- A. Construct the Work under a single unit-price contract, as shown on the Bid Form.

1.04 WORK BY OTHERS - Not Applicable

1.05 FUTURE WORK— Not Applicable

1.06 WORK SEQUENCE

- A. Construct the Work in stages to accommodate the Owner's use of the premises during the construction period; coordinate the construction schedule and operations with the Owner's Representative.
- B. Construct the Work in stages to provide for public convenience.
 - 1. Do not close off public use of facilities until completion of one stage of construction will provide alternative usage.
 - 2. Stages of construction are those indicated on drawings.

1.07 CONTRACTOR'S USE OF PREMISES

- A. Contractor shall limit his use of the premises for Work and for storage, to allow for:
 - 1. Work by other Contractors:
 - 2. Owner occupancy.
 - 3. Public use.
- B. Coordinate use of premises under direction of Owner's Representative.
- C. Assume full responsibility for the protection and safekeeping of Products under this Contract, stored on the site.
- D. Move any stored Products, under Contractor's control, which interfere with operations of the Owner or separate contractor.
- E. Obtain and pay for the use of additional storage or work areas needed for operations.

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01 25 13 PRODUCT SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.01 SUBSTITUTIONS:

- A. Contractor assumes all risks associated with premature ordering and installation of substitute products.
- B. The specifically named manufacturers, products, and systems, and descriptive characteristics used in the Contract Documents normally serve only to establish a level of quality and a performance standard. Unless a specific restriction is placed upon an item in the specifications, Contractor may submit proposals for substitutions. The Owner reserves the right to disallow substitutions.
- C. Delays caused by tardiness of Contractor in preparing and forwarding submittals do not constitute an acceptable basis for consideration of substitute products. Delays due to factors which were in effect prior to project bidding do not constitute an acceptable basis for consideration of substitute products.
- D. Decisions heretofore made concerning the equivalence or equality of materials, supplies and equipment furnished for or incorporated in other projects, completed or under construction for the Owner shall not be considered as precedents or criteria and shall have no bearing or influence on the question of equivalent, equal or comparable materials, supplies and equipment for the Work.

1.02 SUBSTITUTION REQUEST FORM:

- A. Requests for substitutions shall be submitted to Designer on the form exhibited as Section 01 25 33, or in a similar format which provides the same or more information.
- B. When making requests for substitutions, Contractor assumes the following responsibilities:
 - 1. To have investigated the proposed substitute product and determined it is equal or superior in all respects to that specified;
 - 2. To provide the same warranty for substitute that Contractor would for that specified;
 - 3. To provide complete cost data, and waive all claims for additional costs related to substitution which subsequently become apparent; and
 - 4. To coordinate installation of the accepted substitute, making such changes as may be required for Work to be complete in all respects.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

01 25 33 – PRODUCT SUBSTITUTION REQUEST FORM

To: <<Designer name>>	Project: <<Project name>>
Attention: <<Designer contact>>	SBC Number: <<Number>>
Specified Item Name and Manufacturer: <<Item name and manufacturer>>	Proposed Substitute Item Name and Manufacturer: <<Item name and manufacturer>>

1. The following are attached (mark all that apply):
 - Complete Description Catalog
 - Laboratory Tests Specifications Data
2. This substitution will have the following effects on dimensions, gauges, weights, etc.:
<<Comments>>
3. This substitution will have the following effects on wiring, piping, ductwork, etc.:
<<Comments>>
4. This substitution will have the following effects on other trades:
<<Comments>>
5. This substitution will have the following effect on construction schedules:
<<Comments>>
6. The proposed substitute(s) differs from the specified product(s) in quality and performance as follows:
<<Comments>>
7. Manufacturer guarantees for the substitute(s) and the specified product(s) are (check one):
 - The Same Different (if different, explain below)<<Comments>>

01 25 33 – PRODUCT SUBSTITUTION REQUEST FORM

8. Information on the availability of maintenance services and replacement materials for proposed substitute(s) is provided on an attached sheet.

Attached Not Applicable

9. Names, addresses, and phone numbers of fabricators and suppliers for proposed substitute(s) are provided on an attached sheet.

Attached Not Applicable

10. If the proposed substitution is accepted, it will result in:

No Cost Impact
 A Cost Decrease of \$<<Amount>>
 A Cost Increase of \$<<Amount>> As Shown on Attached Itemization

11. License fees or royalties are pending on the proposed substitute.

No Yes (if yes, explain below)

<<Comments>>

12. The undersigned shall pay for additional studies, investigations, submittals, redesign, and analysis by the Designer necessitated by this substitution request.

Substitutions must be requested in accordance with applicable Contract requirements. After bidding, substitutions are to be submitted only by Contractor. Substitute products should not be ordered or installed without written acceptance.

Submitted By:

Signature:	Date: <<Date>>
Printed Name: <<Name>>	Firm Name: <<Name>>

13. Designer Review and Comments:

Accepted Rejected
 Accepted as Noted Rejected (received too late)
 Rejected (submitted incomplete)

<<Comments>>

Signature:	Date:
Printed Name:	Firm Name:

14. Owner Review:

Signature:	Date:
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END OF SECTION

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DIVISION 01 - GENERAL REQUIREMENTS
SECTION 01 26 00 - CHANGE ORDER PROCEDURES

PART I - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Promptly implement change order procedures.
 - 1. Provide full written data required to evaluate changes.
 - 2. Maintain detailed records of work done on a time-and-material/force account basis.
 - 3. Provide full documentation to Engineer on request.
- B. Designated in writing the member of Contractor's organization:
 - 1. Who is authorized to accept changes in the Work.
 - 2. Who is responsible for informing others in the Contractor's employ of the authorization of changes in the Work.
- C. Owner will designate in writing the person who is authorized to execute Change Orders.

1.02 RELATED REQUIREMENTS

- A. Agreement: The amounts of established unit prices.
- B. Conditions of the Contract:
 - 1. Methods of determining cost or credit to Owner resulting from changes in Work made on a time and material basis.
 - 2. Contractor's claims for additional costs.
- C. Section 01 29 00: Applications for Payment

1.03 DEFINITIONS

- A. Change Order: See General Conditions
- B. Engineer's Supplemental Instructions: A written order, instructions, or interpretations, signed by Engineer making minor changes in the Work not involving a change-in Contract Sum or Contract Time.

1.04 PRELIMINARY PROCEDURES

- A. Owner or Engineer may initiate changes by submitting a Proposal Request to Contractor. Request will include:
 - 1. Detailed description of the Change, Products, and location of the change in the Project.
 - 2. Supplementary or Revised Drawings and Specifications.
 - 3. The projected time span for making the change, and a specific statement as to whether overtime work is, or is not authorized.
 - 4. A specific period of time during which the requested price will be considered valid.
 - 5. Such request is for information only, and is not an instruction to execute the changes, nor to stop Work in progress.
- B. Contractor may initiate changes by submitting a written notice to Engineer containing:
 - 1. Description of the proposed changes

2. Statement of the reason for making the changes
3. Statement of the effect on the Contract Sum and the Contract Time
4. Statement of the effect on the work of separate contractors
5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

1.05 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. Support each quotation for a lump-sum proposal, and for each unit price which has not previously/ been established, with sufficient substantiating data to allow Engineer to evaluate the quotation.
- B. On request, provide additional data to support time and cost computations:
 1. Labor required
 2. Equipment required
 3. Products required
 - a. Recommended source of purchase and unit cost
 - b. Quantities required
 4. Taxes, insurance, and bonds
 5. Credit for work deleted from Contract, similarly documented
 6. Overhead and profit
 7. Justification for any change in Contract time.
- C. Support each claim for additional costs, and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information.
 1. Name of the Owner's authorized agent who ordered the work, and date of the order.
 2. Dates and times work was performed, and by whom.
 3. Time record, summary of hours worked, and hourly rates paid.
 4. Receipts and invoices for:
 - a. Equipment used, listing dates and time of use
 - b. Products used, listing of quantities
 - c. Subcontracts

1.06 PREPARATION OF CHANGE ORDERS

- A. Engineer will prepare each change order.
- B. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
- C. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

1.07 LUMP-SUM I UNIT PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
 1. Engineer's Proposal Request and Contractor's responsive Proposal as mutually agreed between Owner and Contractor.
 2. Contractor's Proposal for a change, as recommended by Engineer.
- B. Owner and Engineer will sign and date the Change Order as authorization for the Contractor to proceed with the changes.
- C. Contractor' may sign and date the Change Order to indicate agreement with the terms therein.

1.08 UNIT PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
 - 1. Engineer's definition of the scope of the required changes.
 - 2. Contractor's Proposal for a change, as recommended by Engineer.
 - 3. purvey of completed work.
- B. The amounts of the unit prices to be:
 - 1. Those stated in the Agreement
 - 2. Those mutually agreed upon between Owner and Contractor
- C. When quantities of each of the items affected by the Change Order can be determined prior to start of the work.
 - 1. Owner and Engineer will sign and date the Change Order as authorization for Contractor to proceed with the changes.
 - 2. Contractor may sign and date the Change Order to indicate agreement with the terms therein.
- D. When quantities of the items cannot be determined prior to start of the work:
 - 1. Engineer or Owner will issue a construction change authorization directing Contractor to proceed with the change on the basis of unit prices, and will cite the applicable unit prices.
 - 2. At completion of the change, Engineer will determine the cost of such work based on the unit prices and quantities used.
 - a. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.
 - 3. Engineer will sign and date the Change Order to indicate his agreement with the terms therein.
 - 4. Owner and Contractor will sign and date the Change Order to indicate their agreement with the terms therein.

1.09 CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Periodically revise Request for Payment forms to record each change as a separate item of Work and to record the adjusted Contract Sum.
- B. Periodically revise the Construction Schedule to reflect each change in Contract Time.
- C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

PART 2- PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 01 26 00

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DIVISION 01 - GENERAL REQUIREMENTS
SECTION 01 26 64— WEATHER DAYS

- A. Wet Conditions: the required time of completion is given in calendar days in the Bid Form (which becomes part of the Contract). It is expressly understood and agreed, by and between the Contractor and Owner, that the time for completion of the work described in the bid form is a reasonable time for completion of the same, taking into consideration the average climatic range and usual lost time due to normal seasonal weather in this locality.

Time for completion in the Bid Form includes the average number of days that are lost due to wet conditions. The table below shows the average number of days lost in each month due to wet conditions on outdoors civil projects. These days are derived from historical data provided by the National Climatic Data Center regarding rainfall for Memphis, TN and Nashville, TN. They represent a number less than the actual number of days of measurable rainfall that can be expected to occur during a twenty-four (24) hour period for the months indicated.

<u>Month</u>	<u>Average Days Lost to Normal Wet Conditions</u>
January	8
February	8
March	8
April	9
May	7
June	4
July	6
August	5
September	7
October	6
November	6
December	7

Based on rainfall data provided by the National Climatic Data Center for Memphis and Nashville, the total contract time includes these days that are expected to be lost each month.

- B. Ice, Standing Snow and Frozen Ground:

In addition to work being delayed due to wet conditions (See A. above), it is recognized that the work may also be delayed due to certain conditions relating to ice, snow and frozen ground; and loss of working time may also be claimed for such last mentioned conditions in accordance with the provisions of this paragraph. The average number of days lost per month in this locality due to ice, standing snow and frozen ground conditions shall be considered zero, however, lost days due to ice, standing snow and frozen ground conditions may be claimed if it is caused by one or more of the following conditions which prevent outside construction activity or access to the site within a 24-hour period:

1. Ice which does not melt on a substantial portion of the project by 10A.M.
2. Temperatures which do not rise above 32 degrees F by 10A.M.
3. Standing snow in excess of one inch (1.00").

- C. Further Provisions Regarding Time for Completion:

1. A weather delay day may be counted only if worse than average weather prevents work on the project for 50 percent or more of the Contractor's scheduled work day.
2. The Contractor must submit Daily Jobsite Work Log showing which and to what extent construction activities have been affected by weather, on a monthly basis.
3. The Contractor must submit actual weather data to support a claim for the time extension obtained from nearest NOAA weather station or other independently verified source approved

- by the Owner at the beginning of the project.
4. The Contractor must maintain a rain gauge, thermometer and clock at the job site. Keep daily records of precipitation, temperature and the time of each occurrence throughout the project.
 5. The Contractor must organize claim and documentation to facilitate evaluation on a basis of calendar month periods, and submit monthly to the Owner.
 6. If an extension of the contract time is appropriate, it shall be effected in accordance with the provisions of the General Conditions of this contract.
 7. No extra cost will be incurred by the Owner for any extra time increase to the contract.

EXAMPLE: The following example is given for further clarification of how extra time for wet conditions and/or ice, standing snow and frozen ground is to be calculated. If wet conditions were to occur for a total of fifteen (15) days during the month of January, then the extra contract time allowed would be 15 days minus 8 days (from table above), or 7 days which may be rounded up to the nearest whole day. Also, if during the same month there was standing snow on any combination of conditions as in B above for three (3) days, then the Contractor would be allowed an extra 3.0 days in addition to the 7.0 days for wet conditions. The Contractor would get a total of 10.0 extra days. No extra cost will be incurred by the Owner for any extra time increase to the Contract.

END OF SECTION 01 26 64

DIVISION 01 - GENERAL REQUIREMENTS
SECTION 01 29 00- APPLICATIONS FOR PAYMENT

PART I -GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Submit applications for Payment to engineer in accord with the schedule established by Conditions of the Contract and Agreement Between Owner and Contractor.

1.02 ELATED REQUIREMENTS

- A. Agreement Between Owner and Contractor: Unit Prices.
- B. Conditions of the Contract: Progress Payments, Retainages and Final Payment.
- C. Section 01 77 00: Contract Closeout.

1.03 FORMAT AND DATA REQUIRED

- A. Submit applications typed on an Application for Payment form acceptable to the Owner, with itemized data typed on 8 1/2 by 11" white paper continuation sheets.
- B. Provide itemized data on continuation sheet:
 - 1. Format, schedules, line items and values: Those of the Schedule of Values accepted by the engineer.

1.04 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT

- A. Application Form:
 - 1. Fill in required information, including that for Change Orders executed prior to date of submittal of application.
 - 2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
 - 3. Executive certification with signature of a responsible officer of Contract Firm.
- B. Continuation Sheets
 - 1. Fill in total list of all scheduled component items of Work, with item number and scheduled dollar value for each item.
 - 2. Fill in dollar value in each column for each scheduled line item when work has been performed or products stored.
 - 3. List each Change Order executed prior to date of submission, at the end of the continuation sheets.
 - a. List by Change Order Number, and description, as for an original component item of work.

1.05 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. When the Owner or the Engineer requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:
 - 1. Project
 - 2. Application Number and Date
 - 3. Detailed list of enclosures

4. For stored products:
 - a. Item number and identification as shown on application
 - b. Description of specific material
- B. Submit on copy of data and cover letter for each copy of application.

1.06 PREPARATION OF APPLICATION FOR FINAL PAYMENT

- A. Fill in Application form as specified for progress payments.
- B. Use continuation sheet for presenting the final statement of accounting as specified in Section 01 77 00 - Contract Close-out.

1.07 SUBMITTAL PROCEDURE

- A. Submit Application for Payment to Engineer at the times stipulated in the Agreement.
- B. Number: Five copies of each Application
- C. When Engineer finds Application properly completed and correct, he will transmit certificate for payment to Owner, with copy to Contractor.

PART 2- PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 29 00

**DIVISION 01— GENERAL REQUIREMENTS
SECTION 01 31 19 -PROJECT MEETINGS**

PART I - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Within twenty (20) days after the effective date of the Agreement and prior to commencing work on the project, the Contractor shall meet with the Engineer and the Owner for a Preconstruction Conference. The time and place shall be designated by the Engineer.
- B. As he sees fit, the Engineer may periodically request that the Contractor meet with the Owner and the Engineer to discuss the progress of the Work. The Contractor shall attend such meetings. -

1.02 RELATED REQUIREMENTS

- A. Conditions of the Contract
- B. Notice of Award

1.03 RECORD OF DISCUSSION

- A. The Engineer shall prepare a written record of the discussions conducted during such meetings and shall distribute a copy to each party in attendance or affected by the discussions.
- B. Any party whose understanding of a discussion or action differs from that presented by the Engineer in the written record shall promptly notify the Engineer of the difference

PART 2- PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 01 31 19

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DIVISION 01— GENERAL REQUIREMENTS
SECTION 01 33 00 - SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART I -GENERAL

1.01 RELATED DOCUMENTS

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

1.02 DESCRIPTION OF REQUIREMENTS

- A. General: This section specifies procedural requirements for non-administrative submittals including shop drawings, product data, samples and other miscellaneous work-related submittals. Shop drawings, product data, samples and other work-related submittals are required to amplify, expand and coordinate the information contained in the Contract Documents.
- B. Refer to other Division-1 sections and other contract documents for specifications on administrative, non-work-related submittals. Such submittals include, but are not limited to the following items:
 - 1. Permits.
 - 2. Payment applications.
 - 3. Performance and payment bonds.
 - 4. Insurance certificates.
 - 5. Inspection and test reports.
 - 6. Schedule of values.
 - 7. Progress reports.
 - 8. Listing of subcontractors.
- C. Product data includes standard printed information on manufactured products that has not been specially-prepared for this project.
- D. Miscellaneous submittals are work-related, non-administrative submittals that do not fit in the two previous categories, including, but not limited to, the following:
 - 1. Specially-prepared and standard printed warranties.
 - 2. Maintenance agreements.
 - 3. Workmanship bonds.
 - 4. Testing and certification reports.
 - 5. Record drawings.
 - 6. Field measurement data.
 - 7. Overrun stock.

1.03 SUBMITTAL PROCEDURES

- A. General: Refer to the General Conditions for basic procedures for submittal handling.
- B. Coordination: Coordinate the preparation and processing of submittals with the performance of the work. Coordinate each separate submittals with other submittals and related activities such as testing, purchasing, fabrication, delivery and similar activities that require sequential activity.
- C. Coordinate the submittal of different units of interrelated work so that one submittal will

not be delayed by the Engineer's need to review a related submittal. The Engineer reserves the right to withhold action on any submittal requiring coordination with other submittals until related submittals are forthcoming.

- D. Coordination of Submittal Times: Prepare and transmit each submittal to the Engineer sufficiently in advance of the scheduled performance of related work and other applicable activities. Transmit different kinds of submittals for the same unit of work so that processing will not be delayed by the Engineer's need to review submittals concurrently for coordination.
1. Review Time: Allow sufficient time so that the installation will not be delayed as a result of the time required to properly process submittals, including time for resubmittal, if necessary. Advise the Engineer on each submittal, as to whether processing time is critical to the progress of the work, and if the work would be expedited if processing time could be shortened.
 2. Allow two weeks for the Engineer's initial processing of each submittal. Allow a longer time period where processing must be delayed for coordination with subsequent submittals. The Engineer will advise the Contractor promptly when it is determined that a submittal being processed must be delayed for coordination.
 3. Allow one week for reprocessing each submittal.
 4. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Engineer sufficiently in advance of the work.
- E. Submittal Preparation: Mark each submittal with a permanent label for identification. Provide the following information on the label for proper processing and recording of action taken.
1. Project Name
 2. Date
 3. Name and address of Engineer.
 4. Name and address of Contractor.
 5. Name and address of subcontractor.
 6. Name and address of supplier.
 7. Name of manufacturer.
 8. Number and title of appropriate specification section.
 9. Drawing number and detail references, as appropriate.
 10. Similar definitive information as necessary.
- F. Provide a space on the label for the Contractor's review and approval markings, and a space for the Engineer's "Action" marking.
- G. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Engineer, and to other destinations as indicated, by use of a transmittal form. Submittals received from sources other than the Contractor will be returned to the sender "without action".
- H. Transmittal Form: Prepare a draft of a transmittal form and submit it to the Engineer for acceptance. Provide on the form places for the following information:
1. Project name.
 2. Date.
 3. To:
 4. From:
 5. Names of subcontractor, manufacturer and supplier.
 6. References.
 7. Category and type of submittal.

8. Submittal purpose and description.
 9. Submittal and transmittal distribution record.
 10. Signature of transmitter.
 11. Contractor's certification stating that the information submitted complies with the requirements of the Contract
 12. Documents, with a place for the Contractor's signature.
- I. Record relevant information and requests for data on the transmittal form. On the transmittal form, or on a separate sheet attached to the form, record deviations from the requirements of the Contract Documents, if any, including minor variations and limitations.

1.04 SPECIFIC SUBMITTAL REQUIREMENTS

- A. General: Specific submittal requirements for individual units of work are specified in the applicable specification section. Except as otherwise indicate in the individual specification sections, comply with the requirements specified herein for each type of submittal.
- B. Where it is necessary to provide intermediate submittals between the initial and final submittals, provide and process intermediate submittals in the same manner as for initial submittals.
- C. Product Data: General information required specifically as product data includes manufacturer's standard printed recommendations for application and use, compliance with recognized standards of trade associations and testing agencies, and the application of their labels and seals (if any, special notation of dimensions which have been verified by way of field measurement, and special coordination requirements for interfacing the material, product or system with other work.
- D. Preparation: Collect required product data into a single submittal for each unit of work or system. Mark each copy to show which choices and options are applicable to the project. Where product data has been printed to include information on several similar products, some of which are not required for use on the project, or are not included in this submittal, mark the copies to show clearly that such information is not applicable.
- E. Submittals: Product data submittal is required for information and record and to determine that the products, materials and systems comply with the provisions of the contract documents. Therefore, the initial submittal is also the final submittal, except where the Engineer observes that there is a non-compliance with the provisions of the contract documents and returns the submittal promptly to the Contractor marked with the appropriate "Action."
- F. Initial Submittal: Except as otherwise indicated in individual sections of these specifications, submit 2 copies of each required product data submittal, plus 2 additional copies where required for maintenance manuals. The Engineer will retain one copy, and will return the other marked with "Action" and corrections or modifications as required.
- G. Do not submit product data or allow its use on the project, until compliance with the requirements of the contract documents has been confirmed by the Contractor.
- H. Final Distribution: Furnish copies of product data to subcontractors, suppliers, fabricators, manufacturers, installers, governing authorities and others as required for proper performance of the work. Show distribution on transmittal forms.

Installation Copy: Do not proceed with installation of materials, products and systems until a copy of product data applicable to the installation is in the possession of the installer. Do not permit the use of unmarked copies of product data in connection with the performance of the work.

- J. Closeout Submittals: Refer to section "Project Closeout" and to individual sections of these specifications for specific submittal requirements of project closeout information, materials, tools, and similar items.
- K. Record Documents: Furnish set of original documents as maintained on the project site. Along with original marked-up record drawings provide 2 photographic copies of marked-up drawings, which, at the Contractor's option, may be reduced to not less than half size.
- L. Operating and Maintenance Data: Furnish 2 bound copies of operating data and maintenance manuals.
- M. Materials and Tools: Refer to individual sections of these specifications for required quantities of spare parts, extra and overrun stock, maintenance tools and devices, keys, and similar physical units to be submitted.
- N. General Distribution: Provide additional distribution of submittals to subcontractors, suppliers, fabricators, installers, governing authorities and others as necessary for the proper performance of the work. Include such additional copies of submittals in the transmittal to the Engineer where the submittals are required to receive "Action" marking before final distribution. Record distributions on transmittal forms.

1.05 ENGINEER'S ACTION

- A. General: Except for submittals for the record and similar purposes, where action and return on submittals is required or requested, the Engineer will review each submittal, mark with appropriate "Action", and where possible return within 2 weeks of receipt. Where the submittal must be held for coordination the Engineer will so advise the Contractor without delay.
- B. Action Stamp: The Engineer will stamp each submittal to be returned with a uniform, self explanatory action stamp, appropriately marked and executed to indicate whether the submittal returned is for unrestricted use, final-but-restricted use (as marked), must be revised and resubmitted (use not permitted) or without action (as explained on the transmittal form).
- C. Final Unrestricted Release: Where the submittals are marked as follows, the work covered by the submittal may proceed provided it complies with the requirements of the contract documents; acceptance of the work will depend upon that compliance.

Marking: "Approved."

- D. Final-But-Restricted Release: When the submittals are marked as follows, the work covered by the submittal may proceed provided it complies with both the Engineer's notations or corrections on the submittal and with the requirements of the contract documents; acceptance of the work will depend on that compliance.

Marking: "Approved as Noted."

- E. Returned for Resubmittal: When the submittal is marked as follows, do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise the submittal or prepare a new submittal in accordance with the

Engineer's notations stating the reasons for returning the submittal; resubmit the submittal without delay. Repeat if necessary to obtain a different action marking. Do not permit submittals with the following marking to be used at the project site, or elsewhere where work is in progress.

Marking: "Disapproved, Resubmit."

- F. Other Action: Where the submittal is returned, marked with the Engineer's explanation, for special processing or other Contractor activity, or is primarily for information or record purposes, the submittal will be marked as follows:

Marking: "No Action."

PART 2- PRODUCTS (not applicable)

PART 3 – EXECUTION (not applicable)

END OF SECTION 01 33 00

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DIVISION 01— GENERAL REQUIREMENTS
SECTION 01 45 23 - TESTING LABORATORY SERVICES

PART I - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall employ, and pay for, services of an independent testing laboratory, acceptable to the Engineer, to perform specified services. See respective specification sections for required services.

1.02 RELATED DOCUMENTS

- A. Section 31 22 00 – Earthwork
- B. Section 32 13 13 - Concrete

1.03 QUALIFICATION OF LABORATORIES

- A. Meet "Recommended Requirements for Independent Laboratory Qualifications," edition which is current when Agreement is signed by Owner and Contractor, published by American Council of Independent Laboratories.
- B. Meet basic requirements of ASTM E 329-72 "Standards for Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction."
- C. Be licensed to operate in the State in which the work is performed.
- D. Have properly calibrated equipment, calibrated within the past 12 months by devices of accuracy traceable to either:
 - 1. National Bureau of Standards; or
 - 2. Accepted values of natural physical constants.

1.04 LABORATORY DUTIES

- A. Cooperate with Owner and Engineer and provide qualified personnel promptly on notice.
- B. Perform specified inspections, sampling and testing of materials and methods of construction:
 - 1. Comply with specified standards, ASTM, other recognized authorities, and as specified.
 - 2. Ascertain compliance with requirements of Contract Documents.
- C. Promptly notify Engineer and Contractor of irregularities or deficiencies in Work which are observed during performance of duties.
- D. Promptly submit three copies of reports of inspections and tests to Owner and Engineer, and submit two copies of those reports to Contractor at the project site.
 - 1. Date issued;
 - 2. Project title, number, and location;
 - 3. Testing laboratory name and address;
 - 4. Name and signature of inspector;

5. Date of inspection and sampling;
6. Date of test;
7. Identification of product and specification section;
8. Type of inspection or test; and
9. Observations regarding compliance with Contract Documents.

1.05 LIMITATIONS OF AUTHORITY

- A. Laboratory is not authorized to:
- B. Release, revoke, alter, or enlarge on, requirements of Contract Document.
 1. Approve or accept any portion of the Work.
 2. Perform any duties of the Contractor.

1.06 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with Laboratory personnel and provide access to Work.
- B. Provide to Laboratory, representatives samples of materials to be tested, in required quantities.
- C. Furnish copies of mill test reports.
- D. Furnish casual labor and facilities:
 1. To provide access to work to be tested;
 2. To obtain and handle samples at the site;
 3. To facilitate inspections and tests; and
 4. For Laboratory's exclusive use for storage and curing of test samples.
- E. Notify Laboratory sufficiently in advance of operations to allow for assignment of personnel and scheduling of tests.
- F. Pay for all laboratory tests to assure full compliance with the specifications.
- G. Pay for additional tests when initial tests indicate work does not comply with Contract Documents.

END OF SECTION 01 45 23

DIVISION 01 - GENERAL REQUIREMENTS
SECTION 01 60 00 - MATERIAL AND EQUIPMENT

PART I - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Material and equipment incorporated into the Work:
 - 1. Conform to applicable specifications and standards.
 - 2. Comply with size, make, type, and quality specified, or as specifically approved in writing by the Engineer.
 - 3. Manufactured and Fabricated Products:
 - a. Design, fabricate, and assemble in accord with the best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
 - c. Two or more items of the same kind shall be identical, by the same manufacturer.
 - d. Products shall be suitable for service conditions.
 - e. Equipment capacities, sizes, and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
 - 4. Do not use material or equipment for any purpose other than that for which it is designated or is specified.

1.02 RELATED REQUIREMENTS

- A. Conditions of the Contract.
- B. Section 0111 00: Summary of Work.
- C. Section 01 33 00: Shop Drawings, Product Data, and Samples
- D. Section 01 74 00: Cleaning.

1.03 REUSE OF EXISTING MATERIAL

- A. Except as specifically indicated or specified, materials and equipment removed from the existing structure, if any, shall not be used in the completed Work.
- B. For material and equipment specifically indicated or specified to be reused in the Work:
 - 1. Use special care in removal, handling, storage, and reinstallation, to assure proper function in the completed Work.
 - 2. Arrange for transportation, storage, and handling of products which require off-site storage, restoration, or renovation. Pay all costs for such work.

1.04 MANUFACTURER'S INSTRUCTIONS

- A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to Engineer.
 - 1. Maintain one set of complete instructions at the job site during installation and until completion.

- B. Handle, install, connect, clean, condition, and adjust products in strict accord with such instructions and in conformity with specified requirements.
 - 1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer for further instructions.
 - 2. Do not proceed with work without clear instructions.
- C. Perform work in accord with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.05 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of Products in accord with construction schedules, coordinate to avoid conflict with work and conditions at the site.
 - 1. Deliver Products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 - 2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that Products are properly protected and undamaged.
- B. Provide equipment and personnel to handle Products by methods to prevent soiling or damage to Products or packaging.

1.06 STORAGE AND PROTECTION

- A. Store Products in accord with manufacturer's instructions with seals and labels intact and legible.
 - 1. Store products subject to damage by the elements in weathertight enclosures.
 - 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
- B. Exterior Storage:
 - 1. Store fabricated products above the ground or on blocking or skids to prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
 - 2. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- C. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored Products to assure that Products are maintained under specified conditions, and free from damage and deterioration.
- D. Protection After Installation:
 - 1. Provide substantial coverings as necessary to protect installed Products from damage from traffic and subsequent construction operations. Remove when no longer needed.

1.07 SUBSTITUTIONS AND PRODUCT OPTIONS

- A. Products List:
 - 1. Within 7 days before Bid Date, submit to Engineer a complete list of major Products proposed to be used, with the name of the manufacturer and the installing Subcontractor.

- B. Contractor's Options:
1. For Products specified only by reference standard, select any Product meeting that standard.
 2. For Products specified by naming several Products or manufacturers, select any one of the products or manufacturers named, which complies with the specifications.
 3. For Products specified by naming one or more Products or manufacturers or "or equal," Contractor must submit a request as for substitutions for any Product or manufacturer not specifically named.
 4. For Products specified by naming only one Product and manufacturer, there is no option.
- C. Substitutions:
1. For a period of 30 days after Contract Date, Engineer will consider written requests from Contractor for substitution of Products.
 2. Submit a separate request for each Product, supported with complete data, with drawings and samples as appropriate, including:
 - a. Comparison of qualities of the proposed substitution with that specified.
 - b. Changes required in other elements of the work because of the substitution.
 - c. Effect on the construction schedule.
 - d. Cost data comparing the proposed substitution with the Product specified.
 - e. Any required license fees or royalties.
 - f. Availability of maintenance service, and source of replacement materials.
 3. Engineer shall be the judge of the acceptability of the proposed substitution.
- D. Contractor's Representation:
1. The request for a substitution constitutes a representation that Contractor:
 - a. Has investigated the proposed Product and determined that it is equal to or superior in all respects to that specified.
 - b. Will provide the same warranties or bonds for the substitution as for the Product specified.
 - c. Will coordinate the installation of an accepted substitution into the Work, and make such other changes as may be required to make the Work.
 - d. Waives all claims for additional costs, under his responsibility, which may subsequently become apparent.
- E. Engineer will review requests for substitutions with reasonable promptness, and notify Contractor, in writing, of the decision to accept or reject the requested substitution

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

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DIVISION 01 - GENERAL REQUIREMENTS
SECTION 01 74 00 – CLEANING

PART I -GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Execute cleaning, during progress of the Work, and at completion of the Work, as required by General Conditions.

1.02 RELATED REQUIREMENTS

- A. Conditions of the Contract.
- B. Each Specification Section: Cleaning for specific Products or work.

1.03 DISPOSAL REQUIREMENTS

- A. Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

PART 2-PRODUCTS

2.01 MATERIALS

- A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.
- B. Use only those cleaning materials and methods recommended by manufacturer of the surface materials to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3- EXECUTION

3.01 DURING CONSTRUCTION

- A. Execute periodic cleaning to keep the Work, the site and adjacent properties free from accumulations of waste materials, rubbish, and wind-blown debris, resulting from construction operations.
- B. Provide on-site containers for the collection of waste materials, debris, and rubbish.
- C. Remove waste materials, debris, and rubbish from the site periodically and dispose of at legal disposal areas away from the site.

3.02 DUST CONTROL

- A. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.

- B. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.

3.03 FINAL CLEANING

- A. Employ skilled workman for final cleaning.
- B. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.
- C. Broom clean exterior paved surfaces; rack clean other surfaces of the grounds.
- D. Prior to final completion, or Owner occupancy, Contractor shall conduct an inspection of sight-exposed interior and exterior surfaces, and all work areas, to verify that the entire Work is clean.

END OF SECTION 01 74 00

**DIVISION 01 - GENERAL REQUIREMENTS
SECTION 01 77 00 - CONTRACT CLOSEOUT**

PART I - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Comply with requirements stated in Conditions of the Contract and in Specifications for administrative procedures in closing out the Work.

1.02 RELATED REQUIREMENTS

- A. Conditions of the Contract: Fiscal provisions, legal submittals, and additional administrative requirements.
- B. Section 0174 00: Cleaning.
- C. Section 0178 39: Projects Record Documents.
- D. The respective sections of specifications: Closeout Submittals Required of Trades.

1.03 SUBSTANTIAL COMPLETION

- A. When Contractor considers the Work substantially complete, he shall submit to Engineer:
 - 1. A written notice that the Work, or designated portion therefore, is substantially complete.
 - 2. A list of items to be completed or corrected.
- B. Within a reasonable time after receipt of such notice, Engineer will make an inspection to determine the status of completion.
- C. Should Engineer determine that the Work is not substantially complete:
 - 1. Engineer will promptly notify the Contractor in writing, giving the reasons therefore.
 - 2. Contractor shall remedy the deficiencies in the Work, and send a second written notice of substantial completion to the Engineer.
 - 3. Engineer will reinspect the Work.
- D. When the Engineer finds that the Work is substantially complete, he will:
 - 1. Prepare and deliver to Owner a tentative Certificate of Substantial Completion with a tentative list of items to be completed before final payment.
 - 2. After consideration of any objections made by the Owner as provided in Conditions of the Contract, and when Engineer considers the Work substantially complete, he will execute and deliver to the Owner and the Contractor a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected.

1.04 FINAL INSPECTION

- A. When Contractor considers the work complete, he shall submit written certification that:
 - 1. Contract Documents have been reviewed.
 - 2. Work has been inspected for compliance with Contract Documents.

3. Work has been completed in accordance with Contract Documents.
 4. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
 5. Work is completed and ready for final inspection.
- B. Engineer will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.
- C. Should Engineer consider that the Work is incomplete or defective:
1. Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.
 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to Engineer that the Work is complete.
 3. Engineer will reinspect the Work.
- D. When the Engineer finds that the Work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.

1.05 REINSPECTION FEES

- A. Should Engineer perform reinspection due to failure of the Work to comply with the claims of status of completion made by the Contractor:
1. Owner will compensate Engineer for such additional service.
 2. Owner will deduct the amount of such compensation from the final payment to the Contractor.

1.06 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ENGINEER

- A. Evidence of compliance with requirements of governing authorities.
- B. Project Record Documents: to requirement of Section 01 78 39.
- C. Evidence of Payment and Release of Liens: To requirements of General and Supplementary Conditions.
- D. Consent of Surety
- E. Certificate of Insurance for Products and Completed Operations, as applicable.

1.07 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting to Engineer.
- B. Statement shall reflect all adjustments to the Contract Sum:
1. The original Contract Sum.
 2. Additions and deductions resulting from:
 - a. Previous Change Orders.
 - b. Allowances.
 - c. Unit Prices.
 - d. Deduction for uncorrected work.
 - e. Penalties and Bonuses.
 - f. Deductions for liquidated damages.
 - g. Deductions for reinspection payments.
 - h. Other adjustments.

3. Total Contract Sum, as adjusted.
 4. Previous Payments.
 5. Sum remaining due.
- C. Engineer will prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

1.08 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

PART 2 - PRODUCTS

(Not Used)

PART 3- EXECUTION

(Not Used)

END OF SECTION 01 77 00

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DIVISION 01— GENERAL REQUIREMENTS
SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART I - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Maintain at the site for the Owner one record copy of:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other Modifications to the Contract.
 - 5. Engineer Field Orders or written instructions.
 - 6. Approved Shop Drawings, Product Data, and Samples.
 - 7. Field Test records.
 - 8. Construction photographs.

1.02 RELATED REQUIREMENTS

- A. Section 01 33 00: Shop Drawings, Product Data, and Samples.

1.03 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. If a field office is, based on site, store documents and samples in Contractor's field office apart from documents used for construction.
 - 1. Provide files and racks for storage of documents.
 - 2. Provide locked cabinet or secure storage space for storage of samples.
- B. File documents and samples in accordance with CSI/CSC format.
- C. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- D. Make documents and samples available at all times for inspection by Landscape Architect.

1.04 MARKING DEVICES

- A. Provide felt-tip marking pens for recording information in the color code designated by Landscape Architect.

1.05 RECORDING

- A. Label each document 'PRODUCT RECORD' in neat, large printed letters.
- B. Record information concurrently with construction progress.
 - 1. Do not conceal any work until required information is recorded.

1.06 SUBMITTAL

- A. At Contract closeout, deliver Record Documents to Landscape Architect for the Owner.
- B. Accompany submittal with transmittal letter in duplicate, containing

1. Date.
2. Project title and number.
3. Contractor's name and address.
4. Title and number of each Record Document.
5. Signature of Contractor or his authorized representative.

PART 2- PRODUCTS

(Not Used)

PART 3- EXECUTION

(Not Used)

END OF SECTION 01 78 39

SECTION 31 20 00 - DEMOLITION

PART 1 - GENERAL

1.01 SCOPE OF WORK:

A. General:

1. Furnish all plant removal/relocation, equipment, labor, and all other equipment and materials required to perform the operations connected with the removal of all site demolition, including any building(s) and foundation, large trees, utilities, equipment and building components shown on the drawings and/or as otherwise specified.
2. Related work is required by the following sections:
 - a. **Section 312200 - Earthwork**
3. Refer to the mechanical and electrical drawings for related work required.
4. See paragraph 3.01.B.2 for Owner-retained materials.

B. The General Contractor is responsible for all demolition, including the coordination of all items and materials to be removed and the full extent of the demolition.

1. Contractor shall notify all corporations, companies, individuals, and/or local authorities which possess conduits, wires, poles, pipes, etc., within the limits of the site.
2. Before starting demolition, disconnect all utilities to be removed. When such disconnection will interrupt the utility services to an area not included in the Contract, arrangements for such interruption shall be made with the Owner at least 24 hours in advance of the interruption.
3. Preserve the condition of all active utilities traversing the construction space, whether or not designated to remain. This will include relocation of utilities (if necessary). This includes underground electrical primary or secondary utilities, water, gas, and storm sewers that exist on the site.
4. Since utility services for the remaining building will remain in service, the mechanical, electrical, and plumbing disconnection, relocation, and/or removal will be performed under their respective sections of this specification.
5. The extent of all demolition shall be carefully coordinated with the respective trades. Any areas or extent of demolition beyond that which is necessary will be the responsibility of the General Contractor.
6. The Contractor shall assume all responsibility for scheduling and accomplishing all demolition work on the project and will hold the Owner, Architect, and the consulting engineers harmless of any claims of negligence related to any construction procedures that may cause personal or property damage to any party on or in the vicinity of the property.

1.02 PROTECTION OF ADJOINING PROPERTY AND BUILDINGS:

- A. Execute all demolition work to ensure adjoining property and buildings against damages which may occur to all shrubs, trees, lawns, walls, walks, drives, etc. Do not interfere with use of adjoining property or building; maintain free, safe passage to and from same.
- B. Take all precautions to guard against movements, settlement, or collapse of any walls, basement or areaway walls, walks, paving to street passage. The Contractor is liable for, and will promptly repair, such damage when so directed.
- C. Repair any damage done to the Owner's property or to any other property by reason of the required work.

1.03 PRE-BID SITE VISIT:

Carefully examine the areas and conditions affecting the demolition and removal of all materials. The Contractor is responsible for the methods, including coordination with the Owner and all subcontractors.

1.04 ENVIRONMENTAL REQUIREMENTS:

A. **Dust Control:**

Use all means necessary to prevent the spread of dust during the performance of the work of this section. The use of vacuum equipment, floor sweeps, moisture sprays, and/or plastic bags is required to prevent dust being a nuisance to the occupants of the building and concurrent performance of the work on site.

- B. Burning of refuse and debris for disposal purposes is at the project site is ***strictly prohibited***.

C. **Noise Control:**

The use of jack hammers, core drills, and other power-driven tools or equipment shall be carefully coordinated with the Owner.

D. **Mud and Water Control:**

The Contractor is responsible for controlling all possible mud and water flow and accumulations on site and off site, on or in adjacent streets, sidewalks, parking areas, drains, catch basins, underground storm or sanitary lines. All such accumulations or occurrences must be promptly removed by hose washing, brooming, repair, and/or replacement. Protect remaining buildings from rain water at all times during demolition work.

- E. Any hazardous material discovered must be removed by the Owner under separate contract.

PART 2 - PRODUCTS

2.01 MATERIALS:

Furnish all necessary tools and equipment proper for demolition.

PART 3 - EXECUTION

3.01 MATERIALS REMOVAL:

A. Owner:

1. Prior to demolition by the Contractor, the Owner will remove all furniture, fixtures, equipment, cooking utensils, built-in cabinets, etc., and disconnect, remove, and store any appliances.
2. Prior to demolition, the Owner will remove all landscape planting on site desired to be saved and replanted in chosen areas.

B. Contractor:

1. Provide all materials described under paragraph 1.01.A, "Scope of Work."
2. The Owner requires the Contractor to disconnect, remove, save, and store all mechanical, electrical, and plumbing equipment, appliances, fixtures, built-in cabinets, hardware, doors, windows, and millwork caused by the demolition work.
3. The Contractor shall perform daily clean-up operations whenever debris accumulates. Any on-site accumulation shall be kept in enclosed trash containers or trucks ready to leave the site.

3.02 CLEAN-UP:

- A. Upon completion of the work, remove all tools, materials, plant apparatuses, and rubbish of every sort. Leave premises clean, neat, and orderly.
- B. Remove and transport debris and rubbish in a manner that prevents spillage on streets and adjacent areas. Clean up spillage, on-site and off, caused by demolition work.

END OF SECTION

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SECTION 31 22 00 - EARTHWORK

PART 1 – GENERAL

1.01 SCOPE:

Furnish all labor, materials, tools, and equipment necessary for excavation, filling, and grading work as herein specified, shown on the drawings, or reasonably implied to complete the construction.

A. **Extent of Work:**

Earthwork, including but not necessarily limited to the following:

1. Excavation, filling and backfilling, preparation of subgrade, and rough and finish grading in conjunction with building pad and paving.
2. Disposal of excavated materials not required for fills.
3. Protection of underground utilities.
4. Keeping excavations and site free of standing water.
5. Shoring, bracing, piling, planking, and cribbing as required; removal of same.
6. Erosion and sediment control.

B. See the following sections for scope of work described therein:

1. ***Section 31 23 16 - Trenching, Backfilling, and Compaction.***
2. Excavation and backfilling in conjunction with mechanical and electrical work.

1.02 QUALITY ASSURANCE:

- A. See ***Quality Control Section*** of this Project Manual for soil quality control.
- B. See ***Inspection Testing Services Section*** of this Project Manual for earthwork services.
- C. Laboratory and geotechnical engineer shall prepare a written report of services performed and distribute these reports to the Architect and Contractor.

PART 2 - MATERIALS

2.01 FILL MATERIALS:

- A. Suitable materials for areas not requiring specific compaction densities are earth, stone, gravel, or other material of acceptable quality that are free of debris, roots, organic matter, frozen matter, and free of stones greater than 2-1/2" in diameter.
- B. Unsuitable materials are materials that contain debris, roots, organic matter, frozen matter, stones greater than 2-1/2" in diameter, and other materials that are determined by the soil engineer as too wet or otherwise unsuitable for providing a stable subgrade or stable foundation for structures.

C. **Structural Fill for Areas Requiring Specific Compaction Densities:**

1. Materials with liquid limit not exceeding 45 and plastic limit not exceeding 25.
2. Excavated materials in classification SP and SM, in accordance with the Unified Soil Classification System, may be used if specified densities are obtained.
3. Materials shall not contain any unsuitable matter.

D. "**Topsoil**" shall be defined as fertile agricultural soil typical of locality and capable of sustaining vigorous plant growth from well drained site that is free of flooding; free of admixture subsoil, slag or clay, stones, lumps, line plants and their roots, sticks, and other extraneous matter. Excavated existing sandy loam topsoil may be used if conforming to foregoing specified requirements.

PART 3 – EXECUTION

3.01 SITE PREPARATION FILL REQUIREMENTS:

- A. To prepare for construction it is recommended that all topsoil, vegetation, roots, and any soft soils in the building area be stripped from the ground surface and either wasted or stockpiled for later use in landscaping. Utilities should be located and re-routed as necessary. After stripping (and excavating to the proposed subgrade level as required), the building area should be proof-rolled with a loaded 30 ton dump truck. Soils which are observed to rut or deflect excessively under the moving load should be undercut and replaced with properly compacted fill. All proof-rolling and undercutting should be witnessed by a qualified geotechnical engineer and should be performed during a period of dry weather.
- B. If the soil test borings were made during the rainy season the surficial soils may be somewhat soft and saturated. If grading work is performed while the upper soils are very moist some undercutting on the order of one to two [1'-0" to 2'-0"] feet may be required prior to filling the site. Typical construction traffic (dump trucks, concrete trucks, etc.) will pump or rut wet soils, thus requiring the soils to be stabilized or replaced. However, if the grading work is performed during an extended period of dry weather (i.e., the summer months), undercutting may not be required.
- C. After stripping, excavating where required, and proof-rolling, but prior to placing fill, the exposed soils should be scarified and then processed to a moisture content between three [3] percentage points below and two [2] percentage points above the standard Proctor optimum. The subgrade should be recompacted to a dry density of at least 95 percent of the standard Proctor maximum dry density for depths of at least eight [8"] inches below the surface.
- D. After subgrade preparation and inspection have been completed, fill placement may begin. Fill materials should be free of organic or other deleterious materials, have a maximum particle size of three [3"] inches, liquid limit less than 40 and a plasticity index less than 20. If a fine-grained (silt or clay) soil is used for fill very close moisture content control will be required to achieve the recommended degree of compaction.
- E. Fine-grained structural fill should be compacted to at least 95 percent of the standard Proctor maximum dry density as determined by ASTM Designation D698. Granular soils should be compacted to at least 100 percent of the standard Proctor density. If the granular soils are of a free draining type (i.e., less than about twelve [12%] percent fines) for which impact compaction will not produce a well defined moisture-density relationship curve, they should be compacted to at least 70 percent relative density as determined by ASTM

Designations D4523 and D4254.

- F. Fine-grained fill should be placed in maximum lifts of eight [8"] inches of loose material and should be compacted within the range of two [2] percentage points above to three [3] percentage points below the optimum moisture content as determined by the standard Proctor test. If water must be added it should be uniformly applied and thoroughly mixed into the soil by disking or scarifying.
- G. The fill should extend outward from the exterior perimeter of the building a distance equal to the height of fill or five [5'-0"] feet, whichever is greater.
- H. Each lift of compacted soil should be tested by the geotechnical engineer or his representative prior to placement of subsequent lifts. As a guideline it is recommended that field density tests be taken at a frequency of no less than one [1] test per 2,500 sq. ft. of surface area per lift of fill in the building area.

3.02 EXCAVATIONS:

After opening, footings should be inspected and concrete placed as quickly as possible to avoid exposure of the footing bottoms to wetting and drying. If it is required that footing excavations be left open for more than one [1] day they should be protected to reduce evaporation or entry of soil moisture. Adequate protection against sloughing of soil should be provided for workers and inspectors entering the footing excavations, utility trenches, and undercut areas (this protection should meet the requirements of OSHA and applicable building codes).

3.03 DRAINAGE:

Water should not be allowed to collect near the foundations or floor slab areas of the building either during or after construction. Proper drainage should be provided by sloping the ground surface away from the structure. Splash blocks may be helpful in directing water away from the foundations.

3.04 WEATHER CONDITIONS:

During wet weather periods increases in moisture can cause significant reduction in the soil strength and support capabilities. In addition, soils which become wet may be slow to dry and thus significantly retard the progress of grading and compaction activities. It will, therefore, be advantageous to perform earthwork and foundation construction during dry weather.

3.05 DISCOVERY OF DEFECTS:

The Contractor will, upon becoming aware of subsurface or latent physical conditions differing from those disclosed by the original soil investigation work, promptly notify the Owner verbally and in writing to permit verification of the conditions and the nature of the differing conditions. No claim by the Contractor for any conditions differing from those anticipated in the plans and specifications and disclosed by the soil studies will be allowed unless the Contractor has so notified the Owner, verbally and in writing as required above, of such differing conditions.

END OF SECTION

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SECTION 31 23 16 - TRENCHING, BACKFILLING, AND COMPACTION

PART 1 - GENERAL

1.01 SCOPE:

This Contractor shall furnish all labor and materials and perform all work to complete the following:

- A. Excavation for underground piping/conduits.
- B. Provide necessary sheeting, shoring, and bracing.
- C. Prepare trench bottom with appropriate materials.
- D. Remove water from excavation, as required.
- E. Place and compact granular beds, as required, and backfill.

1.02 RELATED WORK:

- A. See **Section 31 22 00 - Earthwork**.

1.03 PRECAUTIONS:

- A. Notify utility companies when it is necessary to disturb existing facilities and abide by their requirements for repairing and replacing.
- B. Protect all vegetation and other features to remain.
- C. Protect all benchmarks and survey points.
- D. When the trench is to be located within a right-of-way or easement, the Contractor shall acquaint himself with the requirements and shall continue all work elements within the limits of the right-of-way or easement. Provide barriers, warning lights, and other protective devices at all trenches to protect the public welfare.
- E. Provide for the movement and protection of traffic, both vehicular and pedestrian, including flagmen where required.

1.04 REGULATORY AGENCY:

- A. All open excavation made in the Earth's surface shall comply with subpart "P", **Excavations**, of OSHA's 29 CFR, Part 1926.
- B. All excavations more than twenty [20'-0"] feet in depth must be designed by a registered engineer. Submit plans, sealed by a professional engineer, of these excavations to the Architect for approval.

PART 2 - MATERIALS

2.01 BEDDING AND BACKFILL MATERIALS:

A. Class A Material:

Continuous concrete cradle constructed in conformity with details shown on drawings, consisting of concrete as specified in ***Cast-in-Place Concrete Section***.

B. Class B Material:

Sand or natural sandy soil, all passing a three-eighths [3/8"] inch sieve with not more than ten [10%] percent passing a No. 200 sieve; or stone, gravel, chert or slag.

C. Class C Material:

Natural ground or compacted embankment at a depth of at least ten [10%] percent of the outside vertical pipe diameter.

D. In rock cuts or other areas where free drainage bedding or backfill materials are required, use crushed stone, slag, or washed gravel.

E. For crushed stone pavement and shoulder replacement, use crushed stone.

PART 3 - EXECUTION

3.01 PREPARATION:

A. Install barriers and other devices to protect areas adjacent to construction.

B. Protect and maintain all benchmarks and other survey points.

3.02 EXCAVATION TRENCHES:

A. Perform in such a manner as to form a suitable trench in which to place the pipe and so as to cause the least inconvenience to the public.

B. Maximum width at the crown of the pipe shall be two [2'-0"] feet plus the nominal diameter of the pipe.

C. Cut pavement along neat, straight lines with either a pavement breaker or pavement saw.

D. Trench depth for lines shall be as shown on the plans or as specified.

E. Align trench as shown on the plans unless a change is necessary to miss an unforeseen obstruction.

F. Whenever the trench bottom is in unstable soil, it shall be undercut. The depth of the undercut shall be sufficient so that when backfilled with foundation material, the trench bottom shall be stable enough to accommodate foot traffic without shoving or pumping. The foundation material shall be clean sand meeting with requirements of this section.

G. Whenever, due to neglect or error, the excavation is carried below grade, it shall be backfilled to the desired grade with select granular bedding material or other material

acceptable to the Architect. The backfill material shall be compacted in accordance with **Earthwork Section**.

- H. Excavated material suitable for backfill shall be preserved in an orderly manner and at locations that will not overload sides of the excavation. Material that is not required for backfill shall be removed by this Contractor to such disposal areas as may be provided by the Owner and directed by the Architect.

3.03 SHEETING, SHORING, AND BRACING:

- A. When necessary or when directed by the engineer, furnish, put in place, and maintain such sheeting, bracing, etc., as may be required to support the sides of the excavation and to prevent movement to provide protection for workmen, the work, adjoining structure(s), and pavement. Comply with local regulations or, in the absence thereof, refer to the "**Manual of Accident Prevention in Construction**," published by the Associated General Contractors of America, Inc.
- B. Take care to prevent voids outside the sheeting.
- C. If voids are formed, fill and ram them immediately to the satisfaction of the engineer.
- D. Devise plans for performing this work, subject to the approval of the engineer.
- E. Unless adjacent facilities will be injured, remove all sheeting, shoring, and bracing after backfill has been placed to a depth of eighteen [18"] inches over the pipeline.
- F. Cut shoring off at the top of the pipe and leave the lower section in the trench.

3.04 DISPOSAL OF EXCAVATED MATERIAL:

Satisfactorily dispose of all excess excavated material that is not suitable for embankments.

3.05 UNAUTHORIZED EXCAVATION:

- A. All excavations outside or below the proposed lines and grades shown on the plans or directed by the engineer are considered unauthorized.
- B. Backfill areas of unauthorized excavation with the type material necessary (earth, rock or concrete) to ensure the stability of the structure of construction involved.
- C. Unauthorized excavation or backfill to replace same shall not be a pay item.

3.06 REMOVAL OF WATER:

- A. Keep excavated areas free of water while work is in progress.
- B. Well-pointing shall be performed, if required.
- C. Take particular precautions to prevent the displacement of structures or pipelines as a result of accumulated water.

3.07 OBSTRUCTIONS:

- A. Obstructions shown on the plans are for information purposes only and do not guarantee their exact locations, nor that other obstructions are not present.
- B. When utilities or obstructions are not shown on the plans but are present off the roadway at the location of the proposed pipeline route, the Contractor may request relocation of the pipeline in the roadway, if necessary, to avoid disturbing the utility or obstructions.
- C. Exercise due care in excavating adjacent to existing obstructions and do not disturb same unless absolutely necessary.

3.08 BEDDING MATERIALS:

- A. Use Class A, B, or C bedding, as shown on the plans. If Class is not indicated, Class C bedding is to be used.
- B. Construction Class B bedding is to be used in a trench cut in natural ground or compacted embankment.
 - 1. Bed pipe on six [6"] inches of Class B material and sufficient additional Class B material accurately shaped by a template to fit the lower part of the pipe exterior.
 - 2. Ram and tamp in layers not over six [6"] inches in loose thickness around the pipe to a minimum depth of that shown on the plans.
 - 3. When bell and spigot pipe is to be placed, dig recesses in the bedding material of sufficient width and depth to accommodate the bell.
- C. Construction Class C Bedding is to be used in a Shallow Trench
 - 1. Shape the bedding to fit the lower pipe exterior for the specified embedment.
 - 2. When bell and spigot pipe is to be placed, dig recesses of sufficient width and depth to accommodate the bell.

3.09 BACKFILLING - GENERAL:

- A. Backfill shall be thoroughly compacted with a heavy rammer or an approved mechanical tamper or, if the soil is of granular nature, by puddling with hose and long pipe nozzle after the trench is backfilled, provided that under the location of pavement and other surfacing, the backfill shall be compacted solidly with mechanical tampers in layers not more than six [6"] inches thick, measured loose.
- B. All backfilling of trenches or other excavation shall be accomplished in a manner approved by the engineer to ensure, in the opinion of the engineer, the following compaction: A ninety-five [95%] percent compaction standard proctor within the building area.

3.10 INITIAL BACKFILLING:

- A. Do not begin backfilling before the engineer has inspected the grade and alignment of the pipe, the bedding of the pipe, and the joints between the pipe. If backfill material is placed over the pipe before an inspection is made, reopen the trench so that inspection can be made. Locations and invert elevations of all piping shall be recorded on the record drawings.
- B. Perform backfilling by hand, together with tamping, until fill has progressed to eighteen [18"] inches above the top of the pipe.
 - 1. Deposit Class I granular material (where required) or loose soil, free of lumps, clods, frozen material, or stones in layers approximately six [6"] inches thick.
 - 2. Compact by hand or with a manually operated machine tamper actuated by compressed air or other suitable means.
 - 3. Use taps and machines of suitable type which do not crush or otherwise damage the pipe.

3.11 FINAL BACKFILLING:

- A. After backfill has reached a point of eighteen [18"] inches or more above the top of the pipe, perform final backfilling as needed due to the location of the work and danger from subsequent settlement.
- B. **Backfilling in Unimproved Areas:**
 - 1. Dispose of all soft or yielding material which is unsuitable for trench and replace backfill with suitable material.
 - 2. Deposit backfill to the surface of the ground by dragline, bulldozer, or other suitable equipment in such a manner so as not to disturb the pipe.
 - 3. Neatly round sufficient surplus excavated material over the treatment so as to compensate for settlement afterward.
 - 4. Dispose of all surplus excavated material.
 - 5. Prior to final acceptance, remove all mounds to the elevation of the surrounding terrain.

END OF SECTION

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SECTION 31 25 00 - EROSION CONTROL

PART 1 - GENERAL

1.01 SCOPE:

- A. Erosion control measure shall be installed, inspected and maintained as indicated on the Drawings and as required to minimize and control sediment on site and from leaving the site without additional costs to the Owner.

1.02 RELATED DOCUMENTS:

- A. Drawings and **General Provisions of the Contract**, including **General** and **Supplementary Conditions** and all **DIVISION 1** sections apply to the work of this section.
- B. Ground cover section (Lawns and Grasses and/or Turfgrass Sod).

1.03 DESCRIPTION:

- A. This work consists of furnishing all materials, equipment, supervision, and labor necessary to provide erosion control measures as shown or reasonably implied in the drawings.
- B. The Contractor shall have soils analysis performed to determine fertilizer application rates necessary for the site.

PART 2 - PRODUCTS

2.01 HAY BALES:

Hay bales only to be used as supplemental measures. Small grain straw of tame hay, compacted in bales with wire ties, approximate dimensions 24" x 48" x 24", weighing 45 lbs. minimum per bale, air-dried, free of undesirable weed seed shall be provided.

2.02 SILT FENCE:

Silt fence specification shall be in accordance with the local and state specifications.

2.03 OTHER MEASURES:

Alternative materials and methods that are considered must be approved by Engineer and TDEC.

PART 3 - EXECUTION

3.01 CONSTRUCTION SCHEDULE:

- A. A construction schedule shall be an integral part of the plan. It shall establish a sequence of construction operations which will facilitate the control of erosion. Among the factors to be considered are:

1. Limiting initiation of work to minimum area necessary to execute work, leaving soil cover on other areas undisturbed.
2. Completing work on individual areas as quickly as possible to permit installation of planned temporary and permanent erosion control measures.
3. Whenever land-disturbing activity is undertaken, a ground cover sufficient to restrain erosion must be planted or otherwise provided within 15 working days on that portion of the tract upon which further active construction is not being undertaken.

3.02 TEMPORARY SOIL EROSION MEASURES:

Site grading operation of preparation shall not commence until immediate and temporary soil erosion measures are installed. These temporary measures shall be as indicated on the plans or as required by the local authorities.

END OF SECTION

SECTION 32 13 13 - CONCRETE PAVING

PART 1 - GENERAL

1.01 DESCRIPTION:

All exterior concrete, including paving, aprons, drives, ramps, sidewalks, steps, curbs and gutters, bases for lighting or equipment, loading dock slabs, retaining walls and headwalls, and any concrete exposed to the weather shall be installed complete with reinforcement.

1.02 RELATED WORK:

See **Section 31 22 00 - Earthwork**

1.03 SUBMITTALS:

- A. Make submittals in accordance with Submittal Section.
- B. Material content per cubic yard of each class of concrete finished, three [3] copies:
 - 1. Dry weights of cement.
 - 2. Saturated surface-dried weights of fine and coarse aggregate.
 - 3. Quantities, type, and name of admixtures.
 - 4. Weight of water.
- C. Proposed concrete mix design of each class of concrete for review prior to commencement of work.
- D. Store materials in area protected from weather and moisture.
- E. Remove damaged materials from site.

1.04 ENVIRONMENTAL REQUIREMENTS:

- A. **Allowable Concrete Temperatures:**
 - 1. Cold weather -- Maximum and minimum, ASTM C94.
 - 2. Hot weather -- Maximum concrete temperature shall be 90 degrees F.

1.05 INSPECTION AND TESTING:

- A. Inspection and testing will be performed by the testing laboratory.
- B. Tests will be performed as follows:
 - 1. Concrete inspection and tests shall be as listed in **Methods of Sampling and Testing**, ASTM C94.

2. Three [3] concrete test cylinders for every 75 cubic yards, or less.
 3. One additional test cylinder during cold weather concreting, cured on job site under same conditions as the concrete it represents.
 4. One [1] slump test for each set of test cylinders taken.
- C. See *Inspection Testing Services* section.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS:

- A. **Portland Cements:** ASTM C150; Type 1, 1A, 111 or 111A.
- B. Fine and Coarse aggregates shall consist of limestone, one [1"] maximum size for walks.
- C. Water shall be clean and free from injurious amounts of oil, alkali, organic matter, or other deleterious material.
- D. Air entrainment shall conform to ASTM C260.

2.02 REINFORCEMENT:

- A. Reinforcing steel shall be sixty [60] ksi yield strength, deformed billet steel bars, ASTM A615, plain finish.
- B. Welded steel wire fabric shall be plain type, ASTM A185, plain finish.

NOTE: This reinforcement shall be installed in all exterior concrete slabs described in ARTICLE 1.01 and in the areas shown on the structural drawings.

- C. Tie wire shall be minimum 16-gauge annealed type, or patented system acceptable to Engineer.
- D. Fabricated bar mats shall be ASTM A184, or ASTM A615, Grade 60 steel bars.
- E. Joint dowel bars shall be plain steel bars, ASTM A615, Grade 60.

2.03 FORMWORK:

Formwork shall be matched, tightly fitted, and adequately stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of concrete.

2.04 EXPANSION JOINT FILLER AND SEALANT:

- A. **Paving:**
 1. Joint filler shall be non-extruding type, premoulded bituminous, impregnated fiberboard units complying with ASTM D1751, and FS HH-F-341, Type 1.

2. Sealant shall be *Sonolastic Paving Joint Sealant*, No. 884, 2-component, pourable, self-leveling urethane.

2.05 CONCRETE MIX:

- A. Ready-mixed concrete shall be normal weight concrete conforming to ASTM C94.
- B. **Walks, Steps, Curbs, Gutters, Bases, Headwalls, etc.:**
 1. Compressive strength shall be 4,000 psi minimum at 28 days.
 2. Slump range shall be from two to four [2" to 4"] inches.
 3. Air Content shall be from three to five [3.0% to 5.0%] percent.
- C. **Paving for Drives:**
 1. Slump range shall be from one and one-half to three [1½" to 3"] inches.
 2. Air content shall be from four to five [4.0% to 5.0%] percent.
 3. Flexural strength shall conform to ASTM C78, 650 psi minimum at 28 days.
 4. Compressive strength shall be 4,000 psi minimum at 28 days.
- D. Use accelerating admixtures in cold weather only when acceptable to the engineer. Use of admixtures shall not relax cold weather placement requirements. DO NOT use calcium chloride.
- E. Use set-retarding admixtures during hot weather only when acceptable to the engineer.

2.06 CONCRETE CURING MATERIALS:

Membrane-forming curing compound shall be in accordance with ASTM C309, Type 2, white pigmented.

PART 3 - EXECUTION

3.01 INSPECTION:

- A. Examine areas and conditions under which concrete paving is to be installed. Inspect for conditions detrimental to proper and timely completion of work.
- B. Check subgrade for conformity with elevations and section.
- C. Do not begin paving work until subgrade proof-rolling, filling, and preparation have been completed as specified in **Section 31 22 00**. Base and sub-base shall meet the requirements of Standard Specifications for Road and Bridge Construction, 2006 Edition, published by the Tennessee Department of Transportation, Nashville, Tennessee.

3.02 FORMING:

- A. Form vertical surfaces to full depth, and securely position to required lines and levels. Ensure

form ties are not placed so as to pass through concrete.

- B. Arrange and assemble formwork to permit easy dismantling and stripping, and to prevent damage to concrete during formwork removal.

3.03 PLACING REINFORCING:

- A. Reinforce concrete pavement, walks, curbs and gutters. Allow for minimum of one and one-half [1½"] inch concrete cover.
- B. Do not extend reinforcing through expansion joints. Provide doweled joints through expansion and contraction joints, with one end of dowels fitted with capped sleeve to allow free movement.

3.04 FORMING EXPANSION AND CONTRACTION JOINTS:

- A. Place expansion and contraction joints at intervals indicated. Where possible, make joints of curbs coincide with joints in walks. When sidewalks abut building, provide continuous joint filler.
- B. Fit joints with filler of required profiles, perpendicular to longitudinal axis of walks, curbs and gutters. Recess one-half [½"] inch below finished concrete surface.
- C. Fillers and sealants shall be as specified. Comply with the requirements in the specifications for preparation of joints, materials, installation and performance.

3.05 PLACEMENT:

- A. Consult **Cast-in-Place Concrete** for concrete placements.
 - 1. The use of tamping tools on slabs to force coarse aggregate away from the surface are prohibited.
 - 2. The use of troweling machines are prohibited.

3.06 CONCRETE FINISHING:

After striking-off and consolidating concrete, smooth surface by screeding and floating. Use hand methods only where mechanical floating is not possible. Adjust floating to compact surface and produce uniform texture.

After floating, test surface for trueness with a ten [10'-0"] foot straight edge. Distribute concrete as required to remove surface irregularities, and re-float repaired areas to provide a continuous smooth finish.

Work edges of slabs, gutters, back top edge of curb, and formed joints with an edging tool, and round to one-half [½"] inch radius, unless otherwise indicated. Eliminate tool marks on concrete surface.

After completion of floating and troweling, when excess moisture or surface sheen has disappeared, complete surface finishing as follows:

Broom finish by drawing fine-hair broom across concrete surface, perpendicular to line of

traffic. Repeat operation, if required, to provide a fine line texture.

On inclined slab surfaces provide a coarse, non-slip finish by scoring surface with a stiff-bristled broom, perpendicular to line of traffic.

3.07 CURING:

Protect and cure finished concrete paving, complying with applicable requirements of the sections in **DIVISION 3** of this Project Manual. Use curing and sealing compound or approved moist-curing methods.

END OF SECTION

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SECTION 32 92 00 - LAWNS AND GRASSES

PART 1 - GENERAL

1.01 SECTION INCLUDES:

Provide all labor, materials, equipment, installation, and tests for all seeding and mulching in accordance with all applicable codes. All areas noted on plans to receive seed.

1.02 RELATED SECTIONS:

- A. *Section 31 22 00 – Earthwork*
- B. *Section 31 25 00 – Erosion Control*

1.03 QUALITY ASSURANCE:

- A. Test existing soil in accordance with the requirements of the local Agricultural Department to evaluate the required and recommended fertilizer to properly germinate the seeding process.
 - 1. Supply written analysis stating N, P, and K requirements, organic matter content, and Ph value of soil.
- B. The selection of all materials and execution of all preparation required under the Drawings and Specifications shall be subject to approval of the Engineer. The Engineer shall have the right to reject any and all materials, all work, which is in his opinion does not meet the requirements Specifications or Drawings at any stage of the operations. Rejected materials shall be removed from the site.
- C. The Contractor shall notify the Authority having jurisdiction at least 48 hours in advance of the time he intends to begin sowing seed and shall not proceed with such work until permission to do so has been granted. Before starting operation on any area, final dressing shall have been completed in accordance with the provisions of Section 02200. All seeding and related operation
- D. Maintenance of Site During Planting: Sidewalks, roads, and other pavement adjacent to planting operation shall be kept clean and free of obstructions, mud and debris at all times. Wheels of vehicles used in work shall be cleaned if necessary. Flushing of streets or disposal of dirt or debris into sewers or drainage ditches will not be permitted. Dust shall be controlled by approved means.

1.04 GUARANTEE:

- A. One year after completion of work under this Section, lawn shall be solid color well-sodded mat, reasonably free from weeds.
- B. Inspection for Beginning of Guarantee Period
 - 1. Inspection of the planting work, to determine its completion for beginning the guarantee period, will be made by the Authority having jurisdiction, and given approval in writing upon Notice requesting such inspection by the Contractor.
 - 2. All planting must be alive and healthy in order to be considered complete.

- C. Final Inspection and Replacements: Inspection of the plating to determine its final acceptance will be made at the conclusion of the guarantee period. No grassing shall be accepted unless alive and healthy.
- D. Provide a uniform stand of grass by watering, mowing, and maintaining seeded areas until final acceptance. Re-seed areas, with specified materials, which fail to provide a uniform stand of grass until all affected areas are accepted by the Owner.

1.05 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver grass seed in original containers showing analysis of seed mixture, percentages of pure seed, year of production, net weight, date of packaging and location of packaging. Damaged packages shall NOT be acceptable to site.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- C. Deliver straw or mulch in original bales or bags properly stored in original bags or containers.

PART 2 - PRODUCTS

2.01 GROWING MEDIA:

A. Topsoil

Natural, fertile, agricultural soil typical of the locality, capable of sustaining vigorous plant growth, from a well drained site free of flooding, not in frozen or muddy condition, not less than 6 percent organic matter, and Ph value of 5.9 to 7.0. Free from subsoil, slag, clay, stones, lumps, live plants, roots, sticks, crabgrass, couch grass, noxious weeds, and foreign matter.

B. Fertilizer

13-13-13 grade commercial type with 13 percent nitrogen 13 percent P_2O_5 , and 13 percent K_2O or as required by the testing specified hereinbefore, Article 1.03 - Quality Assurance. Apply at the rate of not less than ten pounds per 1000 S.F.

C. Lime

Standard agricultural type containing at least 85 percent total carbonates applied as required by the test results and recommendation as specified hereinbefore.

1. Before seeding, apply lime and fertilizer and incorporate them into the soil at least 1-1/2 inches deep by discing and harrowing, at the rates recommended above or required by the above test results.

2.02 GRASS SEED:

- A. The requirements of the State Department of Agriculture "Pure Seed Laws" apply and no "Below Standard" seed will be acceptable.
 - 1. Bermuda (Hulled), 99.5% Purity, 90% Germination
 - 2. Annual Rye, 99.8% Purity, 85% Germination

2.03 ACCESSORIES:

A. Mulching Material

Oat or wheat straw, reasonably free from weeds, foreign matter detrimental to plant life, and in dry condition. Hay or chopped cornstalks are not acceptable.

B. Hydromulch

Conwed Hydro Mulch available from Conwed Corp., 332 Minnesota St., St. Paul, Minnesota 55101 or approved equal.

PART 3 - EXECUTION

3.01 PREPARATION:

- A. Protect existing underground improvements from damage.
- B. Remove foreign materials, plants, roots, stones, and debris, from site. Do not bury foreign material.
- C. Remove contaminated subsoil.
- D. Area to be seeded shall be scarified, disced, harrowed, raked, or otherwise worked until it has been loosened to a minimum depth of 4 inches.
- E. Restore prepared areas to specified condition if eroded, settled, or otherwise disturbed after fine grading and prior to seeding.

3.02 FERTILIZING:

- A. Apply fertilizer at a rate of not less than ten pounds per 1000 square feet in formulation and quality required by soil analysis or to the above minimum requirements. Apply lime at a rate determined by the soil test to adjust pH of topsoil to not less than 6.0 nor more than 6.8. Distribute evenly by machine and incorporate thoroughly into topsoil.
- B. Apply after fine grading, mix thoroughly into upper 1-1/2 inches (50 mm) of topsoil and lightly compact.

3.03 SEEDING

- A. Apply seed at rate indicated below:
 - Hulled Bermuda - 90 lbs. / acre
 - Kentucky 31 tall fescue - 150 lbs. / acre
 - Annual Rye - 150 lbs. / acre

- B. Time of Sowing:
May 15 - August 15 - Hulled Bermuda
August 15 - December 1 - Kentucky 31 tall fescue
March 1 - May 15 - Annual Rye

*No seeding to take place from December 1 through March 1. If project completion is scheduled during this time, seeding operation shall be completed prior to December 1.

- C. Broadcast half the seed with a mechanical spreader and then broadcast the remaining half of the seed at right angles to the first seeding pattern using a mechanical spreader.
- D. Cover seed to a depth of 1/8" by raking or harrowing.
- E. Do not sow immediately following rain. When ground is too dry, or during windy periods.
- F. Apply water with fine spray immediately after each area has been sown.

3.04 MULCHING:

A. Mulching

Cover the seeded areas with weed-free straw. Placement shall be loose enough to allow air to circulate but compact enough to partially shade the ground and reduce erosion. (Approximately 25% of the ground should be visible).

B. Watering and Maintenance

Water and maintain the seeding until satisfactory grass growth has been established, and at least until final project acceptance.

C. Areas Requiring Seeding and Mulching

1. Seeding: all ground surfaces which have been filled, or otherwise disturbed by the work under this contract, and other areas as indicated on the drawings, except types covered by paving or structures or sodding.
2. Mulching: all seeded areas. Use straw on 3% slopes or less. Hydromulch on all slopes over 3%.

3.05 MAINTENANCE PERIOD:

- A. Maintain surfaces and supply additional topsoil where necessary, including areas affected by erosion.
- B. Water to insure uniform seed germination and to keep surface of soil damp.
- C. Contractor shall mow grass to maintain a height of 3"-5" until project completion.
- D. Apply water slowly so that surface of soil will not puddle and crust.
- E. Replant damaged grass areas showing root growth failure, deterioration, bare or thin spots, and eroded areas.

3.06 RESTORATION:

- A. Restore pavement, concrete, grassed areas, plated areas, and structures damaged during execution of work, of this section.

3.07 ACCEPTANCE:

- A. Seeded and mulched areas will be accepted at end of maintenance period when seed areas are properly established and otherwise acceptable.
- B. If in the opinion of the authority having jurisdiction that any seed areas do not show a uniform or healthy stand of grass, the Contractor shall reseed and/or re-fertilize those areas as directed without any additional cost to the Owner.

END OF SECTION

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DIVISION 33 – UTILITIES

SECTION 33 36 20 - GENERATOR

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes packaged engine-generator sets suitable for use in mission critical applications with the features as specified and indicated. Engine generators will be used as the Standby power source for the system, but shall be capable of providing reliable power with no run-time limitations while the primary source of power is unavailable.

1.3 DEFINITIONS

- A. Emergency Standby Power (ESP): Per ISO 8528: The maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200 hours of operation per year with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. The permissible average power output (Ppp) over 24 hours of operation shall not exceed 70 percent of the ESP unless otherwise agreed by the RIC engine manufacturer.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of packaged engine generator indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. In addition, include the following:
 - 1. Thermal damage curve for generator.
 - 2. Time-current characteristic curves for generator protective device.
 - 3. Sound test data, based on a free field requirement.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, and location and size of each field connection.
 - 1. Dimensioned outline plan and elevation drawings of engine-generator set and other components specified.
 - 2. Wiring Diagrams: Control interconnection, Customer connections.

C. Certifications:

1. Submit statement of compliance which states the proposed product(s) is certified to the emissions standards required by the location for EPA, stationary emergency application.
2. Submit statement of compliance which states the proposed product(s) are seismically certified in compliance with local requirements signed and sealed by a qualified professional engineer.

1.5 INFORMATIONAL SUBMITTALS

A. Manufacturer Seismic Qualification Certification: Submit certification that the 24 Hour(s) fuel tank, the Sound Attenuated enclosure, engine-generator set, and components will withstand seismic forces defined in Division 26 Section "Vibration and Seismic Controls for Electrical Systems." Include the following:

1. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
2. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

B. Source quality-control test reports.

1. Certified summary of prototype-unit test report. See requirements in Part 2 "Source Quality Control" Article Part A. Include statement indicating torsional compatibility of components.
2. Certified Test Report: Provide certified test report documenting factory test per the requirements of this specification, as well as certified factory test of generator set sensors per NFPA110 level 1.
3. List of factory tests to be performed on units to be shipped for this Project.
4. Report of exhaust emissions and compliance statement certifying compliance with applicable regulations.

C. Warranty:

1. Submit manufacturer's warranty statement to be provided for this Project.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Manufacturer Qualifications: A qualified manufacturer. Maintain, within Memphis, TN of Project site, a service center capable of providing training, parts, and emergency maintenance repairs.

- C. Source Limitations: Obtain packaged generator sets and auxiliary components through one source from a single manufacturer.
- D. Comply with NFPA 37 (Standard For the Installation and Use of Stationary Combustion Engines and Gas Turbines).
- E. Comply with NFPA 70 (National Electrical Code. Equipment shall be suitable for use in systems in compliance to Article 700, 701, and 702).
- F. Comply with NFPA 110 (Emergency and Standby Power Systems) requirements for Level 1 emergency power supply system.
- G. Comply with UL 2200.

1.7 PROJECT CONDITIONS

- A. Environmental Conditions: Engine-generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:
 1. Ambient Temperature: 0.0 deg C (32.0 deg F) to 60.0 deg C (140.0 deg F).
 2. Relative Humidity: 0 to 95 percent.
 3. Altitude: Sea level to 500.0 feet (152.4 m).

1.8 WARRANTY

- A. Base Warranty: Manufacturer shall provide base warranty coverage on the material and workmanship of the generator set for a minimum of twenty-four (24) months for Standby product and twelve (12) months for Prime/Continuous product from registered commissioning and start-up.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- 2.2 Manufacturers: The basis for this specification is Cummins Power Generation DQDAC. Other manufactures that wish to bid this project must have prior approval one week ahead of the bid date.

2.3 ENGINE-GENERATOR SET

- A. Factory-assembled and -tested, engine-generator set.
- B. Mounting Frame: Maintain alignment of mounted components without depending on concrete foundation; and have lifting attachments.
 1. Rigging Information: Indicate location of each lifting attachment, generator-set center of gravity, and total package weight in submittal drawings.

C. Capacities and Characteristics:

1. Power Output Ratings: Electrical output power rating for Standby operation of not less than 300 kW, at 80 percent lagging power factor, 277/480, Series Wye, Three phase, 4 -wire, 60 hertz.
2. Alternator shall be capable of accepting maximum 1210.0 kVA in a single step and be capable of recovering to a minimum of 90% of rated no load voltage. Following the application of the specified kVA load at near zero power factor applied to the generator set.
3. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component. The engine-generator nameplate shall include information of the power output rating of the equipment.

D. Generator-Set Performance:

1. Steady-State Voltage Operational Bandwidth: 0.5 percent of rated output voltage from no load to full load.
2. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within 5 seconds. On application of a 100% load step the generator set shall recover to stable voltage within 10 seconds.
3. Steady-State Frequency Operational Bandwidth: 0.25 percent of rated frequency from no load to full load.
4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.
5. Transient Frequency Performance: Not more than 15 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within 5 seconds. On application of a 100% load step the generator set shall recover to stable frequency within 10 seconds.
6. Output Waveform: At full load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for any single harmonic. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50.
7. Sustained Short-Circuit Current: For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 300 percent of rated full-load current for not less than 8 seconds without damage to generator system components. For a 1-phase, bolted short circuit at system output terminals, system shall regulate both voltage and current to prevent over-voltage conditions on the non-faulted phases.
8. Start Time: Comply with NFPA 110, Level 1, Type 10, system requirements.

9. Ambient Condition Performance: Engine generator shall be designed to allow operation at full rated load in an ambient temperature under site conditions, based on highest ambient condition. Ambient temperature shall be as measured at the air inlet to the engine generator for enclosed units, and at the control of the engine generator for machines installed in equipment rooms.

2.4 ENGINE

- A. Fuel: ASTM D975 #2 Diesel Fuel
- B. Rated Engine Speed: 1800RPM.
- C. Lubrication System: The following items are mounted on engine or skid:
 1. Lube oil pump: shall be positive displacement, mechanical, full pressure pump.
 2. Filter and Strainer: Provided by the engine manufacturer of record to provide adequate filtration for the prime mover to be used.
 3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.
- D. Engine Fuel System: The engine fuel system shall be installed in strict compliance to the engine manufacturer's instructions
- E. Main Fuel Pump: Mounted on engine. Pump ensures adequate primary fuel flow under starting and load conditions.
- F. Coolant Jacket Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity and performance.
 1. Designed for operation on a single 120 VAC, Single phase, 60Hz power connection. Heater voltage shall be shown on the project drawings.
 2. Installed with isolation valves to isolate the heater for replacement of the element without draining the engine cooling system or significant coolant loss.
 3. Provided with a 24VDC thermostat, installed at the engine thermostat housing
- G. Governor: Adjustable isochronous, with speed sensing. The governing system dynamic capabilities shall be controlled as a function of engine coolant temperature to provide fast, stable operation at varying engine operating temperature conditions. The control system shall actively control the fuel rate as appropriate to the state of the engine generator. Fuel rate shall be regulated as a function of starting, accelerating to start disconnect speed, accelerating to rated speed, and operating in various isochronous states.
- H. Cooling System: Closed loop, liquid cooled

1. The generator set manufacturer shall provide prototype test data for the specific hardware proposed demonstrating that the machine will operate at rated standby load in an outdoor ambient condition of 40 deg C.
 2. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.
 3. Size of Radiator overflow tank: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.
 4. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gage glass and petcock.
 5. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
 6. Duct Flange: Generator sets installed indoors shall be provided with a flexible radiator duct adapter flange.
- I. Muffler/Silencer: Selected with performance as required to meet sound requirements of the application, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements. For generator sets with outdoor enclosures the silencer shall be inside the enclosure.
- J. Air-Intake Filter: Engine-mounted air cleaner with replaceable dry-filter element and restriction indicator.
- K. Starting System: 24V, as recommended by the engine manufacturer; electric, with negative ground.
1. Components: Sized so they will not be damaged during a full engine-cranking cycle with ambient temperature at maximum specified in Part 1 "Project Conditions" Article.
 2. Cranking Cycle: As required by NFPA 110 for level 1 systems.
 3. Battery Cable: Size as recommended by engine manufacturer for cable length as required. Include required interconnecting conductors and connection accessories.
 4. Battery Compartment: Factory fabricated of metal with acid-resistant finish.
 5. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation. The battery charging alternator shall have sufficient capacity to recharge the batteries with all parasitic loads connected within 4 hours after a normal engine starting sequence.
 6. Battery Chargers: Unit shall comply with UL 1236, provide fully regulated, constant voltage, current limited, battery charger for each battery bank. It will include the following features:

- a. Operation: Equalizing-charging rate based on generator set manufacturer's recommendations shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.
- b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 20 deg C to plus 40 deg C to prevent overcharging at high temperatures and undercharging at low temperatures.
- c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.
- d. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.
- e. Provide LED indication of general charger condition, including charging, faults, and modes. Provide a LCD display to indicate charge rate and battery voltage. Charger shall provide relay contacts for fault conditions as required by NFPA110.
- f. Enclosure and Mounting: NEMA, Type 1, wall-mounted cabinet.

2.5 FUEL OIL STORAGE

- A. Comply with NFPA 30.
- B. Sub Base-Mounted Fuel Oil Tank: Provide a double wall secondary containment type sub base fuel storage tank. The tank shall be constructed of corrosion resistant steel and shall be UL 142 listed and labeled. The fuel tank shall include the following features:
 - 1. Capacity: Fuel for 24 Hour(s) continuous operation at 100 percent rated power output.
 - 2. Tank rails and lifting eyes shall be rated for the full dry weight of the tank, genset, and enclosure.
 - 3. Electrical stub up(s)
 - 4. Normal & emergency vents
 - 5. Lockable fuel fill
 - 6. Mechanical fuel level gauge
 - 7. High and low level switches to indicate fuel level
 - 8. Leak detector switch

9. Sub base tank shall include a welded steel containment basin, sized at a minimum of 110% of the tank capacity to prevent escape of fuel into the environment in the event of a tank rupture.
10. Tank design shall meet the regional requirements for the Project location

2.6 CONTROL AND MONITORING

- A. Engine generator control shall be microprocessor based and provide automatic starting, monitoring, protection and control functions for the unit.
- B. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of generator set. When mode-selector switch is switched to the on position, generator set starts. The off position of same switch initiates generator-set shutdown. (Switches with different configurations but equal functions are acceptable.) When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of the local (generator set-mounted) and/or remote emergency-stop switch also shuts down generator set.
- C. Manual Starting System Sequence of Operation: Switching on-off switch on the generator control panel to the on position starts generator set. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of the local (generator set-mounted) and/or remote emergency-stop switch also shuts down generator set.
- D. Configuration: Operating and safety indications, protective devices, system controls, engine gages and associated equipment shall be grouped in a common control and monitoring panel. Mounting method shall isolate the control panel from generator-set vibration. AC output power circuit breakers and other output power equipment shall not be mounted in the control enclosure.
- E. Indicating and Protective Devices and Controls: As required by NFPA 110 for Level 1 system, and the following:
 1. AC voltmeter (3-phase, line to line and line to neutral values).
 2. AC ammeter (3-phases).
 3. AC frequency meter.
 4. AC kW output (total and for each phase). Display shall indicate power flow direction.
 5. AC kVA output (total and for each phase). Display shall indicate power flow direction.

6. AC Power factor (total and for each phase). Display shall indicate leading or lagging condition.
7. Ammeter-voltmeter displays shall simultaneously display conditions for all three phases.
8. Emergency Stop Switch: Switch shall be a red "mushroom head" pushbutton device complete with lock-out/tag-out provisions. Depressing switch shall cause the generator set to immediately stop the generator set and prevent it from operating.
9. Fault Reset Switch: Supply a dedicated control switch to reset/clear fault conditions.
10. DC voltmeter (alternator battery charging).
11. Engine-coolant temperature gauge.
12. Engine lubricating-oil pressure gauge.
13. Running-time meter.
14. Generator-voltage and frequency digital raise/lower switches. Rheostats for these functions are not acceptable. The control shall adjustment of these parameters in a range of plus or minus 5% of the voltage and frequency operating set point (not nominal voltage and frequency values.) The voltage and frequency adjustment functions shall be disabled when the paralleling breaker is closed.
15. Fuel tank derangement alarm.
16. Fuel tank high-level shutdown of fuel supply alarm.
17. AC Protective Equipment: The control system shall include over/under voltage, reverse kVAR, reverse kW, over load (kW) short circuit, over current, loss of voltage reference, and over excitation shut down protection. There shall be a ground fault alarm for generator sets rated over 1000 amps, overload warning, and overcurrent warning alarm.
18. Status LED indicating lamps to indicate remote start signal present at the control, existing shutdown condition, existing alarm condition, not in auto, and generator set running.
19. A graphical display panel with appropriate navigation devices shall be provided to view all information noted above, as well as all engine status and alarm/shutdown conditions (including those from an integrated engine emission control system). The display shall also include integrated provisions for adjustment of the gain and stability settings for the governing and voltage regulation systems.
20. Panel lighting system to allow viewing and operation of the control when the generator room or enclosure is not lighted.
21. DC control Power Monitoring: The control system shall continuously monitor DC power supply to the control, and annunciate low or high voltage conditions. It shall

also provide an alarm indicating imminent failure of the battery bank based on degraded voltage recover on loading (engine cranking).

- F. Remote Alarm Annunciator: Comply with NFPA 110. An LED labeled with proper alarm conditions shall identify each alarm event and a common audible signal shall sound for each alarm condition.

2.7 GENERATOR OVERCURRENT AND FAULT PROTECTION

- A. Generator Overcurrent Protection: The generator set shall be provided with a UL Listed/CSA Certified protective device that is coordinated with the alternator provided to prevent damage to the generator set on any possible overload or overcurrent condition external to the machine. The protective device shall be listed as a utility grade protective device under UL category NRGU. The control system shall be subject to UL follow-up service at the manufacturing location to verify that the protective system is fully operational as manufactured. Protector shall perform the following functions:
 1. Initiates a generator kW overload alarm when generator has operated at an overload equivalent to 110 percent of full-rated load for 60 seconds. Indication for this alarm is integrated with other generator-set malfunction alarms.
 2. Under single phase or multiple phase fault conditions, or on overload conditions, indicates an alarm conditions when the current flow is in excess of 110% of rated current for more than 10 seconds.
 3. Under single phase or multiple phase fault conditions, operates to switch off alternator excitation at the appropriate time to prevent damage to the alternator.
 4. The operator panel shall indicate the nature of the fault condition as either a short circuit or an overload.
 5. Senses clearing of a fault by other overcurrent devices and controls recovery of rated voltage to avoid overshoot greater than 120% of nominal voltage.
 6. The protective system provided shall not include an instantaneous trip function.

2.8 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

- A. Comply with NEMA MG 1.
- B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.
- C. Electrical Insulation: Class H
- D. Temperature Rise: 105 / Class H environment.
- E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, over speed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.

- F. Permanent Magnet Generator (PMG) shall provide excitation power for optimum motor starting and short circuit performance.
- G. Enclosure: Drip-proof.
- H. Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified. The voltage regulation system shall be microprocessor-controlled, 3-phase true RMS sensing, full wave rectified, and provide a pulse-width modulated signal to the exciter. No exceptions or deviations to these requirements will be permitted.
- I. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.
- J. Subtransient Reactance: 12 percent maximum, based on the rating of the engine generator set.

2.9 OUTDOOR GENERATOR-SET ENCLOSURE

- A. Description: Weather Aluminum housing. Multiple panels shall be lockable and provide adequate access to components requiring maintenance. Instruments, control, and battery system shall be mounted within enclosure.
- B. Construction:
 - 1. Louvers: Equipped with bird screen to permit air circulation when engine is not running while excluding birds and rodents.
 - 2. Hinged Doors: With padlocking provisions. Restraint/Hold back hardware to prevent door to keep door open at 180 degrees during maintenance. Rain lips over all doors.
 - 3. Exhaust System:
 - a. Muffler Location: Within enclosure.
 - 4. Hardware: All hardware and hinges shall be stainless steel.
 - 5. Mounting Base: Suitable for mounting on sub-base fuel tank or housekeeping pad.
 - 6. A weather protective enclosure shall be provided which allows the generator set to operate at full rated load with a static pressure drop equal to or less than 0.5 inches of water.
 - 7. Inlet ducts shall include rain hoods
- C. Engine Cooling Airflow through Enclosure: Housing shall provide ample airflow for engine generator operation at rated load in an ambient temperature of 40 deg C.
 - 1. Louvers: Fixed-engine, cooling-air inlet and discharge.
- D. Sound Performance: Reduce the sound level of the engine generator while operating at full rated load to a maximum of 92 dBA measured at any location 7 m from the engine generator in a free field environment.

1. Provide an internally mounted and wired electrical distribution panel to serve the engine generator and enclosure; including:
 - a. 100 amp distribution panelboard connected to a 120/240VAC utility service by the installer.
 - b. Two duplex GFI receptacles, one inside the enclosure, and a weatherproof receptacle on the outside of the enclosure.
 - c. Factory wired normal AC service from the panelboard to the engine coolant heater, alternator heater, and battery charger.

E. Site Provisions:

1. Lifting: Complete assembly of engine generator, enclosure, and sub base fuel tank (when used) shall be designed to be lifted into place as a single unit, using spreader bars.

2.10 VIBRATION ISOLATION DEVICES

- A. Vibration Isolation: Generators installed on grade shall be provided with elastomeric isolator pads integral to the generator, unless the engine manufacturer requires use of spring isolation.
 1. IBC Compliance: Isolators complying with IBC requirements shall be specified in the equipment documentation, as well as the installation requirements for the unit.

2.11 FINISHES

- A. Indoor and Outdoor Enclosures and Components: Powder-coated and baked over corrosion-resistant pretreatment and compatible primer. Manufacturer's standard color or as directed on the drawings.

2.12 SOURCE QUALITY CONTROL

- A. Prototype Testing: Factory test engine-generator set using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.
 1. Tests: Comply with NFPA 110, Level 1 Energy Converters. In addition, the equipment engine, skid, cooling system, and alternator shall have been subjected to actual prototype tests to validate the capability of the design under the abnormal conditions noted in NFPA110. Calculations and testing on similar equipment which are allowed under NFPA110 are not sufficient to meet this requirement.
- B. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:
 1. Test engine generator set manufactured for this Project to demonstrate compatibility and functionality.

2. Full load run.
3. Maximum power.
4. Voltage regulation.
5. Steady-state governing.
6. Single-step load pickup.
7. Simulated safety shutdowns.
8. Provide 14 days' advance notice of tests and opportunity for observation of tests by Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with packaged engine-generator manufacturers' written installation, application, and alignment instructions and with NFPA 110.
- B. Equipment shall be installed by the contractor in accordance with final submittals and contract documents. Installation shall comply with applicable state and local codes as required by the authority having jurisdiction. Install equipment in accordance with manufacturer's instructions and instructions included in the listing or labeling of UL listed products.
- C. Installation of equipment shall include furnishing and installing all interconnecting wiring between all major equipment provided for the on-site power system. The contractor shall also perform interconnecting wiring between equipment sections (when required), under the supervision of the equipment supplier.
- D. Equipment shall be installed on concrete housekeeping pads. Equipment shall be permanently fastened to the pad in accordance with manufacturer's instructions and seismic requirements of the site.
- E. Equipment shall be initially started and operated by representatives of the manufacturer. All protective settings shall be adjusted as instructed by the consulting engineer.
- F. All equipment shall be physically inspected for damage. Scratches and other installation damage shall be repaired prior to final system testing. Equipment shall be thoroughly cleaned to remove all dirt and construction debris prior to initial operation and final testing of the system.
- G. On completion of the installation by the electrical contractor, the generator set supplier shall conduct a site evaluation to verify that the equipment is installed per manufacturer's recommended practice.

3.2 ON-SITE ACCEPTANCE TEST

- A. The complete installation shall be tested to verify compliance with the performance requirements of this specification following completion of all site work. Testing shall be conducted by representatives of the manufacturer, with required fuel supplied by Contractor. The Engineer shall be notified in advance and shall have the option to witness the tests. The generator set manufacturer shall provide a site test specification covering the entire system. Tests shall include:
- B. Prior to start of active testing, all field connections for wiring, power conductors, and bus bar connections shall be checked for proper tightening torque.
- C. Installation acceptance tests to be conducted on site shall include a "cold start" test, a two hour full load (resistive) test, and a one-step rated load pickup test in accordance with NFPA 110. Provide a resistive load bank and make temporary connections for full load test, if necessary.
- D. Perform a power failure test on the entire installed system. This test shall be conducted by opening the power supply from the utility service, and observing proper operation of the system for at least 2 hours. Coordinate timing and obtain approval for start of test with site personnel.

3.3 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

3.4 SERVICE AND SUPPORT

- A. The generator set supplier shall maintain service parts inventory for the entire power system at a central location which is accessible to the service location 24 hours per day, 365 days per year. The inventory shall have a commercial value of \$3 million or more. The manufacturer of the generator set shall maintain a central parts inventory to support the supplier, covering all the major components of the power system, including engines, alternators, control systems, paralleling electronics, and power transfer equipment.
- B. The generator set shall be serviced by a local service organization that is trained and factory certified in generator set service. The supplier shall maintain an inventory of critical power system replacement parts in the local service location. Service vehicles shall be stocked with critical replacement parts. The service organization shall be on call 24 hours per day, 365 days per year. The service organization shall be physically located within Memphis, TN of the site.
- C. The manufacturer shall maintain model and serial number records of each generator set provided for at least 20 years.

END OF SECTION

REL NO	LTR	NO	REVISION	OWN	CAD	APVD	DATE
ECO-157120	F	1	ADD NOTE 6	CJF	KK	K KISHORE	11NOV15

TANK/LIFT BASE FEATURE CODE	TANK CAPACITY	TANK WEIGHT DRY KG (LBS)	DIM_D	DIM_E	DIM_F	DIM_H	DIM_I	DIM_J	DIM_K
C201	300	1060 (2338)	2643 (104)	183 (7.2)	305 (12)	526 (20.7)	1126 (44.3)	1122 (44.2)	614.7 (24.2)
C202/C242	400/270	1105 (2438)	2694 (106)	234 (9.2)	356 (14)	577 (22.7)	1177 (46.3)	1173 (46.2)	665 (26.2)
C203	500	1171 (2584)	2743 (108)	284 (11.2)	406 (16)	627 (24.7)	1228 (48.3)	1224 (48.2)	716.3 (28.2)
C204	600	1253 (2765)	2819 (111)	361 (14.2)	483 (19)	704 (27.7)	1304 (51.3)	1300 (51.2)	792.5 (31.2)
C205	660	1295 (2857)	2858 (112.5)	399 (15.7)	521 (20.5)	742 (29.2)	1343 (52.8)	1339 (52.7)	830.6 (32.7)
C206	720	1275 (2814)	2895 (114)	437 (17.2)	559 (22)	780 (30.7)	1381 (54.3)	1377 (54.2)	868.7 (34.2)
C207	850	1445 (3189)	2997 (118)	538 (21.2)	660 (26)	881 (34.7)	1481 (58.3)	1478 (58.2)	970.3 (38.2)
F214	N/A	N/A	2540 (100)	81 (3.2)	203 (8)	424 (16.7)	1024 (40.3)	1021 (40.2)	513.1 (20.2)
C208	1470	1702 (3756)	3324 (127.3)	771 (30.3)	914 (36)	1150.2 (45.3)	1748.2 (68.8)	1744 (68.6)	665 (26.2)
C209	1700	1962 (4331)	3324 (127.3)	771 (30.3)	914 (36)	1150.2 (45.3)	1748.2 (68.8)	1744 (68.6)	665 (26.2)
C211	2525	2811 (6204)	3324 (127.3)	771 (30.3)	914 (36)	1150.2 (45.3)	1748.2 (68.8)	1744 (68.6)	665 (26.2)

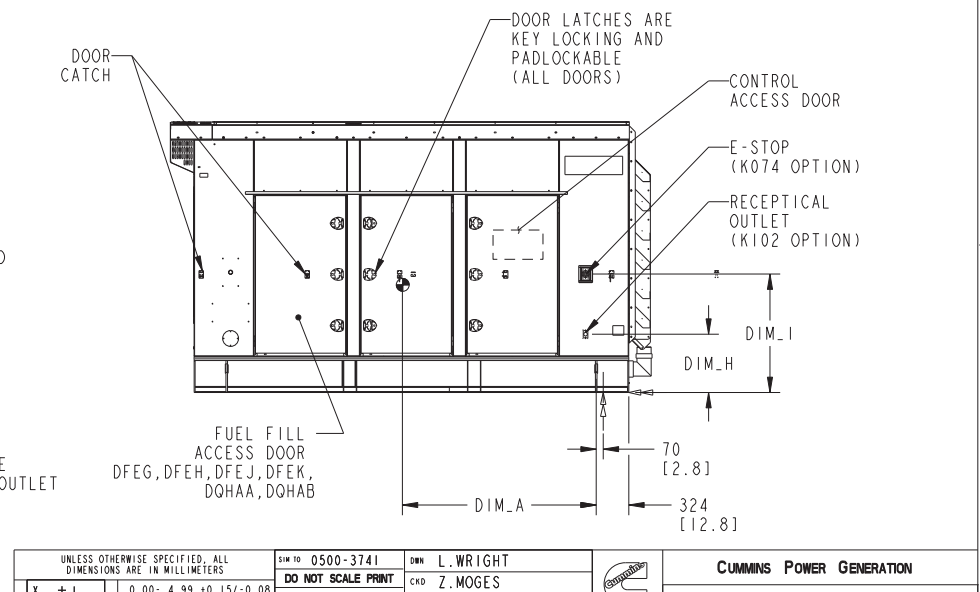
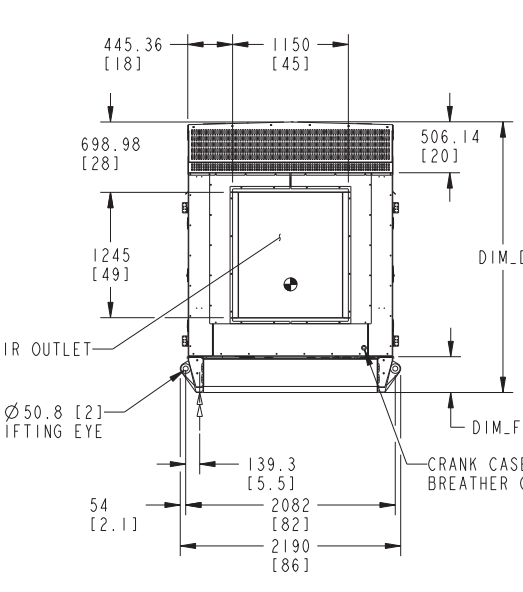
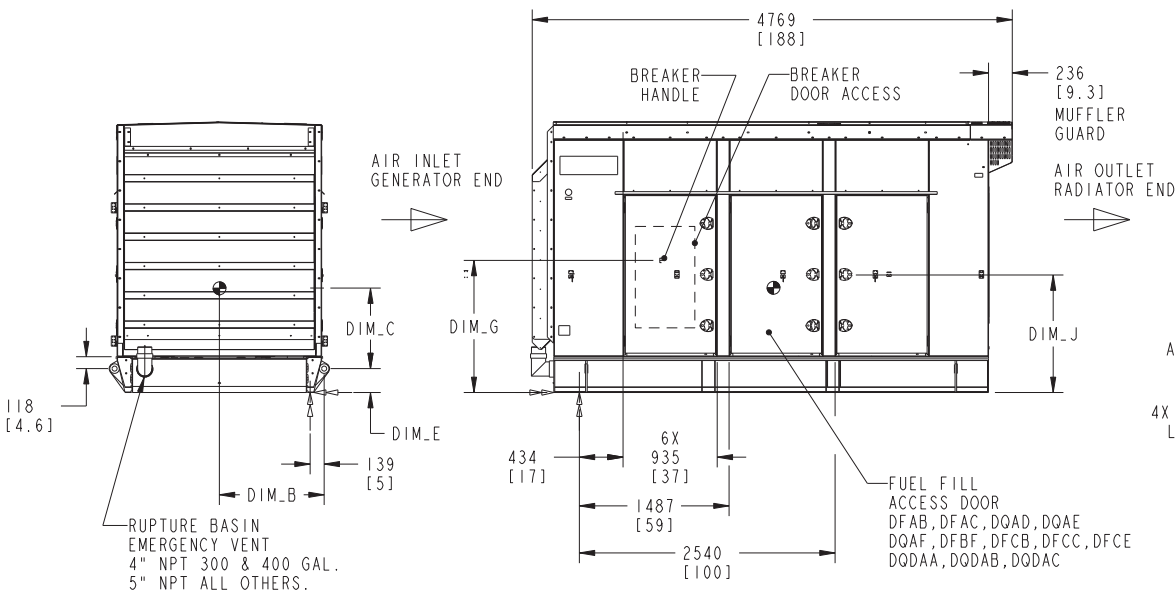
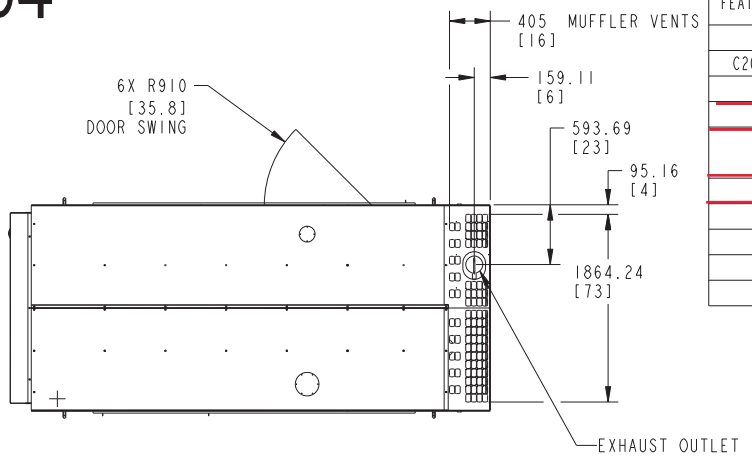
MODEL	KW	CG_DIM "A"	CG_DIM "B"	CG_DIM "C"	STEEL ENCLOSURE WEIGHT KG (LBS)	ALUMINUM ENCLOSURE WEIGHT KG (LBS)
DFEG	350	1836 [72.3]		721 [28.4]	7237 (15955)	6877 (15155)
DFEH	400	1821 [71.7]			7367 (16241)	7007 (15441)
DFEJ	450	1803 [71.0]		726 [28.6]	7520 (16579)	7160 (15779)
DFEK	500	1783 [70.2]			7656 (16879)	7296 (16079)
DODAA	250	2179 [85.8]	1041 [41]	697 [27.4]	5367 (11789)	5007 (10989)
DODAB	275					
DOAAC	300	2193 [86.3]		699 [27.5]	5467 (12089)	5107 (11289)
DOHAA	275	1905 [75.0]		853 [33.5]	5765 (12709)	5405 (11909)
DOHAB	300	1897 [74.7]		856 [33.7]	5878 (12959)	5518 (12159)

***WEIGHT & CG'S ARE SHOWN WITH HIGHEST GALLON FUEL TANK, ENCLOSURE, AND STANDARD WET GENSET. ADDITION OF OTHER FEATURES MAY CHANGE THE WEIGHT.

- NOTES:
- DIMENSIONS SHOWN IN [] ARE INCHES.
 - FOUNDATION REFERENCE POINT (→→). SEE FOUNDATION DRAWING FOR DETAILS.
 - FOR FEATURE CODE L116 & L120 (FLORIDA & MICHIGAN TANKS) ADD 162.6 [6.4] TO DIMS D-J
 - SEE SHEET 2 FOR TANK VENT LOCATIONS.
 - EXCESSIVE TWISTING OF THE FUEL TANK, WHEN FASTENING IT TO A FOUNDATION, MAY RESULT IN STRUCTURAL FAILURE OF THE TANK. TO INSURE THE INSTALLATION DOES NOT EXCESSIVELY TWIST THE FUEL TANK, THE FOLLOWING PROCEDURE MUST BE OBSERVED:
 - REFER TO CUMMINS APPLICATION MANUAL T030 FOR GENERAL GENSET/TANK MOUNTING GUIDELINES.
 - (NOTE REMOVED)
 - (NOTE REMOVED)
 - (NOTE REMOVED)
 - TIGHTEN TANK HOLD DOWN MOUNTING FASTENERS.
 - FUEL TANK SHOWN IS 300 GALLON MODEL. FUEL TANKS MAY BE LONGER AND TALLER THAN MODEL SHOWN.

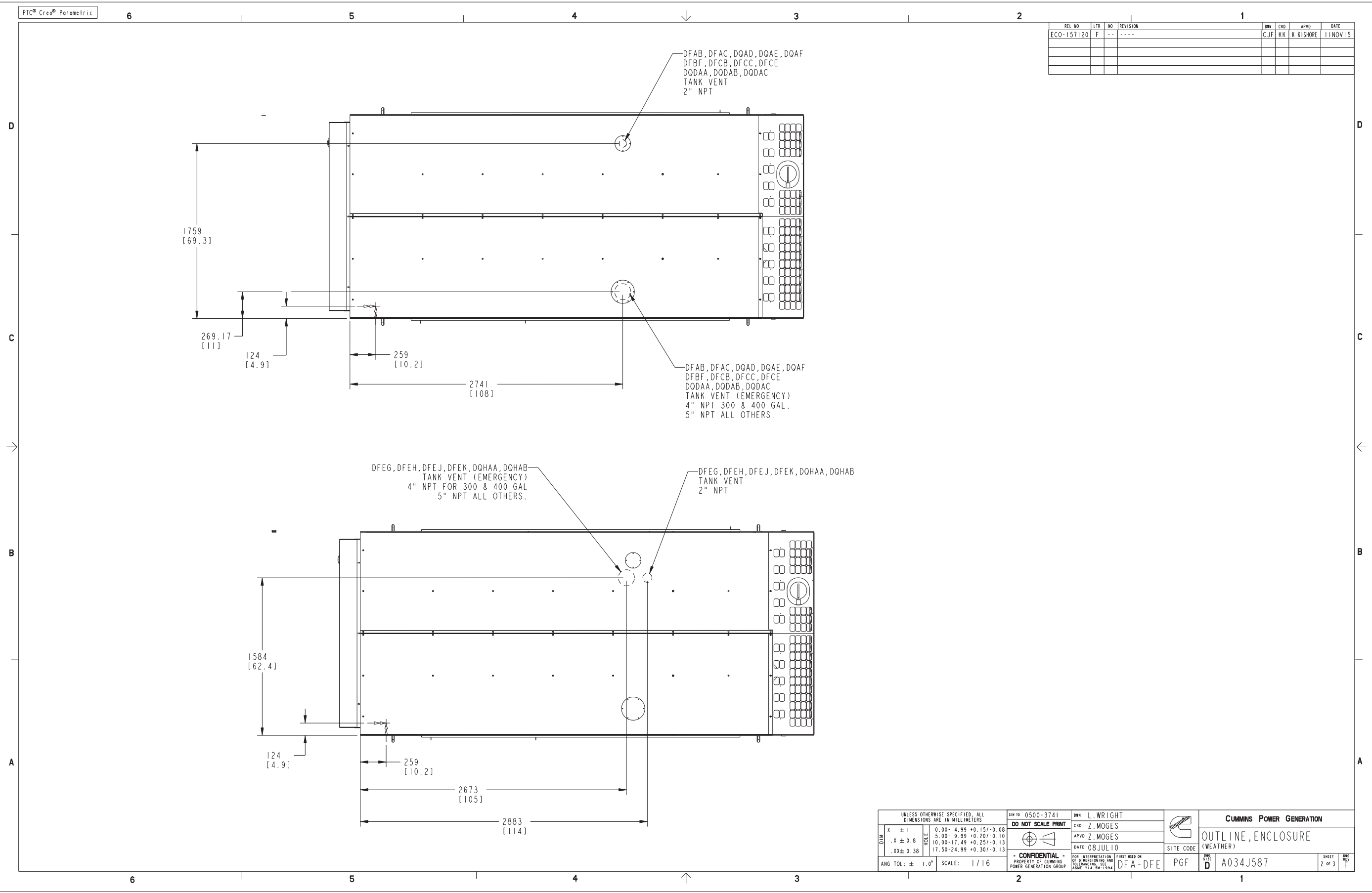
OPTIONAL FEATURE F200, F201, F203, F204

TANK/LIFT BASE FEATURE CODE	TANK CAPACITY	DIM_G OS L9 L-FRAME	DIM_G OS L9 P-FRAME	DIM_G OS M11 L-FRAME	DIM_G OS M11 P-FRAME	DIM_G OS X15 L-FRAME	DIM_G OS X15 P-FRAME
C201	300	1457.2 [57.37]	1309.4 [51.55]	1495.3 [58.87]	1347.5 [53.05]	1707.9 [67.24]	1560 [61.42]
C202/C242	400/270	1508 [59.37]	1360.2 [53.55]	1546.1 [60.87]	1398.3 [55.05]	1758.7 [69.24]	1610.9 [63.42]
C203	500	1558.8 [61.37]	1411 [55.55]	1596.9 [62.87]	1449.1 [57.05]	1809.5 [71.24]	1661.7 [65.42]
C204	600	1635 [64.37]	1487.2 [58.55]	1673.1 [65.87]	1525.3 [60.05]	1885.7 [74.24]	1737.9 [68.42]
C205	660	1673 [65.87]	1525.3 [60.05]	1711.2 [67.37]	1563.4 [61.55]	1923.8 [75.74]	1776 [69.92]
C206	720	1711.2 [67.37]	1563.4 [61.55]	N/A	N/A	N/A	N/A
C207	850	N/A	N/A	1851 [72.87]	1703.1 [67.05]	2063.5 [81.24]	1915.7 [75.42]
F214	N/A	1355.6 [53.37]	1207.8 [47.55]	1393.7 [54.87]	1245.9 [49.05]	1606.3 [63.24]	1458.5 [57.42]
C208	1470	2066.8 [81.37]	1919 [75.55]	N/A	N/A	N/A	N/A
C209	1700	N/A	N/A	2104.9 [82.87]	1957.1 [77.05]	2317.5 [91.24]	2169.7 [85.42]
C211	2525	N/A	N/A	N/A	N/A	2317.5 [91.24]	2169.7 [85.42]



UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS		SIM 10 0500-3741	OWN L. WRIGHT		CUMMINS POWER GENERATION	
DO NOT SCALE PRINT		DO NOT SCALE PRINT	CAD Z. MOGES		OUTLINE, ENCLOSURE (WEATHER)	
X ± 1	0.00 - 4.99 +0.15/-0.08		APVD Z. MOGES	SITE CODE	DATE 08JUL10	FIRST USED ON DFA-DFE
.X ± 0.8	5.00 - 9.99 +0.20/-0.10		PGF			
.XX ± 0.38	10.00 - 17.49 +0.25/-0.13		D			
ANG TOL: ± 1.0°	17.50 - 24.99 +0.30/-0.13	SCALE: 1/32	PROPERTY OF CUMMINS POWER GENERATION GROUP	REV 1 OF 3	REV F	A034J587 A034J587

REL NO	LTR	NO	REVISION	OWN	CAD	APVD	DATE
ECO-157120	F	--	----	CJF	KK	K KISHORE	11NOV15



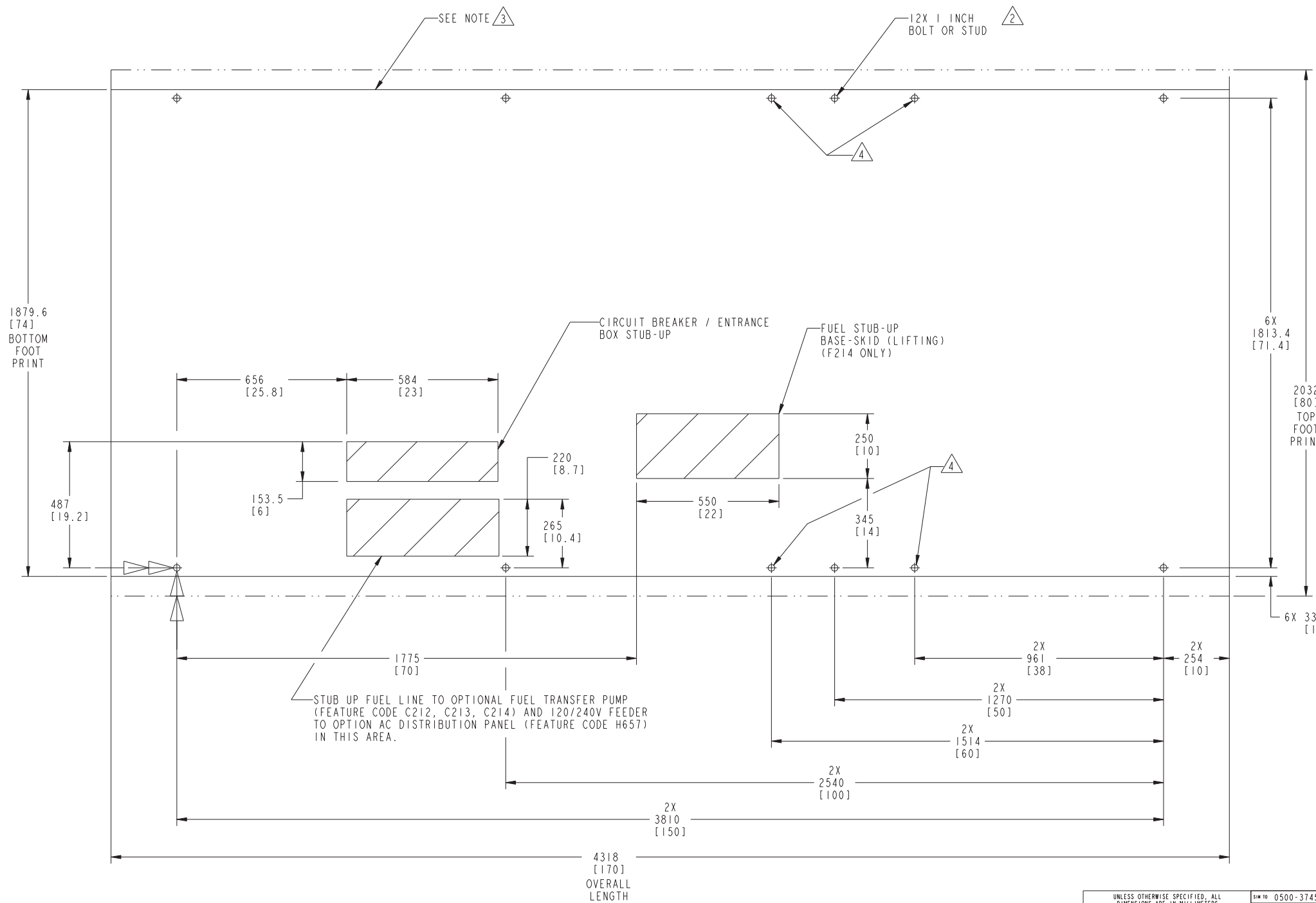
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS		SIM NO 0500-3741	OWN L. WRIGHT		CUMMINS POWER GENERATION	
DO NOT SCALE PRINT		CND Z. MOGES	OUTLINE, ENCLOSURE			
DIM	X ± 1	0.00- 4.99 +0.15/-0.08	APVD Z. MOGES	SITE CODE	DFA-DFE	PGF
	.X ± 0.8	5.00- 9.99 +0.20/-0.10	DATE 08JUL10			
	.XX ± 0.38	10.00-17.49 +0.25/-0.13				
ANG TOL: ± 1.0°		SCALE: 1/16	FIRST USED ON		REV D	REV F
FOR INTERPRETATION OF DIMENSIONS AND TOLERANCING, SEE ASME Y14.5M-1994			DFA-DFE		PGF	REV F
			DFA-DFE		PGF	REV F

DQDAA, DQDAB, DQDAC (C201-C207, C242, F214)

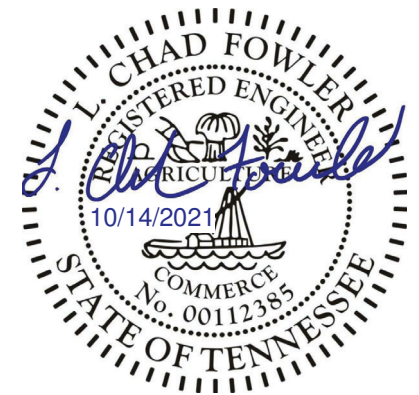
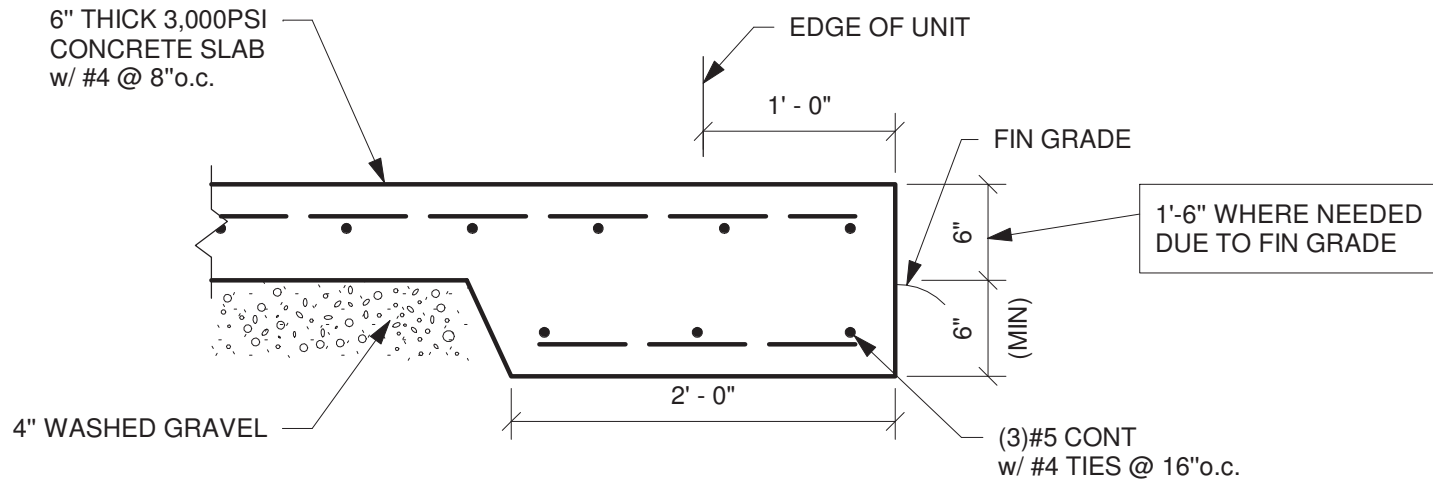
REL NO	LTR	NO	REVISION	OWN	CAD	APVD	DATE
ECO-118385	C	1	6X 1813.4 WAS 1803.4, ZONE C2	WGM	BJD	X. KISHORE	27 JUL 11
		2	6X 33.1 WAS 38.1, ZONE B2	WGM	BJD	X. KISHORE	27 JUL 11
		9	345 WAS 340, ZONE B3	WGM	BJD	X. KISHORE	27 JUL 11
		10	265 WAS 260, ZONE B4	WGM	BJD	X. KISHORE	27 JUL 11
		11	487 WAS 482, ZONE B6	WGM	BJD	X. KISHORE	27 JUL 11

NOTE:

- 1. DIMENSIONS IN [] ARE IN INCHES.
- 2. SKID-BASE (LIFTING) AND FUEL TANK HAVE A FLANGE THICKNESS OF 4.76mm [.19 INCHES], (FLORIDA UNITS WITH FEATURE CODE L116) 8.76mm [.35 INCHES]. ALLOW EXTRA LENGTH ON HARDWARE FOR UNEVENNESS OF MOUNTING SURFACE.
- 3. LIFTING BASE OR FUEL TANK PERIMETER IS SHOWN. FOUNDATION SHOULD BE EXTENDED BEYOND THIS PERIMETER. SEE (T030) APPLICATION MANUAL.
- 4. FEATURE OPTION F214-2 DOES NOT USE THIS BOLT.



UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS		SIX TO 0500-3745	OWN M. JOHNSON		CUMMINS POWER GENERATION	
DO NOT SCALE PRINT			CND Z. MOGES		OUTLINE, GENSET (FOUNDATION)	
DIM	X ± 3	0.00- 4.99 +0.15/-0.08	APVD Z. MOGES		SITE CODE	SHEET 3 OF 3 REV C
	.X ± 0.8	5.00- 9.99 +0.20/-0.10	DATE 10 JAN 11			
	.XX ± 0.38	10.00-17.49 +0.25/-0.13				
ANG TOL: ± 1.0°		SCALE: ~1/8	- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP	FOR INTERPRETATION OF DIMENSIONS AND TOLERANCING, SEE ASME Y14.5M-1994	FIRST USED ON DFEK	SHEET 3 OF 3 REV C



JOB TITLE: CITY OF DYERSBURG, TENNESSEE
PUBLIC WORKS DEPARTMENT
WASTE WATER SYSTEM GENERATOR REPLACEMENT

Scale:
1" = 1'-0"

FOUNDATION
DETAIL

JOB NO: 21-129

Date:
10/14/21

S101

ELECTRICAL GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE JURISDICTION'S ADOPTED EDITION OF THE N.E.C. AND ALL APPLICABLE STATE AND LOCAL CODES.
- ALL MATERIAL SHALL BEAR THE PROPER U.L., E.T.L., OR OTHER RECOGNIZED NRTL LABEL ACCEPTABLE TO THE AHJ.
- ALL WIRING SHALL BE IN CONDUIT OR OTHER N.E.C. APPROVED RACEWAYS.
- ELECTRICAL CONTRACTOR SHALL VERIFY SERVICE AND VOLTAGE REQUIREMENTS FOR ALL EQUIPMENT TO BE CONNECTED (BOTH NEW AND EXISTING) PRIOR TO MAKING CONNECTIONS.
- EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE PRIOR TO BIDDING IN ORDER TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND ANY DISCREPANCIES OR QUESTIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER PRIOR TO BIDDING.
- ALL ELECTRICAL WORK SHALL BE ACCOMPLISHED BY ELECTRICIANS LICENSED BY THE JURISDICTION IN WHICH THE WORK WILL BE PERFORMED.
- CONTRACTOR SHALL MAINTAIN ACCURATE "AS-BUILT" DRAWINGS DURING CONSTRUCTION. THESE DRAWINGS SHALL BE SUBMITTED TO THE GENERAL CONTRACTOR UPON COMPLETION OF THE PROJECT.
- THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS, EQUIPMENT AND COMPONENTS AND THEIR RELATED ELECTRICAL CONNECTIONS. DEVICE AND PATHWAY PLACEMENT/ROUTING IS ONLY REPRESENTATIVE OF A GENERAL LOCATION UNLESS OTHERWISE INDICATED BY DIMENSIONS. SYMBOLS ARE USED EXTENSIVELY WHICH MAY NOT EXACTLY REPRESENT ACTUAL SIZES.
- THESE DRAWINGS DO NOT SHOW ALL OFFSETS, TRANSITIONS AND/OR DEVICES NECESSARY FOR A COMPLETE AND FUNCTIONAL SYSTEM AS REQUIRED BY THE CONTRACT DOCUMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PLACE THESE DEVICES AND PATHWAYS SUCH THAT THEY OFFER FULL FUNCTIONALITY WITHOUT HINDERANCE FROM CASWORK, FURNITURE, WINDOWS AND DOORS, HVAC, PLUMBING, ELECTRICAL, AND OTHER BUILDING SYSTEMS.
- NO PIPING, DUCTS OR EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE LOCATED WITHIN THE DEDICATED SPACE ABOVE ELECTRICAL EQUIPMENT.

ELECTRICAL SPECIFICATIONS

EXCAVATING, TRENCHING, AND BACKFILL

- GENERAL:** LAY ALL RACEWAYS IN OPEN TRENCH. OPEN THE TRENCH SUFFICIENTLY AHEAD OF RACEWAY LAYING TO REVEAL OBSTRUCTIONS. MAINTAIN EASY ACCESS TO FIRE HYDRANTS BY FIRE FIGHTING APPARATUS. PROVIDE TRENCH CROSSINGS AS NECESSARY TO ACCOMMODATE PUBLIC TRAVEL. ALL EXCAVATIONS SHALL BE FULLY PROTECTED.
- SEPARATE TRENCHES:** UNLESS OTHERWISE SHOWN OR REQUIRED, PROVIDE SEPARATE TRENCHES FOR COMMUNICATION LINES AND POWER LINES, RESPECTIVELY, WITH A MINIMUM OF THREE (3) FEET OF UNDISTURBED EARTH BETWEEN TRENCHES. GAS AND ELECTRICAL LINES SHALL ALWAYS BE PLACED IN SEPARATE TRENCHES.
- WIDTH OF TRENCH:** EXCAVATE TRENCHES OF SUFFICIENT WIDTH FOR PROPER INSTALLATION OF WORK.
- WATER REMOVAL:** KEEP TRENCHES FREE FROM WATER WHILE CONSTRUCTION THEREIN IS IN PROGRESS. UNDER NO CIRCUMSTANCES LAY CONDUIT OR APPURTENANCES IN WATER. PUMP OR BAIL HOLES TO PERMIT PROPER JOINTING OF THE RACEWAYS. CONDUCT THE DISCHARGE FROM TRENCH DEWATERING TO DRAINS OR NATURAL DRAINAGE CHANNELS.
- DISPOSITION OF UTILITIES:**
 - RULES AND REGULATIONS GOVERNING THE RESPECTIVE UTILITIES SHALL BE OBSERVED IN EXECUTING ALL WORK UNDER THIS HEADING.
 - ACTIVE UTILITIES SHOWN ON THE DRAWINGS SHALL BE ADEQUATELY PROTECTED FROM DAMAGE AND REMOVED OR RELOCATED ONLY IN ACCORDANCE WITH WRITTEN INSTRUCTIONS FROM THE ARCHITECT. UTILITIES SHOWN ARE LOCATED AS NEAR AS POSSIBLE TO ASCERTAIN IN CORRECT LOCATIONS BUT SOME VARIANCE IN LOCATION MAY BE EXPECTED.
 - ACTIVE UTILITIES NOT SHOWN ON THE DRAWINGS NOR EVIDENT DURING INSPECTION, SHALL BE PROTECTED OR RELOCATED IN ACCORDANCE WITH WRITTEN INSTRUCTION OF THE ENGINEER.
 - INACTIVE AND ABANDONED UTILITIES ENCOUNTERED IN TRENCHING OPERATIONS SHALL BE REMOVED, PLUGGED, OR CAPED. IN ABSENCE OF SPECIFIED REQUIREMENTS, PLUG OR CAP SUCH UTILITY LINES AT LEAST THREE FEET FROM UTILITY LINES TO BE INSTALLED, OR AS REQUIRED BY LOCAL REGULATIONS.
- EXCAVATION:** MATERIALS TO BE EXCAVATED SHALL INCLUDE EARTH OR ANY OTHER MATERIAL ENCOUNTERED WITHIN THE LIMITS OF TRENCH EXCAVATION FOR THE UTILITIES HEREUNDER TO THE DEPTH AND EXTENT INDICATED ON THE DRAWINGS AND HEREIN SPECIFIED.
- TREE PROTECTION:** EXERCISE CARE TO PROTECT THE ROOTS OF TREES TO REMAIN. WITHIN THE BRANCH SPREAD OF SUCH TREES, PERFORM ALL TRENCHING BY HAND. OPEN THE TRENCH ONLY WHEN THE UTILITY CAN BE INSTALLED IMMEDIATELY; PRUNE INJURED ROOTS CLEANLY AND BACKFILL AS SOON AS POSSIBLE. PERFORM ALL THIS WORK UNDER THE DIRECTION OF THE ARCHITECT.
- BACKFILLING:** BACKFILL TRENCHES ONLY AFTER CONDUIT HAS BEEN INSPECTED, CHECKED AND LOCATIONS OF UTILITIES AND APPURTENANCES HAVE BEEN RECORDED. BACKFILL ONLY WITH SUITABLE MATERIAL FREE FROM DEBRIS WHICH COULD DAMAGE THE CONDUITS. IN AREAS SUBJECT TO VEHICULAR TRAFFIC, BACKFILL WITH COMPACTED CRUSHED LIMESTONE OR FLOWABLE FILL CONCRETE. REPLACE SURFACE TO ORIGINAL CONDITION.

CONDUIT

- RIGID GALVANIZED STEEL CONDUIT SHALL BE USED FOR ALL ABOVE GROUND EXTERIOR APPLICATIONS OR WHERE CONDUIT MAY BE SUBJECT TO PHYSICAL DAMAGE. ANY EXCEPTION TO THE ABOVE WILL BE SPECIFICALLY NOTED.
- PVC CONDUIT SHALL BE USED FOR ALL UNDERGROUND OR UNDERSLAB APPLICATIONS. SCH 80 SHALL BE USED FOR FEEDERS AND SERVICES AND 2" RED CONCRETE ENCASMENT SHALL BE REQUIRED WHERE THESE CONDUITS PASS UNDER AREAS OF VEHICLE TRAFFIC. SCH 40 SHALL BE USED FOR BRANCH CIRCUITS - NO CONCRETE.
- EMT CONDUIT OR MC CABLE SHALL BE EMPLOYED FOR ALL INTERIOR APPLICATIONS OTHER THAN THOSE LISTED ABOVE FOR RIGID CONDUIT.
- ALUMINUM CONDUIT SHALL NOT BE PERMITTED FOR ANY APPLICATIONS.
- WHERE CONDUITS CROSS BUILDING EXPANSION JOINTS, USE SUITABLE SLIDING OR OFFSETTING FITTINGS. UNLESS SPECIFICALLY APPROVED FOR BONDING, USE A SUITABLE BONDING JUMPER.
- THE MINIMUM SIZE OF CONDUIT SHALL BE 1/2" UNLESS OTHERWISE NOTED ON THE DRAWINGS.

ELECTRICAL SPECIFICATIONS

WIRE

- ALL WIRING SHALL BE COPPER, CODE GRADE, TYPE THW OR THHN/THWN EQUIVALENT, RATED 600V.
- ALL WIRING SHALL BE INSTALLED IN CONDUIT OR OTHER N.E.C. APPROVED RACEWAY.
- ALL SPLICES SHALL BE PRESSURE TYPE AND SHALL BE MADE IN ACCESSIBLE JUNCTION OR SPLICE BOXES, WIRING, FLUORESCENT FIXTURES, ETC., SHALL BE OF THE PROPER TEMPERATURE RATING PER THE N.E.C.
- ALL CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED.

FITTINGS

- THINWALL CONDUIT (EMT) FITTINGS SHALL BE ALL STEEL, RAINTIGHT, AND SET-SCREW TYPE UP TO AND INCLUDING 2" CONDUIT. SET-SCREW TYPE SHALL BE USED ON SIZES LARGER THAN 2".
- RIGID CONDUIT FITTINGS SHALL BE METALLIC HEAVY DUTY TYPE.
- FLEXIBLE CONDUIT FITTINGS SHALL BE ALL STEEL.
- DIE-CAST AND INDENTER TYPE FITTINGS SHALL NOT BE ACCEPTABLE.
- FURNISH TYPE AS MANUFACTURED BY T & B, STEEL CITY, APLETON, RACO OR APPROVED EQUAL.

DEMOLITION

- CONTRACTOR SHALL BE RESPONSIBLE FOR ELECTRICAL DEMOLITION. ELECTRICAL EQUIPMENT, (LIGHT FIXTURES, RECEPTACLES, SWITCHES, HVAC EQUIPMENT, ETC.) MADE OBSOLETE BY DEMOLITION AND NOT DESIGNATED AS BEING REUSED, SHALL BE DISCONNECTED AND REMOVED. WIRING, NO LONGER REQUIRED, SHALL BE DISCONNECTED AND REMOVED.
- ELECTRICAL EQUIPMENT, NOT DESIGNATED AND/OR SHOWN TO BE REMOVED OR OTHERWISE NOTED, SHALL REMAIN IN PLACE AND REMAIN ACTIVE. DO NOT LEAVE ABANDONED WIRING IN CONDUITS.
- EXISTING CONDUITS NO LONGER REQUIRED MAY BE ABANDONED AND LEFT IN PLACE PROVIDED THE WIRING IS REMOVED AND THE PLACEMENT OF THE CONDUIT IS SUCH THAT IT DOES NOT CONFLICT WITH NEW CONSTRUCTION.
- WHERE THE DEMOLITION OF ELECTRICAL EQUIPMENT INTERRUPTS POWER TO OTHER DOWNSTREAM ELECTRICAL EQUIPMENT, THAT ARE EXISTING TO REMAIN, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT DOWNSTREAM DEVICES REMAIN ACTIVE AND ARE PROPERLY RECONNECTED.
- EQUIPMENT REMOVED AND NOT REUSED SHALL BE THE PROPERTY OF THE OWNER. ANY EXCEPTION TO THE ABOVE SHALL BE SO NOTED ON THE DRAWINGS.

SUBMITTALS

- AT MINIMUM, SUBMITTALS SHALL BE SUBMITTED FOR LUMINAIRES, LIGHTING CONTROLS, SWITCHGEAR/PANELBOARDS, FIRE ALARM SYSTEM/COMPONENTS, AND TRANSFORMERS WHERE APPLICABLE TO THE PROJECT. OTHERS ARE NOT REQUIRED BUT WILL BE ACCEPTED AND REVIEWED SUCH AS WIRING DEVICES, CONDUIT, WIRE, BOXES.
- SUBMIT MANUFACTURER'S SPECIFICATION SHEETS, CATALOG SHEETS, OR SHOP DRAWINGS COVERING ALL PHASES OF WORK INCLUDED IN THE PROJECT.
- HARD COPY SUBMITTALS SHALL BE ARRANGED IN SETS AND BOUND. IF MULTIPLE SUBMITTALS ARE SENT TOGETHER, EACH SECTION SHALL ORGANIZED IN SEPARATE INDEXED SECTIONS. **NO LOOSE LEAF SHEETS WILL BE ACCEPTED.**
- ELECTRONIC SUBMITTALS SHALL BE IN PDF FORMAT WITH EACH SECTION IN A SEPARATE FILE. **ALL SECTIONS MERGED INTO A SINGLE LARGE FILE WILL NOT BE ACCEPTED.**
- ALL SUBMITTALS SHALL BEAR WRITTEN CERTIFICATION TO THE EFFECT THAT THE CONTRACTOR HAS EXAMINED THEM AND FOUND THEM TO BE IN ACCORDANCE WITH SPECIFICATIONS & DRAWINGS AND TO BE DIMENSIONALLY CORRECT WITH REFERENCE TO AVAILABLE SPACE AND OTHER TRADES. EACH SUBMITTAL SHALL BE SIGNED AND DATED BY CONTRACTOR.
- SUBMITTALS ARE REQUIRED EVEN WHEN EQUIPMENT BEING FURNISHED IS EXACTLY AS SPECIFIED.

ELECTRICAL SPECIFICATIONS

TESTING

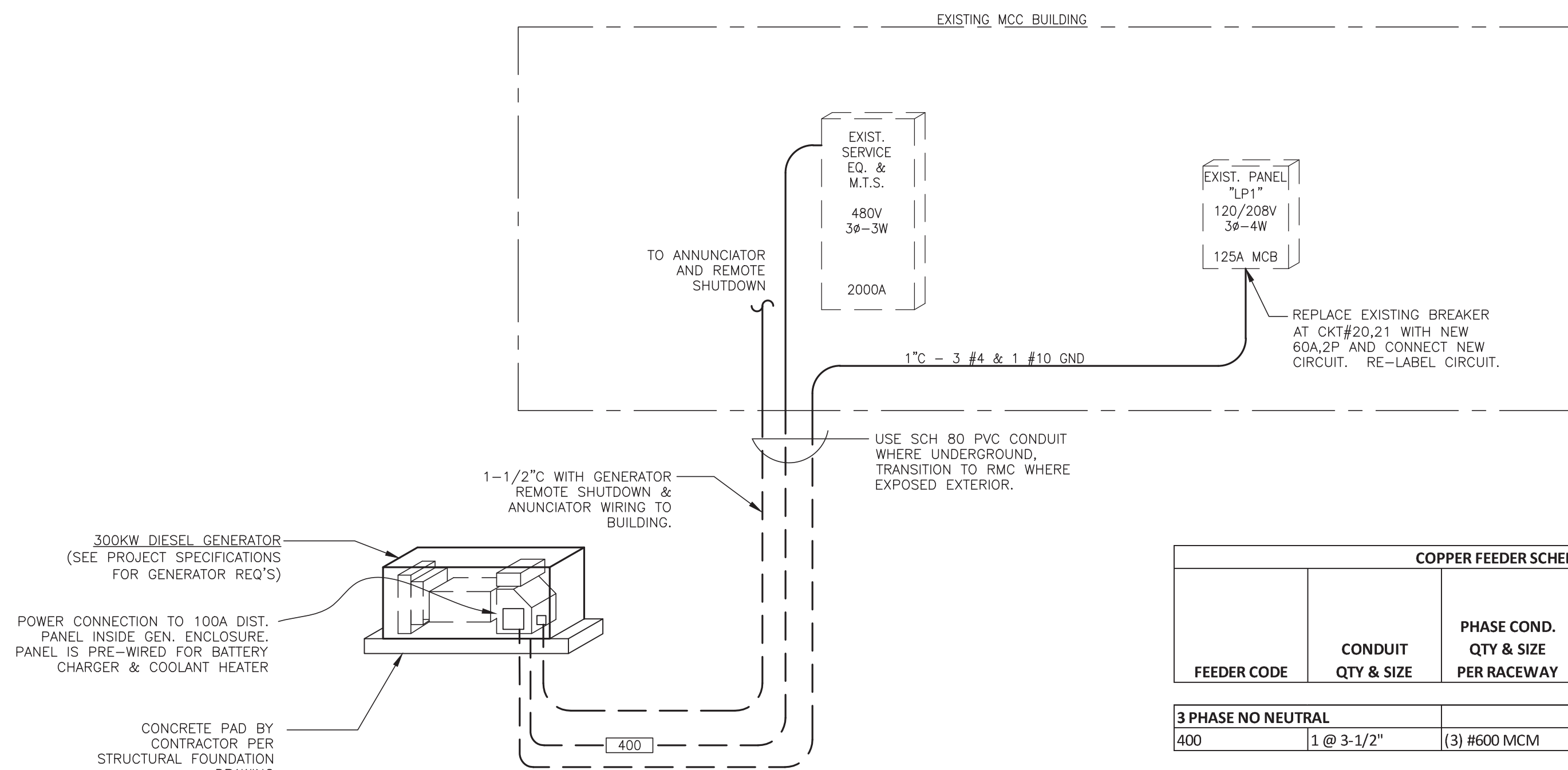
- THE CONTRACTOR SHALL PERFORM MEGGER TESTING OF EACH CONDUCTOR MAKING UP SERVICE ENTRANCE, IF INSTALLED BY CONTRACTOR, AND ALL FEEDERS. ANY CONDUCTORS INSTALLED OR OWNED BY THE SERVING UTILITY ARE EXEMPT FROM SAID TESTING.
- THE TEST SHALL BE PERFORMED WITH AN APPLIED POTENTIAL OF 1800 VOLTS DC FOR 1 MIN. CONTRACTOR SHALL PERFORM TESTS WITH CONDUCTORS DISCONNECTED AT BOTH ENDS. THE MINIMUM INSULATION RESISTANCE VALUES SHALL NOT BE LESS THAN TWO MEGOHMS.
- THE CONTRACTOR SHALL RECORD ALL READINGS AND SUBMIT A TEST REPORT WITH CLOSE OUT DOCUMENTS.
- ALL TERMINATIONS SHALL BE MADE WITH A PROPERLY CALIBRATED TORQUE WRENCH TO BE WITHIN EQUIPMENT MANUFACTURER'S RECOMMENDED VALUES. FOR LUG TERMINATIONS ON SERVICES & FEEDERS, CONTRACTOR SHALL MARK A LINE ACROSS THE TOP OF THE LUG AFTER PROPER TIGHTENING.
- CONTRACTOR SHALL SUBMIT COPIES OF MOST RECENT CALIBRATION CERTIFICATES FOR ALL TORQUE WRENCHES TO BE USED ON SITE. CALIBRATION MUST HAVE BEEN DONE WITHIN 12 MONTHS OF THE TIME OF USE ON PROJECT SITE.

PERMITS AND INSPECTIONS

- CONTRACTOR SHALL PAY ALL FEES & OBTAIN ALL PERMITS REQUIRED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL AUTHORITIES GOVERNING THE PROJECT AND PROVIDING PROPER NOTICE TO SAID AUTHORITIES FOR ALL REQUIRED INSPECTIONS. ANY LACK OF COORDINATION REQUIRING THE REMOVAL OF INSTALLED BUILDING COMPONENTS TO SATISFY REQUIRED INSPECTIONS WILL BE AT CONTRACTOR'S EXPENSE TO REPAIR.
- CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AT THE FOLLOWING PROGRESS POINTS IN THE PROJECT FOR ENGINEERING INSPECTIONS:
 - UNDERGROUND SERVICE ENTRANCE AND FEEDERS PRIOR TO CONCRETE ENCASING OR BACKFILLING. DOES NOT INCLUDE ANY UTILITY SIDE CONDUITS.
 - INTERIOR ROUGH-IN PRIOR TO ANY WALL COVERINGS BEING IN PLACE.
 - PANELBOARD/SWITCHGEAR/TRANSFORMER TERMINATIONS BEFORE SECURING COVERS
 - ABOVE CEILING AFTER LUMINAIRE INSTALLATION PRIOR TO CEILING TILES BEING INSTALLED.
- CONTRACTOR SHALL NOTIFY ENGINEER AT LEAST ONE WEEK PRIOR TO REQUIRED INSPECTION. IF ENGINEER CANNOT PERFORM INSPECTION IN A TIMELY MANNER AS TO NO DELAY CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT DIGITAL PHOTOGRAPHIC EVIDENCE OF THE INSTALLATION. ENGINEER SHALL REVIEW PHOTOGRAPHS AND GIVE NOTICE OF ACCEPTANCE AT WHICH TIME THE CONTRACTOR MAY PROCEED.
- FAILURE TO NOTIFY ENGINEER OF INSPECTIONS SHALL RESULT IN CONTRACTOR REMOVING ALL COVERINGS TO ALLOW INSPECTION AND REPLACING TO PREVIOUS CONDITION AT CONTRACTOR'S OWN EXPENSE.

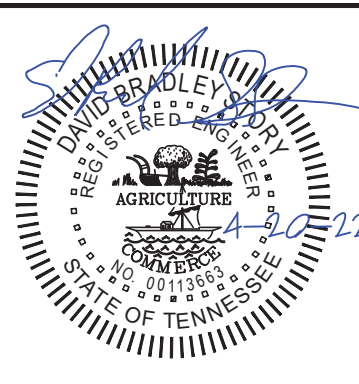
SUBSTITUTIONS

- THE PROPOSED SUBSTITUTION SHALL BE FULLY INVESTIGATED AND DETERMINED TO BE EQUAL OR SUPERIOR IN ALL RESPECTS TO THE SPECIFIED PRODUCT.
- THE SAME WARRANTY SHALL BE FURNISHED FOR THE PROPOSED SUBSTITUTION AS FOR THE SPECIFIED PRODUCT.
- THE PROPOSED PRODUCT SHALL HAVE THE SAME MAINTENANCE SERVICE AND AVAILABILITY OF SPARE PARTS.
- THE PROPOSED SUBSTITUTION SHALL NOT AFFECT DIMENSIONS AND/OR FUNCTIONAL REQUIRED CLEARANCES PER THE MANUFACTURER OR THE LATEST APPLICABLE CODES.
- THE PROPOSED SUBSTITUTION SHALL HAVE NO ADVERSE EFFECT ON OTHER TRADES AND SHALL NOT AFFECT AND/OR DELAY THE PROGRESS SCHEDULE.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO PAY FOR ANY CHANGES TO BUILDING DESIGN, INCLUDING ARCHITECTURAL/ENGINEERING DESIGN, DETAILING AND CONSTRUCTION COST CAUSED BY THE SUBSTITUTION.
- THE CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR SUBSTITUTIONS THAT ARE DEEMED "VALUE ENGINEERING" AND DETERMINED NOT EQUAL OR SUPERIOR TO THE PRODUCT SPECIFIED.



ONE-LINE DIAGRAM

NO SCALE



REVISION	DATE	COMMENT

ELECTRICAL INFO & DIAGRAMS

GENERATOR REPLACEMENT
WASTEWATER TREATMENT PLANT
HONEYDEW LN, DYERSBURG, TN

DW COLLIER
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COLLIER

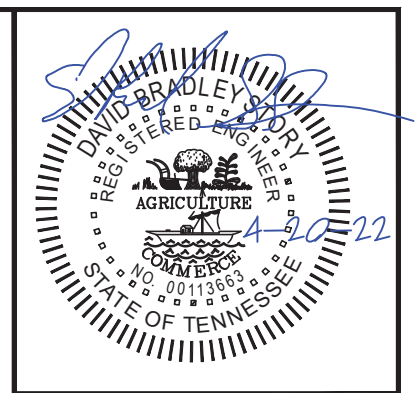
ORIGINAL ISSUE DATE: 04-20-22
SCALE: NONE
CHECKED: TSL
DRAWN BY: DBS
APPROVED: DBS

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PROJECT NUMBER:
22-045

SHEET NUMBER:
E-1



REVISION	DATE	COMMENT

SHEET TITLE: **ELECTRICAL PLANS**

PROJECT: **GENERATOR REPLACEMENT
WASTEWATER TREATMENT PLANT
HONEYDEW LN, DYERSBURG, TN**

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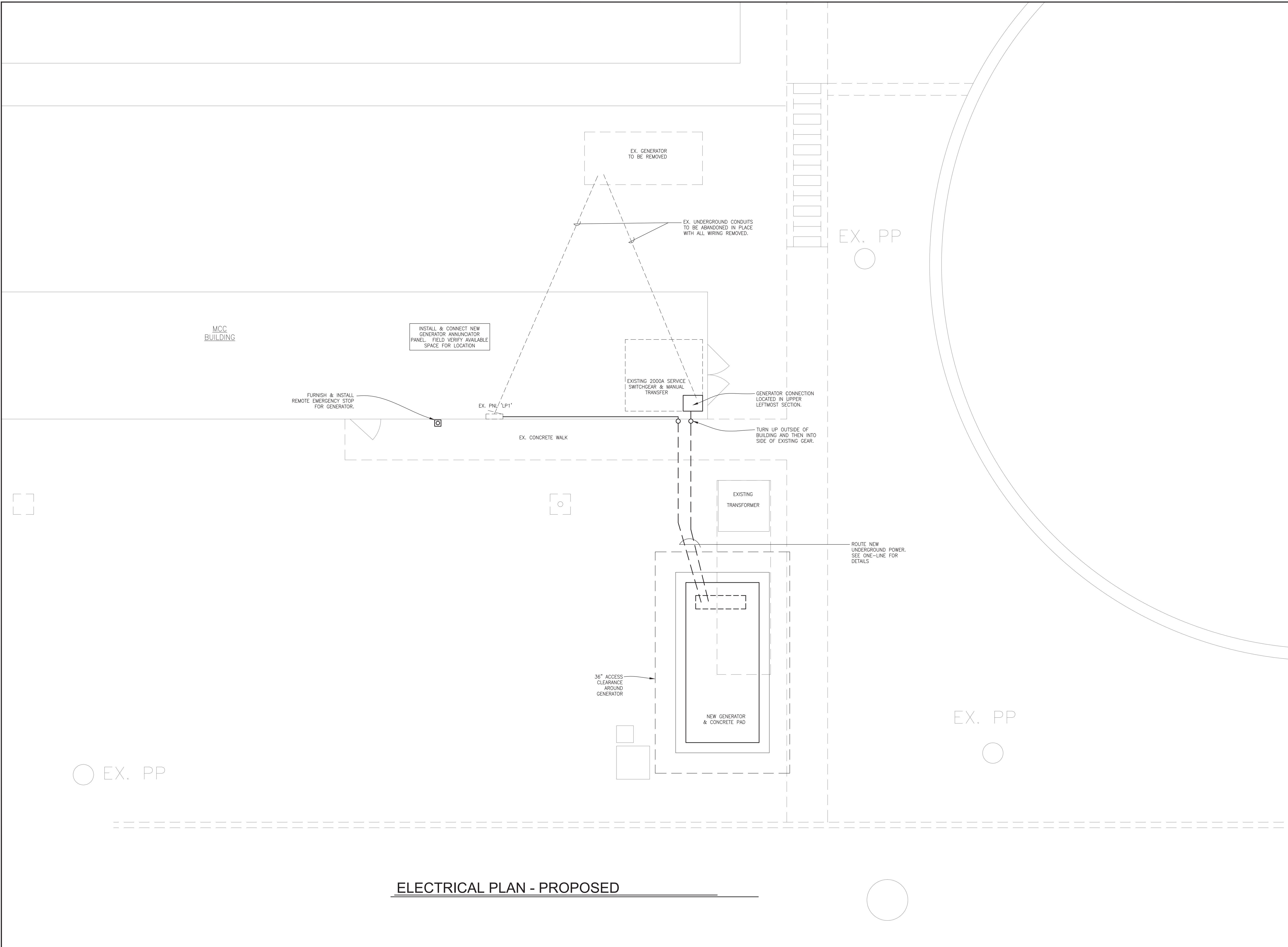


ORIGINAL ISSUE DATE:	04-20-22
SCALE:	1/4" = 1'-0"
CHECKED:	TSL
APPROVED:	DBS
DRAWN BY:	DBS

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PROJECT NUMBER:
22-045

SHEET NUMBER:
E-2



ELECTRICAL PLAN - PROPOSED